MS-6526 *Version 00A*

INTEL (R) Brookdale-G Chipset
Willamette/Northwood 478pin mPGA-B Processor Schematics

CPU:

Willamette/Northwood mPGA-478B Processor

System Brookdale-G Chipset:

INTEL GMCH (North Bridge) +
INTEL ICH4 (South Bridge)

On Board Chipset:

BIOS -- FWH
AC'97 Codec -- ALC201A
LPC Super I/O -- W83627HF-AW
Clock Generation -- ICS950218AF
LAN -- RealTek RTL8101L

Expansion Slots:

PCI2.2 SLOT * 3

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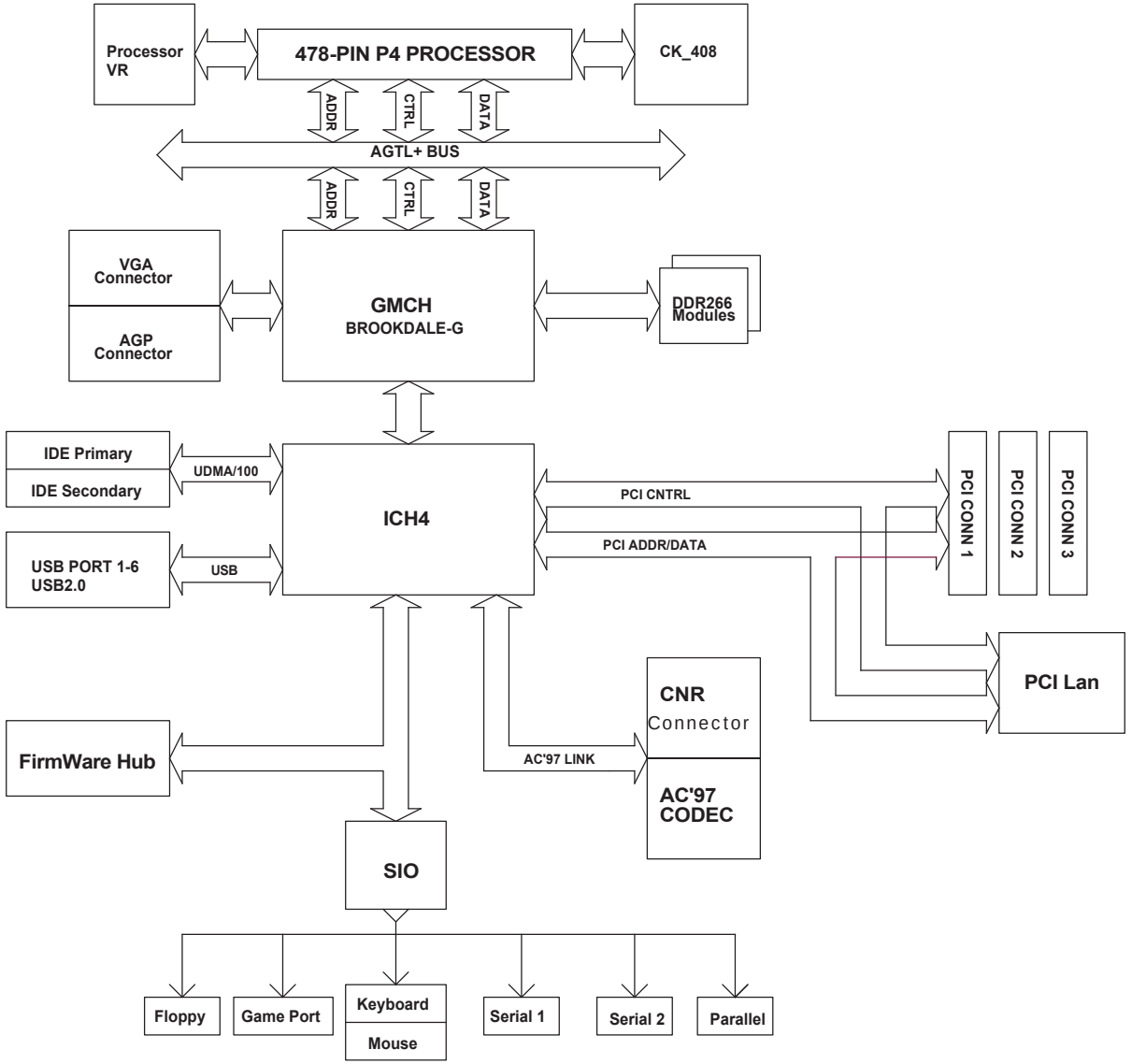
Title: Cover Sheet

Size | Document Number: MS-6526 | Rev: 00A

Date: Wednesday, December 19, 2001 | Sheet 1 of 29

BLOCK DIAGRAM



MSI	MICRO-STAR INT'L CO.,LTD.	
Title	Block Diagram	
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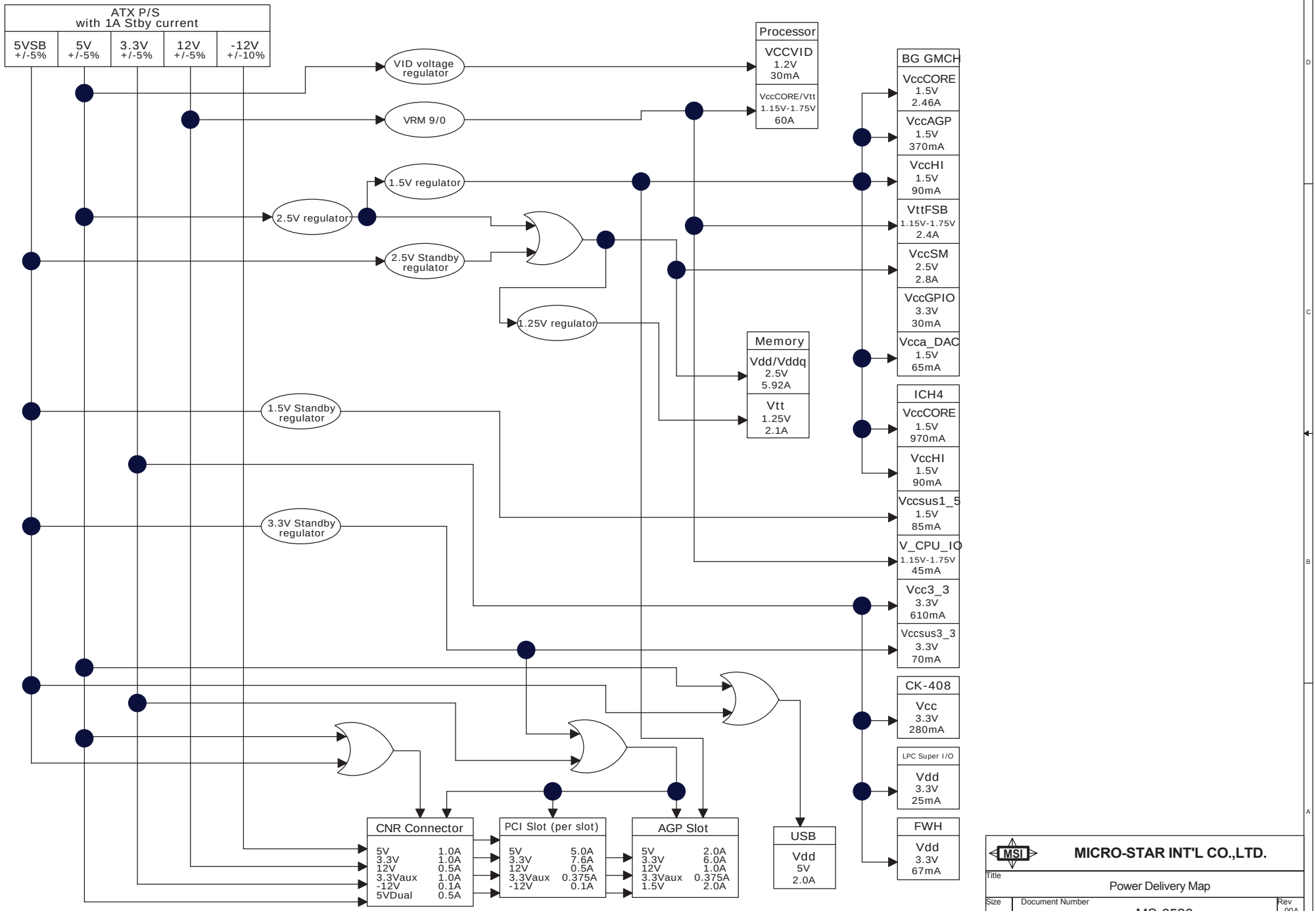
Power Delivery Map



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Title	Power Delivery Map	
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General SPEC

ICH4

GPIO Pin	Type	Function
GPIO 0	I	REQ#A (multifunction pin)
GPIO 1	I	REQ#B (multifunction pin)
GPIO 2	I	Pull up through 8.2K ohms (PIRQE#)
GPIO 3	I	Pull up through 8.2K ohms (PIRQF#)
GPIO 4	I	Pull up through 8.2K ohms (PIRQG#)
GPIO 5	I	Pull up through 8.2K ohms (PIRQH#)
GPIO 6	I	Pull down through 10K ohms (unused)
GPIO 7	I	Pull down through 10K ohms (unused)
GPIO 8	I	Pull Up to 3.3VSBY through 4.7K ohms (SIO_PME)
GPIO 9	I	Not Implemented
GPIO 10	I	Not Implemented
GPIO 11	I	SMB_ALERT (multifuntion pin)
GPIO 12	I	Pull down through 10K ohms (unused)
GPIO 13	I	Pull down through 10K ohms (unused)
GPIO 14~15	I	Not Implemented
GPIO 16	O	GNT#A (multifunction pin)
GPIO 17	O	GNT#B (multifuntion pin)
GPIO 18*	O	No Connected
GPIO 19	O	No Connected
GPIO 20	O	No Connected
GPIO 21	O	No Connected
GPIO 22	OD	No Connected
GPIO 23	O	Pull Up to 3.3V through 8.2K ohms (BIOS protect)
GPIO 24	I/O	No Connected
GPIO 25	I/O	No Connected
GPIO 26	I/O	Not Implemented
GPIO 27	I/O	No Connected
GPIO 28	I/O	No Connected
GPIO 29~31	O	Not Implemented
GPIO 32	I/O	No Connected
GPIO 33	I/O	No Connected
GPIO 34	I/O	Primary IDE ATA66/100 detection (PD_DET)
GPIO 35	I/O	Secondary IDE ATA66/100 detection (SD_DET)
GPIO 36	I/O	No Connected
GPIO 37	I/O	No Connected
GPIO 38	I/O	No Connected
GPIO 39	I/O	No Connected
GPIO 40	I/O	No Connected
GPIO 41	I/O	No Connected
GPIO 42	I/O	No Connected
GPIO 43	I/O	No Connected
GPIO 44~47	I/O	Not Implemented

** GPIO18 will toggle at 1Hz frequency.*

FWH

GPIO Pin	Type	Function
GPI 0	I	Pull down through 8.2K ohms (unused)
GPI 1	I	Pull down through 8.2K ohms (unused)
GPI 2	I	P1 customer defined
GPI 3	I	P1 customer defined
GPI 4	I	Pull down through 8.2K ohms (unused)

PCI Config.

DEVICE	ICH INT Pin	IDSEL	CLOCK	CLK GEN PIN OUT
PCI Slot 1	INTA# INTB# INTC# INTD#	AD16	PCICLK0	10 (PCI3/FS4)
PCI Slot 2	INTB# INTC# INTD# INTA#	AD17	PCICLK1	11 (PCI4)
PCI Slot 3	INTC# INTD# INTA# INTB#	AD18	PCICLK2	12 (PCI5)
PCI LAN	INTG# INTF#	AD29	LAN_PCLK	17 (PCI9)

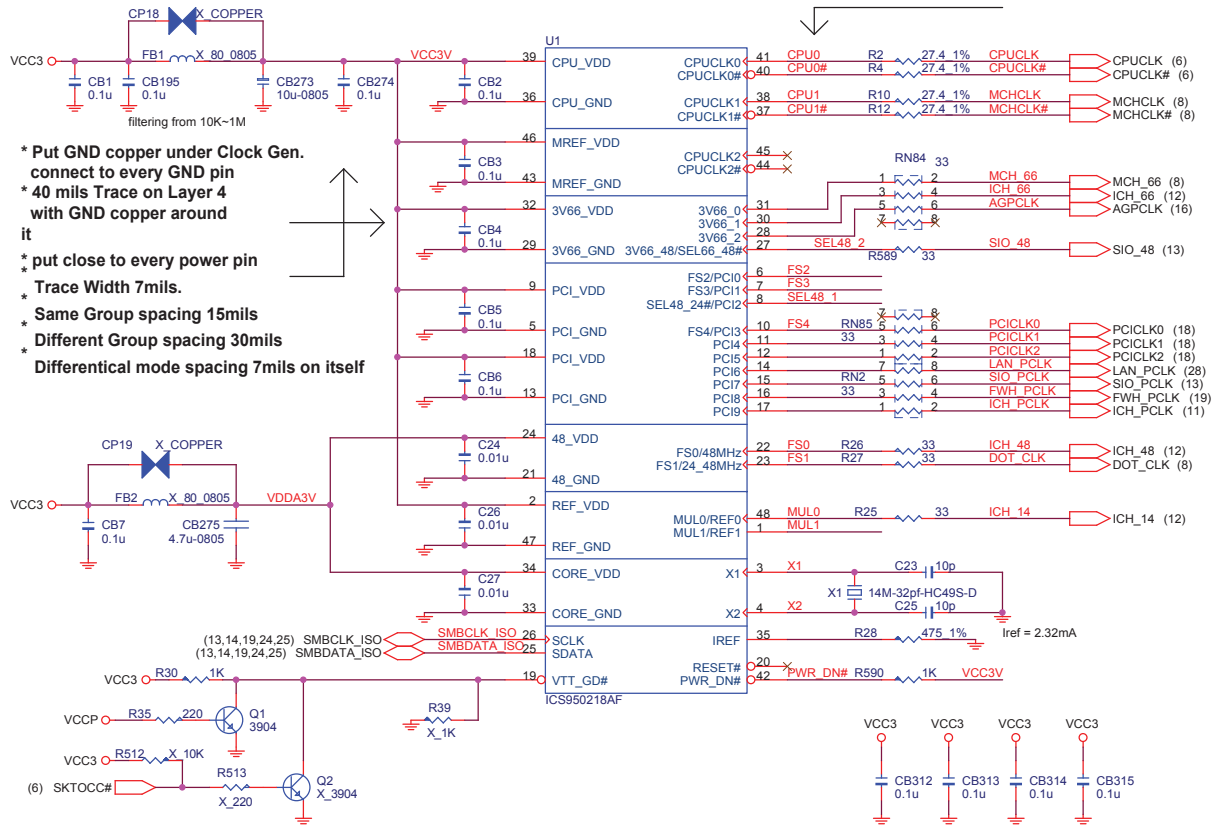
**ICH4 reserved PCI address line AD22 for the PCI-to-ISA Bridge's IDSEL input.*

DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	1010000B	DCLK0/DCLK0# DCLK1/DCLK1# DCLK2/DCLK2#
DIMM 2	1010001B	DCLK3/DCLK3# DCLK4/DCLK4# DCLK5/DCLK5#

CLOCK GENERATOR BLOCK

*Trace < 0.5"

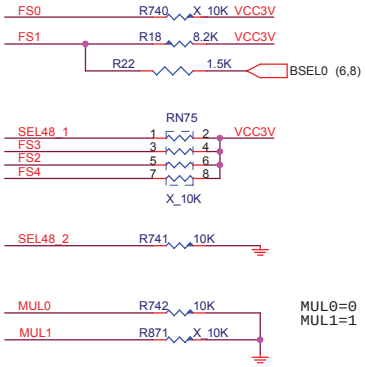


Shut Source Termination Resistors

Trace less 0.2"

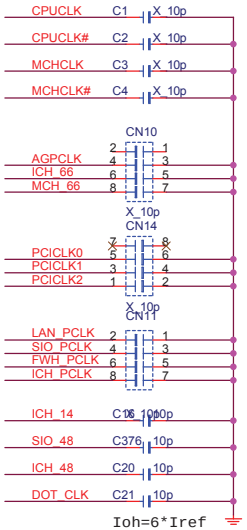
49.9ohm for 50ohm M/B impedance

CLOCK STRAPPING RESISTORS



FS4	FS3	FS2	FS1	FS0	FSB (MHz)
1	1	1	0	1	100 MHz
1	1	1	1	1	133 MHz

Pull-Down Capacitors



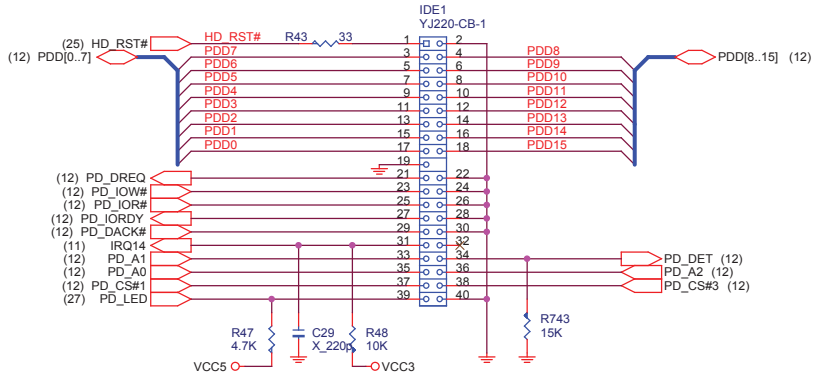
Ioh=6*Iref
Voh=0.71V

used only for EMI issue

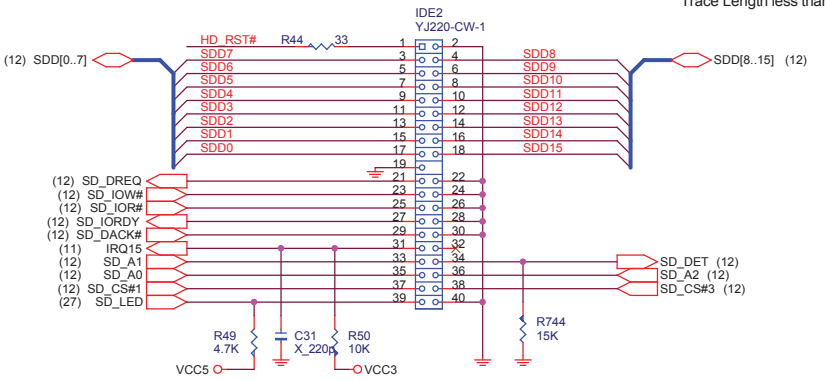
Trace less 0.2"

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"

MICRO-STAR INT'L CO.,LTD.

Title	Clock Gen & ATA100 IDE Connectors	
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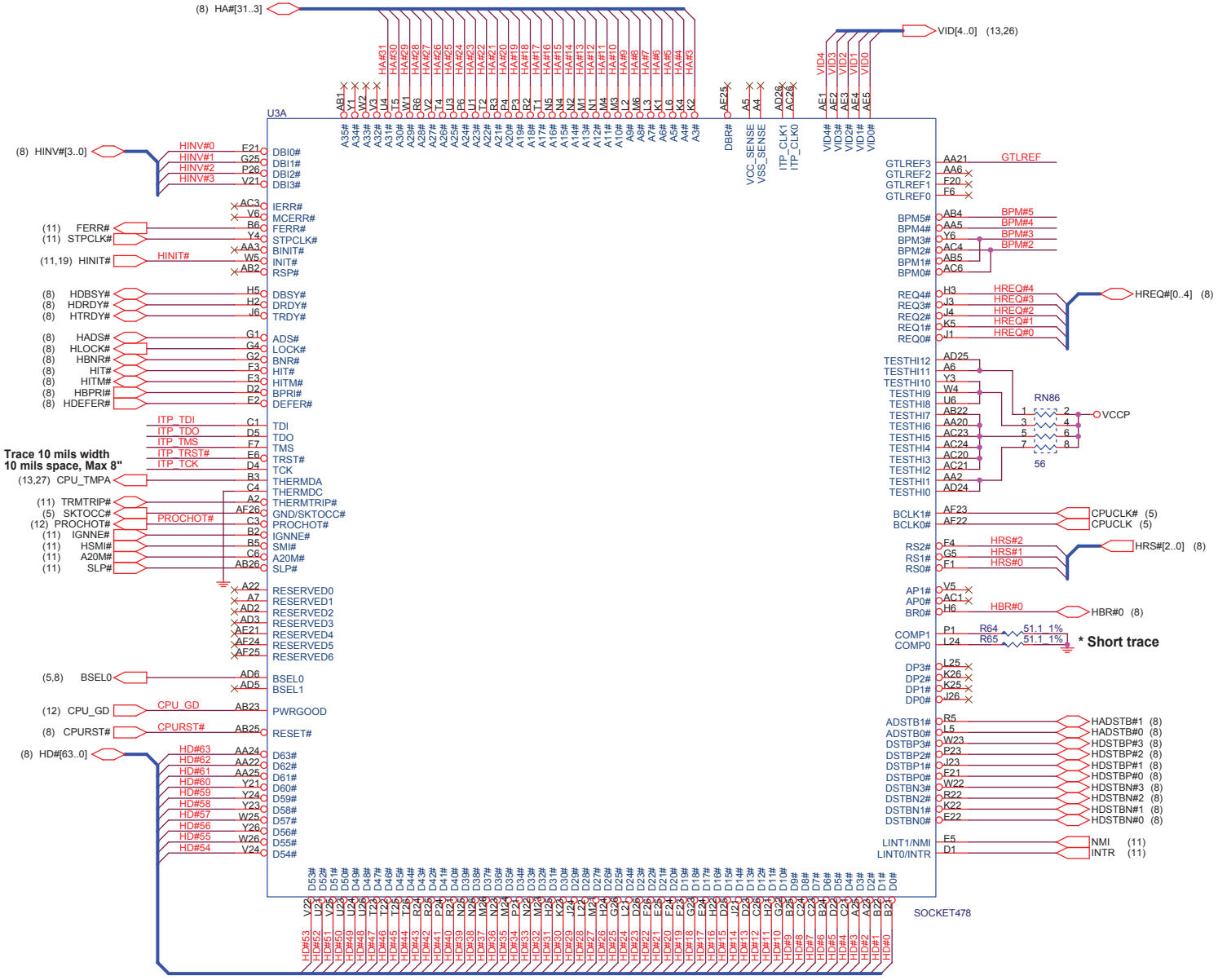
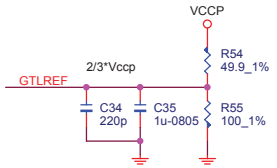
CPU SIGNAL BLOCK



CPU GTL REFERNCE VOLTAGE BLOCK

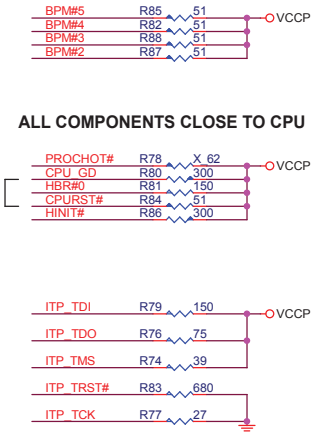


Every pin put one 220pF cap near it.

Trace Width 7mils, Space 10mils.

Keep the voltage divider within 1.5" of the GETREF pin.

CPU STRAPPING RESISTORS



MSI	MICRO-STAR INT'L CO.,LTD.	
Title	mPGA478-B INTEL CPU SOCKET Part1	
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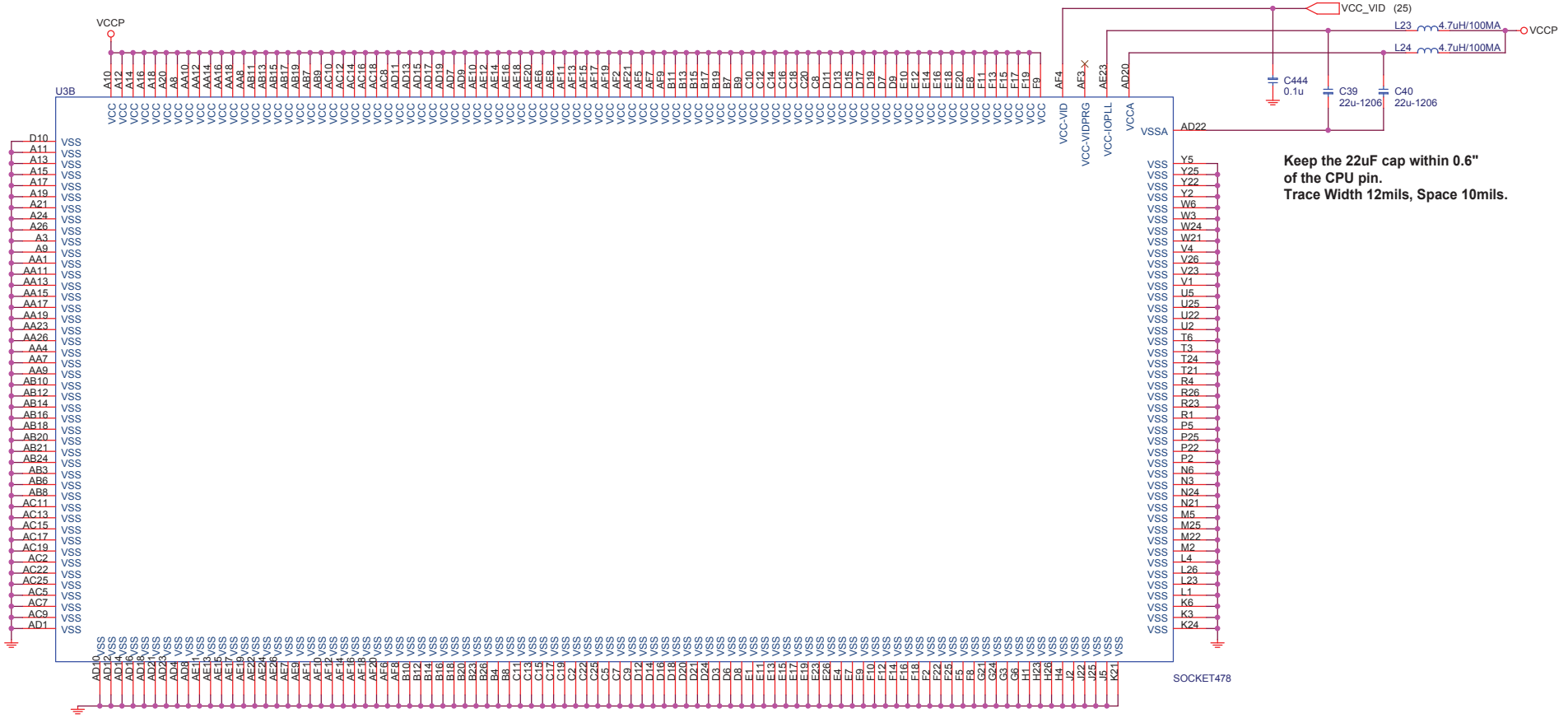
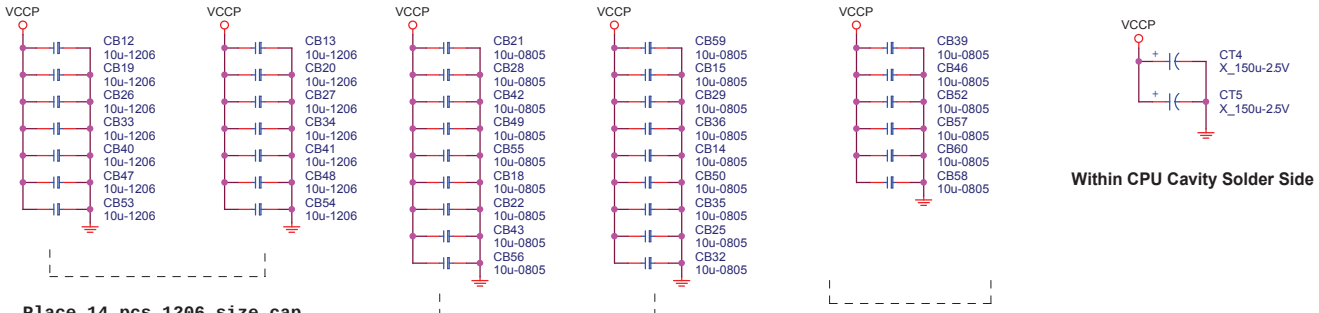
CPU VOLTAGE BLOCK



Keep the 22uF cap within 0.6" of the CPU pin.
Trace Width 12mils, Space 10mils.

CPU DECOUPLING CAPACITORS



Place 14 pcs 1206 size cap north side of processor

PLACE CAPS WITHIN CPU CAVITY

Place these caps on south side of processor

Within CPU Cavity Solder Side

MSI	MICRO-STAR INT'L CO.,LTD.	
Title	mPGA478-B INTEL CPU Part2	
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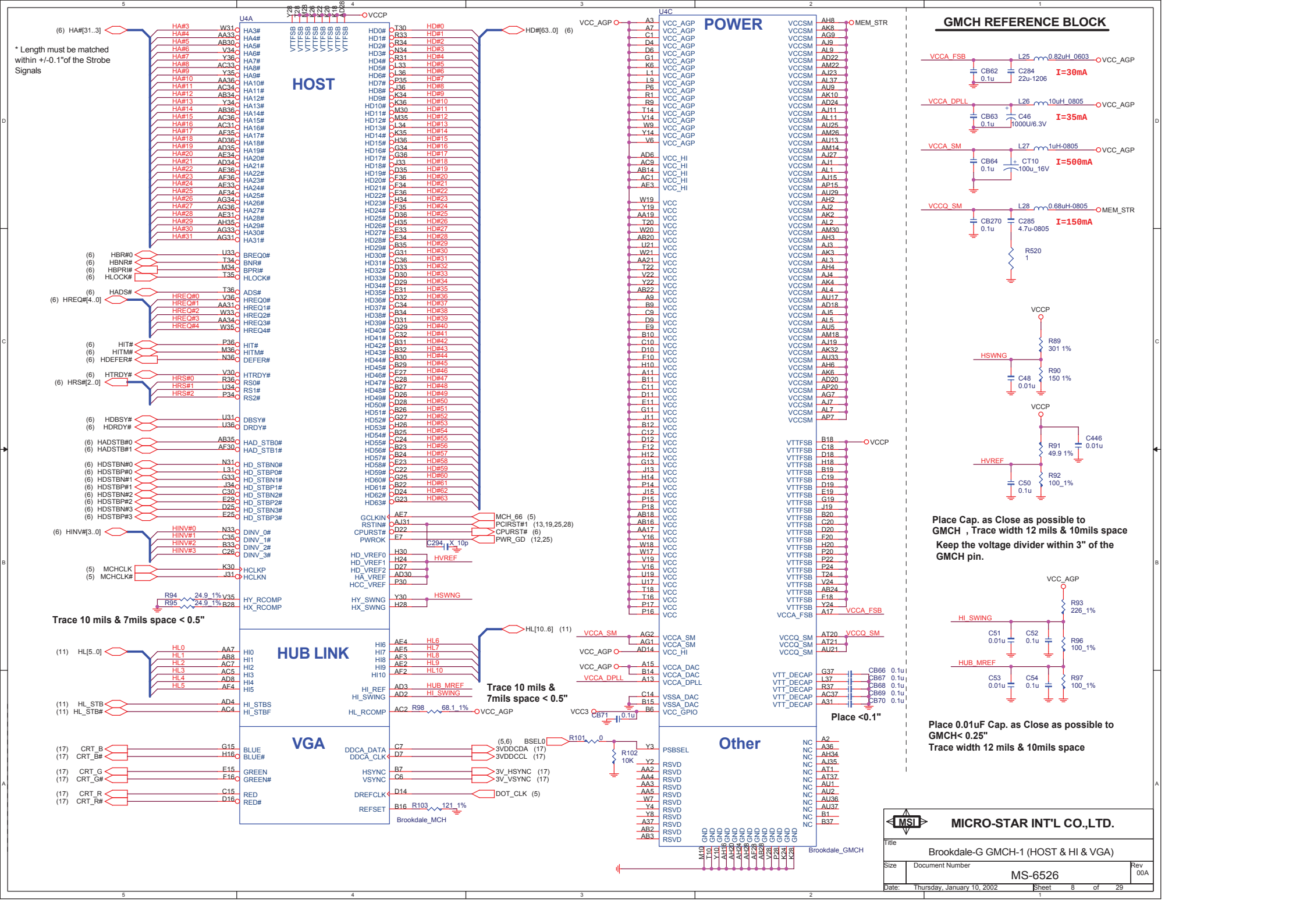
U4A
HOST
U4C
POWER
HUB LINK
VGA
Other
* Length must be matched within +/-0.1"of the Strobe Signals
Trace 10 mils & 7mils space < 0.5"
Trace 10 mils & 7mils space < 0.5"
Place <0.1"
Brookdale_MCH
Brookdale_GMCH
GMCH REFERENCE BLOCK
VCCA_FSB
L25 0.82uH_0603
CB62 0.1u
C284 22u-1206
I=30mA
VCCA_DPLL
L26 10uH_0805
CB63 0.1u
C46 1000U/6.3V
I=35mA
VCCA_SM
L27 1uH-0805
CB64 0.1u
CT10 100u_16V
I=500mA
VCCQ_SM
L28 0.68uH-0805
CB270 0.1u
C285 4.7u-0805
I=150mA
R520 1
R89 301 1%
R90 150 1%
C48 0.01u
R91 49.9 1%
C446 0.01u
R92 100_1%
C50 0.1u
Place Cap. as Close as possible to GMCH , Trace width 12 mils & 10mils space
Keep the voltage divider within 3" of the GMCH pin.
R93 226_1%
C51 0.01u
C52 0.1u
R96 100_1%
C53 0.01u
C54 0.1u
R97 100_1%
Place 0.01uF Cap. as Close as possible to GMCH< 0.25"
Trace width 12 mils & 10mils space
MICRO-STAR INT'L CO.,LTD.
Brookdale-G GMCH-1 (HOST & HI & VGA)
MS-6526
Thursday, January 10, 2002
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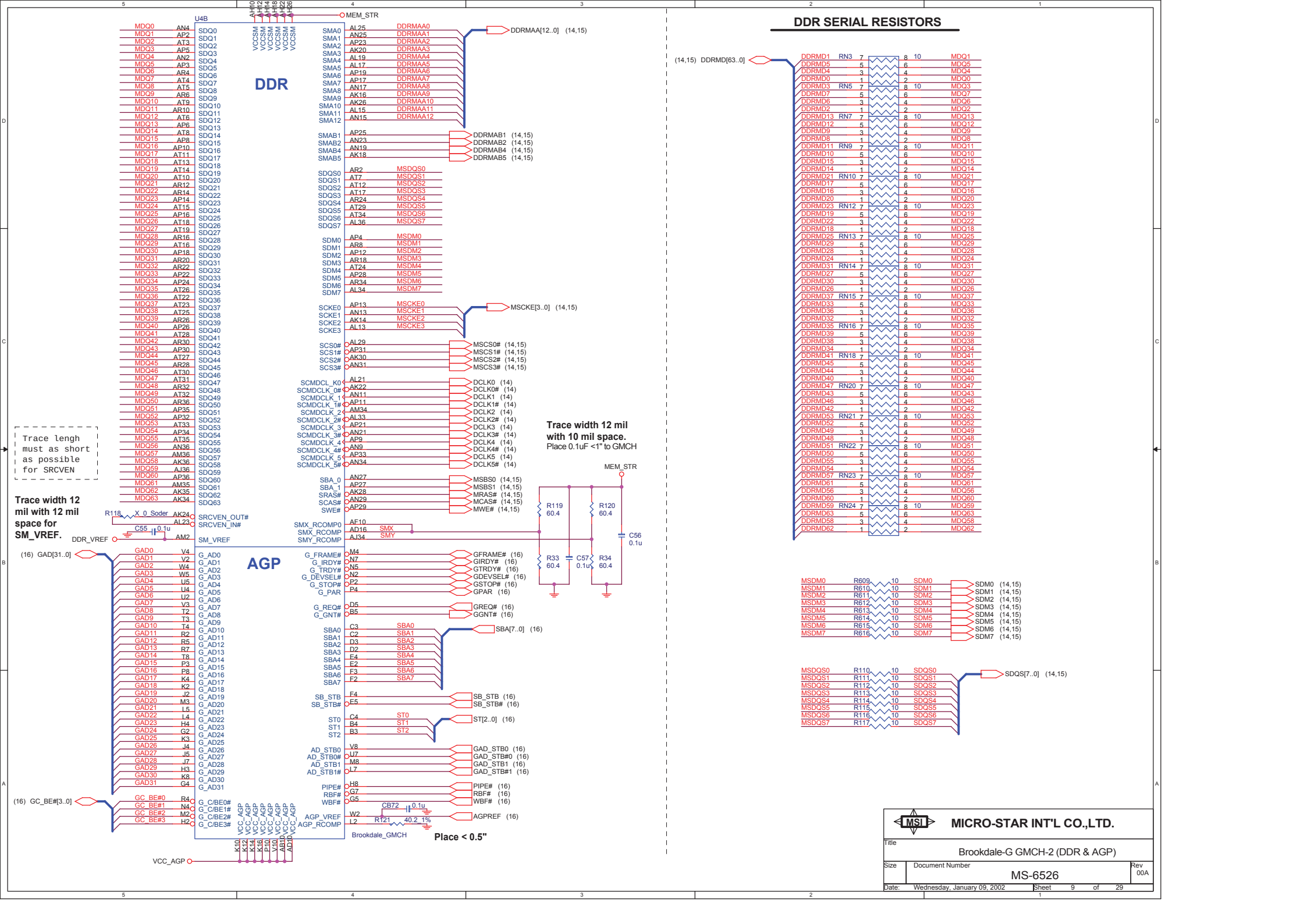
DDR SERIAL RESISTORS
DDR
AGP
U4B
MEM_STR
Trace lengh must as short as possible for SRCVEN
Trace width 12 mil with 12 mil space for SM_VREF.
Trace width 12 mil with 10 mil space.
Place 0.1uF <1" to GMCH
Place < 0.5"
Brookdale_GMCH
DDRMAA[12..0] (14,15)
DDRMAB1 (14,15)
DDRMAB2 (14,15)
DDRMAB4 (14,15)
DDRMAB5 (14,15)
MSCKE[3..0] (14,15)
MSCS0# (14,15)
MSCS1# (14,15)
MSCS2# (14,15)
MSCS3# (14,15)
DCLK0 (14)
DCLK0# (14)
DCLK1 (14)
DCLK1# (14)
DCLK2 (14)
DCLK2# (14)
DCLK3 (14)
DCLK3# (14)
DCLK4 (14)
DCLK4# (14)
DCLK5 (14)
DCLK5# (14)
MSBS0 (14,15)
MSBS1 (14,15)
MRAS# (14,15)
MCAS# (14,15)
MWE# (14,15)
GFRAME# (16)
GIRDY# (16)
GTRDY# (16)
GDEVSEL# (16)
GSTOP# (16)
GPAR (16)
GREQ# (16)
GGNT# (16)
SBA[7..0] (16)
SB_STB (16)
SB_STB# (16)
ST[2..0] (16)
GAD_STB0 (16)
GAD_STB#0 (16)
GAD_STB1 (16)
GAD_STB#1 (16)
PIPE# (16)
RBF# (16)
WBF# (16)
AGPREF (16)
(14,15) DDRMD[63..0]
SDQS[7..0] (14,15)
(16) GAD[31..0]
(16) GC_BE#[3..0]
VCC_AGP
DDR_VREF
SM_VREF
MICRO-STAR INT'L CO.,LTD.
Title
Brookdale-G GMCH-2 (DDR & AGP)
Size
Document Number
MS-6526
Rev
00A
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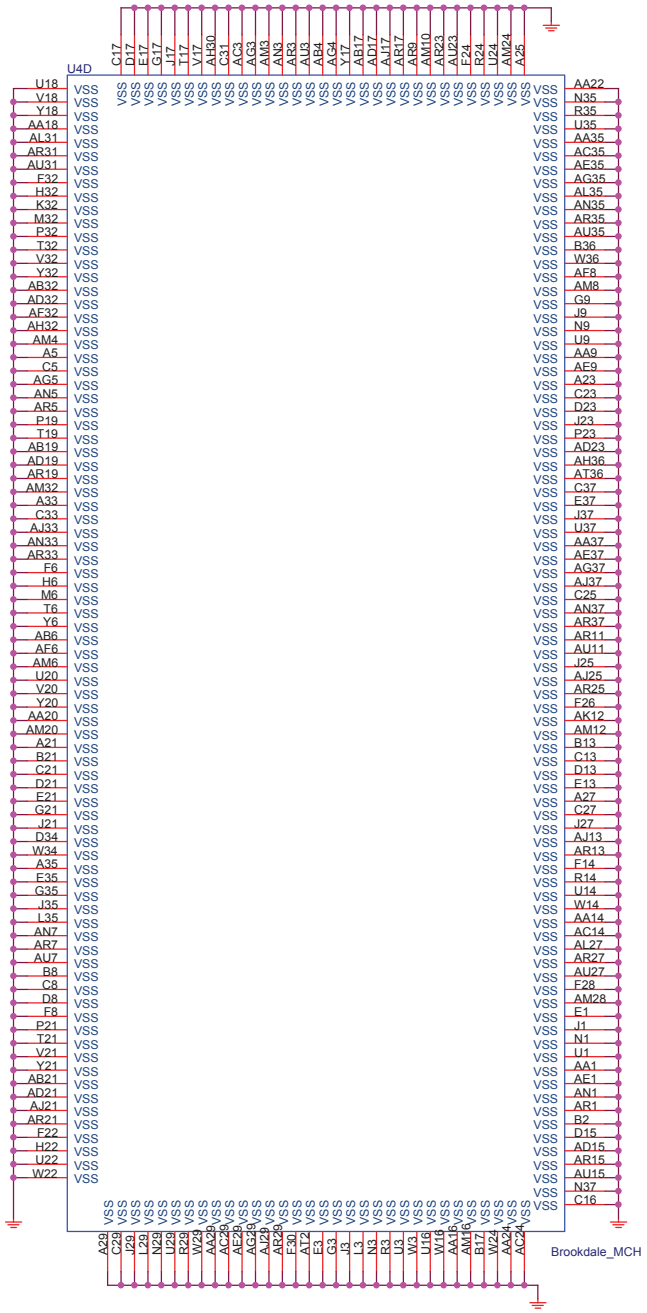
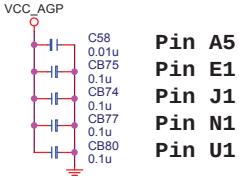


GMCH DECOUPLING CAPACITOR



Pin A5
Pin E1
Pin J1
Pin N1
Pin U1

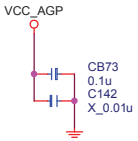
Place decoupling cap close to GMCH AGP Interface < 0.1"

Pin AA1
Pin AE1

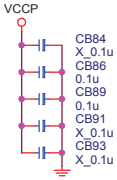
Place decoupling cap close to GMCH Hub-Link Interface< 0.1"

Pin B14
Pin A15

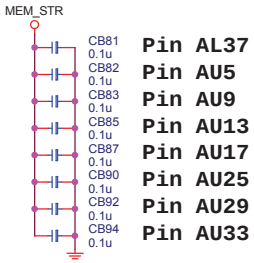
Place decoupling cap close to GMCH DAC Interface< 0.1"



Place decoupling cap close to GMCH Core Logic Interface < 0.1"

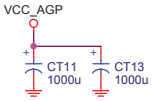


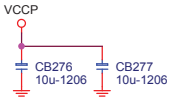
Place decoupling cap close to GMCH CPU Interface < 250mil in the Vtt corridor



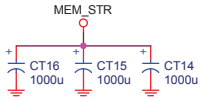
Pin AL37
Pin AU5
Pin AU9
Pin AU13
Pin AU17
Pin AU25
Pin AU29
Pin AU33

Place decoupling cap close to GMCH Memory Interface < 0.1", with 18 mil trach width





Place Bulk cap for Core Logic, AGP & Hub Link Interface



Place Bulk cap between GMCH & DIMM slot

MSI	MICRO-STAR INT'L CO.,LTD.	
Title	Broodale GMCH(VSS)	
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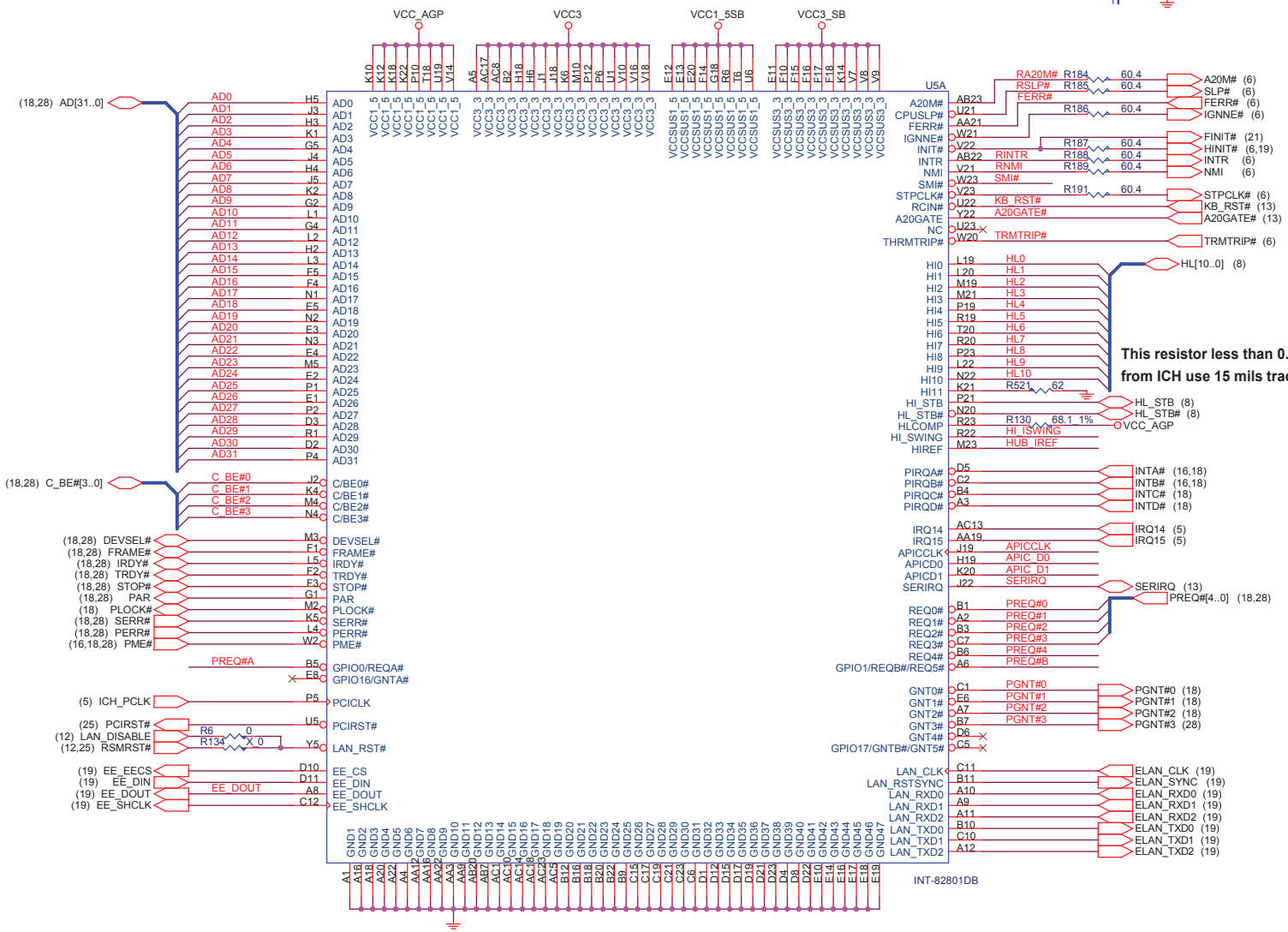
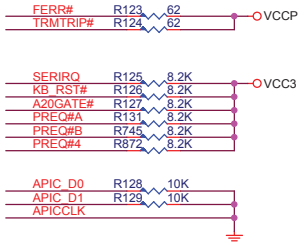
ICH4 PCI / HUB LINK / CPU / LAN / INTERRUPT SIGNALS



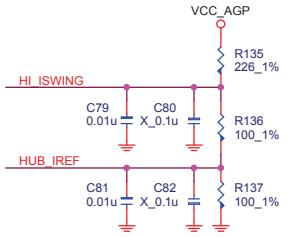
ICH4 STRAPPING RESISTORS

Reserved pull-down resistor for ICH4 reserved function straps.

ICH4 PULL-UP/DOWN RESISTORS



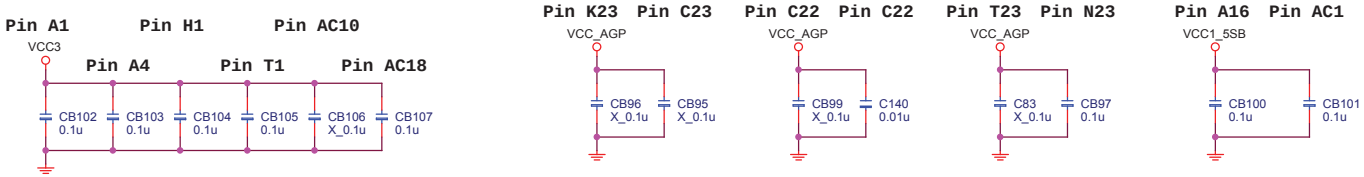
ICH4 REFERENCE VOLTAGE



Place Cap. as Close as possible to ICH4 < 0.25"
Trace width use 12 mils and 10mils space

ICH4 DECOUPLING CAPACITORS

Place one 0.1u close to ICH4 <100 mil



MSI MICRO-STAR INT'L CO.,LTD.

Title	ICH4 PCI & HI & LAN	
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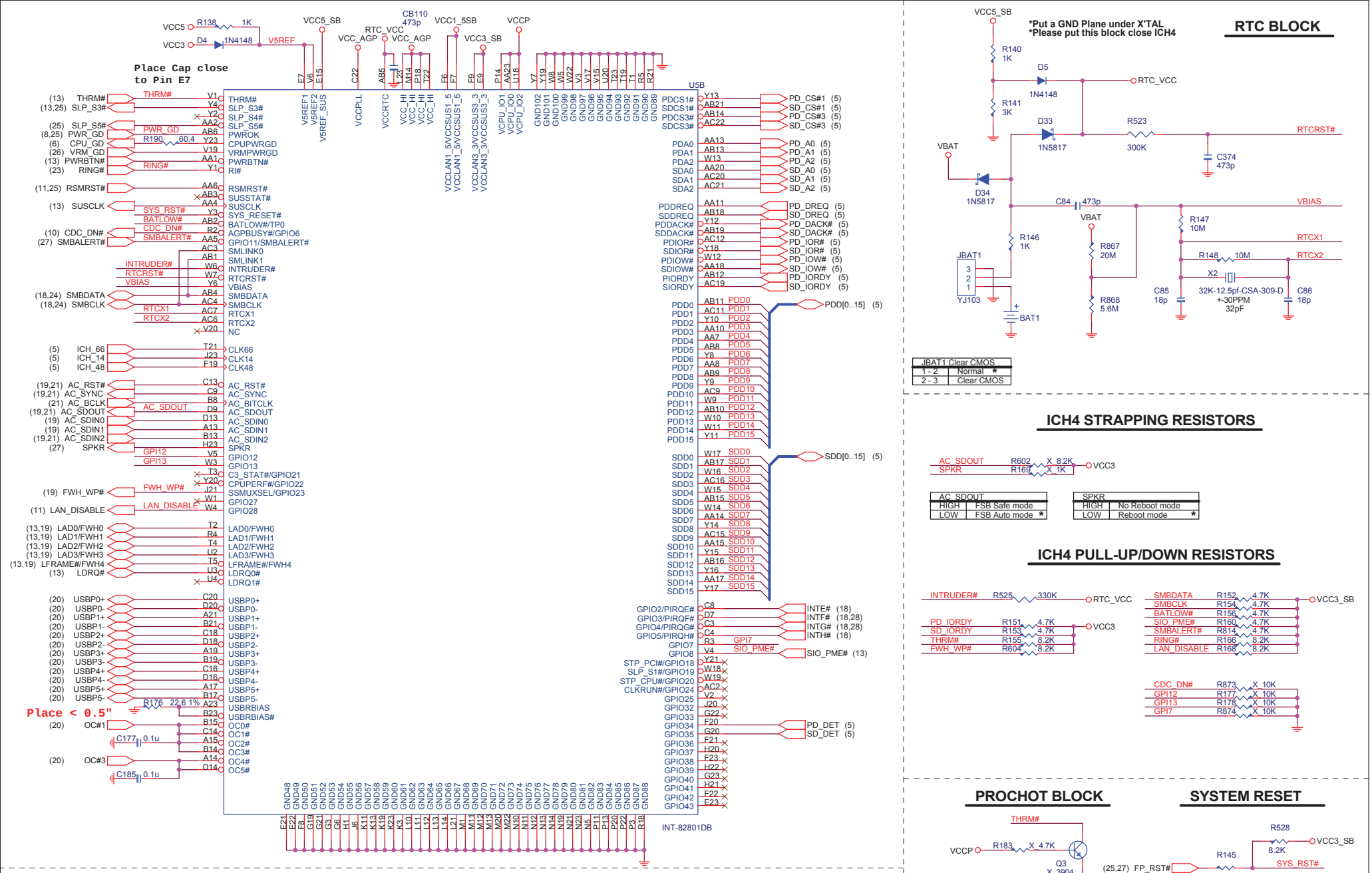

MICRO-STAR INT'L CO.,LTD.

Title: ICH4 ASIC/RTC/AC'97/GPIO/LPC/USB/IDE

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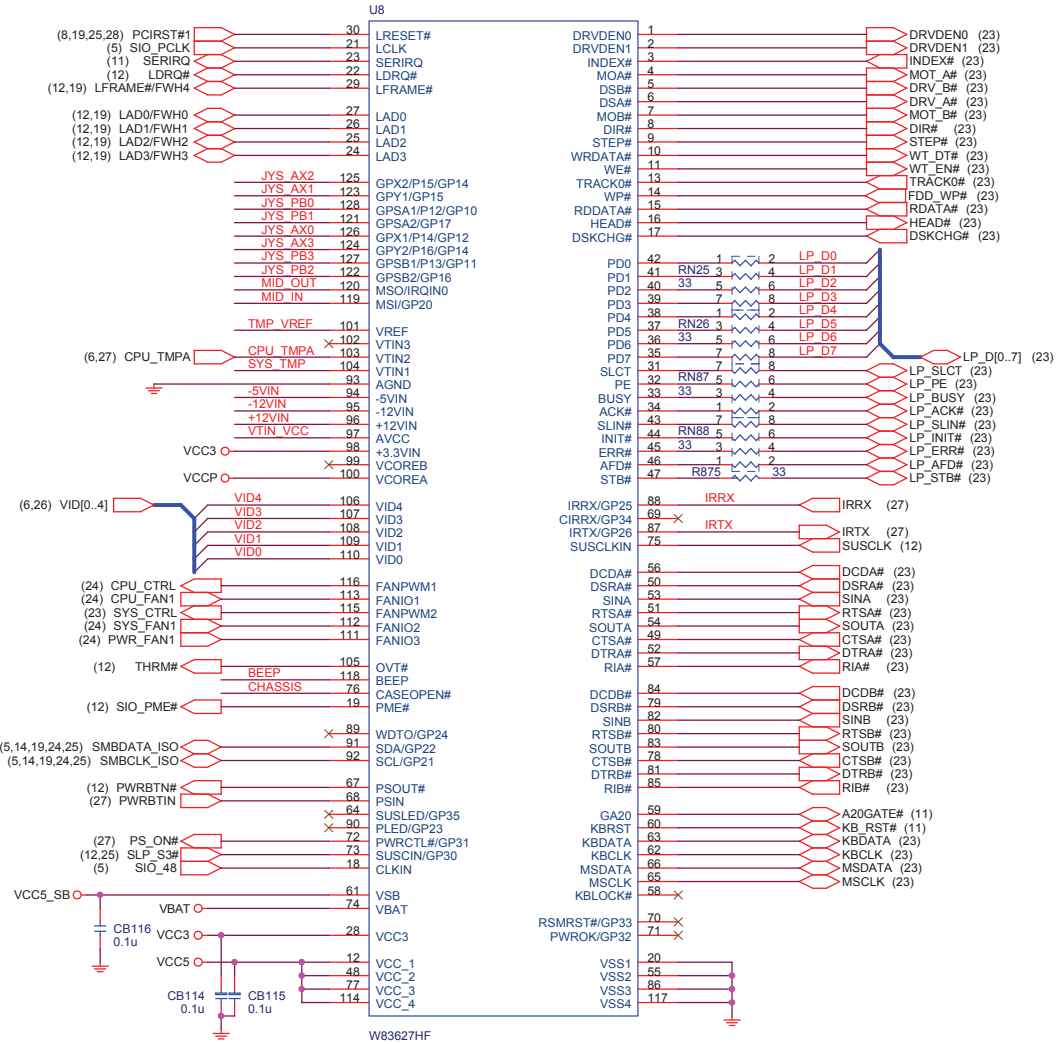
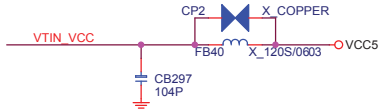
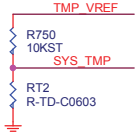
LPC SUPER I/O W83627HF



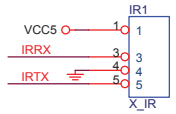
THERMAL RESISTOR BLOCK

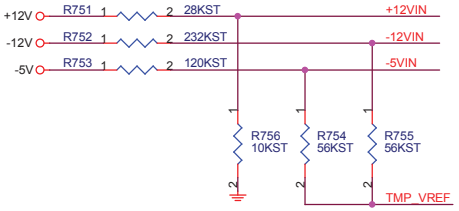




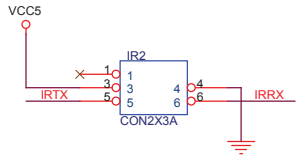
NOTE: LOCATE CLOSE STATUS PANEL

MSI Front IR Header

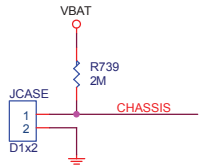




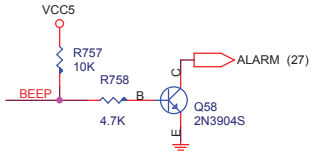
Intel Front IR Header



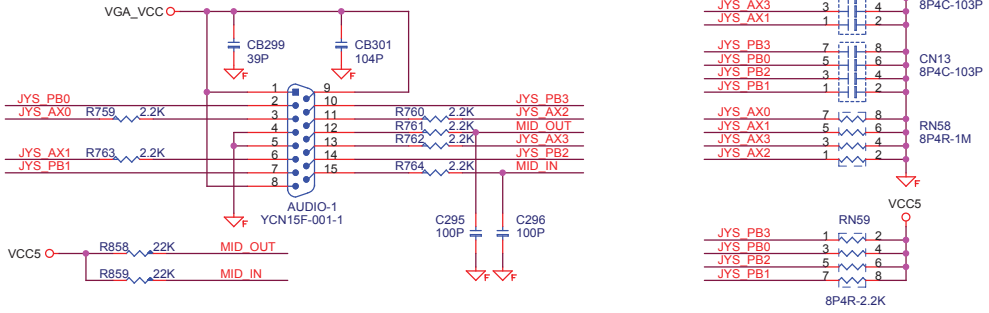
Chasiss Intrusion Header



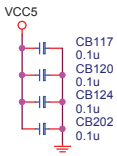
SPEAKER BLOCK



GAME/MIDI CONNECTOR



LPC I/O DECOUPLING CAPACITORS



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

MSI MICRO-STAR INT'L CO.,LTD.

Title: LPC IO & GAME PORT

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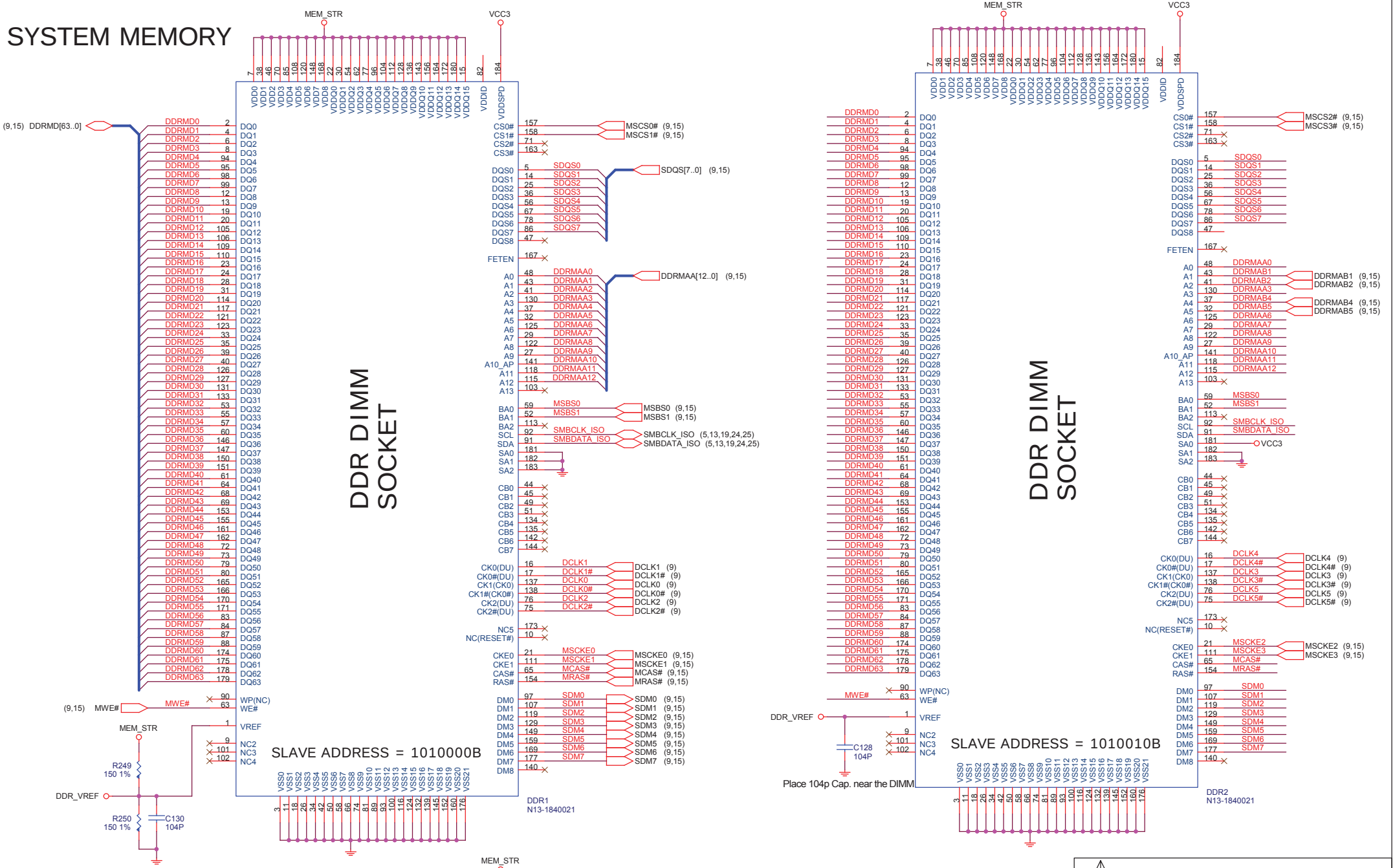
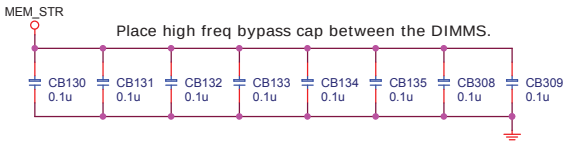
SYSTEM MEMORY



Keep the voltage divider within 1" of DIMM1.
Trace width 12 mil with 12 mil space.
Place 104p Cap. near the DIMM



MSI	MICRO-STAR INT'L CO.,LTD.
Title	DDR DIMM1&2
Size	Document Number: MS-6526 — Rev: 00A
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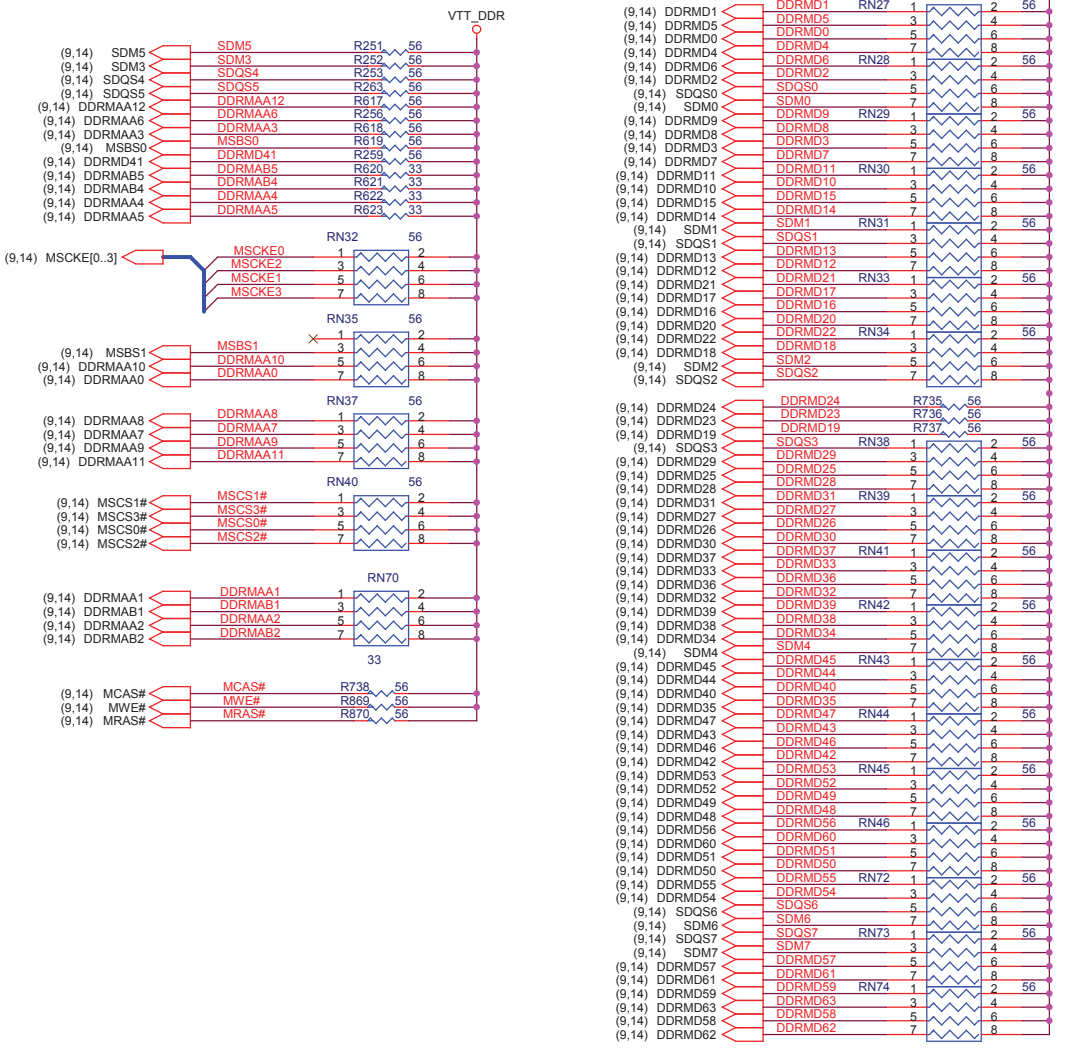
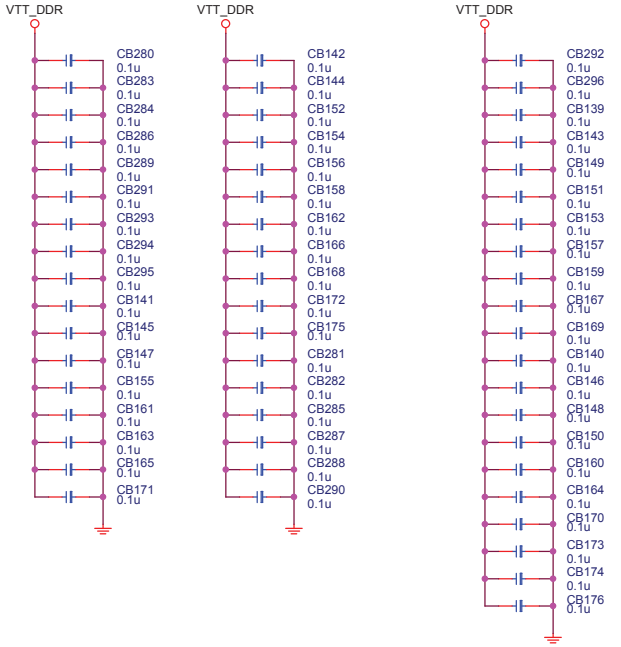
DDR TERMINATORS

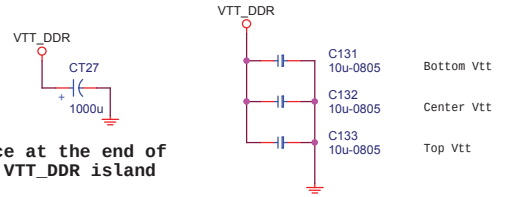


DDR Decouping Caps



Total 110 signal, need 55 pcs decoupling.

Place for VTT_DDR island



Place at the end of the VTT_DDR island

MICRO-STAR INT'L CO.,LTD.

Title	DDR Terminator Resistor	
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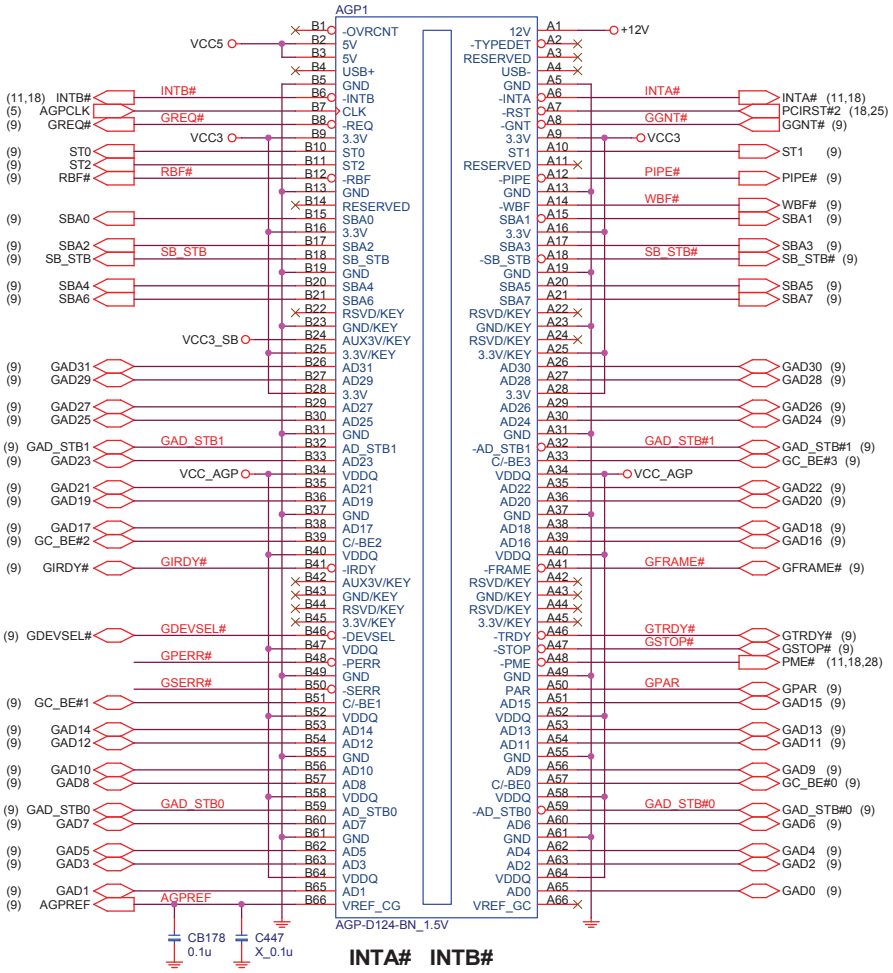
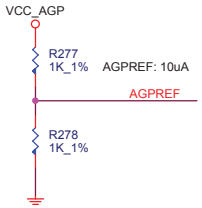
AGP 1.5V 2X/4X SLOT(AGP VER:2.0 COMPLY)

VCC5 = 60mils trace / 15 mils space



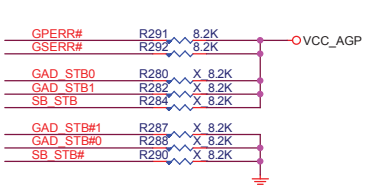
INTA# INTB#

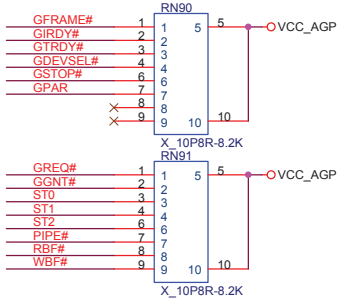
AGP SIGNAL REFERENCE CIRCUIT



NEAR AGP SLOT

AGP TERMINATION RESISTORS

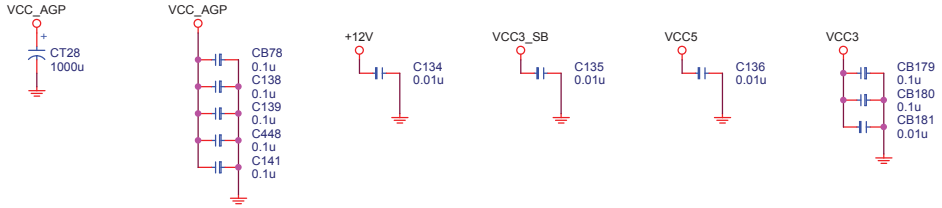




LESS 100MILS STUB TRACE LENGTH FOR 2/4X
LESS 500MIL FOR 1X MUST BE FOLLOWING.

Place these resistors between AGP slot & GMCH

AGP SLOT DECOUPLING CAPACITORS



MSI	MICRO-STAR INT'L CO.,LTD.	
Title	AGP SLOT	
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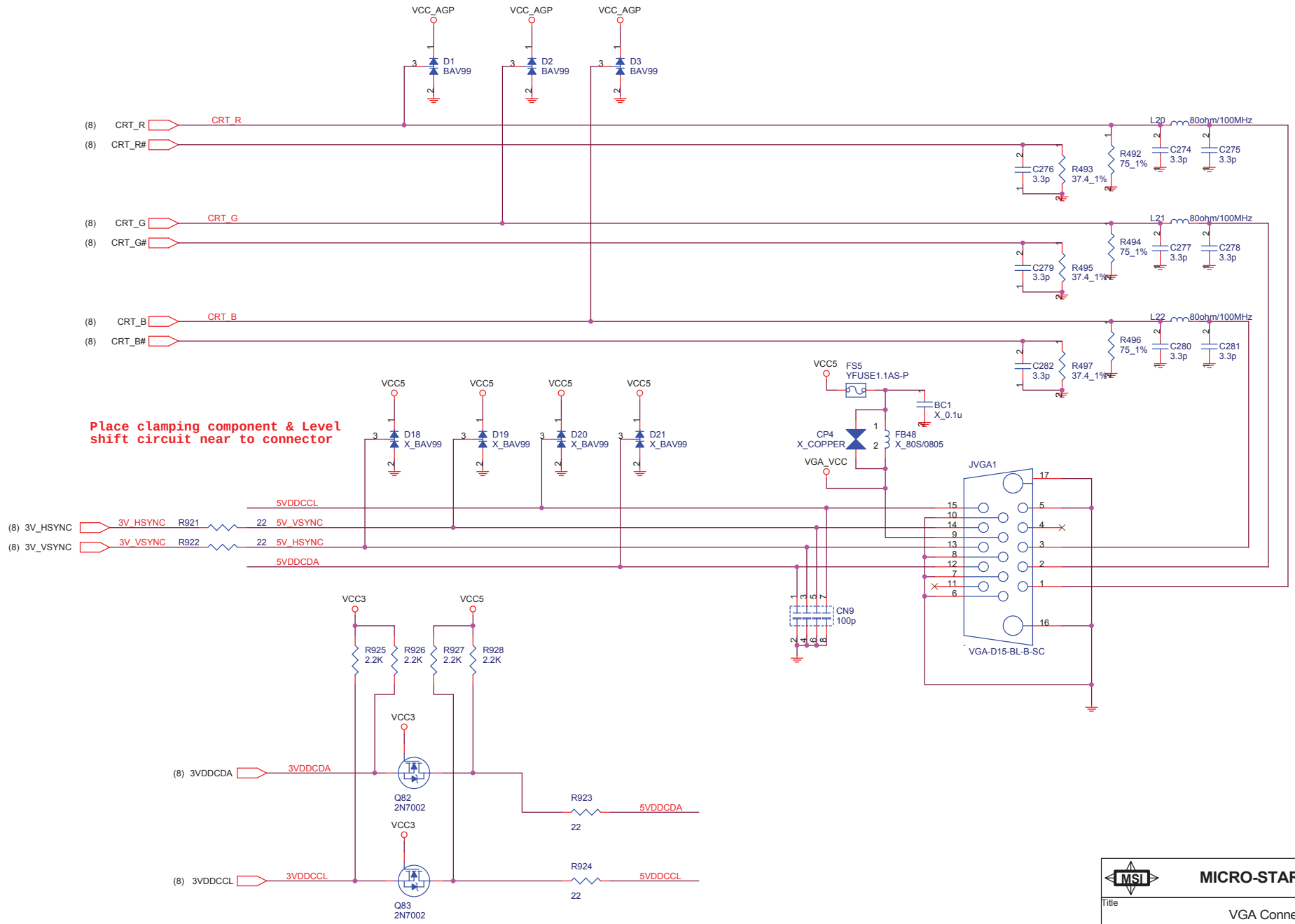
Video Connector



MSI	MICRO-STAR INT'L CO.,LTD.	
Title	VGA Connector	
Size	Document Number MS-6526	Rev 00A
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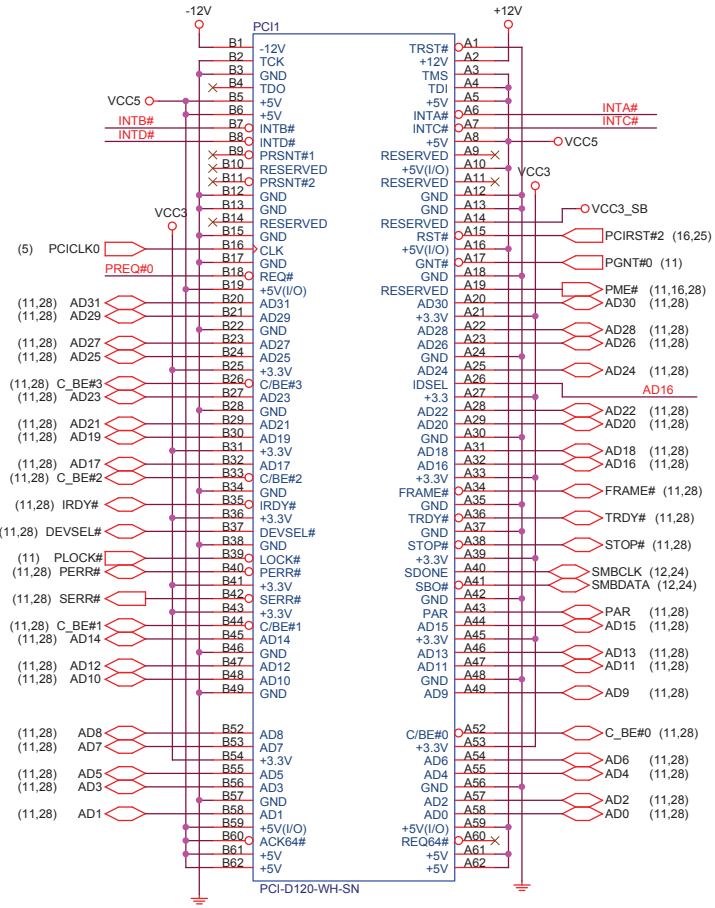
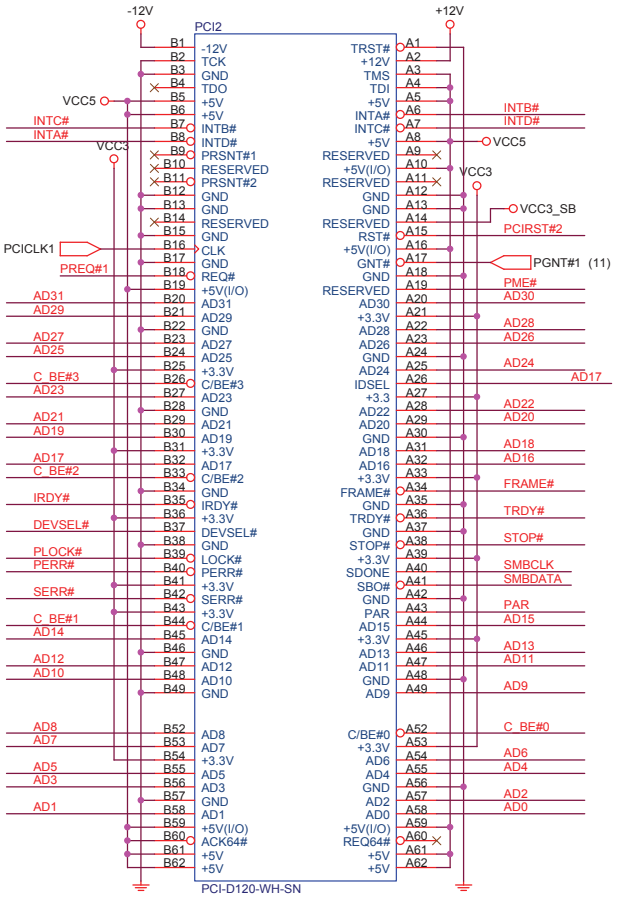
PCI SLOT 1 (PCI VER: 2.2 COMPLY)



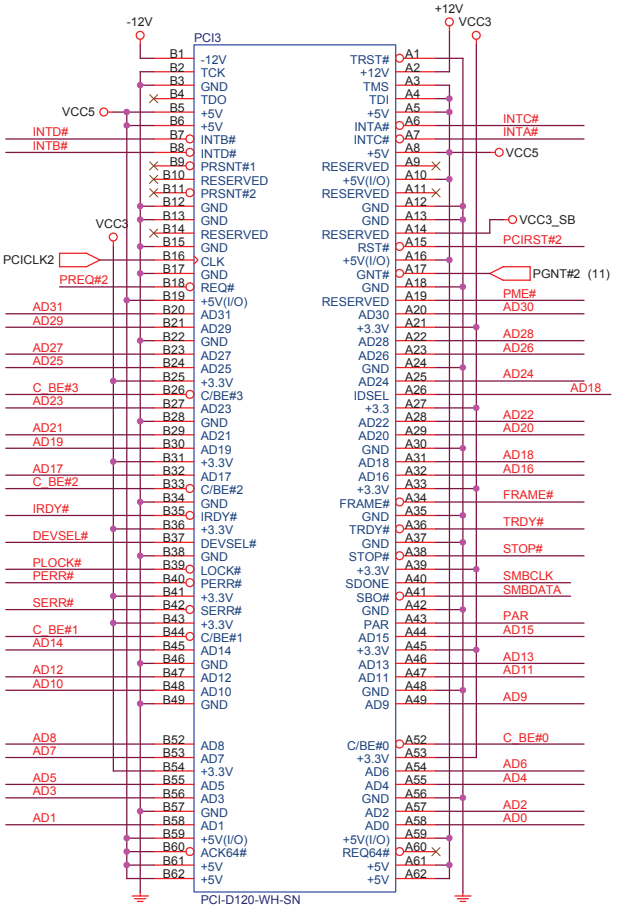
IDSEL = AD16
MASTER = PREQ0
INTA#

PCI SLOT 2 (PCI VER: 2.2 COMPLY)



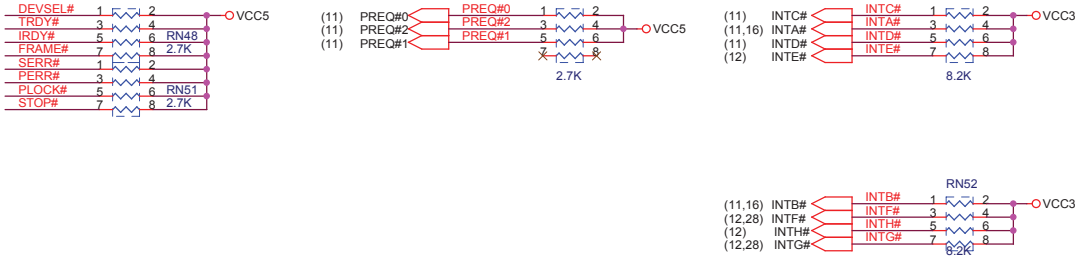
IDSEL = AD17
MASTER = PREQ1
INTB#

PCI SLOT 3 (PCI VER: 2.2 COMPLY)

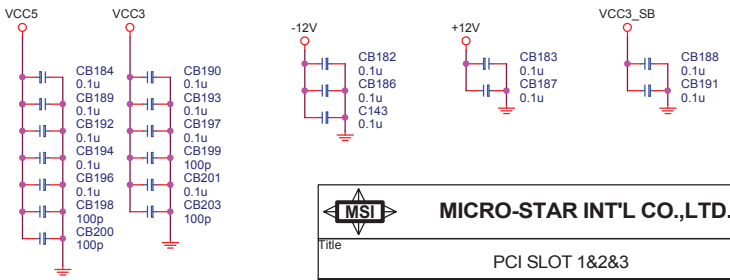


IDSEL = AD18
MASTER = PREQ2
INTC#

PCI PULL-UP / DOWN RESISTORS



PCI SLOT DECOUPLING CAPACITORS



MSI **MICRO-STAR INT'L CO.,LTD.**

Title: PCI SLOT 1&2&3

Size | Document Number: MS-6526 | Rev: 00A

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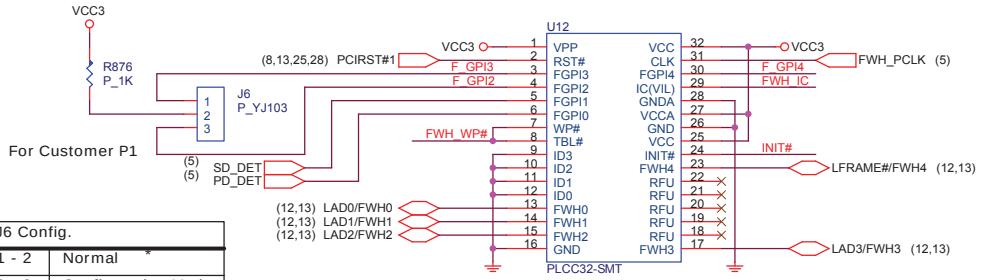
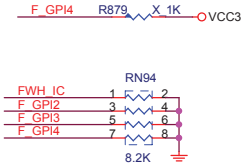
Firware Hub (FWH)



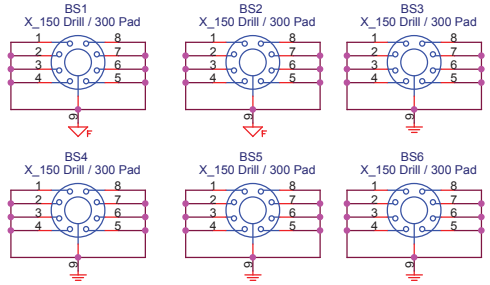
J6 Config.	
1 - 2	Normal *
2 - 3	Configuration Mode
OPEN	Recovery

* Default

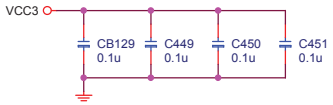
FWH RESISTORS



PCB Mounting Holes

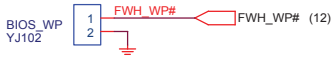


FWH DECOUPLING CAPACITORS



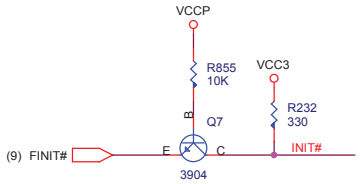
Place Cap. as Close to FWH< 350 mil

FWH write protect

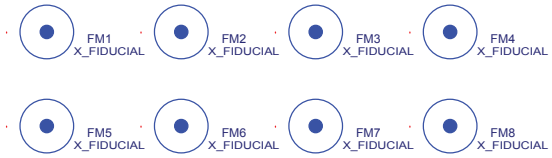


BIOS_WP	BIOS Update
SHORT	Locked
OPEN	Unlocked *

FWH INIT Signal Voltage Translation Block



PCB Fiducials



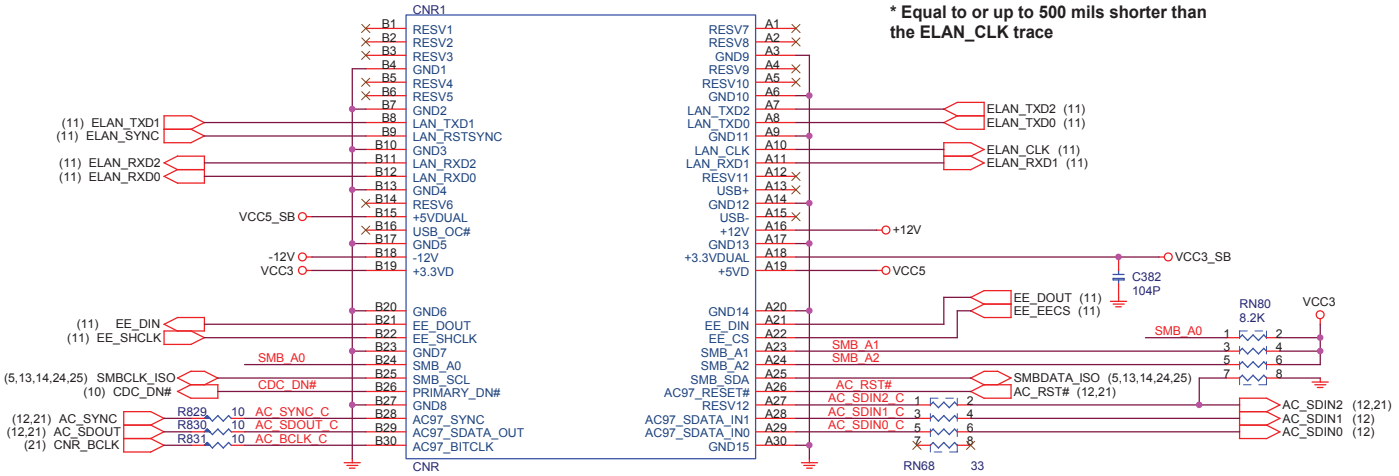
CNR RISER

*** LAN Trace width : 5 mils**

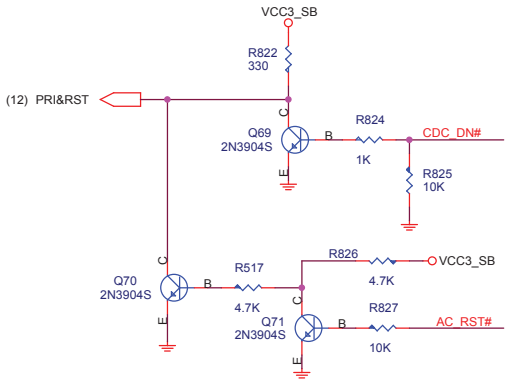
*** AC'97 Trace Spacing : 10 mils**

*** Maxium trace length < 9.5"**

*** Equal to or up to 500 mils shorter than the ELAN_CLK trace**



SIMULATION TRACE



MSI	MICRO-STAR INT'L CO.,LTD.	
Title	FWH & CNR	
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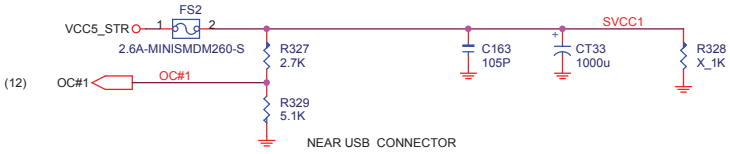
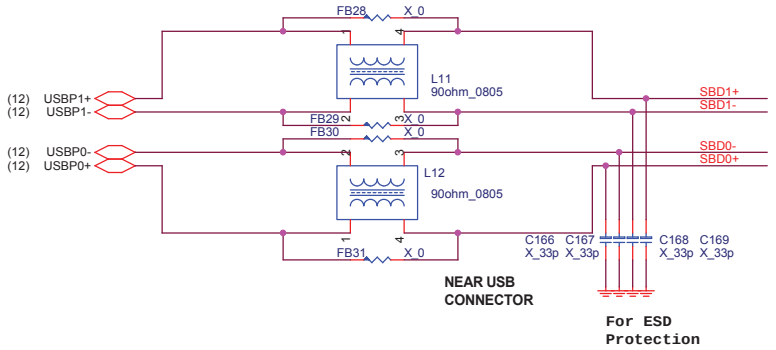
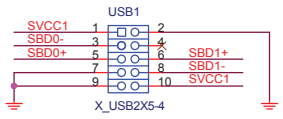
POWER CIRCUIT FOR USB PORT 0,1,2,3

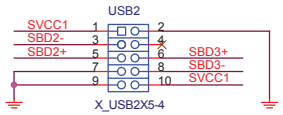


FRONT PANEL USB CONNECTOR FOR USB PORT 0,1

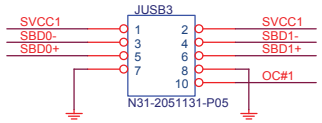


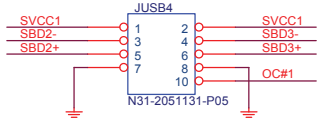
MSI Front USB Header



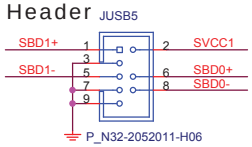


Intel Front USB Header

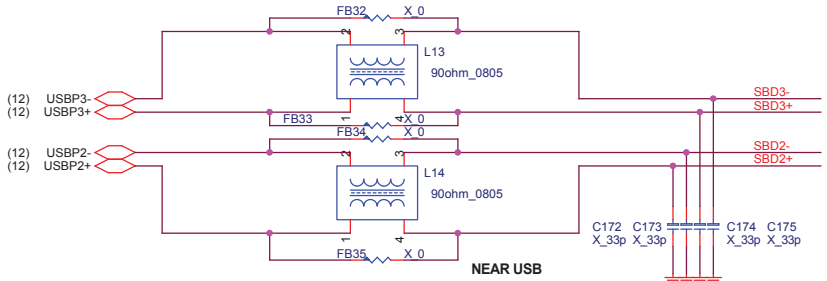




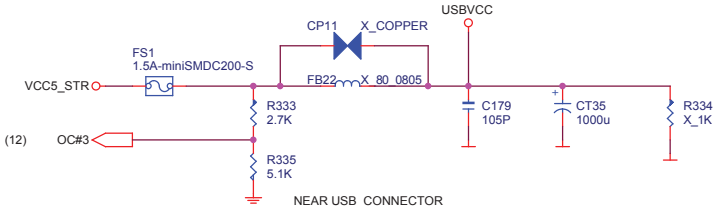
P1 Front USB Header



FRONT PANEL USB CONNECTOR FOR USB PORT 2,3

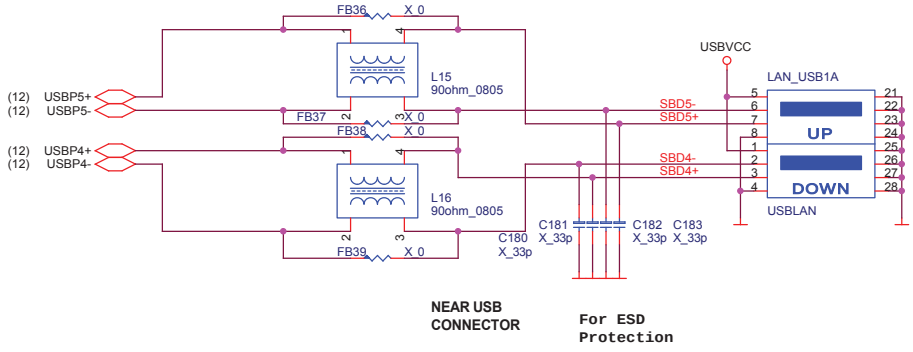


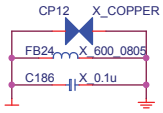
POWER CIRCUIT FOR USB PORT 4,5



* USB Trace width : 9 mils
* USB Trace Spacing : 25 mils
* Differential USB Signlas Trace, Spacing : 18 mils
* USB Power Trace must be 40mils width

REAR PANEL USB CONNECTOR FOR USB PORT 4,5





MICRO-STAR INT'L CO.,LTD.

Title: USB CONNECTORS

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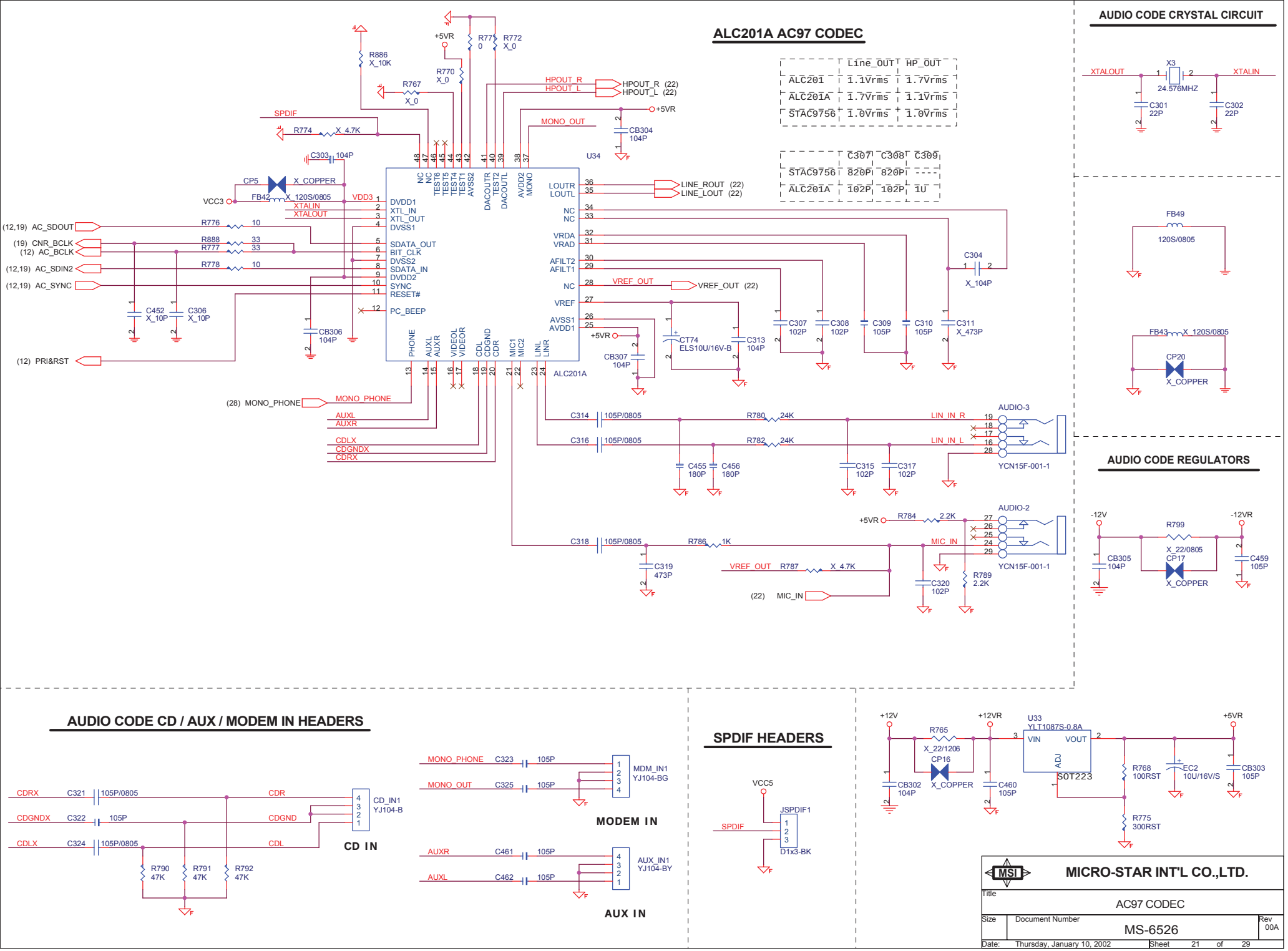
ALC201A AC97 CODEC
Line_OUT HP_OUT
ALC201 1.1Vrms 1.7Vrms
ALC201A 1.7Vrms 1.1Vrms
STAC9756 1.0Vrms 1.0Vrms
C307 C308 C309
STAC9756 820P 820P
ALC201A 102P 102P 1U
AUDIO CODE CRYSTAL CIRCUIT
X3
24.576MHZ
XTALOUT
XTALIN
C301 22P
C302 22P
FB49
120S/0805
FB43 X_120S/0805
CP20
X_COPPER
AUDIO CODE REGULATORS
-12V
-12VR
R799
X_22/0805
CP17
X_COPPER
CB305 104P
C459 105P
U34
ALC201A
DVDD1
XTL_IN
XTL_OUT
DVSS1
SDATA_OUT
BIT_CLK
DVSS2
SDATA_IN
DVDD2
SYNC
RESET#
PC_BEEP
LOUTR
LOUTL
VRDA
VRAD
AFILT2
AFILT1
VREF
AVSS1
AVDD1
PHONE
AUXL
AUXR
VIDEOL
VIDEOR
CDL
CDGND
CDR
MIC1
MIC2
LINL
LINR
HPOUT_R
HPOUT_L
MONO_OUT
SPDIF
VREF_OUT
LINE_ROUT (22)
LINE_LOUT (22)
HPOUT_R (22)
HPOUT_L (22)
VREF_OUT (22)
(12,19) AC_SDOUT
(19) CNR_BCLK
(12) AC_BCLK
(12,19) AC_SDIN2
(12,19) AC_SYNC
(12) PRI&RST
(28) MONO_PHONE
MONO_PHONE
AUXL
AUXR
CDLX
CDGNDX
CDRX
MIC_IN
(22) MIC_IN
VCC3
+5VR
-12V
-12VR
AUDIO-3
AUDIO-2
YCN15F-001-1
YCN15F-001-1
AUDIO CODE CD / AUX / MODEM IN HEADERS
CD_IN1
YJ104-B
CD IN
MDM_IN1
YJ104-BG
MODEM IN
AUX_IN1
YJ104-BY
AUX IN
SPDIF HEADERS
JSPDIF1
D1x3-BK
U33
YLT1087S-0.8A
SOT223
VIN
VOUT
ADJ
+12V
+12VR
+5VR
MICRO-STAR INT'L CO.,LTD.
Title
AC97 CODEC
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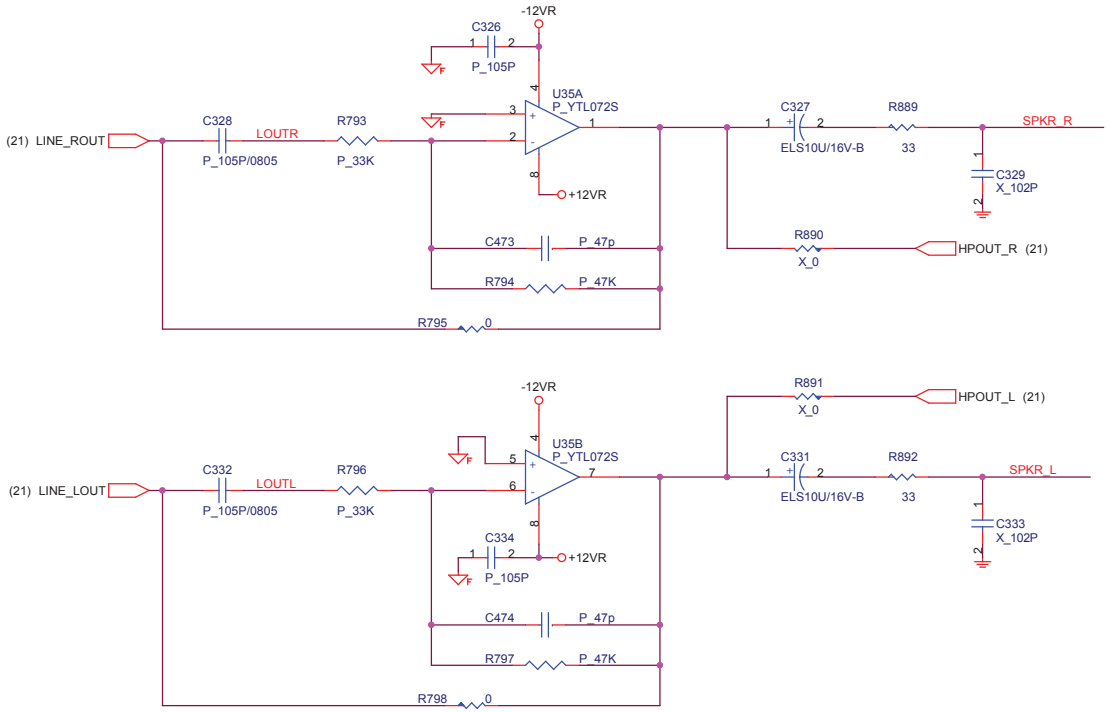
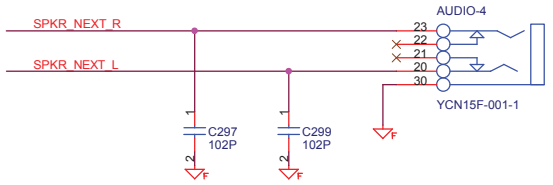
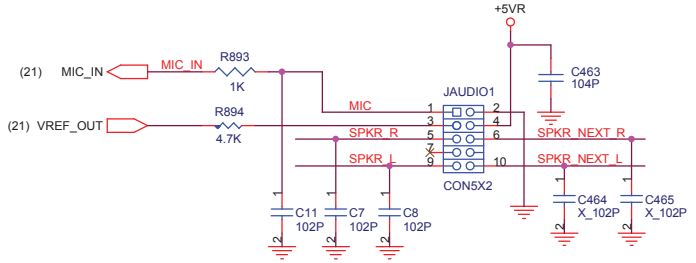
SPEAKER OUT CIRCUIT

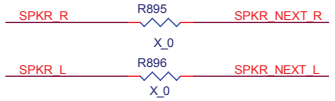


SPEAKER OUT JACK



FOR Intel INTERNAL HEADER





MSI	MICRO-STAR INT'L CO.,LTD.	
Title	AUDIO AMPLIFIER	
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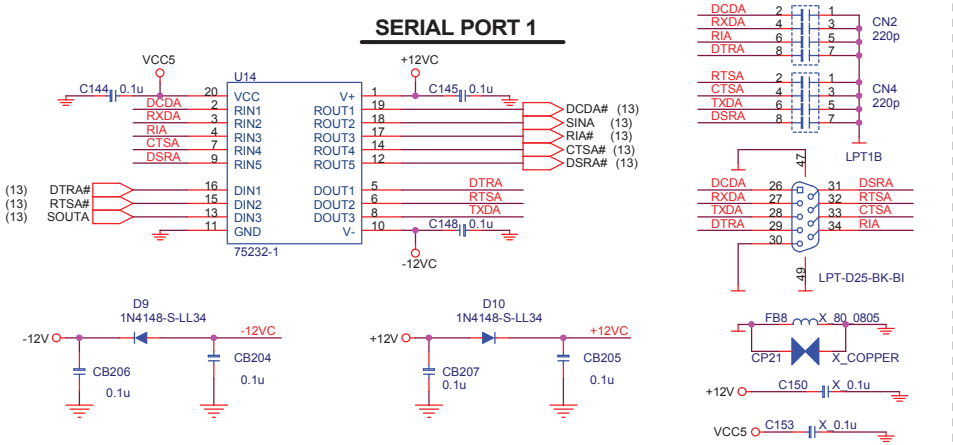
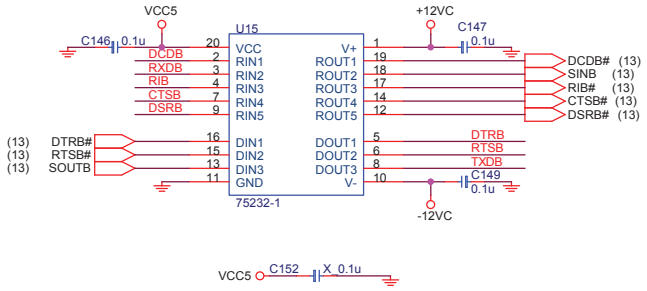
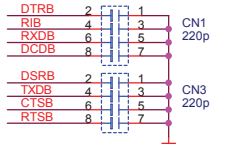
SERIAL PORT 1



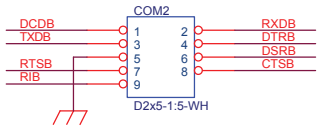
SERIAL PORT 2



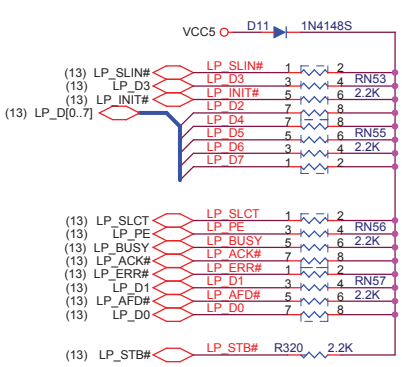
For EMI

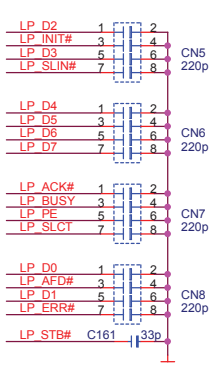


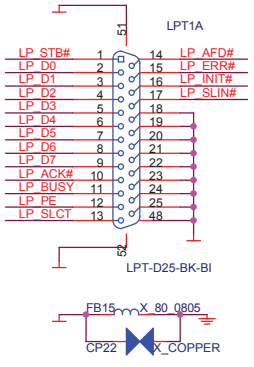
COM2 HEADER



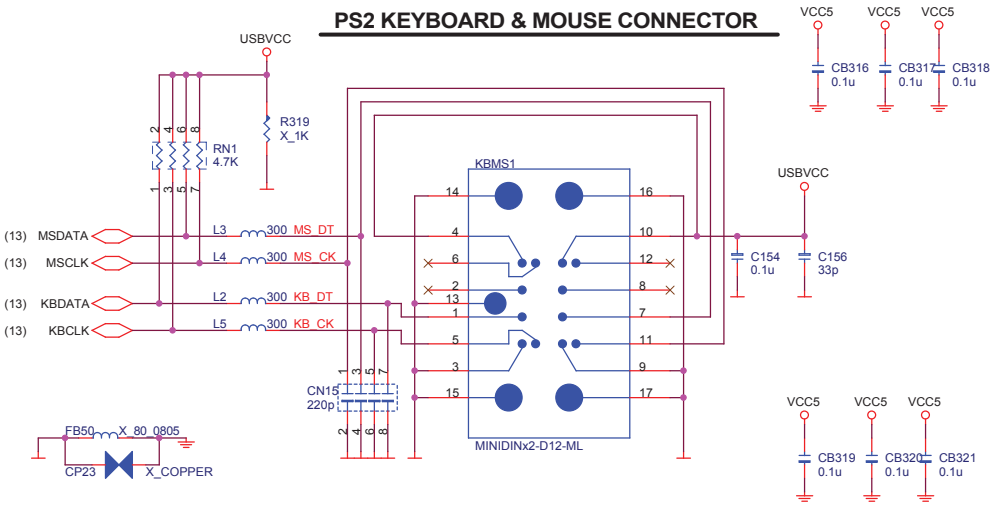
PARALLAL PORT



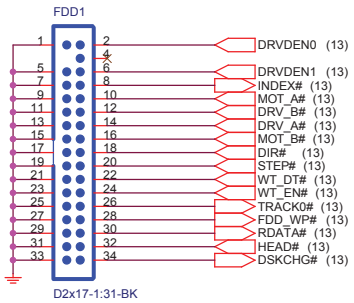


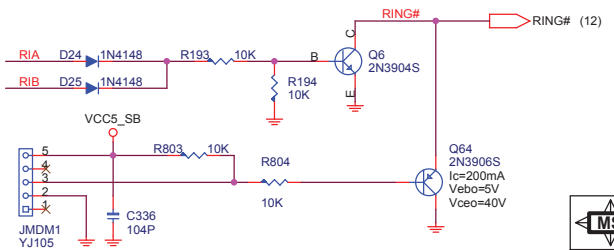


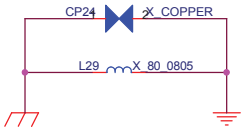
PS2 KEYBOARD & MOUSE CONNECTOR



FLOPPY CONNECTOR







MSI **MICRO-STAR INT'L CO.,LTD.**

Title	I/O CONNECTORS	
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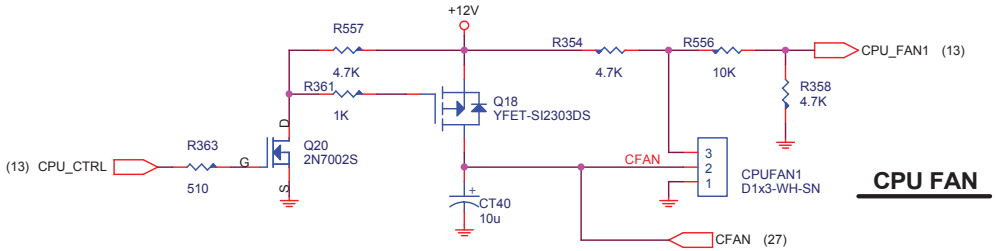
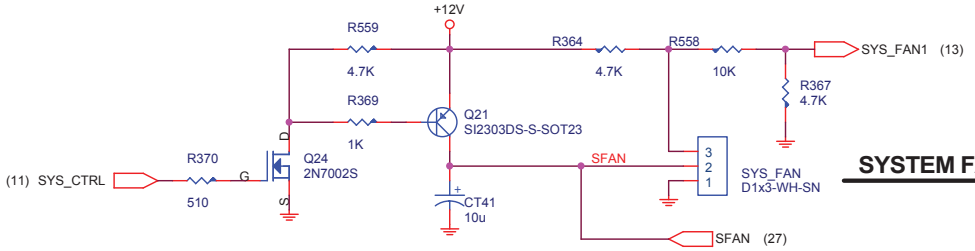
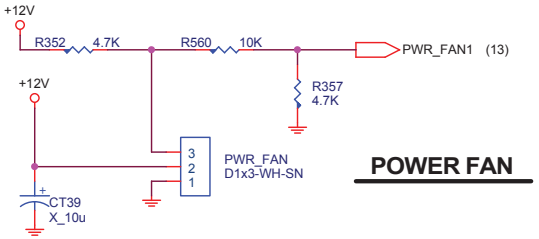


CPU FAN

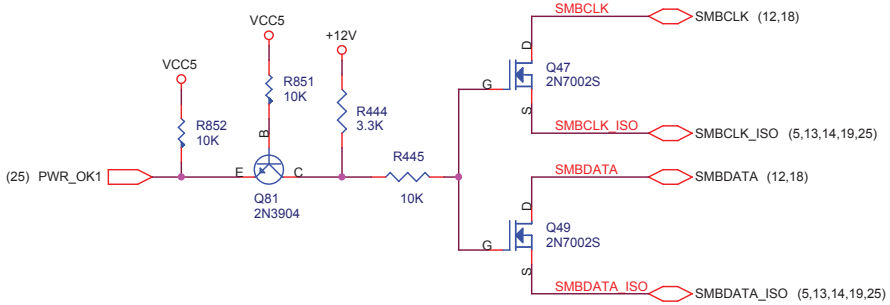


SYSTEM FAN



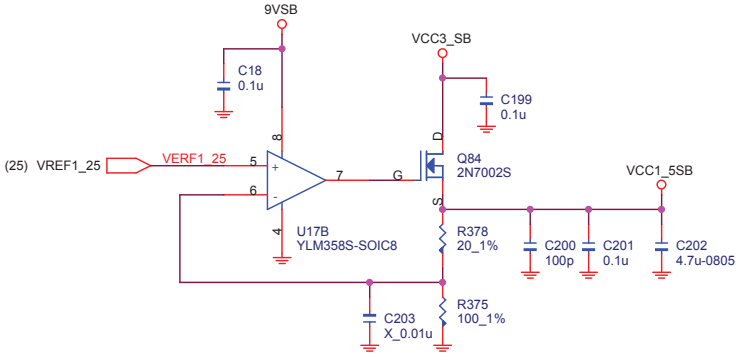
POWER FAN

SMBus Isolation

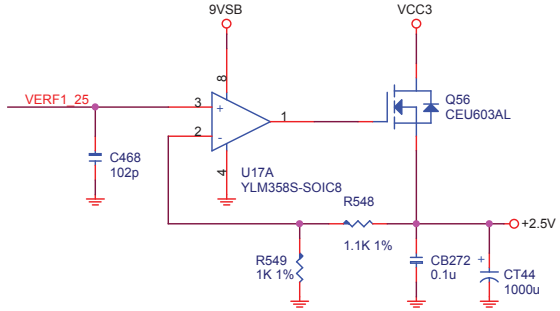


1.5V STANDBY POWER TRANSLATOR

(40mils trace / 20 mils space)



AGP4X & GMCH 1.5V POWER TRANSLATOR



MSI	MICRO-STAR INT'L CO.,LTD.	
Title	FAN	
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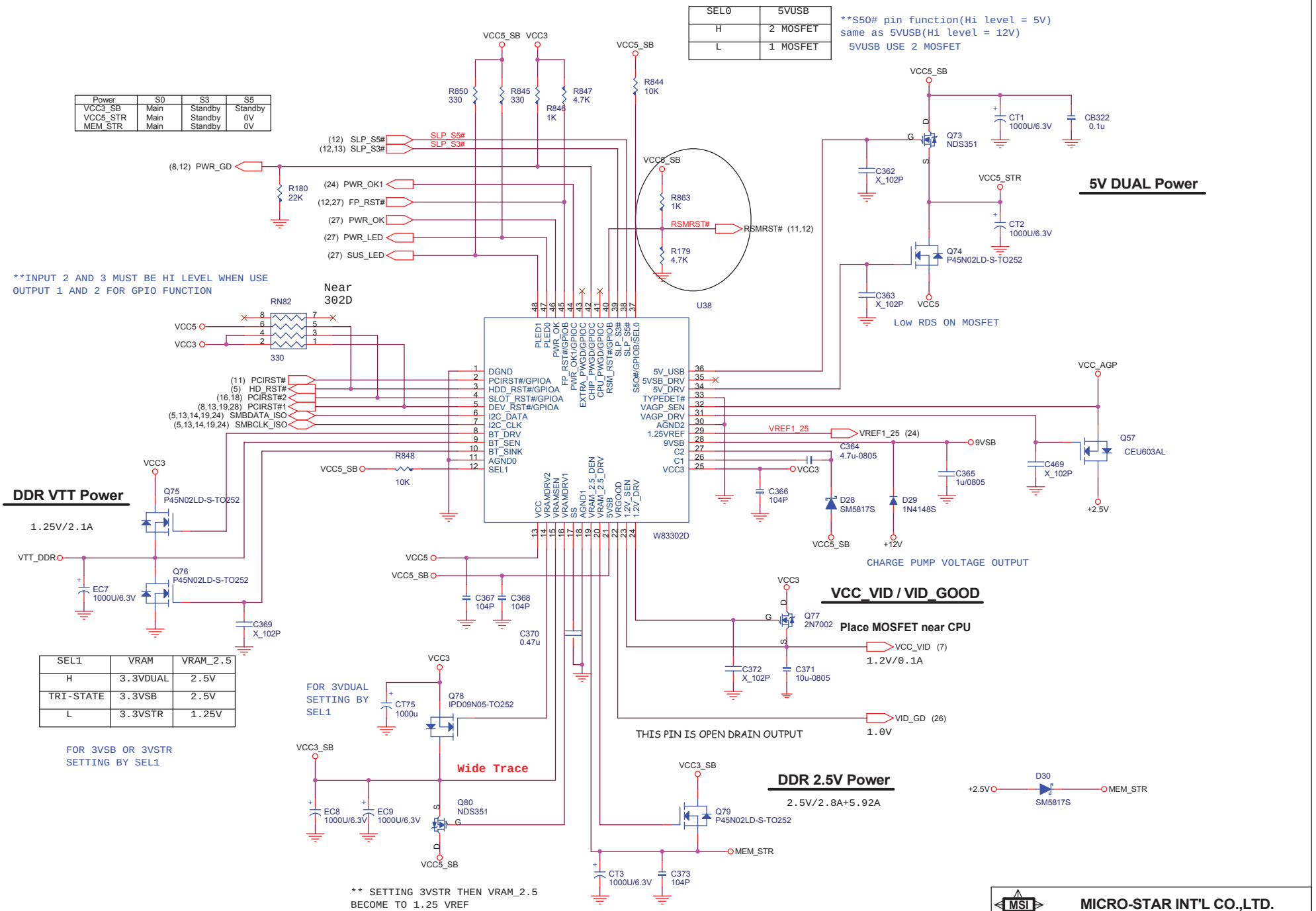
Power | S0 | S3 | S5
VCC3_SB | Main | Standby | Standby
VCC5_STR | Main | Standby | 0V
MEM_STR | Main | Standby | 0V
SEL0 | 5VUSB
H | 2 MOSFET
L | 1 MOSFET
**S5O# pin function(Hi level = 5V)
same as 5VUSB(Hi level = 12V)
5VUSB USE 2 MOSFET
5V DUAL Power
Low RDS ON MOSFET
**INPUT 2 AND 3 MUST BE HI LEVEL WHEN USE
OUTPUT 1 AND 2 FOR GPIO FUNCTION
Near 302D
U38
W83302D
DDR VTT Power
1.25V/2.1A
CHARGE PUMP VOLTAGE OUTPUT
VCC_VID / VID_GOOD
Place MOSFET near CPU
1.2V/0.1A
THIS PIN IS OPEN DRAIN OUTPUT
1.0V
SEL1 | VRAM | VRAM_2.5
H | 3.3VDUAL | 2.5V
TRI-STATE | 3.3VSB | 2.5V
L | 3.3VSTR | 1.25V
FOR 3VSB OR 3VSTR
SETTING BY SEL1
FOR 3VDUAL
SETTING BY
SEL1
Wide Trace
DDR 2.5V Power
2.5V/2.8A+5.92A
** SETTING 3VSTR THEN VRAM_2.5
BECOME TO 1.25 VREF
MICRO-STAR INT'L CO.,LTD.
ACPI CONTROLLER
MS-6526
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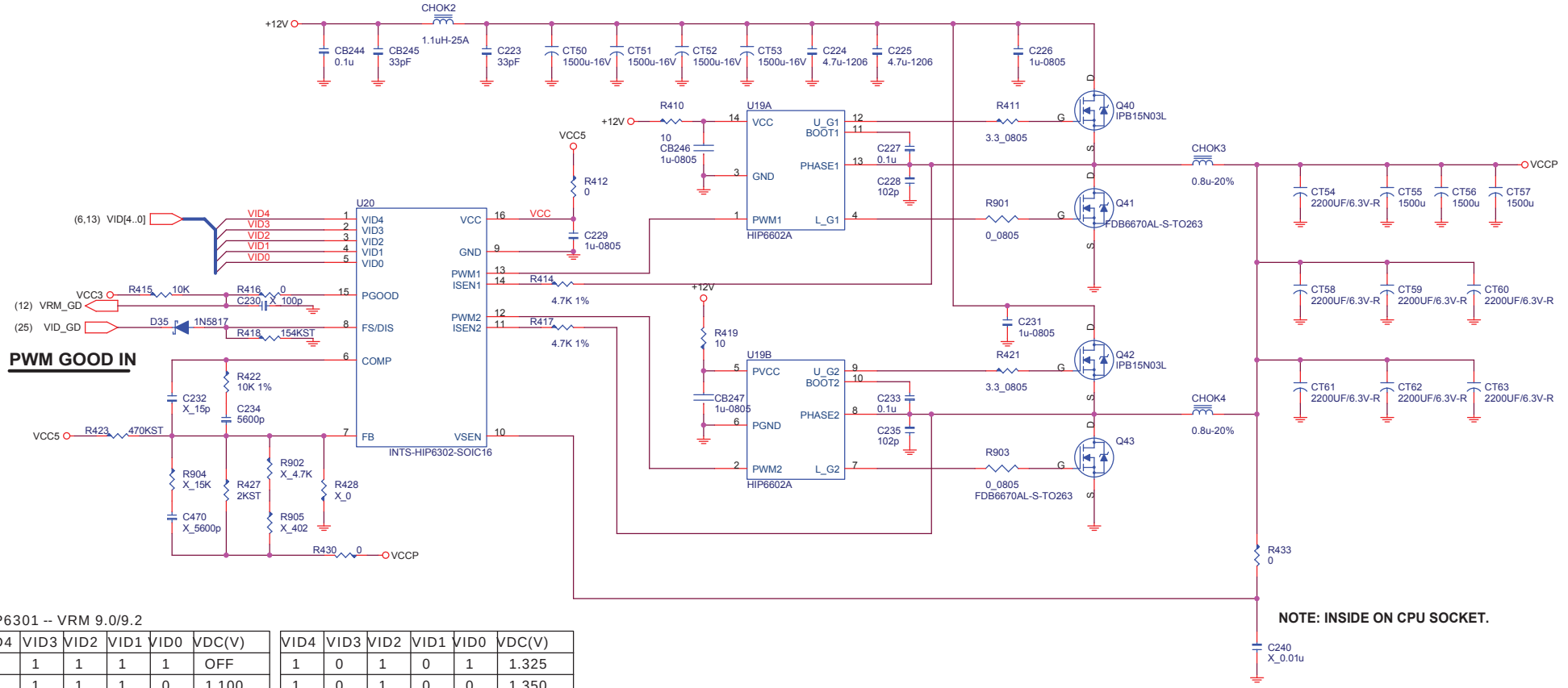
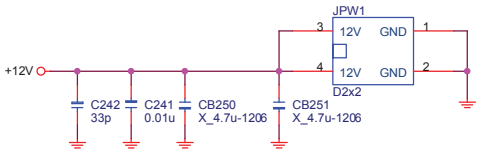


HIP6301 -- VRM 9.0/9.2

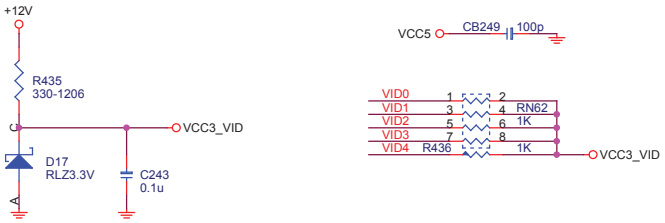
VID4	VID3	VID2	VID1	VID0	VDC(V)
1	1	1	1	1	OFF
1	1	1	1	0	1.100
1	1	1	0	1	1.125
1	1	1	0	0	1.150
1	1	0	1	1	1.175
1	1	0	1	0	1.200
1	1	0	0	1	1.225
1	1	0	0	0	1.250
1	0	1	1	1	1.275
1	0	1	1	0	1.300

VID4	VID3	VID2	VID1	VID0	VDC(V)
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
0	1	1	1	0	1.500
0	1	1	0	1	1.525
0	1	1	0	0	1.550

ATX12V POWER CONNECTOR



VID PULL-UP RESISTORS



MSI MICRO-STAR INT'L CO.,LTD.

Title	VRM 9.0	
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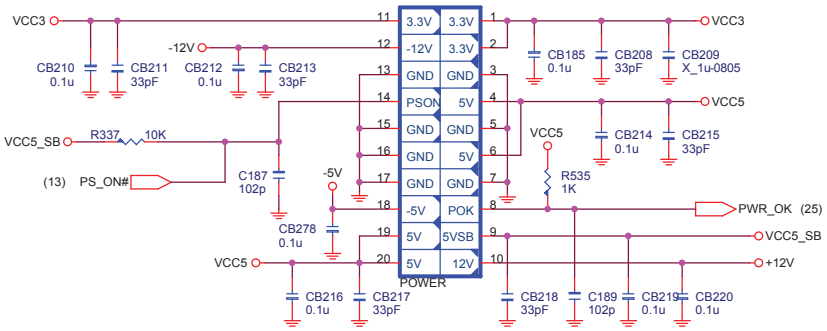
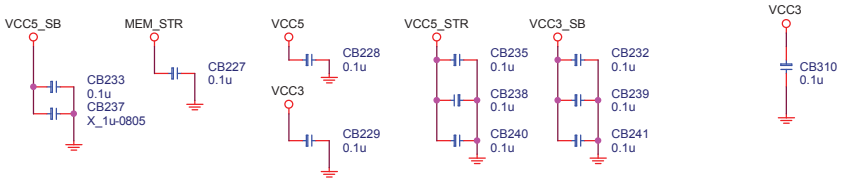
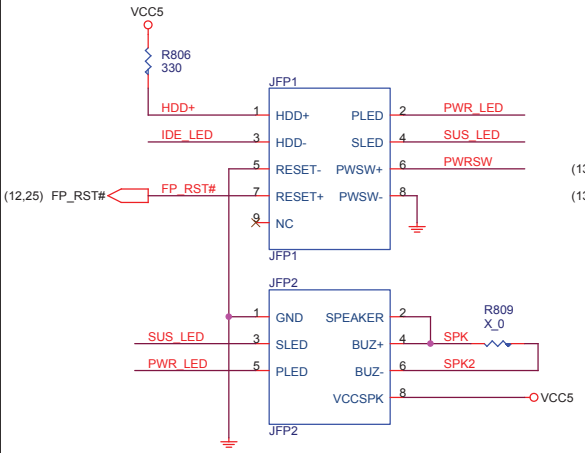
ATX CONNECTOR



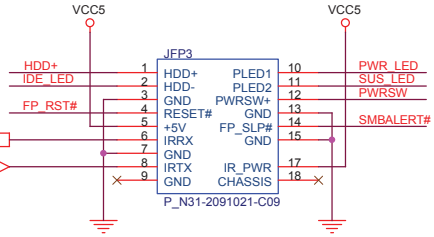
REGULATORS OUTPUT DECOUPLING CAPACITORS



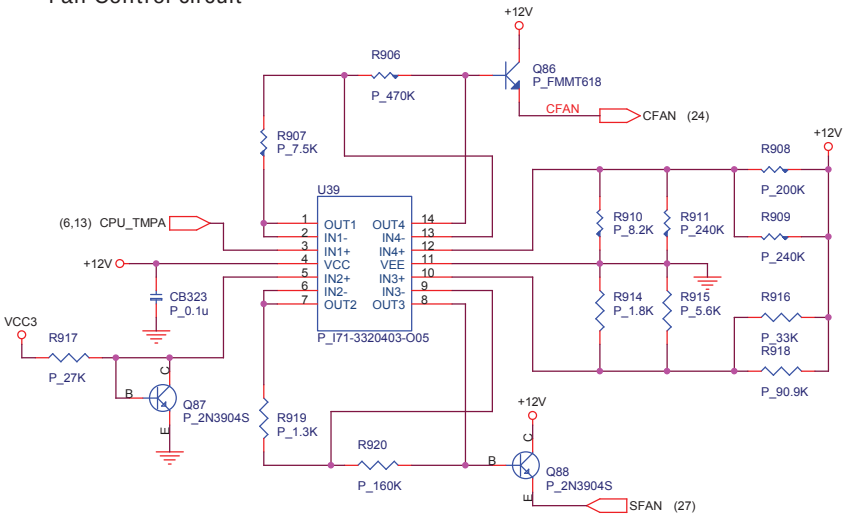
MSI/Intel Front Panel

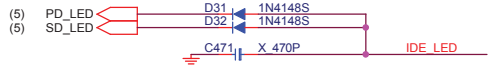


For P1 Customer Front Panel Header

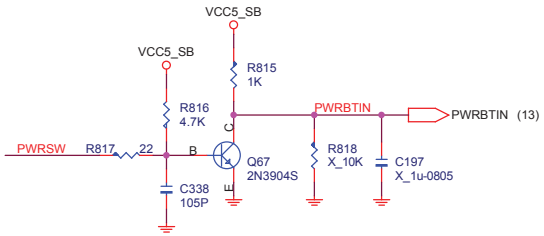


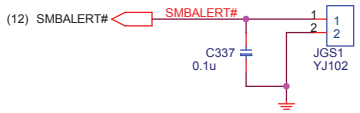
For P1 Customer Fan Control circuit



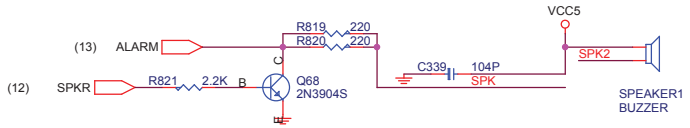


POWER BUTTON





SPEAKER



MSI	MICRO-STAR INT'L CO.,LTD.	
Title	Front Panel & ATX Connector & FAN	
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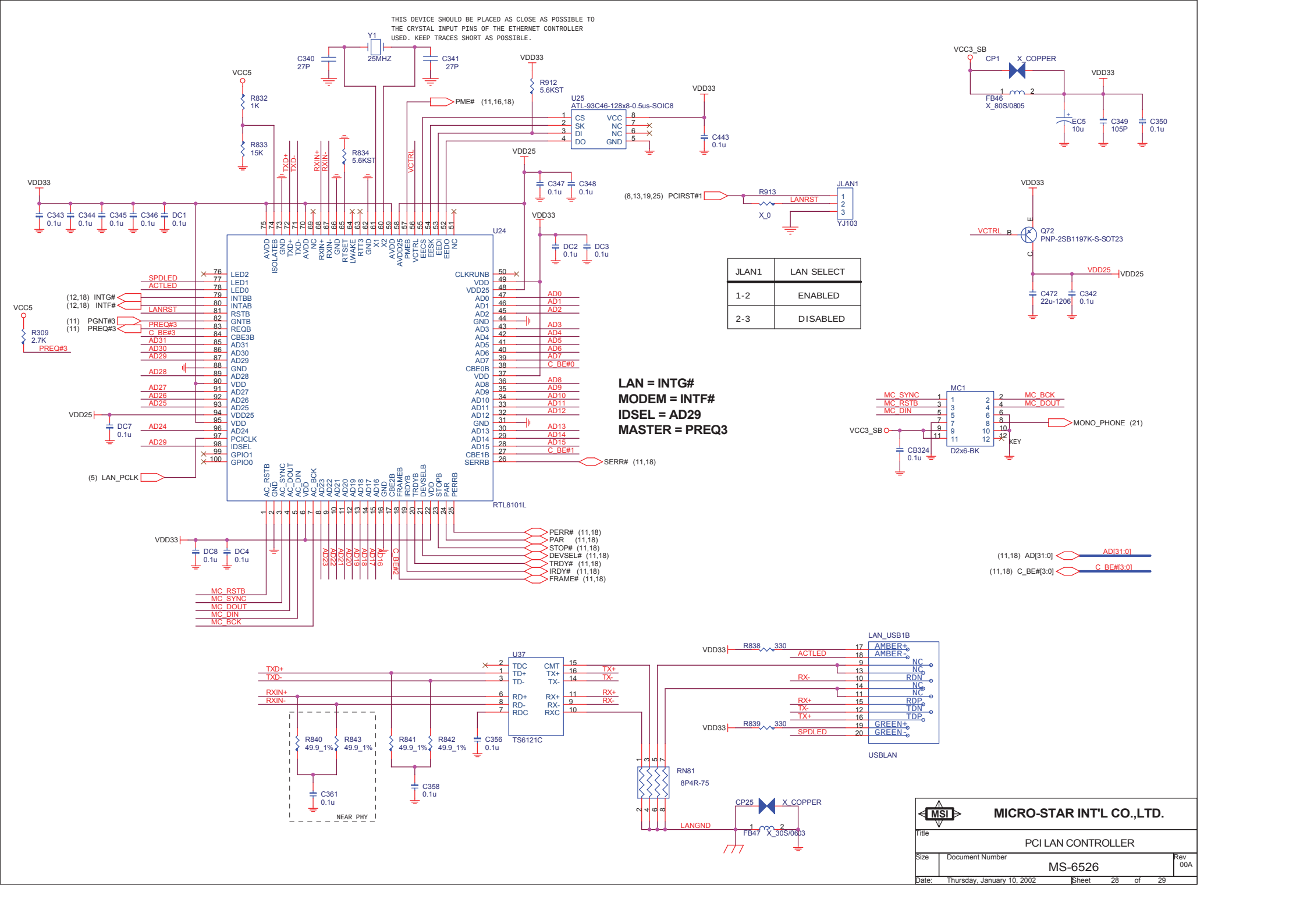
THIS DEVICE SHOULD BE PLACED AS CLOSE AS POSSIBLE TO THE CRYSTAL INPUT PINS OF THE ETHERNET CONTROLLER USED. KEEP TRACES SHORT AS POSSIBLE.
Y1
25MHZ
C340 27P
C341 27P
VCC5
R832 1K
R833 15K
R834 5.6KST
VDD33
R912 5.6KST
U25
ATL-93C46-128x8-0.5us-SOIC8
CS SK DI DO VCC NC NC GND
C443 0.1u
PME# (11,16,18)
VDD25
C347 0.1u
C348 0.1u
C343 0.1u
C344 0.1u
C345 0.1u
C346 0.1u
DC1 0.1u
U24
RTL8101L
AVDD ISOLATEB GND TXD+ TXD- AVDD NC RXIN+ RXIN- GND RTSET LWAKE RTT3 GND X1 X2 AVDD AVDD25 PMEB VCTRL EECK EESK EEDI EEDO NC
LED2 LED1 LED0 INTBB INTAB RSTB GNTB REQB CBE3B AD31 AD30 AD29 GND AD28 VDD AD27 AD26 AD25 VDD25 VDD AD24 PCICLK IDSEL GPIO1 GPIO0
CLKRUNB VDD VDD25 AD0 AD1 AD2 GND AD3 AD4 AD5 AD6 AD7 CBE0B VDD AD8 AD9 AD10 AD11 AD12 GND AD13 AD14 AD15 CBE1B SERRB
AC_RSTB GND AC_SYNC AC_DOUT AC_DIN VDD AC_BCK AD23 AD22 AD21 AD20 AD19 AD18 AD17 AD16 GND CBE2B FRAMEB IRDYB TRDYB DEVSELB VDD STOPB PAR PERRB
SPDLED ACTLED
(12,18) INTG#
(12,18) INTF#
LANRST
(11) PGNT#3
(11) PREQ#3
C_BE#3
AD31 AD30 AD29 AD28 AD27 AD26 AD25 AD24 AD29
(5) LAN_PCLK
R309 2.7K
PREQ#3
DC7 0.1u
DC2 0.1u
DC3 0.1u
DC8 0.1u
DC4 0.1u
SERR# (11,18)
PERR# (11,18)
PAR (11,18)
STOP# (11,18)
DEVSEL# (11,18)
TRDY# (11,18)
IRDY# (11,18)
FRAME# (11,18)
MC_RSTB
MC_SYNC
MC_DOUT
MC_DIN
MC_BCK
LAN = INTG#
MODEM = INTF#
IDSEL = AD29
MASTER = PREQ3
(8,13,19,25) PCIRST#1
R913
X_0
JLAN1
YJ103
JLAN1 | LAN SELECT
1-2 | ENABLED
2-3 | DISABLED
VCC3_SB
CP1 X_COPPER
FB46 X_80S/0805
EC5 10u
C349 105P
C350 0.1u
VCTRL
Q72 PNP-2SB1197K-S-SOT23
C472 22u-1206
C342 0.1u
MC1
D2x6-BK
KEY
MC_SYNC MC_RSTB MC_DIN MC_BCK MC_DOUT
MONO_PHONE (21)
CB324 0.1u
(11,18) AD[31:0]
(11,18) C_BE#[3:0]
AD[31:0]
C_BE#[3:0]
U37
TS6121C
TDC TD+ TD- CMT TX+ TX- RD+ RD- RDC RX+ RX- RXC
TXD+ TXD- RXIN+ RXIN-
TX+ TX- RX+ RX-
R840 49.9_1%
R843 49.9_1%
R841 49.9_1%
R842 49.9_1%
C356 0.1u
C361 0.1u
C358 0.1u
NEAR_PHY
RN81
8P4R-75
LAN_USB1B
USBLAN
AMBER+ AMBER- NC NC RDN NC NC RDP TDN TDP GREEN+ GREEN-
R838 330
R839 330
ACTLED
SPDLED
RX- RX+ TX- TX+
CP25 X_COPPER
FB47 X_30S/0603
LANGND
MSI
MICRO-STAR INT'L CO.,LTD.
Title
PCI LAN CONTROLLER
Size
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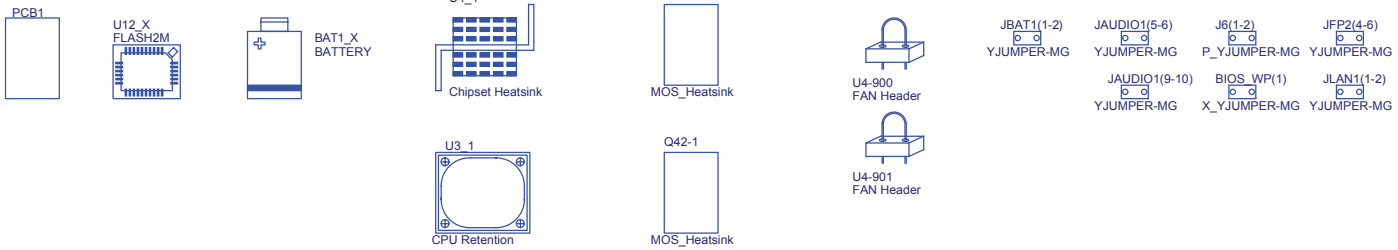
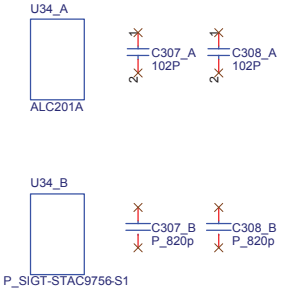


JBAT1 Clear CMOS	
1 - 2	Normal *
2 - 3	Clear CMOS

J6 Config. mode	
1 - 2	Normal *
2 - 3	Configuration Mode
OPEN	Recovery

BIOS_WP	BIOS Update
SHORT	Locked
OPEN	Unlocked *

JLAN1	LAN SELECT
1-2	ENABLED
2-3	DISABLED



MSI **MICRO-STAR INT'L CO.,LTD.**

Title		
	MANUAL PARTS	
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