

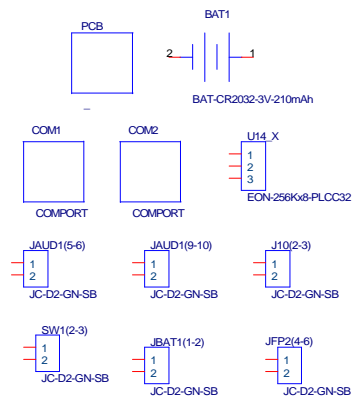
MS-6382 MICRO-ATX

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

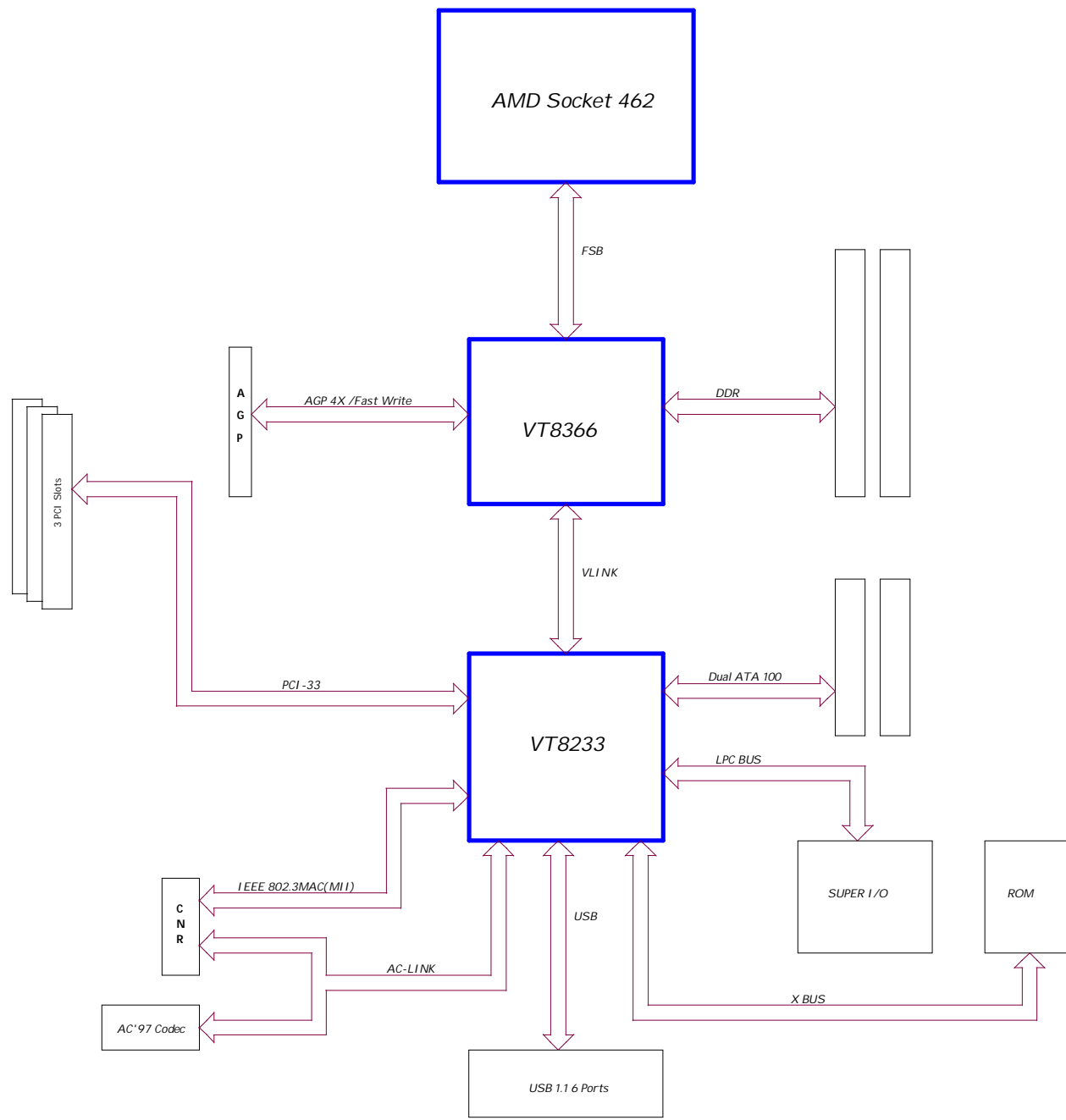
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Title	Cover Sheet	Rev
Document Number	MS-6382	20
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Title			
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Size	Document Number	Rev	
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Date:	Monday, December 03, 2001	Sheet	1 of 1

Block Diagram



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Title	Block Diagram	Rev	20
Document Number	MS-6392	Last Revision Date:	Monday, December 03, 2001
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Sheet	2 of 41

GPIO FUNCTION

VT8233 GPIO Function Define

PIN NAME	Function define	PIN NAME	Function define
GPO0 (VSUS33)	GPO0	GPI0	GPI0
GPO1/SUSA#(VSUS33)	SUSA#	GPI1	ATADET0=>Detect IDE1 ATA100/66
GPO2/SUSB#(VSUS33)	SUSB#	GPI2/EXTSMI#	EXTSMI#
GPO3/SUSST1#(VSUS33)	SUSST#	GPI3/RING#	RING#
GPO4/SUSCLK(VSUS33)	SUSCLK	GPI4/LID#	ATADET1=>Detect IDE2 ATA100/66
GPO5/CPUSTP#		GPI5/BATLOW#	Exteranl Pull up to 3VDUAL
GPO6/PCISTP#		GPI6/PME#	PME#
GPO7/SLP#	SLP#	GPI7/SMBALRT#	Exteranl Pull up to 3VDUAL
GPO8/GPI8/IPBIN0		GPI16/INTRUDER#	Exteranl Pull down
GPO9/GPI9/IPBIN1		GPI17/CPUMISS	Exteranl Pull up to 3VDUAL
GPO10/GPI10/IPBRDFR	GPO10 (PRI_DOWN)	GPI18/AOLGP1/THRM#	THRM#
GPO11/GPI11/IPBRDCK		GPI19/IORDY	Exteranl Pull up to VCC3
GPO12/GPI12/IPBOUT0	GPO12		
GPO13/GPI13/IPBOUT1	GPO13		
GPO14/GPI14/IPBTDFR			
GPO15/GPI15/IPBTDCCK			
GPO16/SA16/STRAP			
GPO17/SA17/STRAP			
GPO18/SA18/STRAP			
GPO19/SA19/STRAP			
GPO20/GPI20/ACSDIN2/PCS0#/EI	GPO20		
GPO21/GPI21/ACSDIN3/PCS1#/SLPBTN#	GPO21		
GPO22/GPI22/IOR#	GPO22		
GPO23/GPI23/IOW#	GPO23		
GPO24/GPI24/GPIOA			
GPO25/GPI25/GPIOC			
GPO26/GPI26/SMBDT2(VSUS33)	SMBDATA2/Slave SMBUS		
GPO27/GPI27/SMBCK2(VSUS33)	SMBCLK2/Slave SMBUS		
GPO28/GPI28/APICD0/APICCS#			
GPO29/GPI29/APICD1/APICACK#			
GPO30/GPI30/GPIOD	Revsin ID		
GPO31/GPI31/GPIOE	Revsin ID		

W697HF-AW

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

PCI

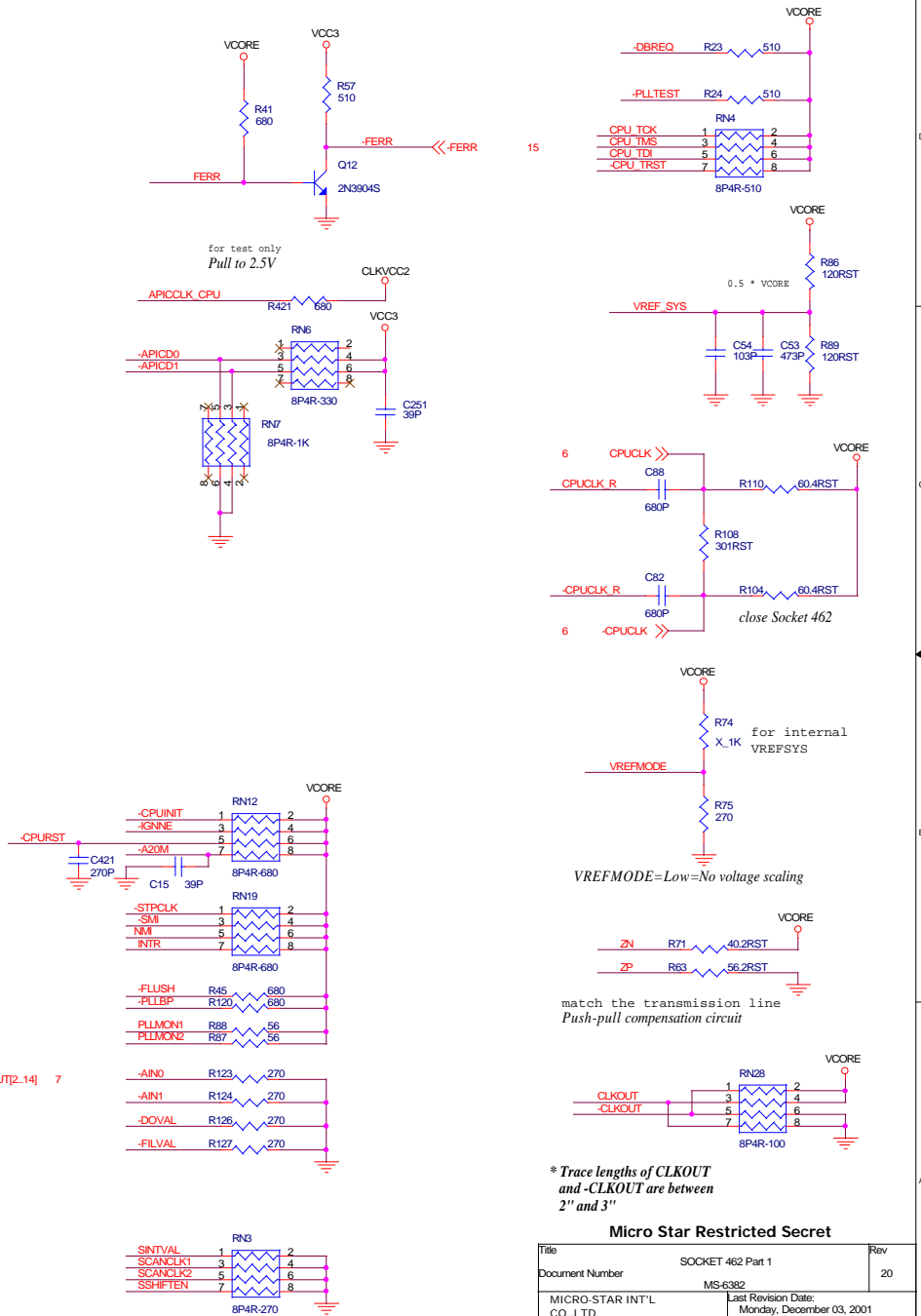
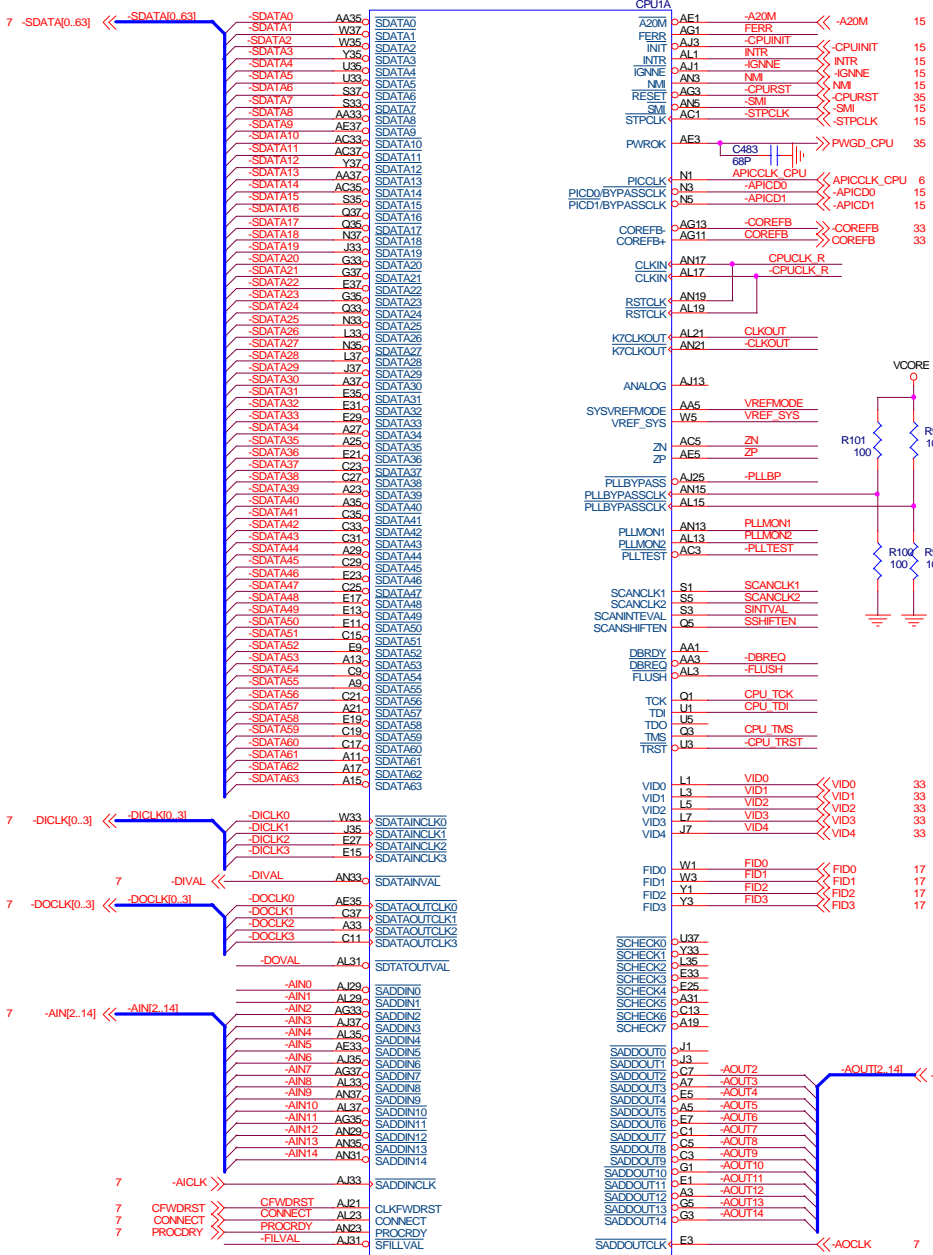
DEVICES	INT#	IDSEL	REQ#/GNT#	CLOCK
PCI SLOT 1	INT#A INT#B INT#C INT#D	AD16	PREQ#0 PGNT#0	PCICLK1
PCI SLOT 2	INT#B INT#C INT#D INT#A	AD17	PREQ#1 PGNT#1	PCICLK2
PCI SLOT 3	INT#C INT#D INT#A INT#B	AD18	PREQ#2 PGNT#2	PCICLK3
	INT#B	AD21	PREQ#4 PGNT#4	PCICLK4
LAN	INT#D	AD19	PREQ#3 PGNT#3	5880PCLK

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Document Number	MS-6382	20
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		Sheet 3 of 41

SOCKET 462 Part 1

All CPU interface are 2.5V tolerant

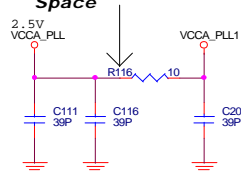


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Sheet	4 of 41		

SOCKET 462 Part 2

* 25 mils Trace/ 12 mils Space

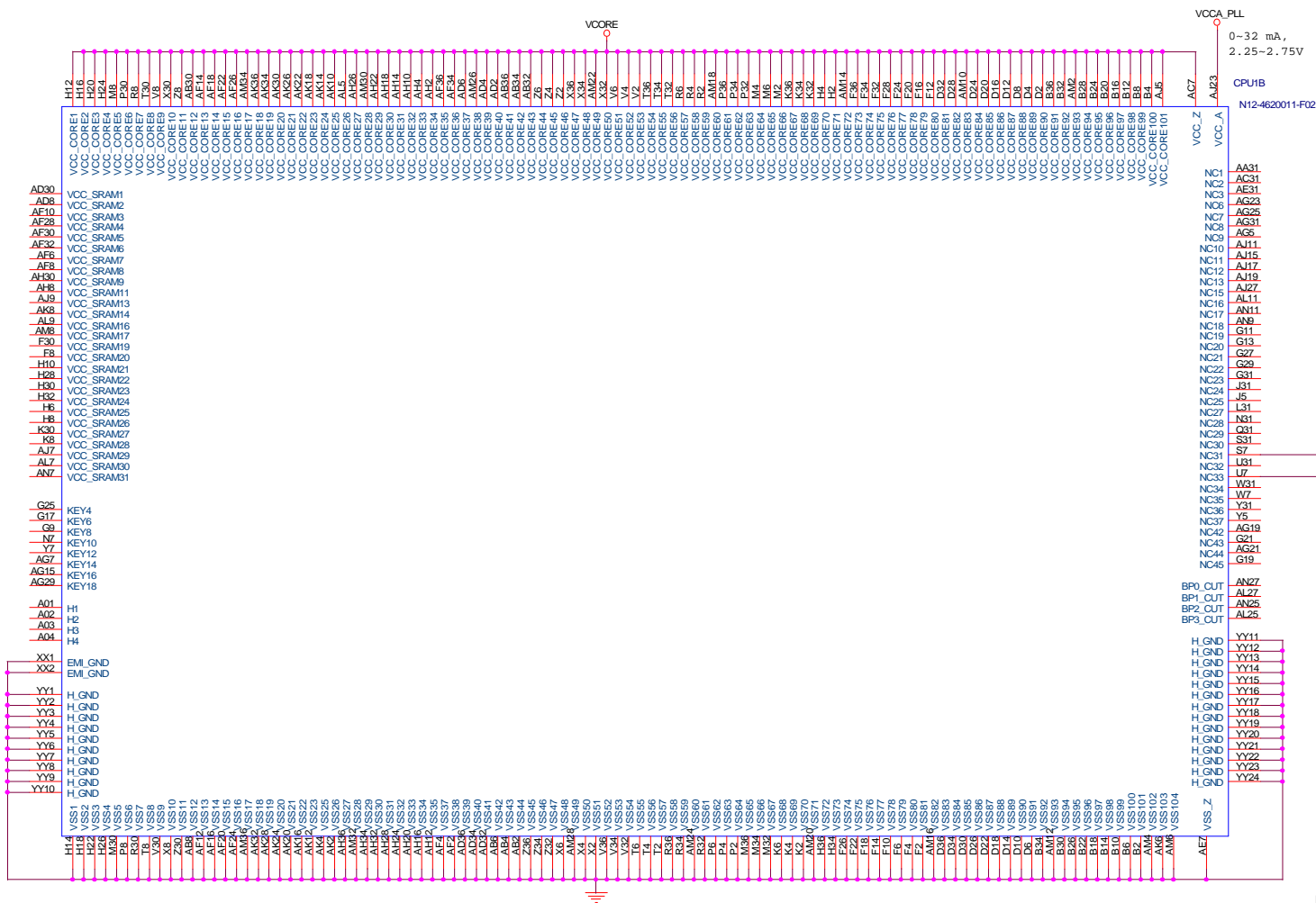


VCCA_PLL trace length from the VR1 to the PGA must be 0.75".

Place all filters close to the PGA.

Keep all power and signal trace away from the VR1.

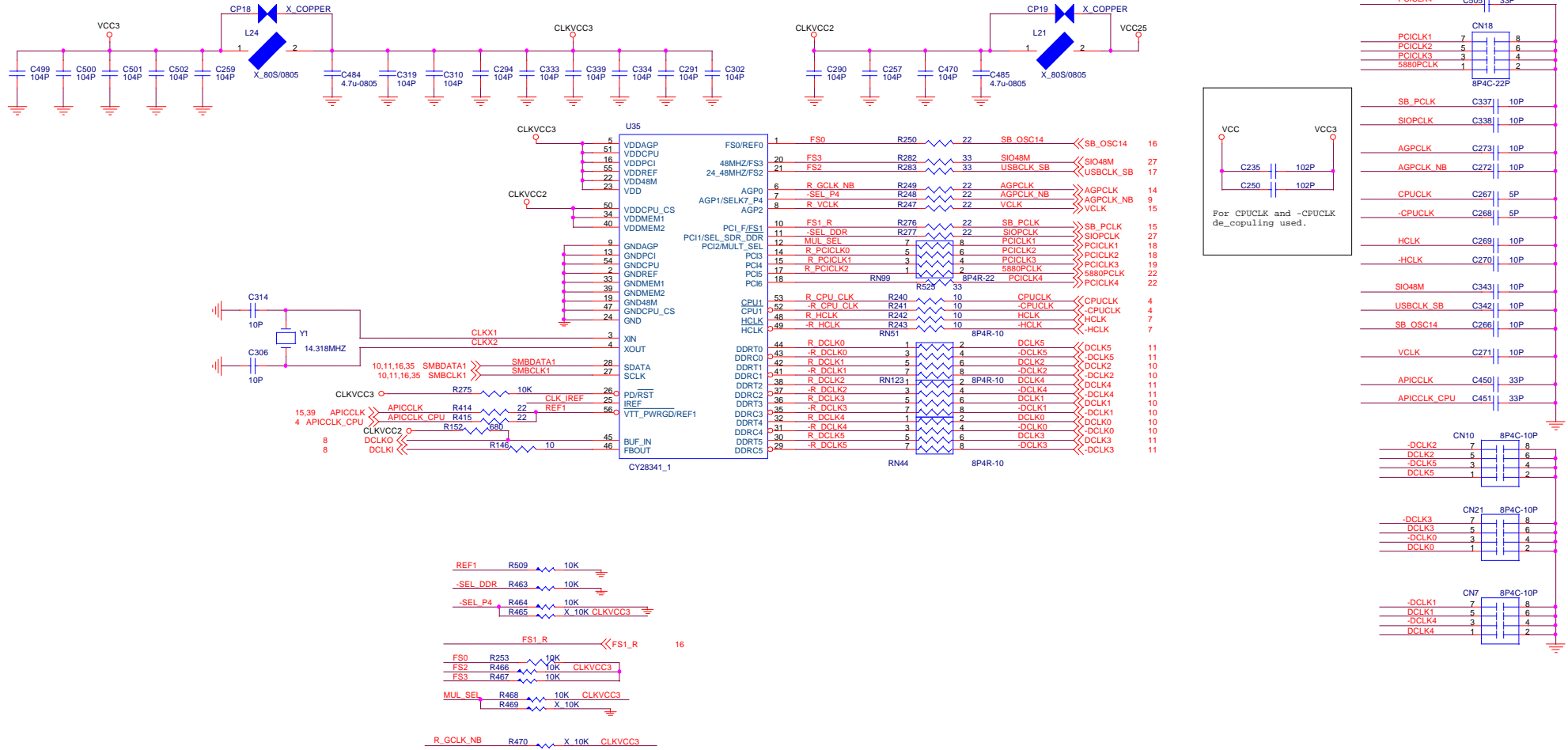
Place a cut in the GND plane around the VCCA_PLL regulator circuit.



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Sheet		5 of 41	

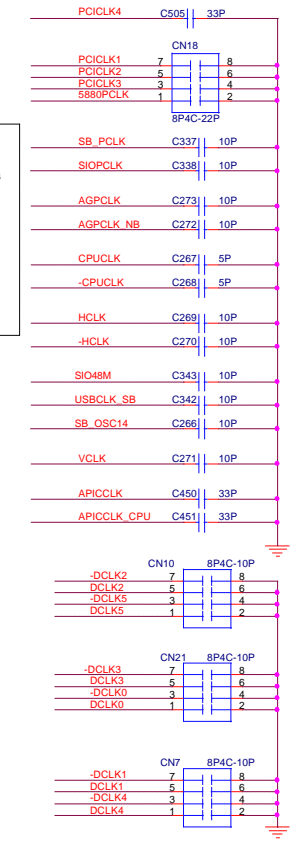
Clock Synthesizer

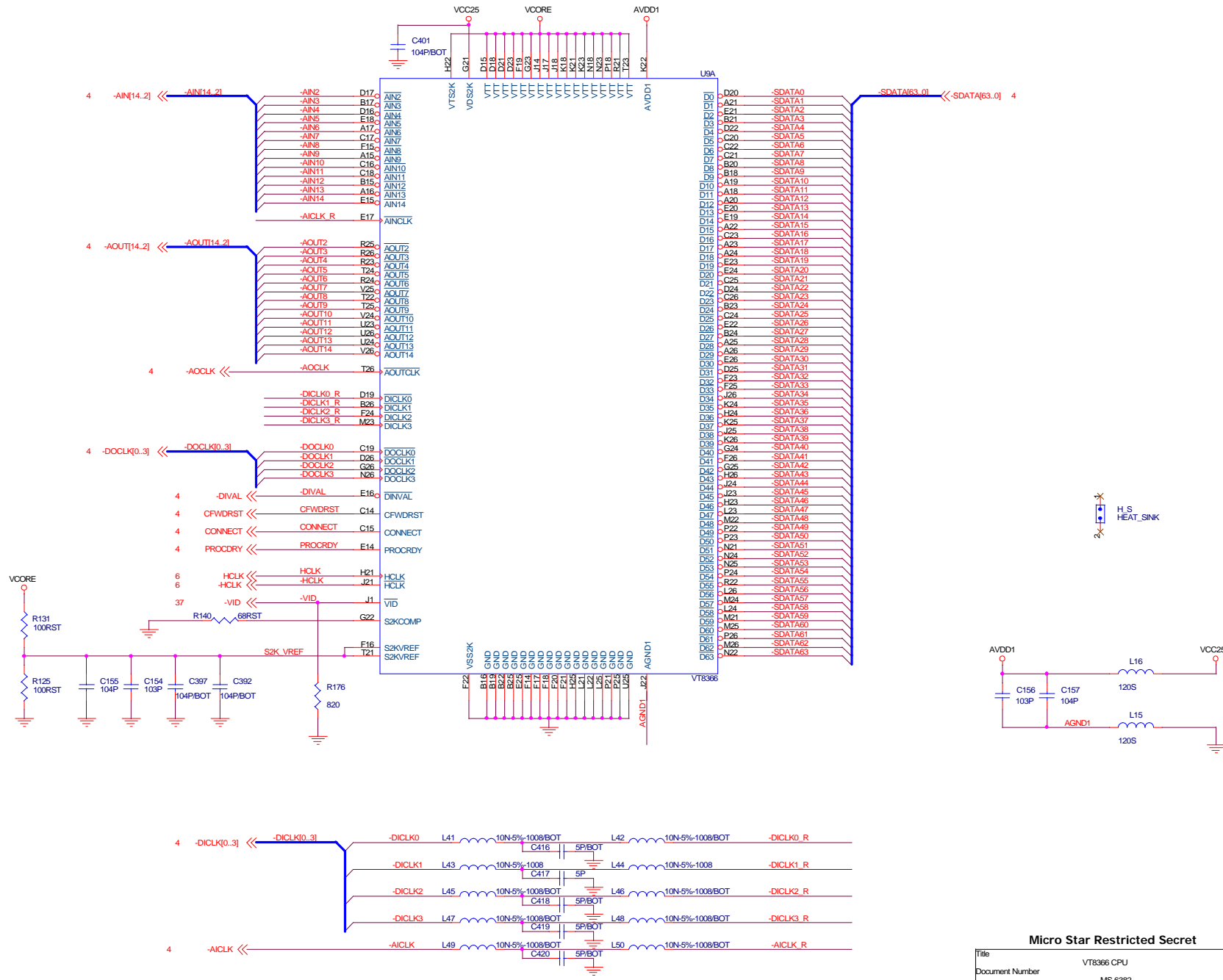


VCC
VCC3

C235 || 102P
C250 || 102P

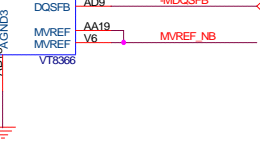
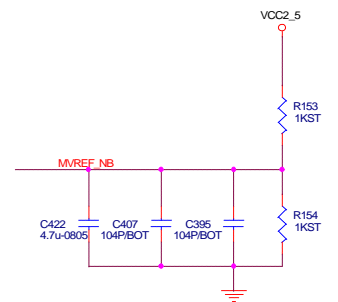
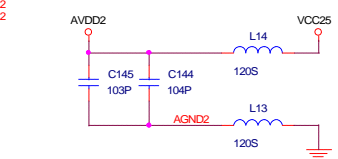
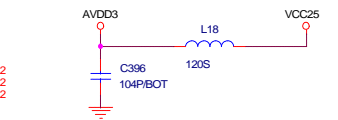
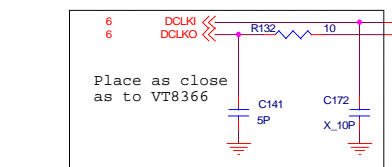
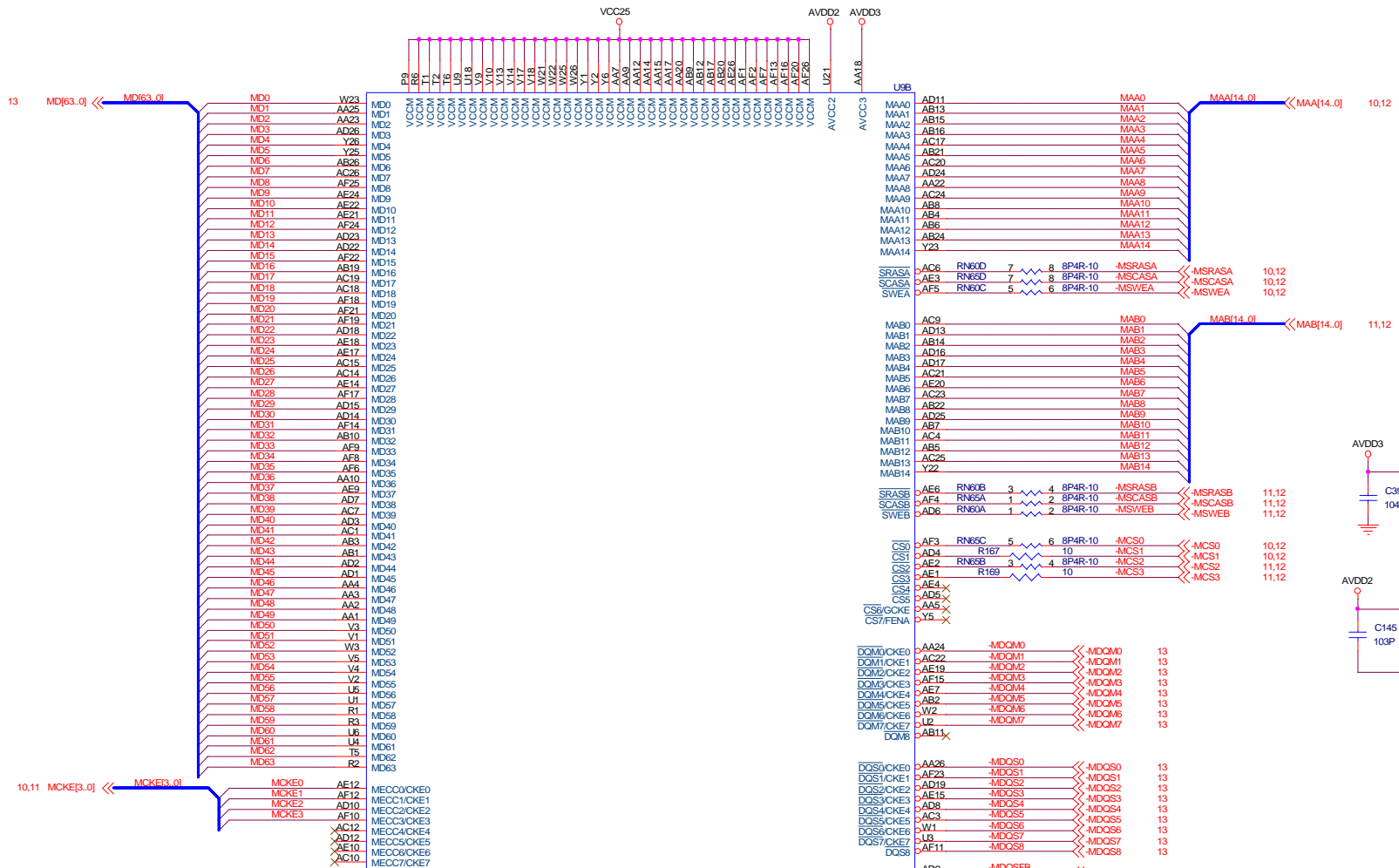
For CPUCLK and -CPUCLK de_coupling used.





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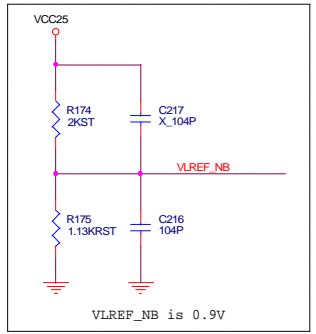
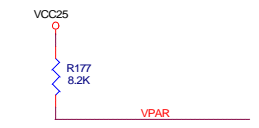
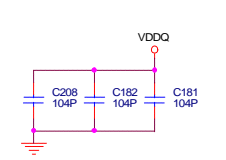
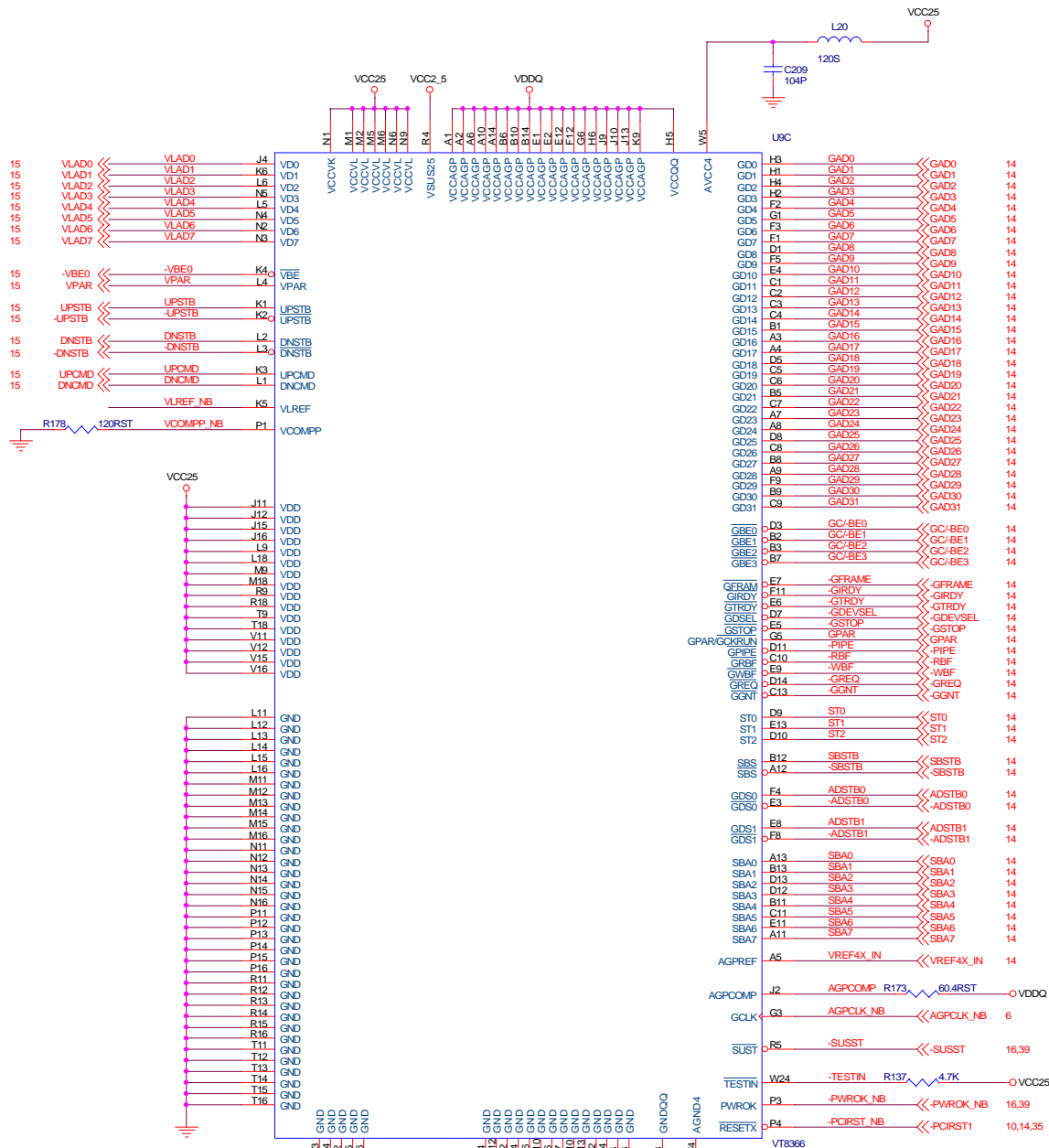
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Document Number	MS-6382		
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Place resistors as close as to NB; Length is 2.5"~3".

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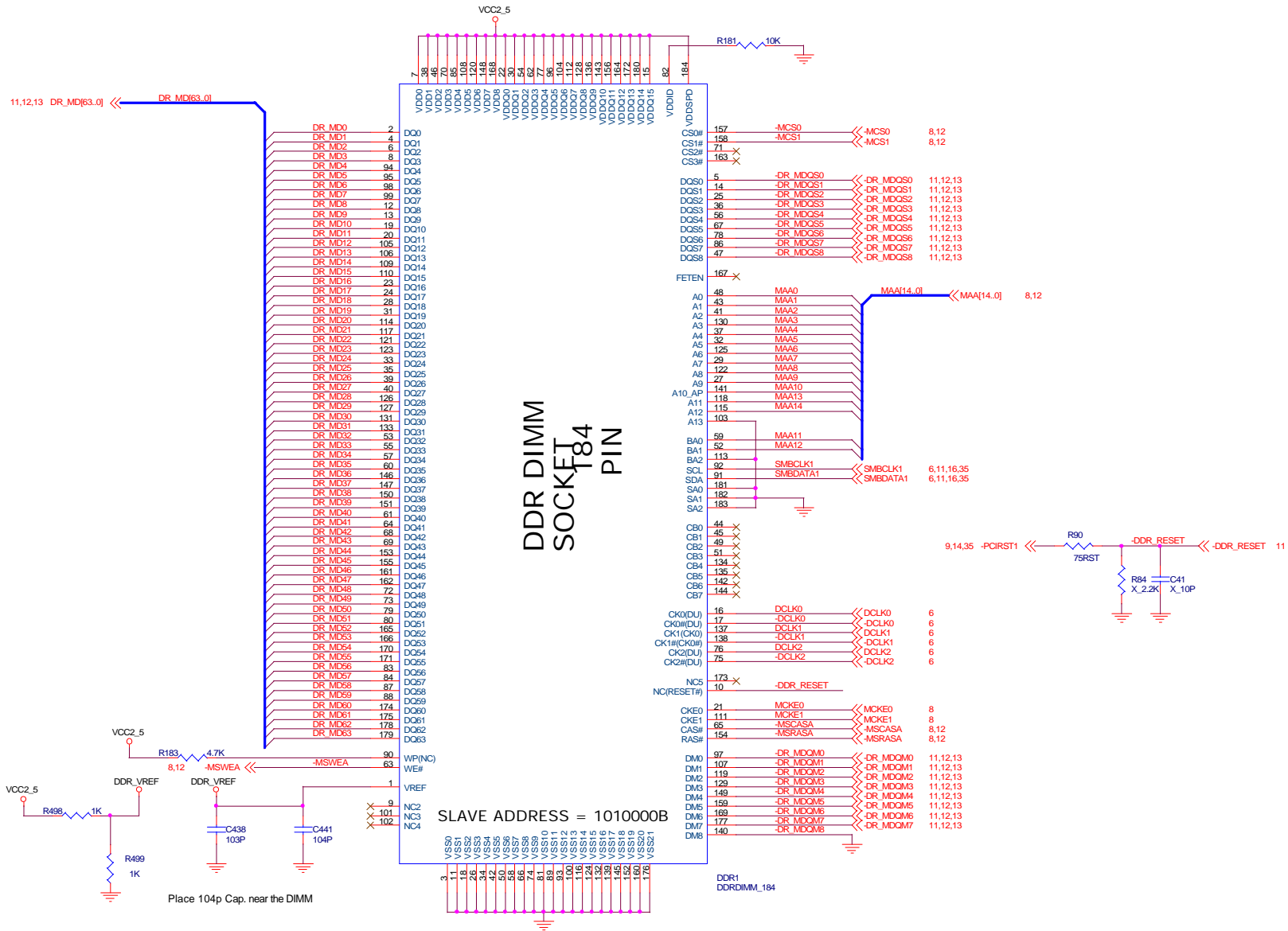
Title	VT8366 Memory	Rev	20
Document Number	MS-6382		
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Micro Star Restricted Secret

Title	VT8366 AGP	Rev	20
Document Number	MS-6382		
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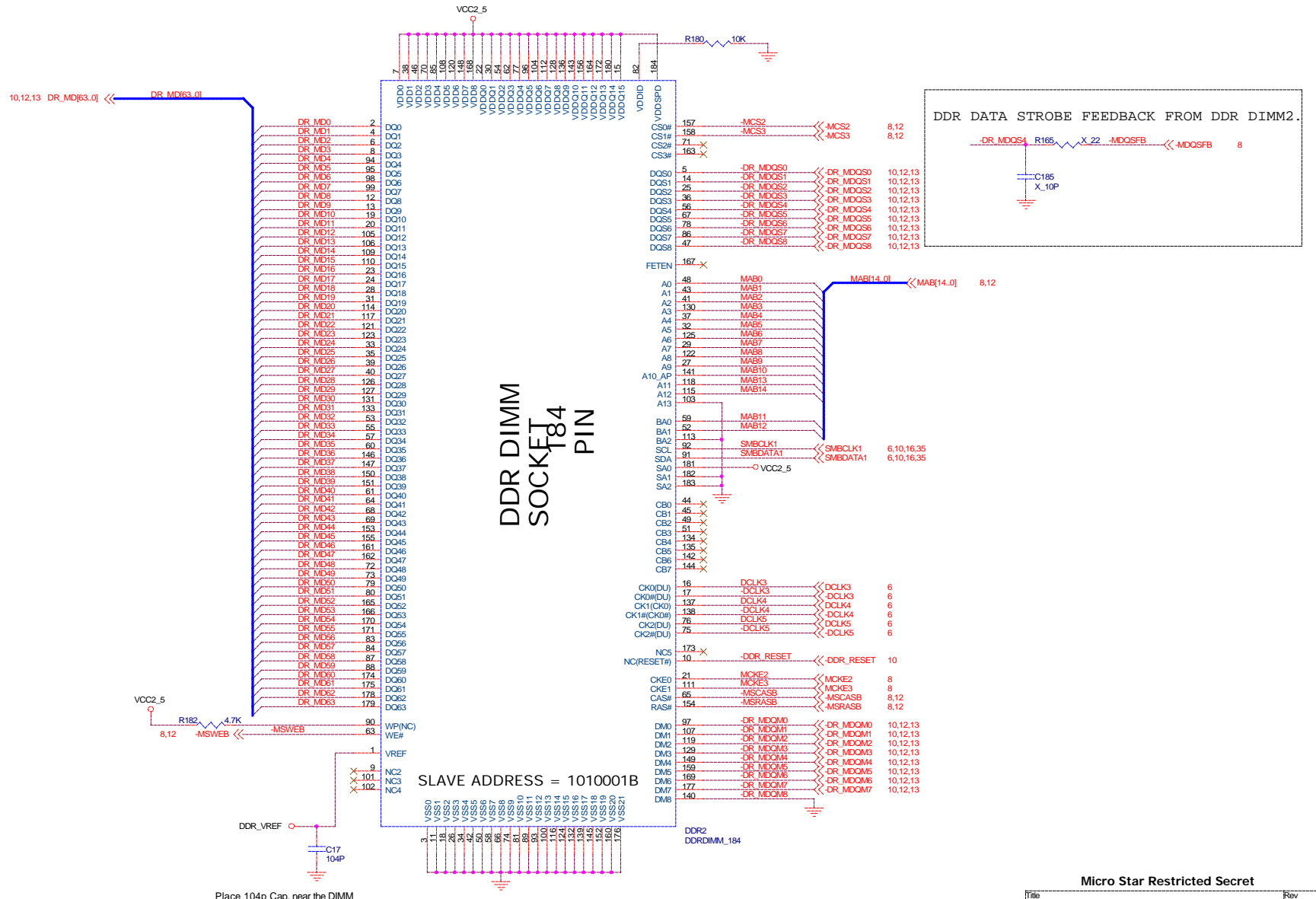
SYSTEM MEMORY



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Title	System Memory : DDR DIMM 1	Rev	20
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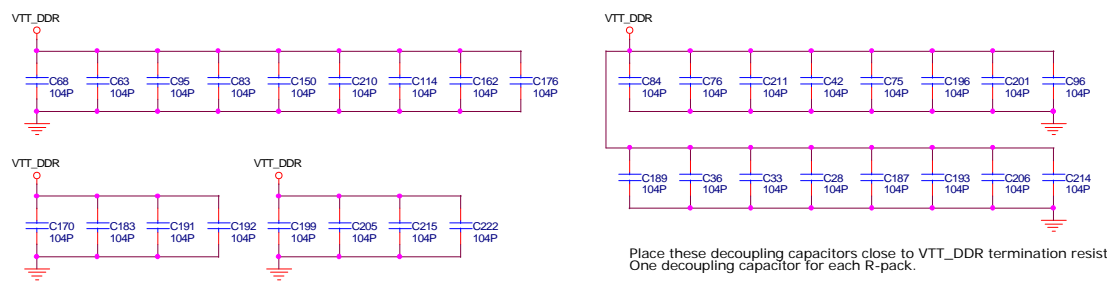
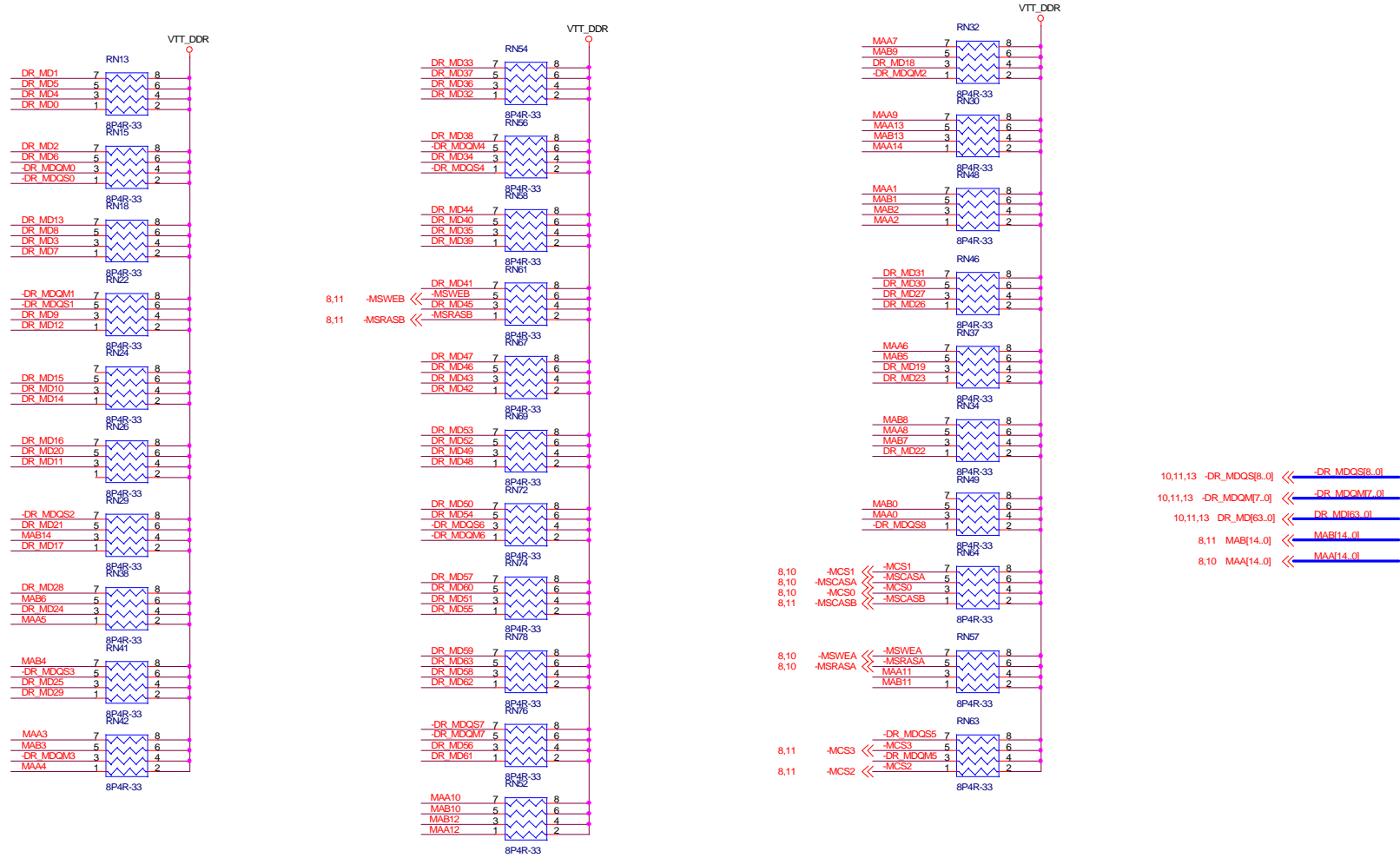
SYSTEM MEMORY



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Title		System Memory : DDR DIMM 2	Rev
Document Number		MS-6382	20
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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.



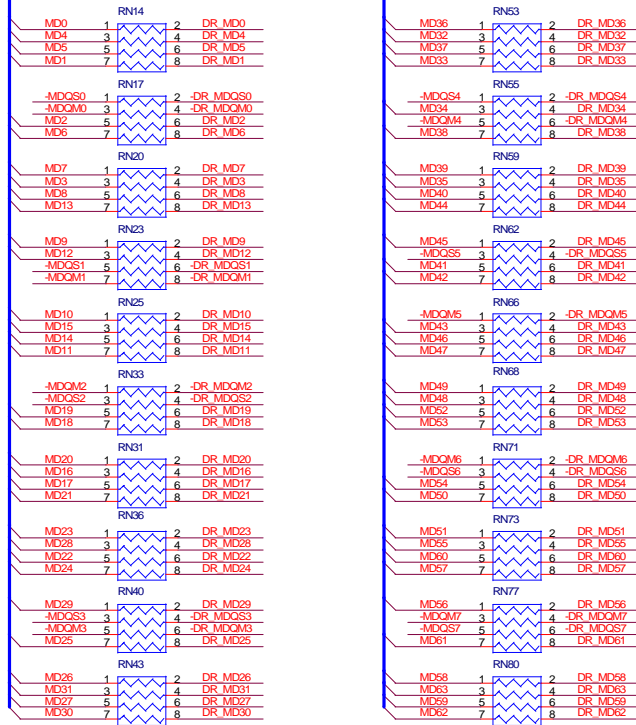
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Title	DDR Terminations Bank 0	Rev	20
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DDR Terminations

10,11,12 DR_MD[63..0] << DR_MD63_0I

8 MD[63..0] << MD63_0I



8 -MDQM[7..0] << -MDQM7_0I

10,11,12 -DR_MDQM[7..0] << -DR_MDQM7_0I

8 -MDQS[8..0] << -MDQS8_0I

10,11,12 -DR_MDQS[8..0] << -DR_MDQS8_0I

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Document Number	MS-6382		
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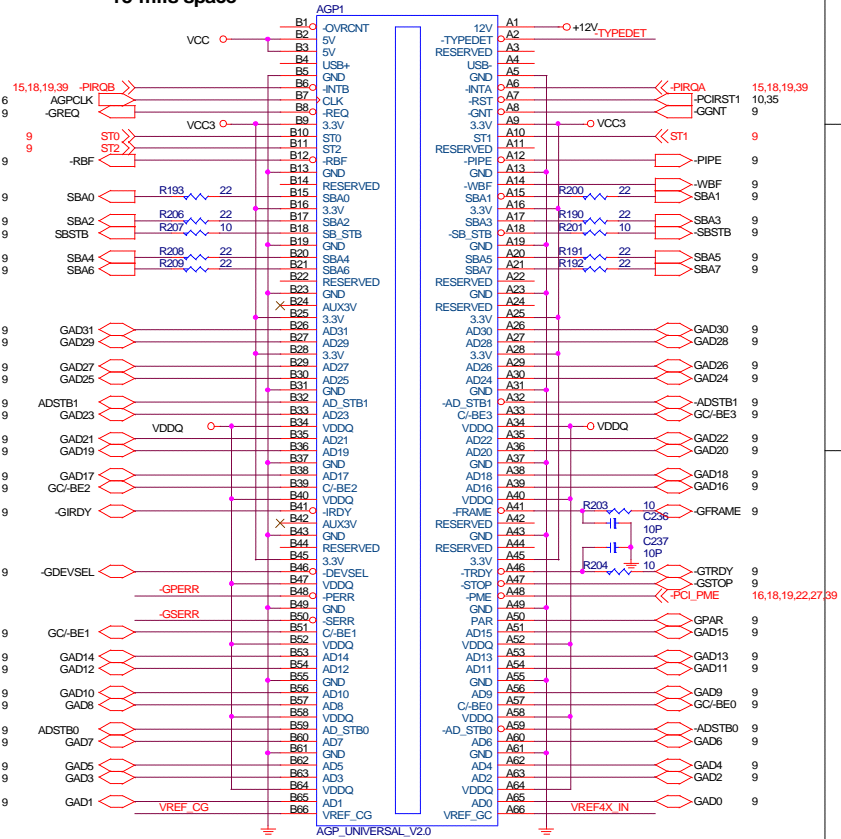
AGP UNIVERSAL 2X/4X SLOT(AGP VER:2.0 COMPLY)

AGP Slot I_{max}

VCC _q	8.0A
VCC ₃	6.0A
VCC ₁₂	1.0A
VCC ₅	2.0A

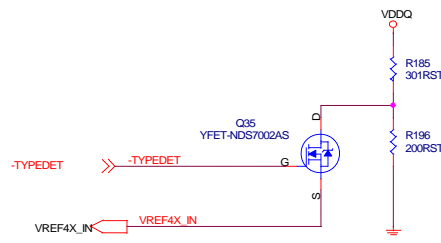
TYPEDET#	VDDQ
Low	1.5V
High	3.3V

VCC = 50mils trace /
15 mils space



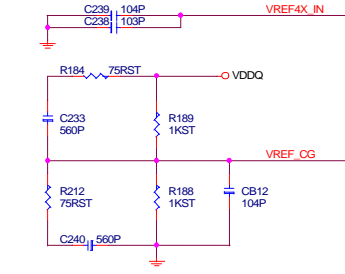
AGP 2/4X REFERENCE VOLTAGE SELECTION

(NEAR AGP SLOT)

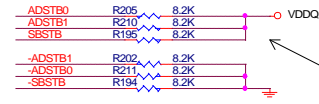
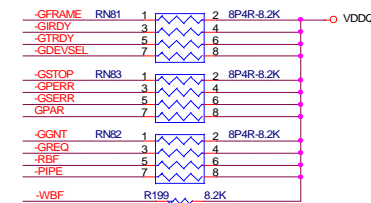


AGP SIGNAL REFERENCE CIRCUIT

(NEAR AGP SLOT)

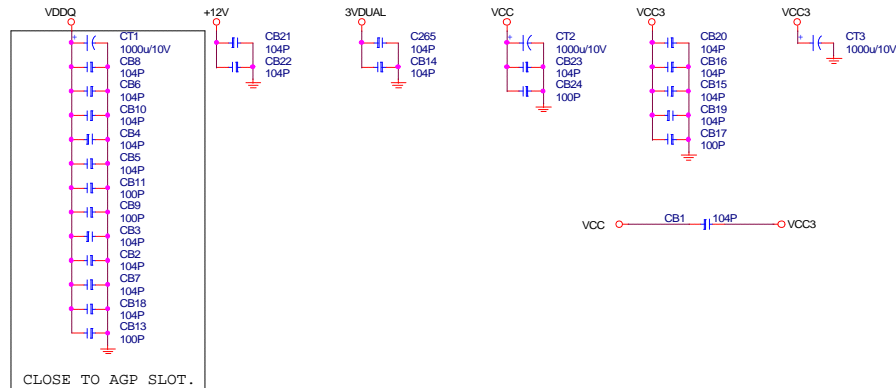


AGP TERMINATION RESISTORS



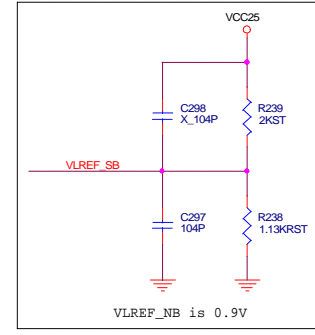
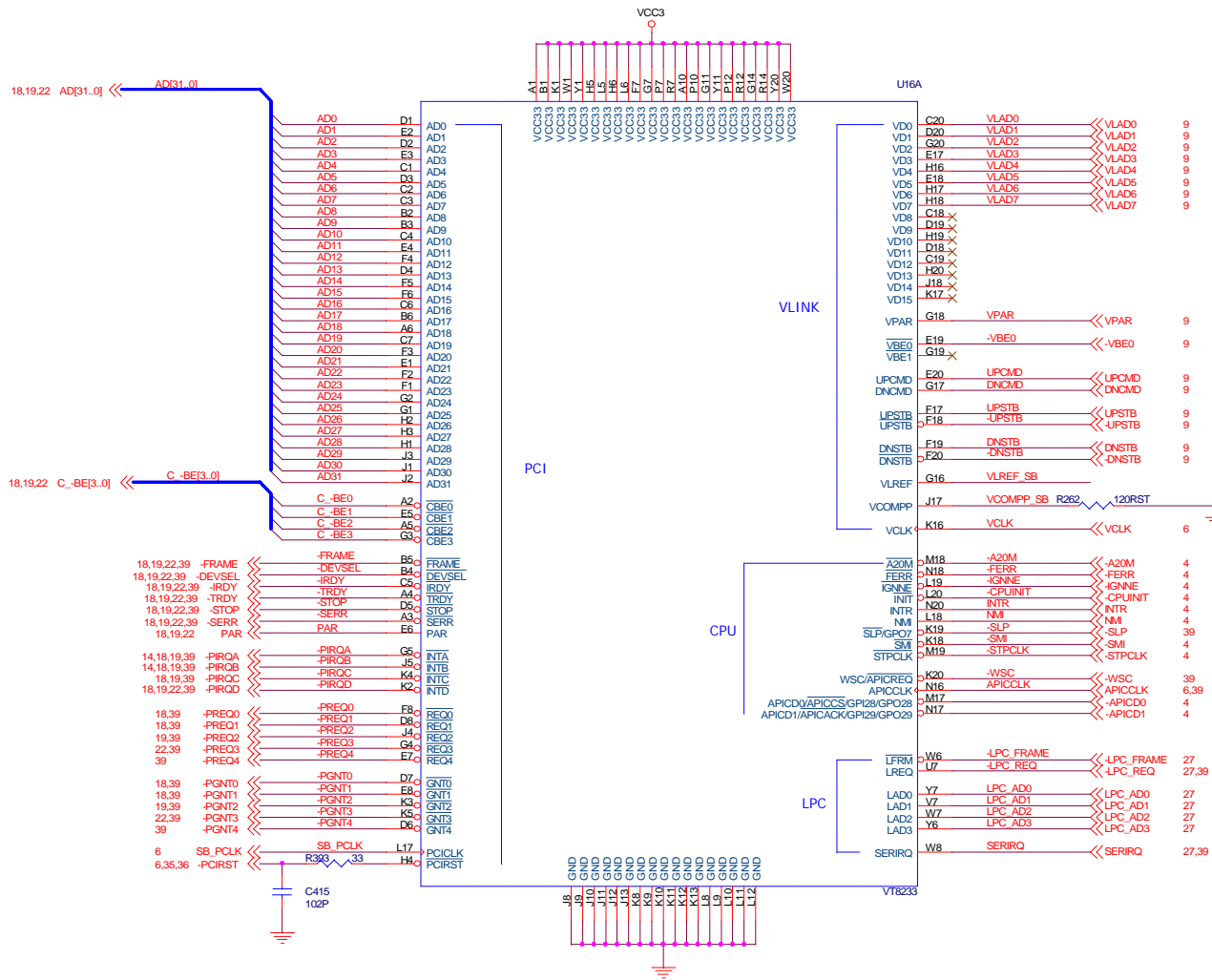
THESE SIX RESISTORS MUST LOCATE ON SIGNAL TRACE BETWEEN CHIPSET AND AGP CONNECTOR, LESS 10MILS STUB TRACE LENGTH MUST BE FOLLOWING.

AGP SLOT DECOUPLING CAPACITORS



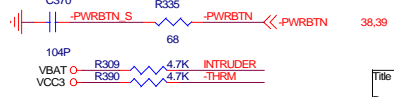
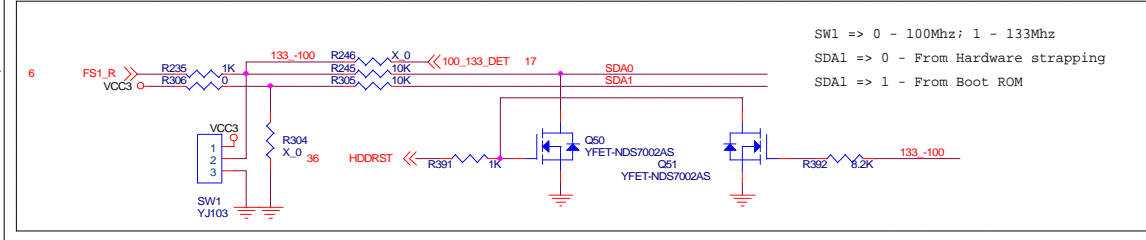
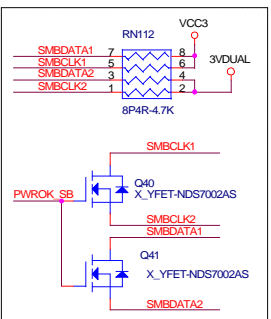
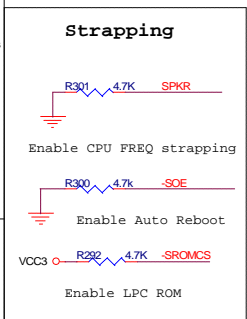
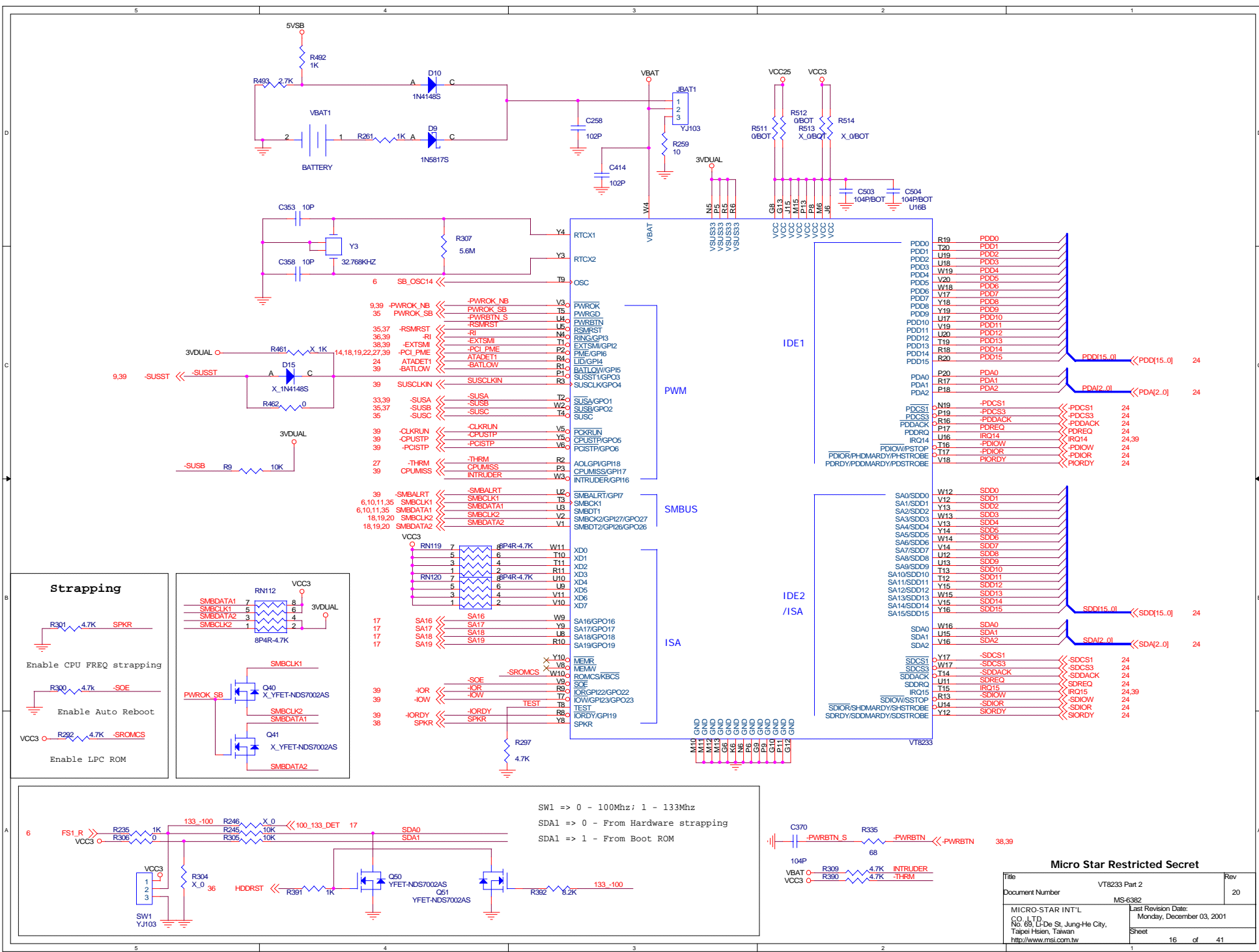
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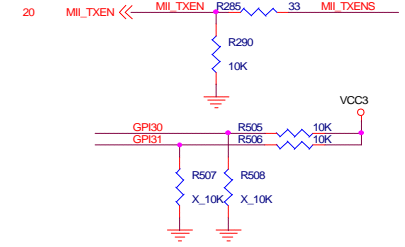
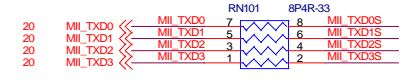
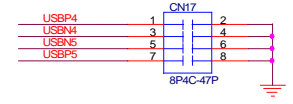
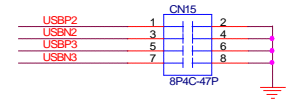
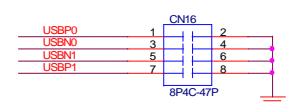
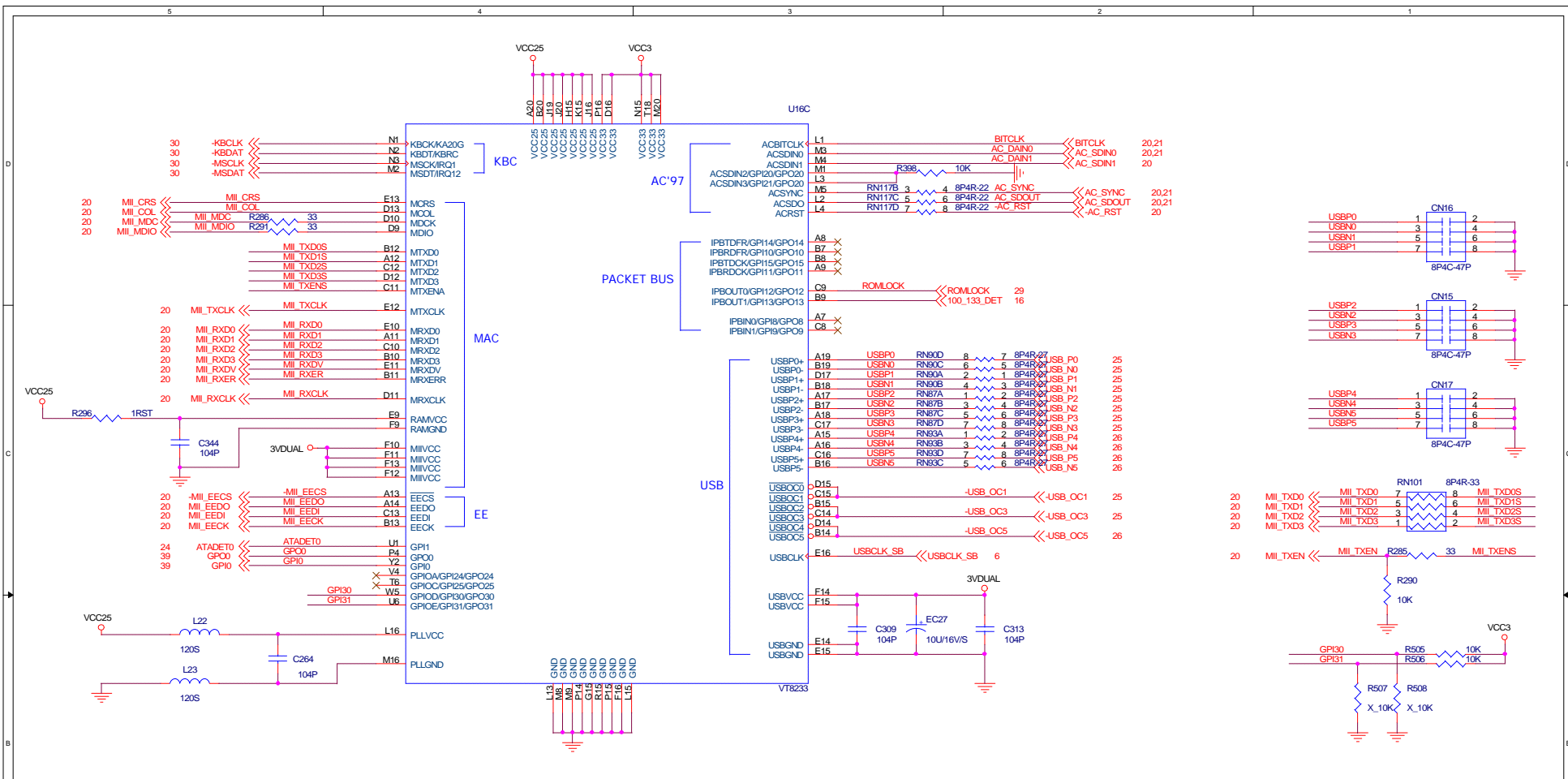


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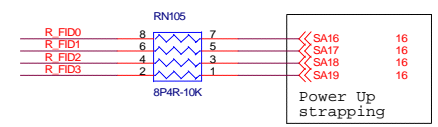
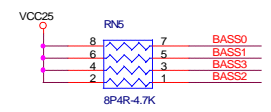
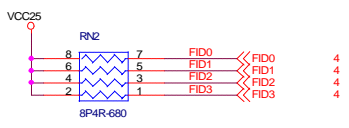
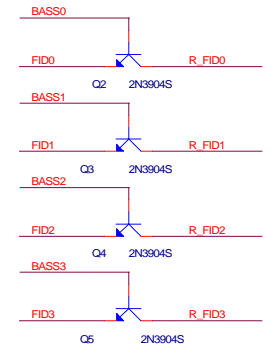
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Document Number	MS-6382		
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Sheet	15 of 41		



PDD0	R19	PDD0			
PDD1	T20	PDD1			
PDD2	U18	PDD2			
PDD3	U18	PDD3			
PDD4	W19	PDD4			
PDD5	V20	PDD5			
PDD6	W18	PDD6			
PDD7	Y17	PDD7			
PDD8	Y18	PDD8			
PDD9	Y19	PDD9			
PDD10	U17	PDD10			
PDD11	U20	PDD11			
PDD12	T19	PDD12			
PDD13	T19	PDD13			
PDD14	R18	PDD14			
PDD15	R20	PDD15			
PDA0	P20	PDA0			
PDA1	R17	PDA1			
PDA2	P18	PDA2			
PDCS1	N19	-PDCS1			24
PDCS3	P19	-PDCS3			24
PDDACK	R16	-PDDACK			24
PDRQ	P17	-PDRQ			24
IRQ14	U16	IRQ14			24,39
PDIOW/STOP	T16	-PDIOW			24
PDIOR/PHDMARDY/PHSTROBE	T17	-PDIOR			24
PDRDY/PDDMARDY/PDSTROBE	V18	-PDRDY			24
SA0/SDD0	W12	SDD0			
SA1/SDD1	V12	SDD1			
SA2/SDD2	Y13	SDD2			
SA3/SDD3	W13	SDD3			
SA4/SDD4	W13	SDD4			
SA5/SDD5	Y14	SDD5			
SA6/SDD6	W14	SDD6			
SA7/SDD7	V14	SDD7			
SA8/SDD8	U12	SDD8			
SA9/SDD9	U13	SDD9			
SA10/SDD10	T13	SDD10			
SA11/SDD11	T12	SDD11			
SA12/SDD12	Y15	SDD12			
SA13/SDD13	W15	SDD13			
SA14/SDD14	V15	SDD14			
SA15/SDD15	Y16	SDD15			
SDA0	W16	SDA0			
SDA1	U15	SDA1			
SDA2	V16	SDA2			
SDCS1	Y17	-SDCS1			24
SDCS3	W17	-SDCS3			24
SDDACK	T14	-SDDACK			24
SDREQ	U11	-SDREQ			24
IRQ15	T15	IRQ15			24,39
SDIOW/STOP	R13	-SDIOW			24
SDIOR/SHDMARDY/SHSTROBE	U14	-SDIOR			24
SDRDY/SDDMARDY/SDSTROBE	Y12	-SDRDY			24



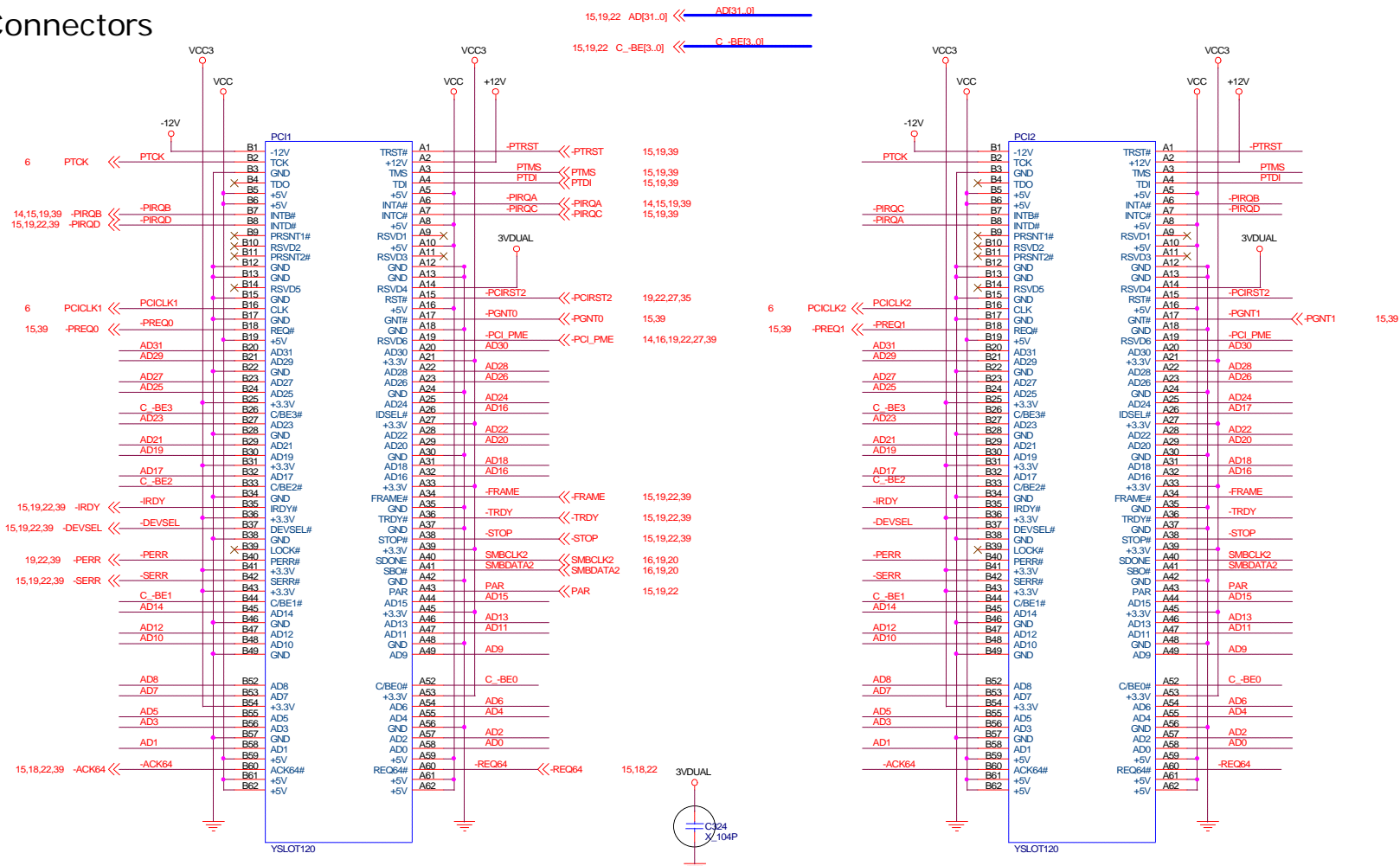
FID[3:0]	Clock Multiplier	FID[3:0]	Clock Multiplier
0000	11.0	1000	7.0
0001	11.5	1001	7.5
0010	12.0	1010	8.0
0011	12.5	1011	8.5
0100	5.0	1100	9.0
0101	5.5	1101	9.5
0110	6.0	1110	10.0
0111	6.5	1111	10.5



Micro Star Restricted Secret

Title	VT8233 Part 3 & CPU FID	Rev	20
Document Number	MS-6382		
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 17 of 41	

PCI Connectors



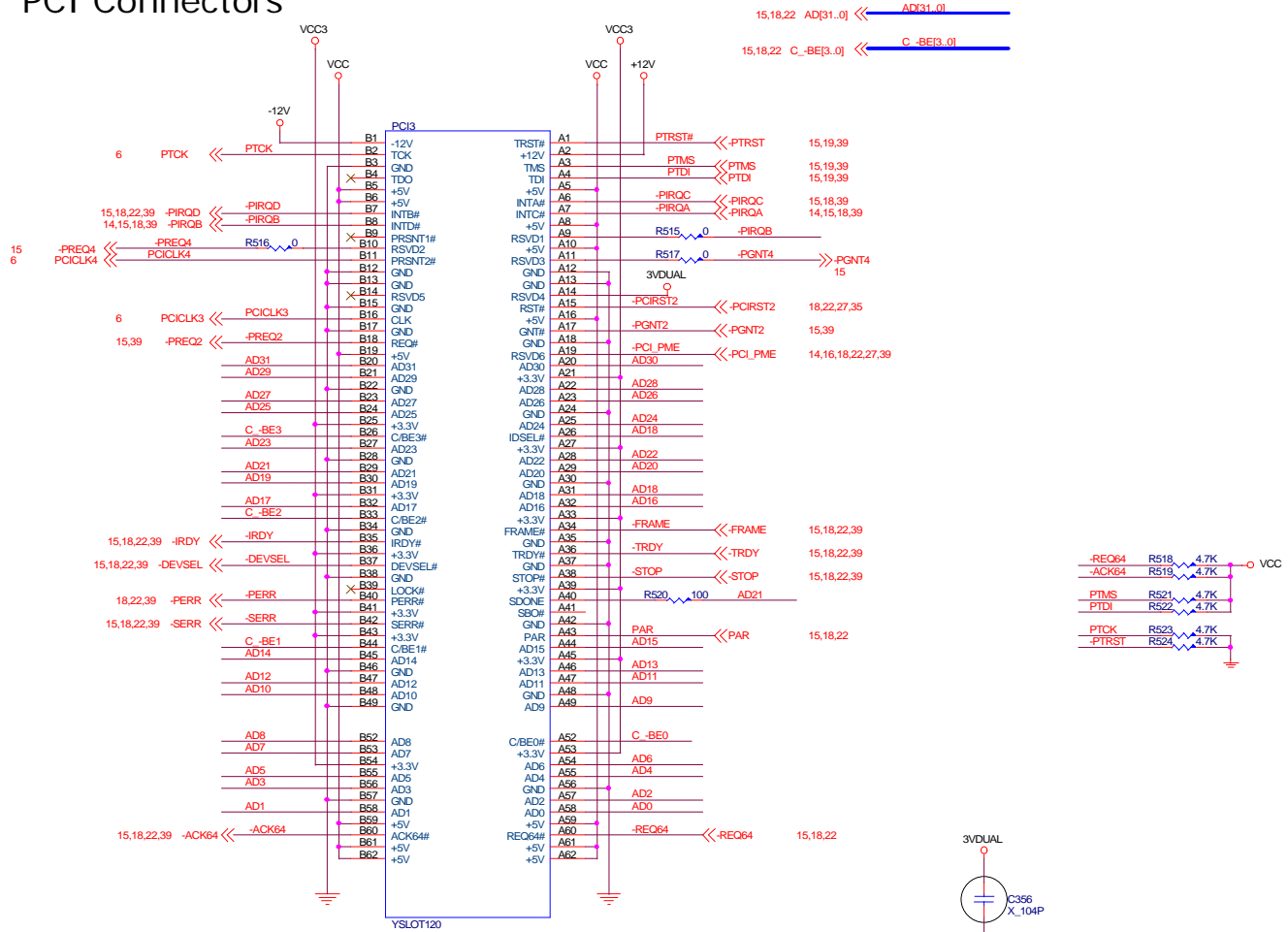
IDSEL= AD16
INT#= A, B, C, D

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

Micro Star Restricted Secret

Title	PCI Connector 1 & 2	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD. No. 88, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet	18 of 41

PCI Connectors

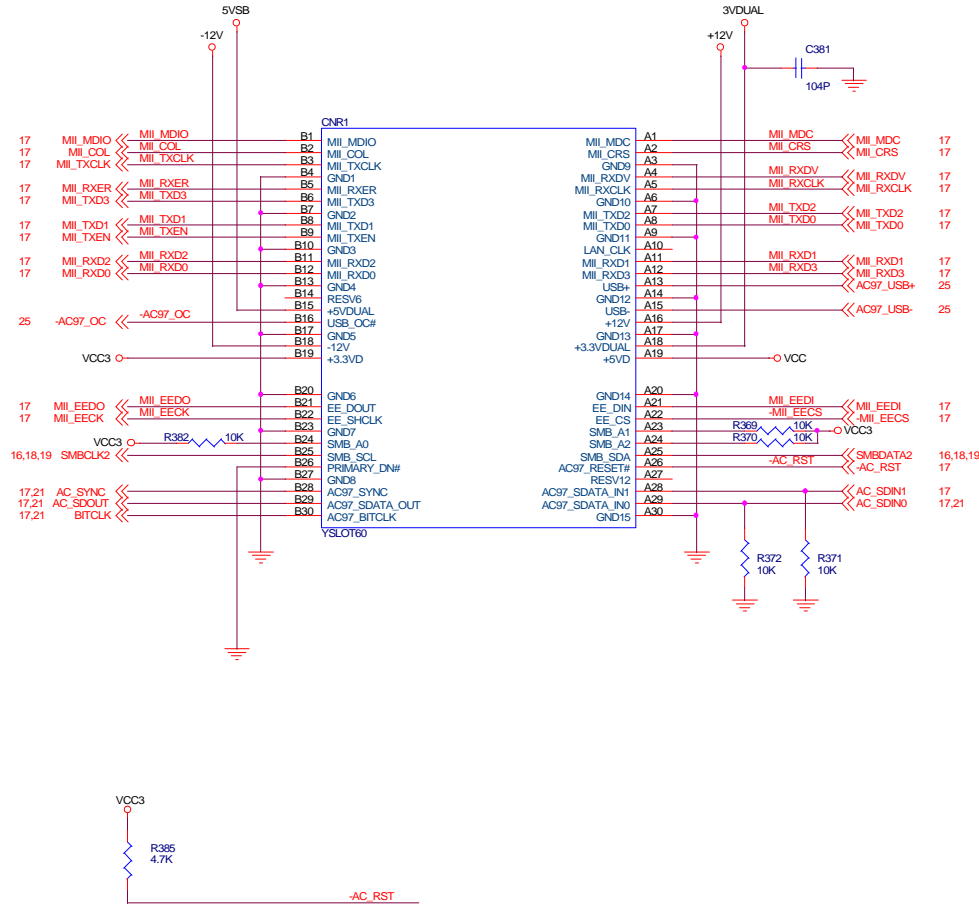


IDSEL = AD18
 INT# = C, D, A, B
 IDSEL = AD21
 INT# = B

Micro Star Restricted Secret

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

CNR Riser

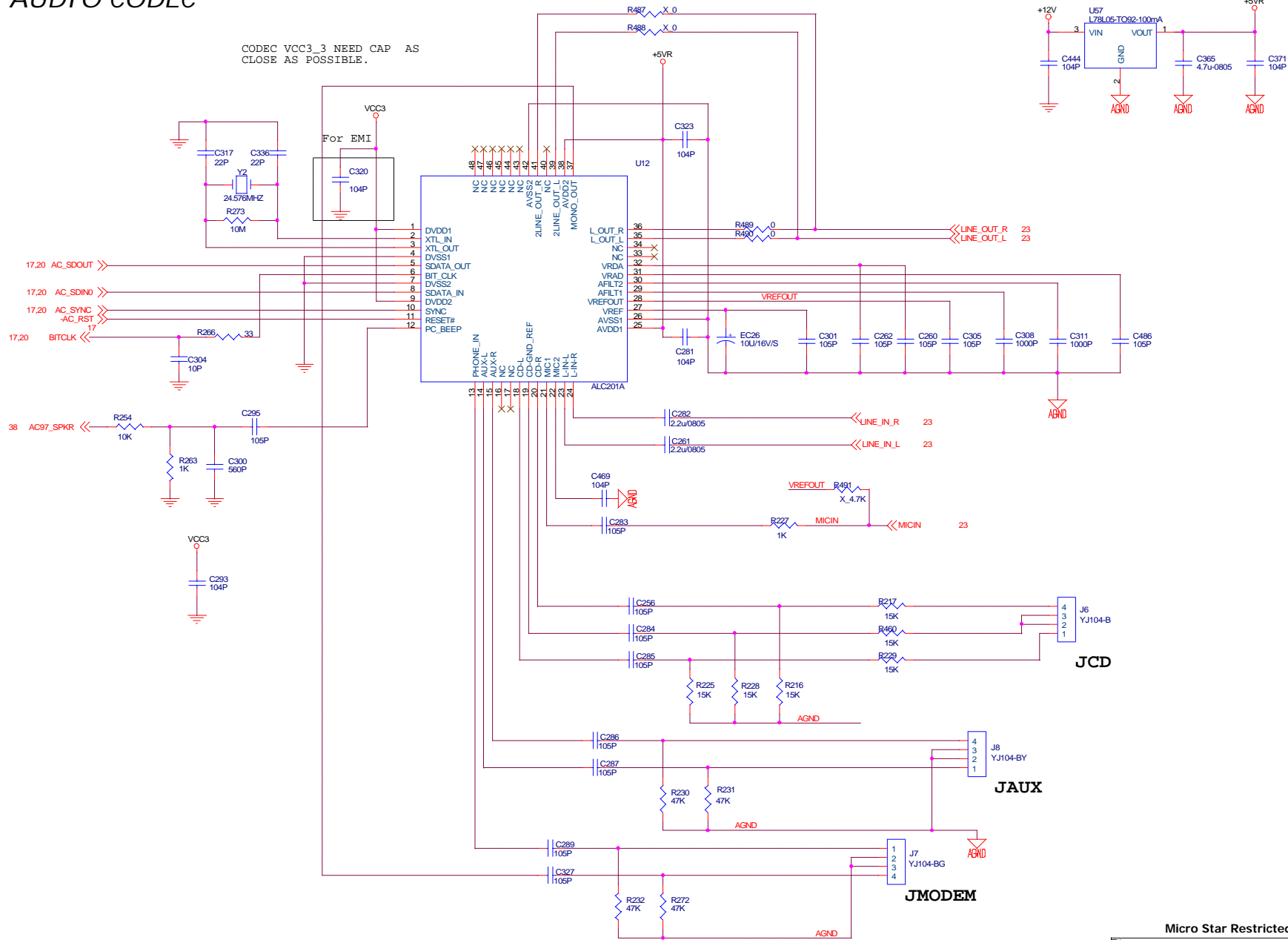


Micro Star Restricted Secret

Title	CNR Riser	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 63, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet 20 of 41

AUDIO CODEC

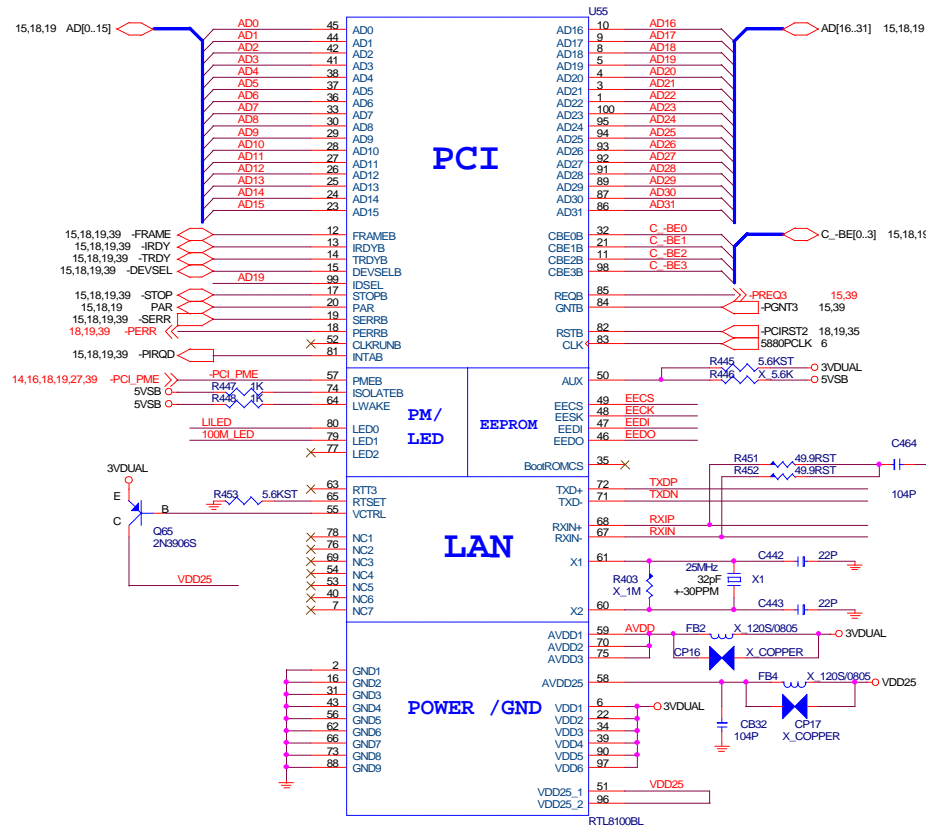
CODEC VCC3_3 NEED CAP AS CLOSE AS POSSIBLE.



Micro Star Restricted Secret

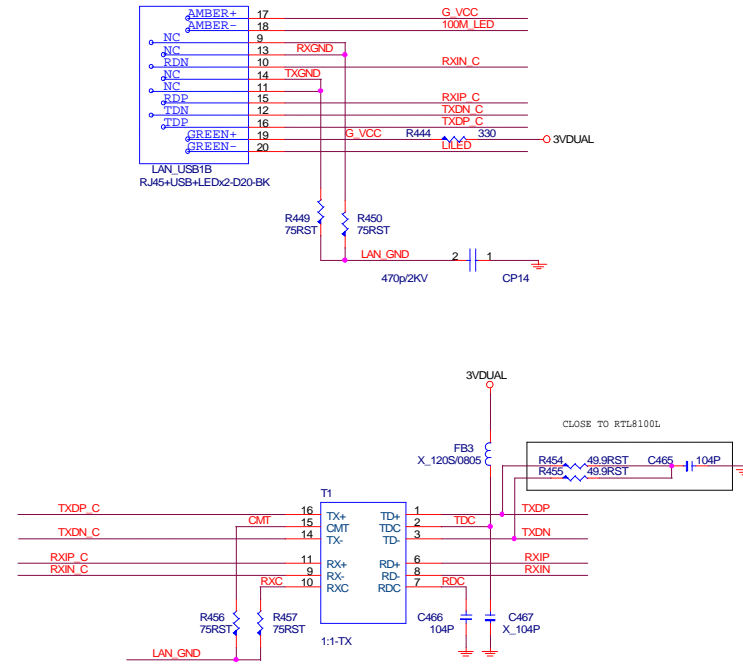
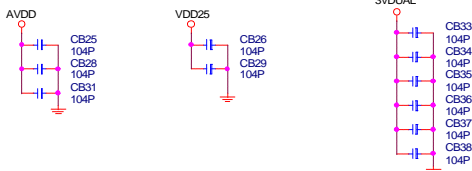
Title	Audio Codec	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L GO., LTD. No. 93, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet 21 of 41

REALTEK RTL8100BL PCI LAN

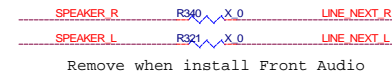
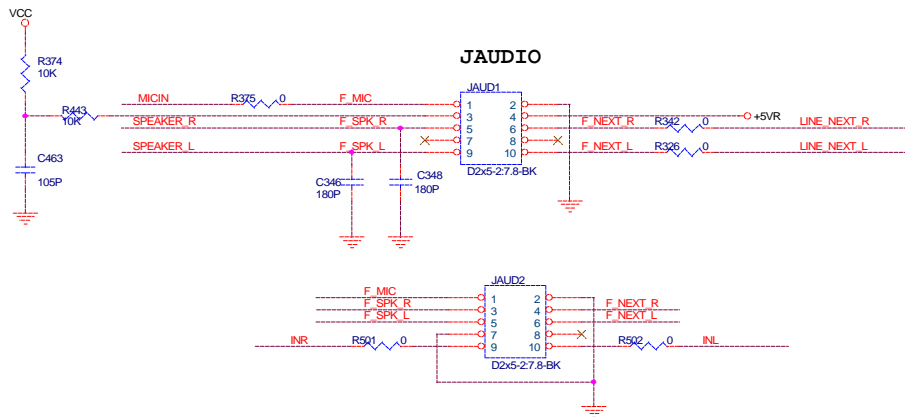
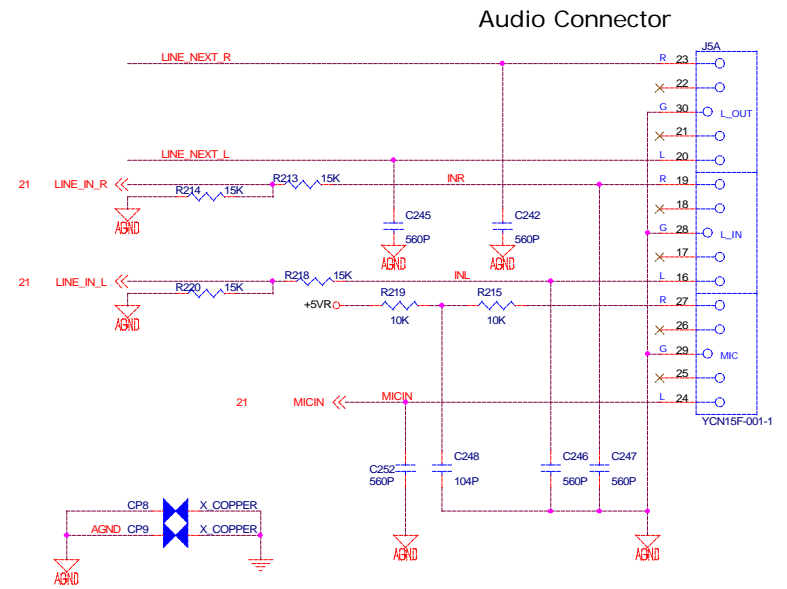
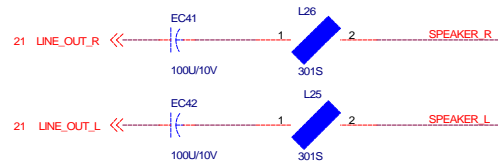


ISEL = AD19
MASTER = PREQ3

BTL8100BL DECOUPLING CAPACITORS



Micro Star Restricted Secret	
Title	RTL8100BL PCI LAN
Document Number	MS-6382
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 22 of 41
Rev	20

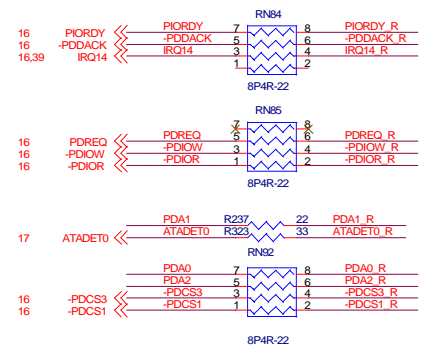
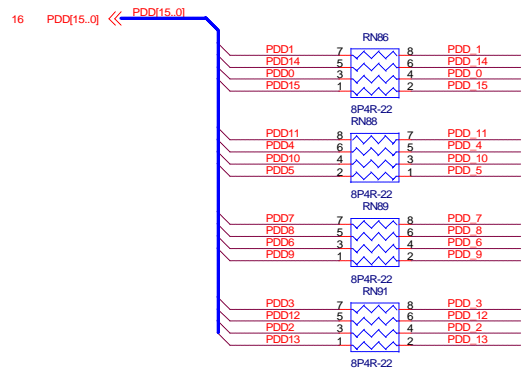
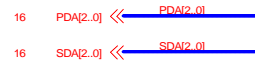
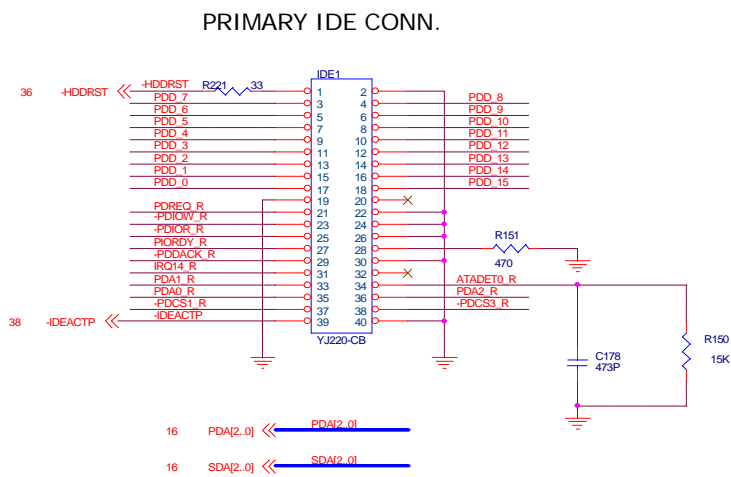


Micro Star Restricted Secret

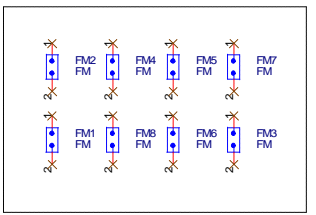
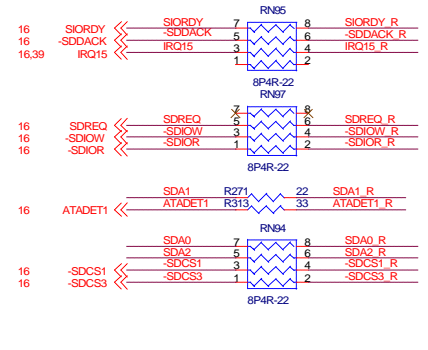
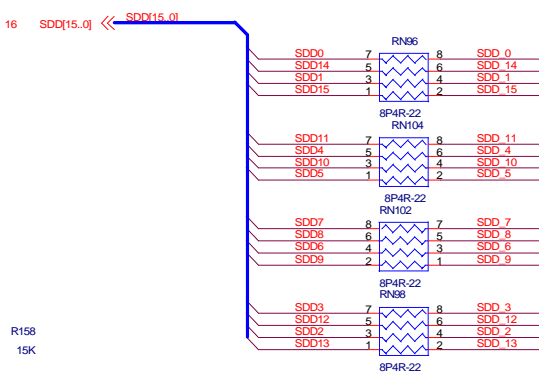
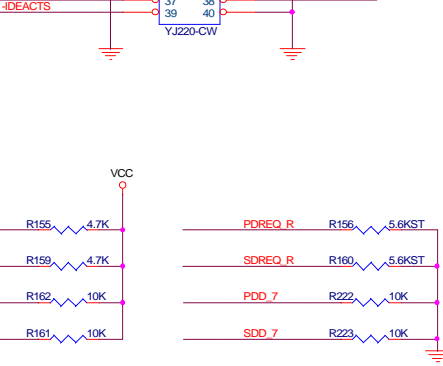
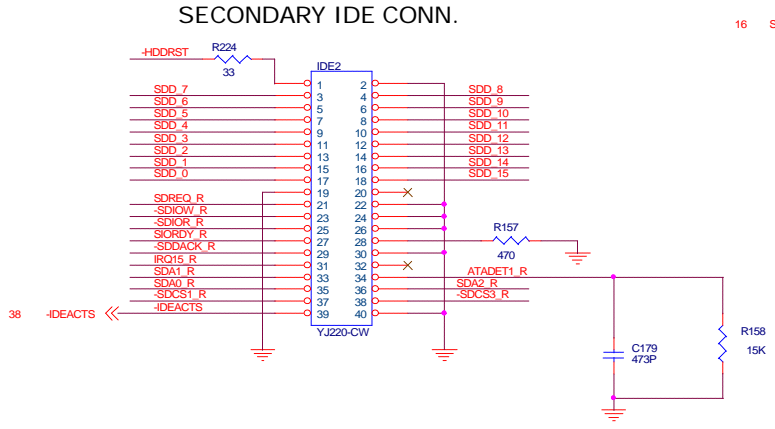
Title	Audio Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001
Sheet		23 of 41

ATA 33/66/100 Connector

PRIMARY IDE CONN.



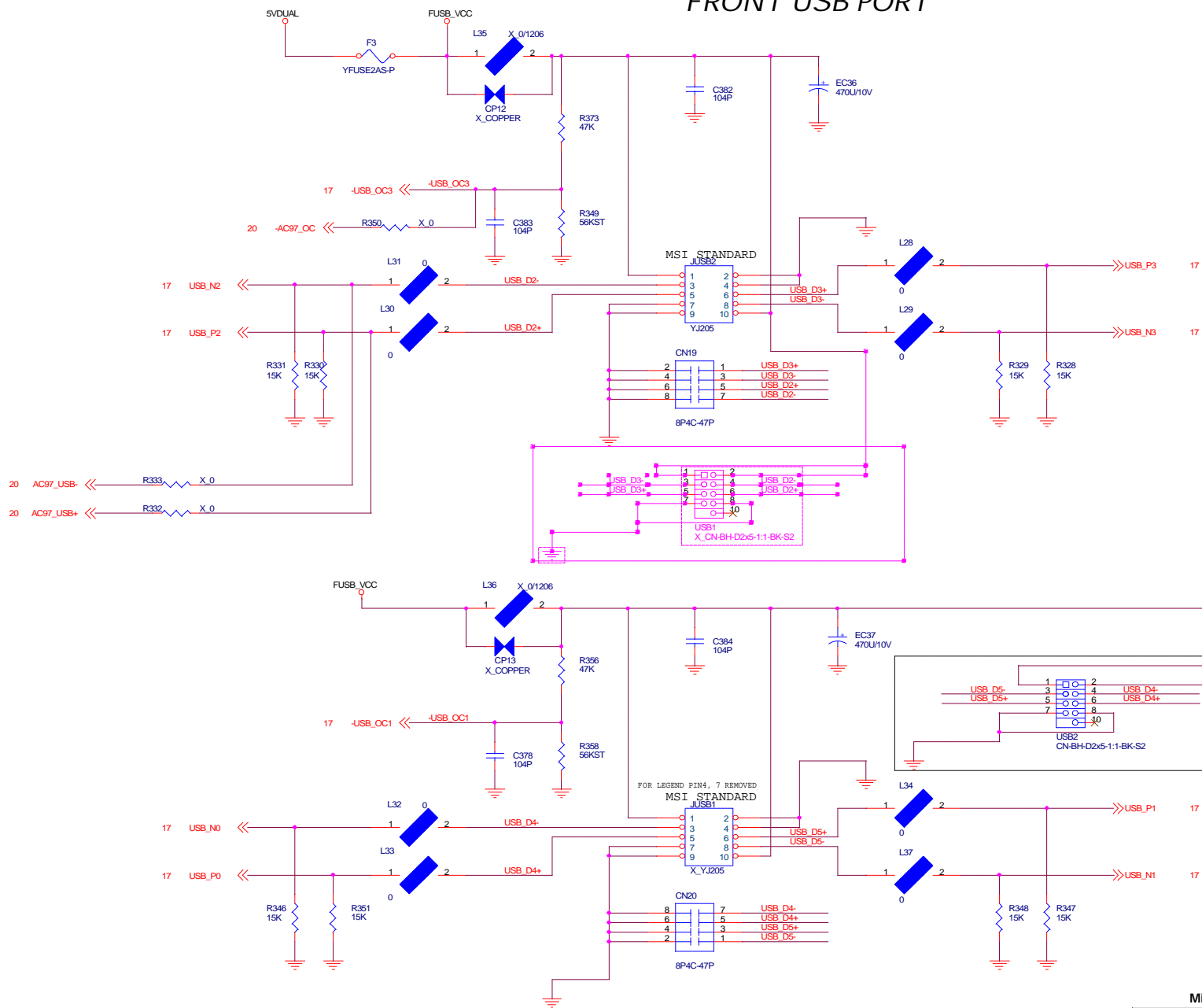
SECONDARY IDE CONN.



Micro Star Restricted Secret

Title	ATA 33/66/100 Connector	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet	24 of 41

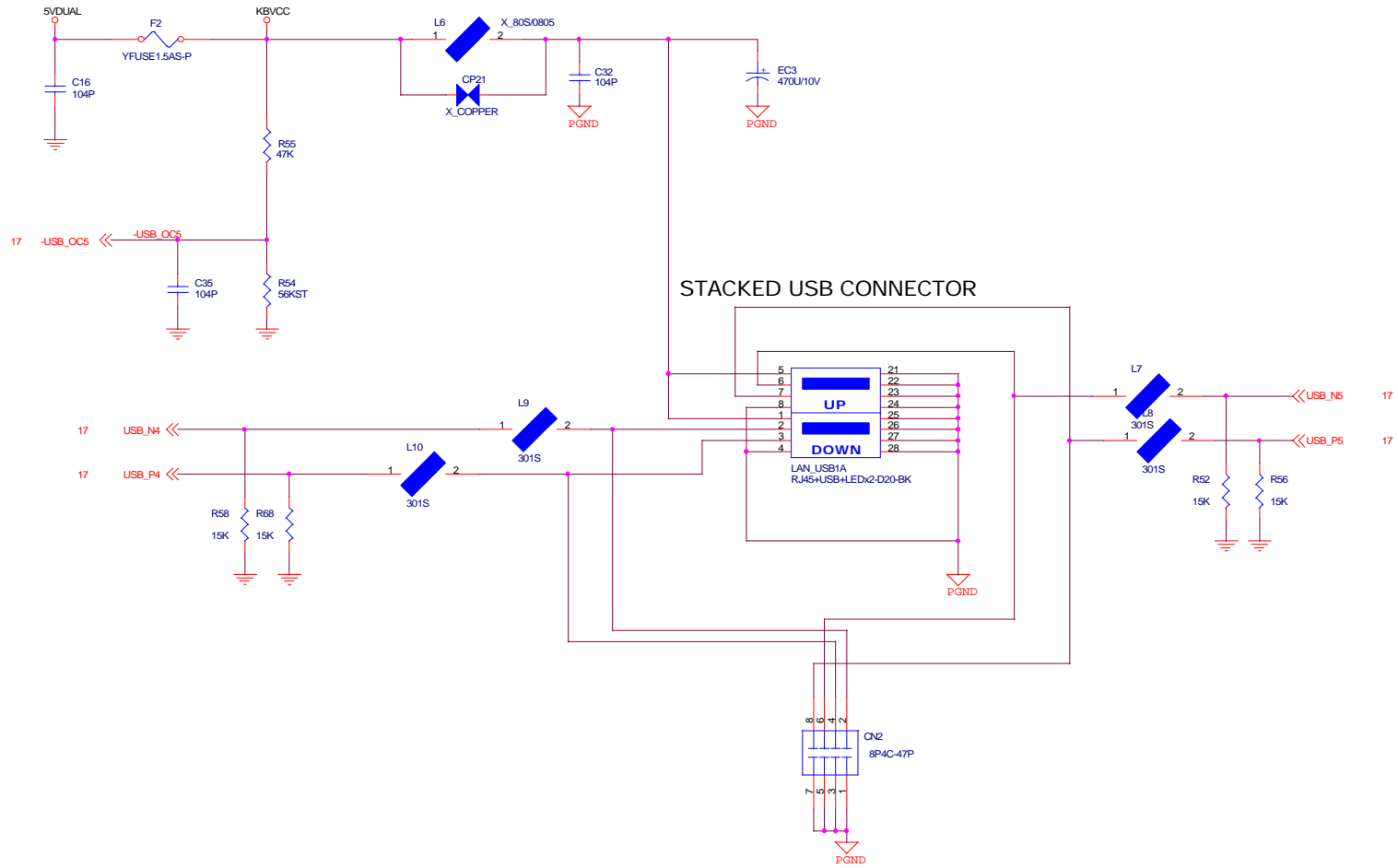
FRONT USB PORT



Micro Star Restricted Secret

Title	Front USB Port	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD. No. 63, 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

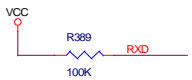
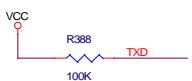
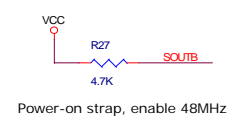
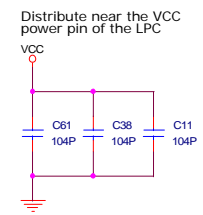
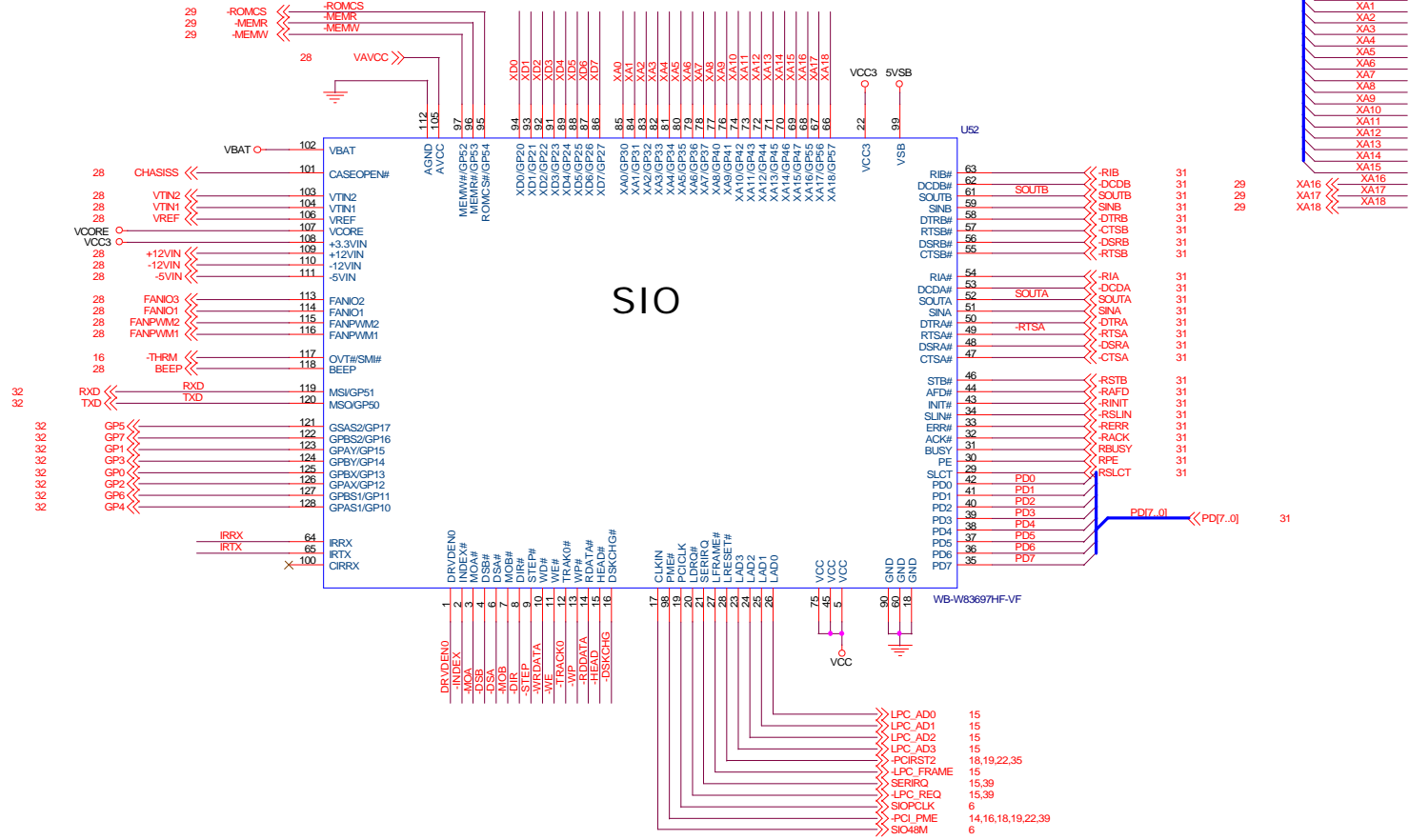
REAR USB PORT



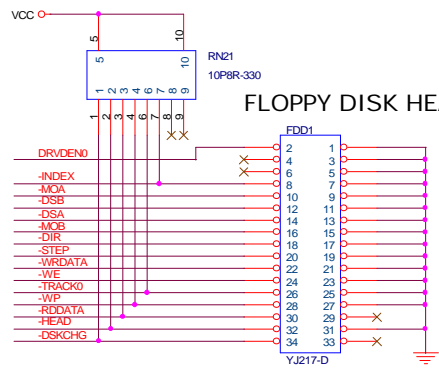
Micro Star Restricted Secret

Title	Rear USB Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 63, 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

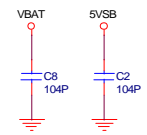
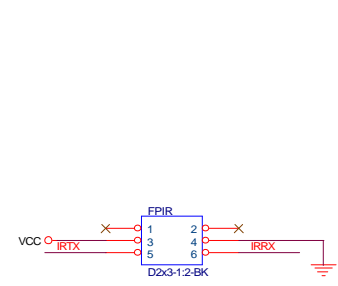
Super I/O



FLOPPY DISK HEADER



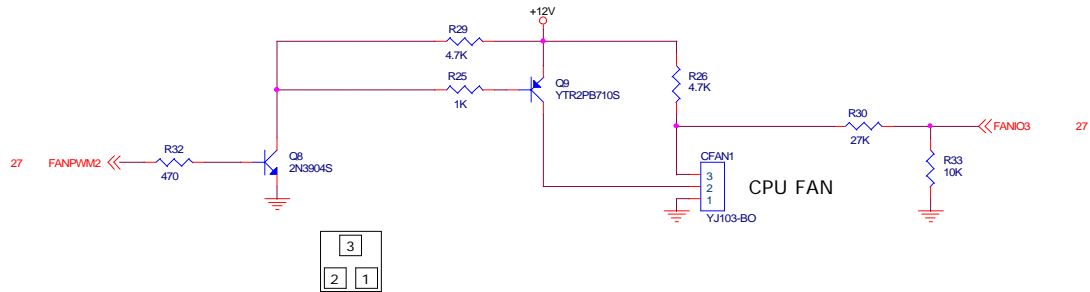
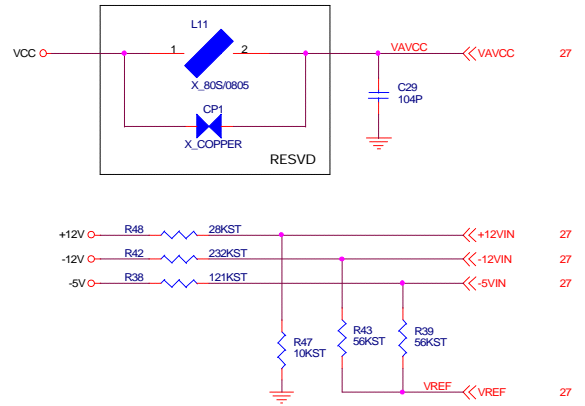
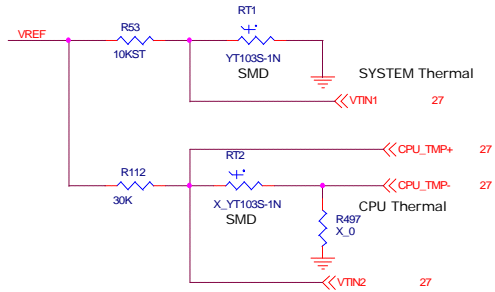
IR HEAD



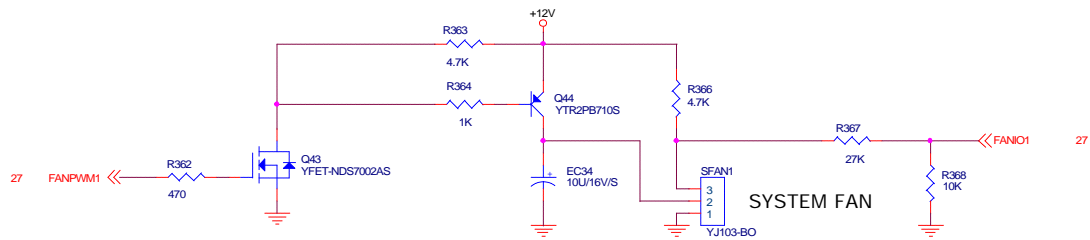
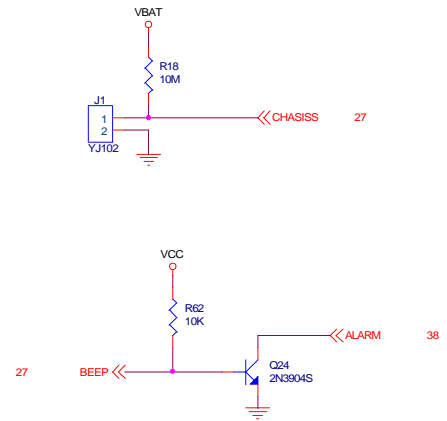
Micro Star Restricted Secret

Title		Winbond W627HF	Rev
Document Number		MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 69, LiDe St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, December 03, 2001	
Sheet		27 of 41	

Hardware Monitor



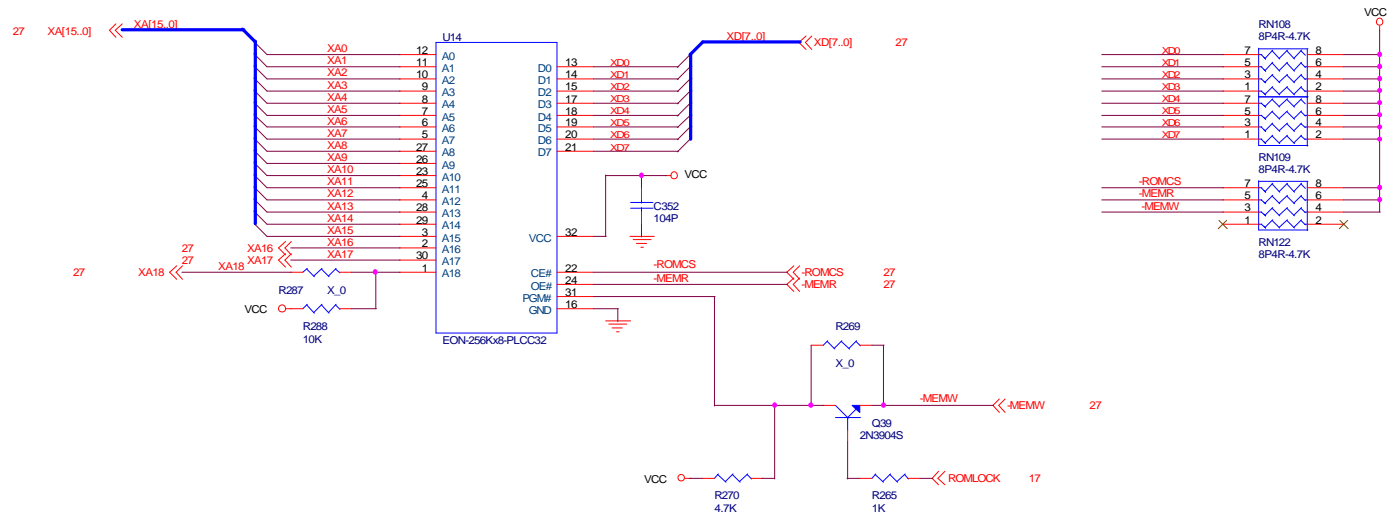
Chassis Intrusion Header



Micro Star Restricted Secret

Title	Hardware Monitor	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L	Last Revision Date:		Monday, December 03, 2001
CO., LTD.	No. 63, Li-De St., Jung-Ho City,		Sheet
Taipei Hsien, Taiwan	http://www.msi.com.tw		28 of 41

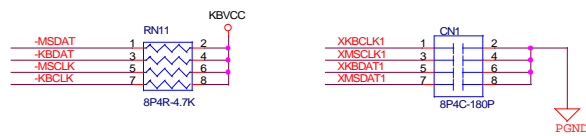
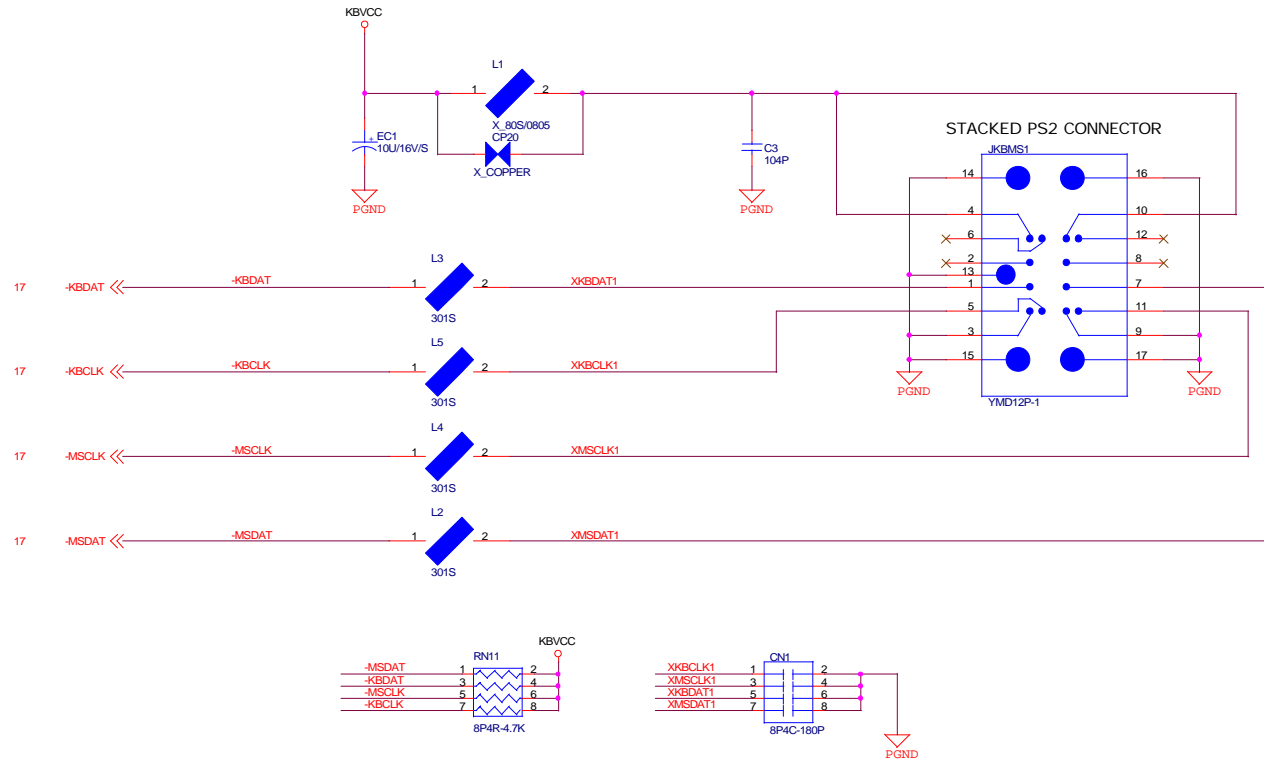
SYSTEM ROM



Micro Star Restricted Secret

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

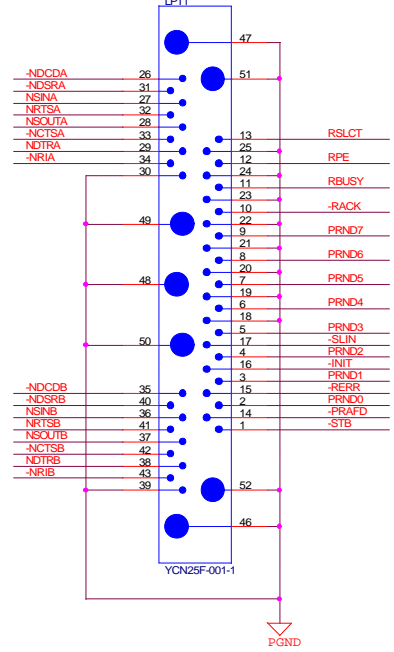
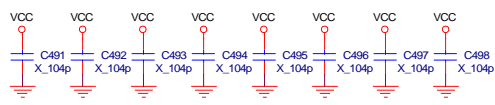
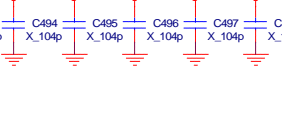
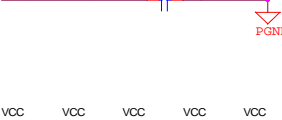
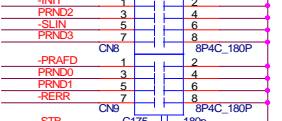
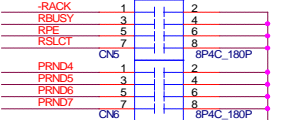
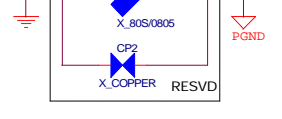
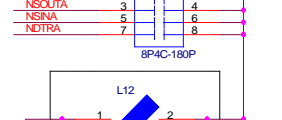
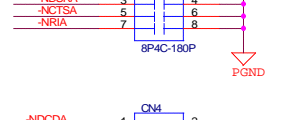
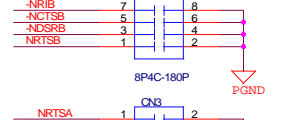
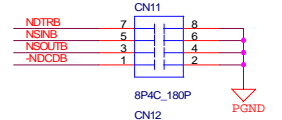
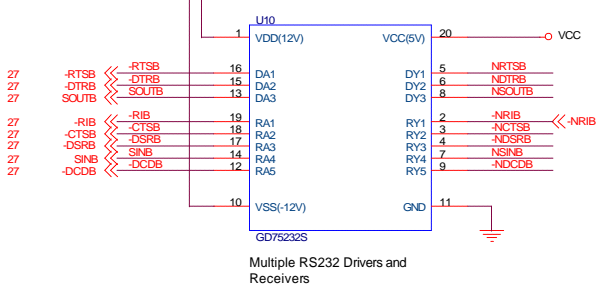
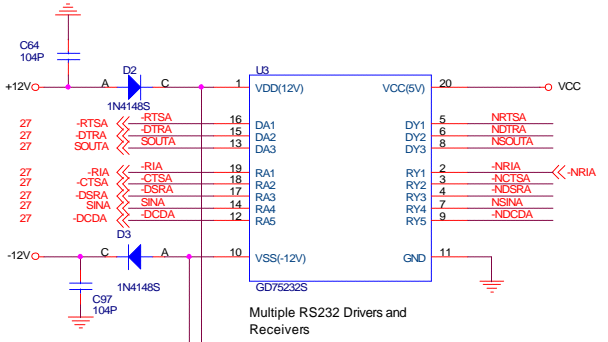
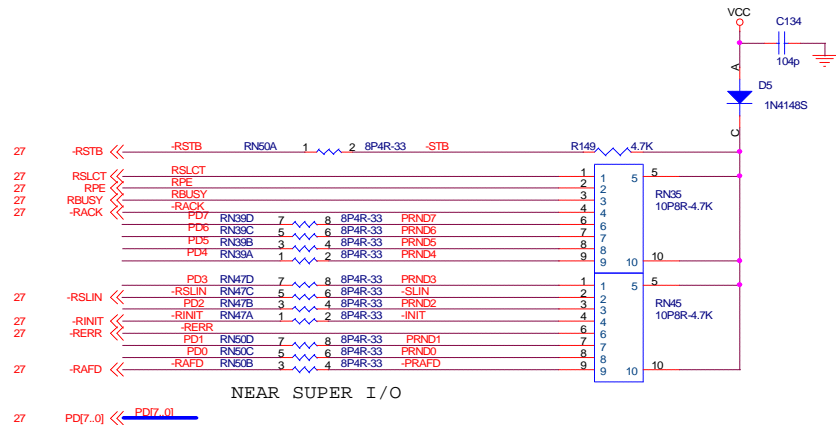
Keyboard/Mouse Ports



Micro Star Restricted Secret

Title	KeyBoard / Mouse Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 63, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet 30 of 41

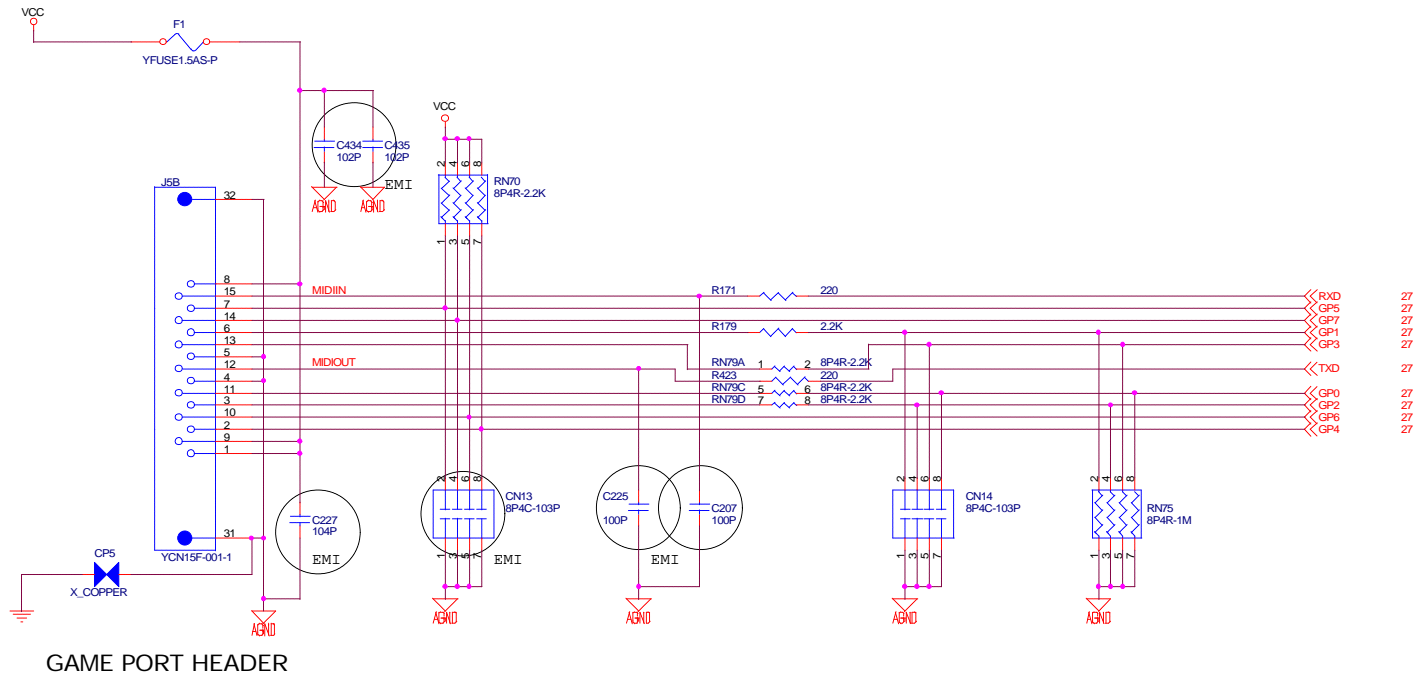
LPT / COM PORTS



Micro Star Restricted Secret

Title	LPT / COM Port	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD. No. 63, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet	31 of 41

GAME PORT

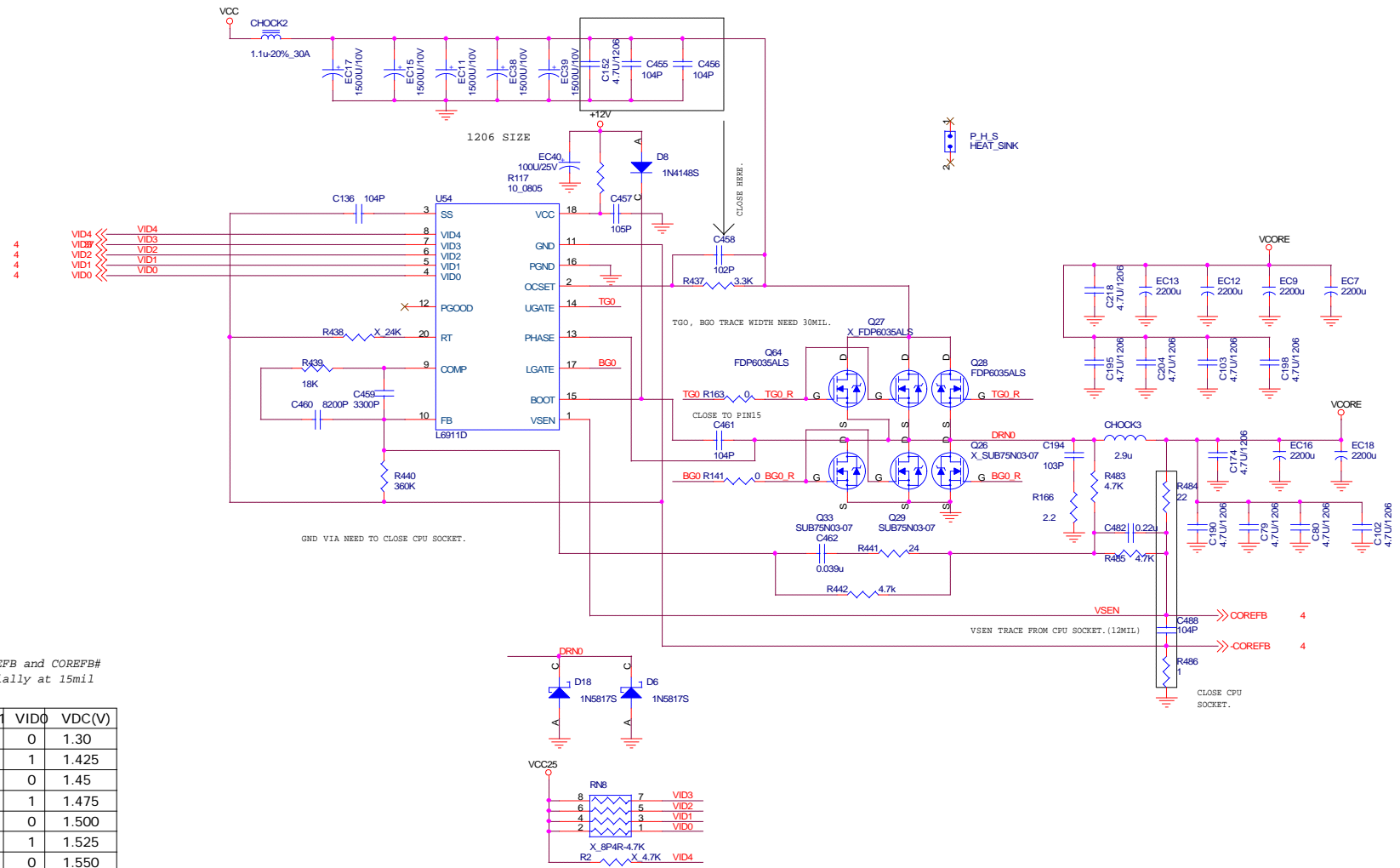


GAME PORT HEADER

Micro Star Restricted Secret

Title	Game Port	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 63, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet
		32 of 41

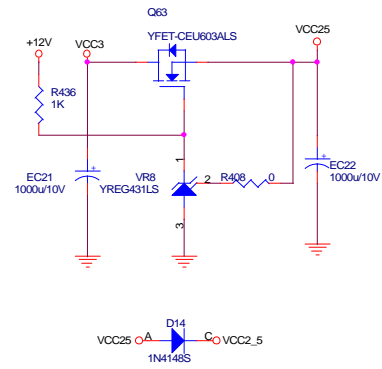
Voltage Regular Module



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

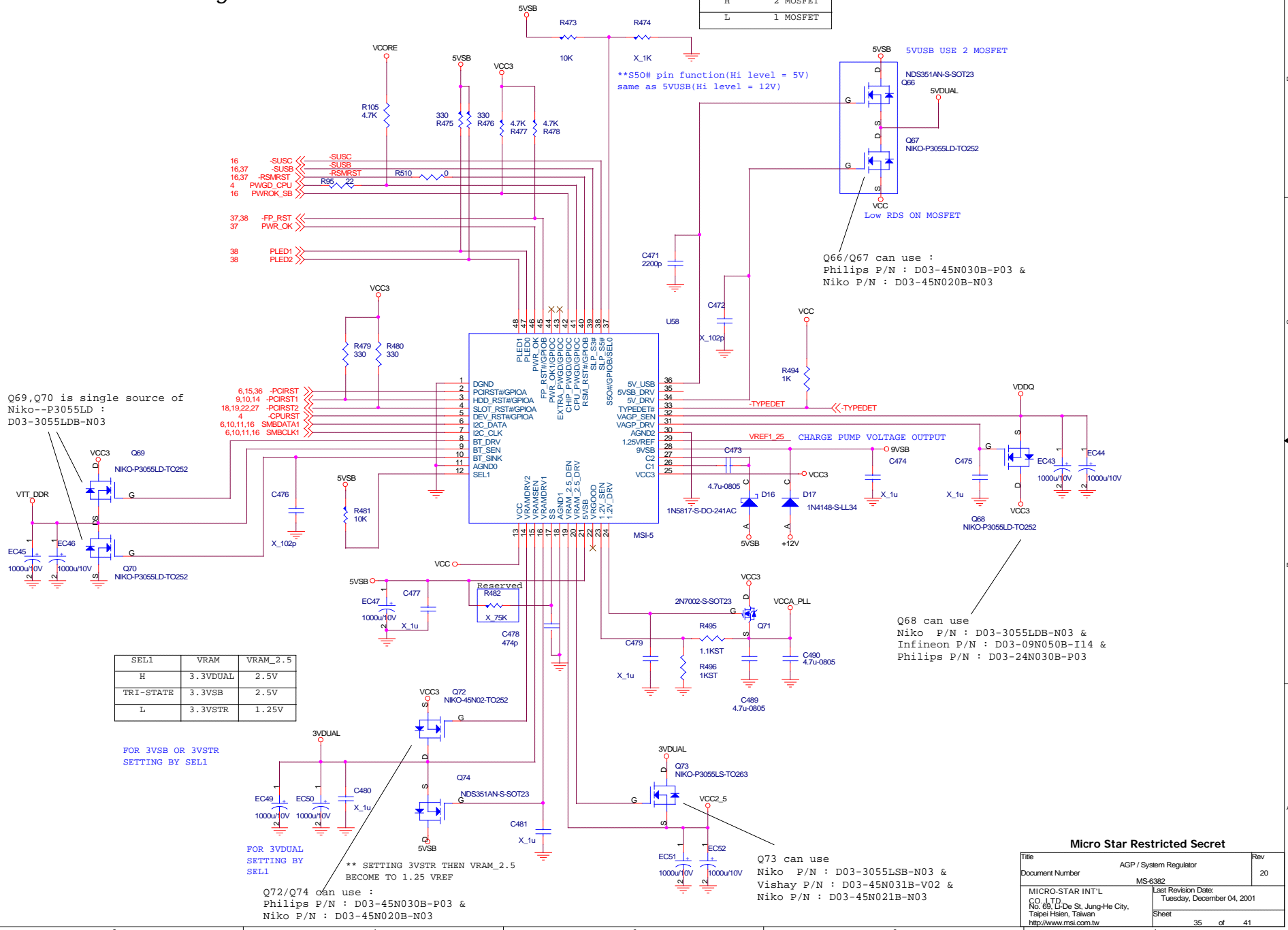


Micro Star Restricted Secret

Title	DDR Power Regulator	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 69, 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

AGP / SYSTEM Regulator

SEL0	5VUSB
H	2 MOSFET
L	1 MOSFET



**S50# pin function(Hi level = 5V)
same as 5VUSB(Hi level = 12V)

Q66/Q67 can use :
Philips P/N : D03-45N030B-P03 &
Niko P/N : D03-45N020B-N03

Q68 can use
Niko P/N : D03-3055LDB-N03 &
Infineon P/N : D03-09N050B-I14 &
Philips P/N : D03-24N030B-P03

Q73 can use
Niko P/N : D03-3055LSB-N03 &
Vishay P/N : D03-45N031B-V02 &
Niko P/N : D03-45N021B-N03

Q72/Q74 can use :
Philips P/N : D03-45N030B-P03 &
Niko P/N : D03-45N020B-N03

SEL1	VRAM	VRAM_2.5
H	3.3VDUAL	2.5V
TRI-STATE	3.3VSTR	2.5V
L	3.3VSTR	1.25V

FOR 3VSTR OR 3VSTR
SETTING BY SEL1

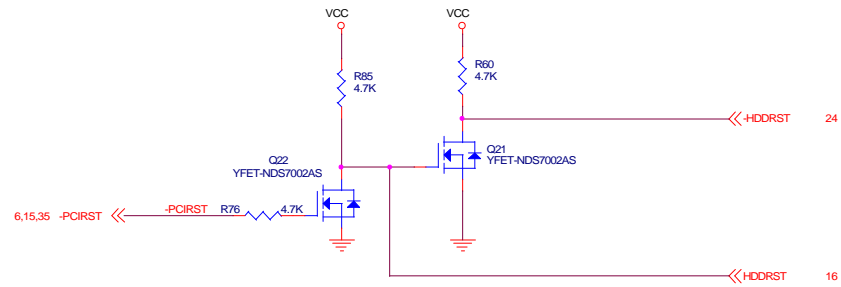
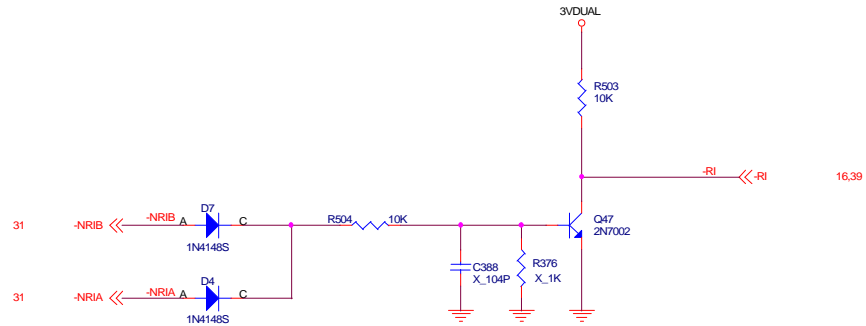
FOR 3VDUAL
SETTING BY SEL1

** SETTING 3VSTR THEN VRAM_2.5
BECOME TO 1.25 VREF

Micro Star Restricted Secret

Title	AGP / System Regulator	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD. No. 88, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Tuesday, December 04, 2001		Sheet 35 of 41

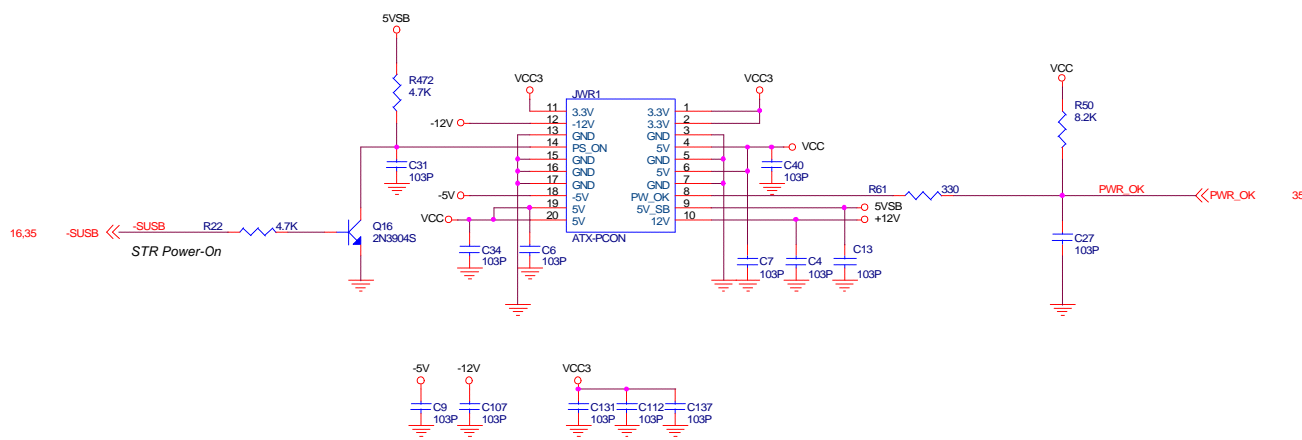
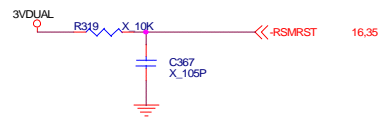
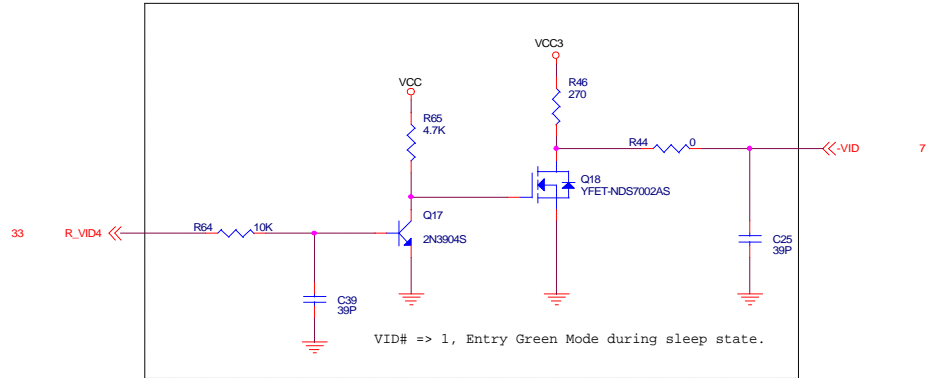
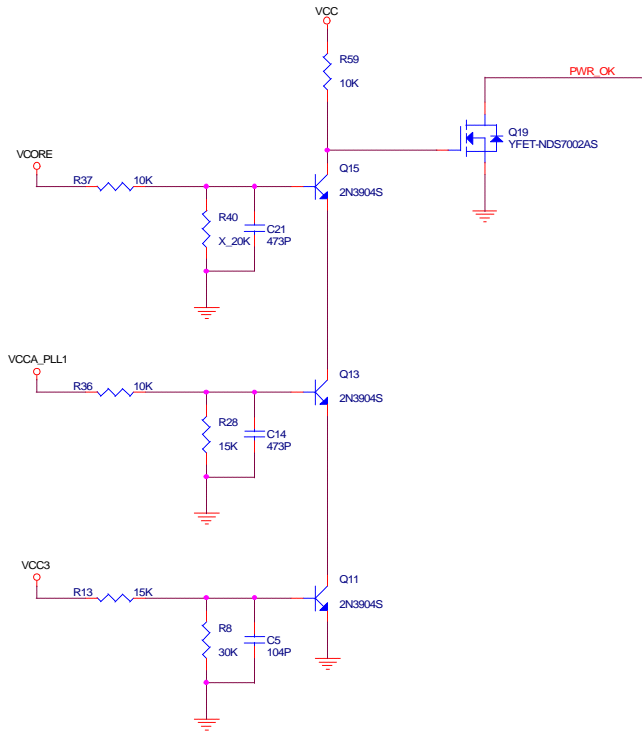
POWER Management



Micro Star Restricted Secret

Title	Power Management	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 63, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet 36 of 41

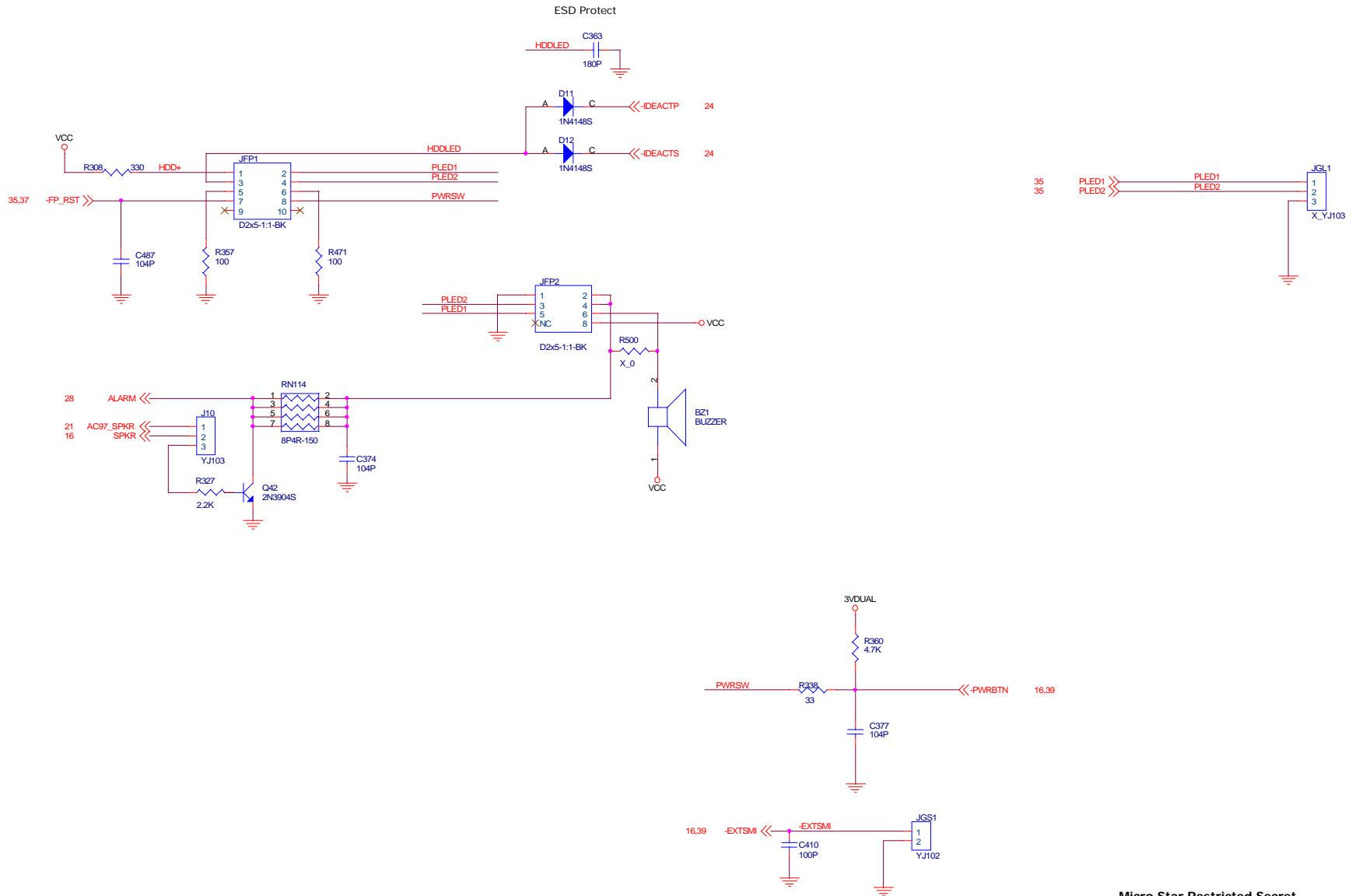
POWER OK Circuits



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Title	Power OK Circuits	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD. No. 63, 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

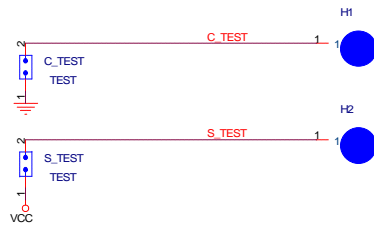
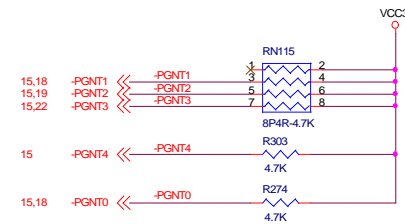
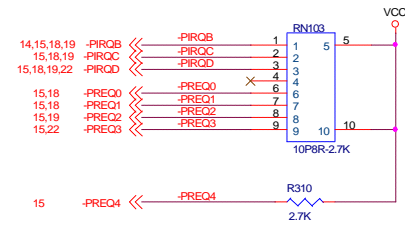
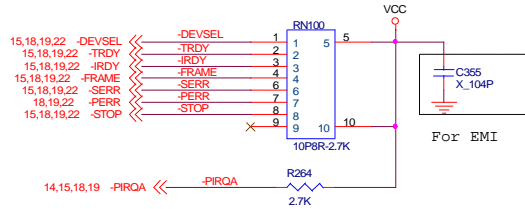


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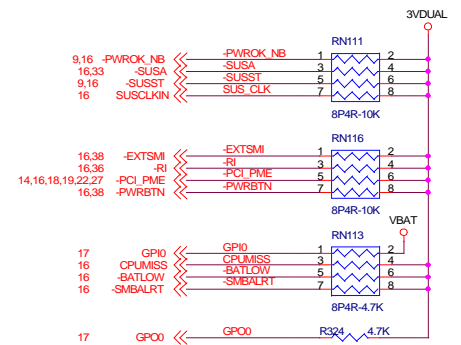
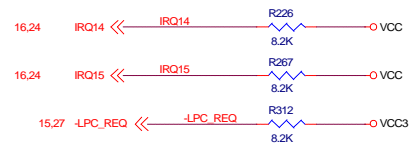
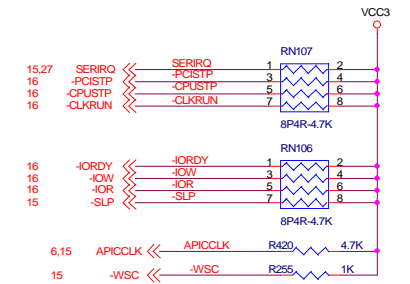
Title	Front Panel	Rev	20
Document Number	MS-6382		
MICRO-STAR INT'L CO., LTD. No. 63, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet	38 of 41

PULL-UP RESISTORS

PCI BUS



SB Pull up resistors

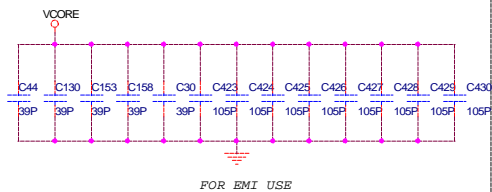
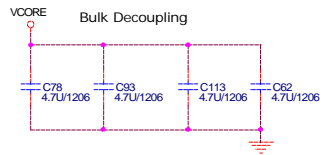
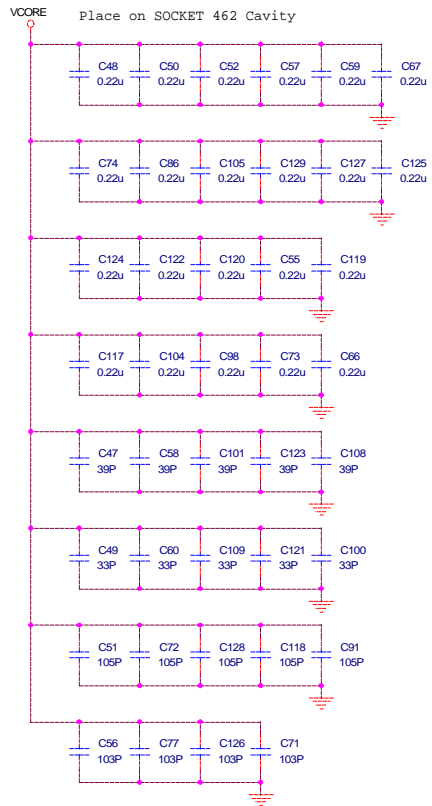


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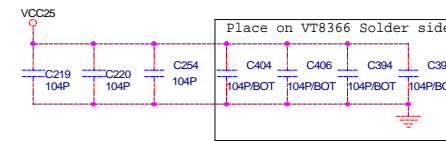
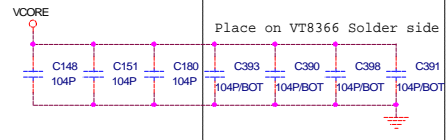
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Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 63, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet 39 of 41

BULK / Decoupling

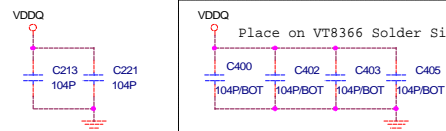
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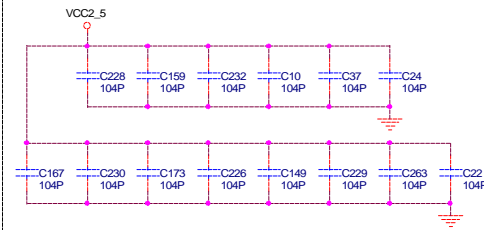
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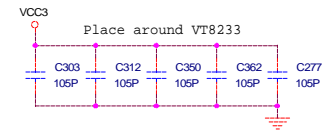
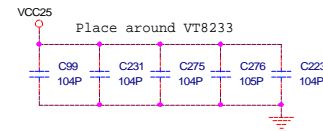
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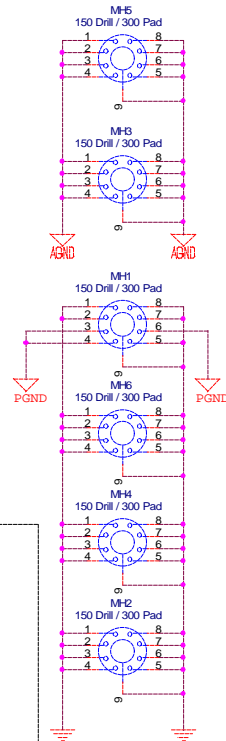
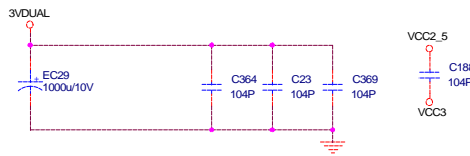
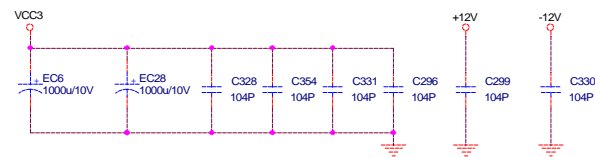
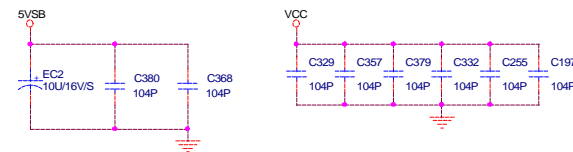
DDR



VT8233

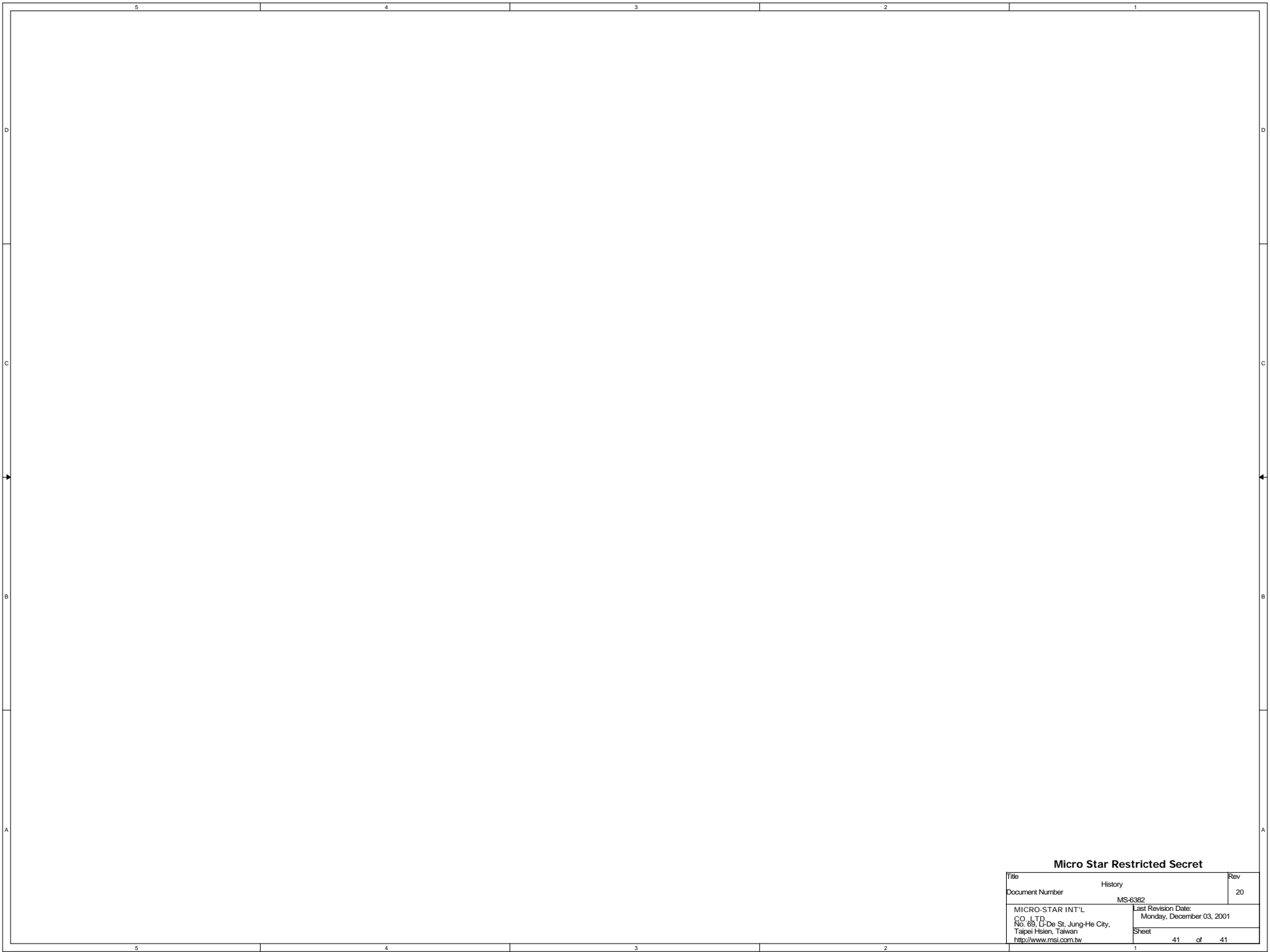


SYSTEM



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Title	BULK / Decoupling	Rev
Document Number	MS-6382	20
MICRO-STAR INT'L CO., LTD. No. 63, 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. 63, Li-De St., Jung-Ho City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, December 03, 2001	Sheet 41 of 41