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# MS-7046M1

**Version 0A**

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:

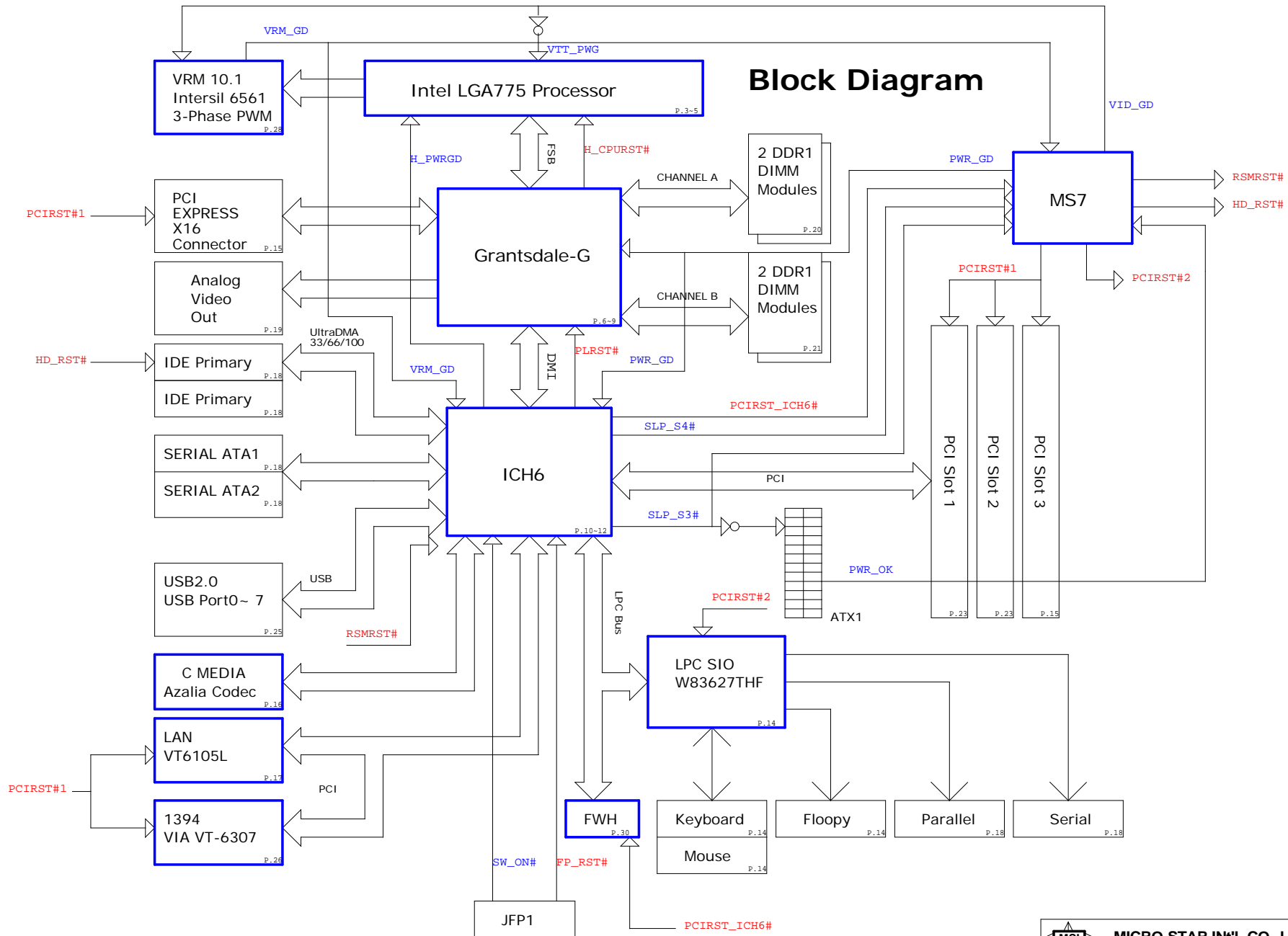
**PCI Express X16 SLOT \* 1**  
**PCI 2.3 SLOT \* 3**

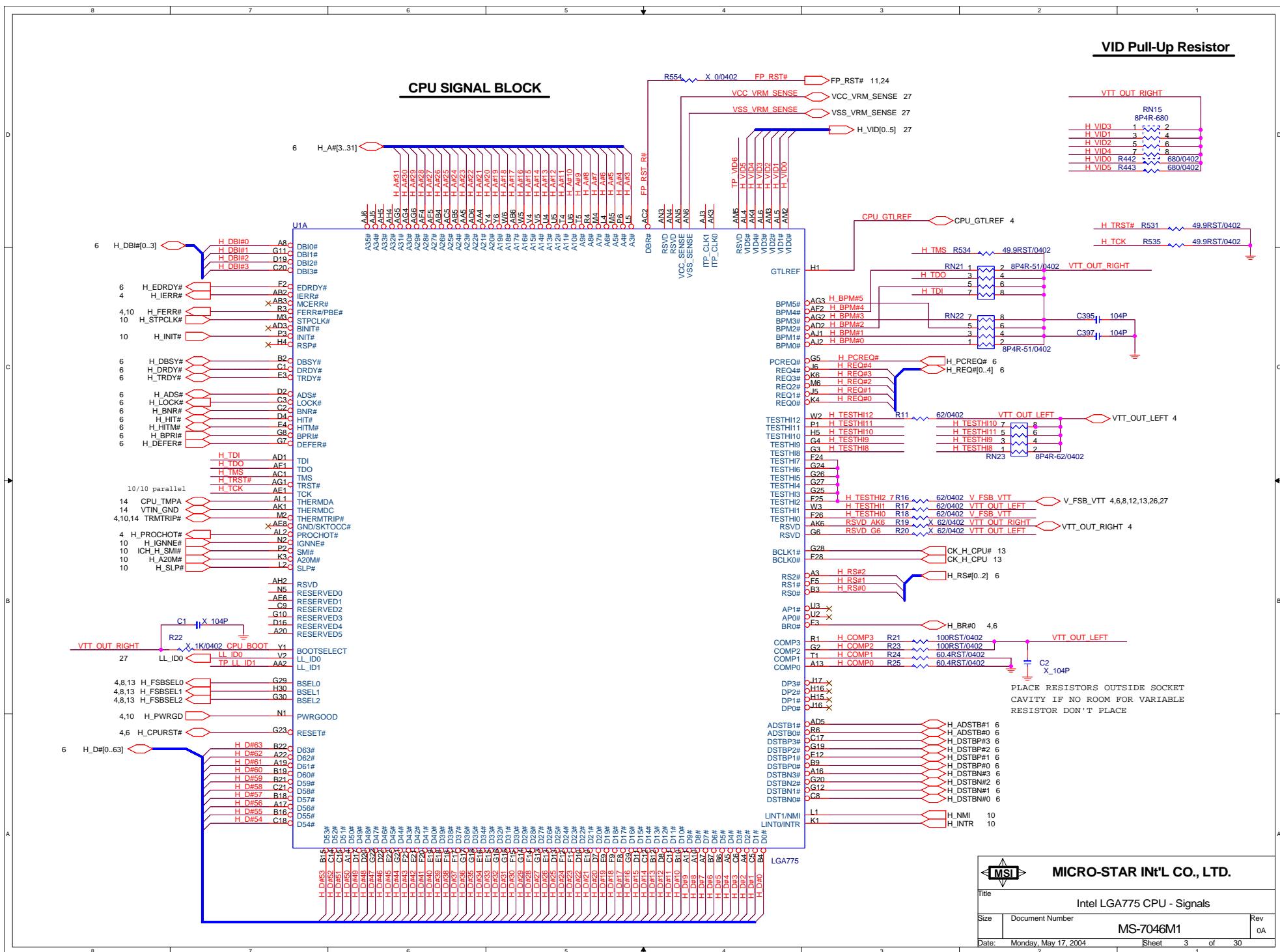
## Intersil PWM:

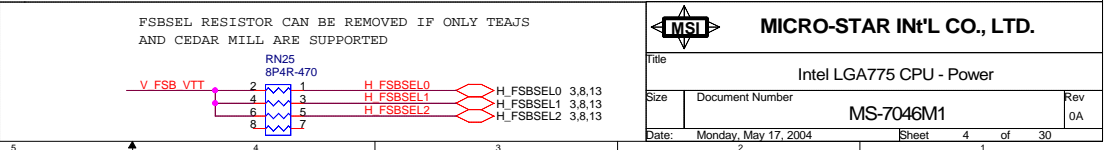
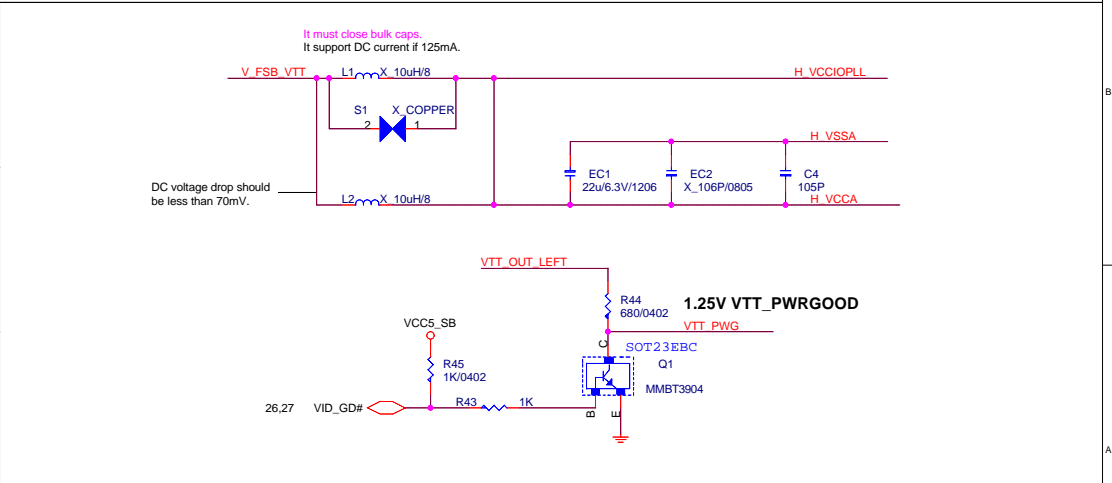
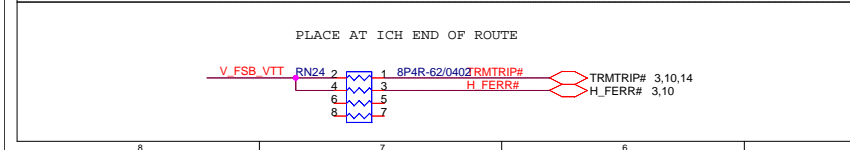
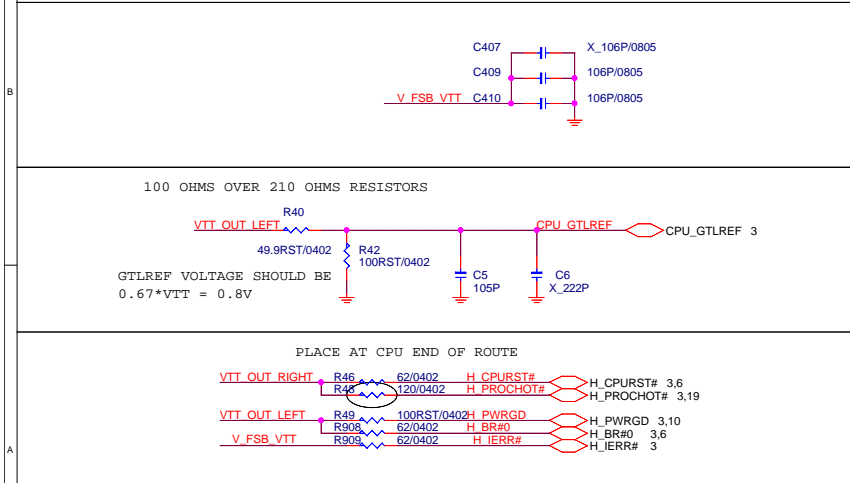
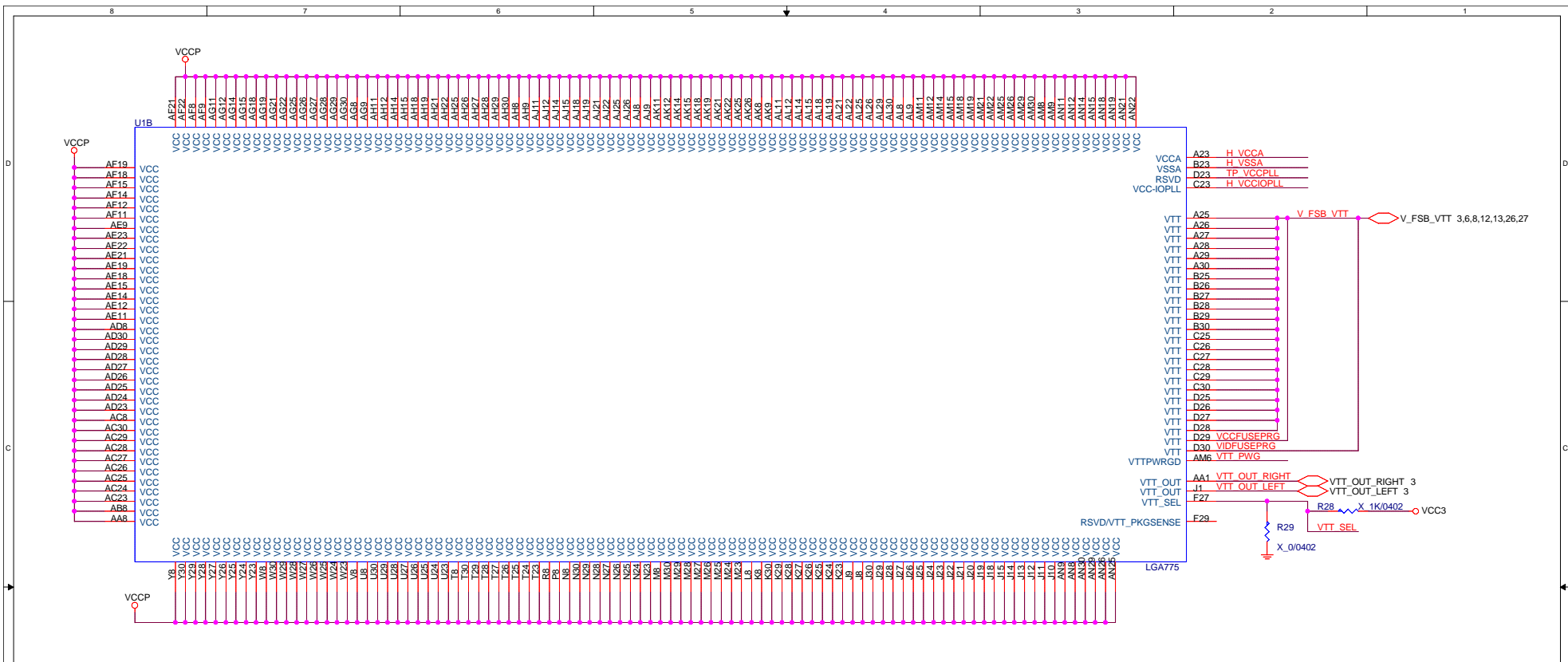
**Controller: HIP6565ACV**  
**Driver: HIP6602B + HIP6601B**

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







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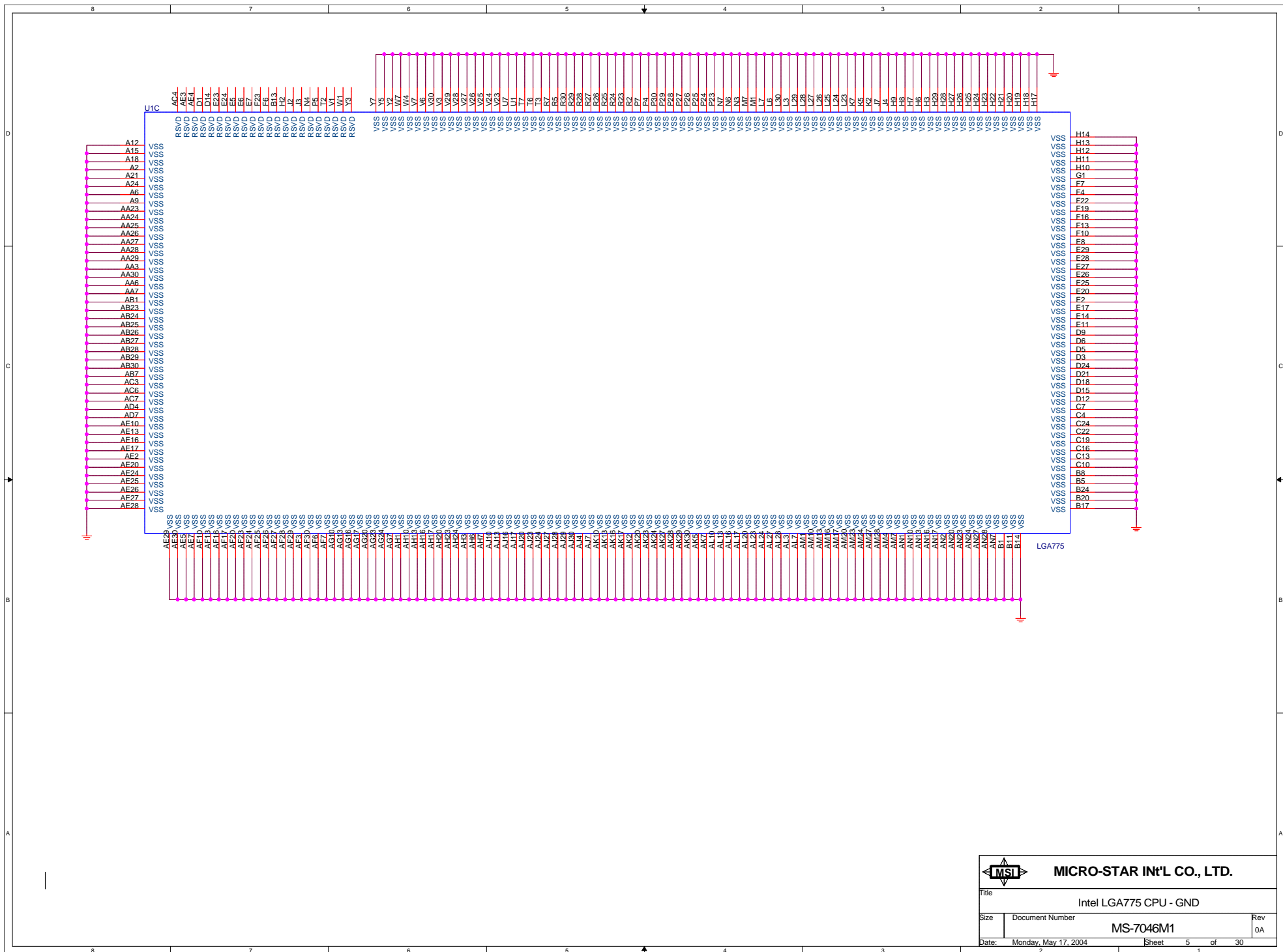
File: Intel LGA775 CPU - Power

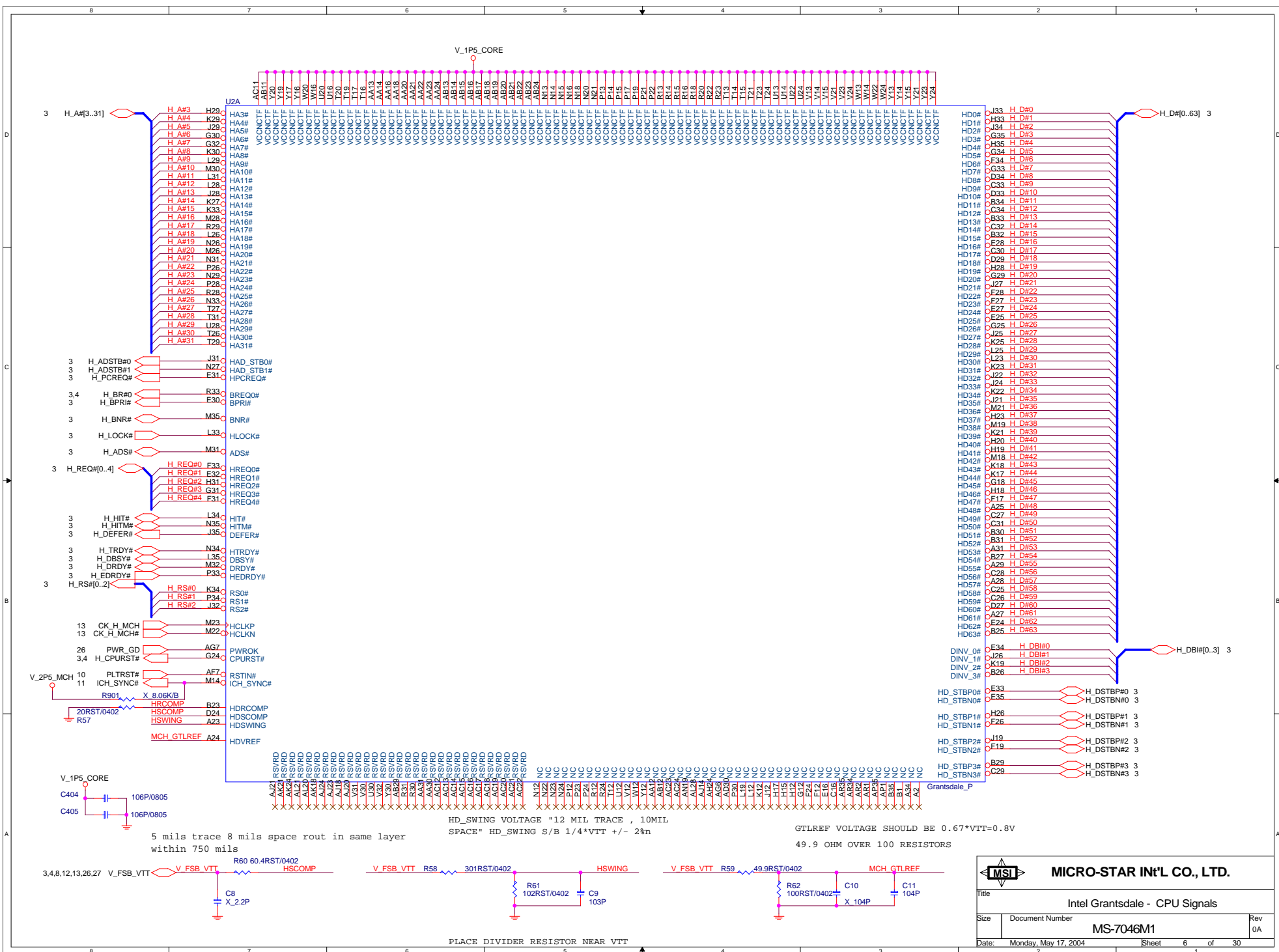
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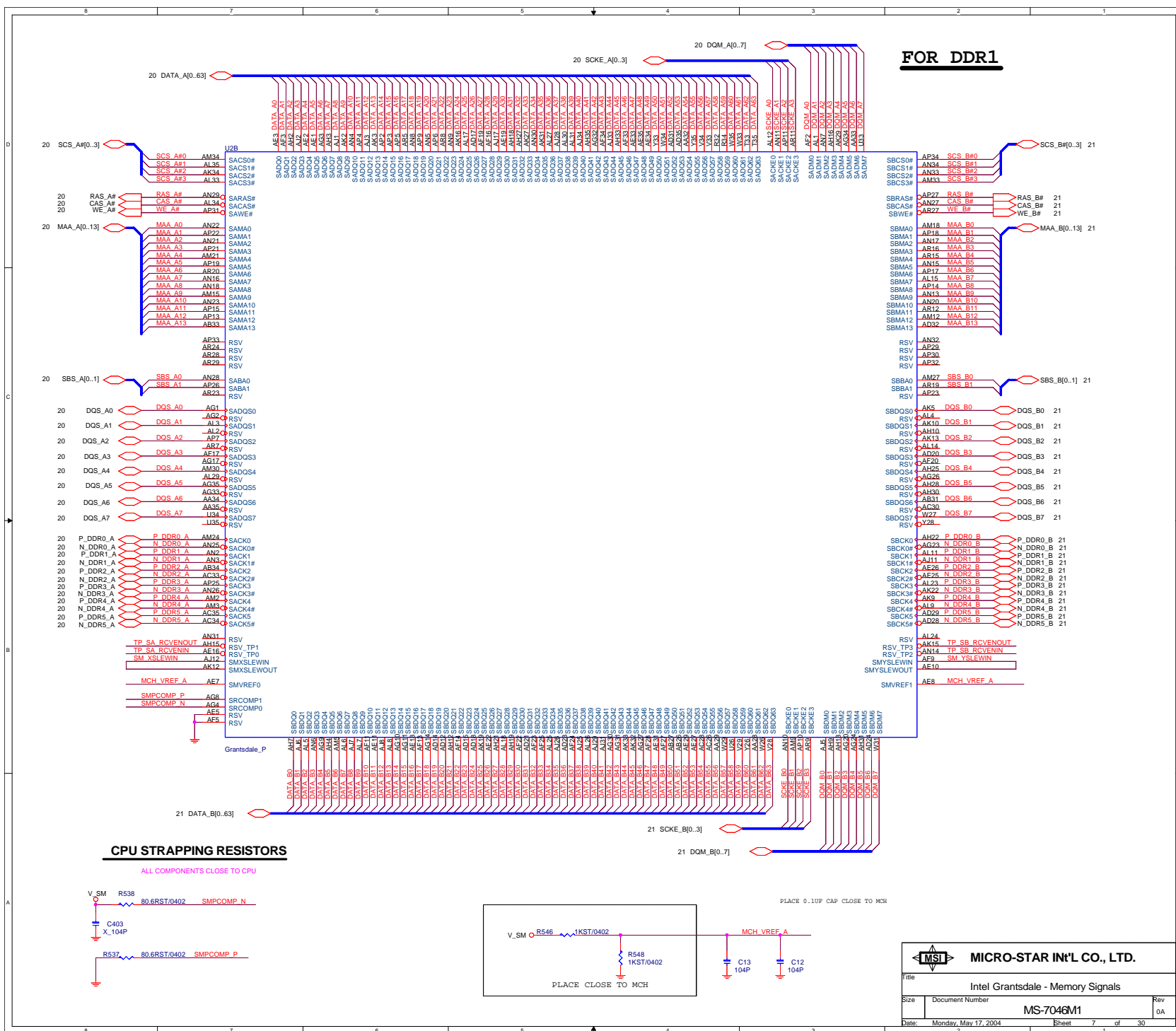
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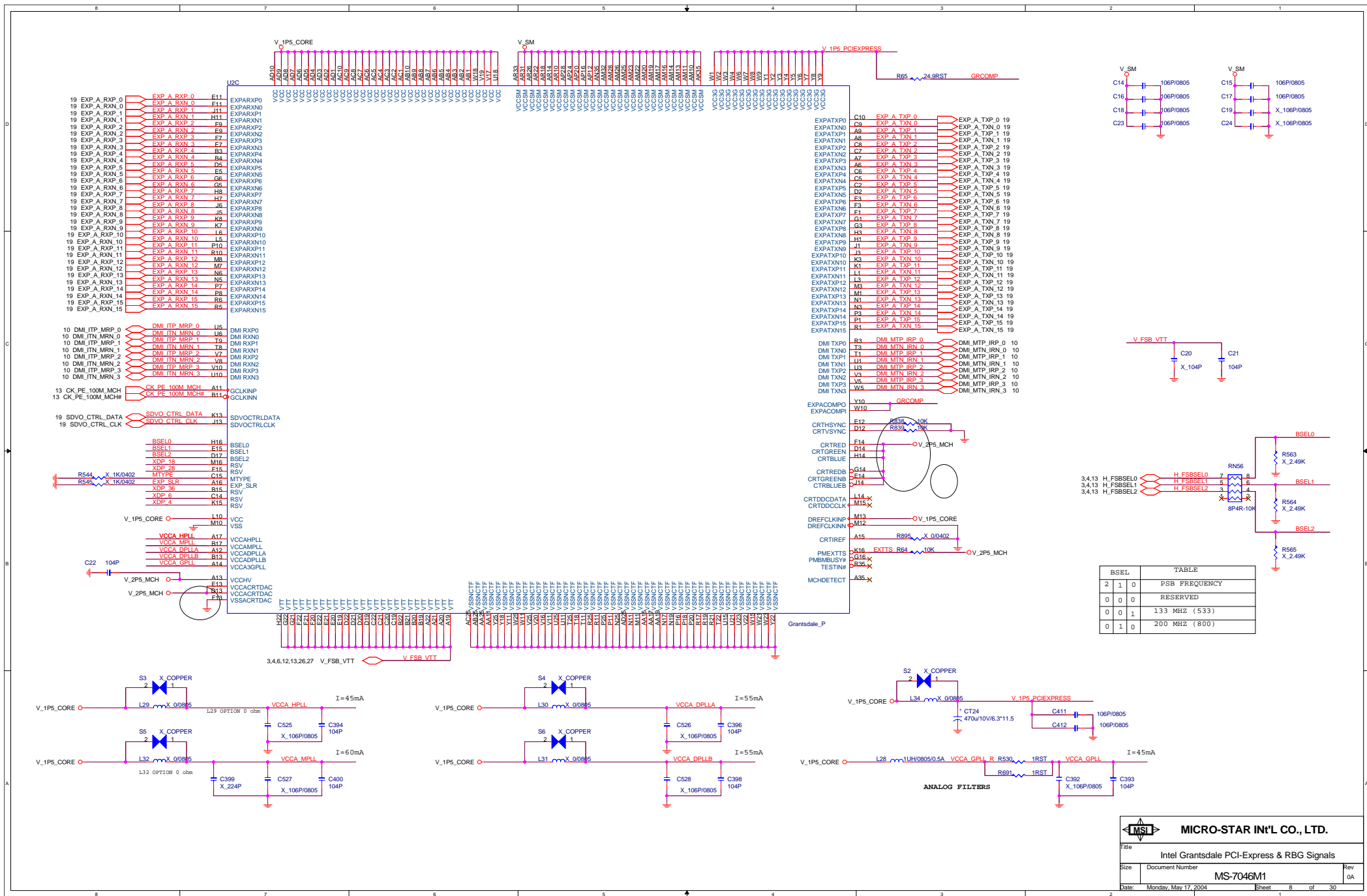
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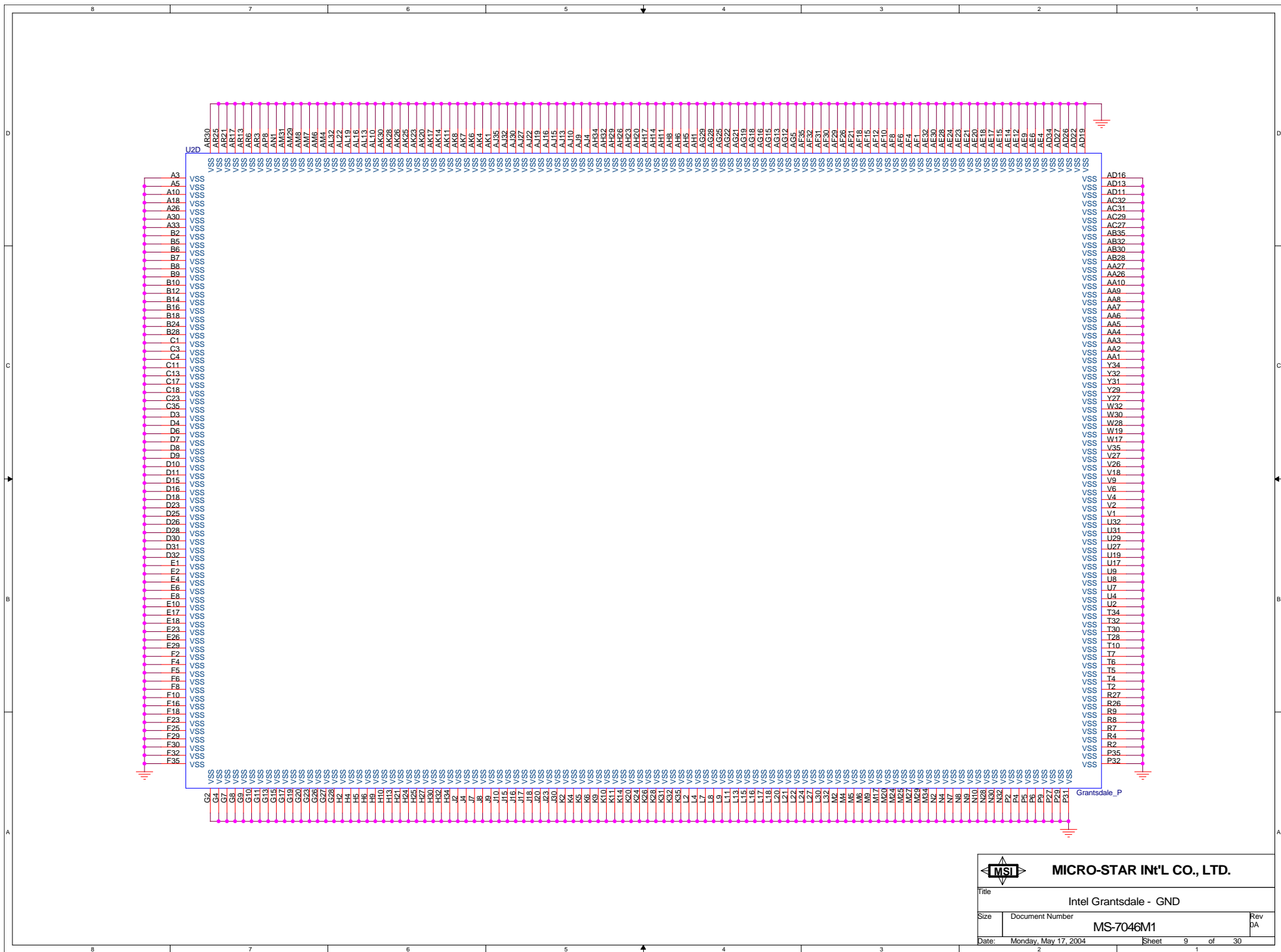


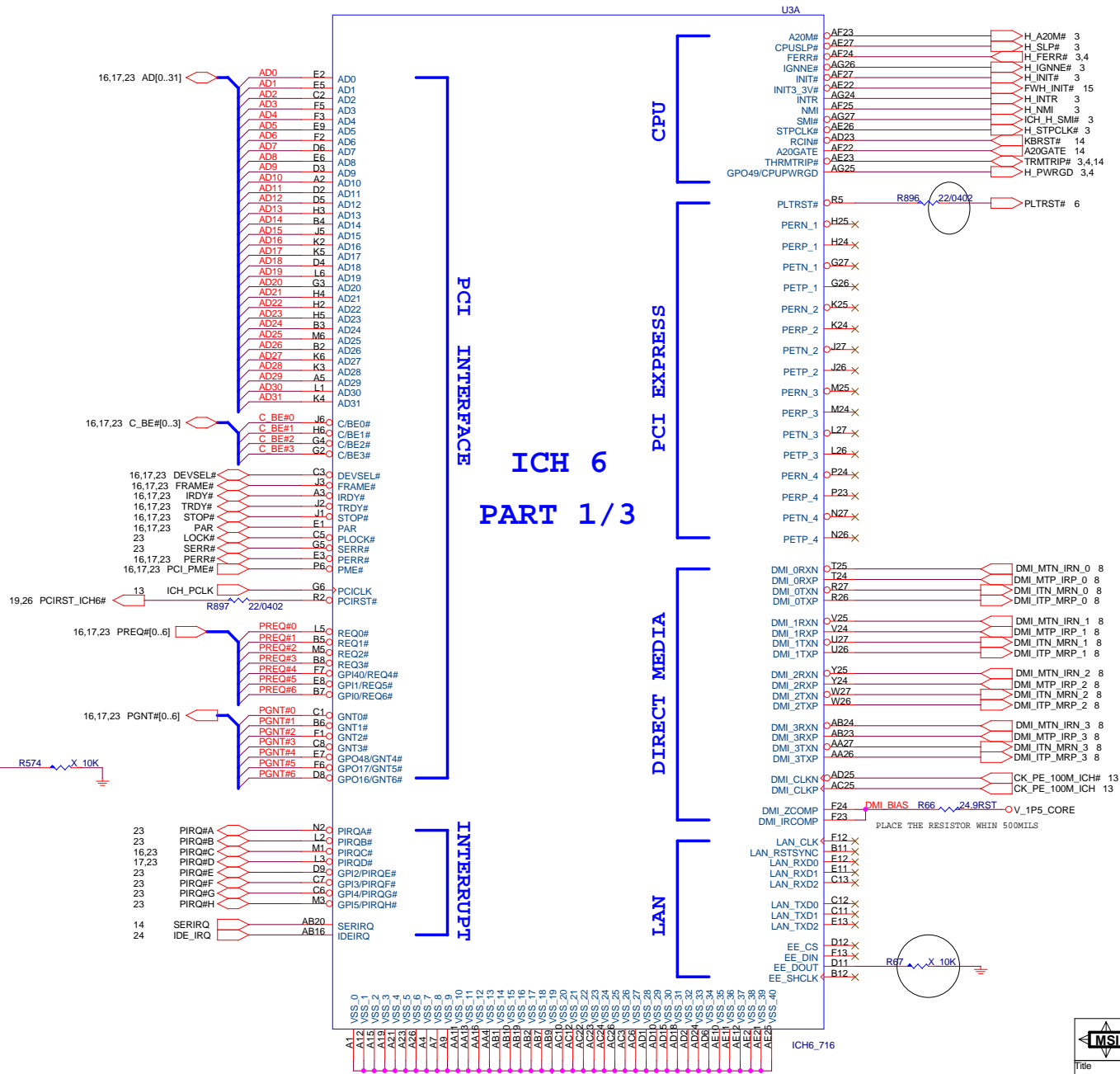


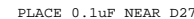






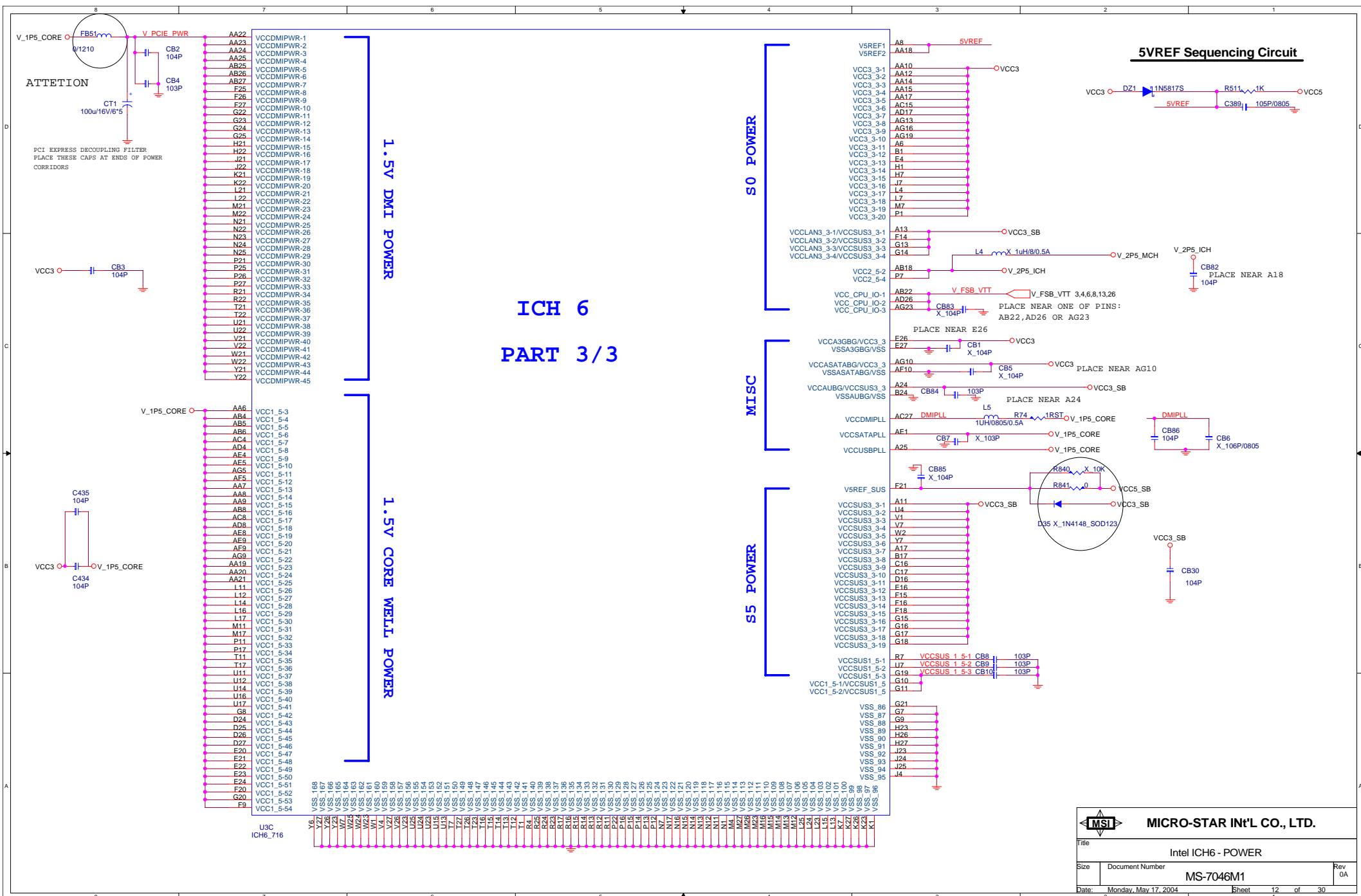


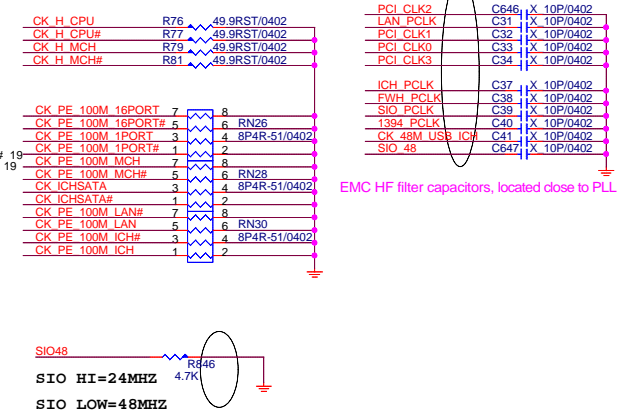




MS-7040MT

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



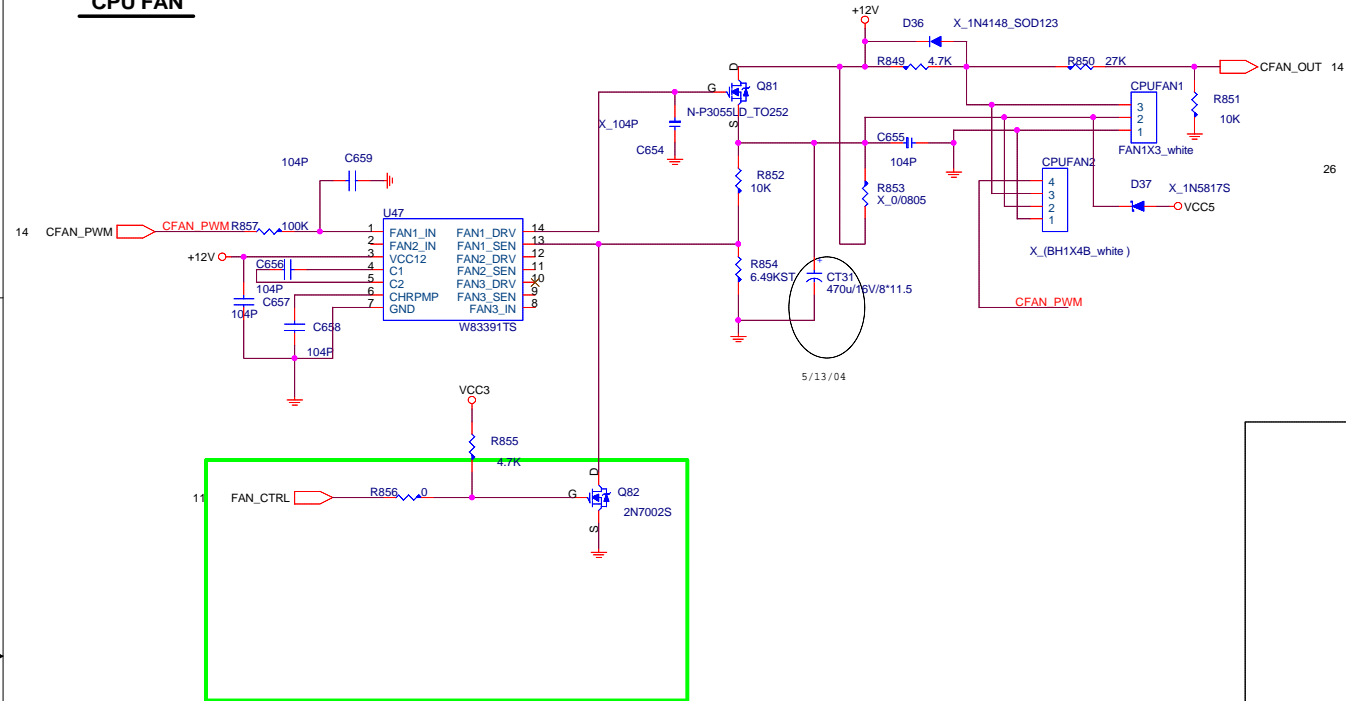
Diagram illustrating two parallel signal lines, SIM1 and SIM2, connected to connectors J1 and J2. Each line has a ground symbol and a red 'F' label.



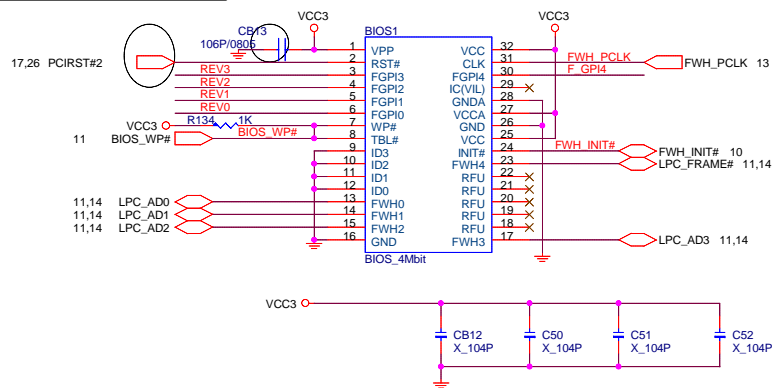
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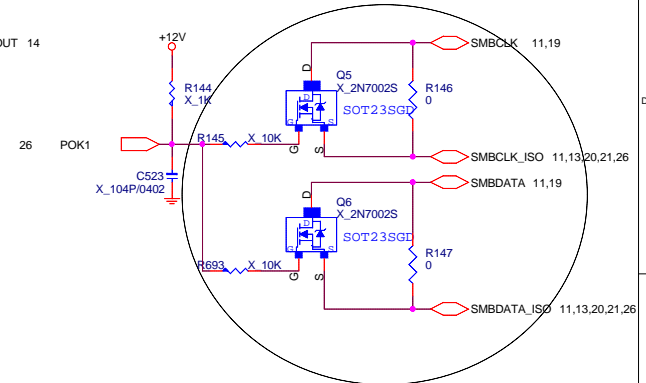
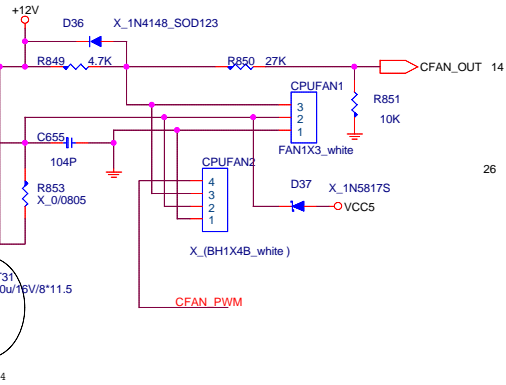
## CPU FAN



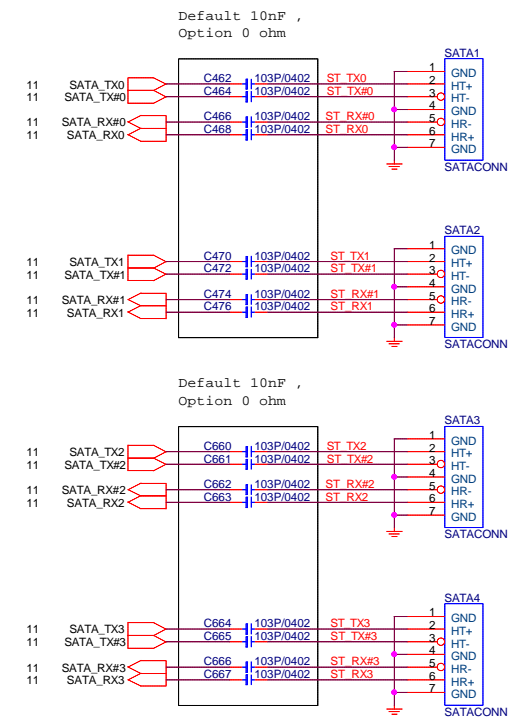
## FIRMWARE HUB (FWH)



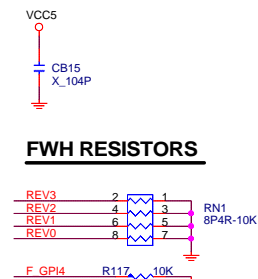
## CPU FAN



## SERIAL ATA CONNECTOR BLOCK



## FWH RESISTORS

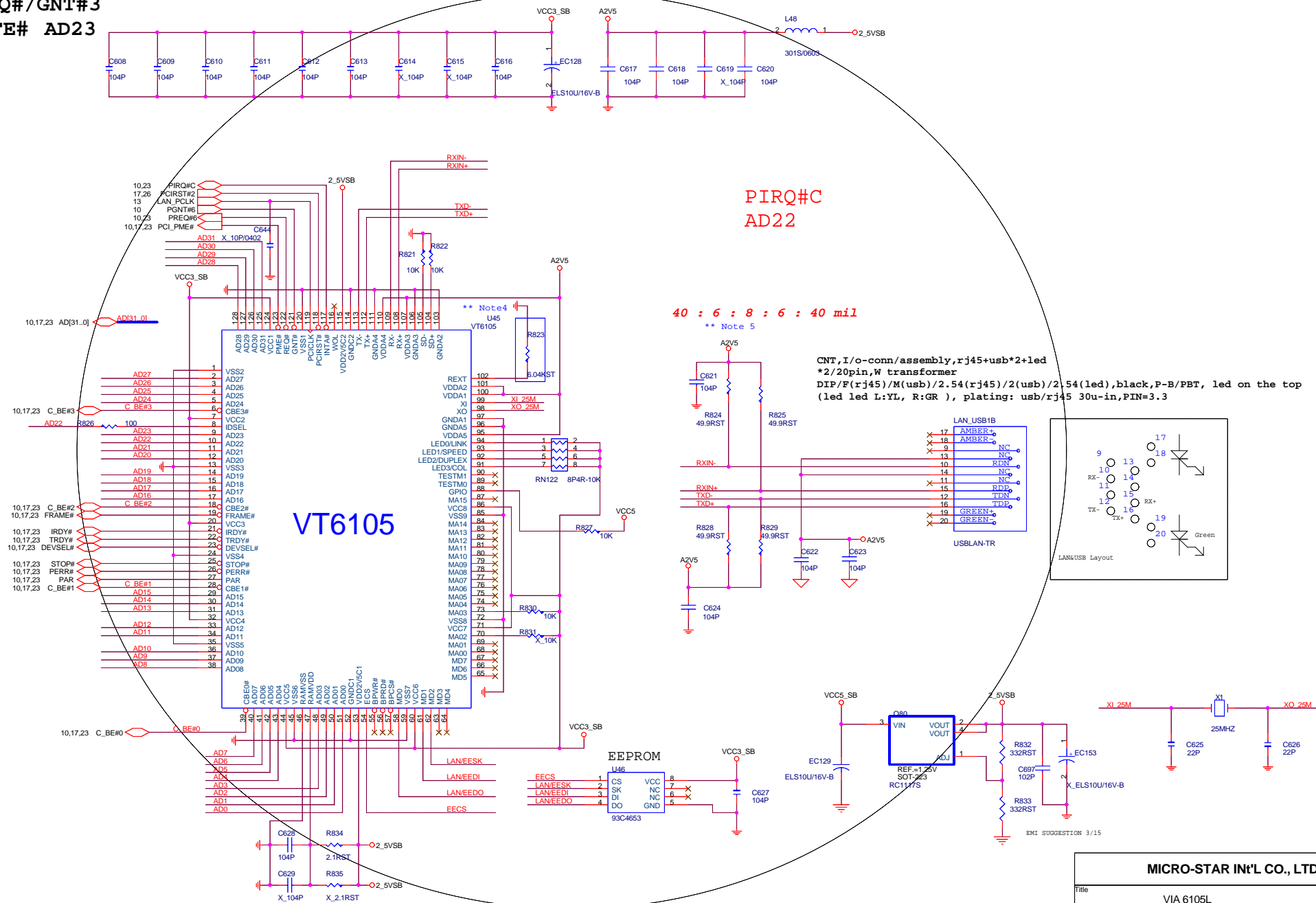


**MICRO-STAR INT'L CO., LTD.**

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



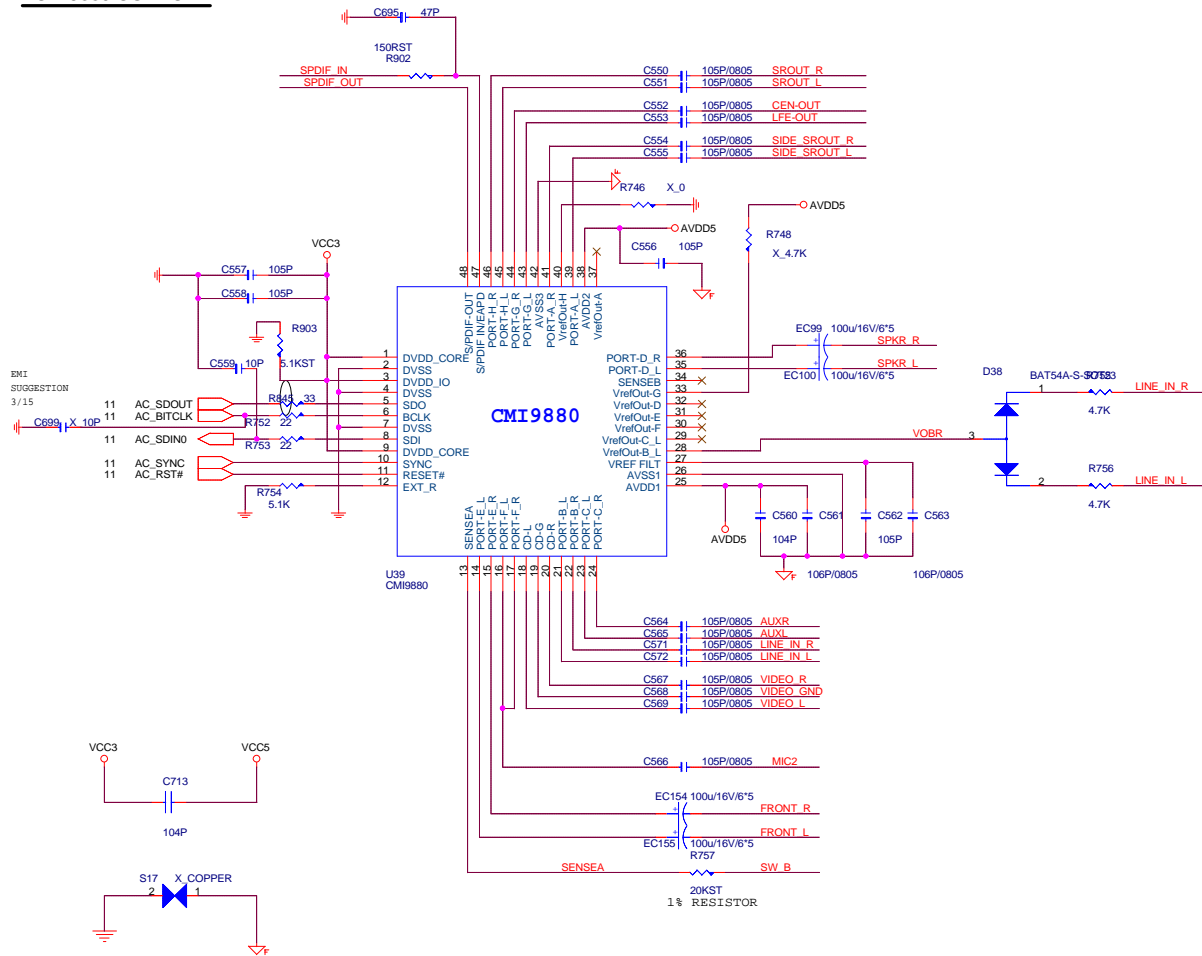
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VIA 6105L			
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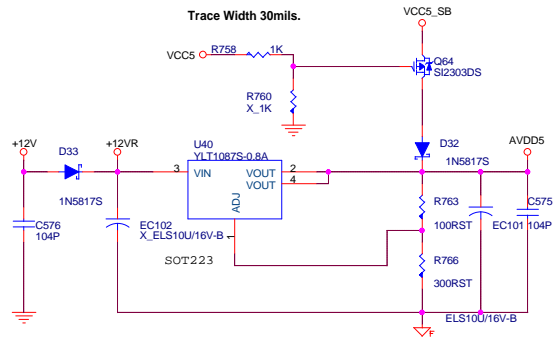
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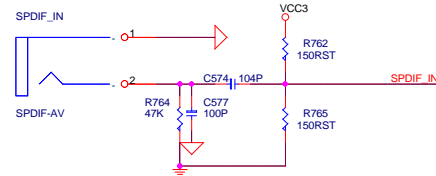
## CMI9880 CODEC



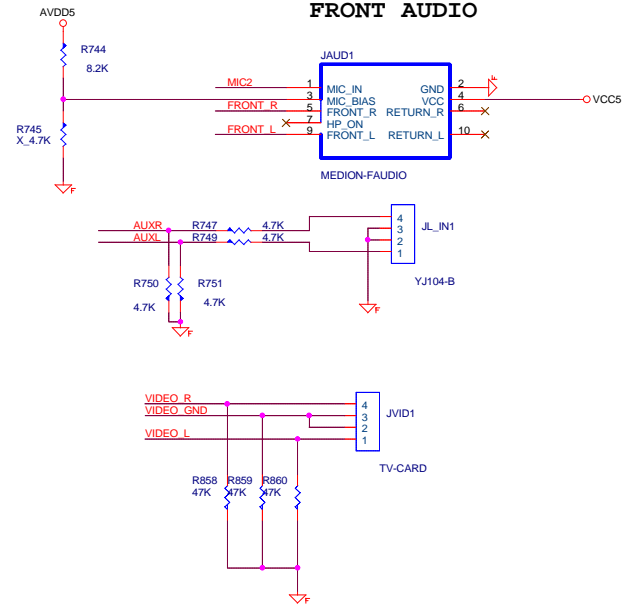
## AUDIO CODE REGULATORS



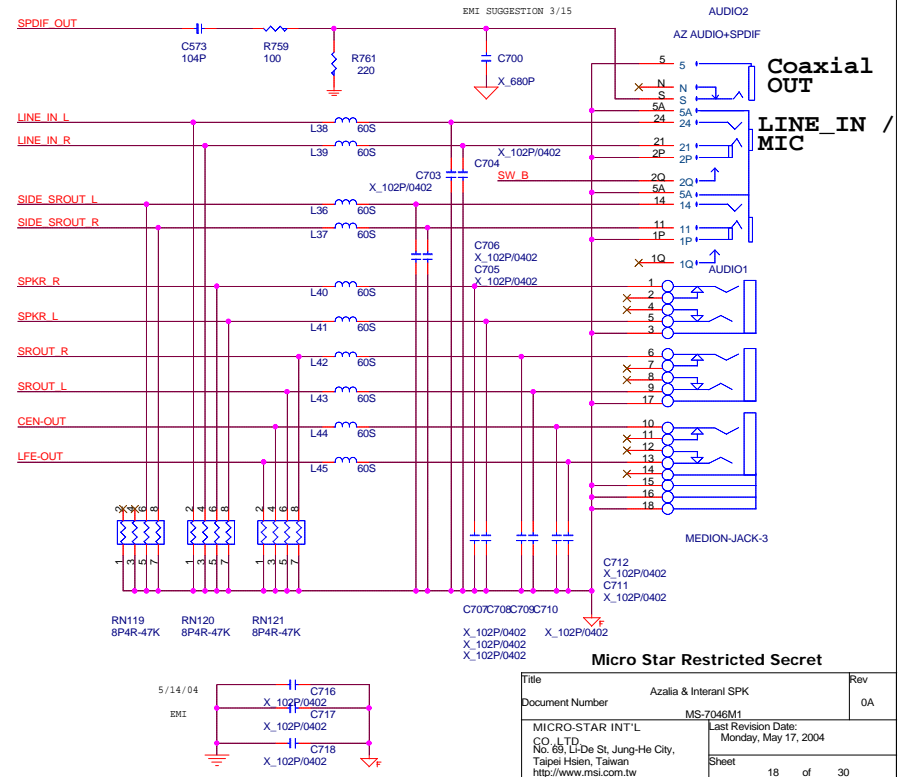
## Coaxial IN



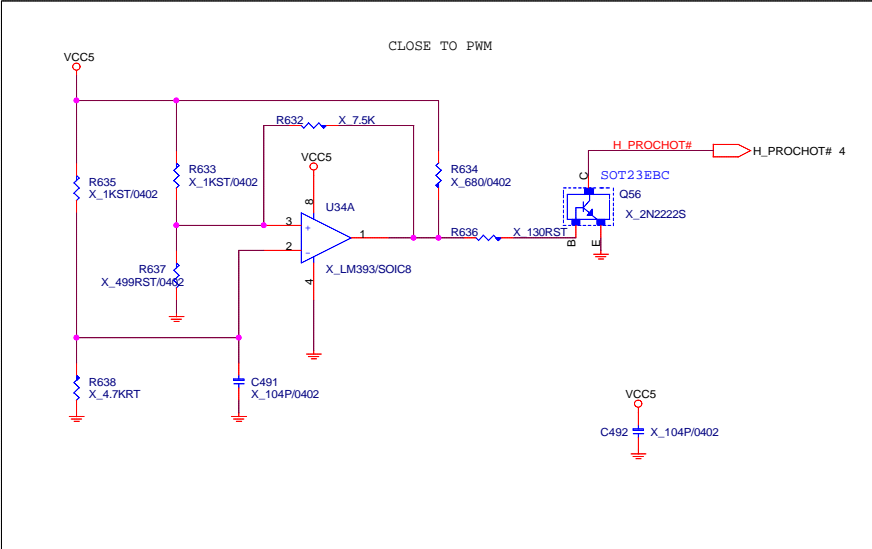
FRONT AUDIO

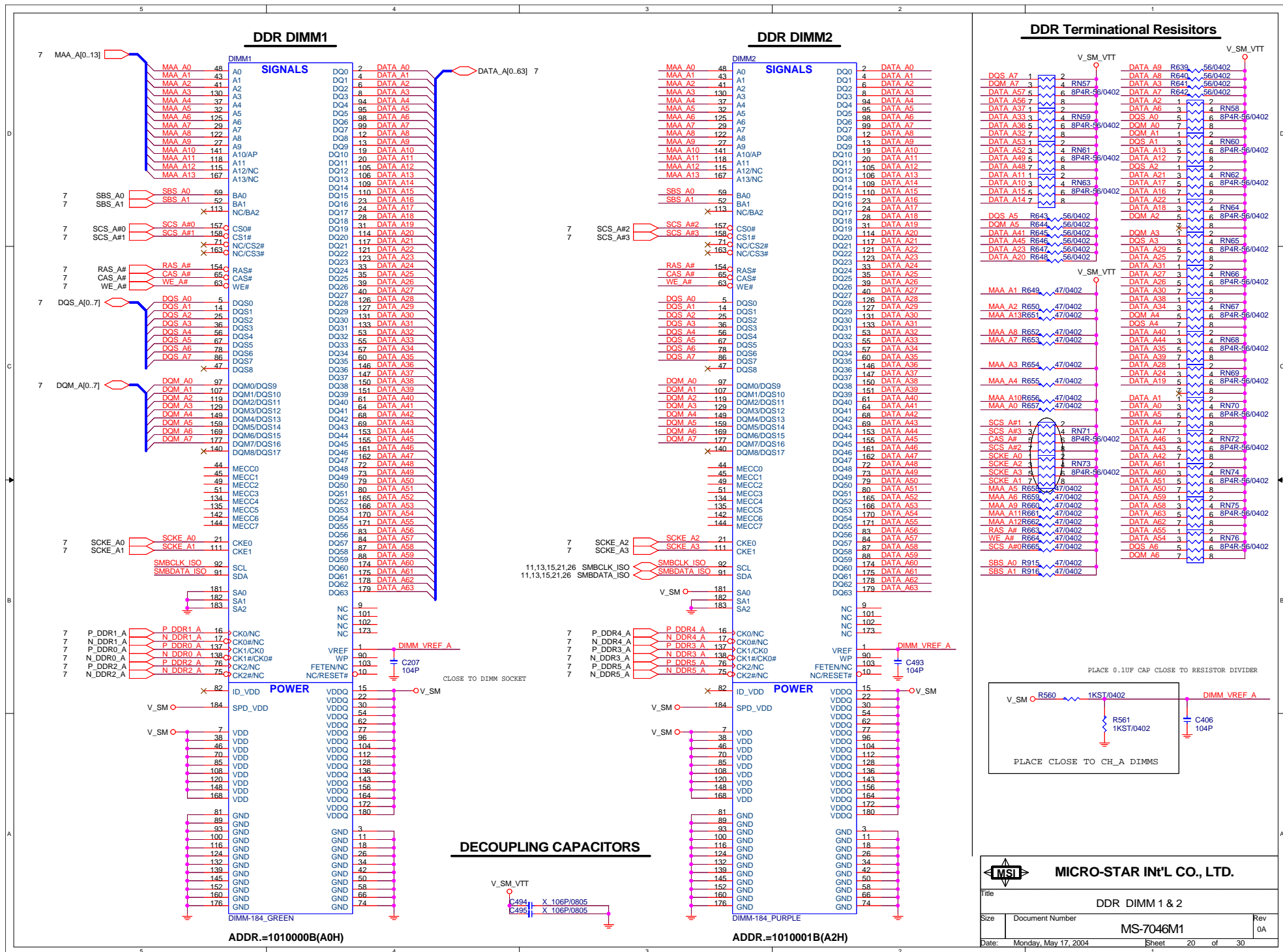


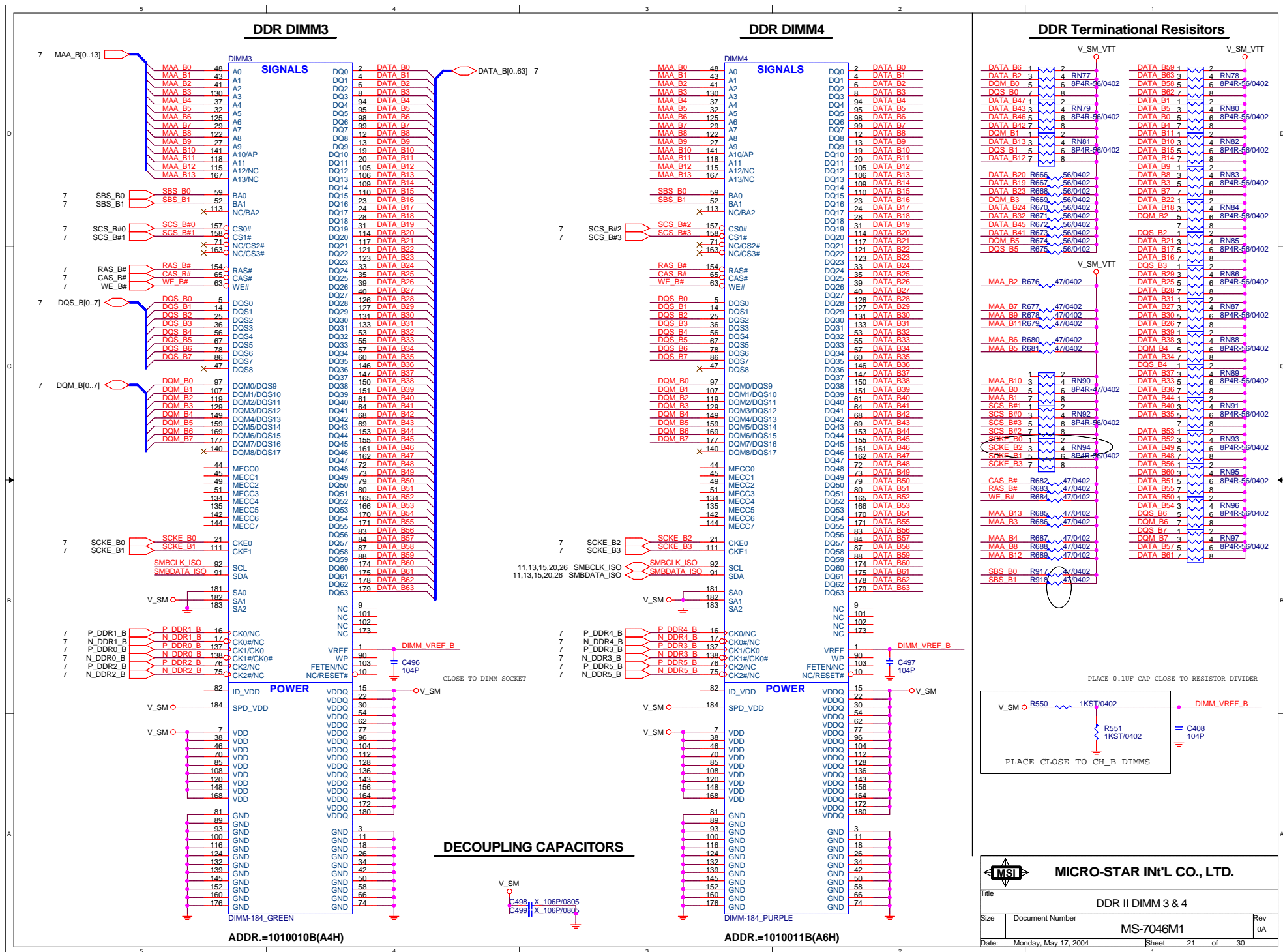
## Audio Connector

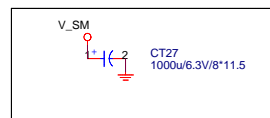
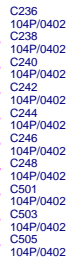
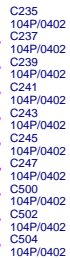


Title	Azalia & Interani SPK	Rev
Document Number	MS-7046M1	0A
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan <a href="http://www.msi.com.tw">http://www.msi.com.tw</a>	Last Revision Date: Monday, May 17, 2004	
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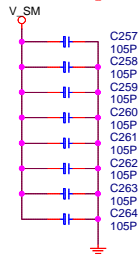






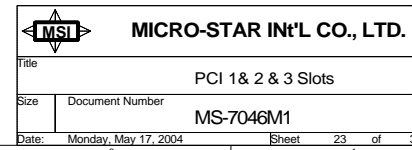
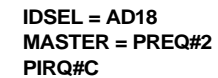


V\_1P5\_CORE V\_2P5\_MCH  
D27  
1N4001S

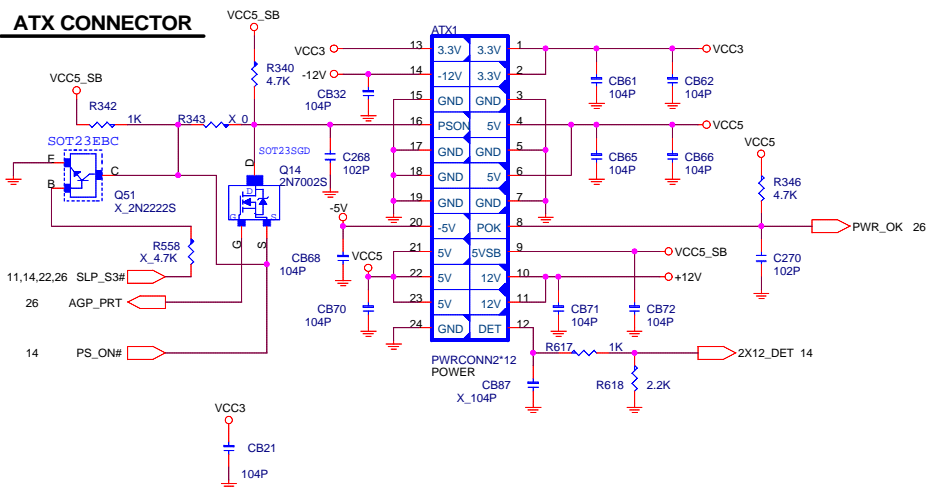


Title				DDR1 VTT DECOUPLING			
Size	Document Number						Rev
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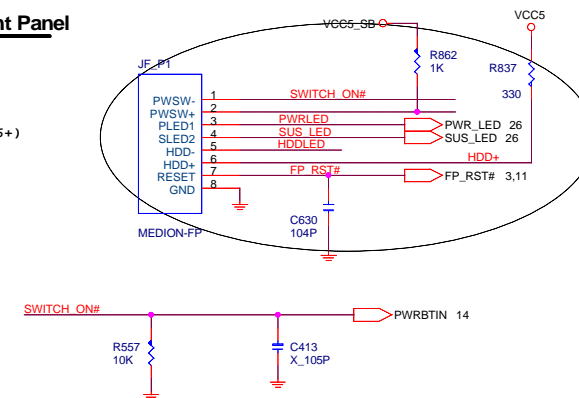
## ATX CONNECTOR



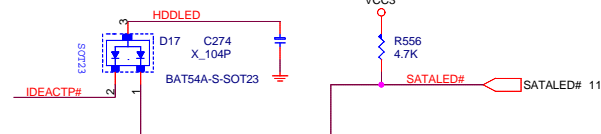
## MEDION Front Panel

JF\_P1

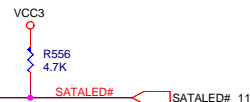
- 1-2 PS-ON
- 3-4 PWR\_LED
- 5-6 HDD\_LED (6+)
- 7-8 RESET



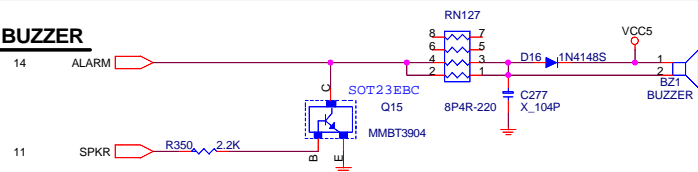
## IDE LED



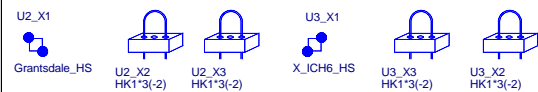
## SERIAL ATA LED



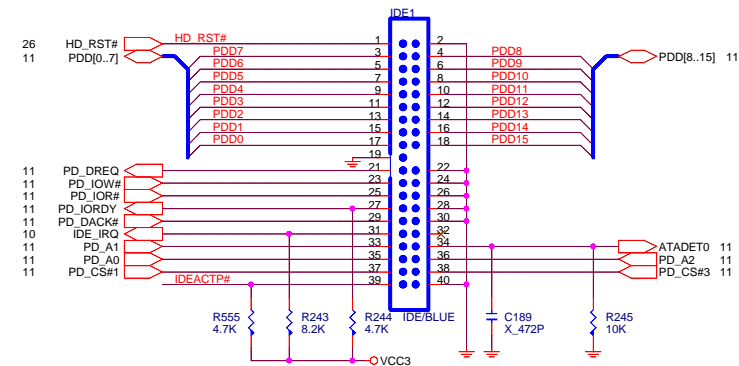
## BUZZER



## HEAT SINK



## PRIMARY IDE BLOCK



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Title ATX Connector & Front Panel & FAN CONTROL

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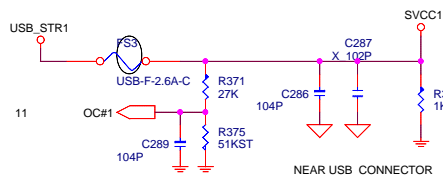


### POWER CIRCUIT FOR USB PORT 0,1,2,3

4

11

NEAR USB CONNECTOR



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

11

USB\_STR

FS4

USB-2.6A-C

R372 27K

R376 51KST

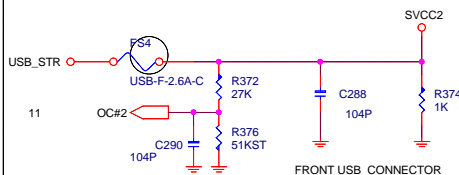
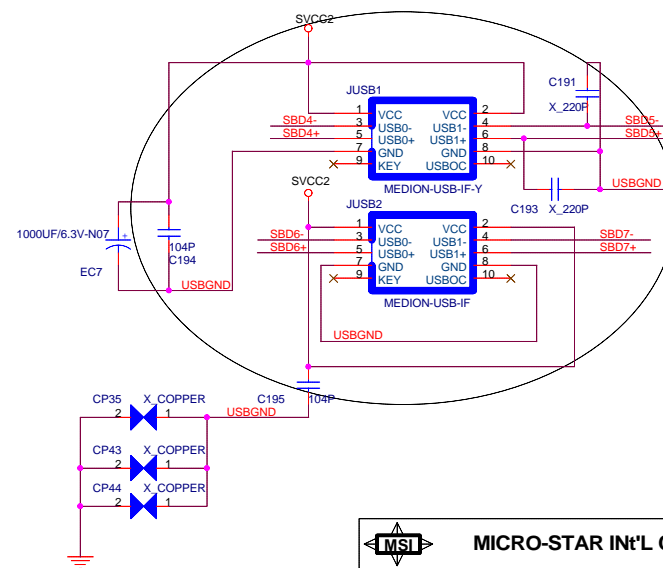
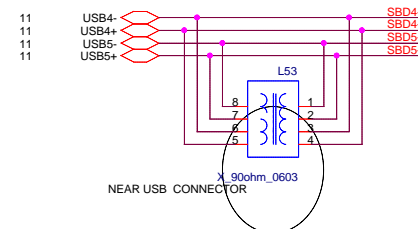
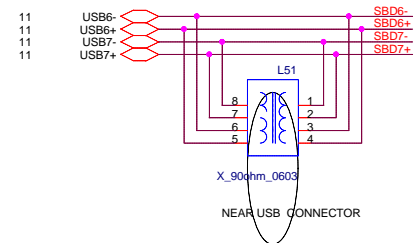
C290 104P


C288 104P

R374 1K

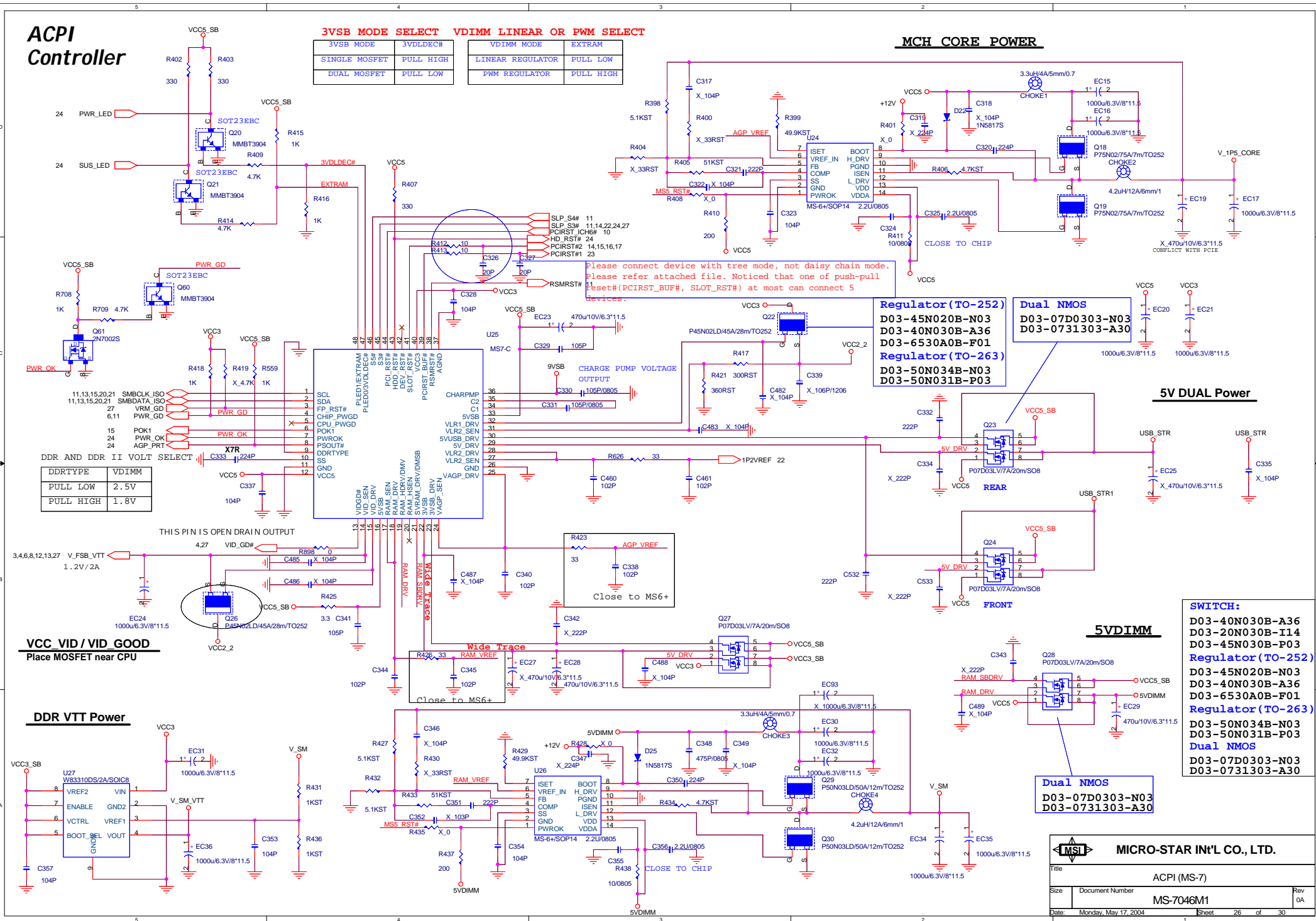
VCC2


FRONT USB CONNECTOR

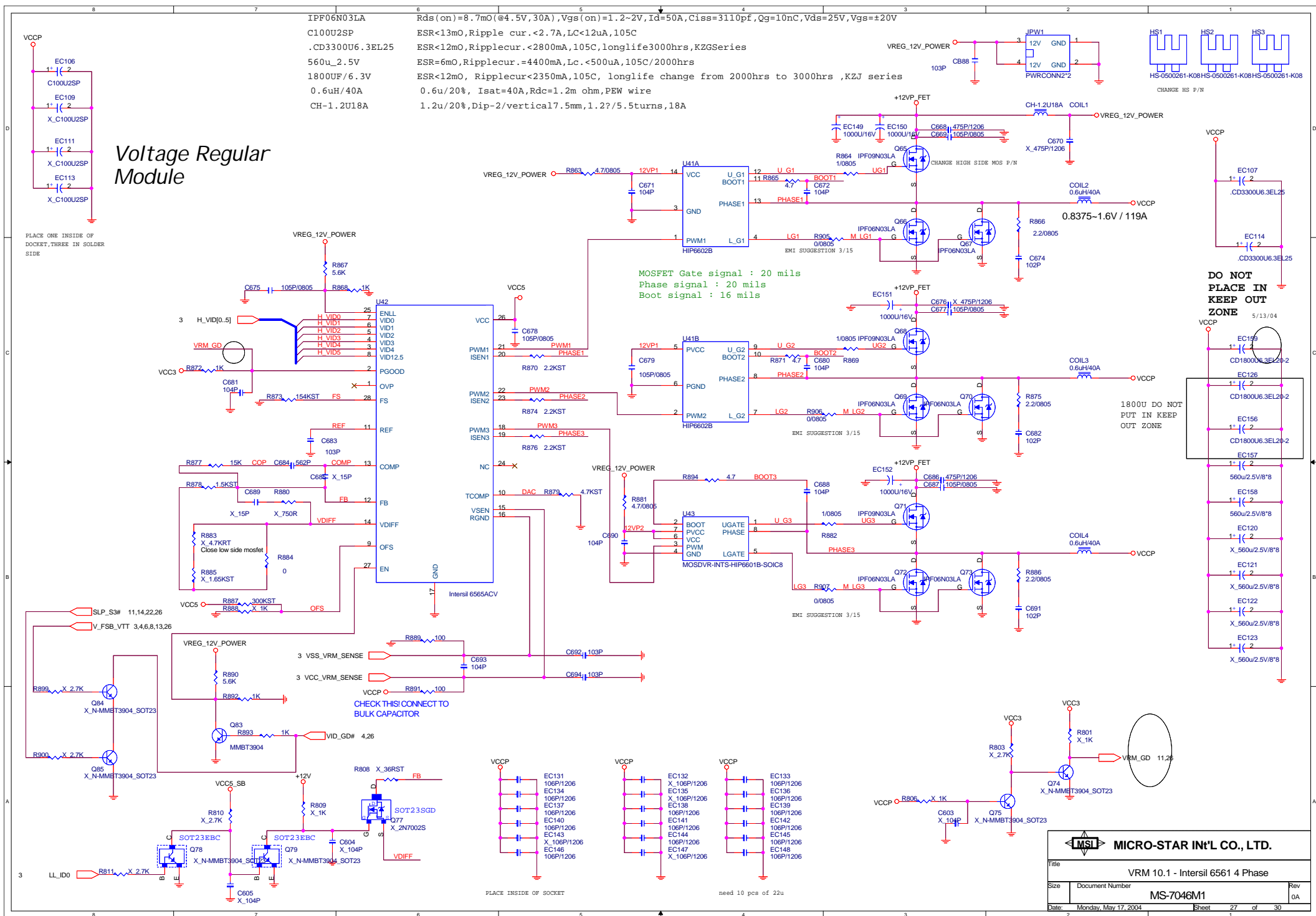
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H/W Monitor & FAN & USB Connectors			
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**ACPI  
Controller**



		<b>MICRO-STAR INT'L CO., LTD.</b>	
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ACPI (MS-7)			
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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 (multifunntion 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 PIRQC PIRQD	PCI_REQ#0 PCI_GNT#0	AD16	PCI_CLK0
PCI Slot 2	PIRQB PIRQC PIRQD PIRQA	PCI_REQ#1 PCI_GNT#1	AD17	PCI_CLK1
PCI Slot 3	PIRQC 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

SIO

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

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

JBAT1	( 1 - 2 ) NORMAL	( 2 - 3 ) CLEAR

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

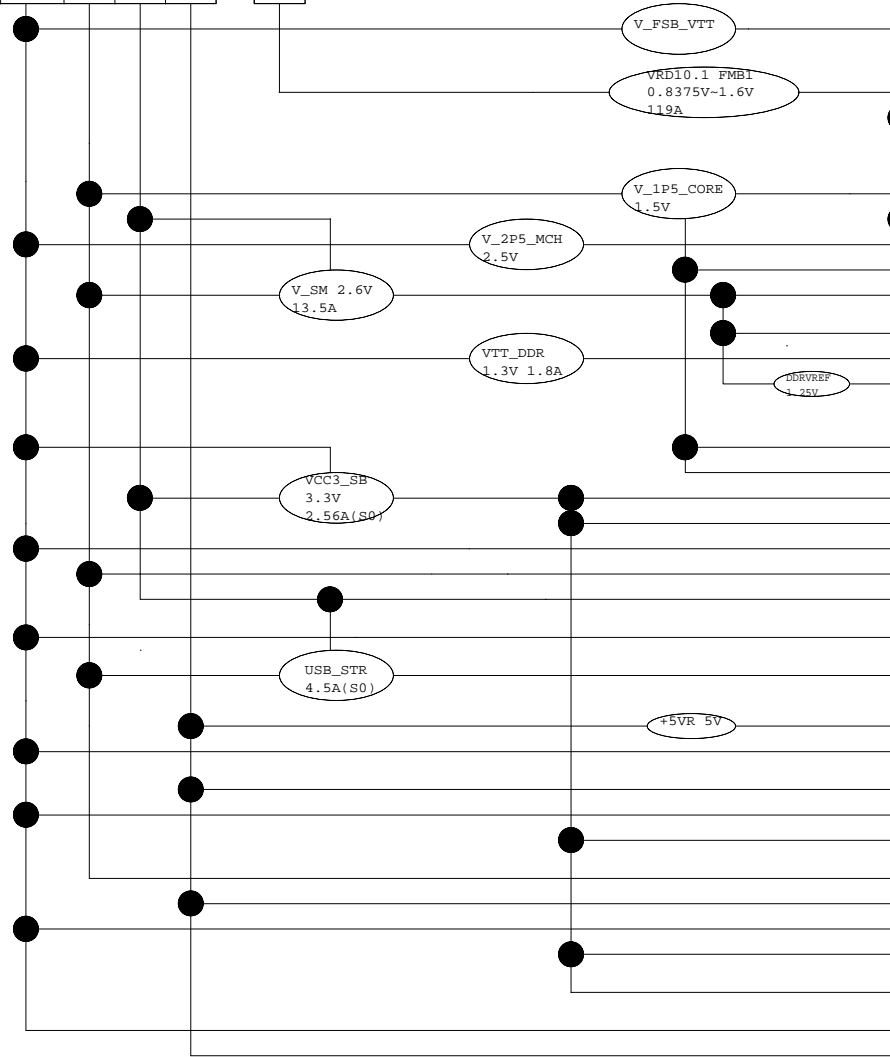
		<b>MICRO-STAR INT'L CO., LTD.</b>	
Title Schematics History			
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# POWER DELIVERY MAP

ATX 12V POWER Supply 12V POWER

-12V	3.3V	5V	5VSB 1.5A	12V
------	------	----	--------------	-----

12VP
------



Processor Core Icc(max)=119A
1.2V FSB Vtt TBDA

Processor

GMCH Core Icc(max)=9.6A
GMCH Vtt Icc(max)=1.2A
GMCH DAC 2.5V Icc(max)=70mA
GMCH PCI_E Icc(max)=1.06A
GMCH DDR I/O Icc(max)=5.5A

GMCH-Grantsdale

2 CHANNEL DDR MODULE Icc(max)=6A
2 CHANNEL DDR MODULE Icc(max)=1.8A
2 CHANNEL DDR MODULE Icc(max)=16μA

DDR MODULE

ICH CPU IO Icc(max)=tbda
ICH DMI Icc(max)=290mA
ICH Core Icc(max)=2.58A
ICH VCC3_SB Icc(max)=330mA
ICH VCCRTC Icc(max)=5μA
ICH 3.3V Icc(max)=180mA
ICH 5VREF Icc(max)=tbda
ICH 5VREF_SUS Icc(max)=tbda

ICH6

LPC FW 3.3V Icc(max)=107mA
----------------------------

LPC FW FLASH

8 PORT USB & PS2(MS/KB)
Icc(max)=0.5A*8(S0/S1), 20mA(S3/S5)

USB PORT & PS2 KB/MS

+5V
VCC3

Azalia ALC880

VCC12V Icc(max)=4.4A
VCC3.3 Icc(max)=3A
VCC3SUS Icc(max)=375mA

PCI\_E x 16

VCC5V Icc(max)=5A
VCC12V Icc(max)= 0.5A
VCC3.3 Icc(max)= 7.6A
PCI 3.3V_SUS Icc(max)= 375mA

PCI CON \*3 + EXPANSION

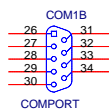
VCC3_SUS Icc(max)=330mA
-------------------------

LAN Realtek8100C/8110S

VCC3
VCC12V

IEEE1394 VT6307

## MANUAL PART



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