

# 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

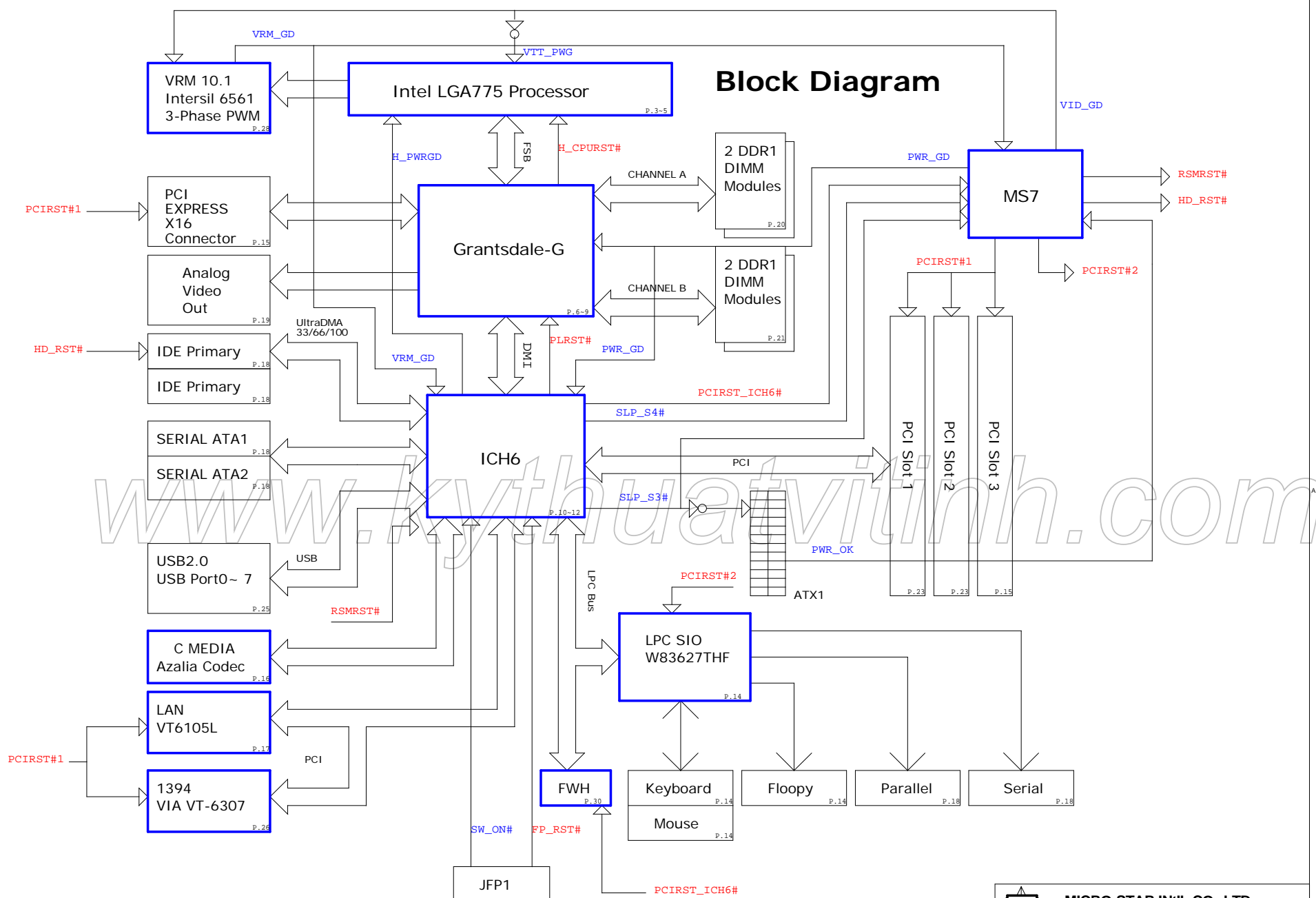
## Intersil PWM:


Controller: HIP6565ACV  
Driver: HIP6602B + HIP6601B

Cover Sheet, Block diagram	1-2
Intel LGA775 CPU - Signals	3
Intel LGA775 CPU - Power	4
Intel LGA775 CPU- GND	5
Intel Grantsdale - CPU	6
Intel Grantsdale - Memory	7
Intel Grantsdale - PCI Express	8
Intel Grantsdale - GND	9
ICH6	10-12
CLOCK - ICS954119	13
LPC I/O - WINBOND83627THF KB/MS	14
FWH/FAN/SERIAL-ATA	15
LAN-VIA 6105L	16
IEEE1394-VIA6307	17
IDE RAID-VIA6410	18
Azalia CODEC-CMI9880	19
PCI EXPRESS X 16	20
DDR1 DIMM 1 , 2 , 3 & 4	21-23
PCI SLOT 1 & 2 & 3	24
ATX & Front Panel & IDE CONNECTOR	25
USB Connectors	26
MS7 ACPI Controller	27
VRM 10 - Intersil HIP 6561 3 phase	28-29
GPIO & JUMPER SETTING	30
Manual Parts & Power Delivery	31
Revision History	32

Collected by:

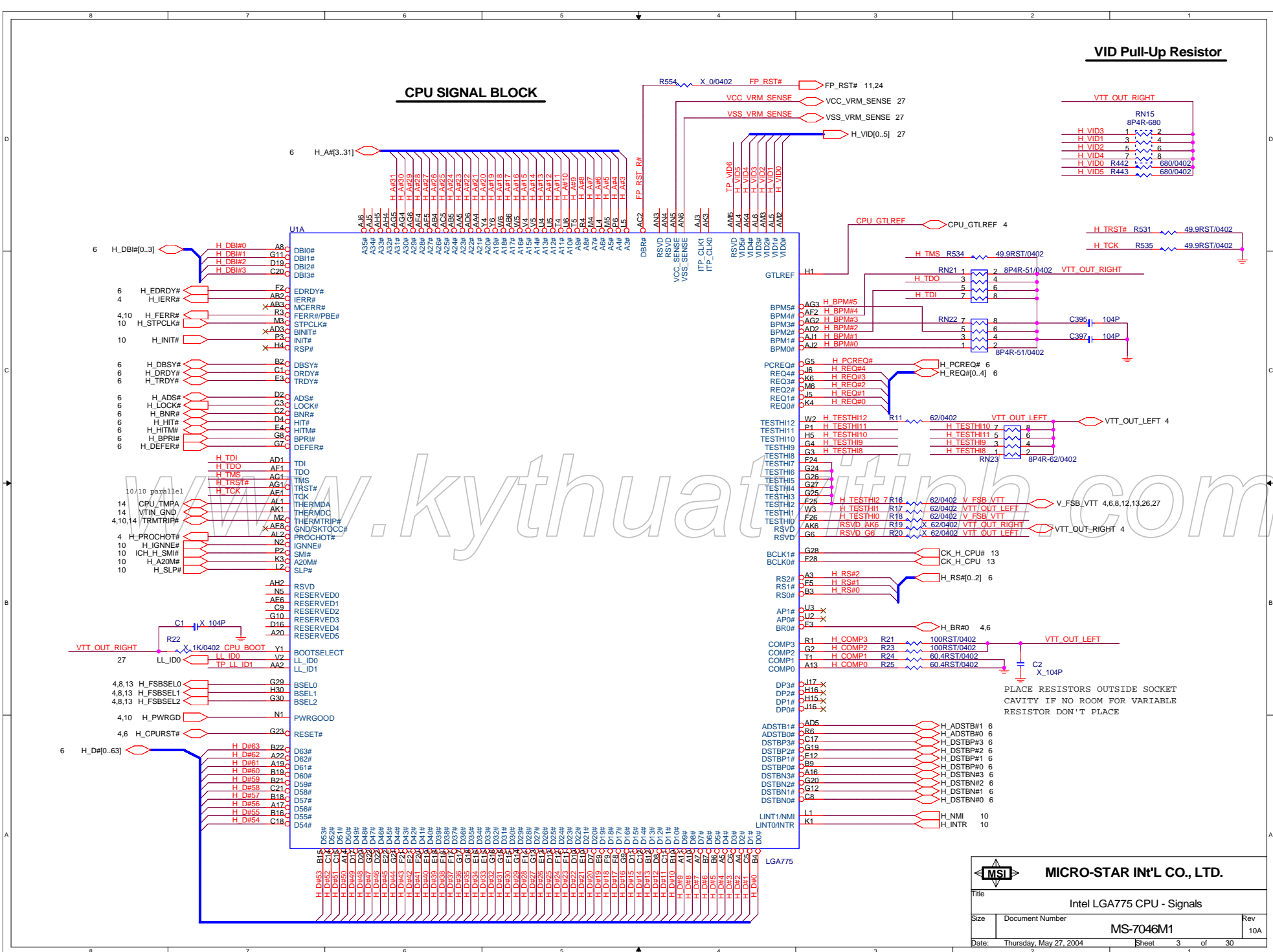
# Block Diagram



 <b>MICRO-STAR INT'L CO., LTD.</b>	
Title: BLOCK DIAGRAM	
Size: Document Number	MS-7046M1
Date: Thursday, May 27, 2004	Rev 10A
Sheet 2 of 30	

### CPU SIGNAL BLOCK

### VID Pull-Up Resistor

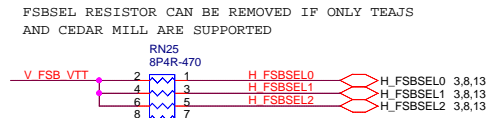
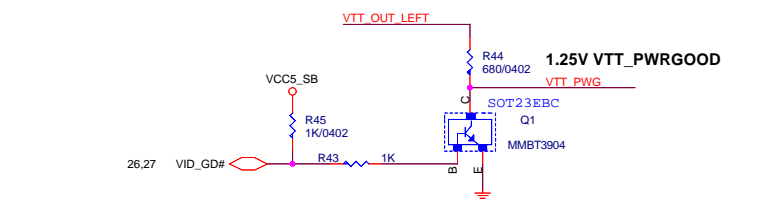
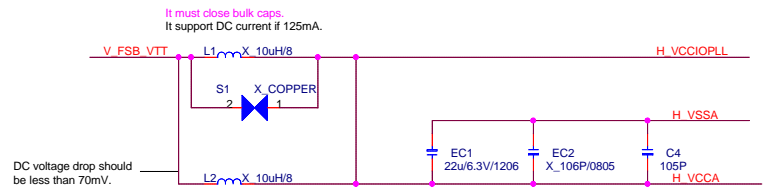
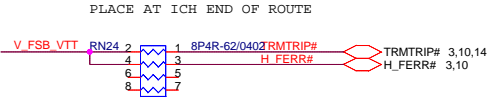
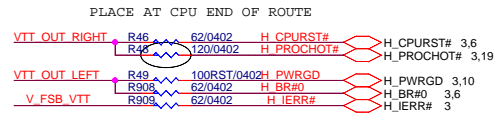
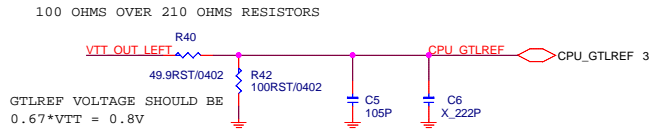
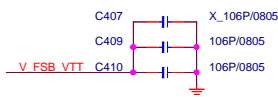
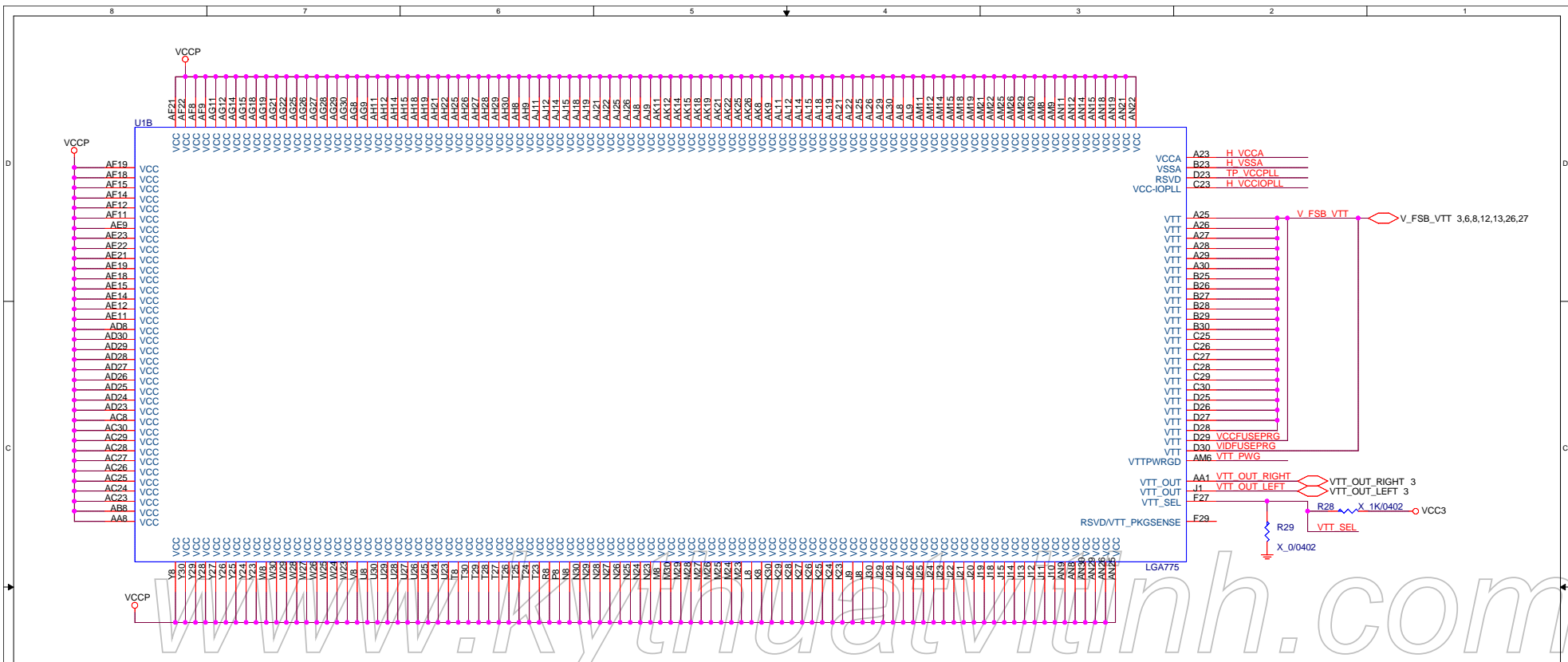


**MSI MICRO-STAR INT'L CO., LTD.**

Title: Intel LGA775 CPU - Signals

Size	Document Number	Rev
	MS-7046M1	10A

Date: Thursday, May 27, 2004      Sheet 3 of 30

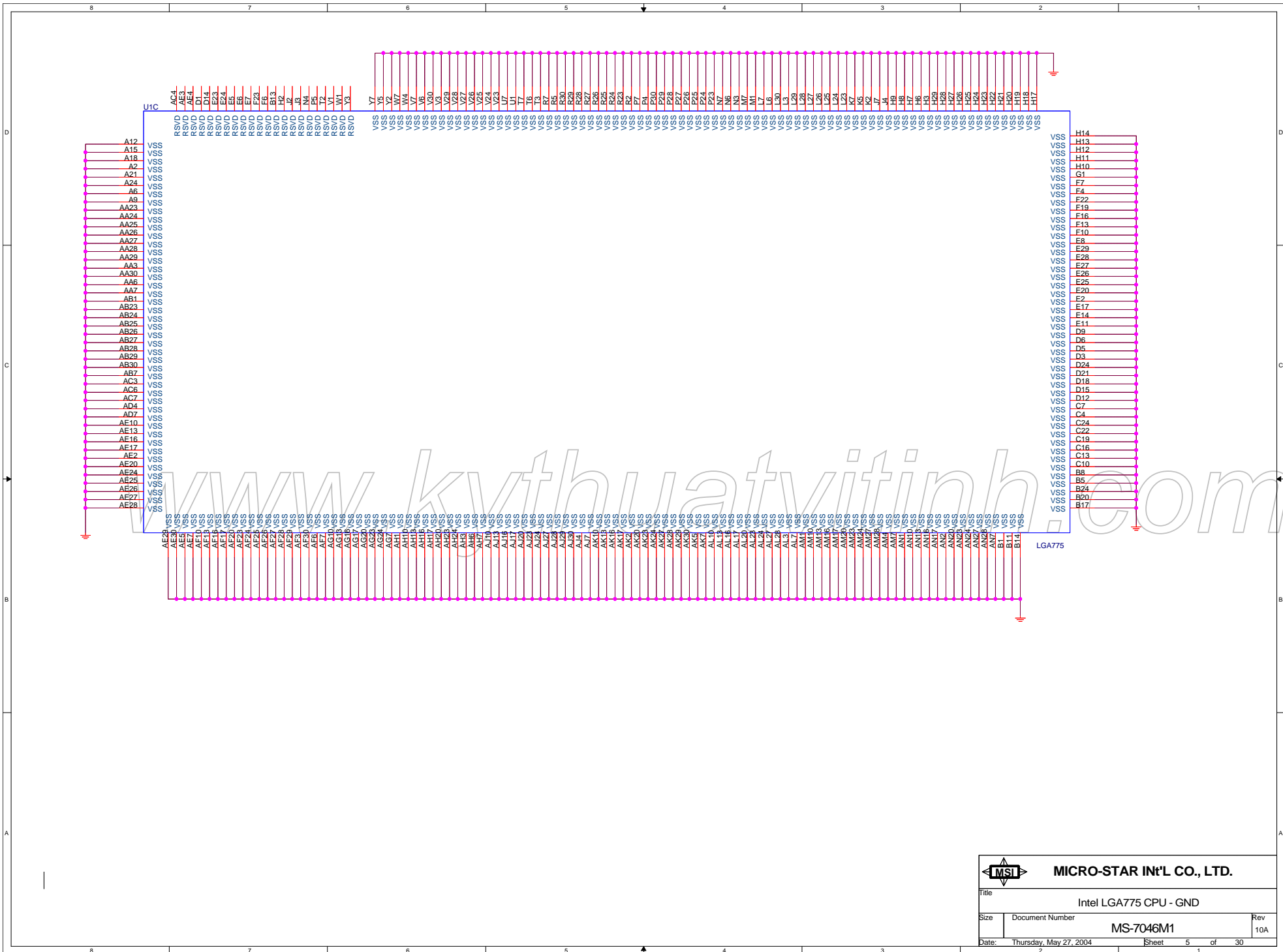



**MSI** MICRO-STAR INT'L CO., LTD.

File: Intel LGA775 CPU - Power

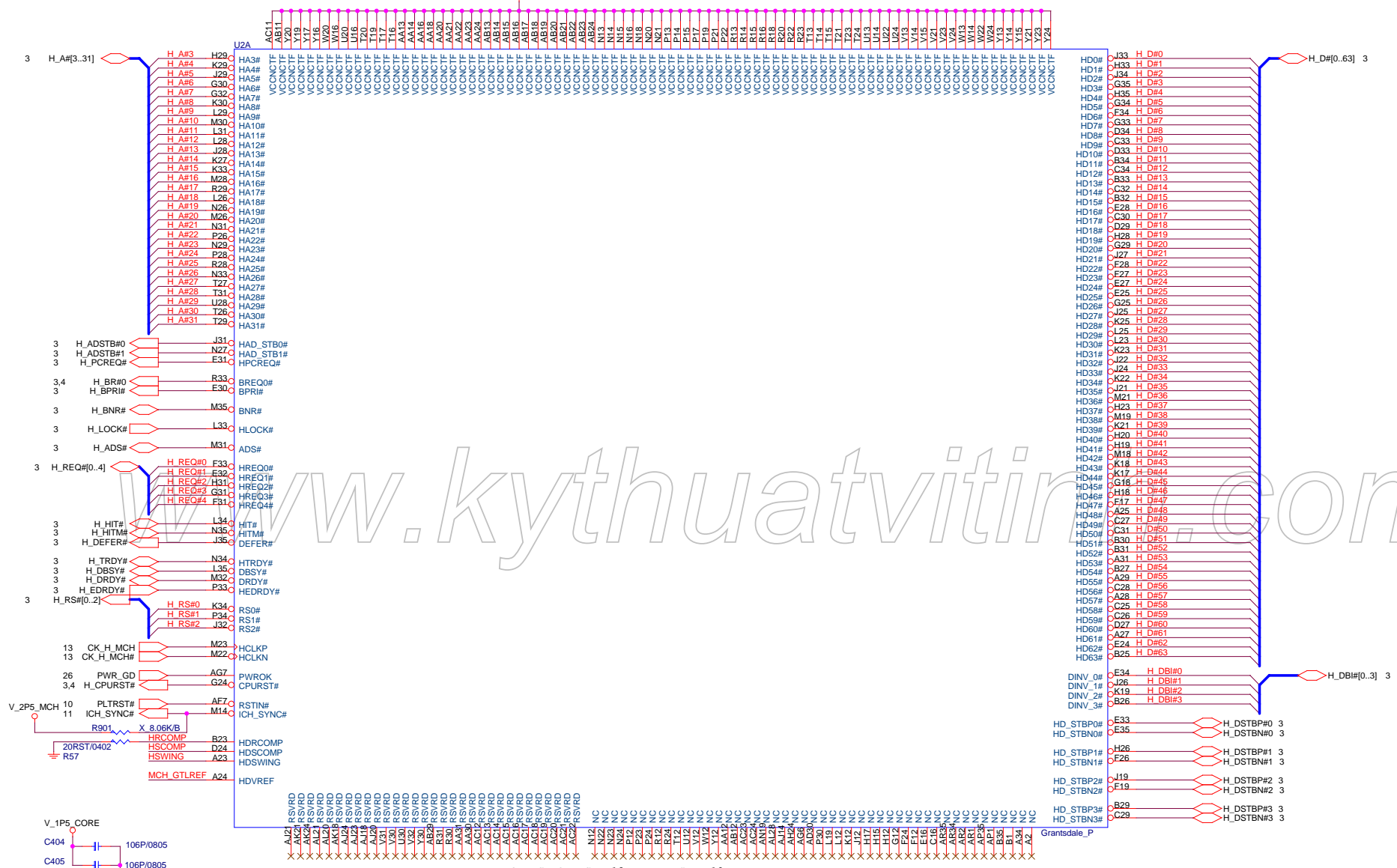
Size: Document Number: MS-7046M1 Rev 10A

Date: Thursday, May 27, 2004 Sheet 4 of 30



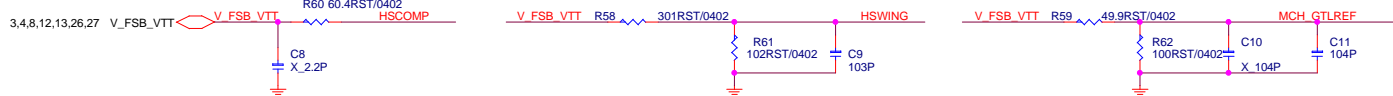
		<b>MICRO-STAR INT'L CO., LTD.</b>	
Title		Intel LGA775 CPU - GND	
Size	Document Number	MS-7046M1	
Date: Thursday, May 27, 2004		Sheet	5 of 30
		Rev	10A

V\_1P5\_CORE



HD\_SWING VOLTAGE "12 MIL TRACE , 10MIL SPACE" HD\_SWING S/B 1/4\*VTT +/- 2%  
 GTLREF VOLTAGE SHOULD BE 0.67\*VTT=0.8V  
 49.9 OHM OVER 100 RESISTORS

5 mils trace 8 mils space rout in same layer within 750 mils



PLACE DIVIDER RESISTOR NEAR VTT

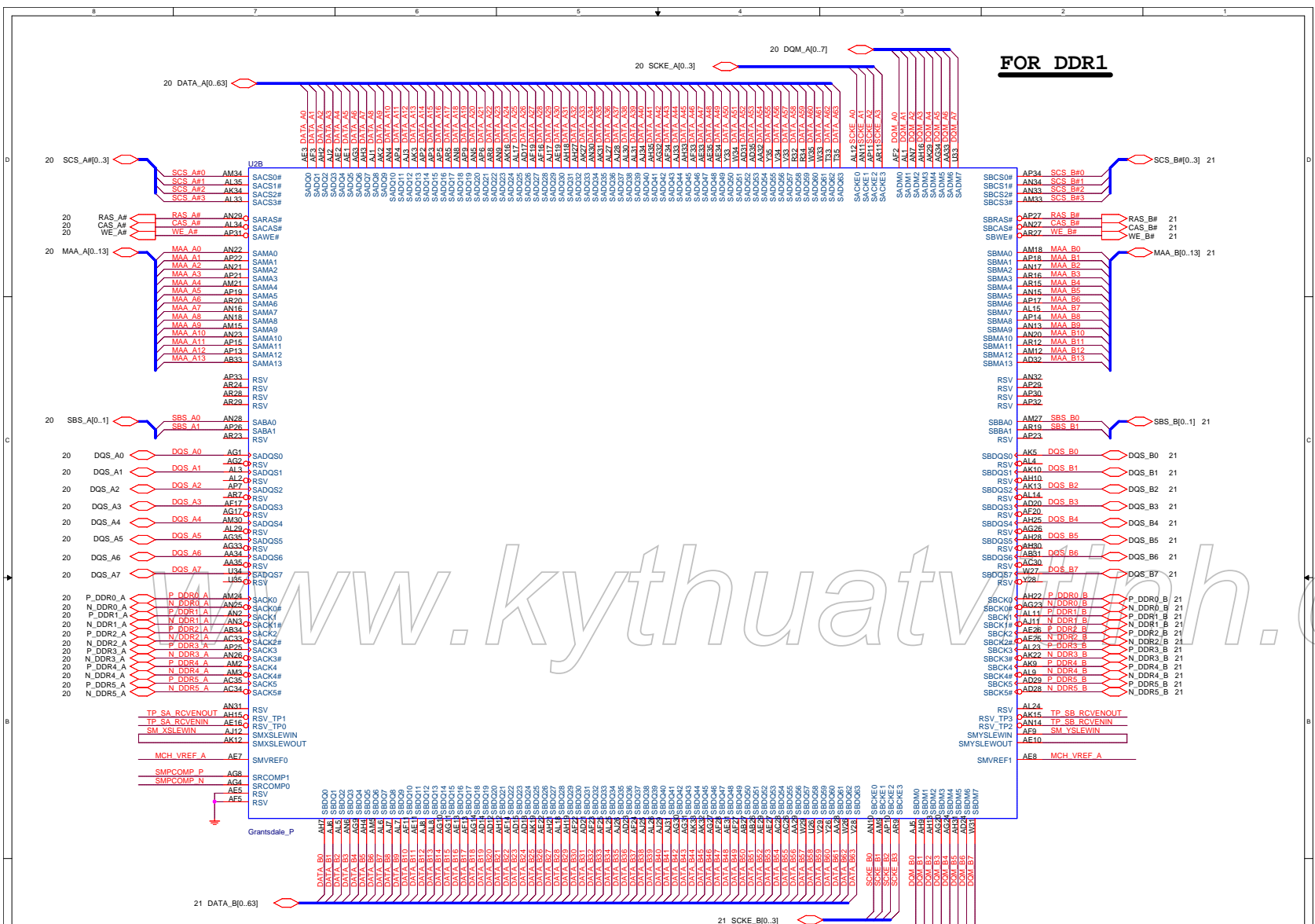
- HDO# J33 H D#0
- HD1# J34 H D#1
- HD2# J35 H D#2
- HD3# G35 H D#3
- HD4# H35 H D#4
- HD5# G34 H D#5
- HD6# F34 H D#6
- HD7# G33 H D#7
- HD8# D34 H D#8
- HD9# C33 H D#9
- HD10# D33 H D#10
- HD11# B34 H D#11
- HD12# G34 H D#12
- HD13# B33 H D#13
- HD14# C32 H D#14
- HD15# B32 H D#15
- HD16# F28 H D#16
- HD17# C30 H D#17
- HD18# D29 H D#18
- HD19# H28 H D#19
- HD20# G29 H D#20
- HD21# J27 H D#21
- HD22# F28 H D#22
- HD23# F27 H D#23
- HD24# E27 H D#24
- HD25# E25 H D#25
- HD26# C25 H D#26
- HD27# J25 H D#27
- HD28# K25 H D#28
- HD29# J25 H D#29
- HD30# L23 H D#30
- HD31# K23 H D#31
- HD32# J22 H D#32
- HD33# J24 H D#33
- HD34# K22 H D#34
- HD35# J21 H D#35
- HD36# M21 H D#36
- HD37# H23 H D#37
- HD38# M19 H D#38
- HD39# K21 H D#39
- HD40# H20 H D#40
- HD41# H19 H D#41
- HD42# M18 H D#42
- HD43# K18 H D#43
- HD44# K17 H D#44
- HD45# G18 H D#45
- HD46# H18 H D#46
- HD47# F17 H D#47
- HD48# A25 H D#48
- HD49# C27 H D#49
- HD50# C31 H D#50
- HD51# B30 H D#51
- HD52# B31 H D#52
- HD53# A31 H D#53
- HD54# B27 H D#54
- HD55# A29 H D#55
- HD56# C28 H D#56
- HD57# A28 H D#57
- HD58# C25 H D#58
- HD59# C26 H D#59
- HD60# D27 H D#60
- HD61# A27 H D#61
- HD62# E24 H D#62
- HD63# B25 H D#63
- DIN\_V\_0# E34 H DBI#0
- DIN\_V\_1# J26 H DBI#1
- DIN\_V\_2# K19 H DBI#2
- DIN\_V\_3# B26 H DBI#3
- HD\_STBP0# E33 H\_DSTBP#0 3
- HD\_STBN0# E35 H\_DSTBN#0 3
- HD\_STBP1# H26 H\_DSTBP#1 3
- HD\_STBN1# E26 H\_DSTBN#1 3
- HD\_STBP2# J19 H\_DSTBP#2 3
- HD\_STBN2# E19 H\_DSTBN#2 3
- HD\_STBP3# B29 H\_DSTBP#3 3
- HD\_STBN3# C29 H\_DSTBN#3 3

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

Title Intel Grantsdale - CPU Signals

Size Document Number MS-7046M1 Rev 10A

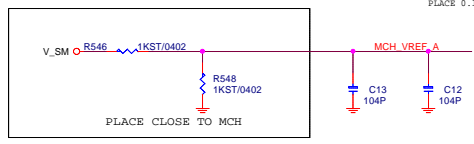
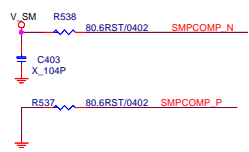
Date: Thursday, May 27, 2004 Sheet 6 of 30



**FOR DDR1**

**CPU STRAPPING RESISTORS**

ALL COMPONENTS CLOSE TO CPU

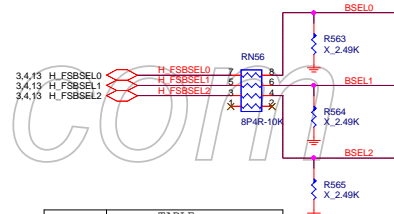
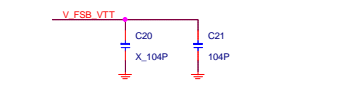
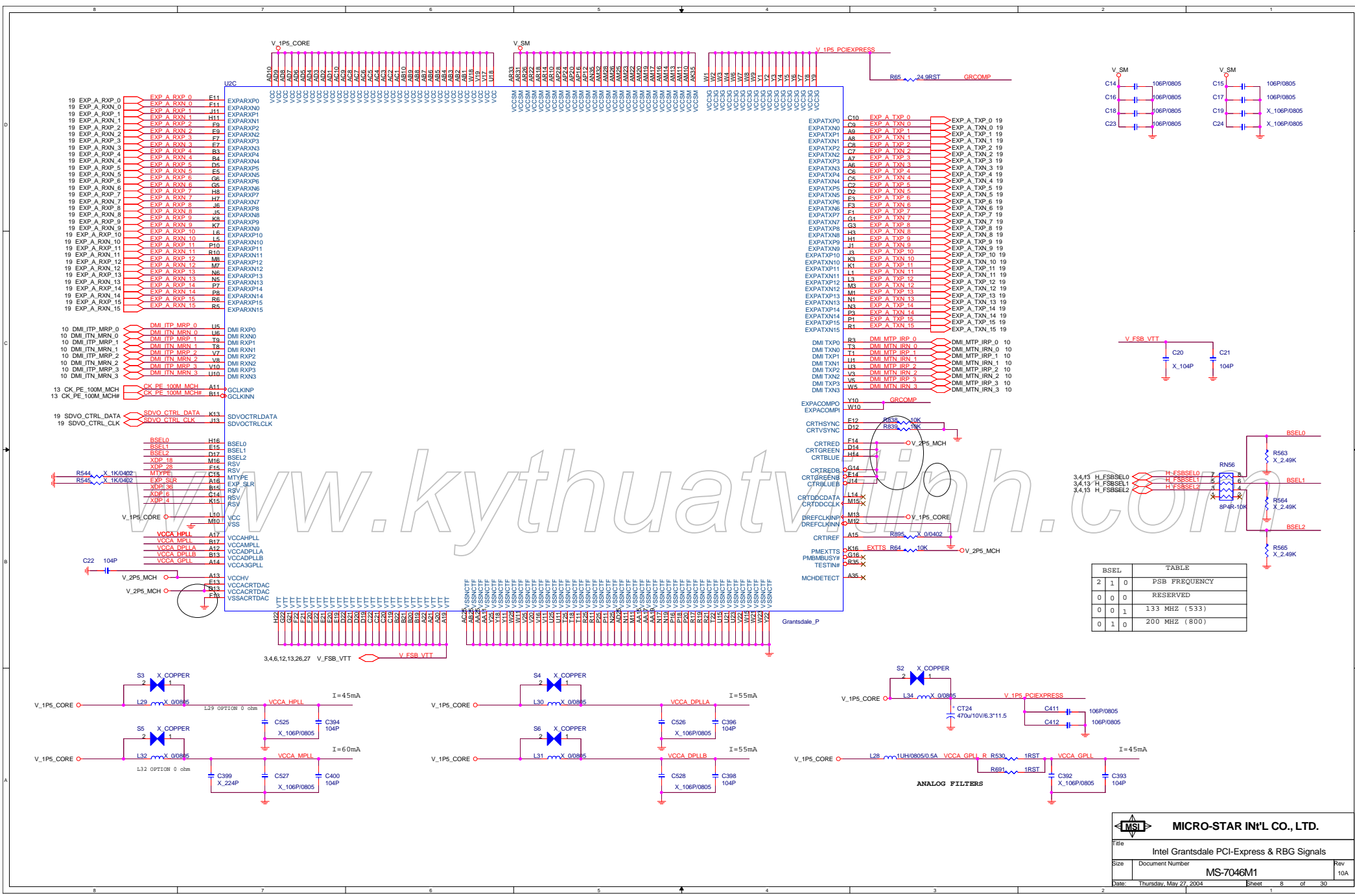


PLACE 0.1UF CAP CLOSE TO MCH

PLACE CLOSE TO MCH



Intel Grantsdale - Memory Signals		
Size	Document Number	Rev
	MS-7046M1	10A
Date:	Thursday, May 27, 2004	Sheet 7 of 30




BSEL		TABLE	
2	1	0	PSB FREQUENCY
0	0	0	RESERVED
0	0	1	133 MHZ (533)
0	1	0	200 MHZ (800)



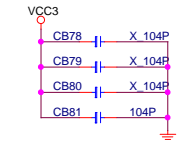
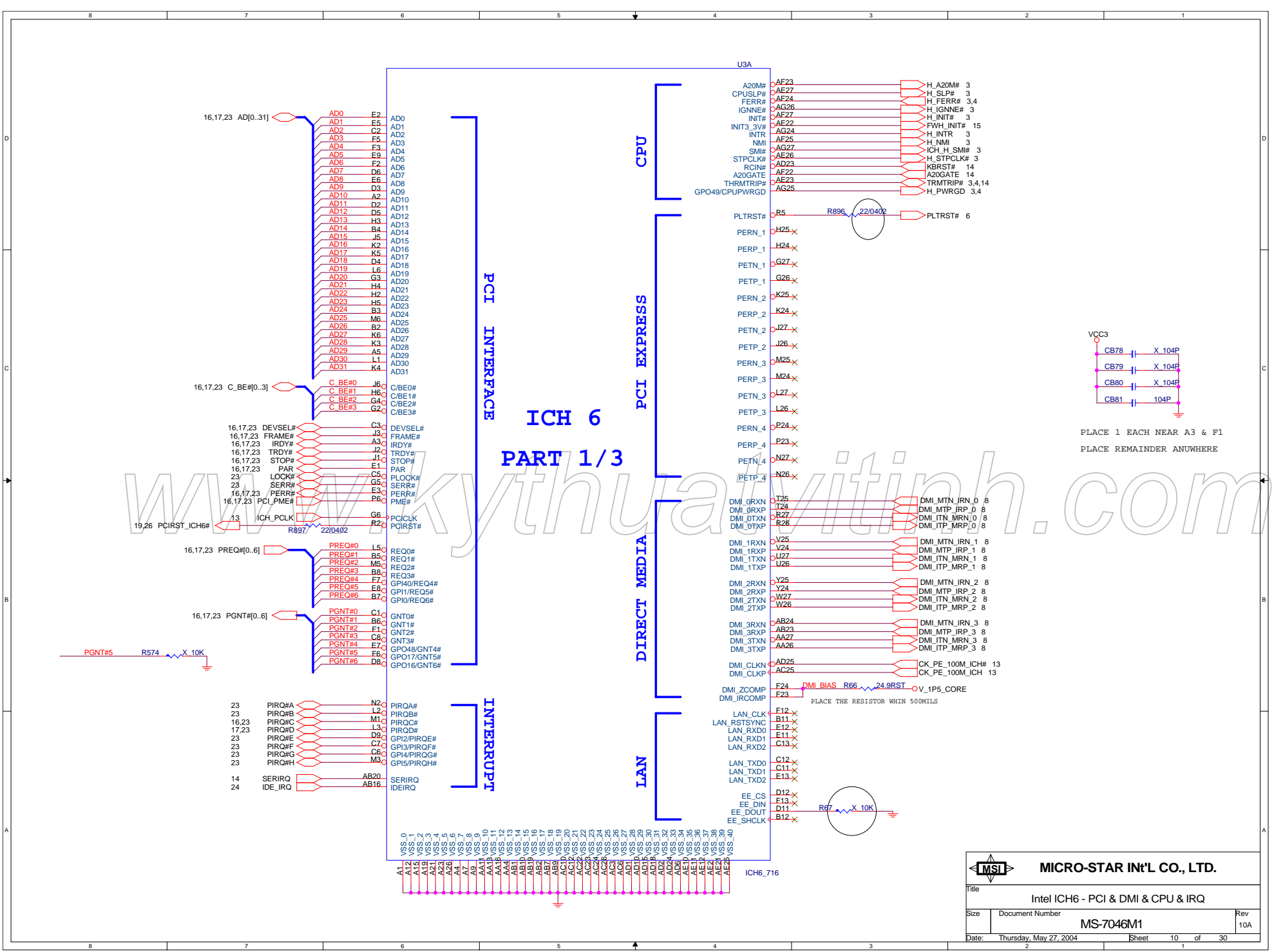
www.kythuovatvinh.com



 <b>MICRO-STAR INT'L CO., LTD.</b>	
Title: Intel Grantsdale - GND	
Size: Document Number	MS-7046M1
Date: Thursday, May 27, 2004	
Sheet 9 of 30	

www.kythuraitin.com

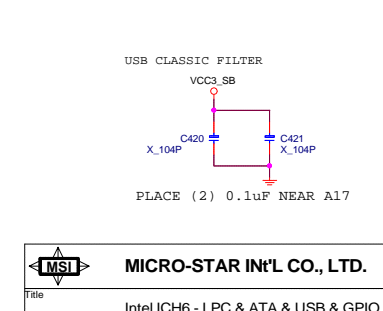
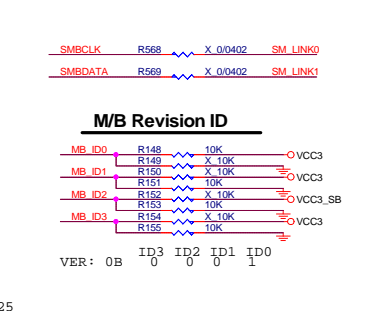
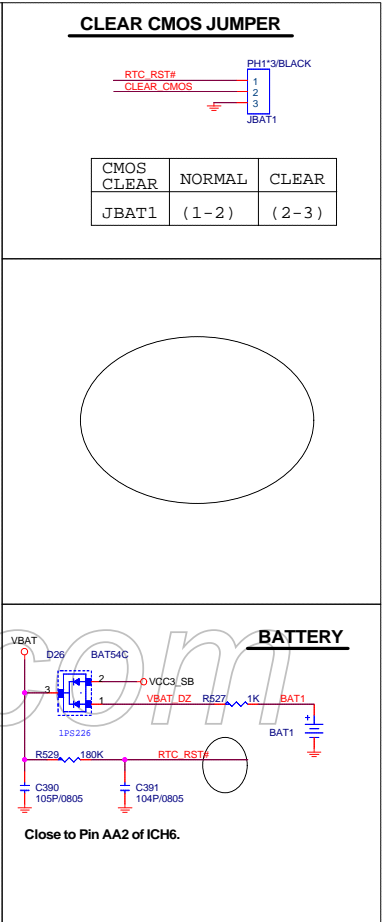
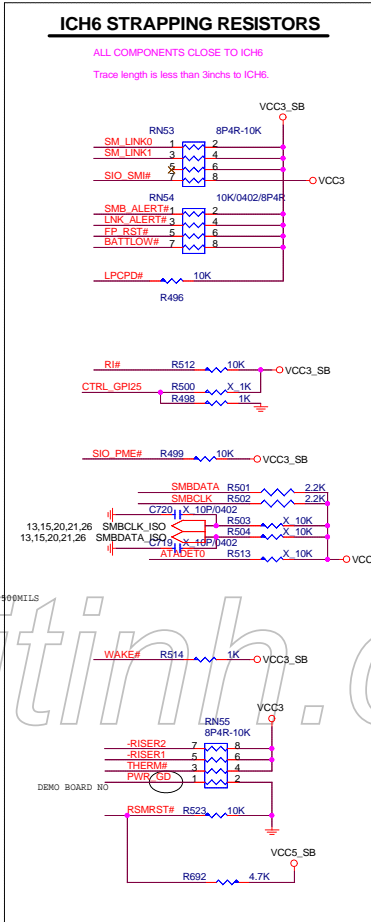
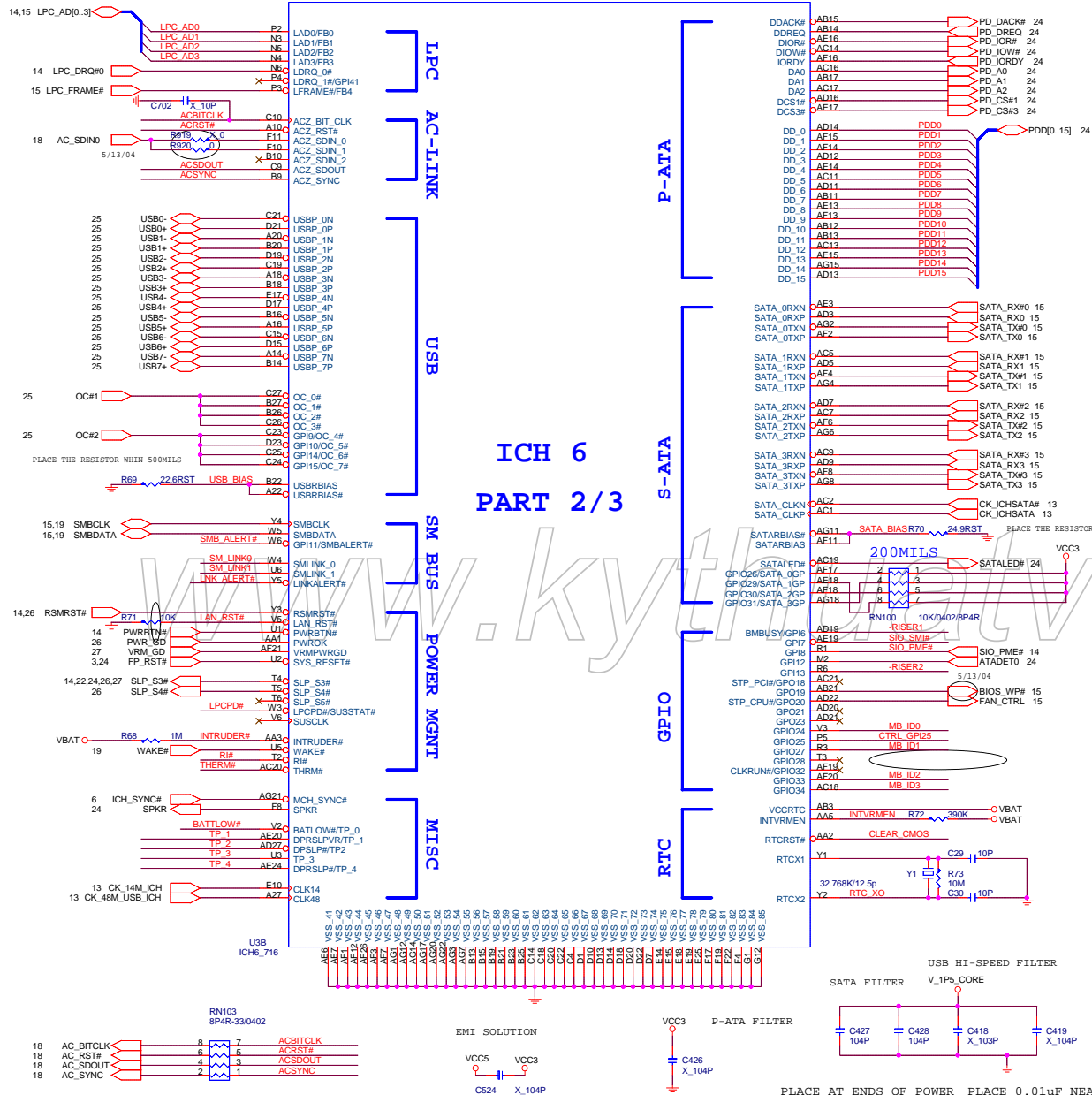
## ICH 6 PART 1 / 3



PLACE 1 EACH NEAR A3 & F1  
PLACE REMAINDER ANUWHERE

PLACE THE RESISTOR WHIN 500MILS

<b>MSI</b>		<b>MICRO-STAR INT'L CO., LTD.</b>	
Title Intel ICH6 - PCI & DMI & CPU & IRQ			
Size	Document Number	MS-7046M1	Rev 10A
Date:	Thursday, May 27, 2004	Sheet	10 of 30



# ICH 6 PART 3/3

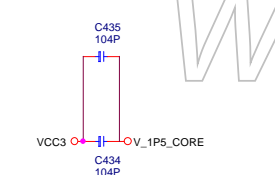
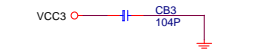
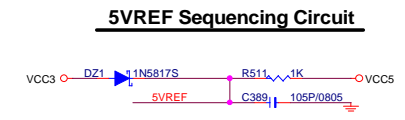
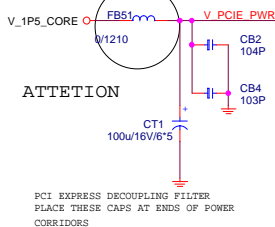
1.5V DMI POWER

1.5V CORE WELL POWER

S0 POWER

MISC

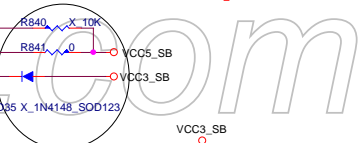
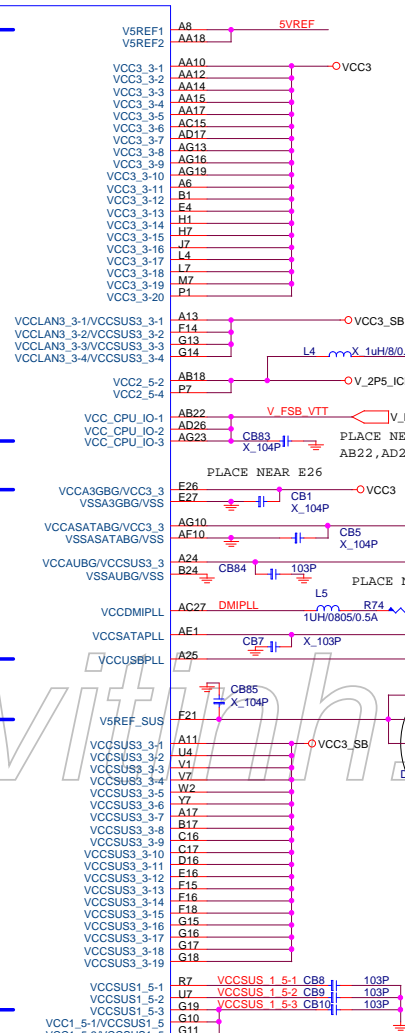
S5 POWER



- AA22 VCCDMIPWR-1
- AA23 VCCDMIPWR-2
- AA24 VCCDMIPWR-3
- AA25 VCCDMIPWR-4
- AB25 VCCDMIPWR-5
- AB26 VCCDMIPWR-6
- AB27 VCCDMIPWR-7
- F26 VCCDMIPWR-8
- F27 VCCDMIPWR-9
- G24 VCCDMIPWR-10
- G25 VCCDMIPWR-11
- H21 VCCDMIPWR-12
- H22 VCCDMIPWR-13
- J21 VCCDMIPWR-14
- J22 VCCDMIPWR-15
- K21 VCCDMIPWR-16
- K22 VCCDMIPWR-17
- L21 VCCDMIPWR-18
- L22 VCCDMIPWR-19
- M21 VCCDMIPWR-20
- M22 VCCDMIPWR-21
- N21 VCCDMIPWR-22
- N22 VCCDMIPWR-23
- N23 VCCDMIPWR-24
- N24 VCCDMIPWR-25
- N25 VCCDMIPWR-26
- P21 VCCDMIPWR-27
- P25 VCCDMIPWR-28
- P26 VCCDMIPWR-29
- P27 VCCDMIPWR-30
- R21 VCCDMIPWR-31
- R22 VCCDMIPWR-32
- T21 VCCDMIPWR-33
- T22 VCCDMIPWR-34
- U21 VCCDMIPWR-35
- U22 VCCDMIPWR-36
- U23 VCCDMIPWR-37
- U24 VCCDMIPWR-38
- U25 VCCDMIPWR-39
- W21 VCCDMIPWR-40
- W22 VCCDMIPWR-41
- W23 VCCDMIPWR-42
- W24 VCCDMIPWR-43
- Y21 VCCDMIPWR-44
- Y22 VCCDMIPWR-45

- AA6 VCC1\_5-3
- AB4 VCC1\_5-4
- AB5 VCC1\_5-5
- AC4 VCC1\_5-6
- AD4 VCC1\_5-7
- AE4 VCC1\_5-8
- AE5 VCC1\_5-9
- AG5 VCC1\_5-10
- AF5 VCC1\_5-11
- AA7 VCC1\_5-12
- AA8 VCC1\_5-13
- AA9 VCC1\_5-14
- AB8 VCC1\_5-15
- AC8 VCC1\_5-16
- AD8 VCC1\_5-17
- AE8 VCC1\_5-18
- AE9 VCC1\_5-19
- AG9 VCC1\_5-20
- AA19 VCC1\_5-21
- AA19 VCC1\_5-22
- AA20 VCC1\_5-23
- AA21 VCC1\_5-24
- L11 VCC1\_5-25
- L12 VCC1\_5-26
- L14 VCC1\_5-27
- L16 VCC1\_5-28
- L17 VCC1\_5-29
- M11 VCC1\_5-30
- M17 VCC1\_5-31
- P11 VCC1\_5-32
- P17 VCC1\_5-33
- T11 VCC1\_5-34
- T17 VCC1\_5-35
- U11 VCC1\_5-36
- U12 VCC1\_5-37
- U14 VCC1\_5-38
- U16 VCC1\_5-39
- U17 VCC1\_5-40
- G8 VCC1\_5-41
- D24 VCC1\_5-42
- D25 VCC1\_5-43
- D26 VCC1\_5-44
- D27 VCC1\_5-45
- E20 VCC1\_5-46
- E21 VCC1\_5-47
- E22 VCC1\_5-48
- E23 VCC1\_5-49
- E24 VCC1\_5-50
- F20 VCC1\_5-51
- G20 VCC1\_5-52
- VCC1\_5-53
- VCC1\_5-54

- VSS\_168
- VSS\_169
- VSS\_166
- VSS\_165
- VSS\_164
- VSS\_162
- VSS\_161
- VSS\_160
- VSS\_158
- VSS\_157
- VSS\_156
- VSS\_154
- VSS\_153
- VSS\_152
- VSS\_150
- VSS\_148
- VSS\_146
- VSS\_144
- VSS\_142
- VSS\_141
- VSS\_140
- VSS\_138
- VSS\_137
- VSS\_136
- VSS\_134
- VSS\_133
- VSS\_132
- VSS\_130
- VSS\_128
- VSS\_126
- VSS\_124
- VSS\_122
- VSS\_121
- VSS\_119
- VSS\_117
- VSS\_116
- VSS\_115
- VSS\_114
- VSS\_113
- VSS\_112
- VSS\_111
- VSS\_109
- VSS\_107
- VSS\_106
- VSS\_104
- VSS\_103
- VSS\_101
- VSS\_99
- VSS\_98
- VSS\_97
- VSS\_96
- VSS\_86
- VSS\_87
- VSS\_88
- VSS\_89
- VSS\_90
- VSS\_91
- VSS\_92
- VSS\_93
- VSS\_94
- VSS\_95



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

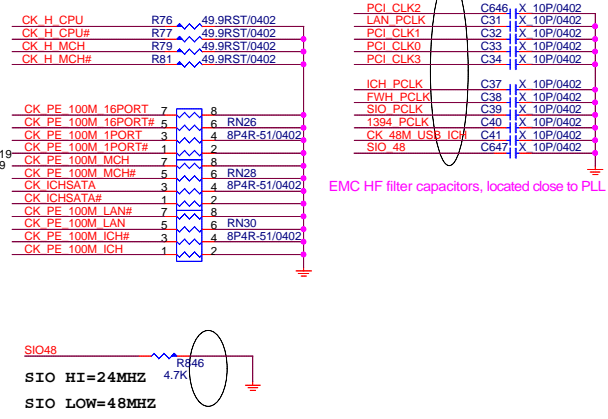
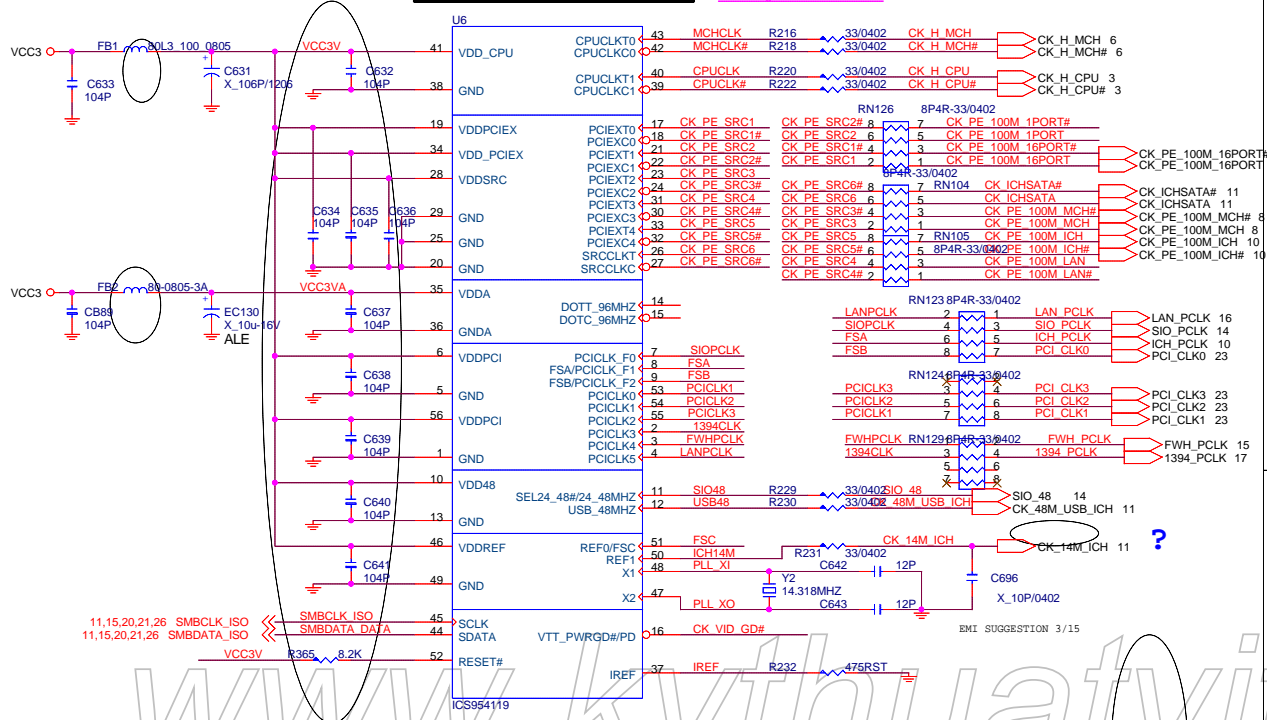
Title: Intel ICH6 - POWER

Size: Document Number: MS-7046M1 Rev 10A

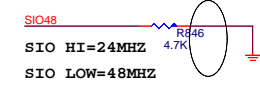
Date: Thursday, May 27, 2004 Sheet 12 of 30

### Clock Generator - ICS954119

Trace length less than 0.5inchs.



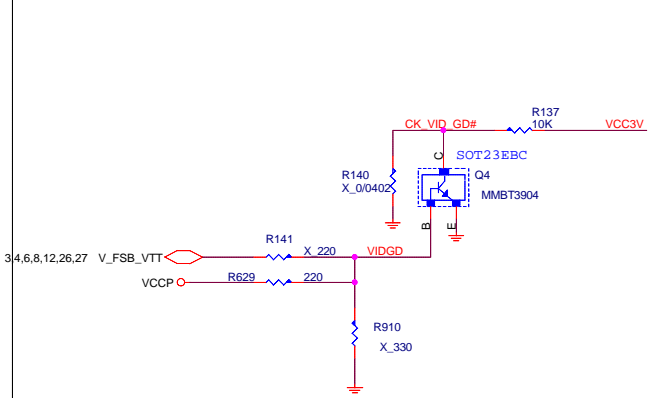
EMC HF filter capacitors, located close to PLL



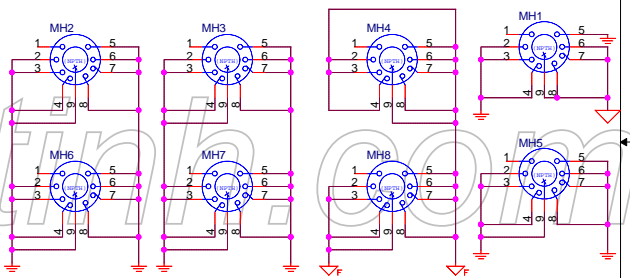
### BSEL[0..2] Level Shift

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

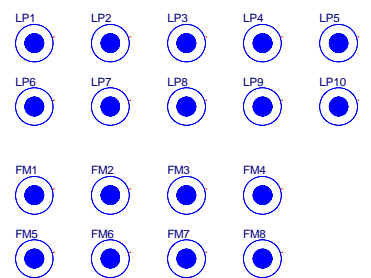
### Clock Generator VTT Power Down Block



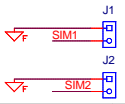
### Mounting Holes



### Optics Orientation Holes



### Simulation



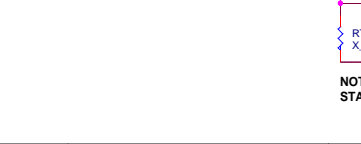
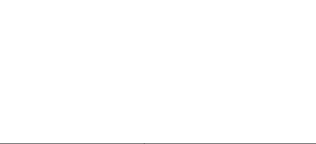
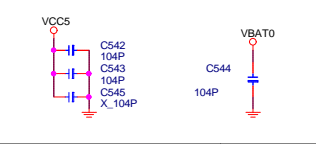
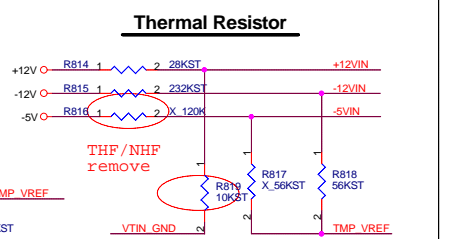
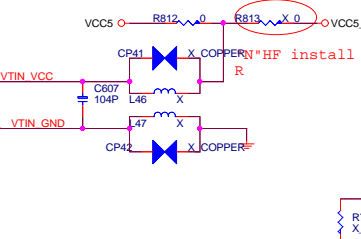
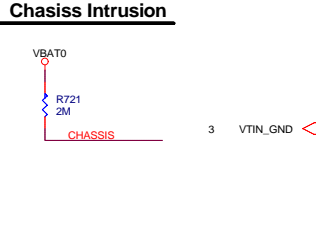
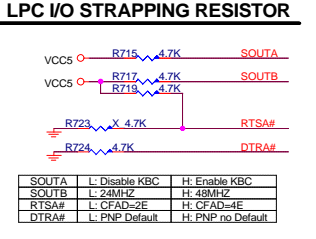
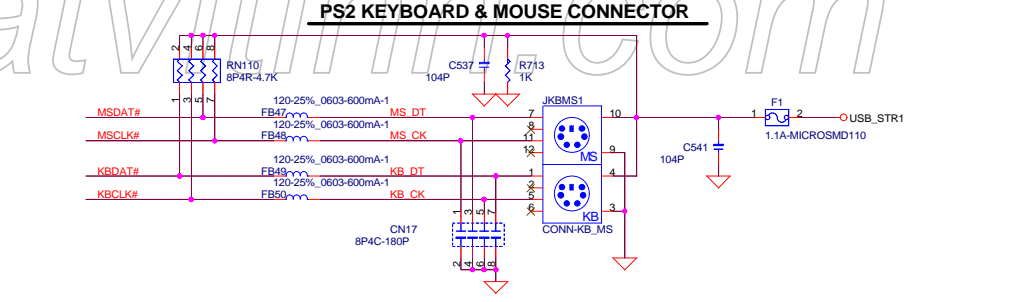
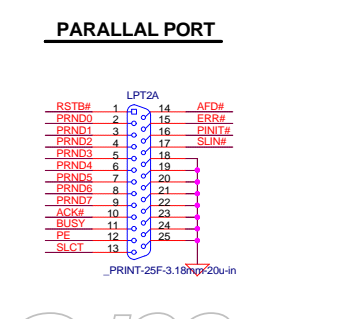
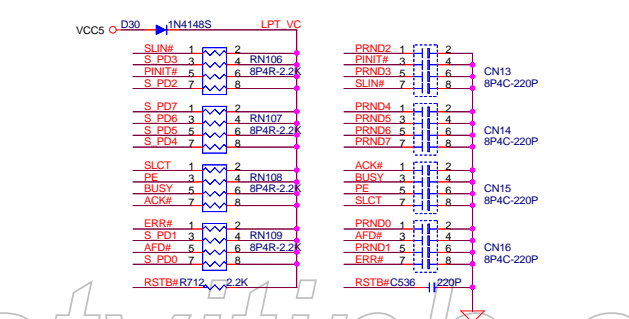
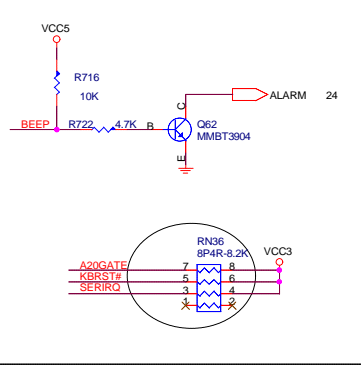
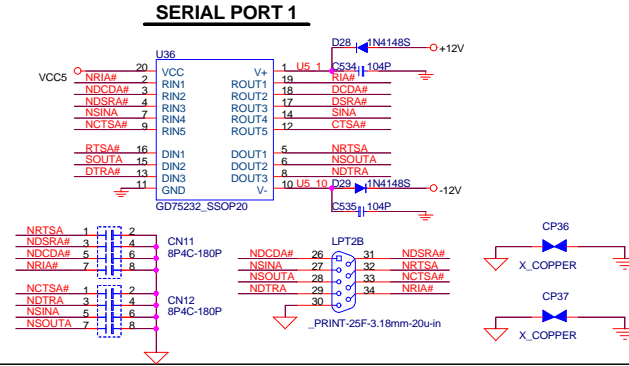
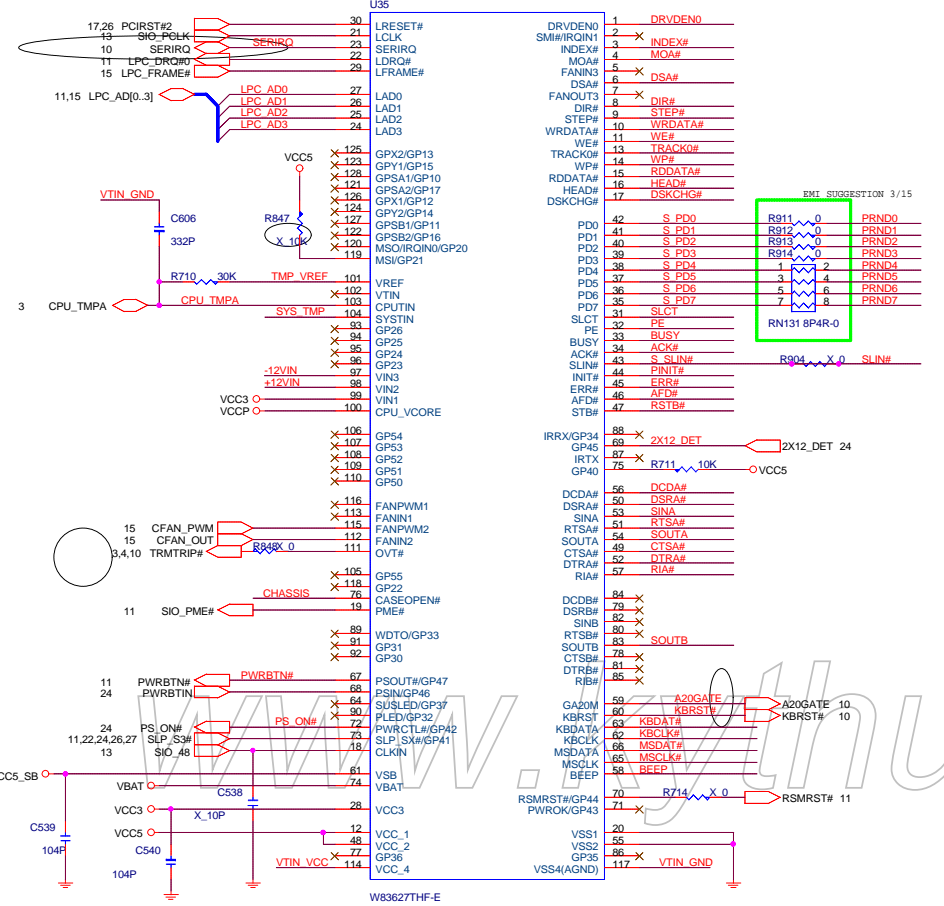
**MICRO-STAR INT'L CO., LTD.**

File: CLOCK GEN ICS954101

Size: Document Number MS-7046M1 Rev: 10A

Date: Thursday, May 27, 2004 Sheet 13 of 30

www.kyathuath.com



### MICRO-STAR IN'L CO., LTD.

**LPC SUPER I/O & CONNECTORS**

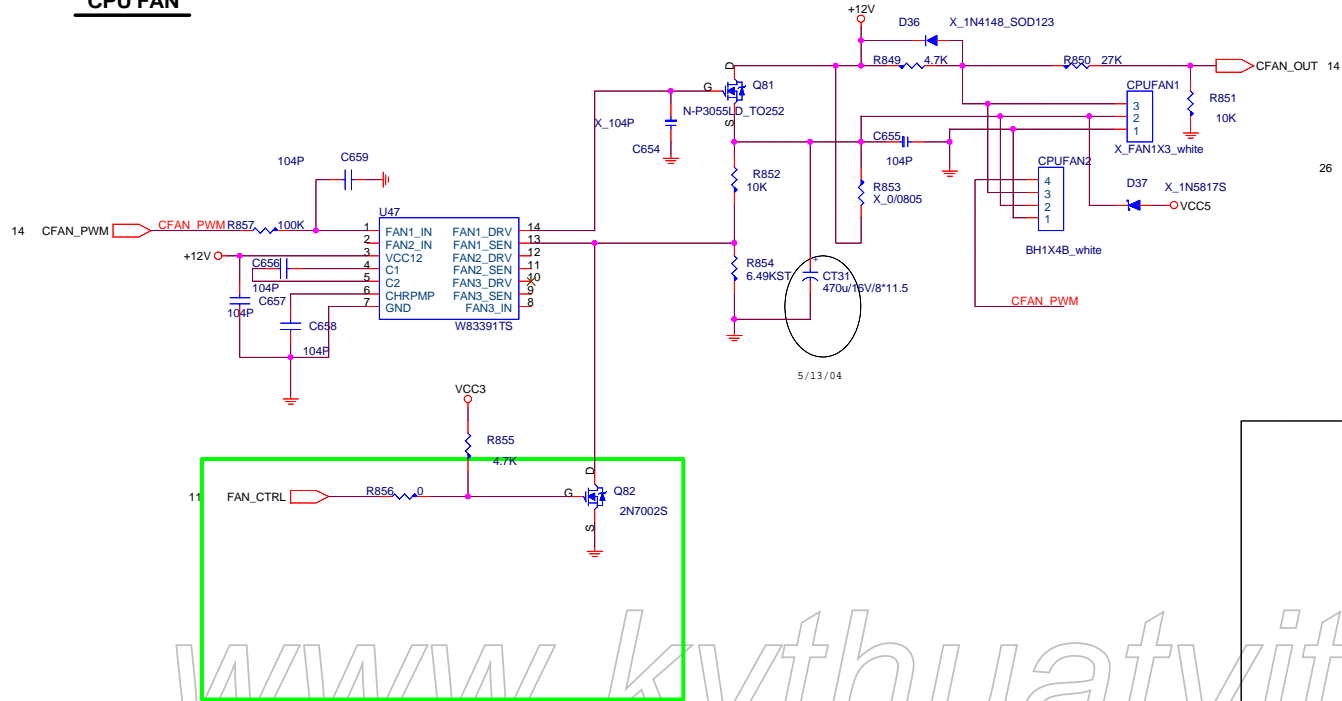
MS-7046M1

Rev 10A

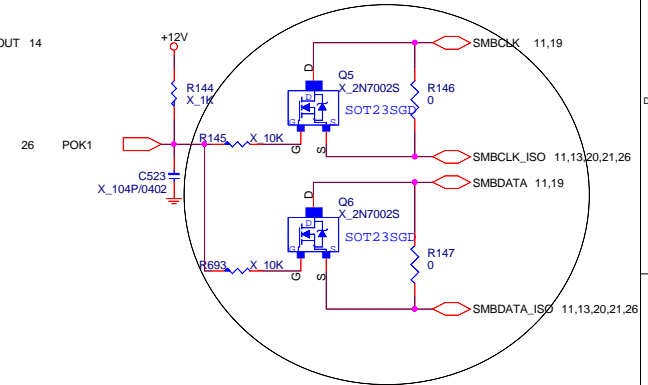
Date: Monday, May 31, 2004

Sheet 14 of 30

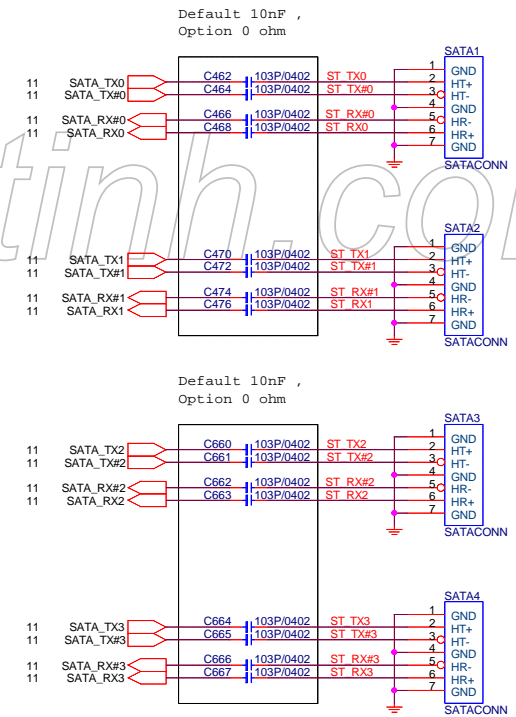
### CPU FAN



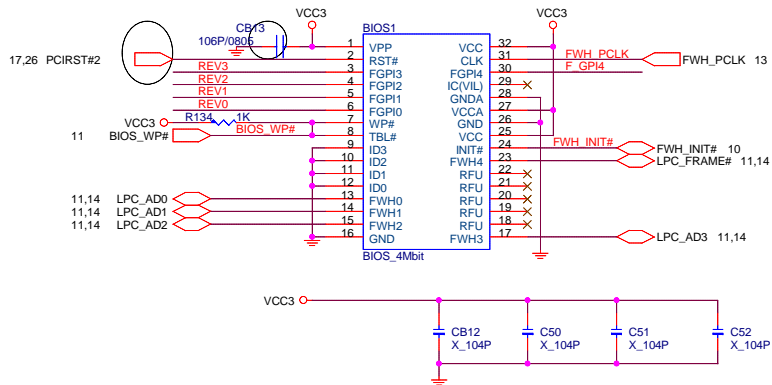
### CPU FAN



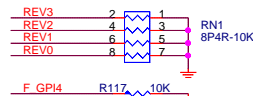
### SERIAL ATA CONNECTOR BLOCK



### FIRMWARE HUB (FWH)



### FWH RESISTORS



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

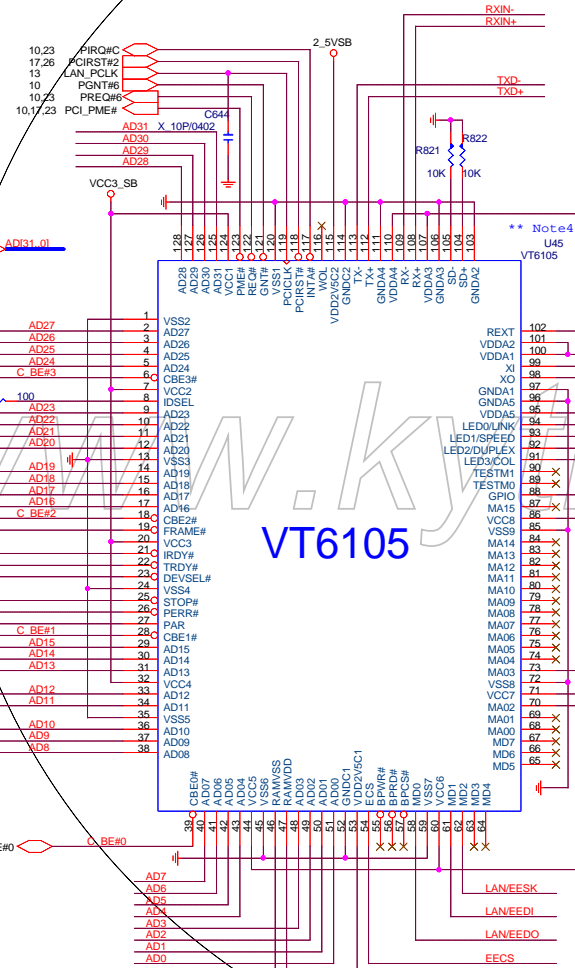
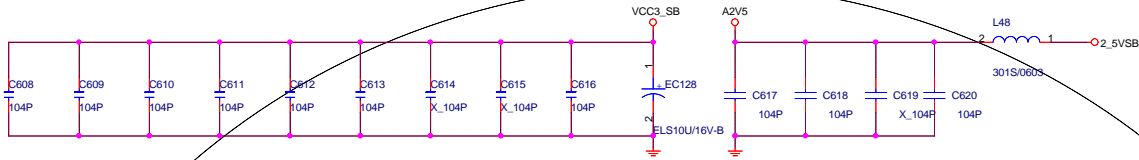
Title: FAN, FWH AND SATA

Size: Document Number: MS-7046M1 Rev: 10A

Date: Monday, May 31, 2004 Sheet: 15 of 30

Lan - VIA6105

REQ#/GNT#3  
INTE# AD23

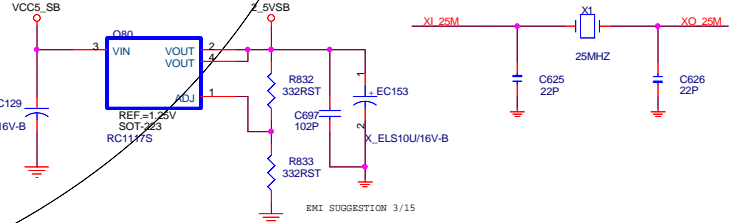
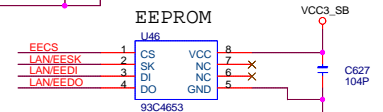
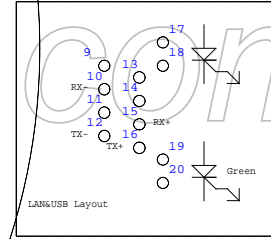


VT6105

PIRQ#C  
AD22

40 : 6 : 8 : 6 : 40 mil  
\*\* Note 5

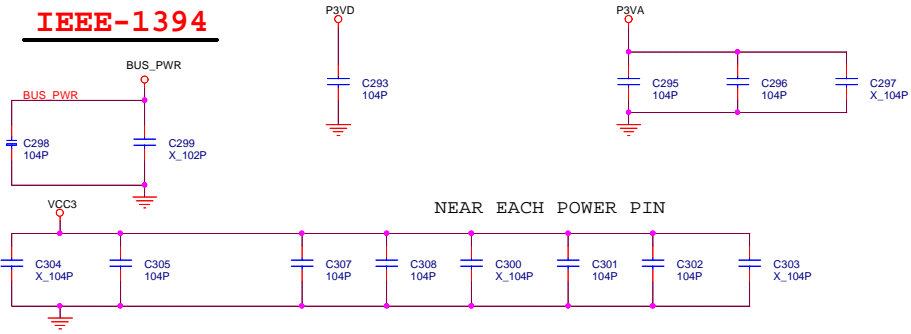
CNT,I/o-conn/assembly,rj45+usb\*2+led  
\*2/20pin,W transformer  
DIP/F(rj45)/M(usb)/2.54(rj45)/2(usb)/2.54(led),black,P-B/PBT, led on the top  
(led led L:YL, R:GR ), plating: usb/rj45 30u-in,PIN=3.3



<b>MICRO-STAR IN'L CO., LTD.</b>			
Title VIA 6105L			
Size	Document Number	Rev 10A	
	MS-7046M1		
Date:	Monday, May 31, 2004	Sheet	16 of 30

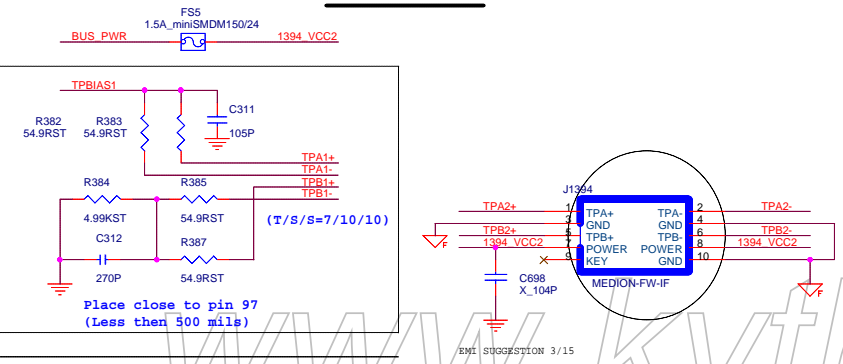


# IEEE-1394



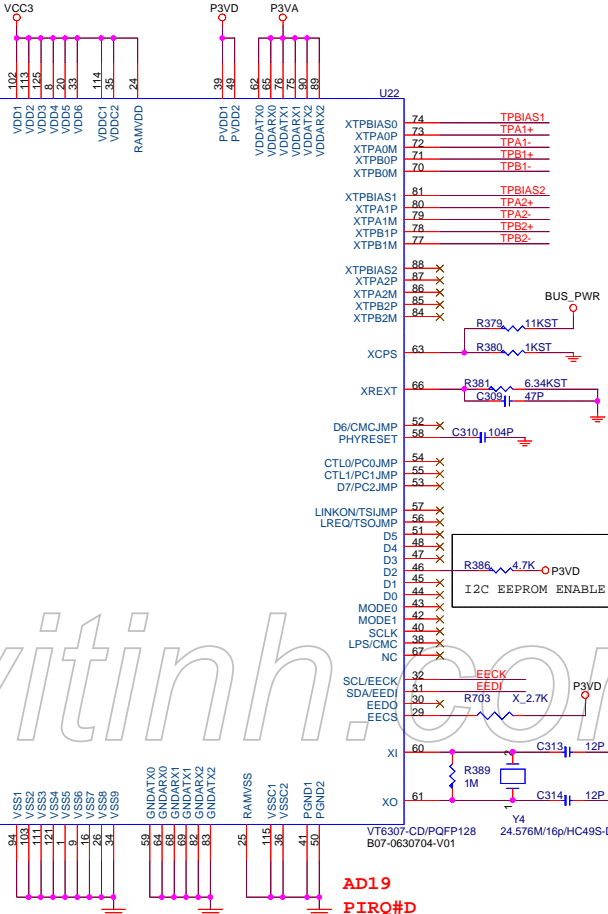
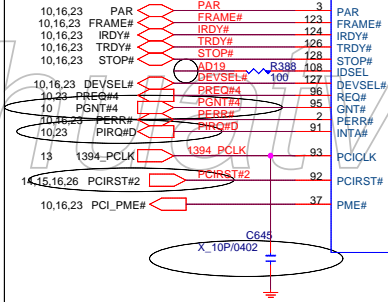
NEAR EACH POWER PIN

## FRONT 1394 PORT 1

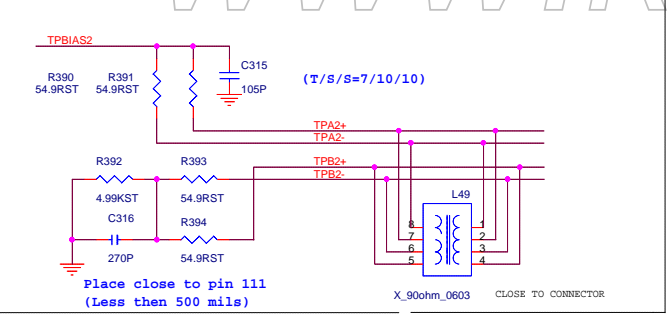


Place close to pin 97  
(Less than 500 mils)

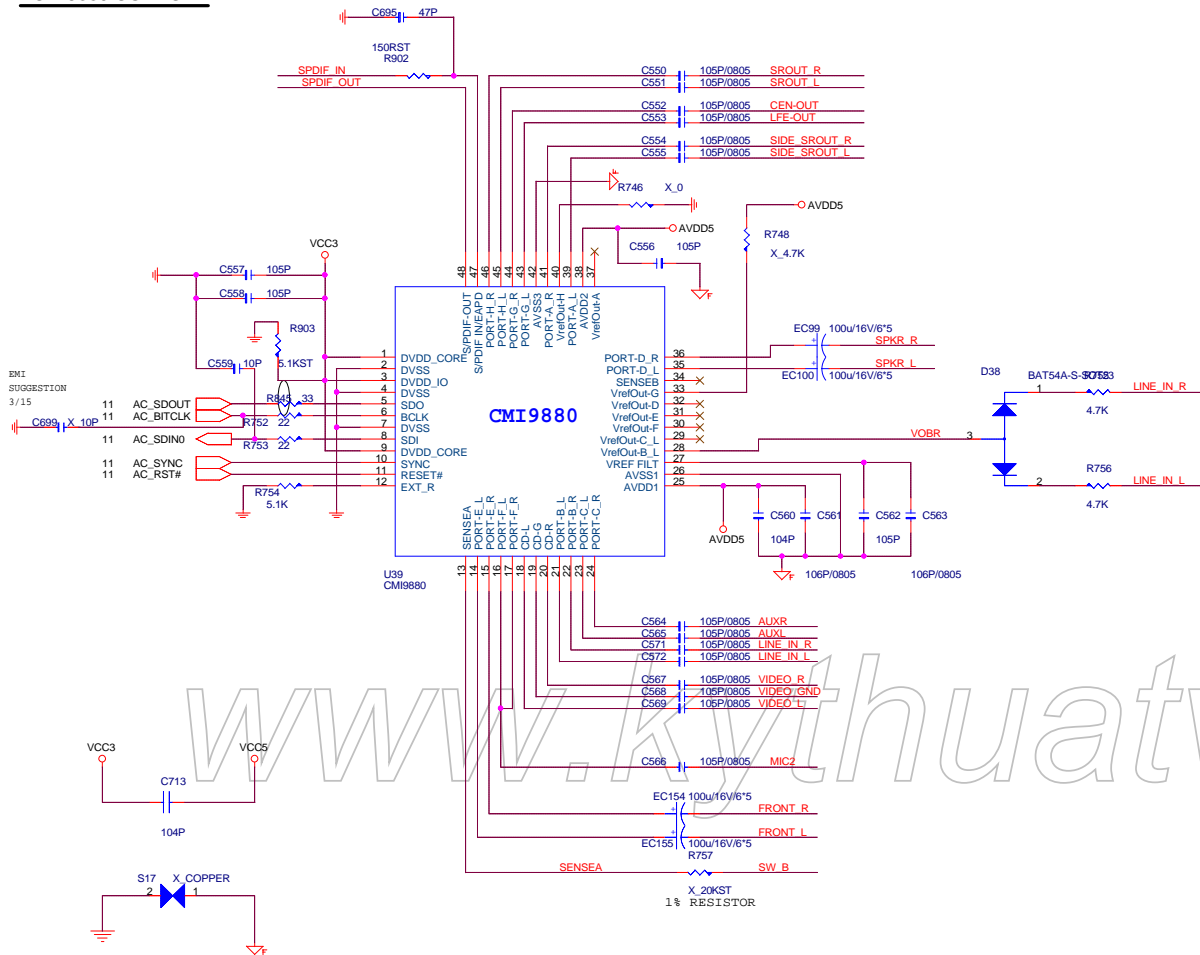
Place close to pin 111  
(Less than 500 mils)



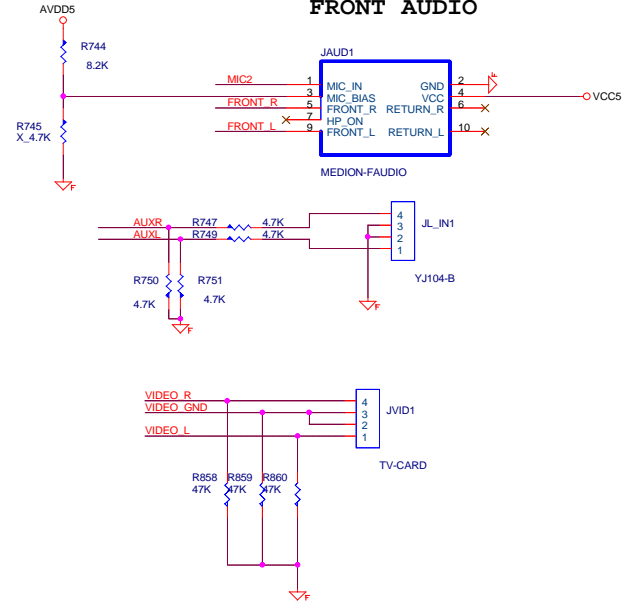
AD19  
PIRQ#D



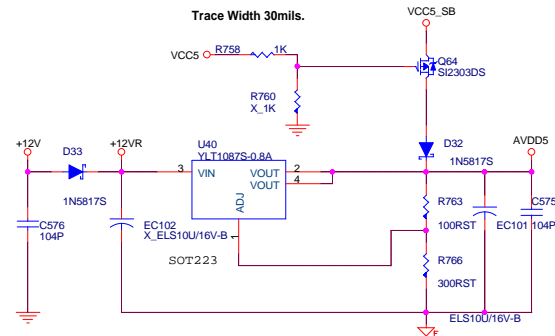
**CMI9880 CODEC**



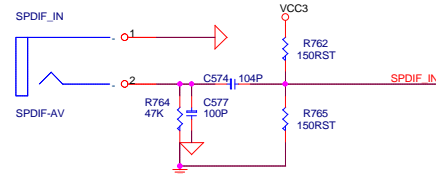
**FRONT AUDIO**



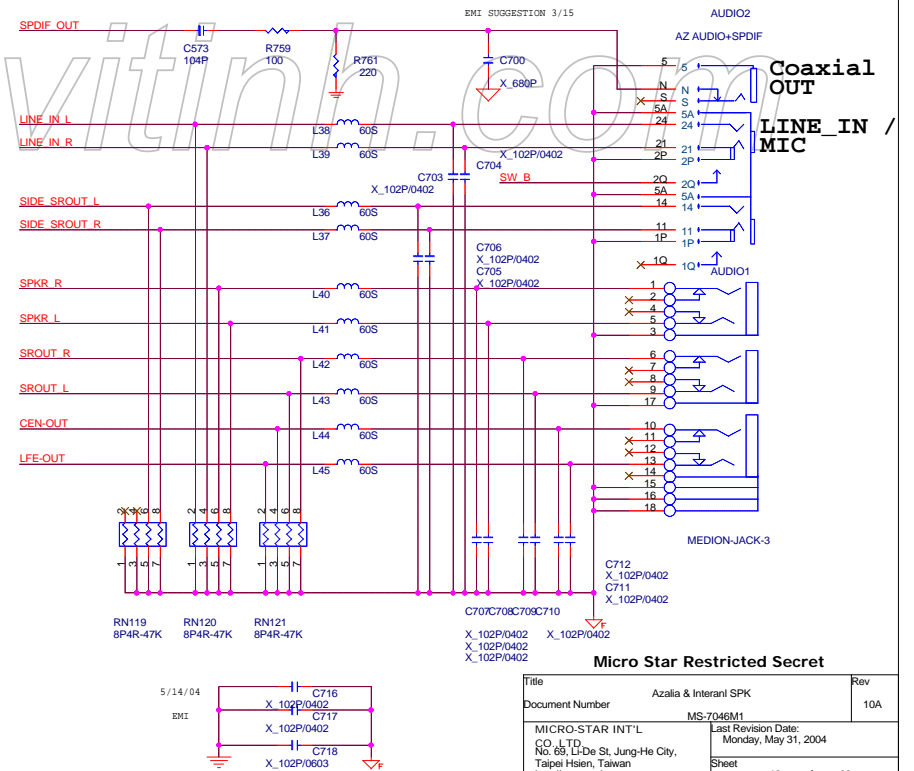
**AUDIO CODE REGULATORS**



**Coaxial IN**

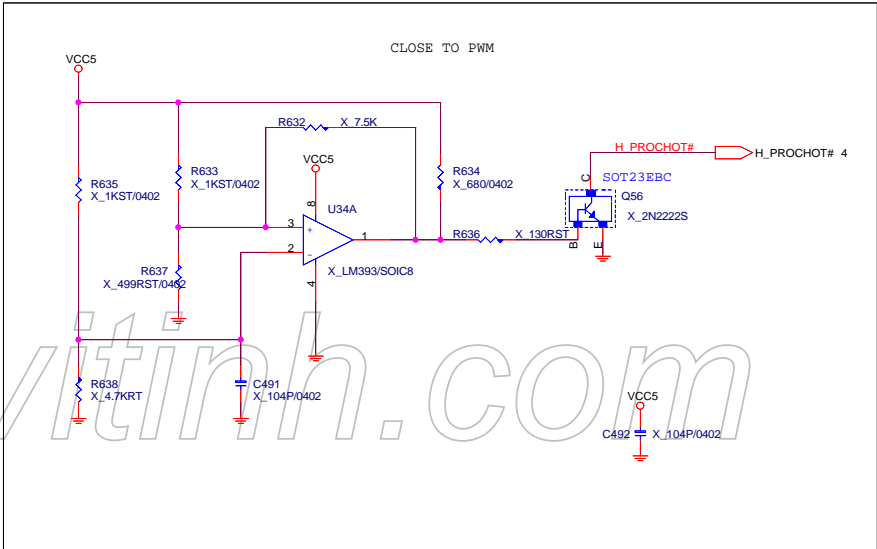
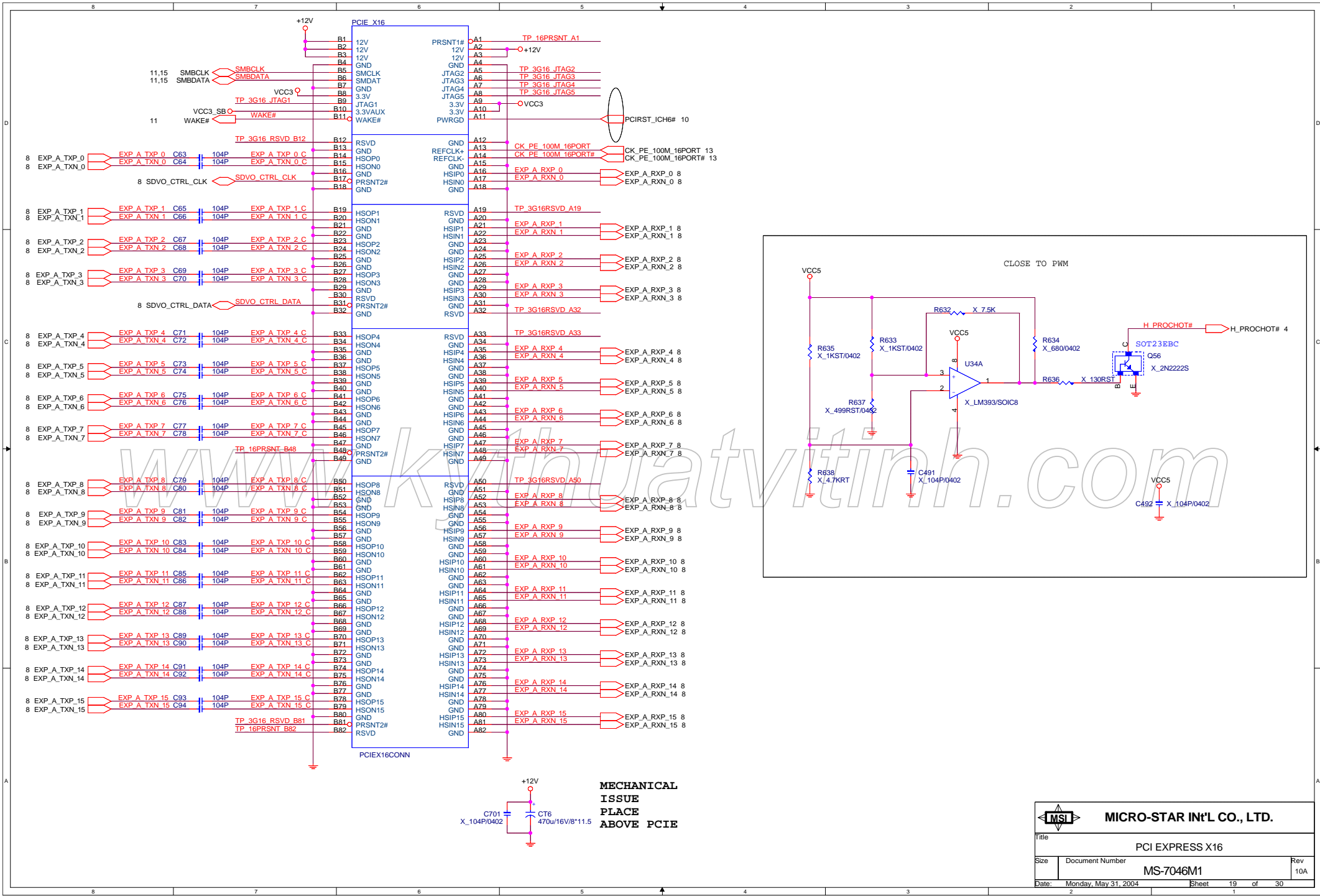


**Audio Connector**



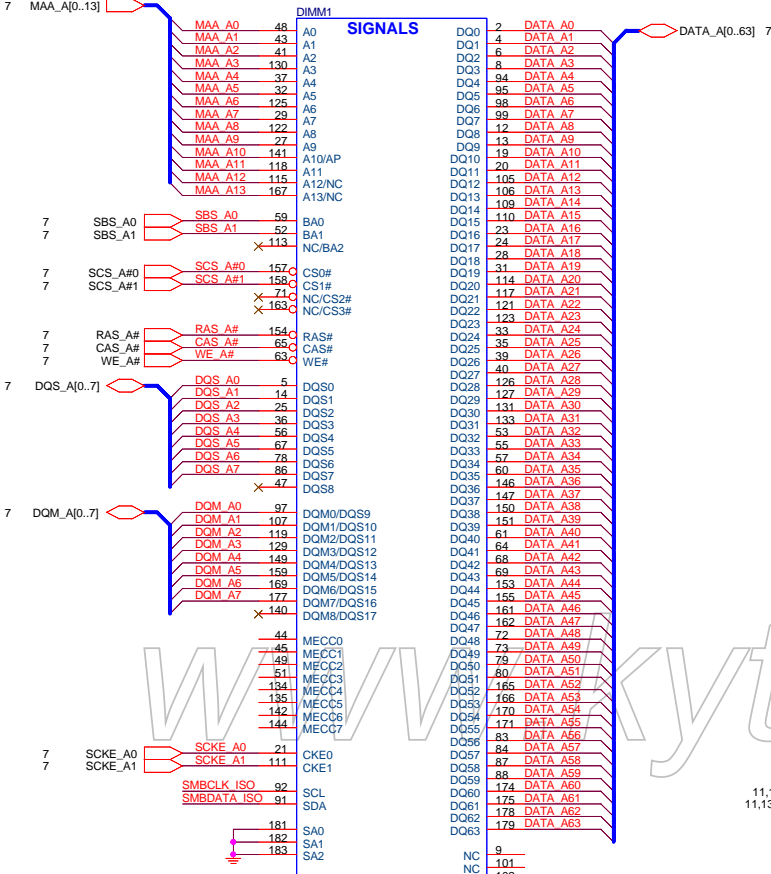
**Micro Star Restricted Secret**

Title	Azalla & Interani SPK	Rev	
Document Number	MS-7046M1	10A	
MICRO-STAR INT'L CO., LTD. No. 89, LD'De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, May 31, 2004	Sheet 18 of 30

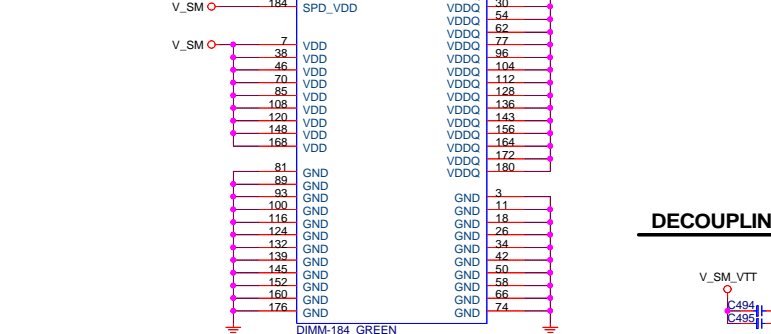


DDR DIMM1

SIGNALS



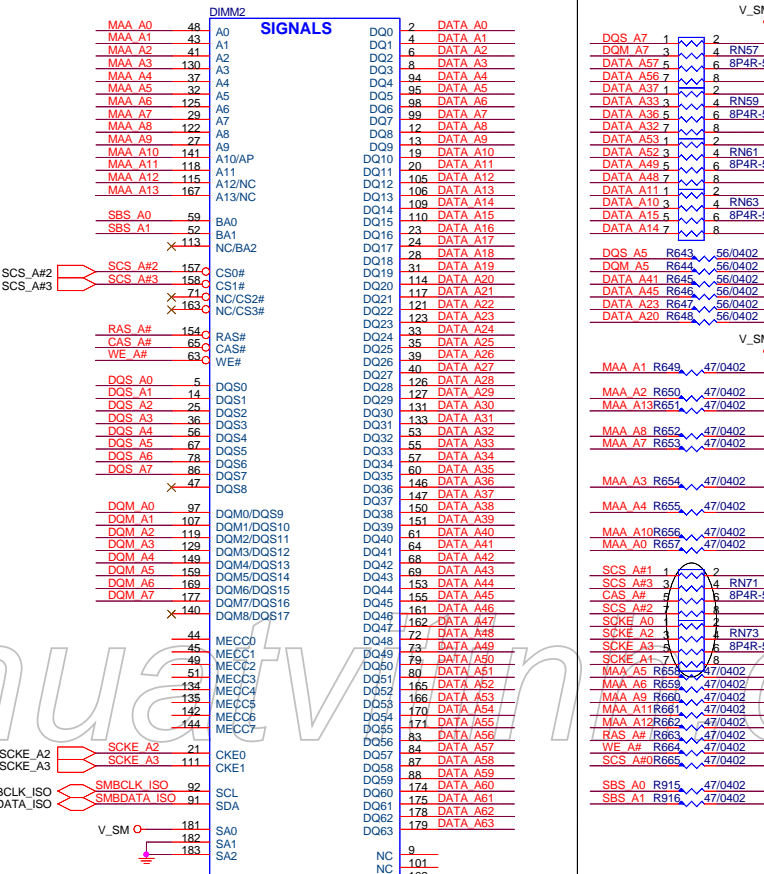
POWER



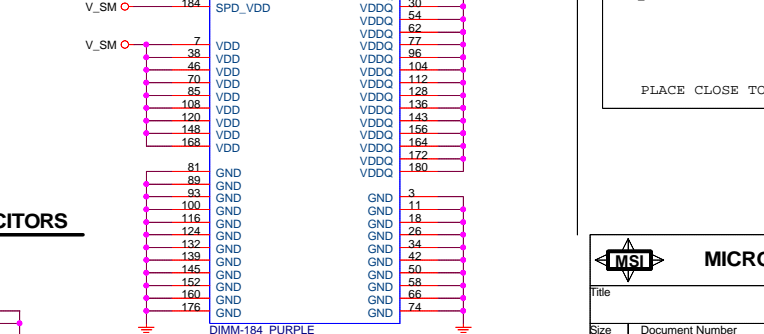
ADDR.=1010000B(A0H)

DDR DIMM2

SIGNALS

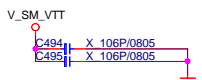


POWER

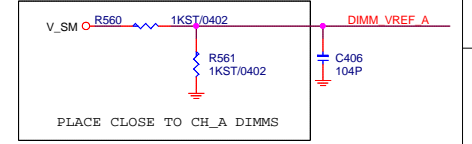
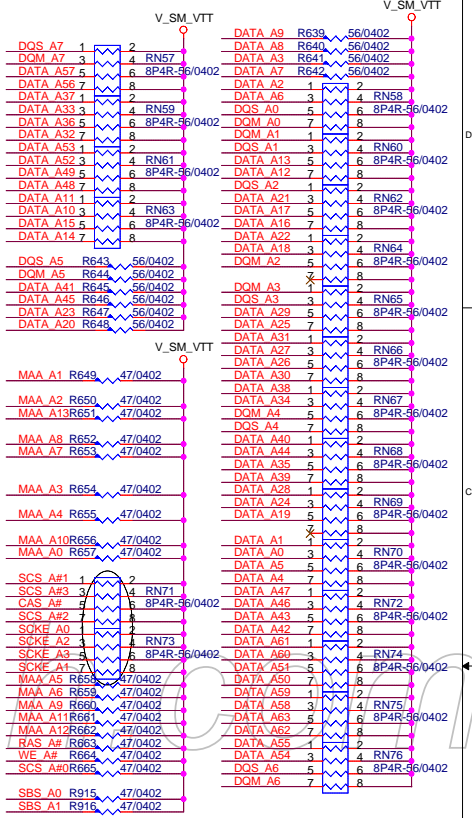


ADDR.=1010001B(A2H)

DECOUPLING CAPACITORS



DDR Terminational Resistors

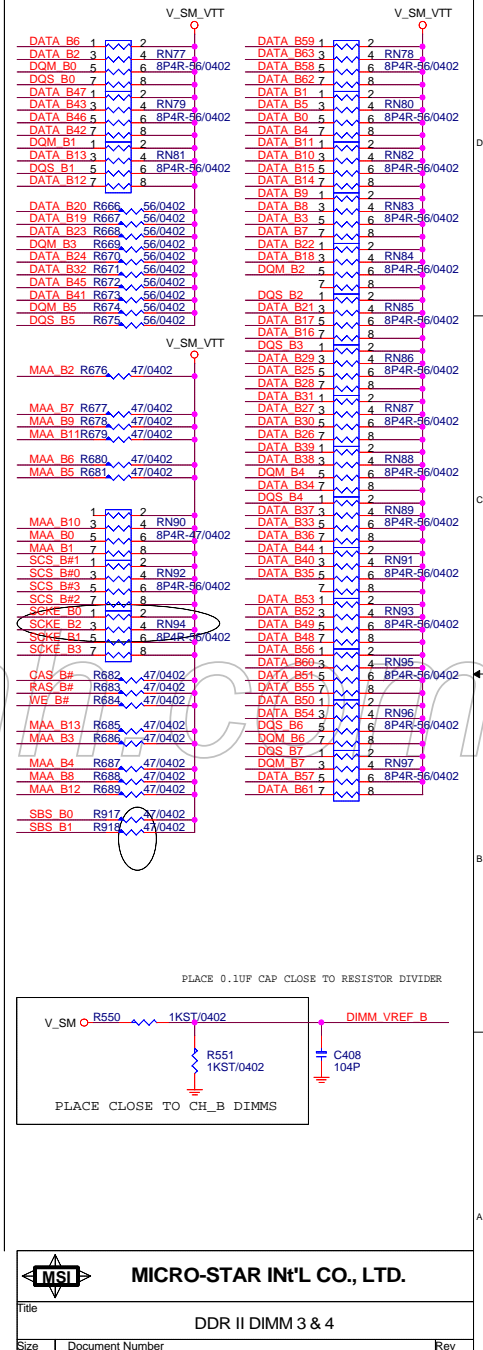
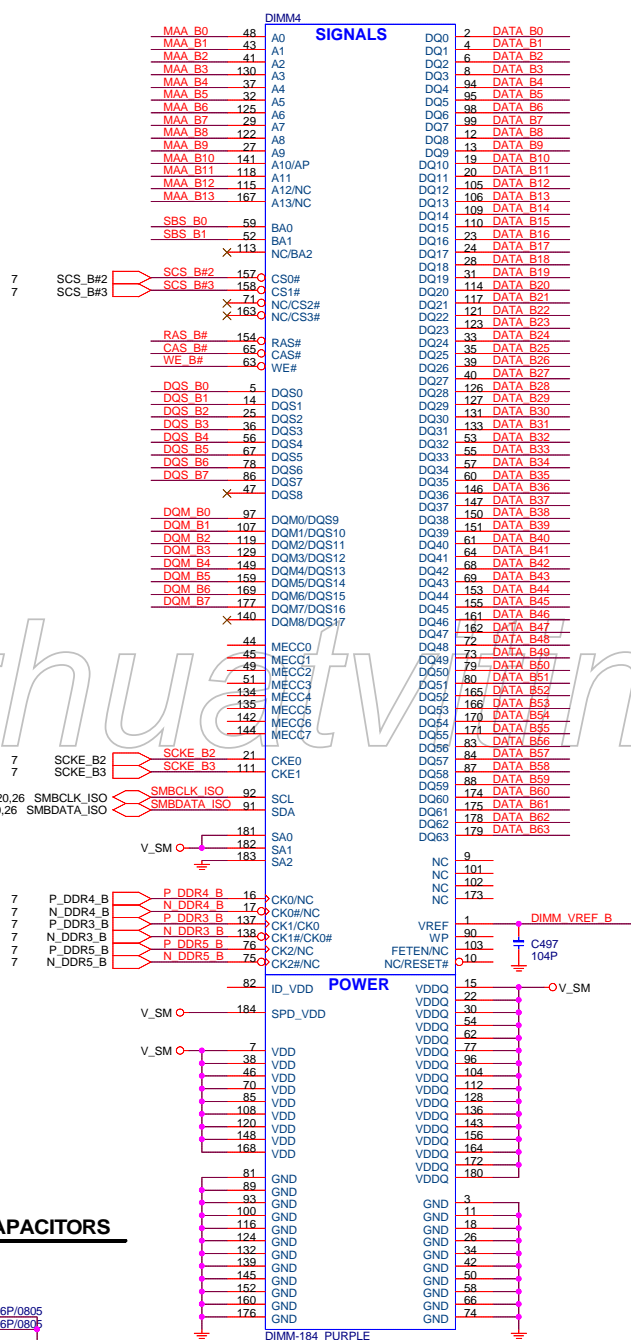
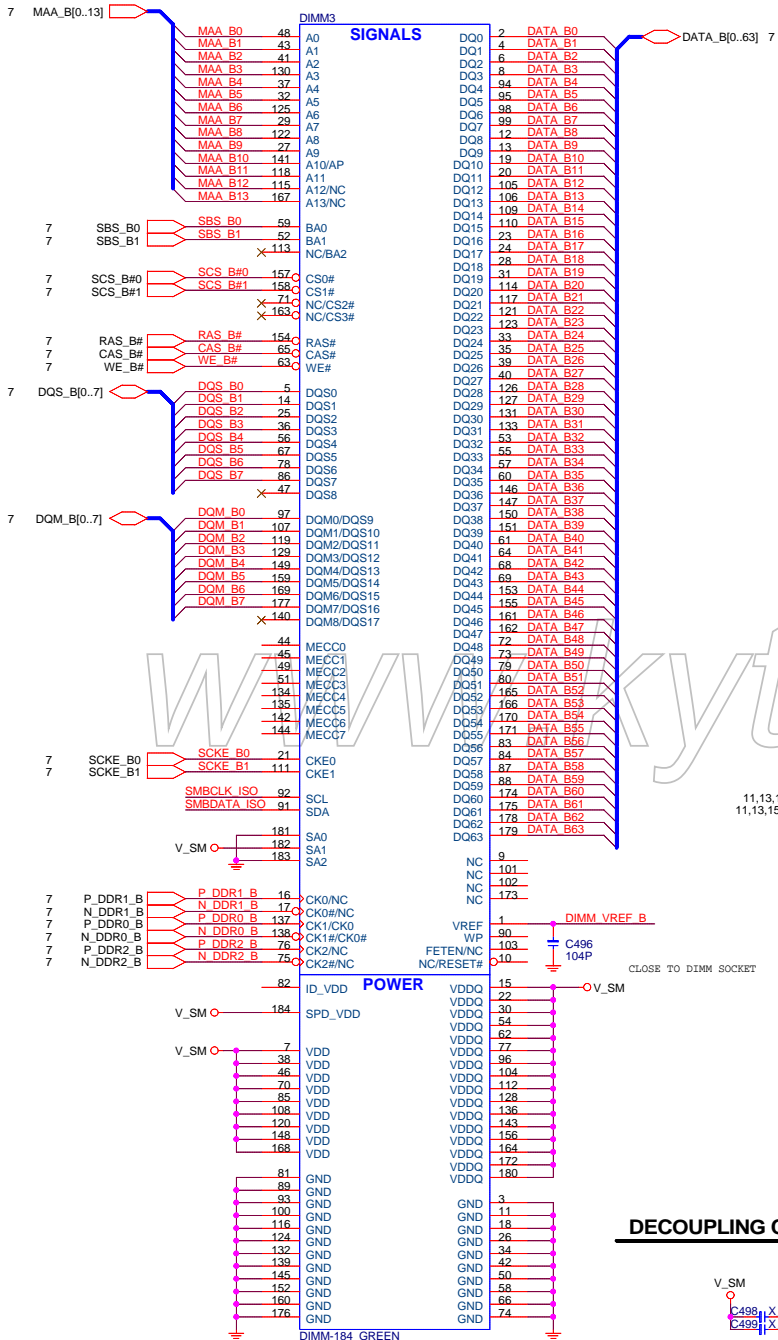


MSI MICRO-STAR INT'L CO., LTD. File: DDR DIMM 1 & 2, Size: MS-7046M1, Rev: 10A, Date: Thursday, May 27, 2004, Sheet: 20 of 30

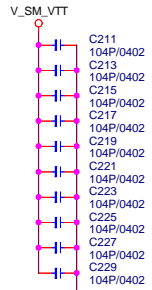
DDR DIMM3

DDR DIMM4

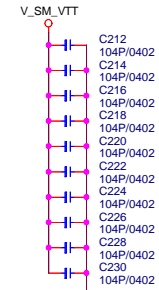
DDR Terminational Resistors



CHANNEL A V\_SM\_VTT DECOUPLING CAPS

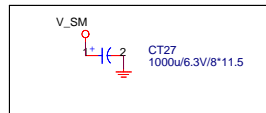
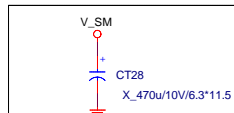
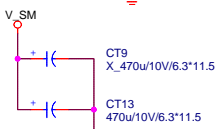
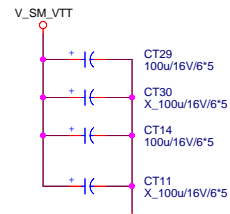
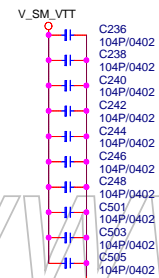
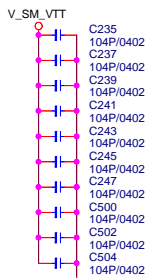
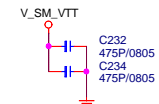
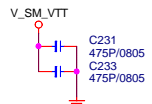


CHANNEL B V\_SM\_VTT DECOUPLING CAPS

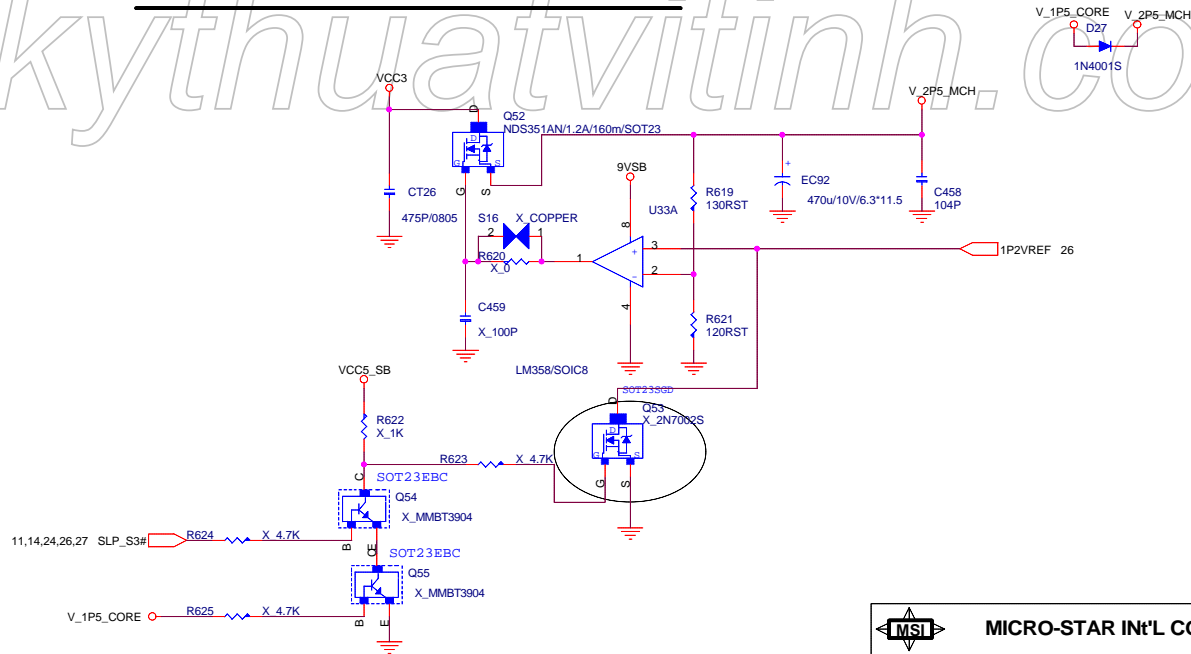


PLACED AT LEFT AND RIGHT ENDS OF VTT ISLAND

PLACED AT LEFT AND RIGHT ENDS OF VTT ISLAND



### Grantsdale GMCH Power Sequencing Requirement Between 1.5V Core and 2.5V DAC



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

Title: DDR1 VTT DECOUPLING

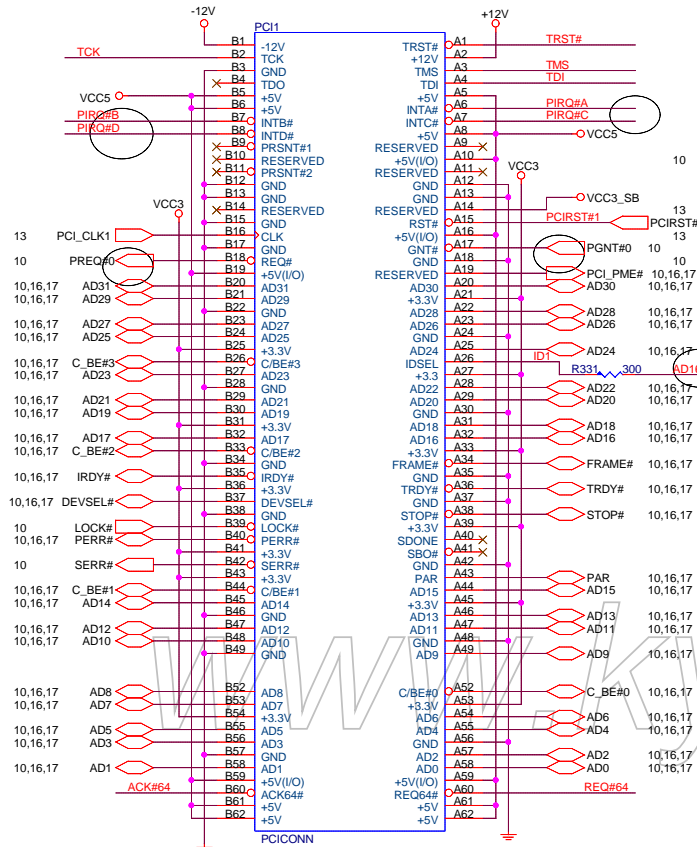
Size: Document Number MS-7046M1 Rev 10A

Date: Thursday, May 27, 2004 Sheet 22 of 30

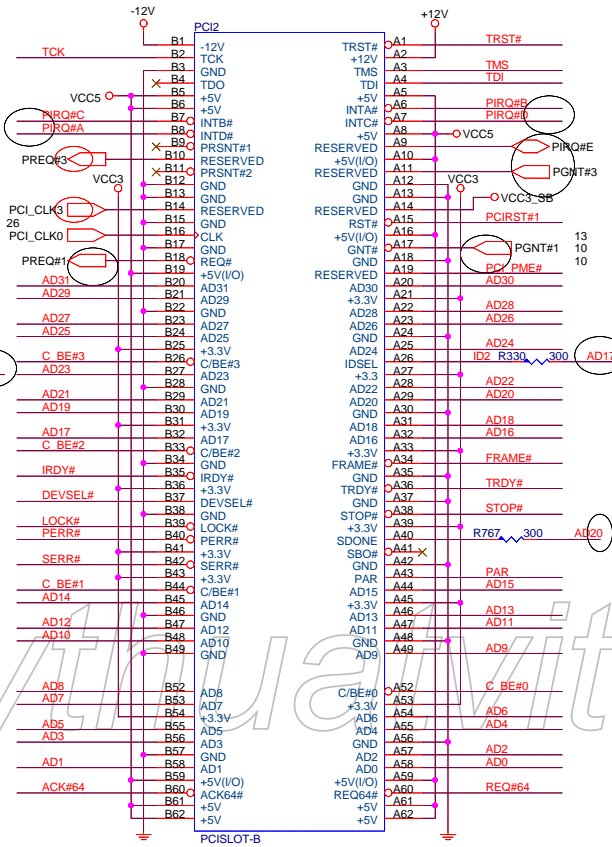
**PCI SLOT 1 (PCI VER: 2.2 COMPLY)**

**PCI SLOT 2 (PCI VER: 2.2 COMPLY)**

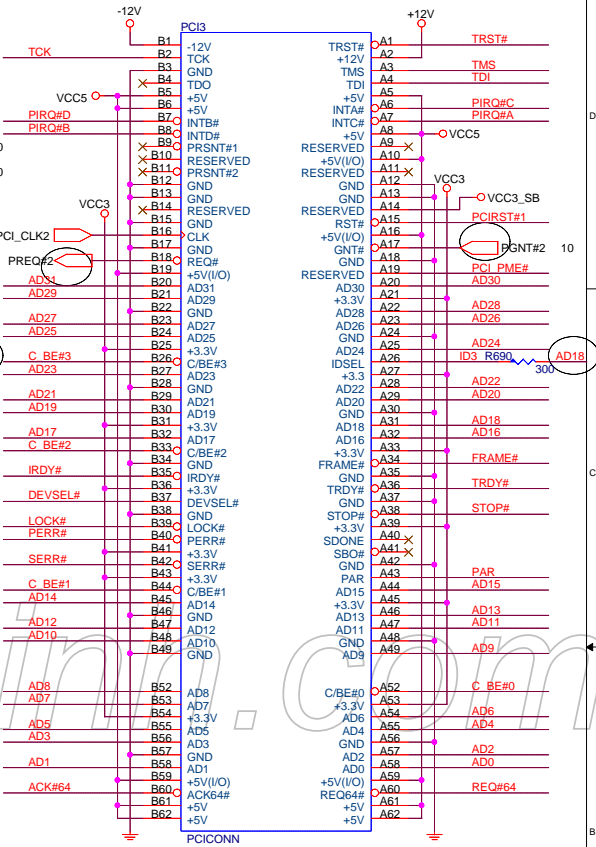
**PCI SLOT 3 (PCI VER: 2.2 COMPLY)**



**IDSEL = AD16**  
**MASTER = PREQ#0**  
**PIRQ#A**



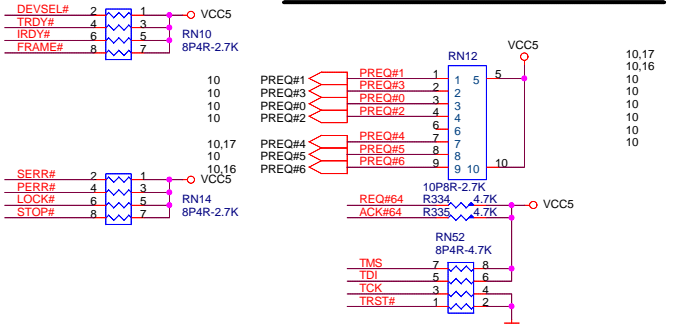
**IDSEL = AD17**  
**MASTER = PREQ#1**  
**PIRQ#B**



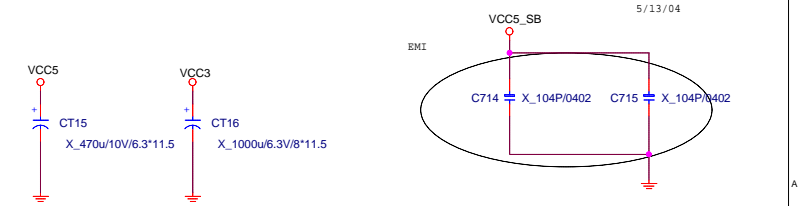
**IDSEL = AD18**  
**MASTER = PREQ#2**  
**PIRQ#C**

**MEDION**  
**IDSEL = AD20**  
**MASTER = PREQ#3**  
**PIRQ#E**

**PCI PULL-UP / DOWN RESISTORS**



**PCI SLOT DECOUPLING CAPACITORS**



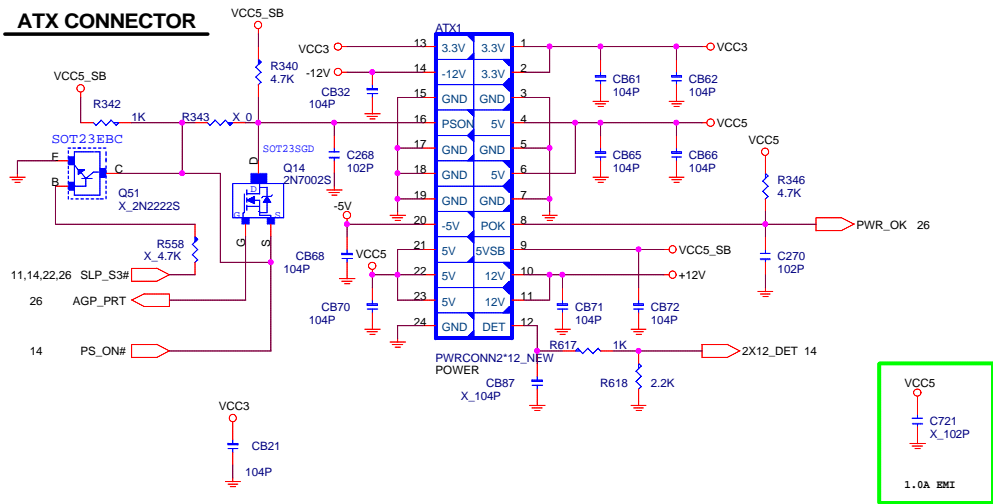
**MSI MICRO-STAR INT'L CO., LTD.**

Title: PCI 1 & 2 & 3 Slots

Size: Document Number: MS-7046M1

Date: Thursday, May 27, 2004 Sheet 23 of 30

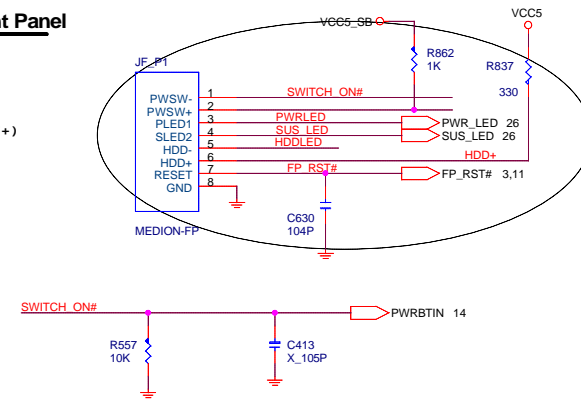
### ATX CONNECTOR



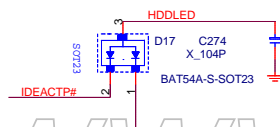
### MEDION Front Panel

JF\_P1

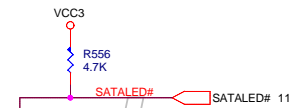
- 1-2 PS-ON
- 3-4 PWR LED
- 5-6 HDD LED (6+)
- 7-8 RESET



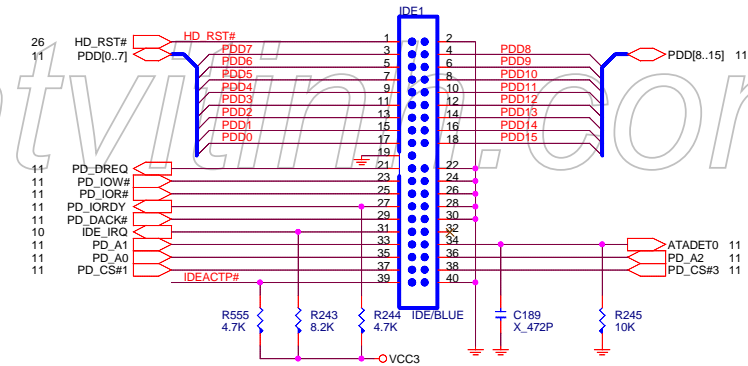
### IDE LED



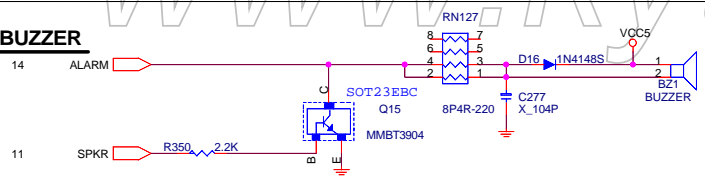
### SERIAL ATA LED



### PRIMARY IDE BLOCK



### BUZZER



### HEAT SINK



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

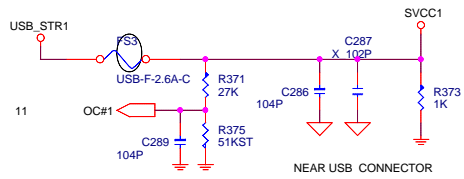
Title: ATX Connector & Front Panel & FAN CONTROL

Size: Document Number MS-7046M1 Rev 10A

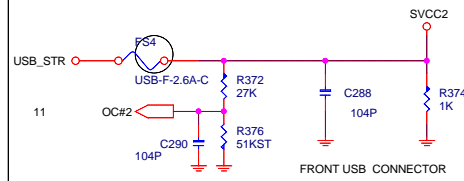
Date: Monday, May 31, 2004 Sheet 24 of 30



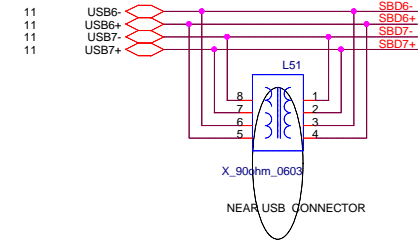
**POWER CIRCUIT FOR USB PORT 0,1,2,3**



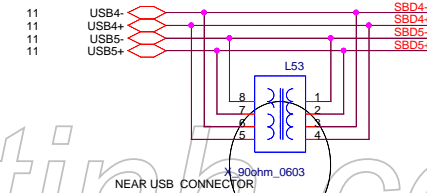
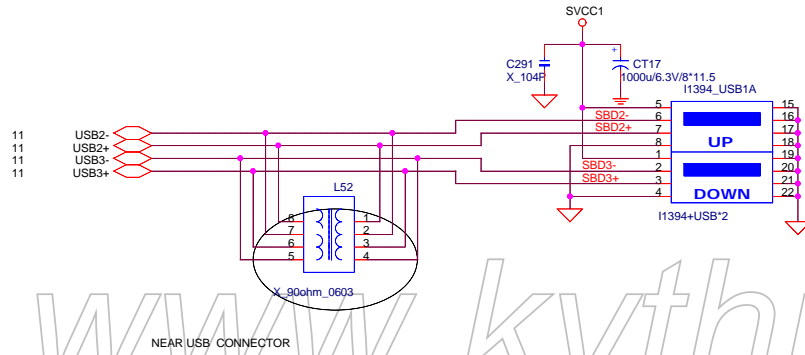
**POWER CIRCUIT FOR USB PORT 4,5,6,7**



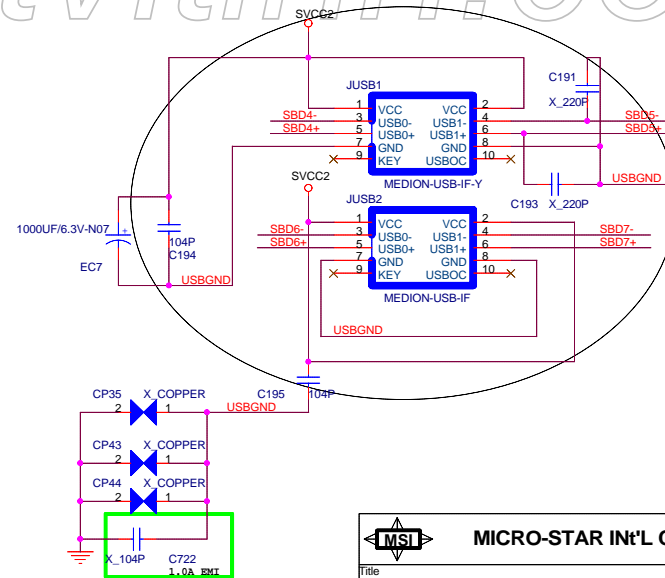
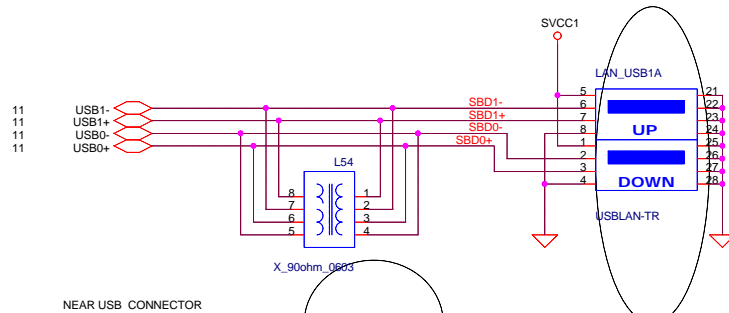
**FRONT PANEL USB CONNECTOR FOR USB PORT 4,5,6,7**



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



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



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

Title: H/W Monitor & FAN & USB Connectors

Size: Document Number MS-7046M1 Rev 10A

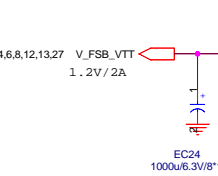
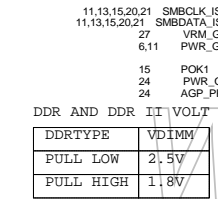
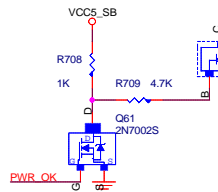
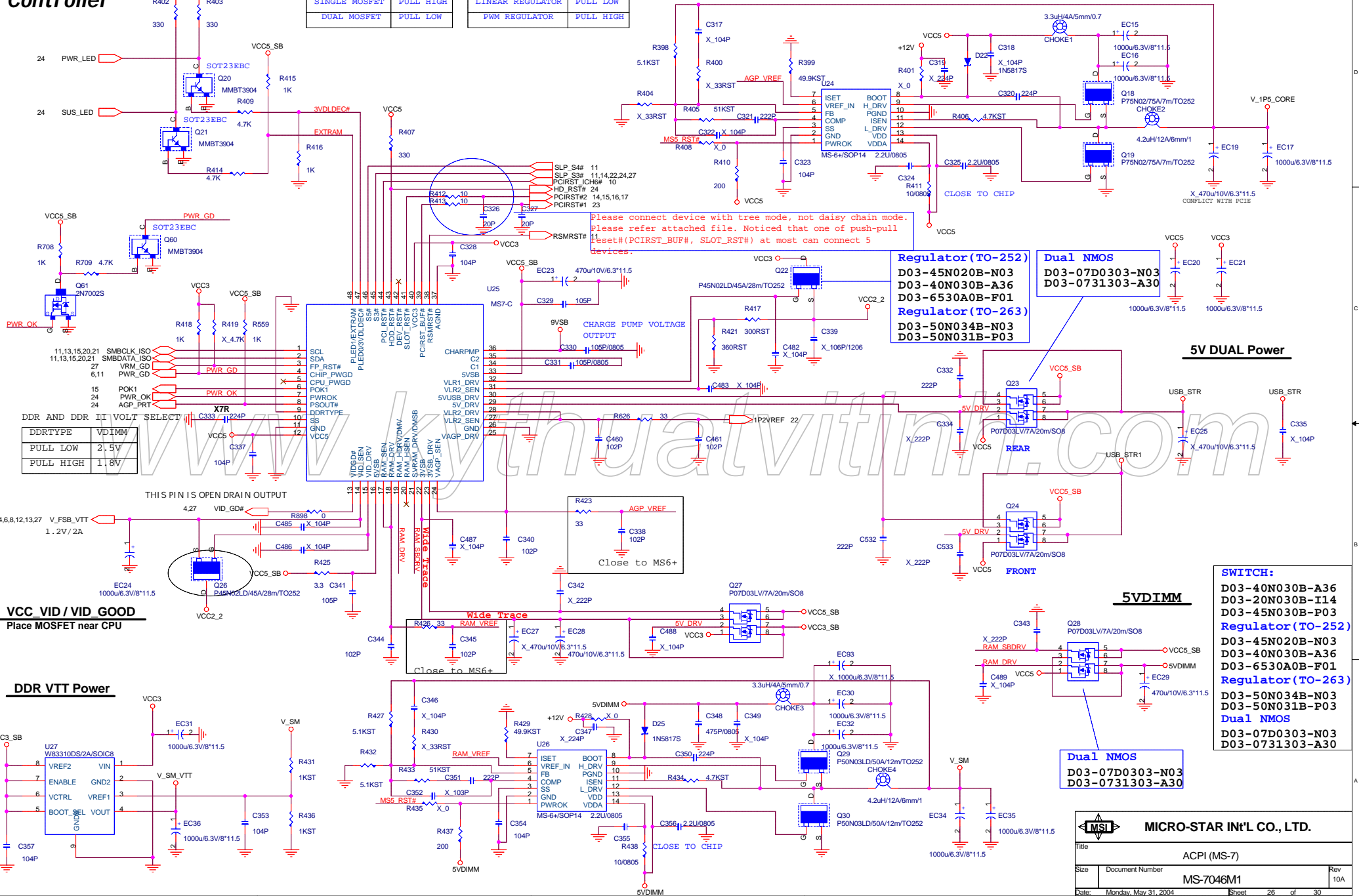
Date: Monday, May 31, 2004 Sheet 25 of 30

# ACPI Controller

## 3VSB MODE SELECT VDIMM LINEAR OR PWM SELECT

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

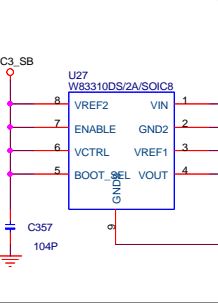
## MCH CORE POWER



### VCC VID/VID GOOD

Place MOSFET near CPU

### DDR VTT Power

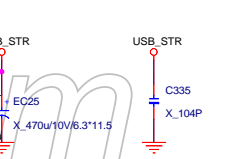


Please connect device with tree mode, not daisy chain mode. Please refer attached file. Noticed that one of push-pull Iset#(PCIRST\_BUF#, SLOT\_RST#) at most can connect 5 devices.

**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



### 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

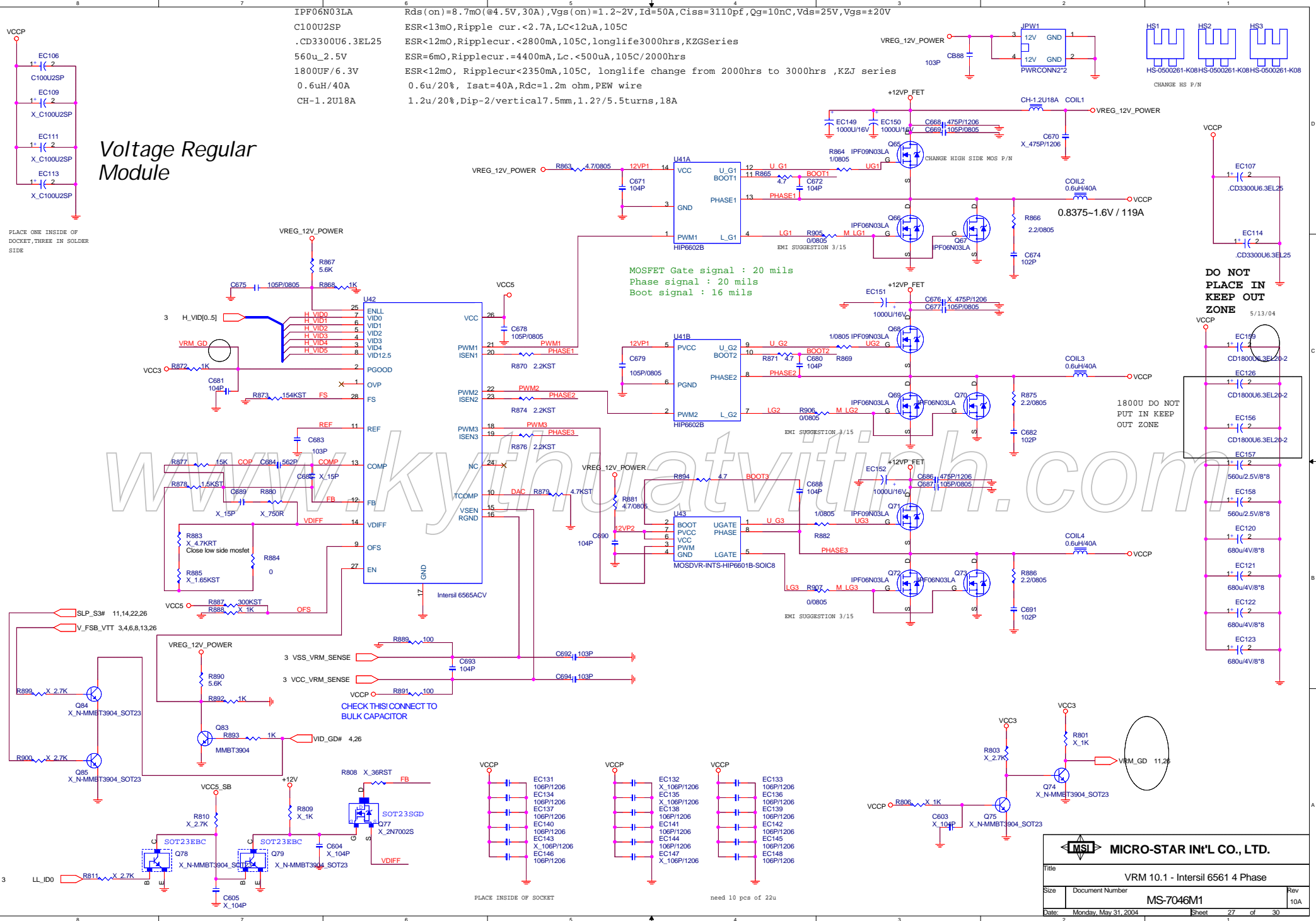
**Dual NMOS**  
 D03-07D0303-N03  
 D03-0731303-A30

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

Title: ACPI (MS-7)

Size: Document Number: MS-7046M1 Rev: 10A

Date: Monday, May 31, 2004 Sheet: 26 of 30



# Voltage Regular Module

**DO NOT PLACE IN KEEP OUT ZONE**

<b>MSI MICRO-STAR INT'L CO., LTD.</b>		
Title VRM 10.1 - Intersil 6561 4 Phase		
Size	Document Number	Rev
	MS-7046M1	10A
Date:	Monday, May 31, 2004	Sheet 27 of 30

## ICH6

GPIO Pin	Type	Function
GPIO 0	I	REQ6# (multifunction pin)
GPIO 1	I	REQ5# (multifunction pin)
GPIO 2	I	PCI_IRQ#E (multifunction pin)
GPIO 3	I	PCI_IRQ#F (multifunction pin)
GPIO 4	I	PCI_IRQ#G (multifunction pin)
GPIO 5	I	PCI_IRQ#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 (multifuntion 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	PIROA PIROB PIROC PIROD	PCI_REQ#0 PCI_GNT#0	AD16	PCI_CLK0
PCI Slot 2	PIROB PIROC PIROD PIROA	PCI_REQ#1 PCI_GNT#1	AD17	PCI_CLK1
PCI Slot 3	PIROC PIROD PIROA PIROB	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	PIROE	PCI_REQ#3 PCI_GNT#3	AD19	PCI_CLK3
IDE RAID	PIROG	PCI_REQ#5 PCI_GNT#5	AD21	RAID_PCLK

## DDR DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	A0H	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


JBAT1	(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

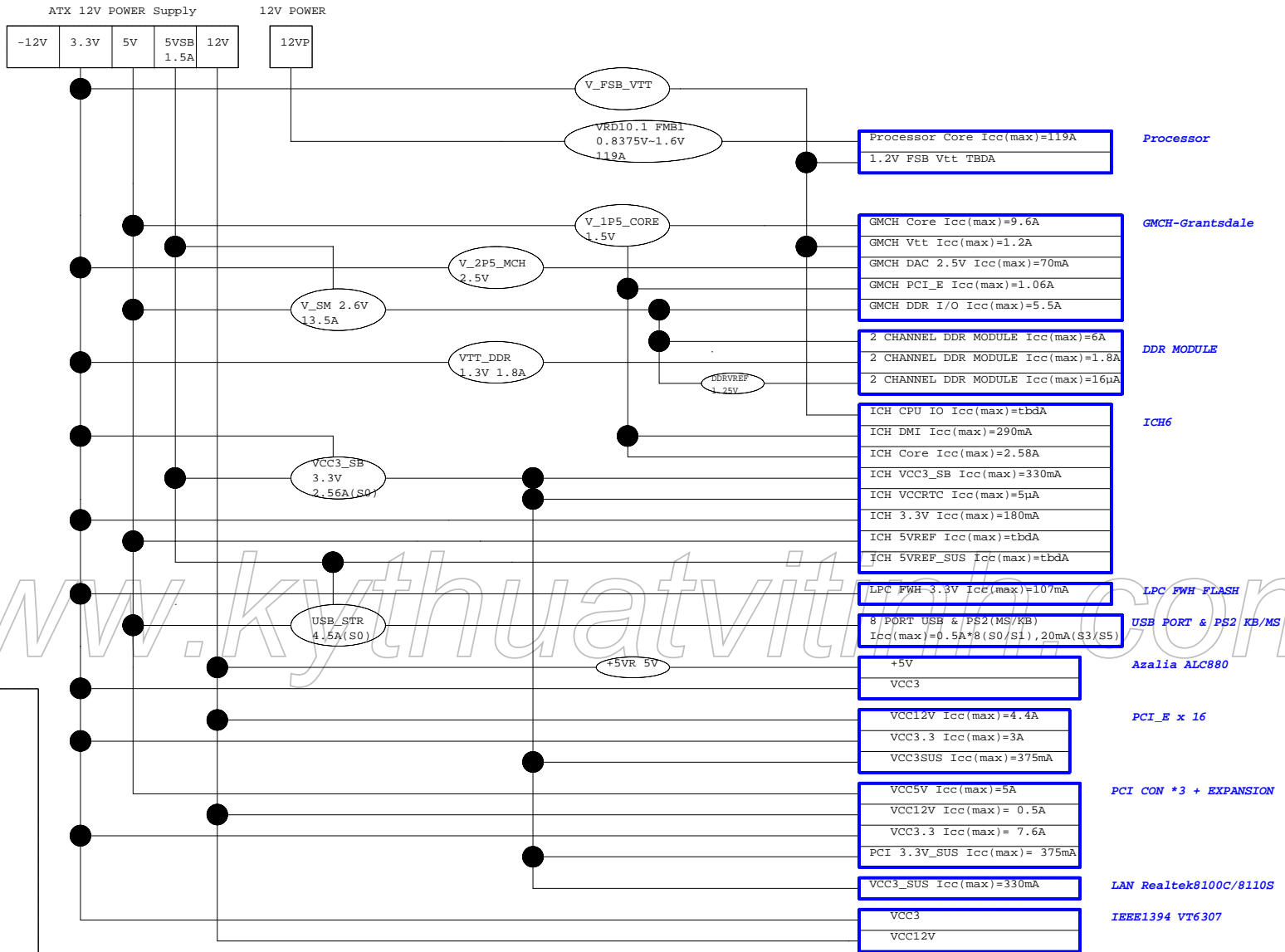
 <b>MICRO-STAR INT'L CO., LTD.</b>	
Title: General Purpose Spec & JUMPER SETTING	
Size: Document Number	MS-7046M1
Date: Monday, May 31, 2004	Sheet 28 of 30

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

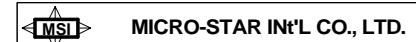
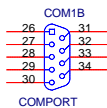
*www.kythuatvitinh.com*

		<b>MICRO-STAR INT'L CO., LTD.</b>	
Title			
Schematics History			
Size	Document Number		Rev
	MS-7046M1		10A
Date:	Monday, May 31, 2004	Sheet	29 of 30

# POWER DELIVERY MAP



## MANUAL PART



File: POWER DELIVERY MAP & MANUAL PART

Size: Document Number MS-7046M1 Rev 10A

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