

MS7255 Version:2.1

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CPU:

Intel LGA775

System Chipset:

P4M900 (North Bridge)
VT8237A (South Bridge)

On Board Chipset:

BIOS -- LPC ROM/SPI
Audio - ALC660/861-CD/883/888
LPC Super I/O -- W83627EHG/DHG
LAN --RTL8201CL/RTL8110SC
CLOCK -- REALTEK-RTM870T-580

Main Memory:

single-channel --DDRII*2

Expansion Slots:

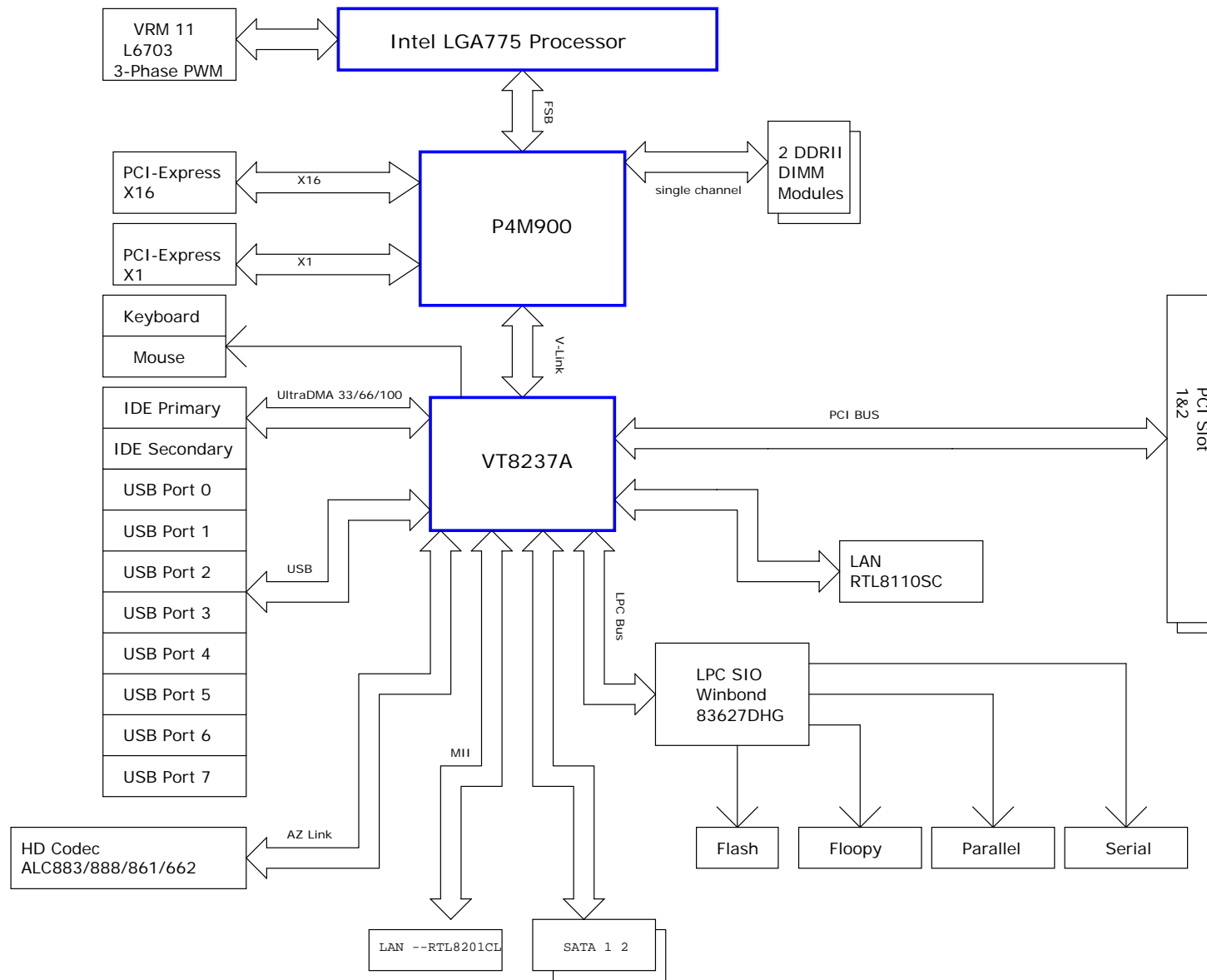
PCI Express X16 * 1
PCI Express X1 * 1
PCI 2.2Slot * 2

PWM(VRM11/FMB 05A):

L6703

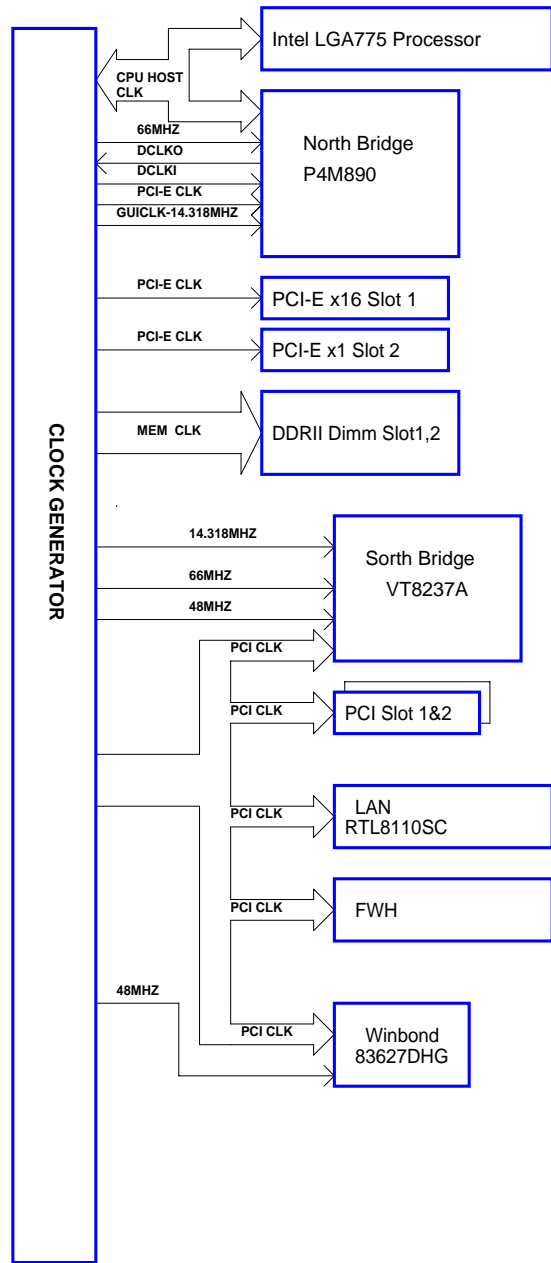
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Title	COVER SHEET
Document Number	MS-7255
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Block Diagram

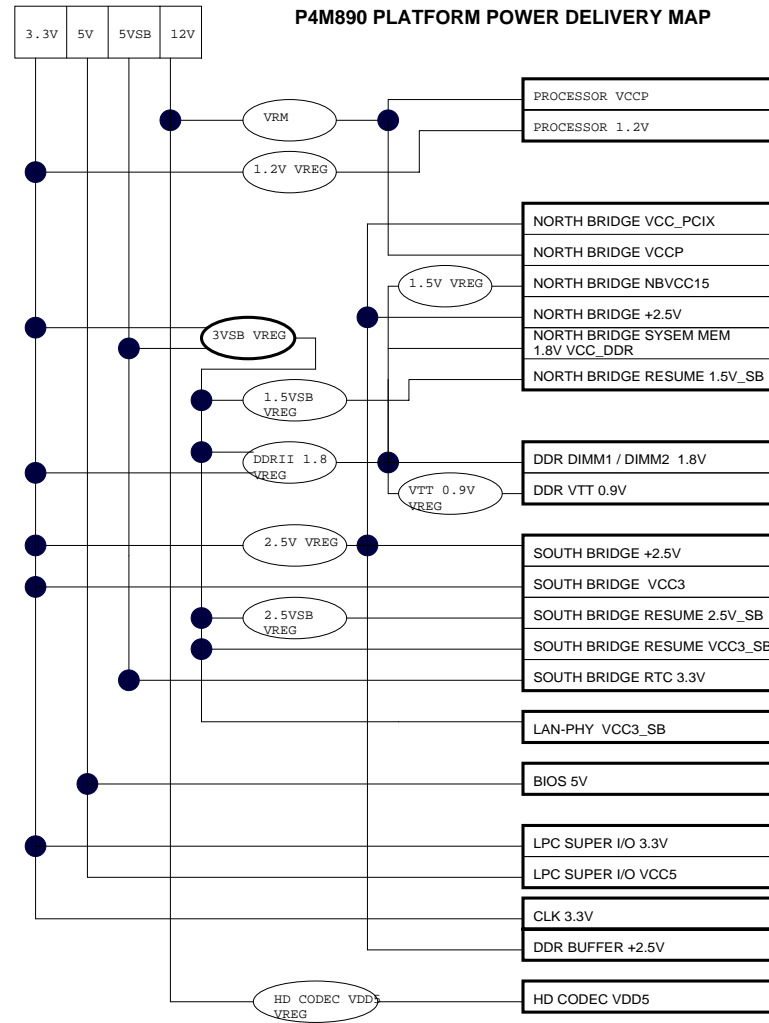


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Title	Rev
BLOCK DIAGRAM	2.1
Document Number	MS-7255
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P4M890 PLATFORM CLOCK GENERATOR MAP



P4M890 PLATFORM POWER DELIVERY MAP



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SB-VT8237A

GPIO Pin	Type	Function	Power well
GPI 0	I	GPI 0	RESUME
GPI 1	I	IDE2 CBD	RESUME
GPO 0	O	GPO 0	RESUME
GPO 1	O	GPO 0	RESUME
GPIO A	I/O	HOST CLOCK	MAIN
GPIO B	I/O	IOQ Depth	MAIN
GPIO C	I/O	HOST CLOCK	MAIN
GPIO D	I/O	GTL pullup	MAIN

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK	CLK GEN PIN OUT
PCI Slot 1	PIRO#B PIRO#C PIRO#D PIRO#A	PREQ#1 PGNT#1	AD21	PCICLK2	7
PCI Slot 2	PIRO#A PIRO#B PIRO#C PIRO#D	PREQ#0 PGNT#0	AD20	PCICLK1	6
LAN	PIRO#E	PREQ#2 PGNT#2	AD19	LAN_PCLK	1

DDR DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	1010000B	MDCLKA0/A#0 MDCLKA1/A#1 MDCLKA2/A#2
DIMM 2	1010001B	MDCLKB0/B#0 MDCLKB1/B#1 MDCLKB2/B#2

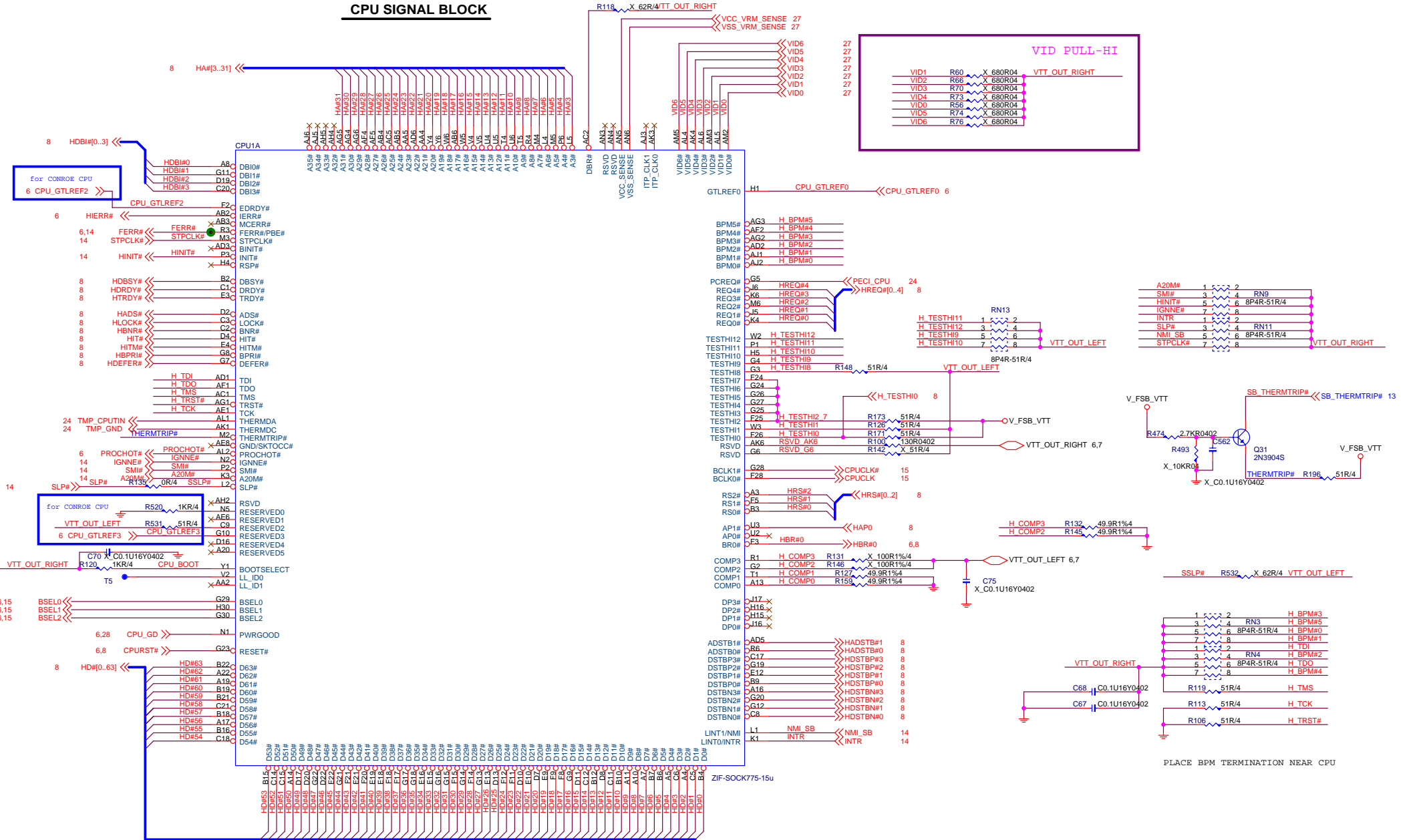
PCI RESET DEVICE

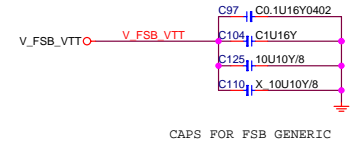
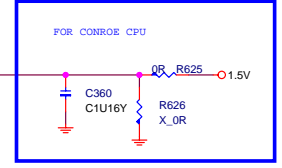
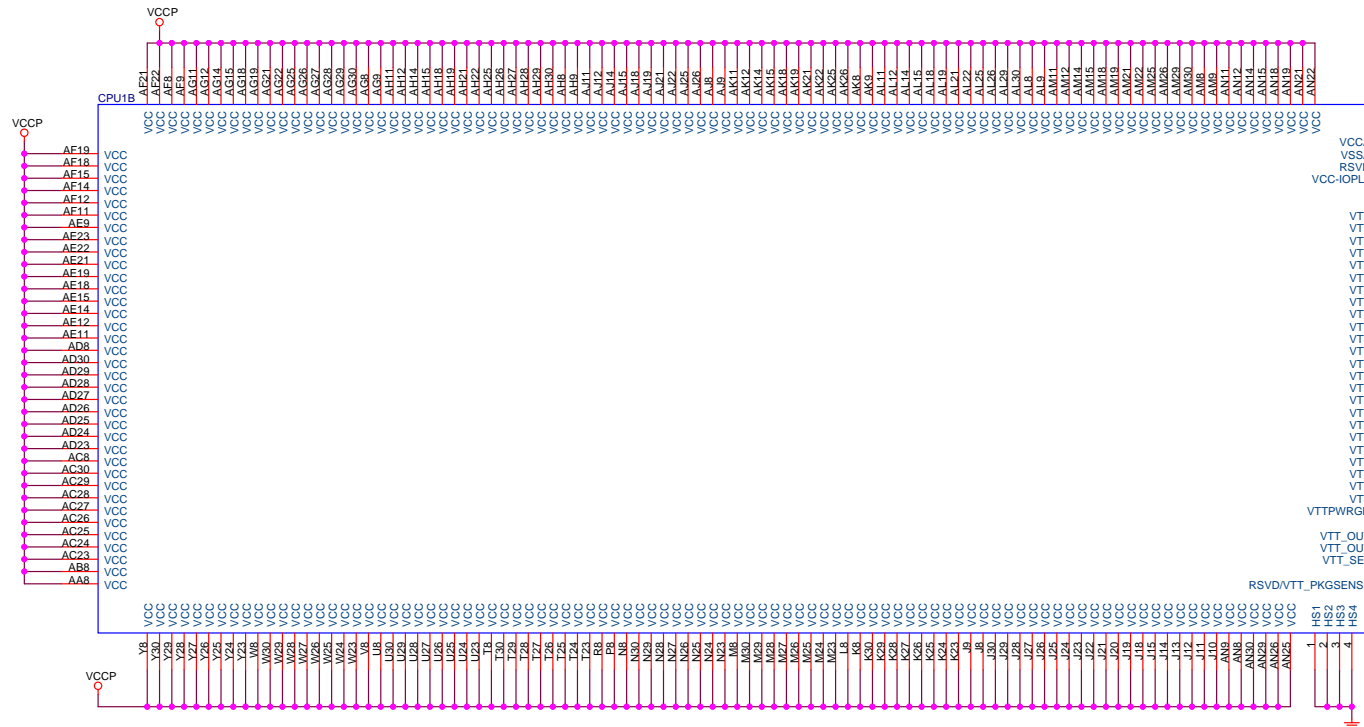
Signals	Source	Target
PCIRST#	SB	MS7
PCIRST#1	MS7	NB & LAN & SPIO & BIOS
PCIRST#2	MS7	PCI slot 1-2
HDRST#	MS7	Primary, Scondary IDE

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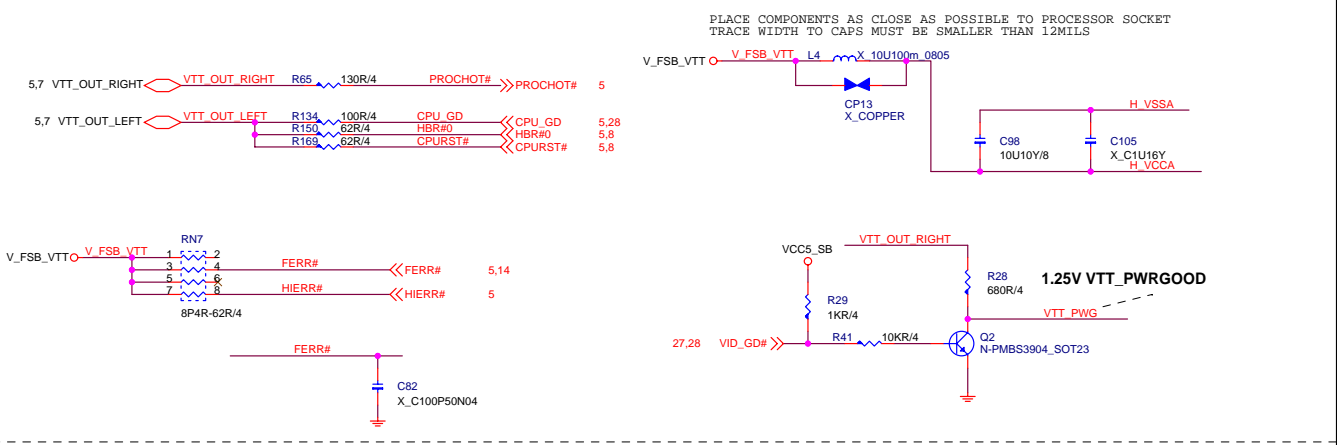
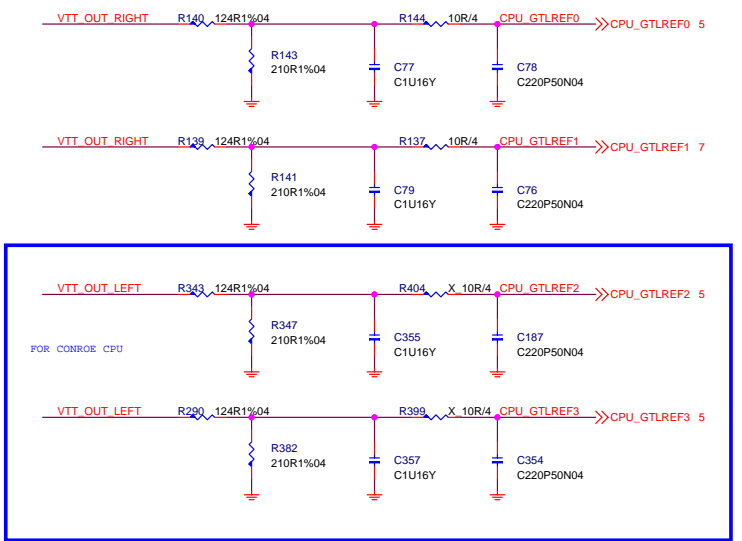
Title	General Purpose Spec	Rev	2.1
Document Number	MS-7255		
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CPU SIGNAL BLOCK



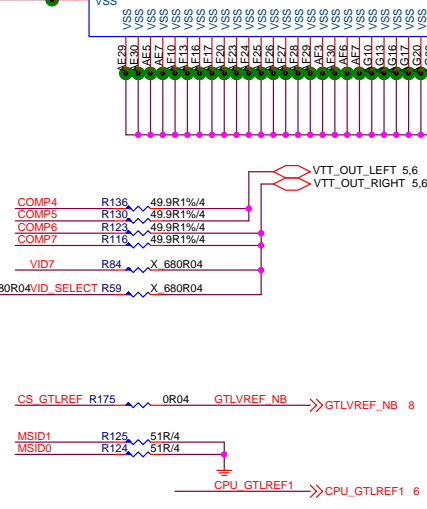
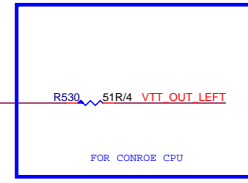
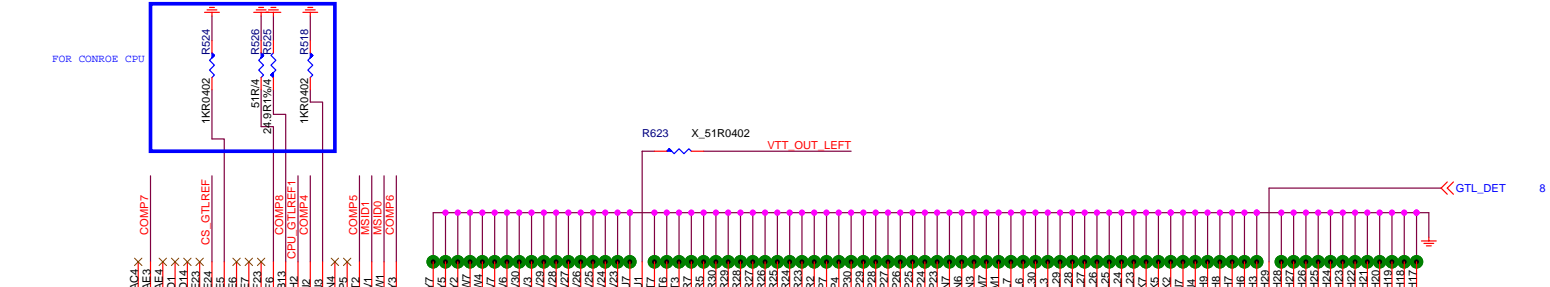
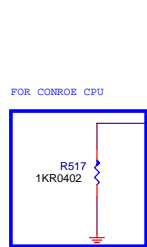
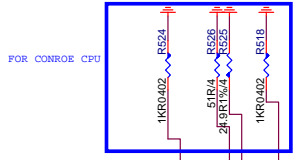
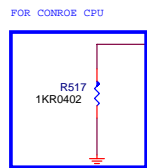


0	TRJ/PSC
1	RSVD

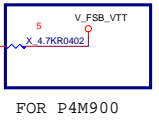
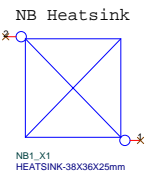
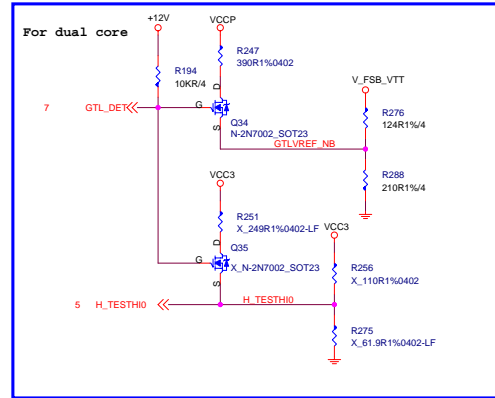
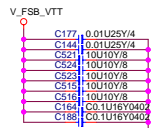
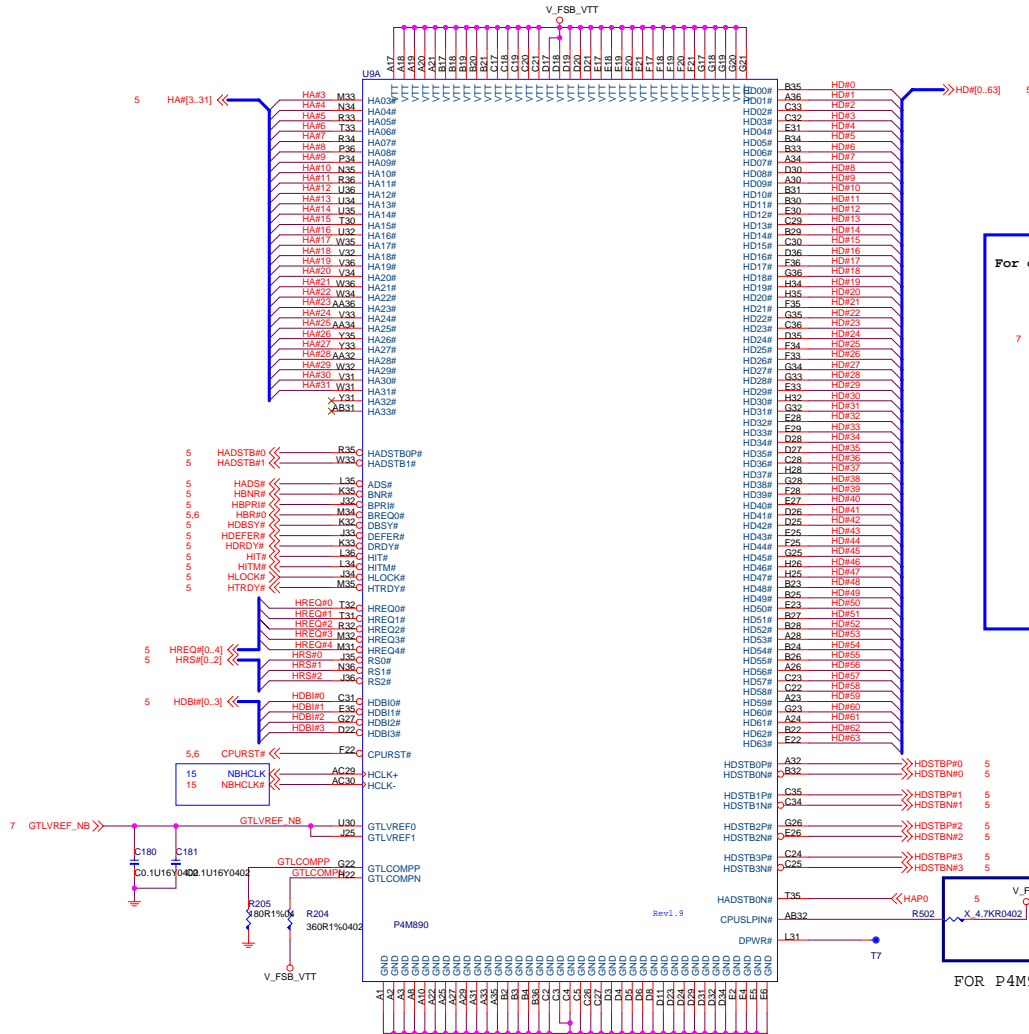


FSBSEL RESISTOR CAN BE REMOVED IF ONLY TEJAS AND CEDAR MILL ARE SUPPORTED

Micro Star Restricted Secret		
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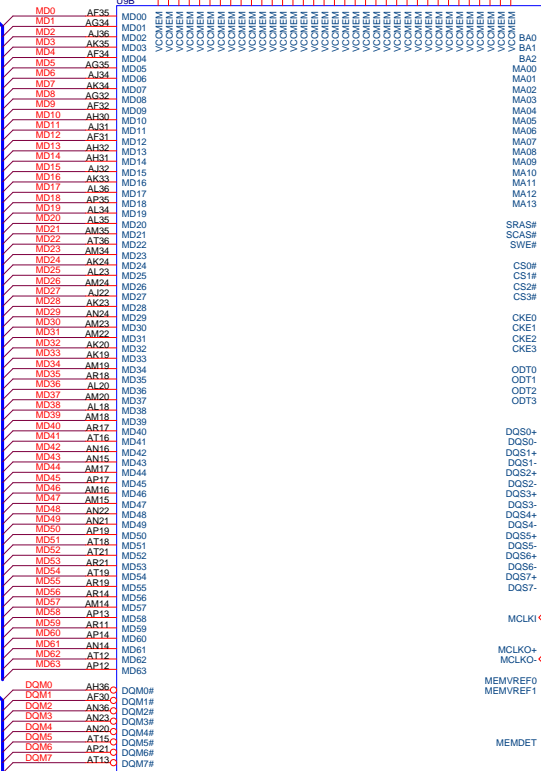


Micro Star Restricted Secret	
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Intel LGA775 CPU - GND	2.1
Document Number	MS-7255
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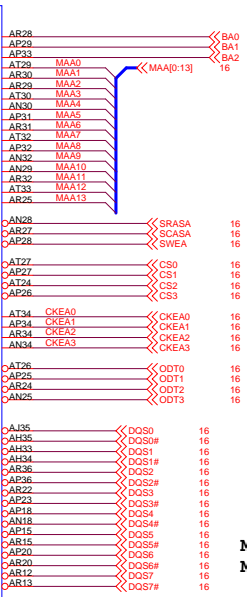
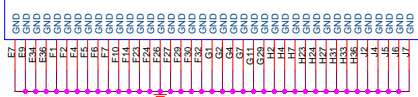


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P4M890-1(HOST)	2.1
Document Number	MS-7255
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16 MD[0:63]

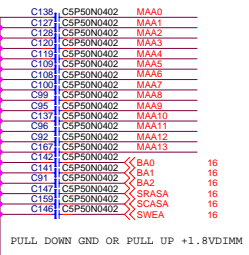
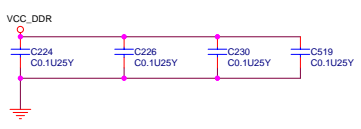
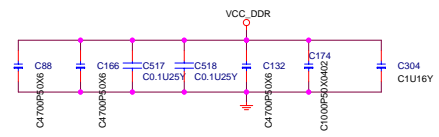
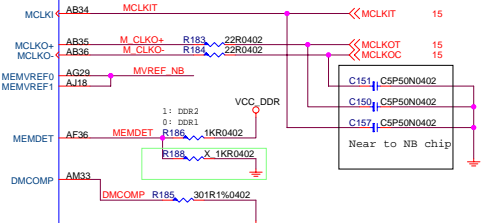


P4M890



NOTE: DQS/DQS# => OTHER:W:S:W:OTHER=15:10:5:10:10:15

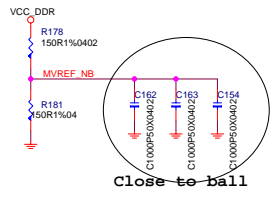
MCLK0+/- as short as passable
MCLKIT = DCLKx + 2 "



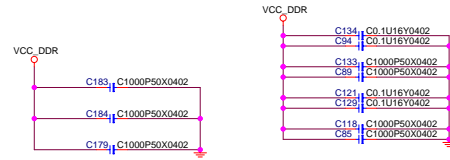
PULL DOWN GND OR PULL UP +1.8VDIMM

CLOSE TO DIMM

Test Point
(Place near their respective balls of NB)

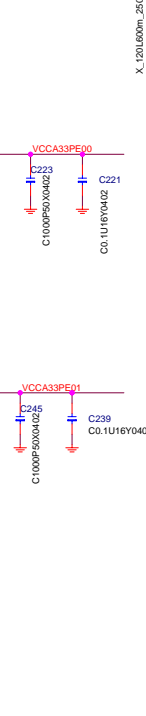
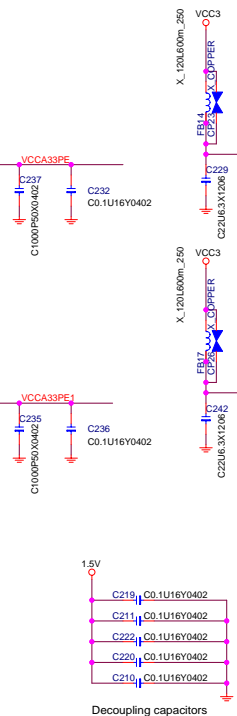
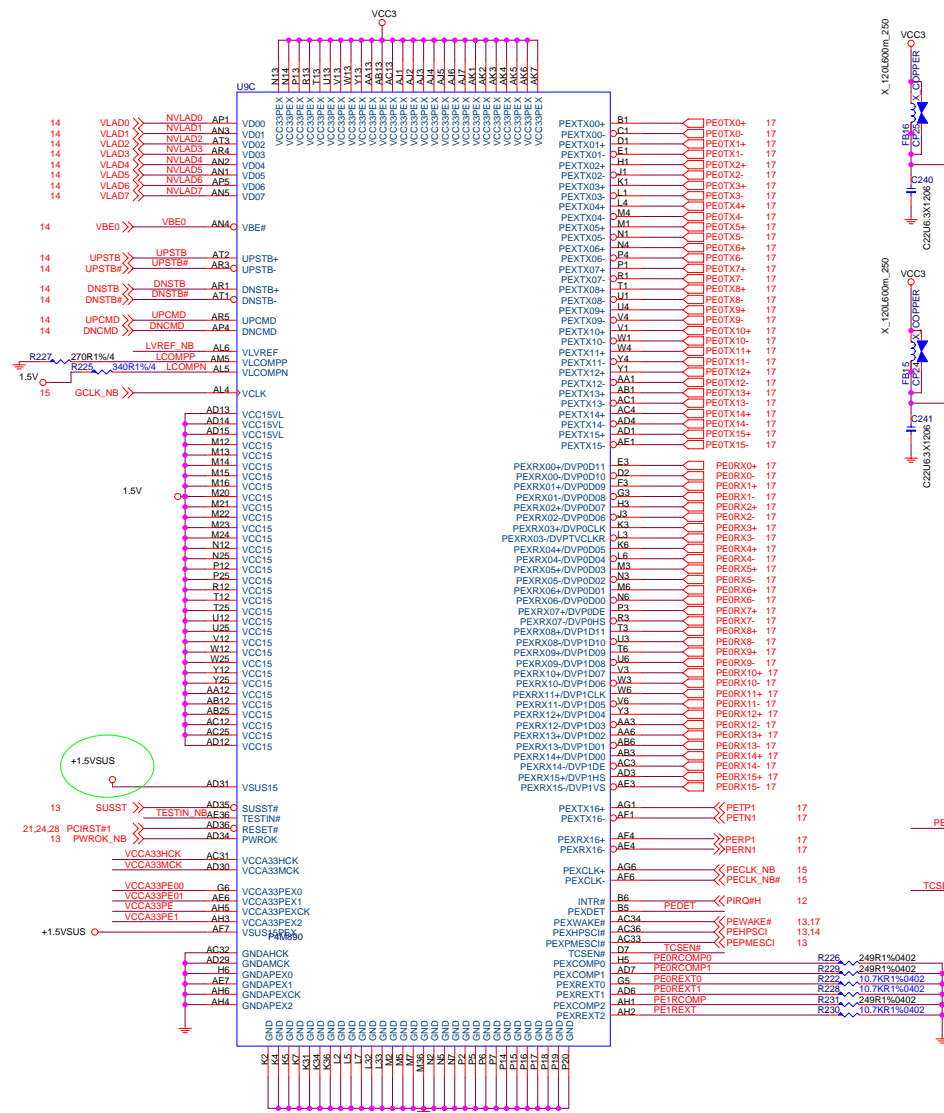


Close to ball



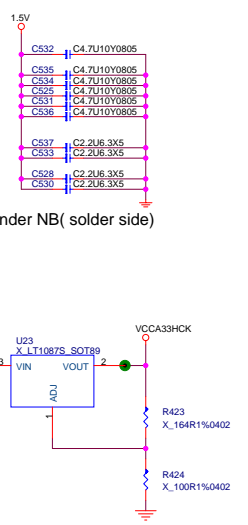
NEAR PM890

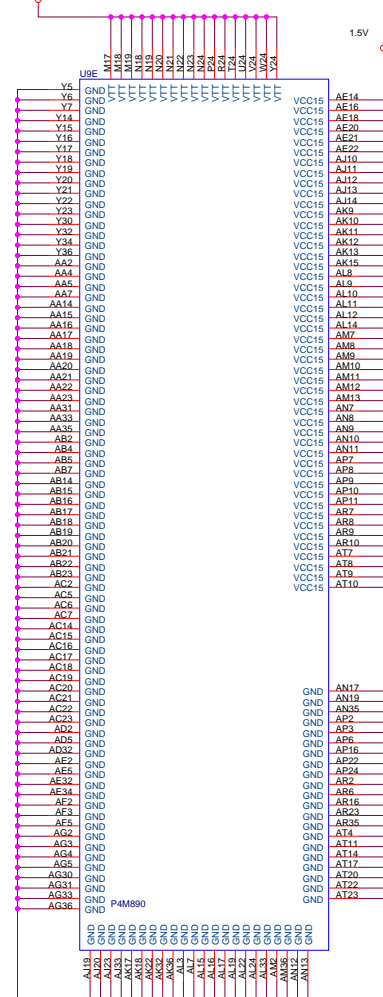
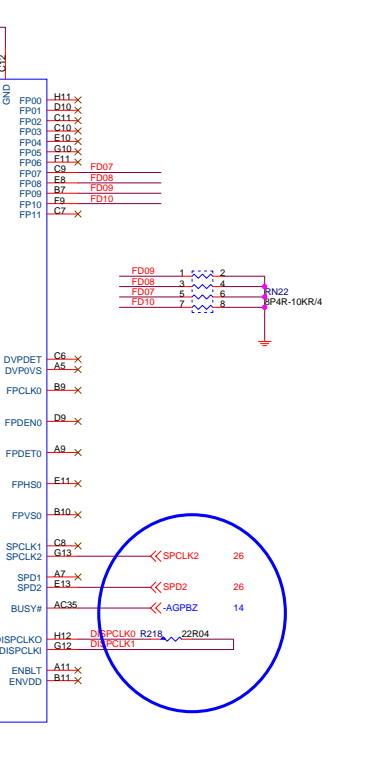
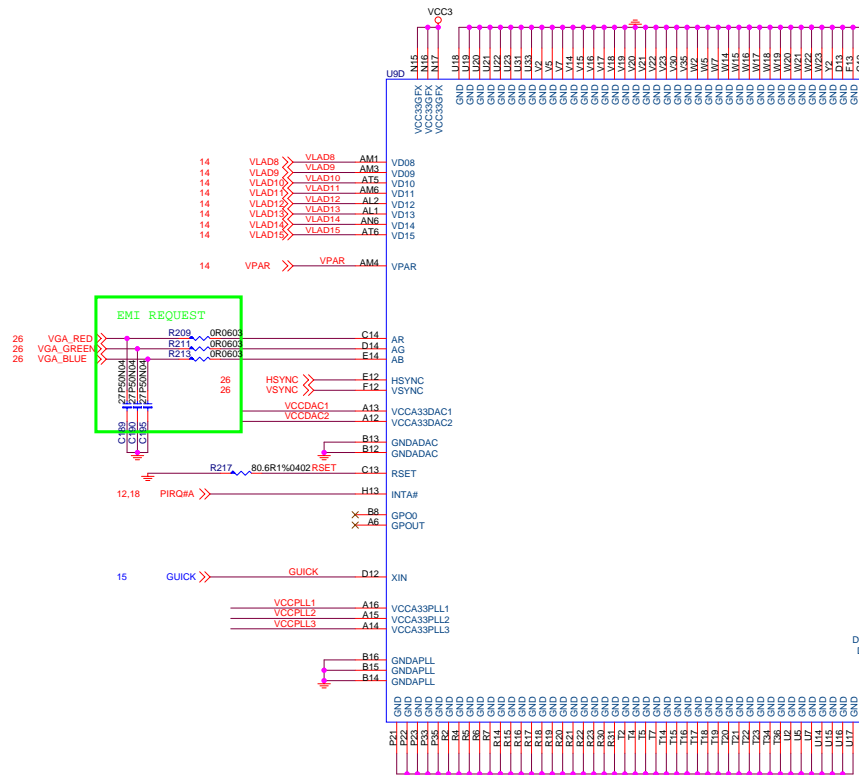
NEAR DIMM



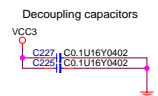
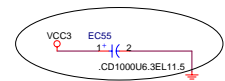
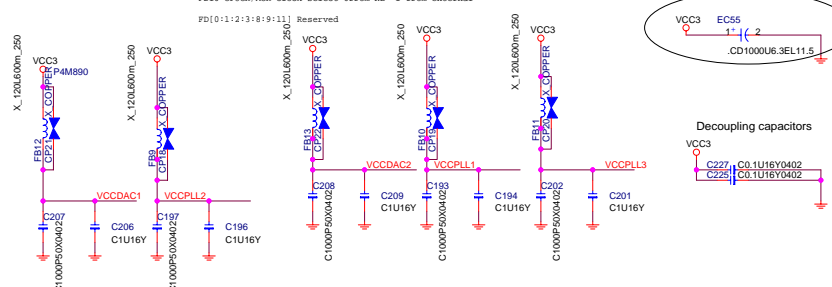
FOR P4M890

TESTIN_NB R187 1KR0402 VCC_DDR

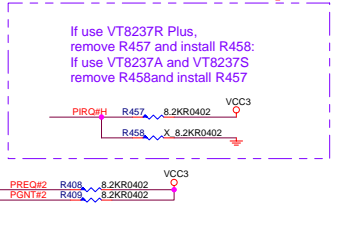
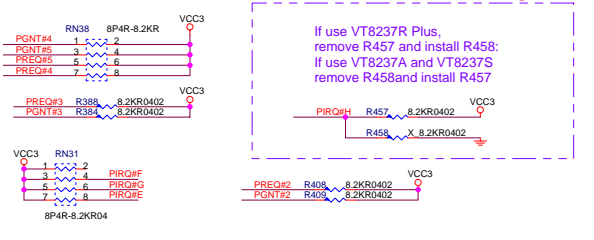
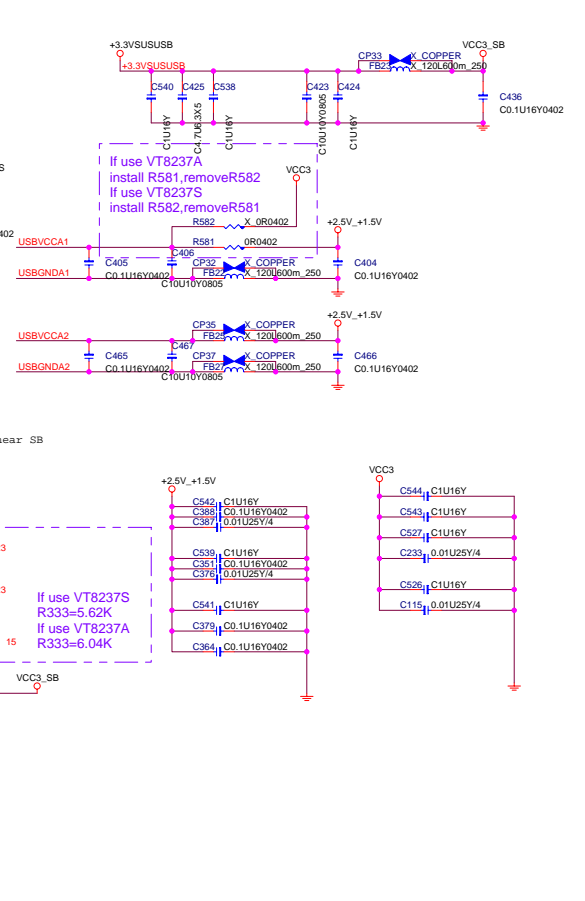
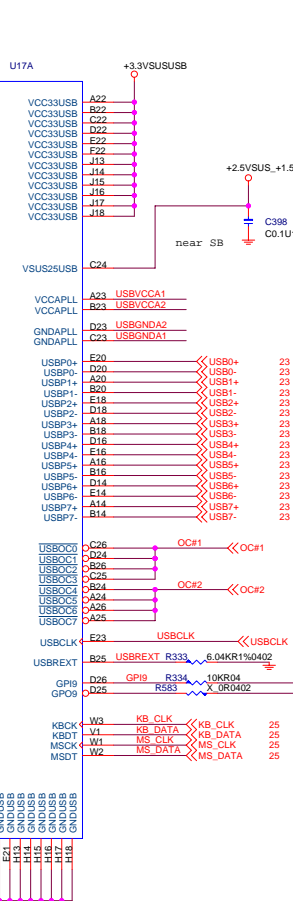
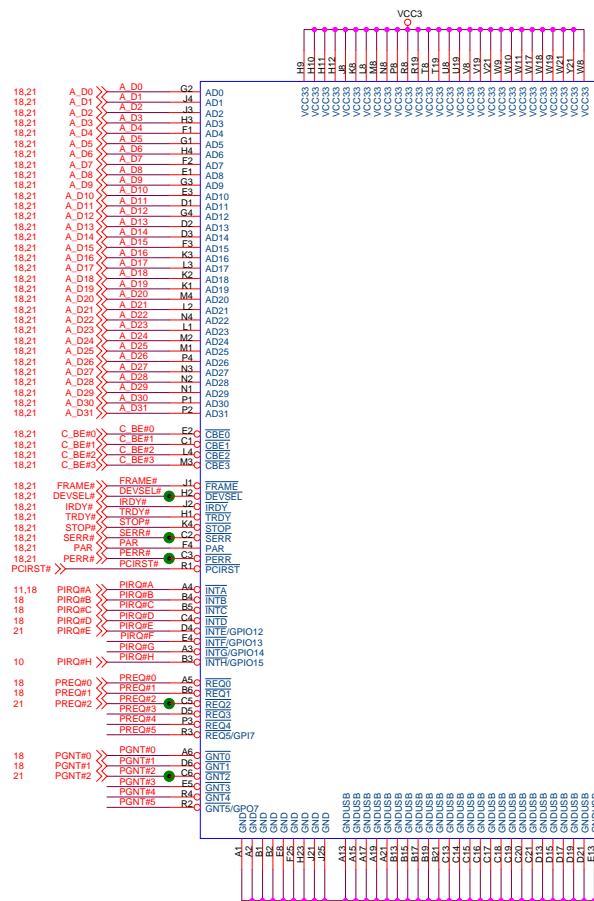


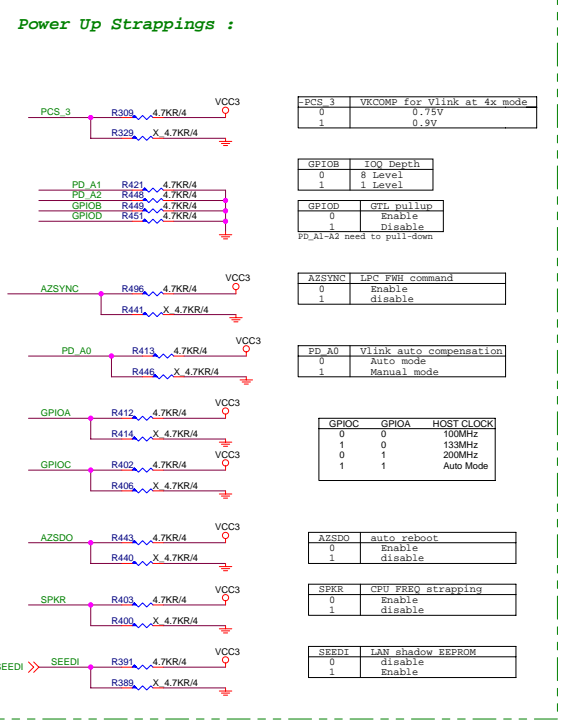
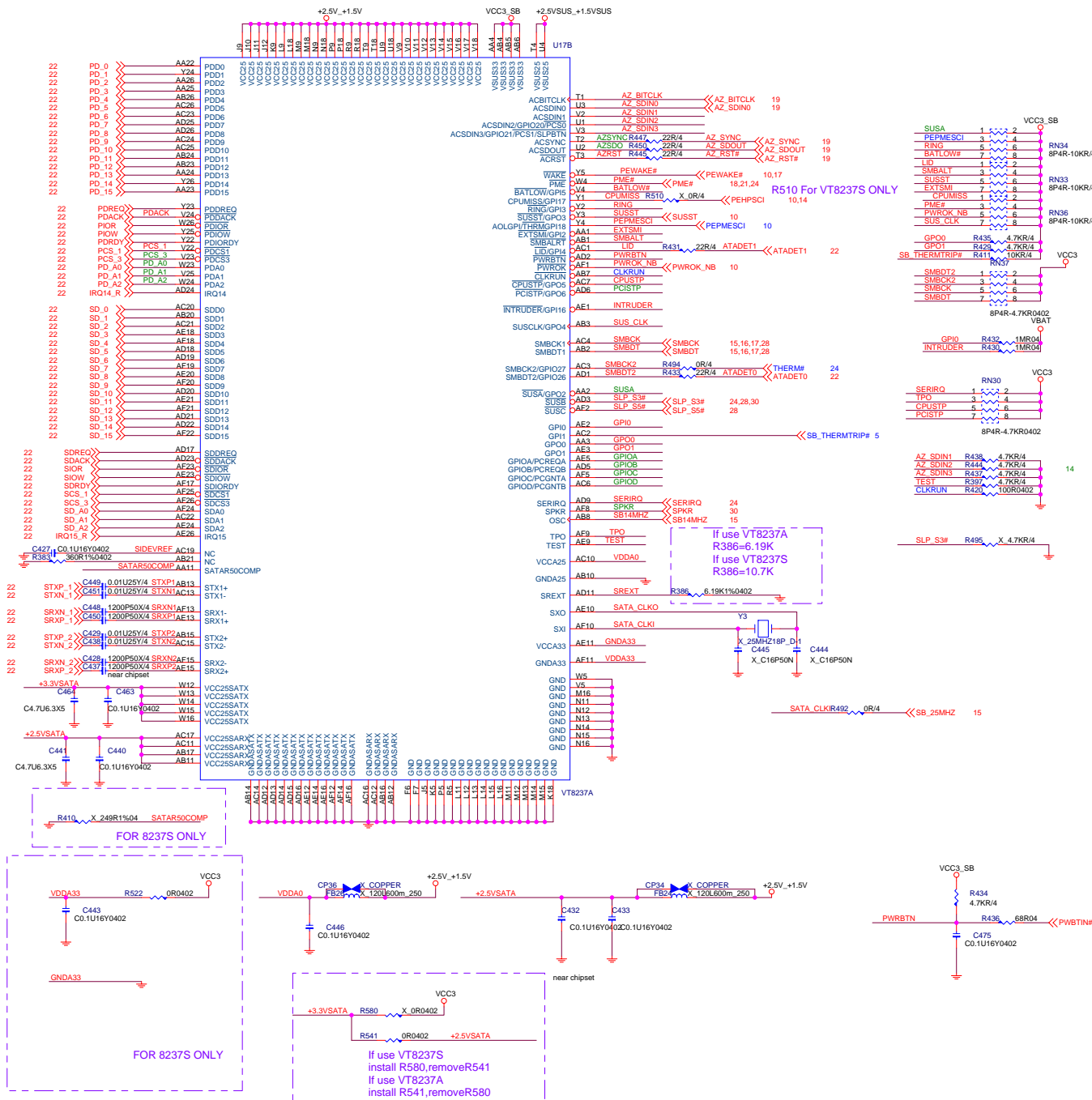


FD4 1: 24bit / 0.2 x 12 bit DVI interface
 FD5 Dedicated DVI port configuration 0:TWMS 1:TV-encoder
 FD6 Dedicated DVI port 0:disable 1:enable
 FD7 GPU clock select (VCK/LCDCLK/CLK) 0:refer internal PLL 1:from external
 FD10 CLK0/CLK select from SB 1:from external



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Title	Rev
P4M890-4(DISPLAY)	2.1
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PCS 3 VCKOMP for Vlink at 4x mode	
0	0.75V
1	0.9V

GPIOB IOQ Depth	
0	8 Level
1	1 Level

GPIOD GFL Pullup	
0	Enable
1	Disable

PD_A1-A2 need to pull-down

AZSYNC LFC FWH command	
0	Enable
1	Disable

PD A0 Vlink auto compensation	
0	Auto mode
1	Manual mode

GPIOC	GPIOA	HOST CLOCK
0	0	100MHz
1	0	133MHz
0	1	200MHz
1	1	Auto Mode

AZSDO auto reboot	
0	Enable
1	Disable

SPKR CPU FREQ strapping	
0	Enable
1	Disable

SEEDI iLAN shadow EEPROM	
0	Disable
1	Enable

For VT8237S Only
0/1: Disable/Enable SATA Stagger Spin Up
For default setting, it is enable.

R410 X 249R1%04 SATARS0COMP
FOR 8237S ONLY

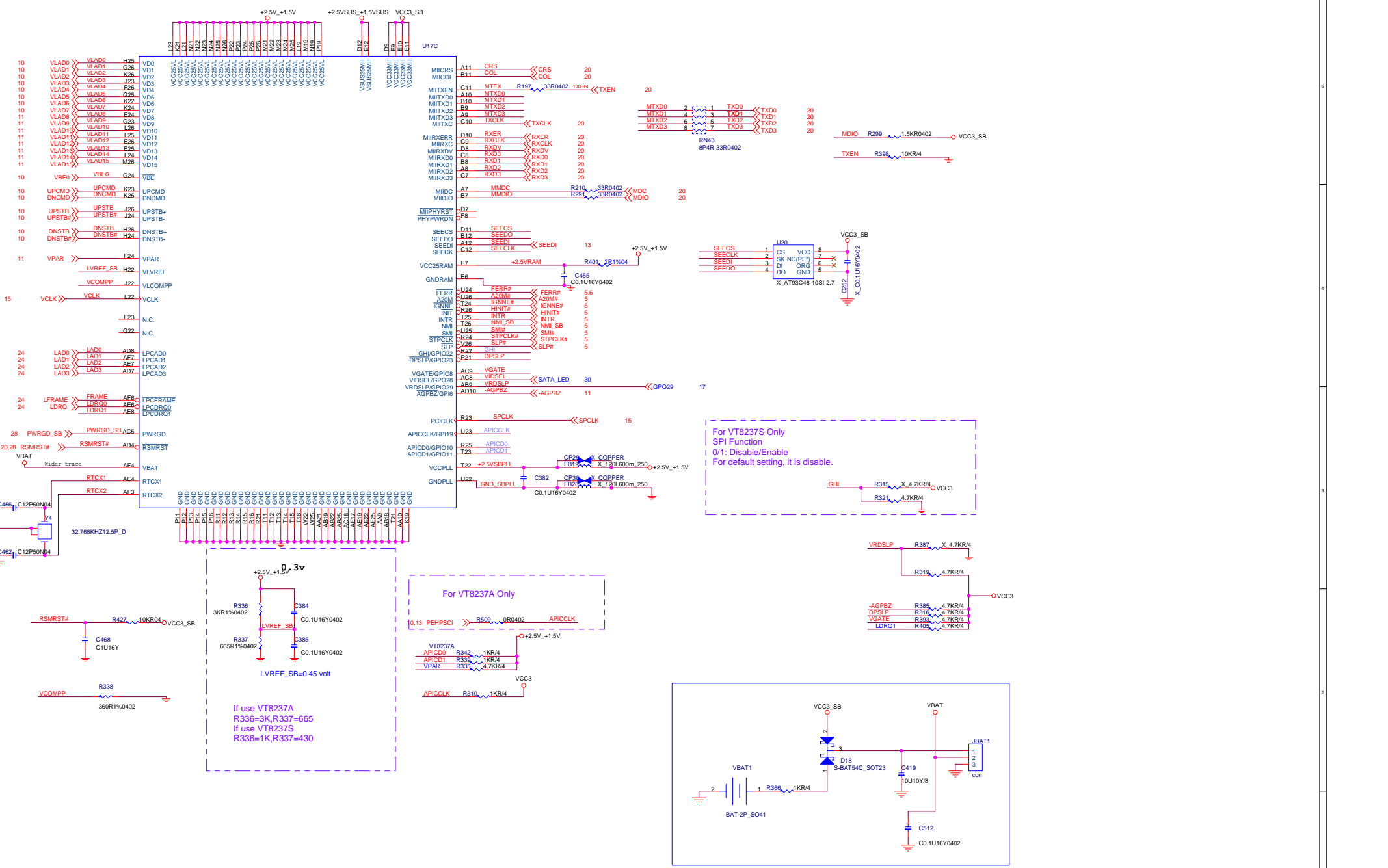
VDDA33 R522 X 0R0402
C443 C0.1U16Y0402
GND A33
FOR 8237S ONLY

VDDA0 CP36 X COPPER
R522 X 0R0402
C446 C0.1U16Y0402
C432 C0.1U16Y0402
C433 C0.1U16Y0402
near chipset

+3.3VSATA R580 X 0R0402
+2.5VSATA
R541 X 0R0402
near chipset

If use VT8237S
install R580, remove R541
If use VT8237A
install R541, remove R580

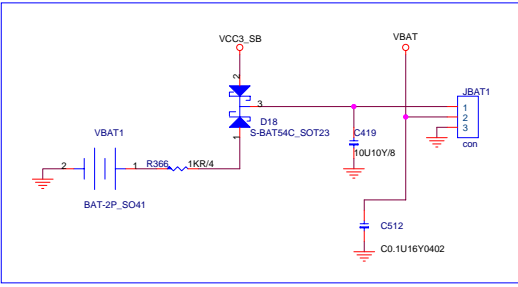
VCC3_SB
R434 4.7KR/4
R436 68R04 X PWBTTN# 30
C475 C0.1U16Y0402



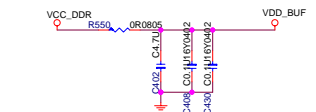
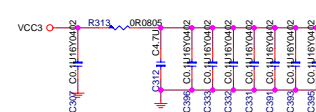
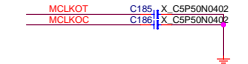
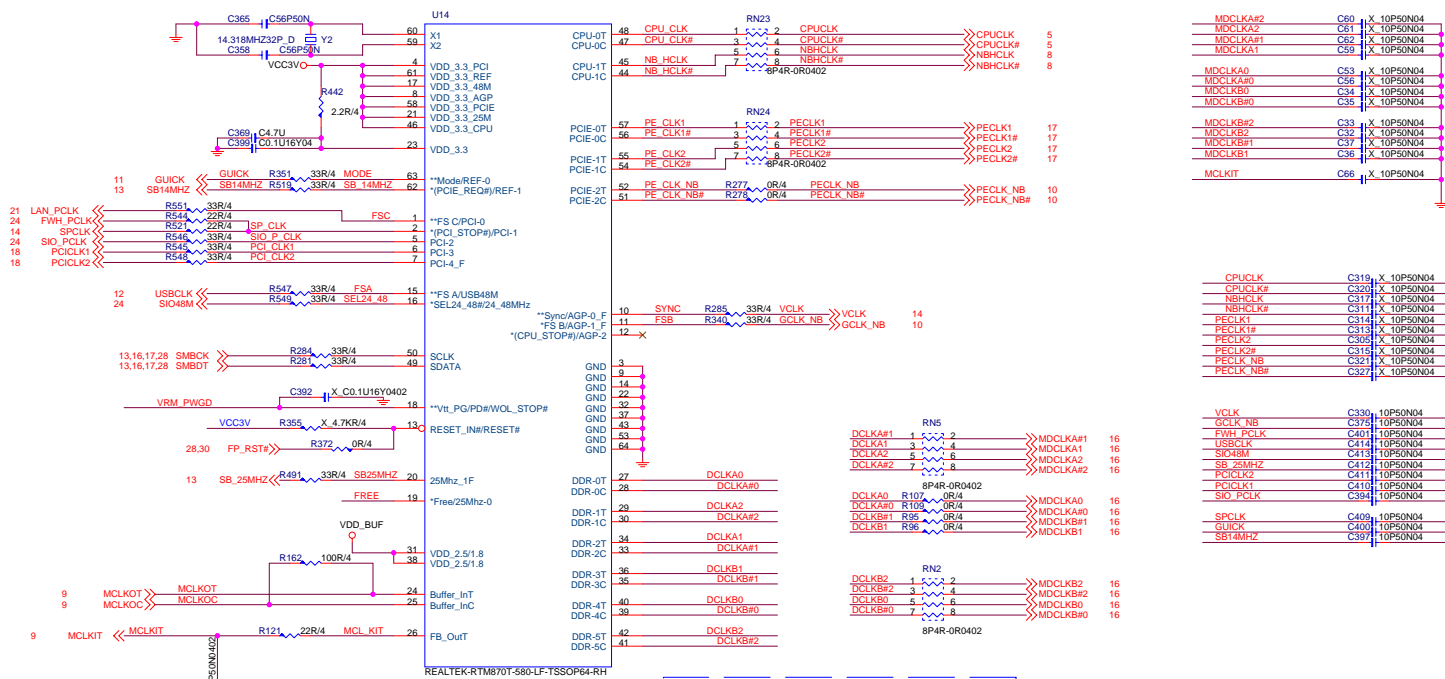
For VT8237S Only
 SPI Function
 0/1: Disable/Enable
 For default setting, it is disable.

For VT8237A Only

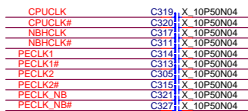
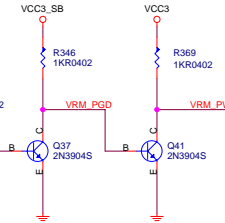
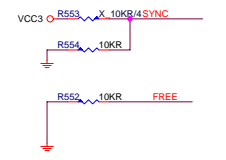
0.3v
 +2.5V, +1.5V
 LVREF_SB=0.45 volt
 If use VT8237A
 R336=3K, R337=665
 If use VT8237S
 R336=1K, R337=430

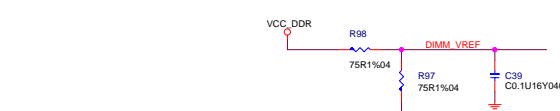
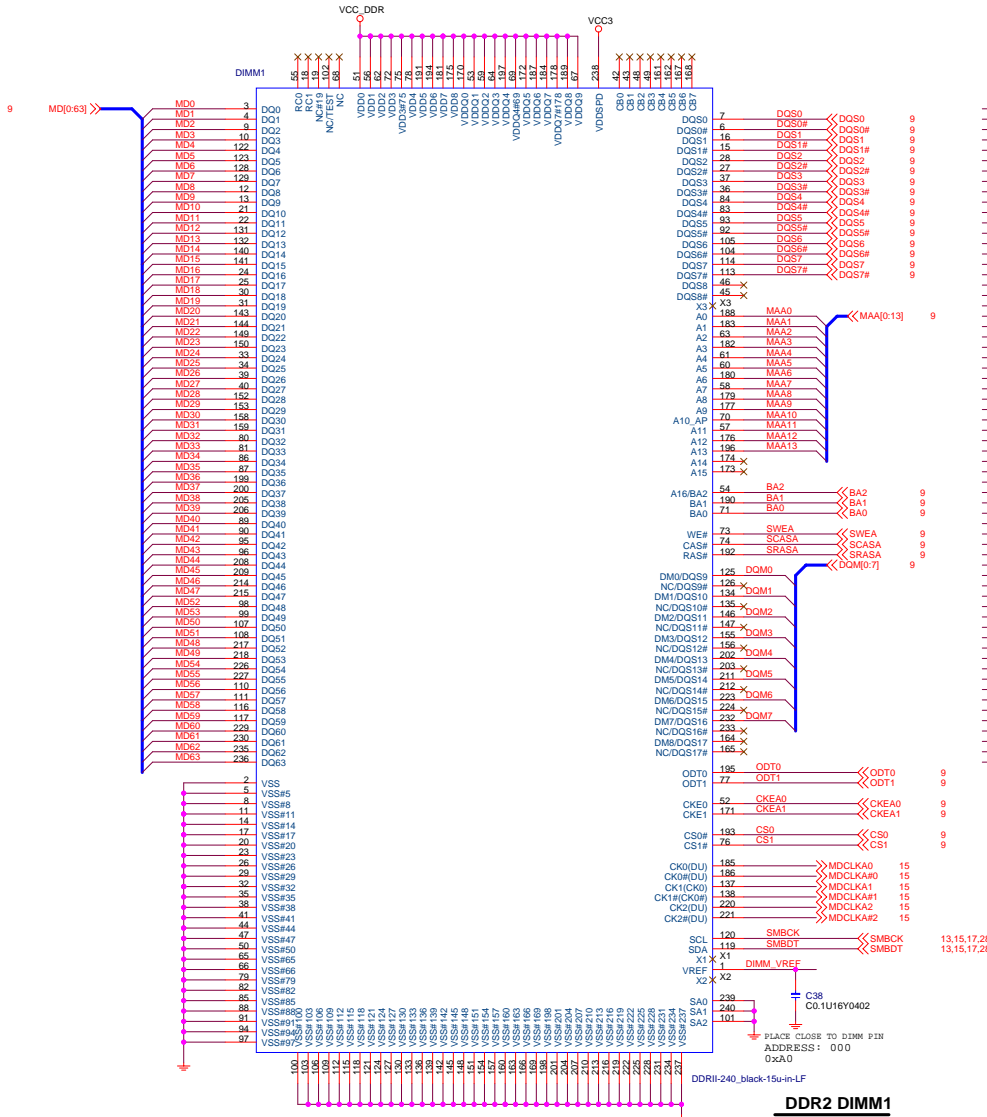


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Title	VT8237A- (LAN & VLINK)	Rev
Document Number	MS-7255	2.1
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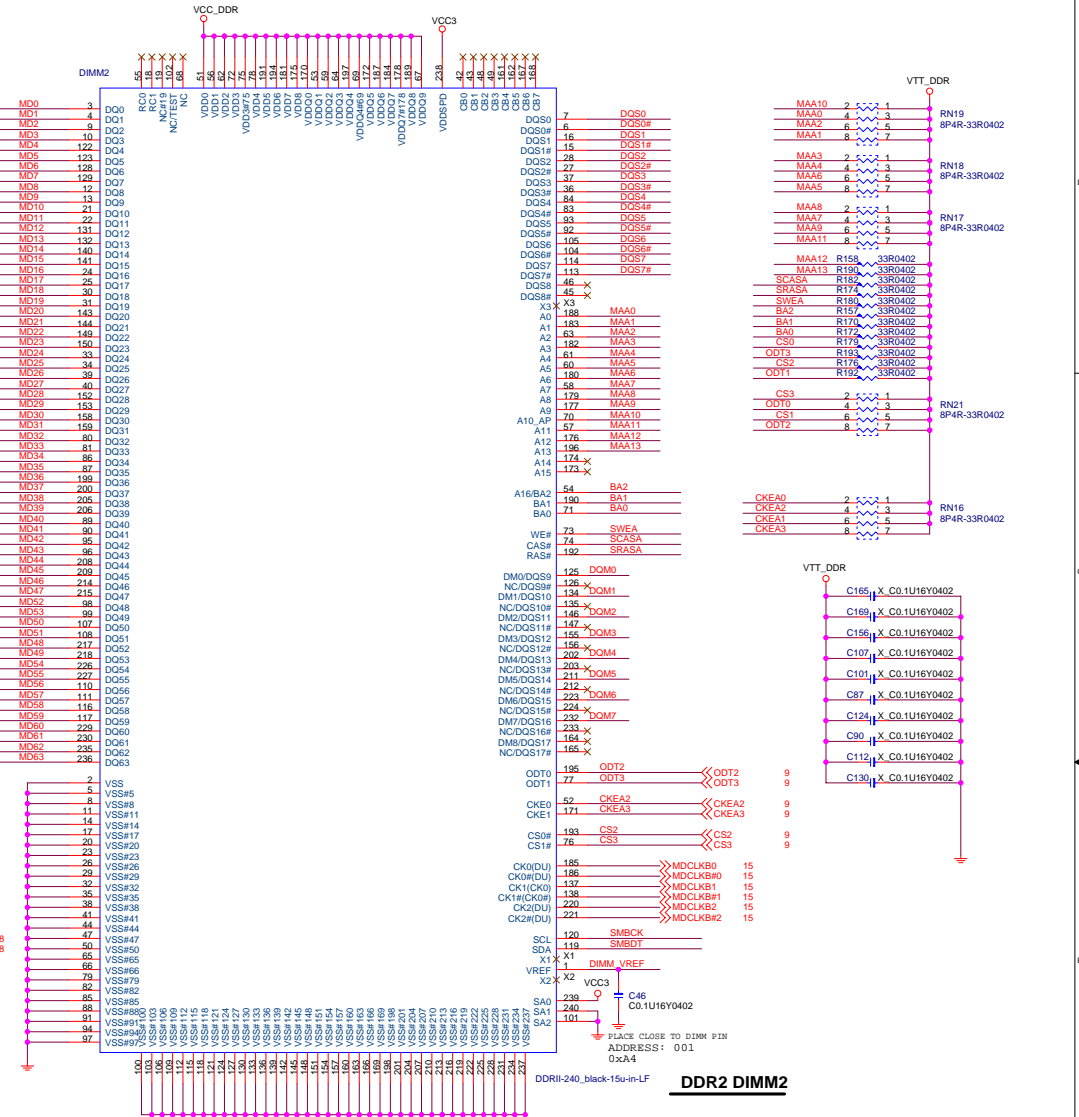


	1 (Pull High)	0 (Pull Low)
SYNC	PCIEX clocks are synchronous with CPU.	PCIEX clocks are asynchronous with CPU.
SEL24_48#	Pin16 = 24Mhz	Pin16 = 48Mhz
MODE	Notebook mode	Desktop mode
Free	25Mhz-0 is free running	25Mhz-0 is stoppable





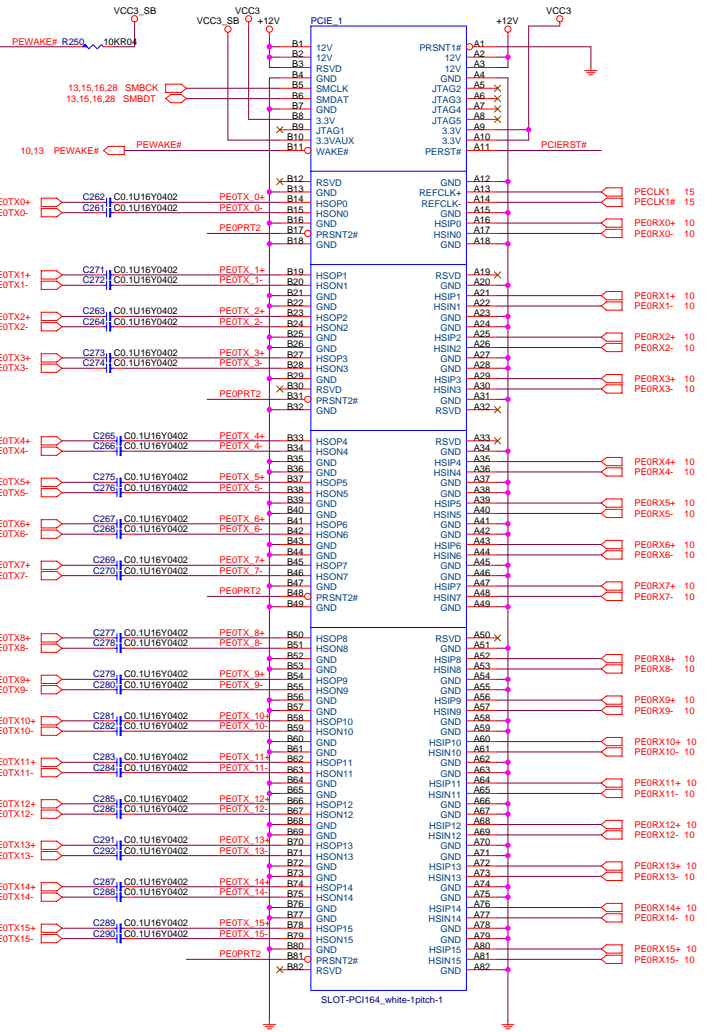
DDR2 DIMM1



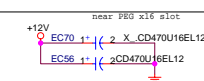
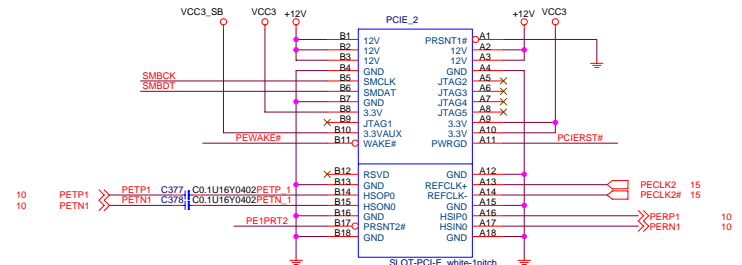
DDR2 DIMM2

18,28 PCIRST#2 >> R326 X_OR0402 PCIERST#
 14 GPO2 >> R327 22R4

12V ==> 5.5A for x16 slot ,75 Watt
 3.3V==> 3A
 3.3Vaux==>375mA



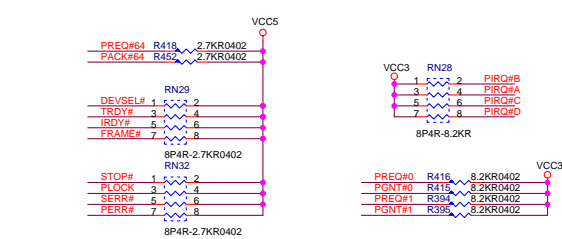
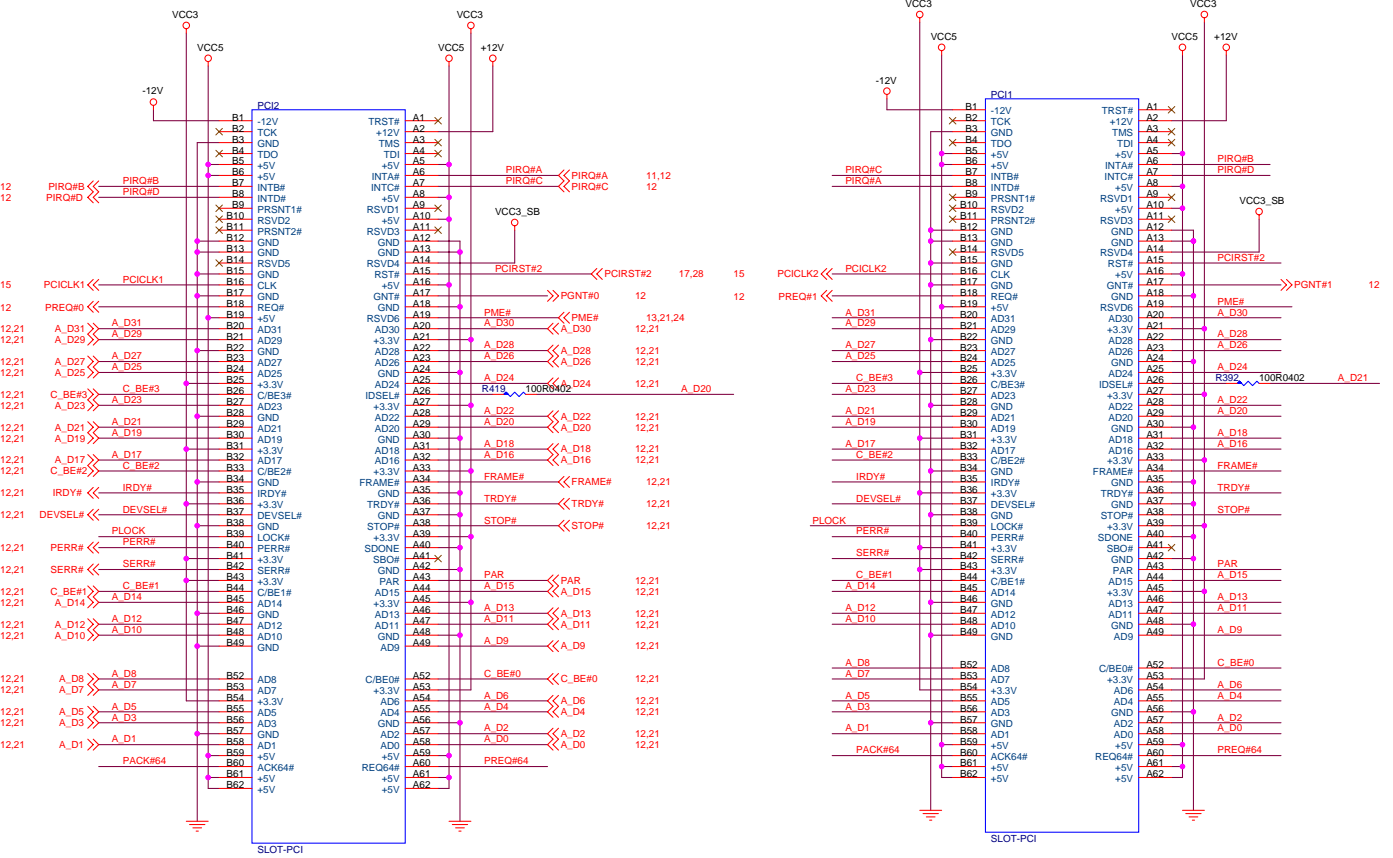
PCI EXPRESS 1-PORT 2



The system board designer determines the pull-up voltage

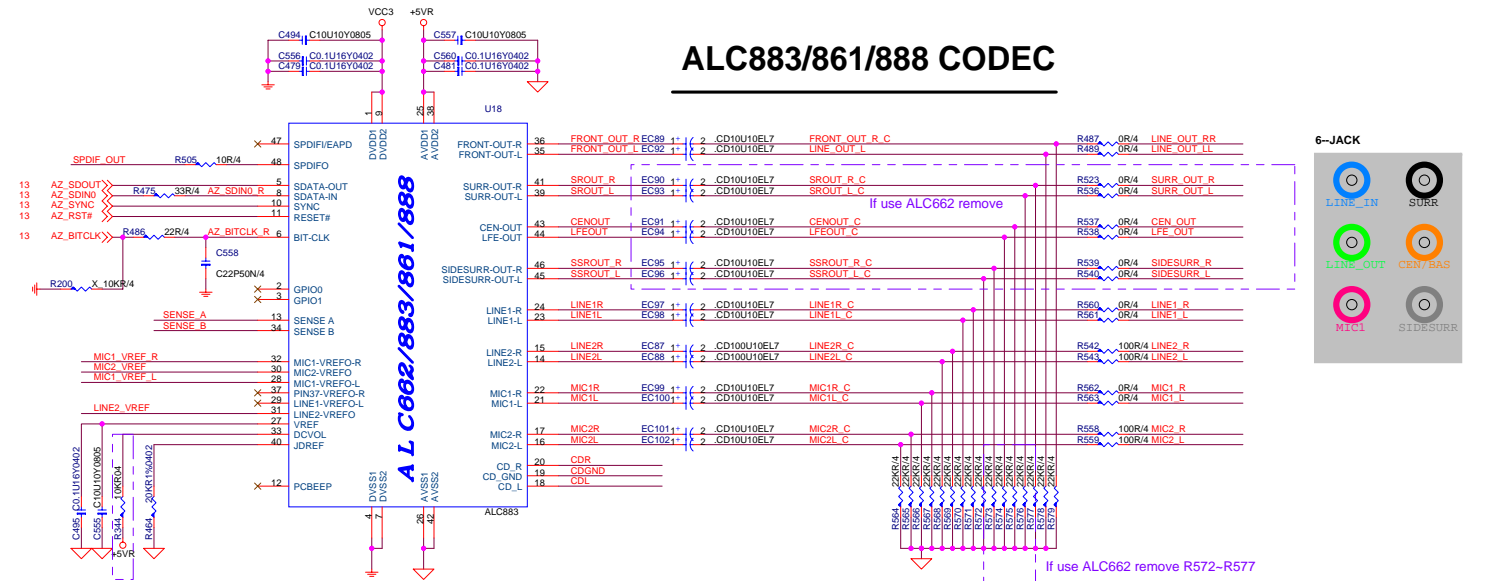
Micro Star Restricted Secret	
Title	PCI-EXPRESS SLOT X16 & X1
Rev	2.1
Document Number	MS-7255
MICRO-STAR INT'L CO.,LTD. No. 88, Lih-Si St, Jung-Hsi City, Taipei Hsien, Taiwan	
Last Revision Date: Friday, November 17, 2006	
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PCI Connectors

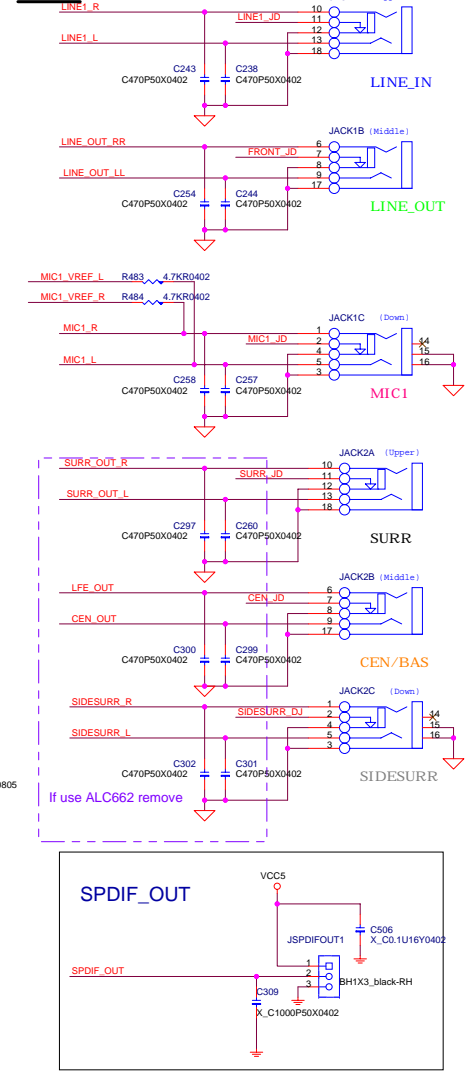


Micro Star Restricted Secret		
Title	Rev	
PCI Connector 1 & 2	2.1	
Document Number	MS-7255	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-Hsi City, Taipei Hsien, Taiwan	Last Revision Date: Friday, November 17, 2006	
Sheet	18	of 32

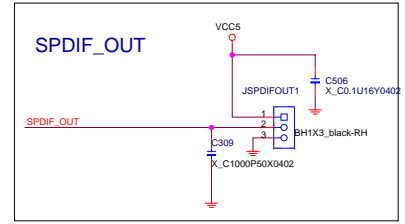
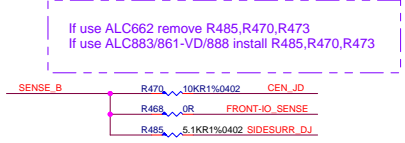
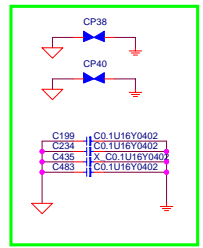
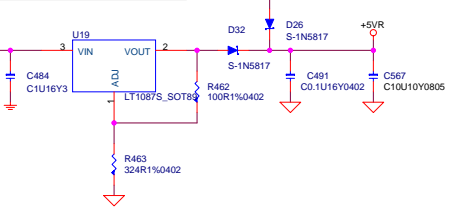
ALC883/861/888 CODEC

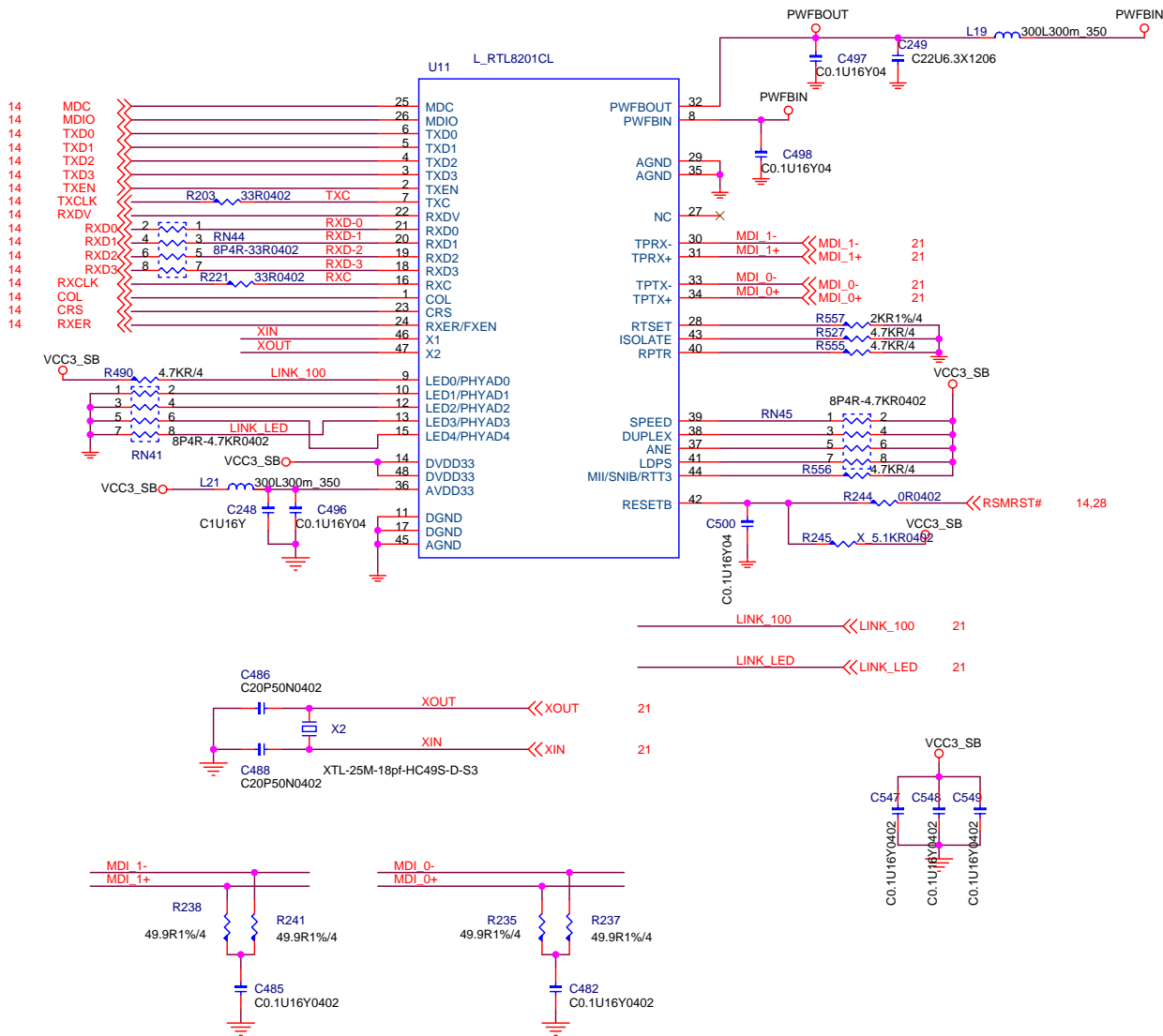


JACK



AUDIO CODE REGULATORS

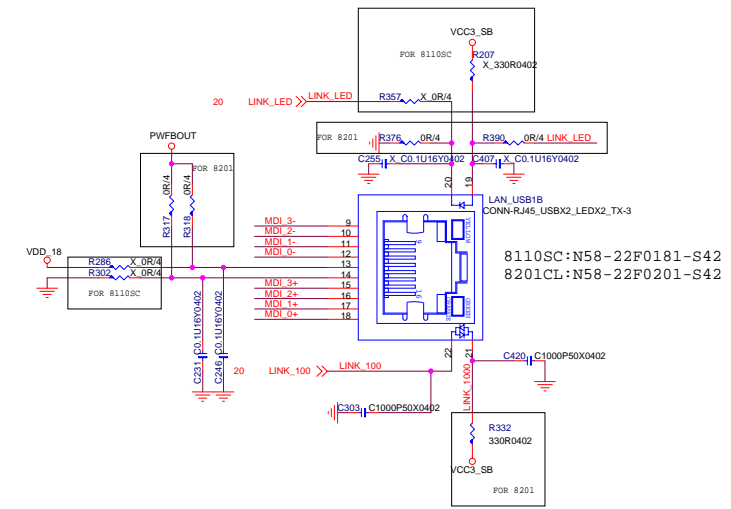
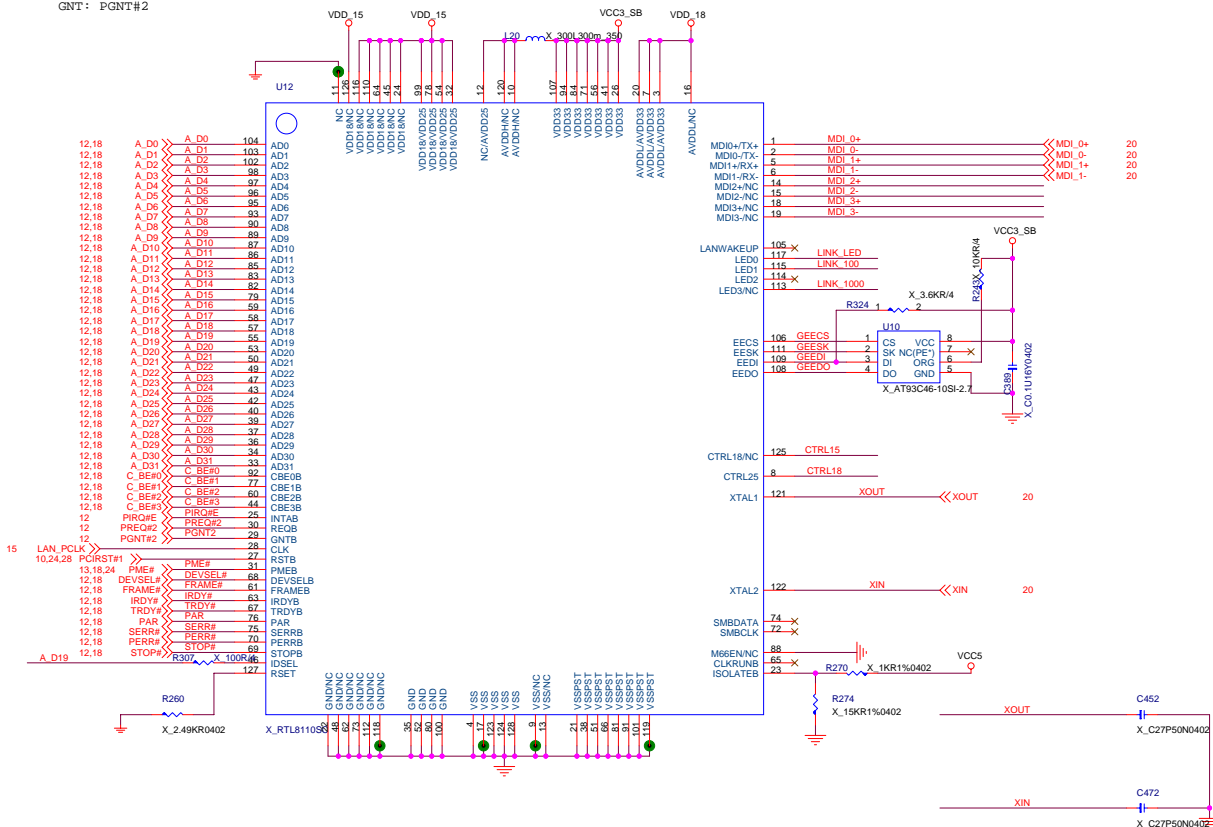




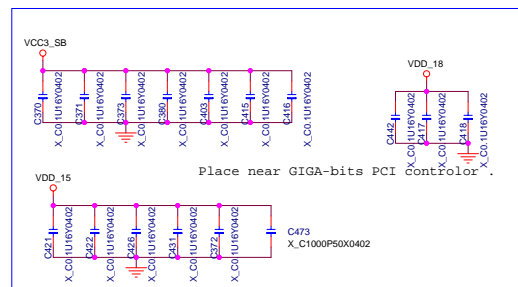
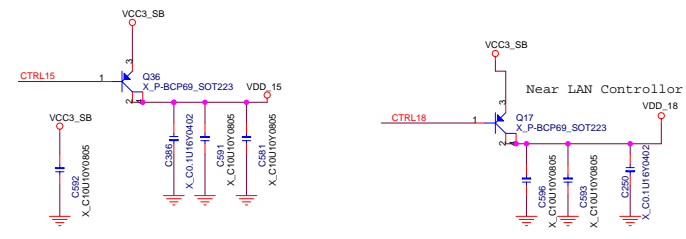
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Title LAN RTL8201CL	Rev 2.1
Document Number MS-7255-2.0	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Friday, November 17, 2006 Sheet 20 of 32

RTL8110SC

LAN
 IDSEL: AD19
 INT : PIRQ#E
 REQ: PREQ#2
 GNT: PGNT#2

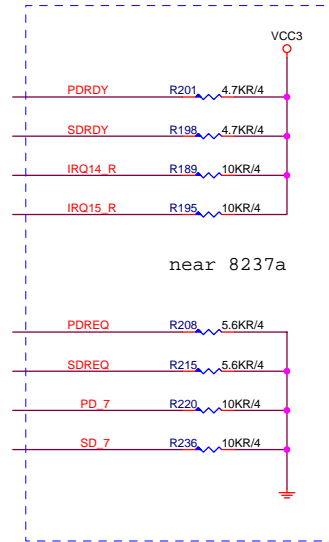
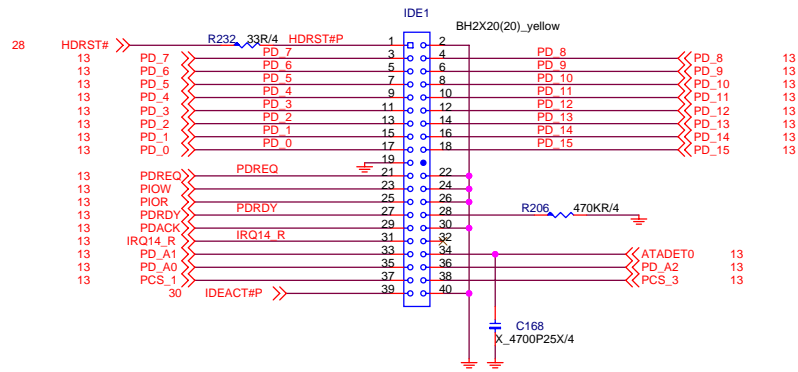


POWER FOR LAN

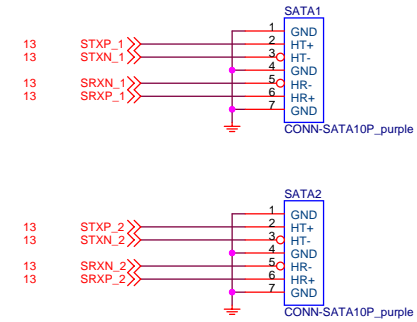


Micro Star Restricted Secret		
Title	RTL8110SC	Rev
Document Number	MS-7255	2.1
MICRO-STAR INT'L CO.,LTD. No. 88, Lih-Shi St, Jung-Hsi City, Taipei Hsien, Taiwan		
Last Revision Date: Friday, November 17, 2006		
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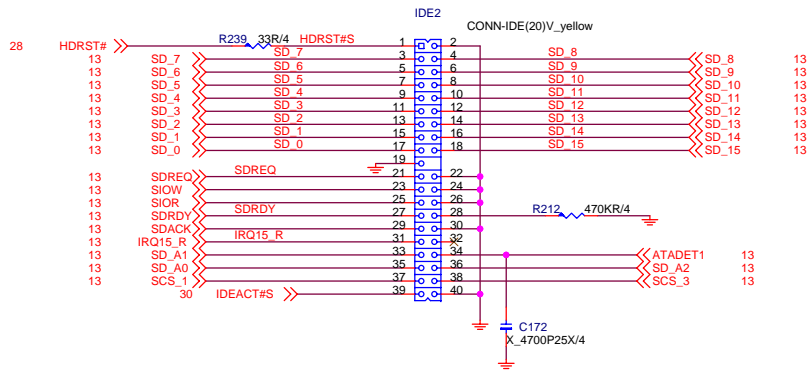
PRIMARY IDE BLOCK



SERIAL ATA CONNECTOR BLOCK



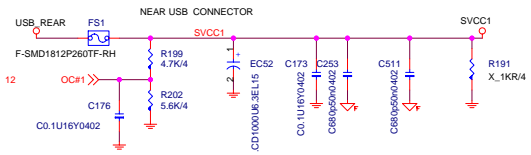
SECONDARY IDE BLOCK



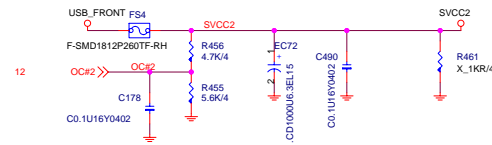
Micro Star Restricted Secret

Title		IDE & SATA	Rev
Document Number		MS-7255	2.1
MICRO-STAR INT'L CO., LTD. No. 68, Li-De St., Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Friday, November 17, 2006	
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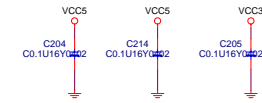
POWER CIRCUIT FOR USB PORT 0,1,2,3 (REAR)



POWER CIRCUIT FOR USB PORT 4,5,6,7 (FRONT)

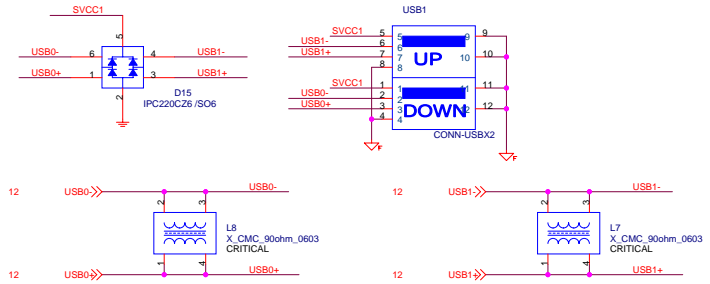


EMI solution

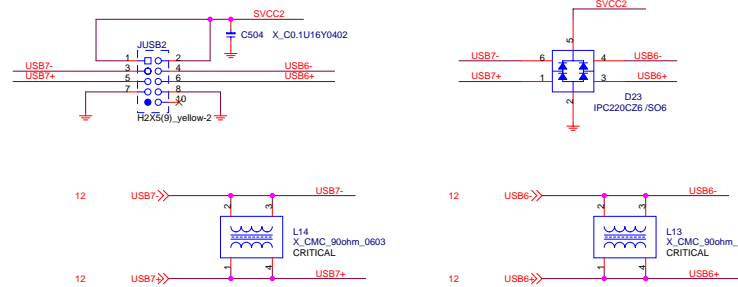


REAR PANEL USB CONNECTOR FOR USB PORT 0,1 & 1394 PORT

USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Trace length 0" to 17"

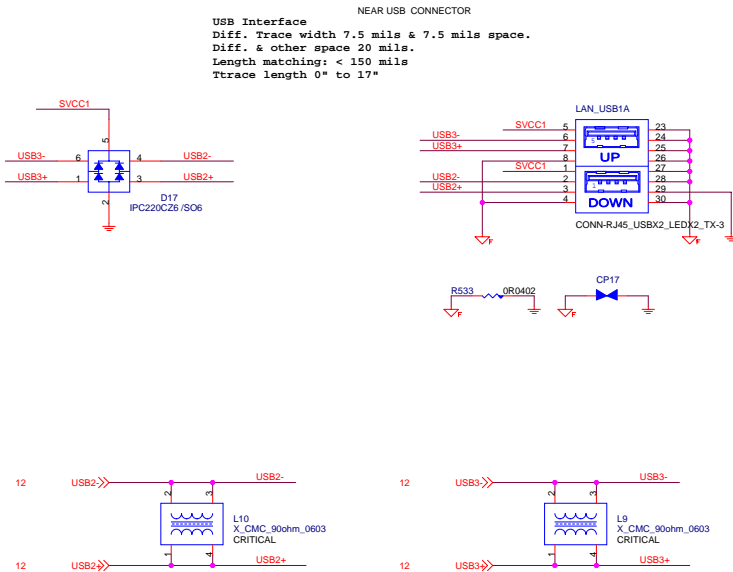


FRONT PANEL USB CONNECTOR FOR USB PORT 6,7

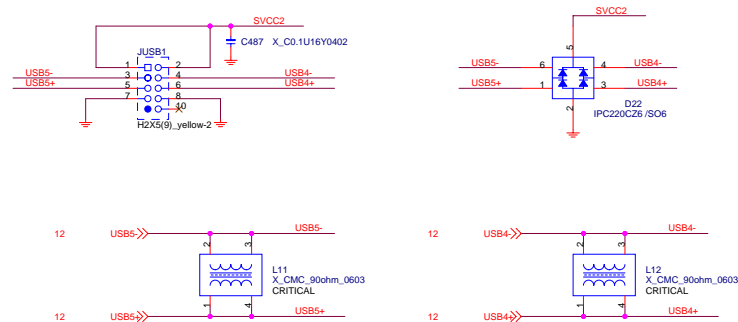


REAR PANEL USB CONNECTOR FOR USB PORT 2,3

USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Trace length 0" to 17"

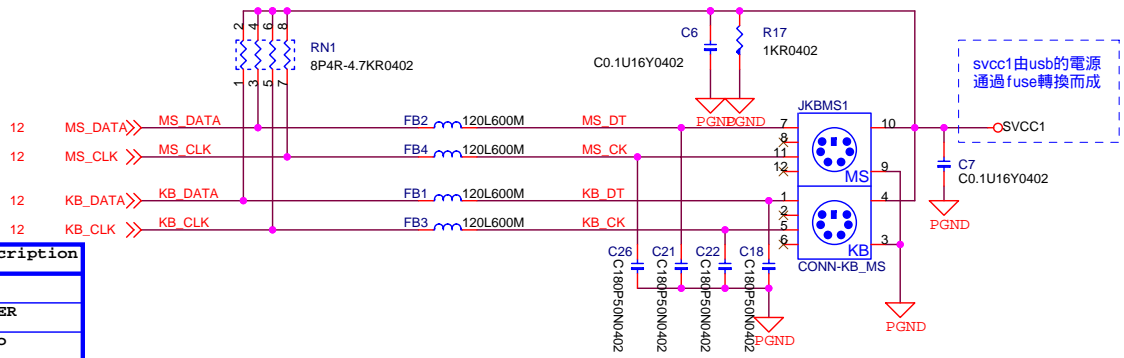


FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



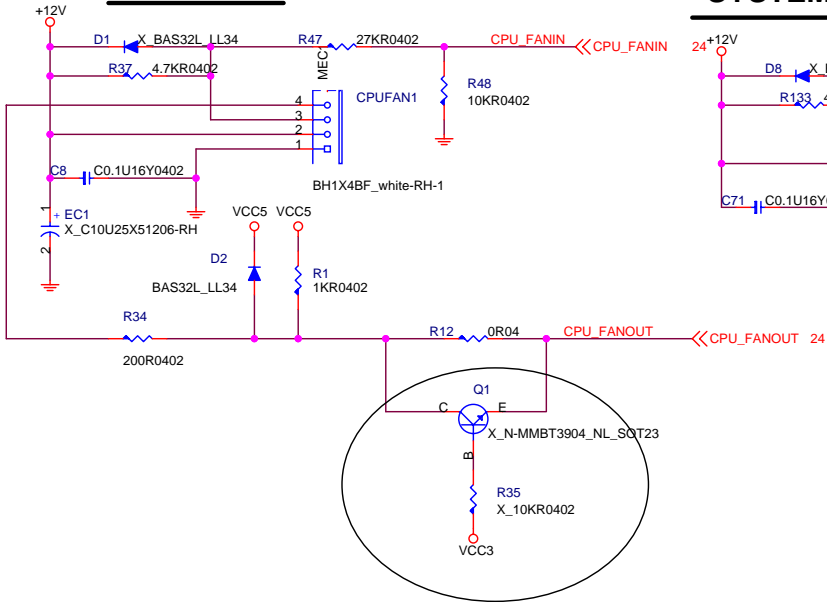
Micro Star Restricted Secret		
Title	USB-REAR & FRONT	Rev
Document Number	MS-7255	2.1
MICRO-STAR INT'L CO., LTD. No. 88, Lihde St, Jung-Ho City, Taipei Hsien, Taiwan		Last Revision Date: Friday, November 17, 2006
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PS2 KEYBOARD & MOUSE CONNECTOR

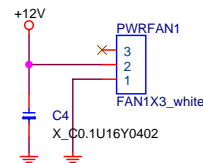
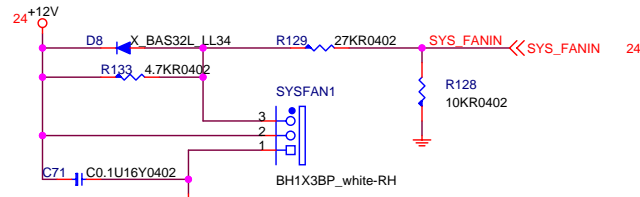


Fan	Description
Pin 1	GND
Pin 2	POWER
Pin 3	Taco
Pin 4	PWM

CPU FAN

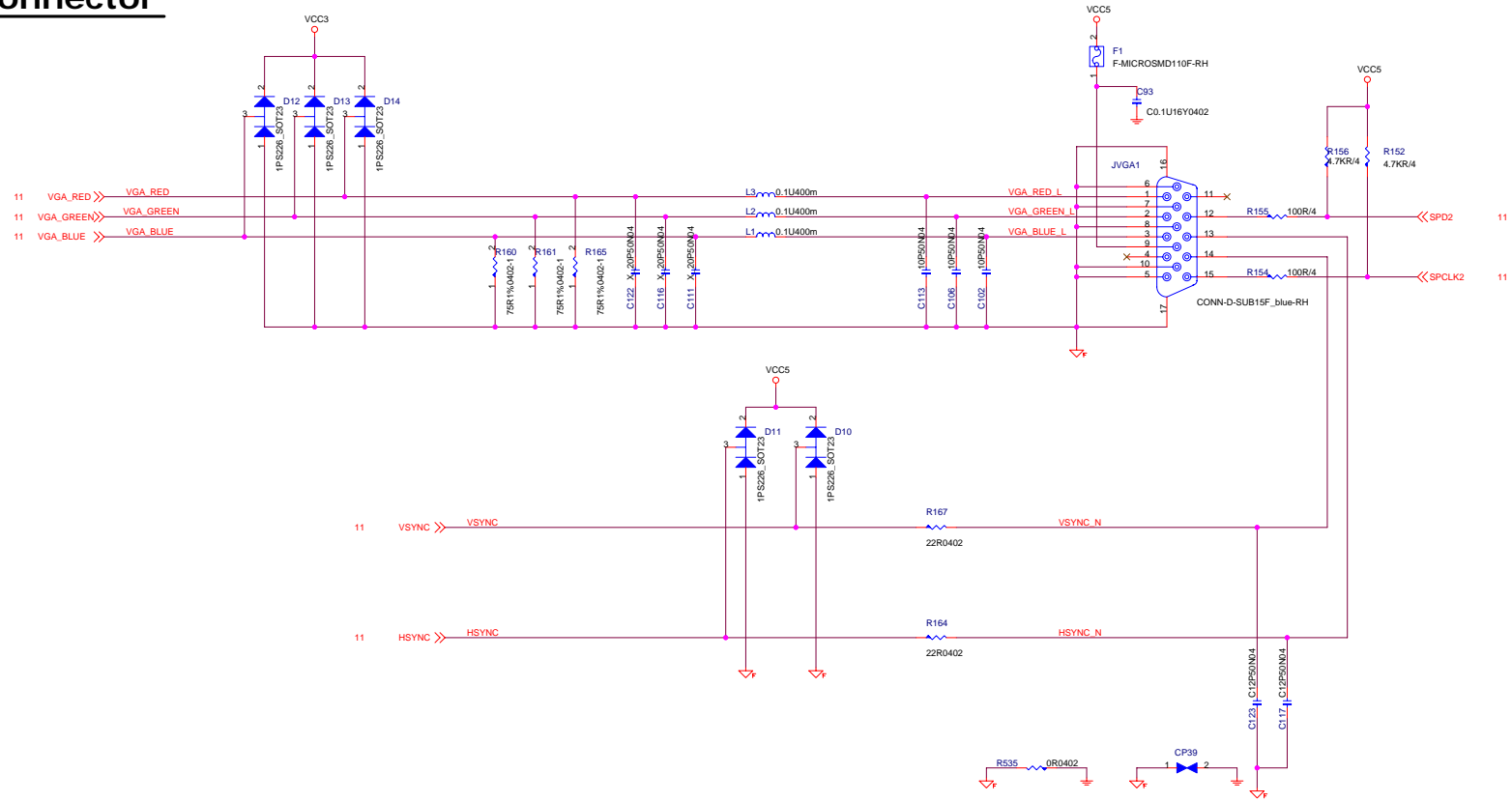


SYSTEM FAN

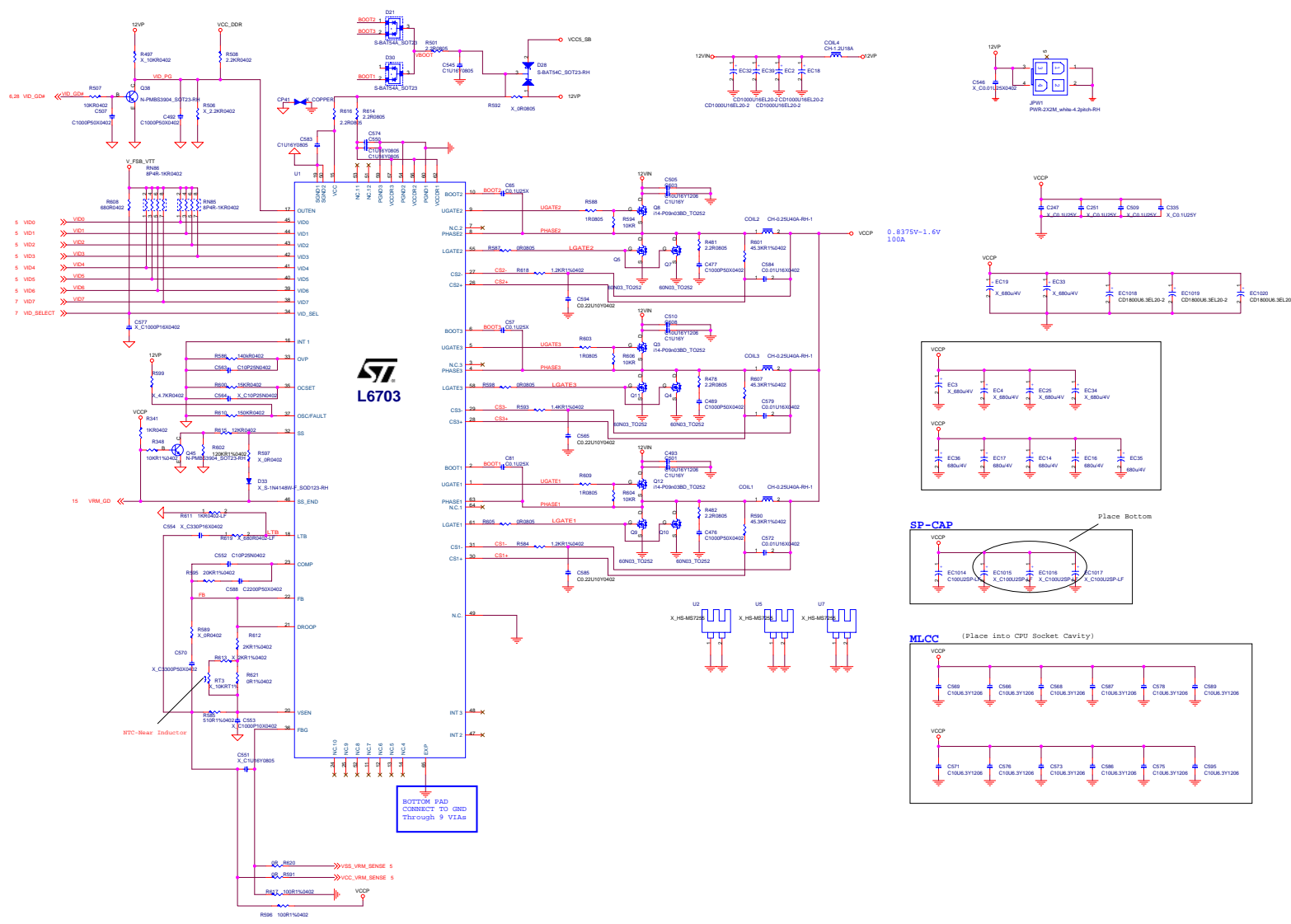


<i>Micro Star Restricted Secret</i>	
Title KB/MS & FAN	Rev 2.1
Document Number MS-7255	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Friday, November 17, 2006 Sheet 25 of 32

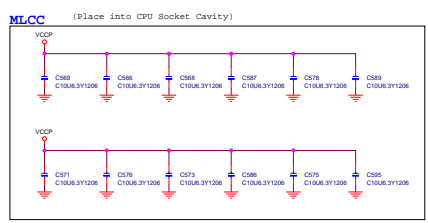
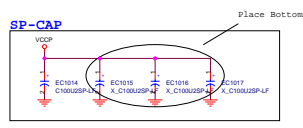
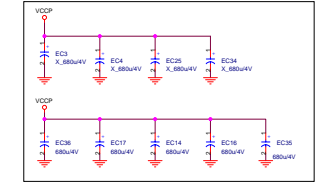
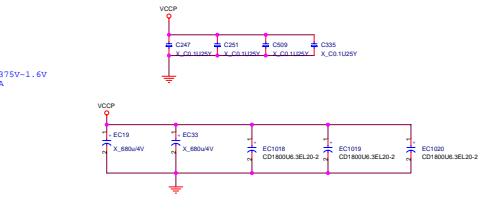
Video Connector

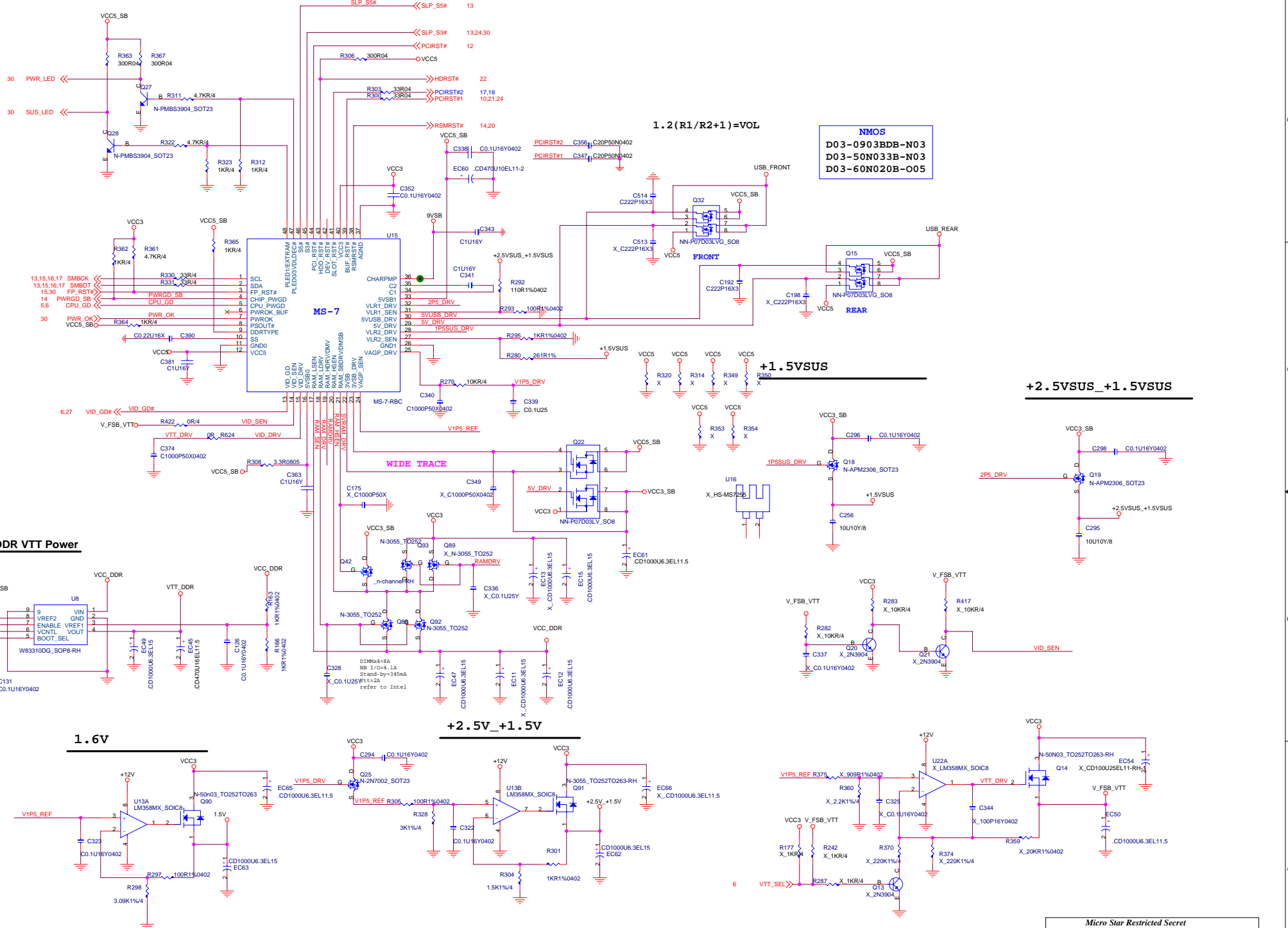


<i>Micro Star Restricted Secret</i>		
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VGA CONNECTOR		2.1
Document Number		MS-7255
MICRO-STAR INT'L CO., LTD. No. 89, LiDe St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Friday, November 17, 2006
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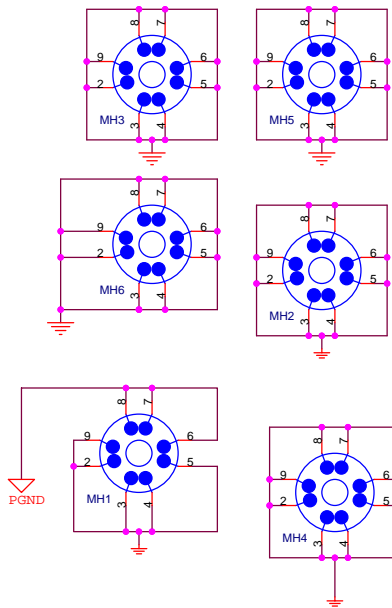
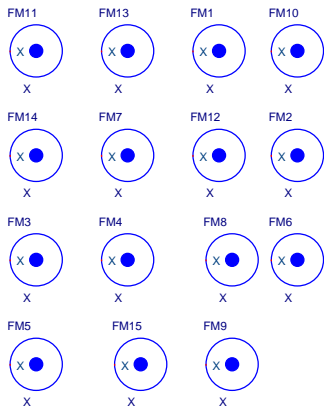
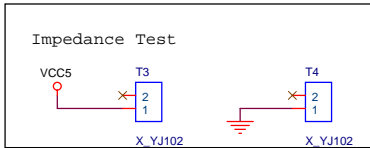
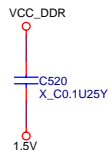
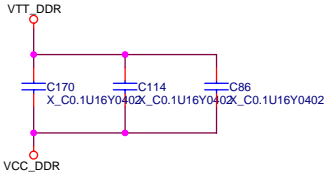
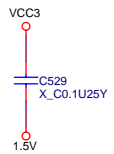
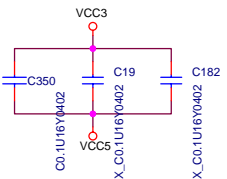
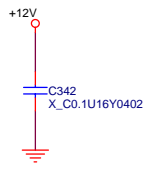
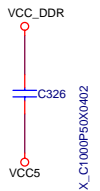
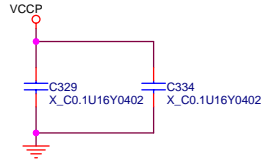
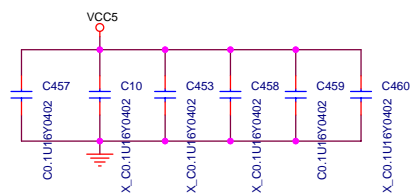
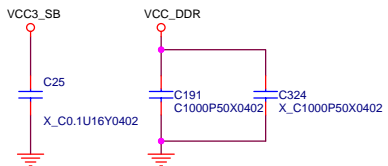
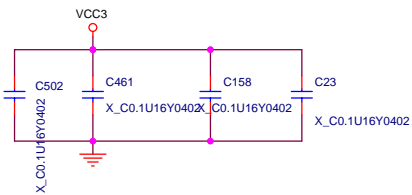


BOTTOM PAD
CONNECTS TO GND
Through 9 VIAs





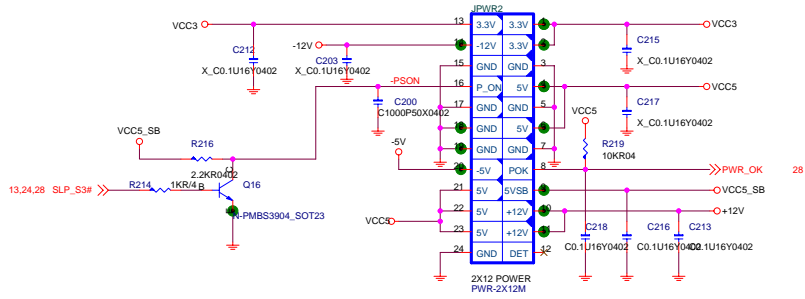
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Title	MS7 ACPI controller	Rev 2.1
Document Number	MS-7255	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Friday, November 17, 2006	Sheet 28 of 32



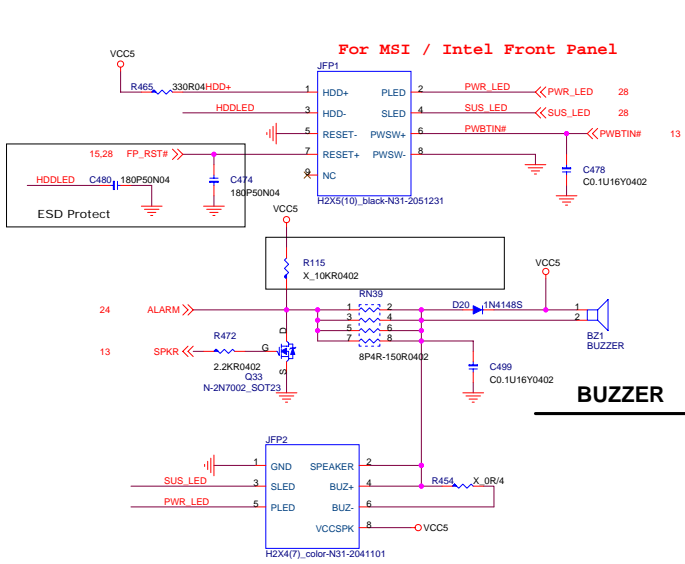
For EMI

<i>Micro Star Restricted Secret</i>	
Title	COVER SHEET
Document Number	MS-7255
MICRO-STAR INT'L CO., LTD. No. 68, Li-De St., Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Friday, November 17, 2006
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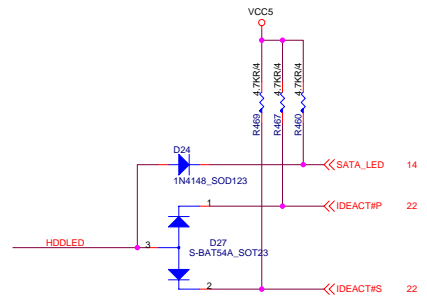
ATX Connector



For MSI / Intel Front Panel



IDE LED SERIAL ATA LED



BUZZER

<i>Micro Star Restricted Secret</i>		
Title	FRONT PANEL	Rev
Document Number	MS-7255	2.1
MICRO-STAR INT'L CO.,LTD. No. 88, Lida St., Jung-Hsi City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Friday, November 17, 2006 Sheet 30 of 32

20061102

- 1.change LINK_LED pull down P20
- 2.modify RJ45 circuits P21
- 3.change LAN_PCLK to pin 1 P15
change FWH_PCLK to pin 2

20061109

- 1. change R586=104KR,c563 =10p,R621=0R,R612=2K1%,R585=510R1%,R584=1.2K1%.R618=1.1K1%,
R593=1.3K1% ;add R611=1k ; remove RT3,R613,R619,C554 for PWM P27
- 2.change R475=33R P19
- 3.C258,C301,C257,C254,C244,C300,C302,C299,C260,C243,C238,C297 Change 100pf to 470pf;
add C199,C483,C234 0.1uf,C253,C511,C303, C420 1000pf for EMI P19
- 4.add U23,R423,R424 P10
- 4.add R122,RT2,CP31 to sense MOSFET temperature P24

<i>Micro Star Restricted Secret</i>	
<i>Title</i>	<i>Rev</i>
COVER SHEET	2.1
<i>Document Number</i> MS-7255	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Friday, November 17, 2006
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