

CONTENT	SHEET
Cover Sheet, Block diagram	1-2
Intel LGA775 CPU	3-5
NVIDIA MCP73	6-8
DDR2 DIMM 1 , 2	9
DDR2 Terminations	10
NVIDIA MCP73	11-17
D-Sub	18
HDMI/DVI	19
PCI-Express Slot	20
PCI Slot 1 & 2	21
PCI Slot 3 & 4	22
LPC-Super I/O F71882FG	23
ATX/Front Panel/FAN	24
USB CONNECTORS	25
LAN-RTL8211BL	26
Azalia Codec - ALC888	27
1394 Controller - JMB381	28
ACPI Controller UPI	29
uP6103/VT/REGULATOR	30
VRD11-ST6703	31
MANUAL PARTS	32

MS-7505 ATX

Version: 21

CPU: Intel Pentium 4 Cedar Mill / Prescott , Pentium D Smithfield / Presler and Conroe / Kentsfield family processors in LGA775 Package.

System Chipset:

NVIDIA MCP73

On Board Device:

BIOS -- SPI Flash 8M
Azalia Codec -- ALC888
LPC Super I/O -- FINTEK F71882FG
LAN -- Realtek RTL8211BL-GR
CLOCK Gen -- Integrated in MCP73
1394 Controller -- JMB381

Main Memory:


SINGLE-channel DDR-II * 4 (Max 4GB)

Expansion Slots:

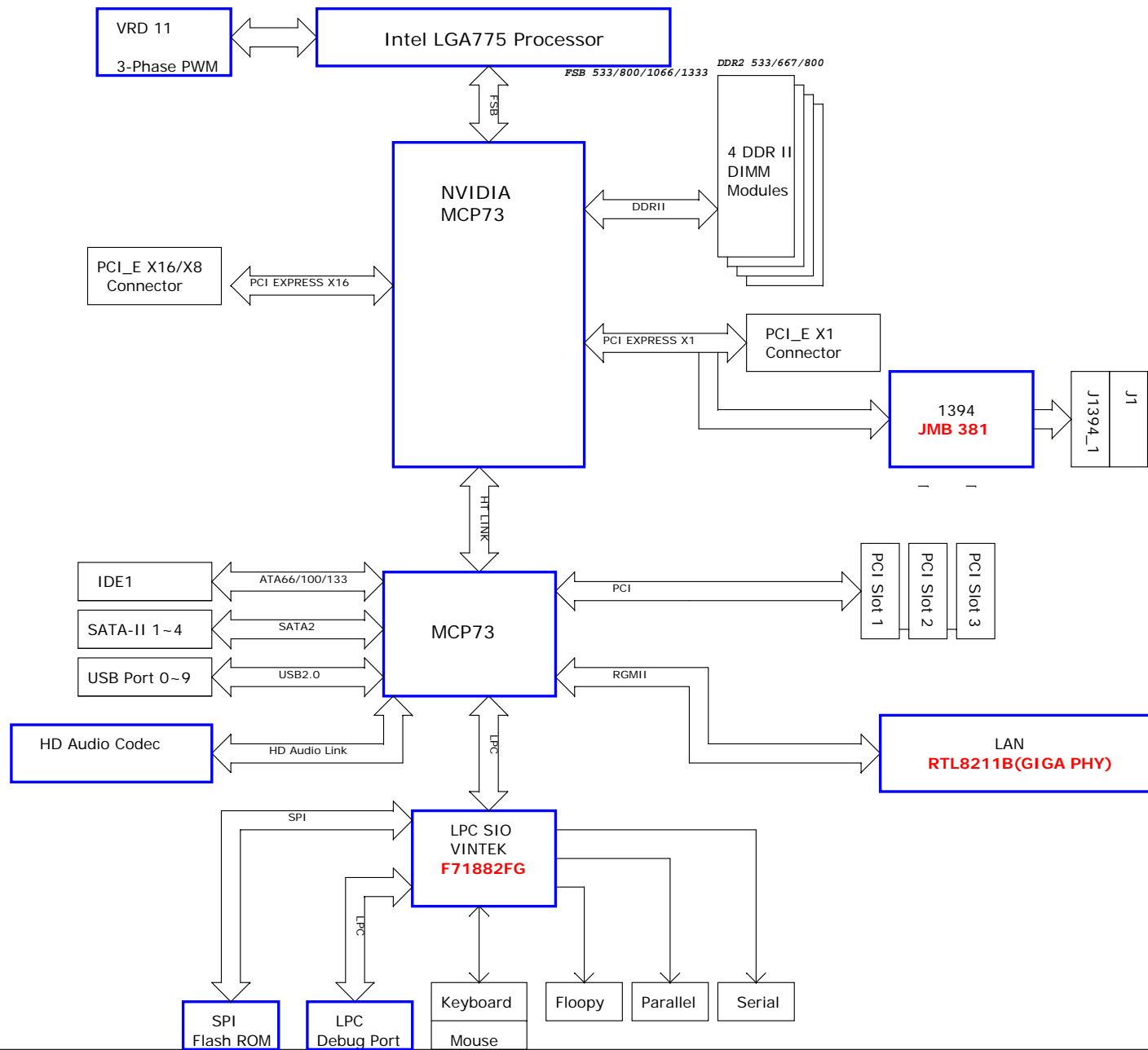
PCI EXPRESS X16 SLOT *1
PCI EXPRESS X1 SLOT * 1
PCI SLOT * 4

Intersil PWM

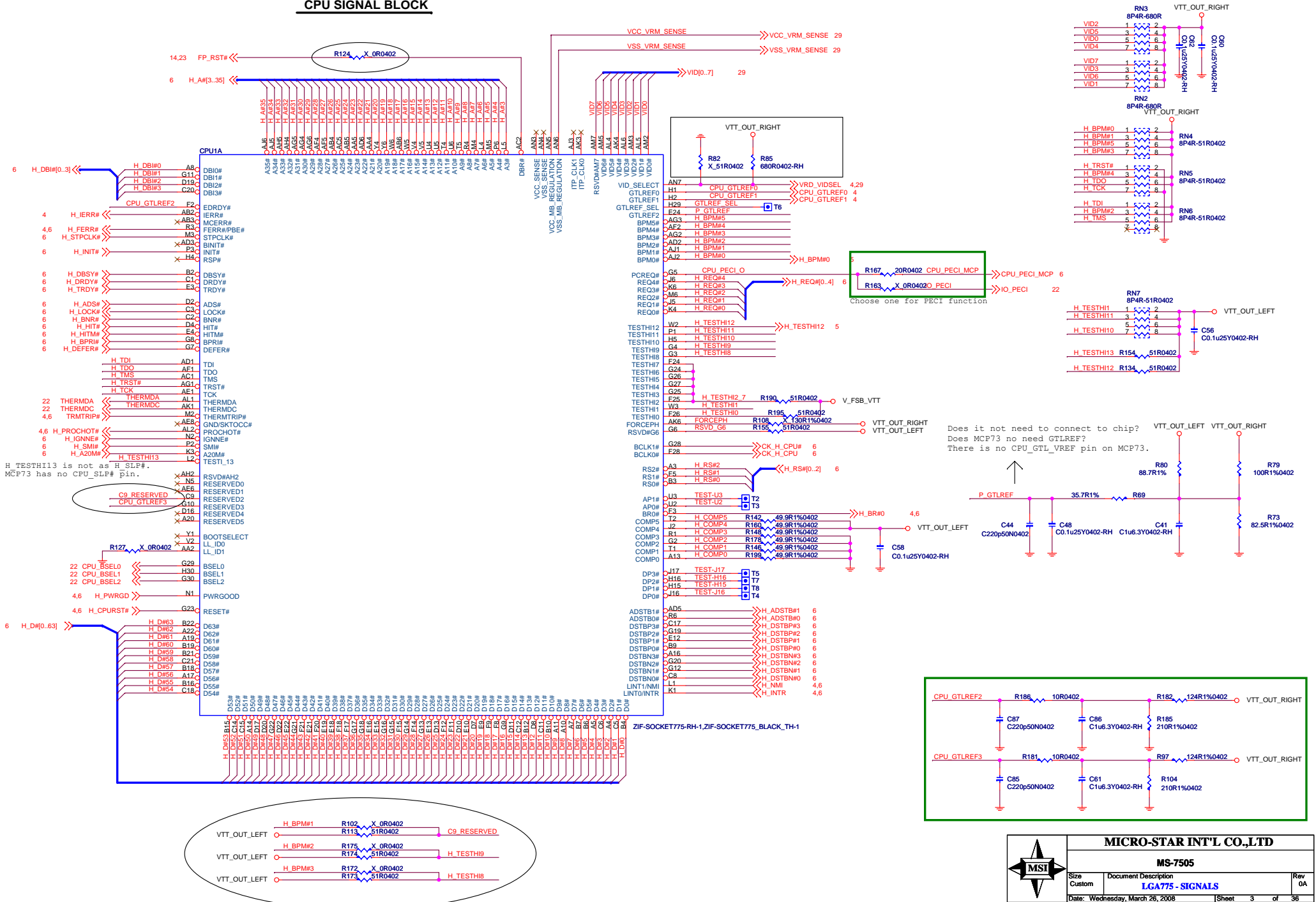
OPT	Function	Orcad Configure	BOM
PV	MCP73PV (HDMI+DVI) / F71882FG / ALC888 / RTL8211BL / JMB381	cfg-7505-PV	601-7505-A10

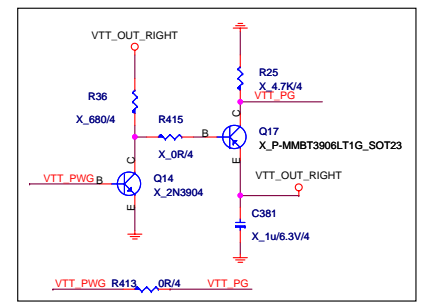
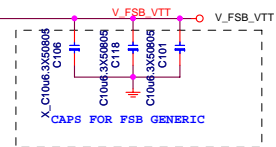
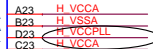
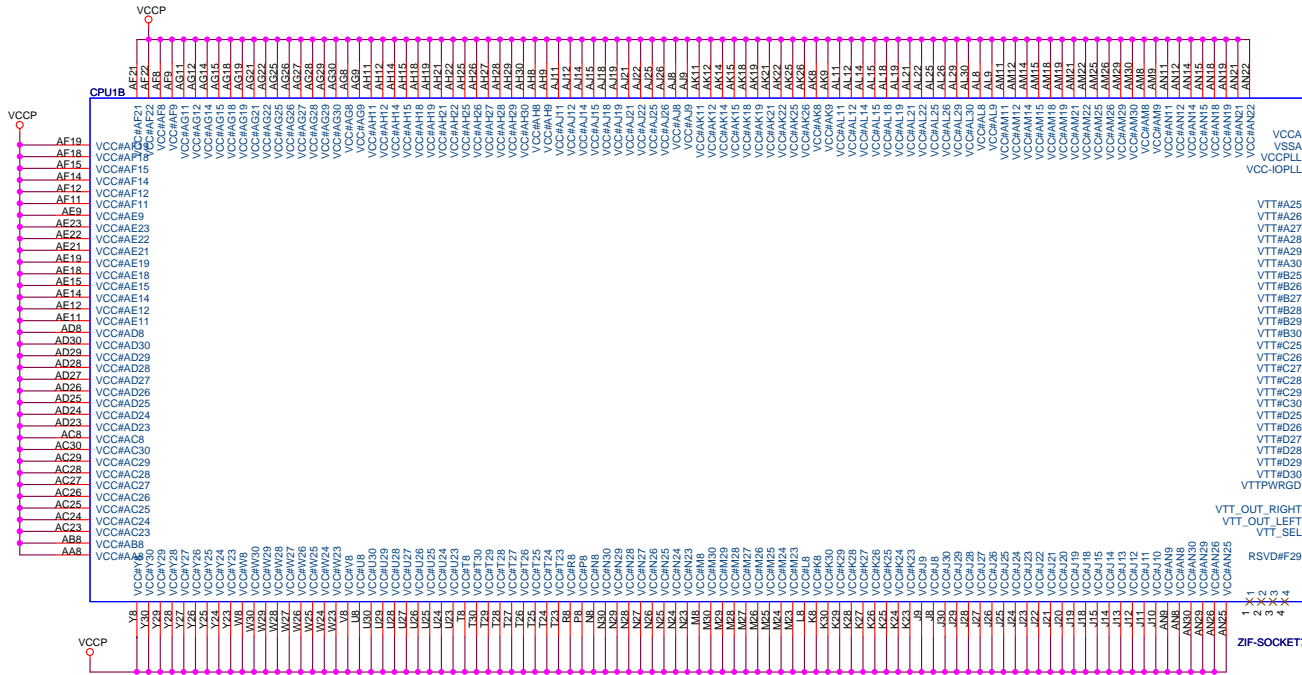
				MICRO-STAR INT'L CO.,LTD			
				MS-7366			
Size	Custom	Document Description				Rev	0A
				COVER SHEET			
Date: Wednesday, March 26, 2008				Sheet 1 of 36			

Block Diagram

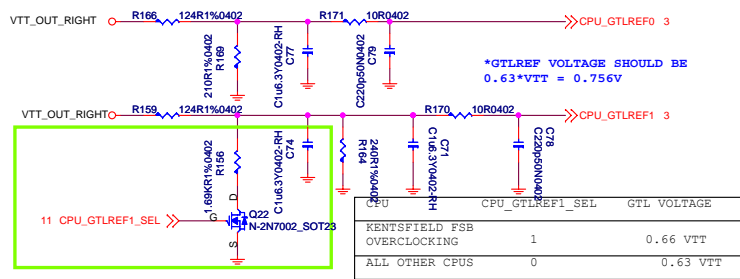


CPU SIGNAL BLOCK

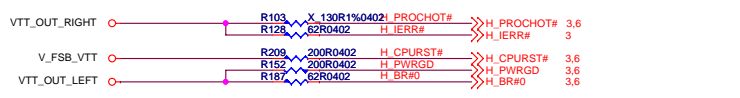




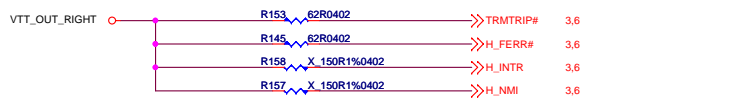
For kantisfield CPU Triese<150 ns



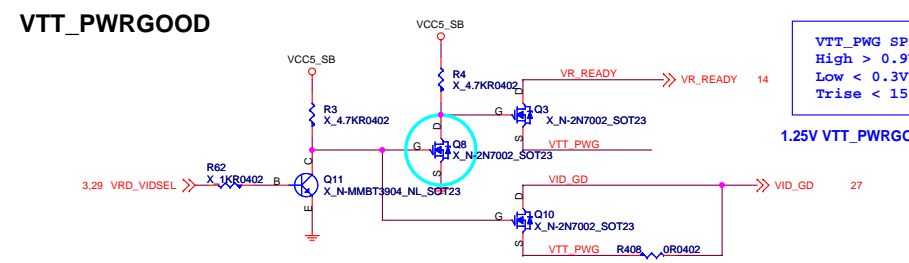
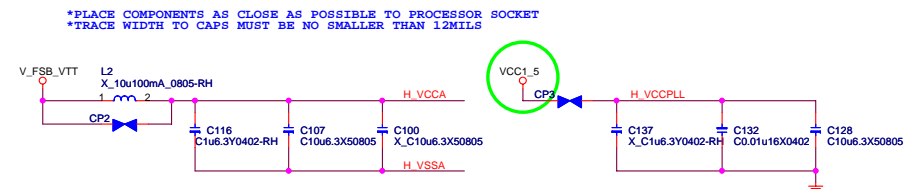
PLACE AT CPU END OF ROUTE




PLACE AT C55 END OF ROUTE



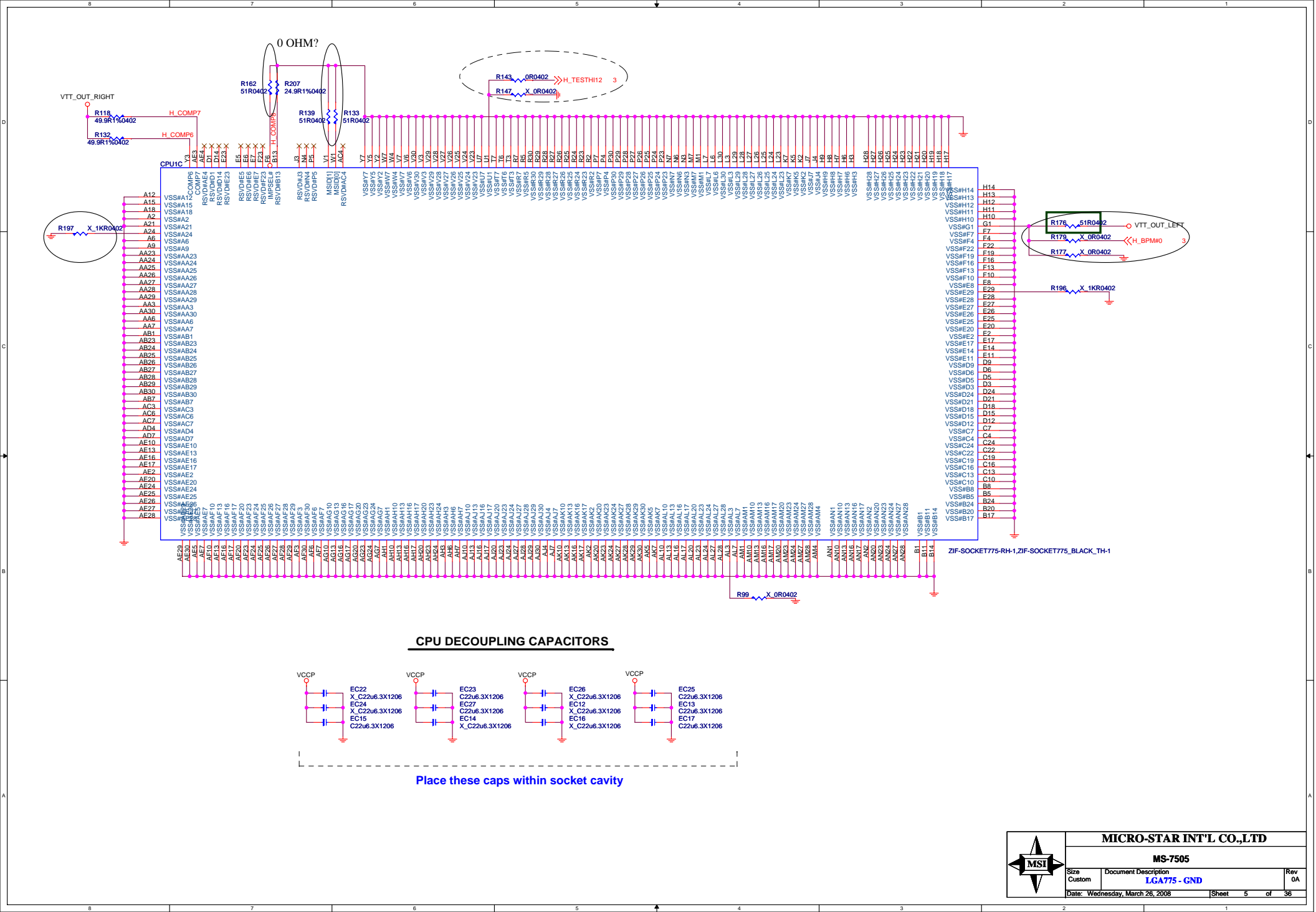
install R152 and R145 for nv note 1/21

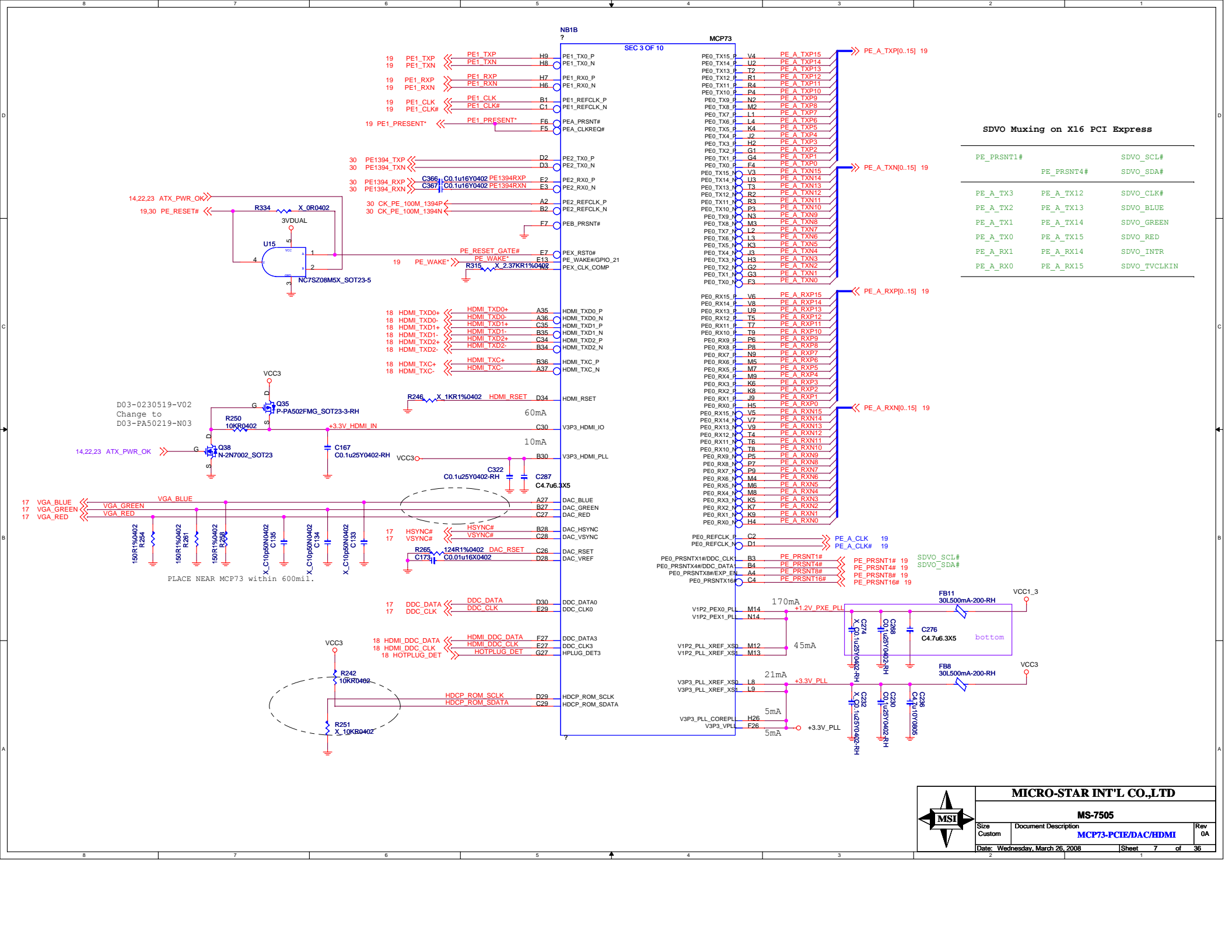


VID_SELECT	VTT_PWG	power on sequence
0 (VRM10)	VID_GD	VTT_PWG before VCCP
1 (VRM11)	VR_READY	VCCP before VTT_PWG



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Size Custom Document Description
LGA775 - POWER
Date: Wednesday, March 26, 2008 Sheet 4 of 36





SDVO Muxing on X16 PCI Express

PE_PRSNT1#	SDVO_SCL#
PE_PRSNT4#	SDVO_SDA#
PE_A_TX3	PE_A_TX12
PE_A_TX2	PE_A_TX13
PE_A_TX1	PE_A_TX14
PE_A_TX0	PE_A_TX15
PE_A_RX1	PE_A_RX14
PE_A_RX0	PE_A_RX15

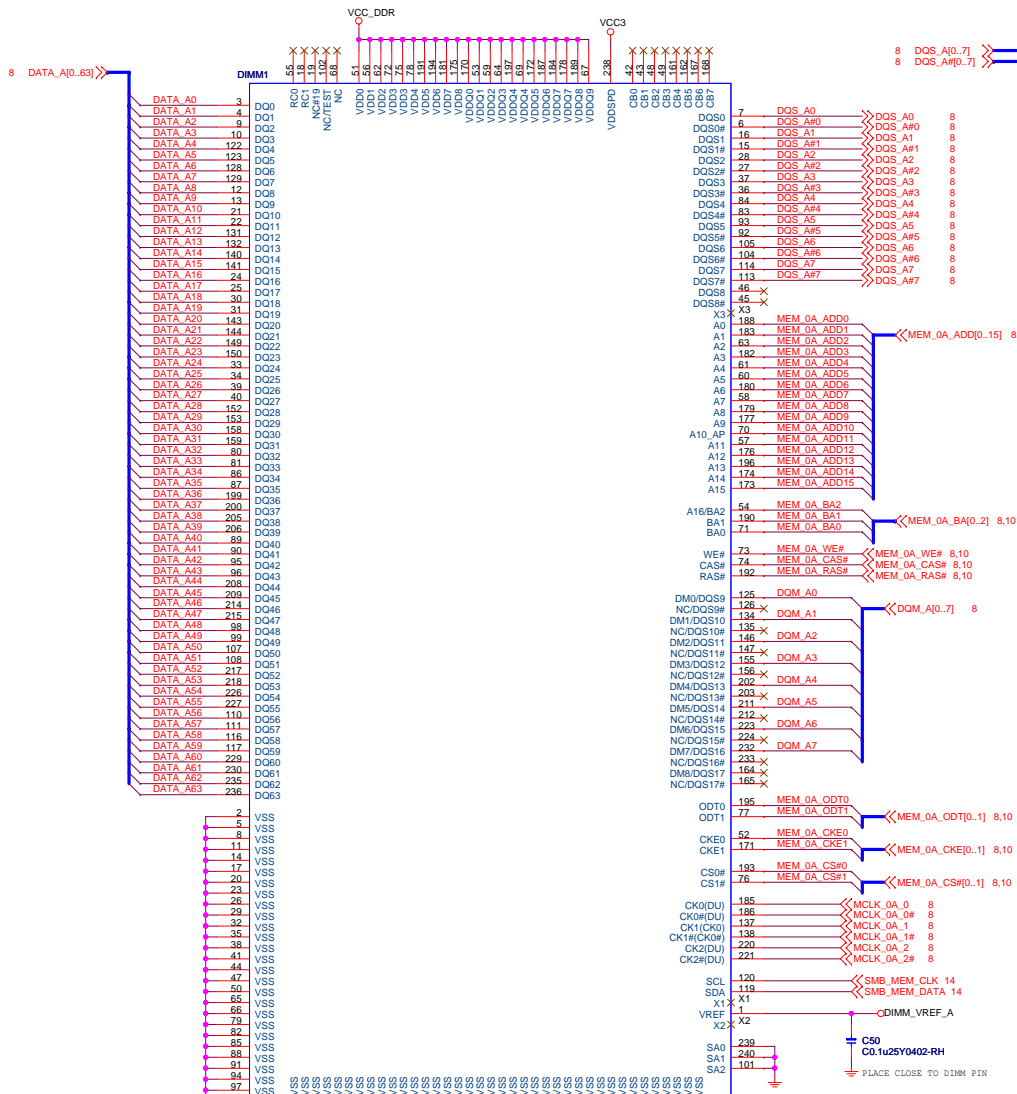


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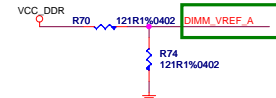
Size	Document Description	Rev
Custom	MCP73-PCIE/DAC/HDMI	0A
Date: Wednesday, March 26, 2008	Sheet 7 of 36	

DIMM1 / 0A



ADDRESS: 000
0xA0

Does DIMM_VREF_A need to connect to W83110?



ADDRESS: 001
0xA2

DIMM2 / 0B



ADDRESS: 001
0xA2

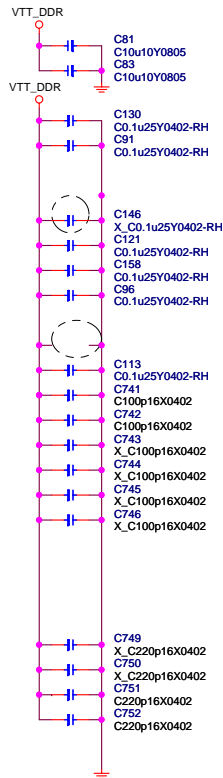


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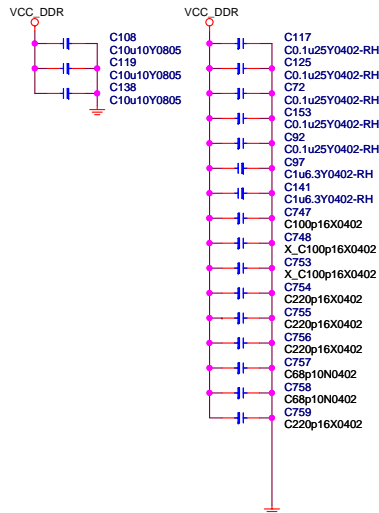
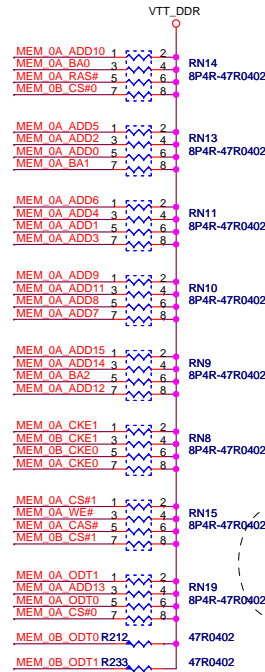
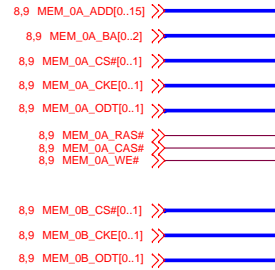
MS-7505

Size	Document Description	Rev
Custom	DDR II - DIMM 1 & 2 Sockets	0A
Date: Wednesday, March 26, 2008	Sheet 9 of 36	

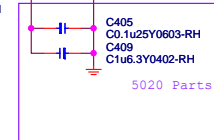
CHANNEL A VTT_DDR DECOUPLING CAPS



CHANNEL A ----- 0A , 0B



Demo Board with 0.1u X5, 1uX3, 10uX3 for Single Channel
Dual Channel Must x2



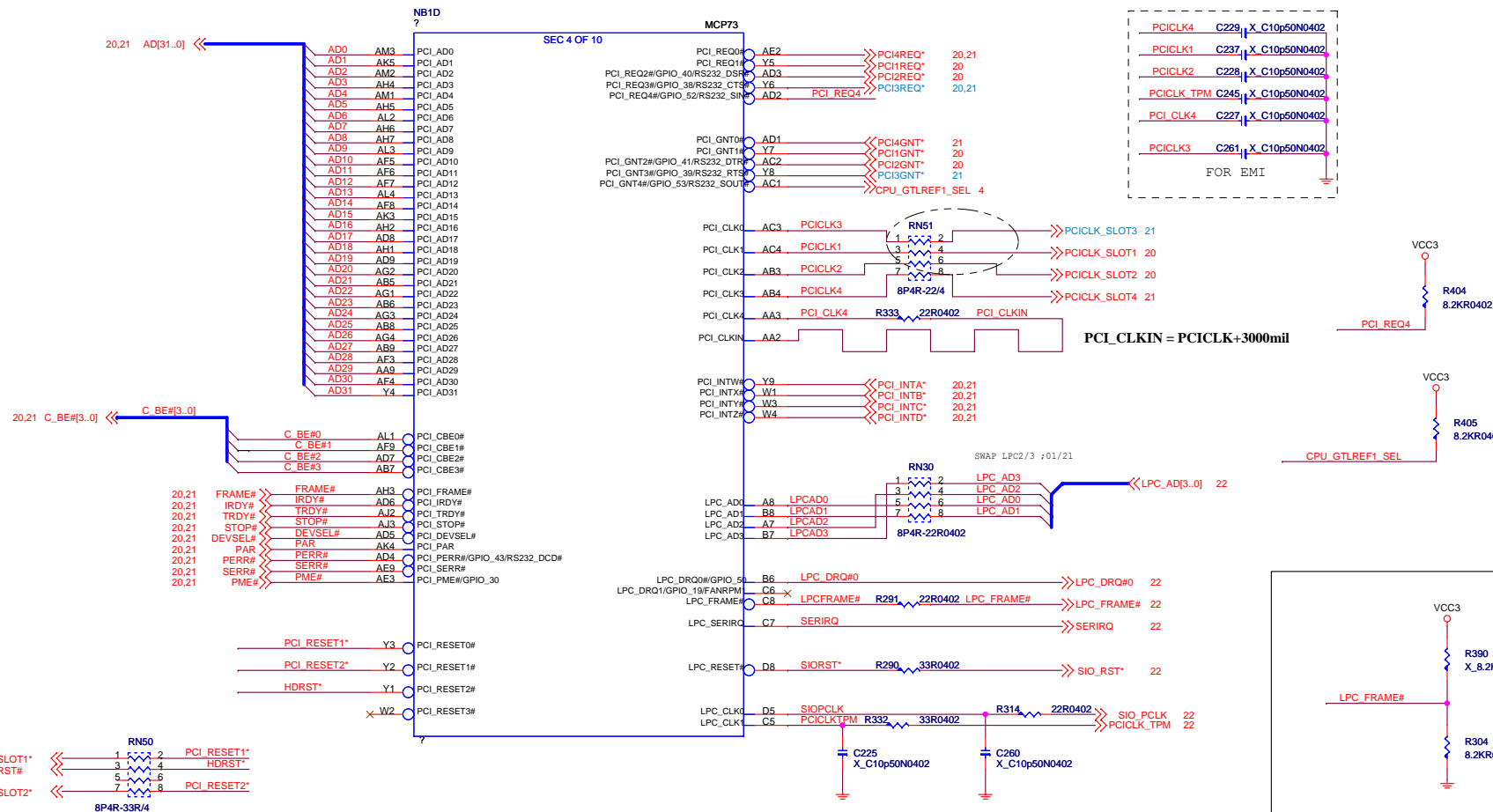
5020 Parts



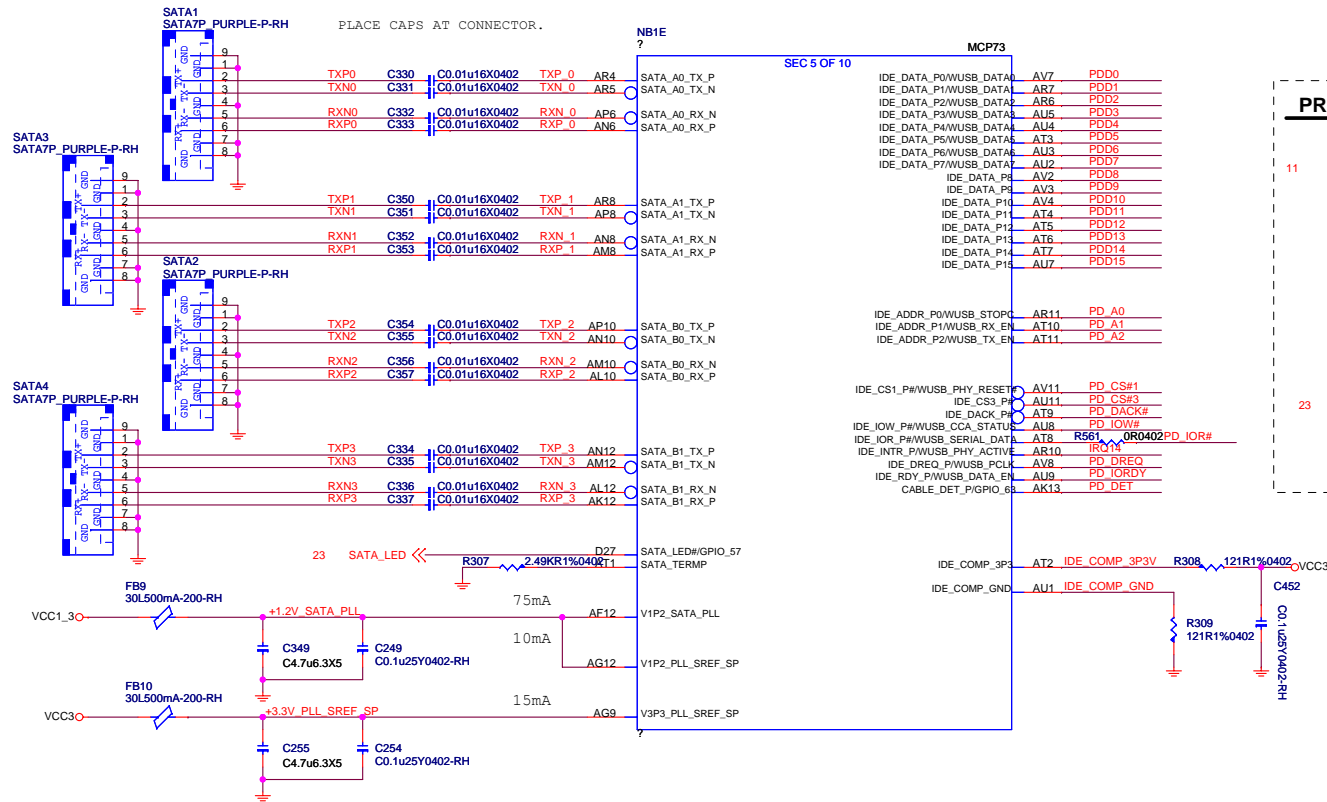
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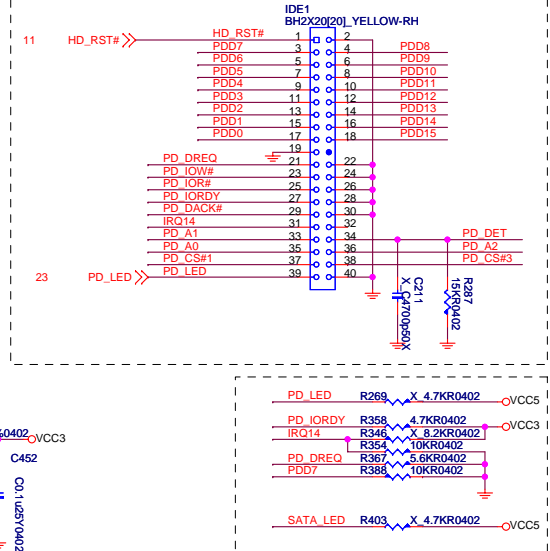
Size	Document Description	Rev
Custom	DDR II VTT Termination & Decoupling	0A
Date: Wednesday, March 26, 2008	Sheet 10 of 36	



SWAP SATA2/3 for BIOS show item; 01/21



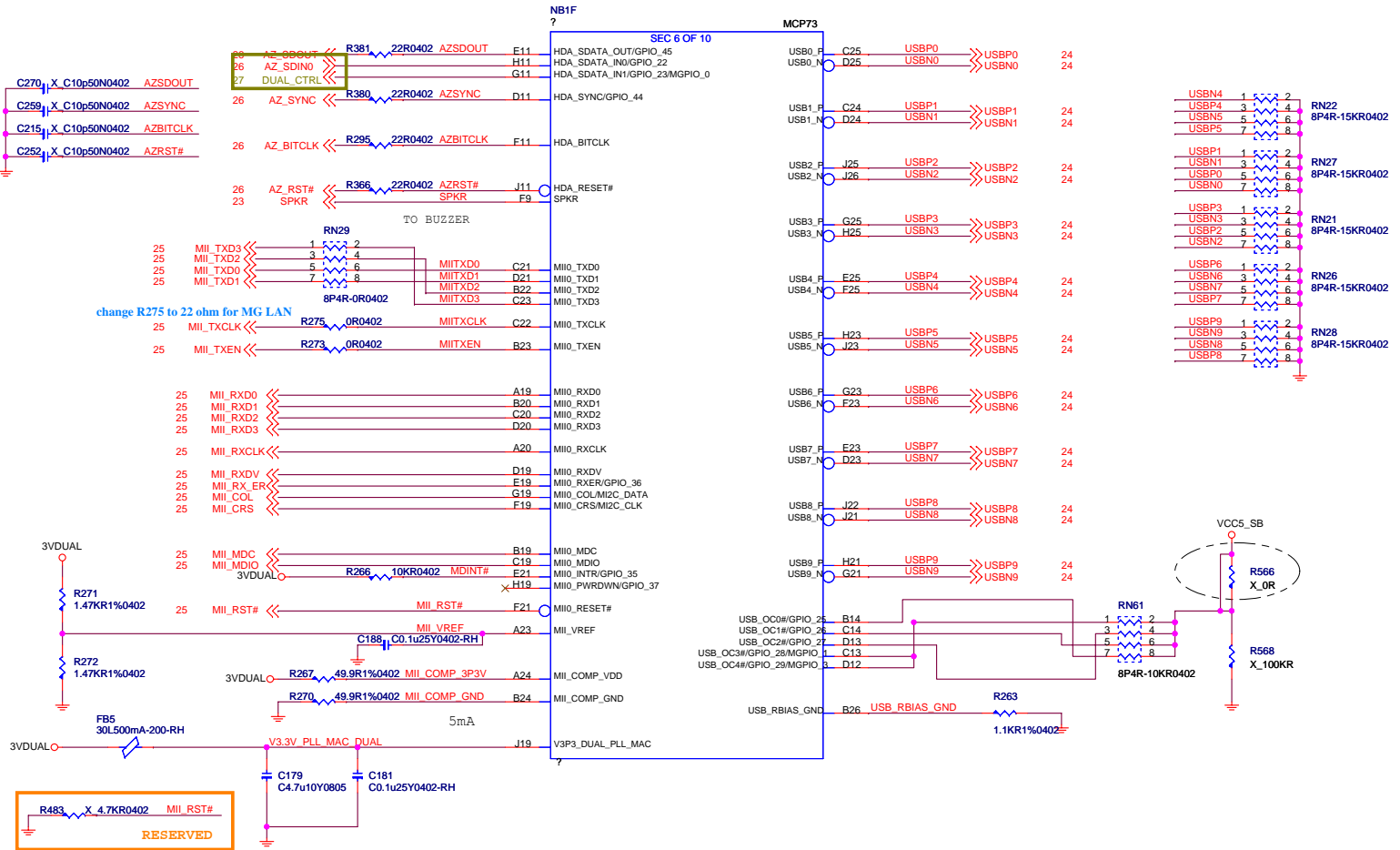
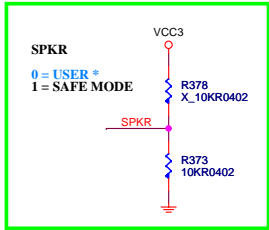
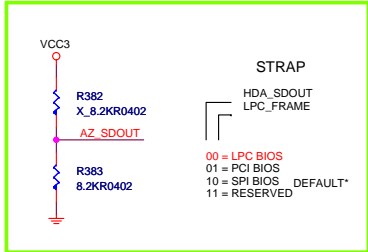
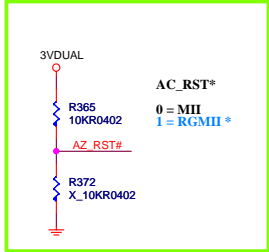
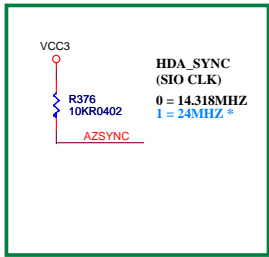
PRIMARY IDE BLOCK

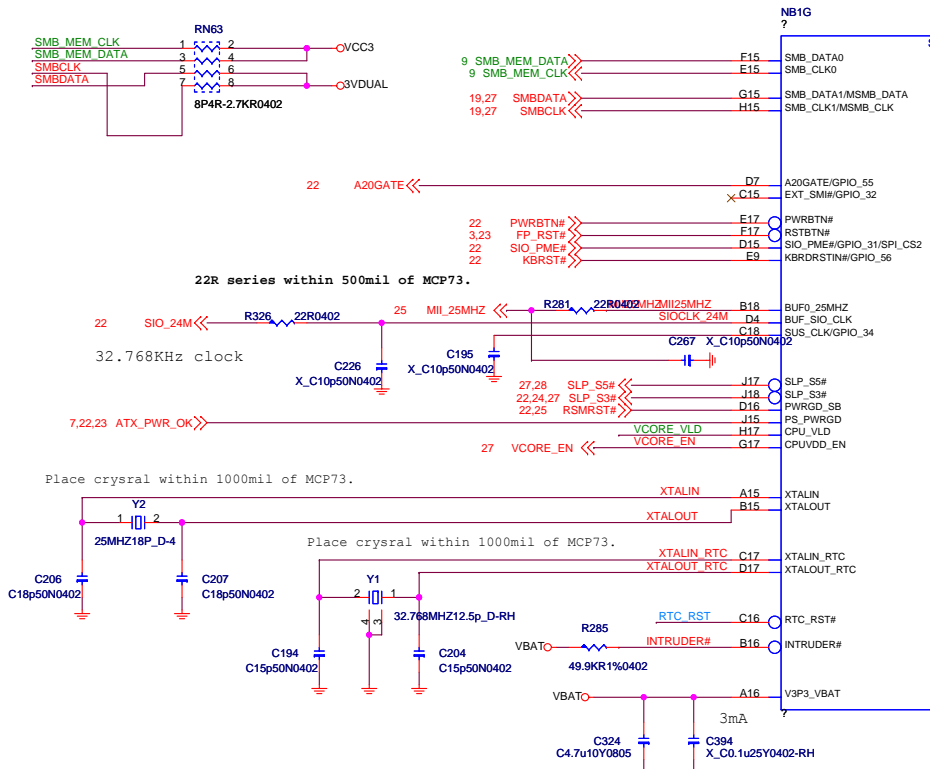


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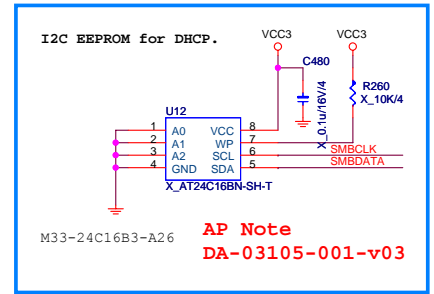
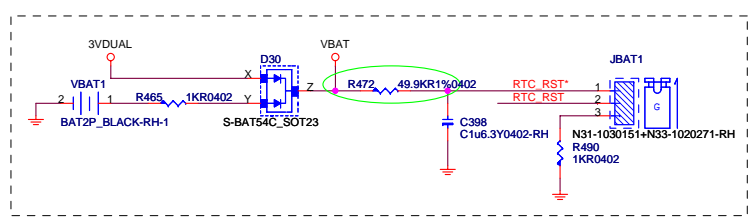
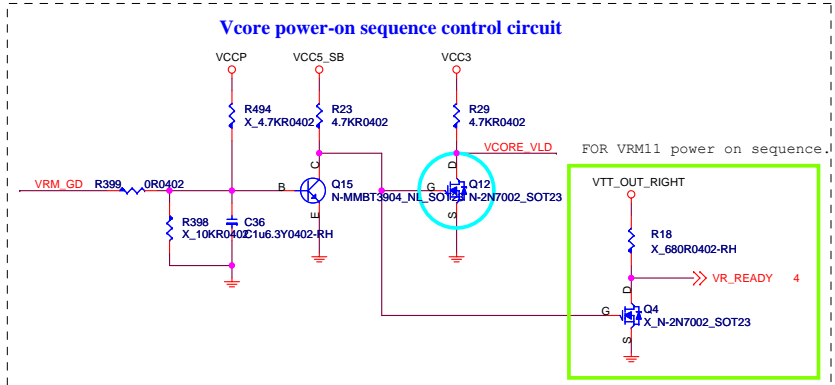
Size	Document Description	Rev
Custom	MCP73-SATA/IDE	0A
Date:	Wednesday, March 26, 2008	Sheet 12 of 36

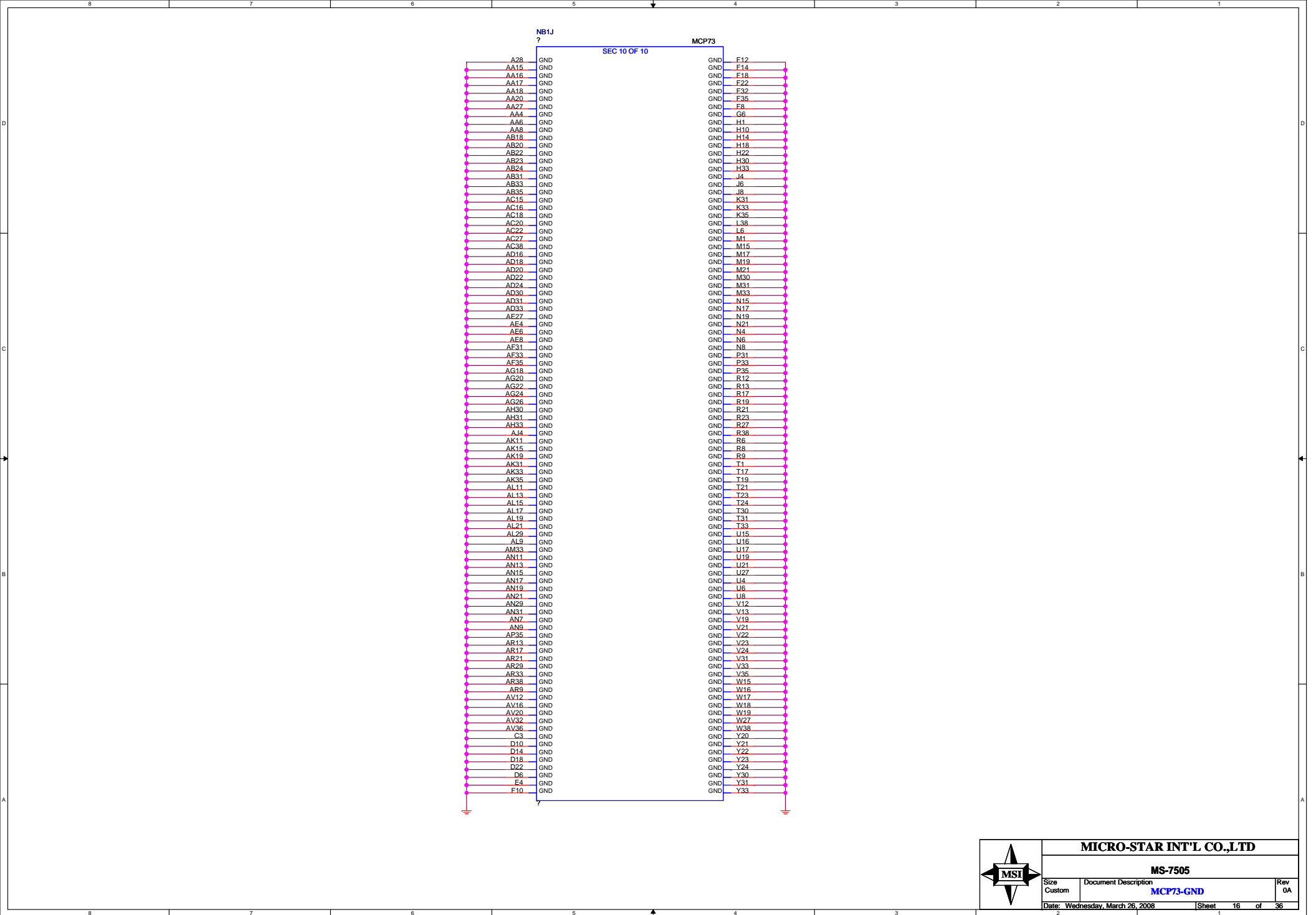




Whether glitch with VRM_GD?

29 VRM_GD >> R247 X_0R0402 VCORE_VLD





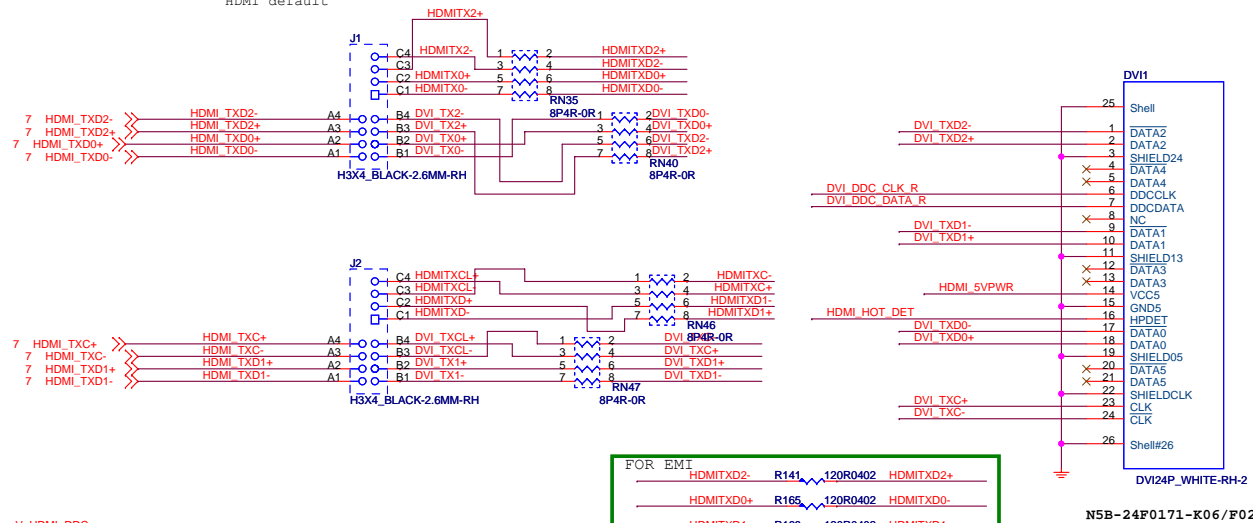
MICRO-STAR INT'L CO.,LTD

MS-7505

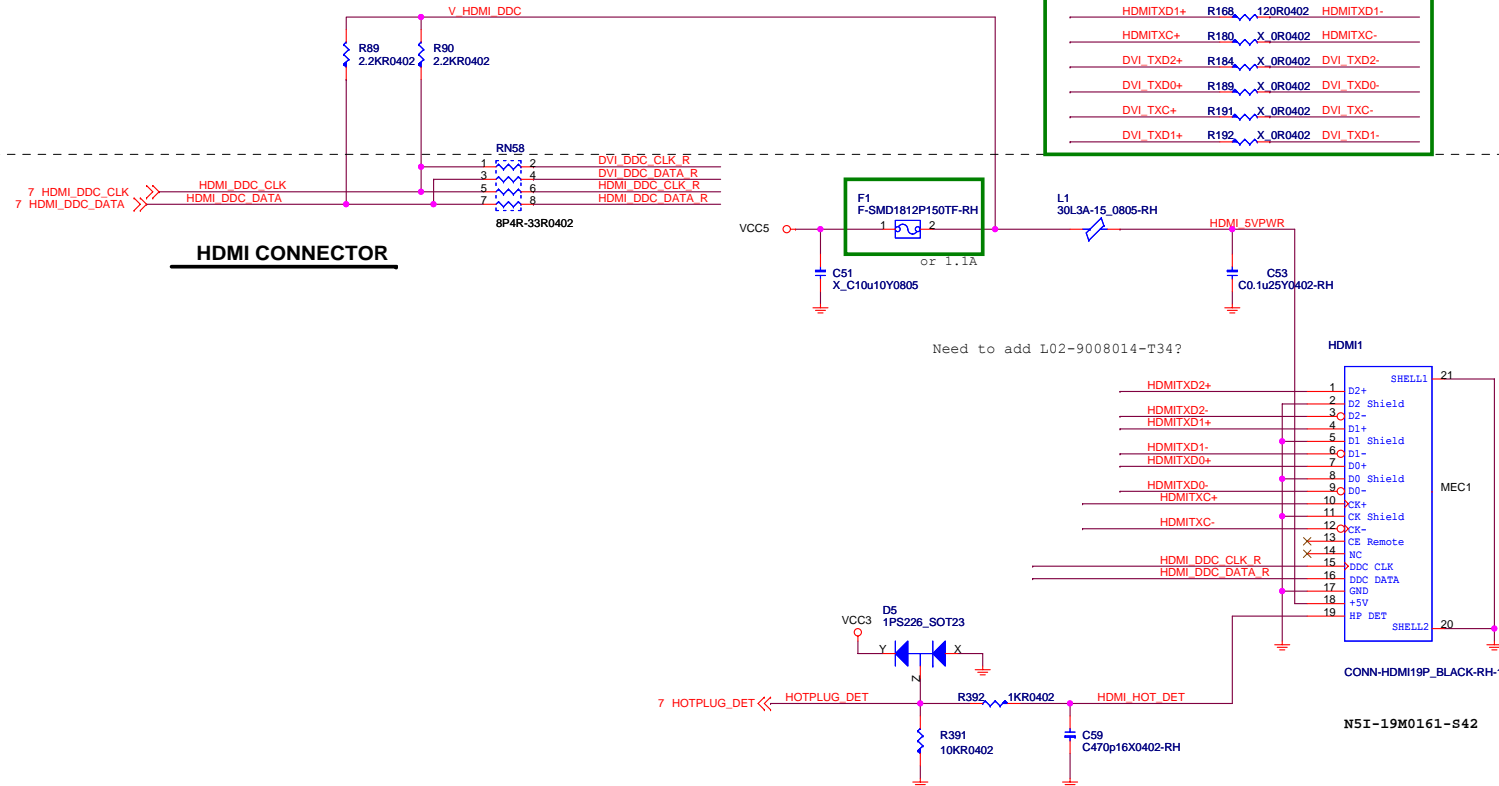
Size	Document Description	Rev
Custom	MCP73-GND	0A
Date: Wednesday, March 26, 2008		Sheet 16 of 36

DVI CONNECTOR

HDMI default



HDMI CONNECTOR

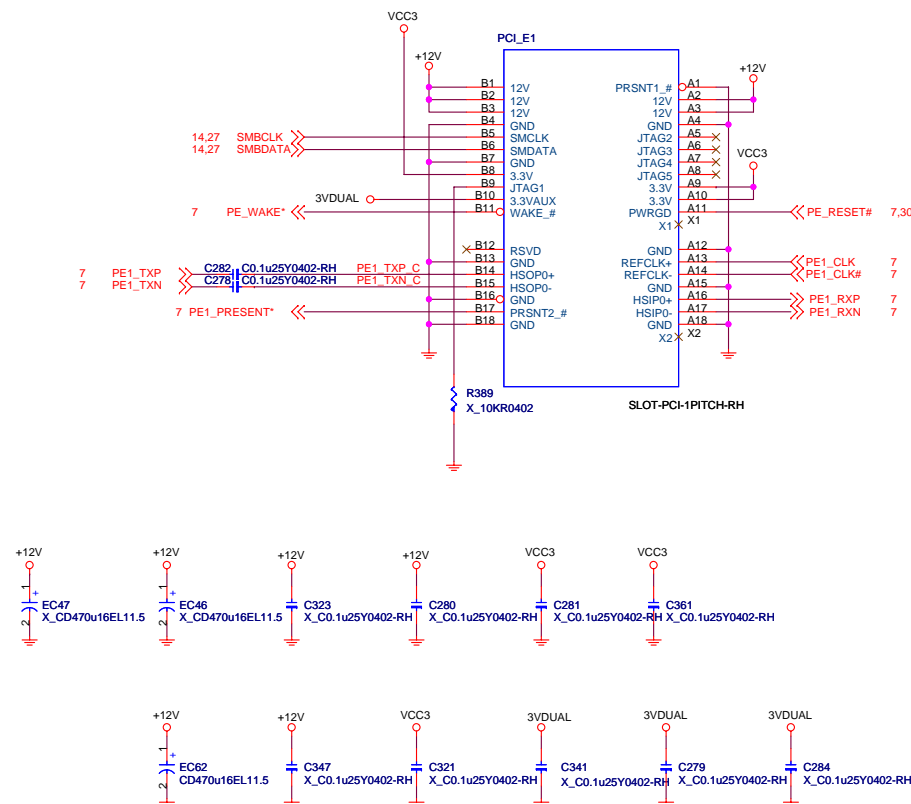
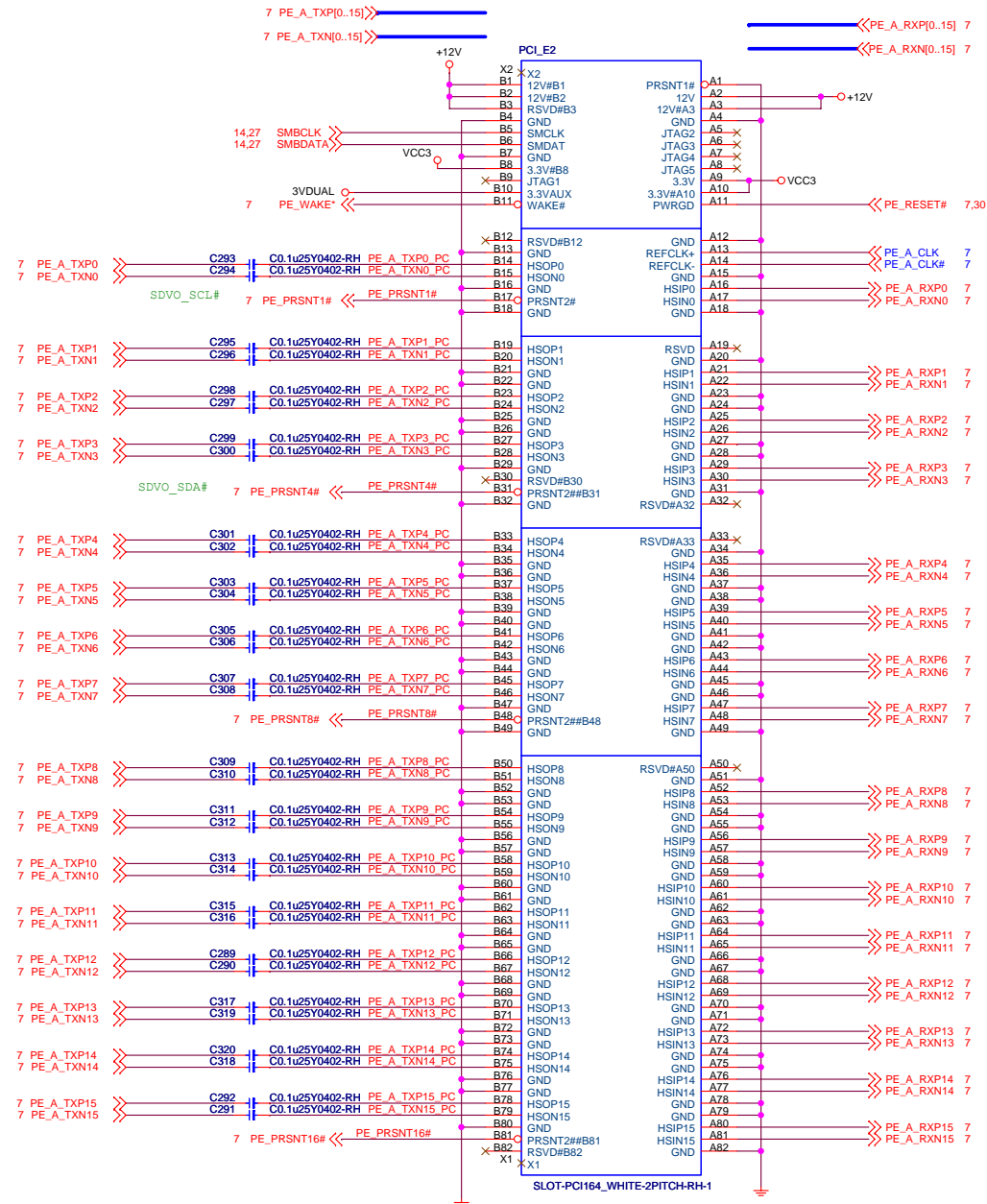


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MS-7505			
Size	Document Description	Rev	
Custom	HDMI/DVI	0A	
Date: Wednesday, March 26, 2008	Sheet 18 of 36		

PCI-Express X16 Primary Slot X16/X8

7505 21 useN11-1640631-L06 (φI CPUよ) 03/26/2008

PCI-Express x1 SLOT 1

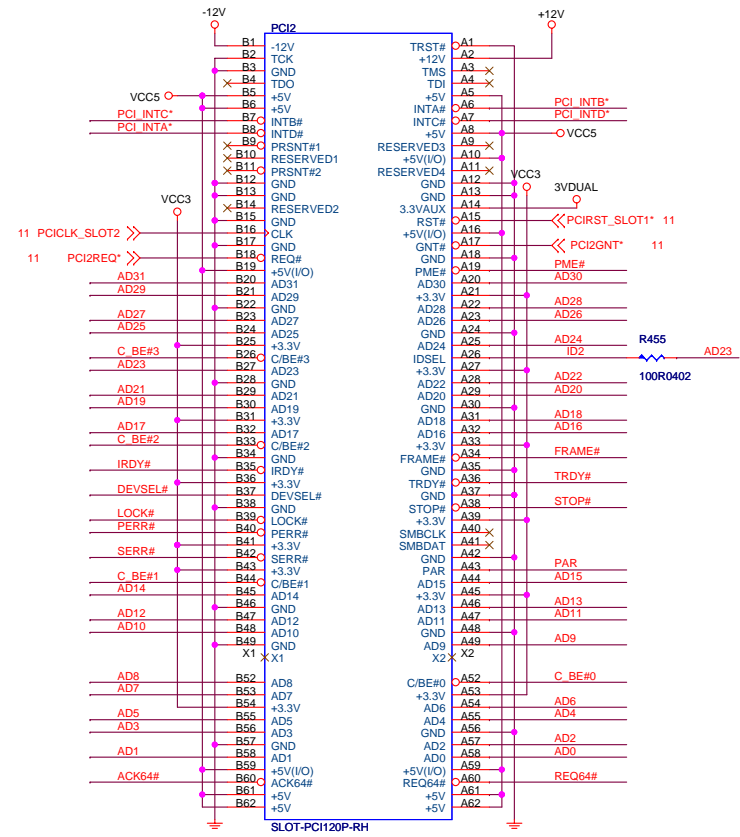


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MS-7505

Size	Document Description	Rev
Custom	PCI-E X16/X1 Slot	0A
Date: Wednesday, March 26, 2008	Sheet 19 of 36	

PCI SLOT 2 (PCI VER: 2.2 COMPLY)



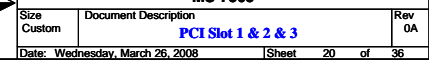
```

IDSEL = AD23
MASTER = PCI2REQ*
PCI2GNT*

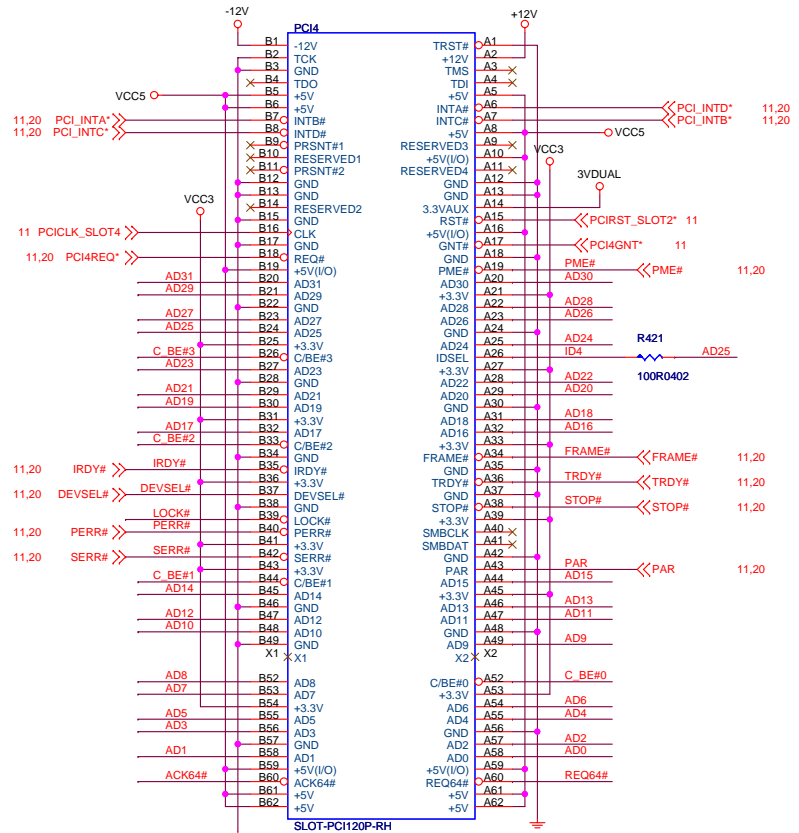
```

11,21 AD[31..0] >> AD[31..0]
11,21 C_BE#[3..0] >> C_BE#[3..0]

The diagrams show three separate power supply connections, each consisting of a capacitor connected between a power supply pin and ground. The first diagram shows capacitor EC61 connected to VCC5 and ground, with the label X_CD470u16EL11.5. The second diagram shows capacitor EC60 connected to VCC3 and ground, with the label CD470u16EL11.5. The third diagram shows capacitor EC52 connected to 3VDUAL and ground, with the label X_CD470u16EL11.5.



PCI SLOT 1 (PCI VER: 2.2 COMPLY)



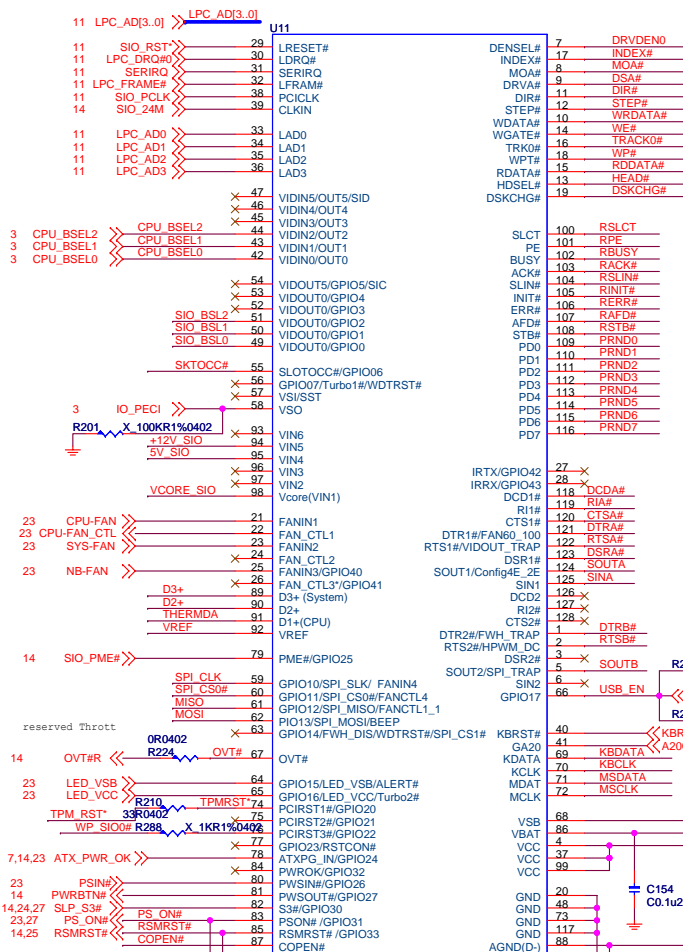
```
IDSEL = AD25
MASTER = PCI4REQ*
PCI4GNT*
```



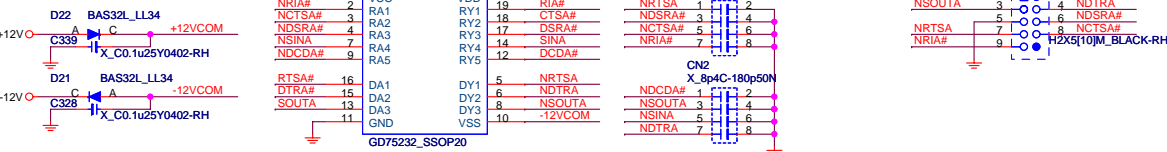
MS-7366

Size Custom	Document Description PCI Slot 4 & 3	Rev 0A
Date: Wednesday, March 26, 2008		Sheet 21 of 36

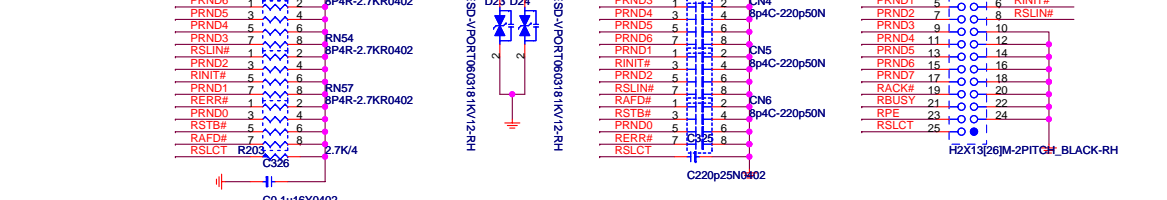
LPC SUPER I/O F71882



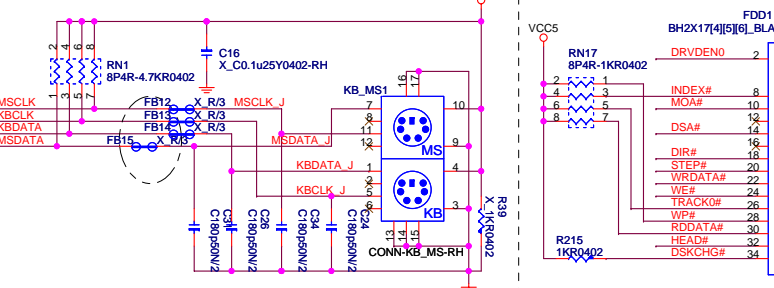
SERIAL PORT 1



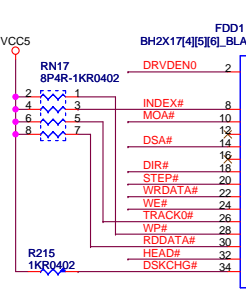
JLPT



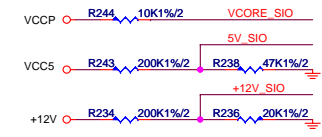
PS2 KEYBOARD & MOUSE CONNECTOR



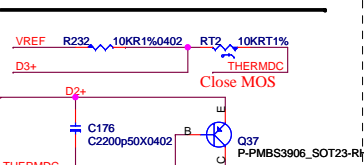
FLOPPY Connector



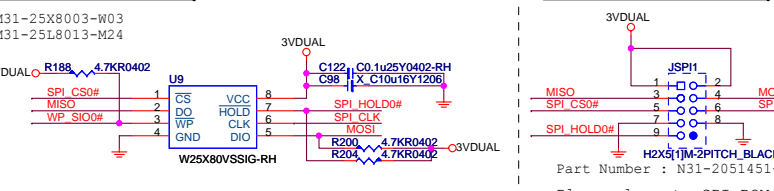
Voltage Sensing (HWM).



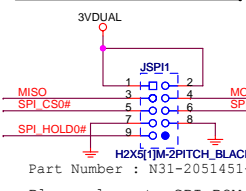
Temperature Sensing (HWM).



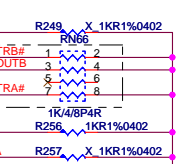
SPI 8M FLASH ROM



SPI DEBUG PORT



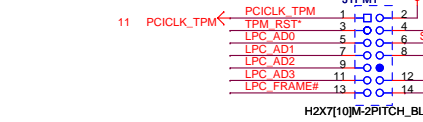
Strapping



Pin

Pin #	Pin Name	Description
Pin 1	DTRB#	1-SPI as a Backup BIOS (Default) 0-SPI as a Primary BIOS
Pin 2	RTSB#	1-Fan Control Mode : PWM Mode.(Default) 0-Fan Control Mode : Linear Mode.
Pin 5	SOUTB	1-SPI Function Disable. (Default) 0-SPI Function Enable.
Pin 121	DTRA#	1-Power On Fan speed as 50% duty(PWM) (Default) 0-Power On Fan with Full speed. (PWM)
Pin 122	RTSA#	1-6 Pins VIDIN and 6 Pins VIDOUT(Default) 0-VIDIN/OUT on 6 pins, VIDOUT Pin will be GPIO.
Pin 124	SOUTA	1-Config. Register I/O Port is 4B/4F.(Default) 0-Config. Register I/O Port is 2B/2F.

JTPM



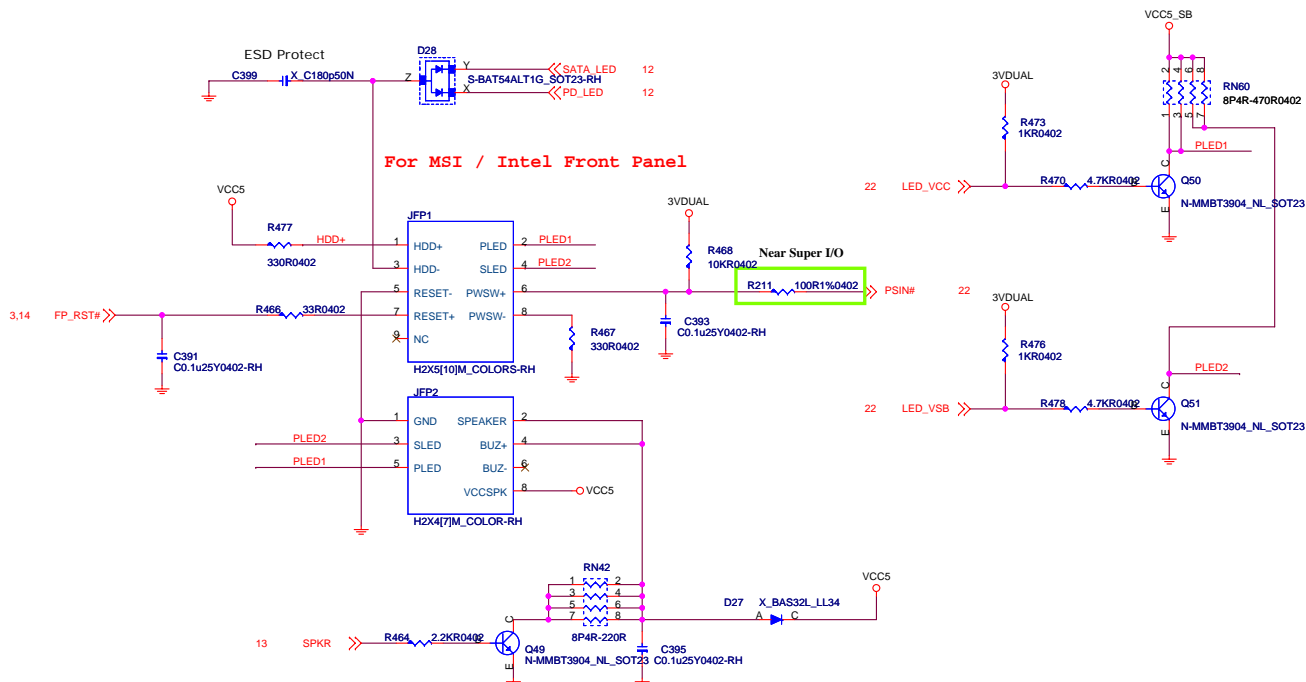
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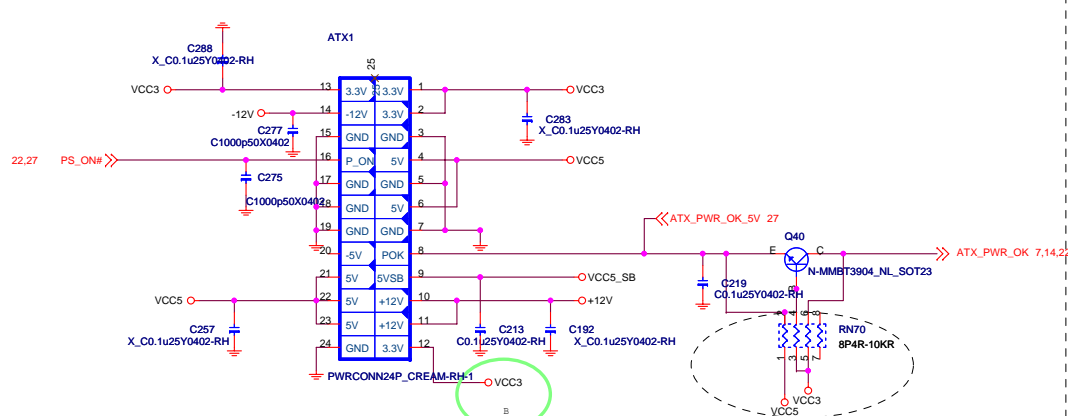
LPC-Super I/O F71882FG

Date: Wednesday, March 26, 2008 Sheet 22 of 36

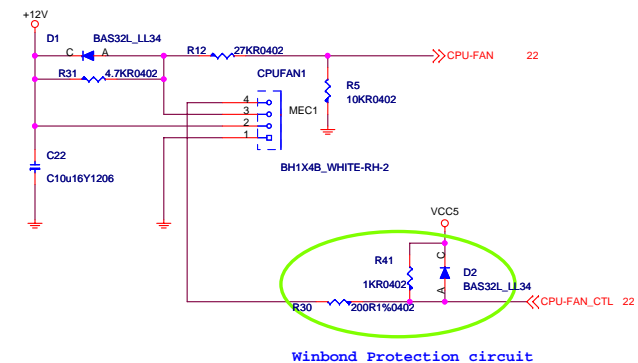
Intel Front Panel



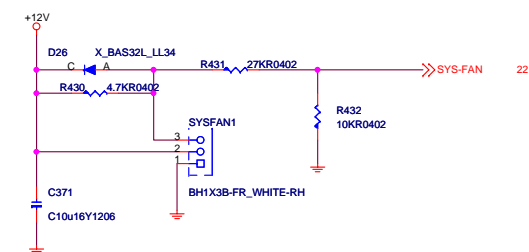
ATX Connector



CPU FAN

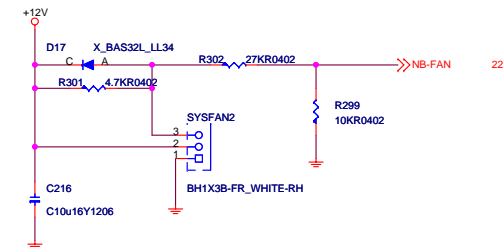


SYSTEM FAN



NB FAN

Reserve for NB_FAN, Near MCP73
MP Remove

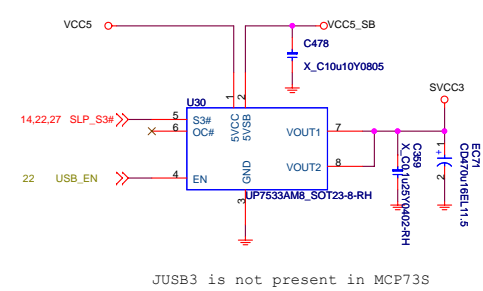
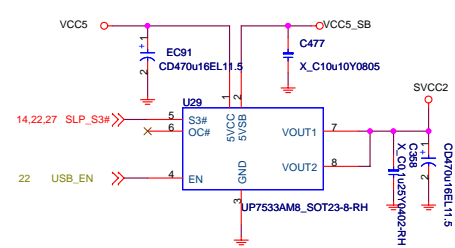
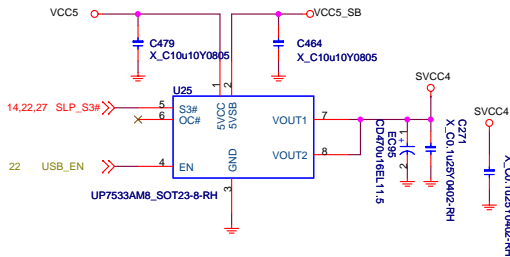
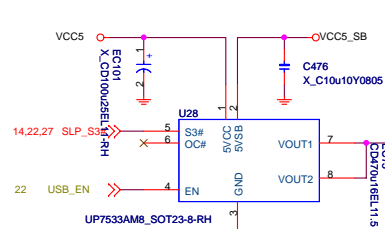


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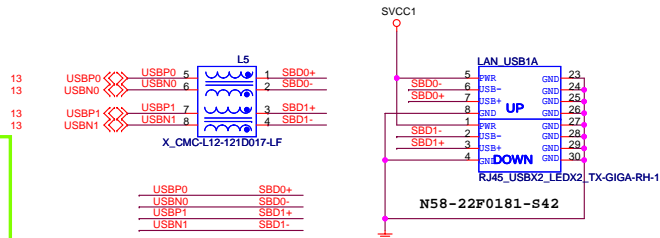
MS-7505

Size	Document Description
Custom	ATX/Front Panel/FAN

Date: Wednesday, March 26, 2008		Sheet 23 of 36
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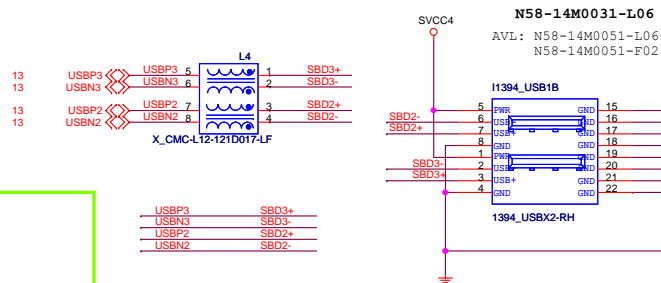
REAR PANEL USB CONNECTOR FOR USB PORT 0,1



NEAR USB CONNECTOR

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

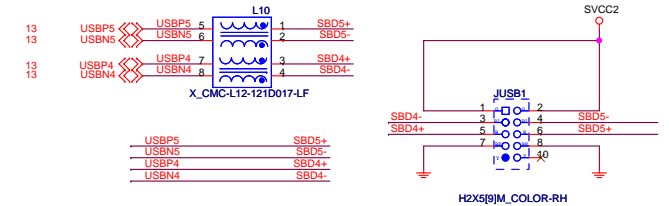
REAR PANEL USB CONNECTOR FOR USB PORT 2,3



NEAR USB CONNECTOR

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

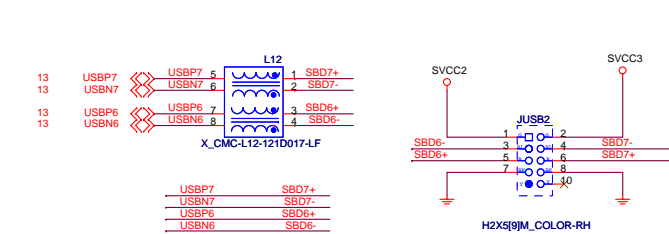
FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



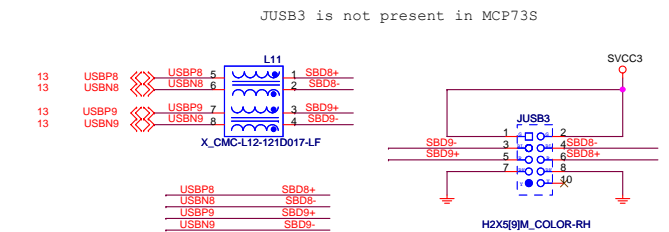
NEAR USB CONNECTOR

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

FRONT PANEL USB CONNECTOR FOR USB PORT 6,7

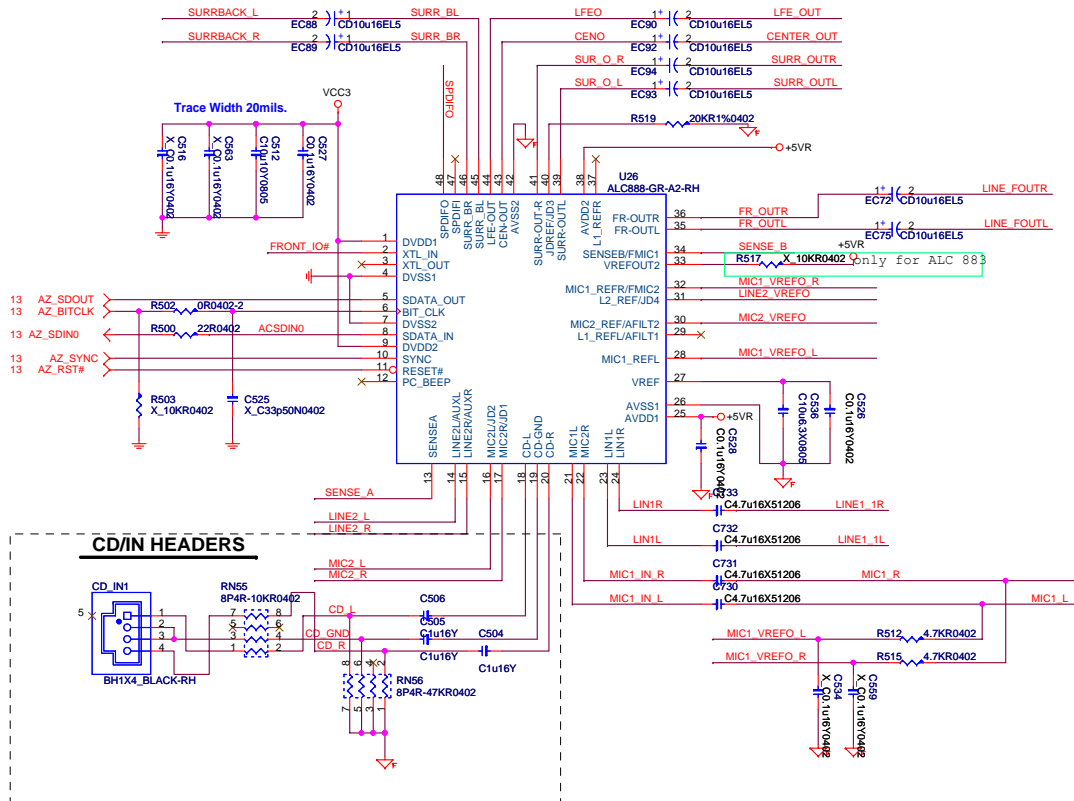


FRONT PANEL USB CONNECTOR FOR USB PORT 8,9

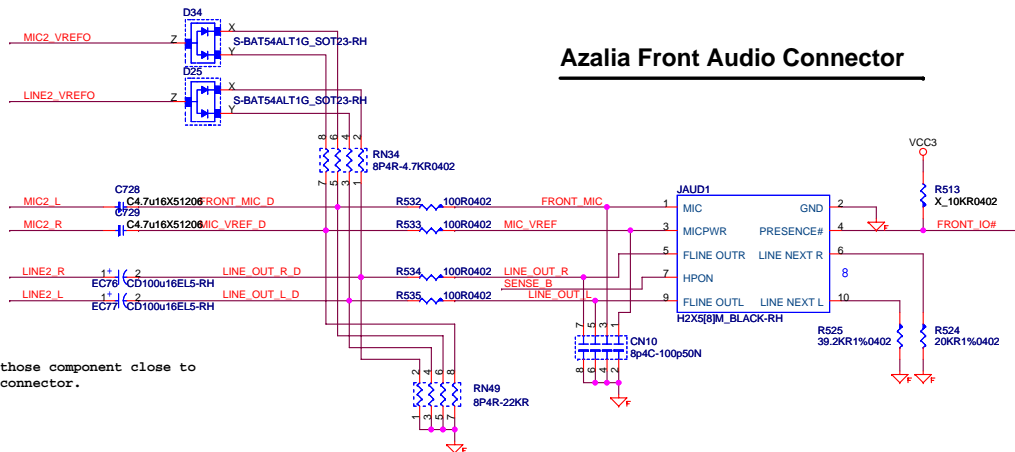


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MS-7505			
Size Custom	Document Description	USB CONNECTORS	
Date: Wednesday, March 26, 2008	Sheet	24	of 36

ALC888 CODEC

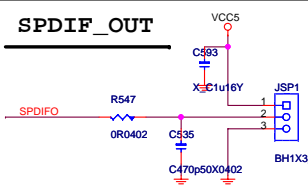


Azalia Front Audio Connector

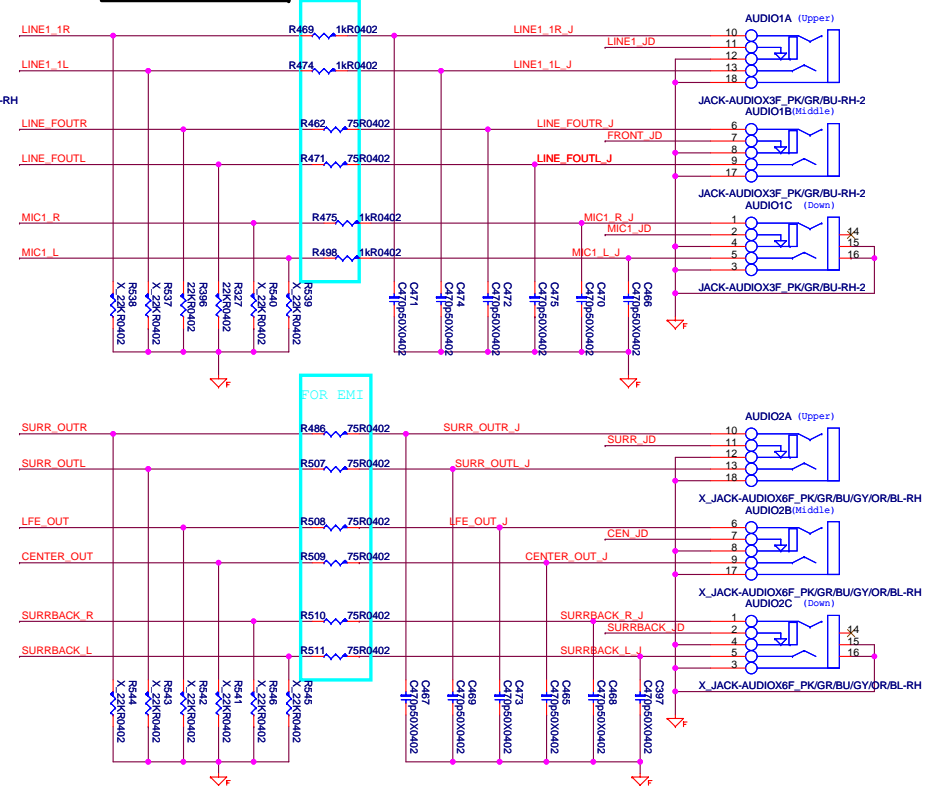


Place those component close to
audio connector.

SPDIF_OUT



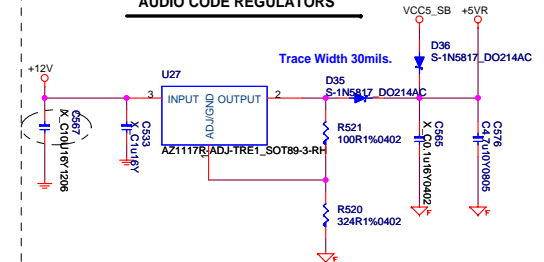
ALC883 JACK



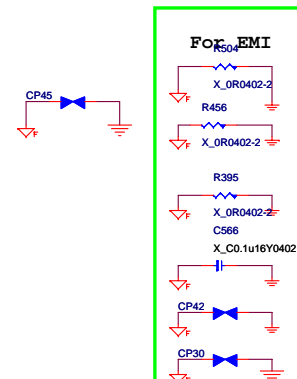
ALC883 JACK DETECT



AUDIO CODE REGULATORS



For EM



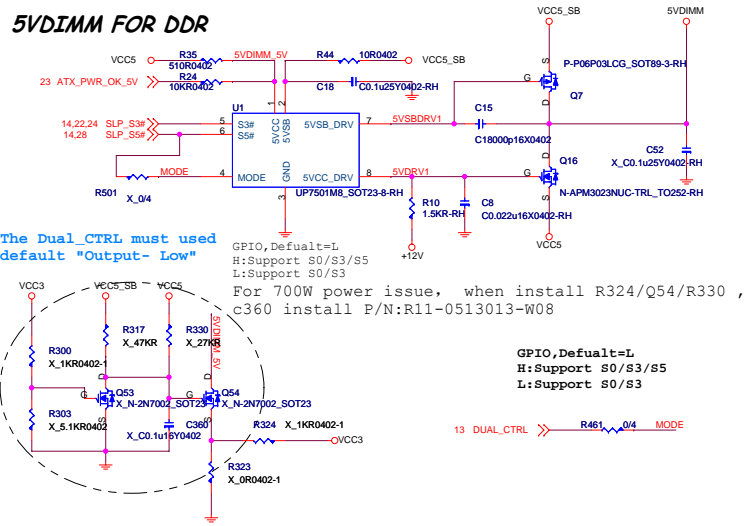
MICRO-STAR INT'L CO.,LTD

MS-7505

Size	Document Description
Custom	Azalia CODEC(ALC888&alc883)

Date: Wednesday, March 26, 2008 Sheet 26 of 36

5VDIMM FOR DDR

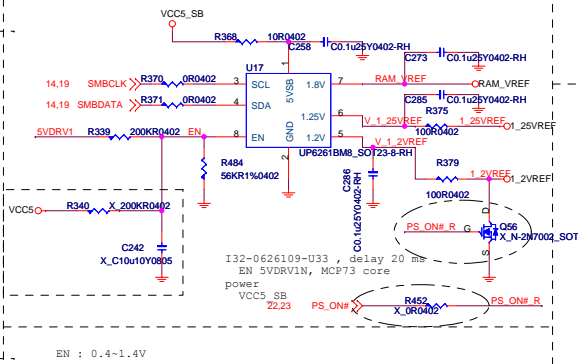


	S0	S3	S4	S5
DUAL_CTRL	X	X	0	1
5VSBDRV1	1	0	1	0
5VDRV1	1	0	0	0
5VSBDRV2	X	0	1	0
USB_MODE	X	1	X	1
5VDIMM	Y	Y	N	Y
USB power	Y	Y	N	Y

Reference Voltage

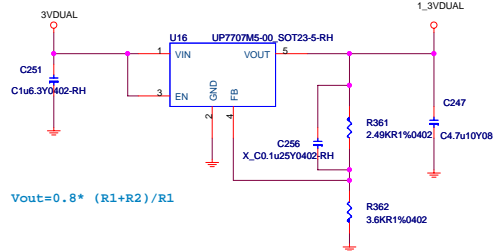
up6261: High Precision Voltage Console

ONLY OVER DDR Voltage to 2V



1_3VDUAL, 25mA

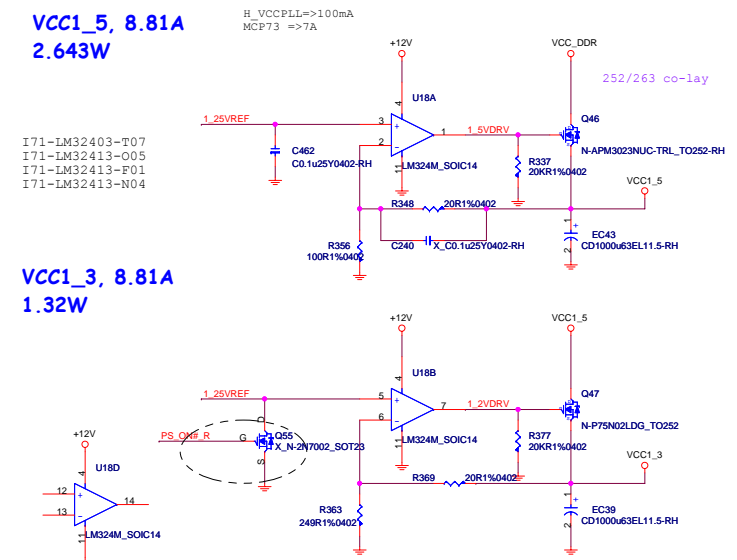
up7707: 600mA Low Dropout Linear Regulator



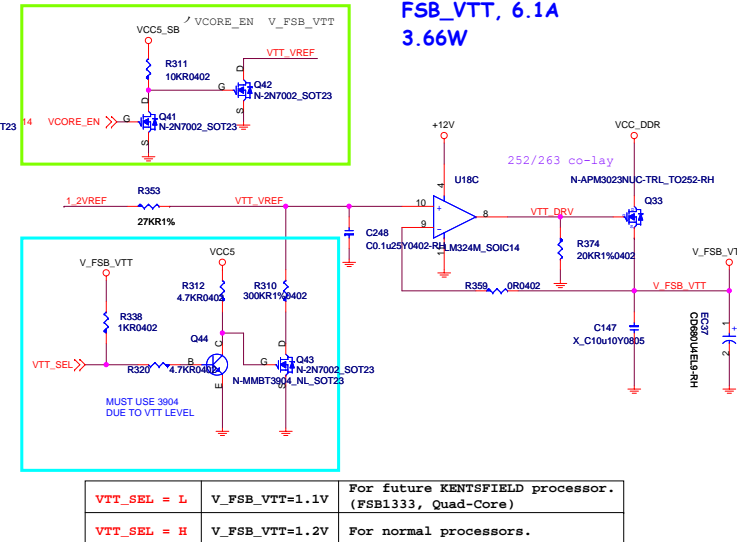
VCC1_5, 8.81A
2.643W

I71-IM32403-T07
I71-IM32413-O05
I71-IM32413-F01
I71-IM32413-N04

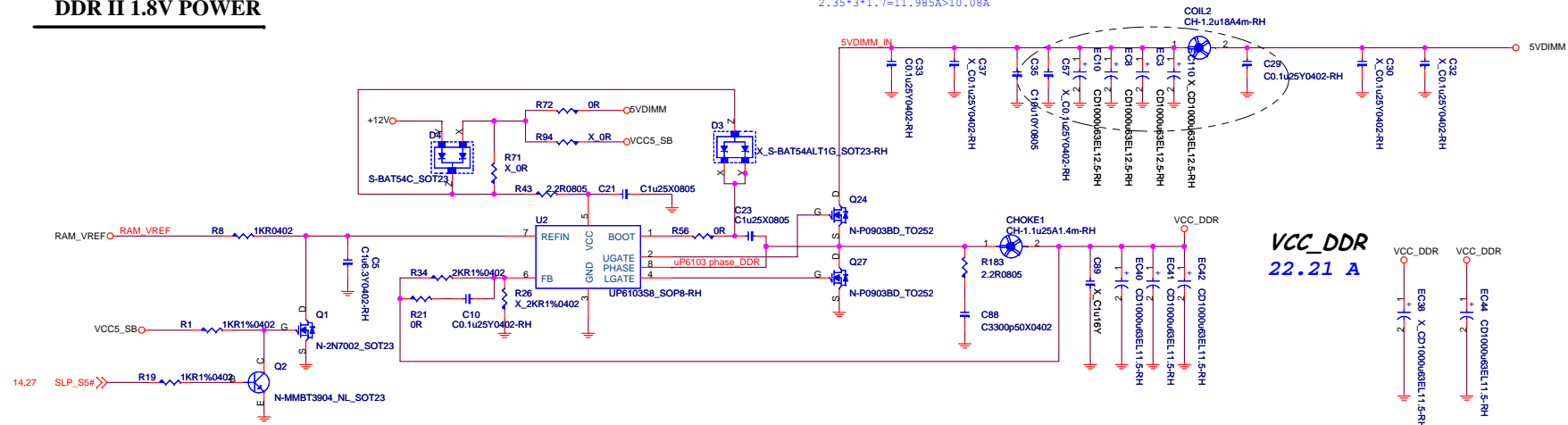
VCC1_3, 8.81A
1.32W



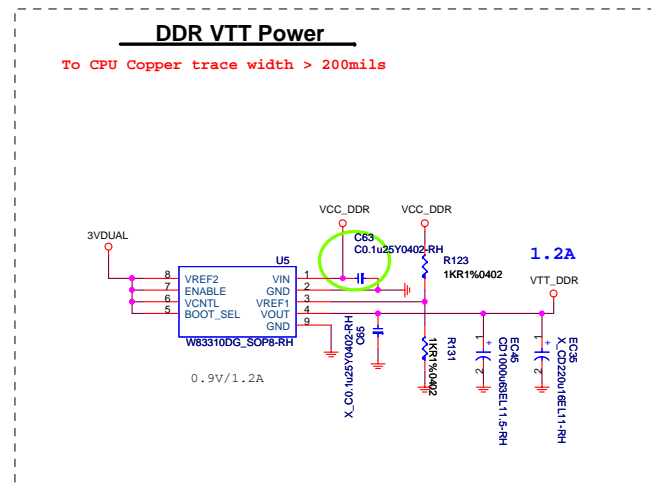
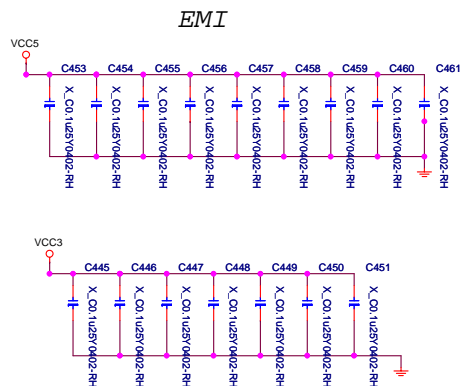
FSB_VTT, 6.1A
3.66W



VTT_SEL = L	V_FSB_VTT=1.1V	For future KENTSFIELD processor. (FSB1333, Quad-Core)
VTT_SEL = H	V_FSB_VTT=1.2V	For normal processors.

$$I_{ripple} = 22.21 \times 0.6 \times 0.8 / 1 = 10.66A$$
$$2.35 \times 3 \times 1.7 = 11.985A > 10.08A$$


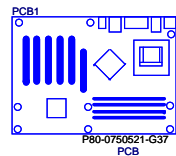
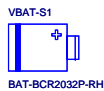
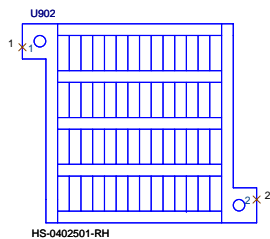
To CPU Copper trace width > 200mils



MS-7505

Rev
0A

Date: Wednesday, March 26, 2008

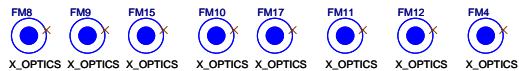


P80-0750520-E48
P80-0750520-E55

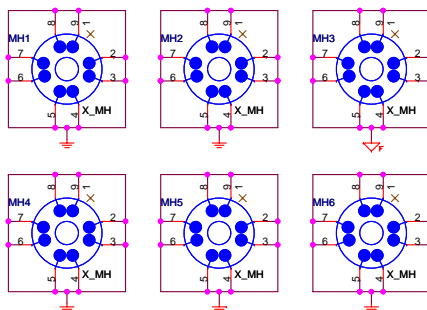
Optics Orientation Holes (F_PAD_M100)



Optics Orientation Holes (F_PAD_M120)



Mounting Holes



Simulation

