

MS-7038

Version 0A
09/22/2003 Update

Intel (R) Springdale (GMCH) + ICH5 Chipset
Intel Northwood & Prescott mPGA478B Processor

CPU:

Intel Northwood/Prescott - 3.0G & Above

System Chipset:

Intel Springdale - GMCH (North Bridge)
Intel ICH5 (South Bridge)

On Board Chipset:

CLOCK -- Cypress CY28405

On Board Chipset:

BIOS -- FWH EEPROM 4M
AC'97 Codec -- REALTEK ALC655
LPC Super I/O -- W83627THF
LAN - REALTEK RTL8110S/8100C

Main Memory:

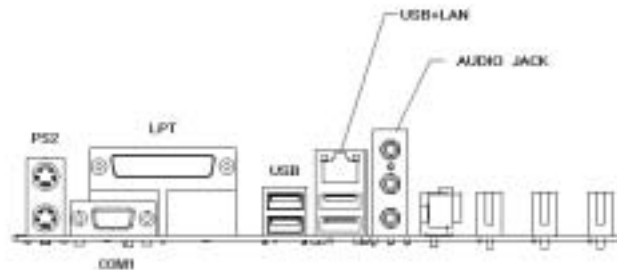
DDR * 2 (Max 4GB)

Expansion Slots:

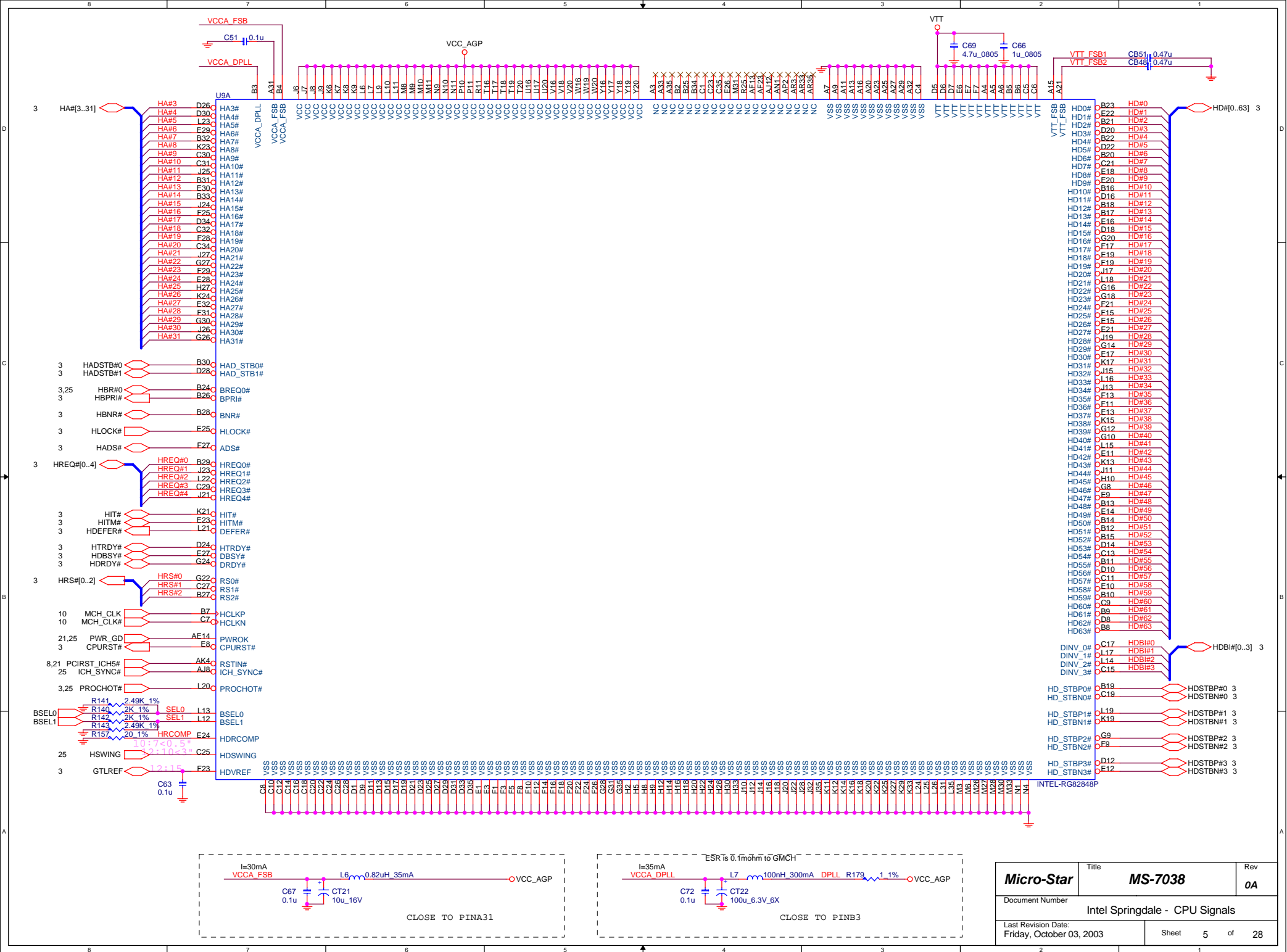
PCI2.3 SLOT * 3
AGP4X/8X SLOT * 1

Intersil PWM:

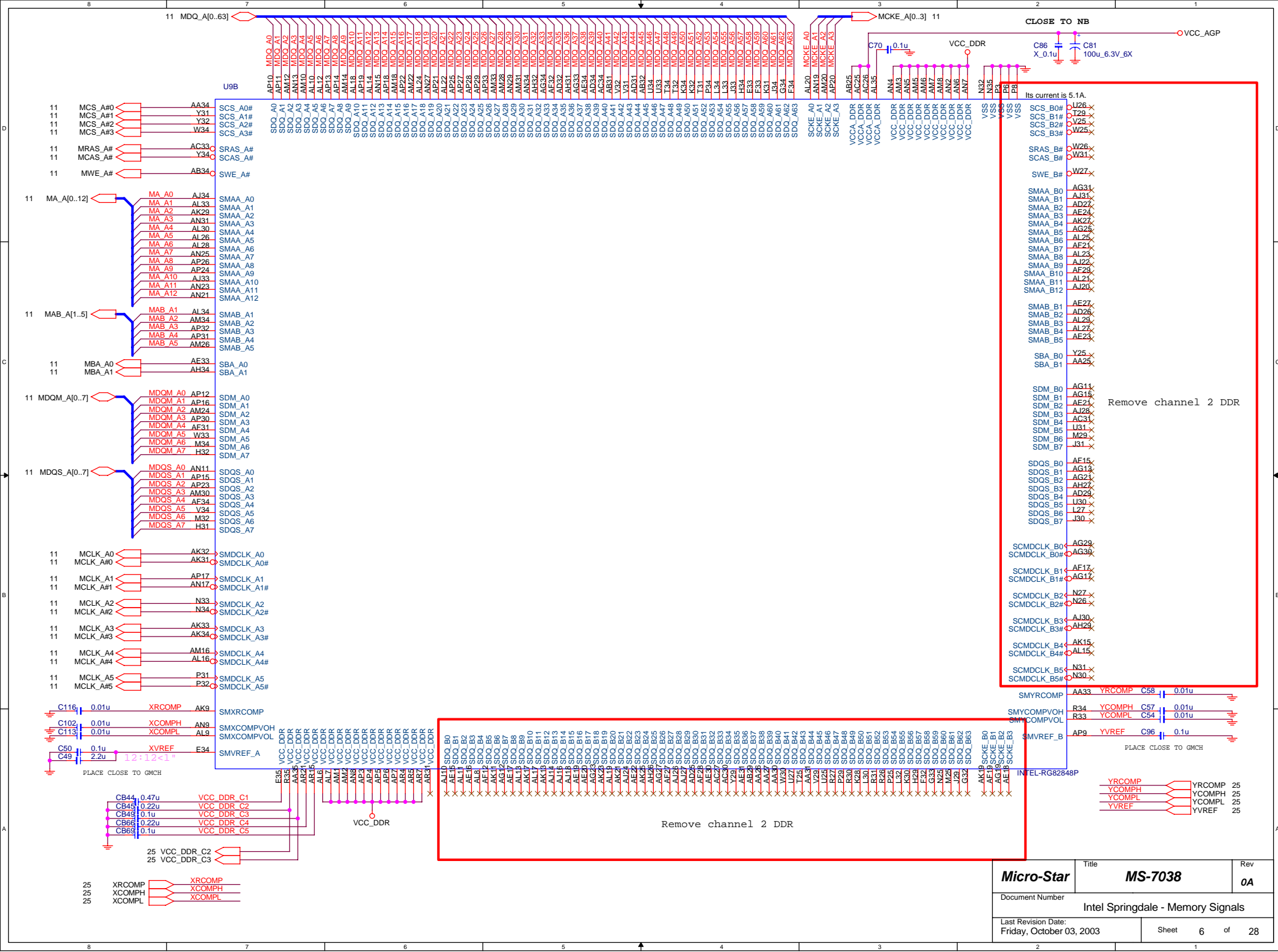
Controller: HIP6556A
Driver: HIP6602B * 2

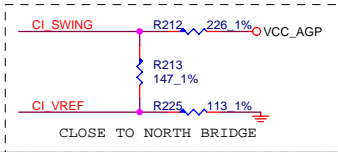
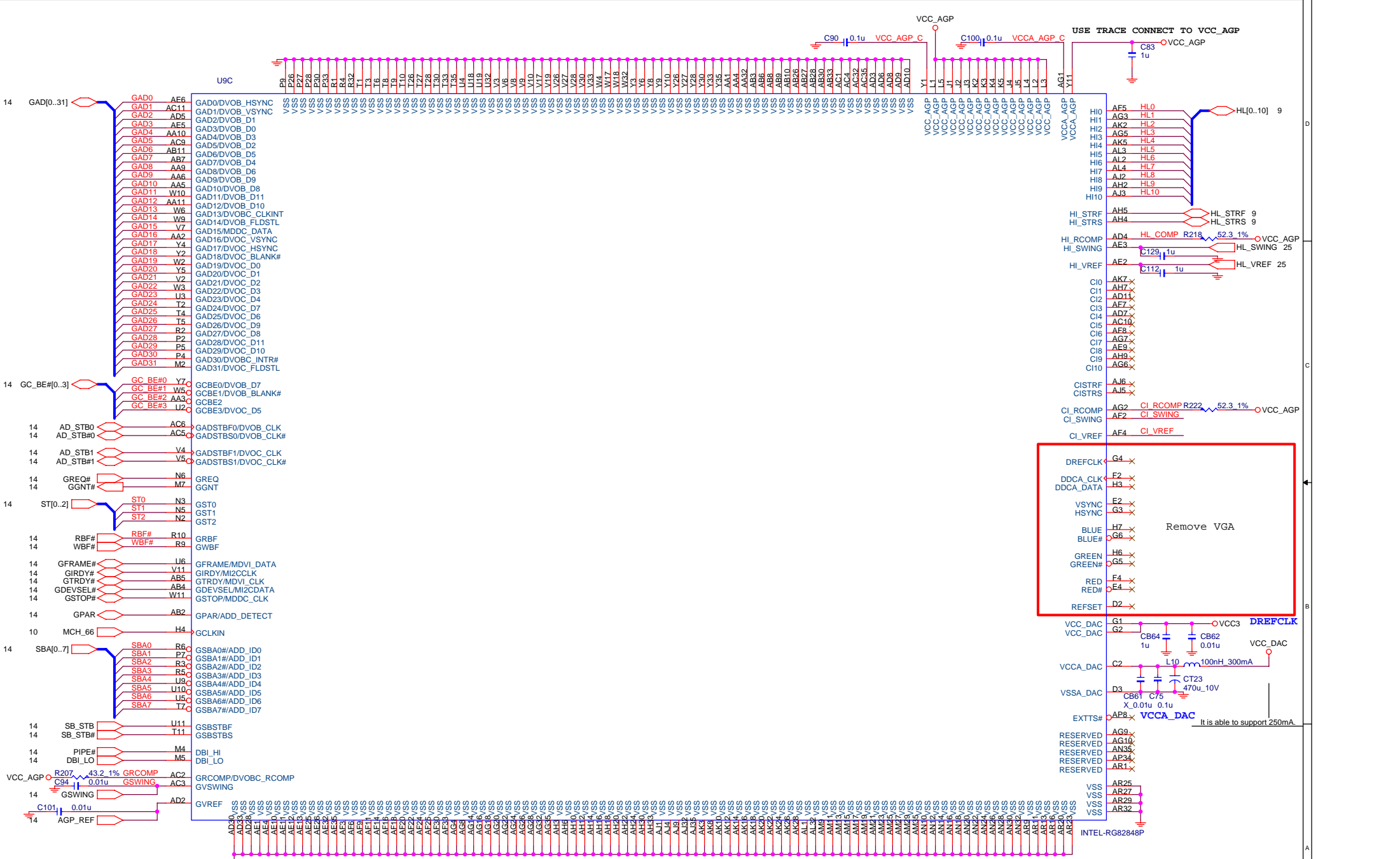


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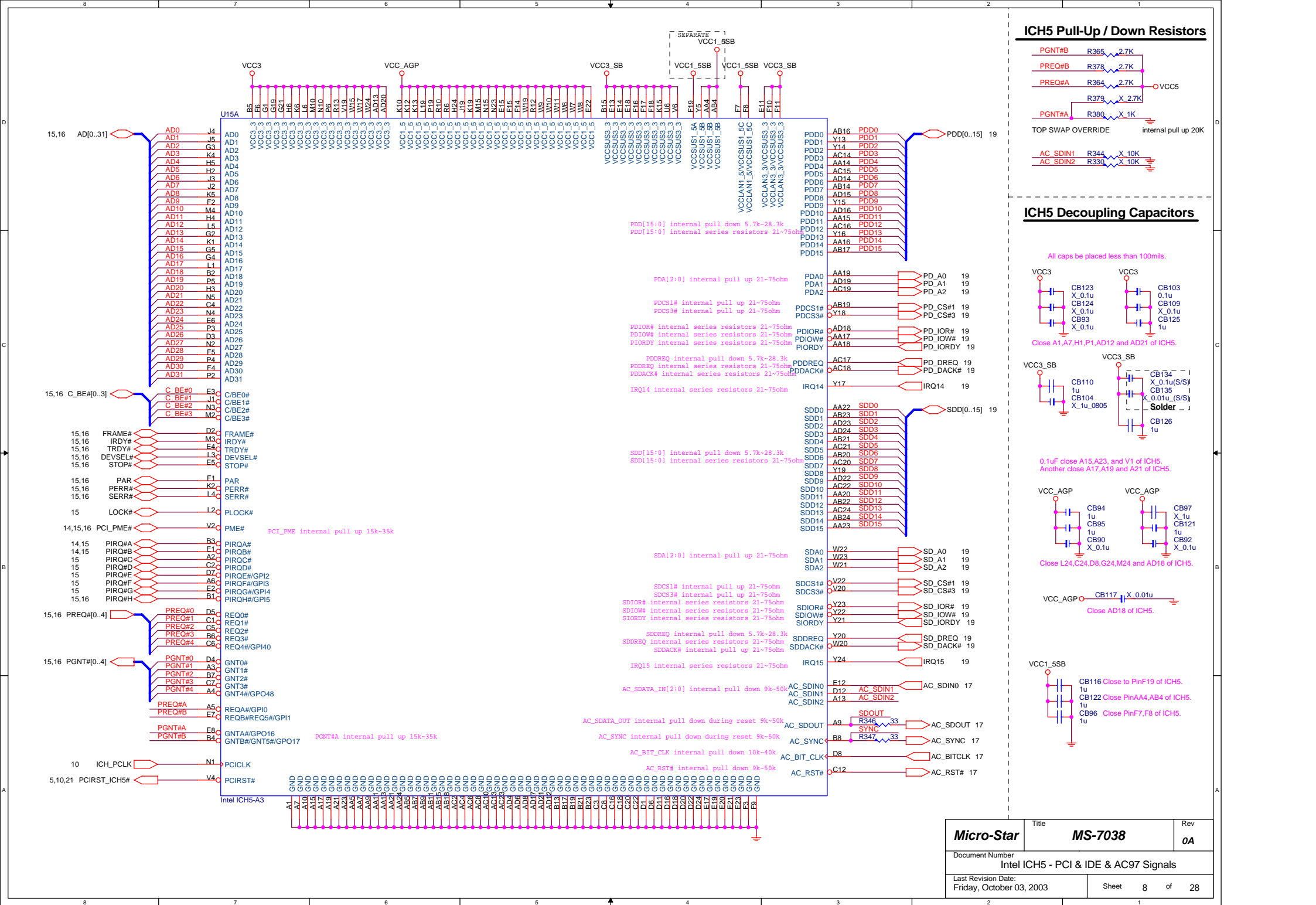


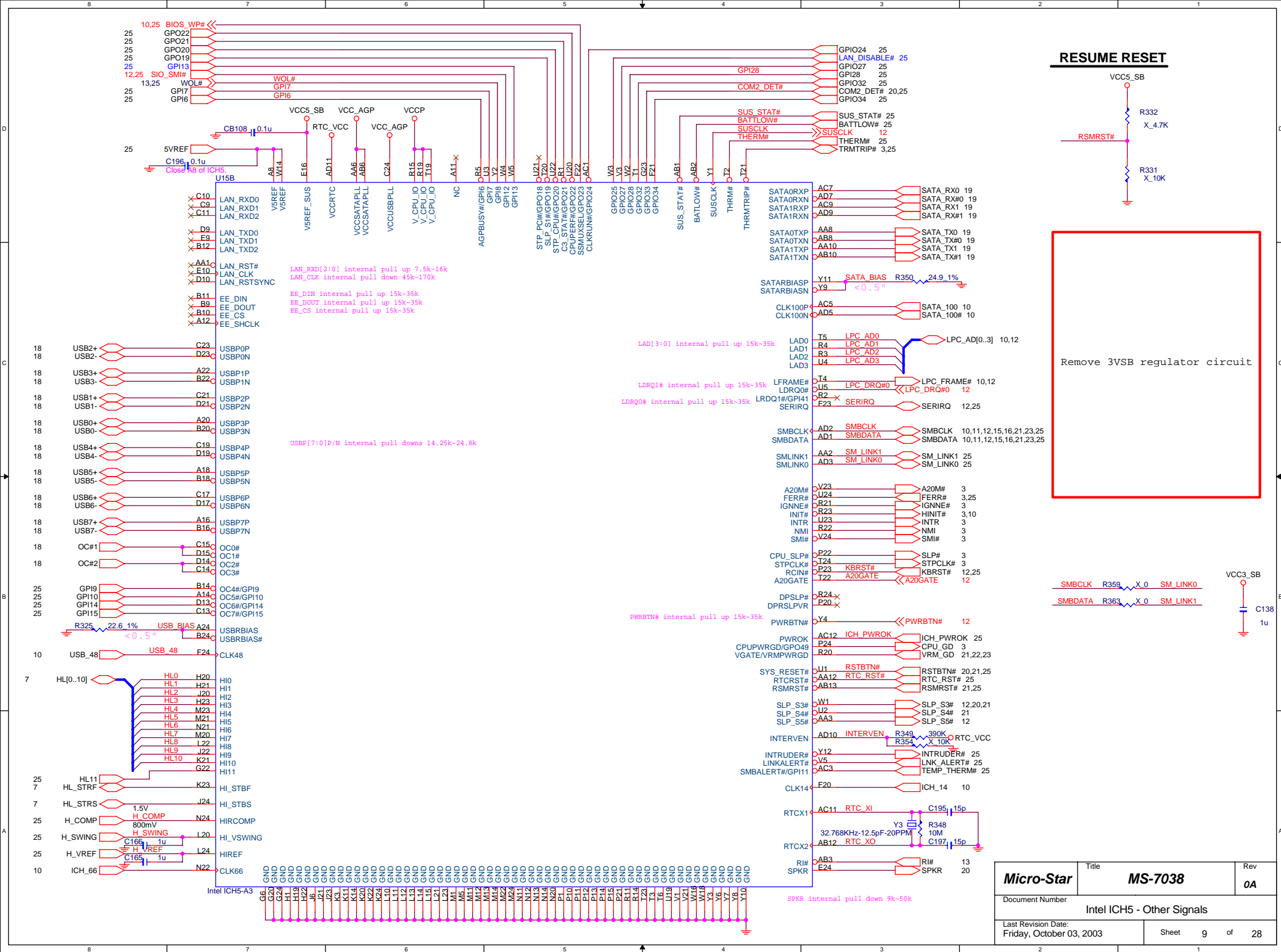
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Document Number		
Intel Springdale - CPU Signals		
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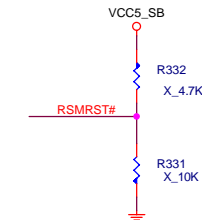


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	Document Number	Intel Springdale - AGP & HLink & LAN Signals		
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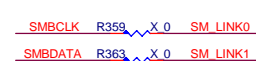




RESUME RESET

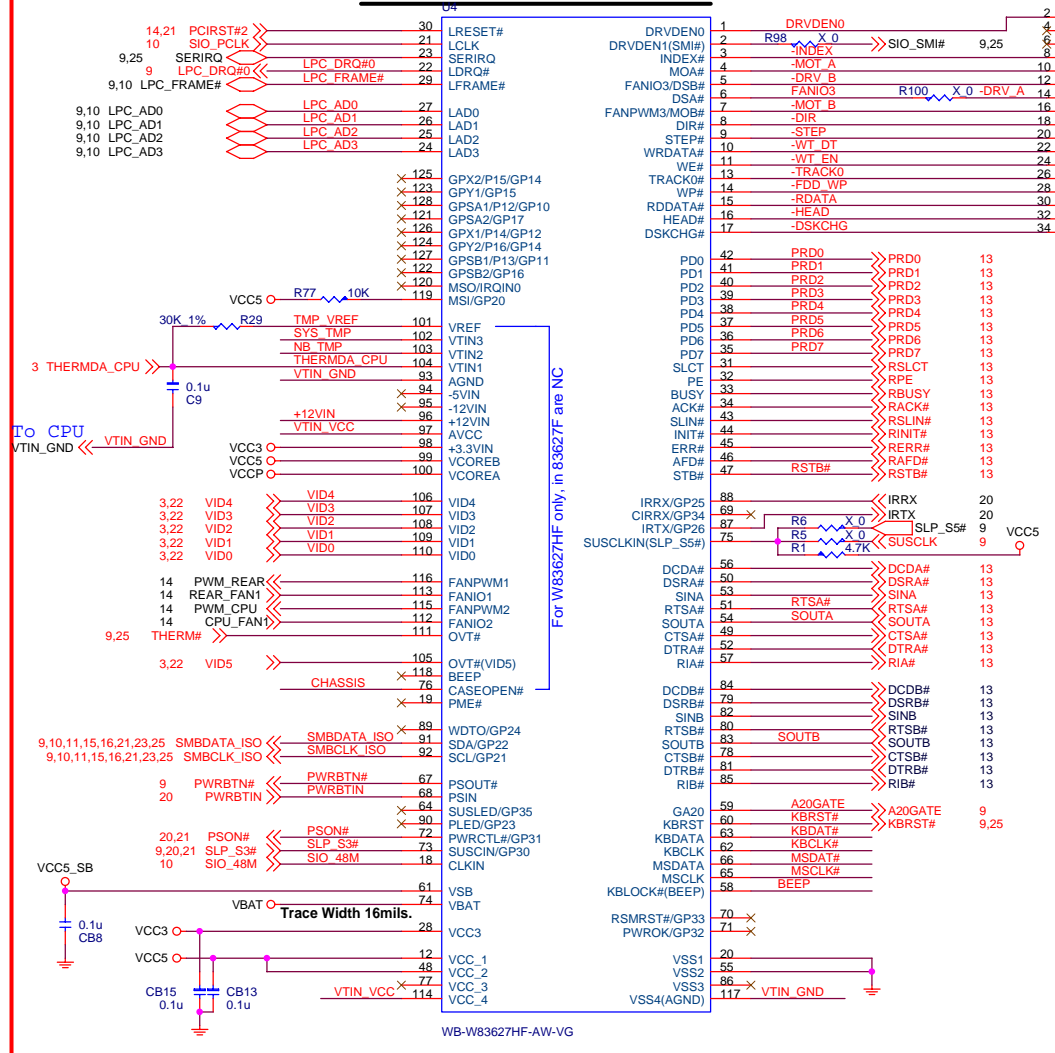


Remove 3VSB regulator circuit

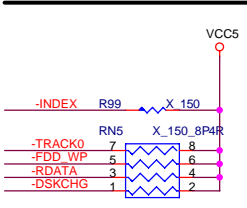


Micro-Star	Title MS-7038	Rev 0A
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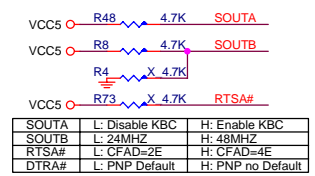
LPC SUPER I/O W83627HF/THF



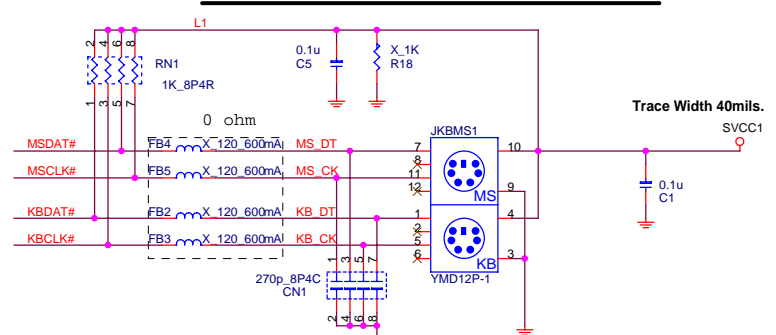
FLOPPY CONNECTOR



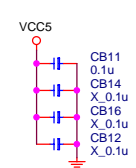
SUPER I/O STRAPPING RESISTOR



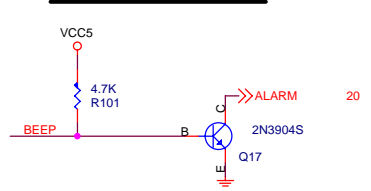
PS2 KEYBOARD & MOUSE CONNECTOR



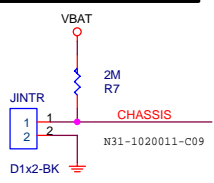
LPC I/O DECOUPLING CAPACITORS



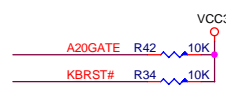
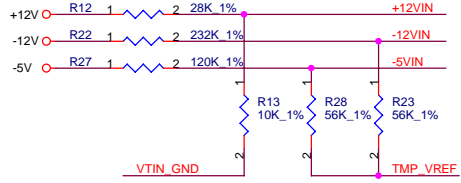
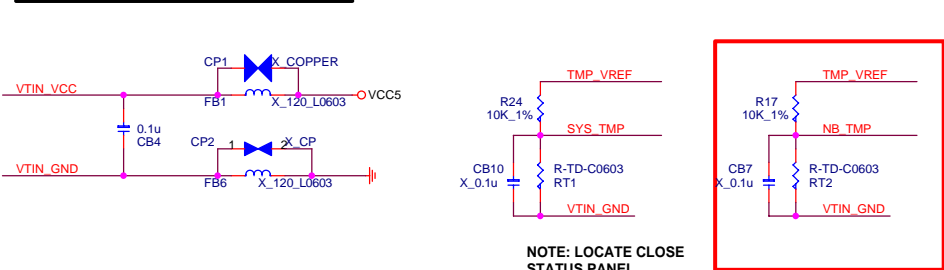
SPEAKER BLOCK



Chasiss Intrusion

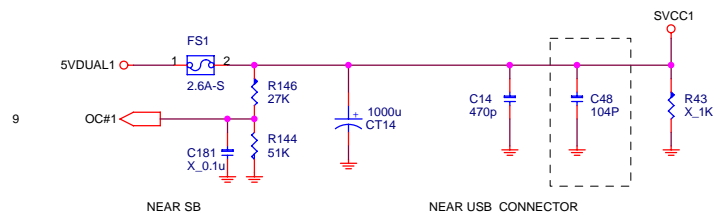


THERMAL RESISTOR BLOCK

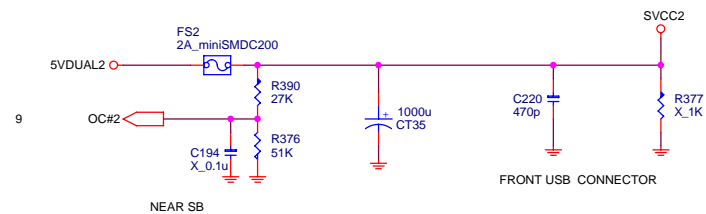


Micro-Star	Title	MS-7038	Rev	0A
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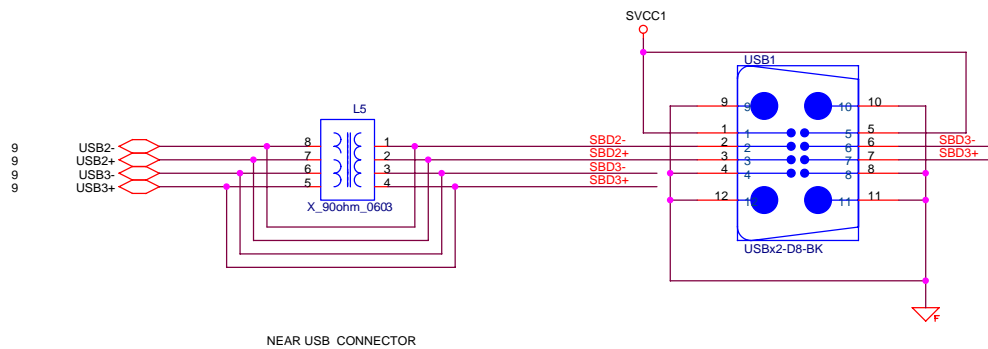
POWER CIRCUIT FOR USB PORT 0,1,2,3



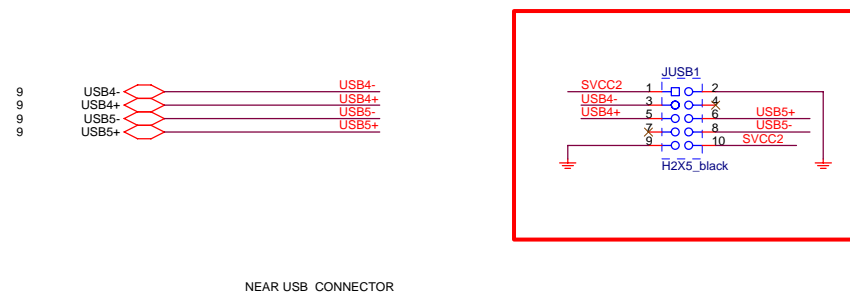
POWER CIRCUIT FOR USB PORT 4,5,6,7



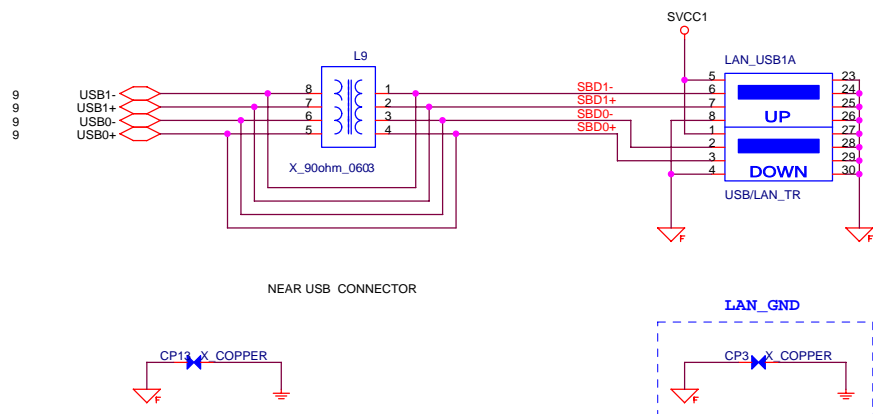
REAR PANEL USB CONNECTOR FOR USB PORT 0,1



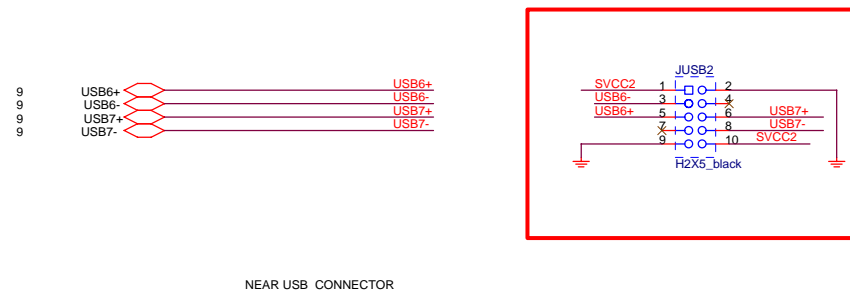
FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



REAR PANEL USB CONNECTOR FOR USB PORT 2,3

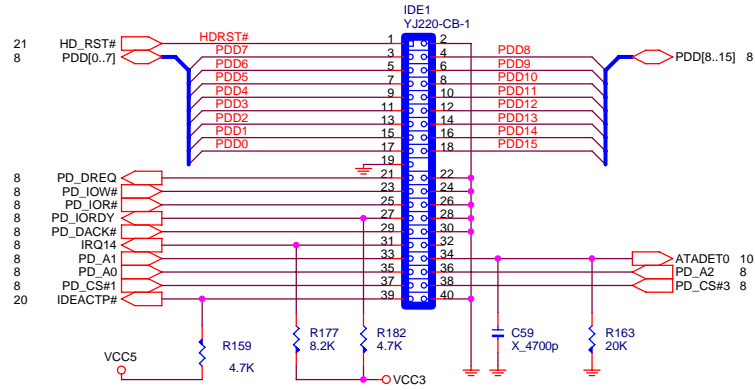


FRONT PANEL USB CONNECTOR FOR USB PORT 6,7

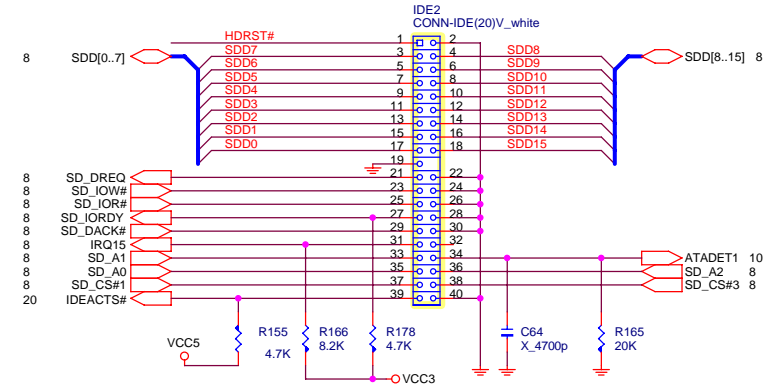


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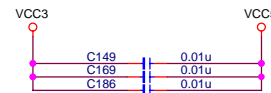
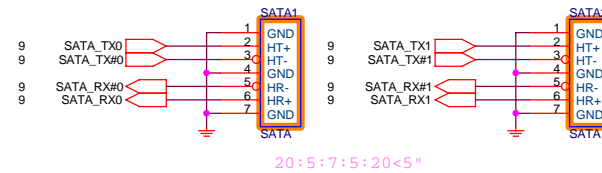
PRIMARY IDE BLOCK



SECONDARY IDE BLOCK

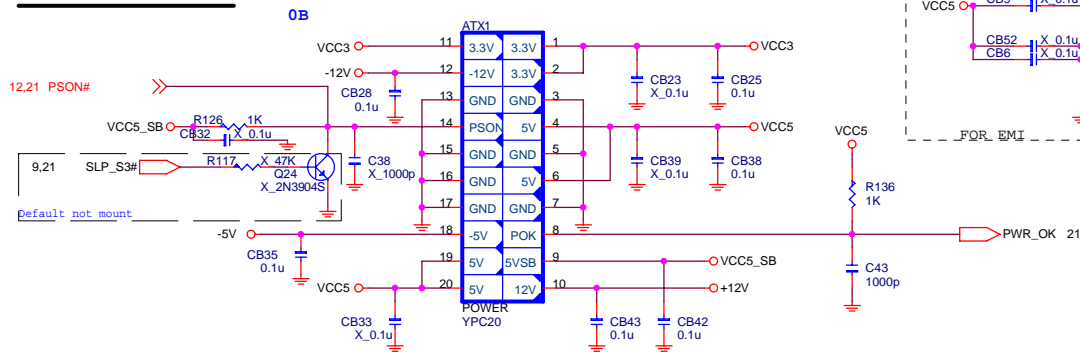


SERIAL ATA CONNECTOR BLOCK

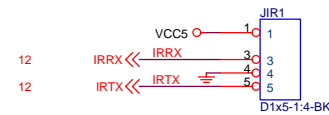


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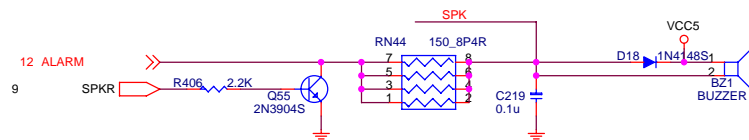
ATX CONNECTOR



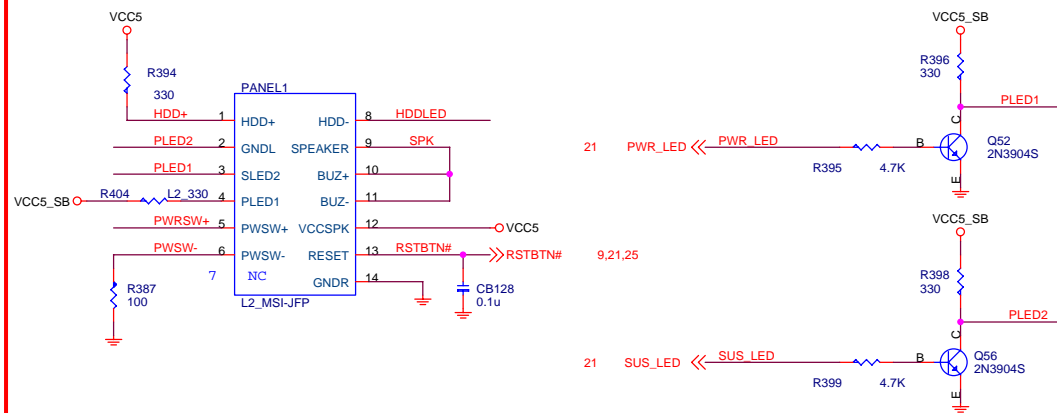
IR CONNECT



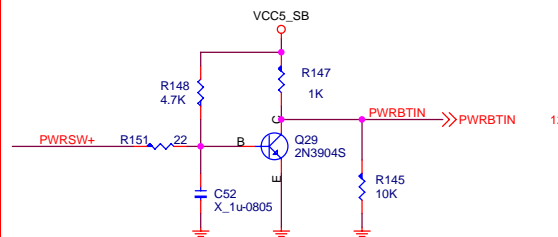
BUZZER



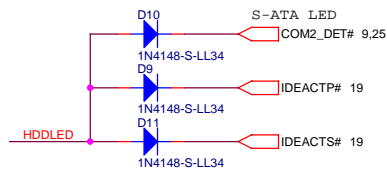
Legend Front Panel



POWER BUTTON



IDE LED



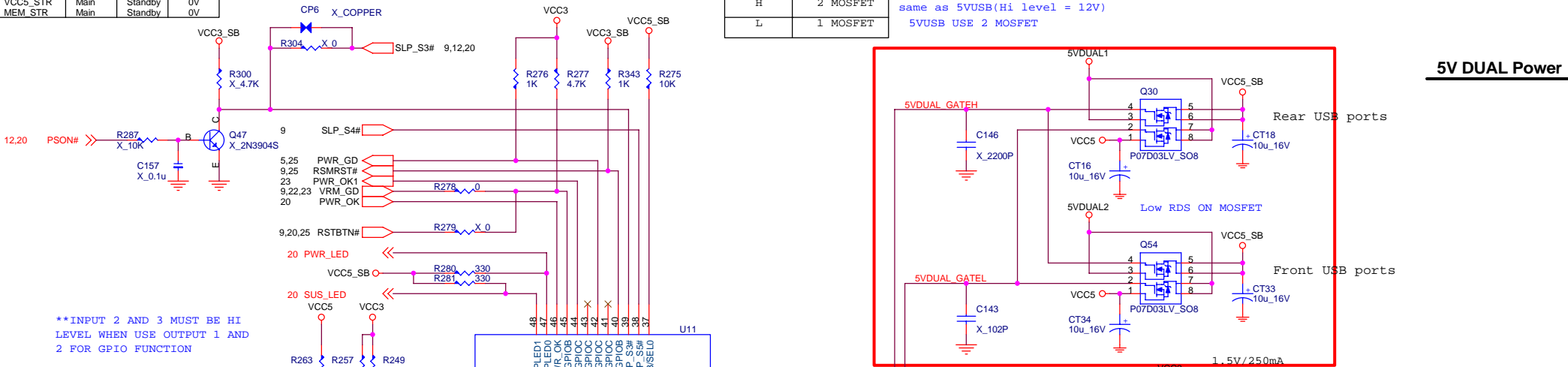
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Power	S0	S3	S5
VCC3_SB	Main	Standby	Standby
VCC5_STR	Main	Standby	Standby
MEM_STR	Main	Standby	Standby

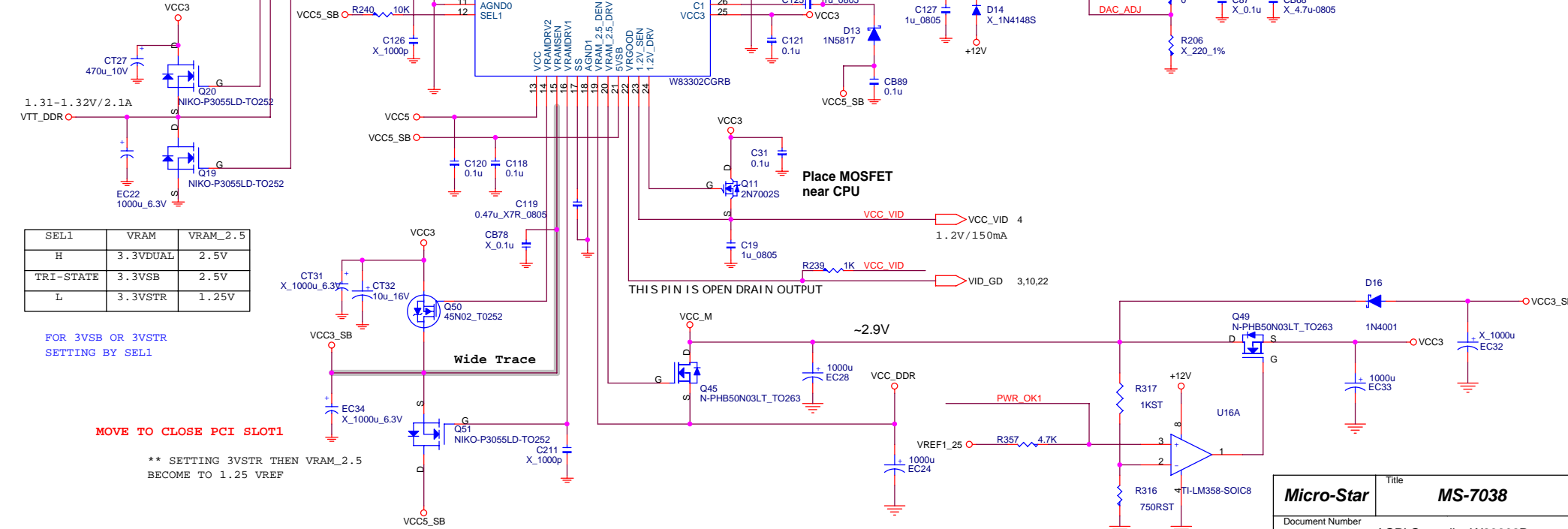
SEL0	5VUSB
H	2 MOSFET
L	1 MOSFET

**S50# pin function(Hi level = 5V)
same as 5VUSB(Hi level = 12V)
5VUSB USE 2 MOSFET

5V DUAL Power

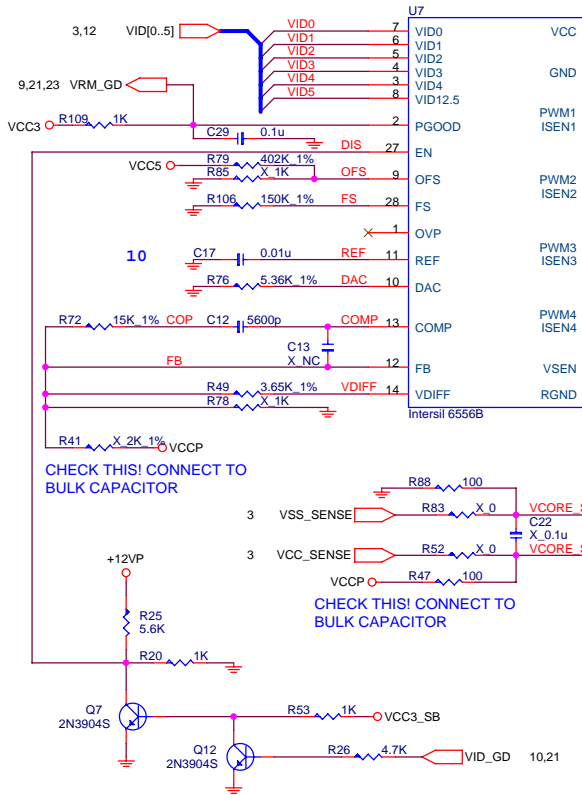
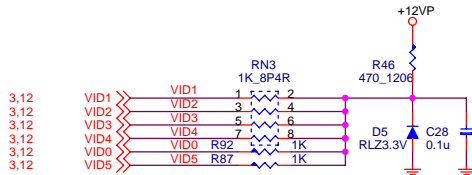


DDR VTT Power

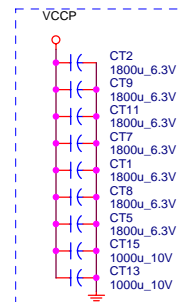
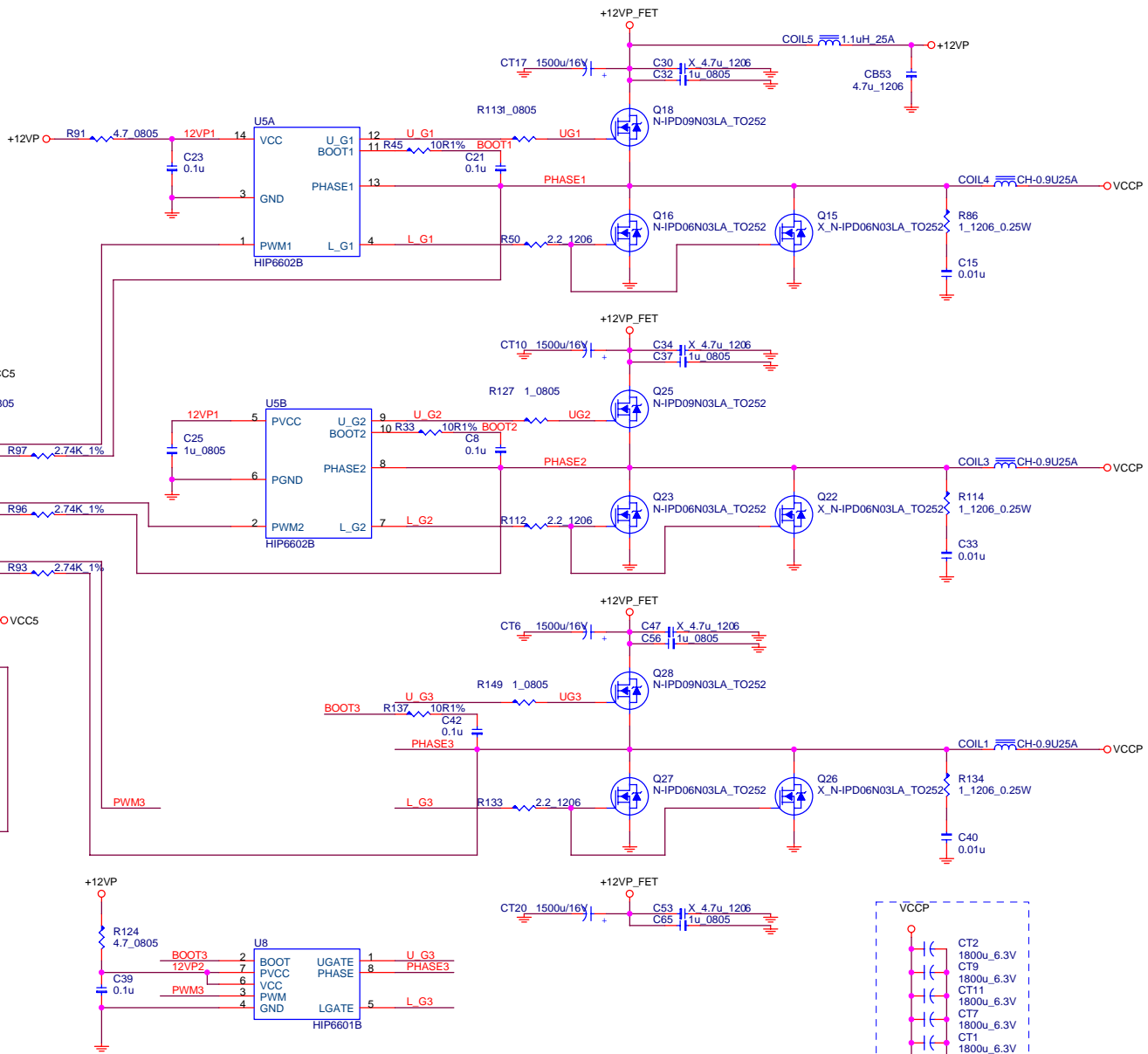
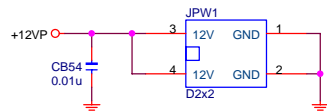
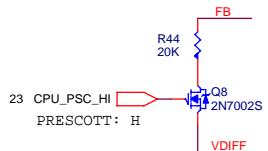


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VID Pull-Up Resistor



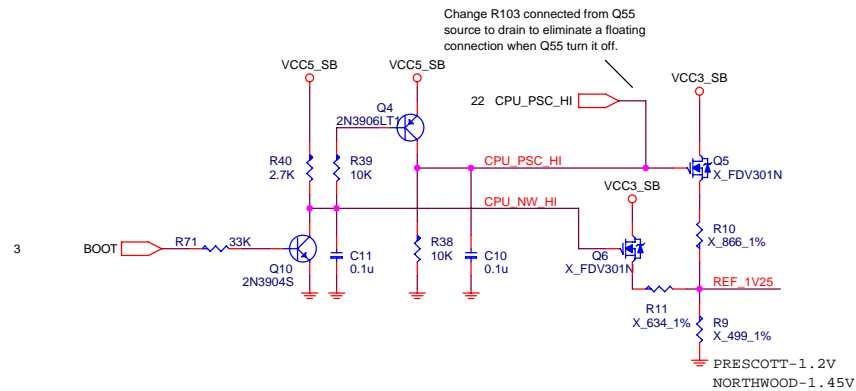
NORTHWOOD/PRESCOTT LOAD LINE SELECTOR



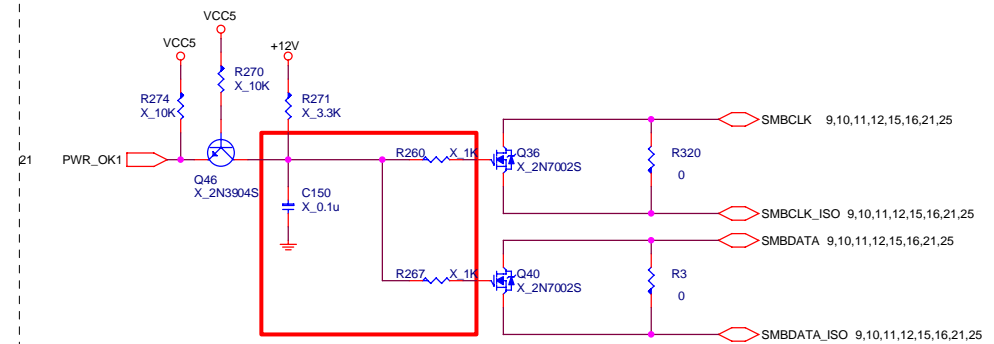
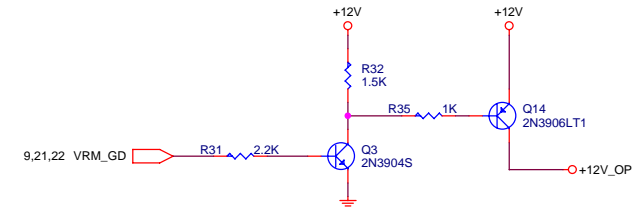
OB:REPLACEMENT

Micro-Star	Title	MS-7038	Rev	0A
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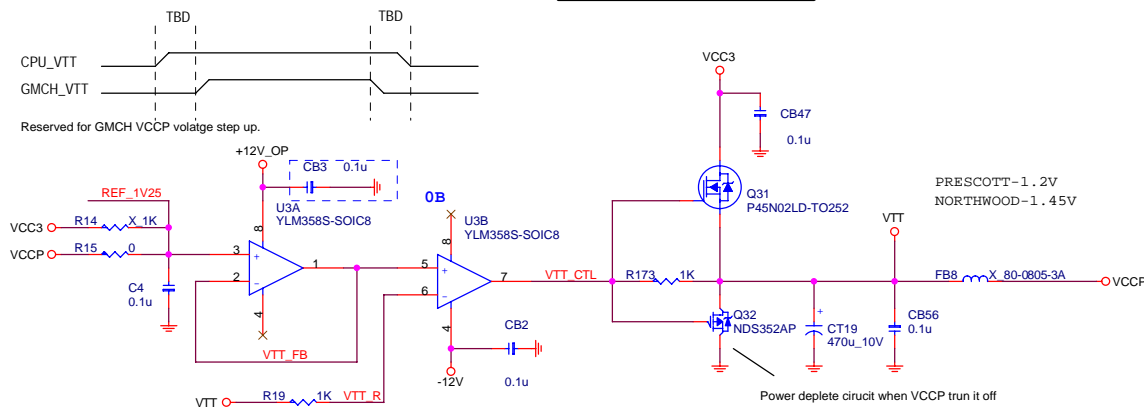
Intel reference GMCH VTT power circuit



GMCH_VTT ON/OFF CIRCUIT



GMCH VTT Generator

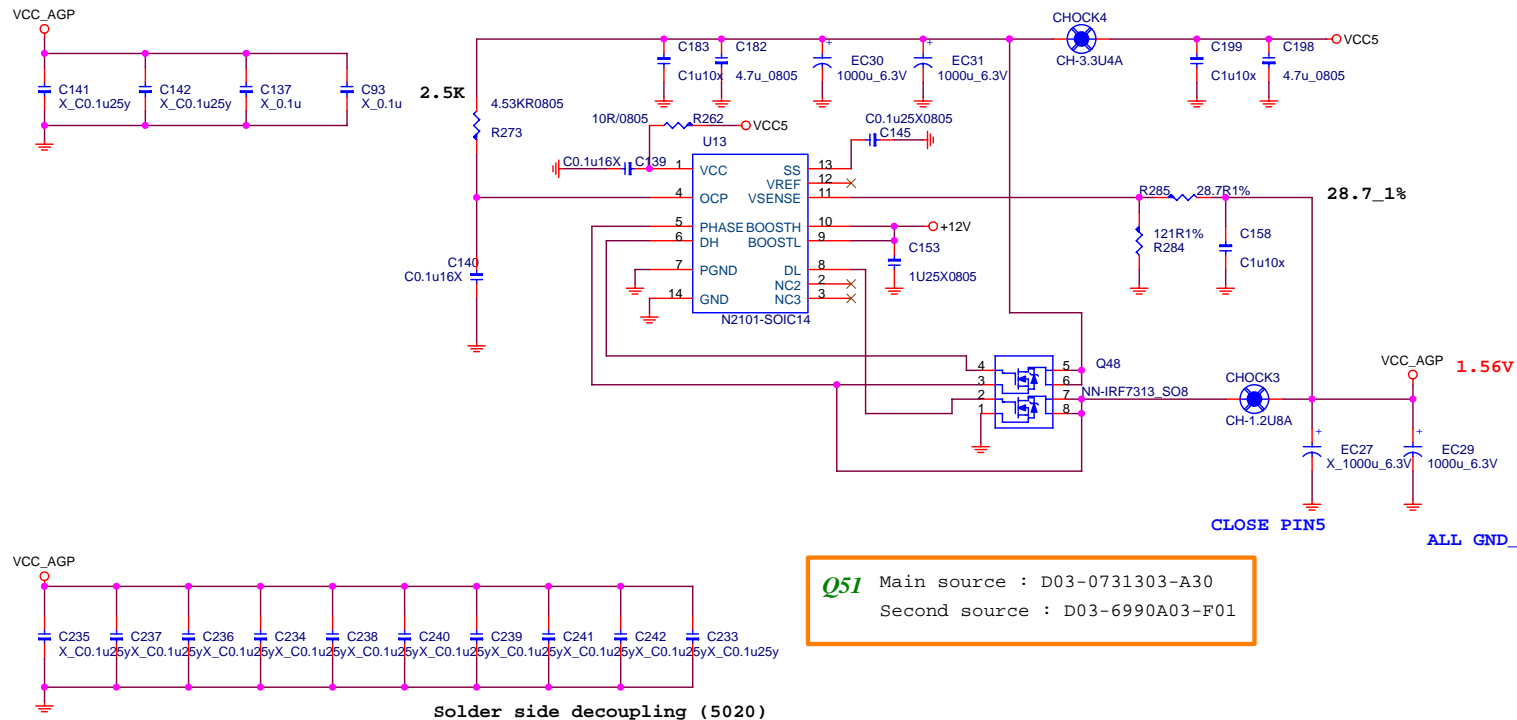


Bootstrip pin are input rather than output on Intel Prescott processor, either it's internal weak pull-up but still need to identify it can be sufficient driving capability for out side circuit. And the bootstrip pin power by core voltage so the outside circuit need to adjust the turn off voltage.

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AGP Power

1 . 5V/ 4A (NB) +1A (SB) +2A (AGP)

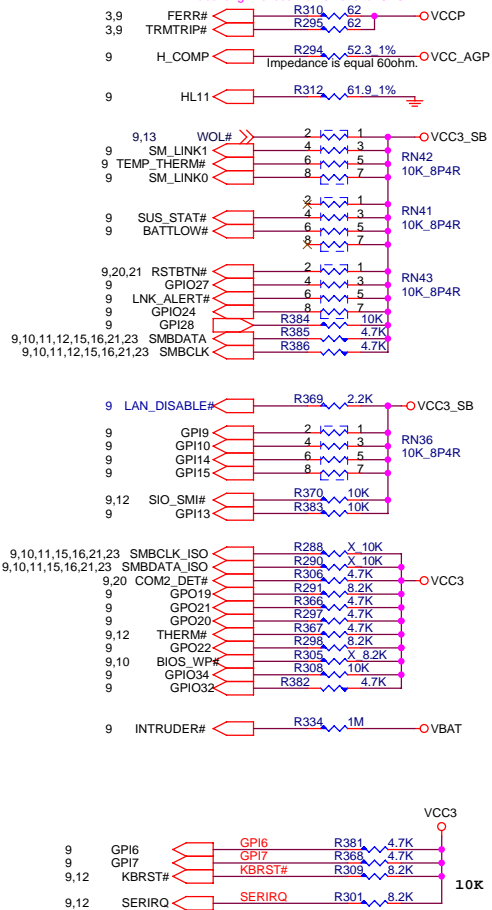


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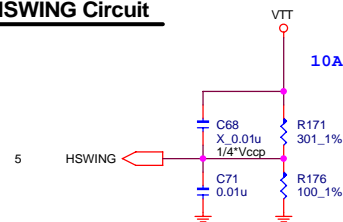
ICH5 STRAPPING RESISTORS

ALL COMPONENTS CLOSE TO ICH5

Trace length is less than 3inches to ICH5.



HSWING Circuit

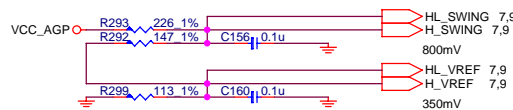
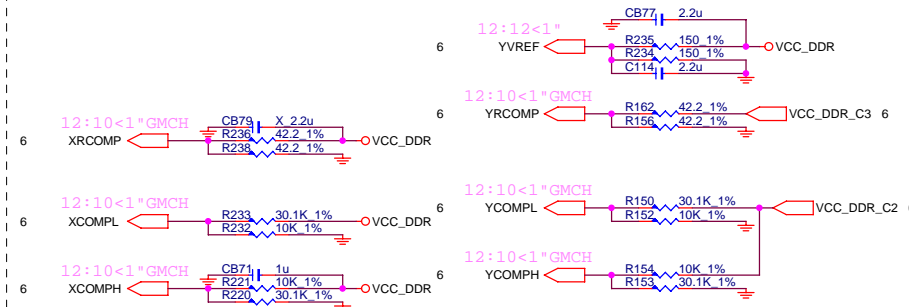
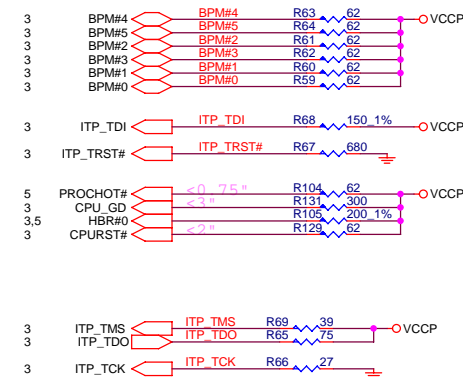


5VREF Sequencing Circuit



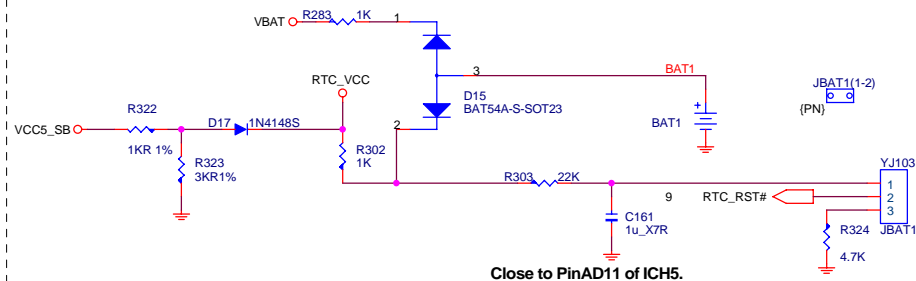
CPU STRAPPING RESISTORS

ALL COMPONENTS CLOSE TO CPU



RTC BLOCK

CLR CMOS	
1 - 2	Normal *
2 - 3	Clear CMOS



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ICH5

GPIO Pin	Type	Function	Power well
GPIO 0	I	PREQ#A	MAIN
GPIO 1	I	PREQ#B	MAIN
GPIO 2	I	PIRQ#E	MAIN
GPIO 3	I	PIRQ#F	MAIN
GPIO 4	I	PIRQ#G	MAIN
GPIO 5	I	PIRQ#H	MAIN
GPIO 6	I	GPI6	MAIN
GPIO 7	I	GPI7	MAIN
GPIO 8	I	WOL#	RESUME
GPIO 9	I	OC4#	RESUME
GPIO 10	I	OC5#	RESUME
GPIO 11	I	TEMP_THERM#	RESUME
GPIO 12	I	SIO_SMI#	RESUME
GPIO 13	I	GPI13	RESUME
GPIO 14	I	OC#6	RESUME
GPIO 15	I	OC#7	RESUME
GPIO 16	O	PGNT#A	MAIN
GPIO 17	O	PGNT#B	MAIN
GPIO 18	O	GPO18	MAIN
GPIO 19	O	GPO19	MAIN
GPIO 20	O	GPO20	MAIN
GPIO 21	O	GPO21	MAIN
GPIO 22	OD	GPO22	MAIN
GPIO 23	O	BIOS_WP#	MAIN
GPIO 24	I/O	GPIO24	RESUME
GPIO 25	I/O	LAN_DISABLE#	RESUME
GPIO 27	I/O	GPIO27	RESUME
GPIO 28	I/O	GPIO28	RESUME
GPIO 32	I/O	GPIO32	MAIN
GPIO 33	I/O	COM2_DET#	MAIN
GPIO 34	I/O	GPIO34	MAIN
GPIO 40	I	PREQ#4	MAIN
GPIO 41	I	GPI41	MAIN
GPIO 48	O	PGNT#4	MAIN
GPIO 49	OD	CPU_GD	MAIN

default output
default output
default output
default output
default output
default output

PCI RESET DEVICE

Signals	Target
PCIRST#1	PCI slot 1-3, LAN
PCIRST#2	Super I/O,AGP slot
PCIRST_ICH5#	Northbridge , FWH
HDDRST#	Primary, Scondary IDE

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
PCI Slot 1	PIRQ#G PIRQ#H PIRQ#E PIRQ#F	PCI_REQ#0 PCI_GNT#0	AD26	PCICLK0
PCI Slot 2	PIRQ#F PIRQ#G PIRQ#H PIRQ#E	PCI_REQ#4 PCI_GNT#4	AD25	PCICLK1
PCI Slot 3	PIRQ#E PIRQ#F PIRQ#G PIRQ#H	PCI_REQ#2 PCI_GNT#2	AD28	PCICLK2
LAN	PIRQH	PCI_REQ#1 PCI_GNT#1	AD29	LAN_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

JUMPER SETTING

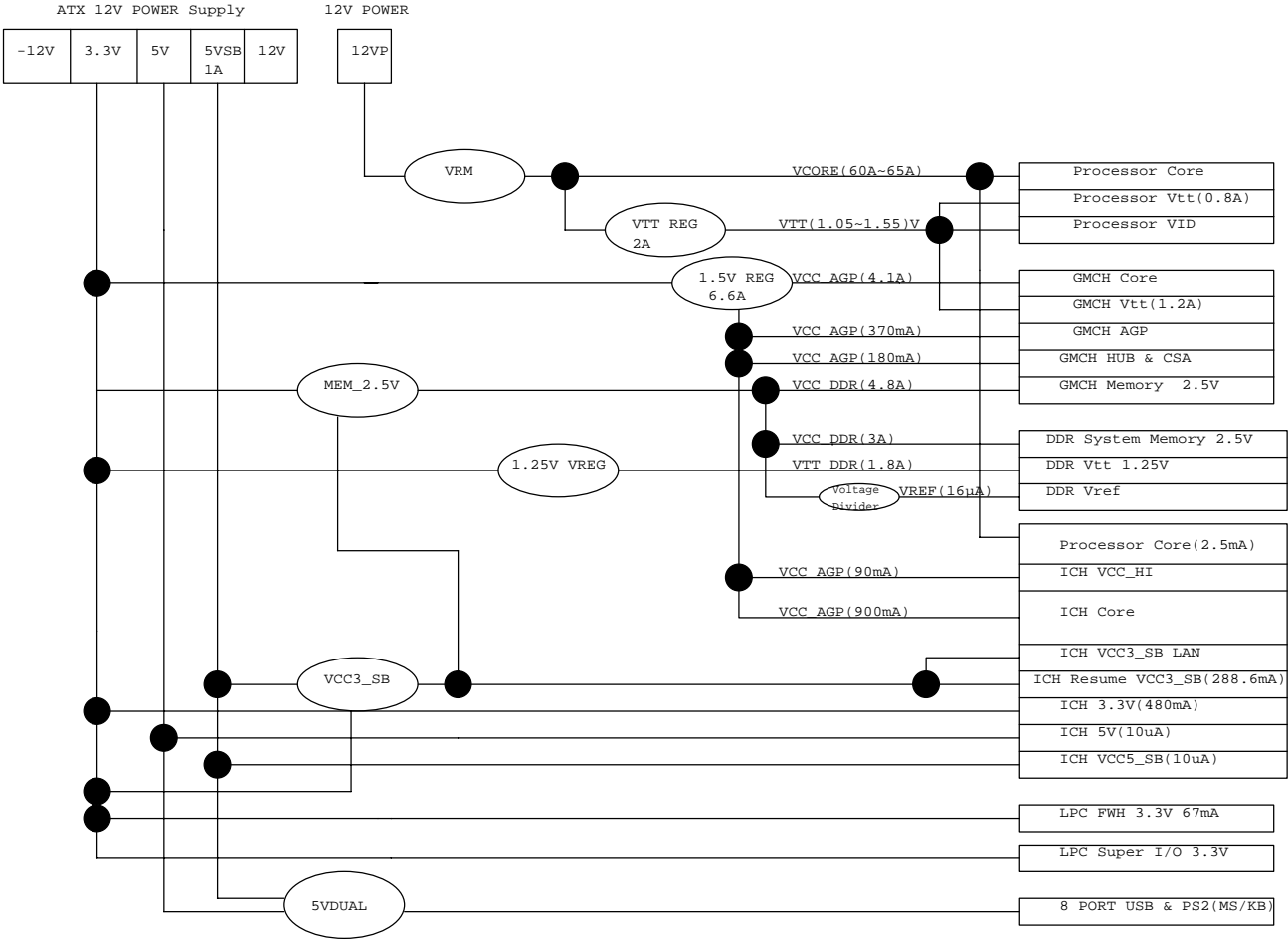
JBAT1	(1-2) NORMAL	(2-3) CLEAR
JAUD1	(5-6) (9-10)	W/O FRONT AUDIO WITH FRONT AUDIO

SIO

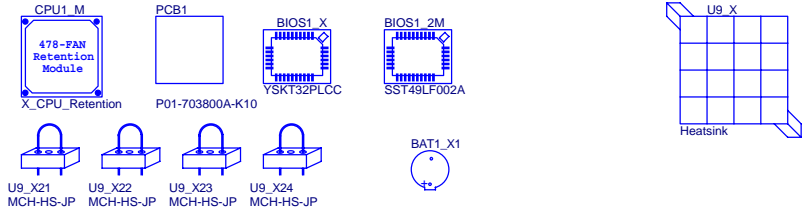
PIN NAME	USAGE	Input/Output	NOTES
GPIO10	UNUSED	INPUT	
GPIO11	UNUSED	INPUT	
GPIO12	UNUSED	INPUT	
GPIO13	UNUSED	INPUT	
GPIO14	UNUSED	OUTPUT	
GPIO15	VID5	INPUT	Low: VID add 0.0125V , High :by pass
GPIO16	UNUSED	OUTPUT	
GPIO17	UNUSED	OUTPUT	
GPIO20	UNUSED	OUTPUT	
GPIO21	SMBCLK_ISO	INPUT	SMBUS CLOCK
GPIO22	SMBDATA_ISO	INPUT / OUTPUT	SMBUS DATA
GPIO23	POWER_LED	OUTPUT	Default used MS-5
GPIO24	UNUSED	OUTPUT	
GPIO25	UNUSED	OUTPUT	IRRX
GPIO26	UNUSED	OUTPUT	
GPIO27	UNUSED	OUTPUT	
GPIO30	SLP_S3#	INPUT	S3 state indicator signal
GPIO31	PS_ON#	OUTPUT	Connector to Power Supply to turn on Power.
GPIO32	UNUSED	OUTPUT	
GPIO33	UNUSED	OUTPUT	
GPIO34	UNUSED	OUTPUT	
GPIO35	UNUSED	OUTPUT	

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POWER DELIVERY MAP



MANUAL PART



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D																																																																							
C																																																																							
B																																																																							
A																																																																							
																	<table><tr><td colspan="2">Micro-Star</td><td colspan="2" rowspan="3">Title</td><td colspan="2" rowspan="3">MS-7038</td><td colspan="2" rowspan="3">Rev</td><td colspan="2" rowspan="3">0A</td></tr><tr><td colspan="10">Document Number</td><td colspan="5">REVISION HISTORY</td></tr><tr><td colspan="10">Last Revision Date: Monday, September 22, 2003</td><td colspan="5">Sheet 28 of 28</td></tr></table>										Micro-Star		Title		MS-7038		Rev		0A		Document Number										REVISION HISTORY					Last Revision Date: Monday, September 22, 2003										Sheet 28 of 28					1				
Micro-Star		Title		MS-7038		Rev		0A																																																															
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Last Revision Date: Monday, September 22, 2003										Sheet 28 of 28																																																													