



MS-7295 Ver:0A

CPU:

AMD 940 Athlon 64/Athlon 64 FX

System Chipset:

NVIDIA C51PV / C51PVG

NVIDIA MCP 51

On Board Chipset:

LPC Super I/O -- Winbond 83627EHF

LAN Vitess VSC8601

HD Codec --ALC883

BIOS --LPC FLASH ROM 4M

Main Memory:

DDR * 4 (Max 4GB)

Expansion Slots:

PCI-E X 16 *1

PCI-E X 4 *1

PCI 2.3 Slot * 2

PWM:

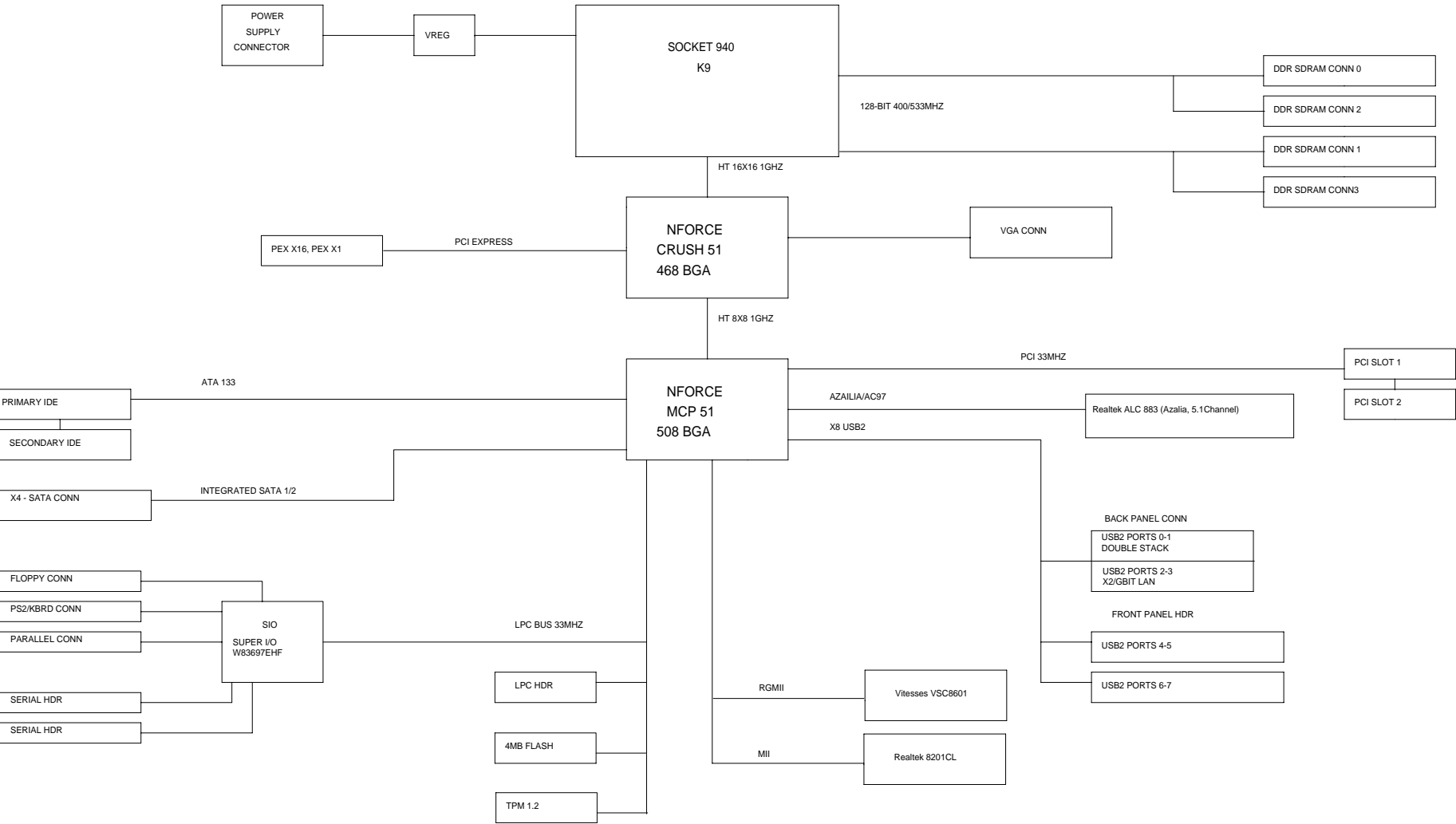
Controller--Intersil ISL6566CR 3 Phase

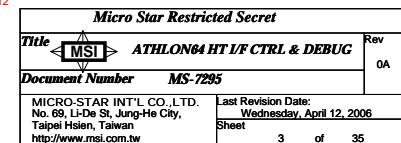
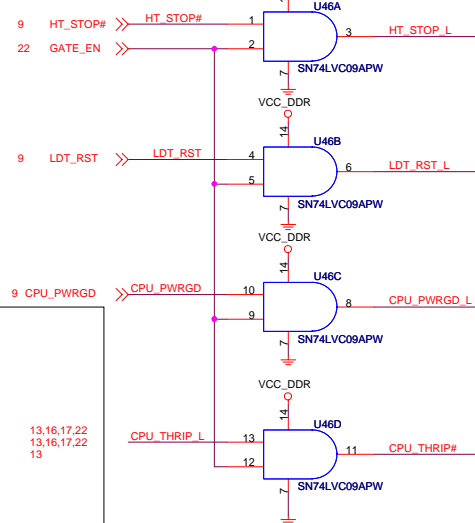
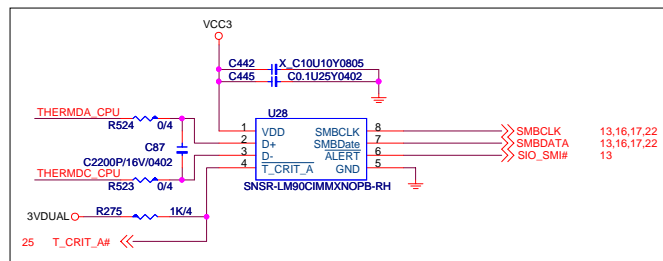
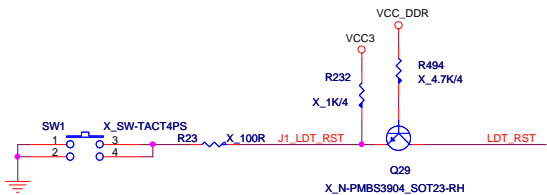
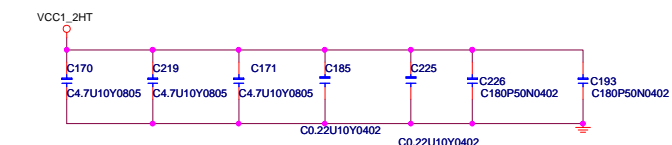
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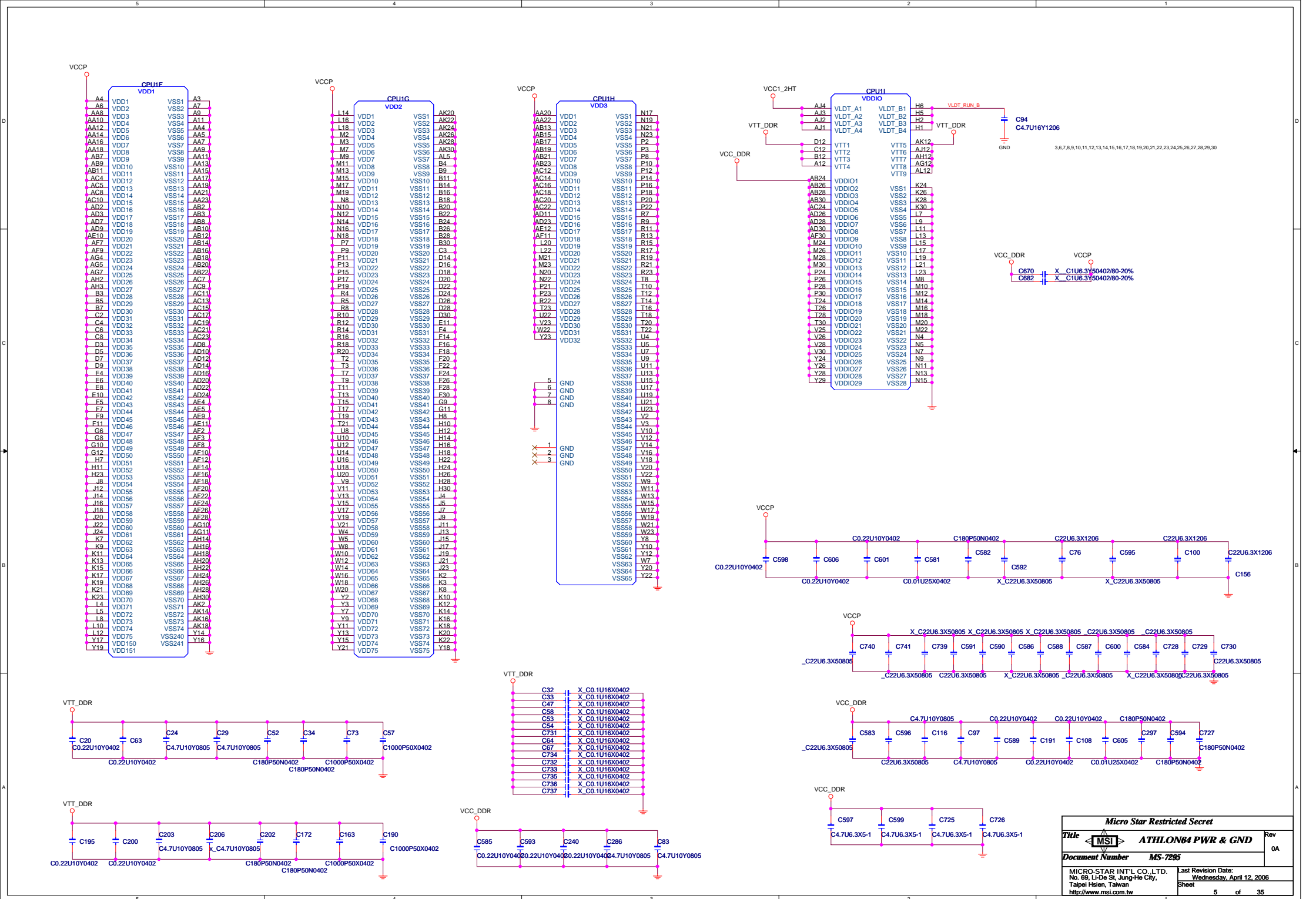
NECCI BOGOTA

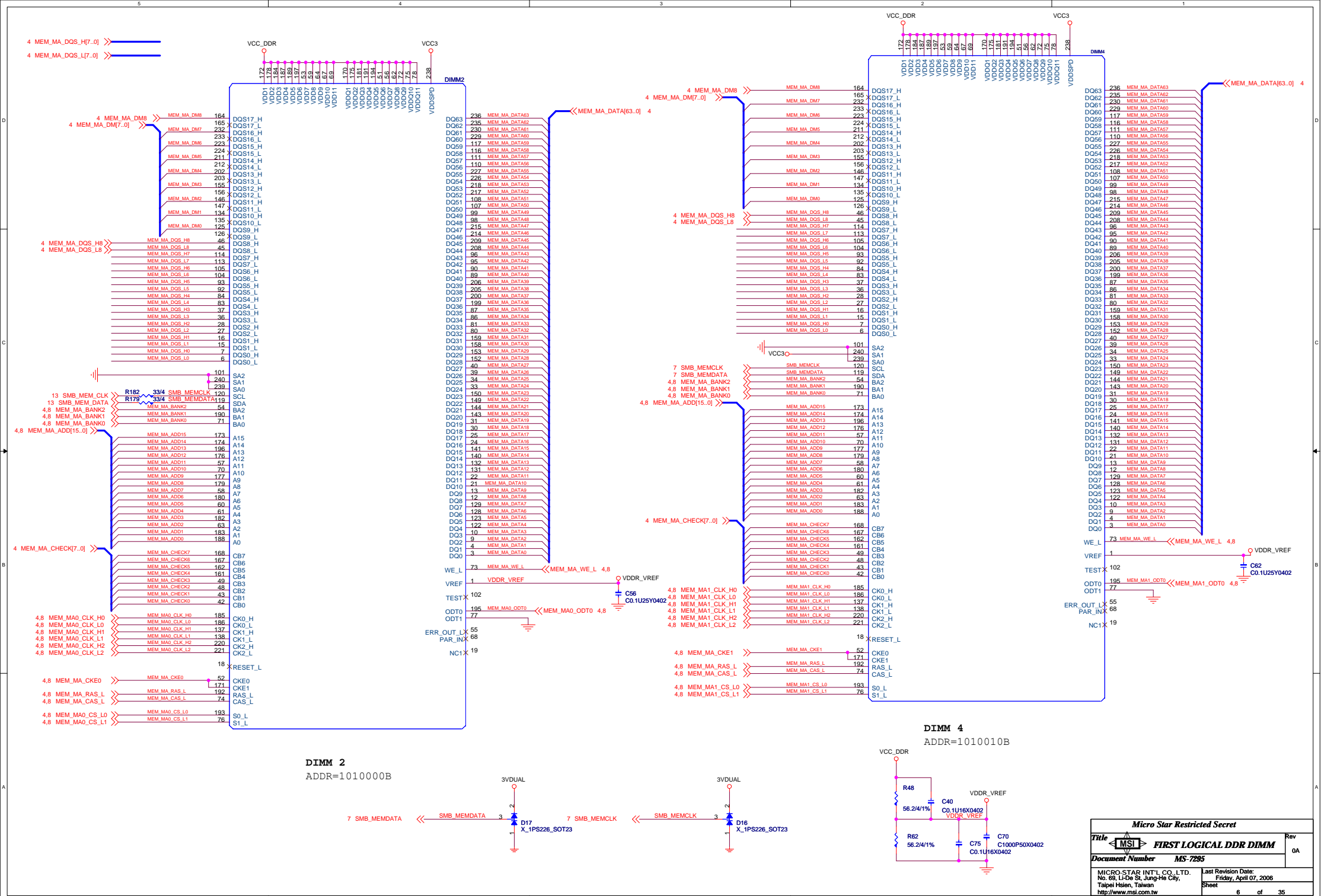
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Title	Cover Sheet	Rev 0A
Document Number	MS-7295	
MICRO-STAR INT'L CO. LTD. No. 69, Li-De St., Jung-Hsi City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Tuesday, March 14, 2006 Sheet 1 of 35

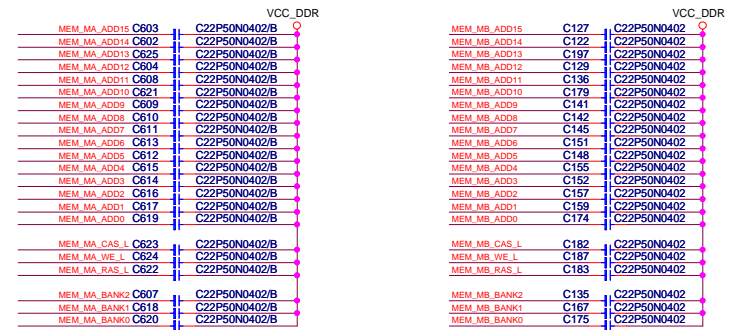
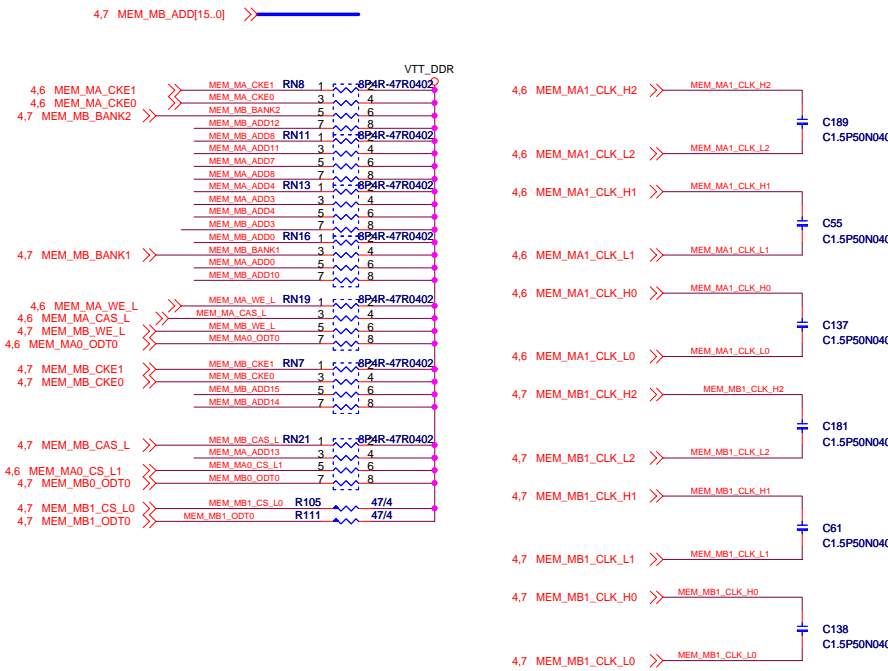
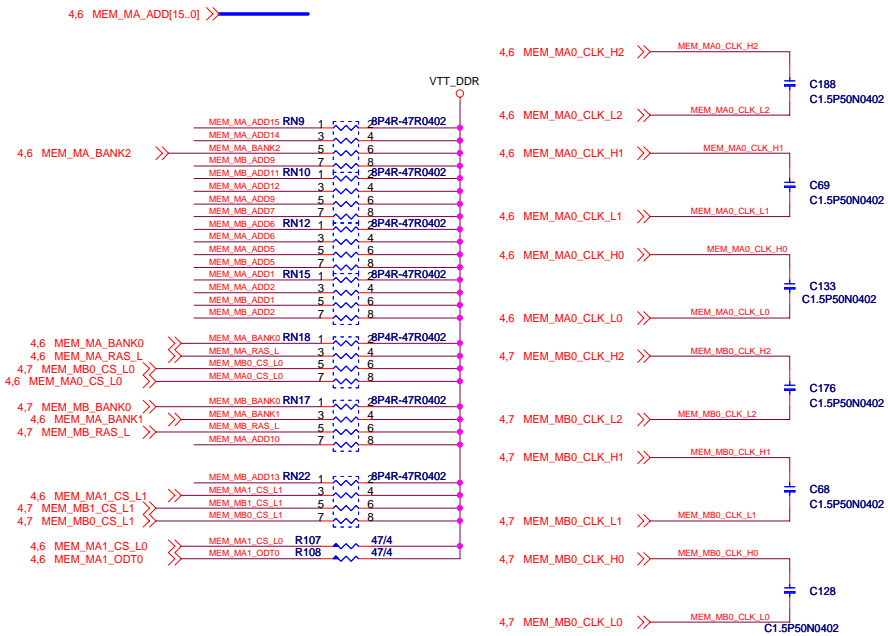
BLOCK DIAGRAM





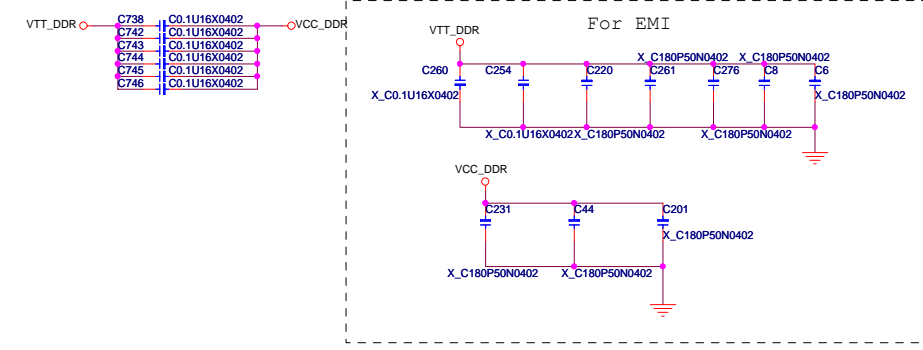
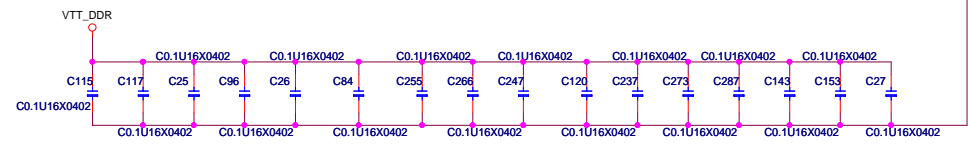
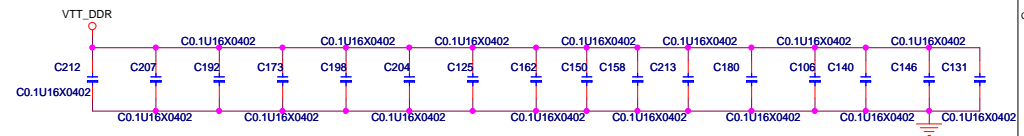


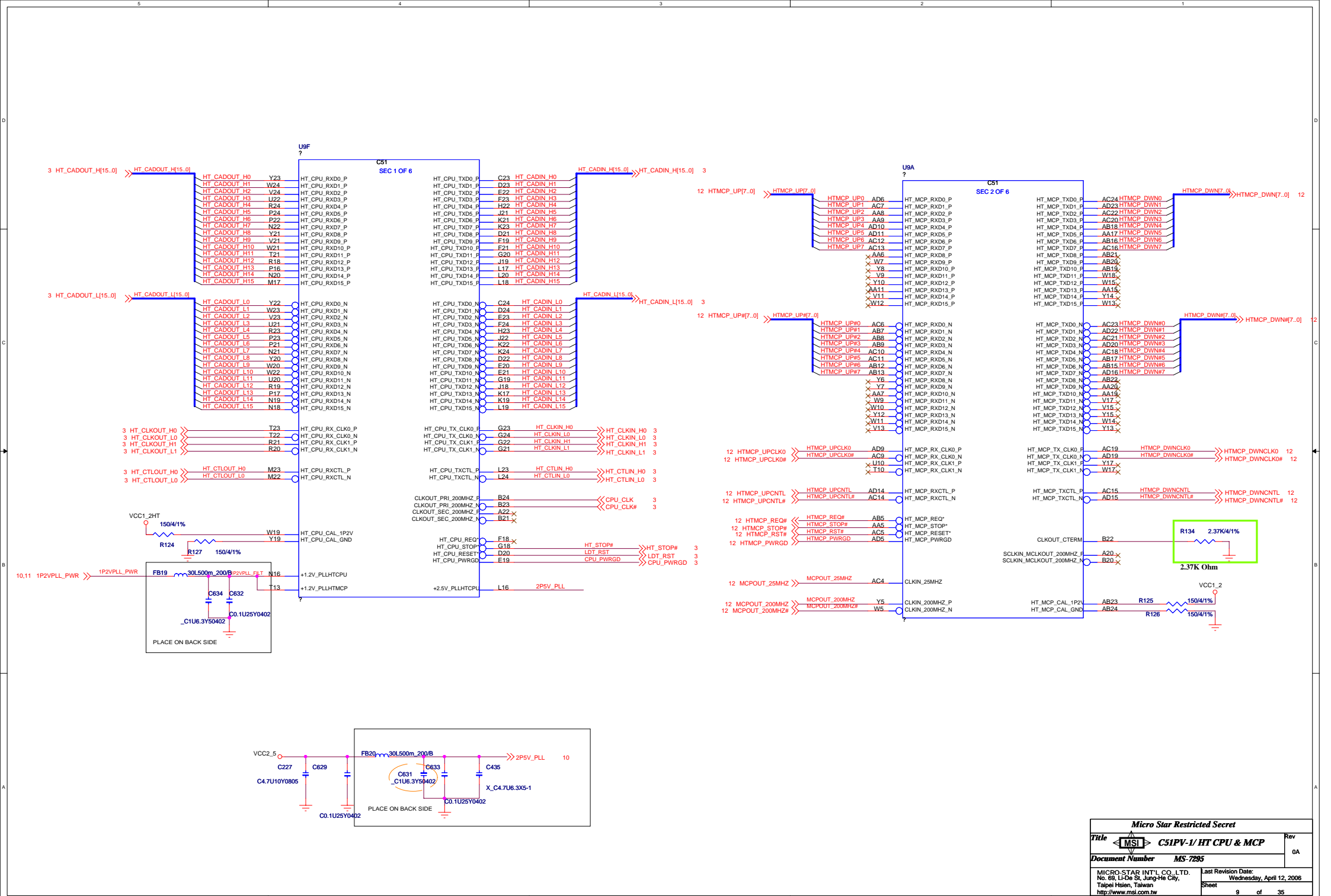


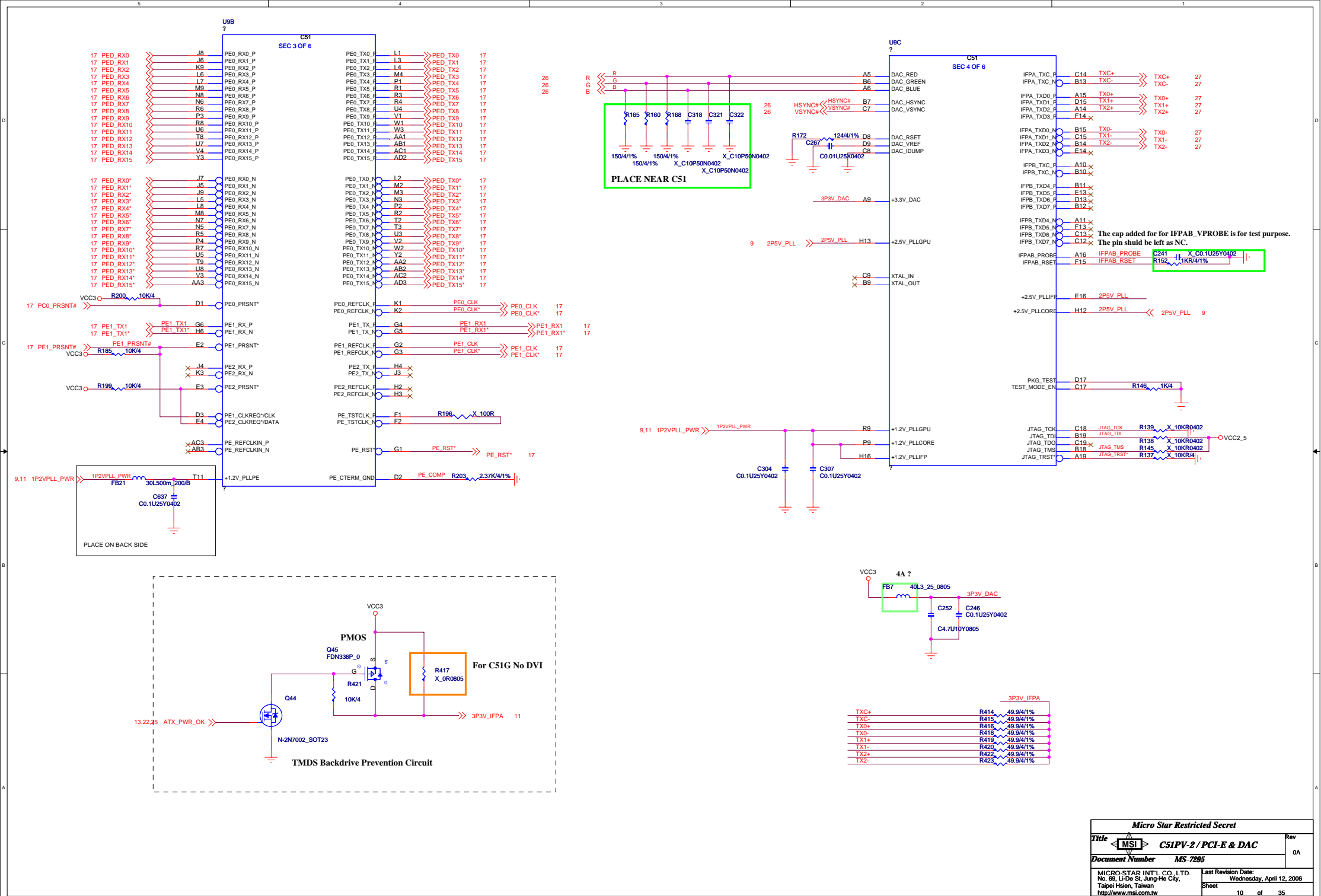


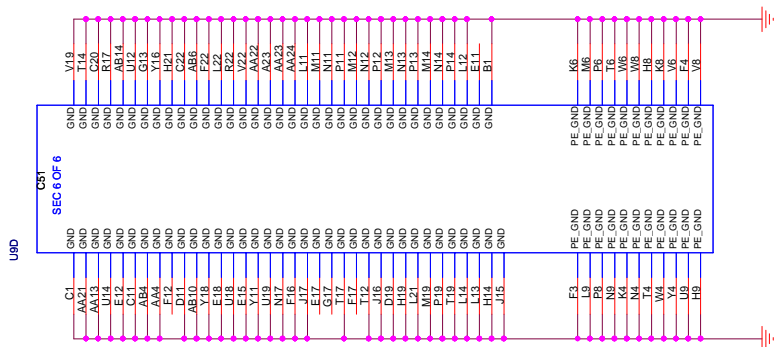
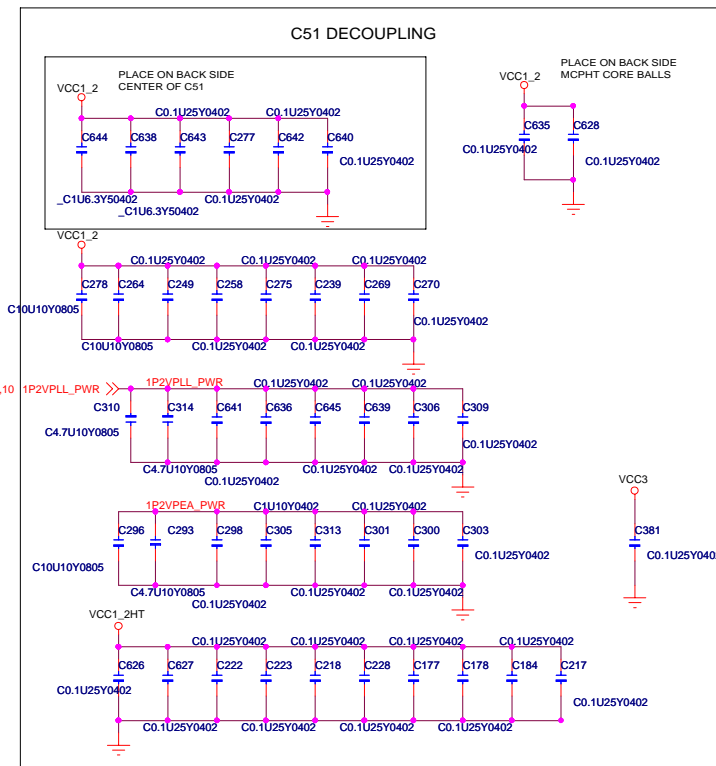
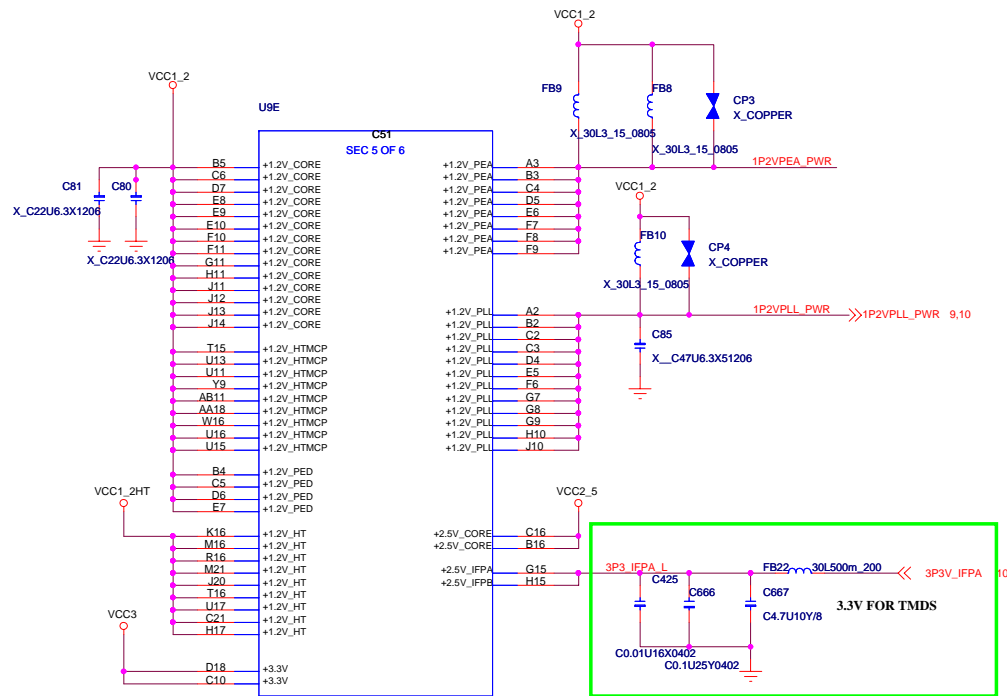
Decoupling Between Processor and DIMMs

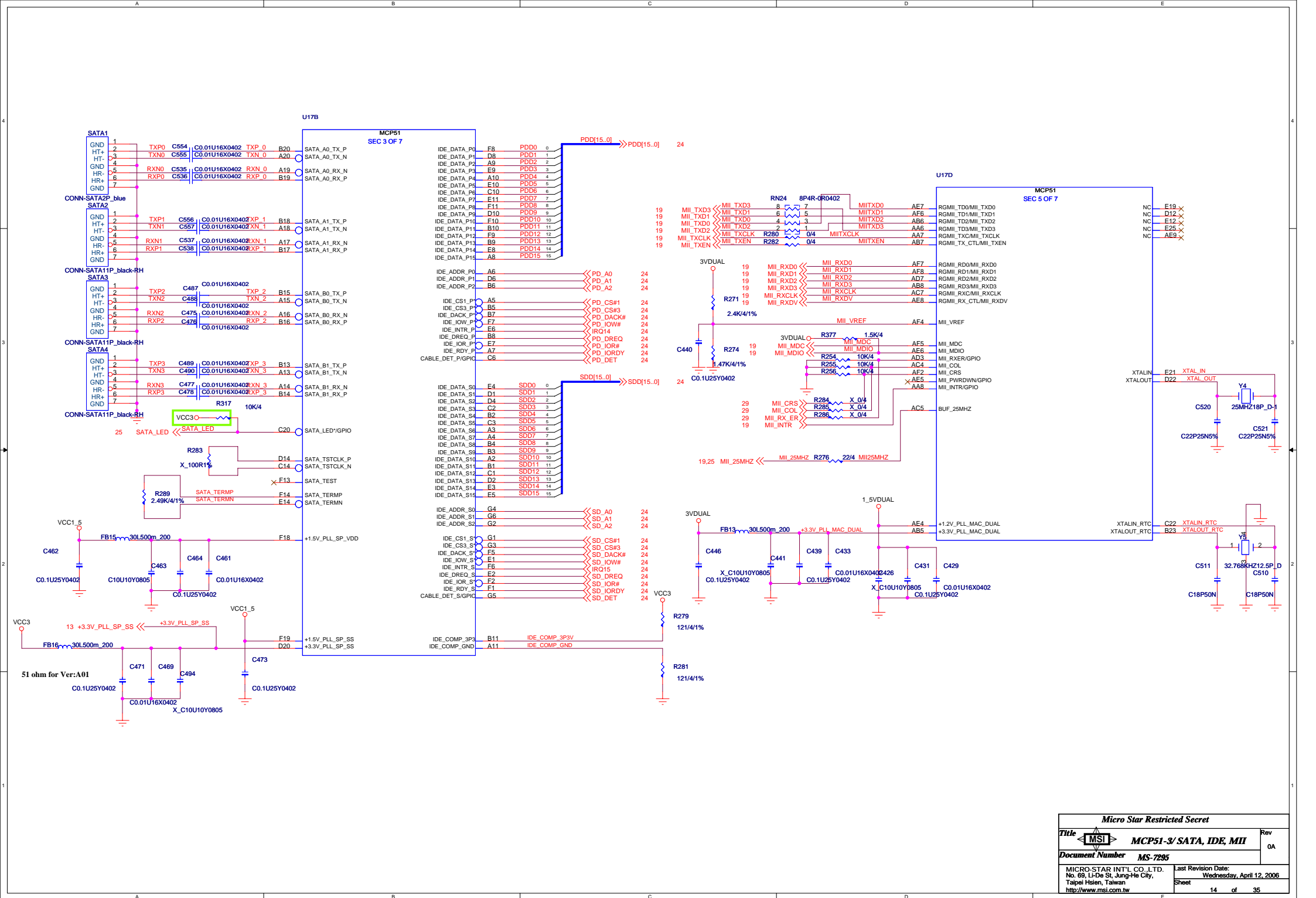
Layout: Spread out on VTT pour





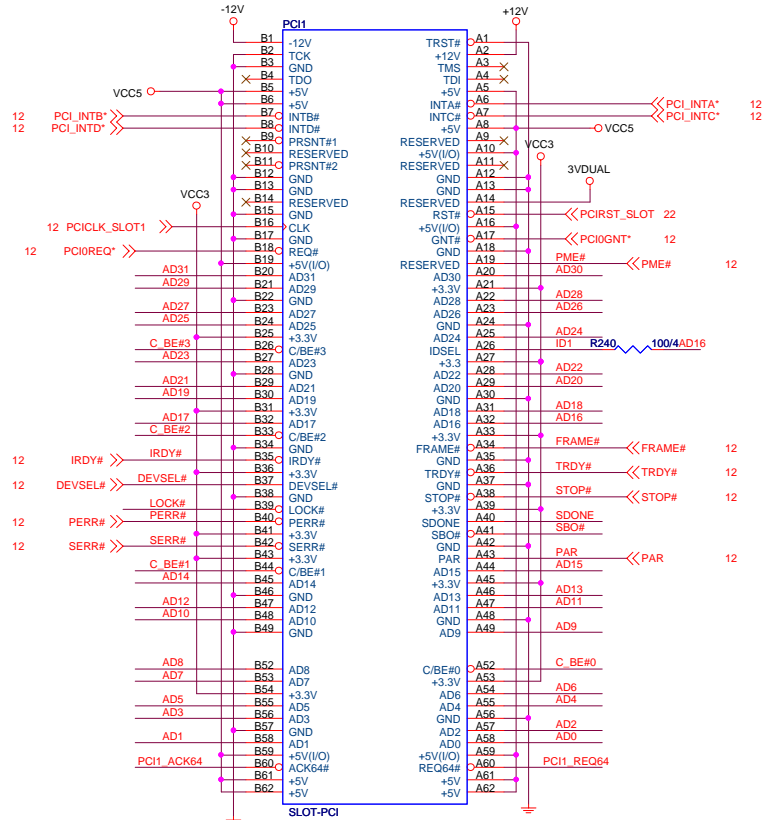






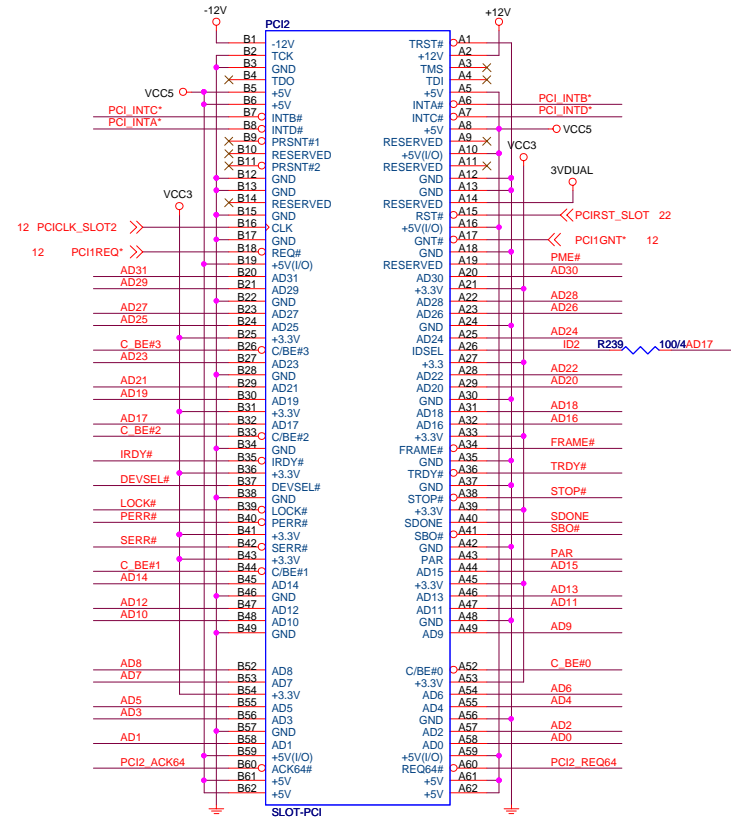
12 AD[31..0] >> AD[31..0]
12 C_BE#[3..0] >> C_BE#[3..0]

PCI SLOT 1 (PCI VER: 2.3 COMPLY)



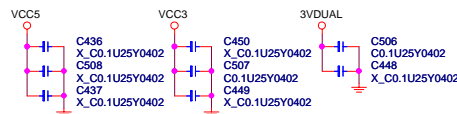
IDSEL = AD16
MASTER = PCI1REQ*
PCI1GNT*

PCI SLOT 2 (PCI VER: 2.3 COMPLY)

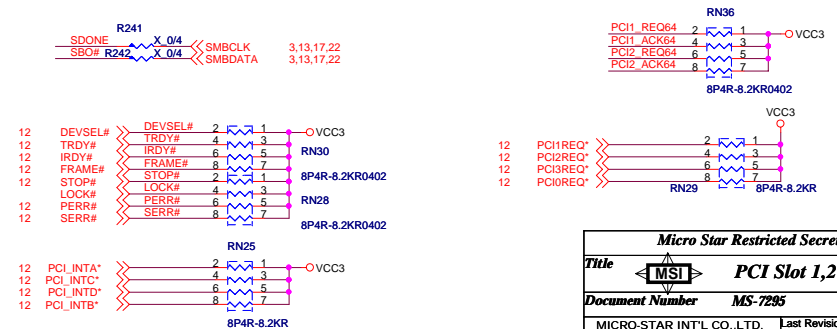


IDSEL = AD17
MASTER = PCI2REQ*
PCI2GNT*

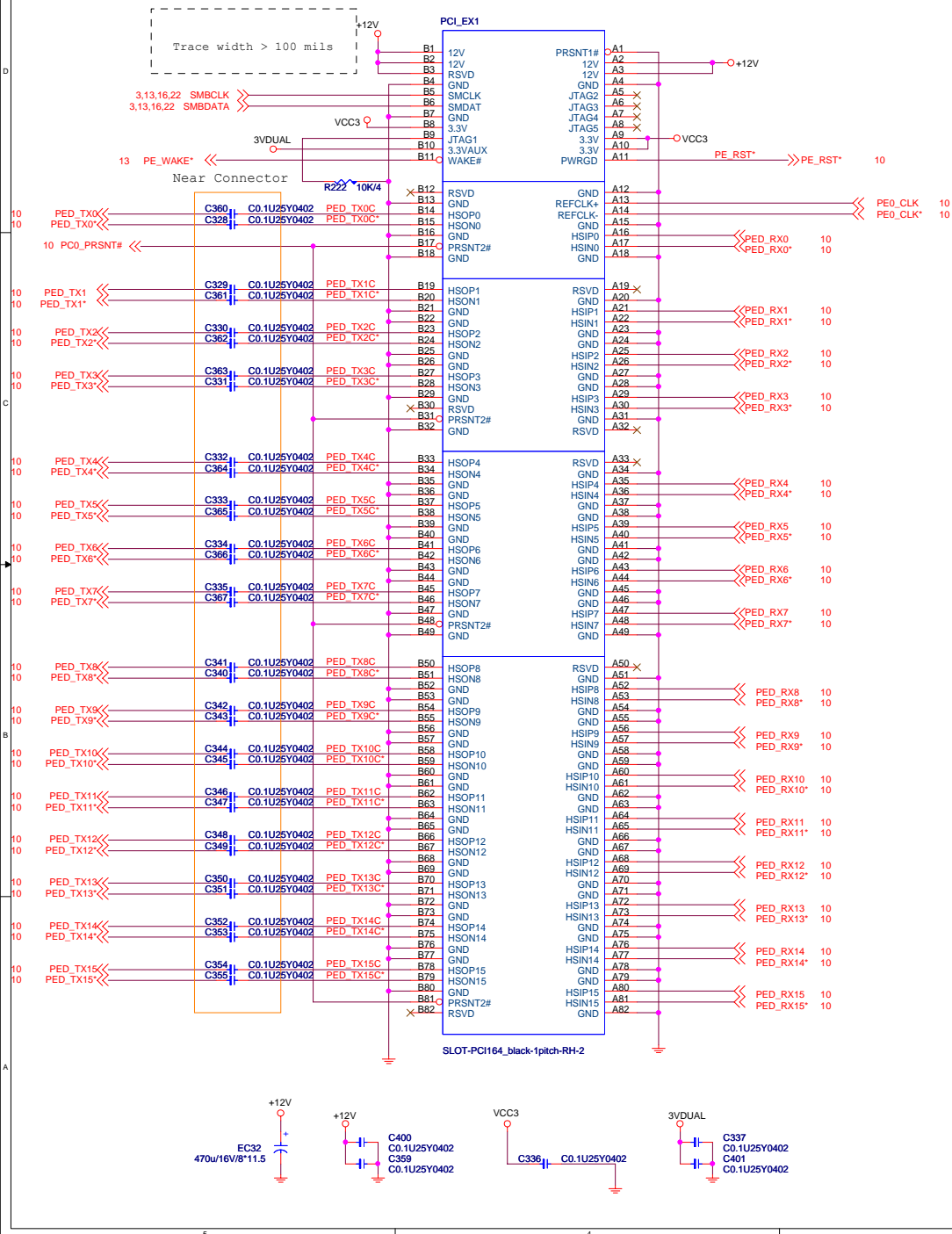
PCI SLOT DECOUPLING CAPACITORS



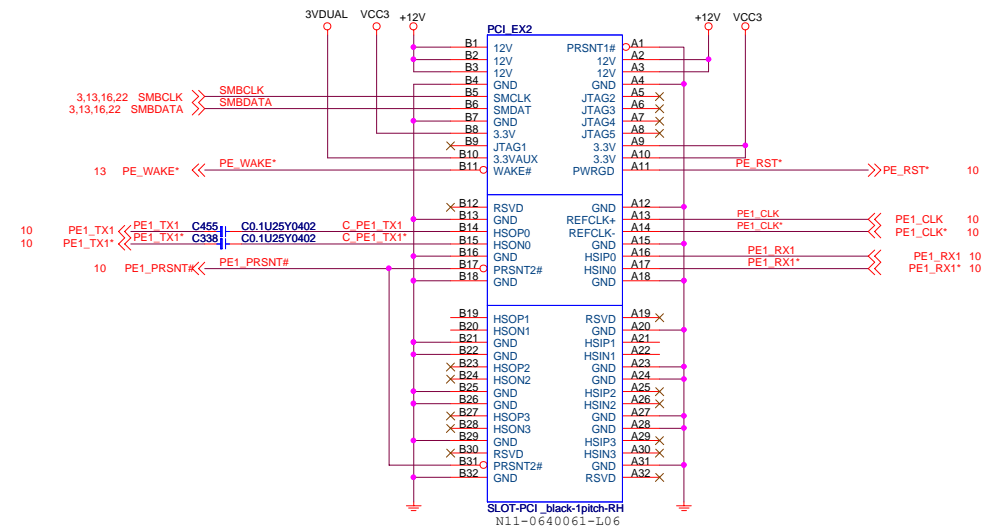
PCI PULL-UP / DOWN RESISTORS

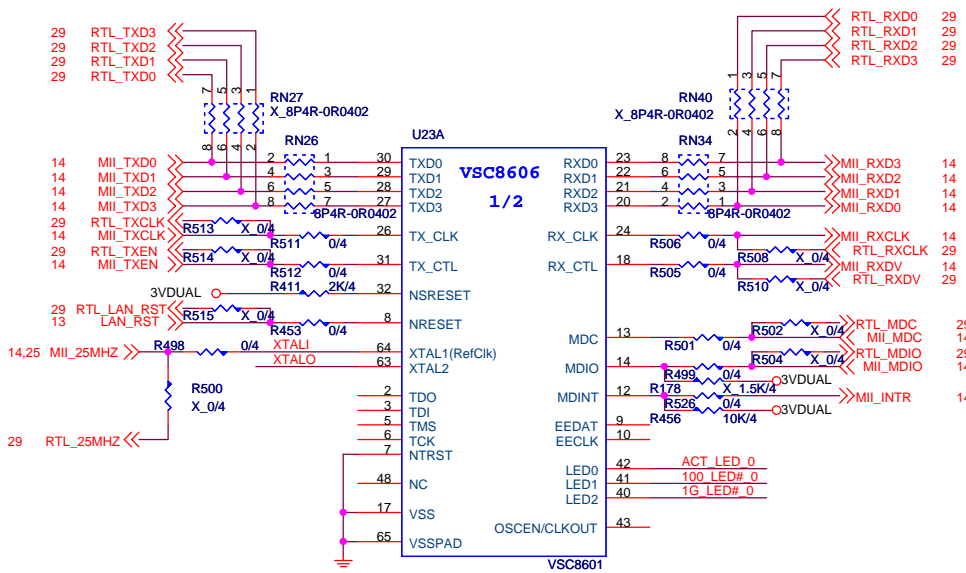


Micro Star Restricted Secret	
Title	PCI Slot 1,2
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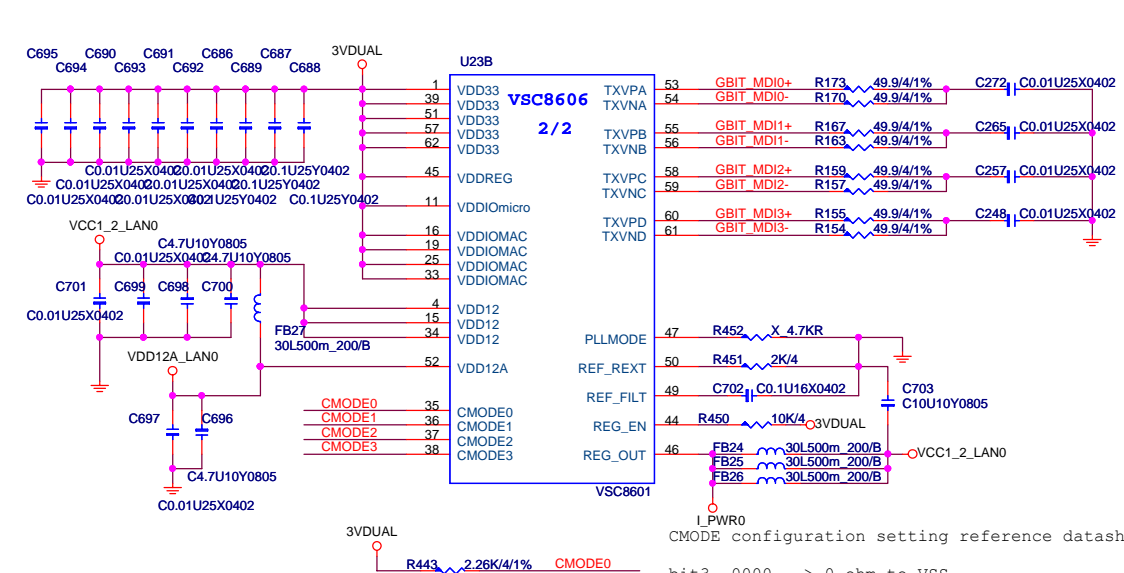
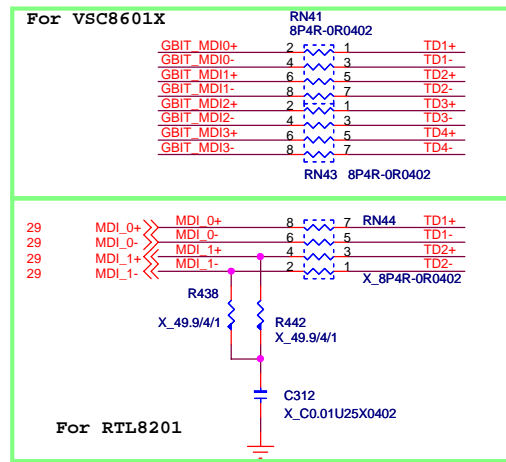
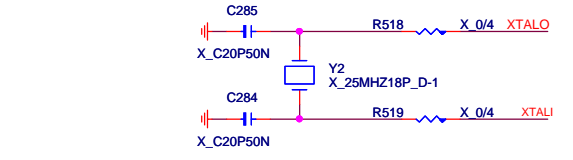
PCI EXPRESS_16

PCI EXPRESS x4-PORT



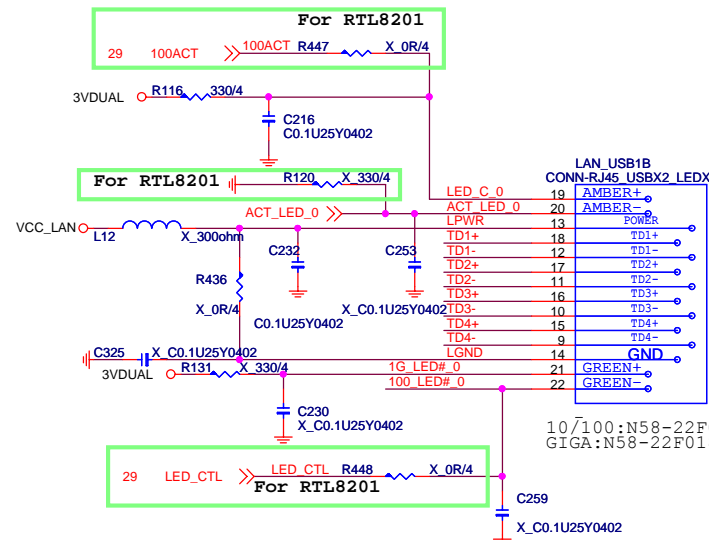


LAN CONNECTOR



CMODE configuration setting reference datasheet

bit	value	description
bit3	0000	--> 0 ohm to VSS
bit2	0100	--> 8.25k ohm to VSS
bit1	0101	--> 12.1k ohm to VSS
bit0	1001	--> 2.26k ohm to 3.3V



For 10/100 Lan

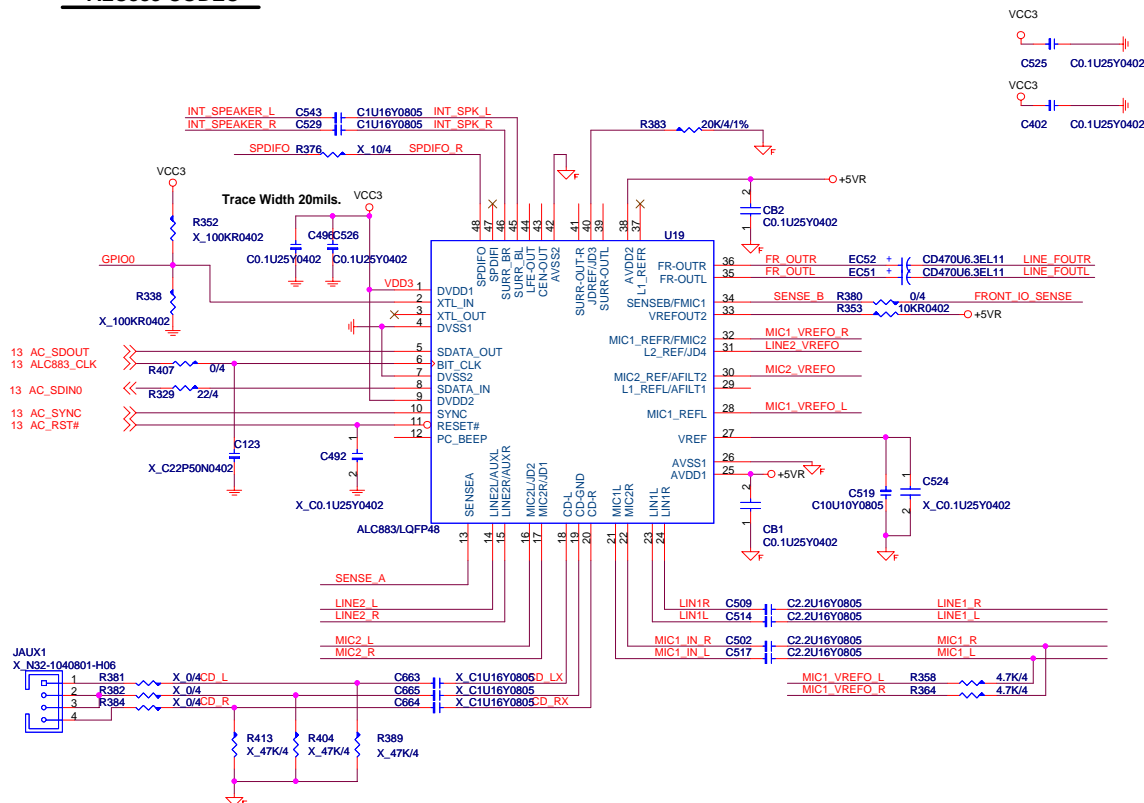
SPEED/LINK	LEFT	RIGHT
LINK	YELLOW	OFF
10 MBPS	YELLOW	OFF
100 MBPS	YELLOW	GREEN

For Giga-bit Lan

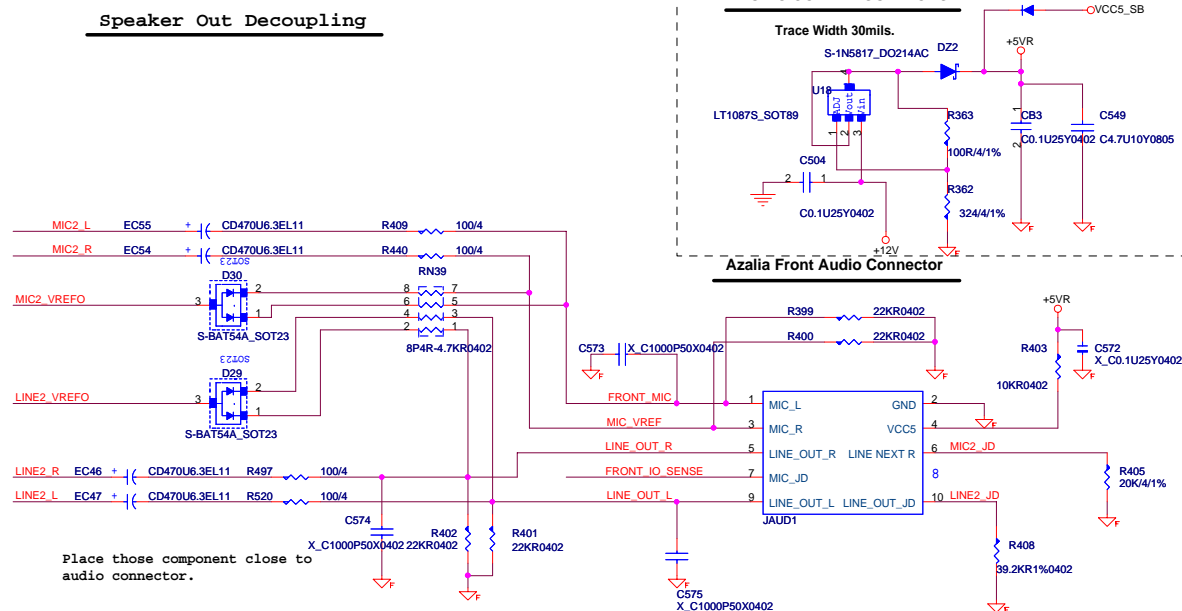
SPEED/LINK	LEFT	RIGHT
LINK	YELLOW	OFF
10 MBPS	YELLOW	OFF
100 MBPS	YELLOW	GREEN
1000 MBPS	YELLOW	ORANGE

MICRO-STAR INT'L CO., LTD.		
Title		
LAN Vitesse VC8601		
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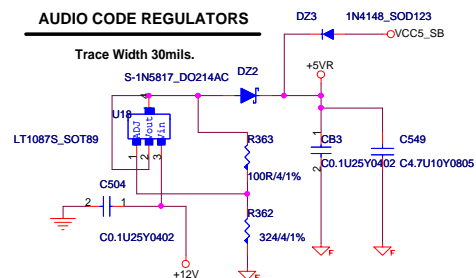
ALC883 CODEC



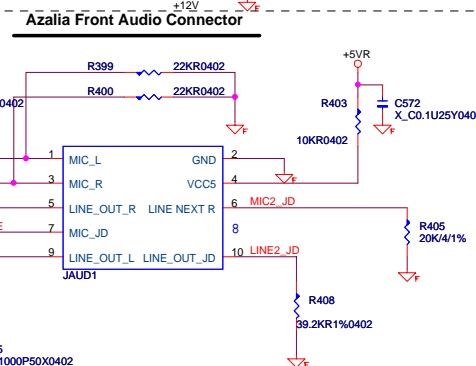
Speaker Out Decoupling



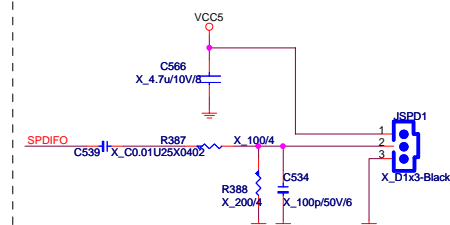
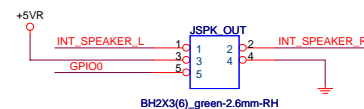
AUDIO CODE REGULATORS



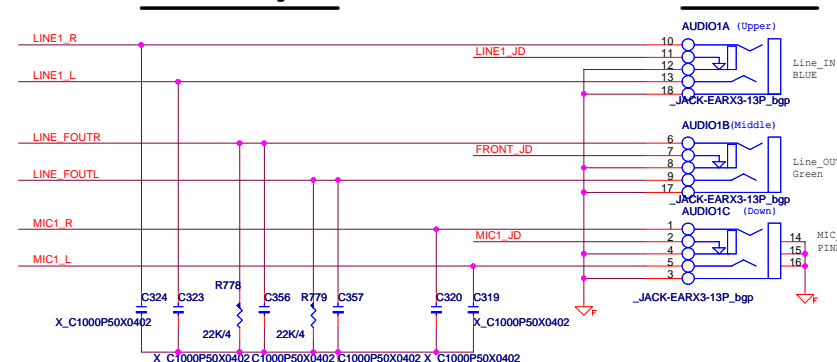
Azalia Front Audio Connector



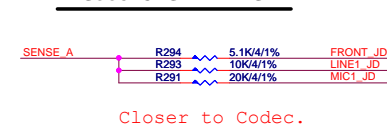
SPDIF OUT



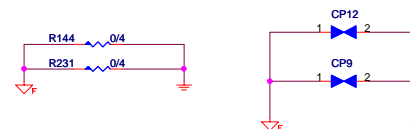
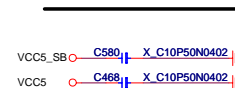
Rear audio jack



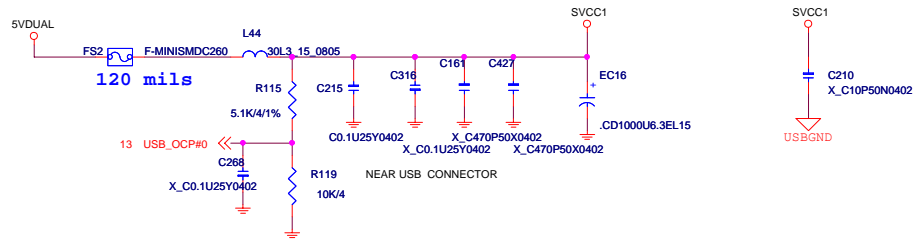
ALC883 JACK DETECT



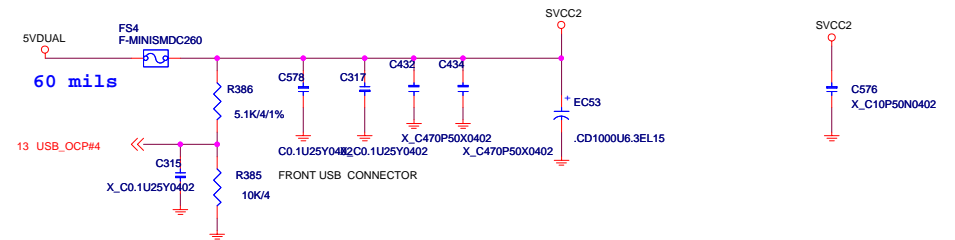
EMI Solution



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

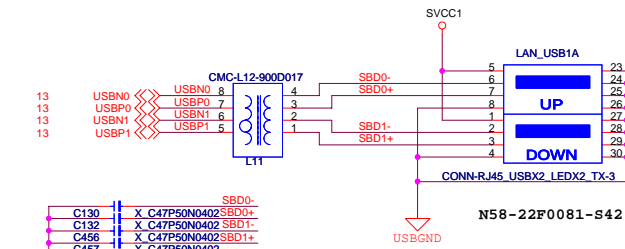
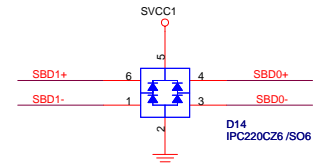


POWER CIRCUIT FOR USB PORT 4,5,6,7



REAR PANEL USB CONNECTOR FOR USB PORT 0,1

ESD Protection



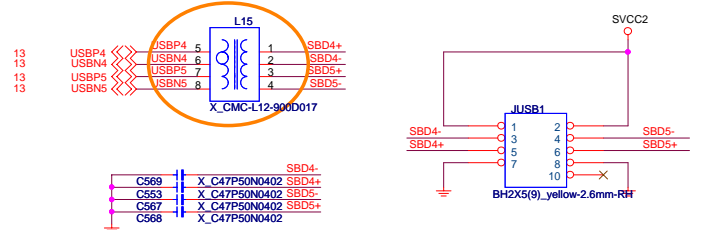
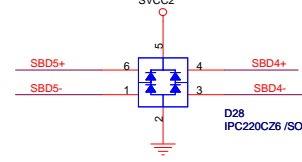
NEAR USB CONNECTOR

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

FRONT PANEL USB CONNECTOR FOR USB PORT 4,5

Reserved, can be taken off riser card within bead

ESD Protection

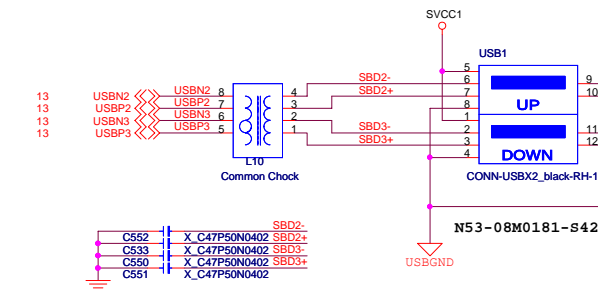
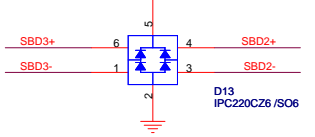


NEAR USB CONNECTOR

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REAR PANEL USB CONNECTOR FOR USB PORT 2,3

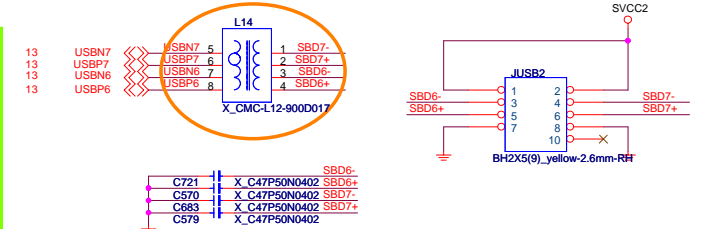
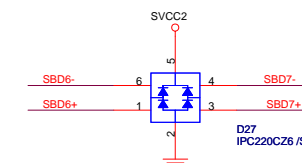
ESD Protection



22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

FRONT PANEL USB CONNECTOR FOR USB PORT 6,7

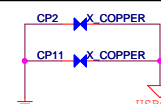
ESD Protection



NEAR USB CONNECTOR

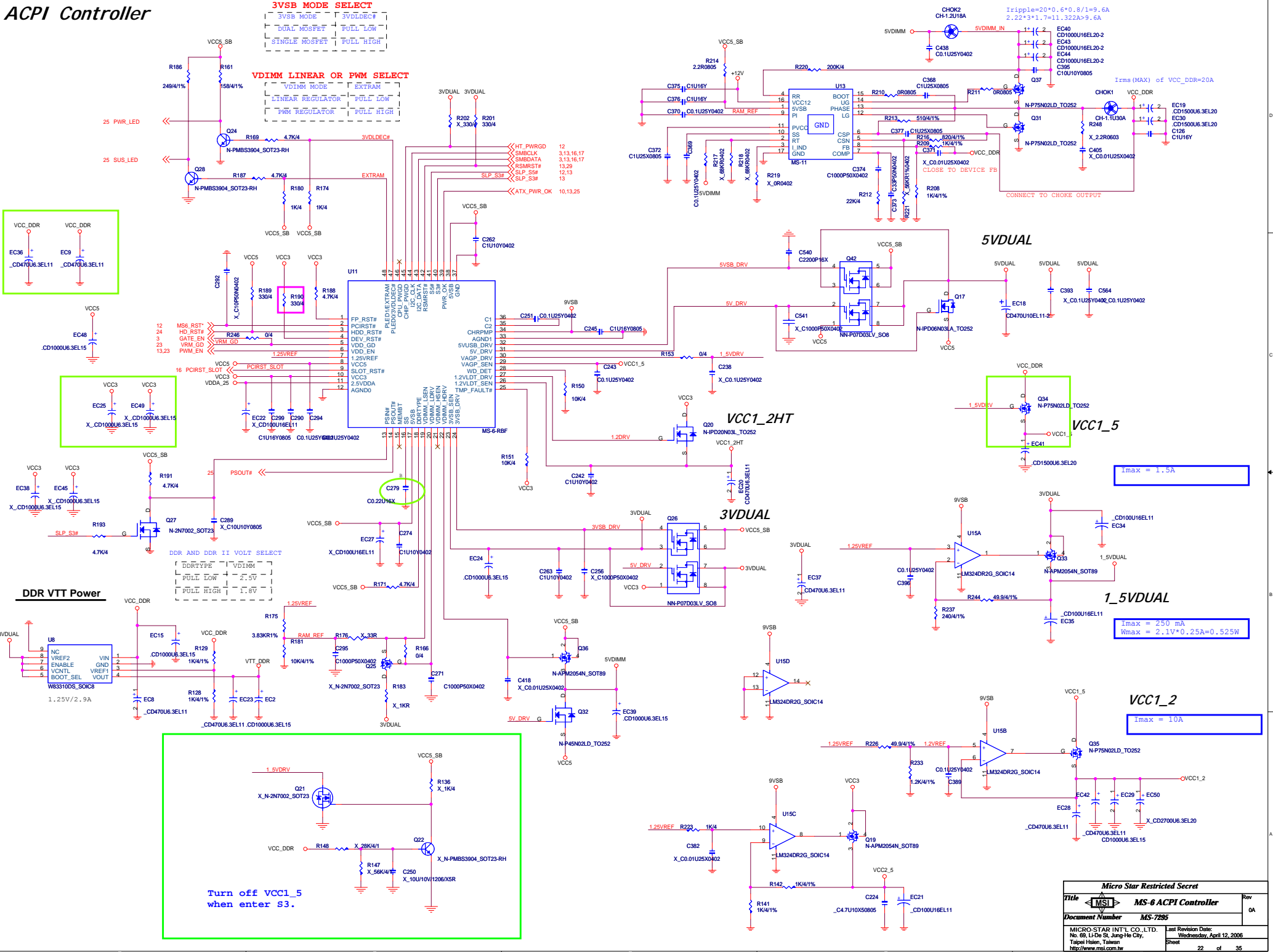
22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

EMI TEST



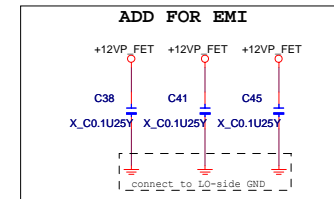
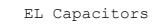
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Title		USB CONNECTORS	
Size	Document Number	MS-7295	
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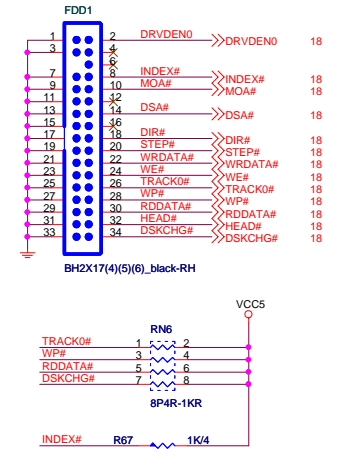
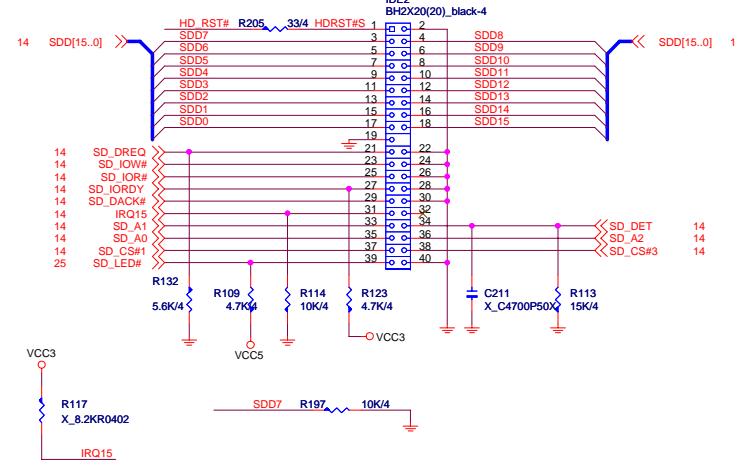
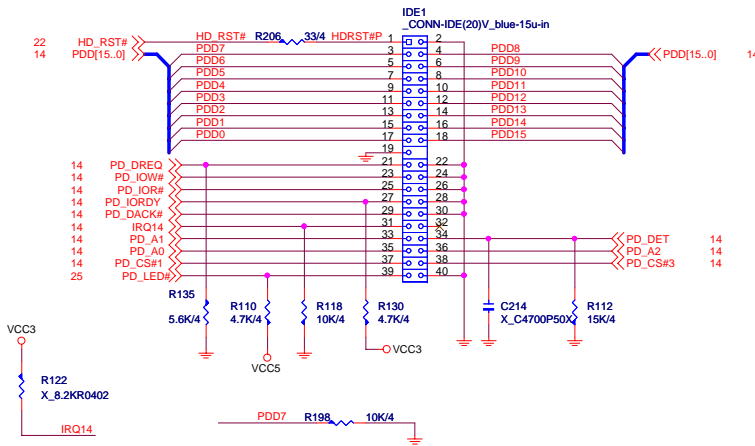
ACPI Controller



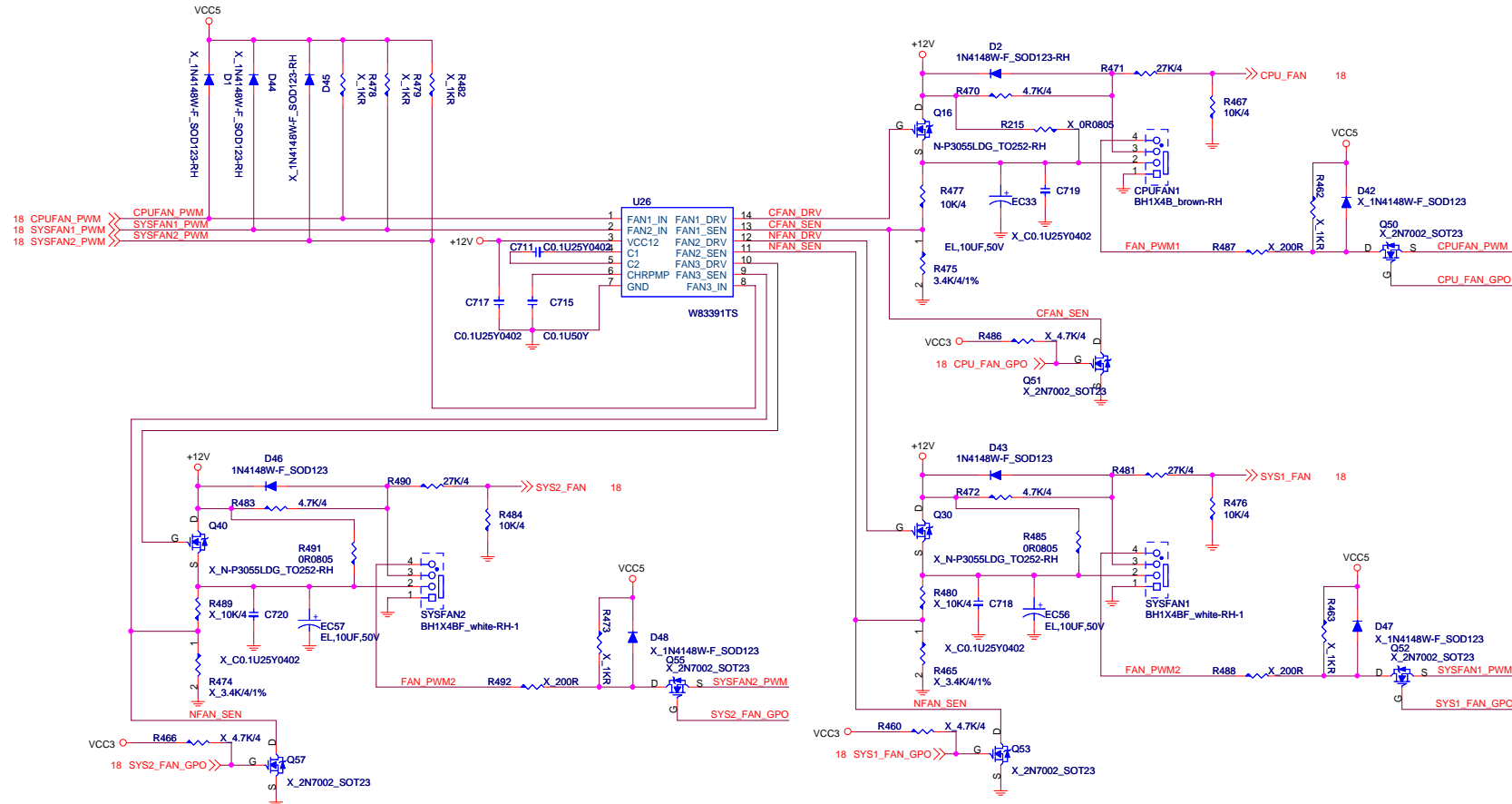
IPF06N030LA	Rds(on)=8.7mΩ(@4.5V, 30A), Vgs(on)=1.2-2V, Id=50A, Ciss=3110pf, Qg=10nC, Vds=25V, Vgs=±20V
C100U2SP	ESR<13mΩ, Ripple cur.<2.7A, LC=12uA, 105C
CD3300U6.3EL25	ESR=12mΩ, Ripplecur.<2800mA, 105C, longlife3000hrs, KZGSeries
560u 2.5V	ESR=6mΩ, Ripplecur.=4400mA, Lc.<500uA, 105C/2000hrs
1800UF/6.3V	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, FEW wire
CH-1.2U18A	1.2u/20%, Dip-2/vertical 7.5mm, 1.2ψ/5.5turns, 18A

MOSFET Heatsinks



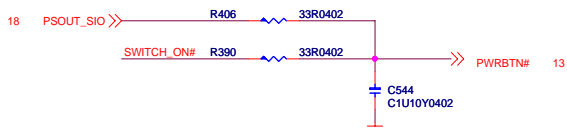
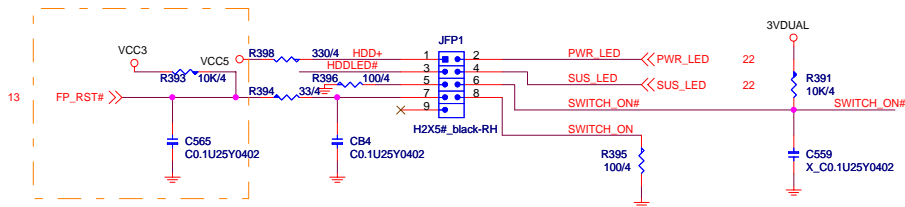


FAN CONNECTOR

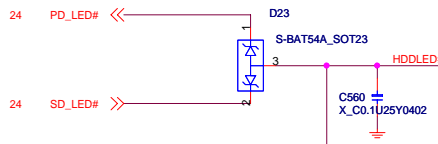


ATX connector / Front Panel

Intel Front Panel



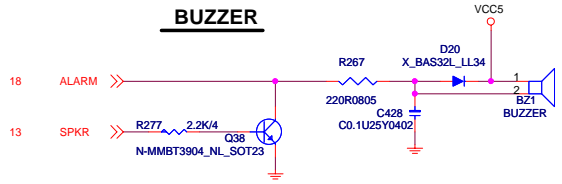
IDE LED



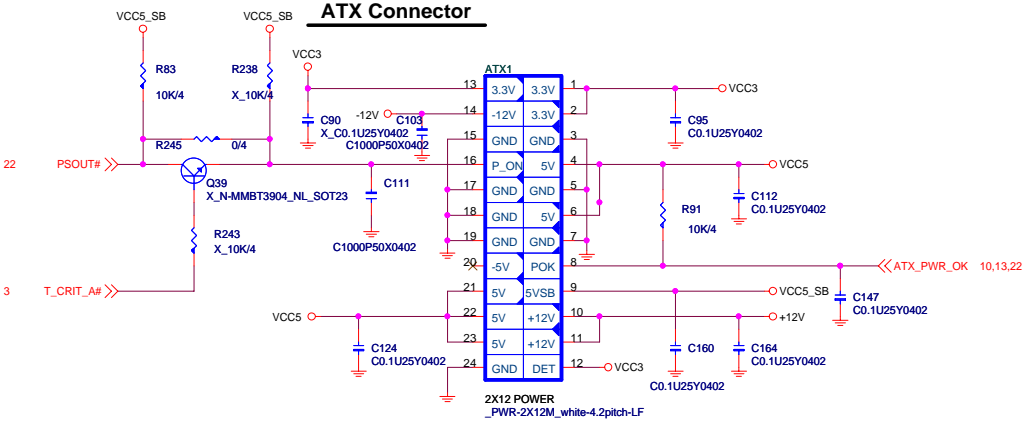
SERIAL ATA LED



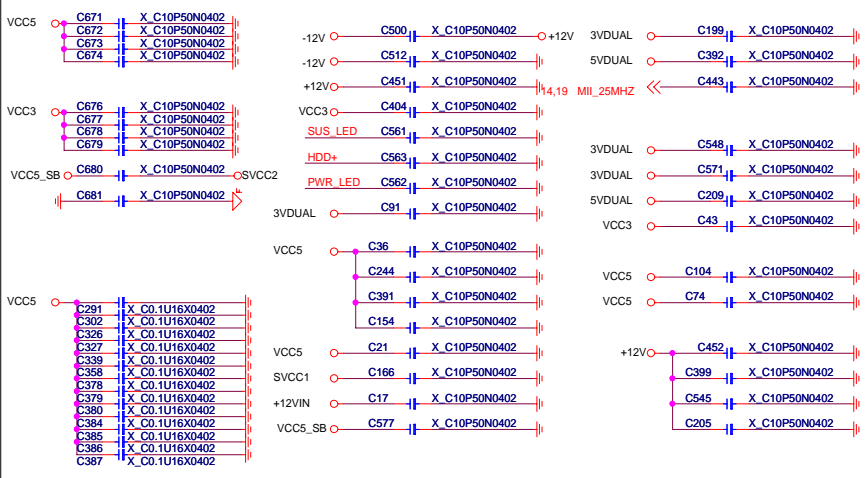
BUZZER



ATX Connector

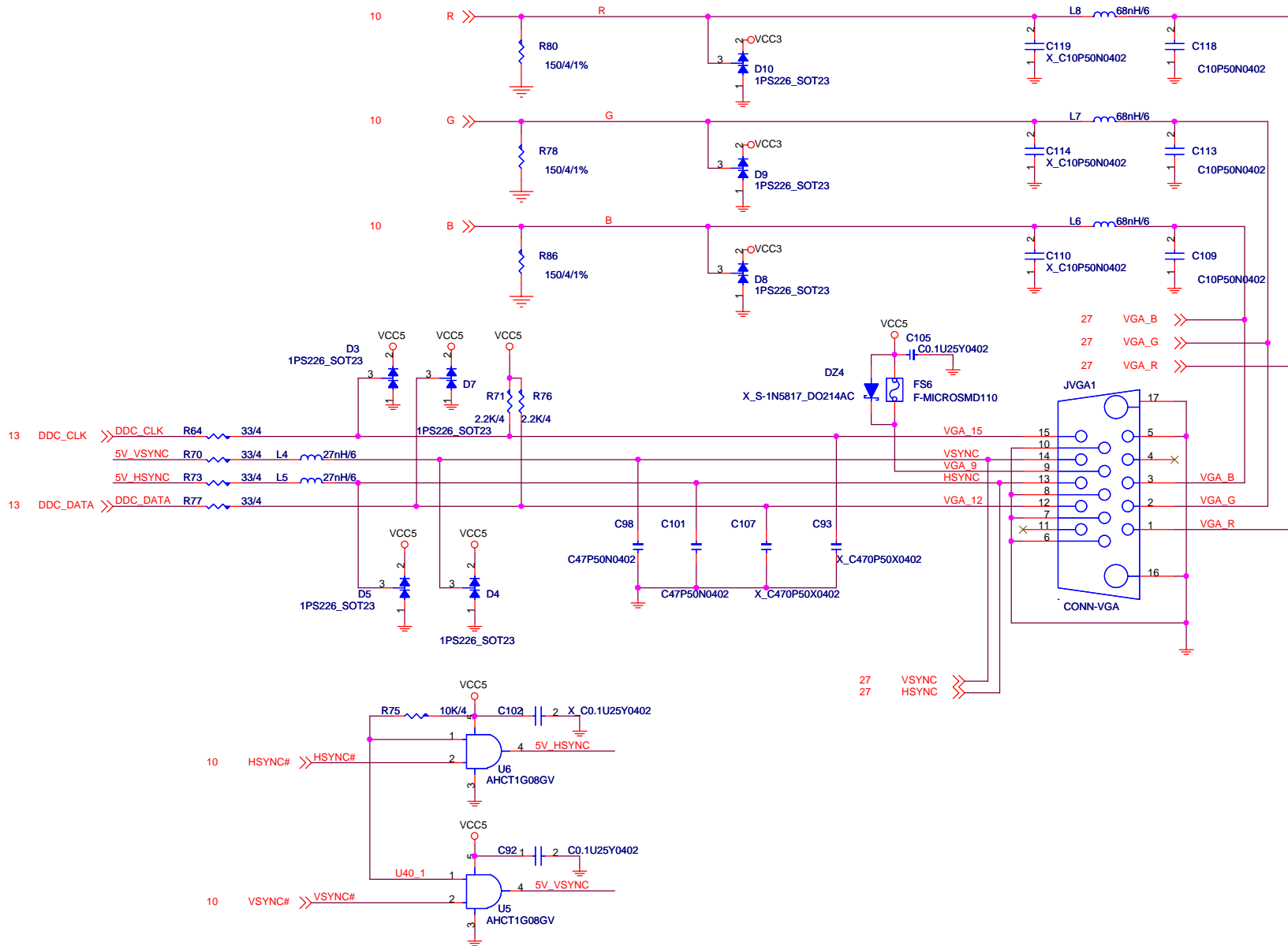



For EMI

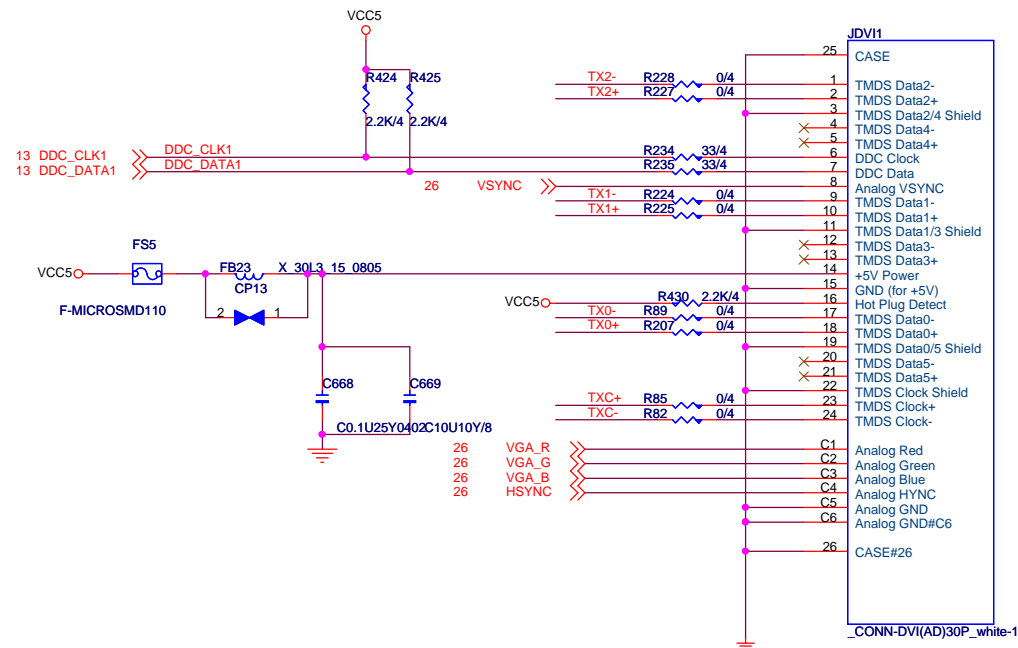
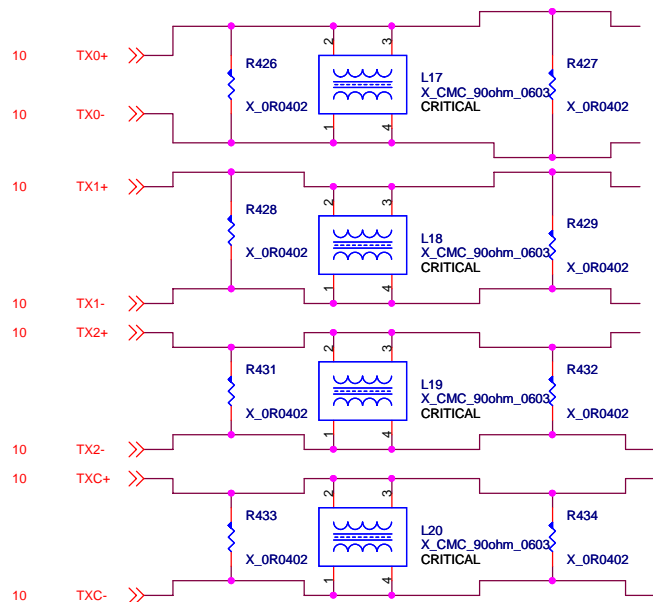


VGA CONNECTOR

close VGA connector

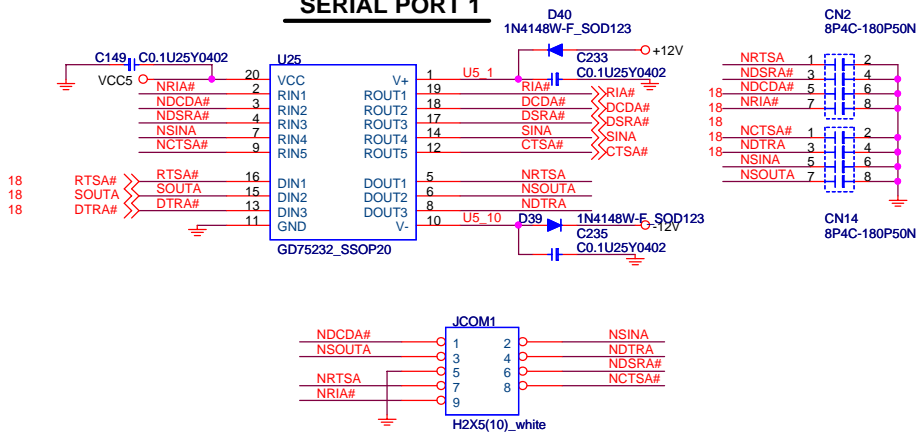


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Document Number	MS-7295		0A
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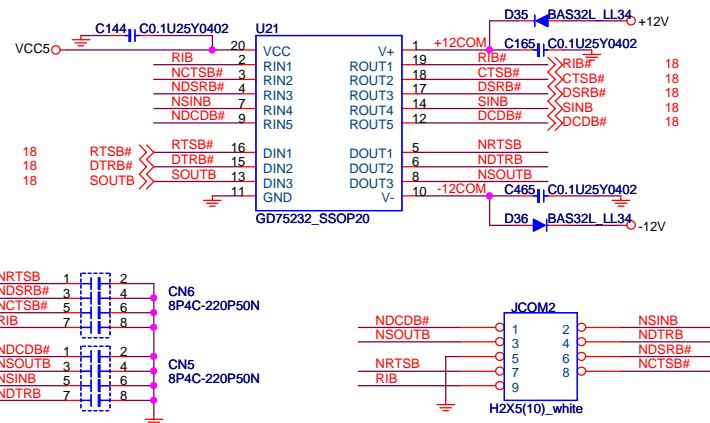


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Document Number	MS-7295		
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SERIAL PORT 1

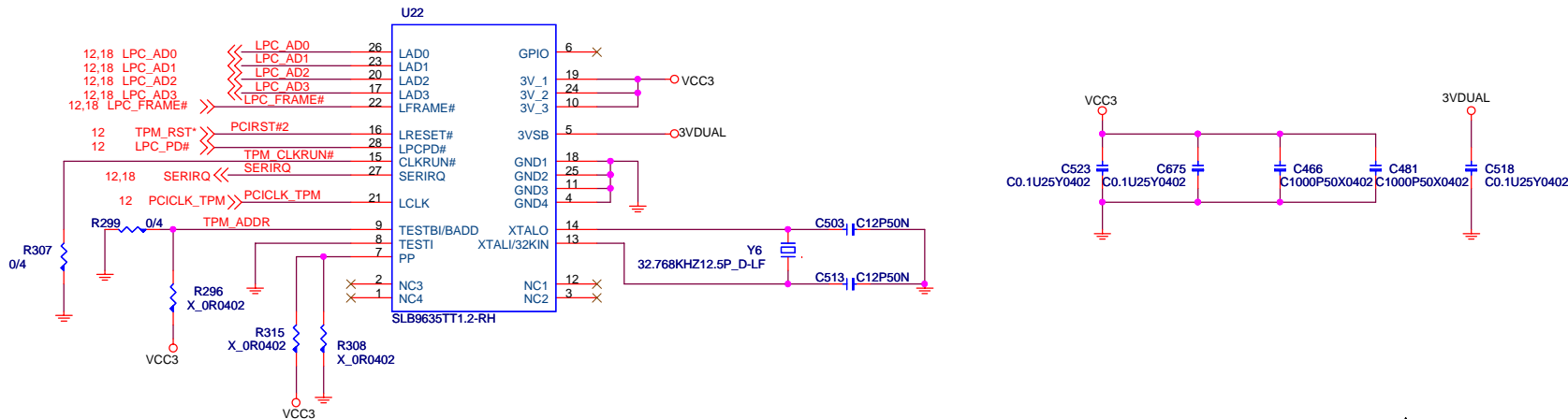


SERIAL PORT 2

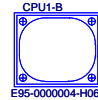
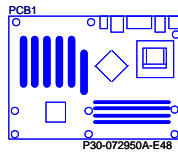
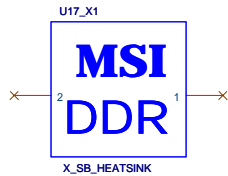
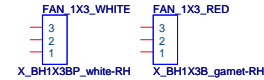
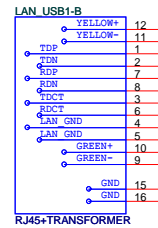
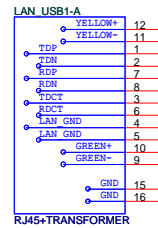
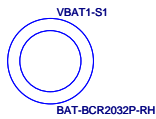
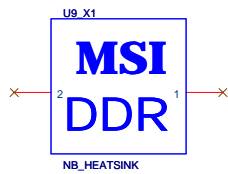


TPM 1.2

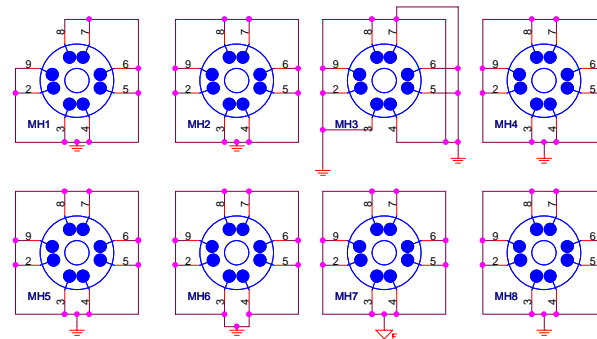
IO Address:0x02E



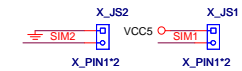
		MICRO-STAR INT'L CO., LTD.	
Title: COM PORTS & TPM 1.2			
Size	Document Number		Rev
	MS-7295		0A
Date:	Wednesday, April 12, 2006		Sheet 28 of 35



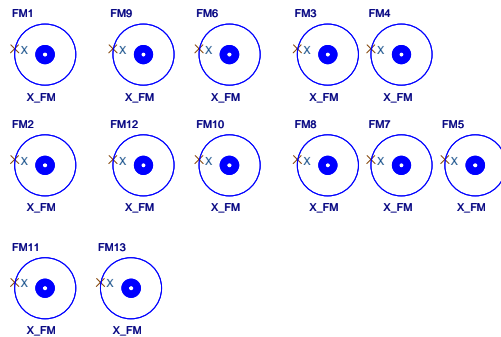
Mounting Holes



Simulation



Optics Orientation Holes



ver : 0A data : 2006 / 03 / 23

Modify for AMD check list


Page03 : HT_STOP_L, LDT_RST_L and CPU_PWRGD_L have 330 ohm pullup resistors (RN5). The recommend value for the pullup resistors is 300 ohms (5%).
Page03 : Add level shifting to RESET_L . modify R23 pin1 & J1 pin24 from LDT_RST_L to LDT_RST.
Page05 : change caps(C34,C52,C202,C172) value to 180-pF.
Page03 : Change the part of L2 position , change the part to L02-4008044-C08.
Page03 : Add a level shift circuit for AMD test tool.
Page05 : Add 2x 1uF caps (C670 & C682) from VDDIO to VCCP .
Page05 : Add a fuse (FS3) for PS2 power .

Modify for nVidia check list

Page26 : Remove D21,D31, R285,R440 for MCP51 A03 .
Page26 : Add a poly fuse (FS6) for VGA power.
Page27 : Reserved 0Ω series resistor close to DVI connector.
Page14 : Add 10 kΩ pull-down resistors for MII_RXER,MII_COL,MII_CRS
Page14 : Add a Pull-up resistor(R377=1.5 kΩ) to RG/MII_MDIO
Page13 : Change strap pin (AC_RESET#) to pull up , to select RGMII mode.
Page15 : Add a bypass cap (C425 0.01uF) for 3P3_IFPA_L .
Page27 : Add damping resistors (R234 & R235 33ohm) for DDC_CLK1 & DDC_DATA1 .
Page19 : Add a damping resistor (R526 0ohm) for RG/MII_INTR .
Page21 : Reserved bypass caps (C161 , C427 , C432 & C434 470pF) for SVCC1 & SVCC2 .
Page16 : Add Pull-up resistors (RN36= 8.2KΩ) for ACK64# & REQ64# (PCI solt pin)
Page14 : Reserved bypass cap (C494 10uF) for +3.3V_PLL_SP_SS
Page15 : Reserved bypass caps (C527 & C528 0.1uF) for +1.5V_SP_A & +1.5V_SP_D
Page15 : Add a damping resistor (R236 100ohm) for +5V
Page15 : Rerserved a ferrite bead (FB18) for +3.3V_HT
Page14 : Reserved bypass cap (C530 4.7uF) for +1.5V_SP_A
Page13 : Reserved bypass cap (C531 4.7uF) for +3.3V_VBAT
Page09 : Reserved bypass cap (C435 4.7uF) for 2P5V_PLL
Page13 : Reserved bypass cap (C447 10uF) for +3.3V_PLL_USB_CORE
Page26 : Reserved bypass caps (C107 & C93 470pF) for DDC_CLK & DDC_DATA .
Page21 : Reserved bypass caps (47pF) for USB1.1 mode .
Page22 : Reserved bypass caps and place near Q35 (EC50 2700uF) for VCC1_2.
Page11 : Reserved bypass caps (C80 & C81 22uF) for VCC1_2.
Page11 : Reserved bypass caps (C85 47uF) for 1P2VPLL_PWR.
Page15 : Reserved bypass caps place near MCP51(EC58 & EC59 2700uF) for VCC1_2.
Page15 : Reserved bypass caps place near MCP51(C88,C89,C723 & C724 22uF) for VCC1_2.
Page26 : Reserved a diode(DZ4 1N5817) co-lay with FS6 for VGA power.

Modify for MSI

Page03 : Modify LM90 circuit , THERMDA_CPU connected to D+ & THERMDC_CPU connected to D- .

Micro Star Restricted Secret			
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MICRO-STAR INT'L CO., LTD. No. 68, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Friday, April 07, 2006 Sheet 34 of 35	