

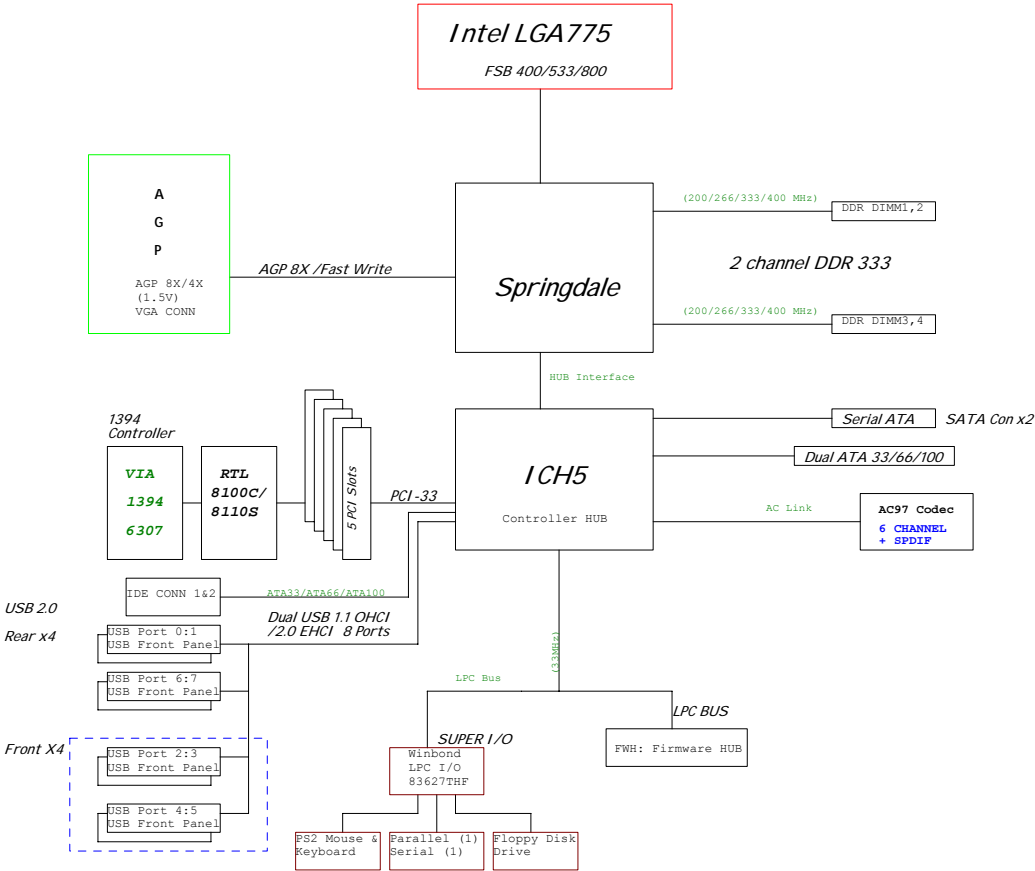
MS-7088 uATX

- *Intel LGA775
- *INTEL Springdale GMCH / ICH5 Chipset
(DDR 400 / AGP 8X) / (integrated serial ATA)
- *CLOCK -- ICS952642
- *LAN - REALTEK RTL8110S/8100C
- *VIA/6307,IEEE1394 2port
- *Winbond 83627THF LPC I/O
- *ALC655 Audio codec 6 channel support
- *USB 2.0 support x8

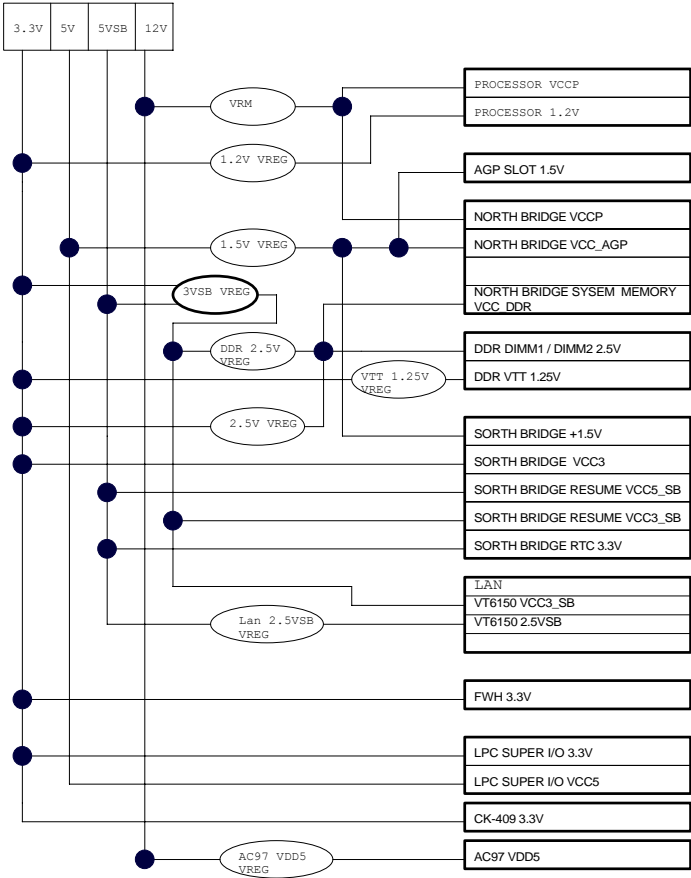
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Block Diagram

+5V : VCC5
+3.3V : VCC3
+12V : +12V
5VSB : VCC5_SB
-12V : -12V
+2.55V for DDR : VCC_DDR
1.275V for DDR VTT : VTT_DDR
Dual 3.3V : 3VDUAL
1.2V for CPU VID : VCC_VID
1.5V for AGP VI/O : VCC_AGP
Dual 5V : 5VDUAL
CPU Vcore : VCCP
+5V for analog CODEC : AVDD5
2.5V for LAN : 2_5VSB
+12V for 1394 bus power : CPWR



POWER DELIVERY MAP



GPIO FUNCTION

ICH5

GPIO Pin	Type	Function	Power well
GPIO 0	I	PREQ#B	MAIN
GPIO 1	I	PREQ#B	MAIN
GPIO 2	I	PIRQ#E	MAIN
GPIO 3	I	PIRQ#F	MAIN
GPIO 4	I	PIRQ#G	MAIN
GPIO 5	I	PIRQ#H	MAIN
GPIO 6	I	GPI6	MAIN
GPIO 7	I	GPI7	MAIN
GPIO 8	I	GPI8	RESUME
GPIO 9	I	OC4#	RESUME
GPIO 10	I	OC5#	RESUME
GPIO 11	I	SIO_SMI#	RESUME
GPIO 12	I	EXTSMI#	RESUME
GPIO 13	I	SIO_PME#	RESUME
GPIO 14	I	OC#6	RESUME
GPIO 15	I	OC#7	RESUME
GPIO 16	O	PGNT#A	MAIN
GPIO 17	O	PGNT#B	MAIN
GPIO 18	O	GPO18	MAIN
GPIO 19	O	BIOS_WP#	MAIN
GPIO 20	O	GPO20	MAIN
GPIO 21	O	GPO21	MAIN
GPIO 22	OD	GPO22	MAIN
GPIO 23	O	GPO23	MAIN
GPIO 24	I/O	GPIO24	RESUME
GPIO 25	I/O	GPIO25	RESUME
GPIO 27	I/O	GPIO27	RESUME
GPIO 28	I/O	GPIO28	RESUME
GPIO 32	I/O	GPIO32	MAIN
GPIO 33	I/O	GPIO33	MAIN
GPIO 34	I/O	GPIO34	MAIN
GPIO 40	I	PREQ#4	MAIN
GPIO 41	I	GPI41	MAIN
GPIO 48	O	PGNT#4	MAIN
GPIO 49	OD	CPUPWRGD	MAIN

default output
default output
default output
default output
default output

FWH

GPIO Pin	Type	Function
GPI 0	I	PD_DET
GPI 1	I	SD_DET
GPI 2	I	BOM strapping for Bit 0
GPI 3	I	Pull down through 1K ohms (unused)
GPI 4	I	BOM strapping for Bit 1

DDR DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	1010000B	MCLK_A0/MCLK_A0# MCLK_A1/MCLK_A1# MCLK_A2/MCLK_A2#
DIMM 2	1010001B	MCLK_A3/MCLK_A3# MCLK_A4/MCLK_A4# MCLK_A5/MCLK_A5#

DDR DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 3	1010010B	MCLK_B0/MCLK_B0# MCLK_B1/MCLK_B1# MCLK_B2/MCLK_B2#
DIMM 4	1010011B	MCLK_B3/MCLK_B3# MCLK_B4/MCLK_B4# MCLK_B5/MCLK_B5#

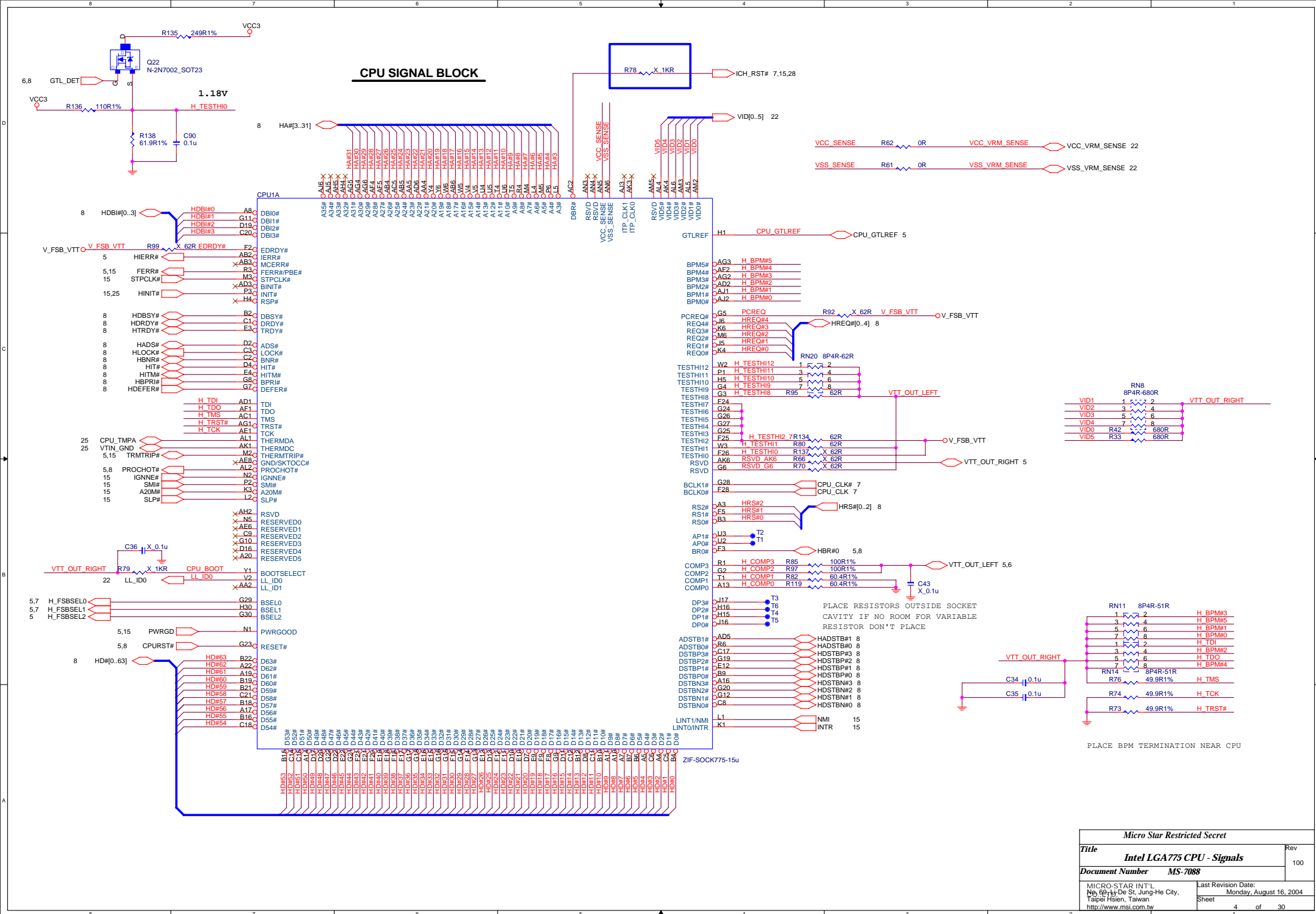
PCI RESET DEVICE

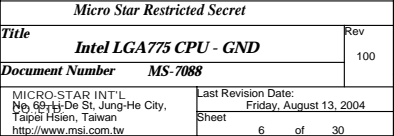
Signals	Target
PCIRST#_ICH5	AGP,FWH,MS-5
PCIRST#1	Springdale,LAN, Super I/O,1394,MS-1
PCIRST#2	PCI slot 1-3 & Mini PCI
HD_RST#	Primary, Scoundary IDE

PCI clock NC pin : PCI 33MHz(Pin 19 ,20) , 66MHz(Pin 27)

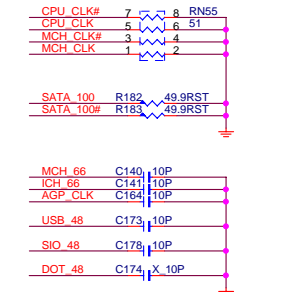
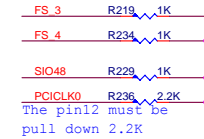
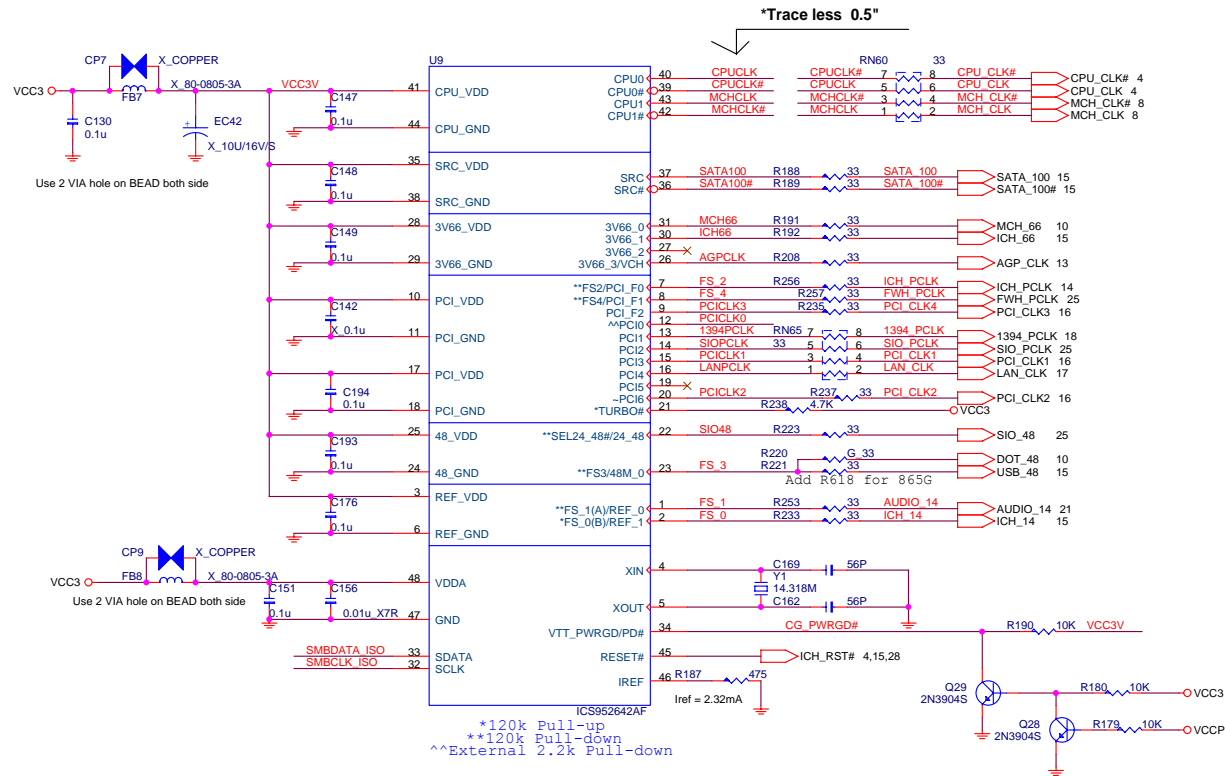
DEVICES	INT#	IDSEL	REQ#/GNT#	CLOCK
Mini PCI 1	INT#A INT#B	AD16	PREQ#1 PGNT#1	PCICLK1-Pin-14
PCI SLOT 1	INT#B INT#C INT#D INT#A	AD17	PCI1PREQ#1 PCI1PGNT#1	PCICLK2-Pin-15
PCI SLOT 2	INT#C INT#D INT#A INT#B	AD18	PREQ#3 PGNT#3	PCICLK3-Pin-20
PCI SLOT 3	INT#D INT#A INT#B INT#C	AD19	PCI3PREQ#3 PCI3PGNT#3	MS1 (MS1PCLK-Pin-8)
PCI SLOT 4	INT#G	AD20	PREQ#5 PGNT#5	PCICLK5-Pin-21
Lan 6105L	INT#E	AD25	PREQ#4 PGNT#4	Lan_PCLK-Pin-16
1394	INT#F	AD26	PREQ#2 PGNT#2	1394_PCLK-Pin-12
MS-1			PREQ#0 PGNT#0	MS1PCLK-Pin-8

Micro Star Restricted Secret			
Title	GPIO Spec.		Rev 100
Document Number	MS-7088		
MICRO-STAR INT'L No. 66, Ly-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Thursday, August 05, 2004 Sheet 3 of 30	

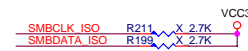
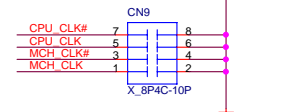
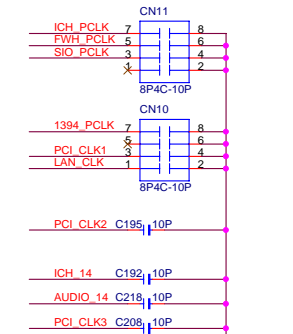




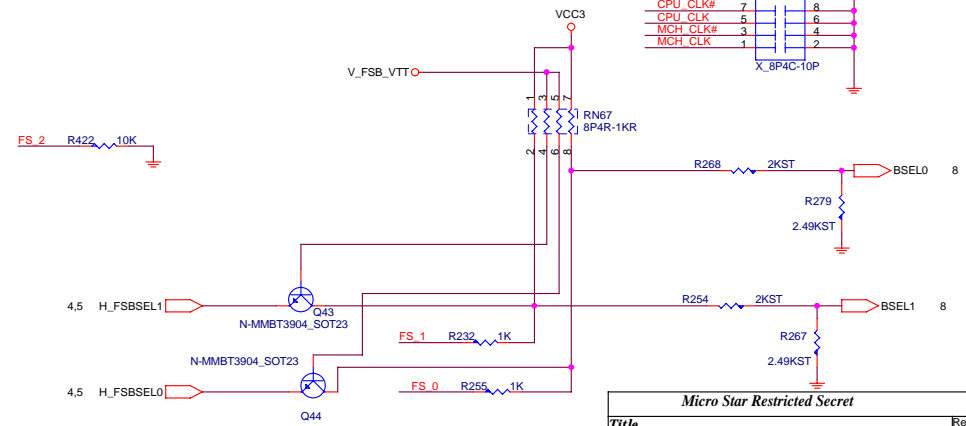
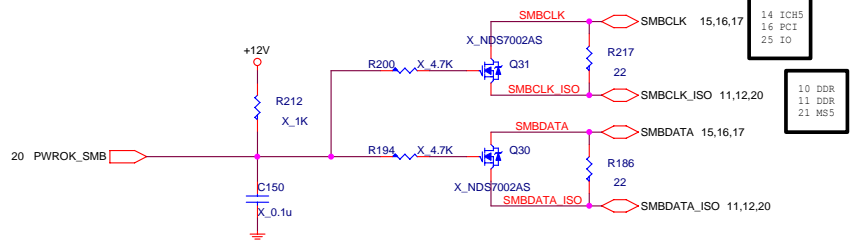
Clock Synthesizer



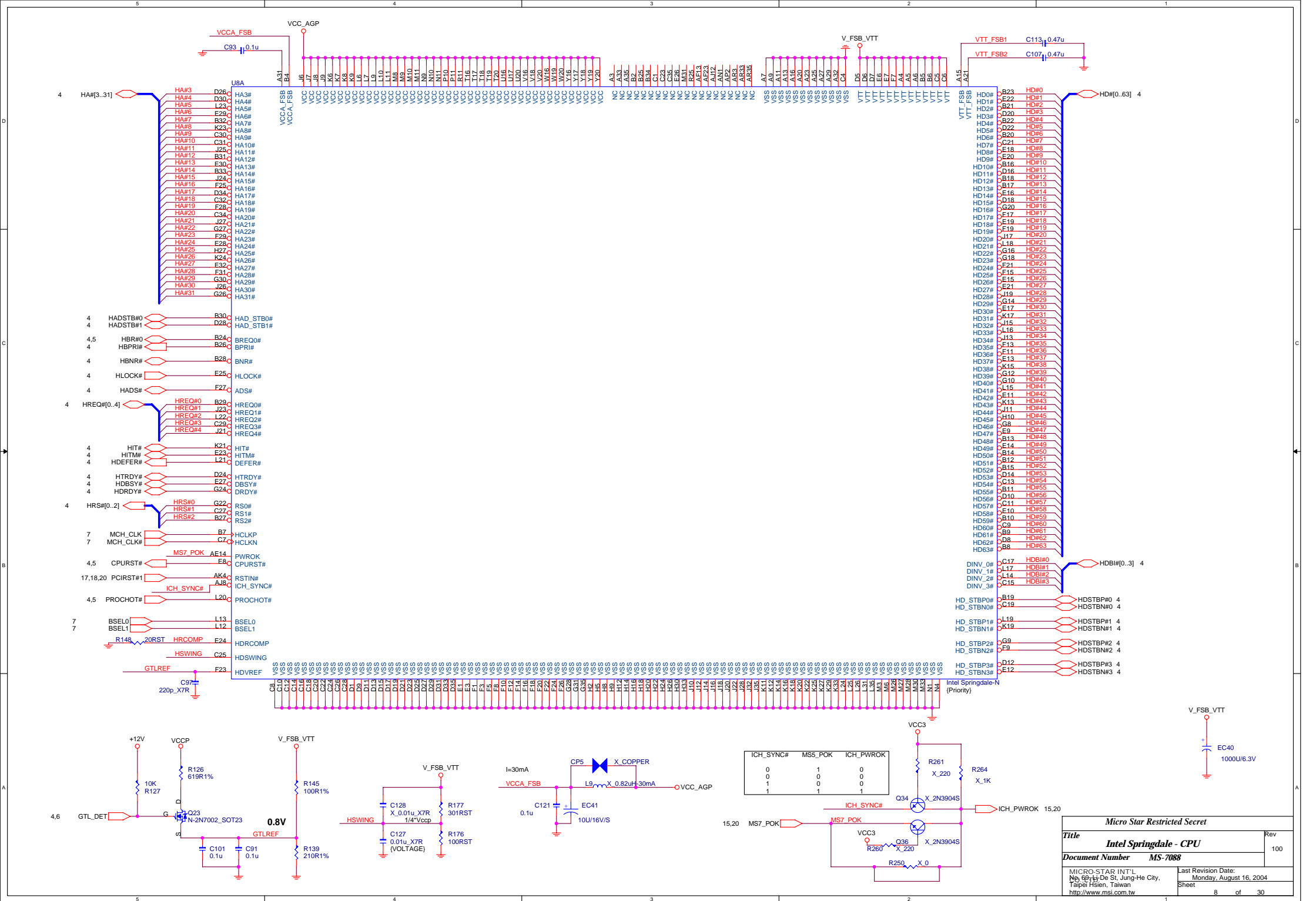
EMC HF filter capacitors, located close to PLL

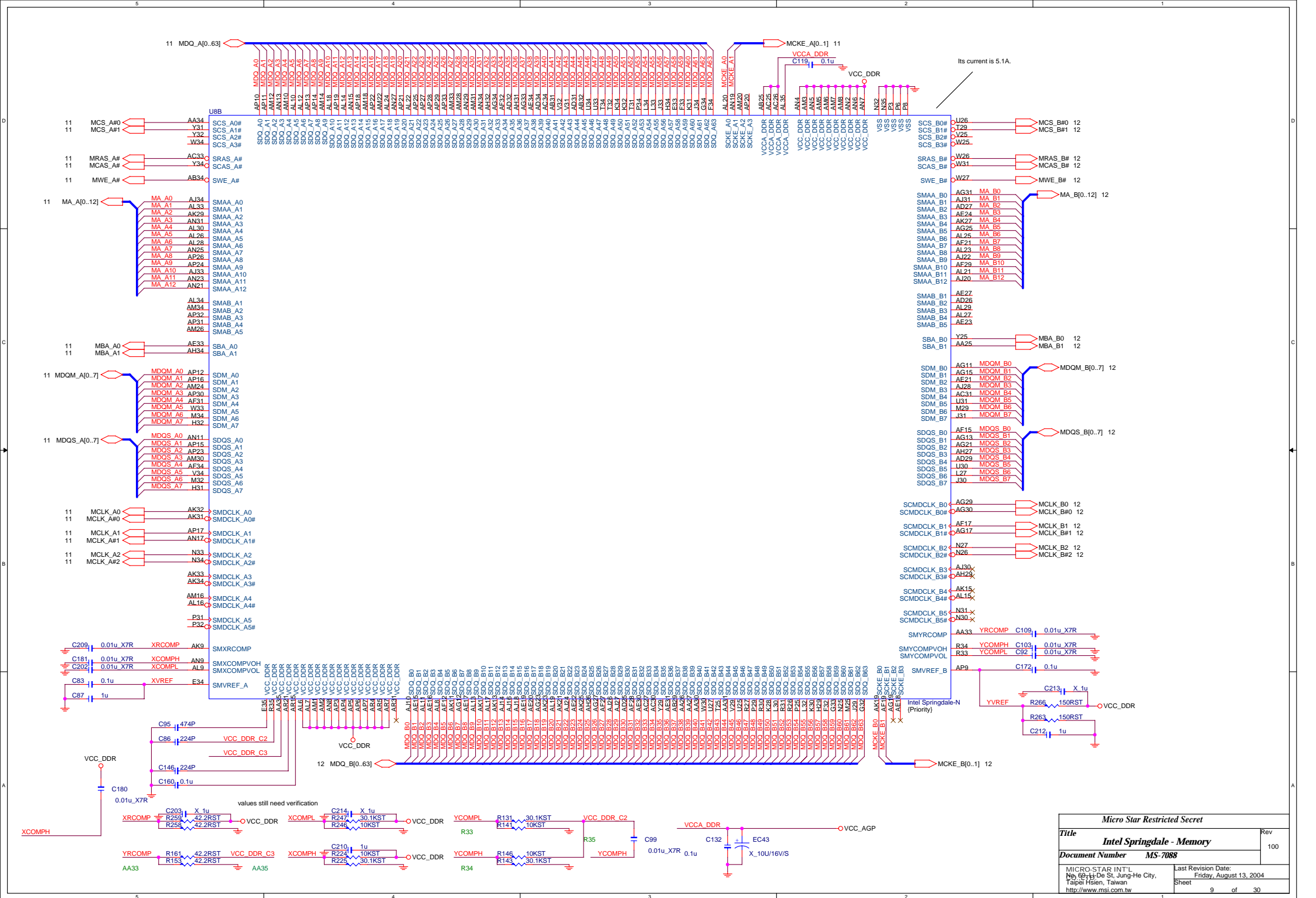


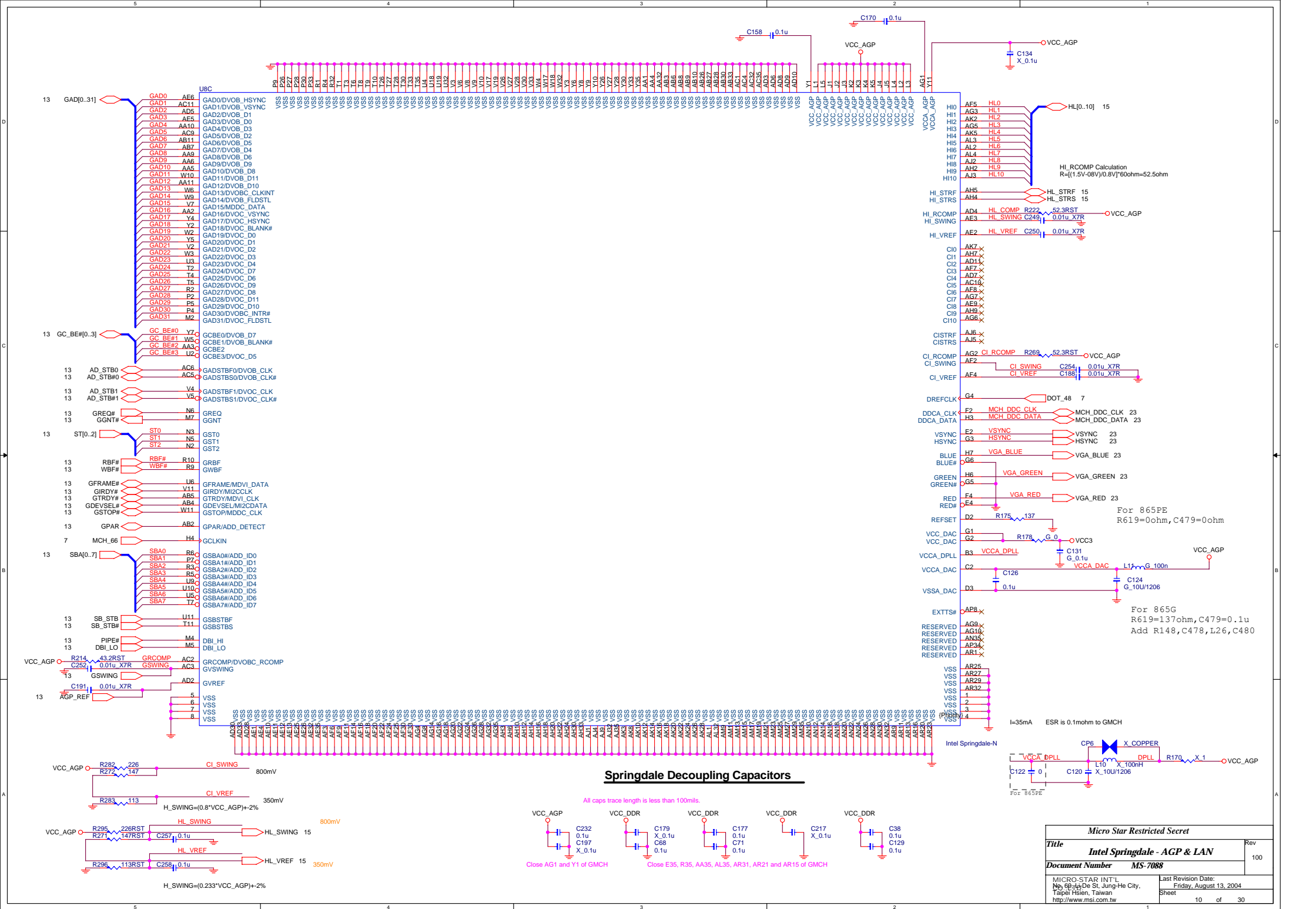
SMBus Isolation



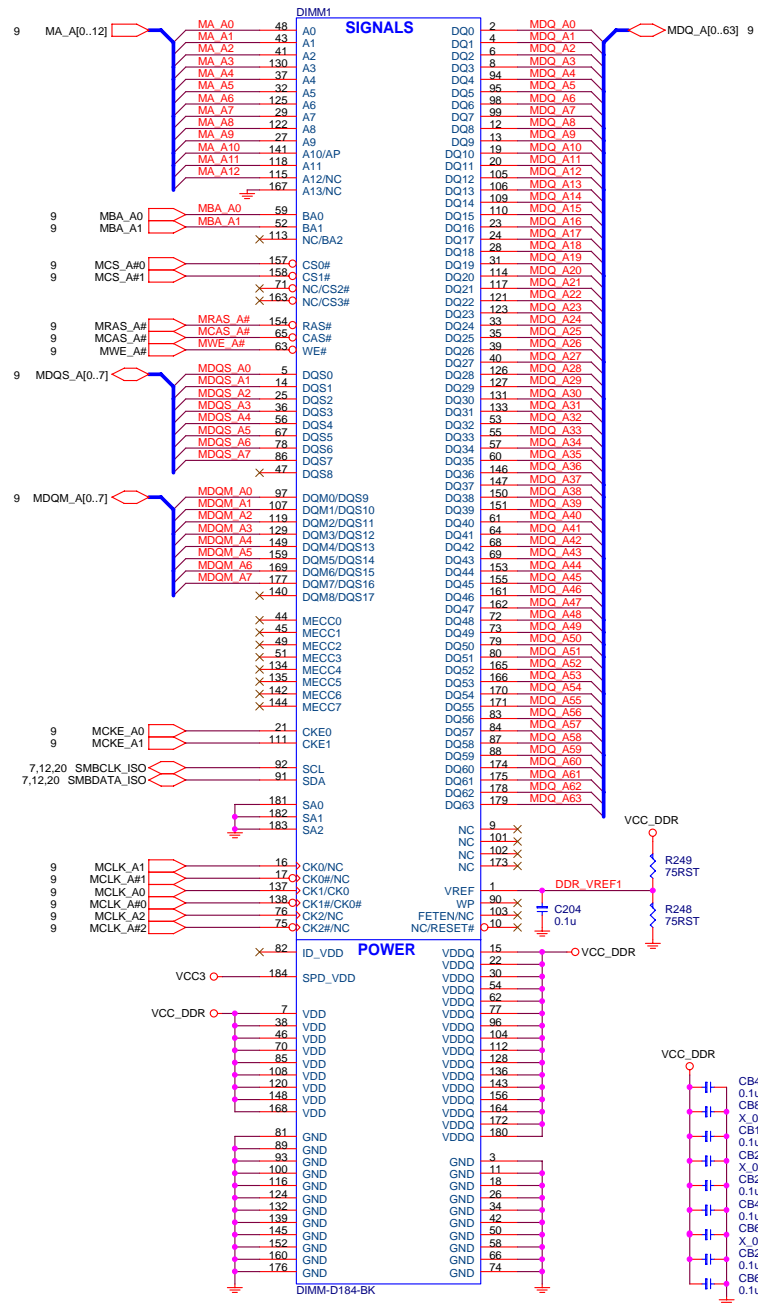
Micro Star Restricted Secret	
Title	Rev
Clock Synthesizer	100
Document Number	MS-7088
MICRO-STAR INT'L No. 66H4, De St. Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw	
Last Revision Date:	
Monday, August 16, 2004	
Sheet	7 of 30





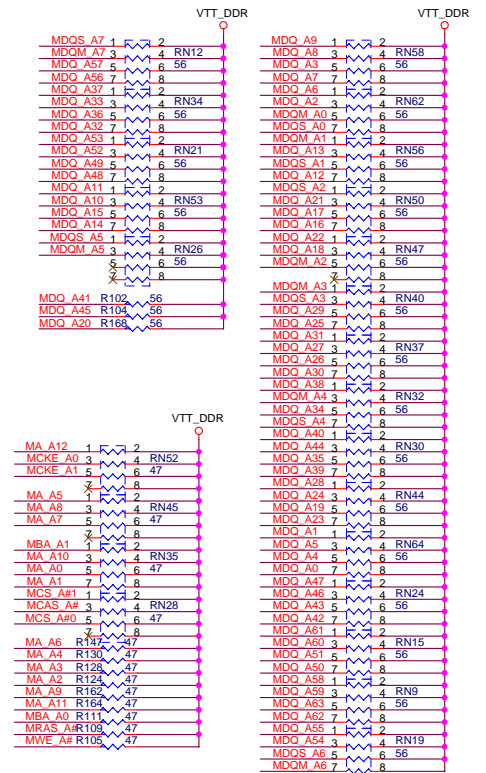


DDR DIMM1

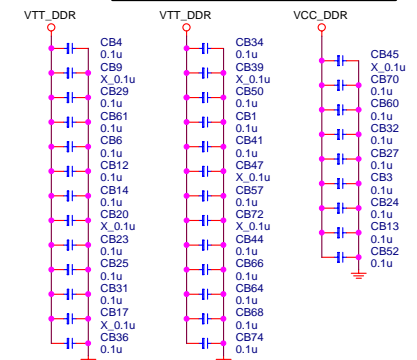


ADDR.=1010000B

DDR Terminational Resisitors



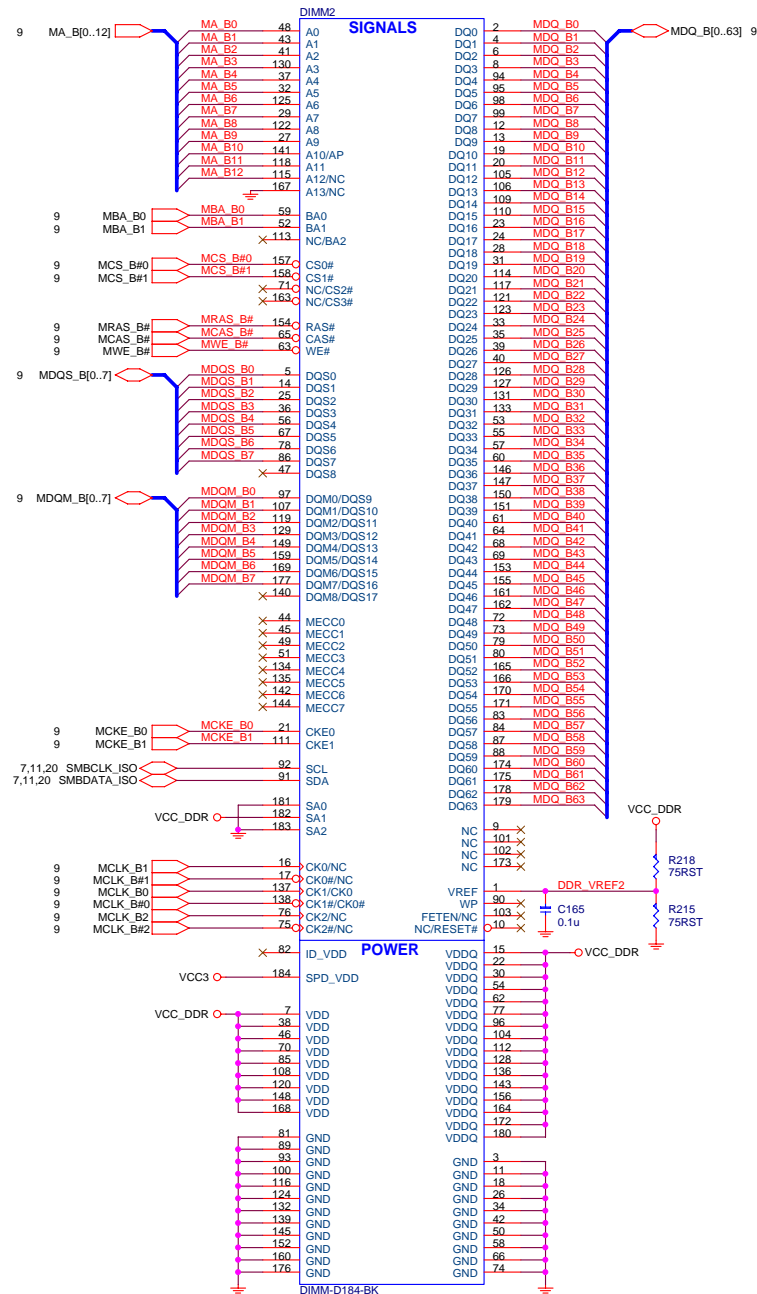
DECOUPLING CAPACITORS



Place these decoupling capacitors close to VTT_DDR termination resistors.
One decoupling capacitor for each R-pack.

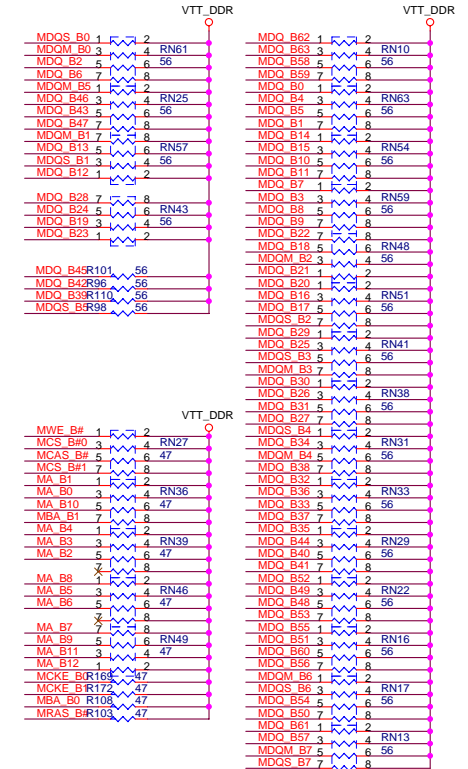
SYSTEM MEMORY

DDR DIMM2

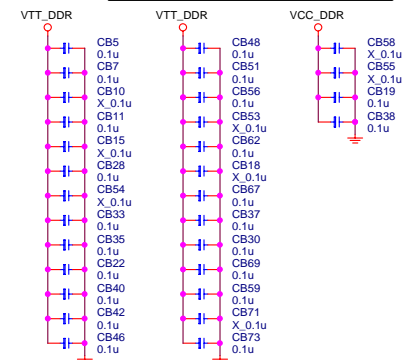


ADDR.=1010010B

DDR Terminational Resisitors



DECOUPLING CAPACITORS



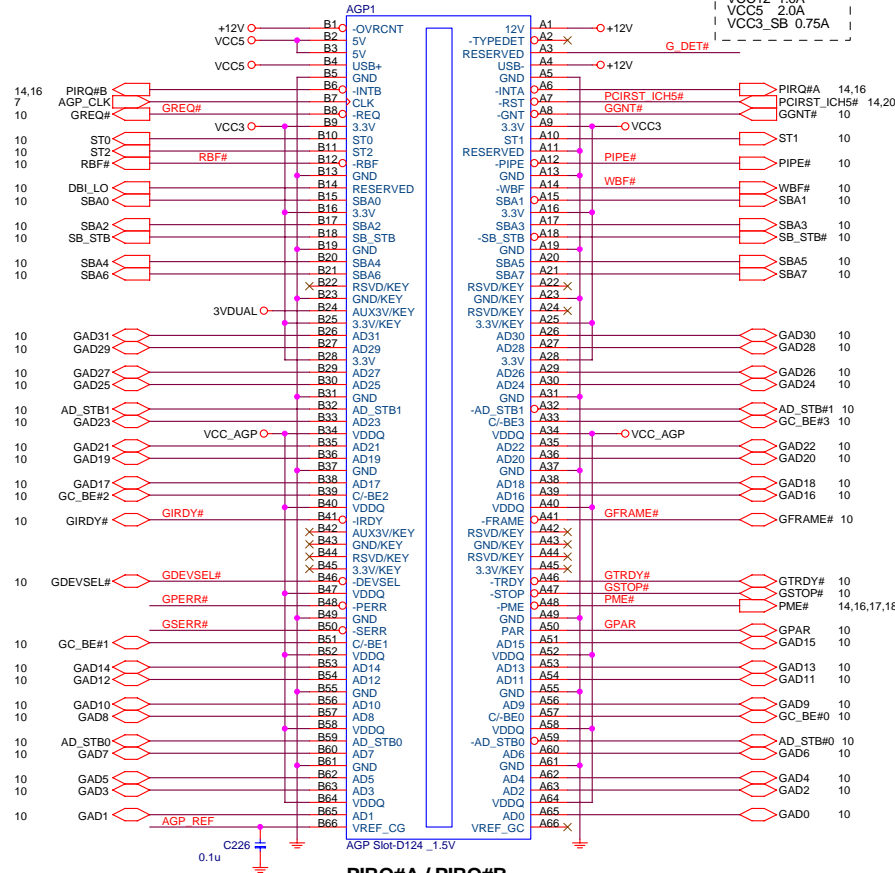
Place these decoupling capacitors close to VTT_DDR termination resistors.
One decoupling capacitor for each R-pack.

Micro Star Restricted Secret		
Title	DDR DIMM 34	Rev
Document Number	MS-7088	100
MICRO-STAR INT'L No. 66, Jiyeh 2 nd St. Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, August 16, 2004 Sheet 12 of 30

B1 == 12V
A4 == 12V
B4 == 5V

AGP 1.5V 4X/8X SLOT(AGP VER:3.0)

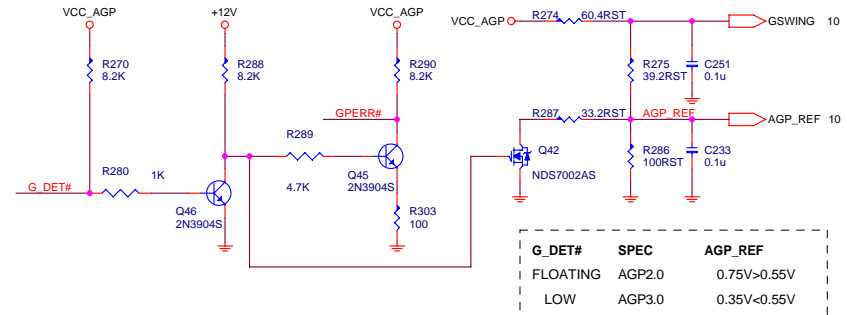
VCC5 = 60mils trace / 15 mils space



PIRQ#A / PIRQ#B

AGP Slot Imax
VCC3 2.0A
VCC5 6.0A
VCC12 1.0A
VCC5 2.0A
VCC3_SB 0.75A

Springdale Reference & Swing Voltage Circuit

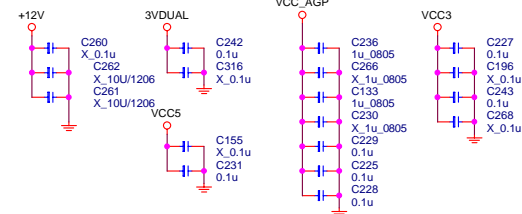


G_DET#	SPEC	AGP_REF
FLOATING	AGP2.0	0.75V>0.55V
LOW	AGP3.0	0.35V<0.55V

AGP TERMINATION RESISTORS

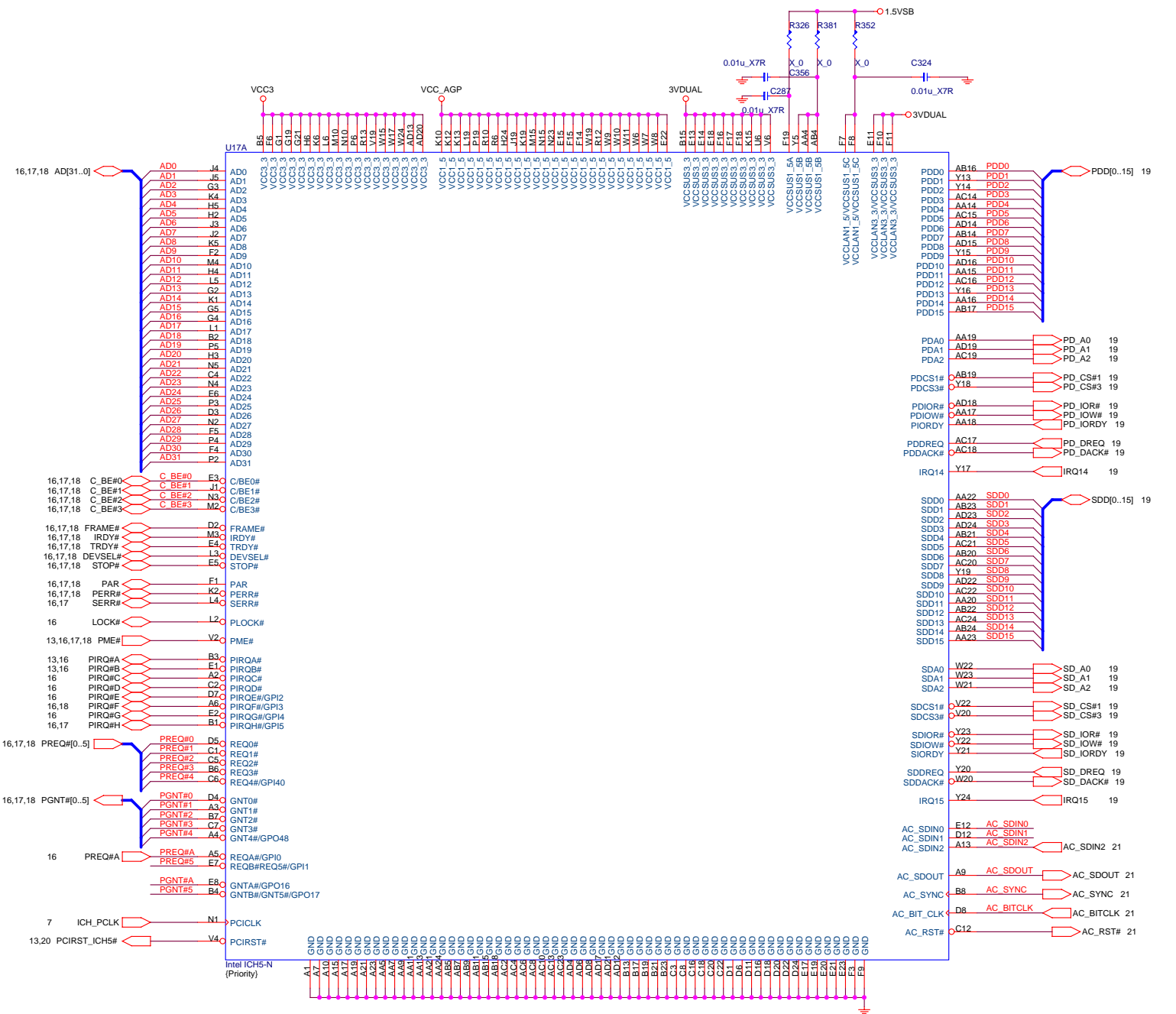


AGP SLOT DECOUPLING CAPACITORS

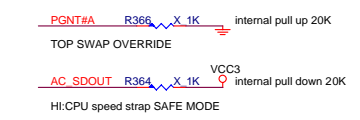


Micro Star Restricted Secret

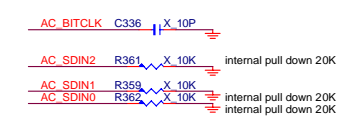
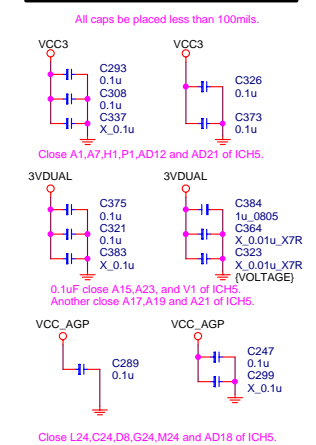
Title		Rev
AGP SLOT		100
Document Number		MS-7088
MICRO-STAR INT'L No. 66, Hsiao-De St., Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, August 16, 2004 Sheet 13 of 30



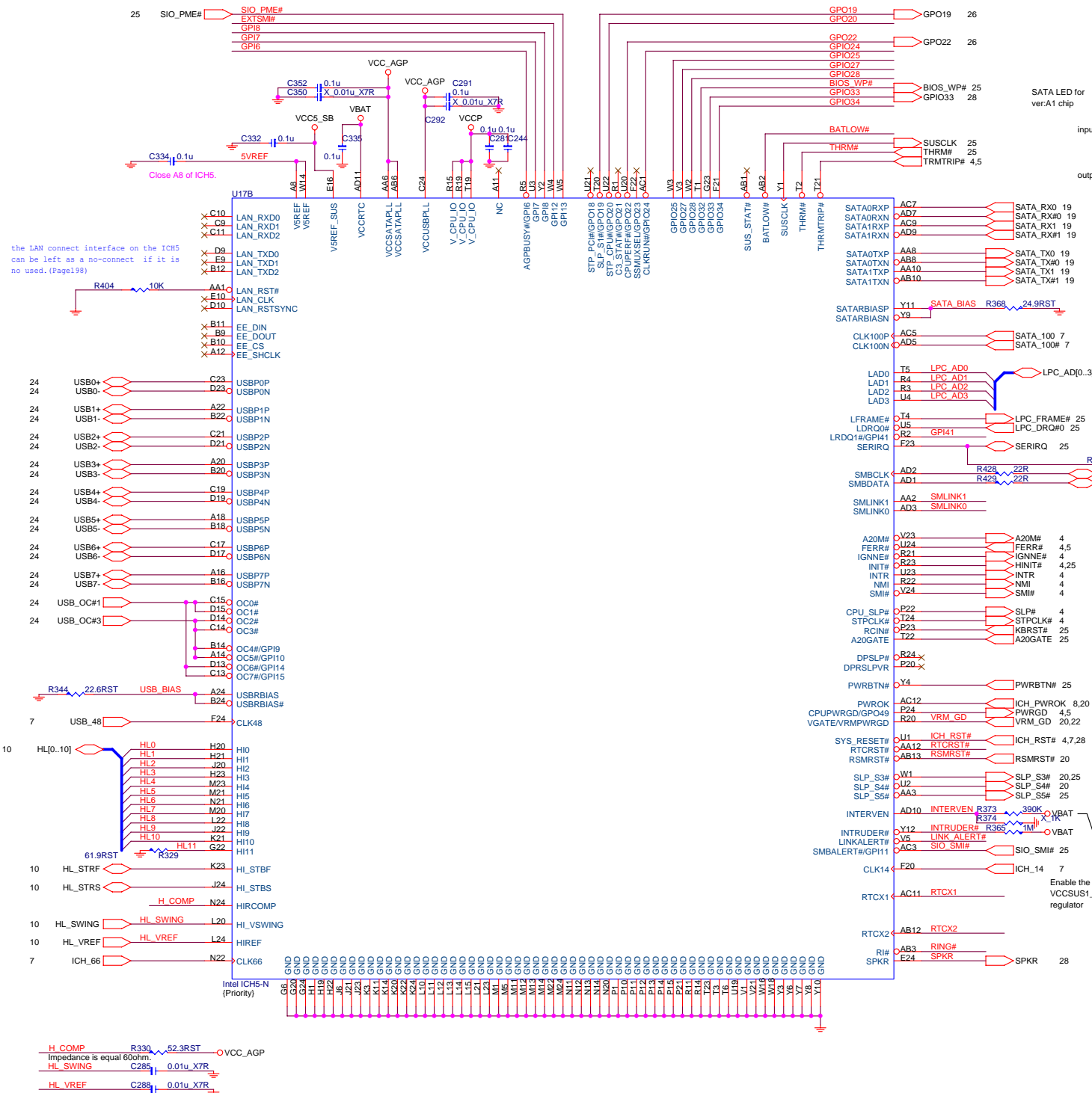
ICH5 Pull-Up / Down Resistors



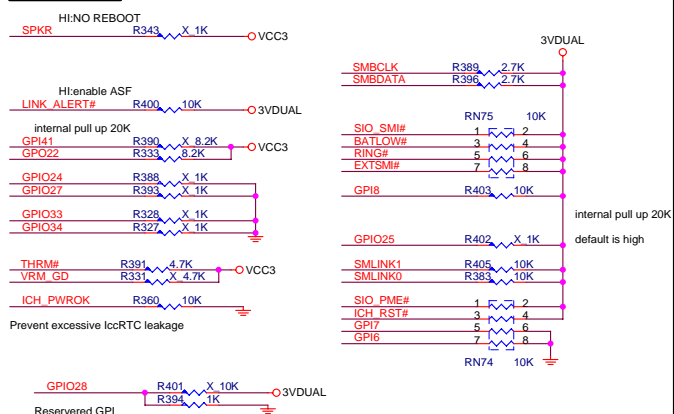
ICH5 Decoupling Capacitors



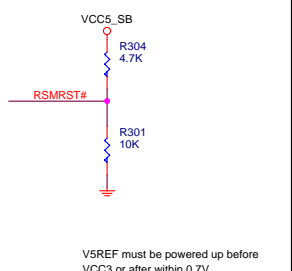
Micro Star Restricted Secret		
Title	Intel ICH5 - PCI & IDE &AC97	Rev
Document Number	MS-7088	100
MICRO-STAR INT'L No. 66, Hsinyuan St., Jung-He City, Taippei Hsien, Taiwan http://www.msi.com.tw		
Last Revision Date: Friday, August 13, 2004		
Sheet 14 of 30		



STRAPS



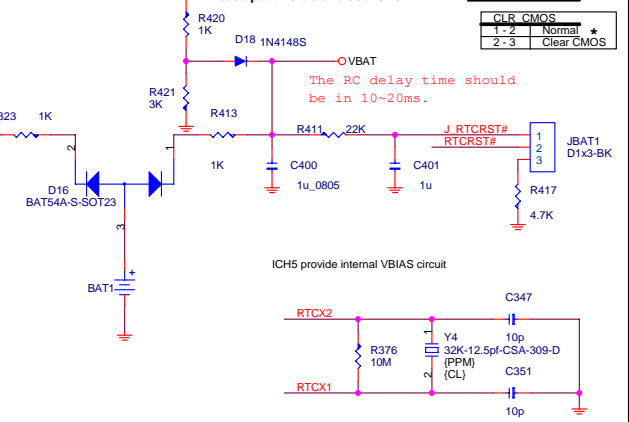
RESUME RESET



V5REF Sequencing Circuit



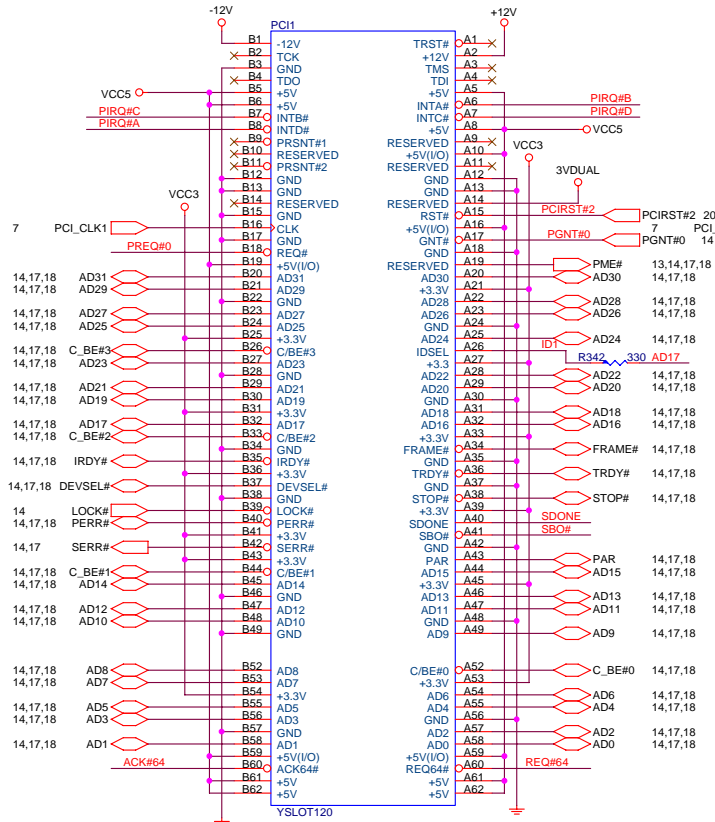
RTC BLOCK



Micro Star Restricted Secret		
Title	Intel ICH5 - Other signals	Rev
Document Number	MS-7088	100
MICRO-STAR INT'L No. 62, Hsiao-Shan St., Jung-He City, Taipei Hsien, Taiwan		
Last Revision Date:		Friday, August 13, 2004
Sheet	15	of 30

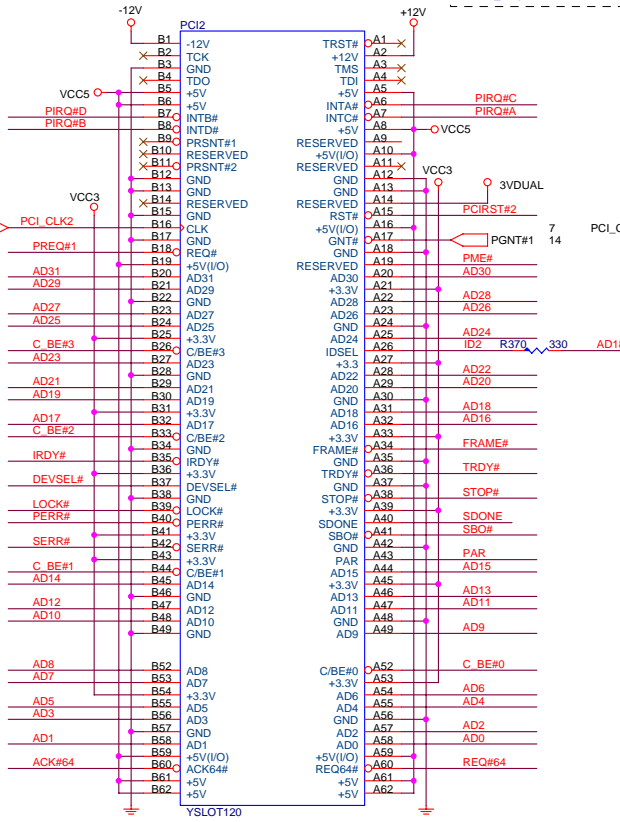
IDSEL = AD17
MASTER = PREQ#0
PIRQ#B

PCI SLOT 1 (PCI VER: 2.2 COMPLY)



IDSEL = AD18
MASTER = PREQ#1
PIRQ#C

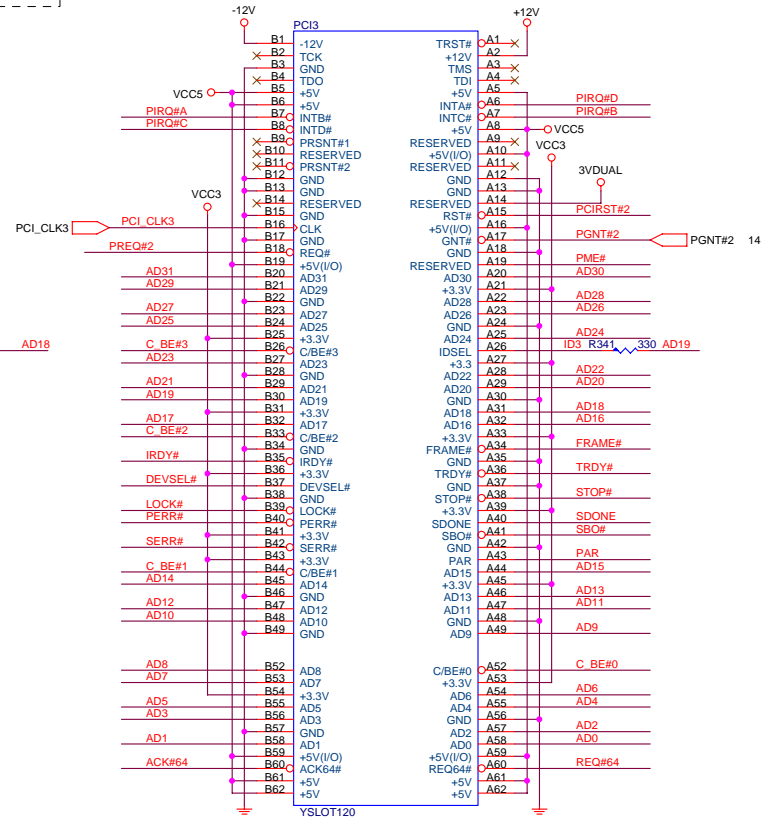
PCI SLOT 2 (PCI VER: 2.2 COMPLY)



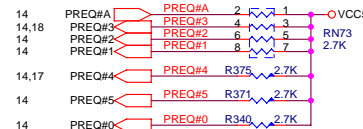
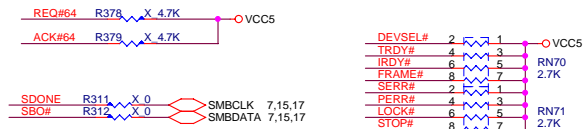
MEDION SPEC
PCI 4: IDSEL = AD20
MASTER = PREQ#5
PIRQ#G

IDSEL = AD19
MASTER = PREQ#2
PIRQ#D

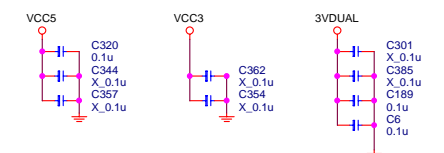
PCI SLOT 3 (PCI VER: 2.2 COMPLY)



PCI PULL-UP / DOWN RESISTORS



PCI SLOT DECOUPLING CAPACITORS



PCI LAN RTL8110S/8100C

PIN319[RSET]: 2.49K for 8110S
5.6K for 8100C

LAN EEPROM

R288 stuff 10K for 93C56

R314 X 10K

R315 3.6K 1%

R316 3.6K 1%

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R525 5.6K 1%

R526 5.6K 1%

R527 5.6K 1%

R528 5.6K 1%

R529 5.6K 1%

R530 5.6K 1%

R531 5.6K 1%

R532 5.6K 1%

R533 5.6K 1%

R534 5.6K 1%

R535 5.6K 1%

R536 5.6K 1%

R537 5.6K 1%

R538 5.6K 1%

R539 5.6K 1%

R540 5.6K 1%

R541 5.6K 1%

R542 5.6K 1%

R543 5.6K 1%

R544 5.6K 1%

R545 5.6K 1%

R546 5.6K 1%

R547 5.6K 1%

R548 5.6K 1%

R549 5.6K 1%

R550 5.6K 1%

R551 5.6K 1%

R552 5.6K 1%

R553 5.6K 1%

R554 5.6K 1%

R555 5.6K 1%

R556 5.6K 1%

R557 5.6K 1%

R558 5.6K 1%

R559 5.6K 1%

R560 5.6K 1%

R561 5.6K 1%

R562 5.6K 1%

R563 5.6K 1%

R564 5.6K 1%

R565 5.6K 1%

R566 5.6K 1%

R567 5.6K 1%

R568 5.6K 1%

R569 5.6K 1%

R570 5.6K 1%

R571 5.6K 1%

R572 5.6K 1%

R573 5.6K 1%

R574 5.6K 1%

R575 5.6K 1%

R576 5.6K 1%

R577 5.6K 1%

R578 5.6K 1%

R579 5.6K 1%

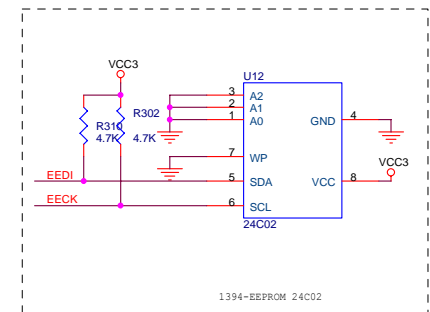
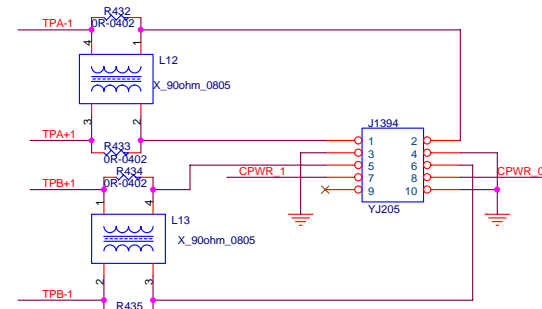
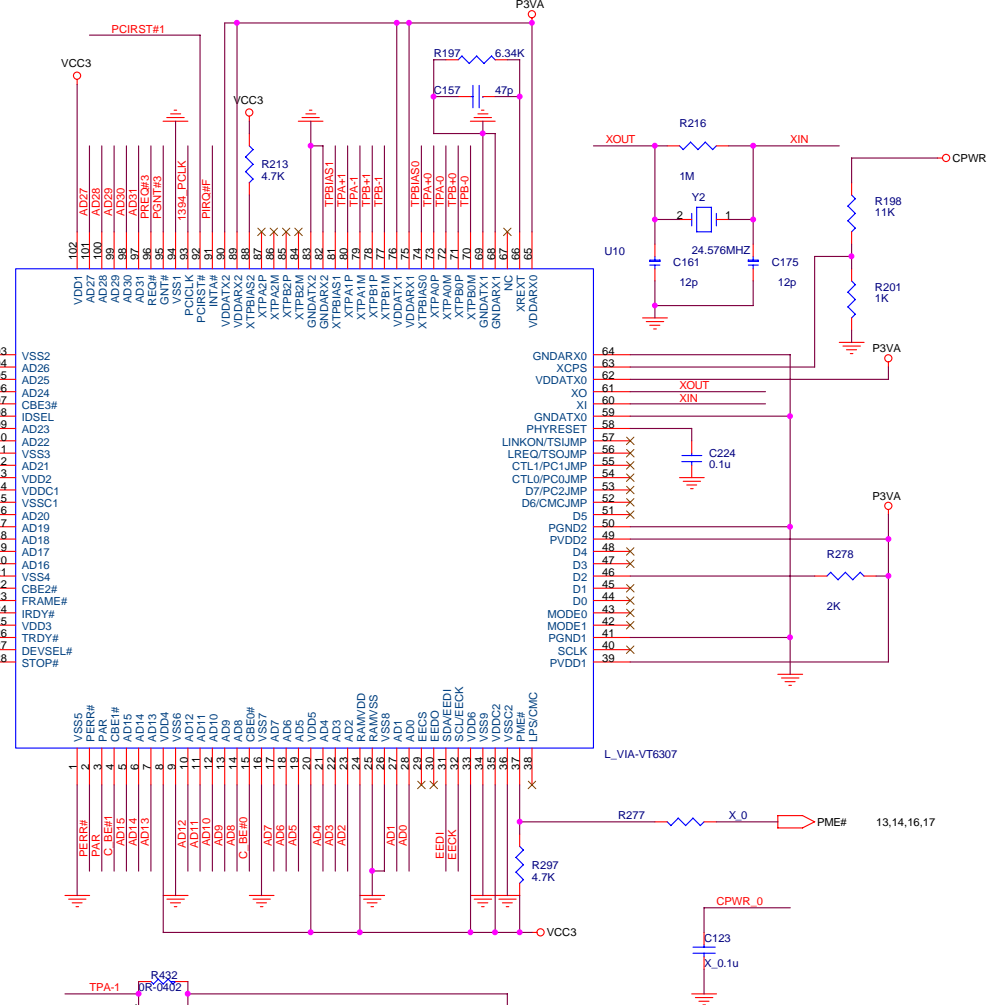
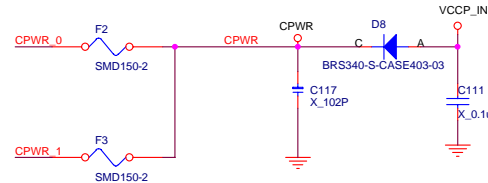
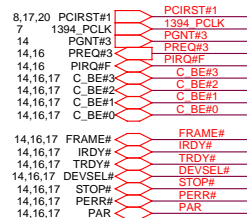
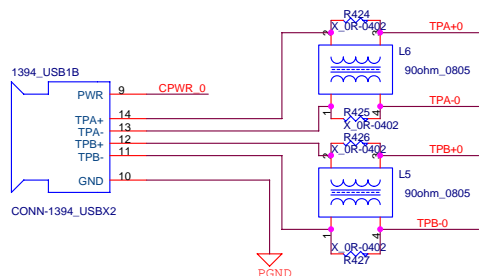
R580 5.6K 1%

R581 5.6K 1%

R582 5.6K 1%

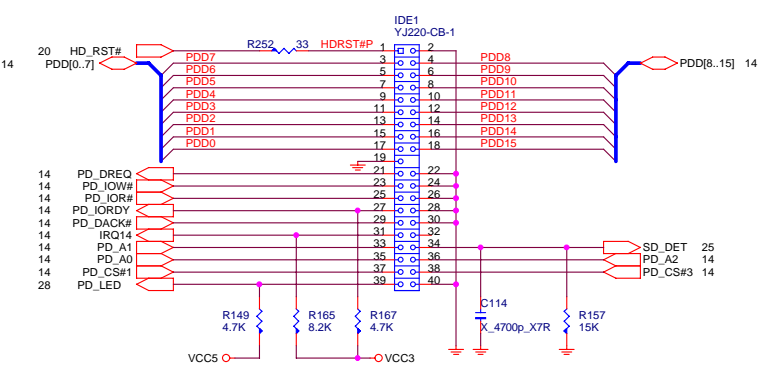
R583 5.6K 1%

```
Did not support S3
wake-up
```

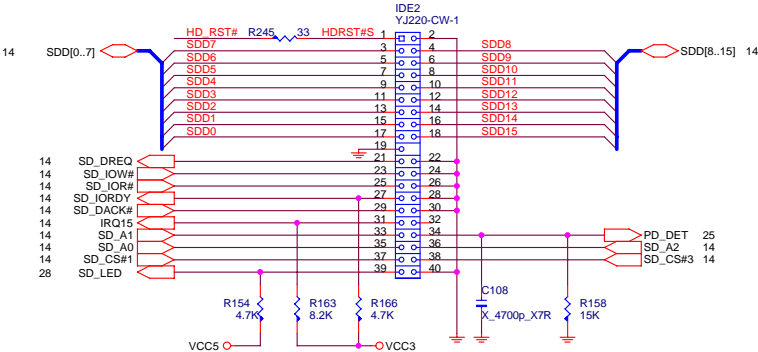


ATA 33/66/100 Connector

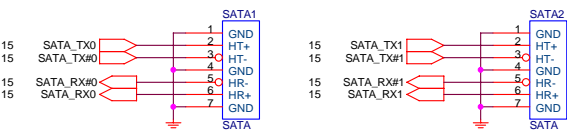
PRIMARY IDE BLOCK



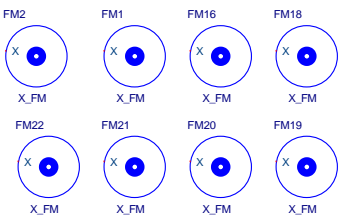
SECONDARY IDE BLOCK



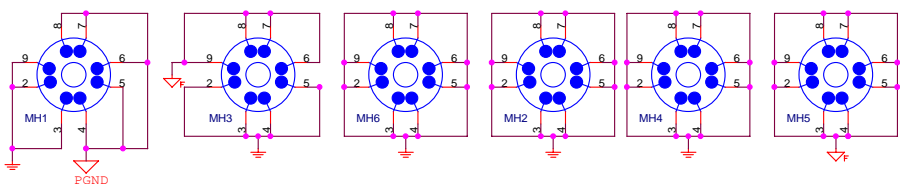
SERIAL ATA CONNECTOR BLOCK



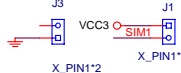
Optics Orientation Holes



Mounting Holes



Simulation



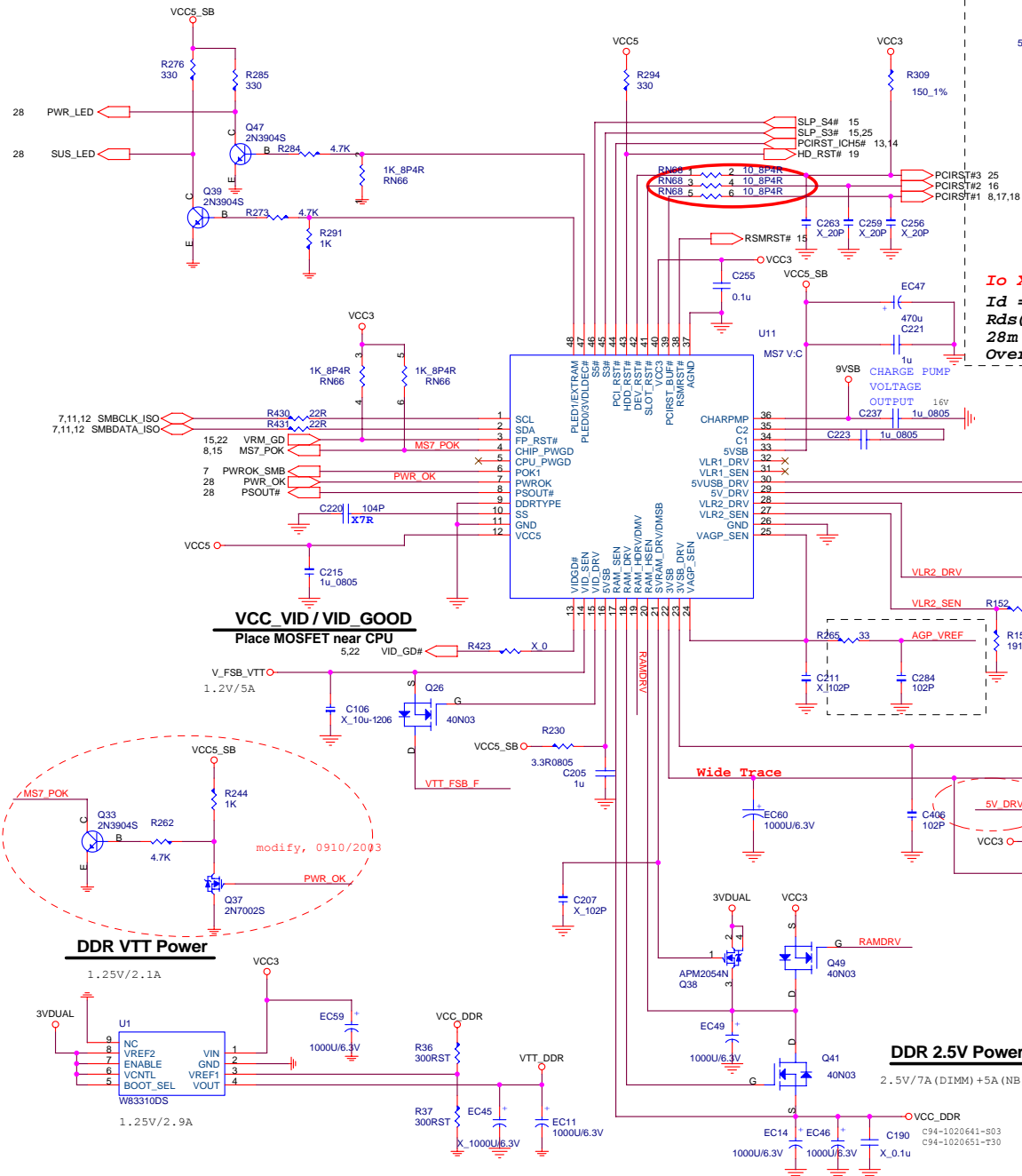
Micro Star Restricted Secret		
Title	ATA 33/66/100 Connector	Rev
Document Number	MS-7088	100
MICRO-STAR INT'L No. 66, Hsiao-De St., Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Friday, August 13, 2004 Sheet 19 of 30

ACPI Controller

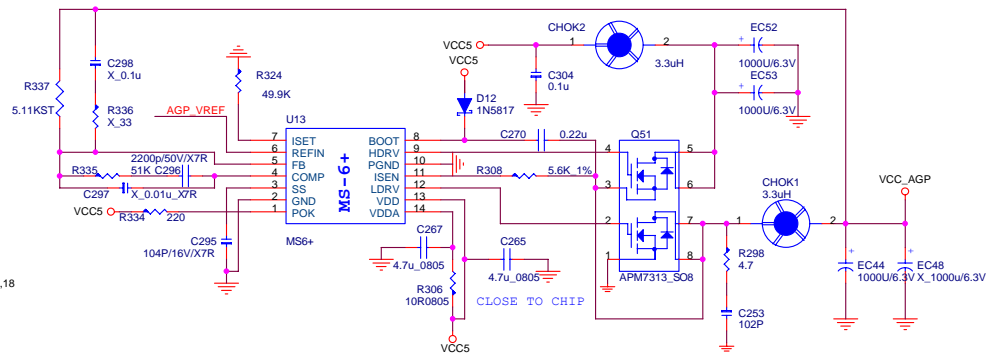
	ICH5 300mA
PCI	375+20+20= 415mA
<hr/>	
VCC3_SB	715mA

1.7V @250mA

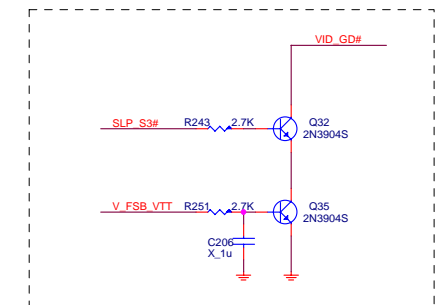
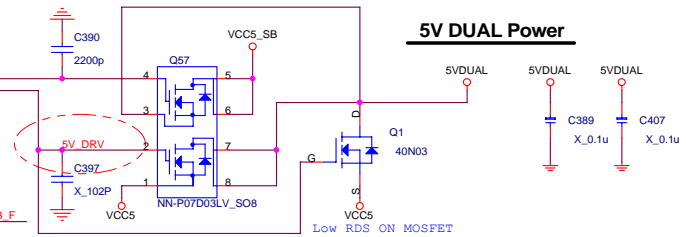
Power	S0	S3	S5
VCC3_SB	Main	Standby	Standby
VCC5_STR	Main	Standby	0V
MEM_STR	Main	Standby	0V



AGP POWER



$I_{oX} R_{ds(on)} = I_{sen}(72\mu A) \times R_{sen}$
 $I_d = 6A, I_d(max) = 24A$
 $R_{ds(on)}/10V = 21m\ \Omega \sim 28m\ \Omega$
 $Overcurrent\ (4.7K\ \Omega) = 12A \sim 16A$

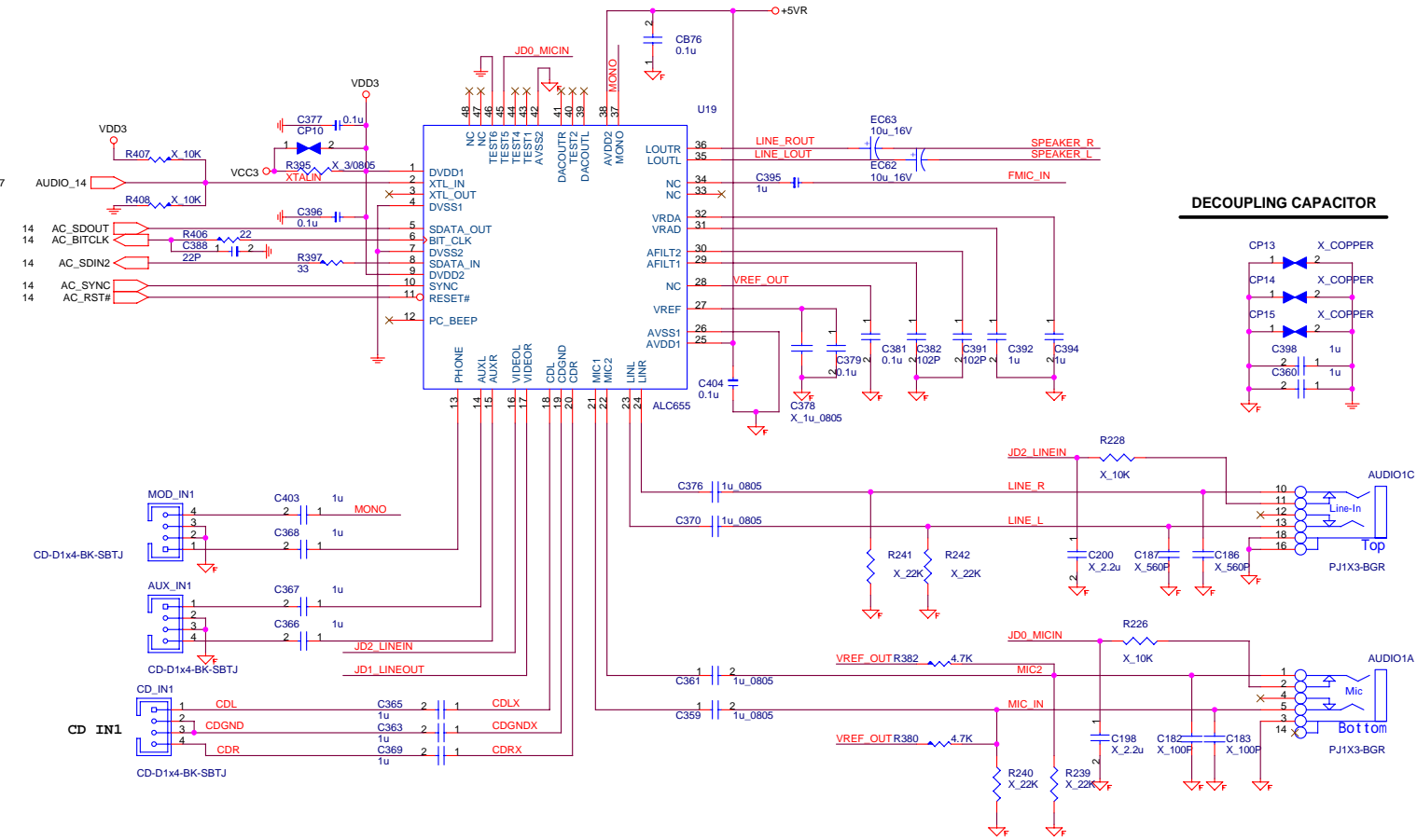


DDR 2.5V Power

2.5V/7A (DIMM) +5A (NB)

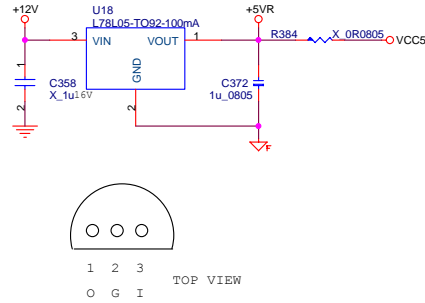
Micro Star Restricted Secret		
Title	ACPI Controller MS7	Rev 100
Document Number	MS-7088	
MICRO-STAR INT'L No. 667, De St. Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, August 16, 2004 Sheet 20 of 30

ALC655 AC97 CODEC

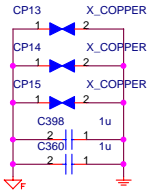


AUDIO CODE REGULATORS

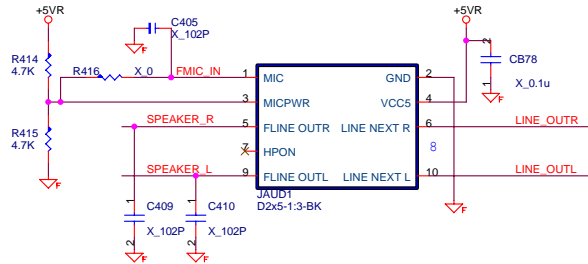
Trace Width 30mils.



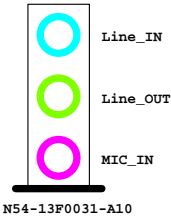
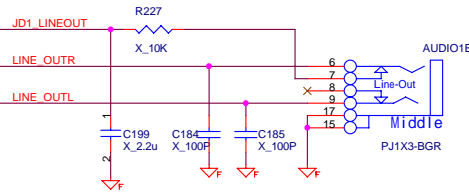
DECOUPLING CAPACITOR



Intel Front Audio Connector



SPEAKER OUT JACK

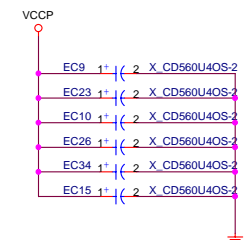
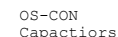


Micro Star Restricted Secret		
Title	ALC655	Rev 100
Document Number	MS-7088	
MICRO-STAR INT'L No. 66, De St. Jung-He City, Taipai Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, August 16, 2004 Sheet 21 of 30

```
TDP = 115 W
VR_TDC = 101 A
Icc(max) = 119 A
Tejas Tcase = [P x 0.213] + 43.3
Prescott Tcase = [P x 0.25] + 43.3
```

Intersil 6565ACV

VID_GD# 5,20



EL Capacitors

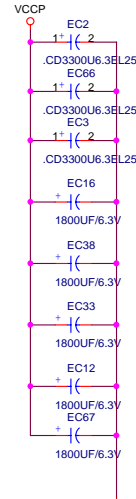
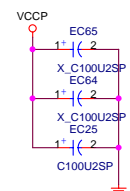


Figure 1 illustrates four different methods of connecting multiple capacitors to a VCCP supply. Each diagram shows a VCCP supply connected to a common rail, which then branches out to individual capacitors. The capacitors are labeled with values like EC5, C10U10Y1206, etc.

- Diagram 1 (Left):** Shows a VCCP supply connected to a common rail. This rail branches out to four parallel branches, each containing a capacitor (EC5, EC19, EC32, EC29) in series with a C10U10Y1206 capacitor.
- Diagram 2:** Shows a VCCP supply connected to a common rail. This rail branches out to four parallel branches, each containing a capacitor (EC4, EC17, EC31, EC27) in series with a C10U10Y1206 capacitor.
- Diagram 3:** Shows a VCCP supply connected to a common rail. This rail branches out to four parallel branches, each containing a capacitor (EC8, EC28, EC30, EC20) in series with a C10U10Y1206 capacitor.
- Diagram 4 (Right):** Shows a VCCP supply connected to a common rail. This rail branches out to two parallel branches, each containing a capacitor (EC21, EC7) in series with a C10U10Y1206 capacitor. The common rail is connected to ground.

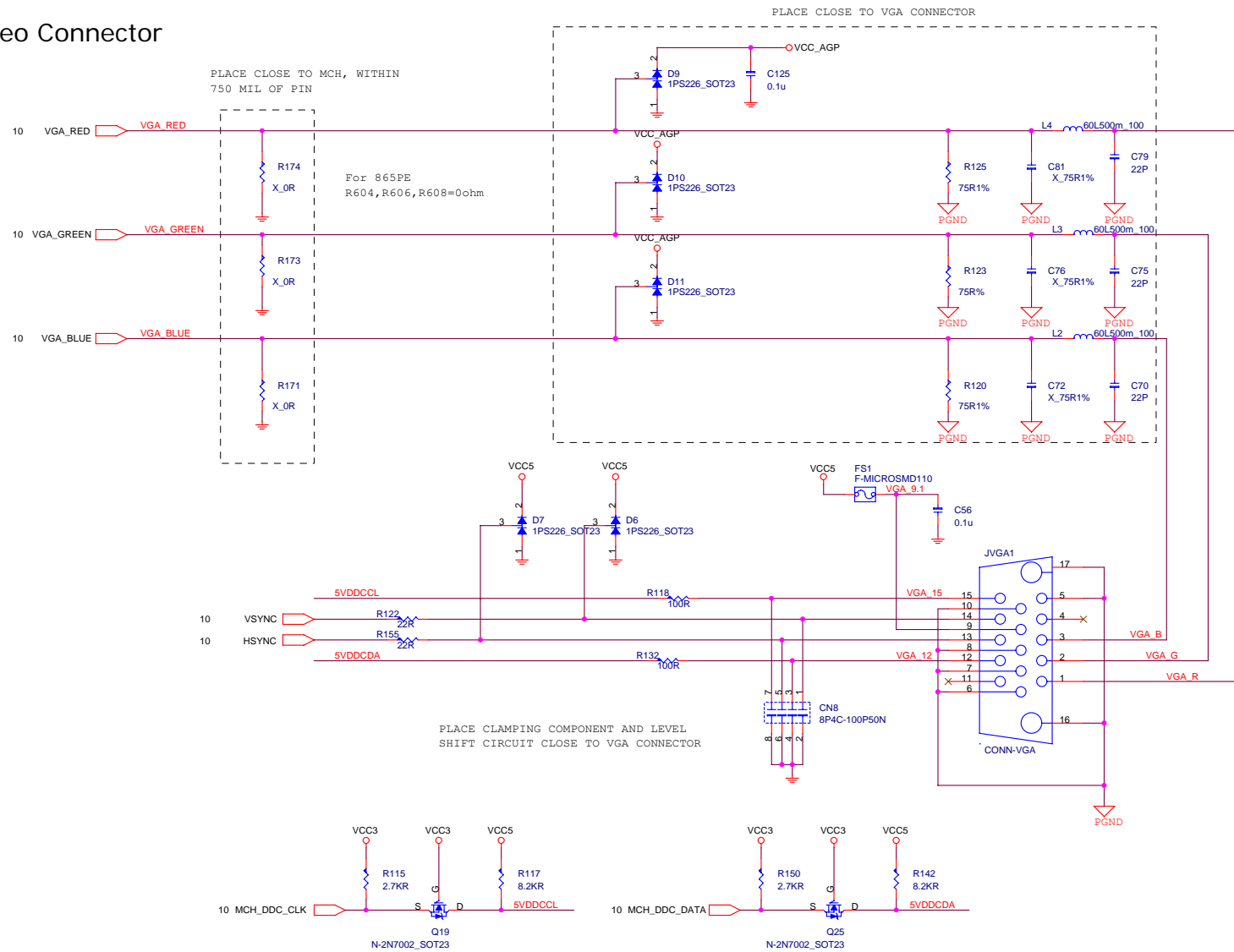
Place these caps within socket cavity

Title	VRM 10.1 - Intersil 6565ACV 3 Phase
-------	-------------------------------------

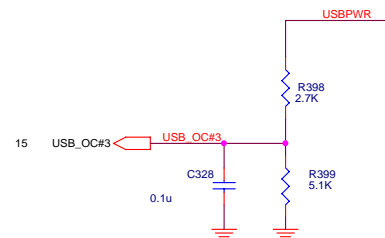
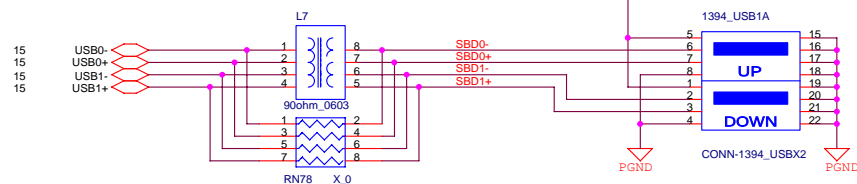
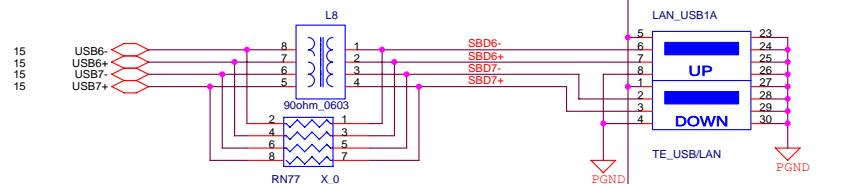
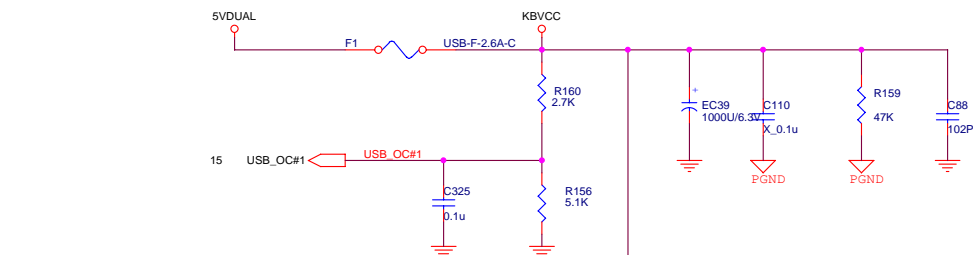
Rev	100
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Sheet	22	of	30

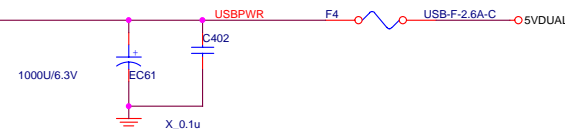
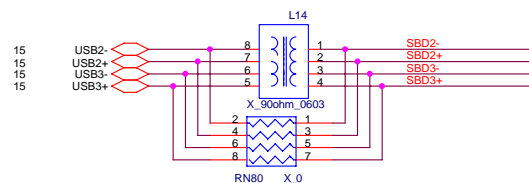
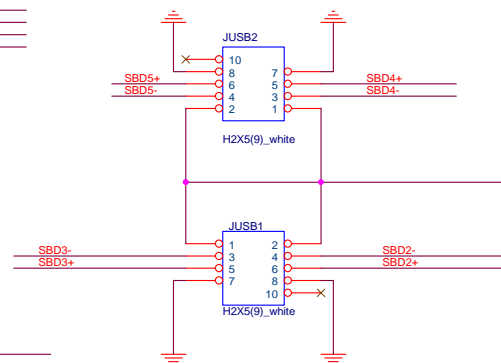
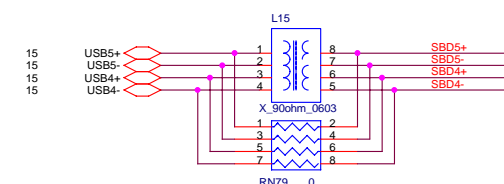
Video Connector



Micro Star Restricted Secret		
Title	VGA CONNECTOR	Rev
Document Number	MS-7088	100
MICRO-STAR INT'L No. 66-Hsi-De St., Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, August 16, 2004 Sheet 23 of 30



- * USB Trace width : 7.5 mils
- * USB Trace Spacing : 20 mils
- * Differential USB Signlas Trace, Spacing : 7.5 mils



Micro Star Restricted Secret	
Title	Rev
USB Connector	100
Document Number	MS-7088
MICRO-STAR INT'L No. 66, Sec. 2, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	
Last Revision Date: Friday, August 13, 2004	
Sheet	24 of 30

Super I/O

LPC SUPER I/O W83627F/HF/THF

83627THF

R86 X 0 SIO_SMI# 15

1 LRESET#

2 LCLK

3 SERIRQ

4 LDRQ#

5 LFRAME#

6 LAD0

7 LAD1

8 LAD2

9 LAD3

10 GPX2/P15/GP14

11 GPY1/GP15

12 GPSA1/P12/GP10

13 GPSA2/GP17

14 GPX1/P14/GP12

15 GPY2/P16/GP14

16 GPSB1/P13/GP11

17 GPSB2/GP16

18 MSO/IRQIN0

19 MSI/GP20

20 VREF

21 VTIN3

22 VTIN2

23 VTIN1

24 AGND

25 -5VIN

26 -12VIN

27 +12VIN

28 AVCC

29 +3.3VIN

30 VCOREB

31 VCOREA

32 VID4

33 VID3

34 VID2

35 VID1

36 VID0

37 SYSFAN_PWM

38 SYS_FAN

39 CPUFAN_PWM

40 CPU_FAN

41 THRM#

42 CHASSIS

43 SIO_PME#

44 PWRBTN#

45 PWRBTN

46 PS_ON#

47 SLP_S3#

48 SIO_48

49 VCC5_SB

50 SIO_VBAT

51 VCC3

52 VCC5

53 VCC3

54 VCC5

55 VCC3

56 VCC5

57 VCC3

58 VCC5

59 VCC3

60 VCC5

61 VCC3

62 VCC5

63 VCC3

64 VCC5

65 VCC3

66 VCC5

67 VCC3

68 VCC5

69 VCC3

70 VCC5

71 VCC3

72 VCC5

73 VCC3

74 VCC5

75 VCC3

76 VCC5

77 VCC3

78 VCC5

79 VCC3

80 VCC5

81 VCC3

82 VCC5

83 VCC3

84 VCC5

85 VCC3

86 VCC5

87 VCC3

88 VCC5

89 VCC3

90 VCC5

91 VCC3

92 VCC5

93 VCC3

94 VCC5

95 VCC3

96 VCC5

97 VCC3

98 VCC5

99 VCC3

100 VCC5

101 VCC3

102 VCC5

103 VCC3

104 VCC5

105 VCC3

106 VCC5

107 VCC3

108 VCC5

109 VCC3

110 VCC5

111 VCC3

112 VCC5

113 VCC3

114 VCC5

115 VCC3

116 VCC5

117 VCC3

118 VCC5

119 VCC3

120 VCC5

121 VCC3

122 VCC5

123 VCC3

124 VCC5

125 VCC3

126 VCC5

127 VCC3

128 VCC5

129 VCC3

130 VCC5

131 VCC3

132 VCC5

133 VCC3

134 VCC5

135 VCC3

136 VCC5

137 VCC3

138 VCC5

139 VCC3

140 VCC5

141 VCC3

142 VCC5

143 VCC3

144 VCC5

145 VCC3

146 VCC5

147 VCC3

148 VCC5

149 VCC3

150 VCC5

151 VCC3

152 VCC5

153 VCC3

154 VCC5

155 VCC3

156 VCC5

157 VCC3

158 VCC5

159 VCC3

160 VCC5

161 VCC3

162 VCC5

163 VCC3

164 VCC5

165 VCC3

166 VCC5

167 VCC3

168 VCC5

169 VCC3

170 VCC5

171 VCC3

172 VCC5

173 VCC3

174 VCC5

175 VCC3

176 VCC5

177 VCC3

178 VCC5

179 VCC3

180 VCC5

181 VCC3

182 VCC5

183 VCC3

184 VCC5

185 VCC3

186 VCC5

187 VCC3

188 VCC5

189 VCC3

190 VCC5

191 VCC3

192 VCC5

193 VCC3

194 VCC5

195 VCC3

196 VCC5

197 VCC3

198 VCC5

199 VCC3

200 VCC5

201 VCC3

202 VCC5

203 VCC3

204 VCC5

205 VCC3

206 VCC5

207 VCC3

208 VCC5

209 VCC3

210 VCC5

211 VCC3

212 VCC5

213 VCC3

214 VCC5

215 VCC3

216 VCC5

217 VCC3

218 VCC5

219 VCC3

220 VCC5

221 VCC3

222 VCC5

223 VCC3

224 VCC5

225 VCC3

226 VCC5

227 VCC3

228 VCC5

229 VCC3

230 VCC5

231 VCC3

232 VCC5

233 VCC3

234 VCC5

235 VCC3

236 VCC5

237 VCC3

238 VCC5

239 VCC3

240 VCC5

241 VCC3

242 VCC5

243 VCC3

244 VCC5

245 VCC3

246 VCC5

247 VCC3

248 VCC5

249 VCC3

250 VCC5

251 VCC3

252 VCC5

253 VCC3

254 VCC5

255 VCC3

256 VCC5

257 VCC3

258 VCC5

259 VCC3

260 VCC5

261 VCC3

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266 VCC5

267 VCC3

268 VCC5

269 VCC3

270 VCC5

271 VCC3

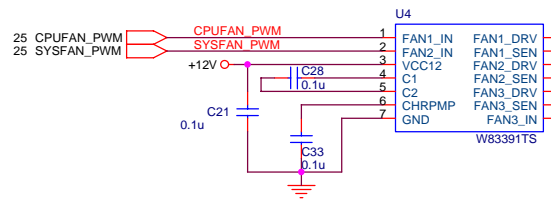
272 VCC5

273 VCC3

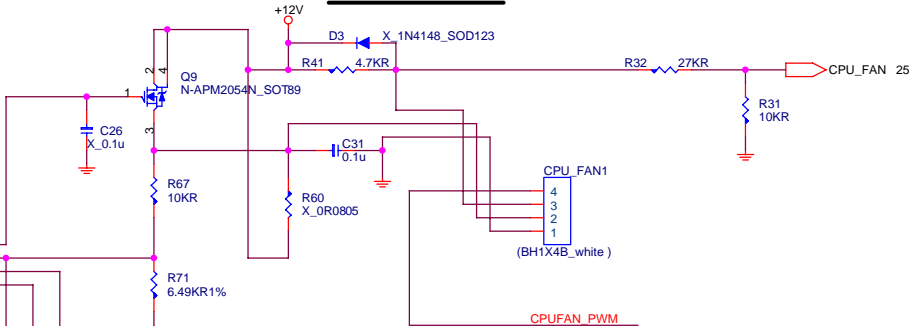
274 VCC5

275

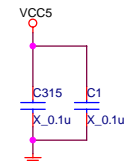
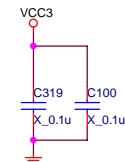
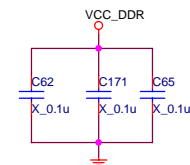
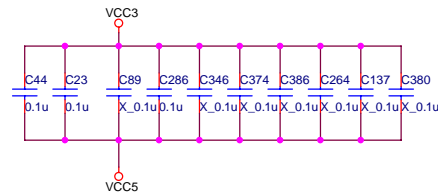
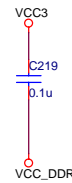
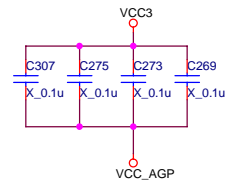
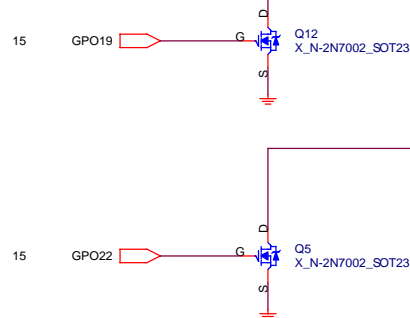
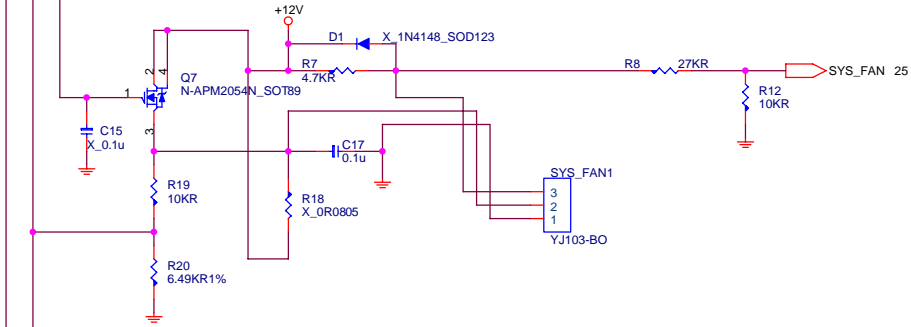
FAN CONTROL



CPU FAN

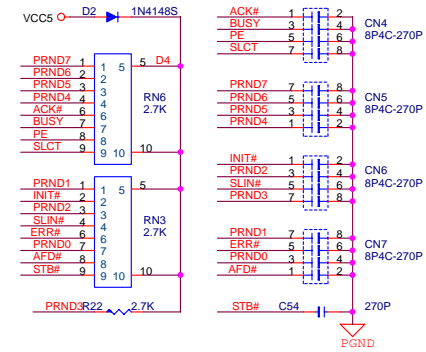
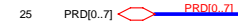
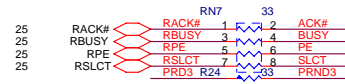
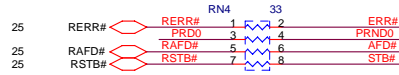
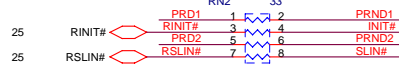
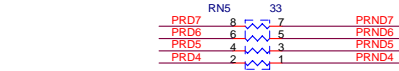
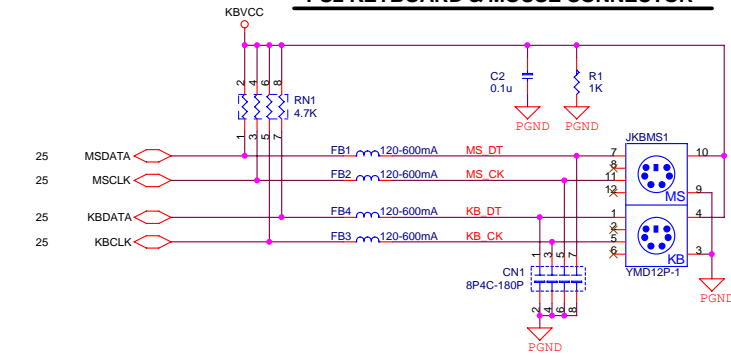


SYSTEM FAN

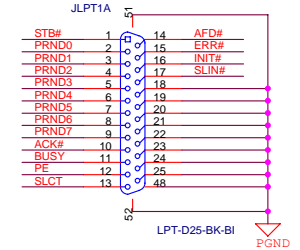


Micro Star Restricted Secret		
Title	FAN	Rev
Document Number	MS-7088	100
MICRO-STAR INT'L No. 60, Sec. 2, St. Jung-He City, Taipai Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, August 16, 2004
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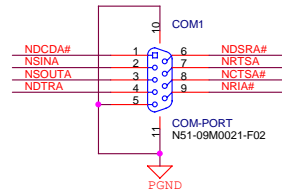
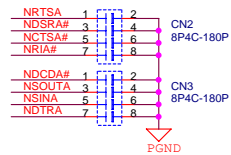
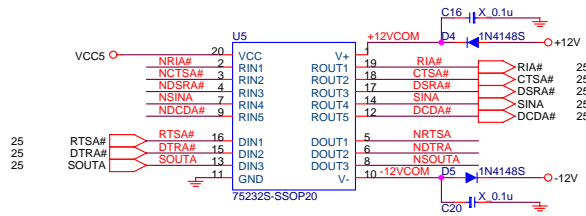
PS2 KEYBOARD & MOUSE CONNECTOR



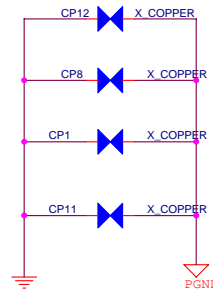
PARALLAL PORT



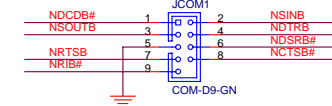
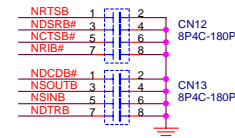
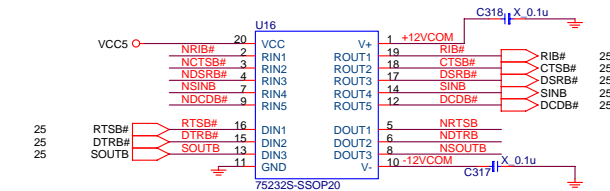
SERIAL PORT 1



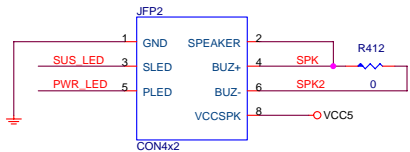
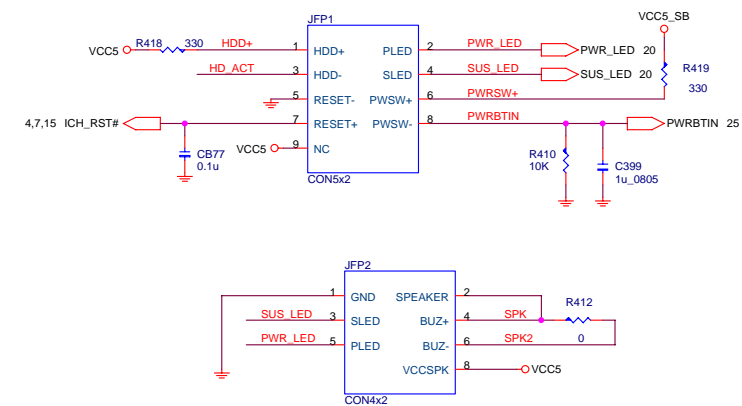
EMI



SERIAL PORT 2



ATX connector / Front Panel



SPEAKER

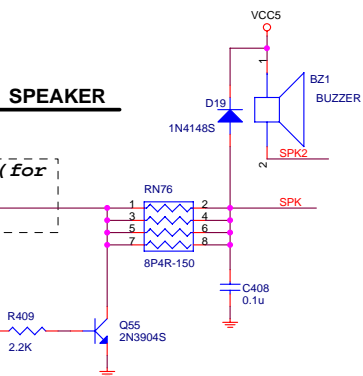
From LPC I/O (for 627THF)

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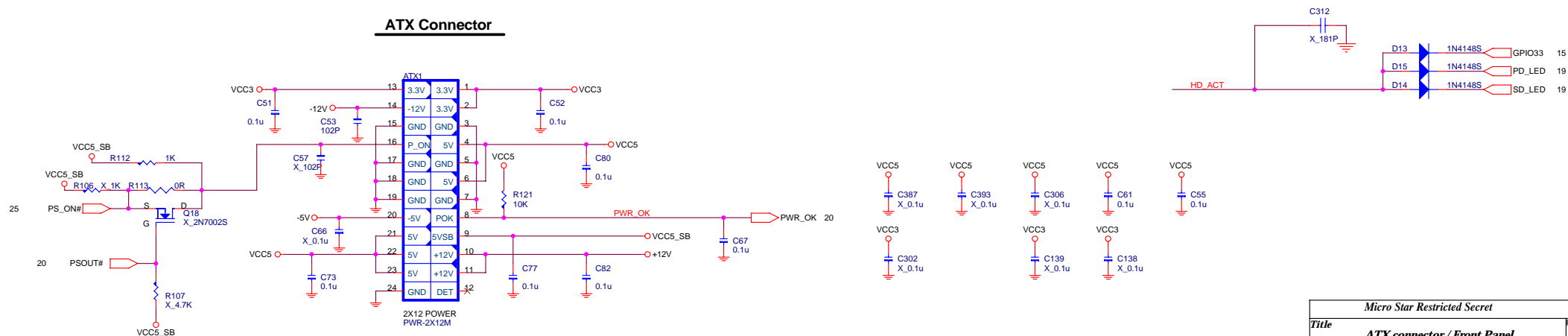
ALARM

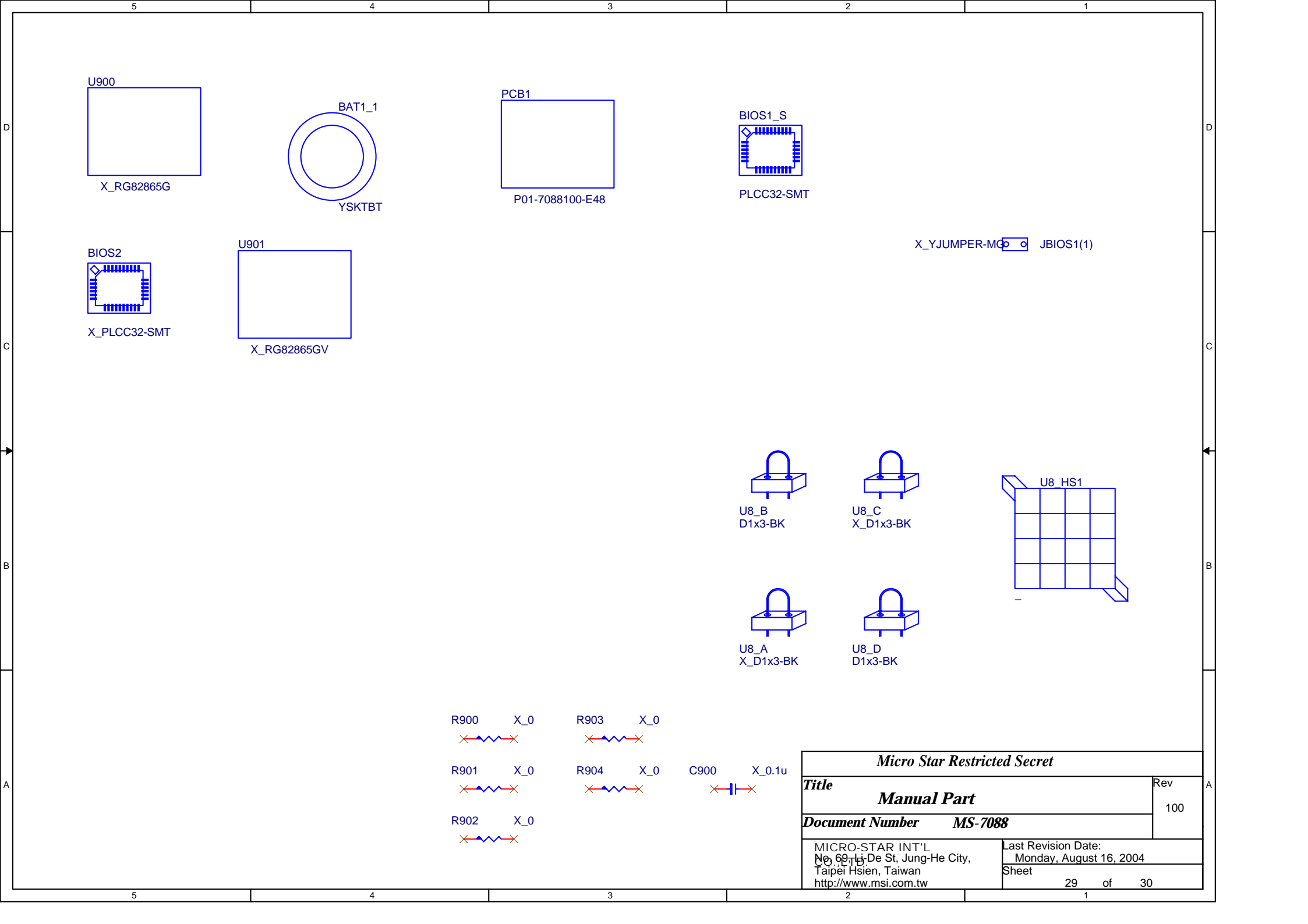
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SPKR



ATX Connector





00A to 100 Schematic change list		Page
1	Add R620 (Slove PWM can't work)	21
2	Add VGA circuit	9,23
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Micro Star Restricted Secret		
Title		Rev
History		100
Document Number	MS-7088	
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