

# MS-7430 Ver : 0A

Intel (R) LGA775 Processor (130W)

Intel (R) ( GMCH G41) + ICH7 Chipset

## CPU:

Intel Core 2 Duo/Extreme/Quad & Pentium D Processor

## System Chipset:

Intel G41 (North Bridge) Rev : A3

Intel ICH7 (South Bridge) Rev : A1

## On Board Chipset:

CLOCK : ICS9LP505

PCIE LAN 82573L

LPC Super I/O : W83627DHG Ver : C

DVI : PERICOM PI3VDP411LSTZDE

1394 : JMICRON JMB 381

E-SATA : JMICRON JMB 362

Audio Codec : ALC888 7.1 Channel Ver : A1

BIOS : SPI- 8M

## Main Memory:

DDR II \* 2 (Max 4GB)

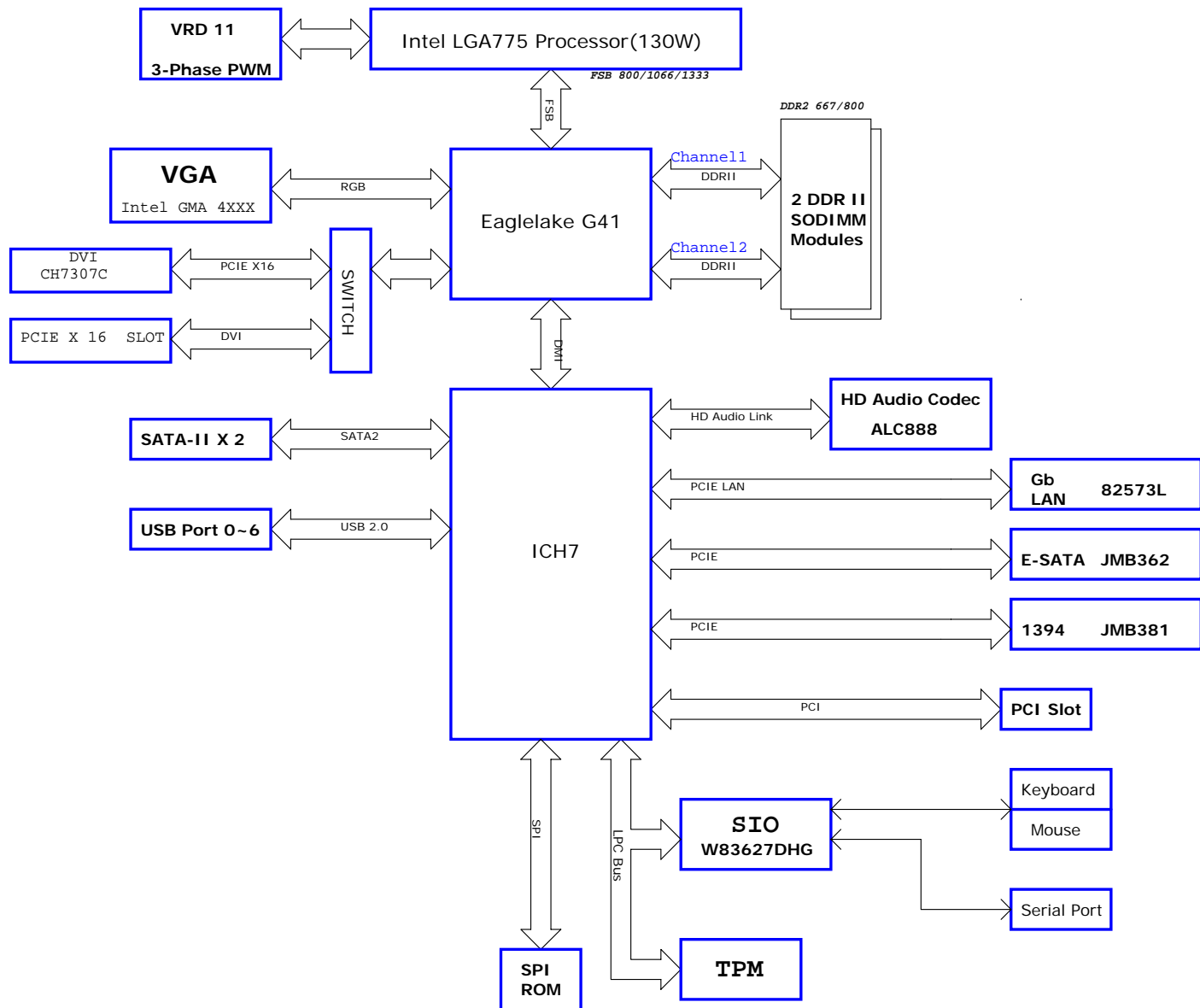
## Expansion Slots:

PCI X SLOT \*1 (FOR PCI-E & PCI Riser)

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Micro Star Restricted Secret		
Title	COVER	Rev 0A
Document Number	MS-7430	
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# Block Diagram



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ICH7

GPIO	Alt Func	Pin	I/O/NC	Power	PU	SMI	Tol	Default	Signal Name
GPIO[0]	BM_BUSY#	AB18	I/O	Vcc3p3	N	Y	3.3	Input	strapped high
GPIO[1]	PCIREQ[5]#	C8	I/O	V5REF	N	Y	5	Input	PREQ#5
GPIO[2]	PIRQE#	G8	I/OD	V5REF	N	Y	5	Input	PIRQ#E
GPIO[3]	PIRQF#	F7	I/OD	V5REF	N	Y	5	Input	PIRQ#F
GPIO[4]	PIRQG#	F8	I/OD	V5REF	N	Y	5	Input	PIRQ#G
GPIO[5]	PIRQH#	G7	I/OD	V5REF	N	Y	5	Input	PIRQ#H
GPIO[6]	unmuxed	AC21	I/O	Vcc3p3	N	Y	3.3	Input	ATADET0
GPIO[7]	unmuxed	AC18	I/O	Vcc3p3	N	Y	3.3	Input	strapped high
GPIO[8]	unmuxed	E21	I/O	VccSus3p3	N	Y	3.3	Input	SIO_PME#
GPIO[9]	unmuxed	E20	I/O	VccSus3p3	N	Y	3.3	Input	strapped high
GPIO[10]	unmuxed	A20	I/O	VccSus3p3	N	Y	3.3	Input	strapped high
GPIO[11]	SMBALERT#	B23	I/O	VccSus3p3	N	Y	3.3	Input	strapped high
GPIO[12]	unmuxed	F19	I/O	VccSus3p3	N	Y	3.3	Input	strapped high
GPIO[13]	unmuxed	E19	I/O	VccSus3p3	N	Y	3.3	Input	strapped high
GPIO[14]	unmuxed	R4	I/O	VccSus3p3	N	Y	3.3	Input	strapped high
GPIO[15]	unmuxed	E22	I/O	VccSus3p3	N	Y	3.3	Input	USB_EN
GPIO[16]	unmuxed	AC22	I/O	Vcc3p3	N	N	3.3	0	NC
GPIO[17]	PCIGNT[5]#	D8	I/O	Vcc3p3	N	N	3.3	N/A	PGNT#5
GPIO[18]	unmuxed	AC20	I/O	Vcc3p3	N	N	3.3	1	SPI_HOLD#
GPIO[19]	SATA1GP	AH18	I/O	Vcc3p3	N	N	3.3	Input	strapped high
GPIO[20]	unmuxed	AF21	I/O	Vcc3p3	N	N	3.3	1	NC
GPIO[21]	SATA0GP	AF19	I/O	Vcc3p3	N	N	3.3	Input	strapped high
GPIO[22]	PCIREQ[4]#	A13	I/O	Vcc3p3	N	N	3.3	Input	PREQ#4
GPIO[23]	LDRQ1#	AA5	I/O	Vcc3p3	N	N	3.3	Input	NC
GPIO[24]	unmuxed	R3	I/O	VccSus3p3	N	N	3.3	No Change	LAN_DIS#
GPIO[25]	unmuxed	D20	I/O	VccSus3p3	Y	N	3.3	1	DMI_MODE
GPIO[26]	unmuxed	A21	I/O	VccSus3p3	N	N	3.3	0	NC
GPIO[27]	unmuxed	B21	I/O	VccSus3p3	N	N	3.3	0	NC
GPIO[28]	unmuxed	E23	I/O	VccSus3p3	N	N	3.3	0	NC
GPIO[29]	OC5#	C3	I/O	VccSus3p3	N	N	3.3	Input	USB_OCP#4
GPIO[30]	OC6#	A2	I/O	VccSus3p3	N	N	3.3	Input	USB_OCP#4
GPIO[31]	OC7#	B3	I/O	VccSus3p3	N	N	3.3	Input	USB_OCP#4
GPIO[32]	unmuxed	AG18	I/O	Vcc3p3	N	N	3.3	1	SPI_WP#
GPIO[33]	unmuxed	AC19	I/O	Vcc3p3	N	N	3.3	1	NC
GPIO[34]	unmuxed	U2	I/O	Vcc3p3	N	N	3.3	0	NC
GPIO[35]	unmuxed	AD21	I/O	Vcc3p3	N	N	3.3	1	NC
GPIO[36]	SATA2GP	AH19	I/O	Vcc3p3	N	N	3.3	Input	strapped high
GPIO[37]	SATA3GP	AE19	I/O	Vcc3p3	N	N	3.3	Input	strapped high
GPIO[38]	unmuxed	AD20	I/O	Vcc3p3	N	N	3.3	Input	strapped high
GPIO[39]	unmuxed	AE20	I/O	Vcc3p3	N	N	3.3	Input	strapped high
GPIO[48]	GNT4#	A14	I/O	Vcc3p3	N	N	3.3	N/A	PGNT#4
GPIO[49]	CPUPWRGD	AG24	I/O	V_CPU_IO	N	N	CPU	N/A	H_PWRGD

Following are the GPIOs that need to be terminated properly if not used:  
GPIO[39:36,23:21,19,7:0]: default as inputs and should be pulled up to Vcc3\_3 if unused.  
GPIO[31:29,15:8]: default as inputs and should be pulled up to VccSus3\_3 if unused.

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
PCI Slot 1	PIRQ#A	PREQ#0 PGNT#0	AD20	PCI_CLK1
	PIRQ#B			
	PIRQ#C			
	PIRQ#D			
PCI Slot 2	PIRQ#C	PREQ#2 PGNT#2	AD21	PCI_CLK2
	PIRQ#D			
	PIRQ#A			
	PIRQ#B			

RESET DEVICE

Signals	Target
RST_OUT0#	LAN 82573L
RST_OUT1#	PCIE X16 , PCI
RST_OUT2#	1394 , IDE
RST_OUT3#	E-SATA , TPM

DDRII DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	A0H	SCLK_A0/SCLK_A#0
		SCLK_A1/SCLK_A#1
		SCLK_A2/SCLK_A#2
DIMM 2	A2H	SCLK_B0/SCLK_B#0
		SCLK_B1/SCLK_B#1
		SCLK_B2/SCLK_B#2

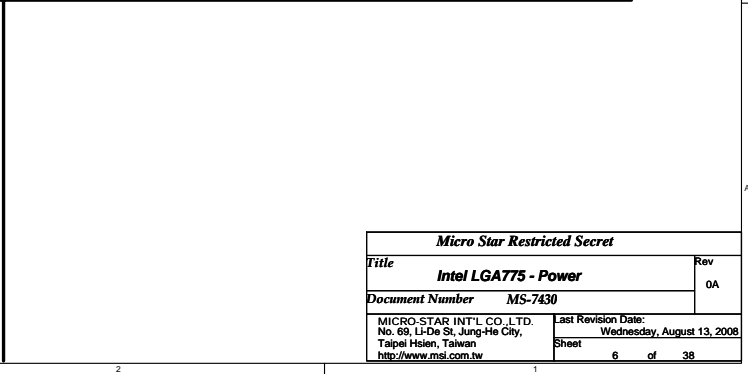
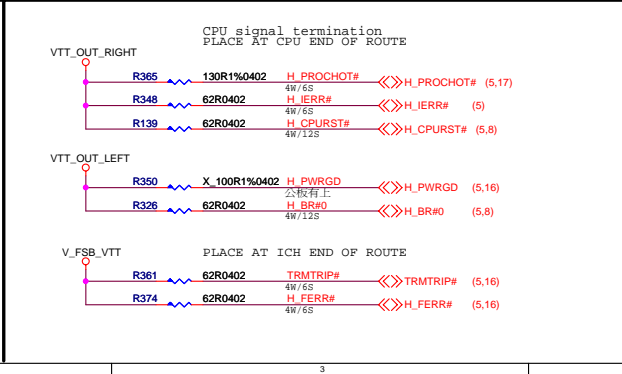
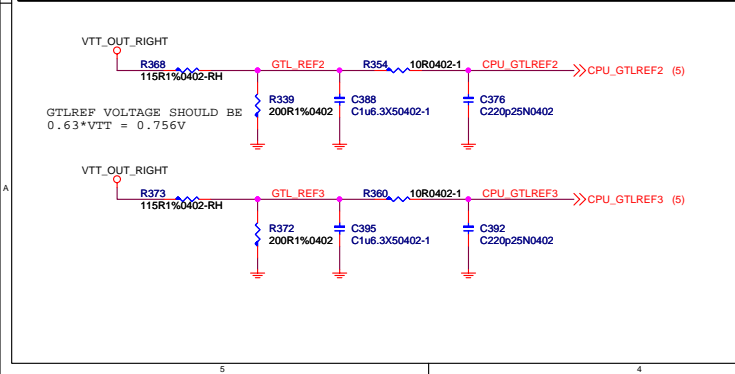
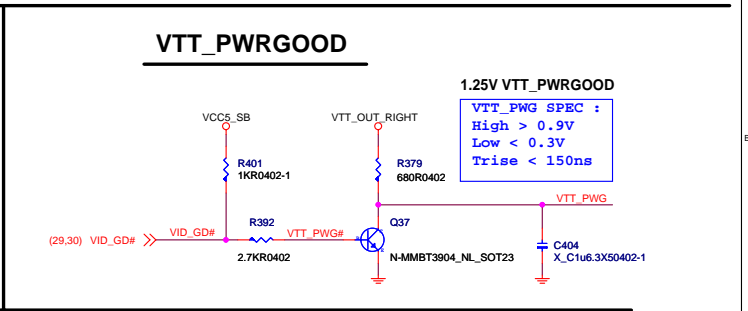
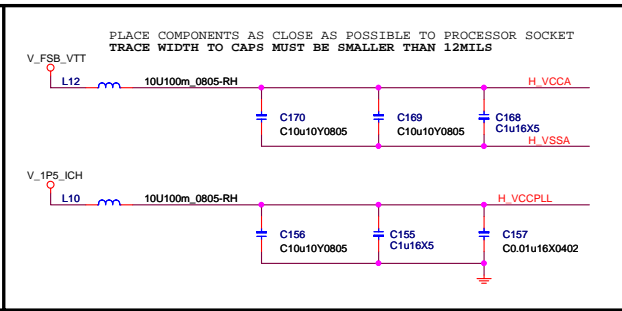
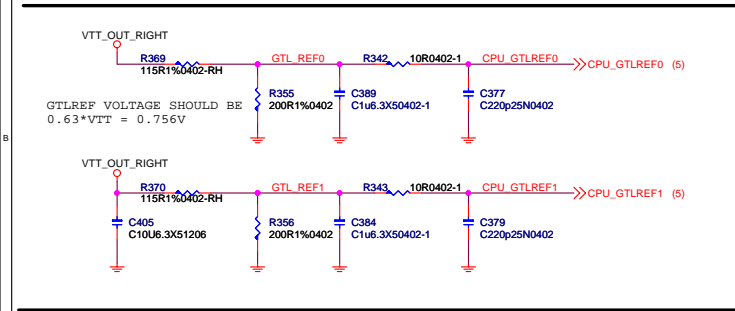
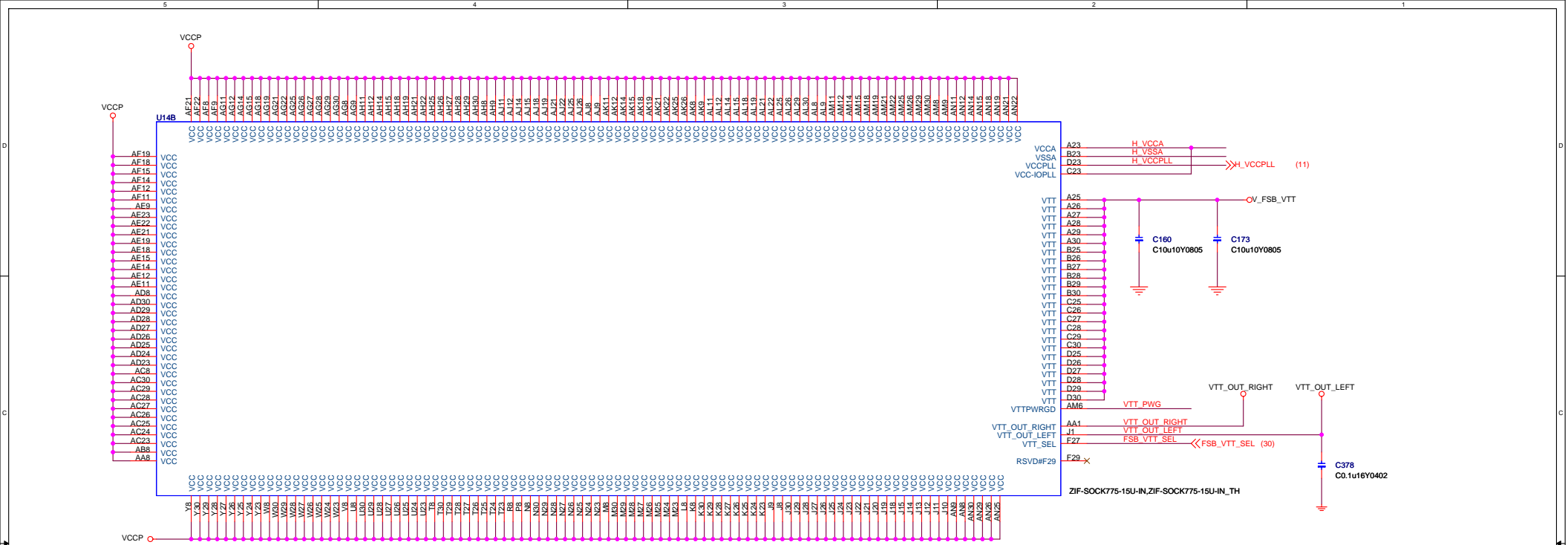
JUMPER SETTING

JBAT1	(1-2) NORMAL	(2-3) CLEAR
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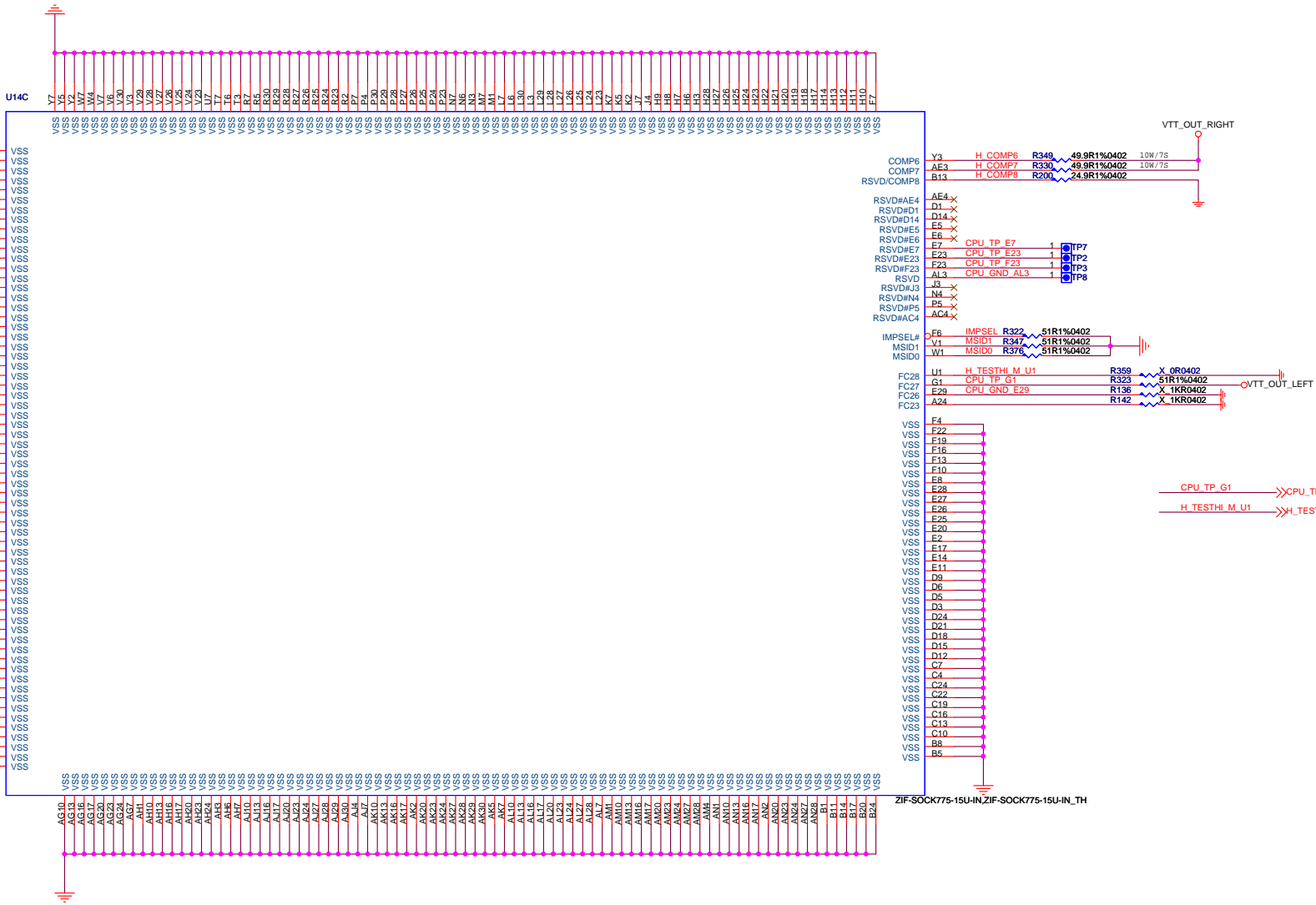
Micro Star Restricted Secret		
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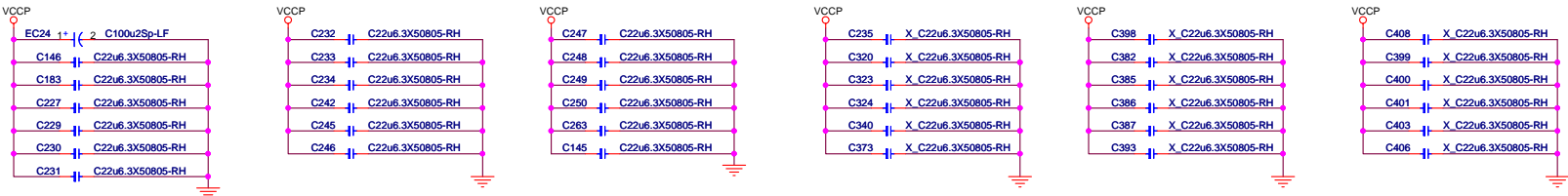




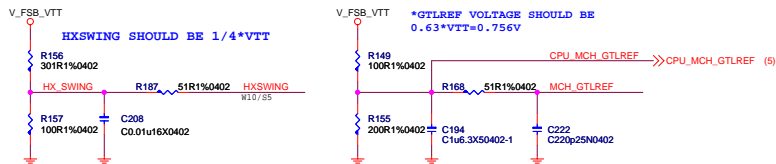
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Document Number	MS-7430	
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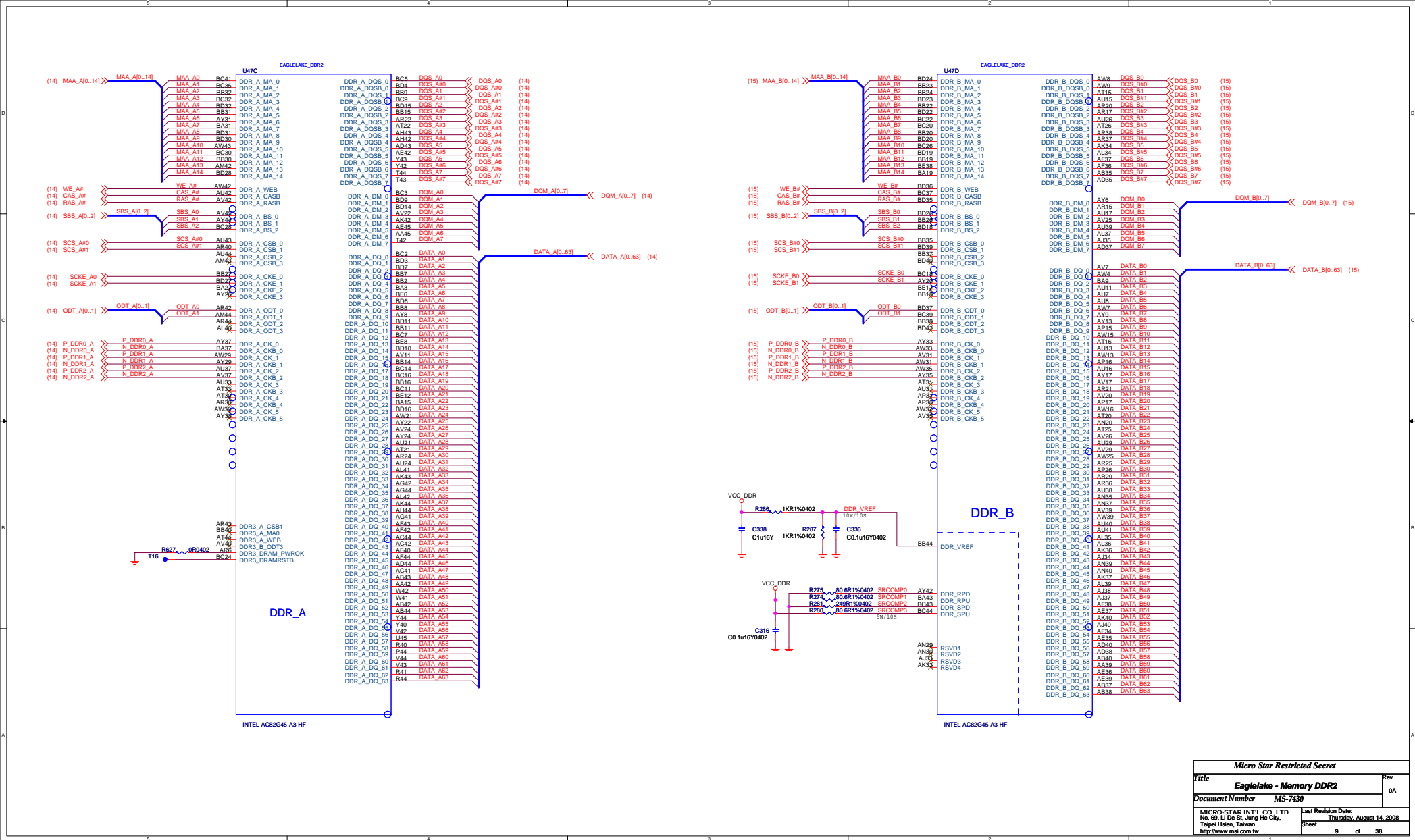
## CPU DECOUPLING CAPACITORS



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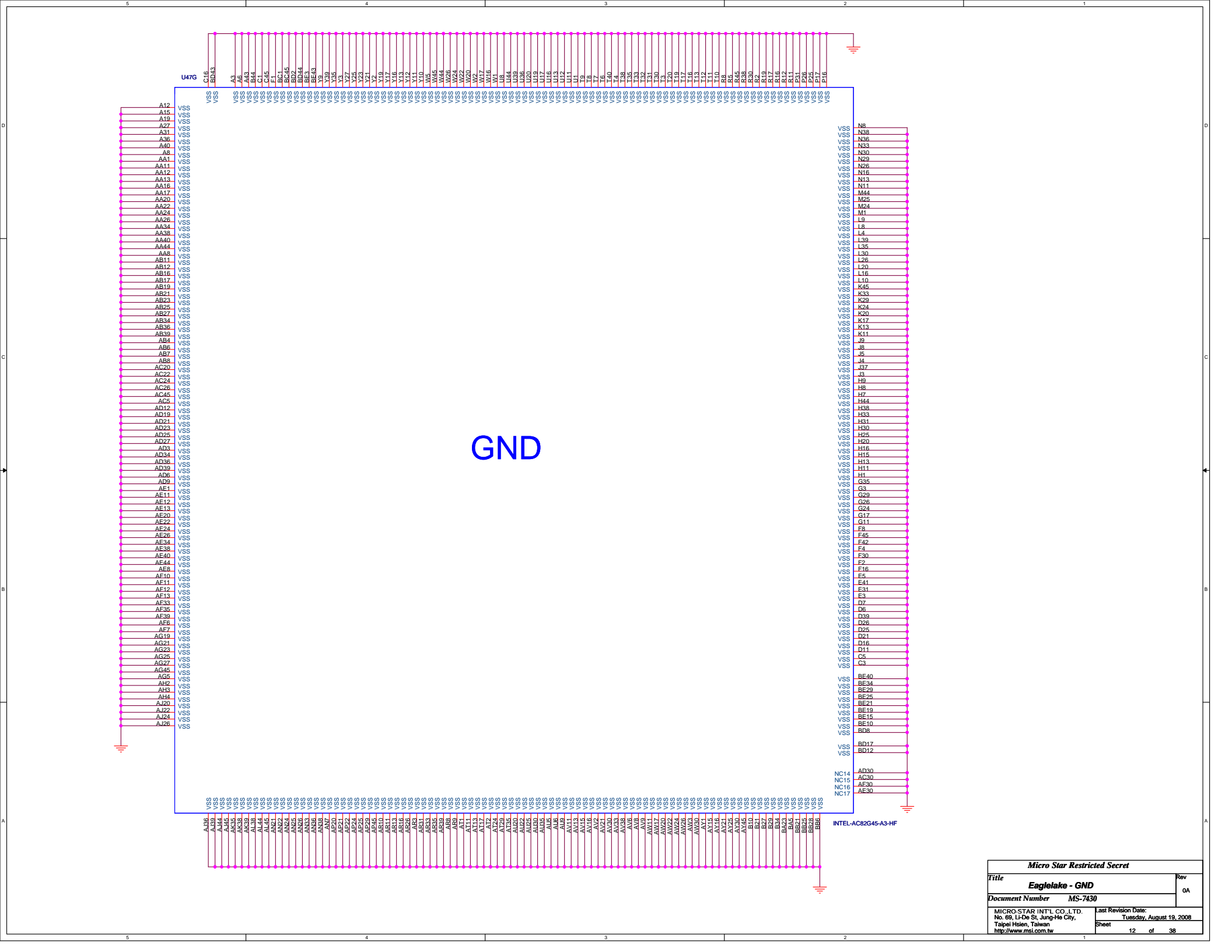




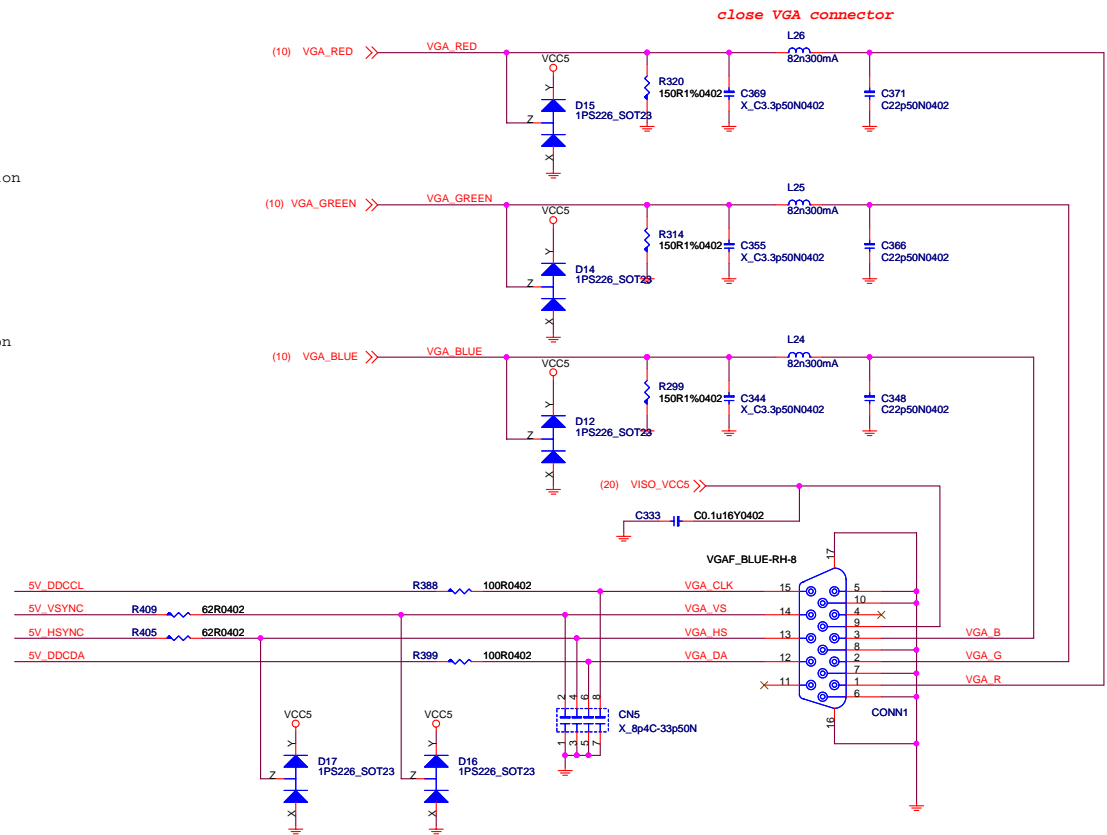
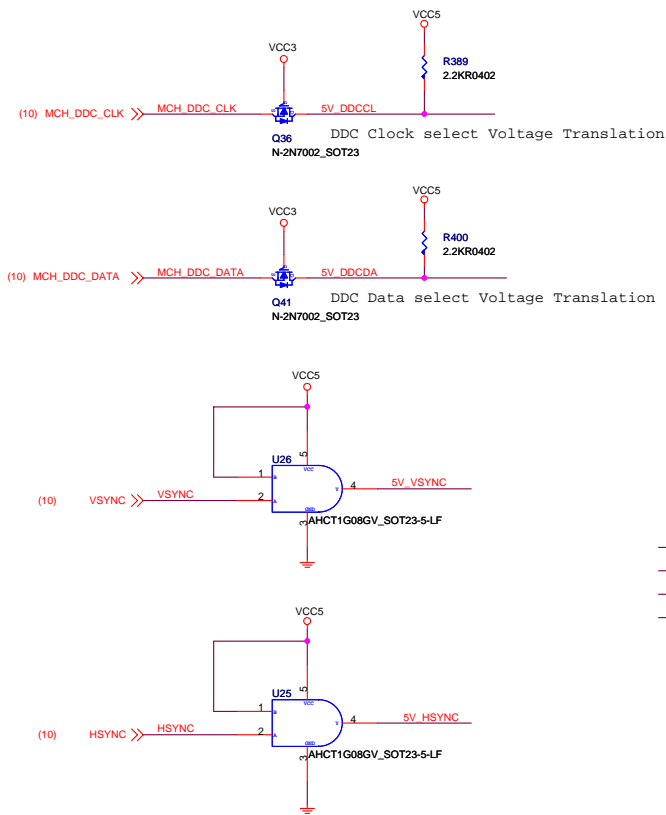




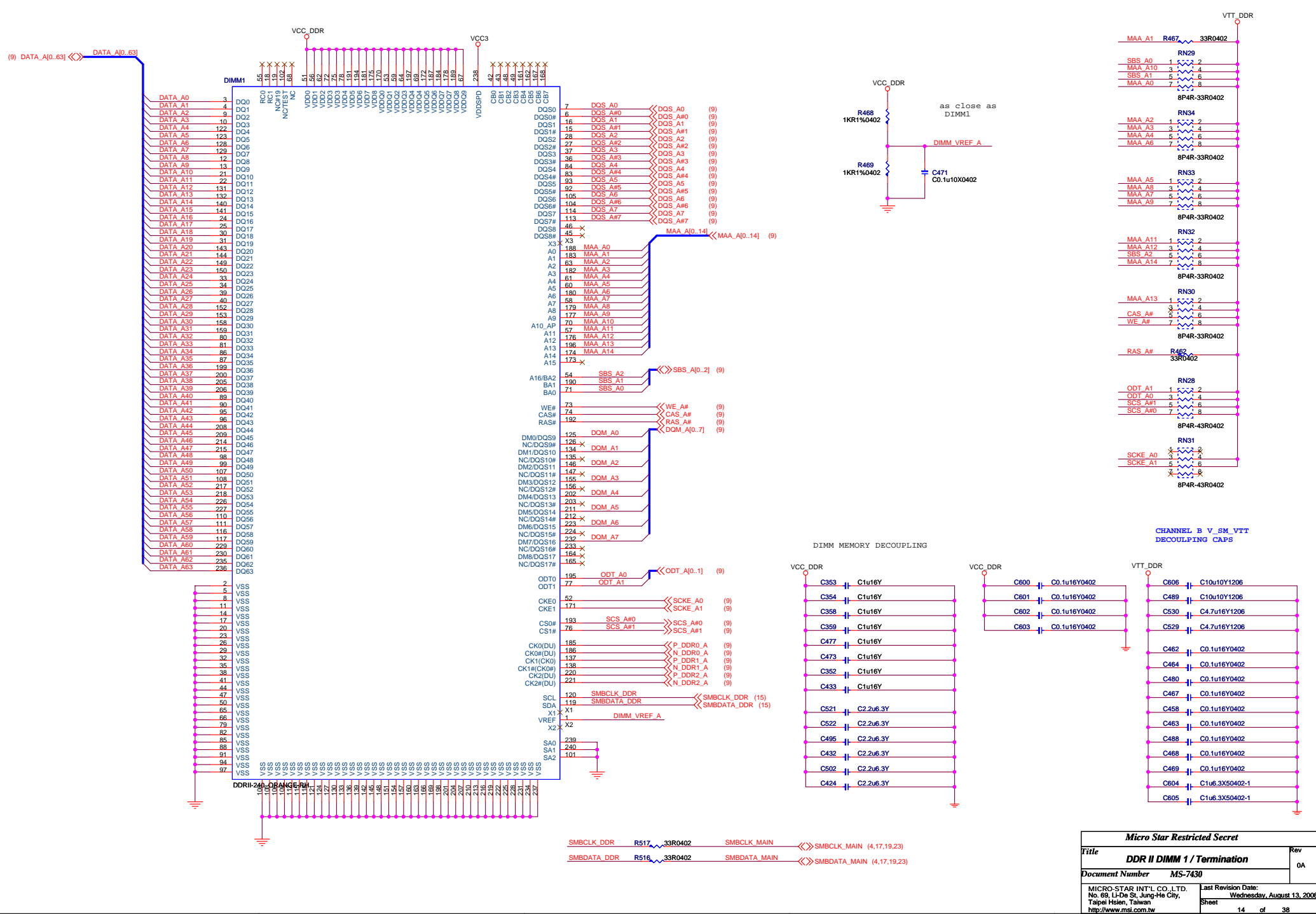


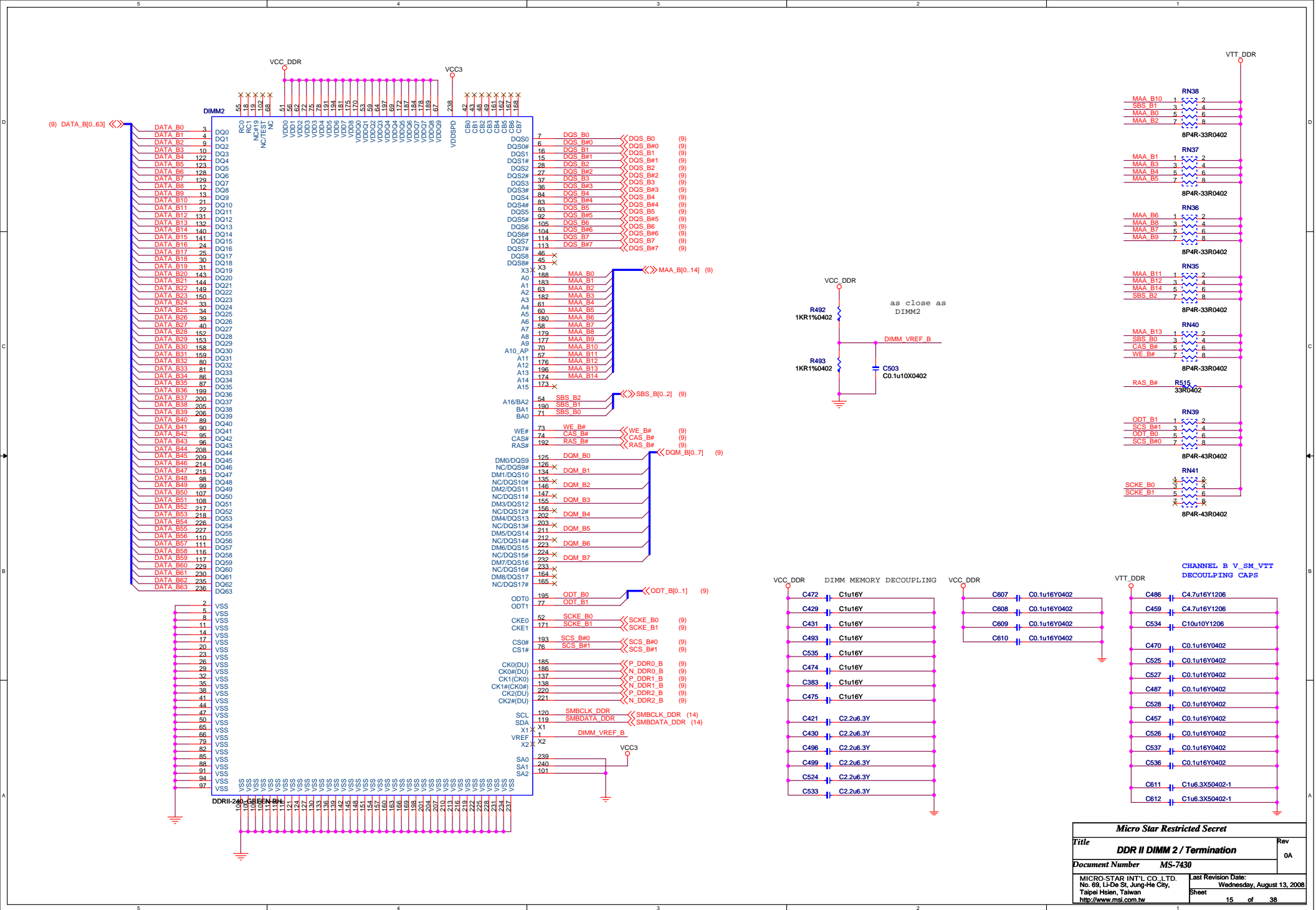


GND

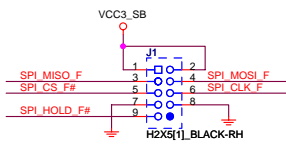


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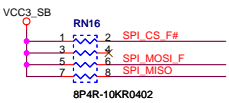
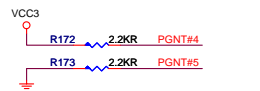




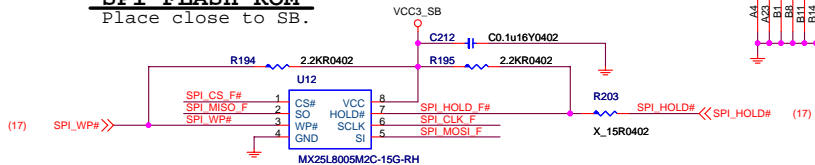
# **SPI DEBUG PROT** Place close to SPI ROM



GNT5#	GNT4#	ROUTING
0	1	Flash Cycles Routed to SPI
1	0	Flash Cycles Routed to PCI
1	1	Flash Cycles Routed to LPC

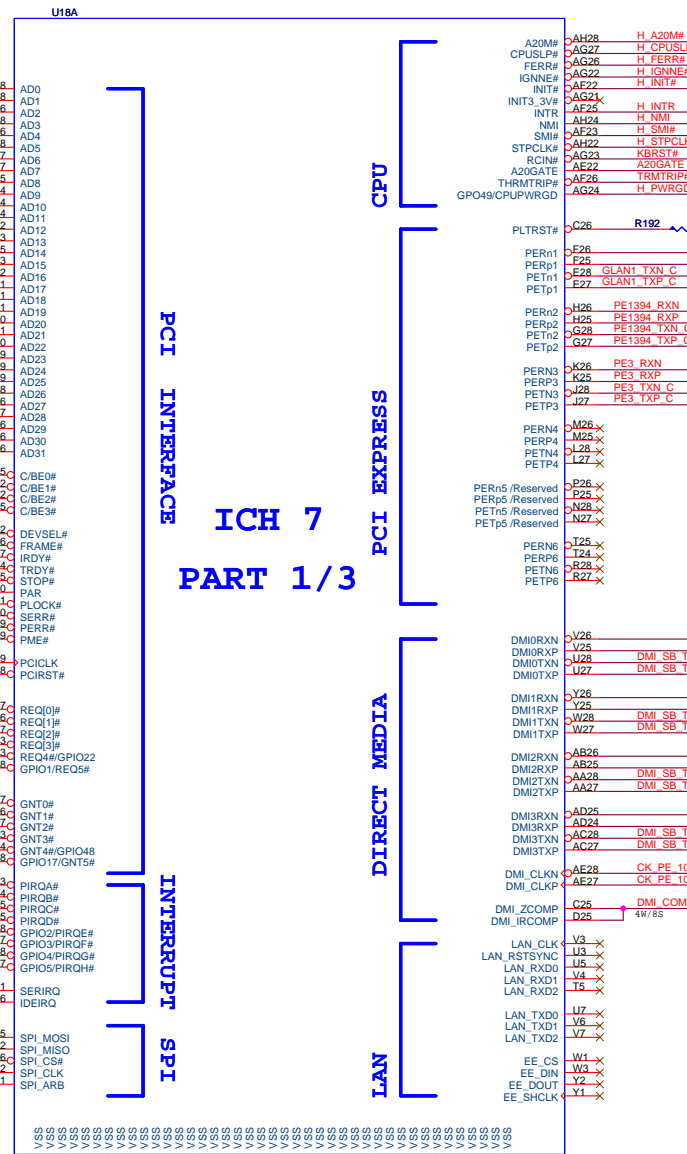


# **SPI FLASH ROM** Place close to SB.



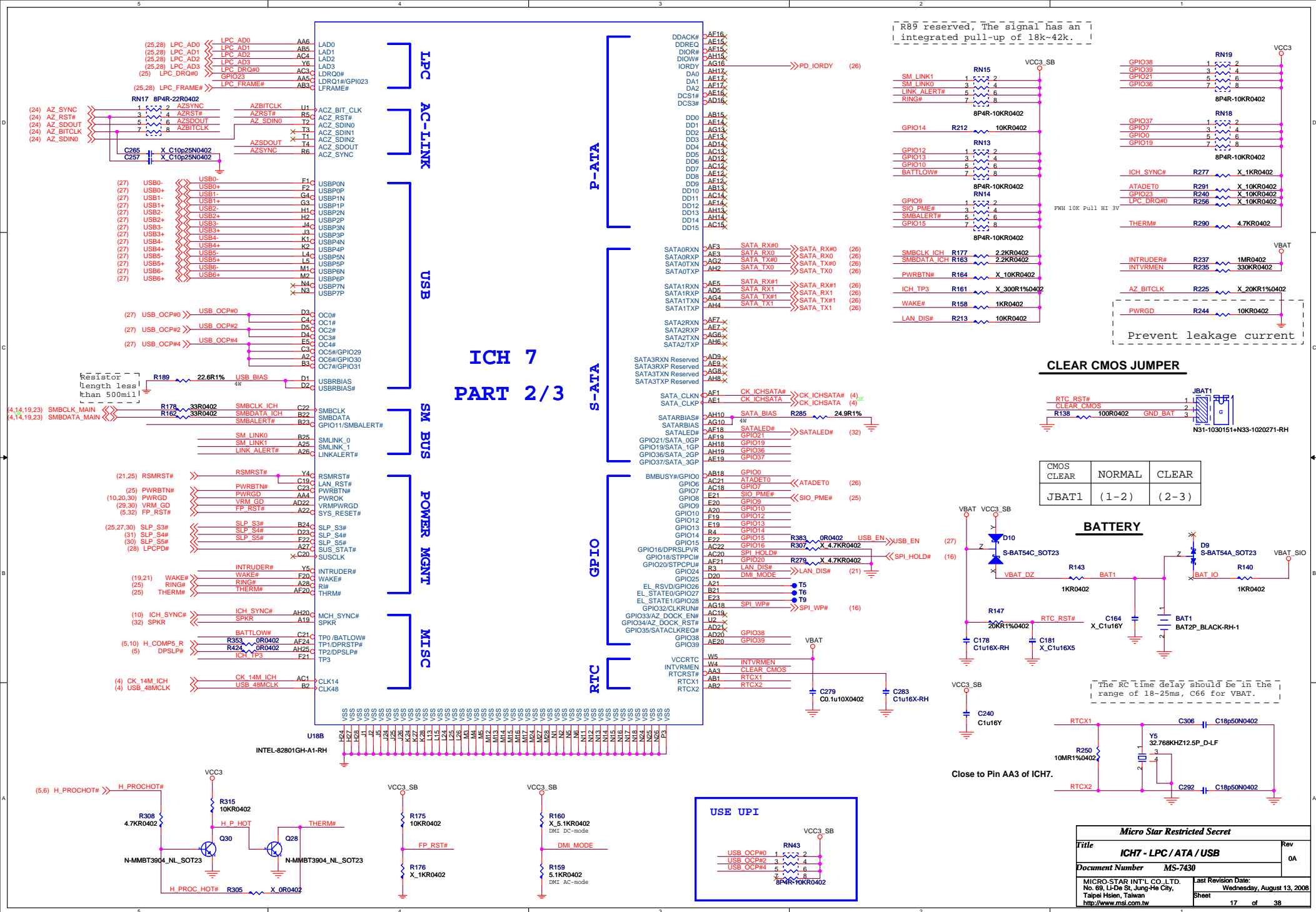
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GPIO[31:29,15:8]: default as inputs and should be pulled up to VccSus3\_3 if unused.

## **ICH 7 PART 1/3**

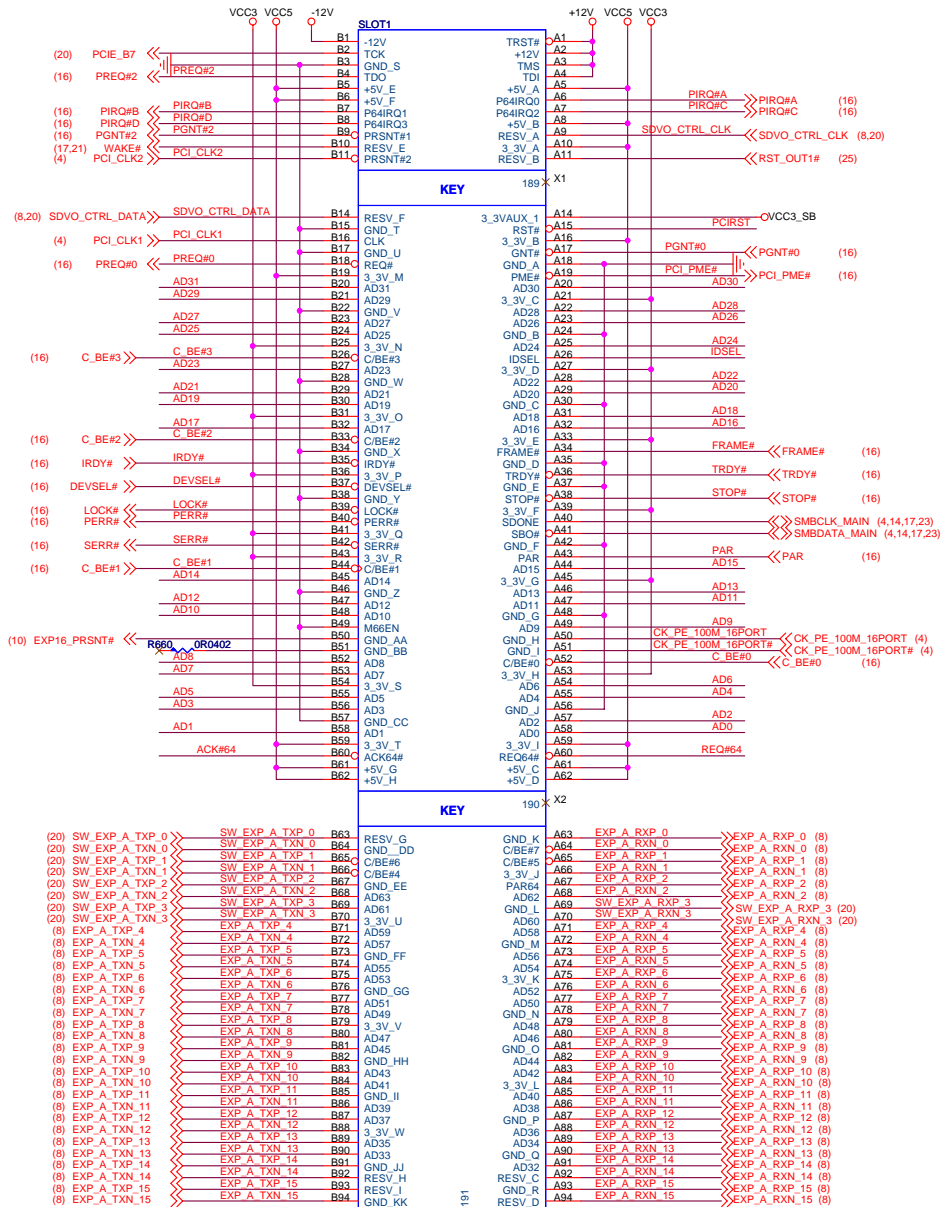


<b>Micro Star Restricted Secret</b>		
Title	<b>ICHT - PCI / DMI / CPU / LAN</b>	Rev QA
Document Number	<b>MS-7430</b>	
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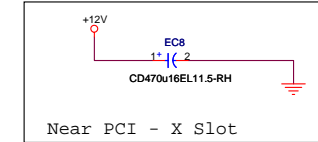
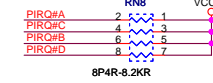
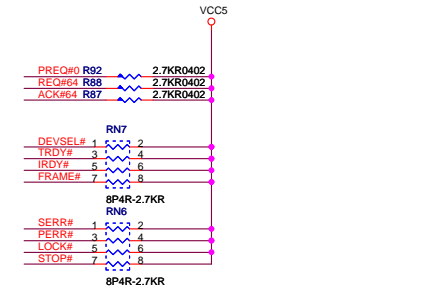
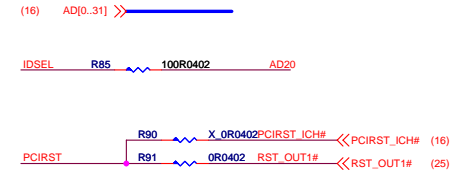


### PCI 1

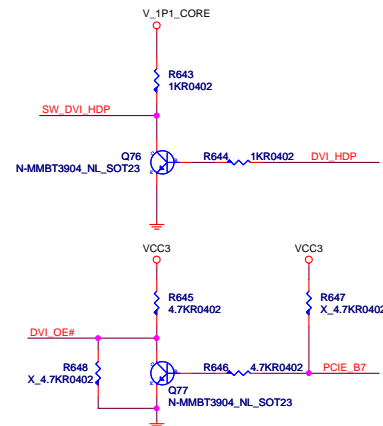
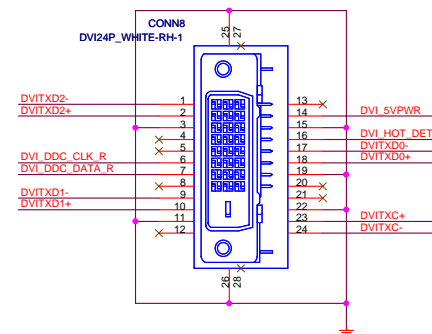
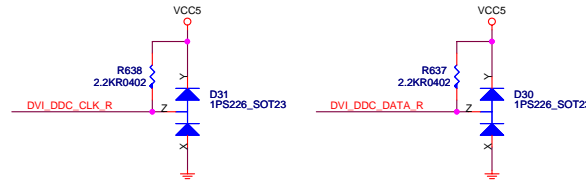
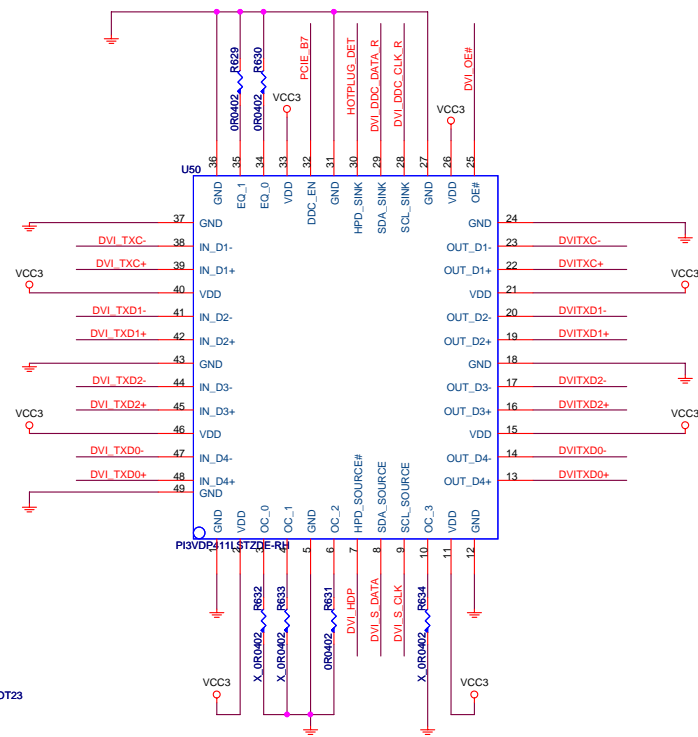
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INT: PIRQ# ABCD  
REQ: PREQ#0  
GNT: PGNT#0  
CLK: PCI\_CLK1

### PCI 2

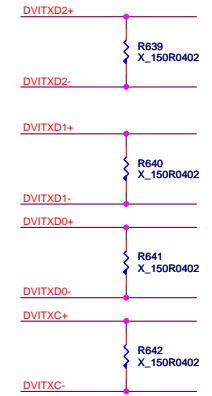
IDSEL: AD21  
INT: PIRQ# CDAB  
REQ: PREQ#2  
GNT: PGNT#2  
CLK: PCI\_CLK2



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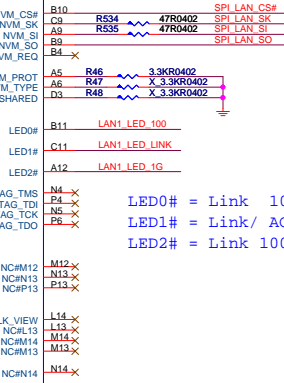
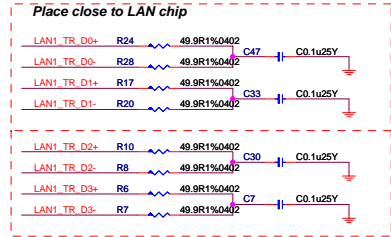
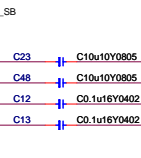
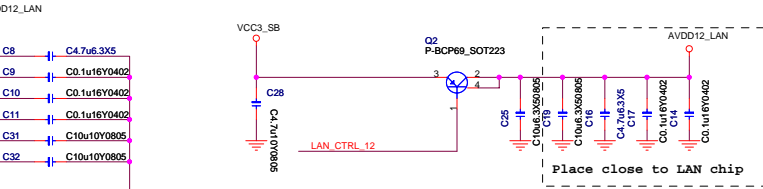
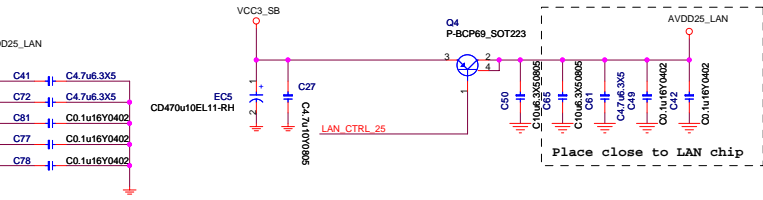
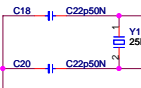
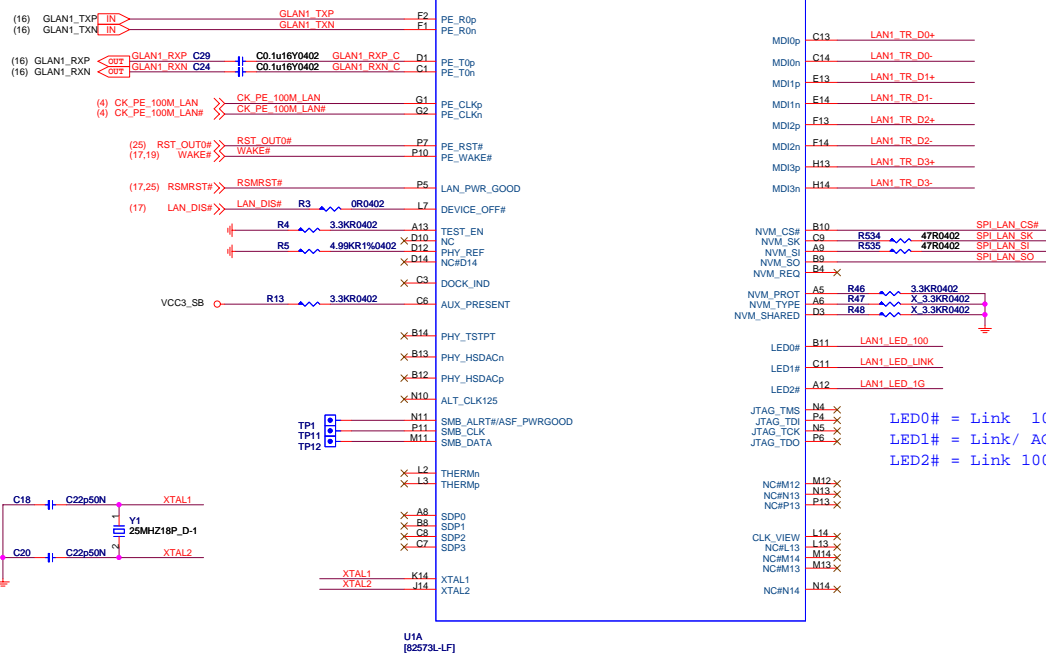
## EMI Solution



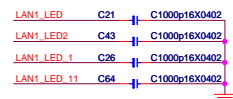
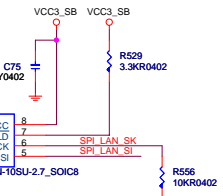
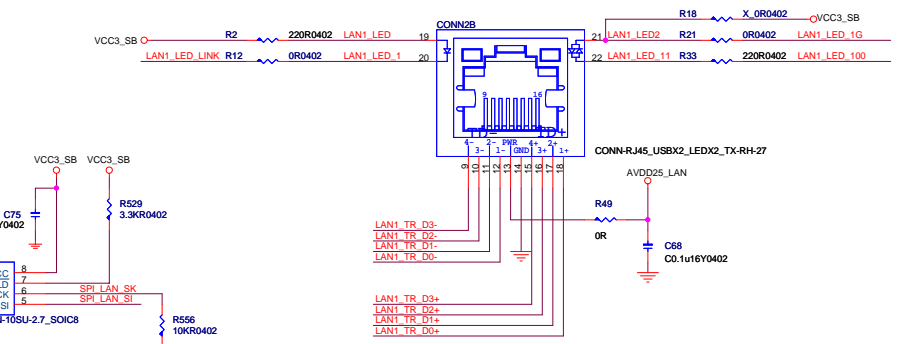
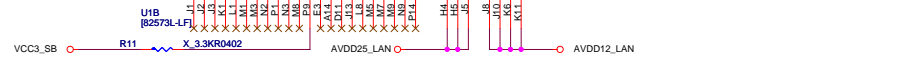
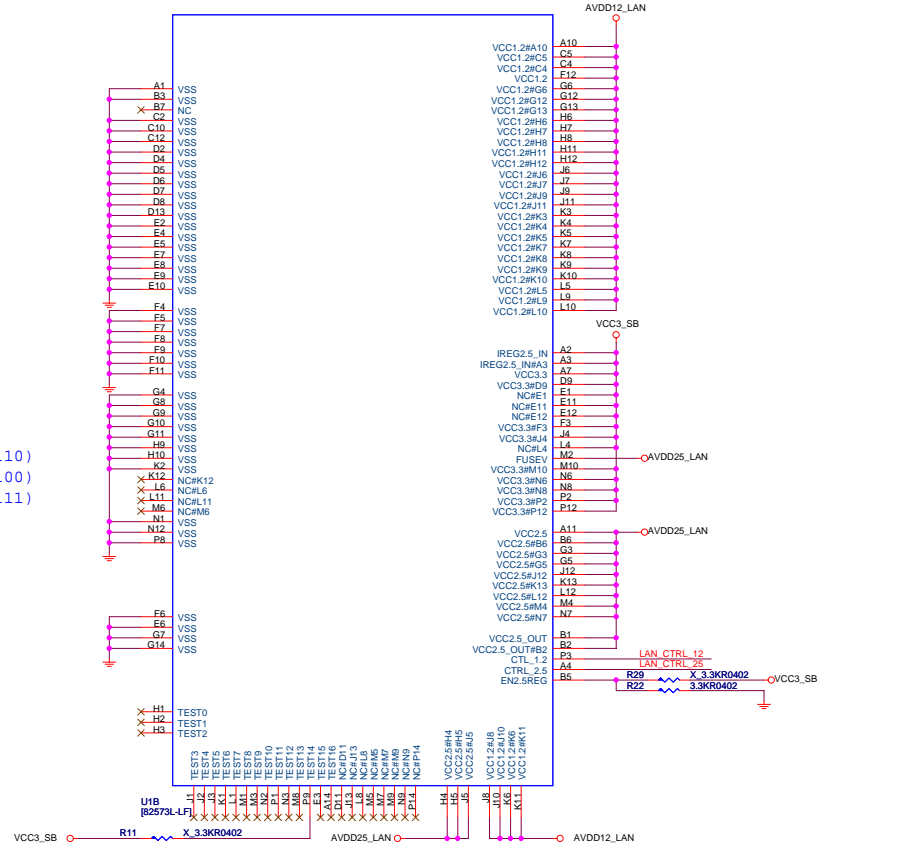
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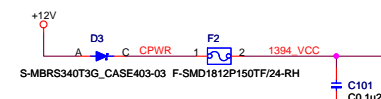
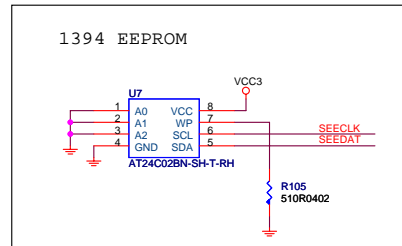
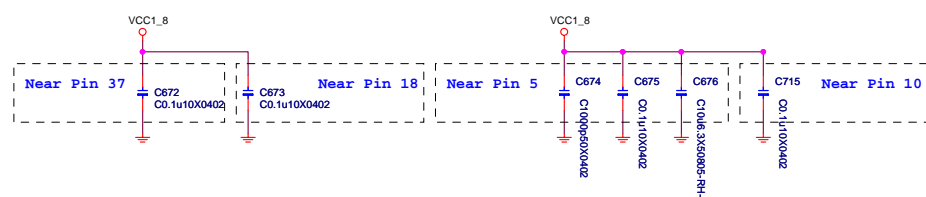
**Micro Star Restricted Secret**

<b>Title</b> <i><b>DVI transfer &amp; switch</b></i>		<b>Rev</b>  0A
<b>Document Number</b> <i><b>MS-7430</b></i>		
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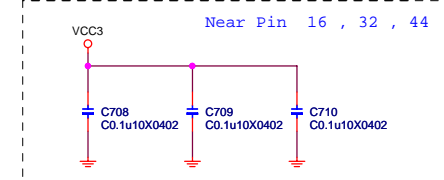
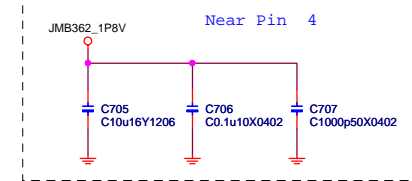
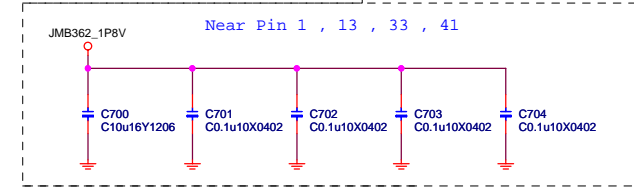
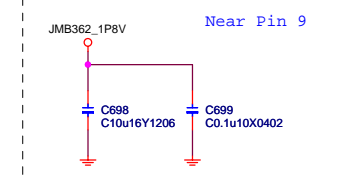
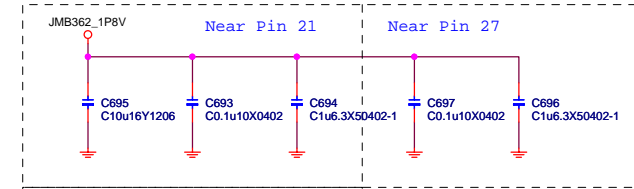
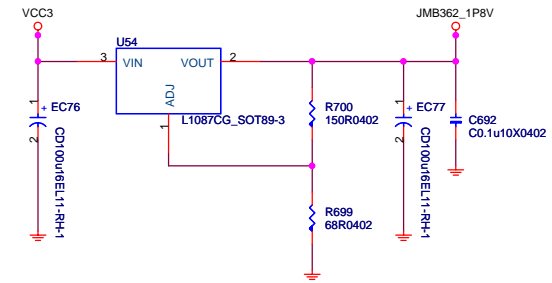
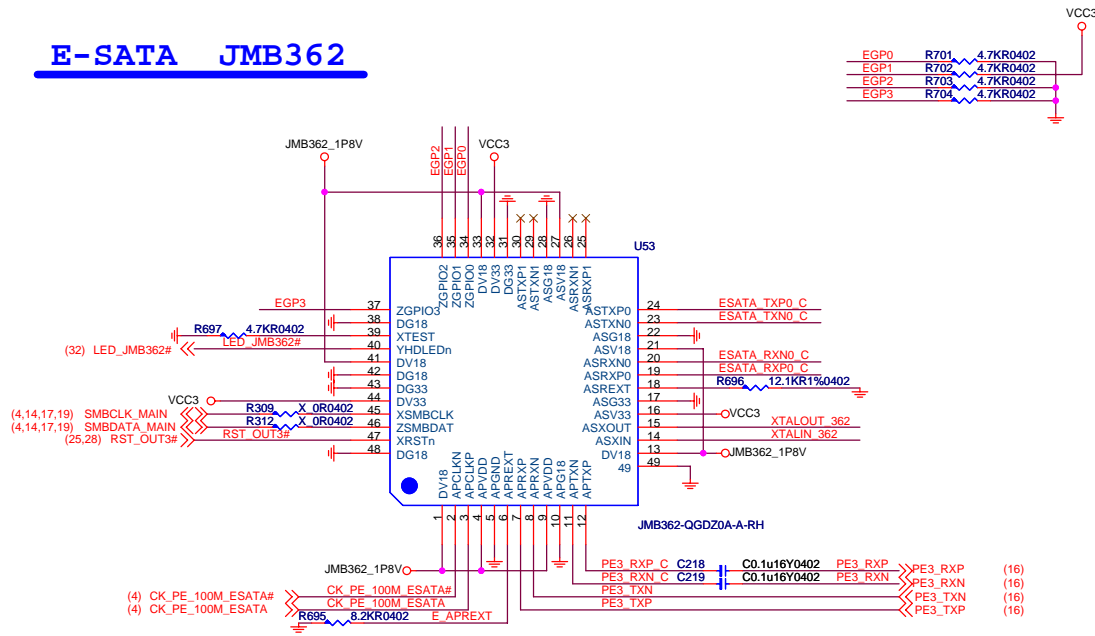
LED0# = Link 100# (0110)  
LED1# = Link/ ACT# (0100)  
LED2# = Link 1000# (0111)





<b><i>Micro Star Restricted Secret</i></b>		
<b>Title</b>	<b>1394 JMB381</b>	<b>Rev</b>
<b>Document Number</b>	<b>MS-7430</b>	<b>0A</b>
<b>MICRO-STAR INT'L CO. LTD.</b> <b>No. 69, Li-De St, Jung-He City,</b> <b>Taipei Hsien, Taiwan</b> <b><a href="http://www.msi.com.tw">http://www.msi.com.tw</a></b>	<b>Last Revision Date:</b> <b>Wednesday, August 13, 2008</b> <b>Sheet</b> <b>22 of 38</b>	

# E-SATA JMB362



Micro Star Restricted Secret		
Title	E-SATA JMB362	Rev 0A
Document Number	MS-7430	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Wednesday, August 13, 2008 Sheet 23 of 38

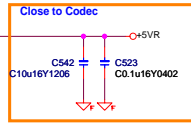
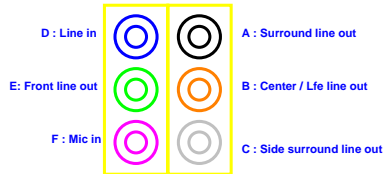
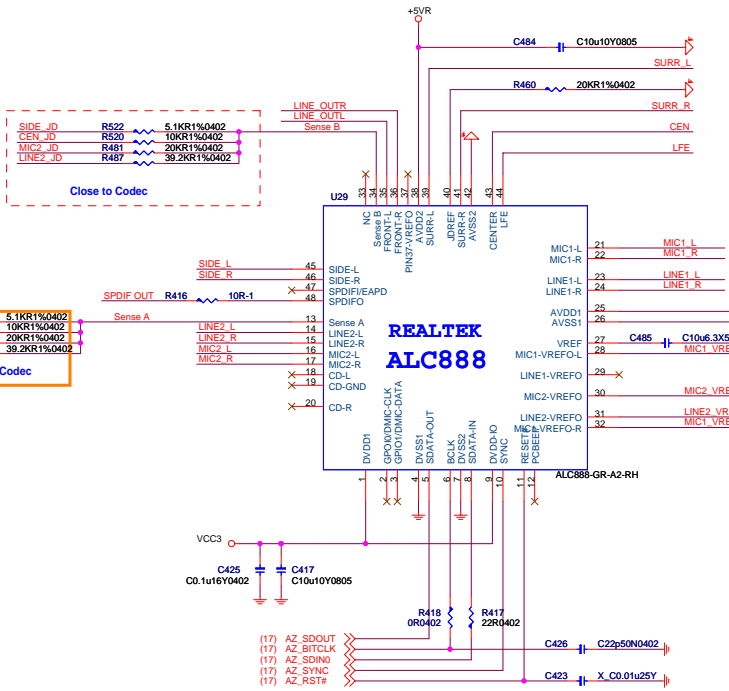
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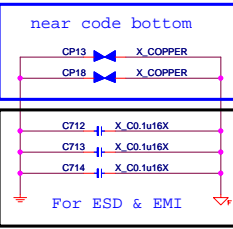
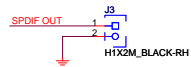
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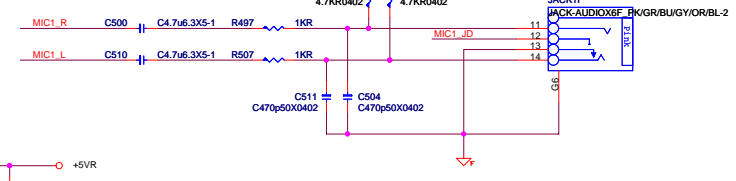
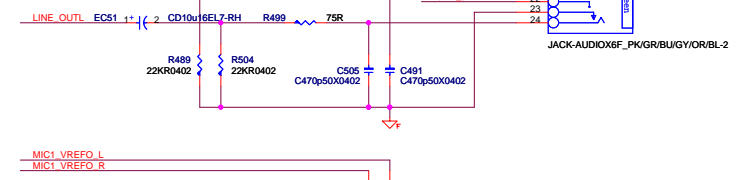
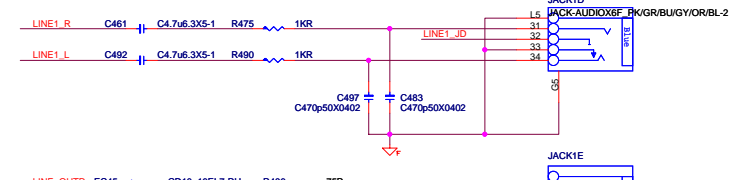
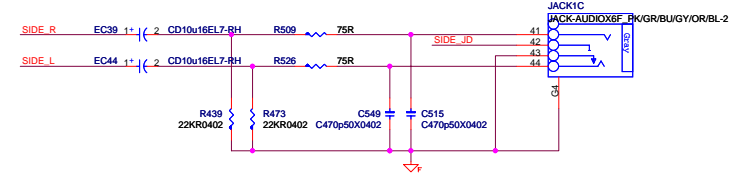
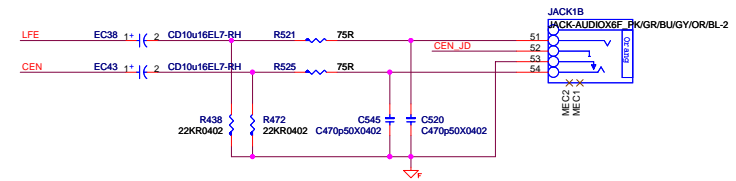
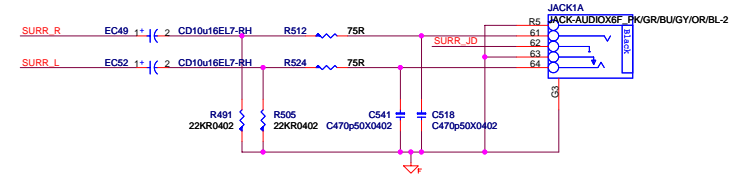
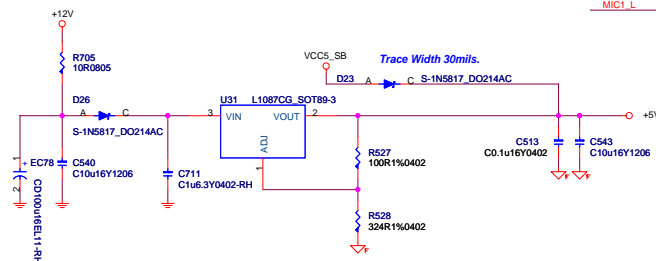
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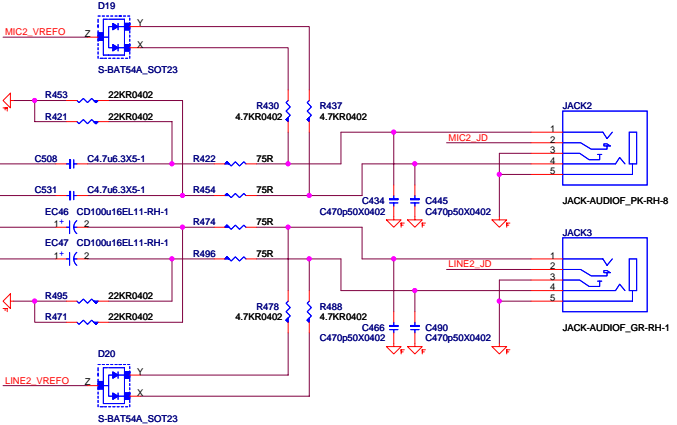
SPDIF OUT For HDMI VGA CARD



### AUDIO CODE REGULATORS



### Azalia Front Audio Connector

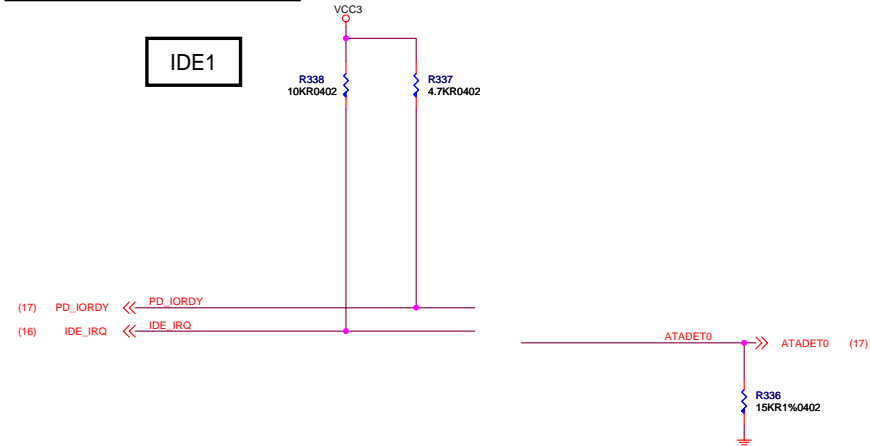


Micro Star Restricted Secret		
Title	Azalia CODEC ALC888	Rev
Document Number	MS-7430	0A
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan		
Last Revision Date:		Wednesday, August 13, 2008
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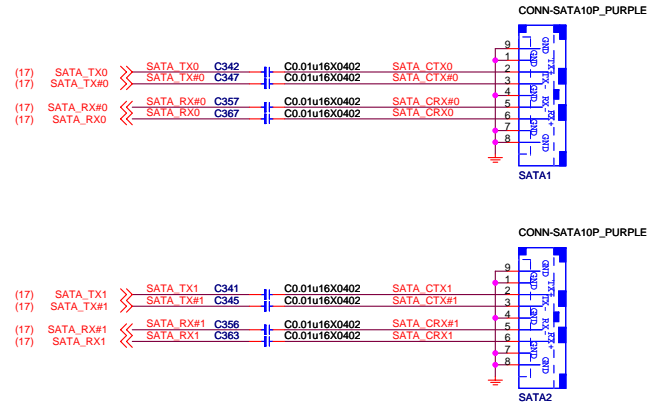




## NC IDE Connector

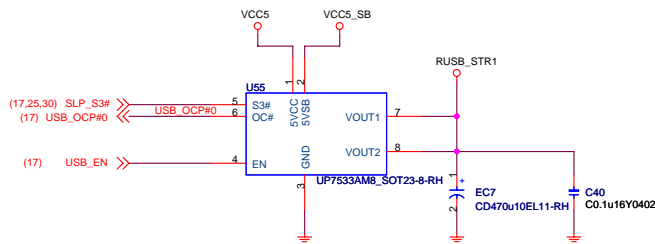


## SATA CONNECTOR

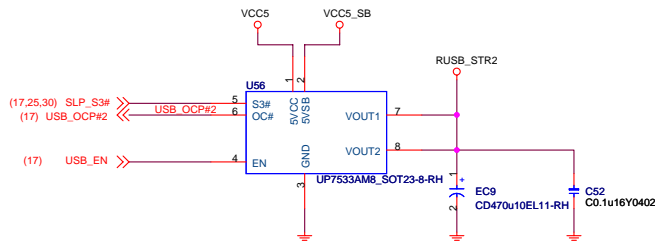


Micro Star Restricted Secret		
Title	IDE /SATA Connector	Rev 0A
Document Number	MS-7430	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Hsi City, Taipei Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>		Last Revision Date: Wednesday, August 13, 2008 Sheet 26 of 38

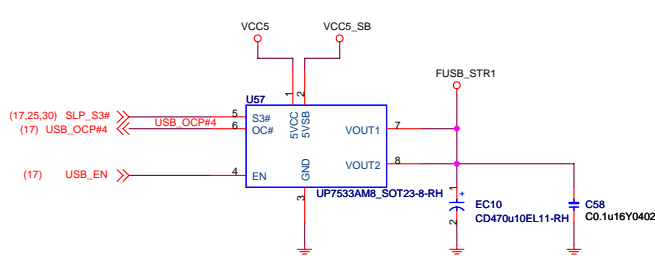
## POWER CIRCUIT FOR USB PORT 0,1



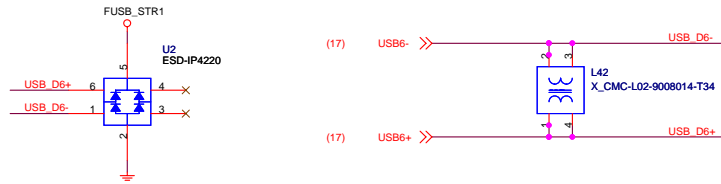
## POWER CIRCUIT FOR USB PORT 0,2



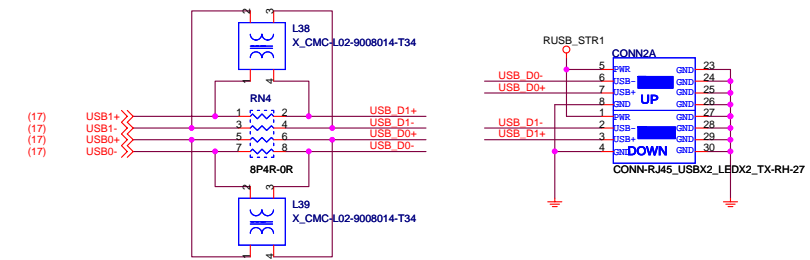
## POWER CIRCUIT FOR USB PORT 4,5,6



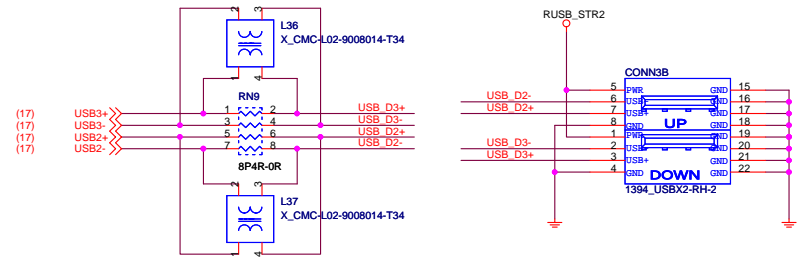
## CARD READER USB CONNECTOR FOR USB PORT 6,



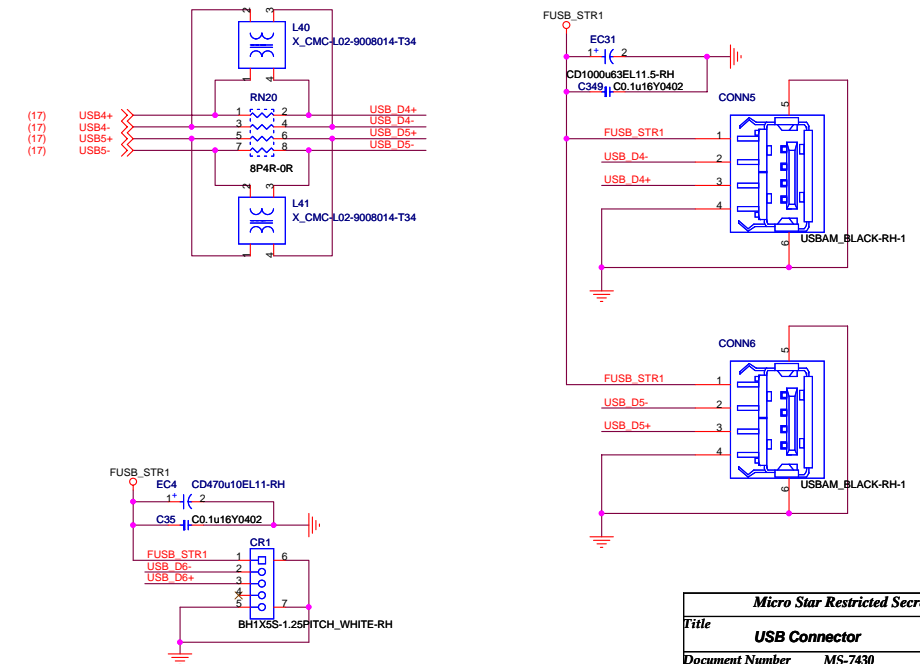
## REAR PANEL USB CONNECTOR FOR USB PORT 0,1



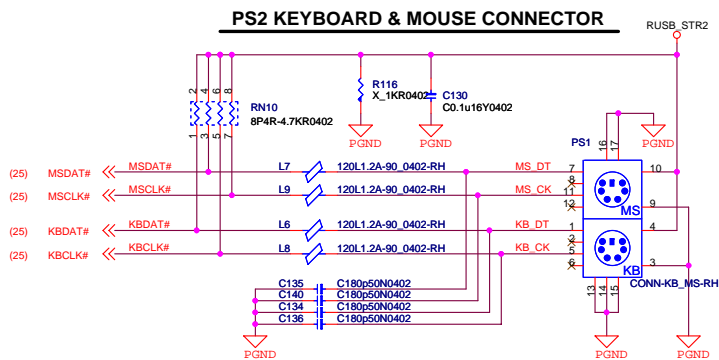
## FRONT PANEL USB CONNECTOR FOR USB PORT 2,3



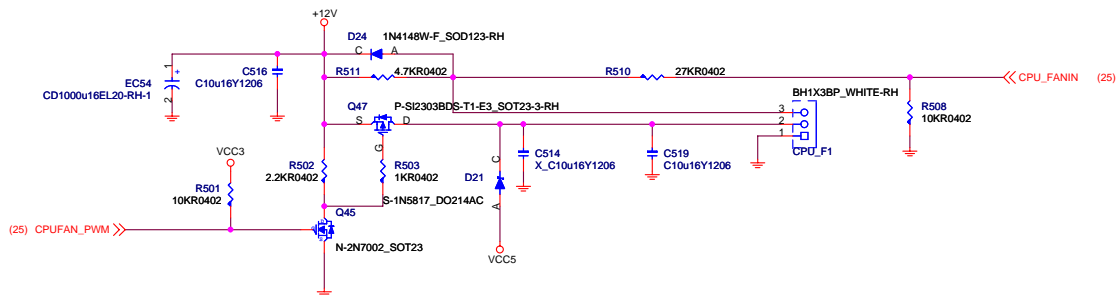
## FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



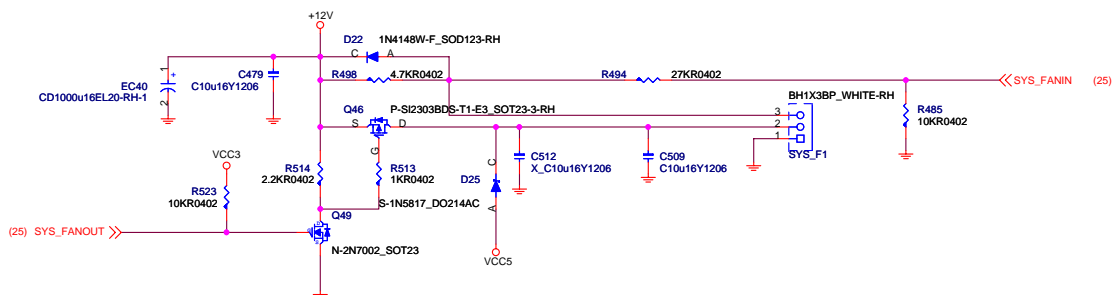
Micro Star Restricted Secret		
Title	USB Connector	Rev
Document Number	MS-7430	0A
MICRO-STAR INT'L CO., LTD.		Last Revision Date:
No. 68, Li-De St., Jung-Ho City,		Wednesday, August 13, 2008
Taipei Hsien, Taiwan		Sheet
http://www.msi.com.tw		27 of 38



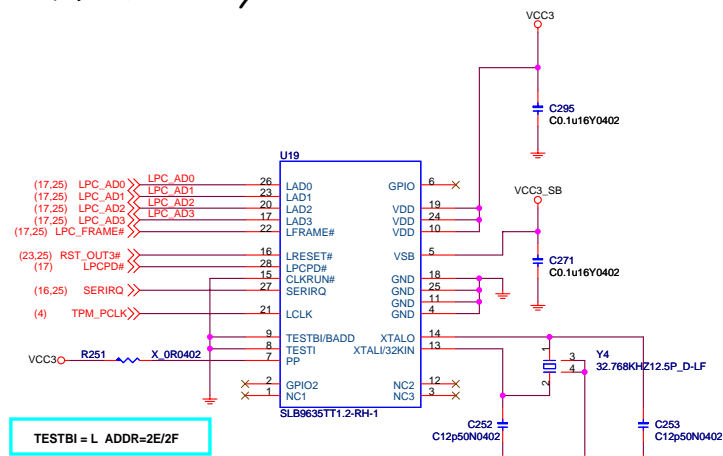
### CPU FAN



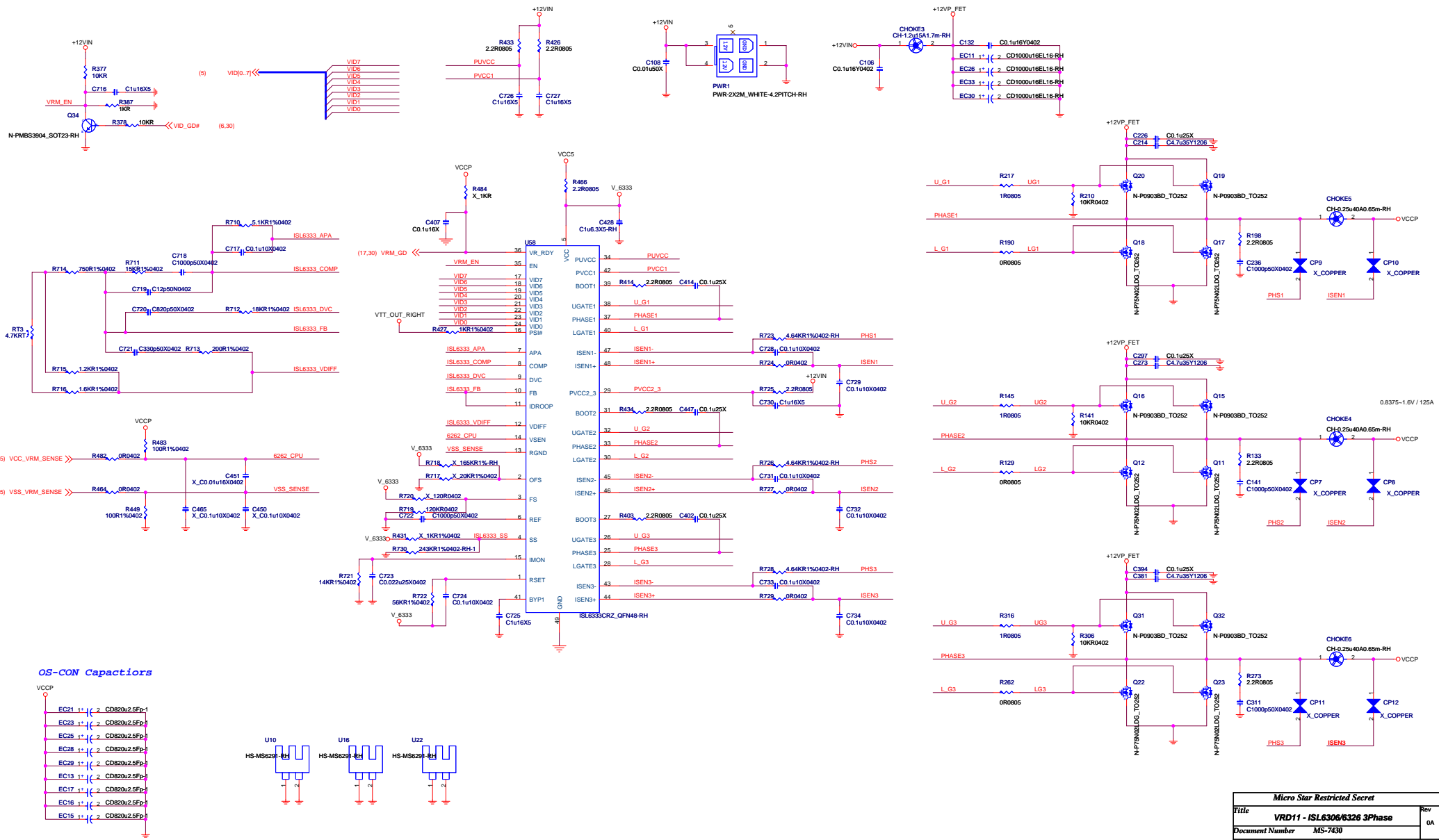
### SYSTEM FAN



### TPM - Security Controller

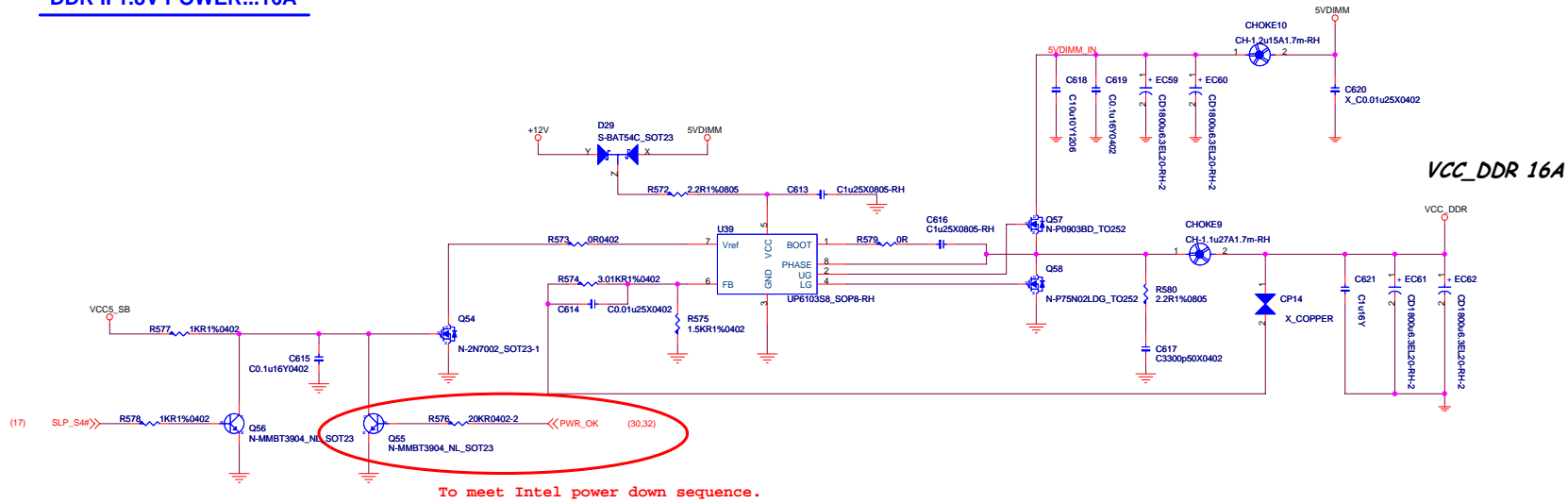


Micro Star Restricted Secret		
Title	KB/MS & FAN	Rev
Document Number	MS-7430	0A
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Hsi City, Taipei Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>		Last Revision Date: Tuesday, August 19, 2008
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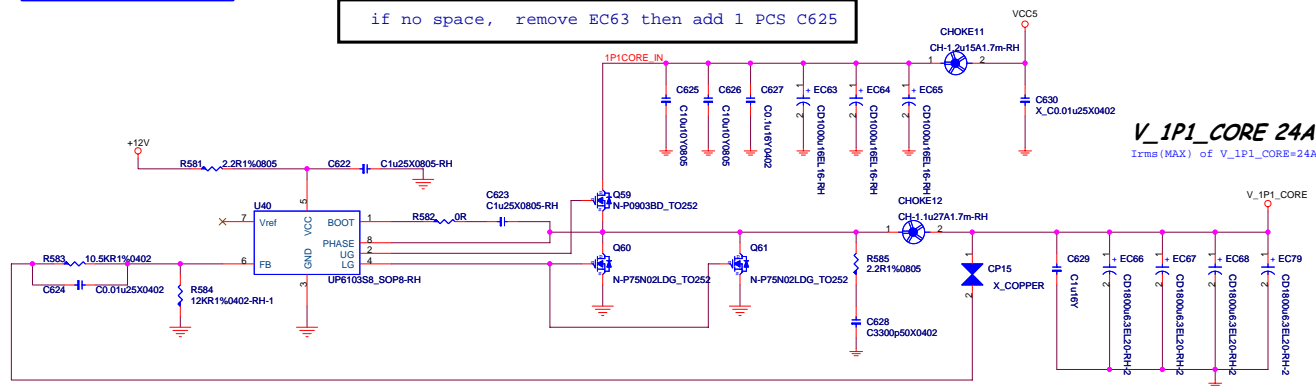


## DDR II 1.8V POWER...16A



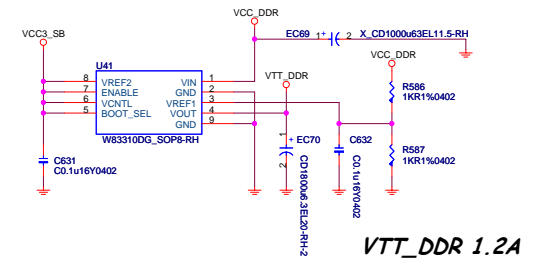
## NB 1.1V POWER

if no space, remove EC63 then add 1 PCS C625



## DDR VTT Power

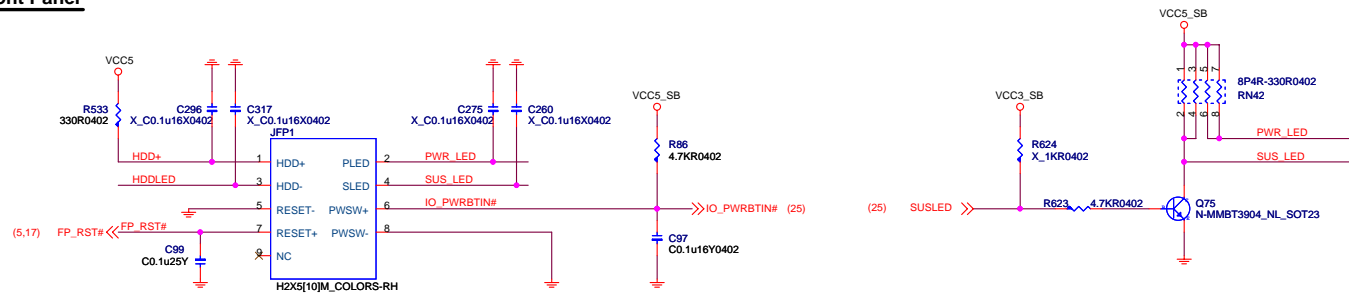
To CPU Copper trace width > 250mils , Fill island behind DIMM > 400mils .



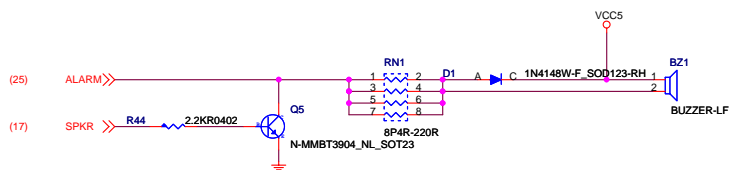
Micro Star Restricted Secret

Title		Rev
NB Corer & DDR Power		0A
Document Number		MS-7430
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, August 13, 2008 Sheet 31 of 38

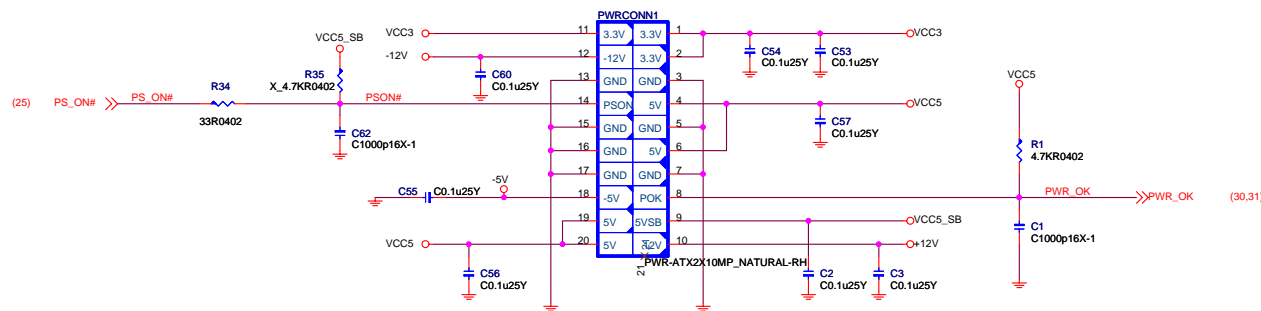
## Intel Front Panel



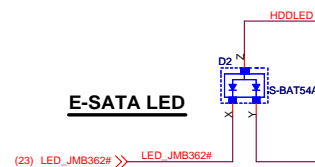
## BUZZER



## ATX



## E-SATA LED

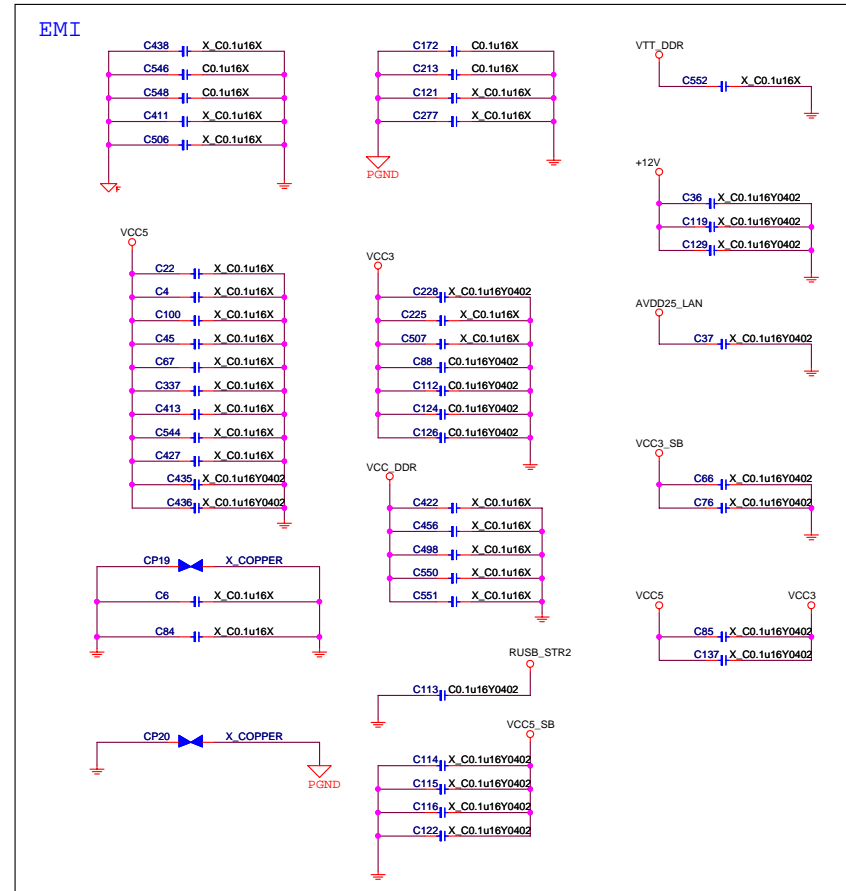
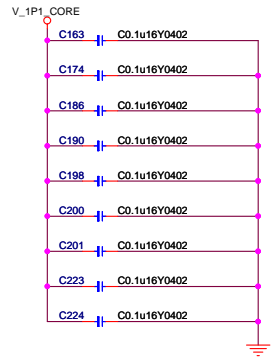
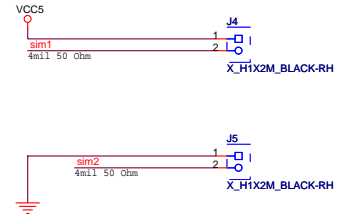
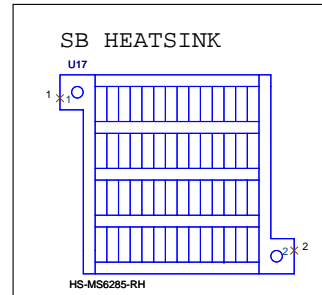
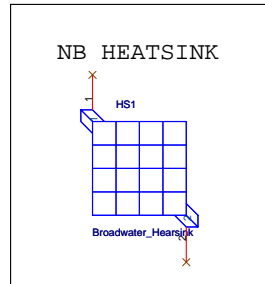
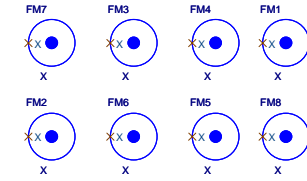
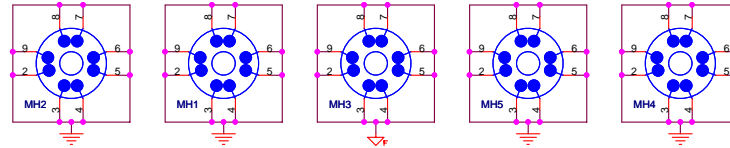
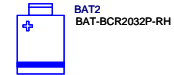


## SERIAL ATA LED



Micro Star Restricted Secret		
Title	Front ATX & Panel & LED	Rev
Document Number	MS-7430	QA
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Hsi City, Taipai Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>		Last Revision Date: Wednesday, August 13, 2008
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Micro Star Restricted Secret		
Title	Manual Parts	Rev 0A
Document Number	MS-7430	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Hsi City, Taipei Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>		Last Revision Date: Friday, August 15, 2008 Sheet 33 of 38

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[illegible]

LGA775 - CPU (130W)		
0.850V-1.3525V Core	-	125A
1.2V FSB VTT	-	5.3A

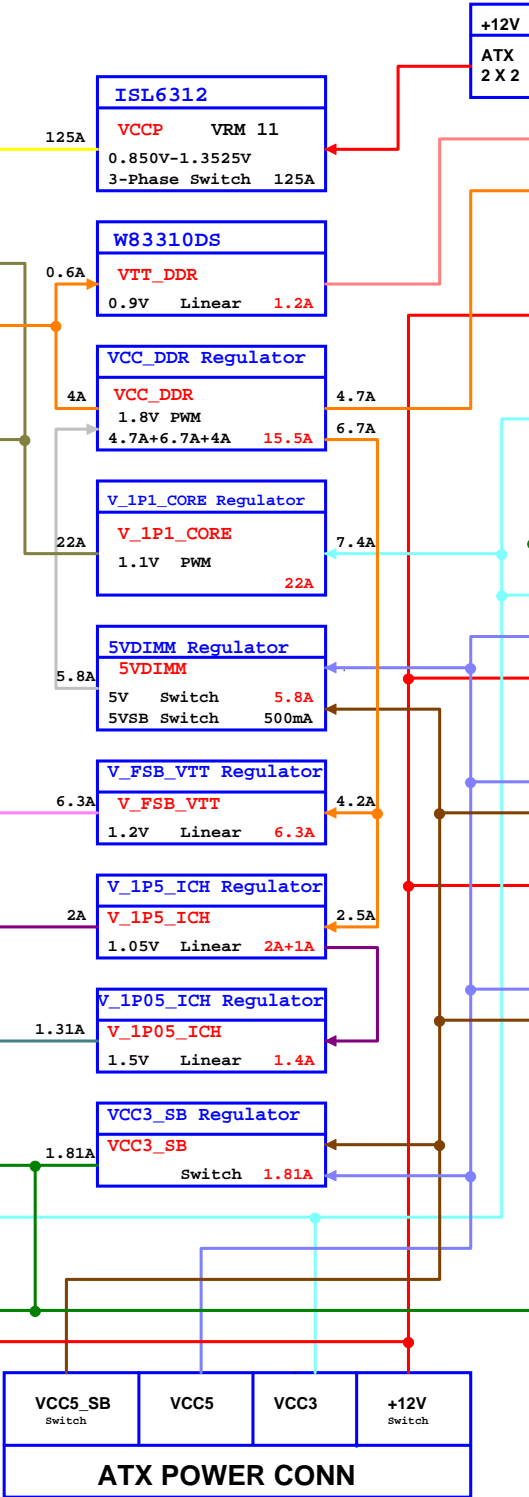
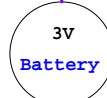
G41		
1.2V FSB_VTT	-	1.0A
1.1V Core	-	18.1A
1.1V DMI/PCI Exp.	-	2.5 A
1.8V VCC_DDR (S0,S1)	-	3.2A
1.8V VCC_SMCLK	-	250mA
3.3V VCCA_DAC	-	65.8mA
3.3V VCC33	-	15.8mA
1.1V Vcc CL	-	3.8A

ICH7		
1.05V Core	-	1.31A
1.5V DMI	-	40 mA
1.2V FSB_VTT	-	14 mA
1.5V_A USB/SATA	-	0.97A
1.5V_B PCI Exp.	-	0.74A
VCCRTC	-	6 uA
3.3V CL	-	12 mA
1.5V GbE LAN	-	74 mA
3.3V 10/100 LAN	-	12 mA
3.3V GbE LAN	-	1 mA
3.3V SushDA	-	4 mA
3.3V HDA	-	24 mA
3.3V VccSus3_3	-	700mA
3.3V Vcc3_3	-	580mA

HD Audio ALC888		
3.3V AUDIO	-	40mA
5V AUDIO	-	200mA

ICS9LP505		
3.3V VDD_48/PCI/REF	-	TBDA

INTEL 82573L		
3.3V_SB I/O & LED	-	14.8mA
2.5V ANALOG	-	288.5mA
1.2V ANALOG	-	372.5mA



DDRII x2 & TERMINATOR		
0.9V VTT_DDR	-	1.2A
1.8V VCC_DDR (S0,S1)	-	4.7A
1.8V VCC_DDR (S3)	-	400mA

PCI Express x16 slot		
+12V	-	5.5 A
+3.3Vaux (wake)	-	375mA
+3.3Vaux (no wake)	-	20mA
+3.3V	-	3.0A

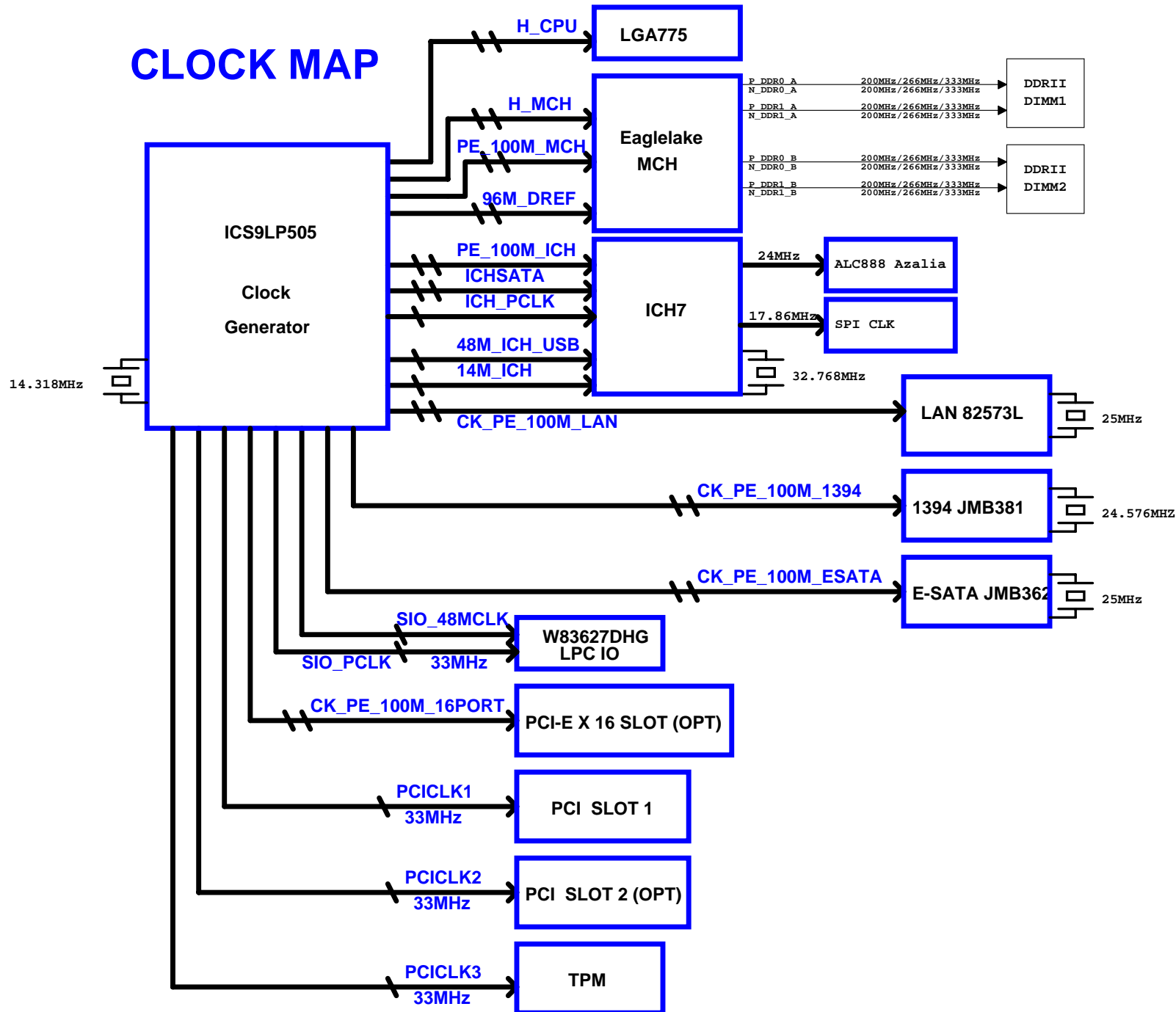
PCI slot x1		
+3.3Vaux (wake)	-	375mA
+3.3Vaux (no wake)	-	20mA
+3.3V	-	7.6A
+5V	-	5.0A
+12V	-	0.5A

USB x7		
+5V (S0,S1)	-	3.5A
+5V (S3)	-	17.5mA

+12V CPU & SYS FAN		
+12V CPU & SYS FAN	-	0.5A

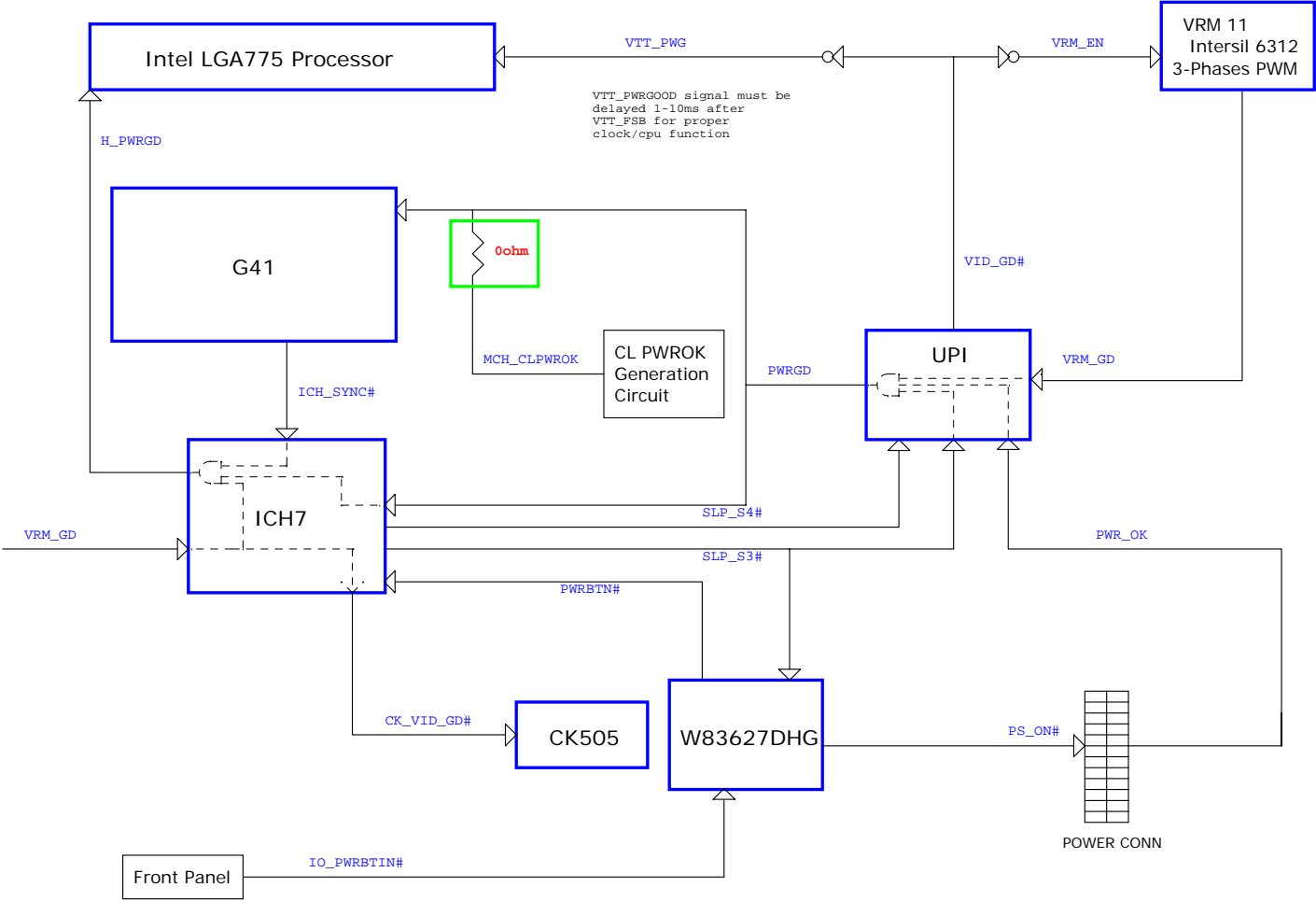
PS/2		
+5V (S0,S1)	-	345mA
+5V (S3)	-	2.0mA

# CLOCK MAP



Micro Star Restricted Secret		
Title	CLOCK MAP	Rev
Document Number	MS-7430	0A
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, August 13, 2008
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PWROK MAP



RESET MAP

