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# MS-7046M1

**Version 10A**

Intel (R) Grantsdale (GMCH) + ICH6 Chipset  
Intel Tejas & Prescott LGA775 Processor

## CPU:

**Intel Tejas/Prescott - 3.8G**

## System Chipset:

**Intel Grantsdale - GMCH (North Bridge)**  
**Intel ICH6 (South Bridge)**

## On Board Chipset:

**BIOS -- FWH FLASH 4Mb**  
**Azalia Codec -- C MEDIA 9880/9882 CO-LAYOUT**  
**LPC Super I/O -- WINBOND83627THF**  
**LAN - VIA 6105L**  
**1394 -- VIA VT-6307**  
**CLOCK -- ICS954119**

## Main Memory:


**2 CHANNEL DDR I \* 4 (Max 4GB)**

## Expansion Slots:

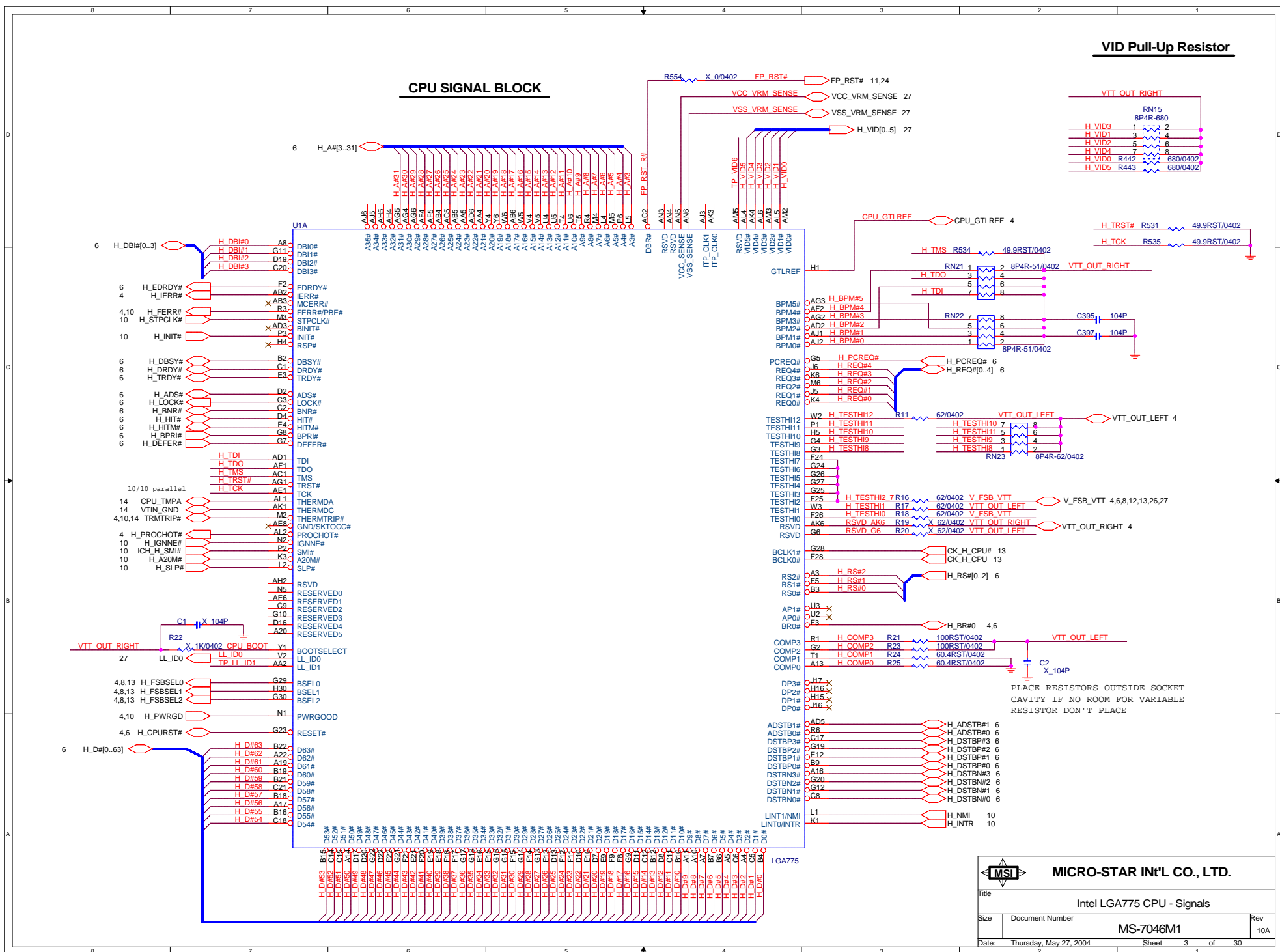
**PCI Express X16 SLOT \* 1**  
**PCI 2.3 SLOT \* 3**

## Intersil PWM:

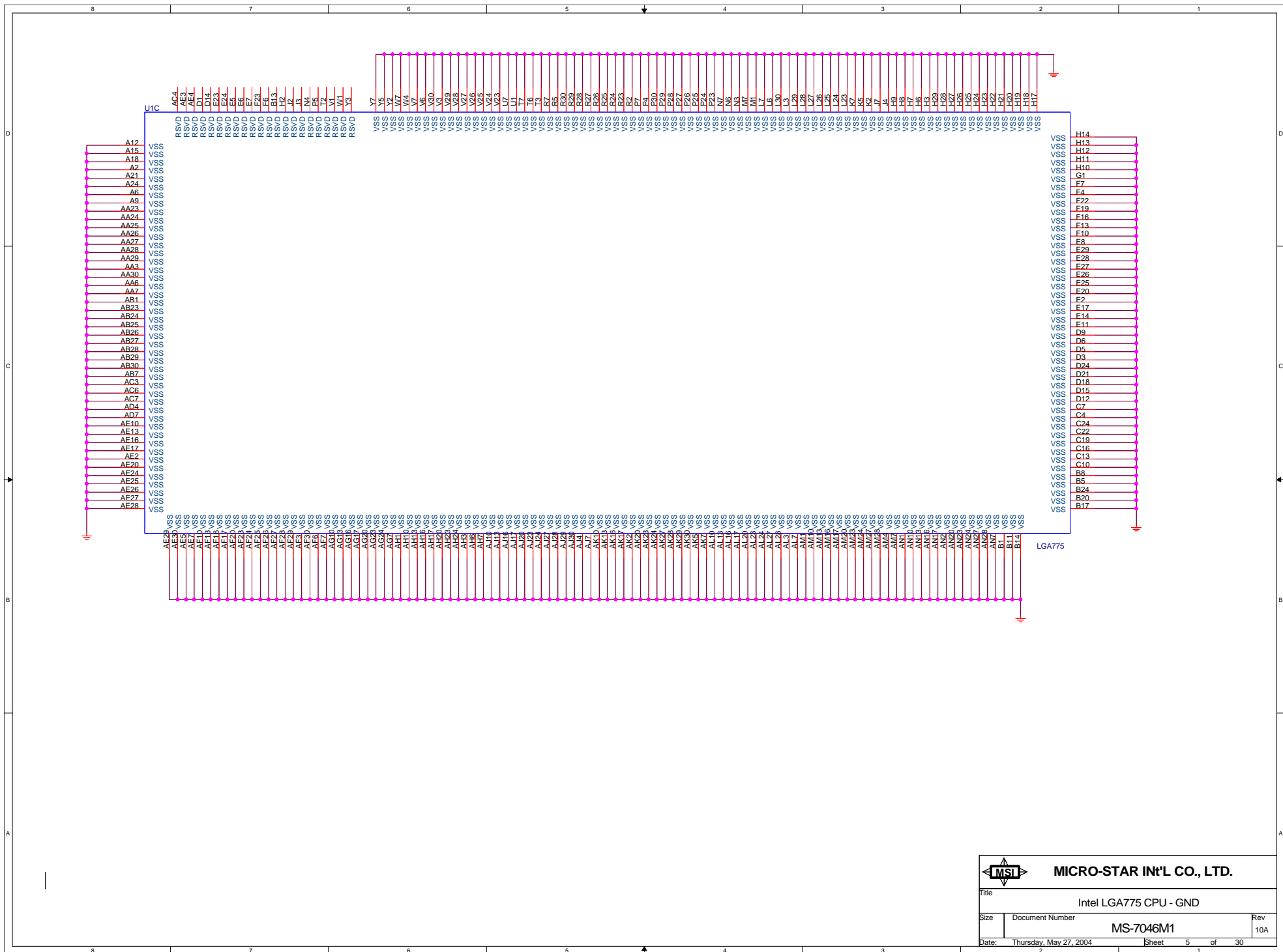
**Controller: HIP6565ACV**  
**Driver: HIP6602B + HIP6601B**

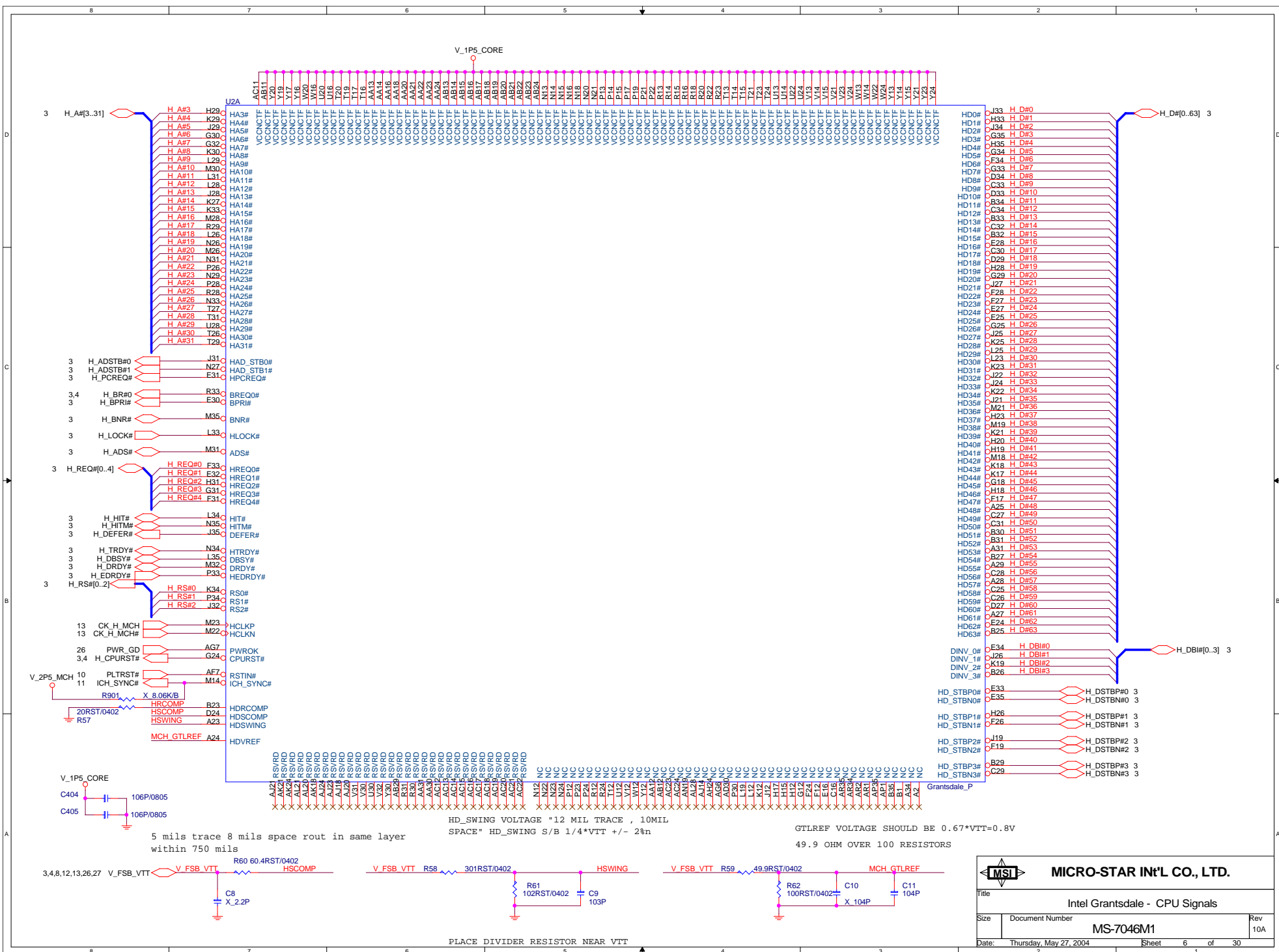
		<b>MICRO-STAR INT'L CO., LTD.</b>	
Title COVER SHEET			
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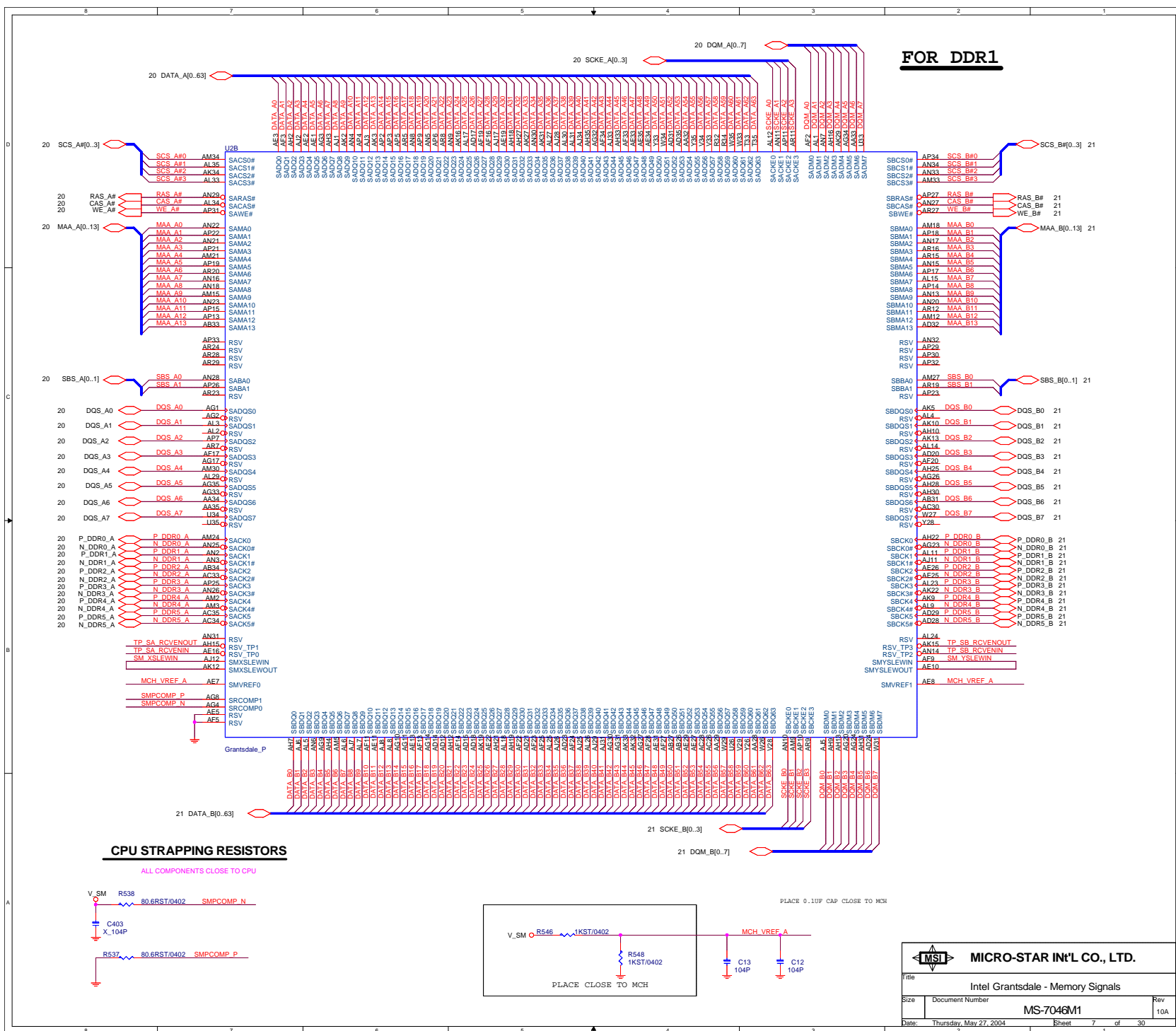


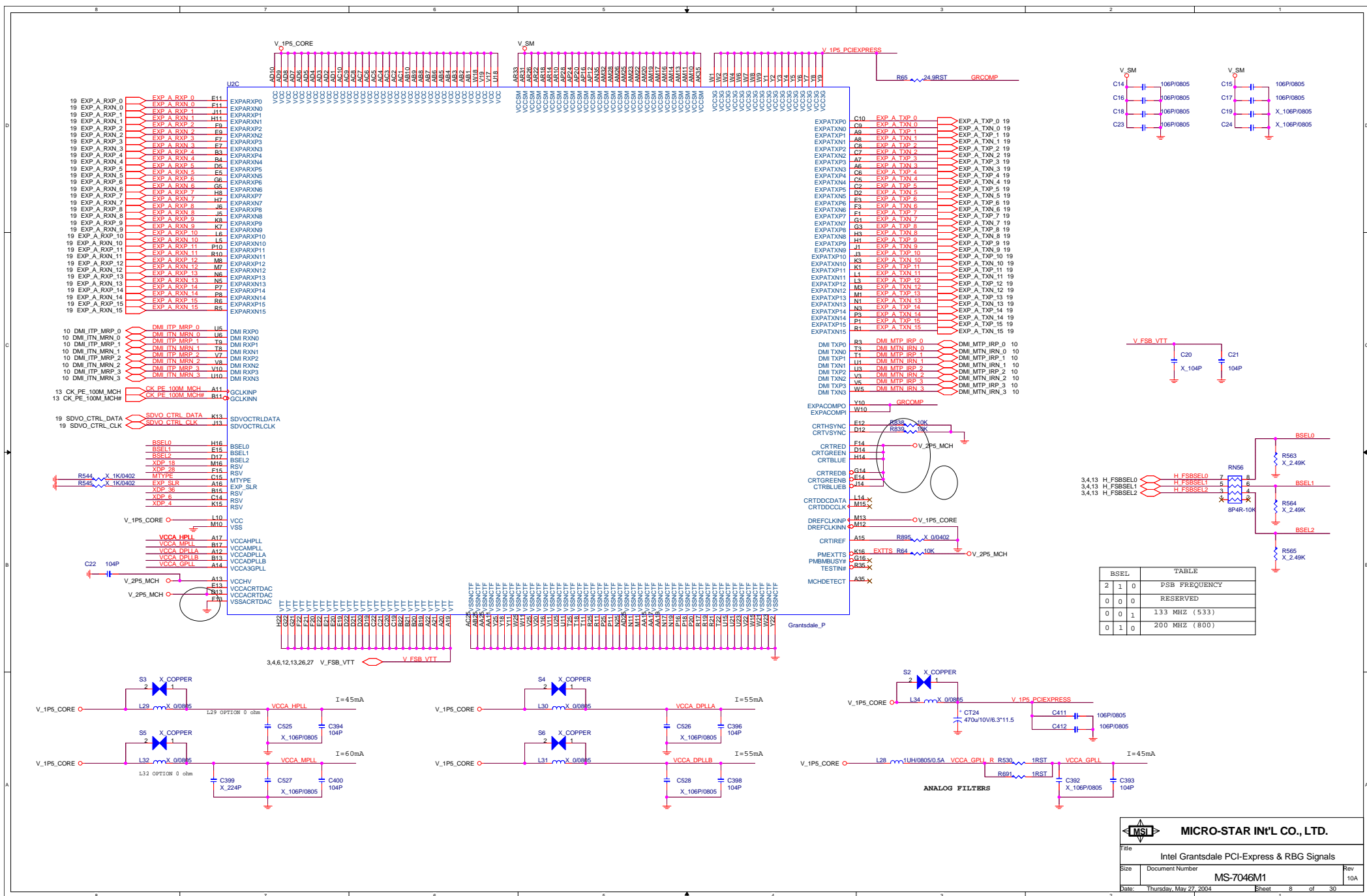




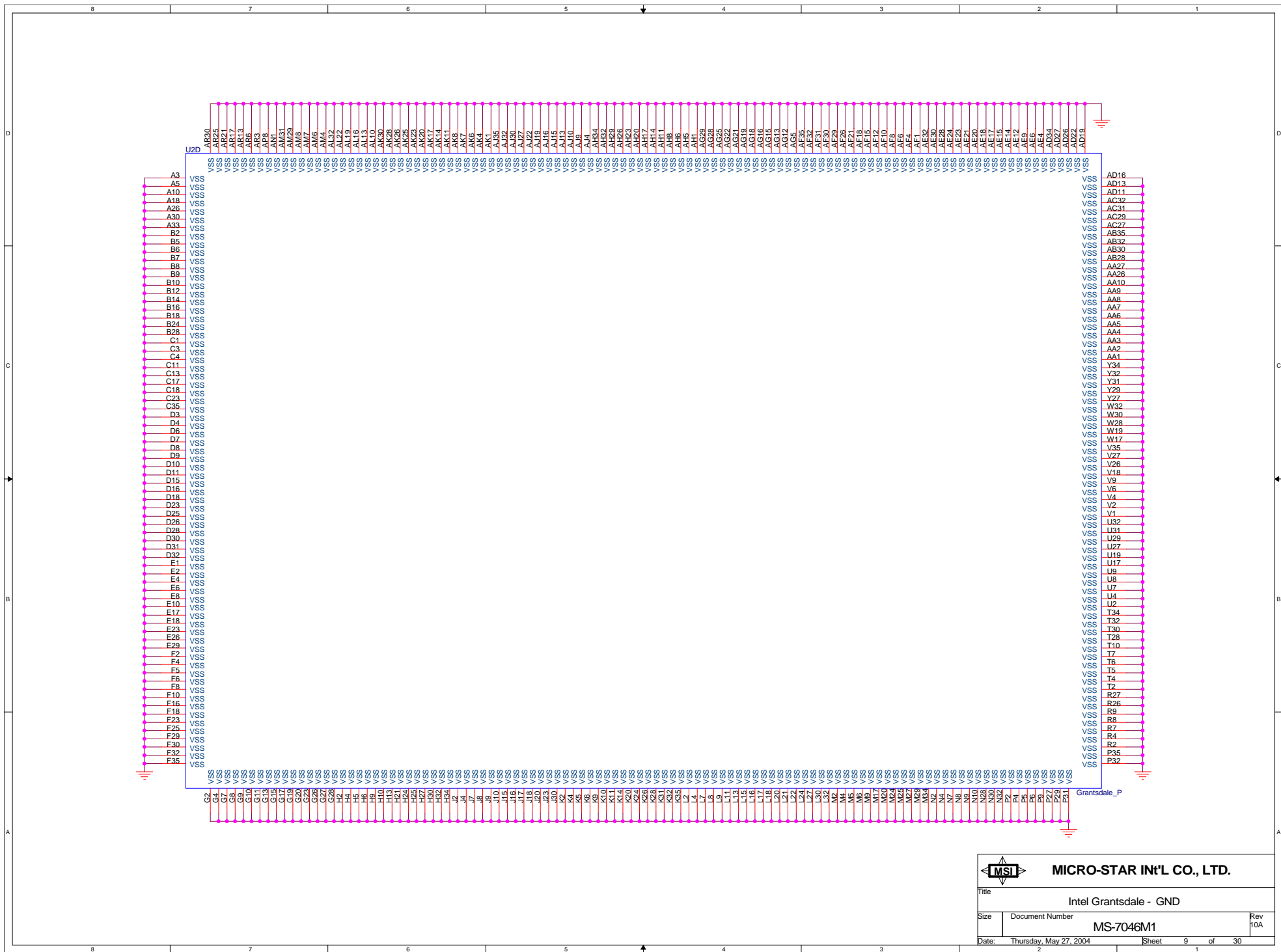








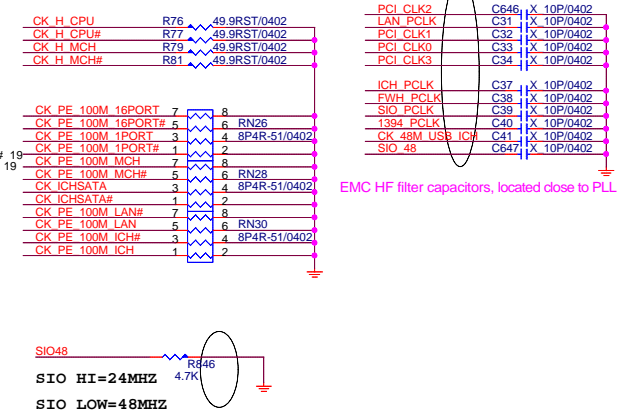










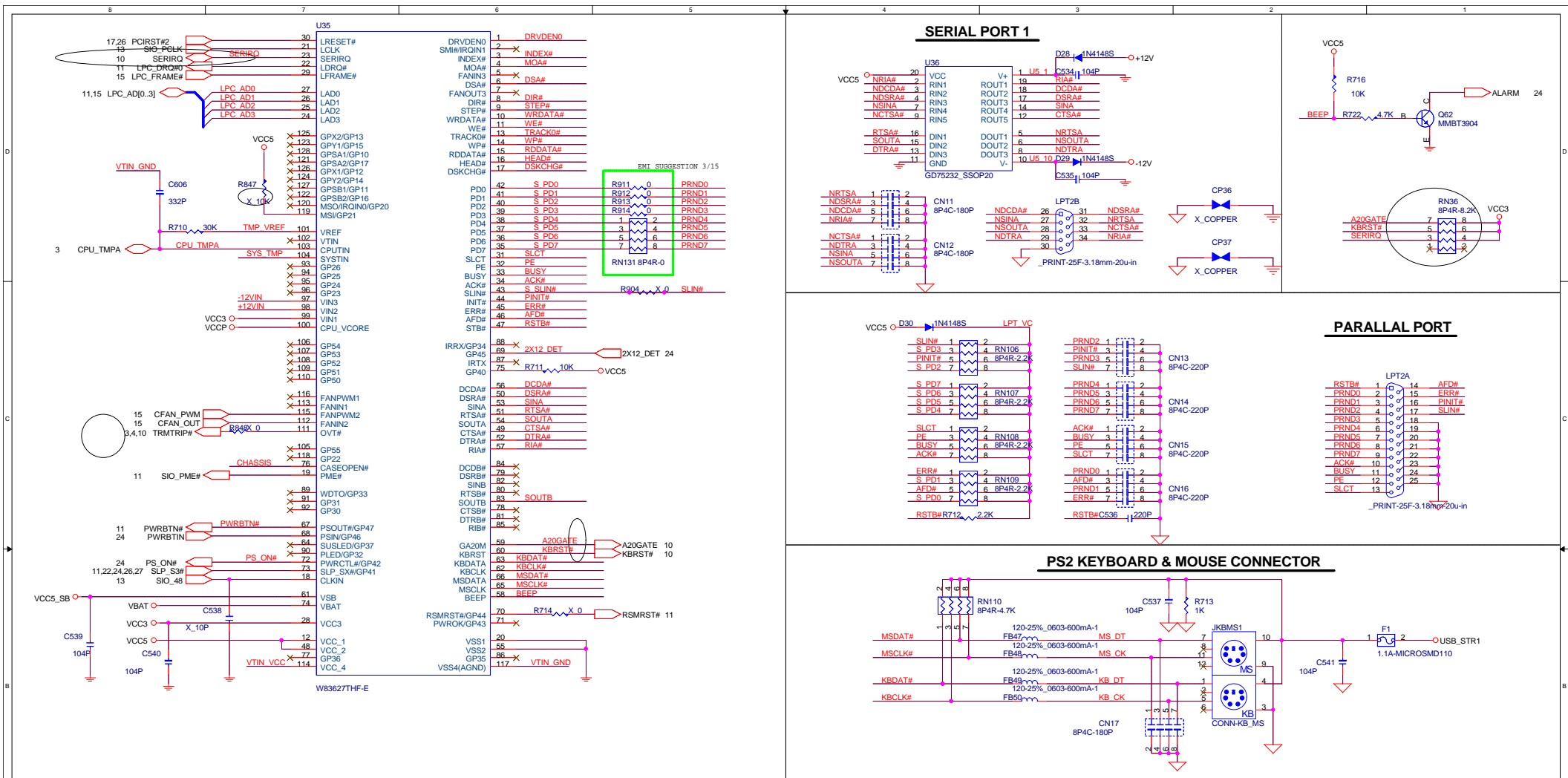


H_FSB_SEL			
2	1	0	CPU
0	0	1	133
0	1	0	200

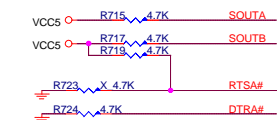


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	MS-7046M1

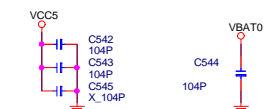
Date:	Thursday, May 27, 2004	Sheet	13	of	30
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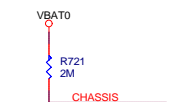
### LPC I/O STRAPPING RESISTOR



SOUTA	L: Disable KBC	H: Enable KBC
SOUTB	L: 24MHz	H: 48MHz
RTSA#	L: CFAD=2E	H: CFAD=4E
DTRA#	L: PNP Default	H: PNP no Default



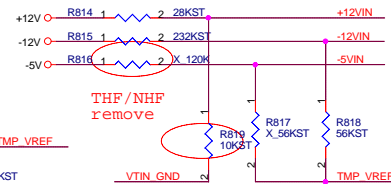
### Chassis Intrusion



SOUTA	L: Disable KBC	H: Enable KBC
SOUTB	L: 24MHz	H: 48MHz
RTSA#	L: CFAD=2E	H: CFAD=4E
DTRA#	L: PNP Default	H: PNP no Default

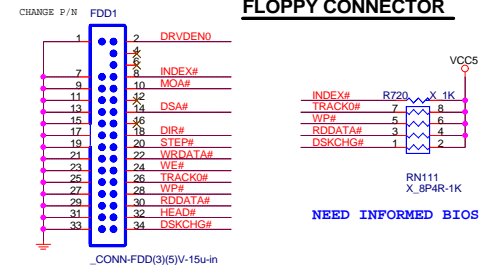


### Thermal Resistor



NOTE: LOCATE CLOSE STATUS PANEL

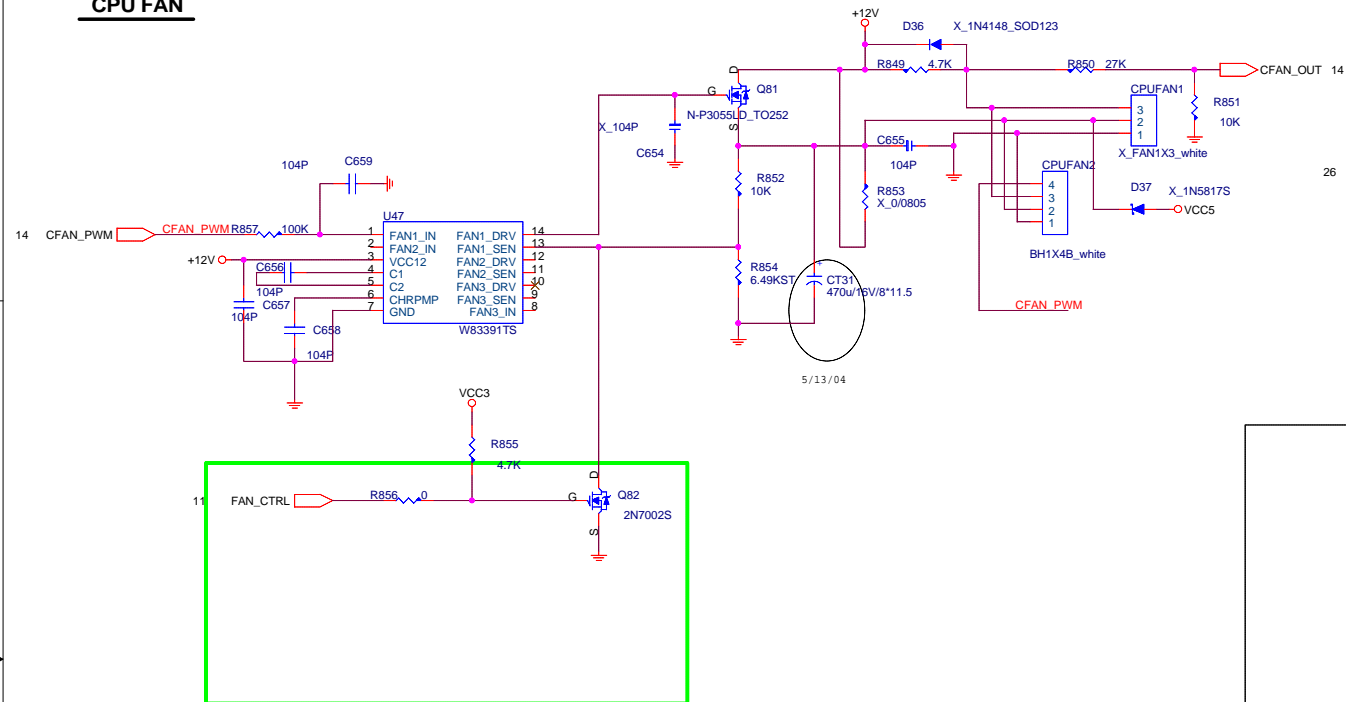
### FLOPPY CONNECTOR



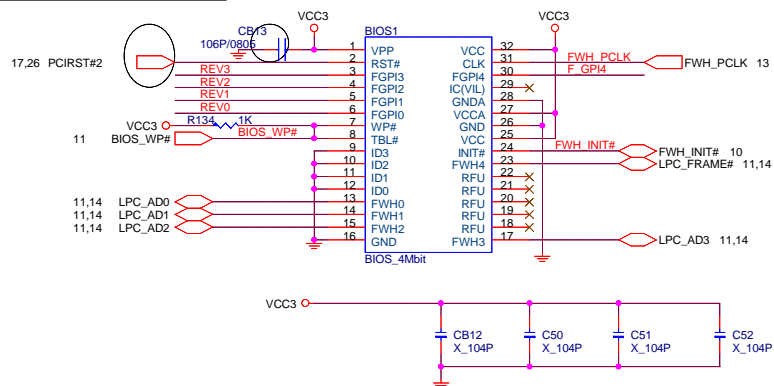
NEED INFORMED BIOS

MSI MICRO-STAR IN'L CO., LTD.	
LPC SUPER I/O & CONNECTORS	
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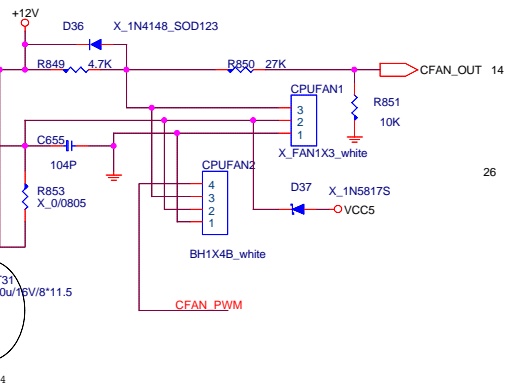
## CPU FAN



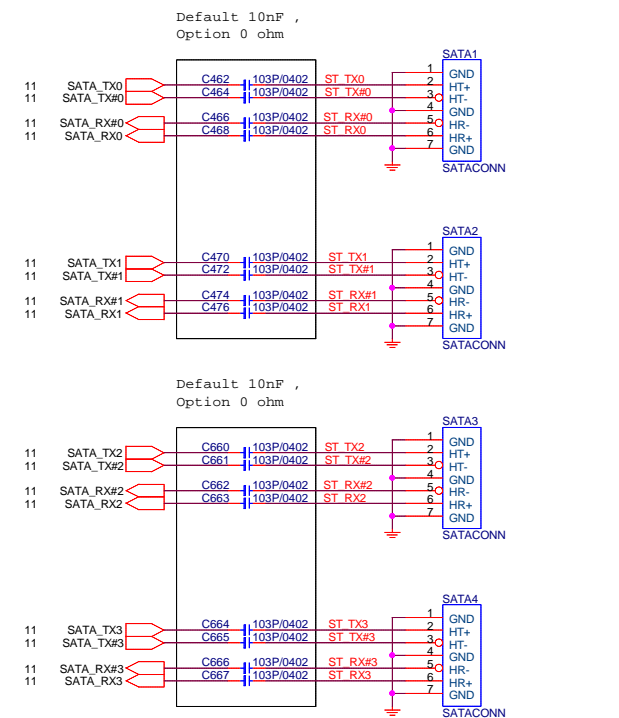
## FIRMWARE HUB (FWH)



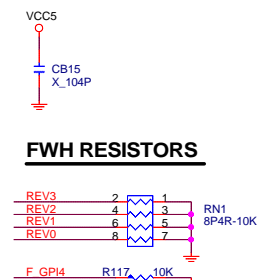
**CPU FAN**



## SERIAL ATA CONNECTOR BLOCK



## FWH RESISTORS



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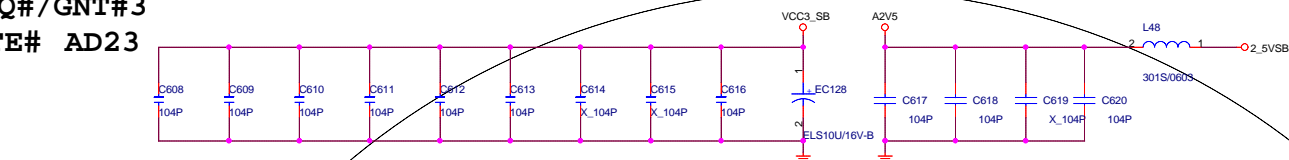
Title	FAN, FWH AND SATA
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Size	Document Number
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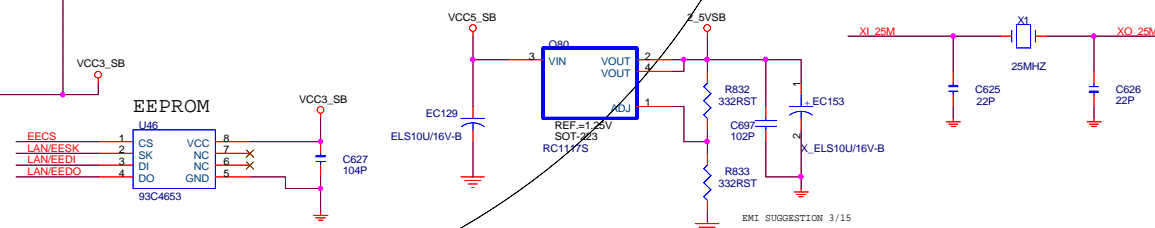
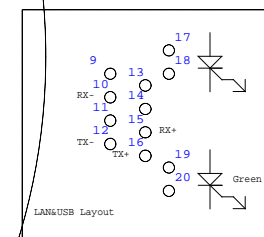
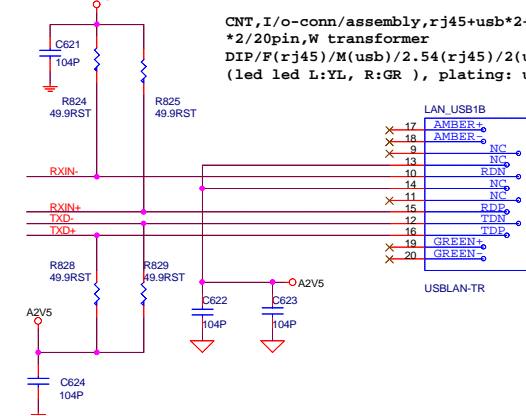
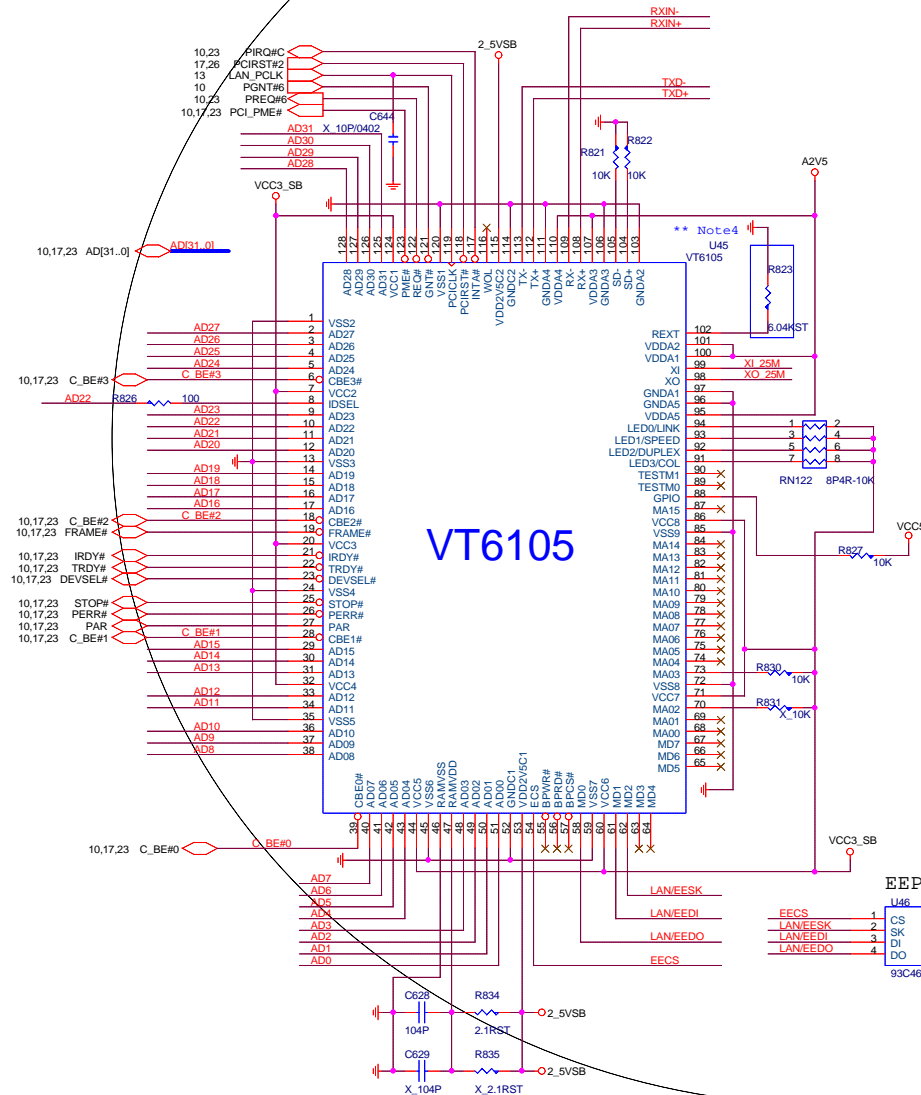
REQ#/GNT#3  
INTE# AD23

PIRQ#C  
AD22

40 : 6 : 8 : 6 : 40 mil

\*\* Note 5

CNT,I/o-conn/assembly,rj45+usb\*2+led  
\*2/20pin,W transformer  
DIP/F(rj45)/M(usb)/2.54(rj45)/2(usb)/2.54(led),black,P-B/PBT, led on the top  
led led L:YL, R:GR ), plating:rj45 30u-in,PIN=3.3

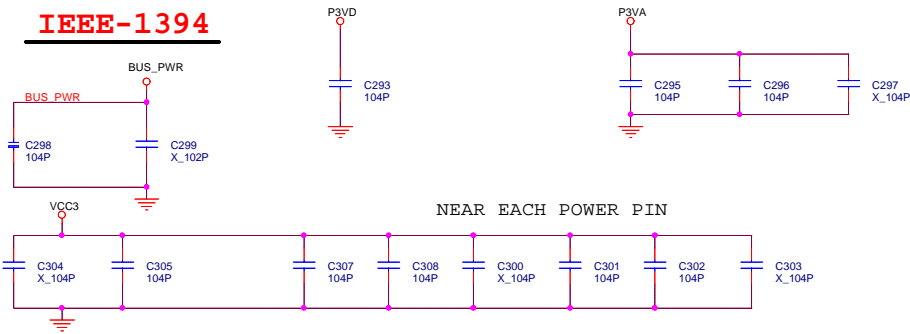


**MICRO-STAR INT'L CO., LTD.**

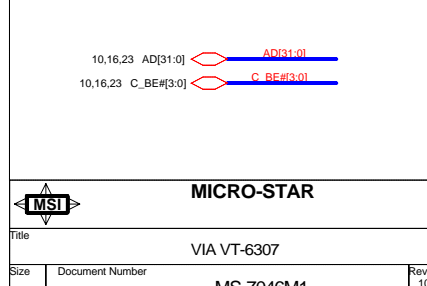
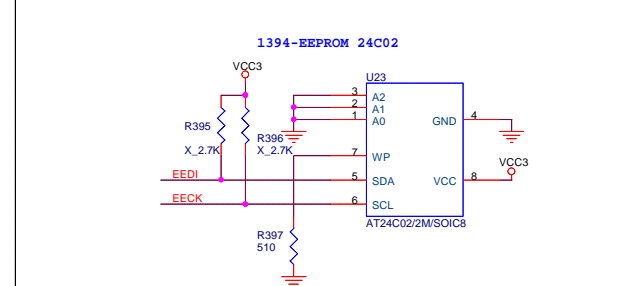
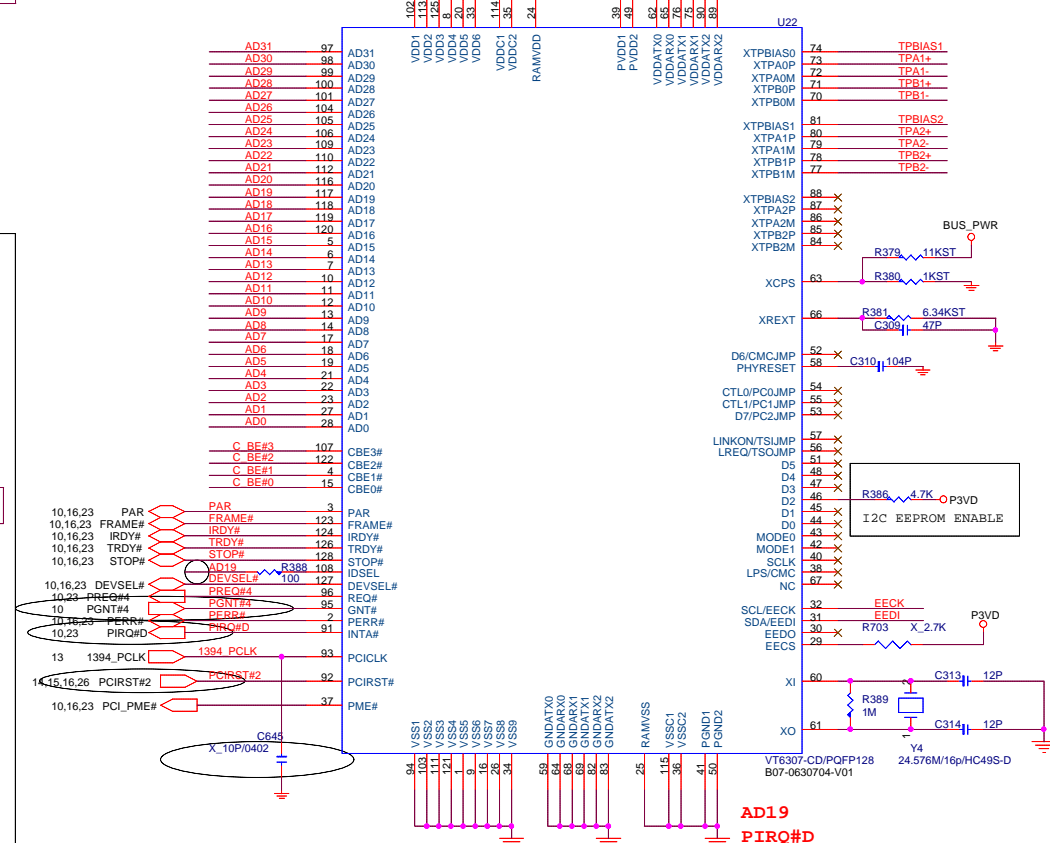
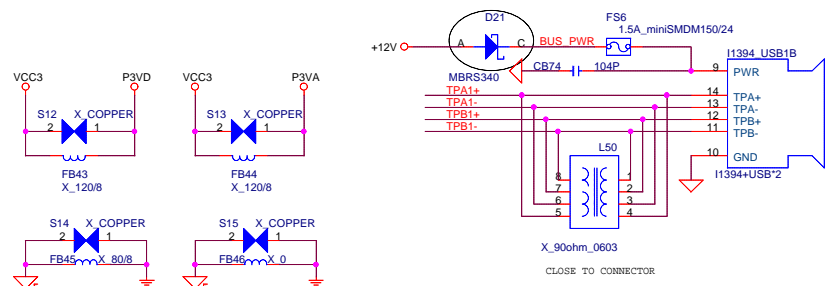
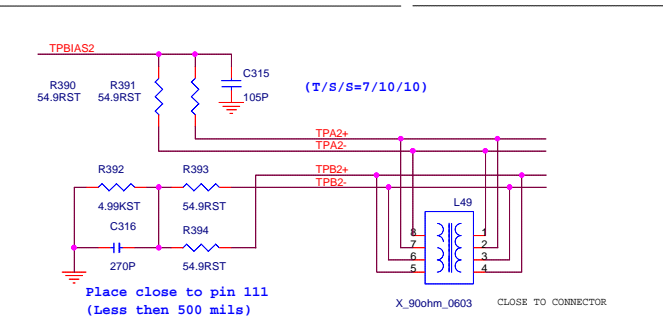
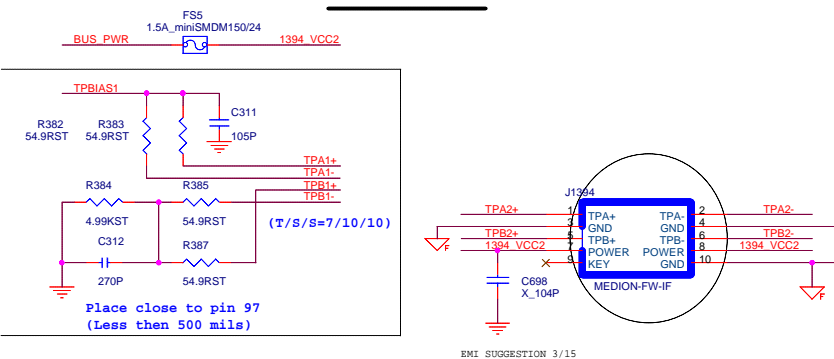
Title			
VIA 6105L			
Size	Document Number		Rev
	MS-7046M1		10A
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# IEEE-1394



## FRONT 1394 PORT 1



**MICRO-STAR**

Title

VIA VT-6307

Size

Document Number

MS-7046M1

Date

Thursday, May 27, 2004

Sheet

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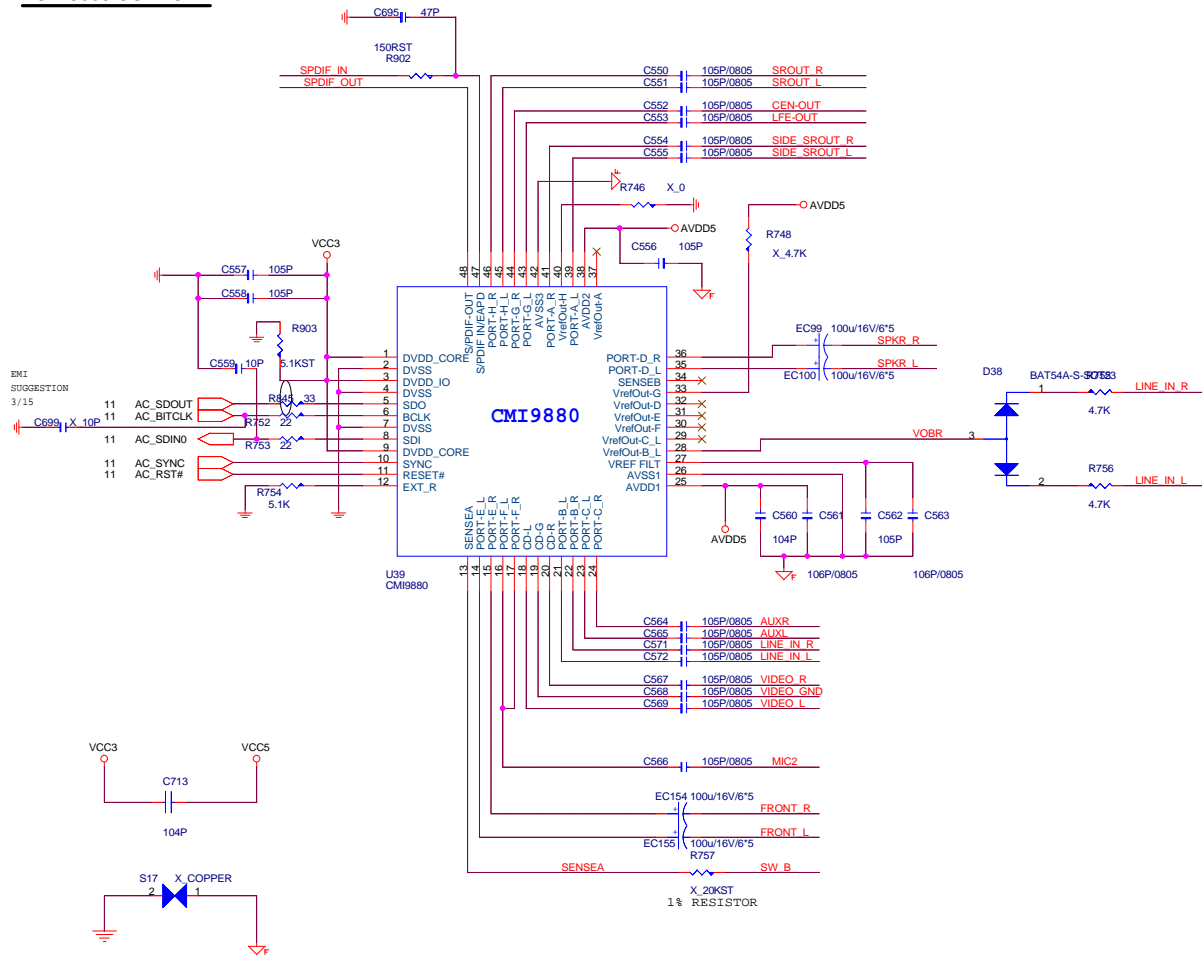
of

30

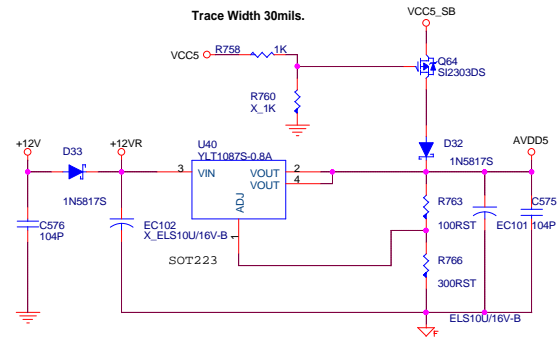
Rev

10A

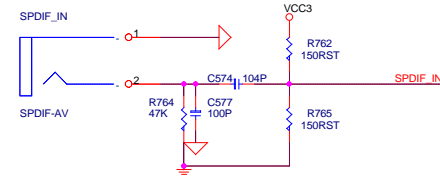
## CMI9880 CODEC



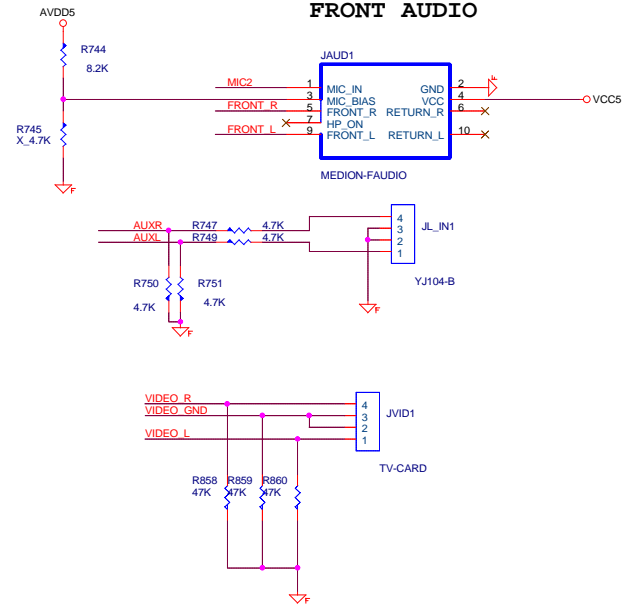
## AUDIO CODE REGULATORS



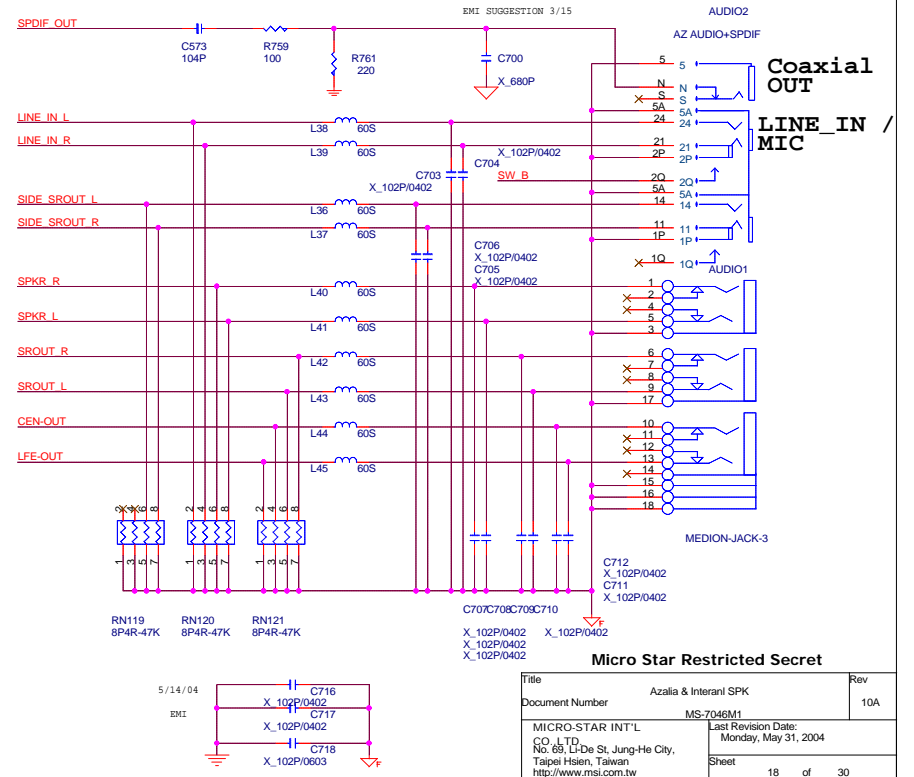
## Coaxial IN



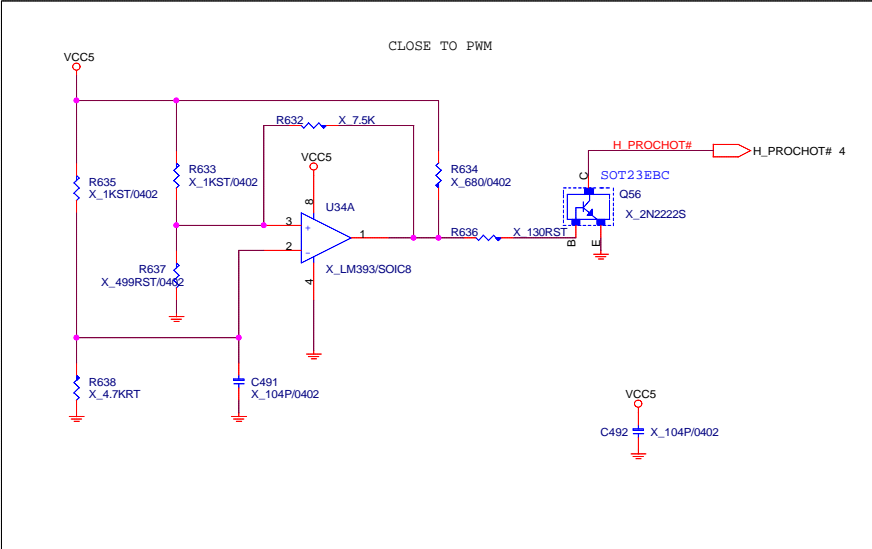
FRONT AUDIO

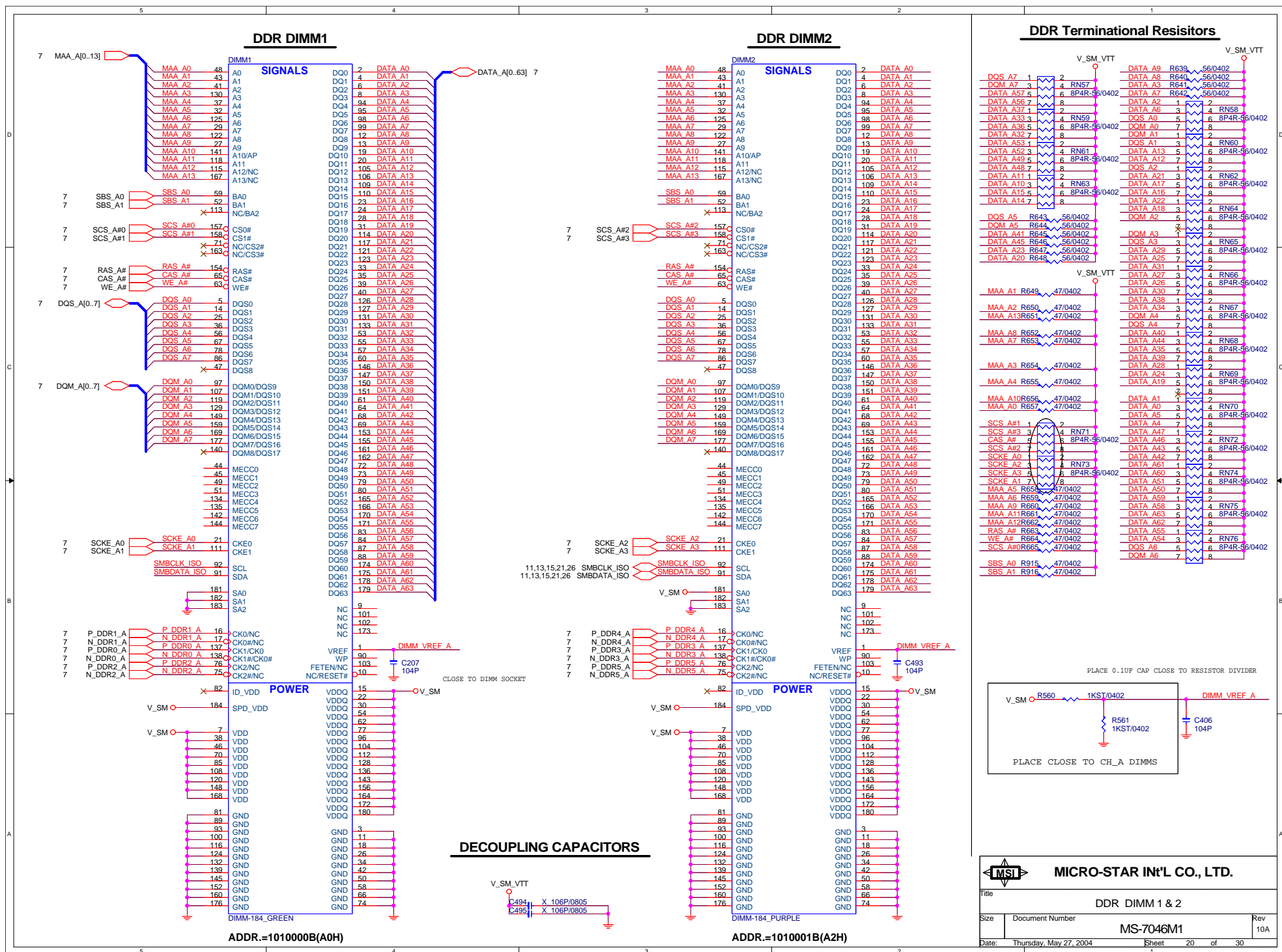


## Audio Connector



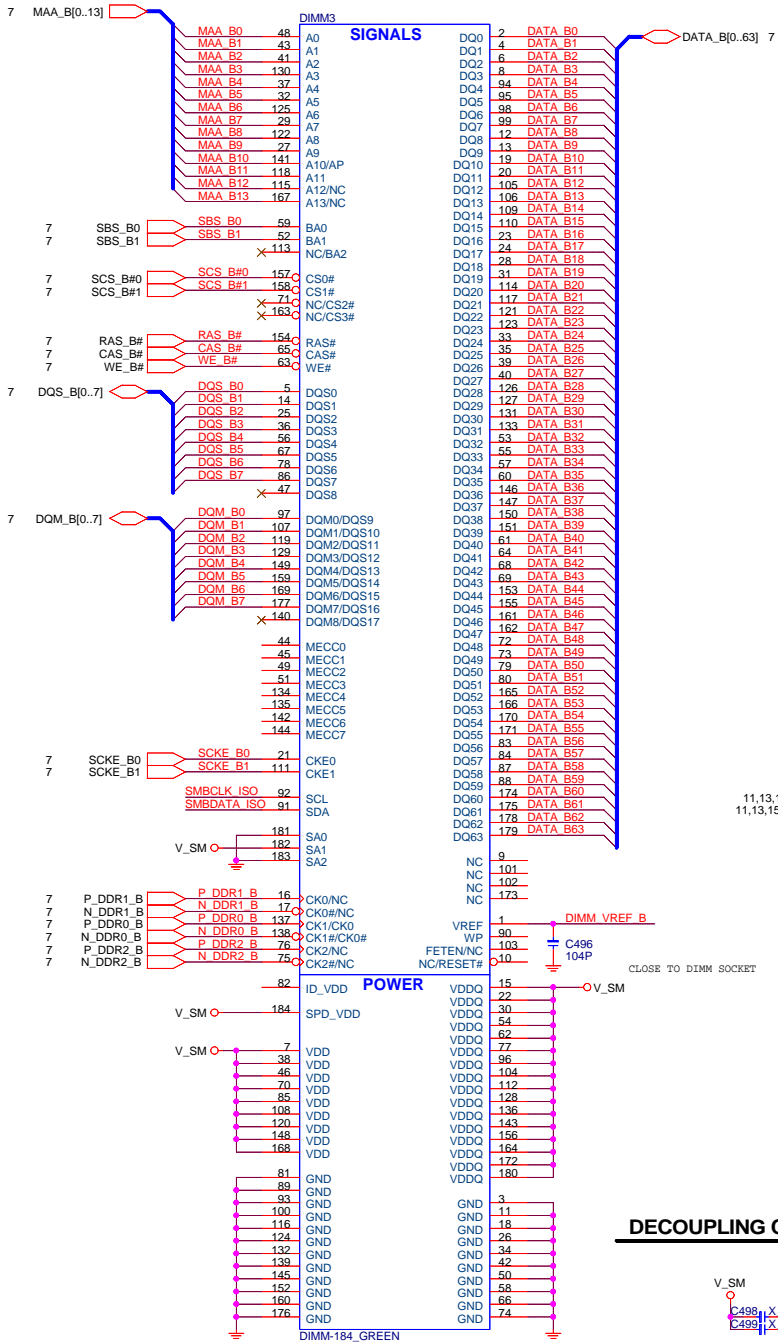
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Document Number	MS-7046M1	10A
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>	Last Revision Date:	
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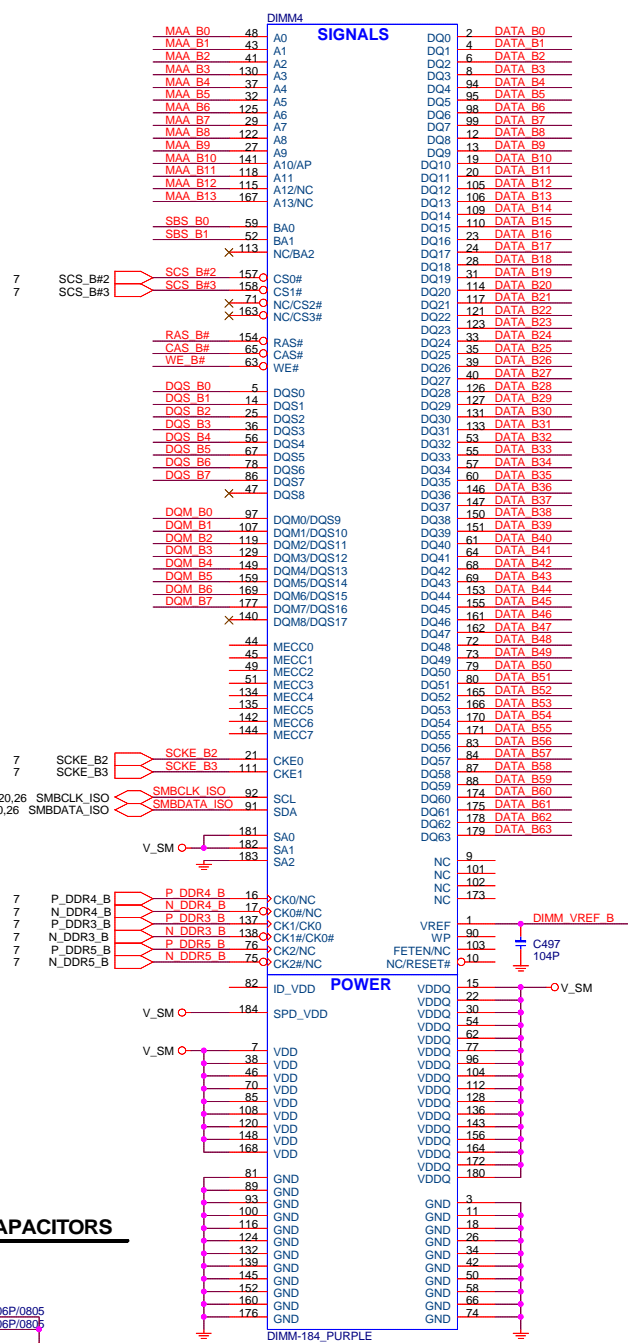
## DDR DIMM3

## SIGNALS

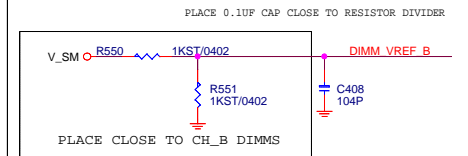
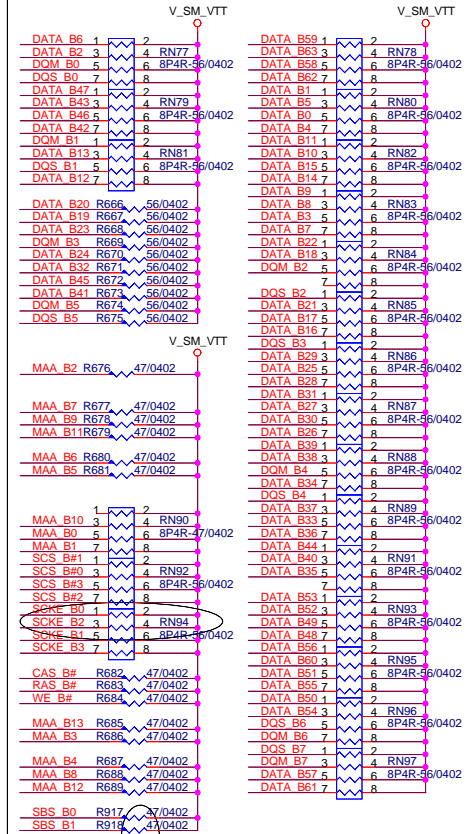


## DDR DIMM4

## SIGNALS



## DDR Terminational Resistors



MICRO-STAR INT'L CO., LTD.

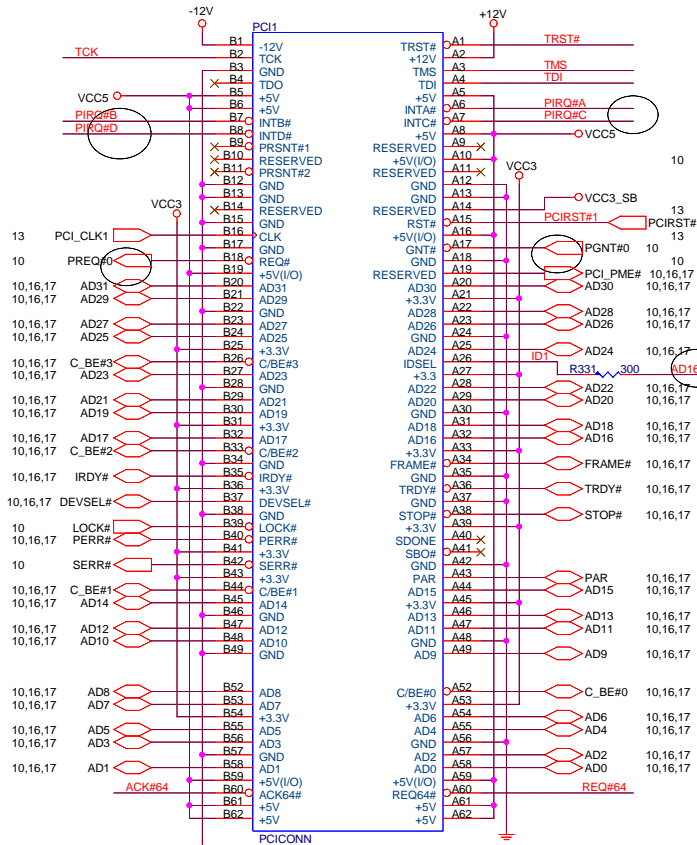




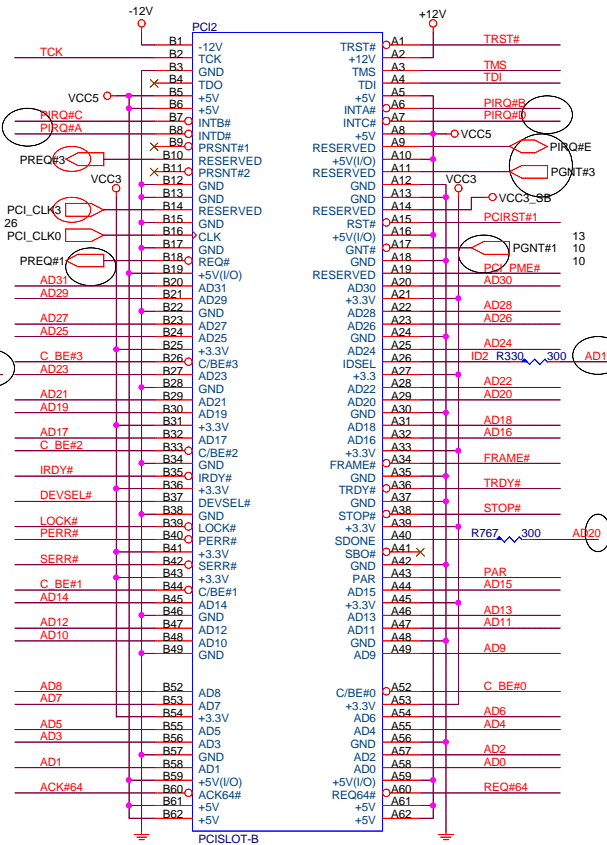
# PCI SLOT 1 (PCI VER: 2.2 COMPLY)

# PCI SLOT 2 (PCI VER: 2.2 COMPLY)

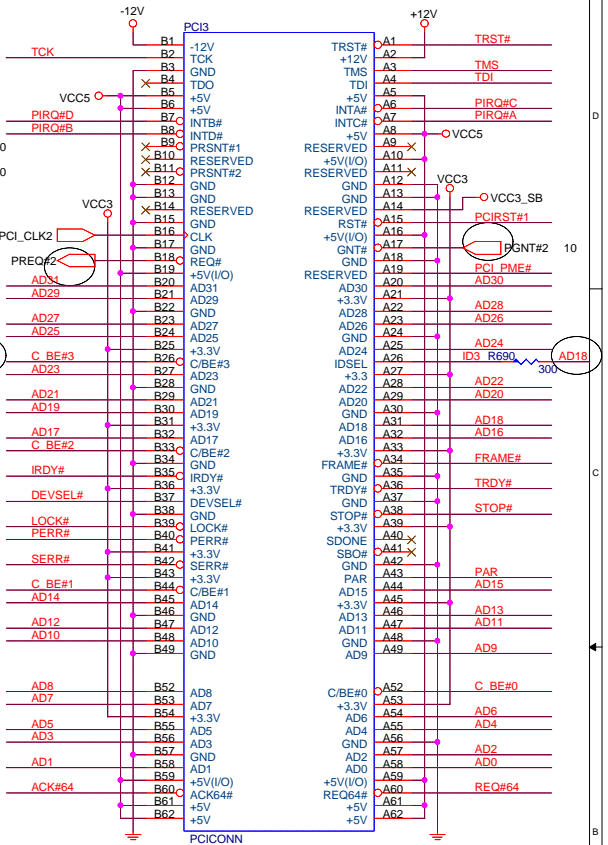
# PCI SLOT 3 (PCI VER: 2.2 COMPLY)



IDSEL = AD16  
MASTER = PREQ#0  
PIRQ#A

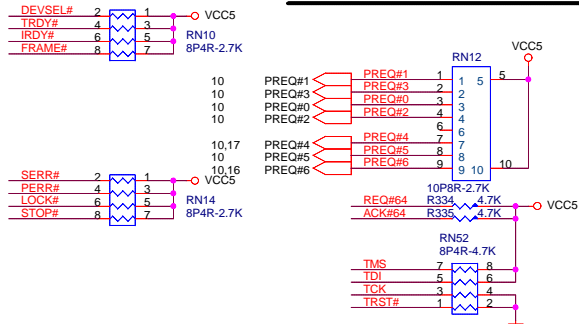


IDSEL = AD17  
MASTER = PREQ#1  
PIRQ#B

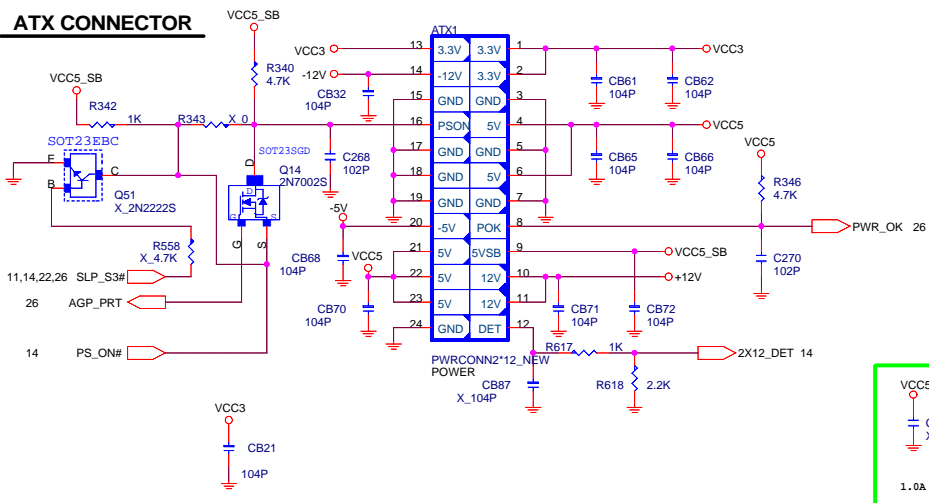


IDSEL = AD18  
MASTER = PREQ#2  
PIRQ#C

## PCI PULL-UP / DOWN RESISTORS



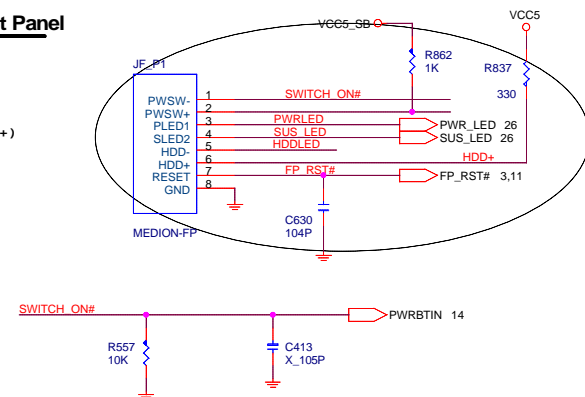
## ATX CONNECTOR



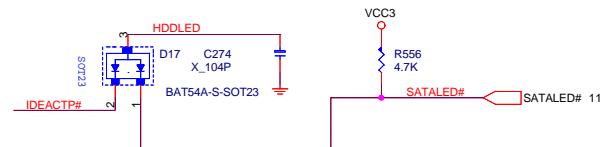
## MEDION Front Panel

JF\_P1

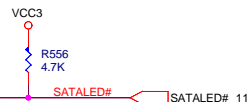
- 1-2 PS-ON
- 3-4 PWR\_LED
- 5-6 HDD\_LED (6+)
- 7-8 RESET



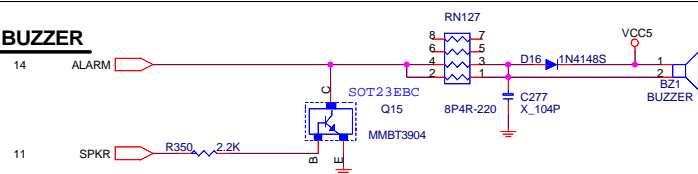
## IDE LED



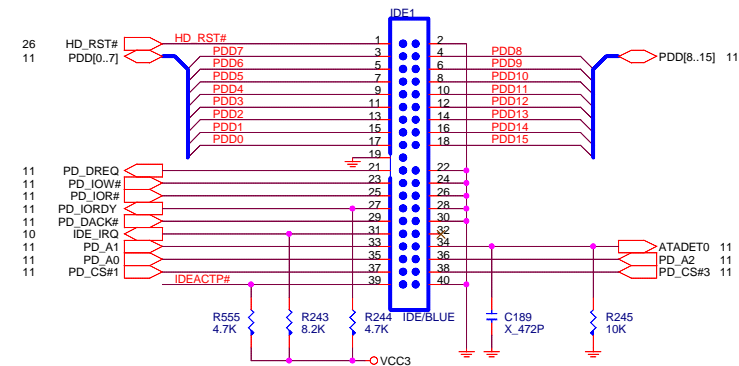
## SERIAL ATA LED



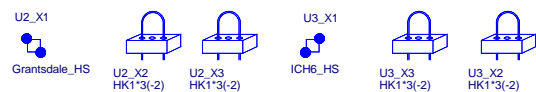
## BUZZER



## PRIMARY IDE BLOCK



## HEAT SINK



MICRO-STAR INT'L CO., LTD.

Title: ATX Connector & Front Panel & FAN CONTROL

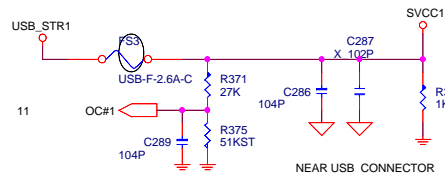
Size: Document Number MS-7046M1

Rev 10A

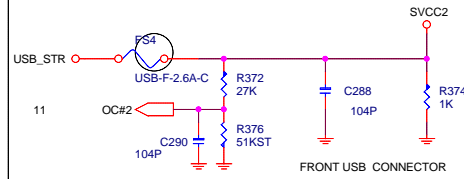
Date: Monday, May 31, 2004 Sheet 24 of 30



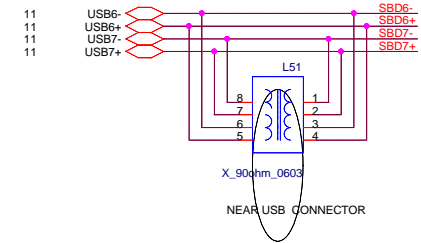
### POWER CIRCUIT FOR USB PORT 0,1,2,3



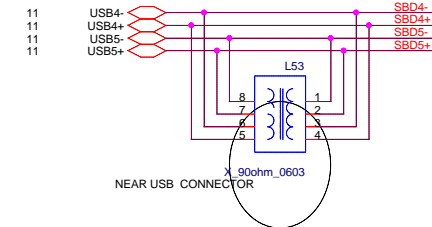
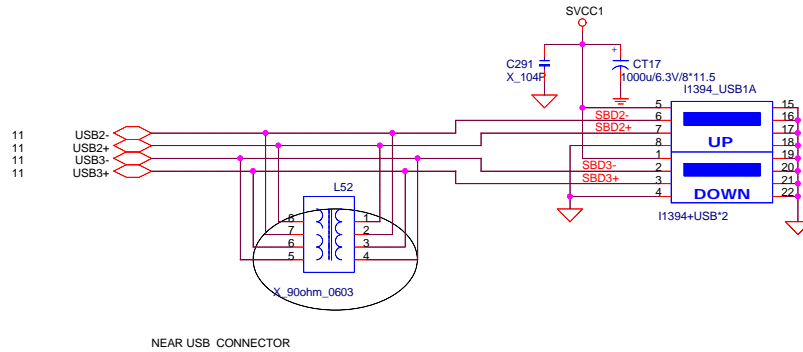
### POWER CIRCUIT FOR USB PORT 4,5,6,7



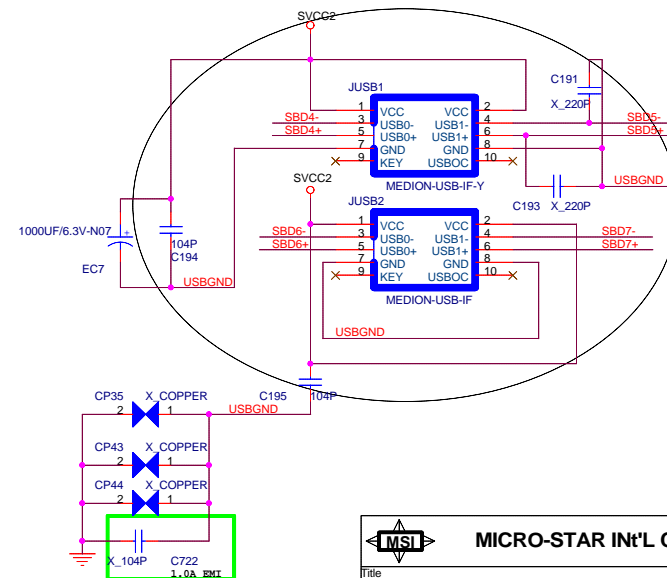
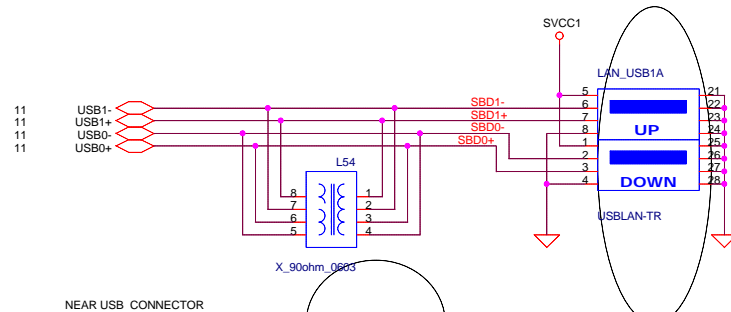
### FRONT PANEL USB CONNECTOR FOR USB PORT 4,5,6,7



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



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

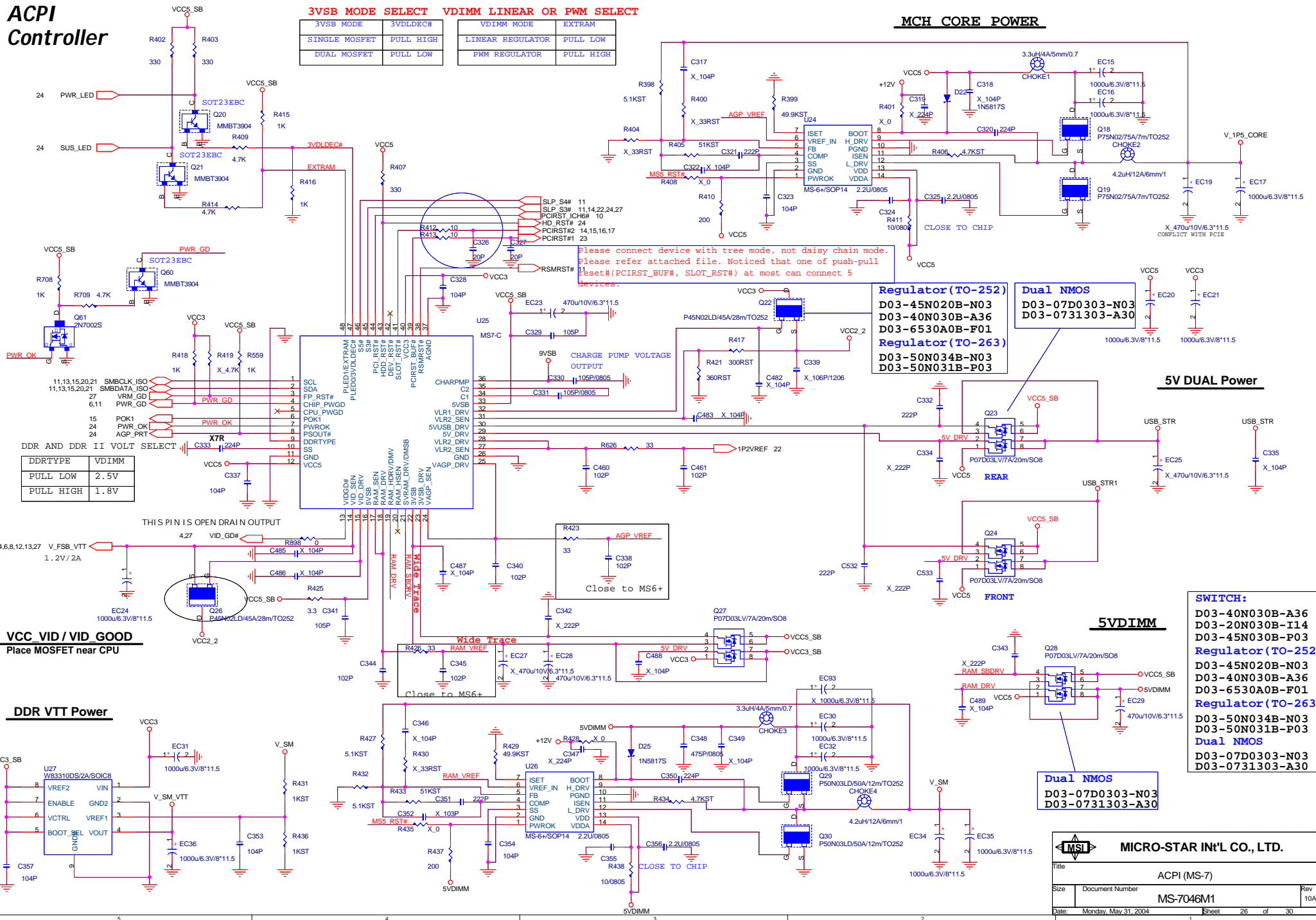


# ACPI Controller

## 3VSB MODE SELECT VDIMM LINEAR OR PWM SELECT

3VSB MODE	3VSDLDEC#	VDIMM MODE	EXTRAM
SINGLE MOSFET	PULL HIGH	LINEAR REGULATOR	PULL LOW
DUAL MOSFET	PULL LOW	PWM REGULATOR	PULL HIGH

## MCH CORE POWER



Please connect device with tree mode, not daisy chain mode.  
Please refer attached file. Noticed that one of push-pull  
Reset#(PCIRST\_BUF#, SLOT\_RST#) at most can connect 5  
devices.

**Regulator (TO-252)**  
D03-45N020B-N03  
D03-40N030B-A36  
D03-6530A0B-F01  
**Regulator (TO-263)**  
D03-50N034B-N03  
D03-50N031B-P03

**Dual NMOS**  
D03-07D0303-N03  
D03-0731303-A30

## 5V DUAL Power

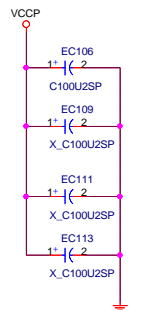
## 5VDIMM

**SWITCH:**  
D03-40N030B-A36  
D03-20N030B-I14  
D03-45N030B-P03  
**Regulator (TO-252)**  
D03-45N020B-N03  
D03-40N030B-A36  
D03-6530A0B-F01  
**Regulator (TO-263)**  
D03-50N034B-N03  
D03-50N031B-P03  
**Dual NMOS**  
D03-07D0303-N03  
D03-0731303-A30

**Dual NMOS**  
D03-07D0303-N03  
D03-0731303-A30

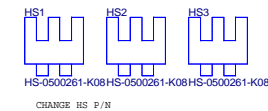
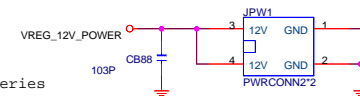
MICRO-STAR IN'L CO., LTD.		
Title: ACPI (MS-7)		
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# Voltage Regular Module

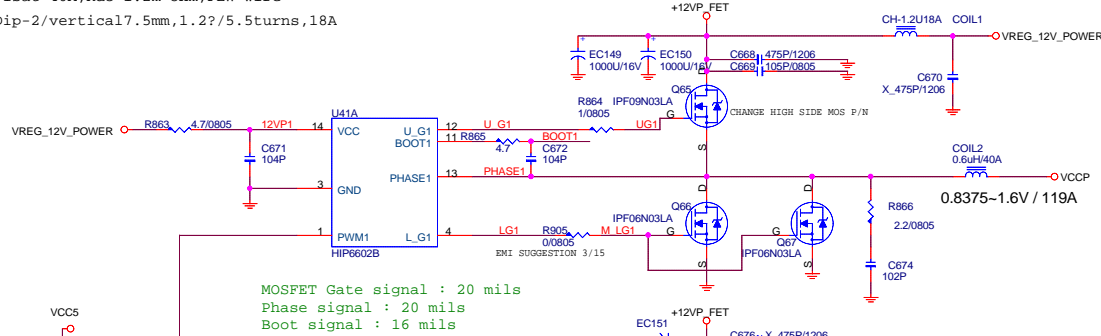


PLACE ONE INSIDE OF DOCKET, THREE IN SOLDER SIDE

IPF06N03LA Rds(on)=8.7mΩ(@4.5V,30A),Vgs(on)=1.2~2V,Id=50A,Ciss=3110pF,Qg=10nC,Vds=25V,Vgs=±20V  
 C100U2SP ESR<13mΩ,Ripple cur.<2.7A,Lc<12uA,105C  
 .CD3300U6.3EL25 ESR<12mΩ,Ripplecur.<2800mA,105C,longlife3000hrs,KZGSeries  
 560u/2.5V ESR=6mΩ,Ripplecur.=4400mA,Lc.<500uA,105C/2000hrs  
 1800UF/6.3V ESR<12mΩ, Ripplecur<2350mA,105C, longlife change from 2000hrs to 3000hrs ,KZJ series  
 0.6uH/40A 0.6u/20%, Isat=40A,Rdc=1.2m ohm,PEW wire  
 CH-1.2U18A 1.2u/20%,Dip-2/vertical7.5mm,1.2?/5.5turns,18A

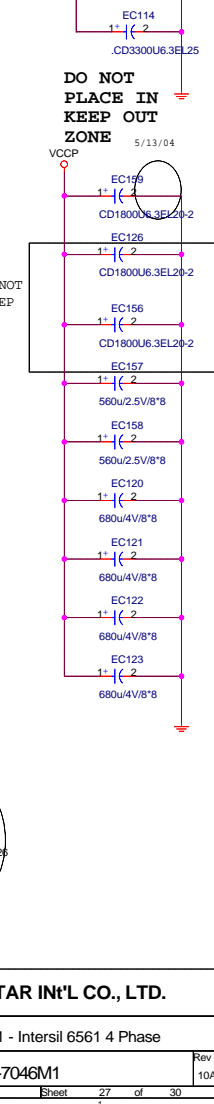
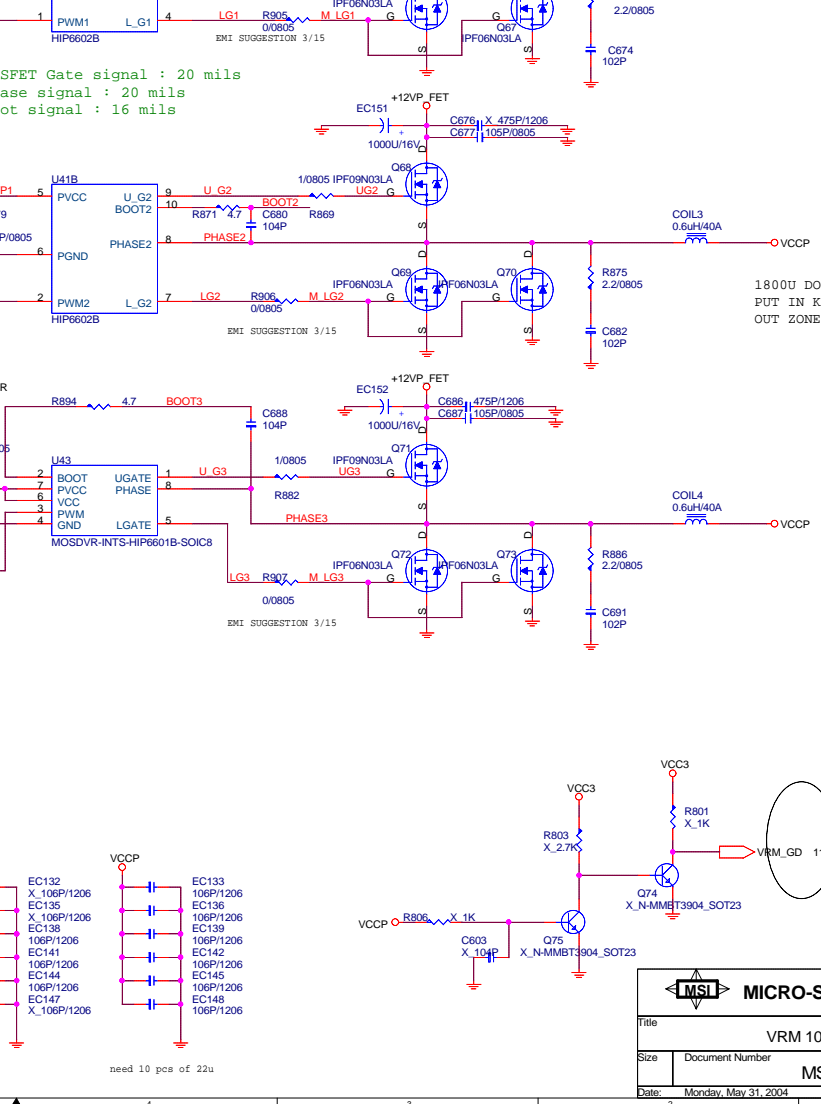
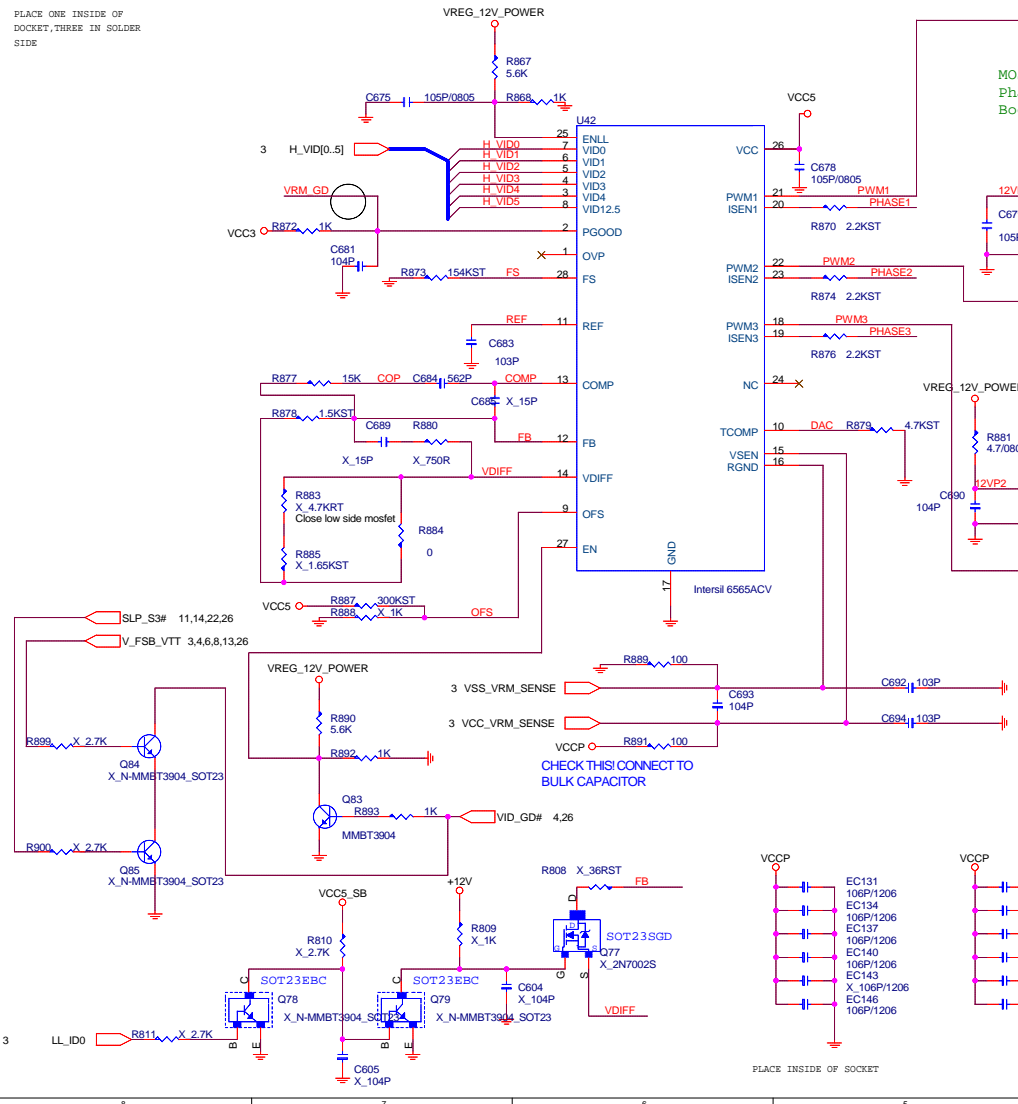


CHANGE HS P/N



MOSFET Gate signal : 20 mils  
 Phase signal : 20 mils  
 Boot signal : 16 mils

DO NOT PLACE IN KEEP OUT ZONE



ICH6

GPIO Pin	Type	Function
GPIO 0	I	REQ6# (multifunction pin)
GPIO 1	I	REQ5# (multifunction pin)
GPIO 2	I	PCI_IRO#E (multifunction pin)
GPIO 3	I	PCI_IRO#F (multifunction pin)
GPIO 4	I	PCI_IRO#G (multifunction pin)
GPIO 5	I	PCI_IRO#H (multifunction pin)
GPIO 6	I	-RISER1 (multifunction pin)
GPIO 7	I	SIO_SMI# (multifunction pin)
GPIO 8	I	SIO_PME# (multifunction pin)
GPIO 9	I	Unused (multifunction pin)
GPIO 10	I	Unused (multifunction pin)
GPIO 11	I	Unused (multifunction pin)
GPIO 12	I	ATADET0
GPIO 13	I	-RISER2
GPIO 14	I	Unused (multifunction pin)
GPIO 15	I	Unused (multifunction pin)
GPIO 16	O	GNT6# (multifunction pin)
GPIO 17	O	GNT5# (multifunction pin)
GPIO 18	O	Unused (multifunction pin)
GPIO 19	O	Unused (multifunction pin)
GPIO 20	O	Unused (multifunction pin)
GPIO 21	O	Unused (multifunction pin)
GPIO 22	OD	Unused (multifunction pin)
GPIO 23	O	Unused (multifunction pin)
GPIO 24	I/O	MB_ID0
GPIO 25	I/O	CTRL_GPI25
GPIO 27	I/O	MB_ID1
GPIO 28	I/O	Password Clear(Active low)
GPIO 32	I/O	(multifunction pin)
GPIO 33	I/O	MB_ID2
GPIO 34	I/O	MB_ID3
GPIO 40	I	PREQ#4 (multifunction pin)
GPIO 41	I	LDRQ1 (multifunction pin)
GPIO 48	O	PGNT#4 (multifunction pin)
GPIO 49	OD	CPU_GD (multifunction pin)

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
PCI Slot 1	PIRQA PIRQB PIROC PIRQD	PCI_REQ#0 PCI_GNT#0	AD16	PCI_CLK0
PCI Slot 2	PIRQB PIROC PIRQD PIRQA	PCI_REQ#1 PCI_GNT#1	AD17	PCI_CLK1
PCI Slot 3	PIROC PIRQD PIRQA PIRQB	PCI_REQ#2 PCI_GNT#2	AD18	PCI_CLK2
LAN	PIRQH	PCI_REQ#6 PCI_GNT#6	AD22	LAN_PCLK
1394	PIRQF	PCI_REQ#4 PCI_GNT#4	AD20	1394_PCLK
PCI 2 MASTER	PIRQE	PCI_REQ#3 PCI_GNT#3	AD19	PCI_CLK3
IDE RAID	PIRQG	PCI_REQ#5 PCI_GNT#5	AD21	RAID_PCLK

DDR DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	AOH	MCLK_A0/MCLK_A#0 MCLK_A1/MCLK_A#1 MCLK_A2/MCLK_A#2
DIMM 2	A2H	MCLK_A3/MCLK_A#3 MCLK_A4/MCLK_A#4 MCLK_A5/MCLK_A#5
DIMM 3	A4H	MCLK_B0/MCLK_B#0 MCLK_B1/MCLK_B#1 MCLK_B2/MCLK_B#2
DIMM 4	A6H	MCLK_B3/MCLK_B#3 MCLK_B4/MCLK_B#4 MCLK_B5/MCLK_B#5

JUMPER SETTING

<b>JBAT1</b>	( 1 - 2 ) NORMAL	( 2 - 3 ) CLEAR

SIO

PIN NAME	USAGE	Input/Output	NOTES
GPIO34	BIOS_WP#	OUTPUT	BIOS Write Protect
GPIO35	2X12_DET	INPUT	2x12 Power Conn Detect

PCI RESET DEVICE

Signals	Target
PCIRST#1	PCI 1-3
PCIRST#2	Super I/O, 1394, RAID, LAN, FWH
PCIRST_ICH6#	PCI-E
HDDRST#	Primary, Scondary IDE




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Title General Purpose Spec & JUMPER SETTING

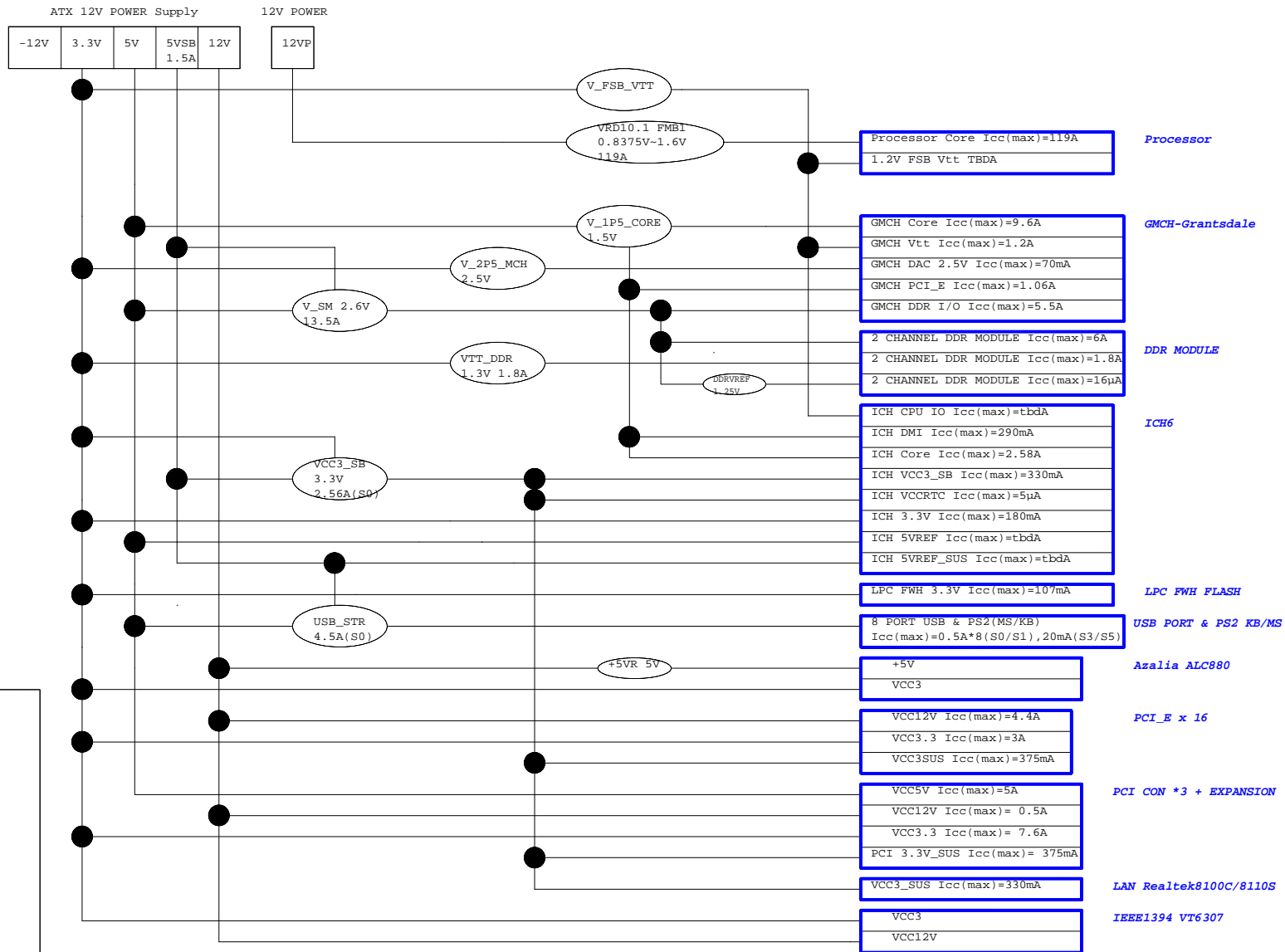
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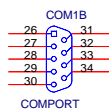
1. P15 ADD CT31 470U IN CPU FAN
2. P11 BIOS WP# CHANGE FROM SIO TO ICH GPO19
3. P27 ADD EC159 1800U FOR VCCP
4. P15 CPU FAN CHANGE TO 3 PIN
5. P11 ADD R919 R920 00HM FOR AC\_SDIN0
6. P23 ADD C714 C715 VCC5\_SB TO GND FOR EMI
7. P18 ADD C716 C717 C718 FOR GND TO GNDF(EMI)
8. P12 CHANGE CB3 FOR VCC3 TO GND
9. P26 CHANGE Q18 Q19 P/N TO D03-75N021B-N03,D03-066760B-F01
10. P22 NEW PWR SEQUENCY REMOVE Q53 Q54 Q55 R622 R623 R624 R625
11. P27 R878 CHANGE TO 1.5K R887 CHANGE TO 300K

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Title Schematics History			
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# POWER DELIVERY MAP



## MANUAL PART



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