MS-6529

INTEL (R) Brookdale Chipset

Willamette/Northwood 423pin mPGA-B Processor Schematics

Version 0A

Micro-Star	Title ***MS-6529***	Rev ***0A***
Document Number	Cover Sheet	
Last Revision Date: Saturday, June 02, 2001	Sheet 1 of 32	

U17-1
PLCC32-SMT

PCB1

P01-652900A

BAT1-1

YSKTBT

COM1

COM-D9-GN

COM2

COM-D9-GN

JBAT1(1-2)

YJUMPER-MG

J4(1)

YJUMPER-MG

JP1(1)

X_YJUMPER-MG

X_U8

845-MCH-H

Title	{Title}	
Size: Custom	Document Number {Doc}	Rev {RevCode}
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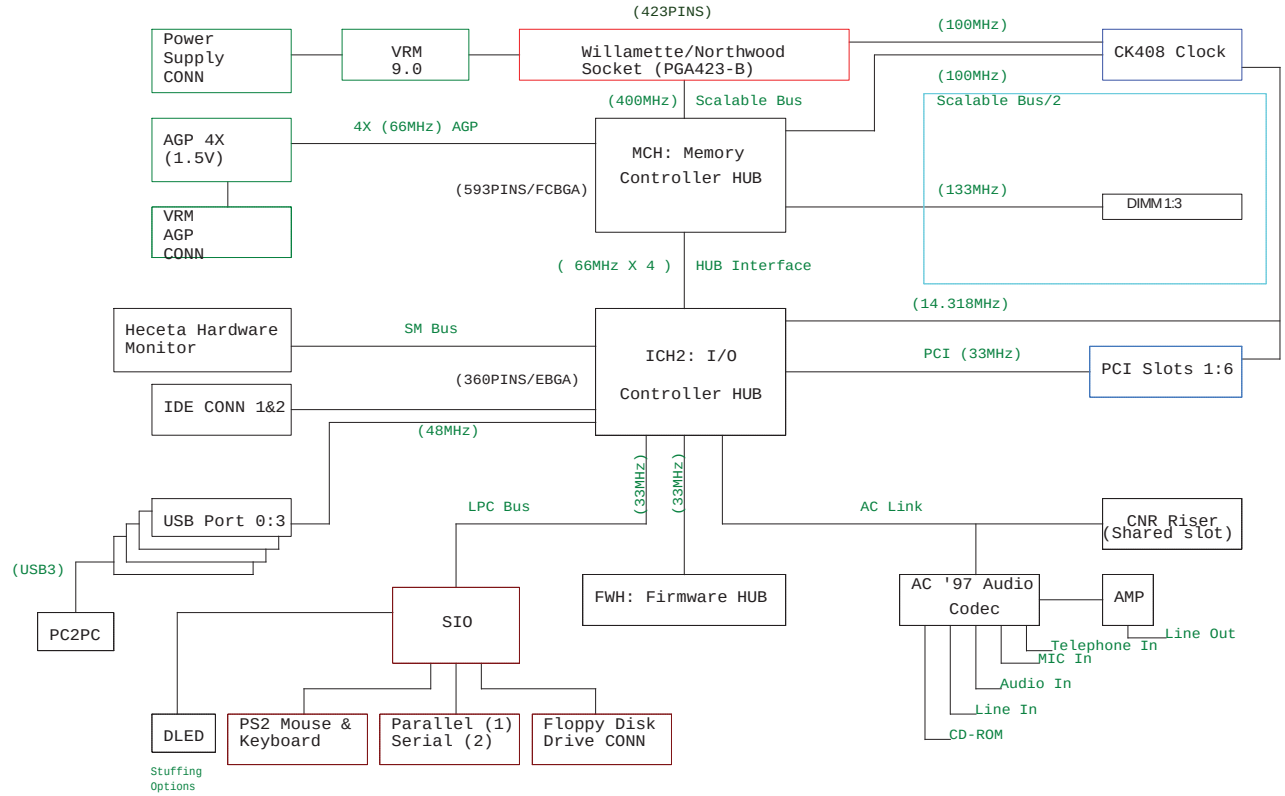
AGP
4X(1.5V)
AGP CONN



Micro-Star	Title: MS-6529	Rev: 0A
Document Number: Block Diagram		
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General Purpose I/O Spec.

ICH2

GPIO Pin	Type	Function
GPIO 0	I	Non Connect
GPIO 1	I	Non Connect (PREQ#5)
GPIO 2	I	INTE#
GPIO 3	I	INTF#
GPIO 4	I	INTG#
GPIO 5	I	INTH#
GPIO 6	I	CNR Detect
GPIO 7	I	None
GPIO 8	I	LAN Wake Up
GPIO 9	I	AC'97 Serial Data In
GPIO 10	I	Non Connect
GPIO 11	I	Non Connect
GPIO 12	I	External SMI
GPIO 13	I	LPC PME
GPIO 14~15	I	Not Implemented
GPIO 16	O	Non Connect
GPIO 17	O	PGNT#5
GPIO 18	O	Not Implemented
GPIO 19	O	SDR Votlage settig
GPIO 20	O	SDR Votlage settig
GPIO 21	O	CPU VID Control
GPIO 22	OD	Non Connect
GPIO 23	O	BIOS Locked/Unlocked
GPIO 24	O	STR Control
GPIO 25	O	Non Connect
GPIO 26	O	Non Connect
GPIO 27	I/O	Non Connect
GPIO 28	I/O	Non Connect
GPIO 29~31	I/O	Not Implemented

FWH

GPIO Pin	Type	Function
GPI 0	I	ATA IDE 1 Detect
GPI 1	I	ATA IDE 2 Detect
GPI 2	I	Reserved
GPI 3	I	Reserved

W627HF-AW

PIN NAME	Function define
GP23/PLED	PLED(POWER LED)
GP24/WDTO	DLED2
GP32/PWROK	DLED1
GP33/RSMRST#	DLED4
GP34/CIRRX	DLED3
GP35/SUSLED	SUSLED

PCI

DEVICES	INT#	IDSEL	REQ#/GNT#	CLOCK
PCI SLOT 1	INT#A INT#B INT#C INT#D	AD16	PREQ#0 PGNT#0	PCICLK0
PCI SLOT 2	INT#B INT#C INT#D INT#A	AD17	PREQ#1 PGNT#1	PCICLK1
PCI SLOT 3	INT#C INT#D INT#A INT#B	AD18	PREQ#2 PGNT#2	PCICLK2
PCI SLOT 4	INT#D INT#A INT#B INT#C	AD19	PREQ#3 PGNT#3	PCICLK3
PCI SLOT 5	INT#B INT#C INT#D INT#A	AD21	PREQ#4 PGNT#4	PCICLK4

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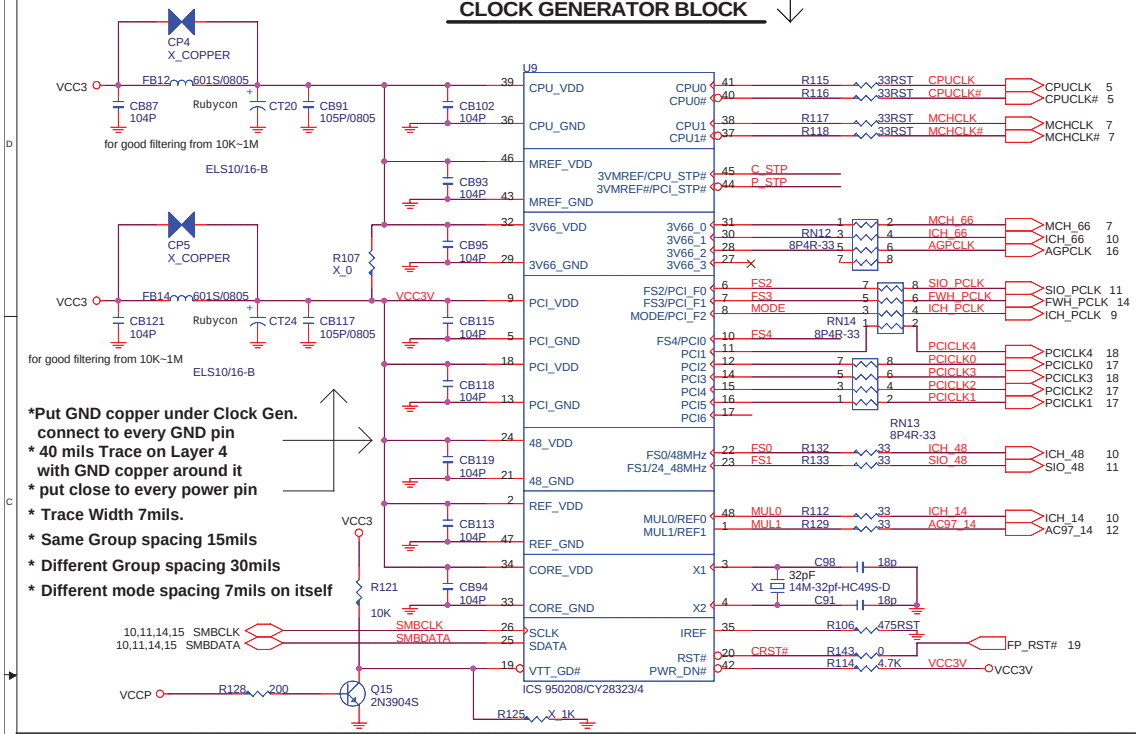
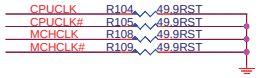
CLOCK GENERATOR BLOCK

*Trace less 0.5"



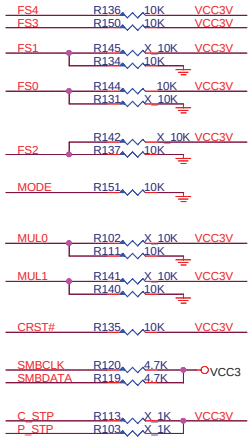
*Put GND copper under Clock Gen.
connect to every GND pin
* 40 mils Trace on Layer 4
with GND copper around it
* put close to every power pin
* Trace Width 7mils.
* Same Group spacing 15mils
* Different Group spacing 30mils
* Different mode spacing 7mils on itself

Shut Source Termination Resistors

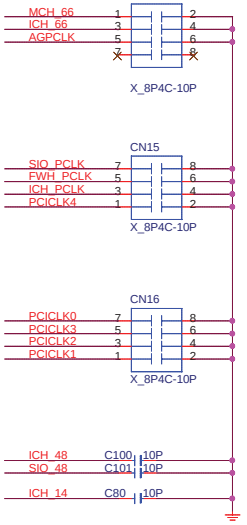


Trace less 0.2"
49.9ohm for 50ohm M/B impedance

CLOCK STRAPPING RESISTORS



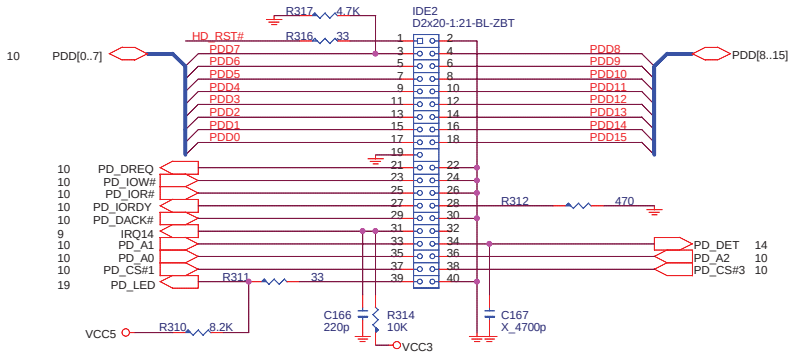
Pull-Down Capacitors



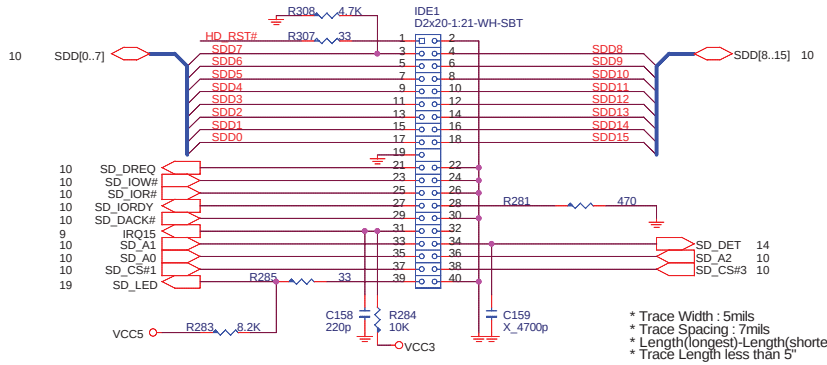
used only for EMI issue
Trace less 0.2"

ATA100 IDE CONNECTORS

PRIMARY IDE BLOCK

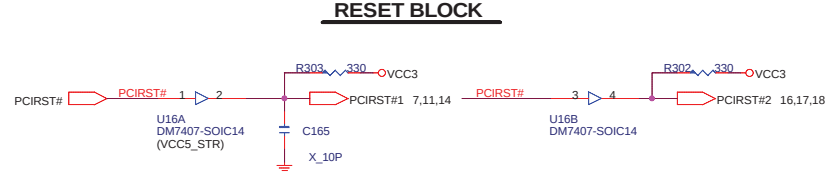


SECONDARY IDE BLOCK



* Trace Width : 5mils
* Trace Spacing : 7mils
* Length(longest)-Length(shortest)<0.5"
* Trace Length less than 5"

RESET BLOCK



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Document Number: Clock CY28323/4 & ATA100 IDE		
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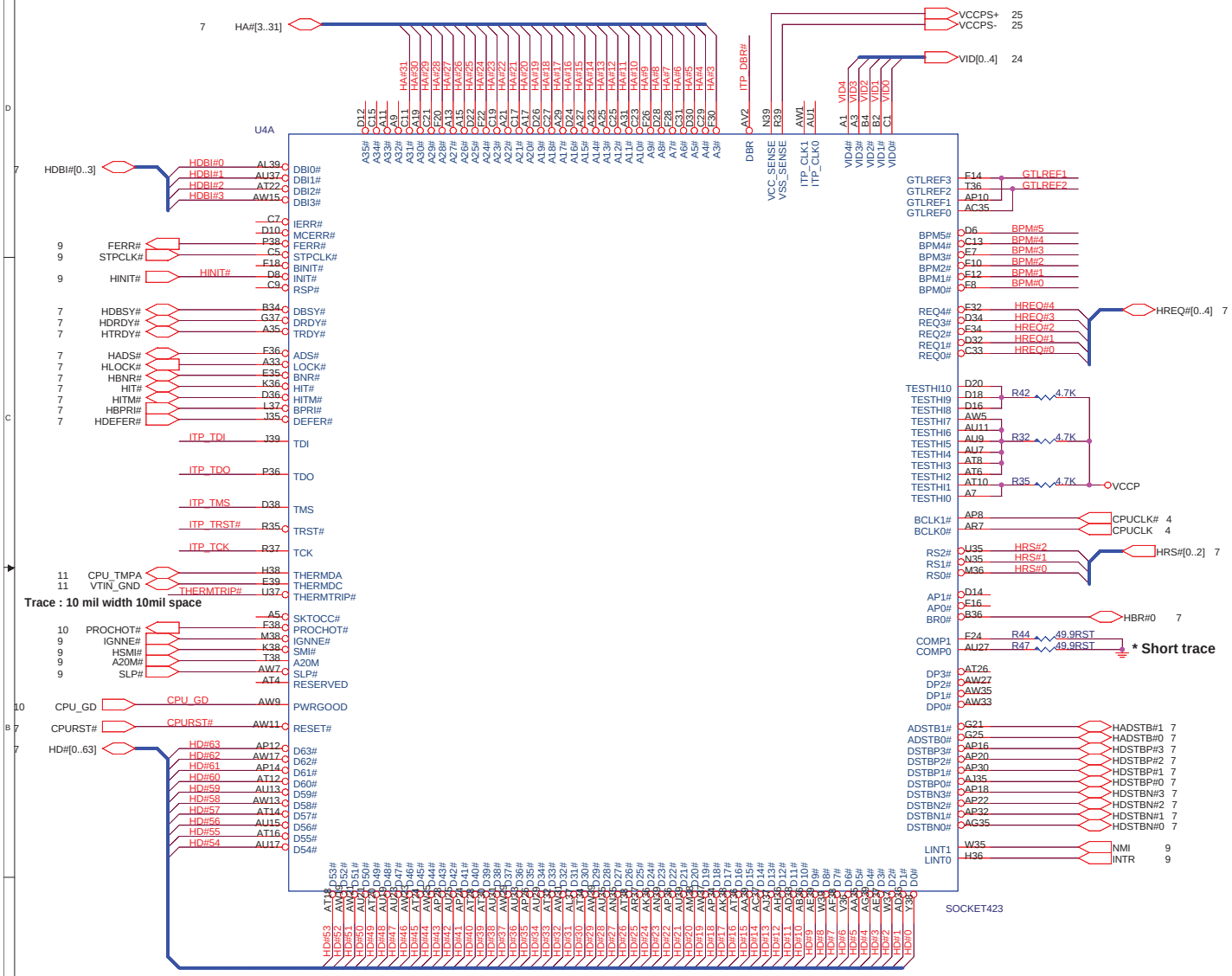
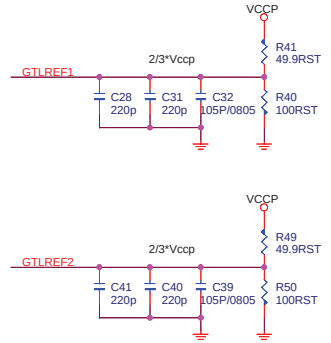
CPU SIGNAL BLOCK

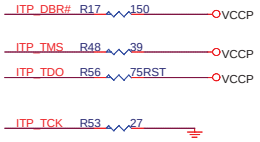


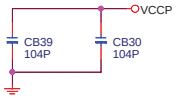
CPU GTL REFERNCE VOLTAGE BLOCK



Every pin put one 220pF cap near it.
Trace Width 15mils, Space 15mils.
Keep the voltage dividers within 1.5 inches of the first GTLREF Pin

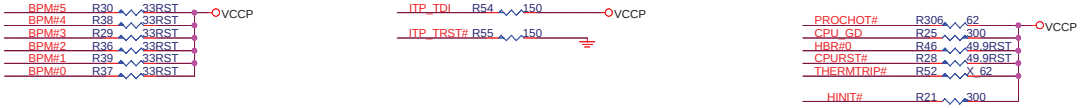
CPU ITP





ALL COMPONENTS CLOSE TO CPU

CPU STRAPPING RESISTORS



ALL COMPONENTS CLOSE TO CPU

Micro-Star	Title: MS-6529	Rev: 0A
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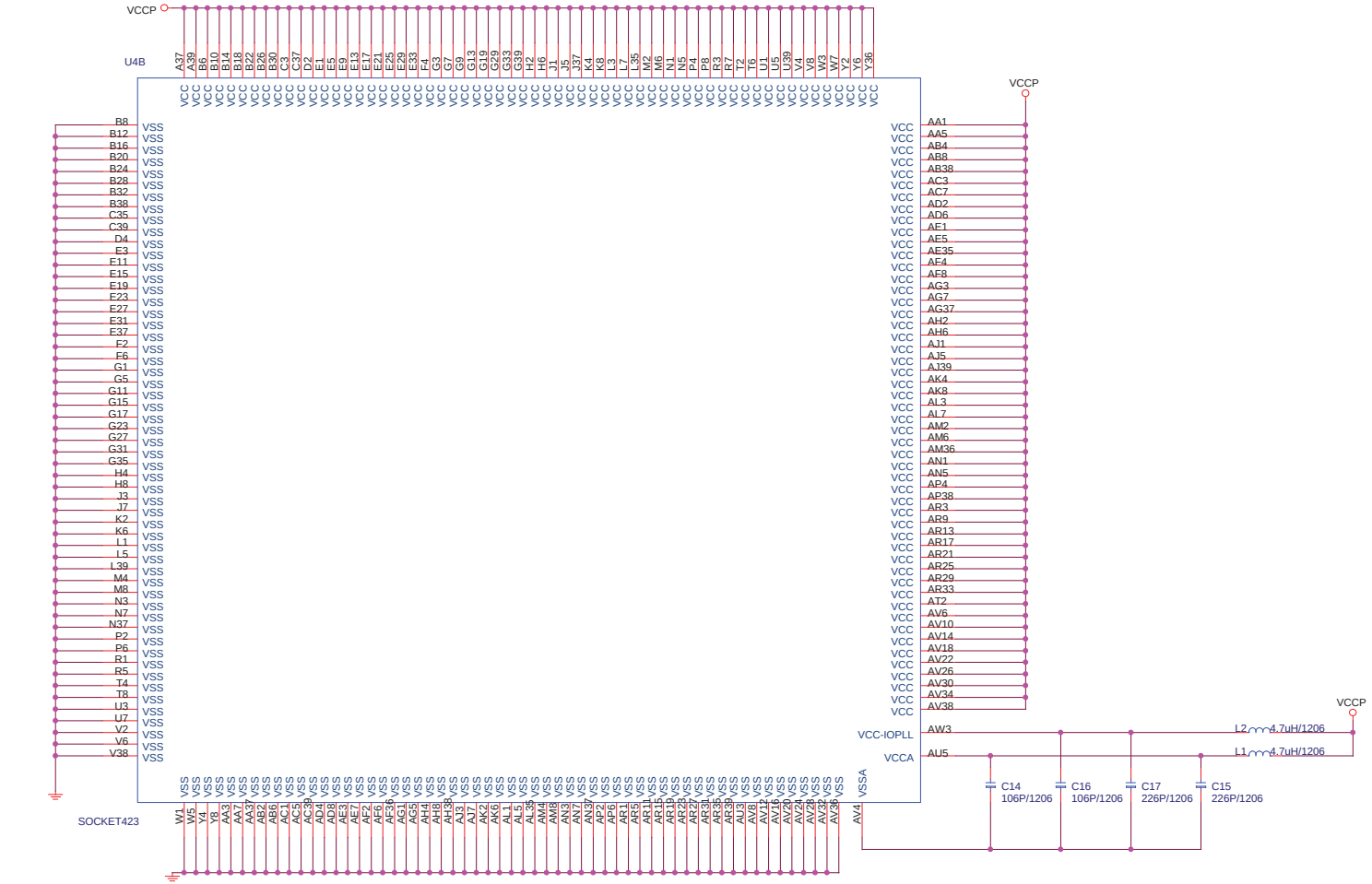
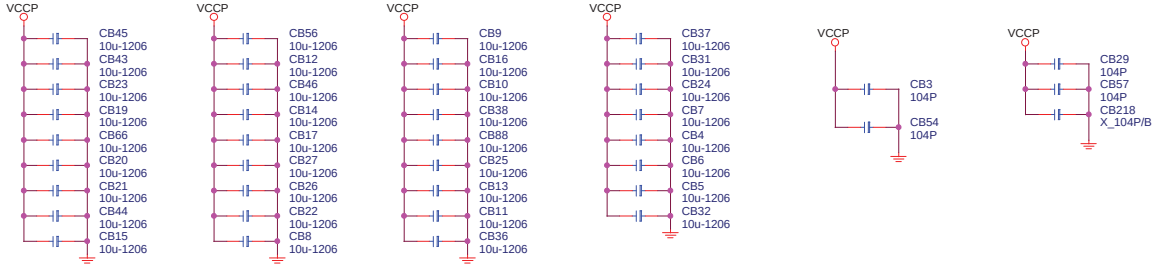
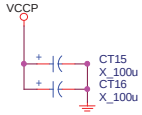


CPU DECOUPLING CAPACITOR

PLACE CAPS WITHIN CPU CAVITY



CPU DECOUPLING CAPACITORS



PLACE CAPS WITHIN CPU CAVITY SOLDER

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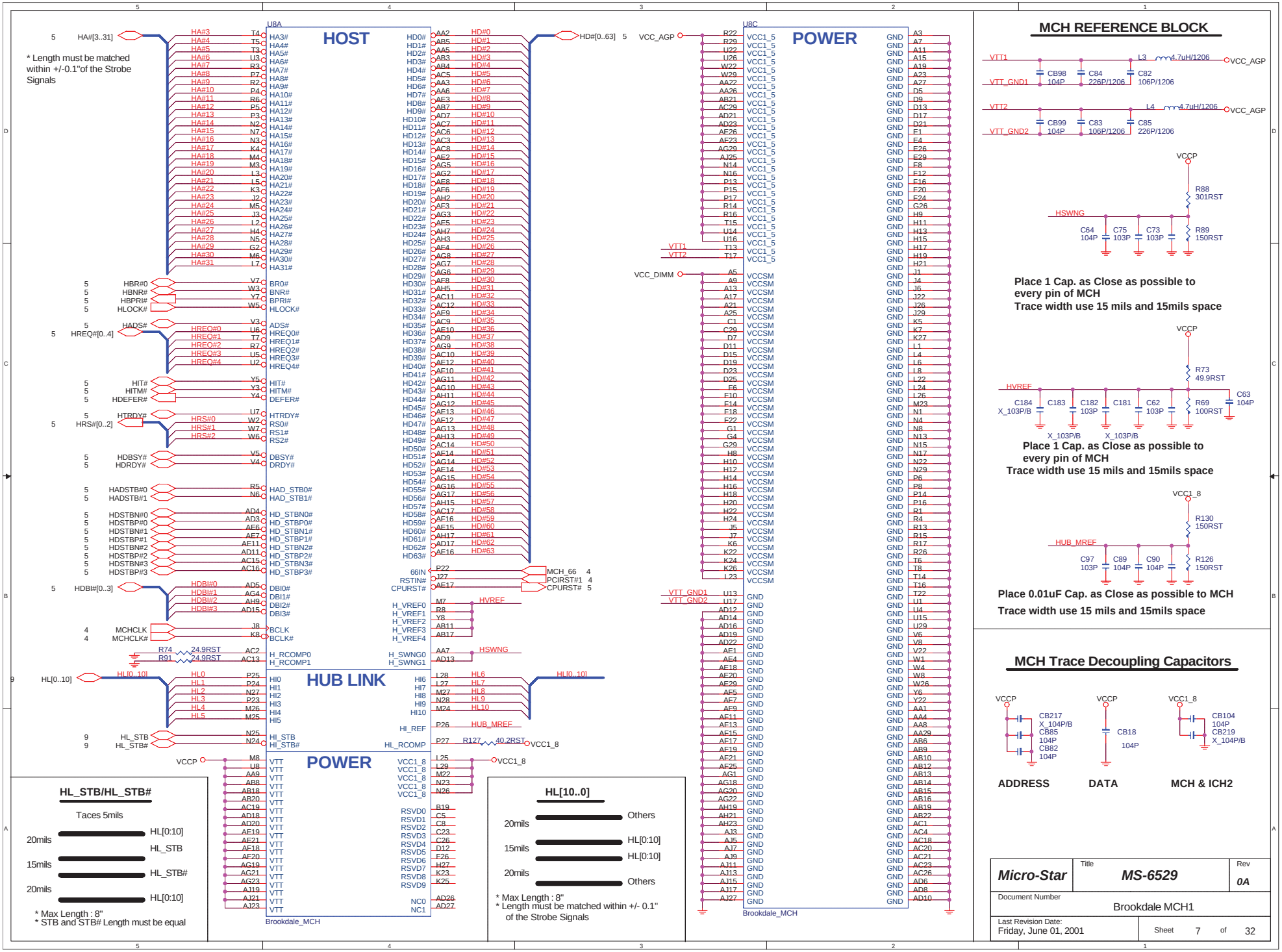
U8A
HOST
HA[3..31]
HD[0..63]
* Length must be matched within +/-0.1"of the Strobe Signals
HBR#0
HBNR#
HBPRI#
HLOCK#
HADS#
HREQ[0..4]
HIT#
HITM#
HDEFER#
HTRDY#
HRS[0..2]
HDBSY#
HDRDY#
HADSTB0#
HADSTB1#
HDSTBN0#
HDSTBP0#
HDSTBN1#
HDSTBP1#
HDSTBN2#
HDSTBP2#
HDSTBN3#
HDSTBP3#
HDBI[0..3]
MCHCLK
MCHCLK#
R74 24.9RST
R91 24.9RST
HL[0..10]
HL_STB
HL_STB#
VCCP
HUB LINK
POWER
Brookdale_MCH
66IN
RSTIN#
CPURST#
MCH_66
PCIRST#1
CPURST#
H_VREF0
H_VREF1
H_VREF2
H_VREF3
H_VREF4
HVREF
H_SWNG0
H_SWNG1
HSWNG
HI_REF
HL_RCOMP
HUB_MREF
R127 40.2RST
VCC1_8
H_RCOMP0
H_RCOMP1
U8C
POWER
VCC_AGP
VCC_DIMM
VTT1
VTT2
VTT_GND1
VTT_GND2
Brookdale_MCH
HL_STB/HL_STB#
Taces 5mils
20mils HL[0:10]
HL_STB
15mils HL_STB#
20mils HL[0:10]
* Max Length : 8"
* STB and STB# Length must be equal
HL[10..0]
20mils Others
15mils HL[0:10]
HL[0:10]
20mils Others
* Max Length : 8"
* Length must be matched within +/- 0.1" of the Strobe Signals
MCH REFERENCE BLOCK
VTT1
VTT_GND1
CB98 104P
C84 226P/1206
C82 106P/1206
L3 4.7uH/1206
VCC_AGP
VTT2
VTT_GND2
CB99 104P
C83 106P/1206
C85 226P/1206
L4 4.7uH/1206
VCCP
R88 301RST
HSWNG
C64 104P
C75 103P
C73 103P
R89 150RST
Place 1 Cap. as Close as possible to every pin of MCH
Trace width use 15 mils and 15mils space
R73 49.9RST
HVREF
C184 X_103P/B
C183
C182 103P
C181
C62 103P
R69 100RST
C63 104P
X_103P/B
Place 1 Cap. as Close as possible to every pin of MCH
Trace width use 15 mils and 15mils space
VCC1_8
R130 150RST
HUB_MREF
C97 103P
C89 104P
C90 104P
R126 150RST
Place 0.01uF Cap. as Close as possible to MCH
Trace width use 15 mils and 15mils space
MCH Trace Decoupling Capacitors
CB217 X_104P/B
CB85 104P
CB82 104P
CB18 104P
CB104 104P
CB219 X_104P/B
ADDRESS
DATA
MCH & ICH2
Micro-Star
Title
MS-6529
Rev
0A
Document Number
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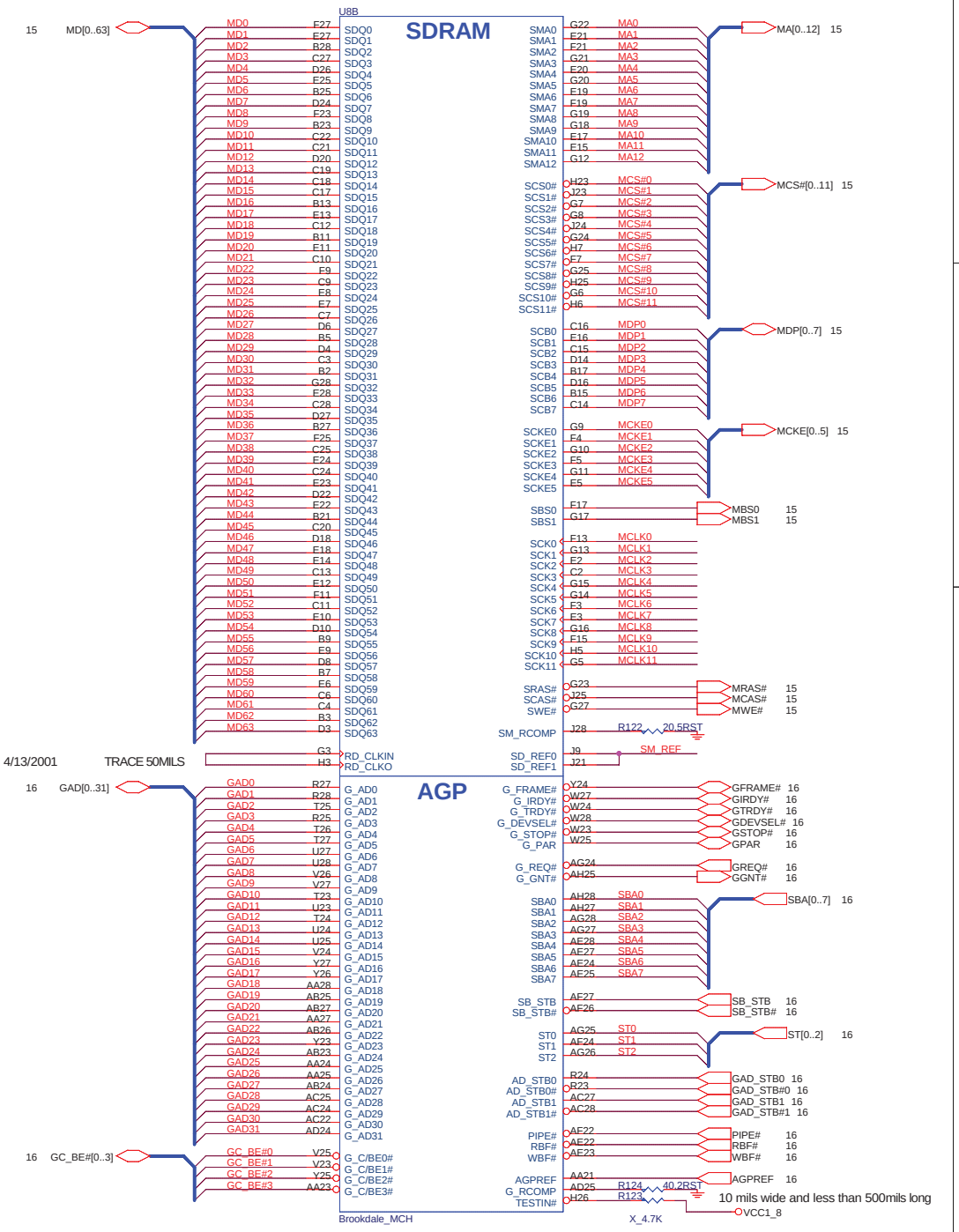
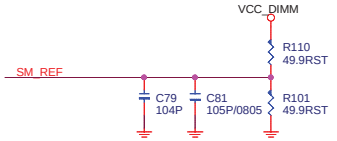
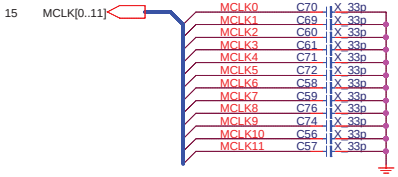


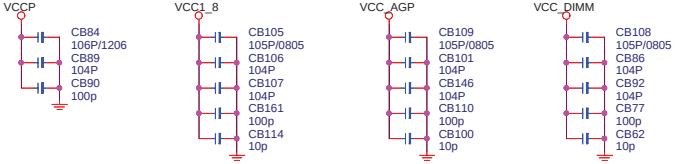
MCH REFERENCE VOLTAGE

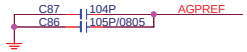


MCH MEMORY CLOCK RC CIRCUITS



MCH DECOUPLING CAPACITOR





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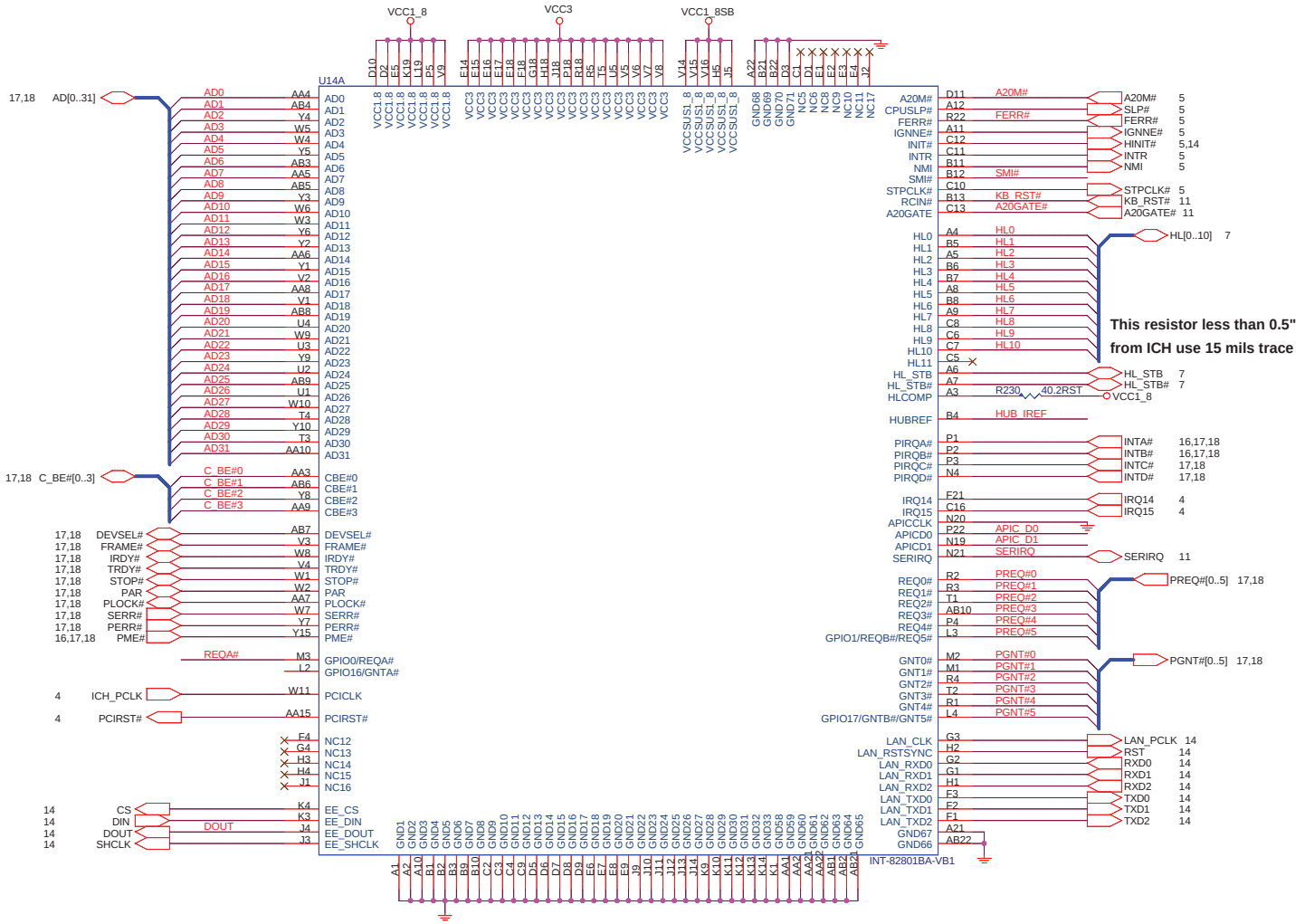
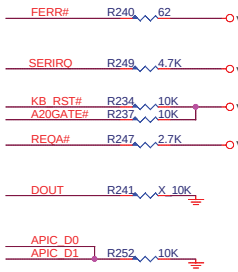
ICH2 PCI / HUB LINK / CPU / LAN / INTERRUPT SIGNALS



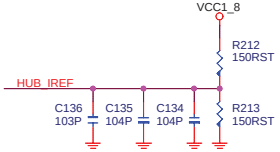
This resistor less than 0.5" from ICH use 15 mils trace

ICH2 SMI# SIGNAL

ICH2 STRAPPING RESISTORS

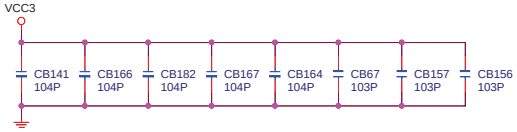


ICH2 REFERENCE VOLTAGE

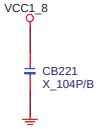


Place Cap. as Close as possible to ICH2
Trace width use 15 mils and 15mils space

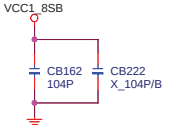
ICH2 DECOUPLING CAPACITORS



Place one 0.1U/0.01U pair in each corner and 2 on opposite sides close to ICH2 if it fit



Distribute near the 1.8V power pin of the ICH2



Distribute near the VCC1_8SB Power pin of the ICH2

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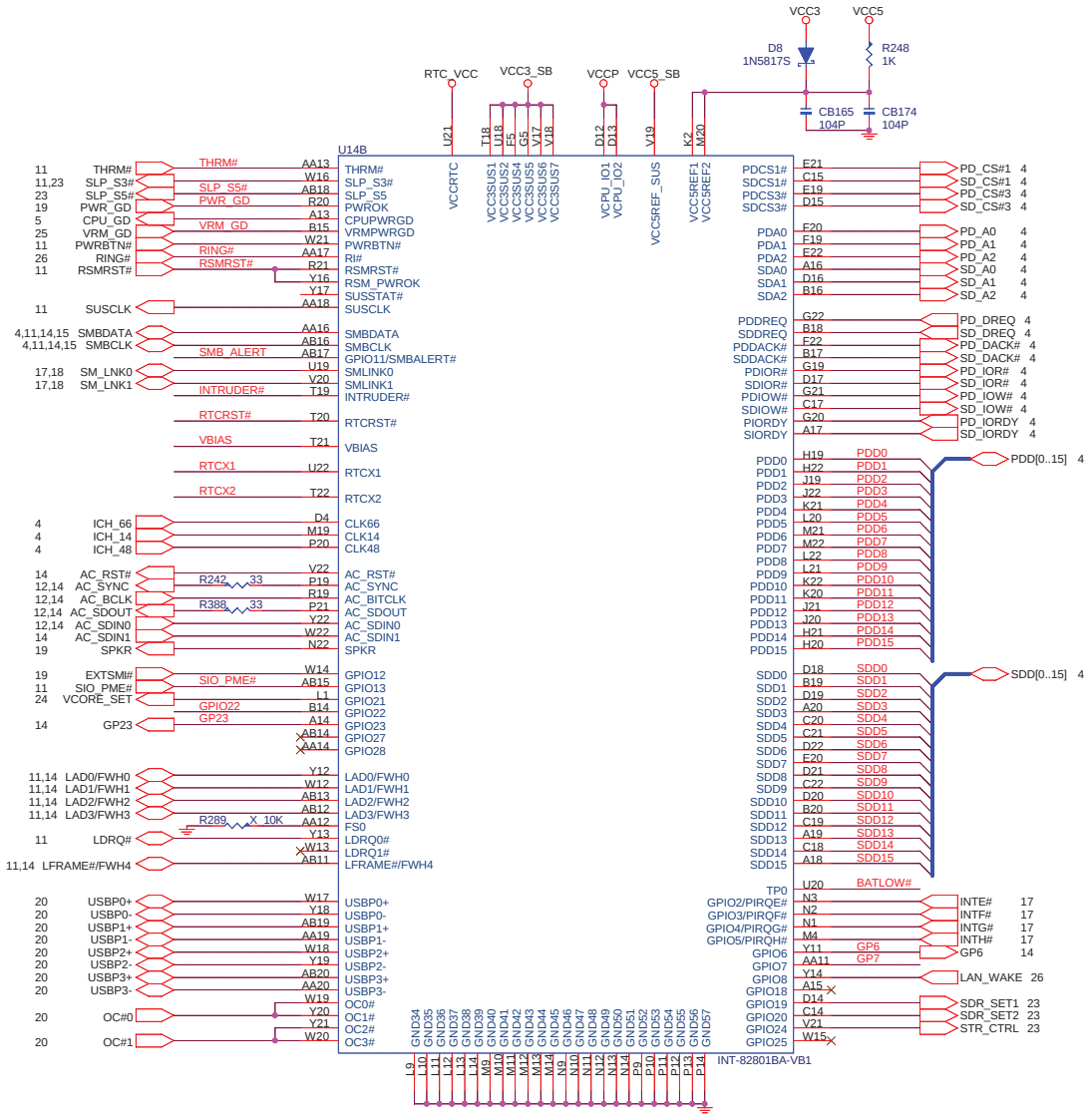
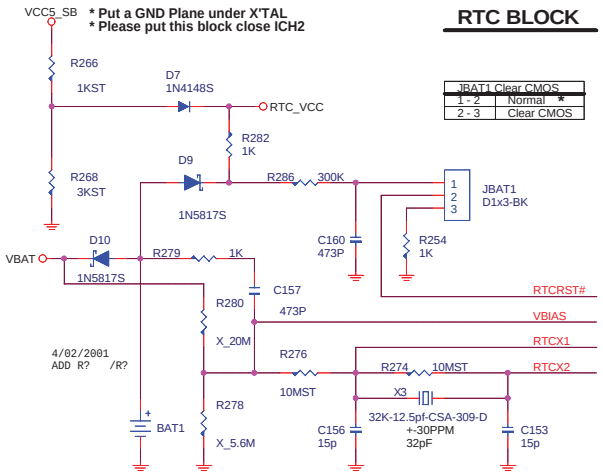
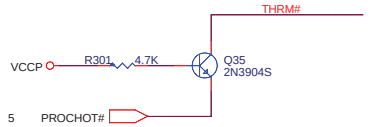
ICH2 ASIC / RTC / AC'97 / GPIO / LPC / USB / IDE SIGNALS



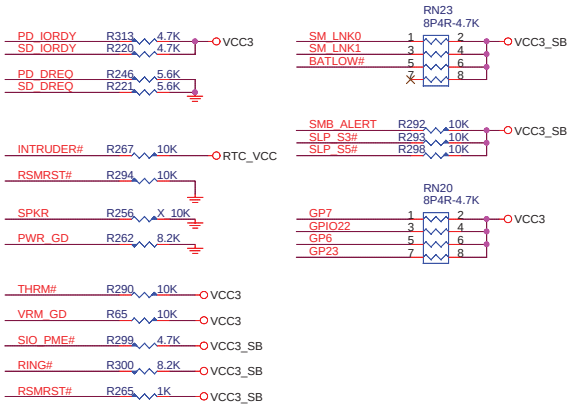
RTC BLOCK



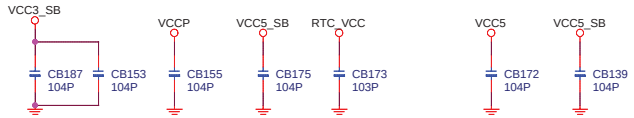
PROCHOT BLOCK



ICH2 STRAPPING RESISTORS



ICH2 DECOUPLING CAPACITOR



Distribute near the VCC3_SB power pin of the ICH

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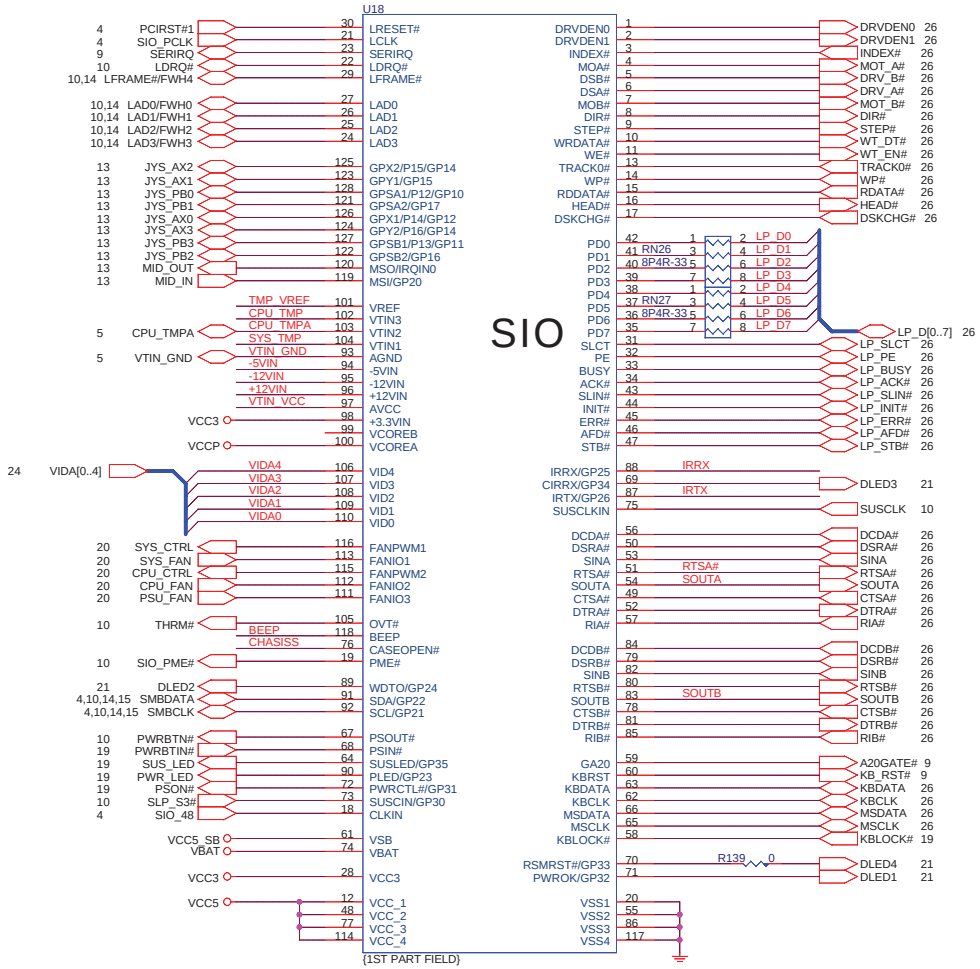
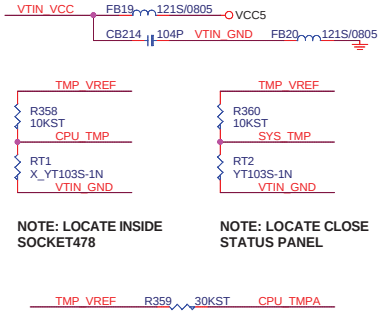
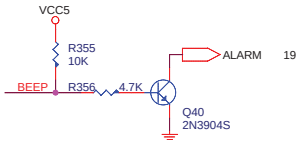
LPC SUPER I/O W83627HF



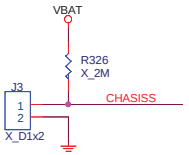
THERMAL RESISTOR BLOCK



SPEAKER BLOCK

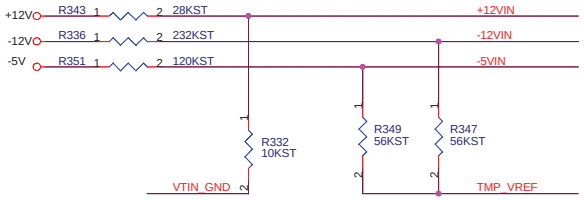


CHASISS INTRUSION HEADER



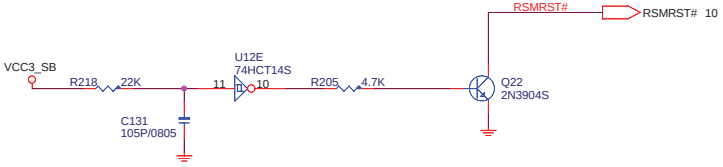
SUPER I/O STRAPPING RESISTOR

SOUTA	L: Disable KBC	H: Enable KBC
SOUTB	L: 24MHZ	H: 48MHZ
RTSA#	L: CFAD=2E	H: CFAD=4E
DTRA#	L: PNP Default	H: PNP no Default

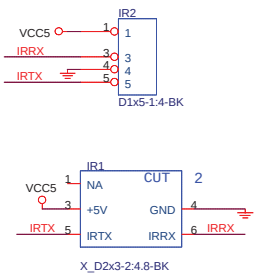


3/16/2001

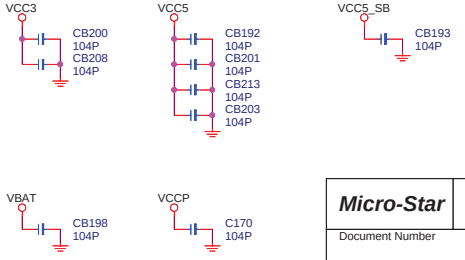
RESUME RESET CIRCUIT BLOCK



IR HEADER



DECOUPLING CAPACITOR



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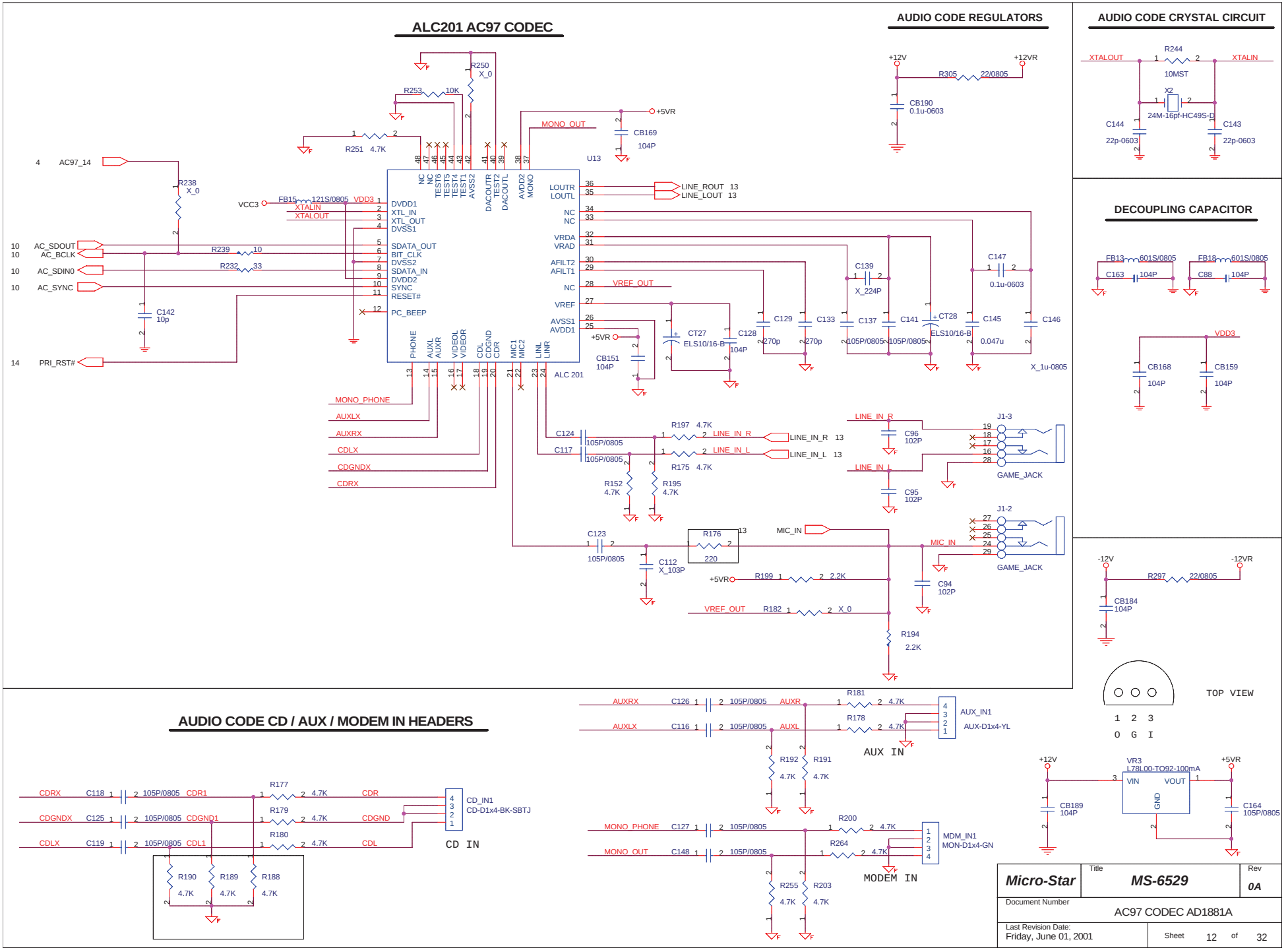
ALC201 AC97 CODEC
AUDIO CODE REGULATORS
AUDIO CODE CRYSTAL CIRCUIT
DECOUPLING CAPACITOR
AUDIO CODE CD / AUX / MODEM IN HEADERS
U13
ALC 201
AC97_14
PRI_RST#
AC_SDOUT
AC_BCLK
AC_SDIN0
AC_SYNC
VCC3
XTALIN
XTALOUT
MONO_OUT
LINE_ROUT 13
LINE_LOUT 13
VREF_OUT
MONO_PHONE
AUXLX
AUXRX
CDLX
CDGNDX
CDRX
LINE_IN_R
LINE_IN_L
MIC_IN
GAME_JACK
AUX IN
MODEM IN
CD IN
TOP VIEW
1 2 3
O G I
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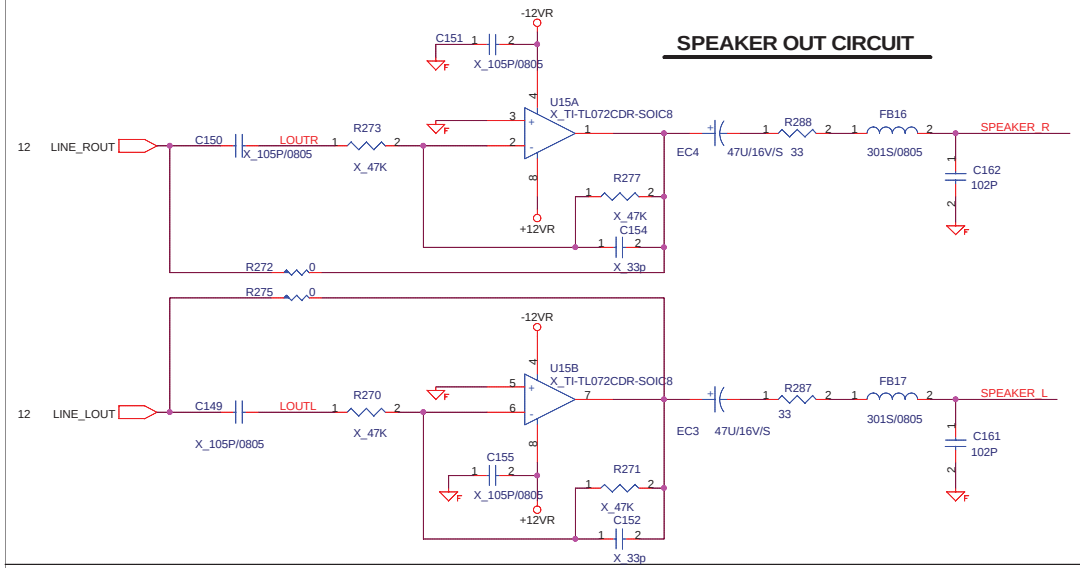
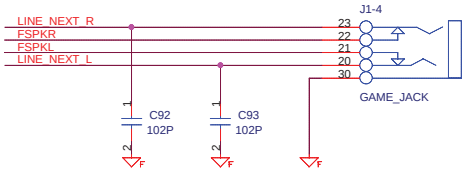
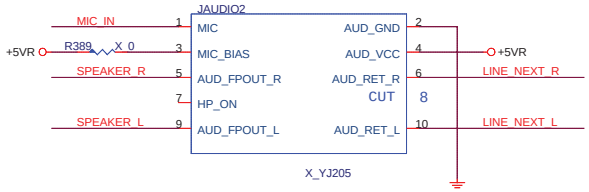
SPEAKER OUT CIRCUIT

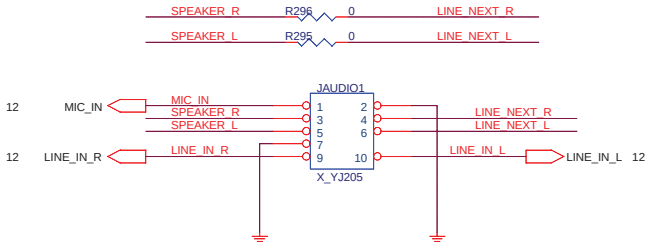


SPEAKER OUT JACK

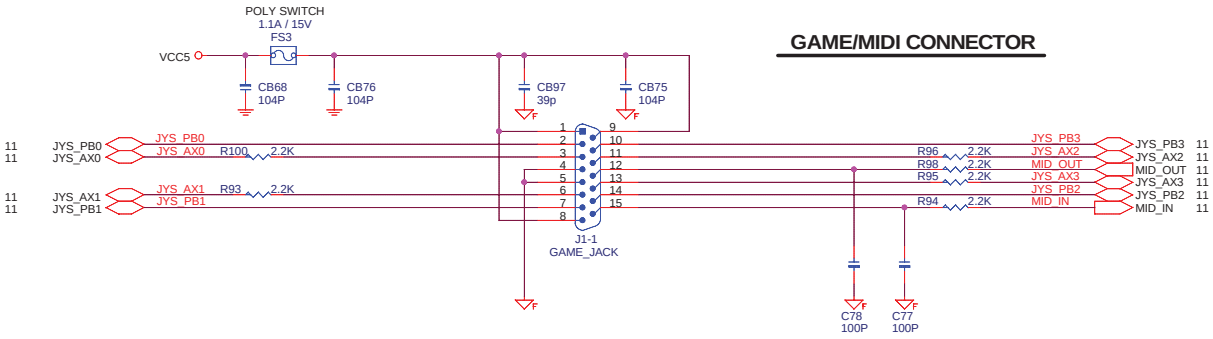


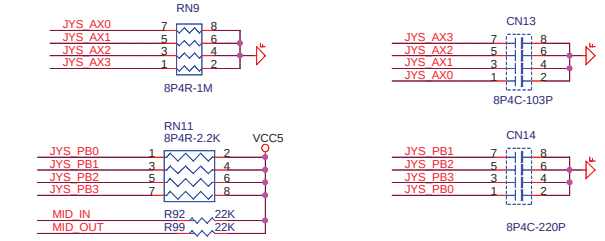


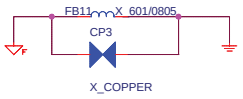
FOR MSI INTERNAL HEADER



GAME/MIDI CONNECTOR







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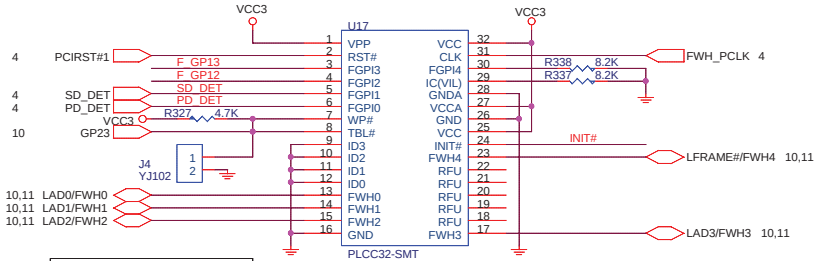
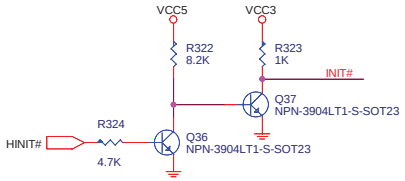
Firware Hub (FWH)

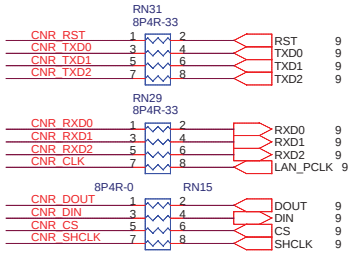


J4 BIOS Update	
SHORT	Locked
* OPEN	Unlocked

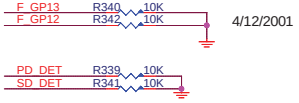
FWH INIT Signal Voltage Translation Block



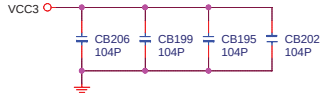
CNR Damping Resistor Net



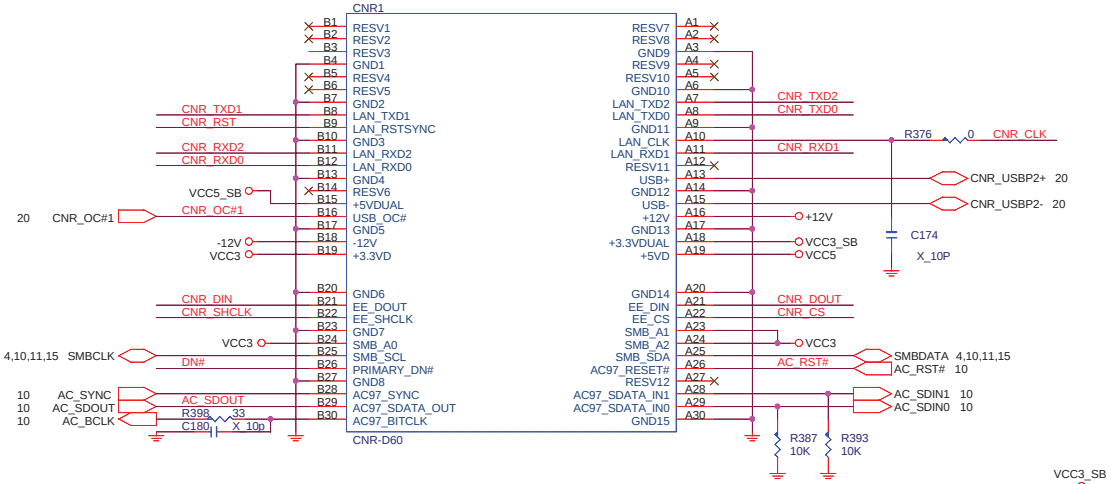
FWH RESISTORS



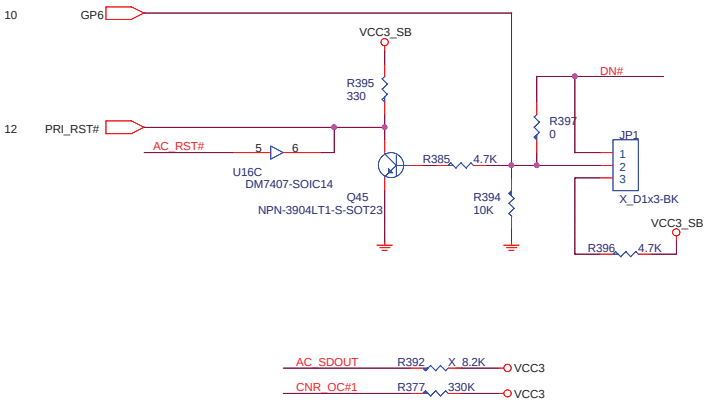
FWH DECOUPLING CAPACITORS



CNR RISER



JP2	AUDIO DOWN
1 - 2	Auto mode
2 - 3	Disabled onboard audio codec



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	Document Number: FWH & CNR RISER	
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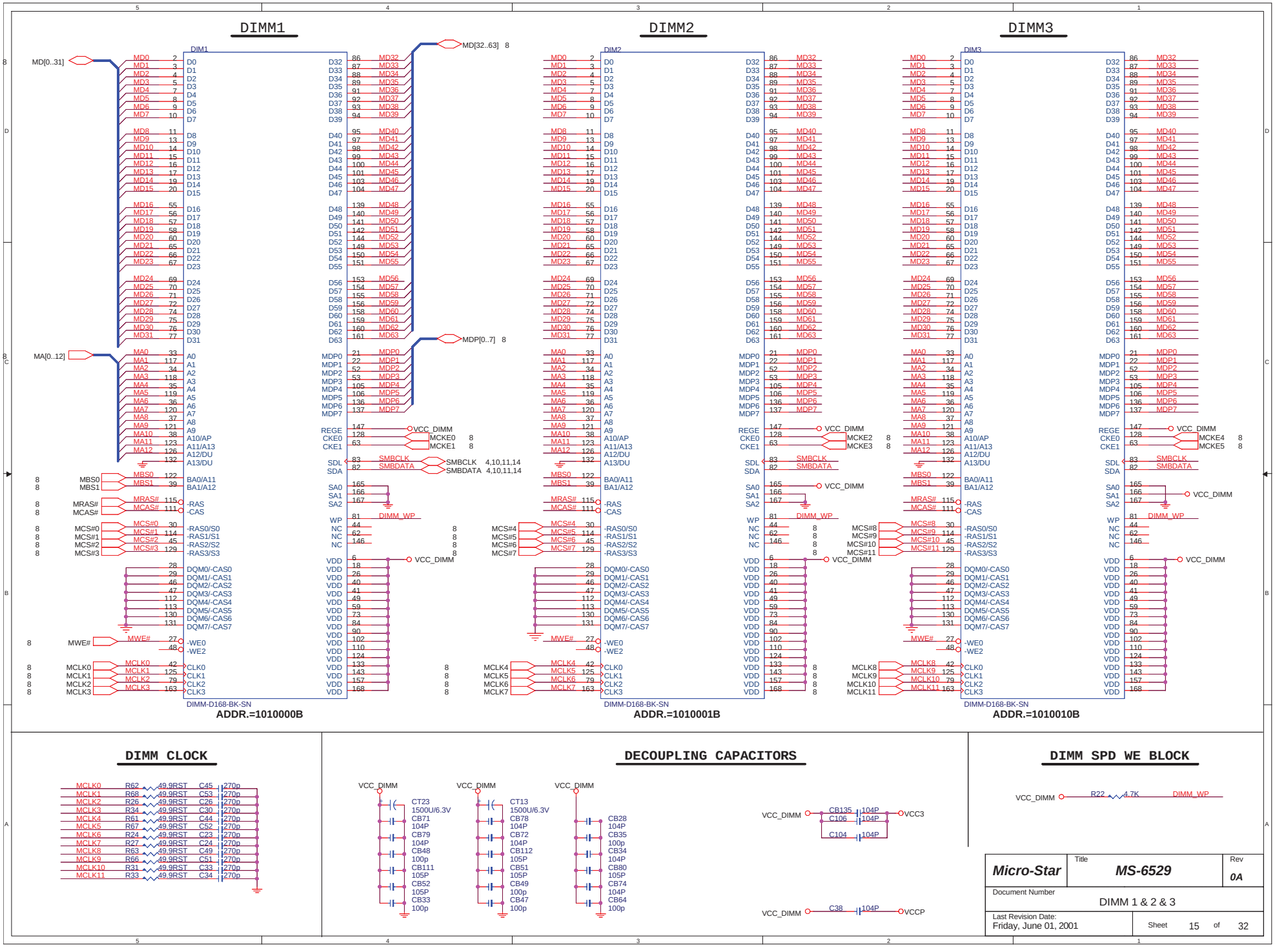
DIMM1
DIMM2
DIMM3
MD[0..31]
MD[32..63] 8
MDP[0..7] 8
MA[0..12]
DIM1
DIM2
DIM3
DIMM-D168-BK-SN
ADDR.=1010000B
ADDR.=1010001B
ADDR.=1010010B
DIMM CLOCK
DECOUPLING CAPACITORS
DIMM SPD WE BLOCK
VCC_DIMM
DIMM_WP
SMBCLK
SMBDATA
MCKE0
MCKE1
MCKE2
MCKE3
MCKE4
MCKE5
MBS0
MBS1
MRAS#
MCAS#
MWE#
VCC3
VCCP
R22 4.7K
C135 104P
C106 104P
C104 104P
C38 104P
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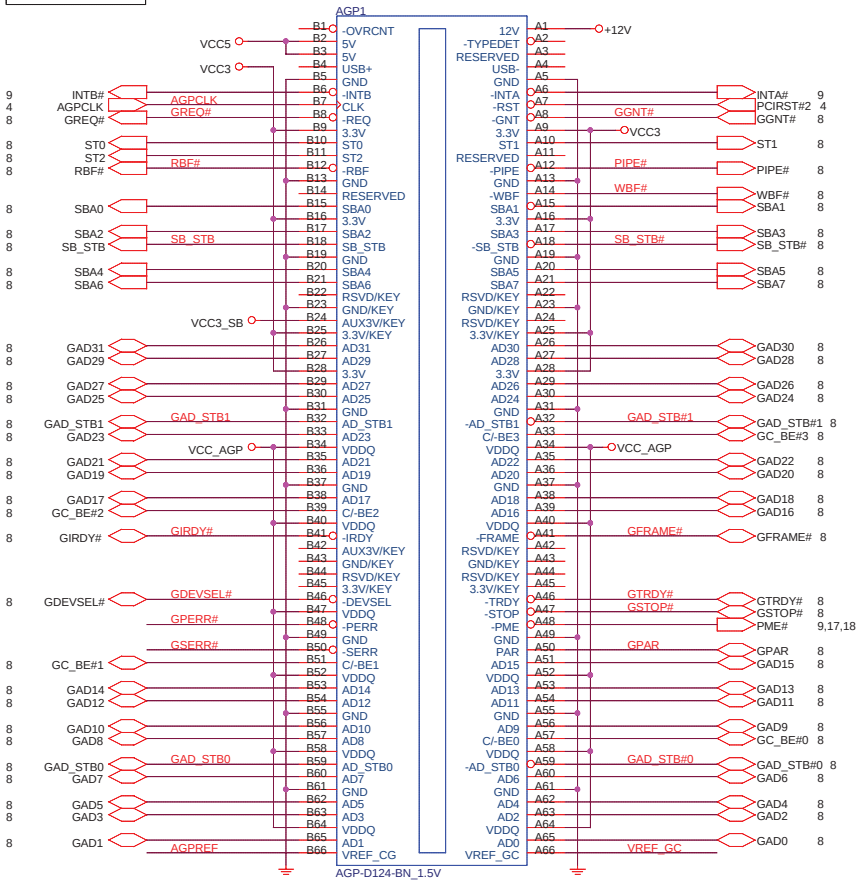
AGP UNIVERSAL 2X/4X SLOT(AGP VER:2.0 COMPLY)

VCC5 = 60mils trace / 15 mils space

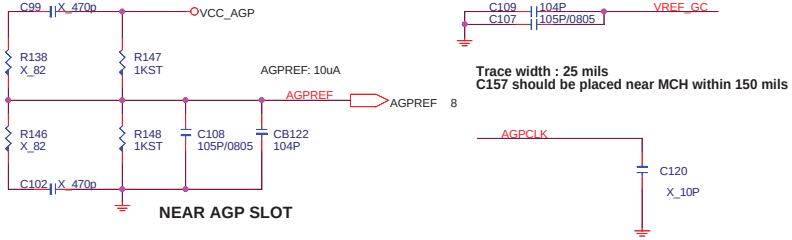
AGP Slot Imax

VCC_AGP 8.0A
VCC3 6.0A
VCC12 1.0A
VCC5 2.0A

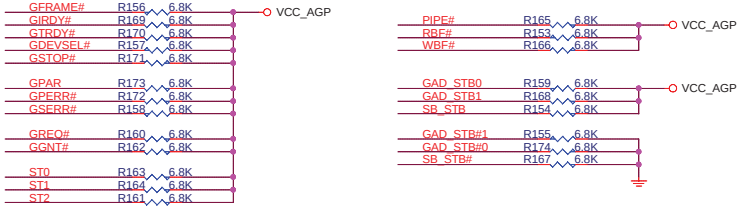
INTA#
INTB#



AGP SIGNAL REFERENCE CIRCUIT



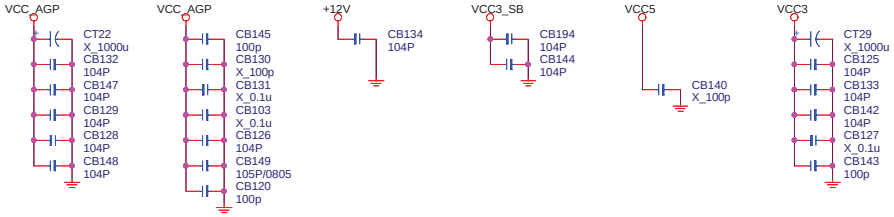
AGP TERMINATION RESISTORS



LESS 100MILS STUB TRACE LENGTH MUST BE FOLLOWING.

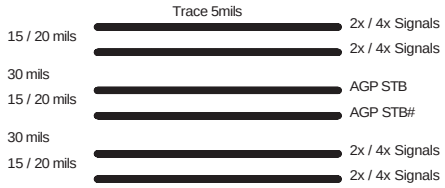
Place these resistors between PCI and AGP slot

AGP SLOT DECOUPLING CAPACITORS



1X Timing group	2X/4X Timing group
AGPCLK PIPE# RBF# WBF# ST[2..0] GFRAME# GIRDY# GTRDY# GSTOP# GDEVSEL# GREQ# GGNT# GPAR	SET#1 GAD[15..0] GC_BE#[1..0] GAD_STB0 GAD_STB0# SET#2 GAD[31..16] GC_BE#[3..2] GAD_STB1 GAD_STB1# SET#3 SBA[7..0] SB_STB SB_STB#

SIGNALS	Maximum Length	Width	Space	Dismatch Length	Relative to
1X Timing group	7.5"	5 mil	5 mil	X	X
2X/4X Timing group SET#1	7.25"	5 mil	20 mil	+/- 0.125"	GAD_STB0 GAD_STB0#
2X/4X Timing group SET#2	7.25"	5 mil	20 mil	+/- 0.125"	GAD_STB1 GAD_STB1#
2X/4X Timing group SET#3	7.25"	5 mil	20 mil	+/- 0.125"	SB_STB SB_STB#
2X/4X Timing group SET#1	6"	5 mil	15 mil	+/- 0.25"	GAD_STB0 GAD_STB0#
2X/4X Timing group SET#2	6"	5 mil	15 mil	+/- 0.25"	GAD_STB1 GAD_STB1#
2X/4X Timing group SET#3	6"	5 mil	15 mil	+/- 0.25"	SB_STB SB_STB#



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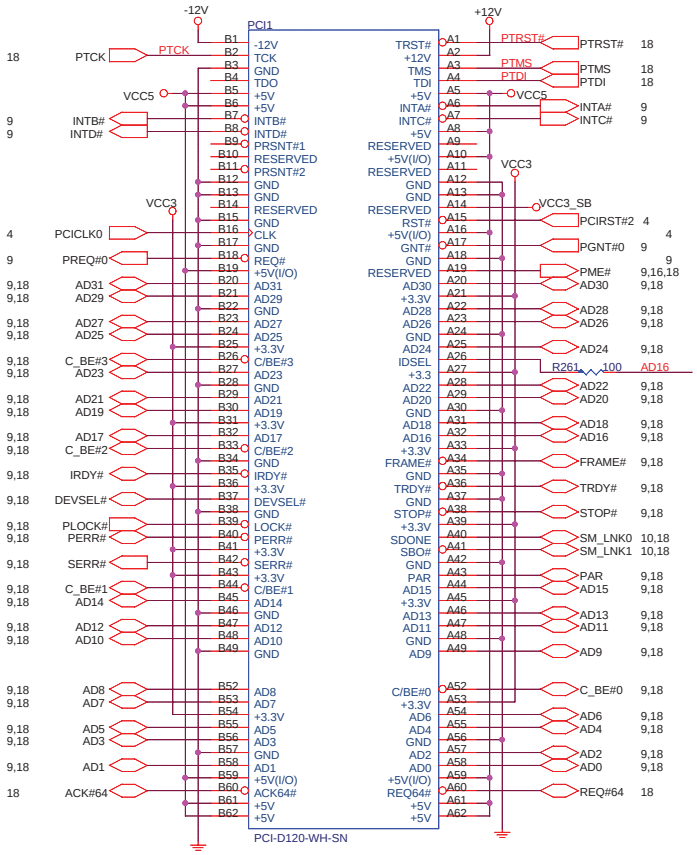
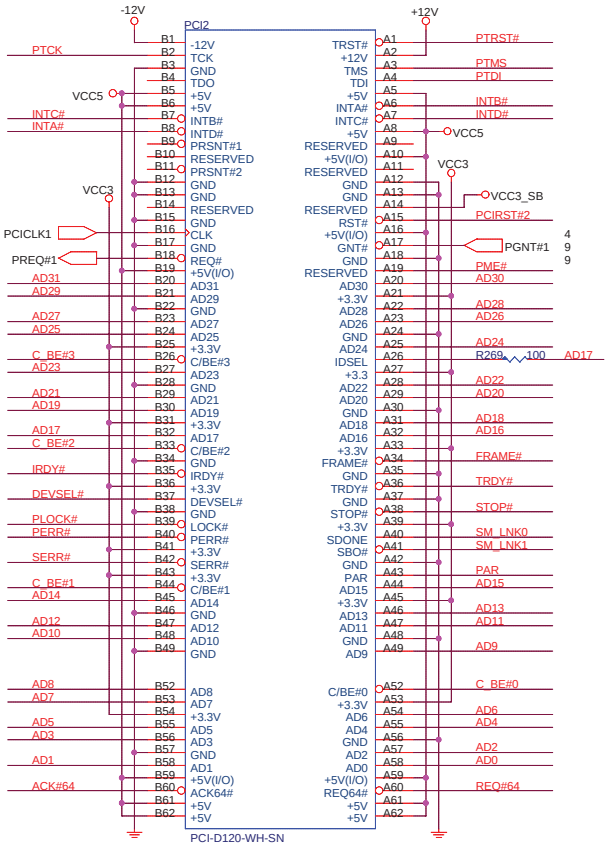
PCI SLOT 1 (PCI VER: 2.2 COMPLY)



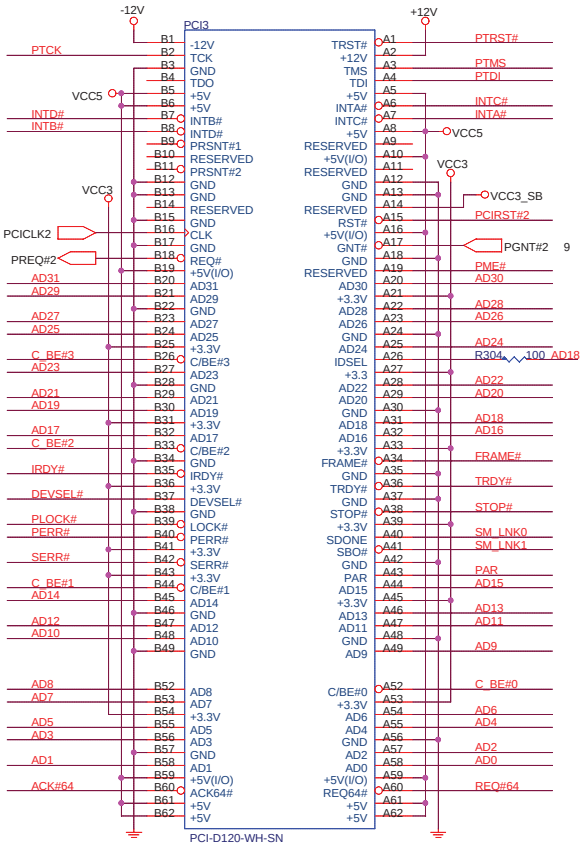
IDSEL = AD16
MASTER = PREQ0
INTA#

PCI SLOT 2 (PCI VER: 2.2 COMPLY)



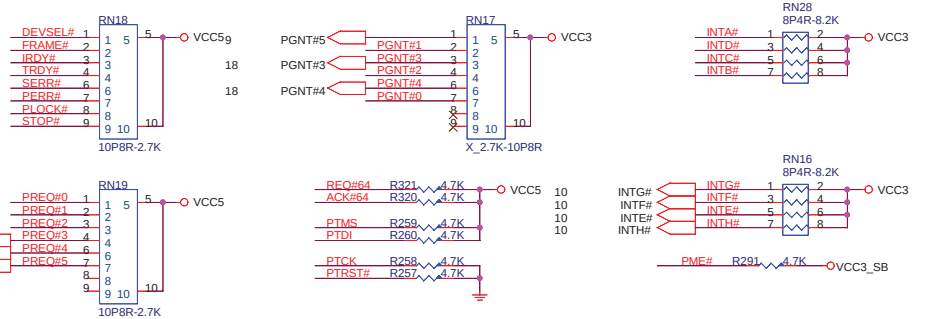
IDSEL = AD17
MASTER = PREQ1
INTB#

PCI SLOT 3 (PCI VER: 2.2 COMPLY)

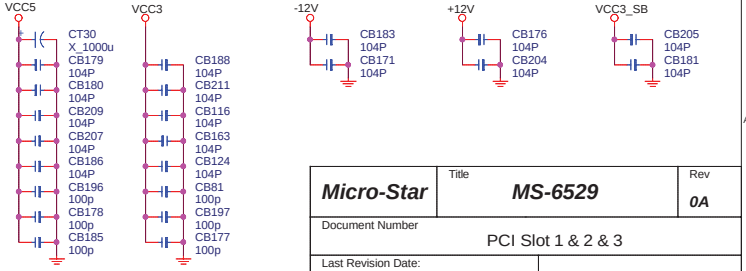


IDSEL = AD18
MASTER = PREQ2
INTC#

PCI PULL-UP / DOWN RESISTORS



PCI SLOT DECOUPLING CAPACITORS



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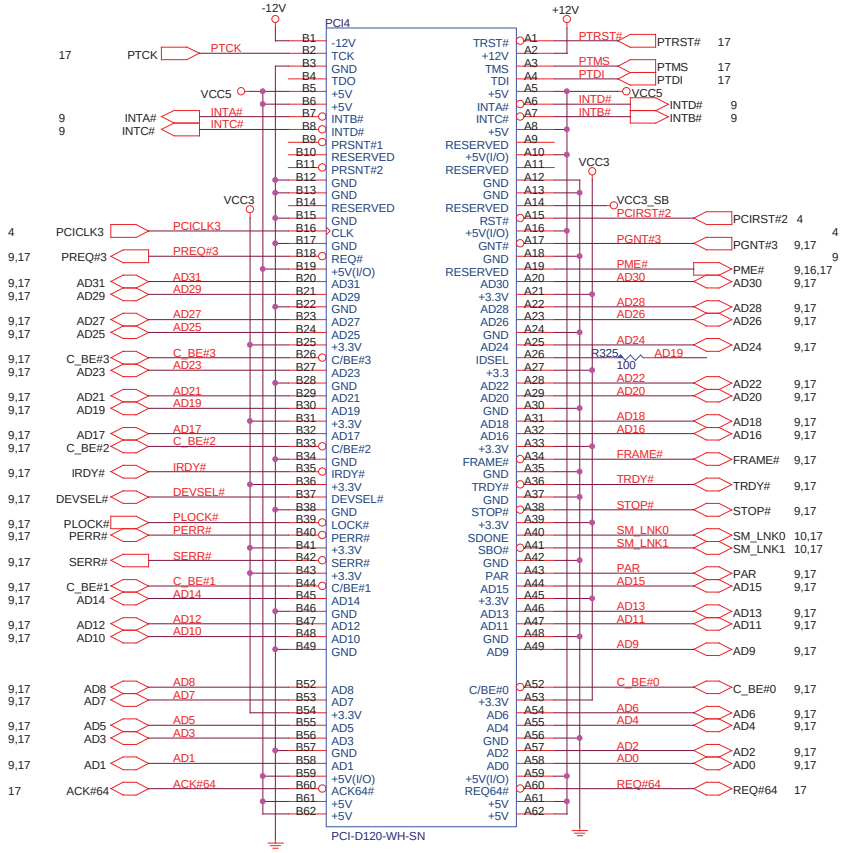
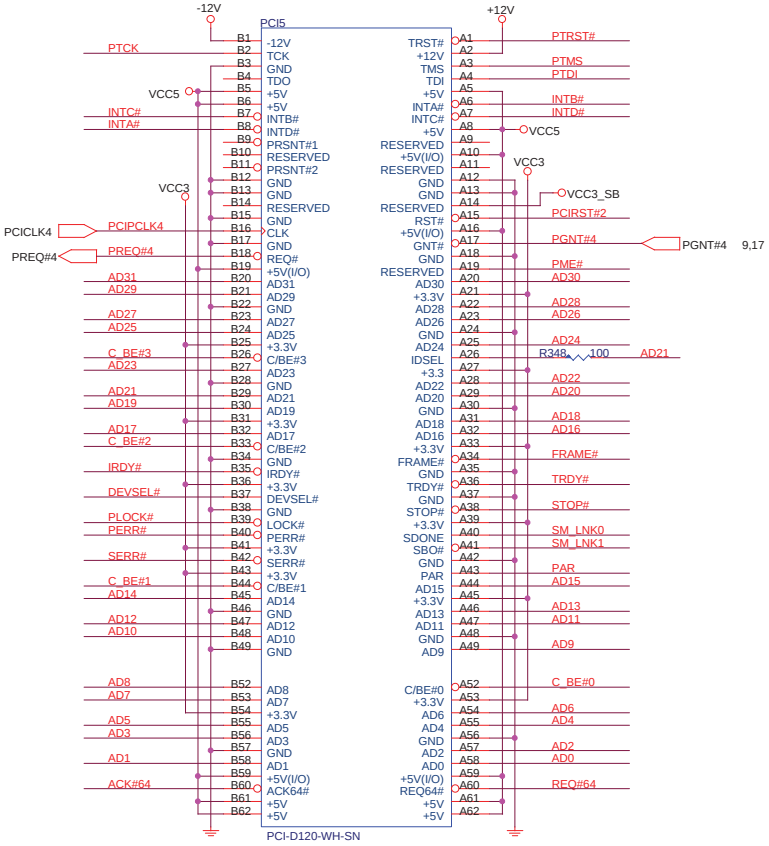
PCI SLOT 4 (PCI VER: 2.2 COMPLY)



IDSEL = AD19
MASTER = PREQ3
INTD#

PCI SLOT 5 (PCI VER: 2.2 COMPLY)



IDSEL = AD21
MASTER = PREQ4
INTA#

Micro-Star	Title: MS-6529		Rev: 0A
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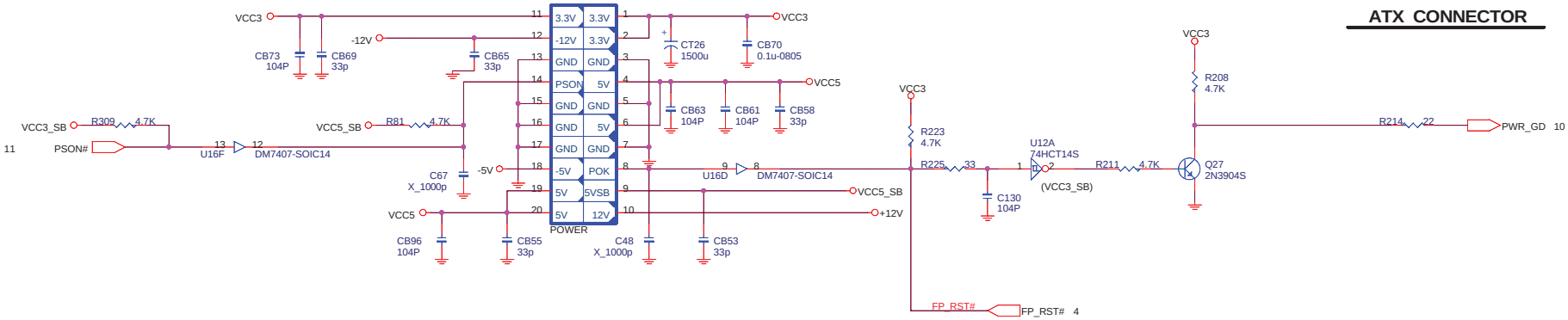
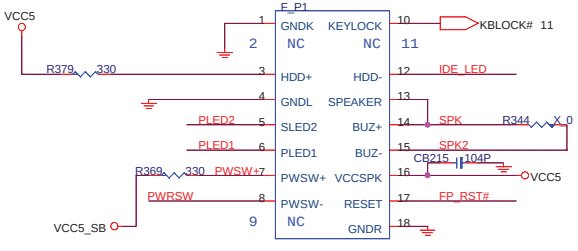
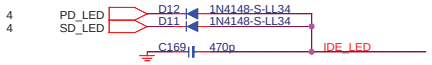
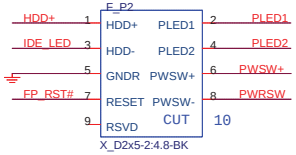
ATX_CONNECTOR

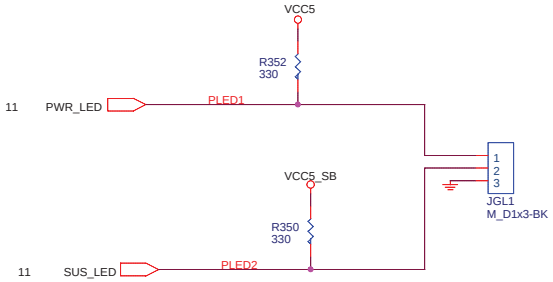


Brookdale FRONT PANEL-M

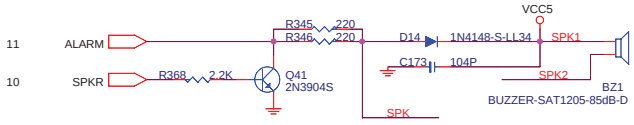




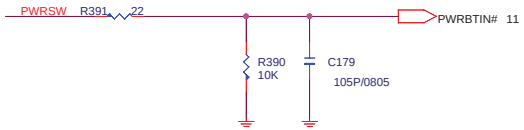


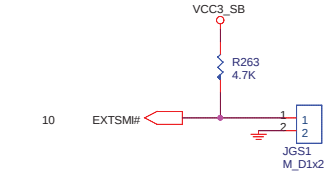


SPEAKER



POWER BUTTON





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Document Number: Front Panel & Connector		
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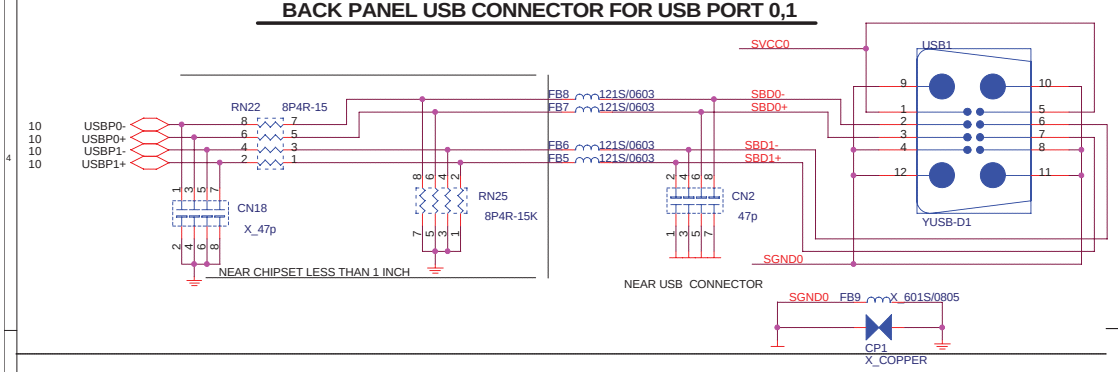
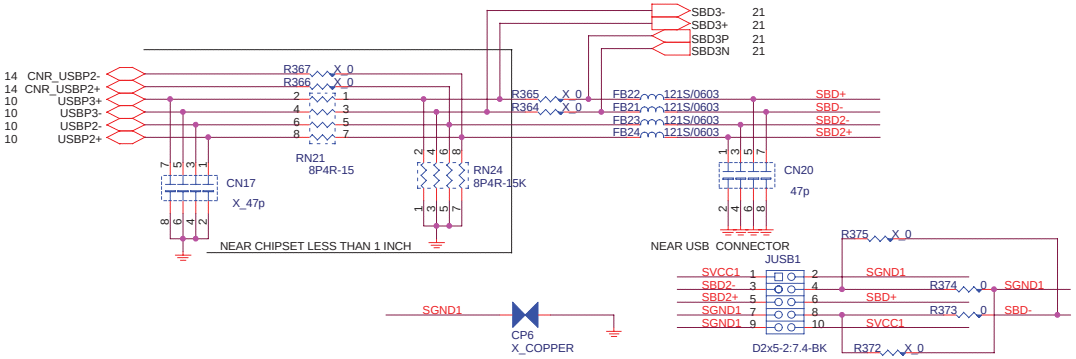
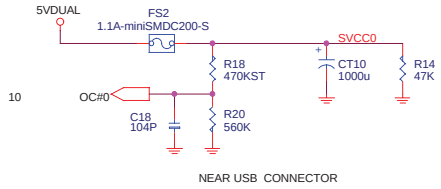
BACK PANEL USB CONNECTOR FOR USB PORT 0,1



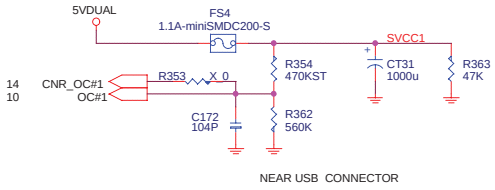
FRONT PANEL USB CONNECTOR FOR USB PORT 2,3



POWER CIRCUIT FOR USB PORT 0,1



POWER CIRCUIT FOR USB PORT 2, 3



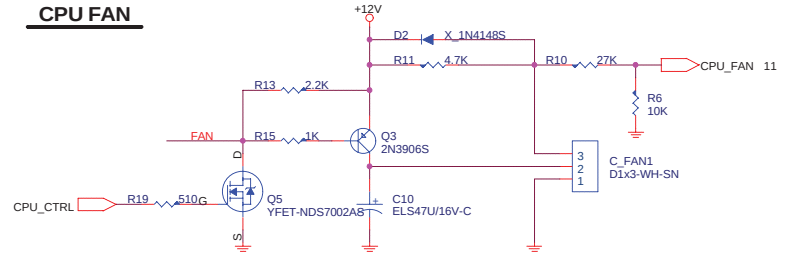
*** USB Trace width : 9 mils**

*** USB Trace Spacing : 25 mils**

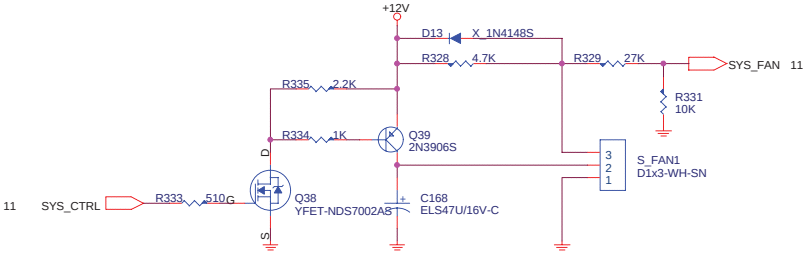
*** Differential USB Signlas Trace Spacing : 18 mils**

*** USB Power Trace must be 40mils width**

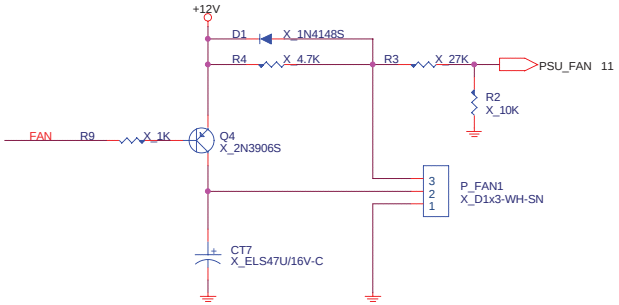
CPU FAN



SYSTEM FAN



ATX PSU FAN ON/OFF CONTROL



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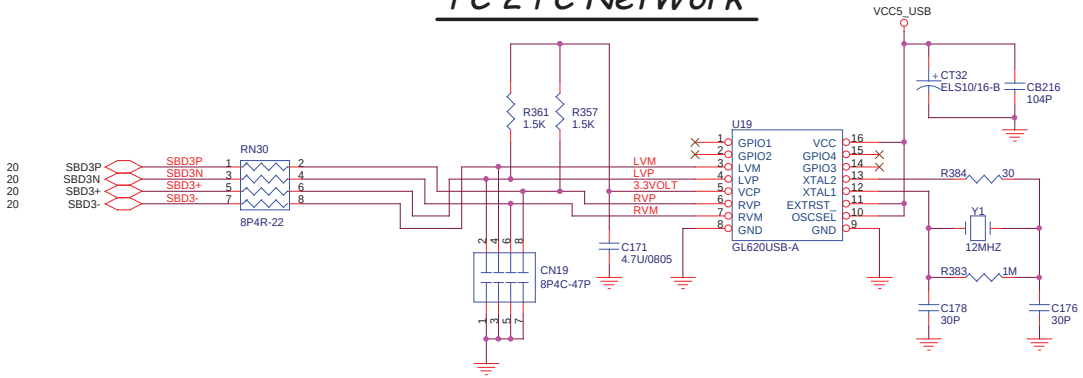
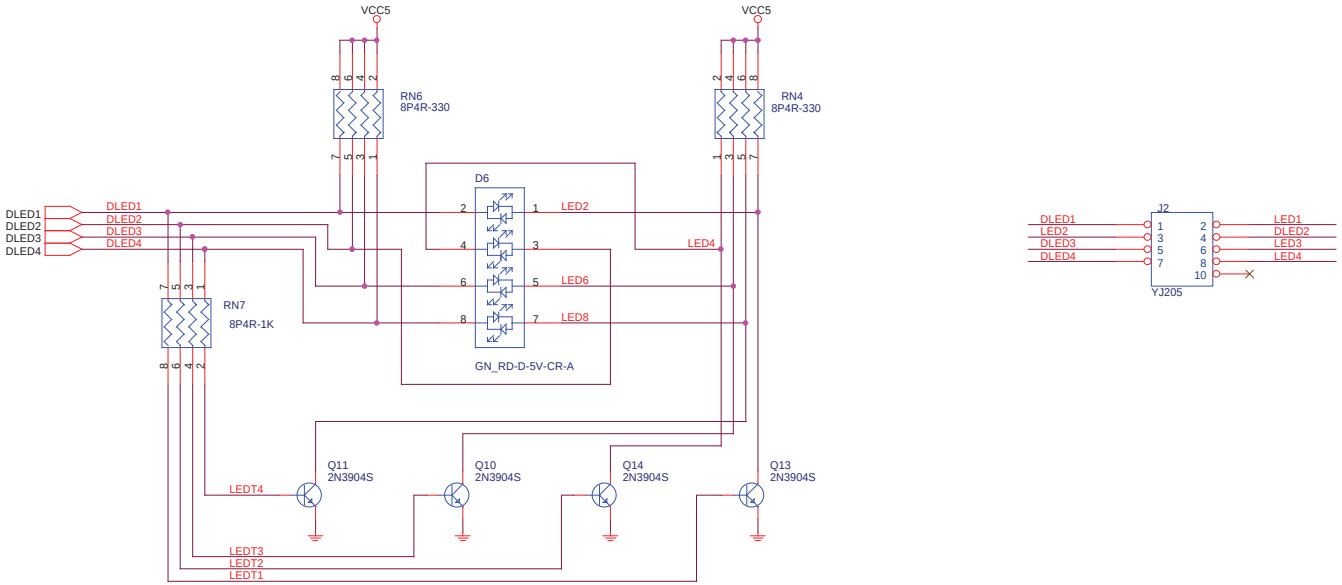
PC 2 PC NetWork



DLED



Micro-Star	Title: MS-6529	Rev: 0A
Document Number: PC2PC & D-LED		
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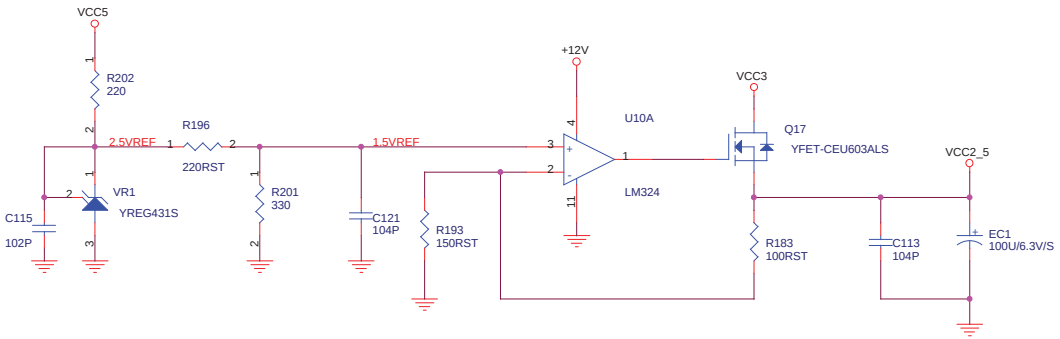
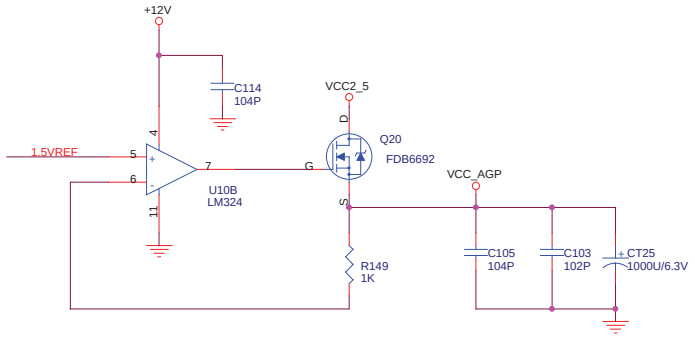
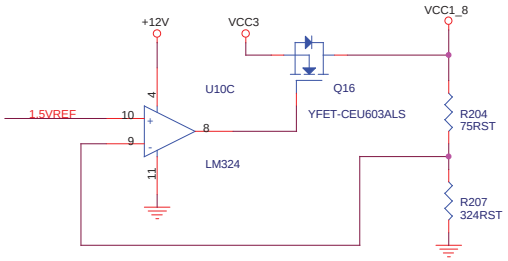
AGP Power

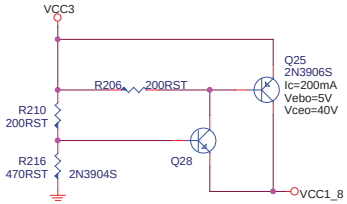




Chipset Power

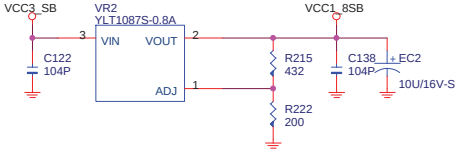


1.8V/3.3V SEQUENCE CIRCUIT

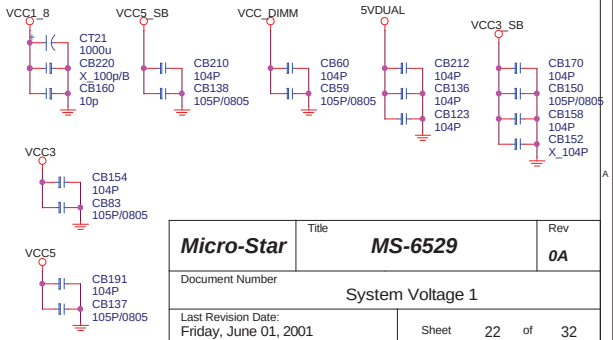


1.8V STANDBY POWER TRANSLATOR

(40mils trace / 20 mils space)



REGULATORS OUTPUT DECOUPLING CAPACITORS



Micro-Star	Title: MS-6529	Rev: 0A
Document Number: System Voltage 1		
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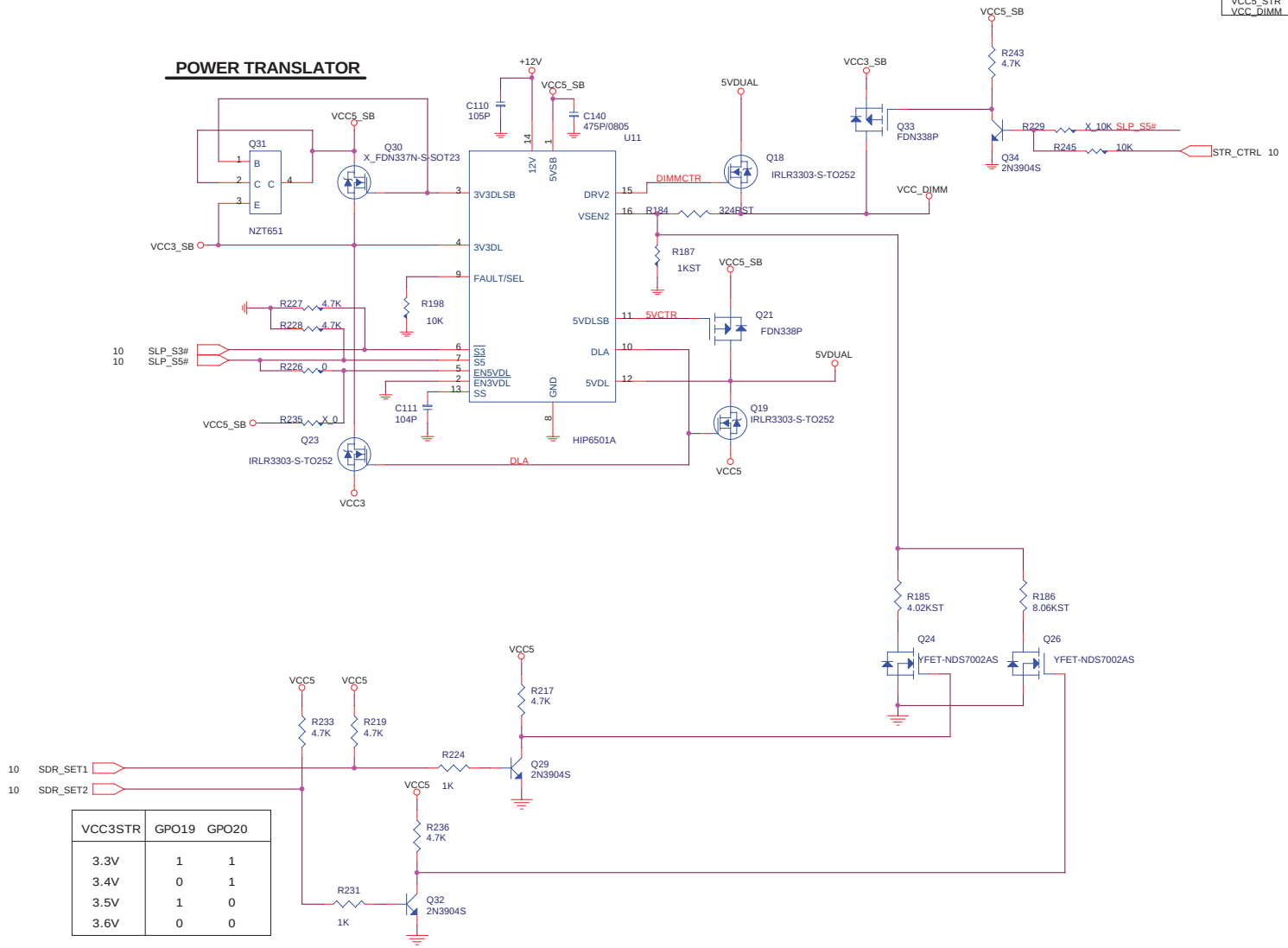
Power	S0	S3	S5
VCC3_SB	Main	Standby	Standby
VCC5_STR	Main	Standby	0V
VCC_DIMM	Main	Standby	0V

POWER TRANSLATOR



VCC3STR	GPO19	GPO20
3.3V	1	1
3.4V	0	1
3.5V	1	0
3.6V	0	0

Power	S0	S3	S5
VCC3_SB	Main	Standby	Standby
VCC5_STR	Main	Standby	0V
VCC_DIMM	Main	Standby	0V

Micro-Star	Title: MS-6529	Rev: 0A
Document Number: System Voltage 2		
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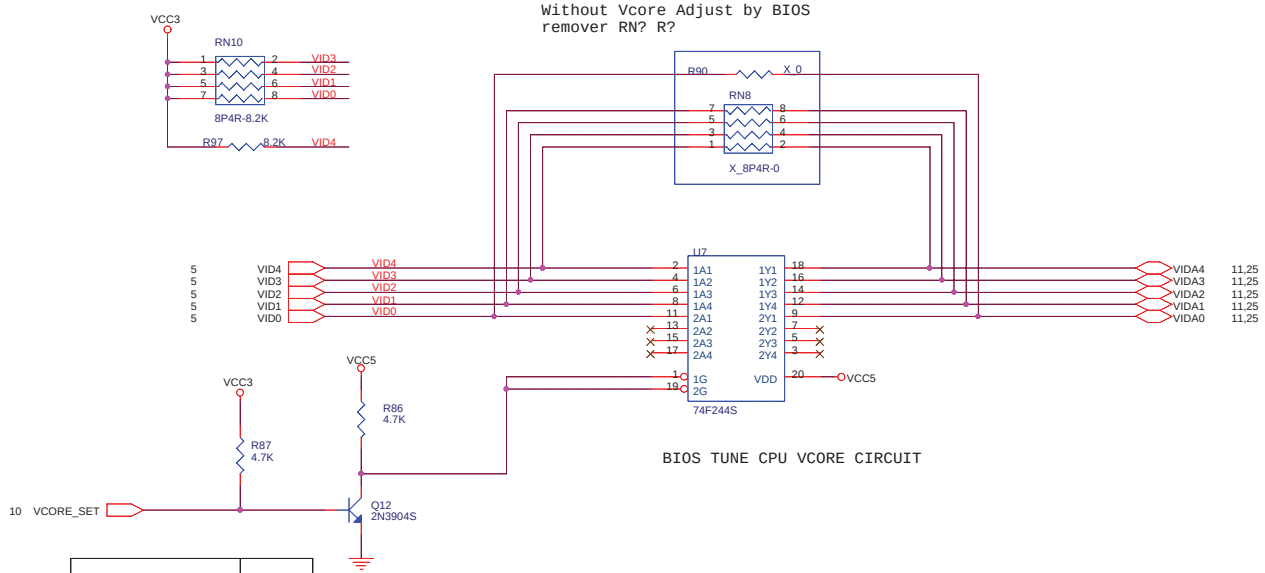
CPU VID Control



VCORE Setting	GPIO21
CPU Default	1
Maanuel Setting	0

Micro-Star	Title: MS-6529	Rev: 0A
Document Number: CPU VID Control		
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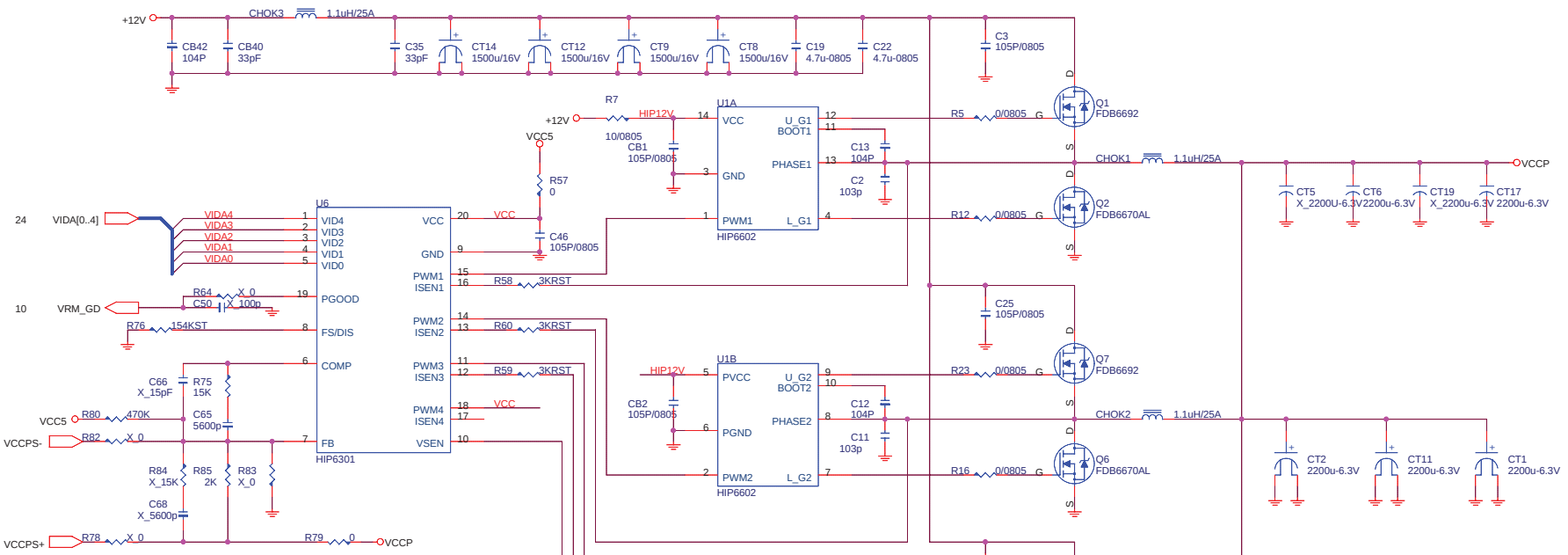


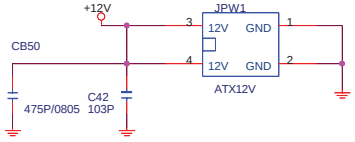
VID4	VID3	VID2	VID1	VID0	VDC(V)
1	1	1	1	0	1.100
1	1	1	0	1	1.125
1	1	1	0	0	1.150
1	1	0	1	1	1.175
1	1	0	1	0	1.200
1	1	0	0	1	1.225
1	1	0	0	0	1.250
1	0	1	1	1	1.275
1	0	1	1	0	1.300
1	0	1	0	1	1.325
1	0	1	0	0	1.350
1	0	0	1	1	1.375
1	0	0	1	0	1.400
1	0	0	0	1	1.425
1	0	0	0	0	1.450
0	1	1	1	1	1.475

VID4	VID3	VID2	VID1	VID0	VDC(V)
0	1	1	1	0	1.500
0	1	1	0	1	1.525
0	1	1	0	0	1.550
0	1	0	1	1	1.575
0	1	0	1	0	1.600
0	1	0	0	1	1.625
0	1	0	0	0	1.650
0	0	1	1	1	1.675
0	0	1	1	0	1.700
0	0	1	0	1	1.725
0	0	1	0	0	1.750
0	0	0	1	1	1.775
0	0	0	1	0	1.800
0	0	0	0	1	1.825
0	0	0	0	0	1.850
1	1	1	1	1	OFF

VID PULL-UP RESISTORS

HIP6301V DON'T NEED PULL HIGH
HIP6301 NEED PULL HIGH

ATX12V POWER CONNECTOR



Micro-Star	Title: MS-6529	Rev: 0A
Document Number: VRM 9.2		
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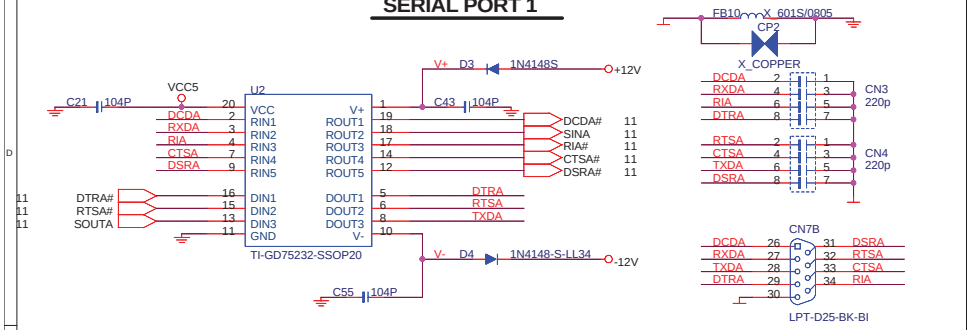
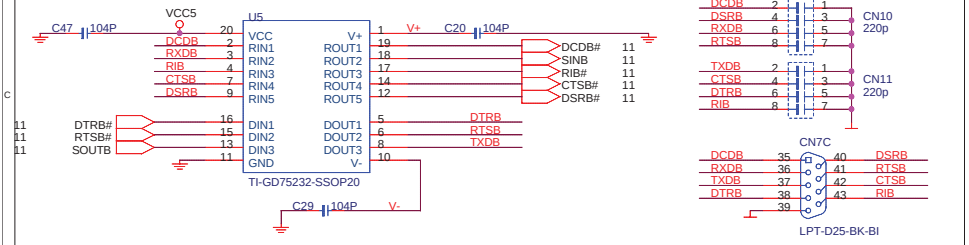
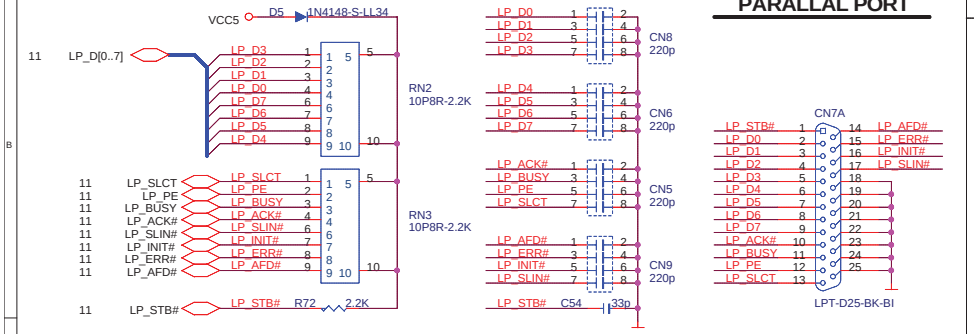
SERIAL PORT 1



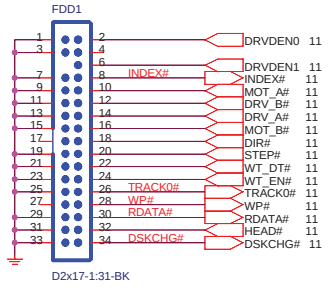
SERIAL PORT 2



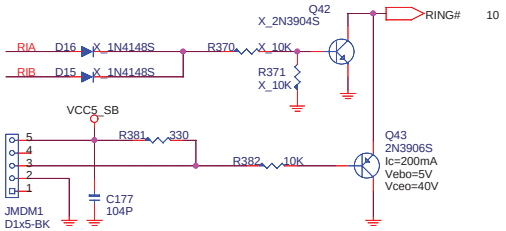
PARALLAL PORT



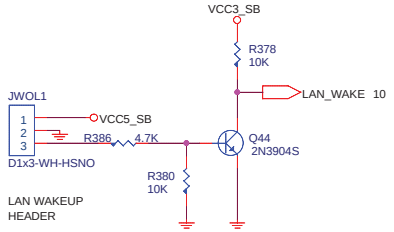
FLOPPY CONNECTOR



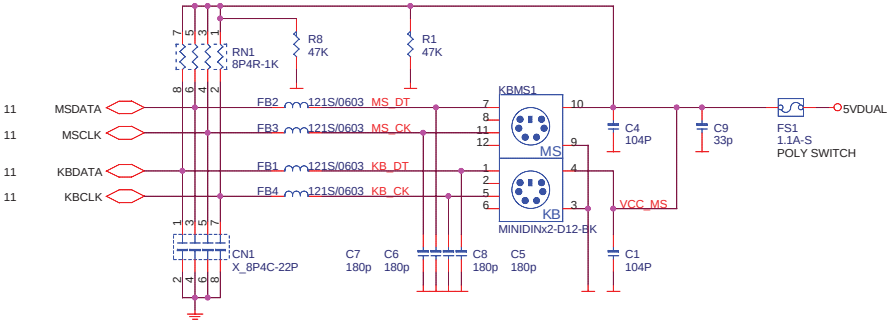
MODEM RING BLOCK



LAN WAKEUP BLOCK



PS2 KEYBOARD & MOUSE CONNECTOR



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Document Number: IO Connector		
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POWER CONSUMPTION

	VCCP	VCC_AGP	VCC1_8	VCC3_DIMM	VCC3	VCC5	VCC5_SB	+12V	-12V
CPU	69.0A	0	0	0	0	0	0	NOTE4	0
MCH	2.4A	NOTE1	0.2A	2.0A	0	0	0	0	0
ICH2	0	0	NOTE3	0	NOTE3	0	NOTE3	0	0
CY28324	0	0	0	0	0	0	0	0	0
AD1881A	0	0	0	0	0		0	0	0
FWH -SST	0	0	0	0			0		
W83627HF	0	0	0	0	0		0	0	0
HIP6301		0	0	0	0		0	0	0
HIP6602A		0	0	0			0	0	0
HIP6601A	0	0	0	0	0	0	0	0	0
SC1547	0	0	0	0	0	0			0
DIMM	0	0	0	NOTE2	0		NOTE2	0	0
AGP	0	8.0A	0	0	6.0A	2.0A	?	1.0A	0
PCI	0	0	0	0		0	0	0	0
USB	0		0	0		0			0
USB HUB	0	0	0	0	0	0	0	0	0
FAN	0	0	0	0	0	0	0	0	0
TTL	0	0	0	0	0	0	0	0	0
AMPLIFIER	0	0	0	0			0	0	0
OTHER	0	0	0	0	0		0		

NOTE1 --- MCH
VCC_AGP = VCC1_5 (1.5A) + VCC_AGP (0.37A)

NOTE2 --- DIMM
S0 STATE --- 2.0A * 3 = 6.0A ---> VCC3
S1/S3 STATE --- 200mA * 3 = 600mA ---> VCC3_SB
VCC3_SB --> 600mA*3.3V/5V=396mA --> VCC5_SB

NOTE3 --- ICH2

Power	S0	S1	S3/S4/S5
1.8V	300mA	100mA	N/A
1.8V_LAN	36mA	28mA	N/A
VCC1_8SB	45mA	30mA	7mA
VCC3	410mA	5mA	N/A
VCC3+562ET	230mA	210mA	N/A
VCC3_SB	25mA	0.6mA	N/A

VCC3_SB =
VCC1_8SB =
VCC5_SB = VCC3_SB + VCC1_8SB

Title	{Title}	
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Jumper Setting & Connector Setting

Jumper	Description	
J1	INTERUDER HEADER	
J2	CHASISS INTRUSION HEADER	
J3	AUDIO REAR PHONE JACK (LINE_IN, LINE_OUT, MIC_IN)	
J4	AUDIO AUX HEADER	
J5	AUDIO FRONT PANEL HEADPHONE JACK HEADER	
J6	AUDIO INTERNAL SPEAKER HEADER (ATAPI)	
J8	CPU SIMULATION PIN	
J9	DDR SIMULATION PIN	
J10	AGP SIMULATION PIN	
J11	BIOS function	
1-2	Normal	(Default)
2-3	Configuration Mode	
JBAT1	CLEAR CMOS	
1-2	NORMAL	(Default)
2-3	CLEAR CMOS	
JP2	CNR RISER CODEC SELECT HEADER	
1-2	AUTO MODE	(Default)
2-3	PRIMARY AUDIO CODEC ONBOARD	
JP3	LEGEND AUDIO HEADER	

Connector	Description
U3	INTEL mPGA478-B CPU
IDE1	Primary
IDE2	Secondary
DIM1	SDRAM DIMM1
DIM2	SDRAM DIMM2
AGP1	AGP Slot
PCI1	PCI Slot1
PCI2	PCI Slot2
PCI3	PCI Slot3
PCI4	PCI Slot4
PCI5	PCI Slot5
COM1	Serial Port
COM2	Serial Port
LPT	Parallel Port
FDD1	Floopy
JMDM1	MODEM RING HEADER
JWOL1	LAN WAKEUP HEADER
KBMS1	PS/2 Keyboard and PS/2 mouse
C_FAN1	CPU FAN HEADER
S_FAN	System FAN HEADER
USB1	USB REAR CONNECTOR
USB2	USB INTERNAL HEADER
POWER	ATX Power
F_P1	Front Panel
C_FAN1	CPU FAN HEADER
S_FAN1	SYS FAN HEADER
P_FAN1	ATX FAN HEADER
JAUDIO1	AUDIO HEADER FOR LEGEND
CD_IN1	CD IN HEADER
CD_IN2 / JSCD1	CD-IN HEADER FOR LEGEND
AUX_IN1	AUX_IN HEADER
MDM_IN1	MODEM_IN HEADER
IR1	IR HEADER
JPW1	ATX12V Power

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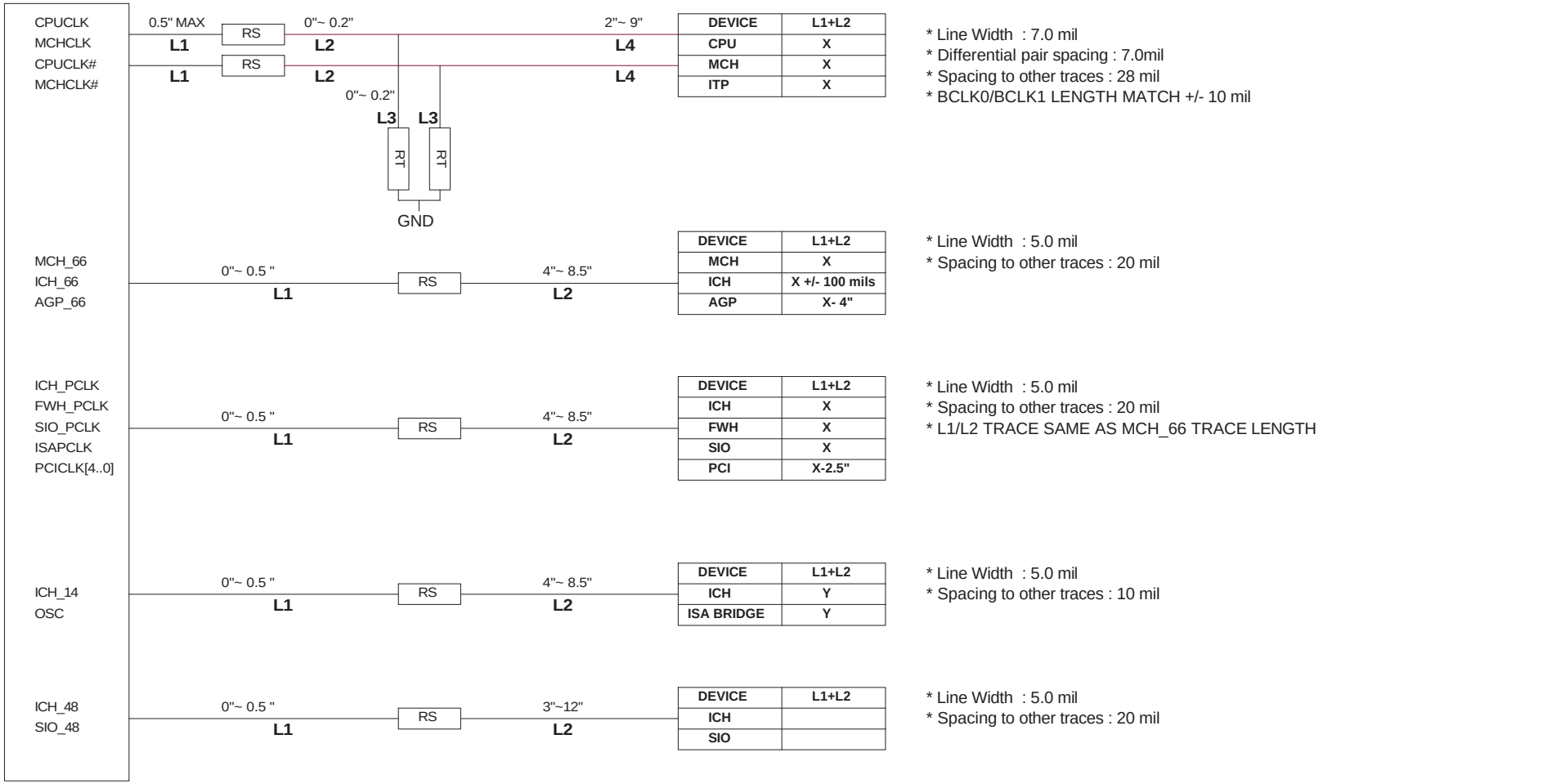

DEVICE	L1+L2
CPU	X
MCH	X
ITP	X

* Line Width : 7.0 mil
* Differential pair spacing : 7.0mil
* Spacing to other traces : 28 mil
* BCLK0/BCLK1 LENGTH MATCH +/- 10 mil

DEVICE	L1+L2
MCH	X
ICH	X +/- 100 mils
AGP	X- 4"

* Line Width : 5.0 mil
* Spacing to other traces : 20 mil

DEVICE	L1+L2
ICH	X
FWH	X
SIO	X
PCI	X-2.5"

* Line Width : 5.0 mil
* Spacing to other traces : 20 mil
* L1/L2 TRACE SAME AS MCH_66 TRACE LENGTH

DEVICE	L1+L2
ICH	Y
ISA BRIDGE	Y

* Line Width : 5.0 mil
* Spacing to other traces : 10 mil

DEVICE	L1+L2
ICH	
SIO	

* Line Width : 5.0 mil
* Spacing to other traces : 20 mil

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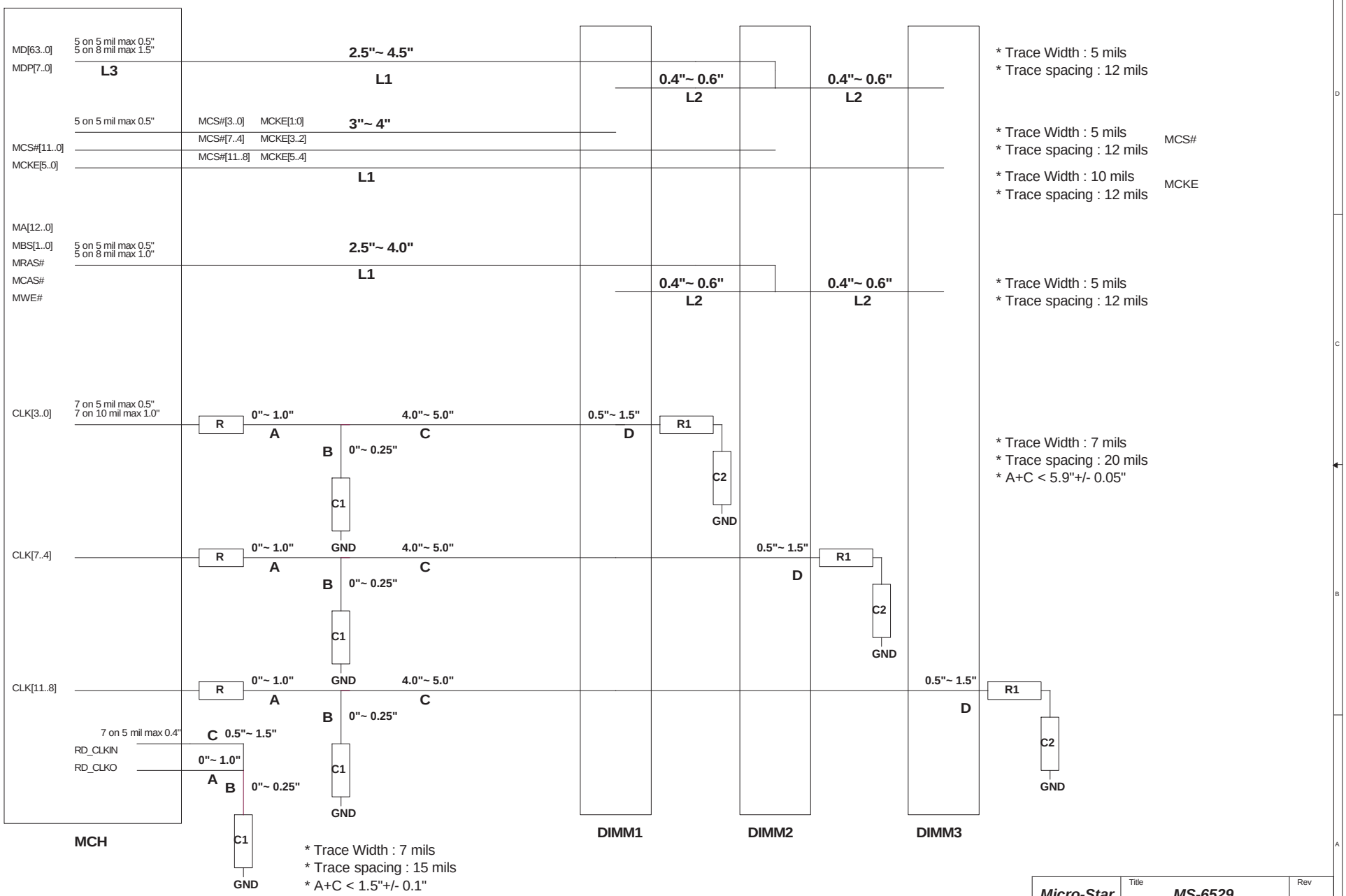

Micro-Star	Title: MS-6529	Rev: 0A
Document Number: PC133 DIMM DG		
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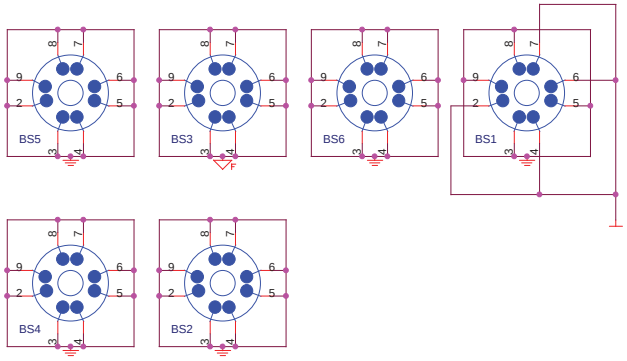
PCB OTHER COMPONENT



SIMULATION TRACE

CPU

AGP

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Revision Initial ver: 0A on 04/09/00

Schematic Initial Revision 0A

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Document Number: Revision History - 1		
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