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MS-7366 Micro ATX

Version: 0B_070829B

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 -- VT6308P

Main Memory:

Dual-channel DDR-II * 2 (Max 4GB)


Expansion Slots:

PCI EXPRESS X16 SLOT *1
PCI EXPRESS X1 SLOT * 1
PCI SLOT * 2

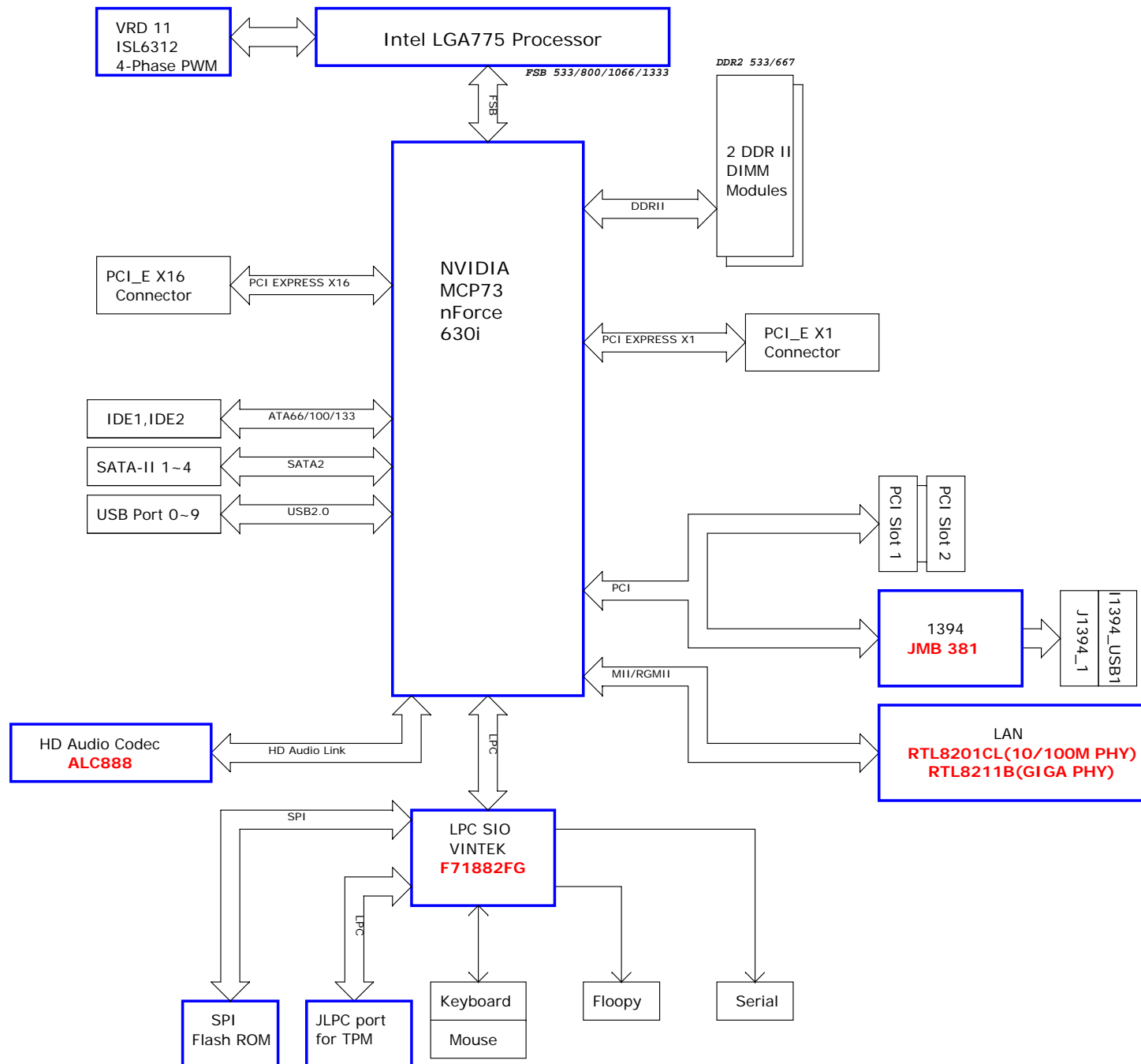
Intersil PWM:

Controller: ST L6703 (3 Phases)
Driver:ST L6703

OPT	Function	Orcad Configure	BOM
A	MCP73U(HDMI,D-SUB)/F71882FG/ALC888/RTL8211BL/JMB381	Cfg-U	601-7366-B10
B	MCP73PV(DVI,D-SUB)/F71882FG/ALC888/RTL8211BL	Cfg-PV	
C	MCP73S(D-SUB)/F71882FG/ALC888/RTL8211BL	Cfg-S	
D	MCP73V(D-SUB)/F71882FG/ALC888/RTL8201CL	Cfg-V	

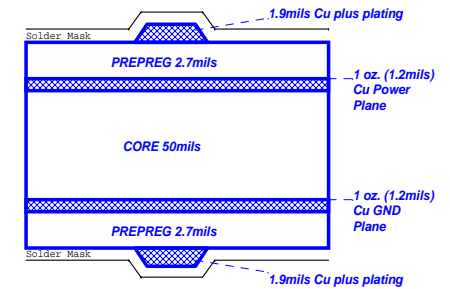
	MICRO-STAR INT'L CO.,LTD				
	MS-7366				
	Size	Document Description			Rev
	Custom	COVER SHEET			0B
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Block Diagram



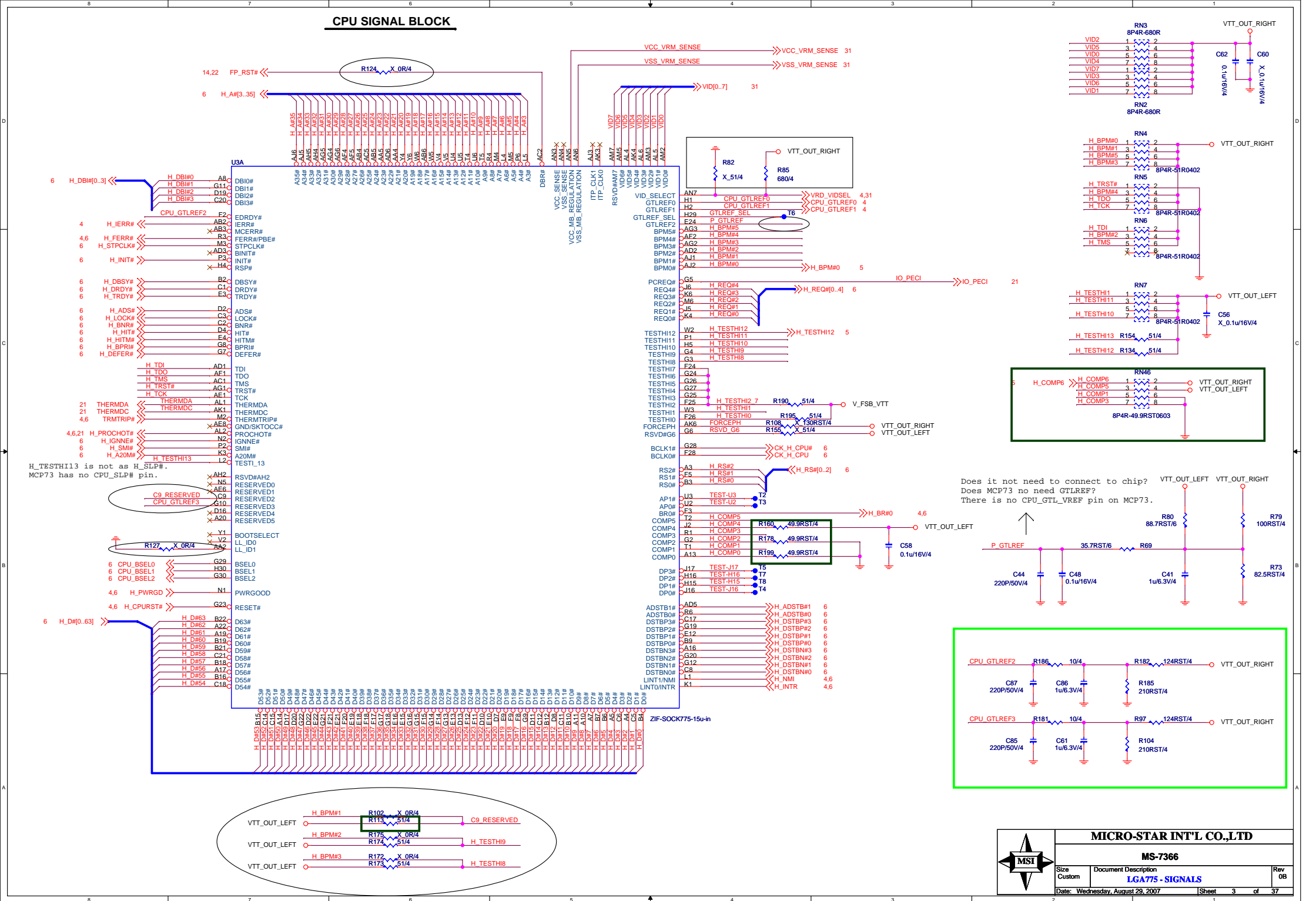
Board Stack-up

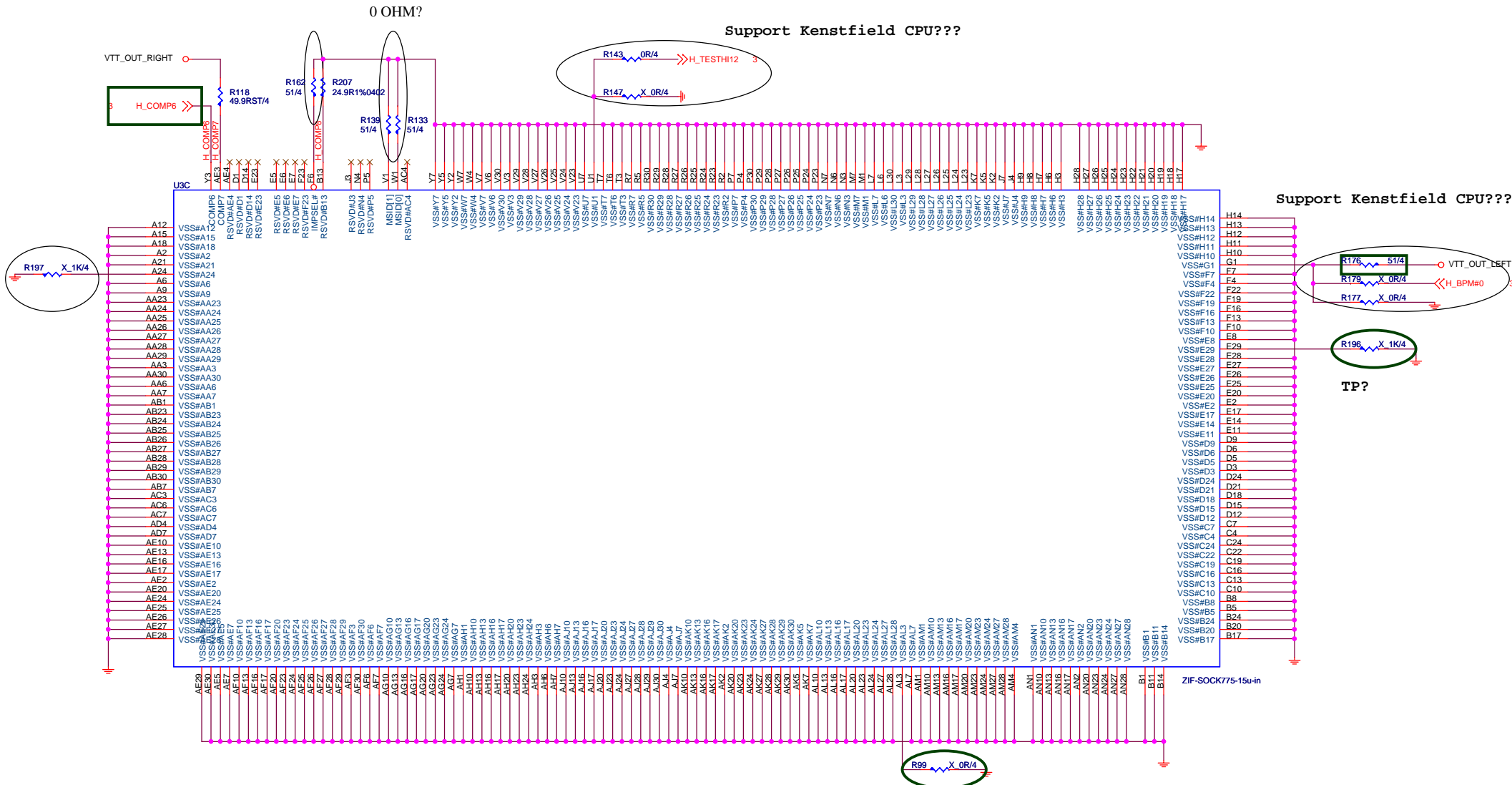
(1080 Prepreg Considerations)



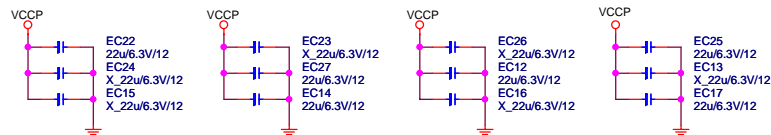
Single End 50ohm Top/Bottom : 4mils
 USB2.0 - 100ohm : 20/4/8/4/20
 HDMI - 100ohm : 20/4/8/4/20
 SATA - 100ohm : 20/4/8/4/20
 LAN - 100ohm : 20/4/8/4/20
 PCIE - 100ohm : 20/4/8/4/20
 IEEE1394 - 110ohm : 15/4/9/4/15
 IDE : 15/4/8/4/15

CPU SIGNAL BLOCK





CPU DECOUPLING CAPACITORS



Place these caps within socket cavity

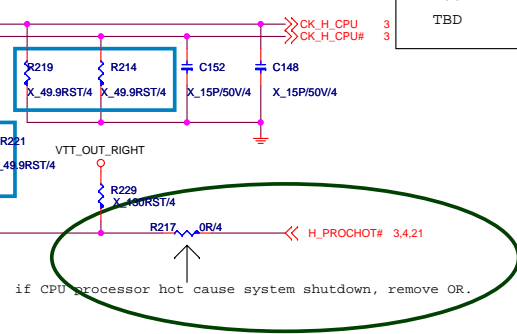
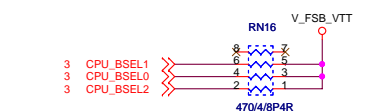


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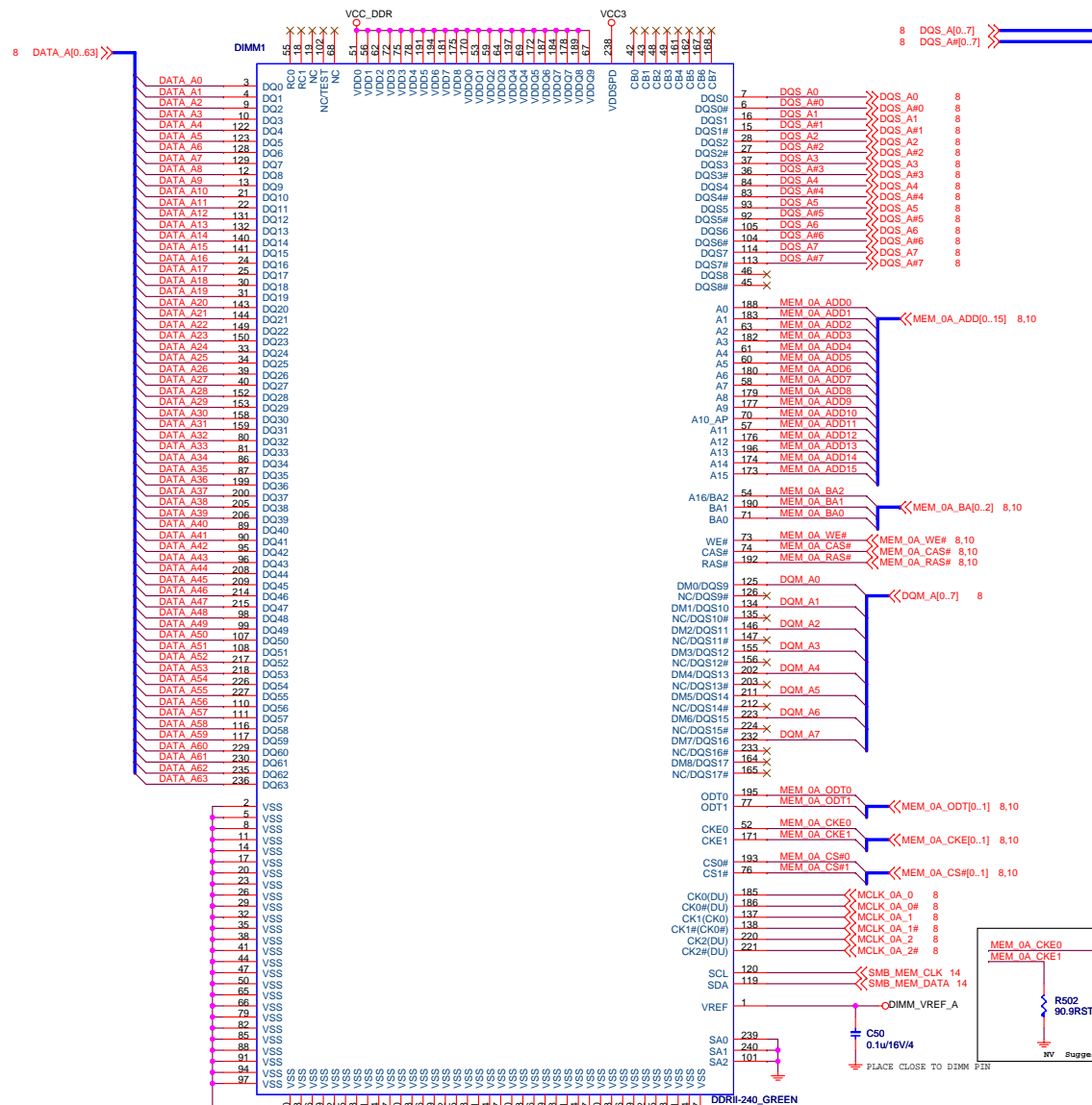
MS-7366

Size Custom Document Description LGA775 - GND Rev 0B

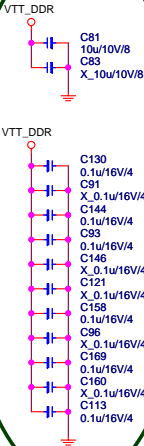
Date: Wednesday, August 29, 2007 Sheet 5 of 37



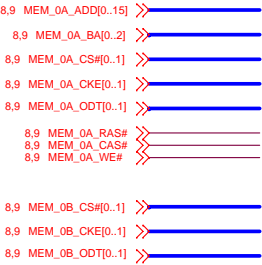
DIMM1 / 0A



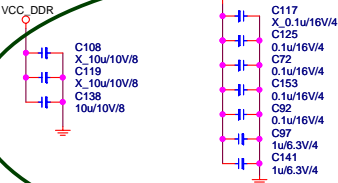
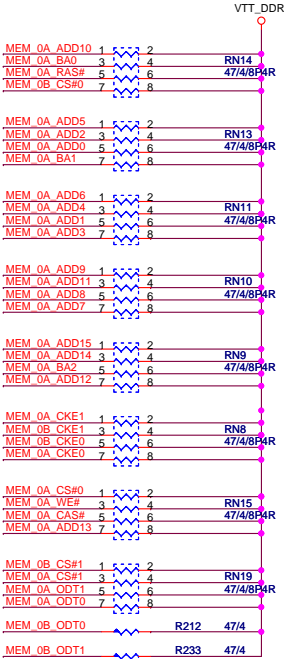
CHANNEL A VTT_DDR DECOUPLING CAPS



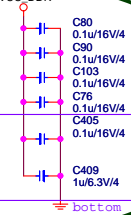
CHECK CAP



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



CHECK CAP



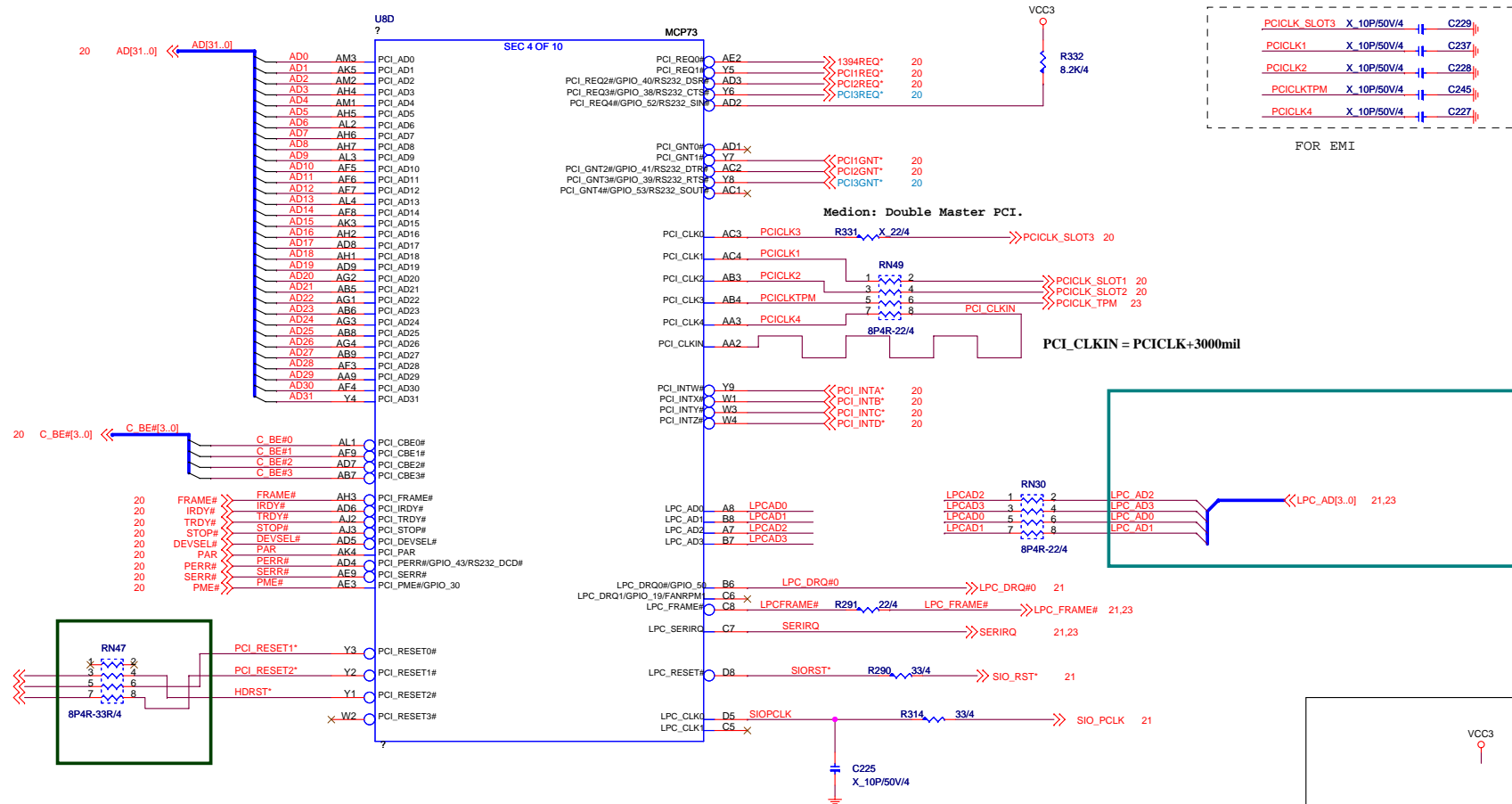
公板上0.1u X5, 1uX3, 10uX3
兩根再X2



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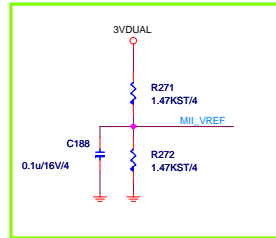
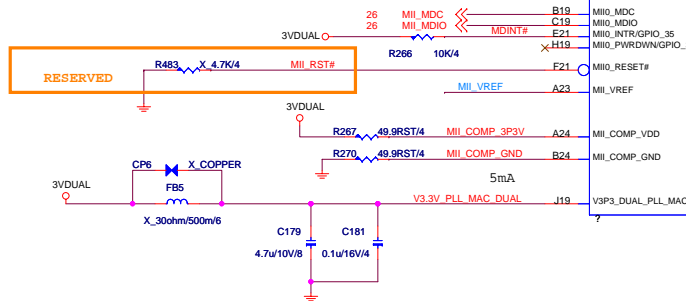
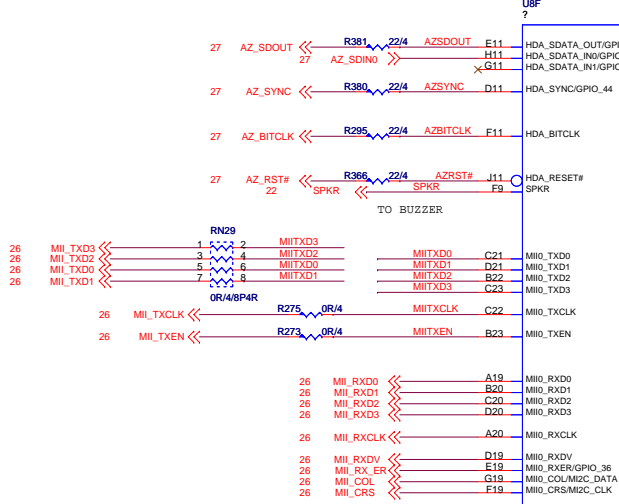
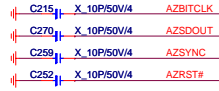
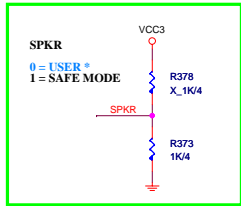
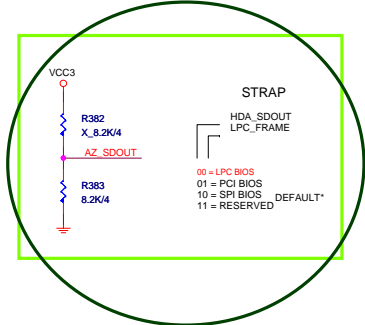
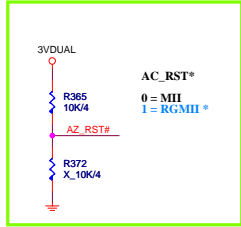
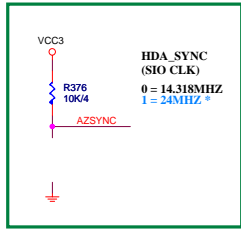
Size	Document Description	Rev
Custom	DDR II VTT Termination & Decoupling	0B
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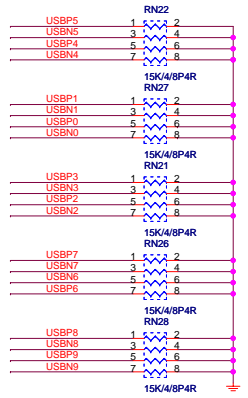
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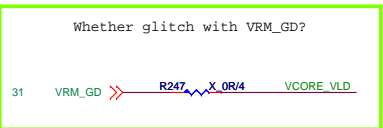
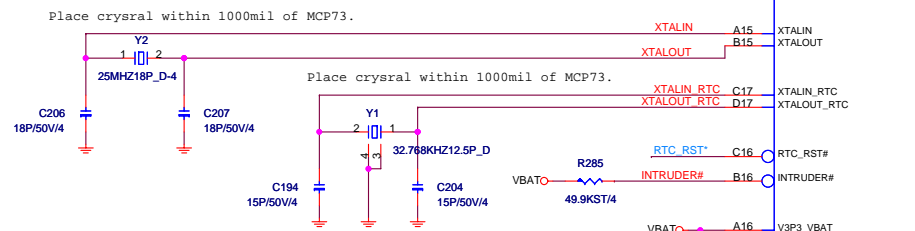
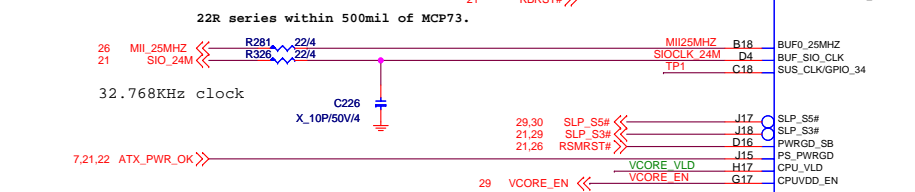
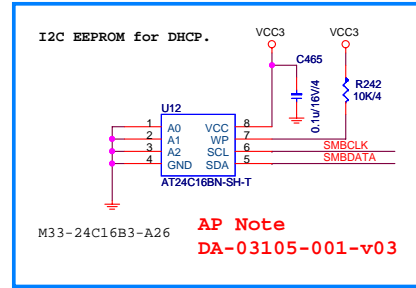
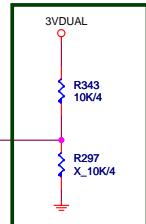
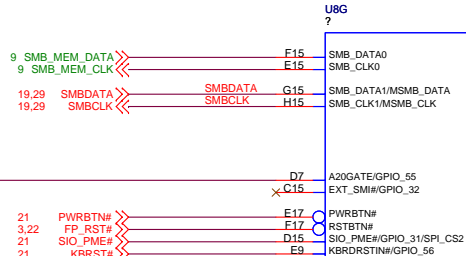
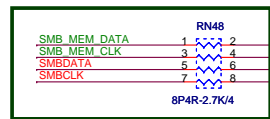
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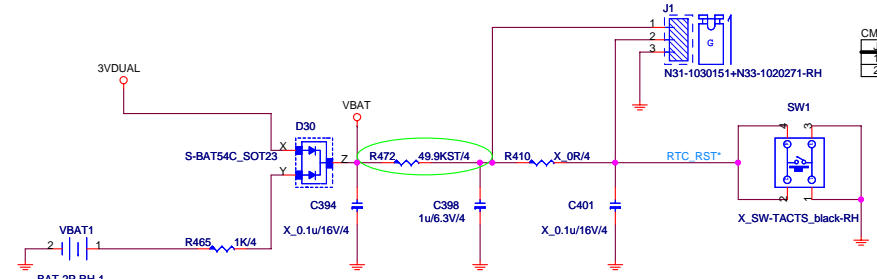
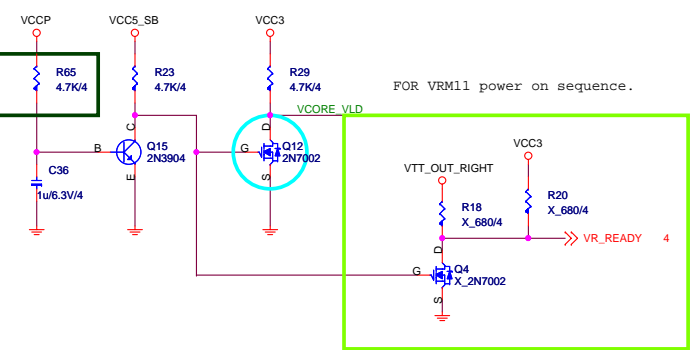


JUSB3--USB[8..9] is not present in MCP73V



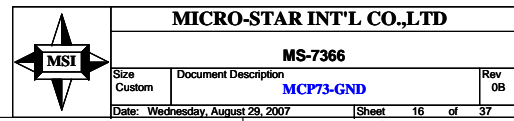


Vcore power-on sequence control circuit

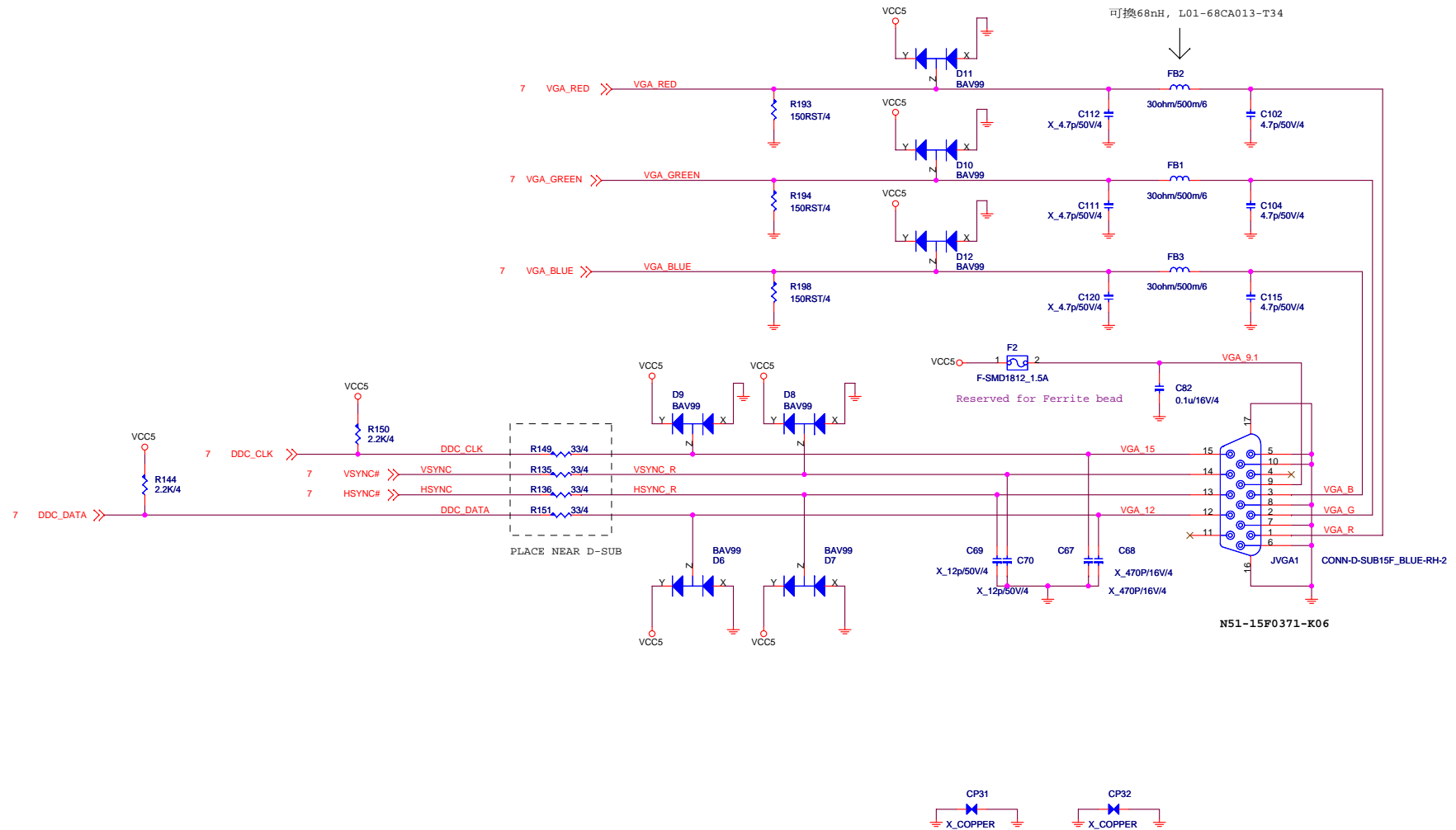


CMOS CLEAR JUMPER	
JBAT1	Clear CMOS
1 - 2	Normal
2 - 3	Clear CMOS





PLACE NEAR VGA CONNECTOR

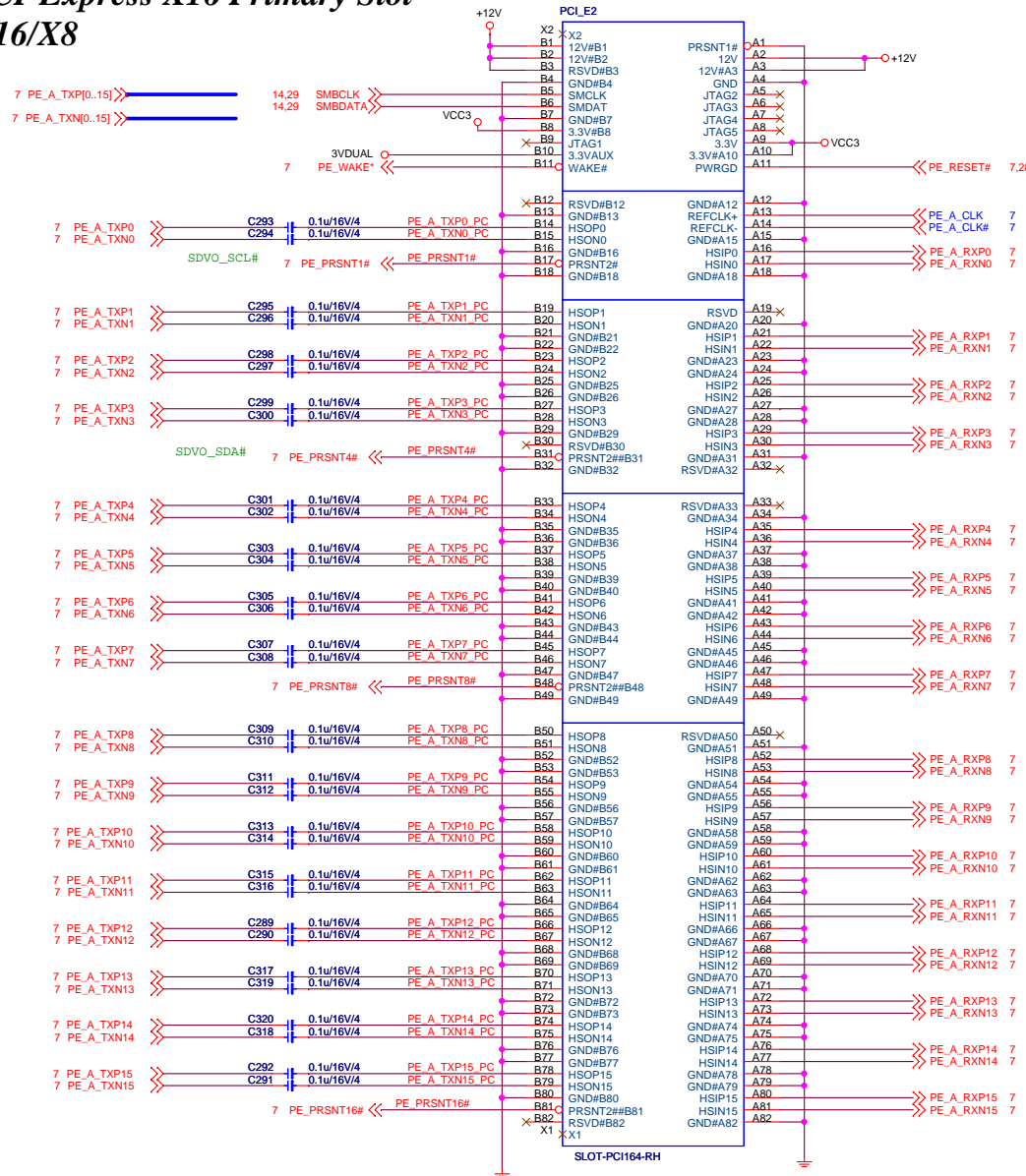


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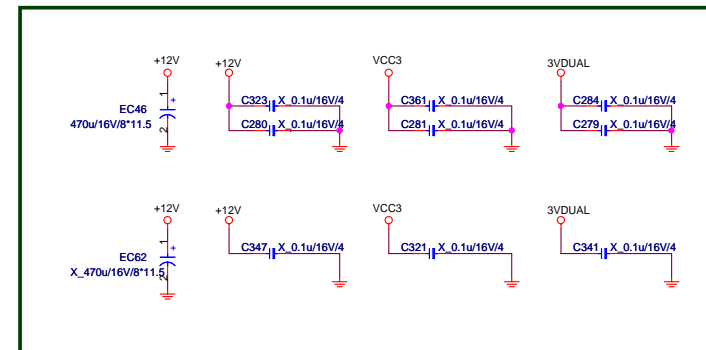
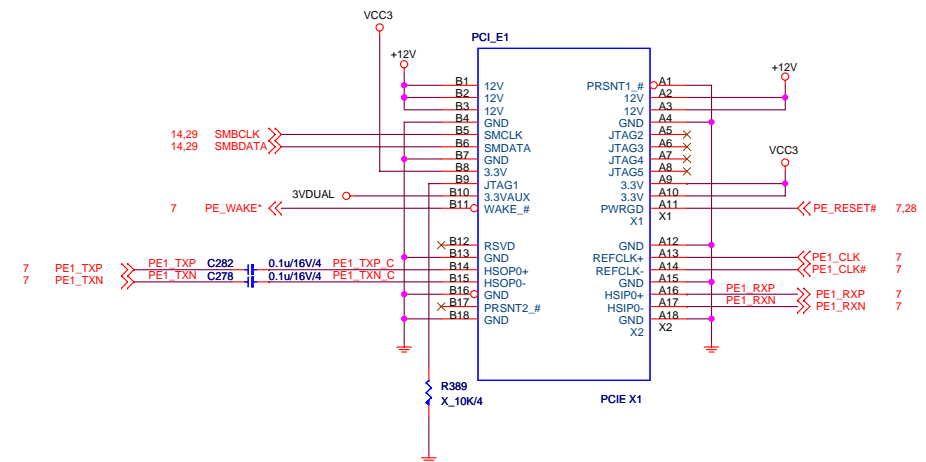
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PCI-Express X16 Primary Slot X16/X8



PCI-Express x1 SLOT 1



Pin-to-pin connection diagram for the SLC6C120 module. The diagram shows two columns of pins. The left column (pins B1 to B62) is connected to the right column (pins A1 to A62). Connections include power (VCC3, VCC5, VCCDUAL), ground (GND#B3, GND#B10, GND#B13, GND#B14, GND#B15, GND#B16, GND#B17, GND#B20, GND#B21, GND#B22, GND#B23, GND#B24, GND#B25, GND#B26, GND#B27, GND#B28, GND#B29, GND#B30, GND#B31, GND#B32, GND#B33, GND#B34, GND#B35, GND#B36, GND#B37, GND#B38, GND#B39, GND#B40, GND#B41, GND#B42, GND#B43, GND#B44, GND#B45, GND#B46, GND#B47, GND#B48, GND#B49, GND#B50, GND#B51, GND#B52), data (TRST#, TCK, TMS, TDI, TDO, INT7#, INTB#, INTD#, PRNST#1, PRNST#2, PRNST#12, PRNST#13, PRNST#14, PRNST#15, PRNST#16, PRNST#17, PRNST#18, PRNST#19, PRNST#20, PRNST#21, PRNST#22, PRNST#23, PRNST#24, PRNST#25, PRNST#26, PRNST#27, PRNST#28, PRNST#29, PRNST#30, PRNST#31, PRNST#32, PRNST#33, PRNST#34, PRNST#35, PRNST#36, PRNST#37, PRNST#38, PRNST#39, PRNST#40, PRNST#41, PRNST#42, PRNST#43, PRNST#44, PRNST#45, PRNST#46, PRNST#47, PRNST#48, PRNST#49, PRNST#50, PRNST#51, PRNST#52), and control (RESERVED#B10, RESERVED#B13, RESERVED#B14, RESERVED#B15, RESERVED#B16, RESERVED#B17, RESERVED#B20, RESERVED#B21, RESERVED#B22, RESERVED#B23, RESERVED#B24, RESERVED#B25, RESERVED#B26, RESERVED#B27, RESERVED#B28, RESERVED#B29, RESERVED#B30, RESERVED#B31, RESERVED#B32, RESERVED#B33, RESERVED#B34, RESERVED#B35, RESERVED#B36, RESERVED#B37, RESERVED#B38, RESERVED#B39, RESERVED#B40, RESERVED#B41, RESERVED#B42, RESERVED#B43, RESERVED#B44, RESERVED#B45, RESERVED#B46, RESERVED#B47, RESERVED#B48, RESERVED#B49, RESERVED#B50, RESERVED#B51, RESERVED#B52).

```

IDSEL = AD22
MASTER = PCI1REQ*
PCI1GNT*
PCI1ROUTE=A,B,C,D

```

Pin-to-pin connection diagram for the PC1210 module. The diagram shows two columns of pins. The left column (pins 1-62) is labeled 'PC12' and the right column (pins 1-62) is labeled 'PC1210'. Connections are indicated by lines between the two columns. Key connections include:

- B1 to A1 (TRST#)
- B2 to A2 (+12V)
- B3 to A3 (TMS)
- B4 to A4 (TDI)
- B5 to A5 (+5V)
- B6 to A6 (INTA#)
- B7 to A7 (INTC#)
- B8 to A8 (+5V)
- B9 to A9 (+5V)
- B10 to A10 (+5V)
- B11 to A11 (+5V)
- B12 to A12 (GND#A11)
- B13 to A13 (GND#A12)
- B14 to A14 (3.3V)
- B15 to A15 (RST#)
- B16 to A16 (+5V)
- B17 to A17 (GND#A17)
- B18 to A18 (REQ#)
- B19 to A19 (+5V)
- B20 to A20 (AD30)
- B21 to A21 (+3.3V)
- B22 to A22 (GND#B22)
- B23 to A23 (AD27)
- B24 to A24 (AD25)
- B25 to A25 (+3.3V)
- B26 to A26 (CBE#3)
- B27 to A27 (AD23)
- B28 to A28 (GND#B28)
- B29 to A29 (AD21)
- B30 to A30 (GND#A30)
- B31 to A31 (AD18)
- B32 to A32 (AD17)
- B33 to A33 (+3.3V)
- B34 to A34 (CBE#2)
- B35 to A35 (FRAME#)
- B36 to A36 (GND#B36)
- B37 to A37 (IRDY#)
- B38 to A38 (+3.3V)
- B39 to A39 (DEVSEL#)
- B40 to A40 (GND#B38)
- B41 to A41 (LOCK#)
- B42 to A42 (PERR#)
- B43 to A43 (+3.3V)
- B44 to A44 (SER#)
- B45 to A45 (+3.3V)
- B46 to A46 (CBE#1)
- B47 to A47 (AD14)
- B48 to A48 (GND#B46)
- B49 to A49 (AD12)
- B50 to A50 (AD10)
- B51 to A51 (GND#B49)
- B52 to A52 (X1)
- B53 to A53 (AD8)
- B54 to A54 (+3.3V)
- B55 to A55 (AD5)
- B56 to A56 (AD3)
- B57 to A57 (GND#B57)
- B58 to A58 (AD1)
- B59 to A59 (+5V)
- B60 to A60 (ACK#)
- B61 to A61 (+5V)
- B62 to A62 (+5V)

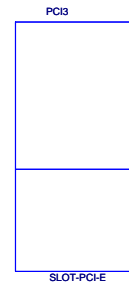
```

IDSEL = AD23
MASTER = PCI2REQ*
PCI2GNT*
PCI1ROUTE=B,C,D,A

```

```
IDSEL = AD24
MASTER = PCI3REQ*
PCI3GNT*
PCI1ROUTE=C
```

Medion BLUE PCI SLOT



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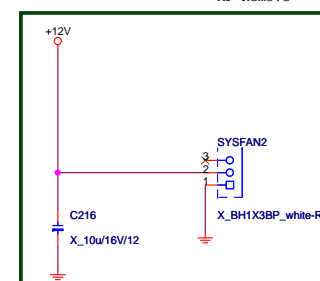
Intel Front Panel



The schematic diagram illustrates the Winbond Protection circuit. It features a +12V input line that passes through a diode D1 and a capacitor EC69 (100u/16V/6.3*5) before reaching a diode BAS32L_LL34. The output of this diode is connected to a resistor R31 (4.7K/4), which then connects to a resistor R12 (27K/4). This resistor network is connected to the fan motor CPUFAN1. The fan motor is also connected to a resistor R5 (10K/4), which leads to the CPU-FAN signal line (pin 21). Additionally, the fan motor is connected to a resistor R30 (200R/ST/4), which is connected to a resistor R41 (1K/4). This resistor network is connected to a diode D2 (BAS32L_LL34), which leads to the CPU-FAN_CTL signal line (pin 21). The circuit is labeled 'Winbond Protection circuit'.

[illegible]

Reserve for NB_FAN, Near MCP73
MP Remove



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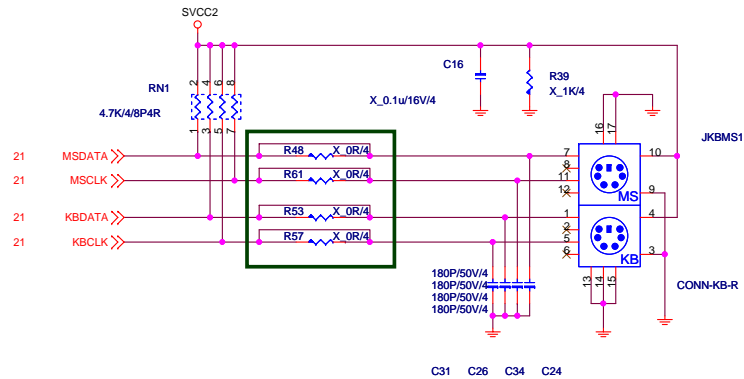
MS-7366

Size	Document Description
Custom	ATX/Front Panel/FAN

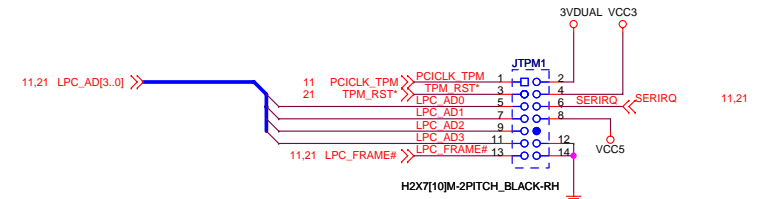
Rev	08
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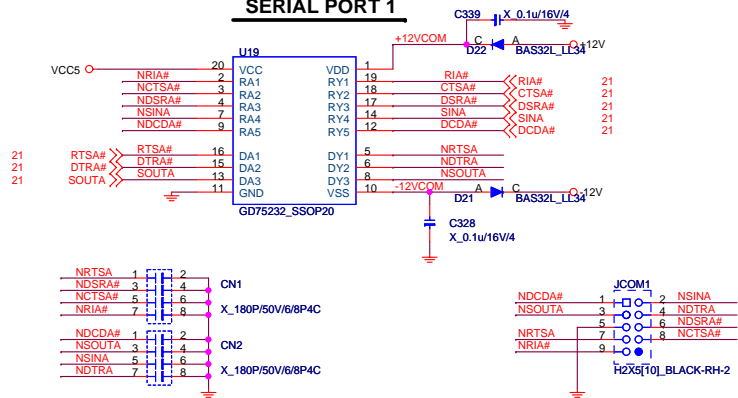
PS2 KEYBOARD & MOUSE CONNECTOR



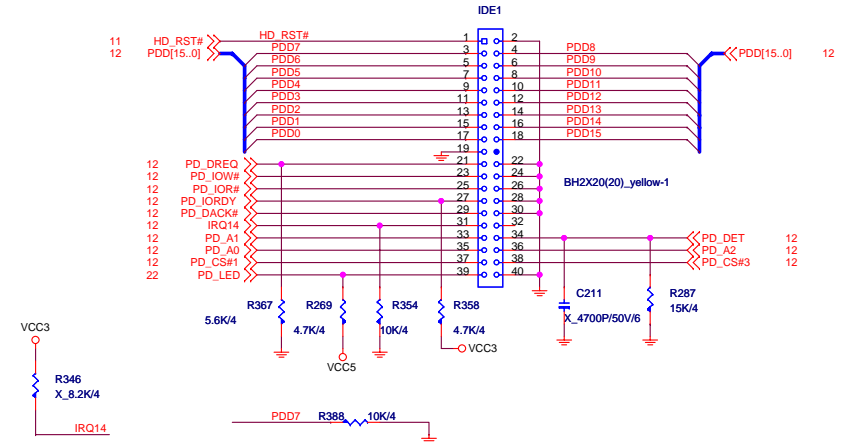
JLPC port for TPM



SERIAL PORT 1



PRIMARY IDE BLOCK



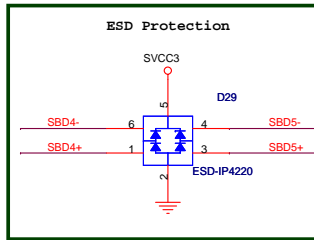
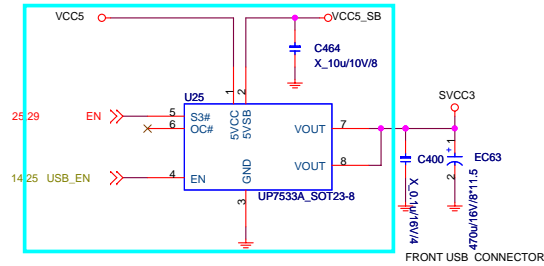
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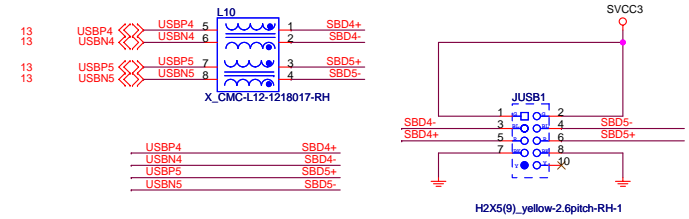
Size	Document Description	Rev
Custom	KB/COM1/IDE/FAN	0B
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FRONT PANEL USB CONNECTOR

POWER CIRCUIT FOR USB PORT 4,5



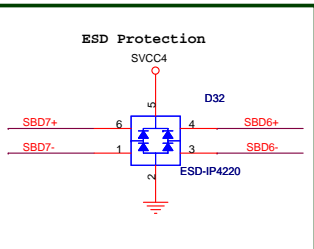
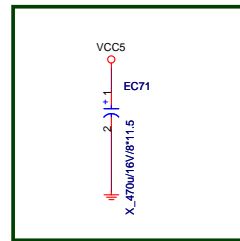
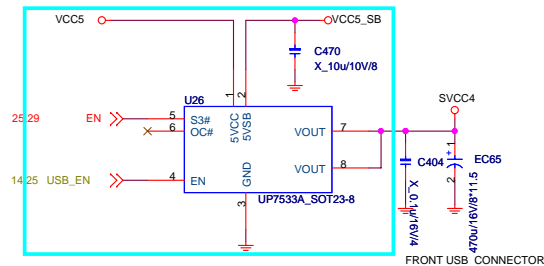
FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



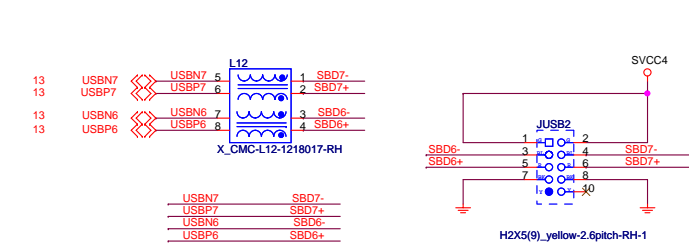
NEAR USB CONNECTOR

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

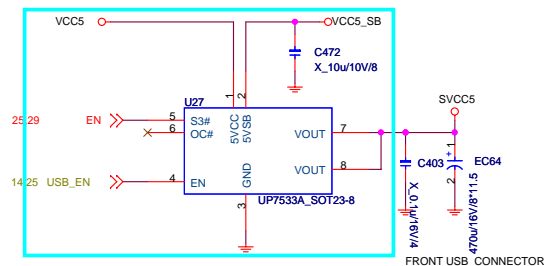
POWER CIRCUIT FOR USB PORT 6,7



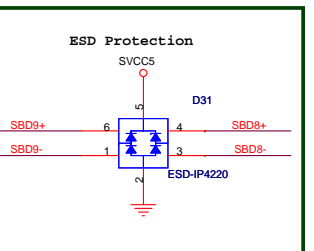
FRONT PANEL USB CONNECTOR FOR USB PORT 6,7



POWER CIRCUIT FOR USB PORT 8,9

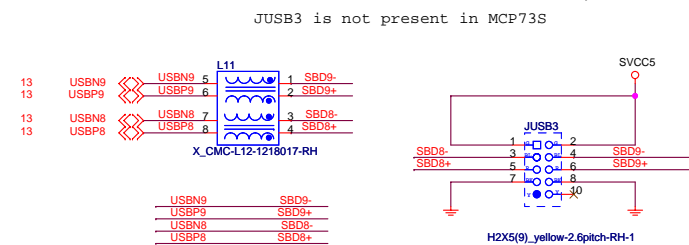


JUSB3--USB[8.9] is not present in MCP73V



JUSB3--USB[8.9] is not present in MCP73V

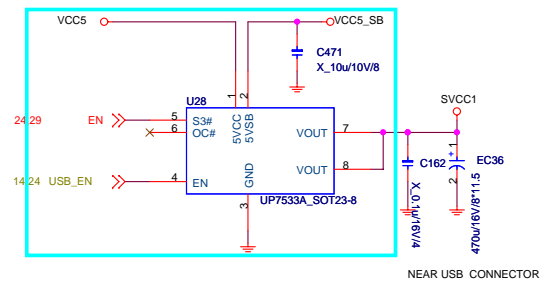
FRONT PANEL USB CONNECTOR FOR USB PORT 8,9



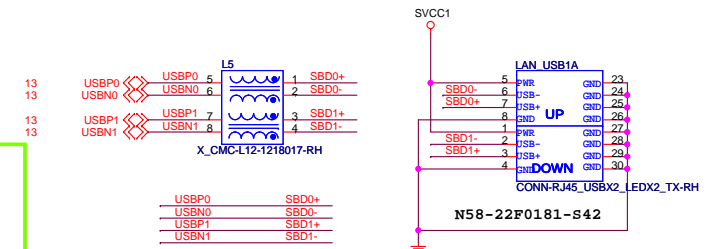
MICRO-STAR INT'L CO.,LTD			
MS-7366			
Size	Document Description		Rev
Custom	USB CONNECTORS PART1		0B
Date: Wednesday, August 29, 2007	Sheet	24	of 37

REAR PANEL USB CONNECTOR

POWER CIRCUIT FOR USB PORT 0,1



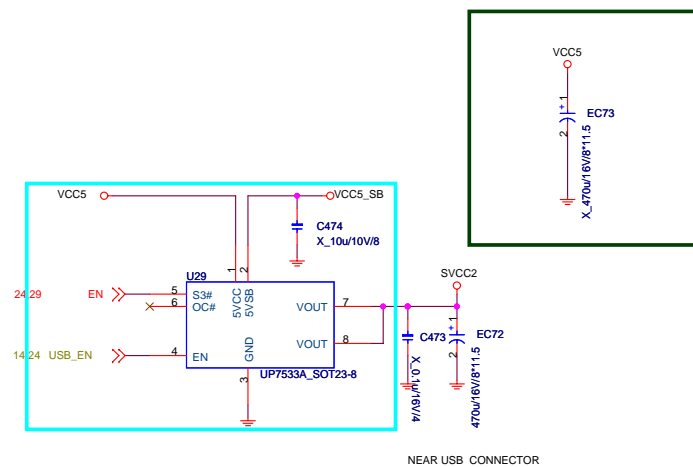
REAR PANEL USB CONNECTOR FOR USB PORT 0,1



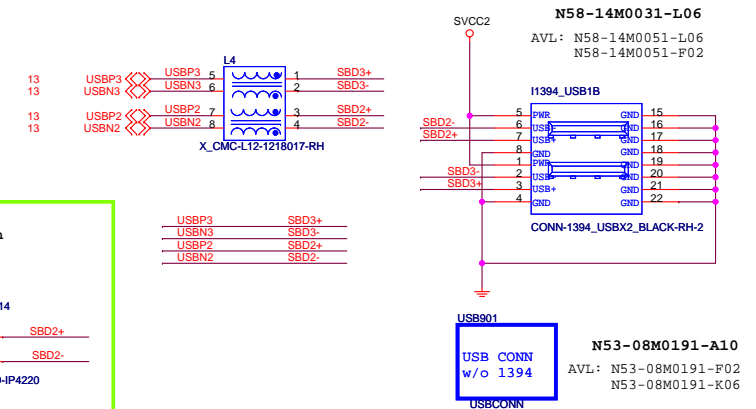
NEAR USB CONNECTOR

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

POWER CIRCUIT FOR USB PORT 2,3



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

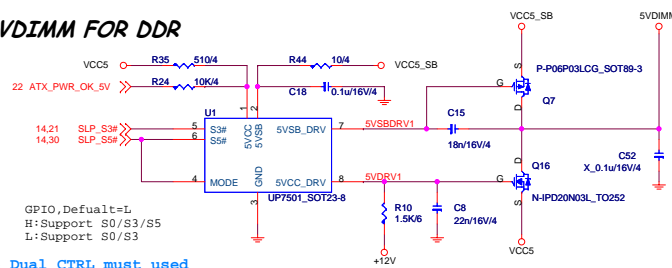


MICRO-STAR INT'L CO.,LTD

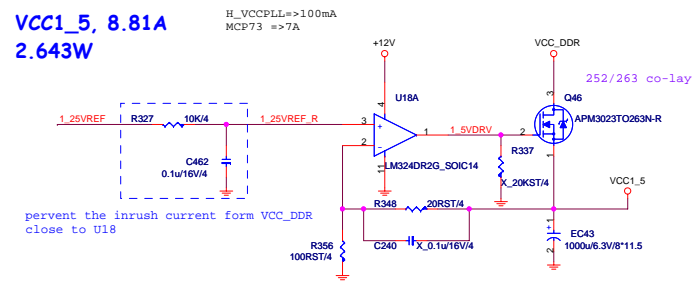
MS-7366

Size Custom	Document Description USB CONNECTORS PART2	Rev 0B
Date: Wednesday, August 29, 2007	Sheet 25 of 37	

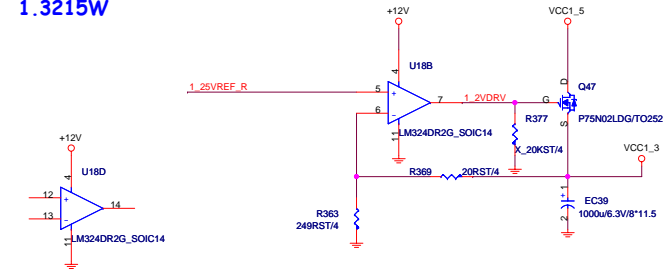
5VDIMM FOR DDR



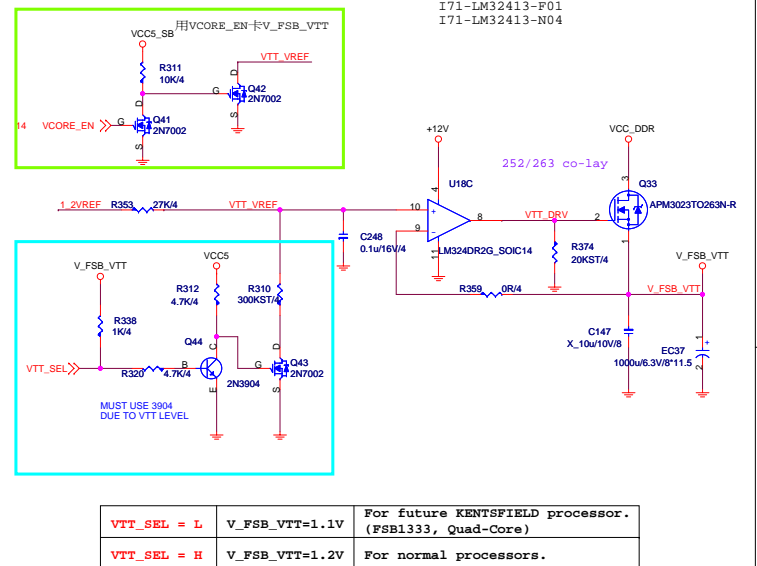
VCC1_5, 8.81A
2.643W



VCC1_3, 8.81A
1.3215W



FSB_VTT, 6.1A
3.66W



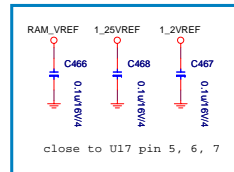
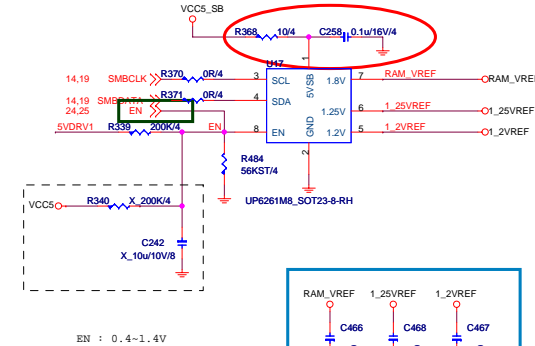
VTT_SEL = L	V_FSB_VTT=1.1V	For future KENTSFIELD processor. (FSB1333, Quad-Core)
VTT_SEL = H	V_FSB_VTT=1.2V	For normal processors.

Reference Voltage

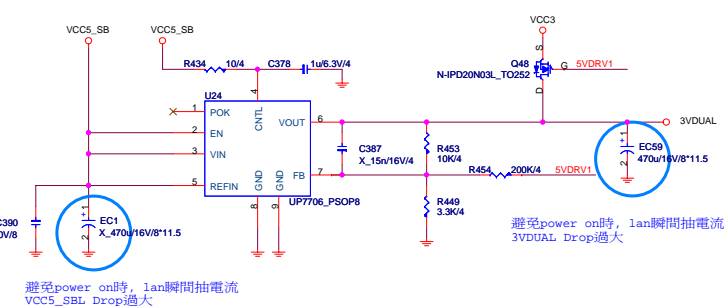
up6261: High Precision Voltage Console

ONLY OVER DDR Voltage to 2V

VCC5_SB to UP6261 pin1 path keep the same.

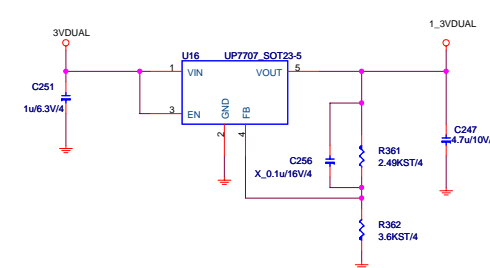


3VDUAL, 1.7A



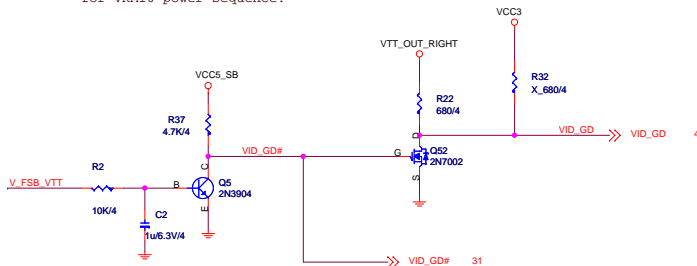
1_3VDUAL, 25mA

up7707: 600mA Low Dropout Linear Regulator



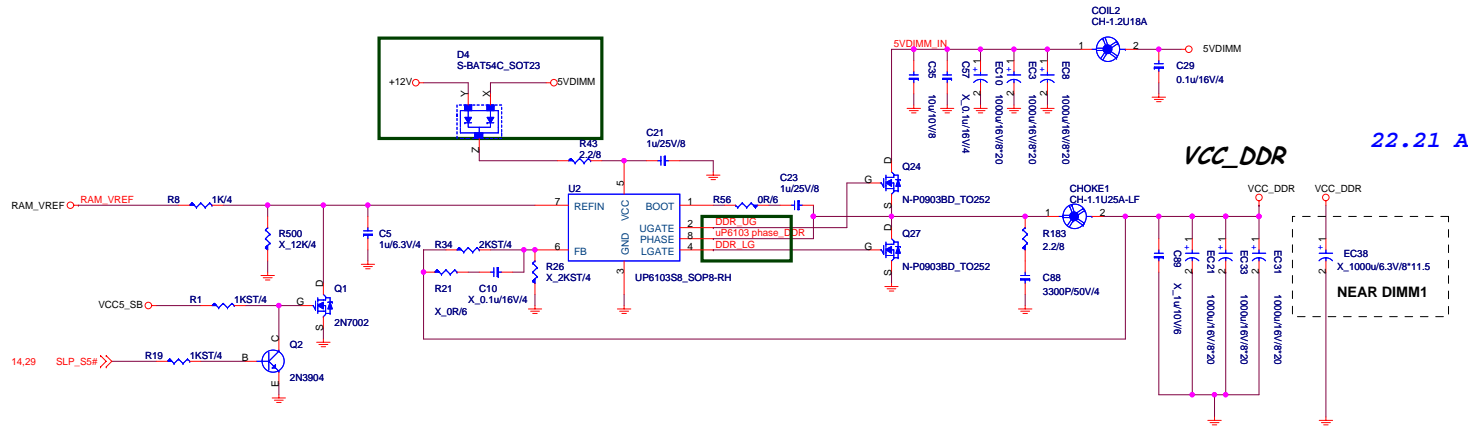
$$V_{out} = 0.8 \cdot (R1 + R2) / R1$$

VID_GD# to PWM and VID_GD to CPU
for VRM10 power sequence.



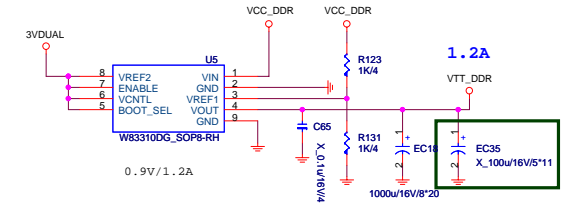
DDR II 1.8V POWER

Iripple=22.21*0.6*0.8/1=10.66A
2.35*3*1.7=11.985A>10.08A

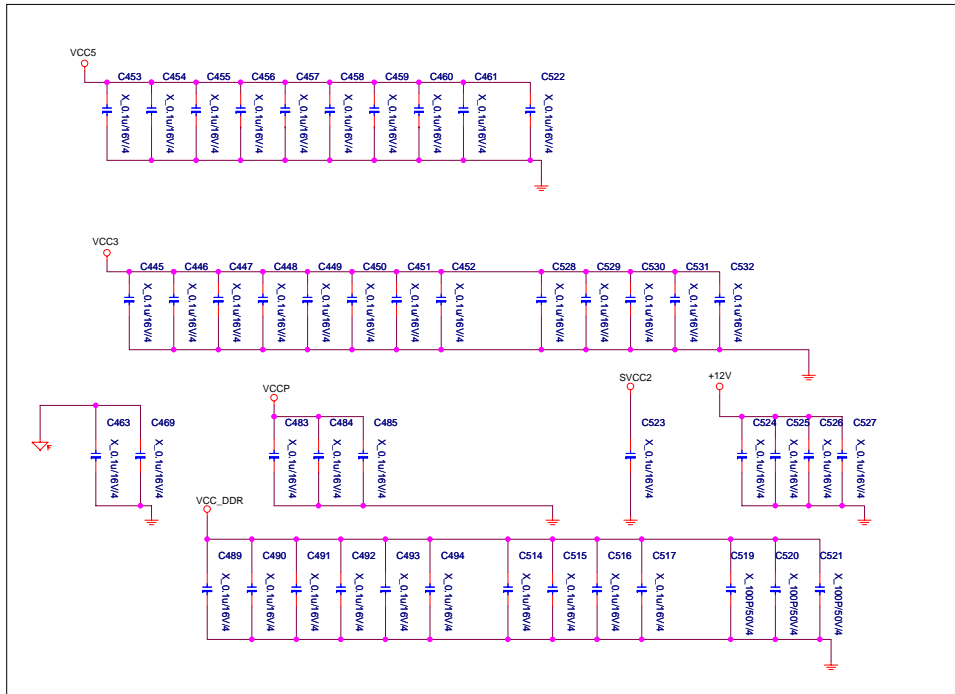


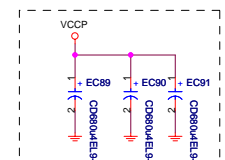
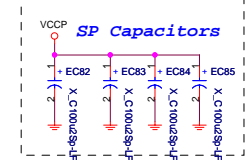
DDR VTT Power

To CPU Copper trace width > 200mils



EMI





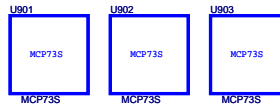
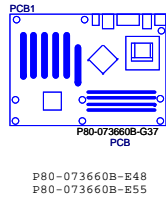
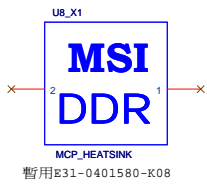
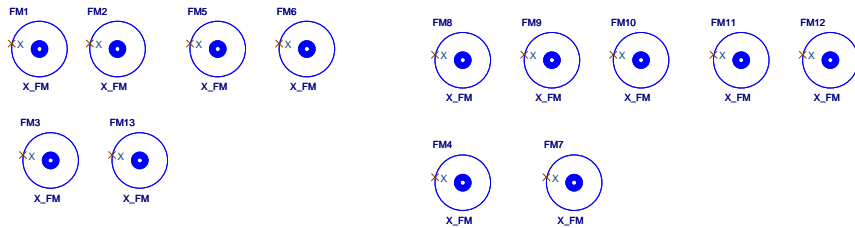


Table 1-4. Comparison of Different MCP73 Models

Features	MCP73D	MCP73PV	MCP730	MCP73S	MCP73V
IGPU	No	DX9 SM3.0	DX9 SM3.0	DX9 SM3.0	DX9 SM3.0
Display Interface	N/A	HDMI, DVI, RGB, sDVO	DVI, RGB, sDVO	DVI, RGB, sDVO	RGB
Integrated HDCP	N/A	Yes	Yes	Yes	No
FSB	1333	1333	1333	1066	1066
Memory	DDR2-667 64-bit	DDR2-667 64-bit	DDR2-667 64-bit	DDR2-667 64-bit	DDR2-667 64-bit
PCI Express	1 x16, 2 x1	1 x16, 2 x1	1 x16, 2 x1	1 x16, 2 x1	1 x16, 2 x1
USB Ports	8	10	10	10	8
Networking	10/100/1000	10/100/1000	10/100/1000	10/100/1000	10/100
SATA II Ports	4	4	4	4	4
RAID	0, 1	0, 1, 0+1, 5	0, 1, 0+1, 5	0, 1, 0+1, 5	0, 1
PATA-133	Two devices	Two devices	Two devices	Two devices	Two devices
iGPU Dev-ID	N/A	0x7E0	0x7E1	0x7E2	0x7E3
Marketing Brand Name	NVIDIA nForce 630i	NVIDIA nForce 630i GeForce 7050	NVIDIA nForce 630i GeForce 7050	NVIDIA nForce 630i GeForce 7025	NVIDIA nForce 610i GeForce 7025

Optics Orientation Holes



Mounting Holes

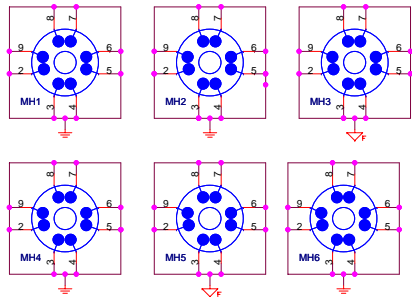


Table 1. MCP73 SKU Definition

Features	MCP73PV	MCP73S	MCP73V
FSB	1333	1333	1066
Memory	DDR2-800 64 bit	DDR2-667 64 bit	DDR2-667 64 bit
Display	HDMI, DVI, RGB, sDVO	DVI, RGB, sDVO	RGB
Integrated HDCP	Yes	Yes	No
Integrated Networking	10/100/1000	10/100/1000	10/100
Vista Premium	Yes	Yes	Yes
PCI-E	1 x16, 2 x1	1 x16, 2 x1	1 x16, 2 x1
USB Ports	10	10	8
SATA II Ports	4	4	4
RAID	0,1,0+1,5	0,1,0+1,5	0, 1
PATA Drives	2	2	2

Simulation

