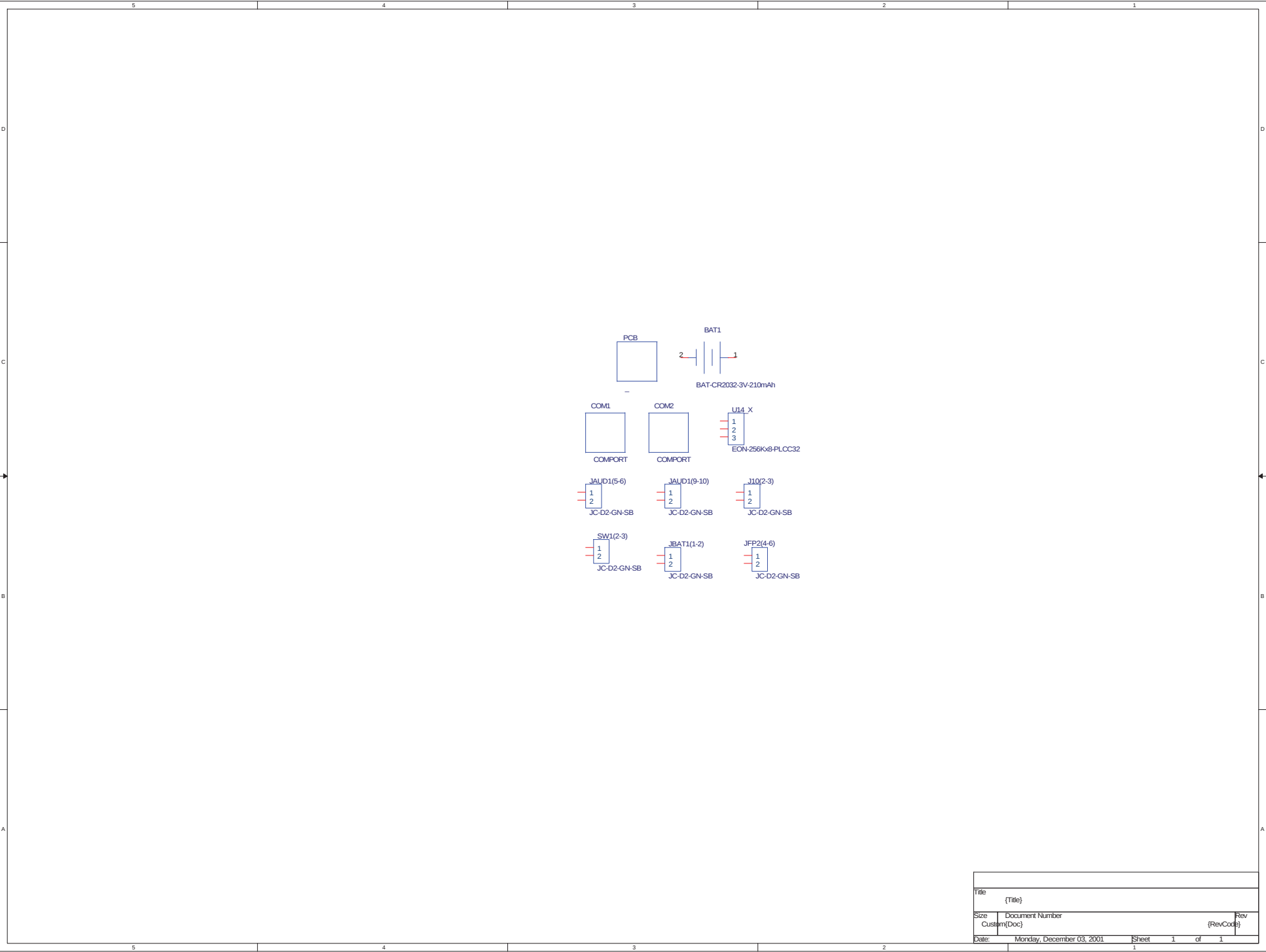


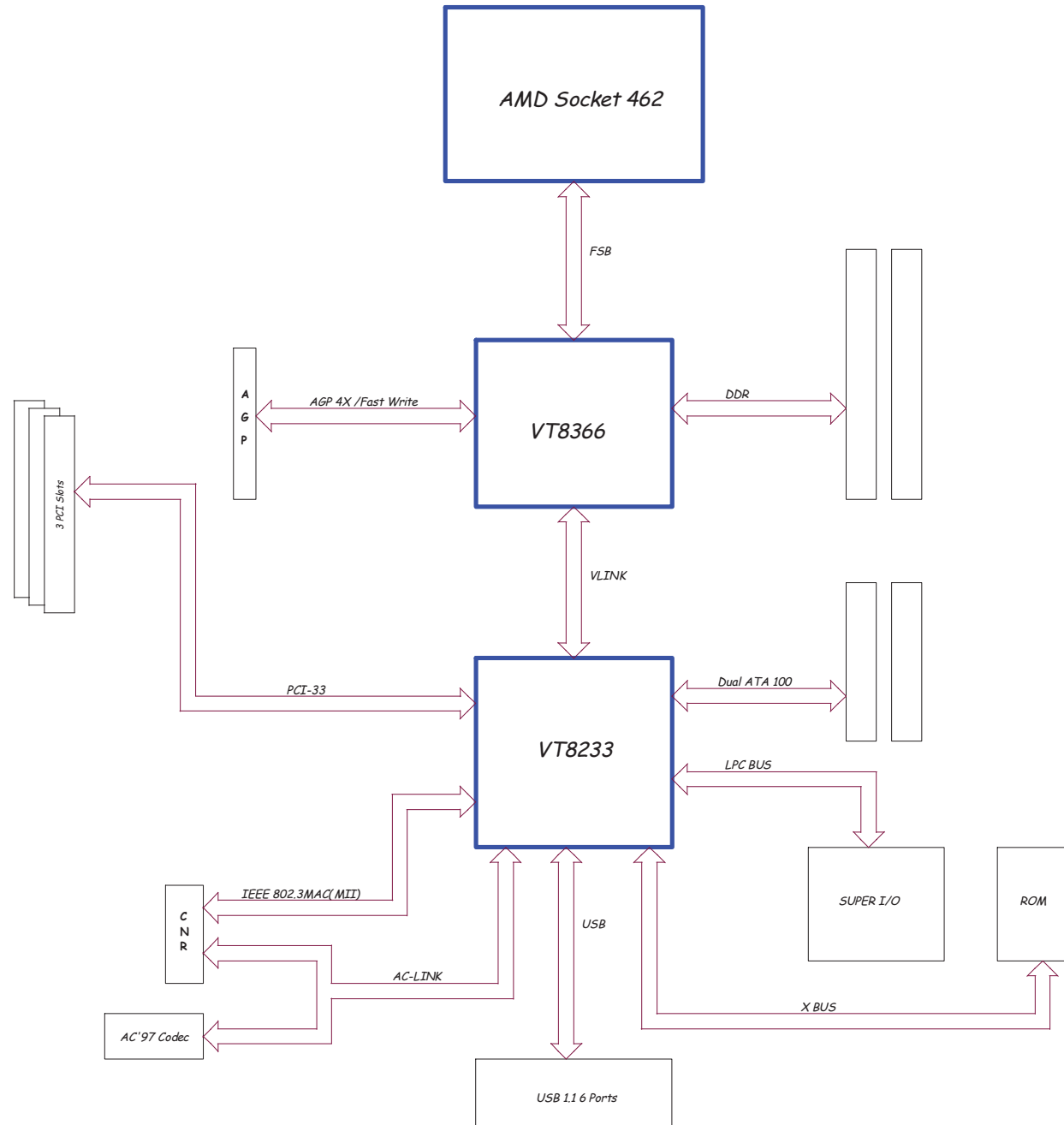
MS-6382 MICRO-ATX

AMD PGA 462 Processor
VIA VT8366A / VT8233A Chipset
Winbond 83697HF-AW LPC I/O

Title	Page
Cover Sheet	1
Block Diagram	2
GPIO SPEC	3
AMD 462 PGA Socket	4,5
Clock Synthesizer	6
VT8366	7,8,9
System Memory	10,11
DDR Terminations	12, 13
AGP PRO SLOT	14
VT8233	15,16,17
PCI Connectors	18,19
CNR RISER	20
AC'97 Codec	21
LAN	22
AUDIO PORT	23
ATA 66/100 Connectors	24
Front USB Port	25
Rear USB Port	26
LPC I/O	27
Hardware monitor	28
System ROM	29
Keyboard/Mouse Connectors	30
LPT/COM Port	31
Game Port	32
VRM 9.0/ L6911D	33
VCC25 POWER	34
APIC CONTROLLER (MS-5)	35
Power Mangement	36
PowerOK Circuit	37
Front Panel	38
Pull up Rsistor	39
BULK / Decopuling	40
HISTORY	41



Block Diagram



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MICRO-STAR INTERNATIONAL			
Title	Block Diagram		Rev
Document Number	MS-6392		20
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		Sheet	2 of 41

GPIO FUNCTION

VT8233 GPIO Function Define

PIN NAME	Function define	PIN NAME	Function define
GP00 (VSUS33)	GP00	GPI0	GPI0
GP01/SUSA#(VSUS33)	SUSA#	GPI1	ATADET0=>Detect IDE1 ATA100/66
GP02/SUSB#(VSUS33)	SUSB#	GPI2/EXTSMI#	EXTSMI#
GP03/SUSST1#(VSUS33)	SUSST#	GPI3/RING#	RING#
GP04/SUSCLK(VSUS33)	SUSCLK	GPI4/LID#	ATADET1=>Detect IDE2 ATA100/66
GP05/CPUSTP#		GPI5/BATLOW#	Exteranl Pull up to 3VDUAL
GP06/PCISTP#		GPI6/PME#	PME#
GP07/SLP#	SLP#	GPI7/SMBALRT#	Exteranl Pull up to 3VDUAL
GP08/GPI8/IPBIN0		GPI16/INTRUDER#	Exteranl Pull down
GP09/GPI9/IPBIN1		GPI17/CPUMISS	Exteranl Pull up to 3VDUAL
GP010/GPI10/IPBRDFR	GP010(PRI_DOWN)	GPI18/AOLGP1/THRM#	THRM#
GP011/GPI11/IPBRDCK		GPI19/IORDY	Exteranl Pull up to VCC3
GP012/GPI12/IPBOUT0	GP012		
GP013/GPI13/IPBOUT1	GP013		
GP014/GPI14/IPBTDFR			
GP015/GPI15/IPBTDCCK			
GP016/SA16/STRAP			
GP017/SA17/STRAP			
GP018/SA18/STRAP			
GP019/SA19/STRAP			
GP020/GPI20/ACSDIN2/PCS0#/EI	GP020		
GP021/GPI21/ACSDIN3/PCS1#/SLPBTN#	GP021		
GP022/GPI22/IOR#	GP022		
GP023/GPI23/IOW#	GP023		
GP024/GPI24/GPI0A			
GP025/GPI25/GPI0C			
GP026/GPI26/SMBDT2(VSUS33)	SMBDATA2/Slave SMBUS		
GP027/GPI27/SMBCK2(VSUS33)	SMBCLK2/Slave SMBUS		
GP028/GPI28/APICD0/APICCS#			
GP029/GPI29/APICD1/APICACK#			
GP030/GPI30/GPI0D	Revsin ID		
GP031/GPI31/GPI0E	Revsin ID		

W697HF-AW

PIN NAME	Function define
GP23/PLED	
GP24/WDT0	
GP32/PWR0K	
GP33/RSMRST#	
GP34/CIRRX	
GP35/SUSLED	

PCI

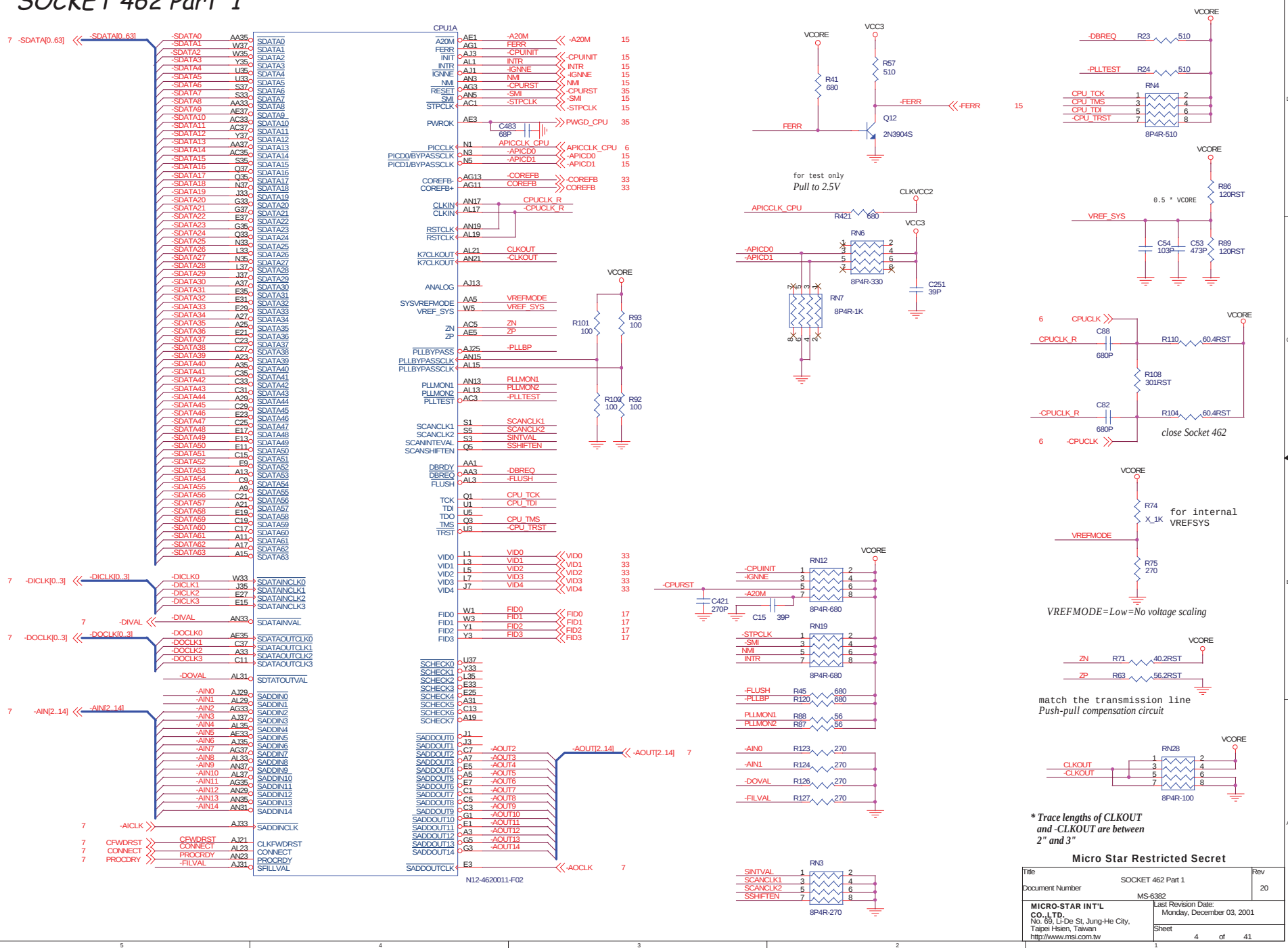
DEVICES	INT#	IDSEL	REQ# /GNT#	CLOCK
PCI SLOT 1	INT#A INT#B INT#C INT#D	AD16	PREQ#0 PGNT#0	PCICLK1
PCI SLOT 2	INT#B INT#C INT#D INT#A	AD17	PREQ#1 PGNT#1	PCICLK2
PCI SLOT 3	INT#C INT#D INT#A INT#B	AD18	PREQ#2 PGNT#2	PCICLK3
	INT#B	AD21	PREQ#4 PGNT#4	PCICLK4
LAN	INT#D	AD19	PREQ#3 PGNT#3	5880PCLK

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		Sheet 3 of 41

SOCKET 462 Part 1

****All CPU interface are 2.5V tolerant****



* Trace lengths of CLKOUT and -CLKOUT are between 2" and 3"

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Title	SOCKET 462 Part 1	Rev	
Document Number	MS-6382		20
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Sheet		4	of 41

SOCKET 462 Part 2

*** 25 mils Trace/ 12 mils Space**

VCCA_PLL trace length from the VR1 to the PGA must be 0.75".

Place all filters close to the PGA.

Keep all power and signal trace away from the VR1.

Place a cut in the GND plane around the VCCA_PLL regulator circuit.

0-32 mA,
2.25-2.75V

CPU1B
N12-4620011-F02

VCCA_PLL

VCCA_Z

VCCA_A

NC1

NC2

NC3

NC6

NC7

NC8

NC9

NC10

NC11

NC12

NC13

NC15

NC16

NC17

NC18

NC19

NC20

NC21

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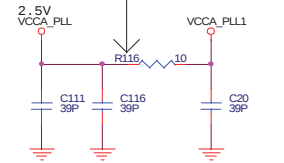
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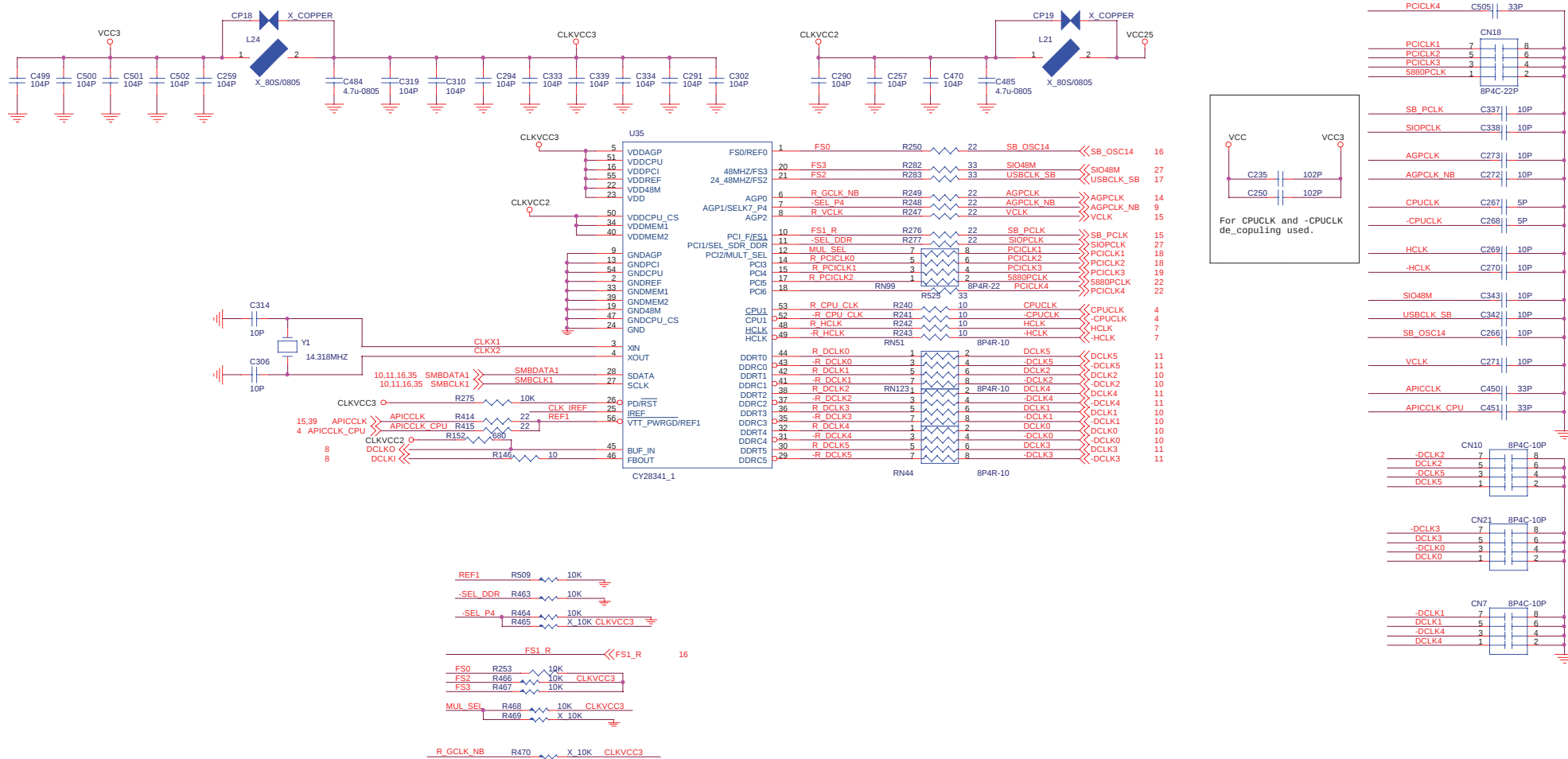


Place a cut in the GND plane around the VCCA_PLL regulator circuit.

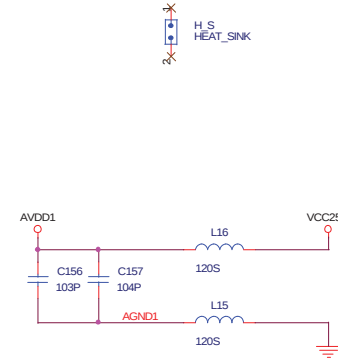


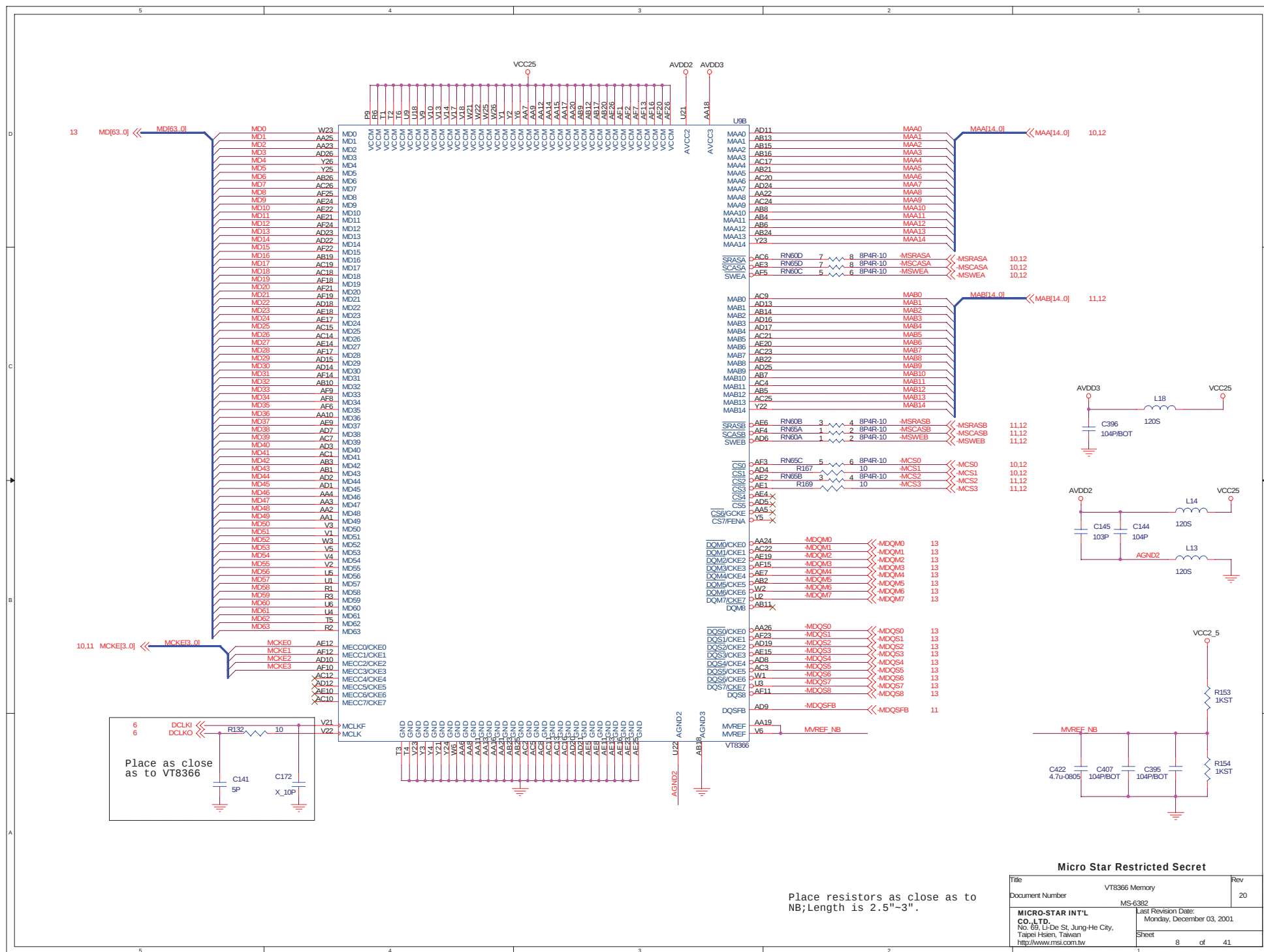
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Document Number	MS-6382	20
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Sheet		5 of 41

Clock Synthesizer



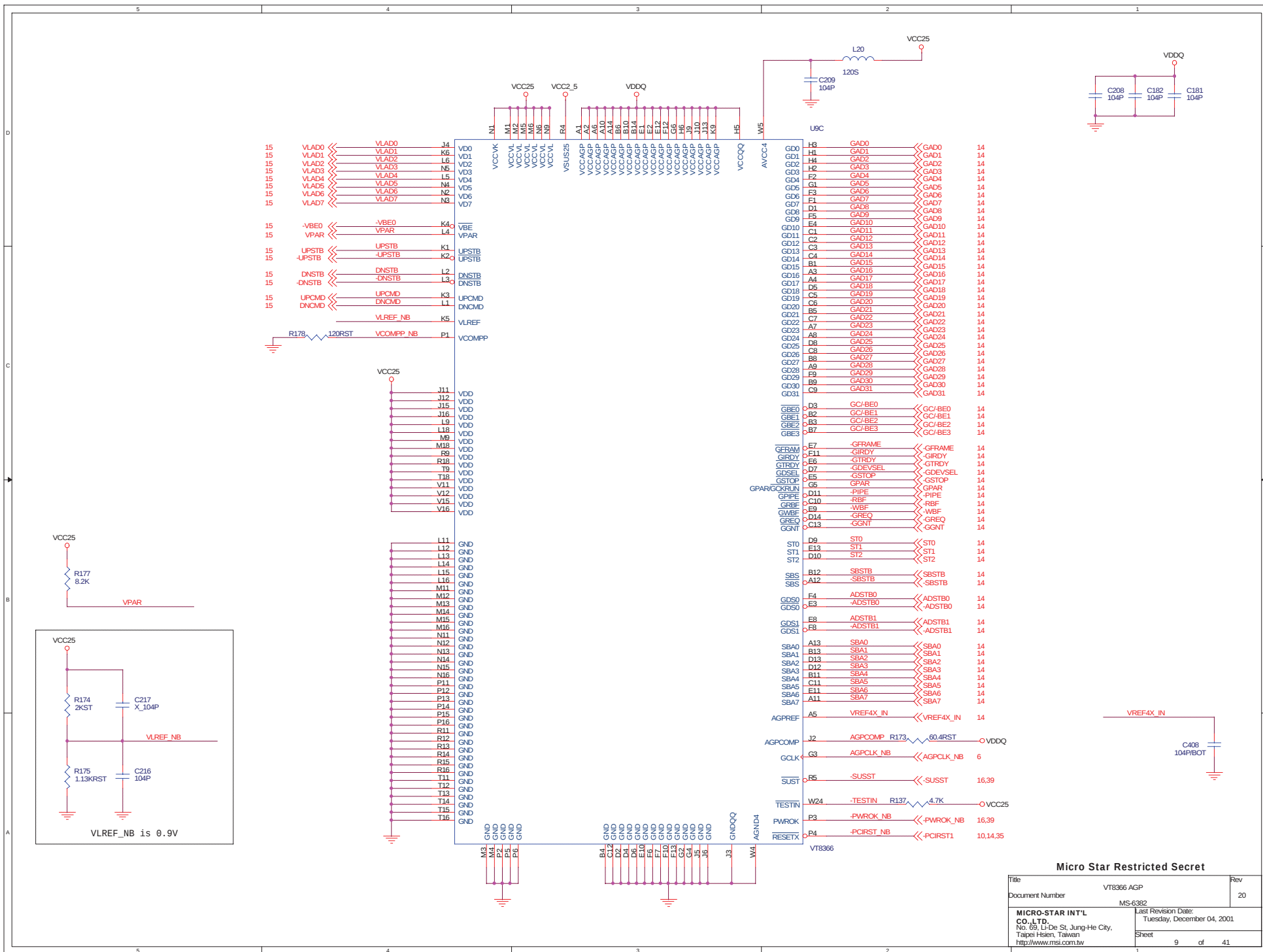
Adjust other Frequency by BIOS.



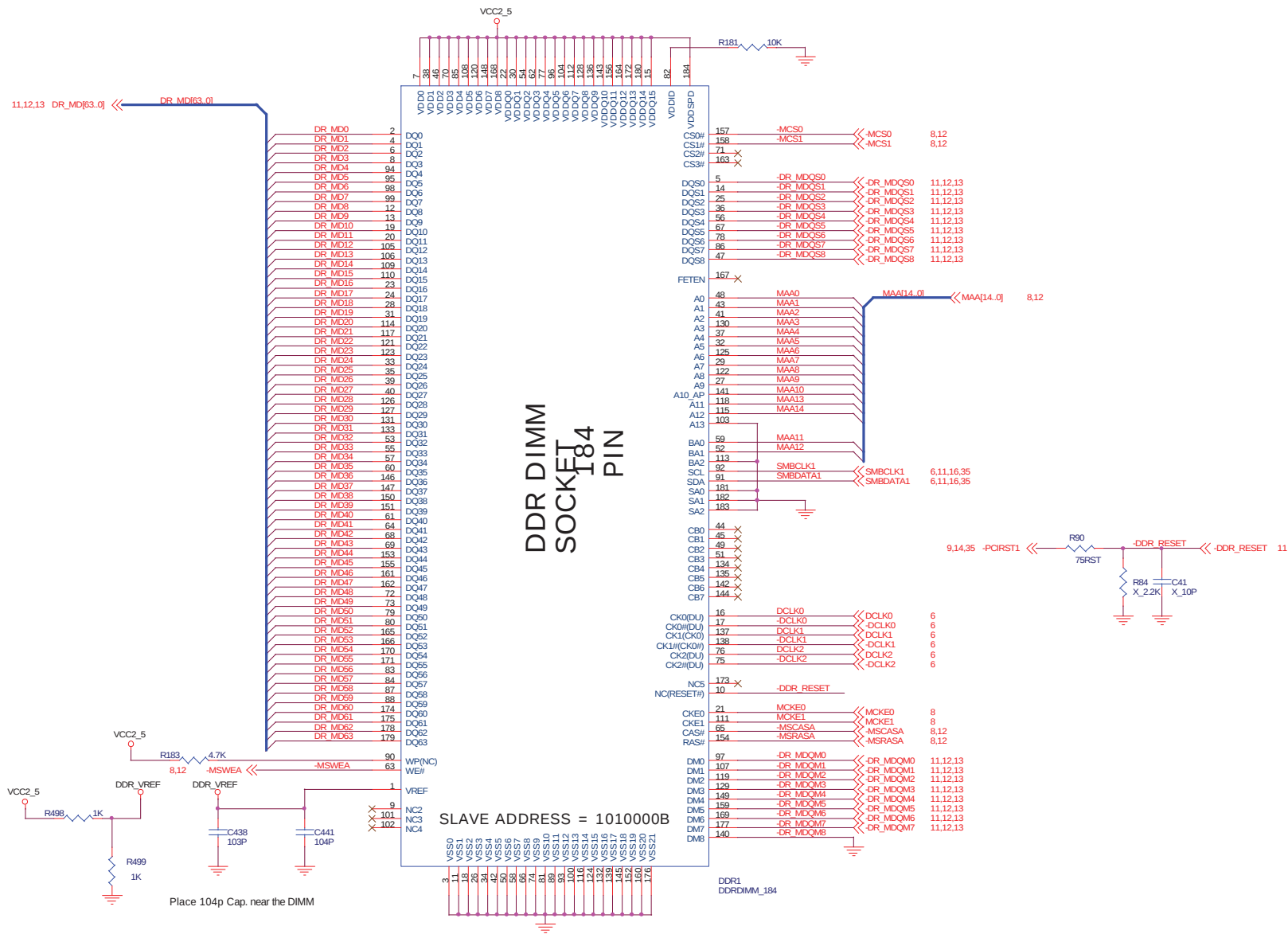


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		Monday, December 03, 2001	
Sheet		8	of 41



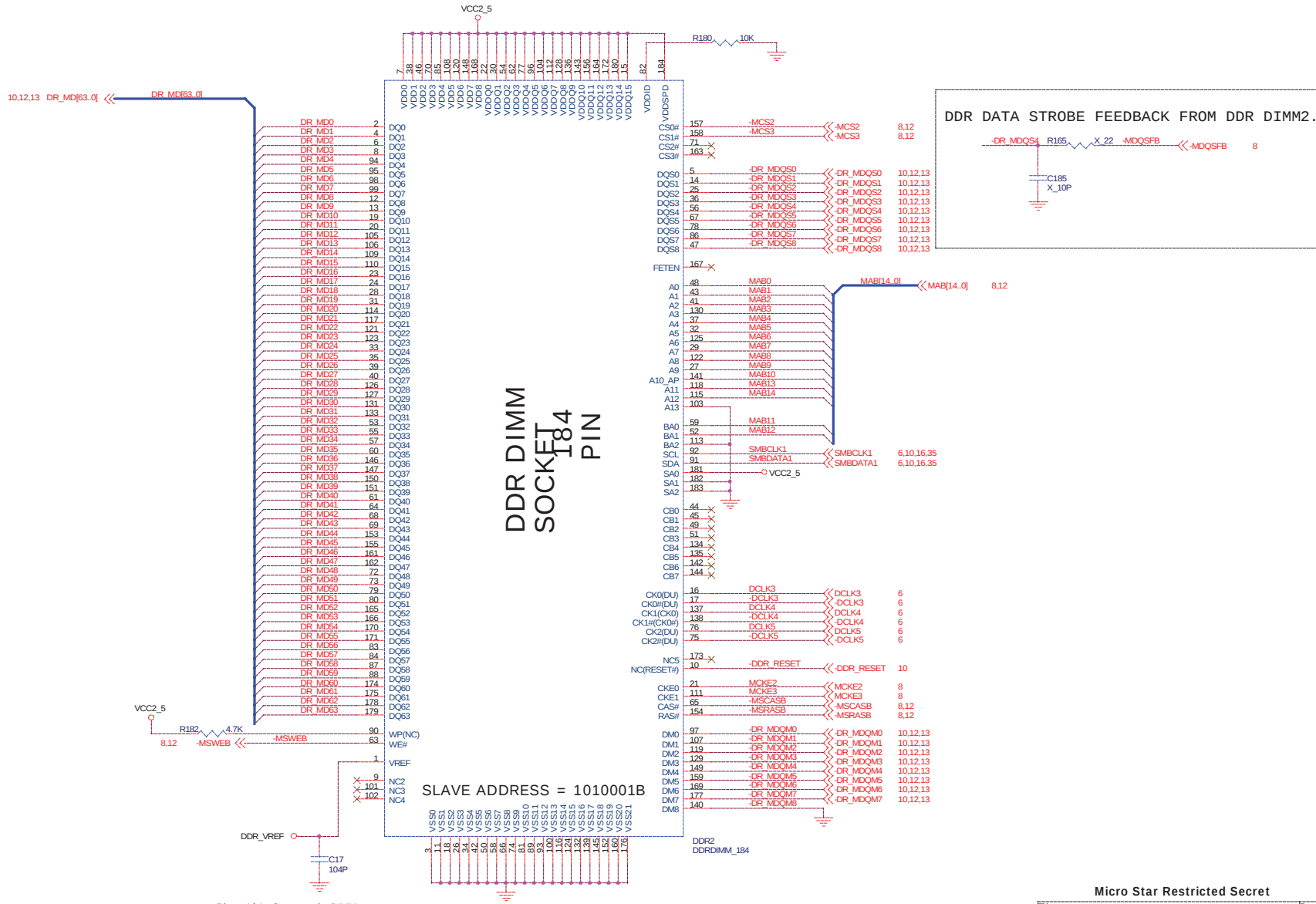
SYSTEM MEMORY



Micro Star Restricted Secret

Title	System Memory : DDR DIMM 1	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD.		Last Revision Date:	
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http://www.msi.com.tw		Sheet	
		10 of 41	

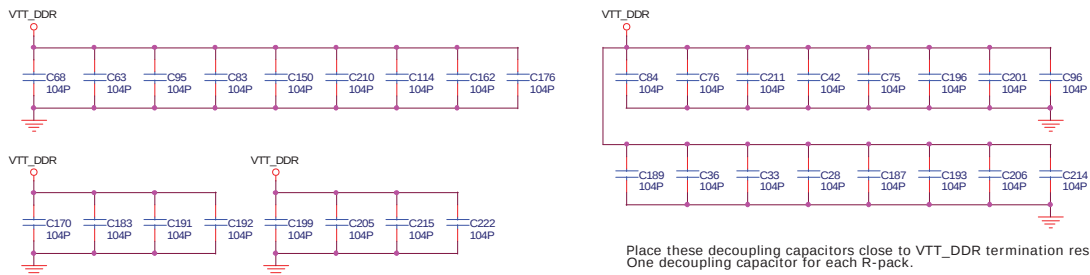
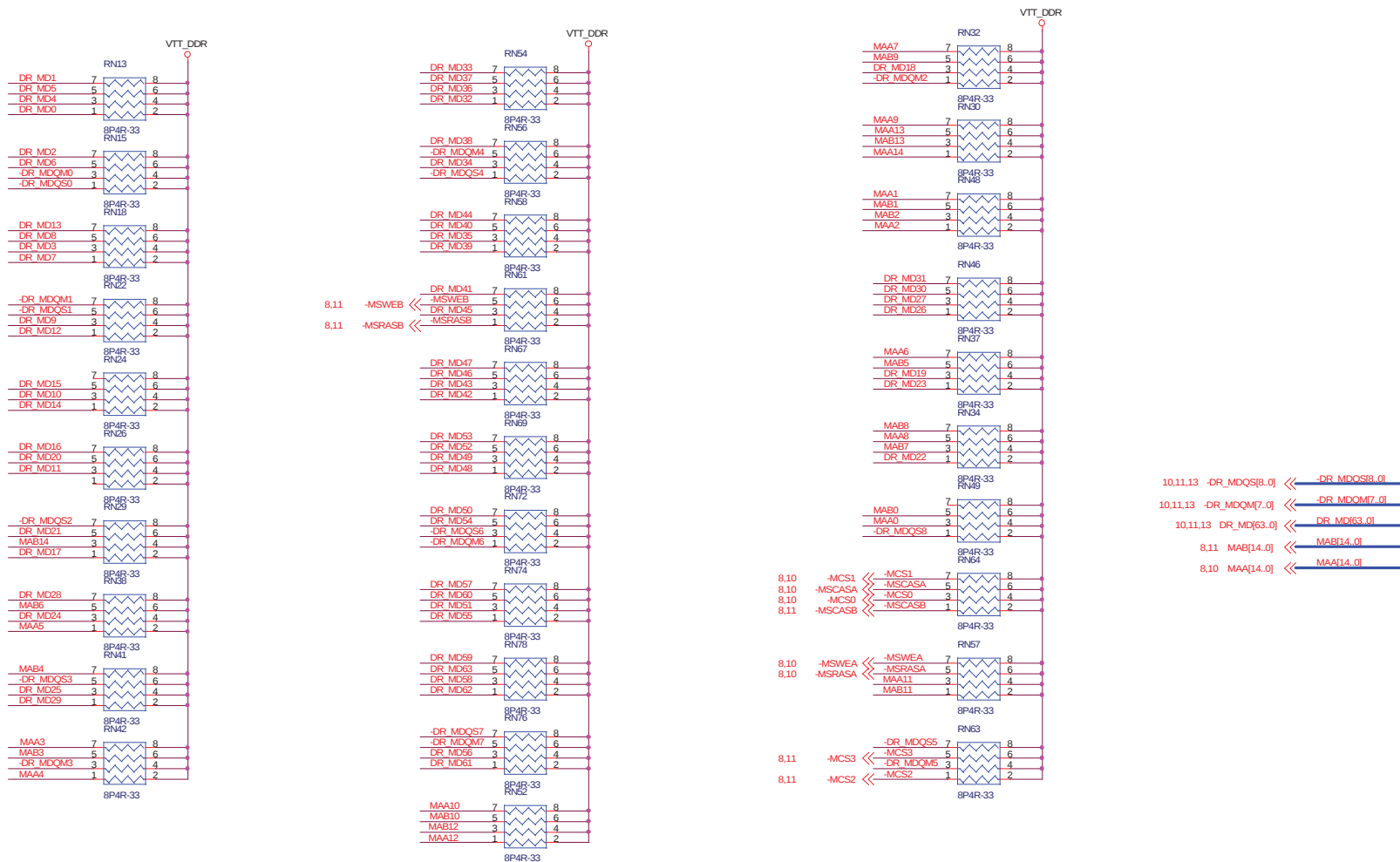
SYSTEM MEMORY



Micro Star Restricted Secret

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Sheet		11 of 41

DDR Terminations



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

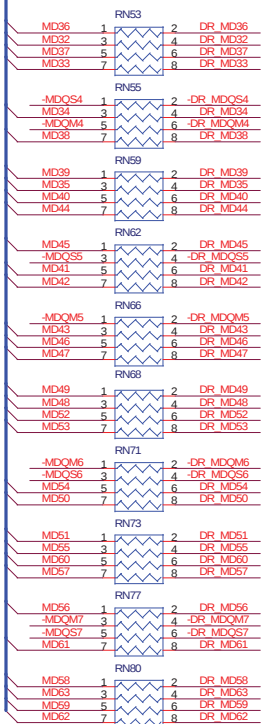
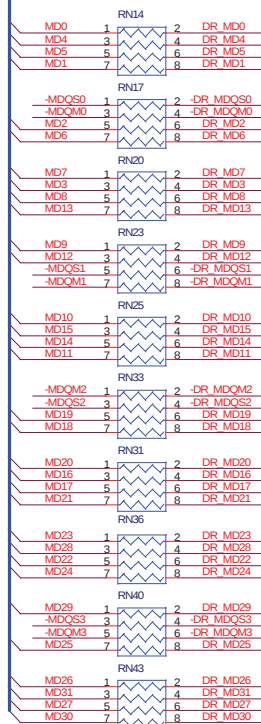
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Document Number	MS-6382	20
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	Sheet 12 of 41	

DDR Terminations

10,11,12 DR_MD[63.0] << DR_MD[63.0]

8 MD[63.0] << MD[63.0]



-MDQS8 R142 10 -DR MDQS8

8 -MDQM[7.0] << -MDQM[7.0]

10,11,12 -DR_MDQM[7.0] << -DR MDQM[7.0]

8 -MDQS[8.0] << -MDQS[8.0]

10,11,12 -DR_MDQS[8.0] << -DR MDQS[8.0]

Micro Star Restricted Secret

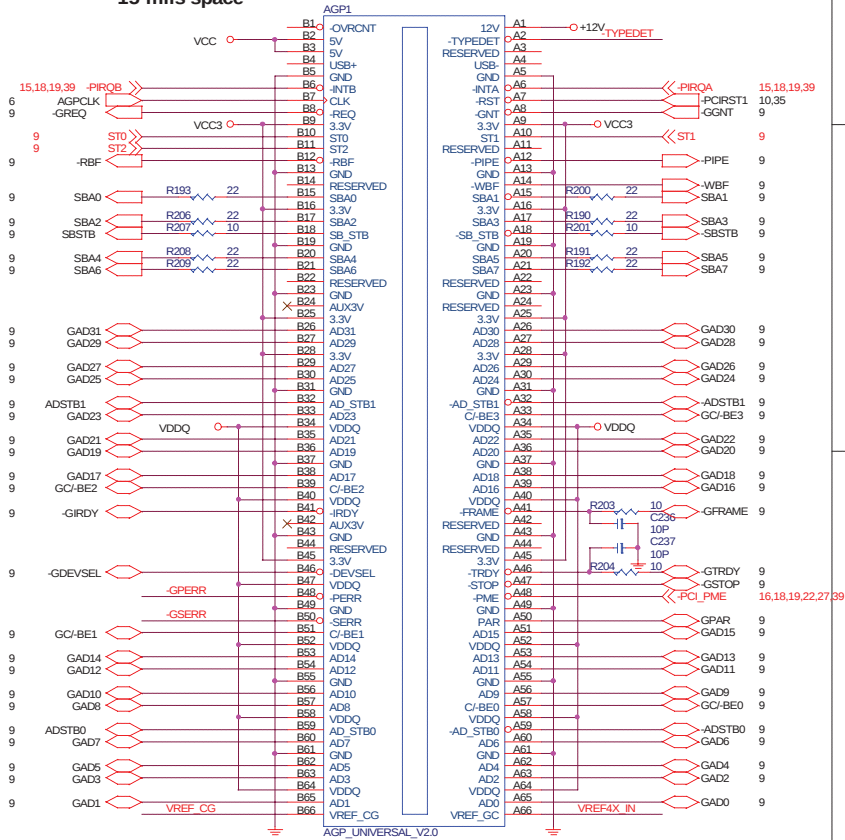
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AGP UNIVERSAL 2X/4X SLOT(AGP VER:2.0 COMPLY)

AGP Slot I_{max}
VCC_q 8.0A
VCC₃ 6.0A
VCC₁₂ 1.0A
VCC₅ 2.0A

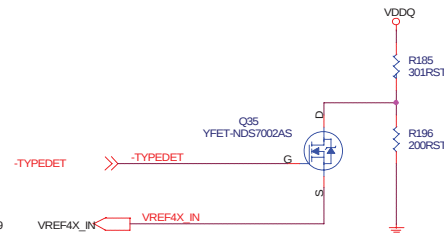
TYPEDET#	VDDQ
Low	1.5V
High	3.3V

VCC = 50mils trace /
15 mils space

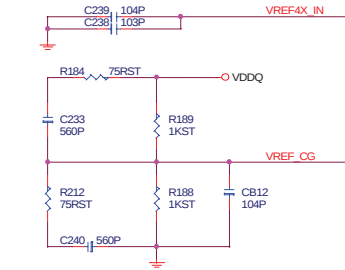


AGP 2/4X REFERENCE VOLTAGE SELECTION

(NEAR AGP SLOT)

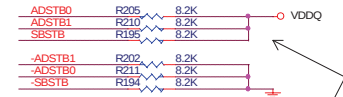
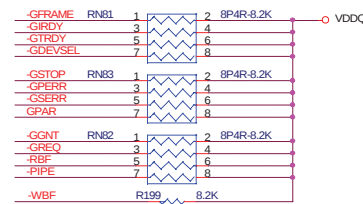


AGP SIGNAL REFERENCE CIRCUIT



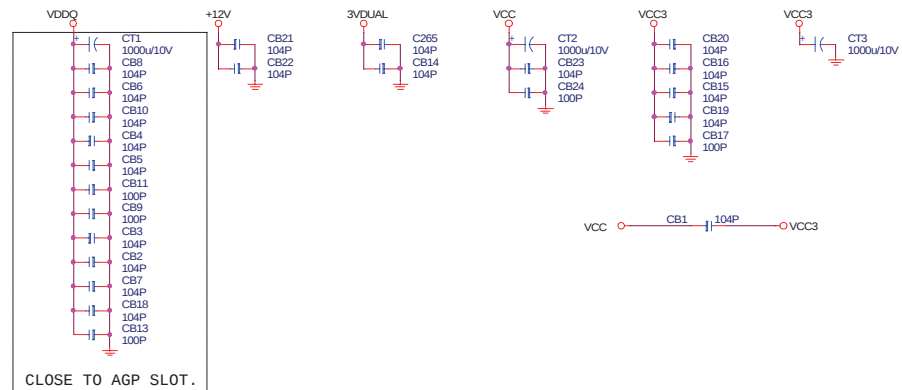
NEAR AGP SLOT

AGP TERMINATION RESISTORS



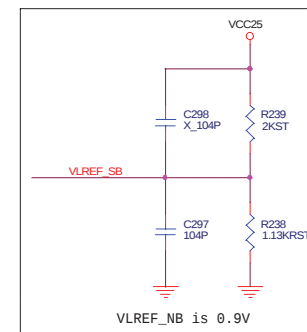
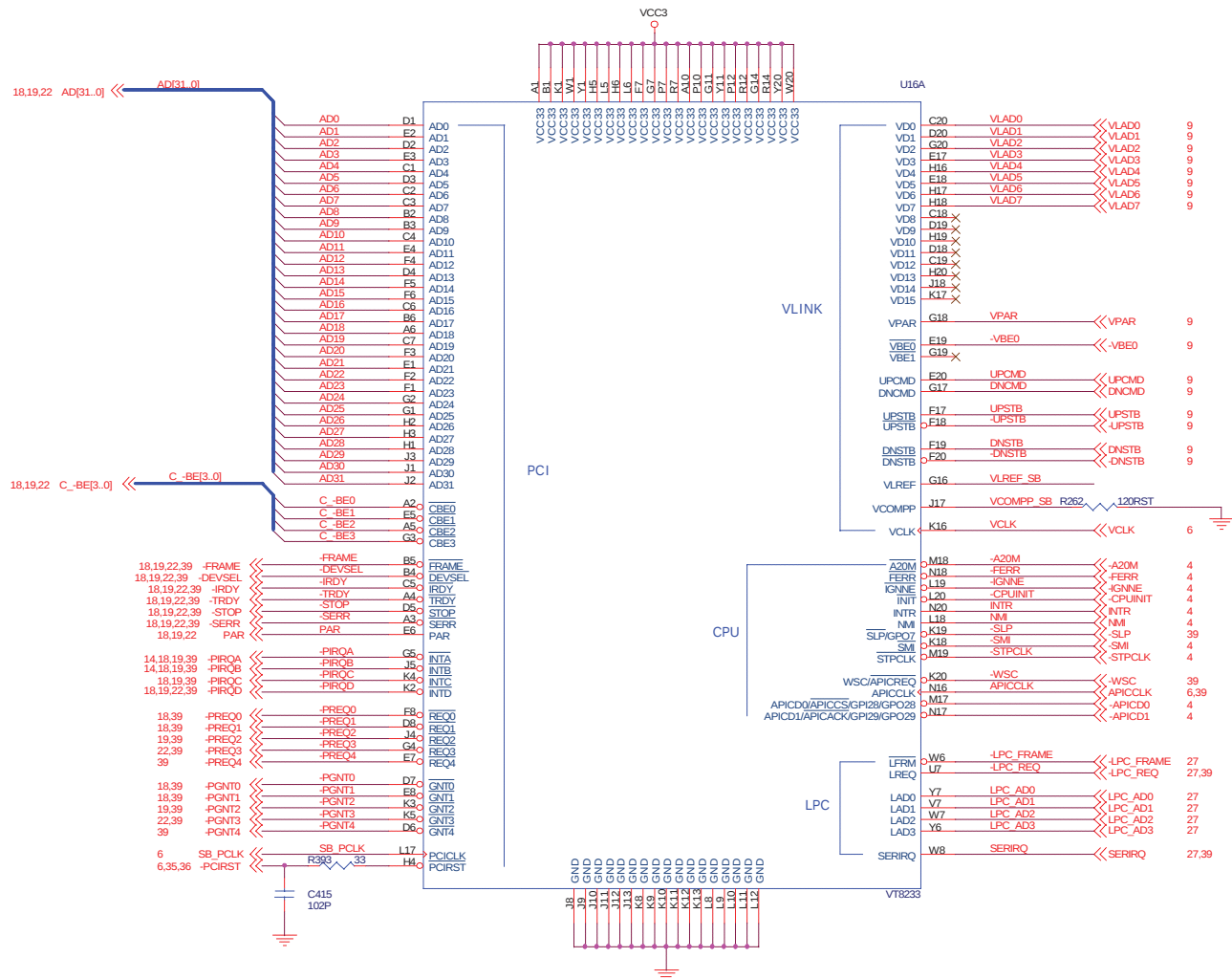
THESE SIX RESISTORS MUST LOCATE ON SIGNAL TRACE
BETWEEN CHIPSET AND AGP CONNECTOR,
LESS 10MILS STUB TRACE LENGTH MUST BE FOLLOWING.

AGP SLOT DECOUPLING CAPACITORS



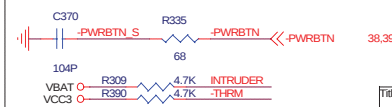
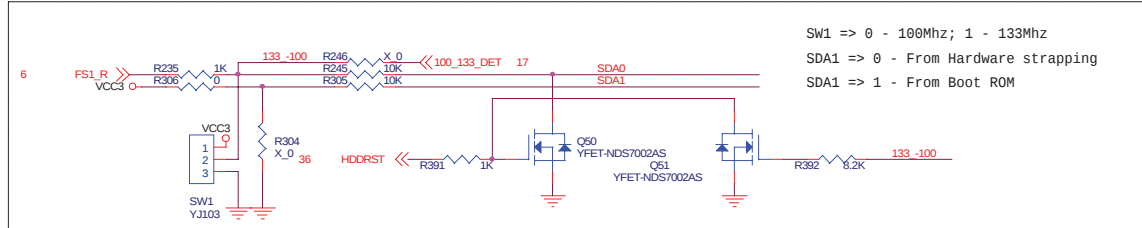
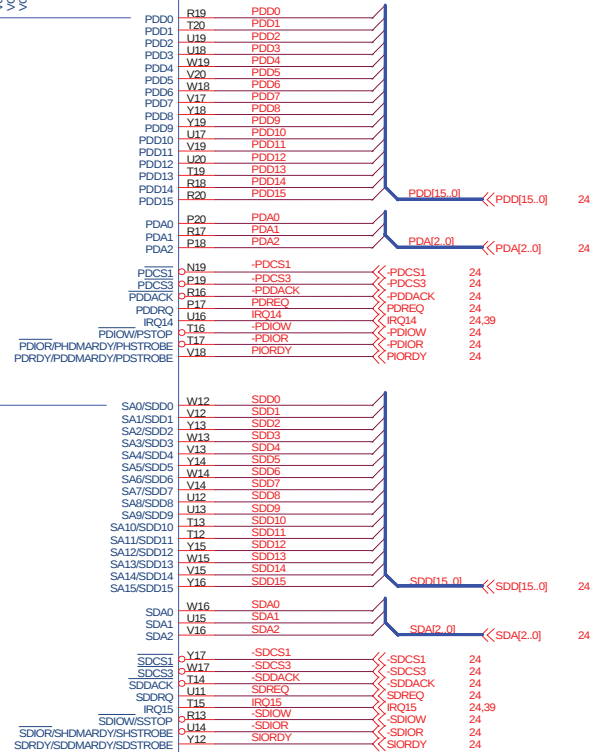
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http://www.msi.com.tw		Sheet	
		14 of 41	

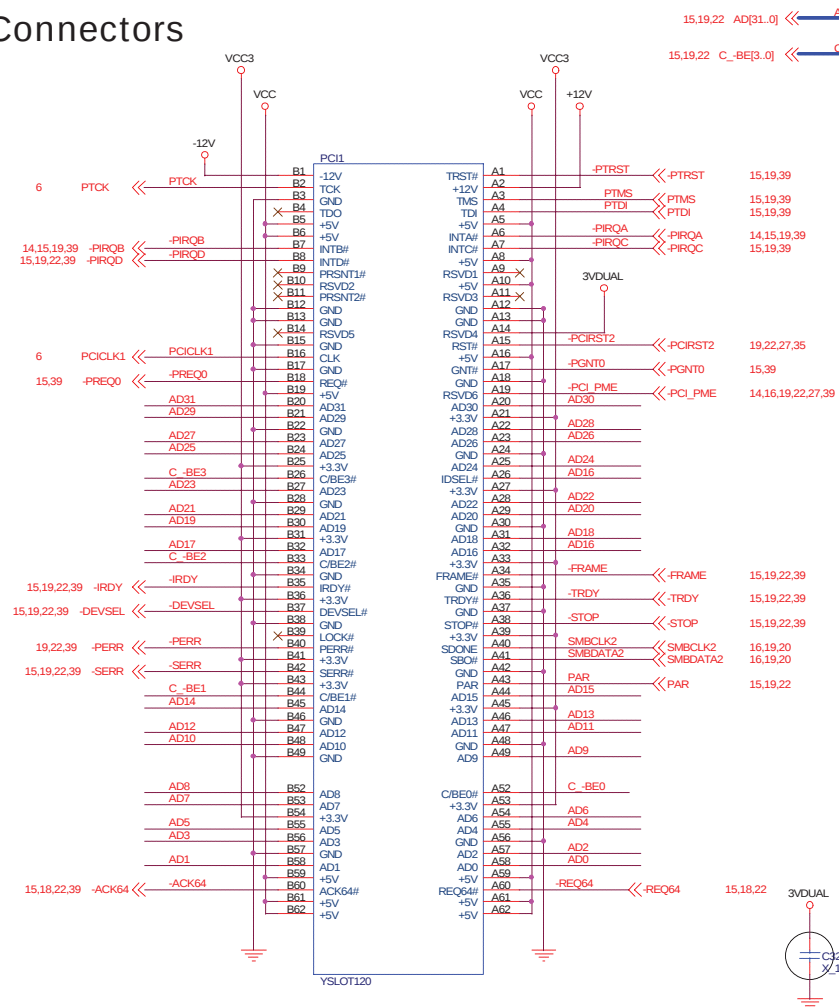


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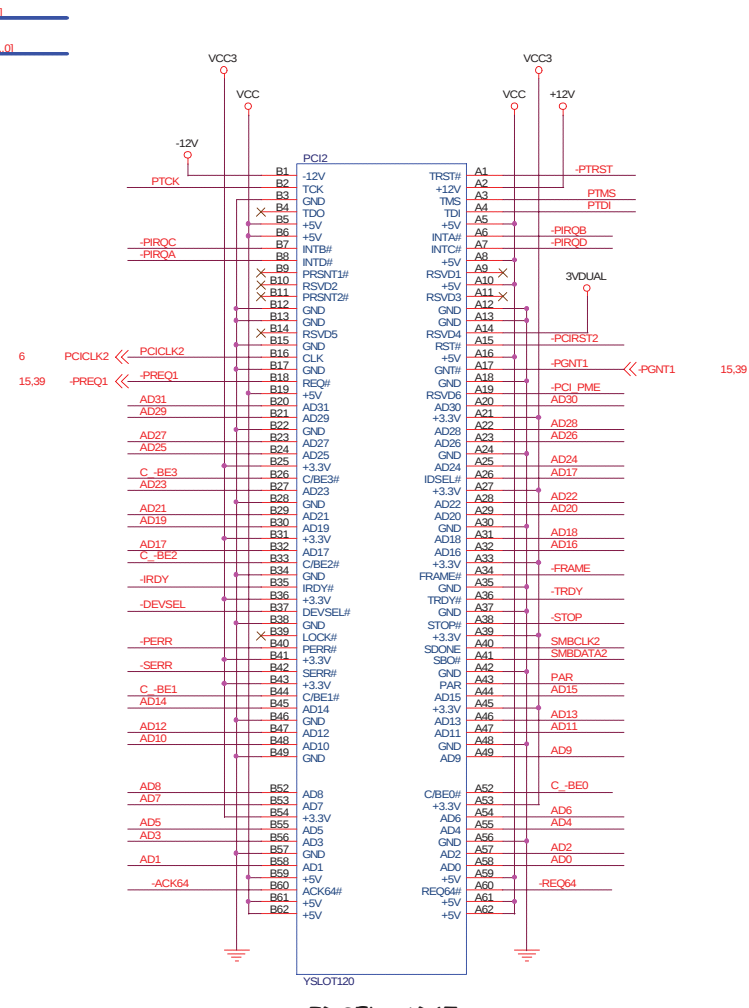
Title	VT8233 Part 1	Rev	20
Document Number	MS-6382		
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PCI Connectors



IDSEL= AD16
INT# = A, B, C, D

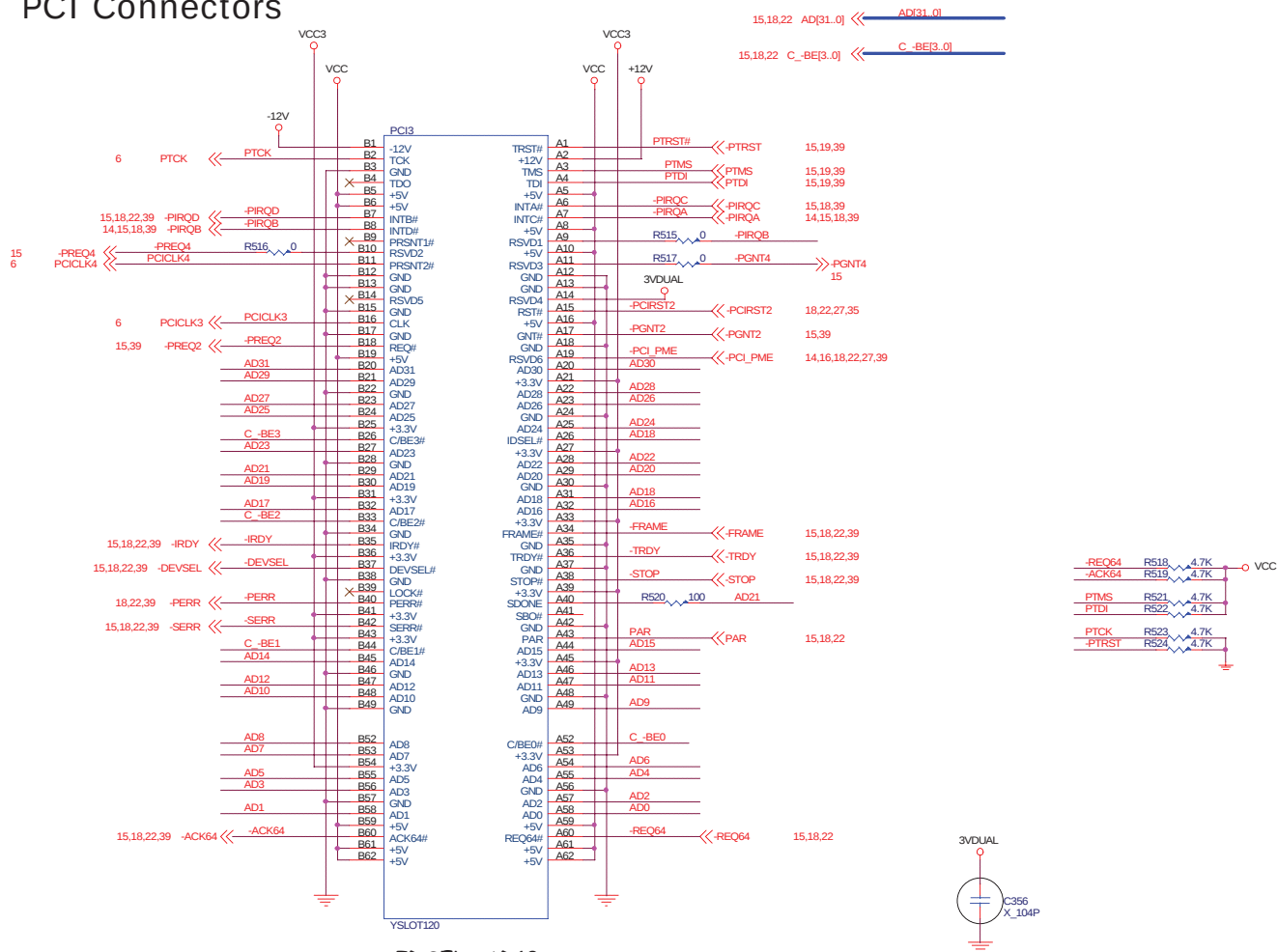


```
IDSEL= AD17
INT#= B, C, D, A
```

Micro Star Restricted Secret

Title	PCI Connector 1 & 2	Rev	20
Document Number	MS-382		
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001	
Sheet		18	of 41

PCI Connectors

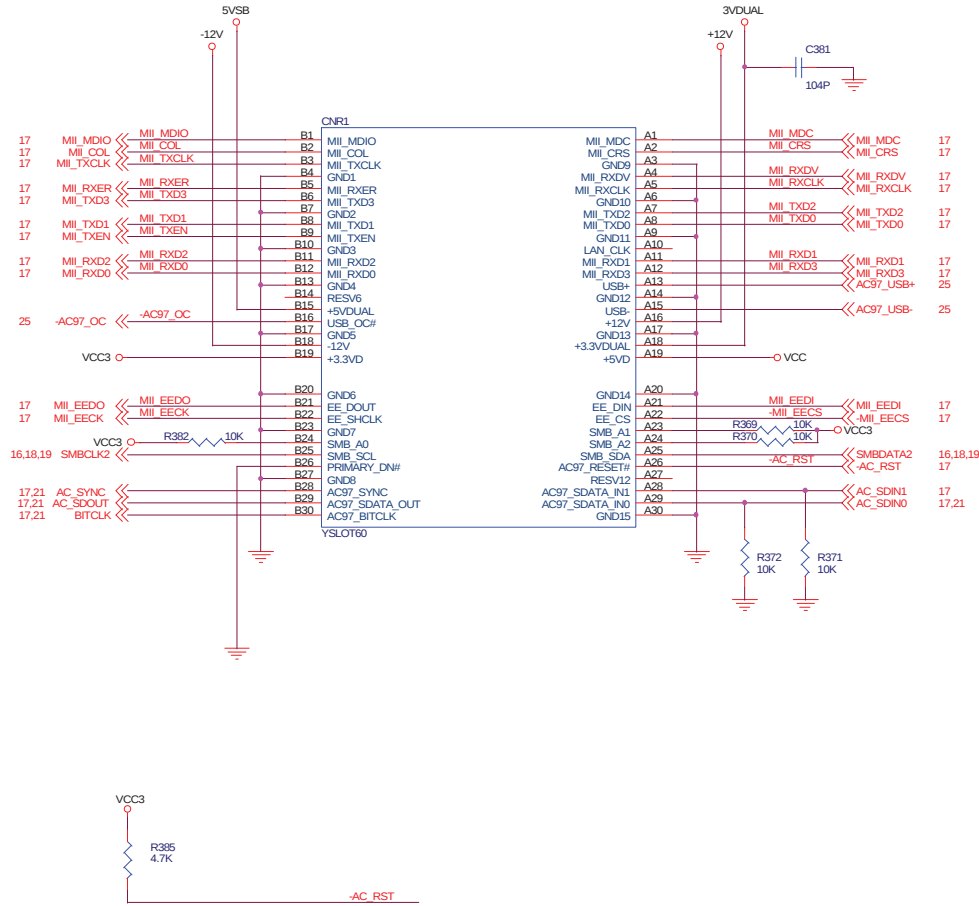


IDSEL= AD18
INT#= C, D, A, B
IDSEL= AD21
INT#= B

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Title	PCI Connector 3 & 4	Rev
Document Number	MS-6382	20
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Sheet		19 of 41

CNR Riser

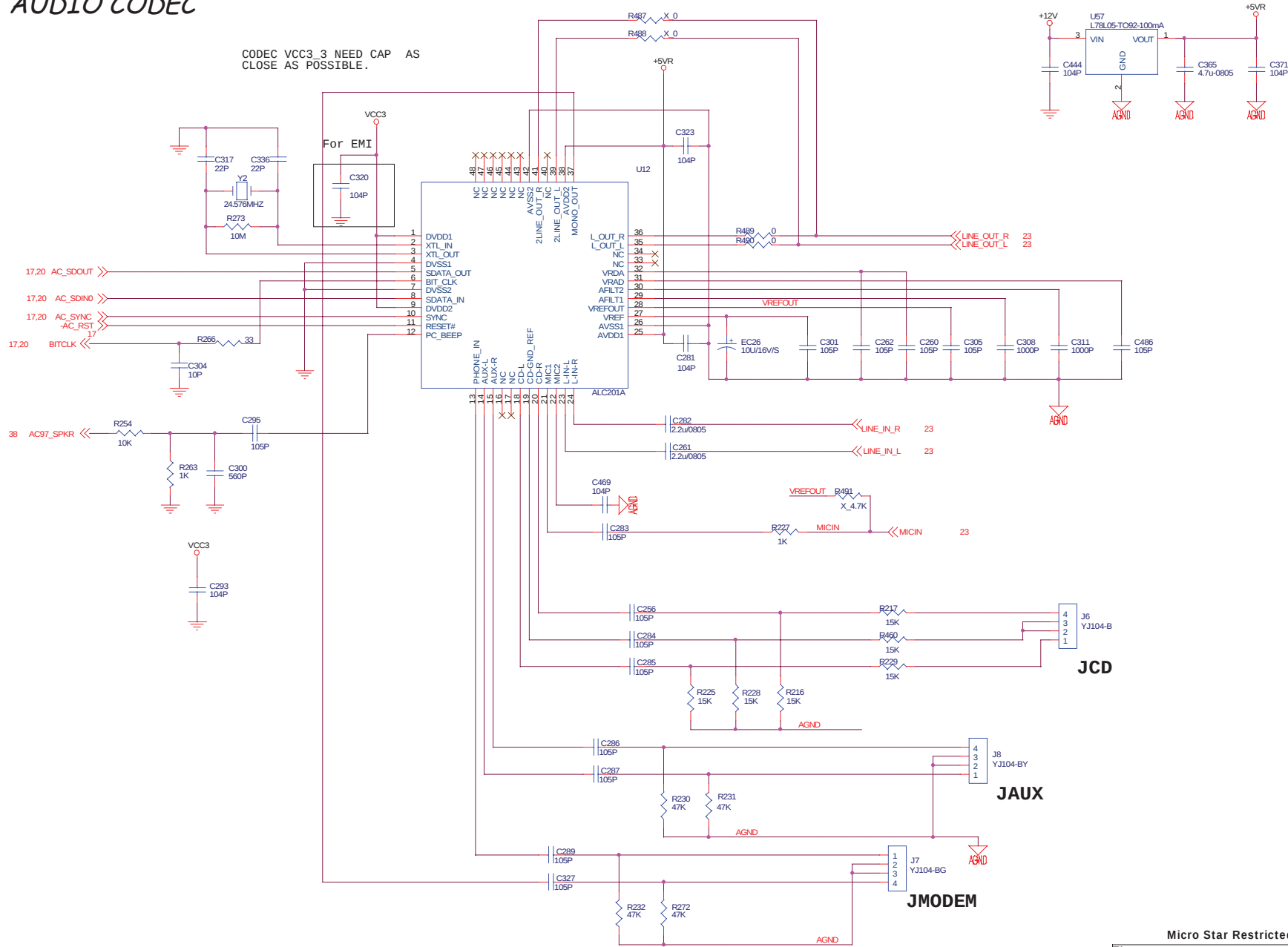


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AUDIO CODEC

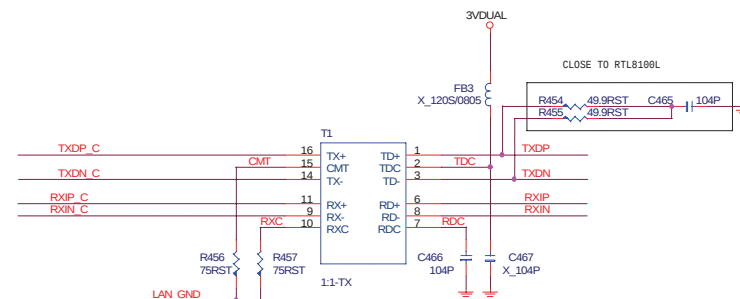
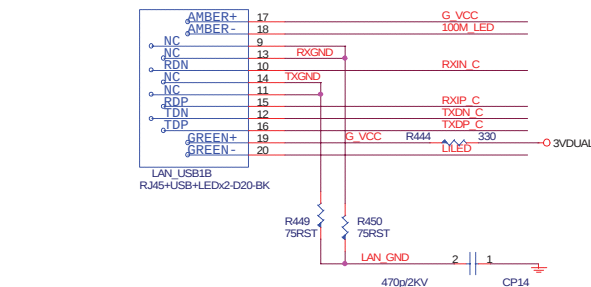
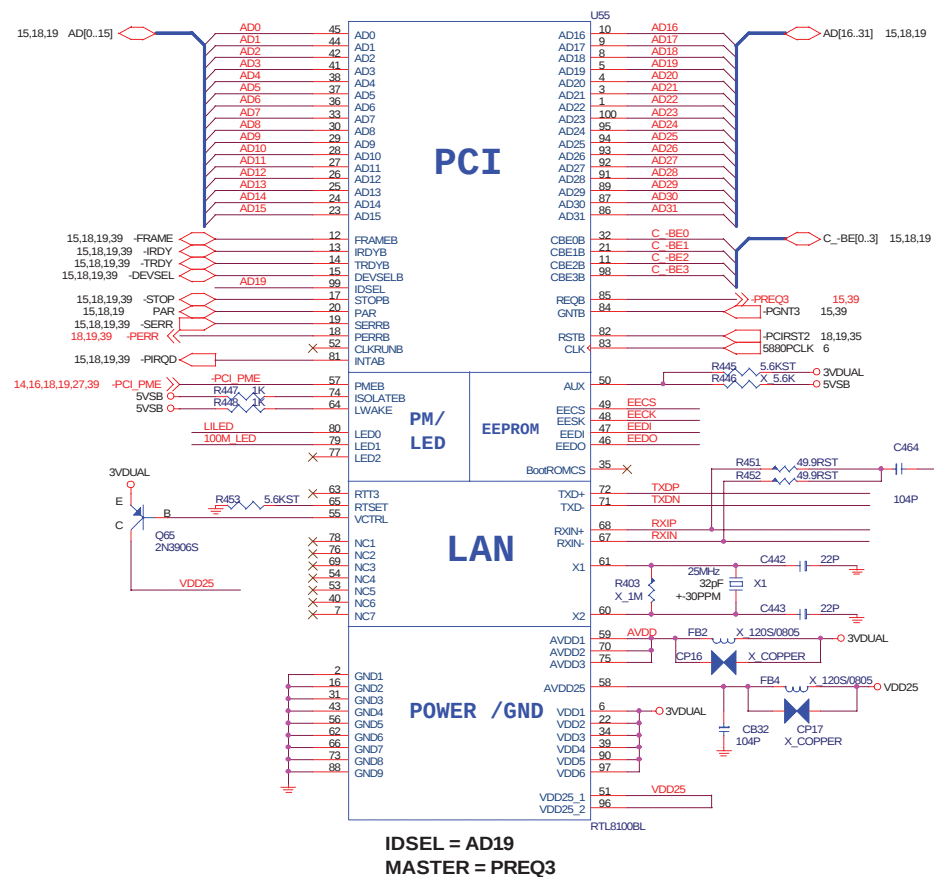
CODEC VCC3_3 NEED CAP AS CLOSE AS POSSIBLE.



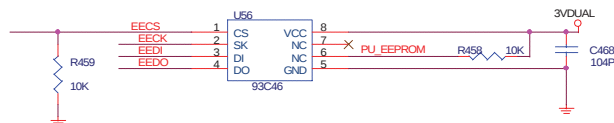
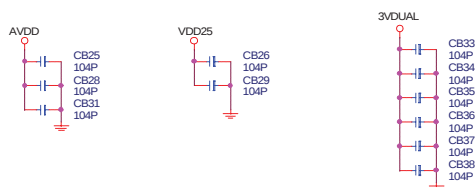
Micro Star Restricted Secret

Title	Audio Codec	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 59, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		21 of 41

REALTEK RTL8100BL PCI LAN

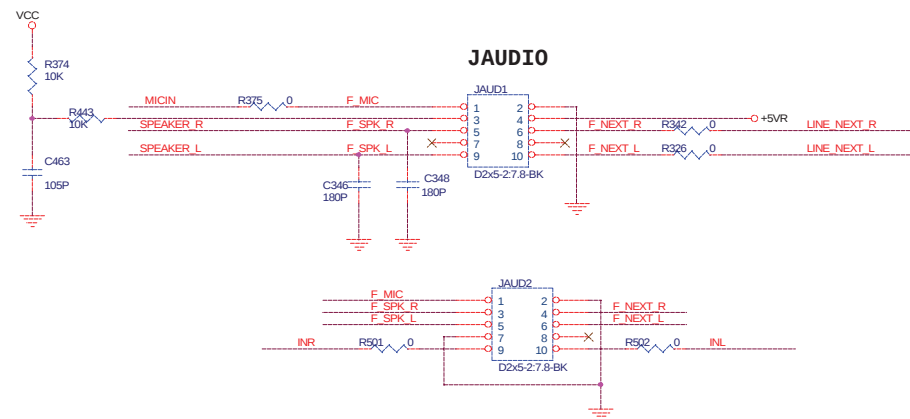
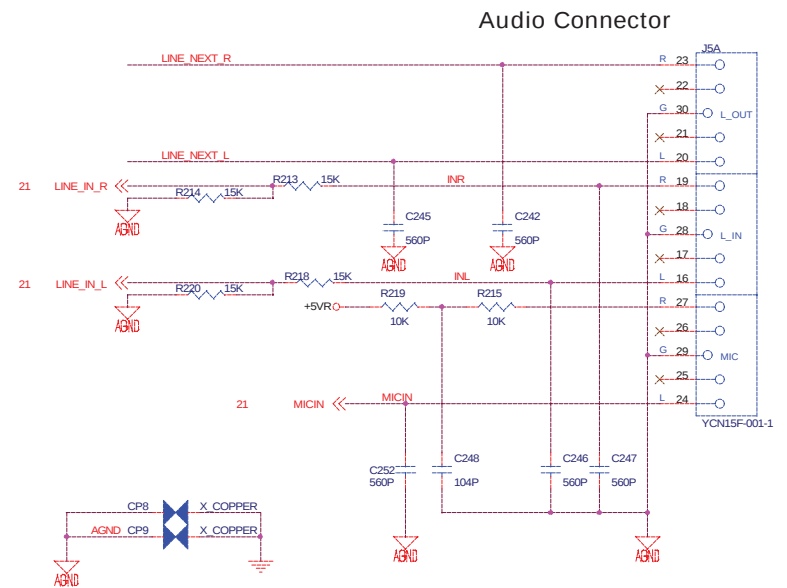
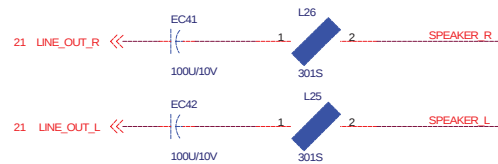


BTL8100BL DECOUPLING CAPACITORS



Micro Star Restricted Secret

Title	RTL8100BL PCI LAN	Rev	
Document Number	MS-6382		20
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001	
Sheet		22	of 41



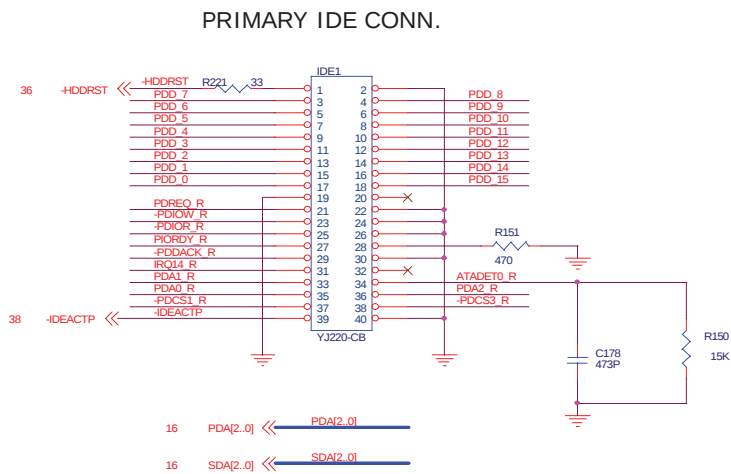
SPEAKER_R R340 X 0 LINE_NEXT_R
SPEAKER_L R321 X 0 LINE_NEXT_L
Remove when install Front Audio

Micro Star Restricted Secret

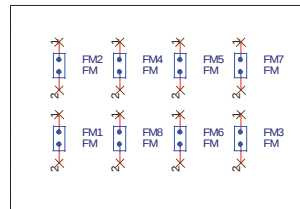
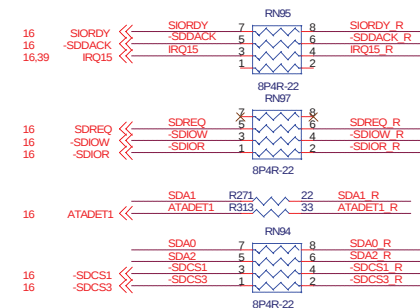
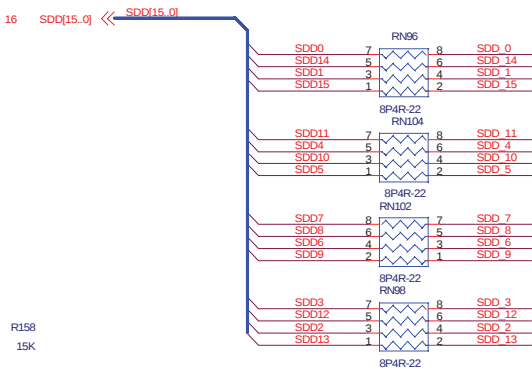
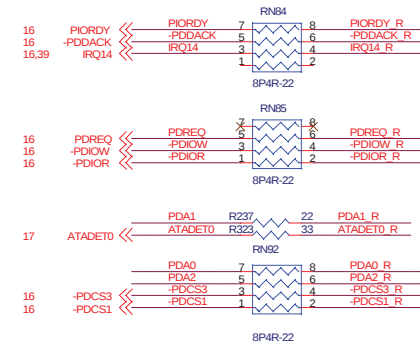
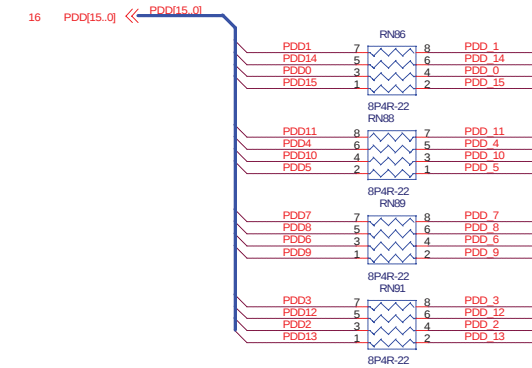
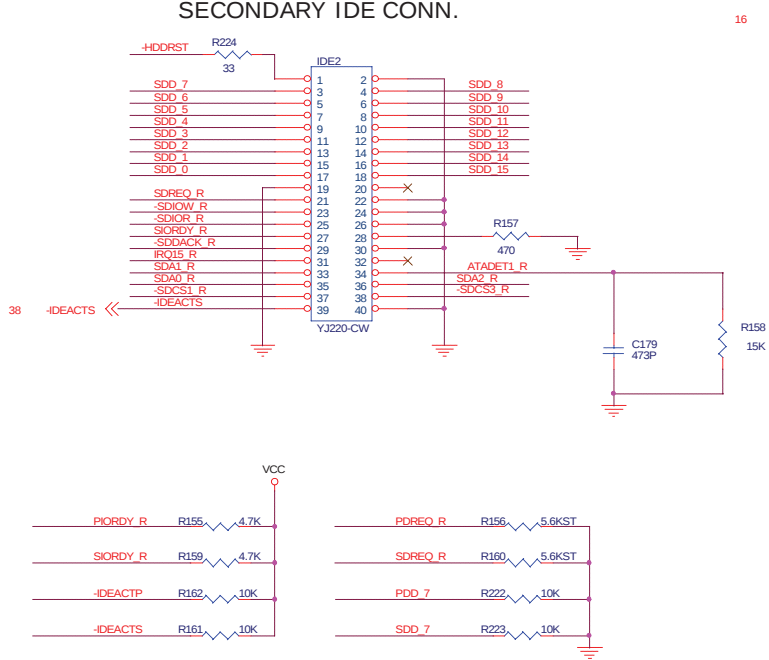
Title	Audio Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 59, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001 Sheet 23 of 41

ATA 33/66/100 Connector

PRIMARY IDE CONN.



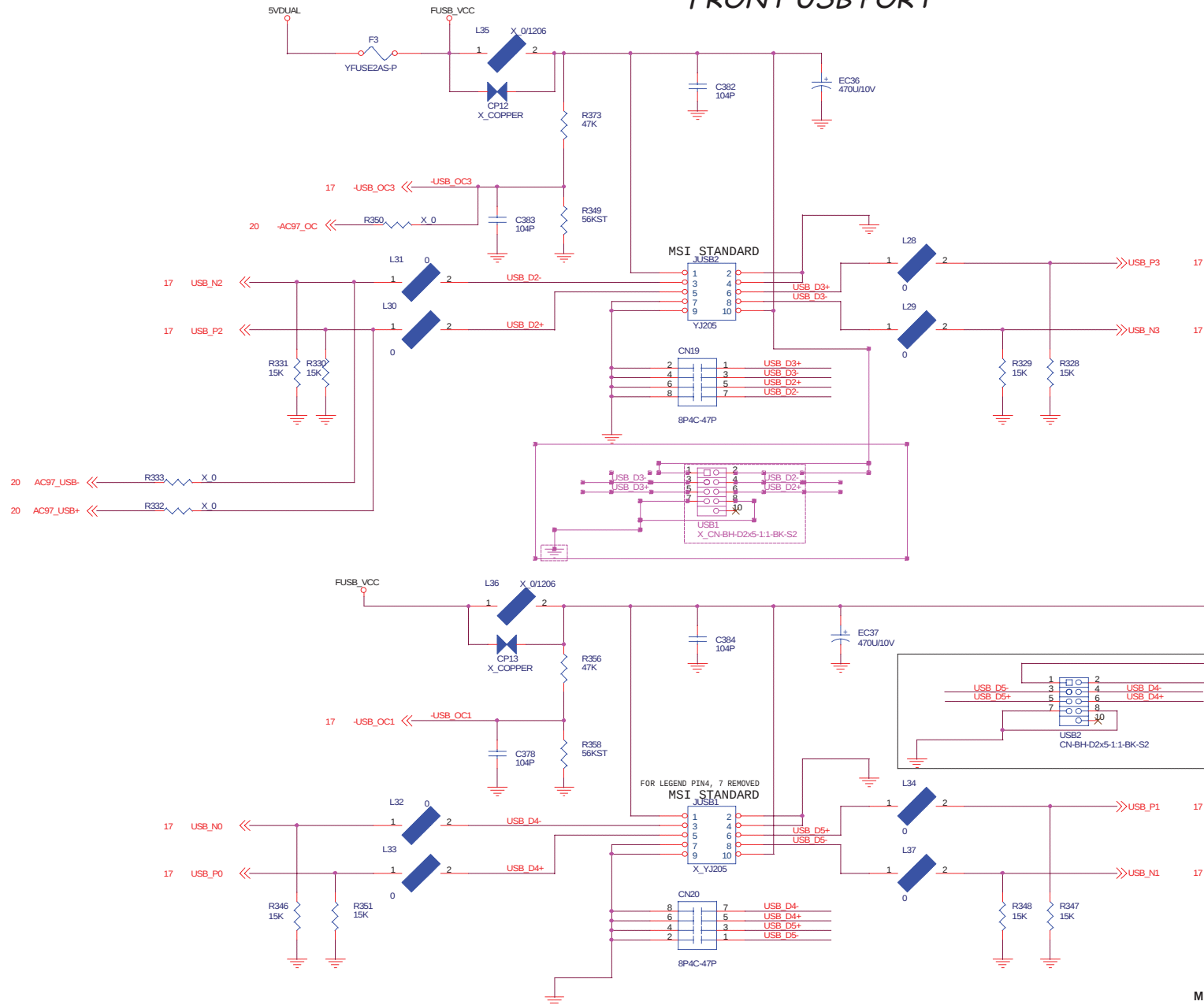
SECONDARY IDE CONN.



Micro Star Restricted Secret

Title	ATA 33/66/100 Connector	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD.		Last Revision Date:	
No. 88, Li-De St, Jung-He City, Taipei Hsien, Taiwan		Monday, December 03, 2001	
http://www.msi.com.tw		Sheet	24 of 41

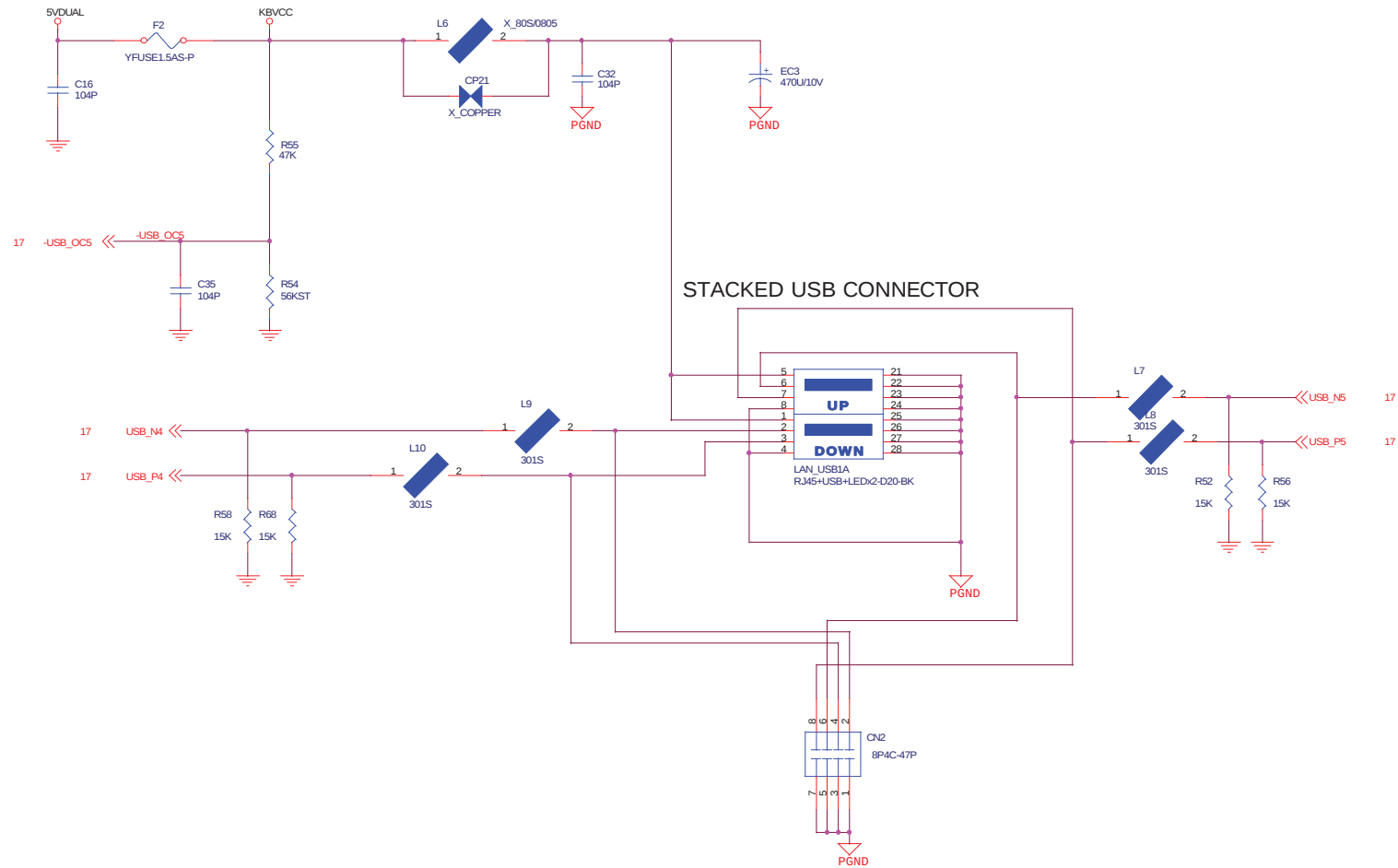
FRONT USB PORT



Micro Star Restricted Secret

Title	Front USB Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 59, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		25 of 41

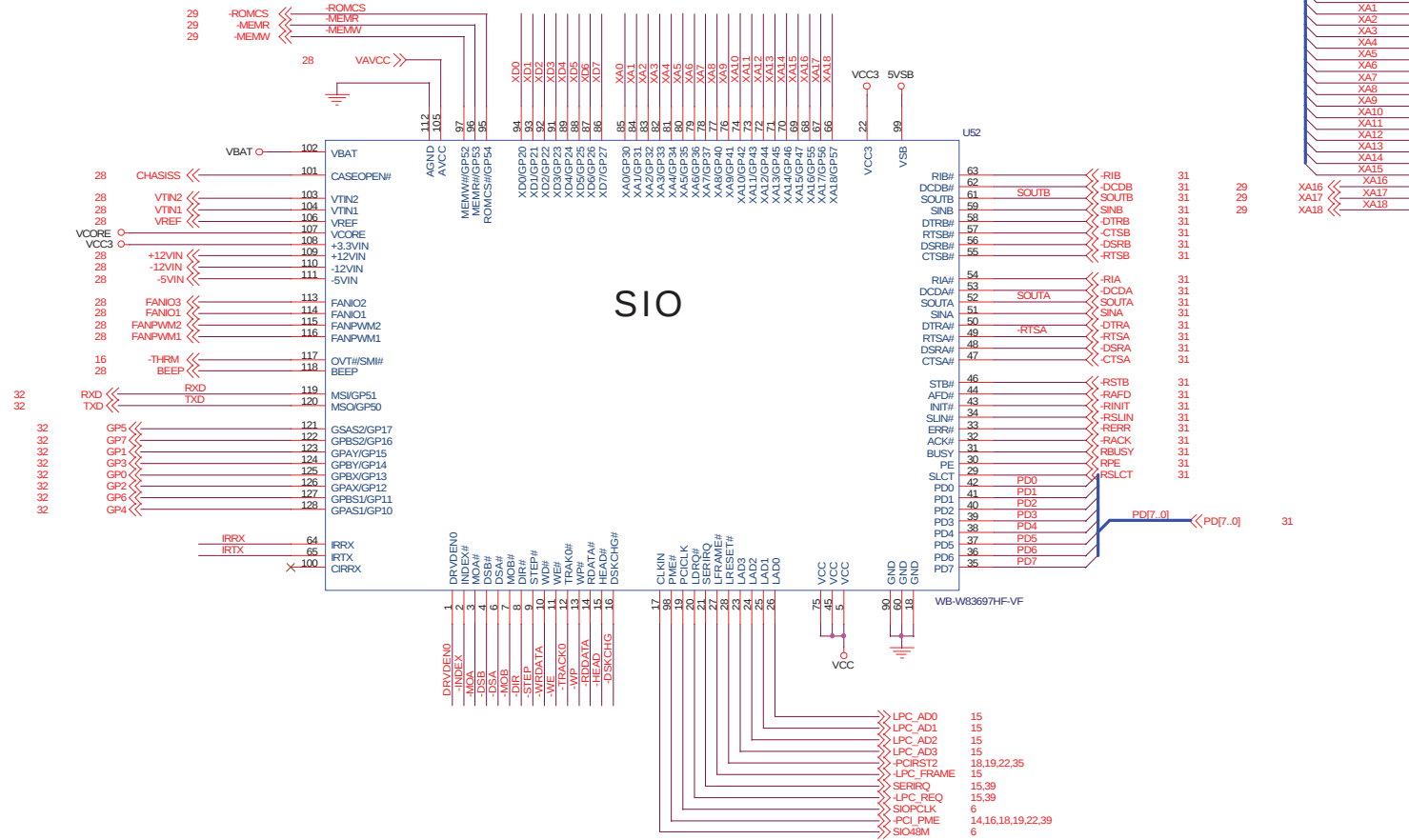
REAR USB PORT



Micro Star Restricted Secret

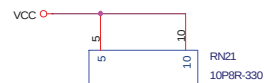
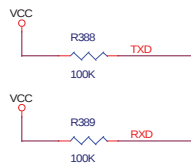
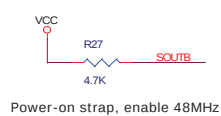
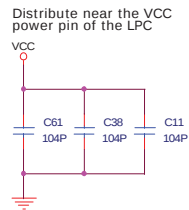
Title	Rear USB Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		26 of 41

Super I/O

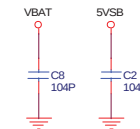
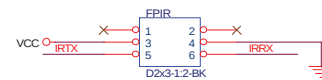


SIO

IR HEADER



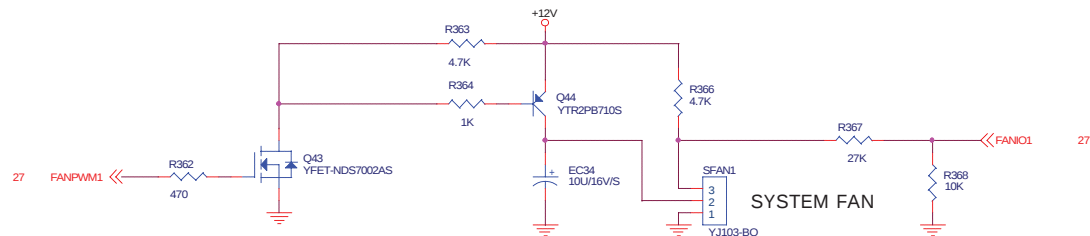
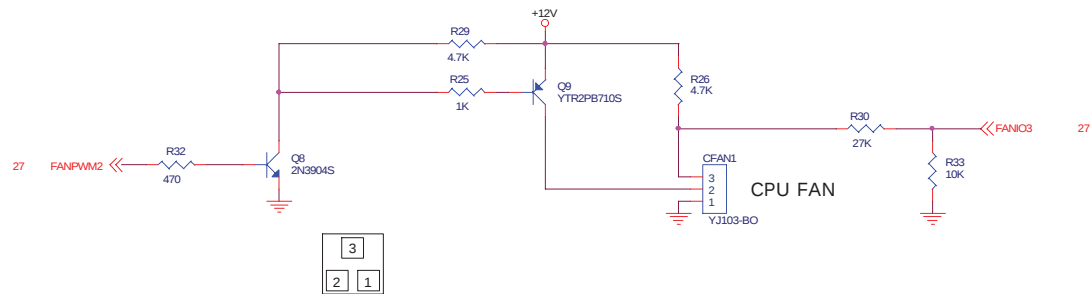
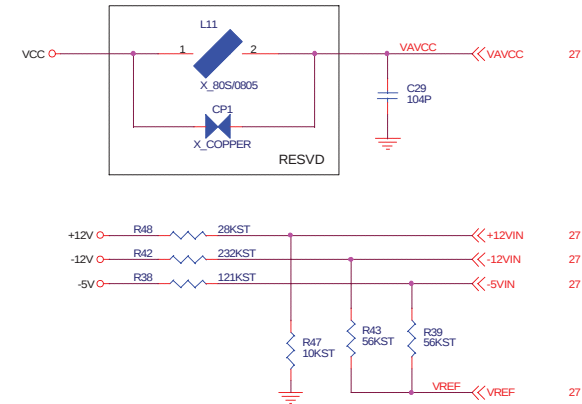
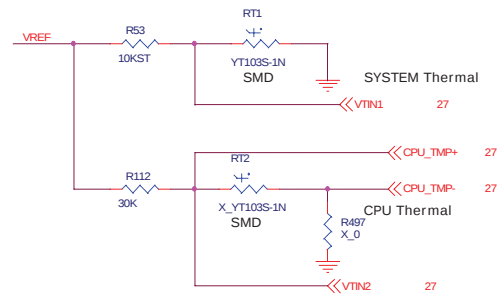
FLOPPY DISK HEADER



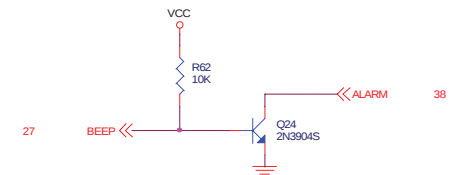
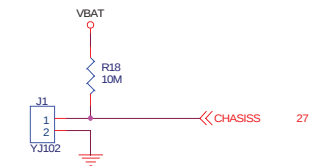
Micro Star Restricted Secret

Title	Winbond W627HF	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD.		Last Revision Date:	
No. 59, Li-De St, Jung-He City, Taipei Hsien, Taiwan		Monday, December 03, 2001	
http://www.msi.com.tw		Sheet	27 of 41

Hardware Monitor



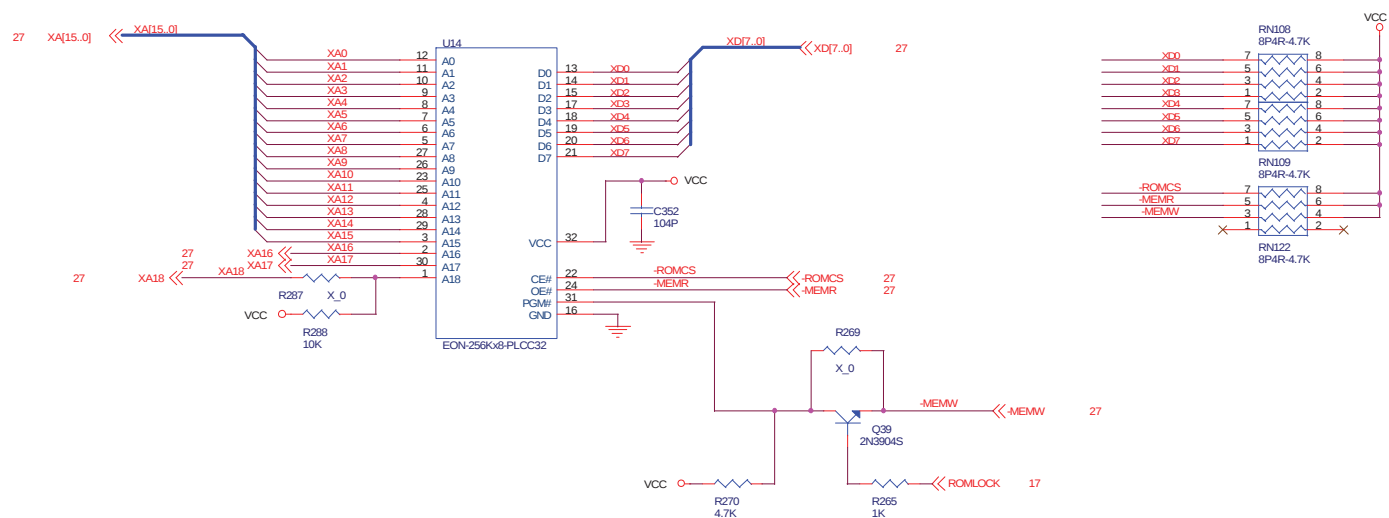
Chassis Intrusion Header



Micro Star Restricted Secret

Title	Hardware Monitor	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 59, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001 Sheet 28 of 41

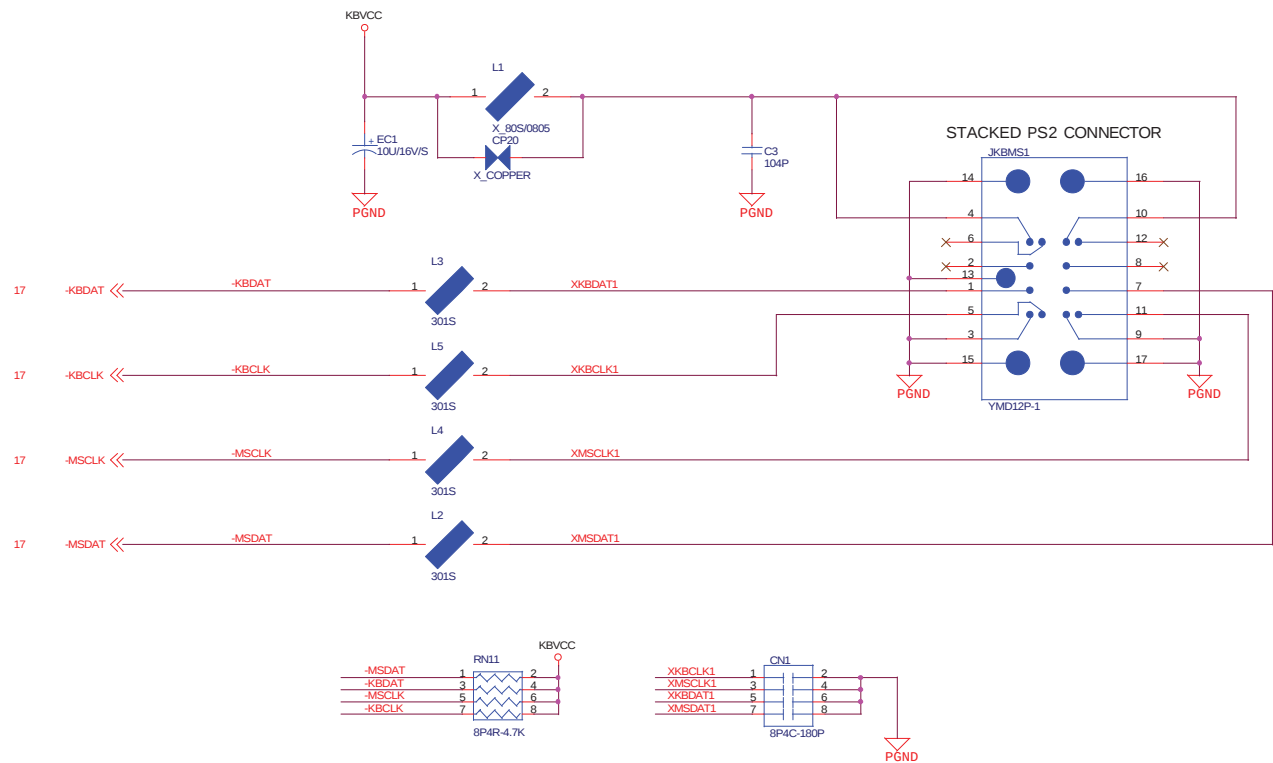
SYSTEM ROM



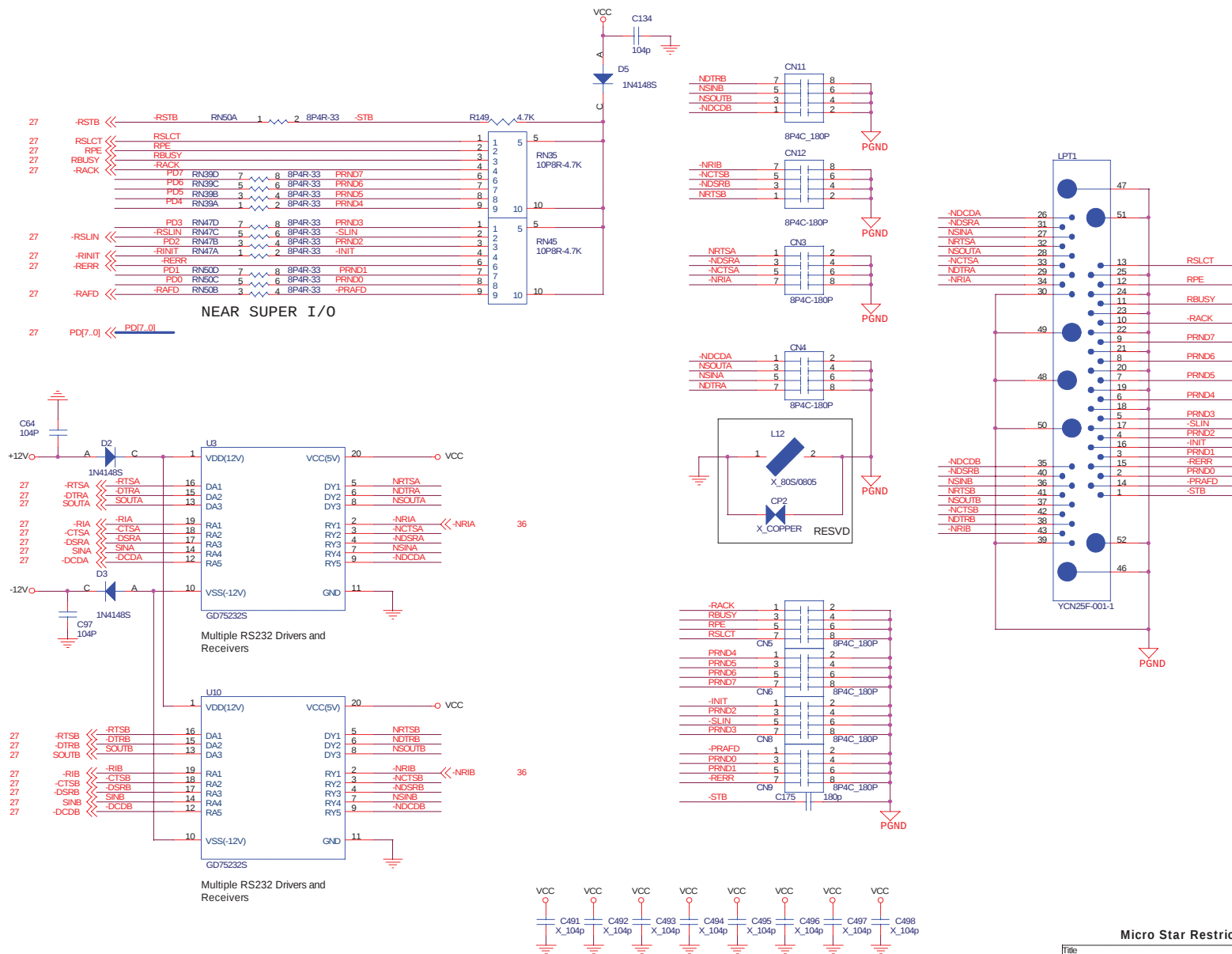
Micro Star Restricted Secret

Title	System ROM	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 59, Li-De St, Jung-Hsi City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		29 of 41

Keyboard/Mouse Ports



LPT / COM PORTS



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Title	LPT / COM Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		31 of 41

GAME PORT

VCC
F1
YFUSE1.5A-S-P

J5B
32
8
15
7
14
6
13
5
12
4
11
3
10
2
9
1

MIDIIN
MIDIOUT

C434 102P
C435 102P
EMI
AGND

VCC
RN70 8P4R-2.2K
EMI
AGND

R171 220
R179 2.2K
RN79A 1 2 8P4R-2.2K
RN79C 5 6 8P4R-2.2K
RN79D 7 8 8P4R-2.2K

CN13 8P4C-103P
EMI
AGND

C225 100P
EMI
AGND

C207 100P
EMI
AGND

CN14 8P4C-103P
EMI
AGND

RN75 8P4R-1M
EMI
AGND

CP5 X_COPPER
YCN15F-001-1
C227 104P
EMI
AGND

RXD 27
GP5 27
GP7 27
GP1 27
TXD 27
GP0 27
GP2 27
GP6 27
GP4 27

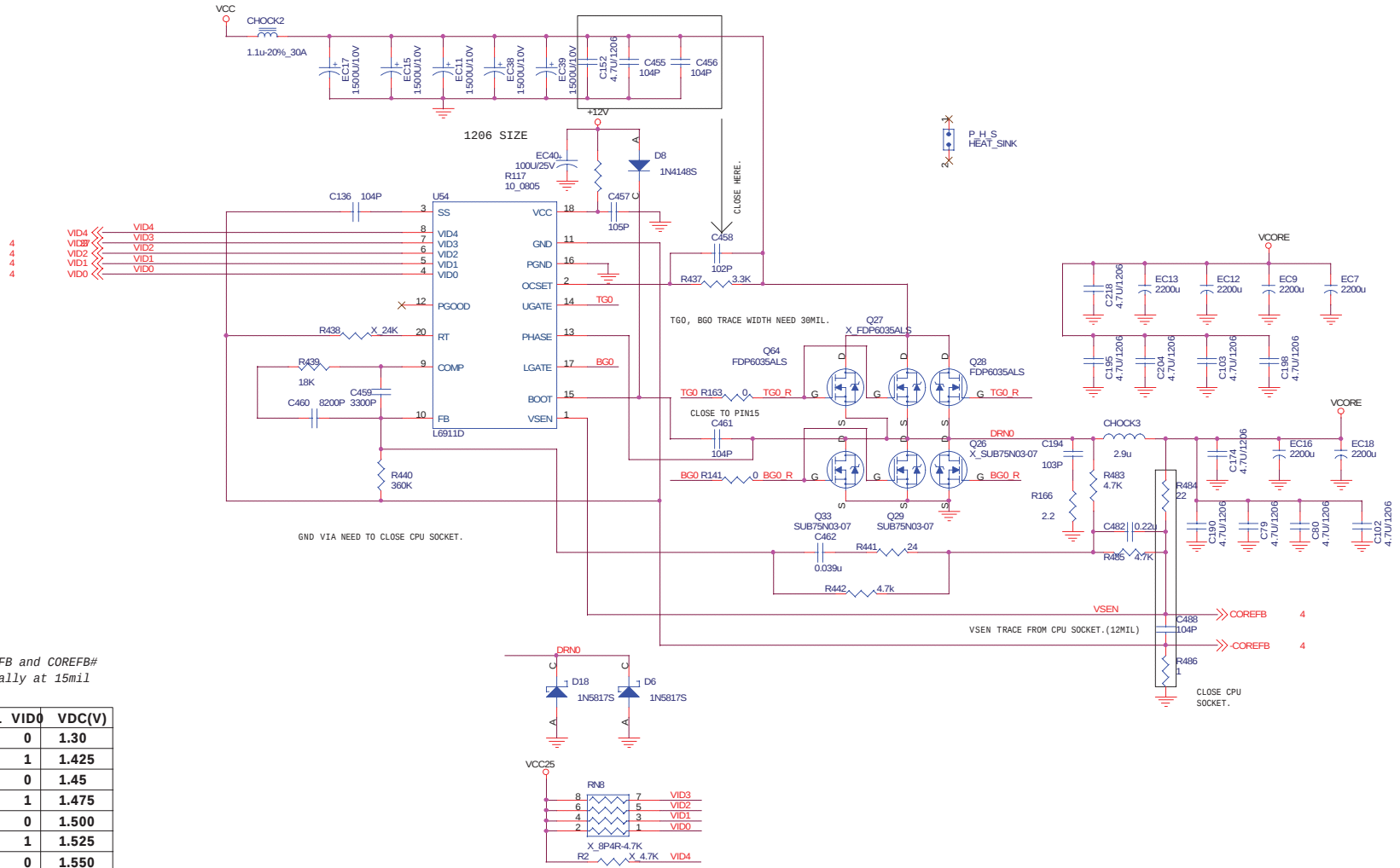
GAME PORT HEADER

Micro Star Restricted Secret

Title	Game Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 89, LinDe St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		32 of 41

Title	Game Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		32 of 41

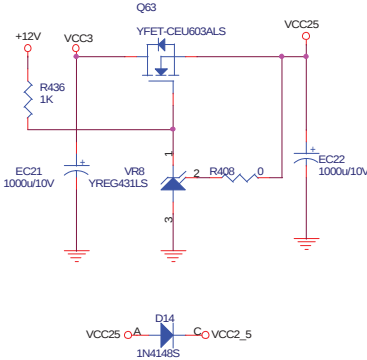
Voltage Regular Module



Design for 45A @+/- 100 mV
Route COREFB and COREFB#
differentially at 15mil
width

VID4	VID3	VID2	VID1	VID0	VDC(V)
1	0	1	1	0	1.30
1	0	0	0	1	1.425
1	0	0	0	0	1.45
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
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	1.75
0	0	0	1	1	1.775
0	0	0	1	0	1.80
0	0	0	0	1	1.825
0	0	0	0	0	1.85
1	1	1	1	1	NO CPU

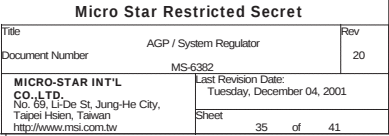
DDR Regulator



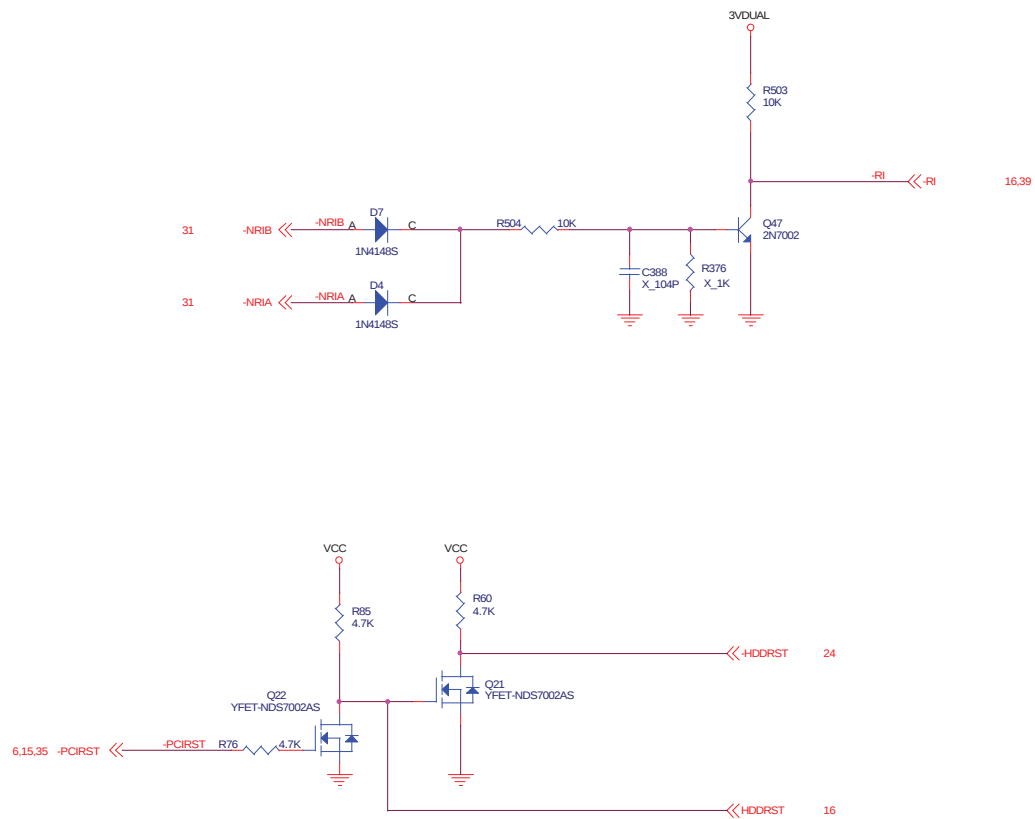
Micro Star Restricted Secret

Title	DDR Power Regulator	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 59, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		34 of 41

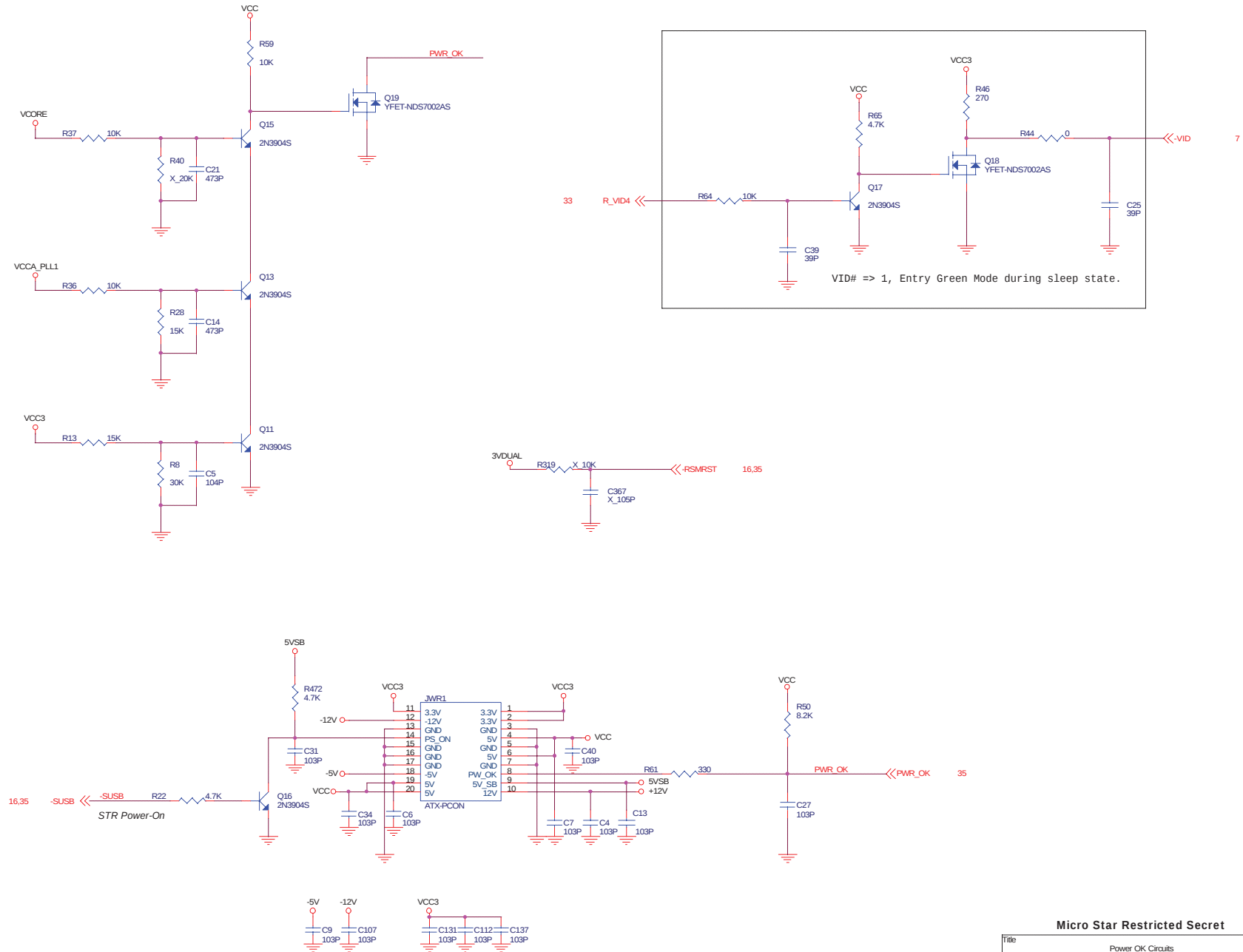
SEL0	5VUSB
H	2 MOSFET
L	1 MOSFET



POWER Management



POWER OK Circuits



Micro Star Restricted Secret

Title	Power OK Circuits	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 59, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001 Sheet 37 of 41

FRONT PANEL

ESD Protect

HDDLED C363 180P

D11 1N4148S C IDEACTP 24

D12 1N4148S C IDEACTS 24

VCC R308 330 HDD+ JFP1 D2x5-1.1-BK PLED1 PLED2 PWRSW

35,37 -FP_RST C487 104P R357 100 R471 100

PLED2 PLED1 JFP2 D2x5-1.1-BK VCC R500 X_0 BZ1 BUZZER

28 ALARM J10 8P4R-150 RN114 C374 104P

21 16 AC97_SPKR YJ103 Q42 2N3904S R327 2.2K

3VDDUAL R360 4.7K PWRSW R533 33 -PWRBTN 16,39 C377 104P

16,39 -EXTSMI C410 100P XGS1 YJ102

35 PLED1 PLED2 JG1 1 X_YJ103

Title		Rev
Document Number		20
MS-6382		
Last Revision Date:		
Monday, December 03, 2001		
Sheet		
38 of 41		

MICRO-STAR INT'L
No. 69, Li-De St. Jung-Ho City,
Taipei Hsien, Taiwan
http://www.msi.com.tw

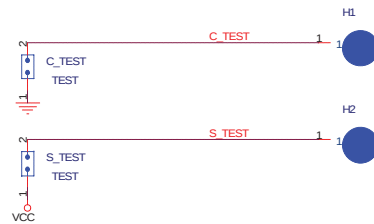
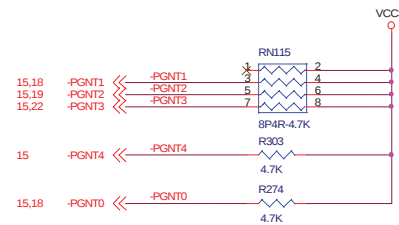
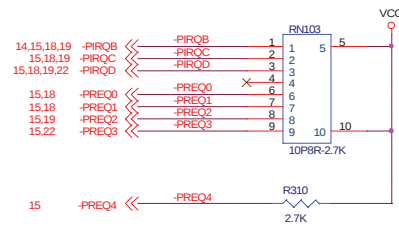
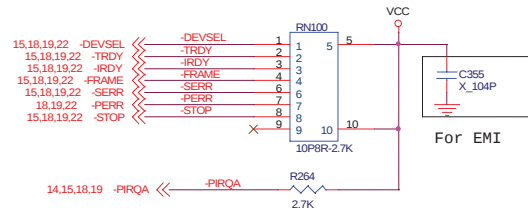
Micro Star Restricted Secret

Title	Front Panel	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		38 of 41

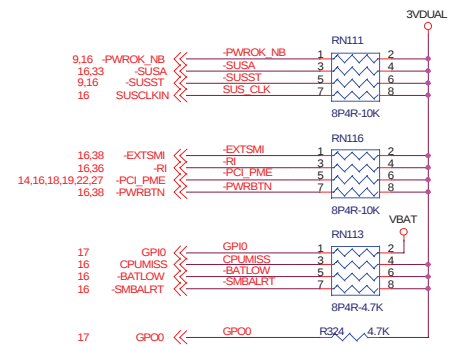
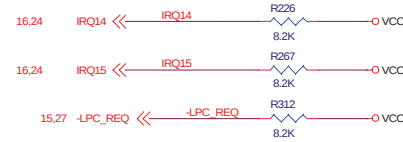
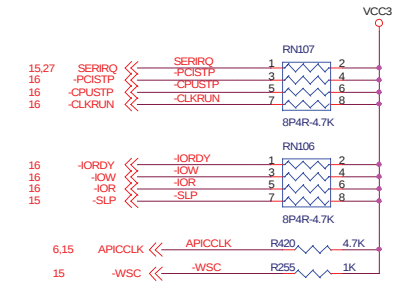
Title	Front Panel	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		38 of 41

PULL-UP RESISTORS

PCI BUS



SB Pull up resistors

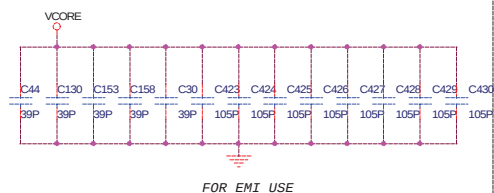
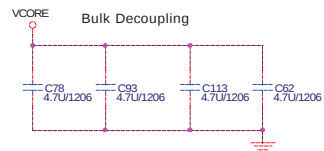
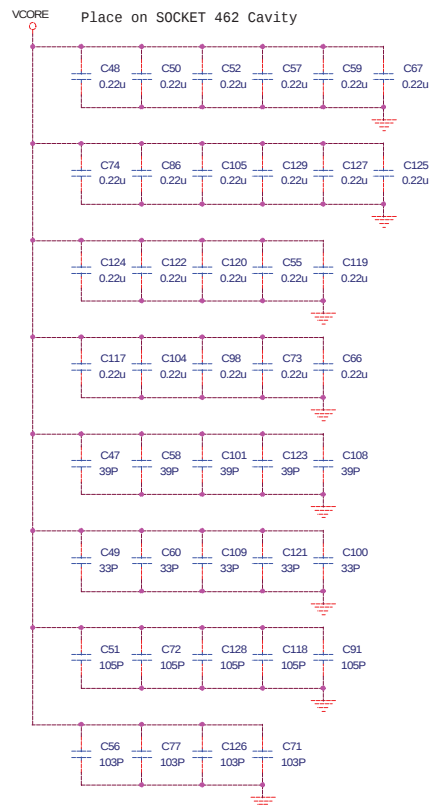


Micro Star Restricted Secret

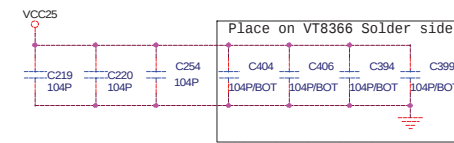
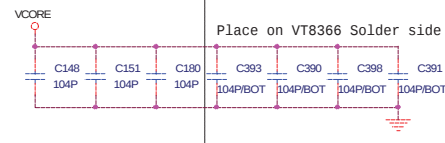
Title	Pull up Resistor	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 55, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		39 of 41

BULK / Decoupling

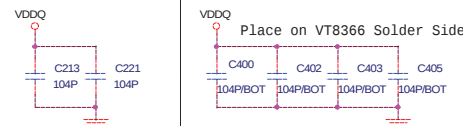
CPU



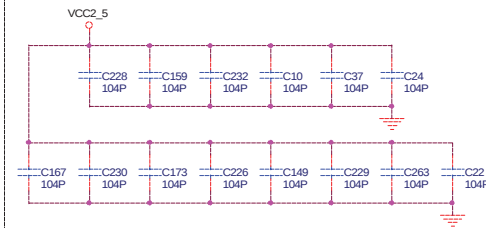
VT8366



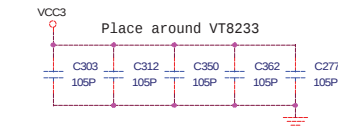
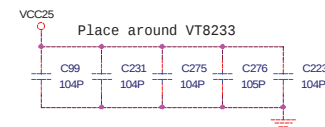
Place around VT8366



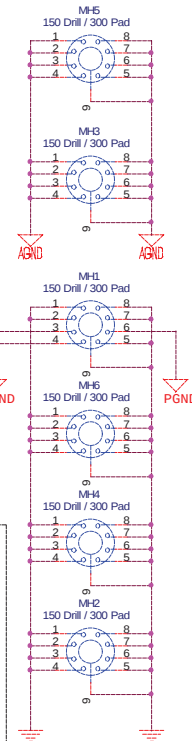
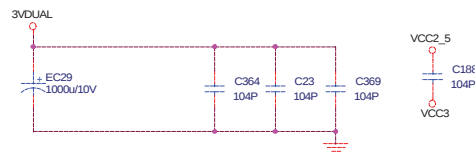
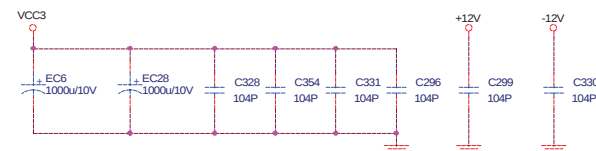
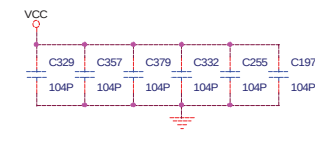
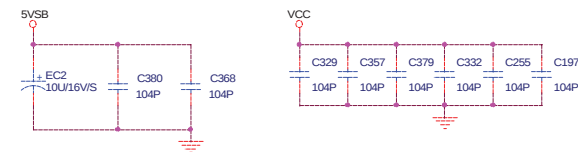
DDR



VT8233



SYSTEM



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Title	BULK / Decoupling	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 59, Li-De St, Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		40 of 41

Micro Star Restricted Secret			
Title	History	Rev	
Document Number	MS-6382	20	
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001	
Sheet		41	of 41
1			