

MS-6380E ATX

AMD PGA 462 Processor
VIA KT333 / VT8233A-CE Chipset
Winbond 83697HF-VF LPC I/O

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MS-6380E ver:0B

Standard BOM (without IDE RAID / USB2.0 HC)

SMT	861
DIP	78
Total	939

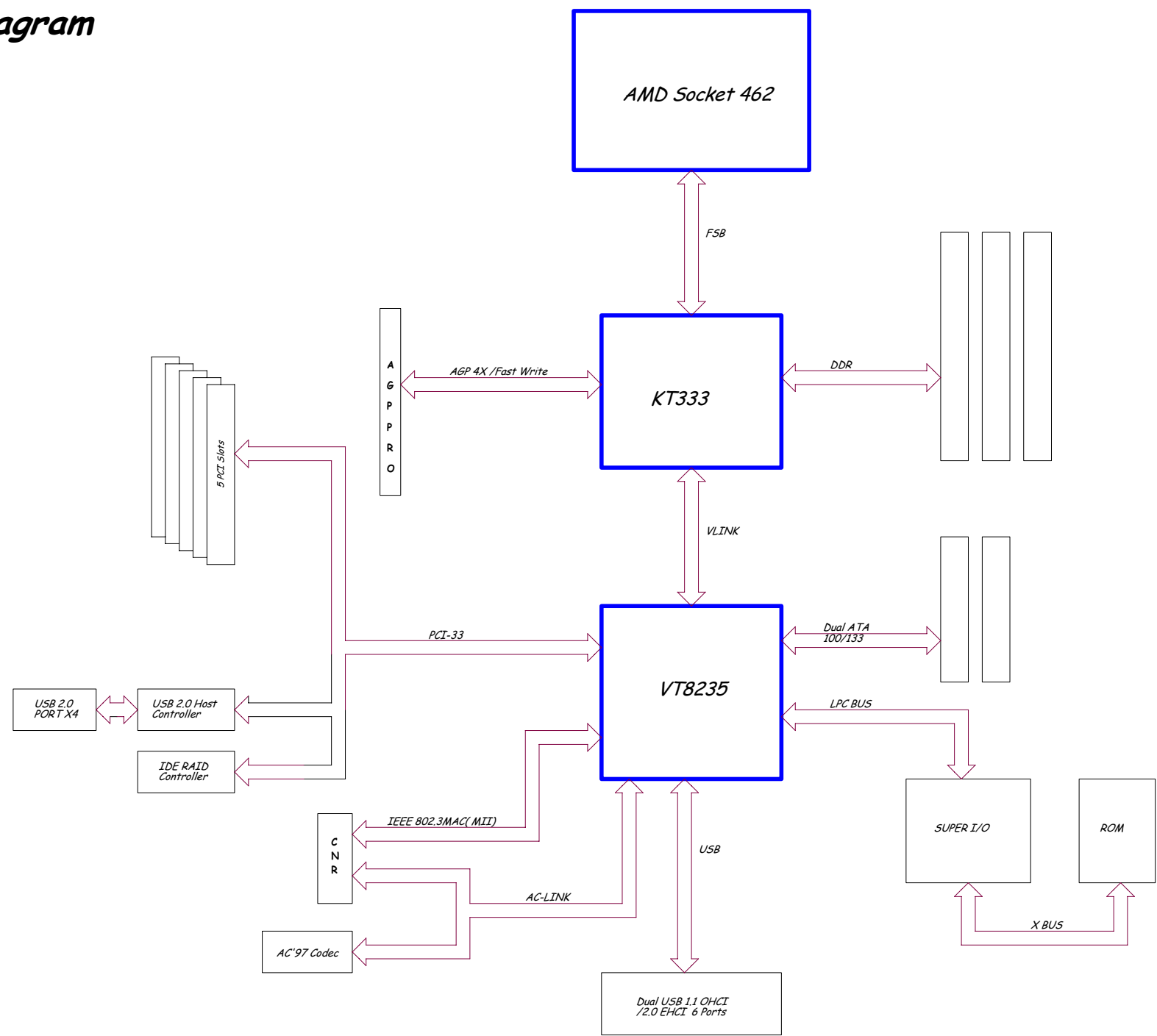
Option A BOM (with IDE RAID / without USB2.0 HC)

SMT	934
DIP	80
Total	1014

Option B BOM (with IDE RAID / USB2.0 HC)

SMT	992
DIP	85
Total	1077

Block Diagram



GPIO FUNCTION

VT8233 GPIO Function Define

PIN NAME	Function define
GPO0 (VSUS33)	GPO0
GPO1/SUSA# (VSUS33)	SUSA#
GPO2/SUSB# (VSUS33)	SUSB#
GPO3/SUSST1# (VSUS33)	SUSST1#
GPO4/SUSCLK (VSUS33)	SUSCLK
GPO5/CPUSTP#	CPUSTP#
GPO6/PCISTP#	PCISTP#
GPO7/SLP#	SLP#
GPO8/GPI8/IPBIN0	Exteranl Pull up to VCC3
GPO9/GPI9/IPBIN1	Exteranl Pull up to VCC3
GPO10/GPI10/IPBRDFR	GPI10 (PRI_DOWN)
GPO11/GPI11/IPBRDCK	
GPO12/GPI12/IPBOUT0	GPO12
GPO13/GPI13/IPBOUT1	GPO13
GPO14/GPI14/IPBTDFR	GPO14
GPO15/GPI15/IPBTDCK	GPO15
GPO16/SA16/STRAP	CPU FID0 Strapping
GPO17/SA17/STRAP	CPU FID1 Strapping
GPO18/SA18/STRAP	CPU FID2 Strapping
GPO19/SA19/STRAP	CPU FID3 Strapping
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	
GPO31/GPI31/GPIOE	

PIN NAME	Function define
GPI0	GPI0
GPI1	ATADET0=>Detect IDE1 ATA100/66
GPI2/EXTSMI#	EXTSMI#
GPI3/RING#	RING#
GPI4/LID#	ATADET1=>Detect IDE2 ATA100/66
GPI5/BATLOW#	Exteranl Pull up to 3VDUAL
GPI6/PME#	PME#
GPI7/SMBALRT#	Exteranl Pull up to 3VDUAL
GPI16/INTRUDER#	Exteranl Pull down
GPI17/CPUMISS	Exteranl Pull up to 3VDUAL
GPI18/AOLGP1/THRM#	THRM#
GPI19/IORDY	Exteranl Pull up to VCC3

DDR Voltage	SET1	SET2
2.5V	1	1
2.6V	0	1
2.7V	1	0
2.8V	0	0

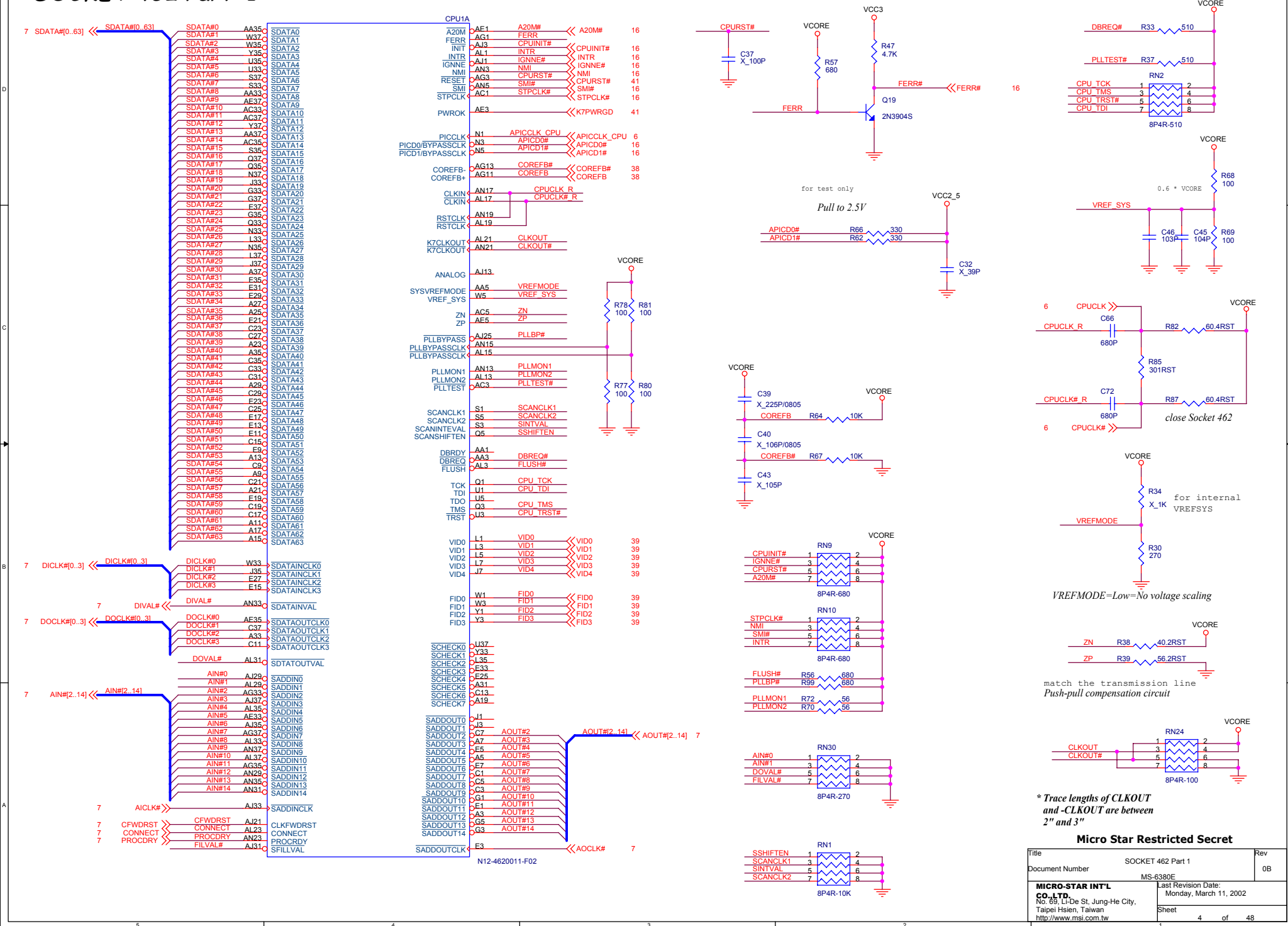
PCI

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
PCI SLOT 4	INT#D INT#A INT#B INT#C	AD19	PCIREQ#3 PCIGNT#3	PCICLK4
PCI SLOT 5	INT#B INT#C INT#D INT#A	AD21	PCIREQ#4 PCIGNT#4	PCICLK5
USB 2.0 HC	INT#C INT#D INT#A	AD22	PCIREQ#6 PCIGNT#6	USB_PCLK
IDE RAID HC	INT#D	AD23	PCIGNT#7 PCIREQ#7	ATAPCLK

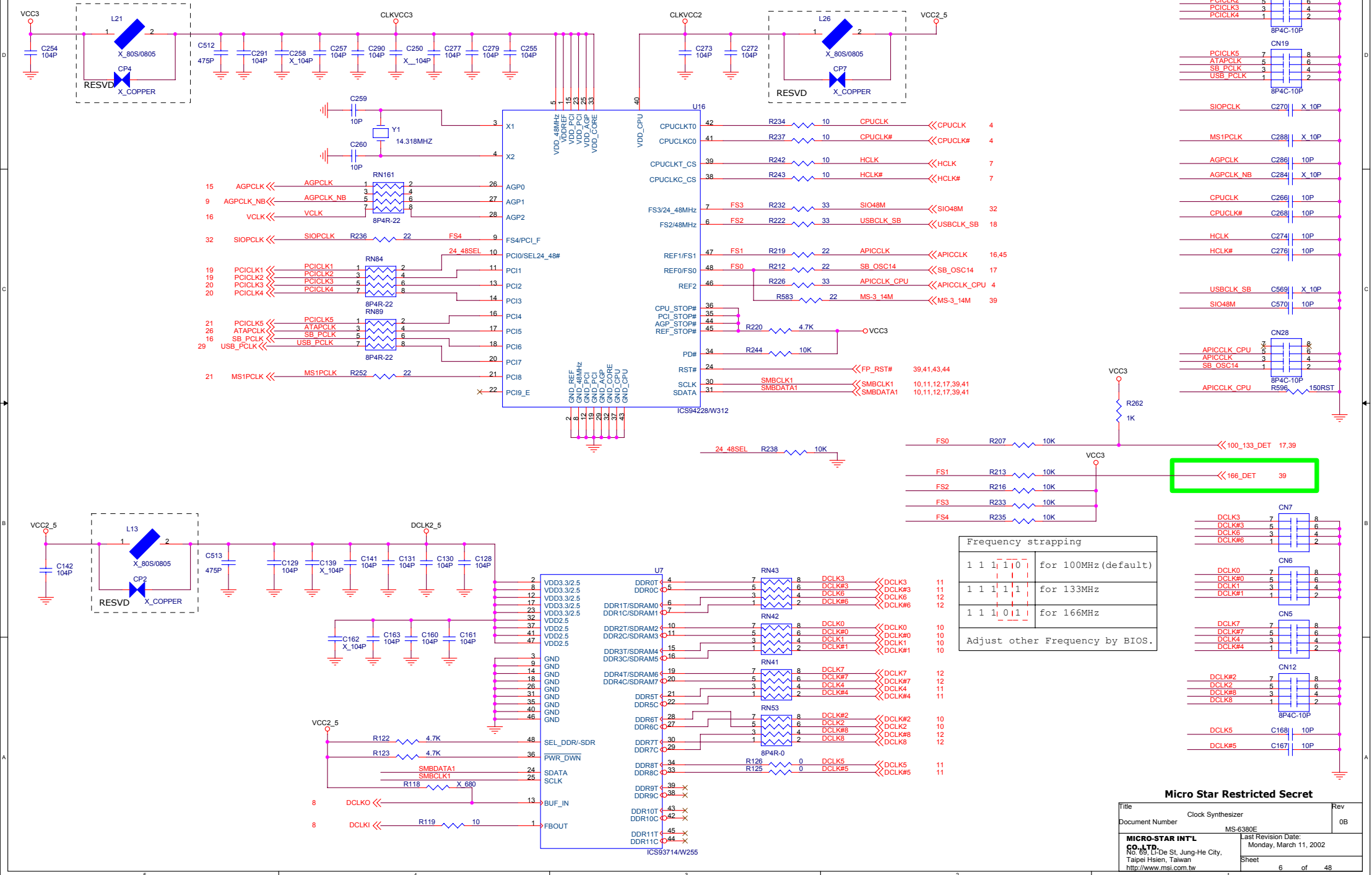
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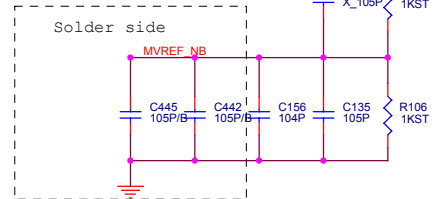
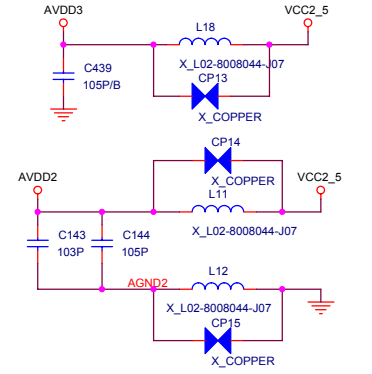
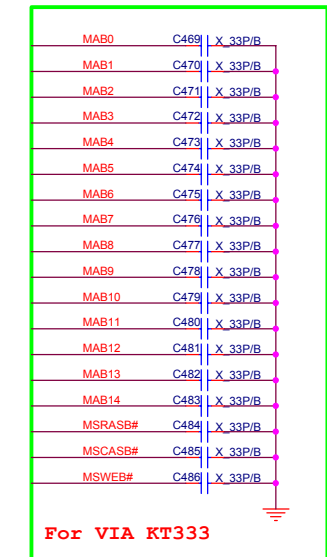
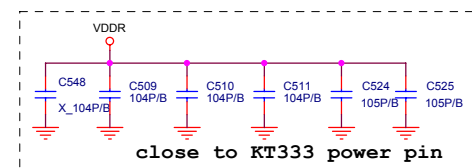
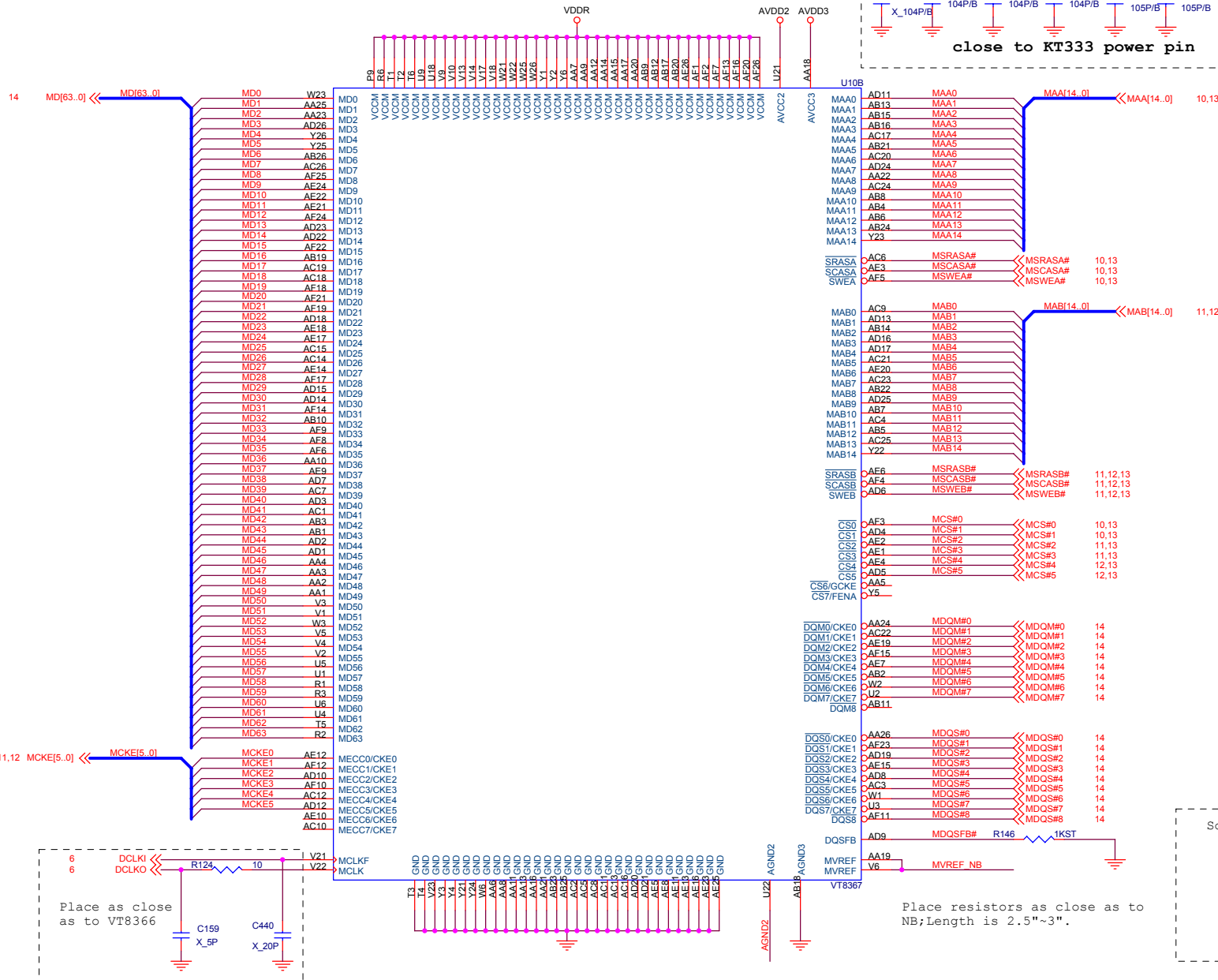
Title	GPIO Spec.	Rev
Document Number	MS-6380E	0B
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****All CPU interface are 2.5V tolerant****



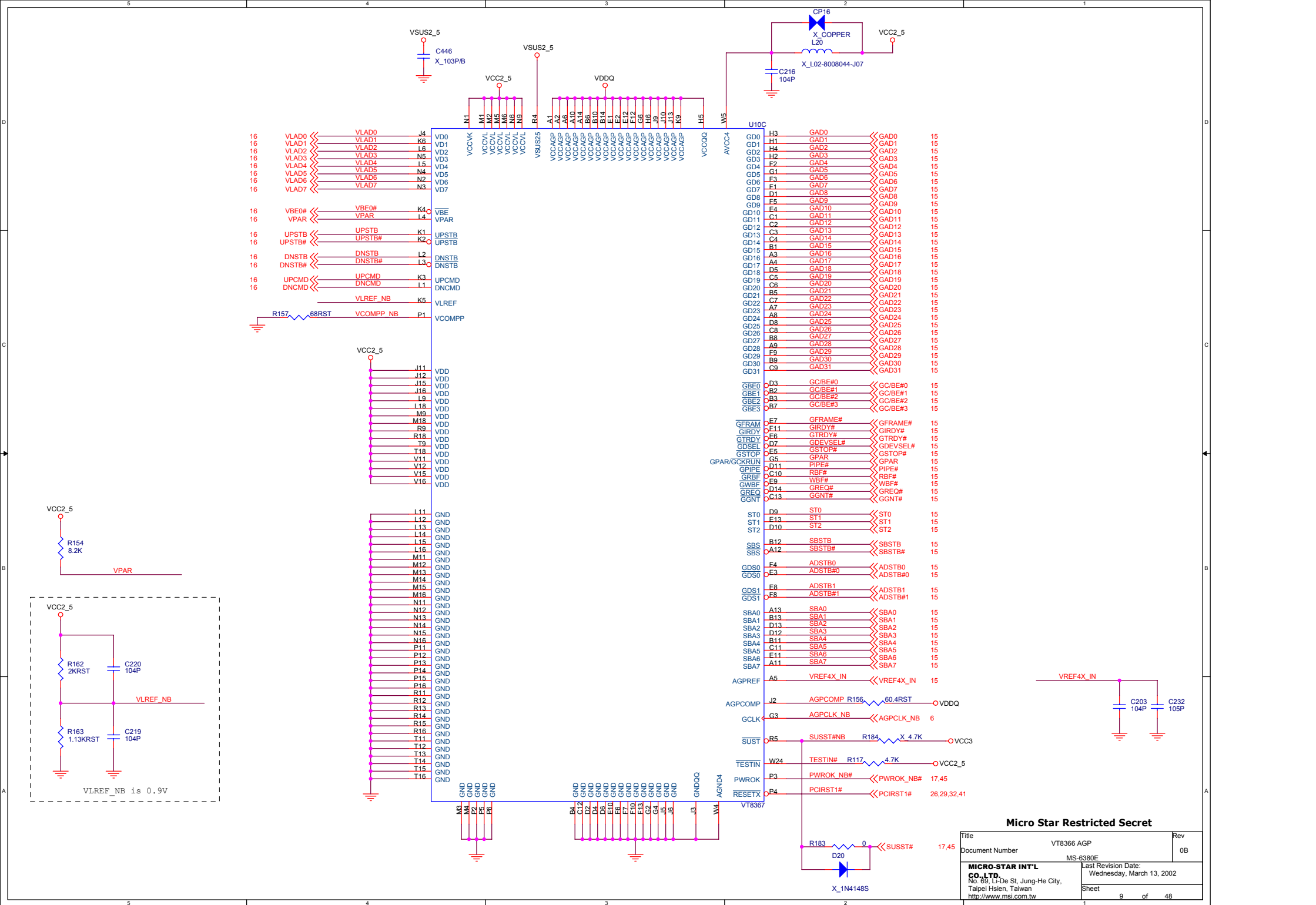
Clock Synthesizer



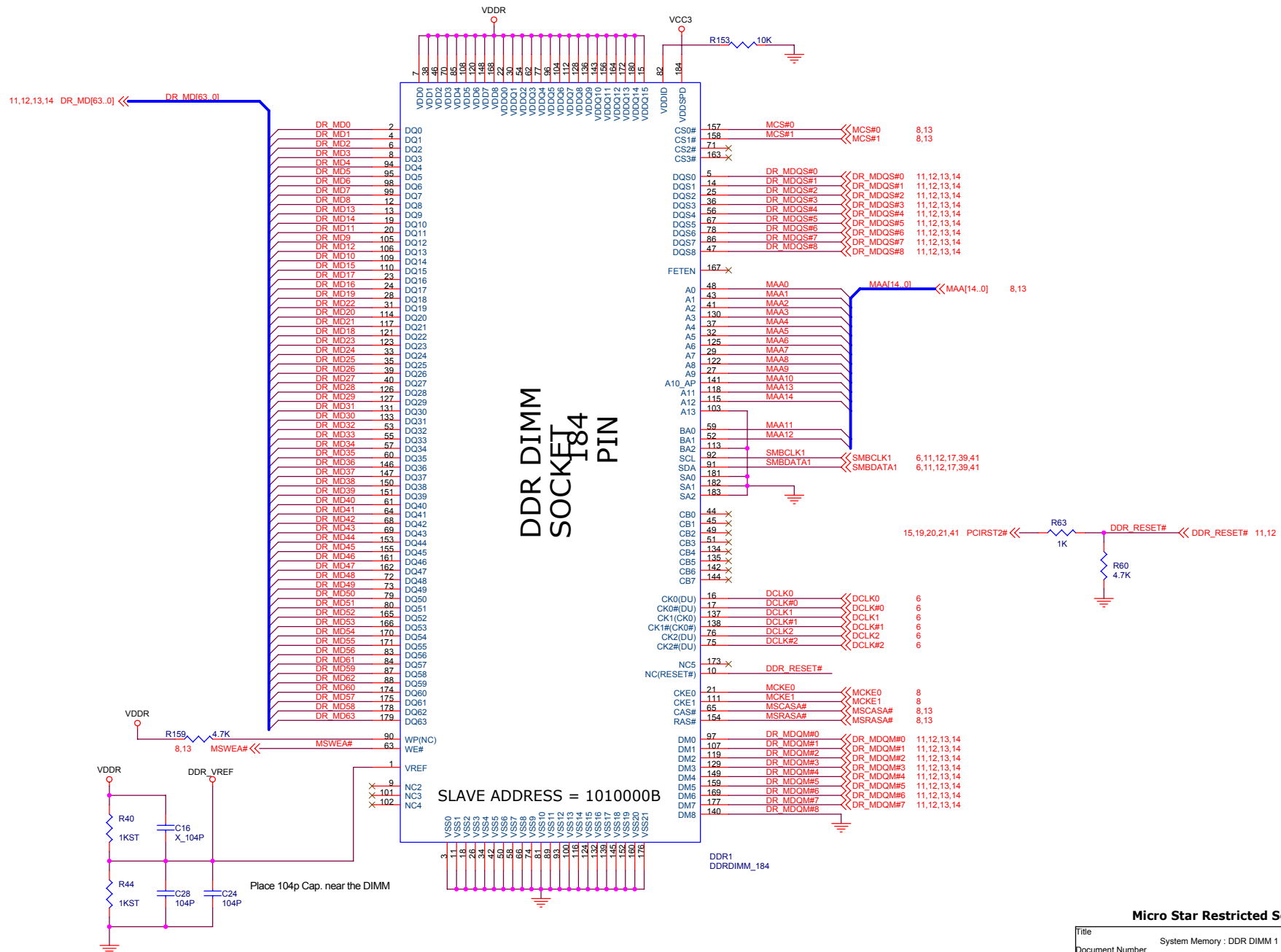


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Document Number	MS-6380E	Last Revision Date:	Wednesday, March 13, 2002
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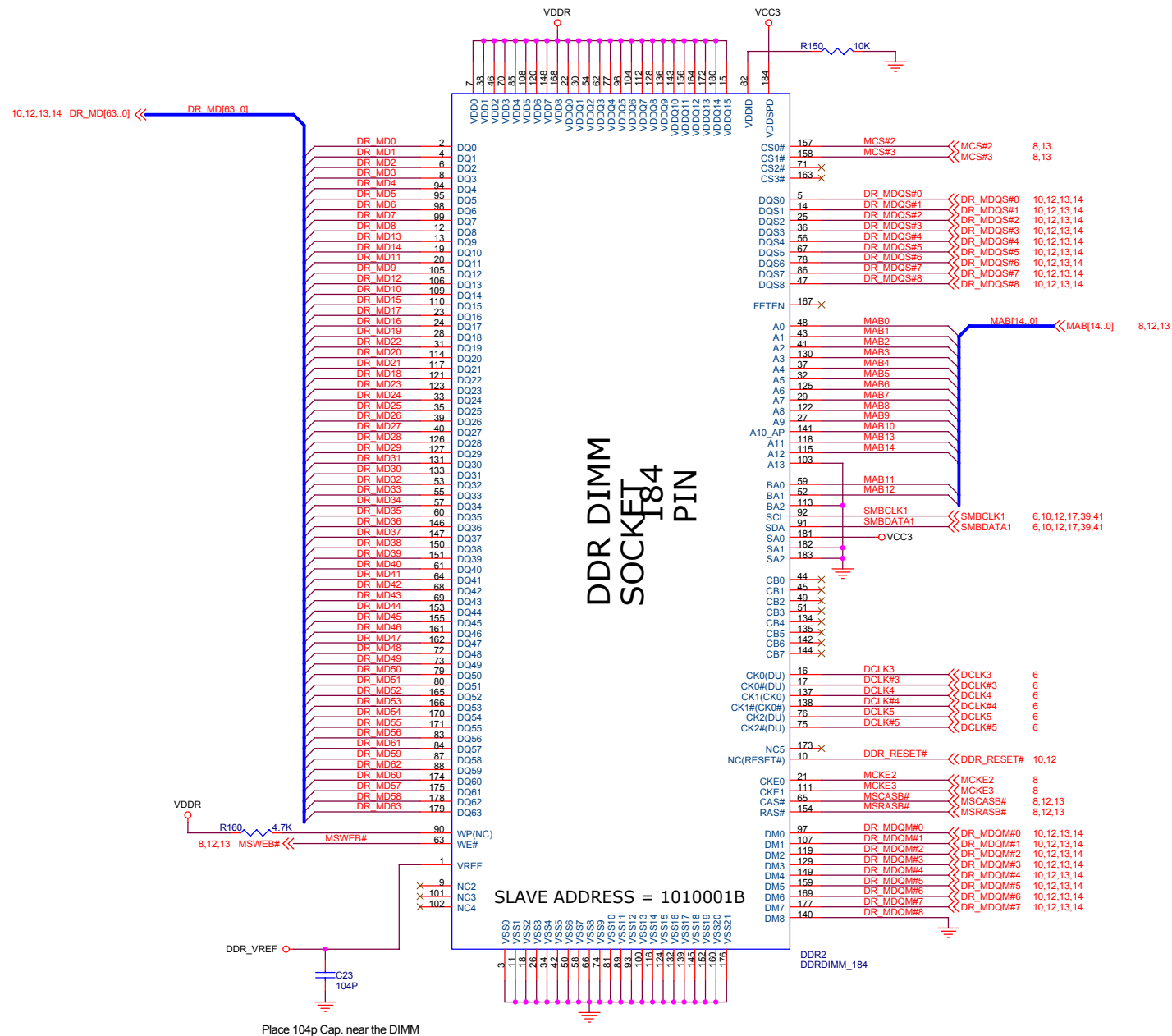
SYSTEM MEMORY



Micro Star Restricted Secret

Title	System Memory : DDR DIMM 1	Rev	
Document Number	MS-6380E	0B	
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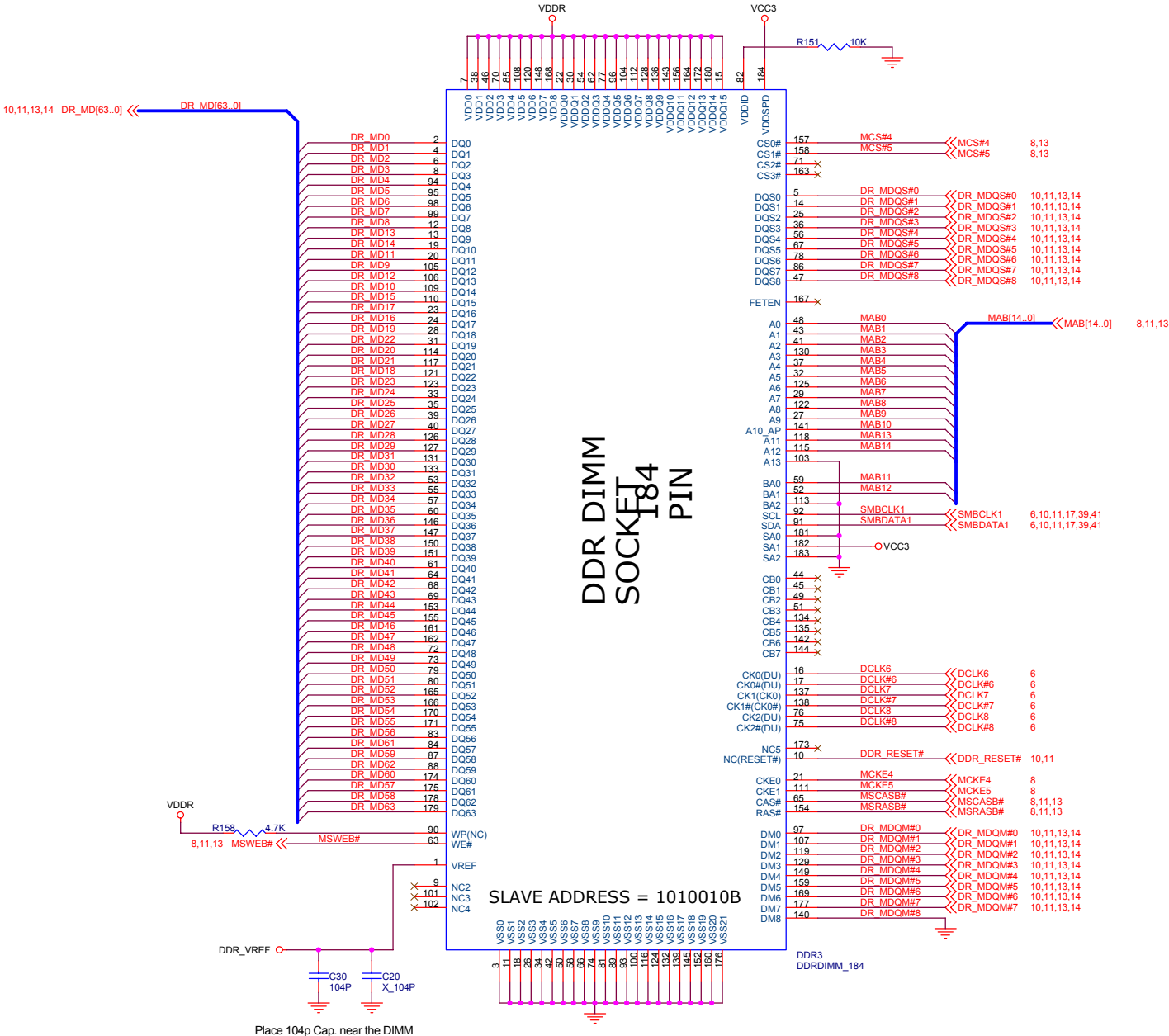
SYSTEM MEMORY



Micro Star Restricted Secret

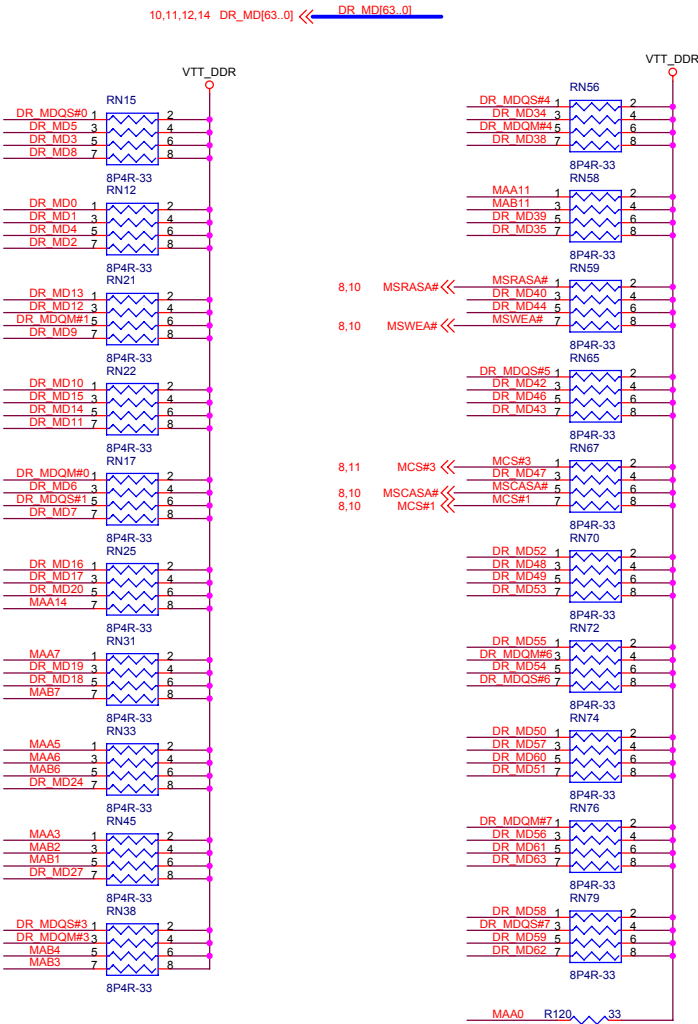
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Document Number	MS-6380E	0B	
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SYSTEM MEMORY



SLAVE ADDRESS = 1010010B

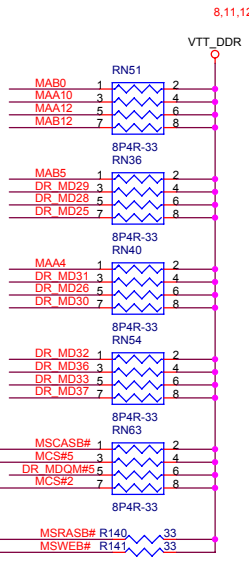
DDR Terminations



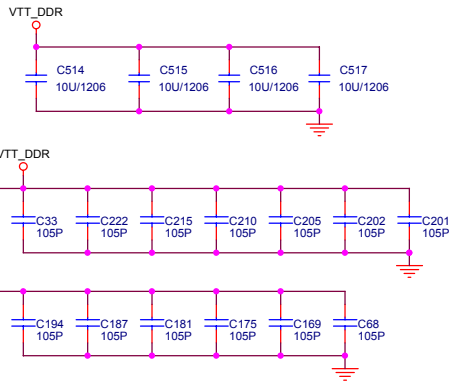
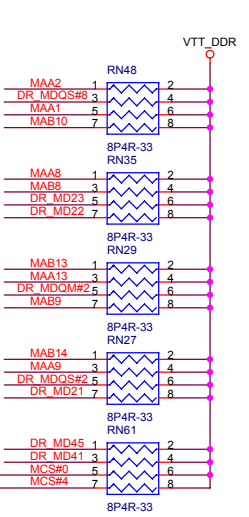
10,11,12,14 DR_MDQ#8..0] << DR_MDQ#8..0]

10,11,12,14 DR_MDQ#7..0] << DR_MDQ#7..0]

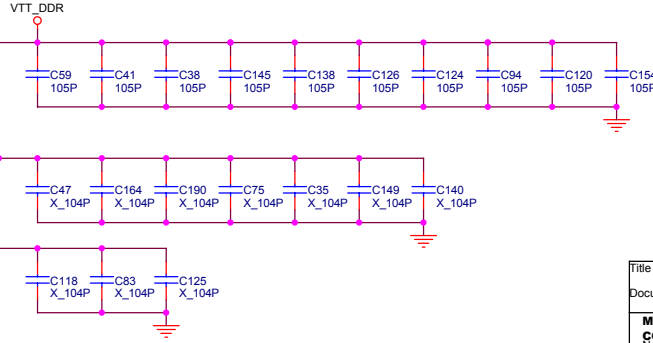
8,10 MAA[14..0] << MAA[14..0]



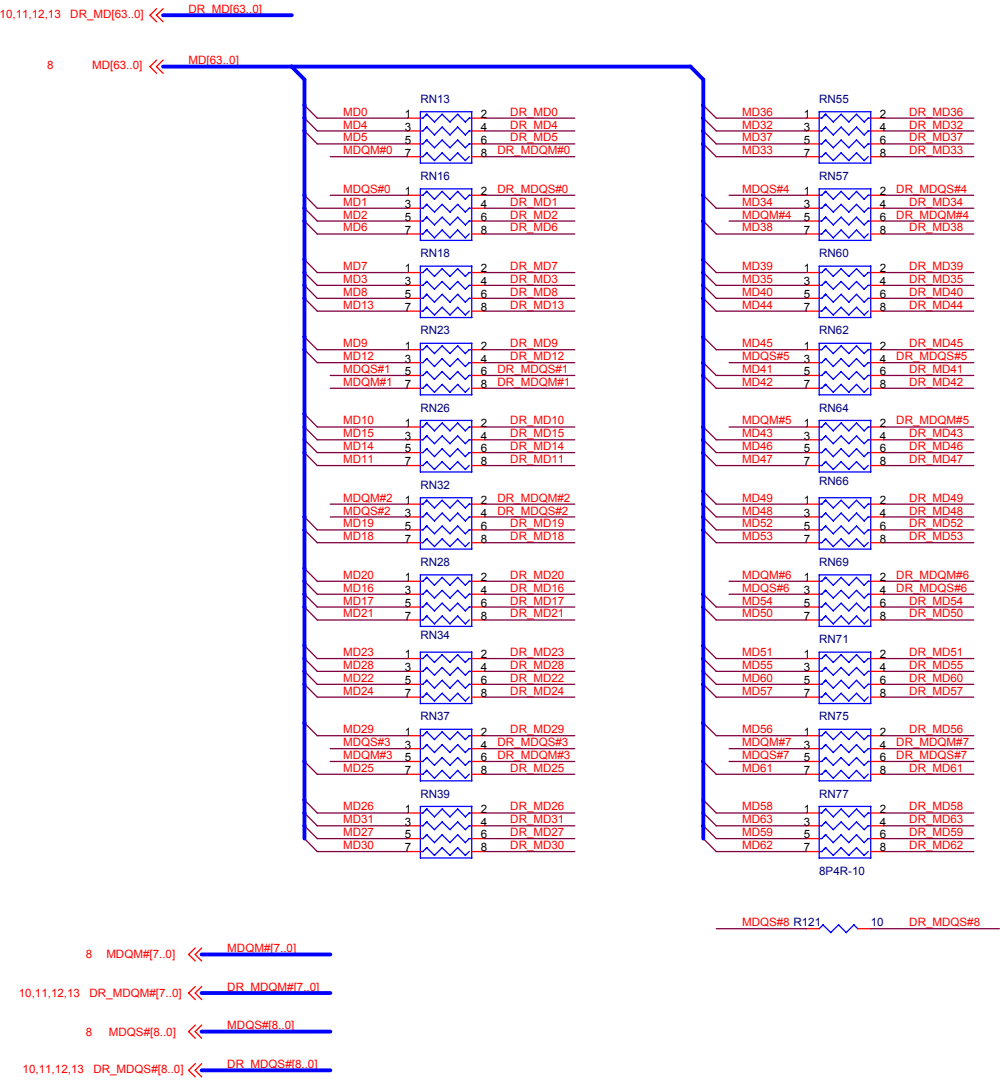
8,11,12 MAB[14..0] << MAB[14..0]



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



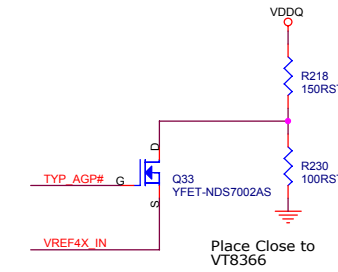
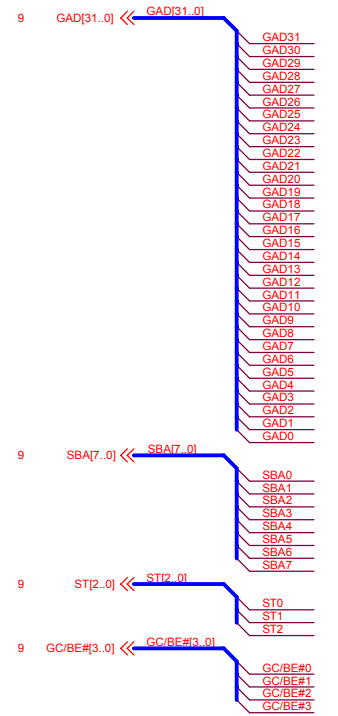
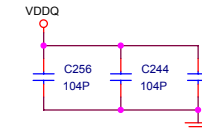
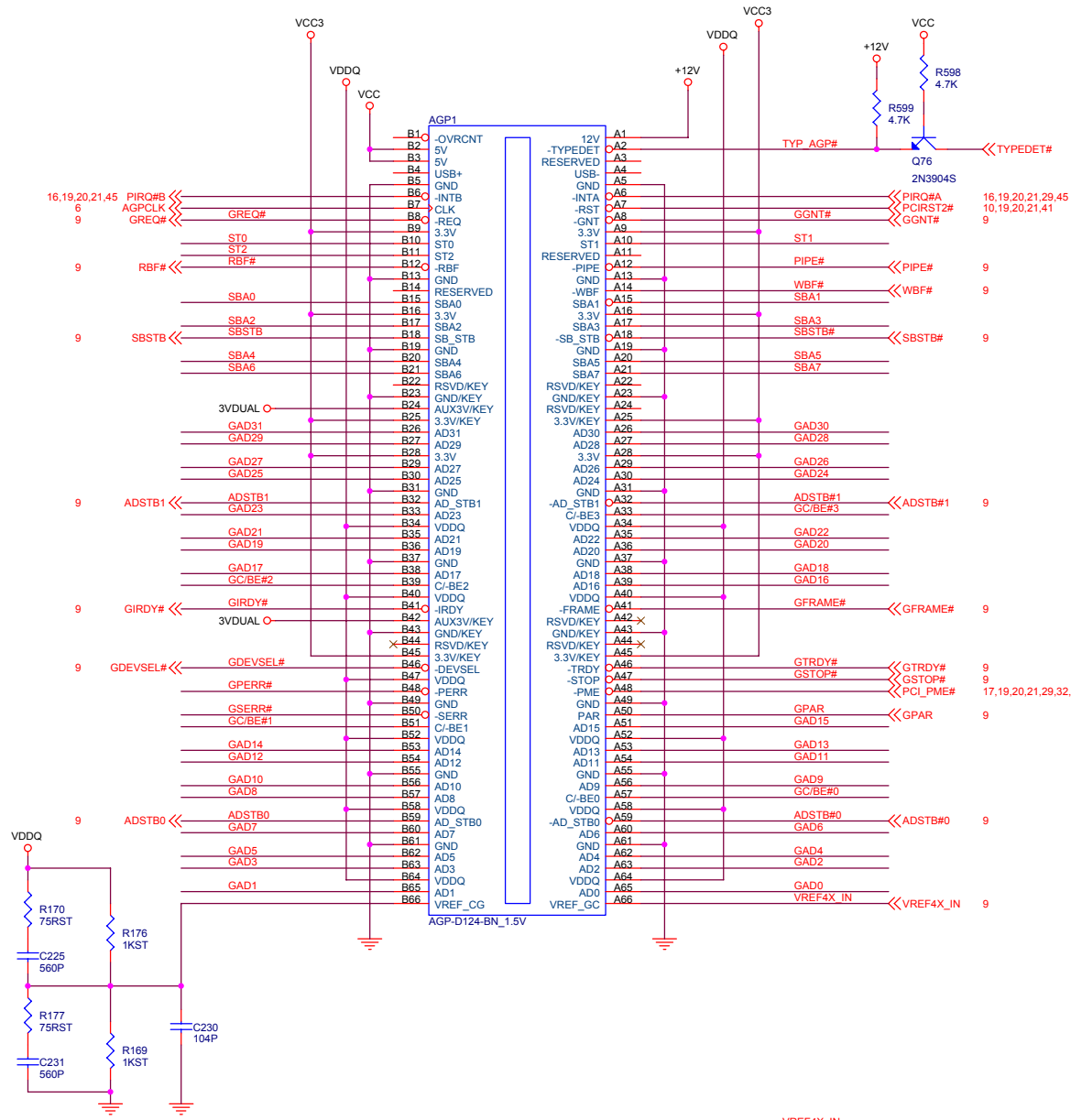
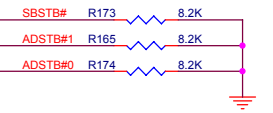
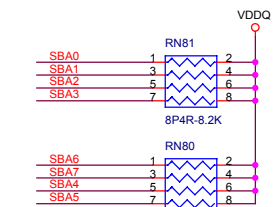
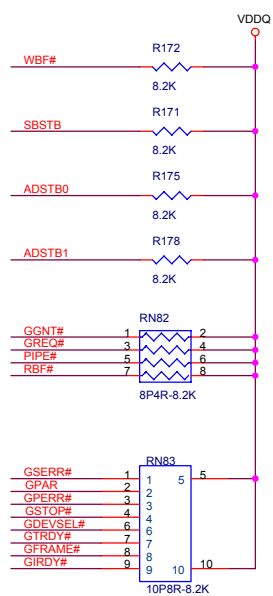
DDR Terminations



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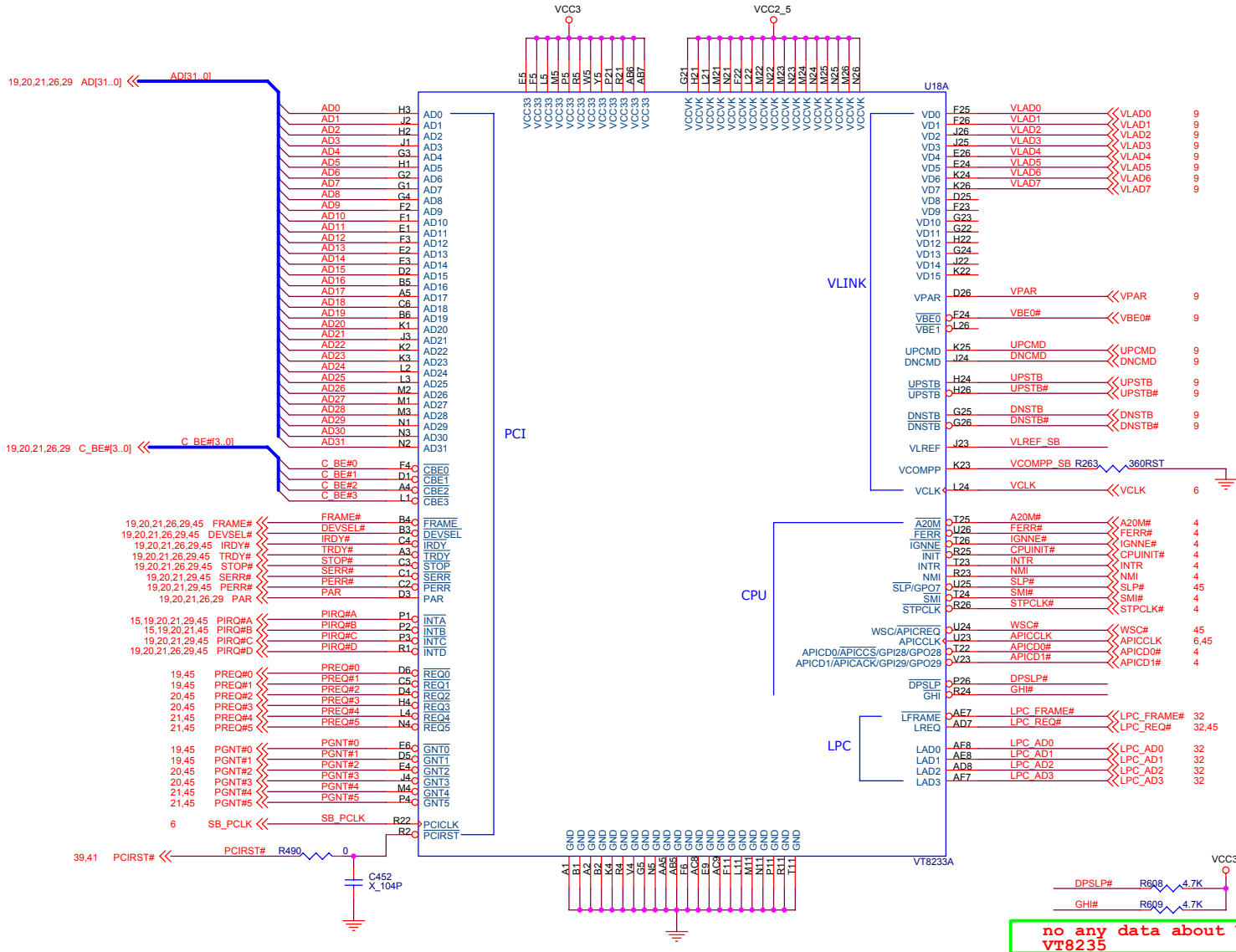
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Document Number	MS-6380E	Last Revision Date:	Monday, March 11, 2002
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AGP PRO Connector



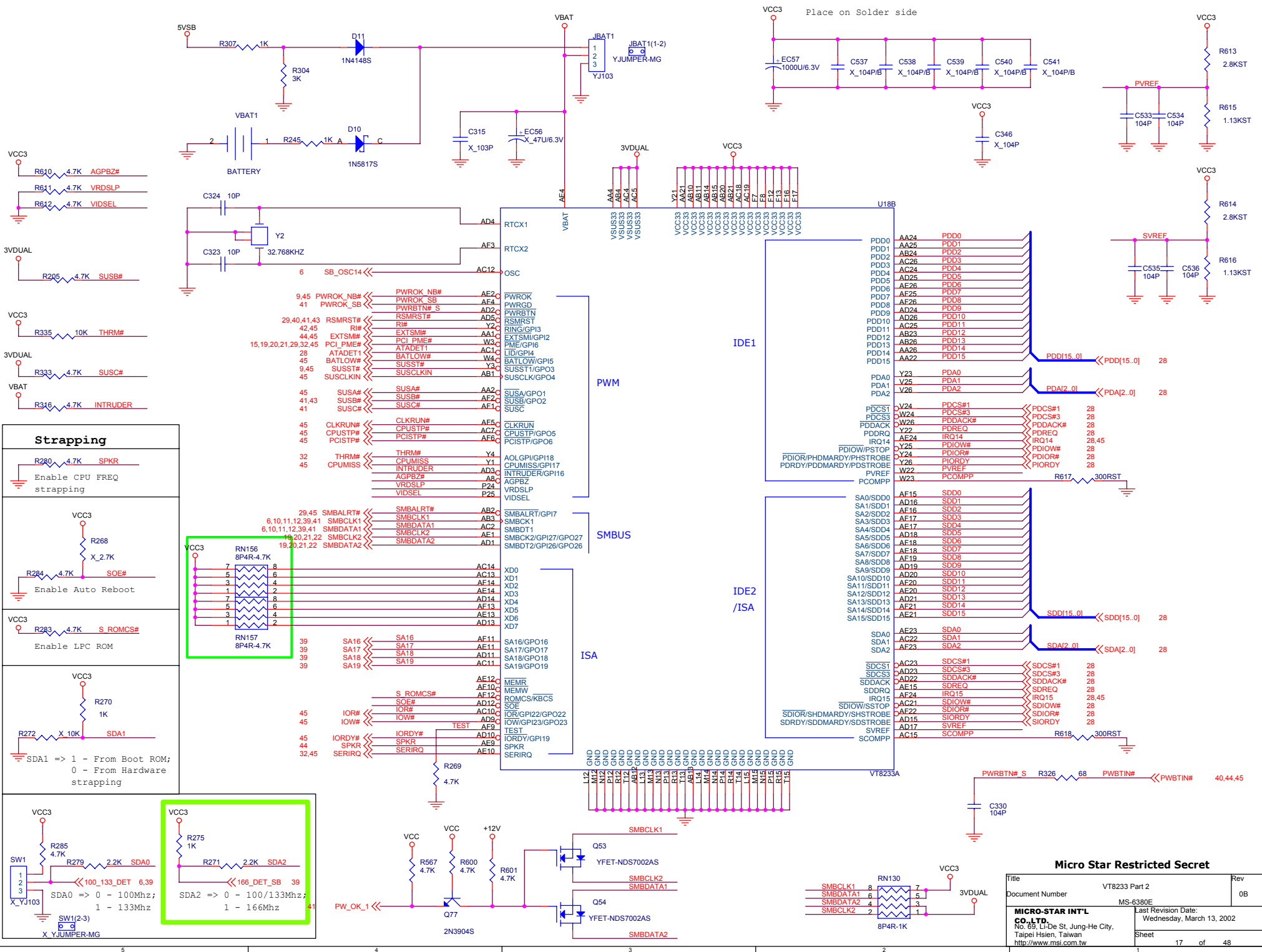
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Document Number	MS-6380E	0B
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Title	VT8233 Part 1	Rev
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Strapping

Enable CPU FREQ strapping

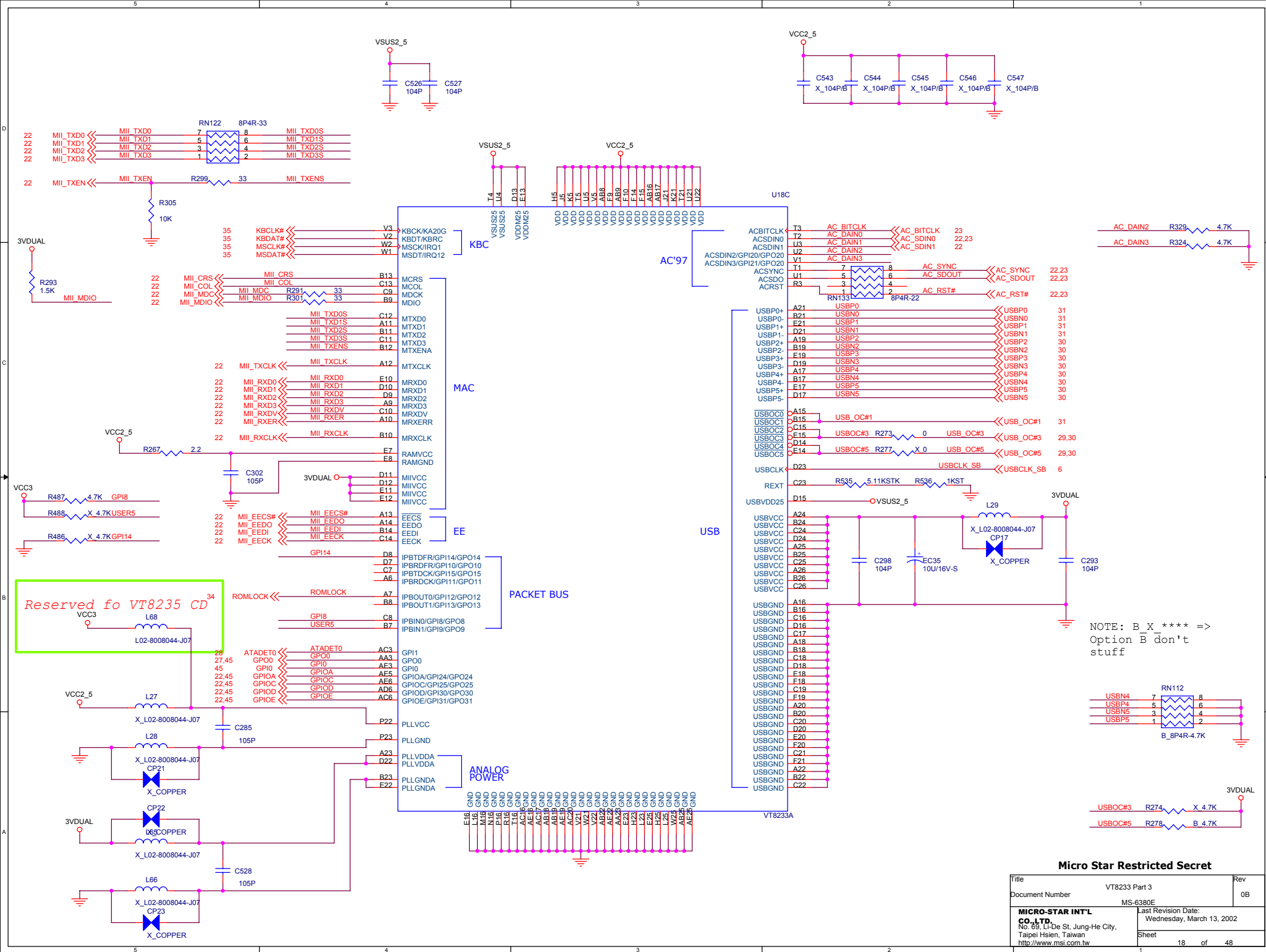
Enable Auto Reboot

Enable LPC ROM

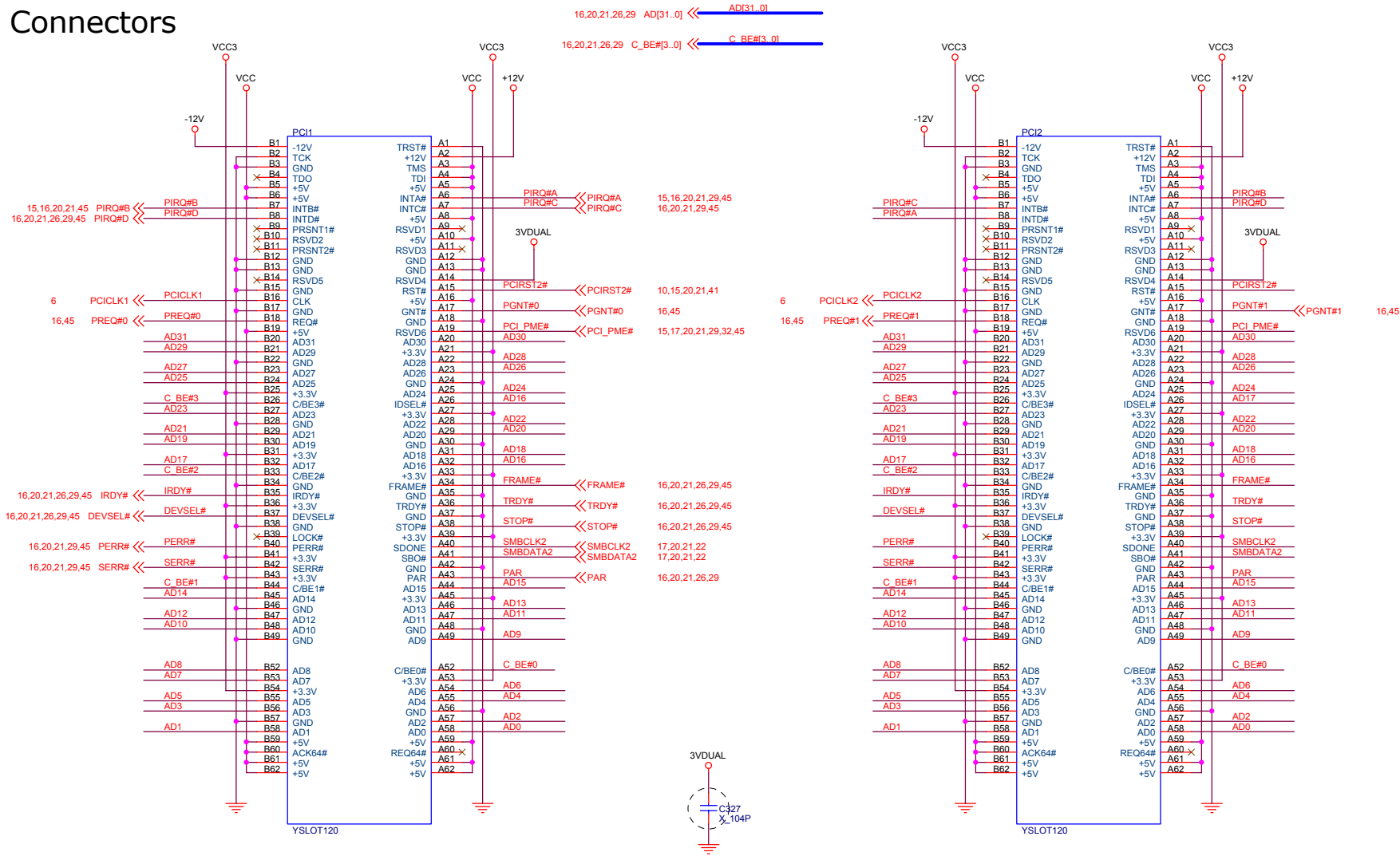
**SDA1 => 1 - From Boot ROM;
0 - From Hardware strapping**

**SDA0 => 0 - 100Mhz;
1 - 133Mhz**

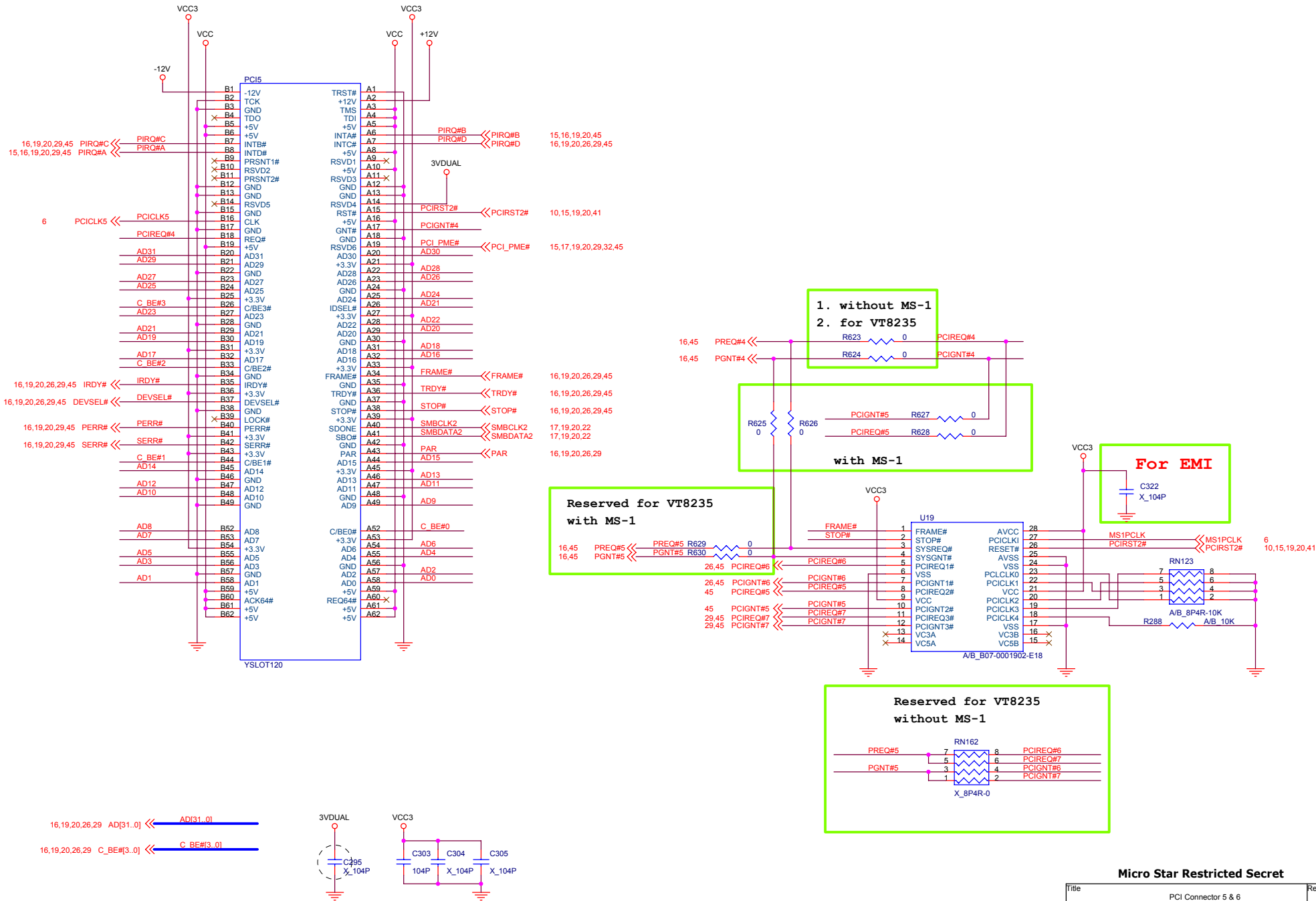
**SDA2 => 0 - 100/133Mhz;
1 - 166Mhz**



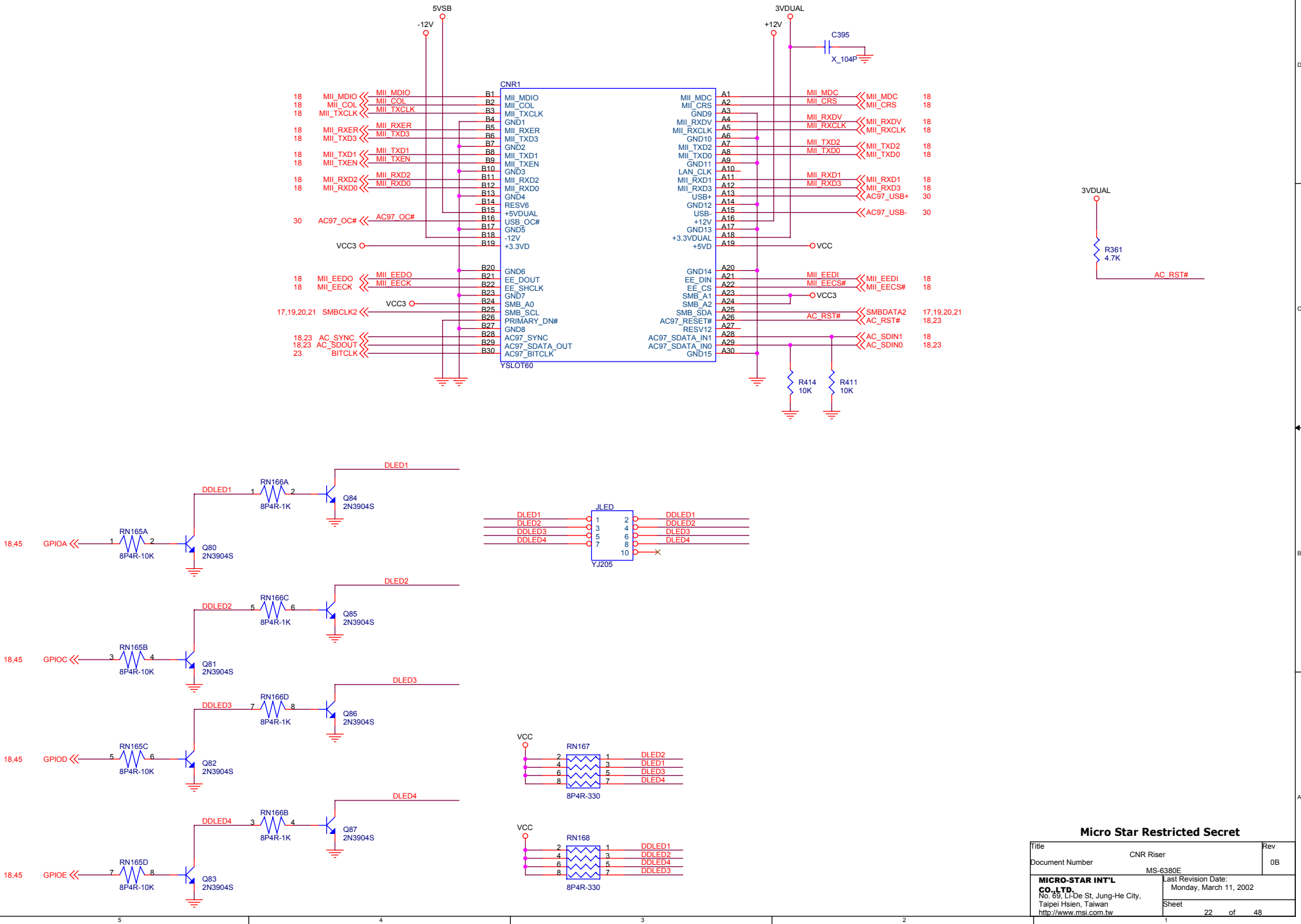
PCI Connectors



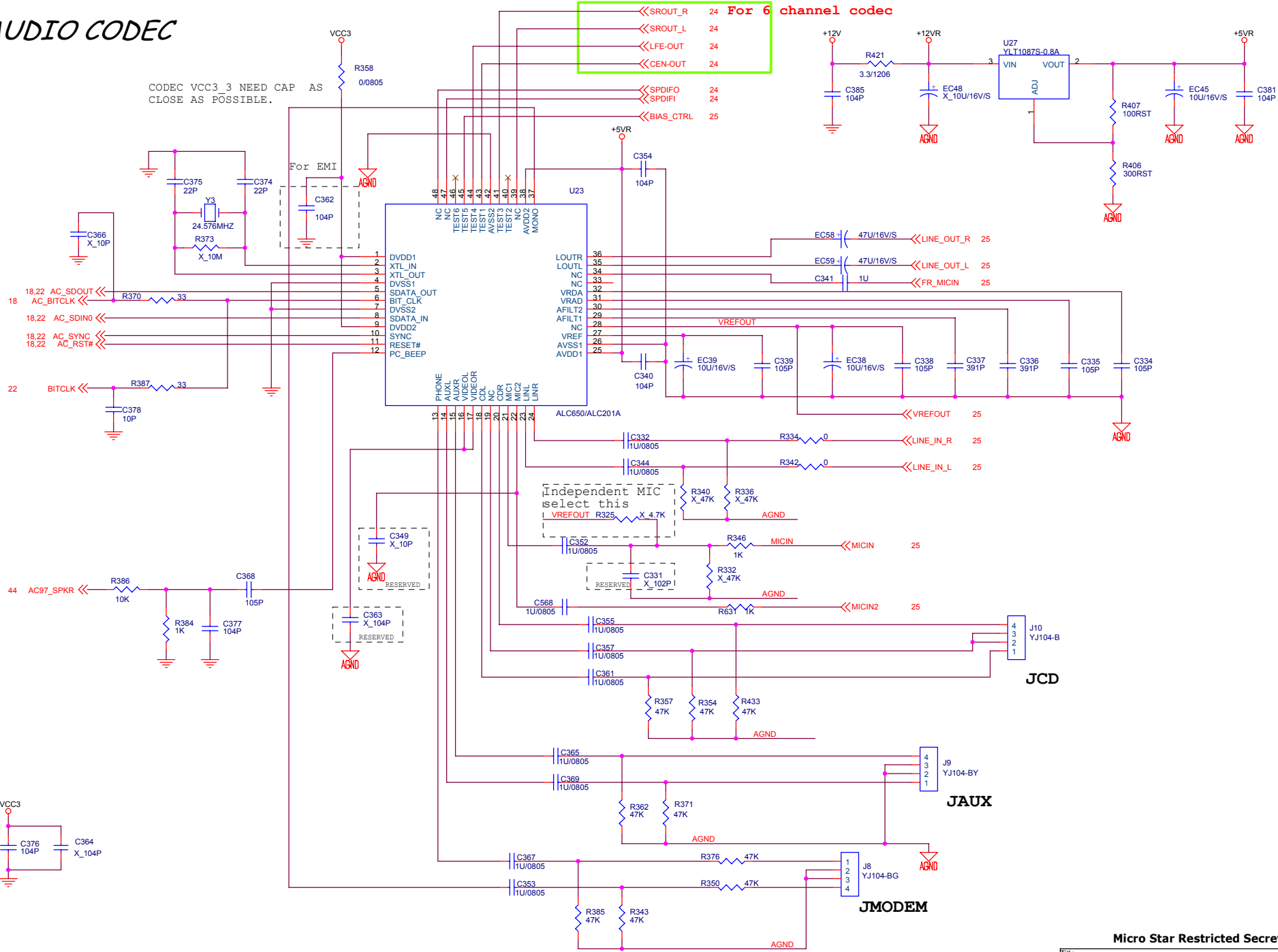
PCI Connectors



CNR Riser / DELD

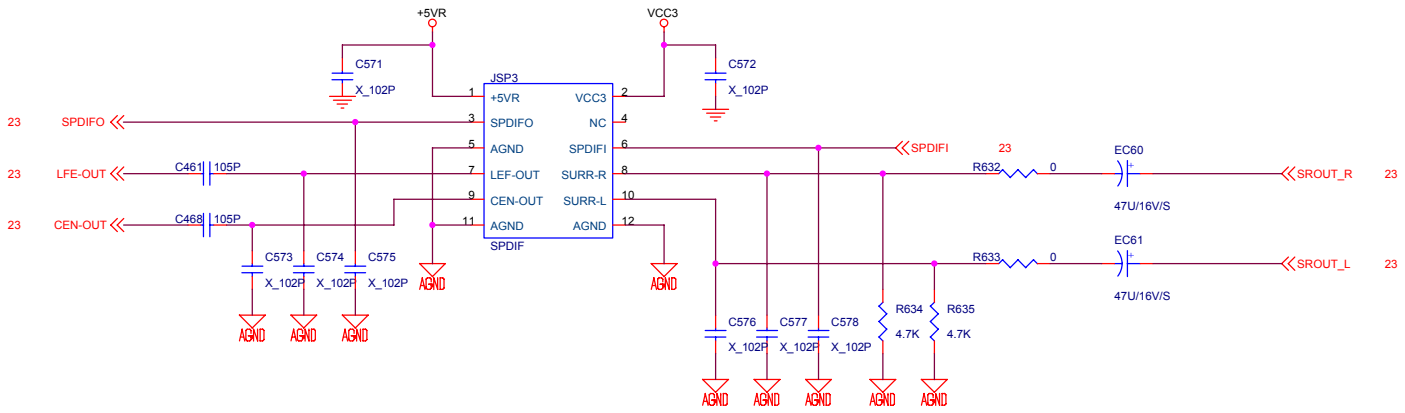


AUDIO CODEC

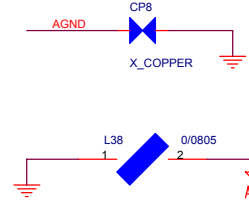
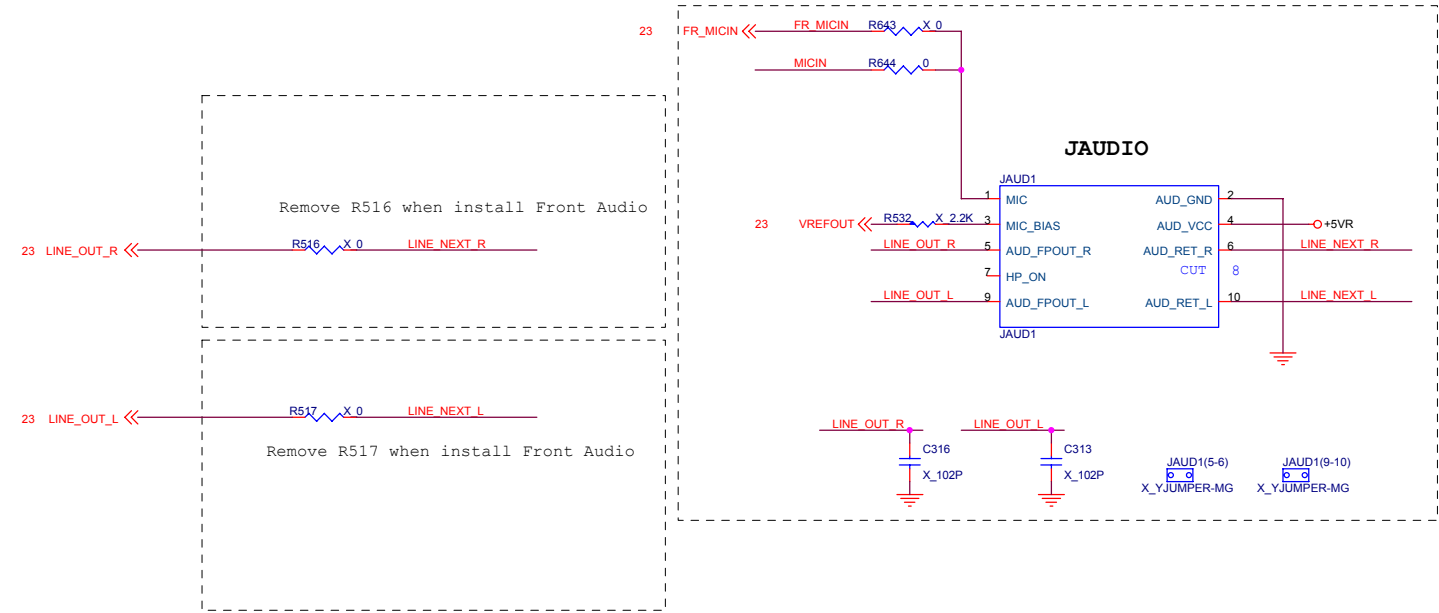
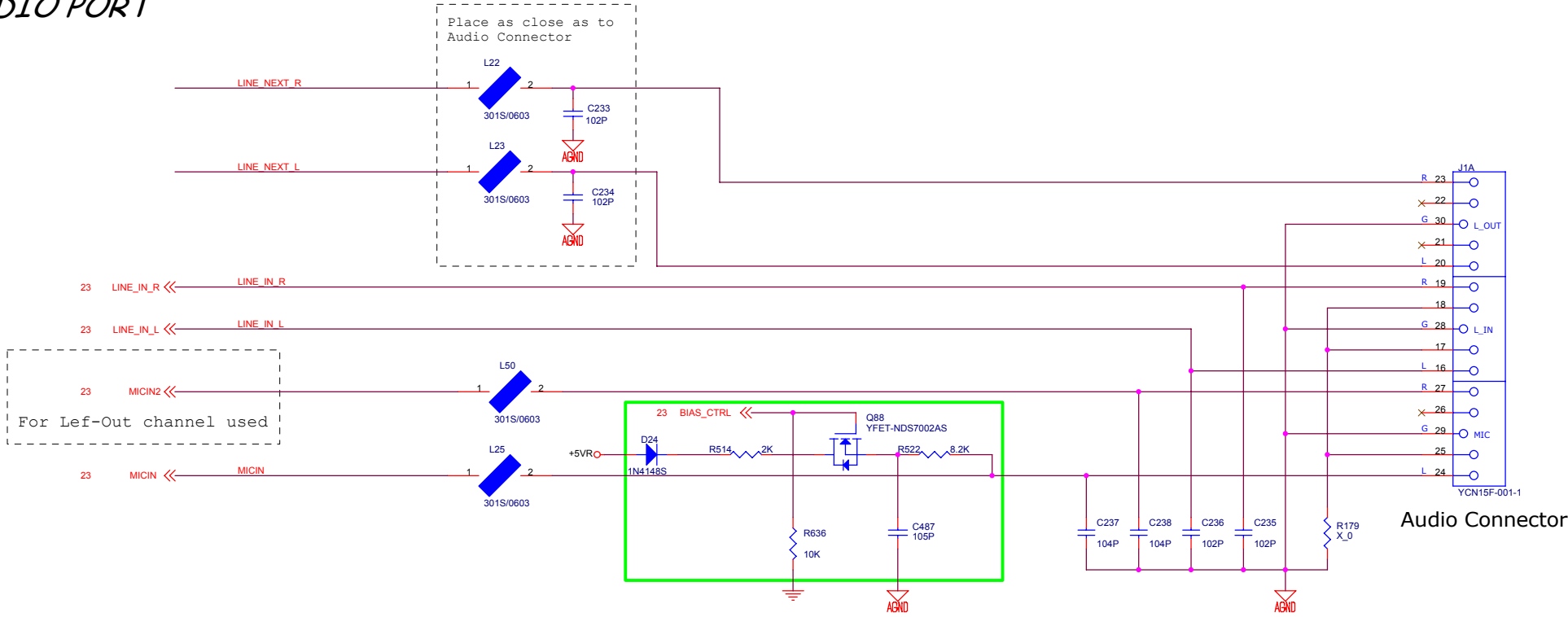


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Title	Audio Codec	Rev
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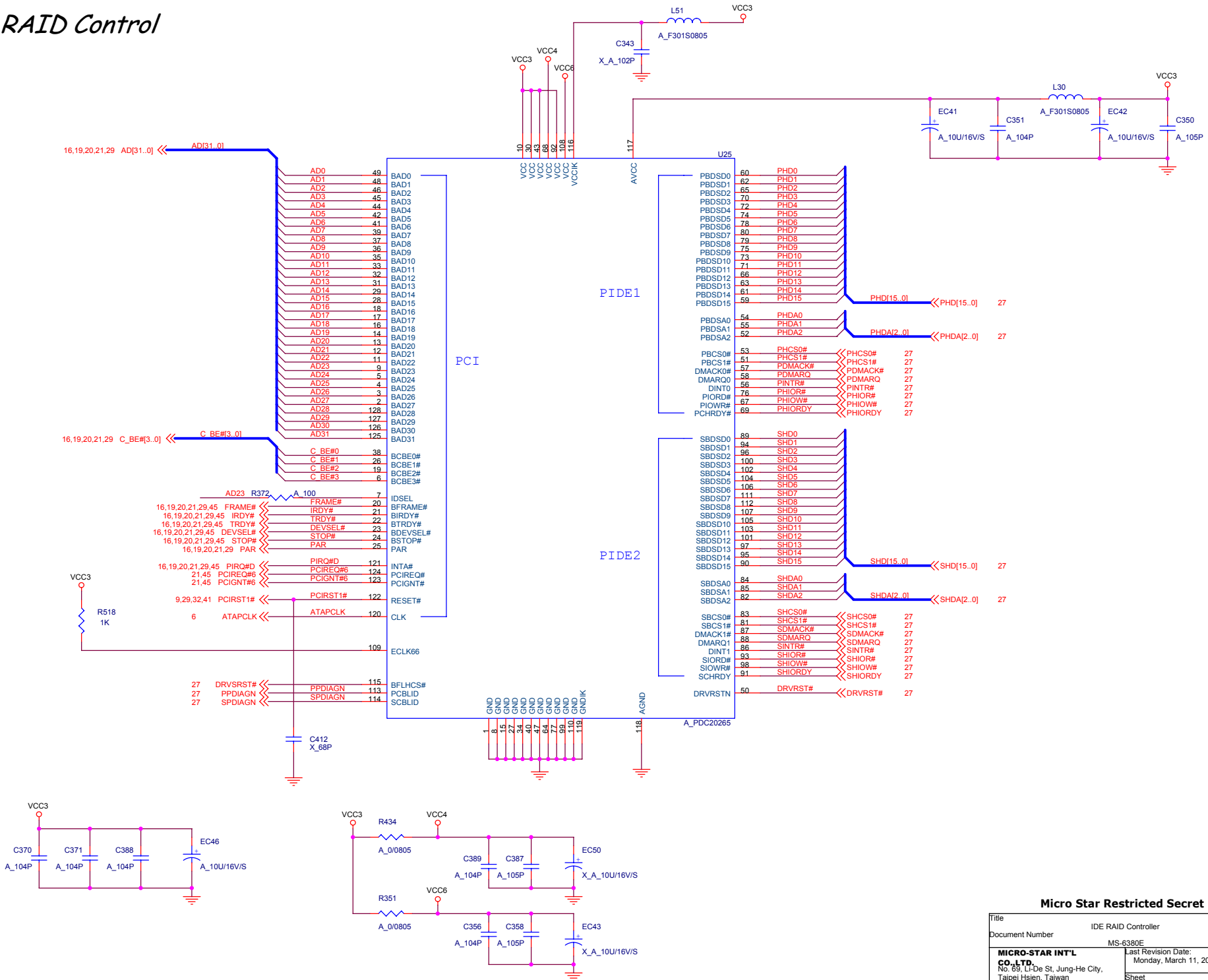
Audio SPDIF / 6 channel connector



AUDIO PORT

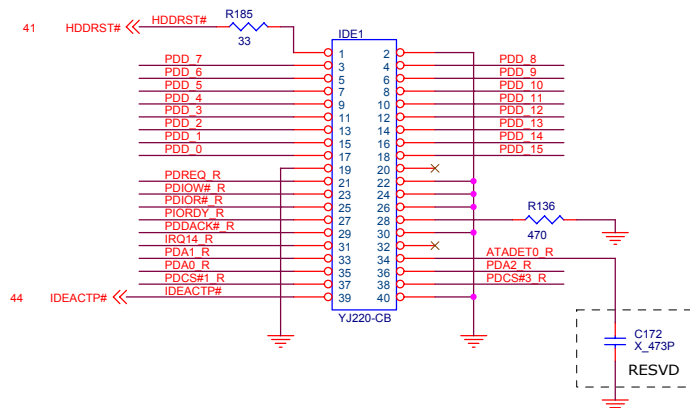


IDE RAID Control

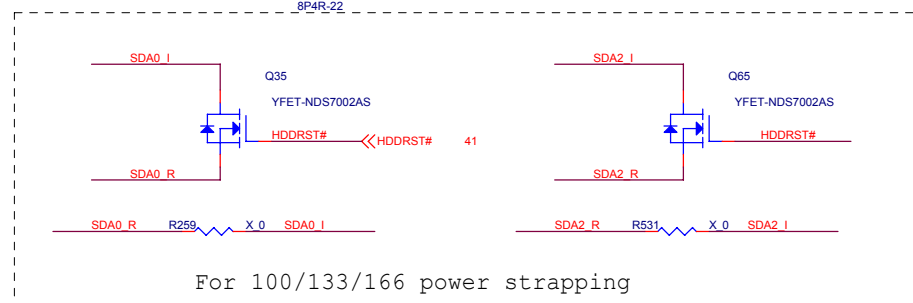
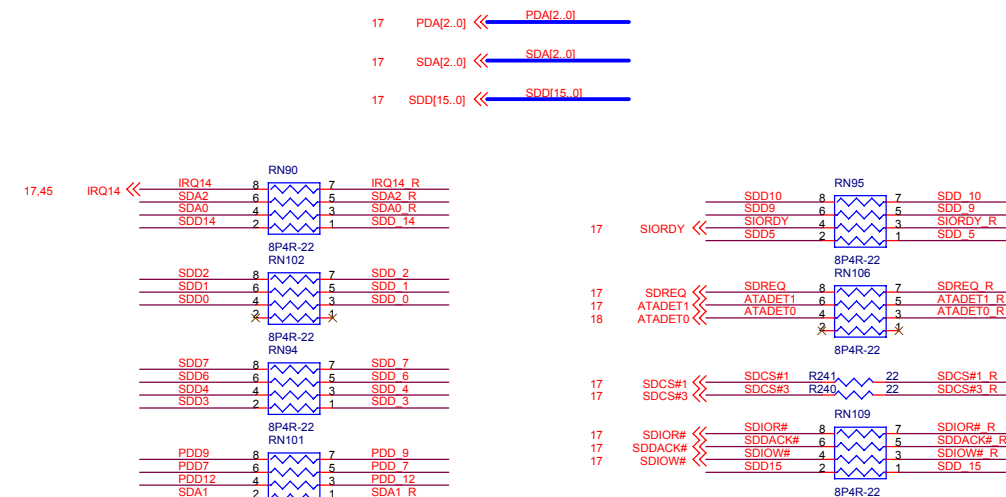
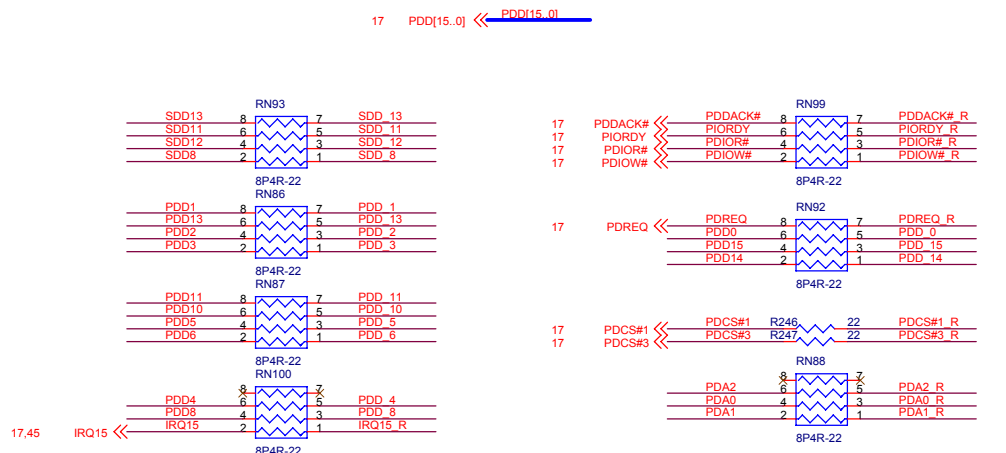
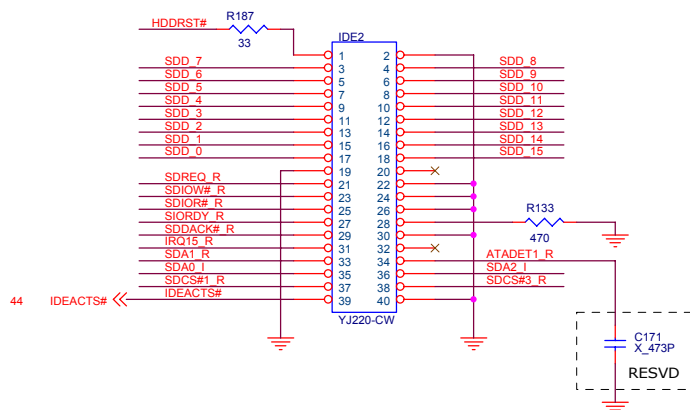


ATA 33/66/100 Connector

PRIMARY IDE CONN.



SECONDARY IDE CONN.

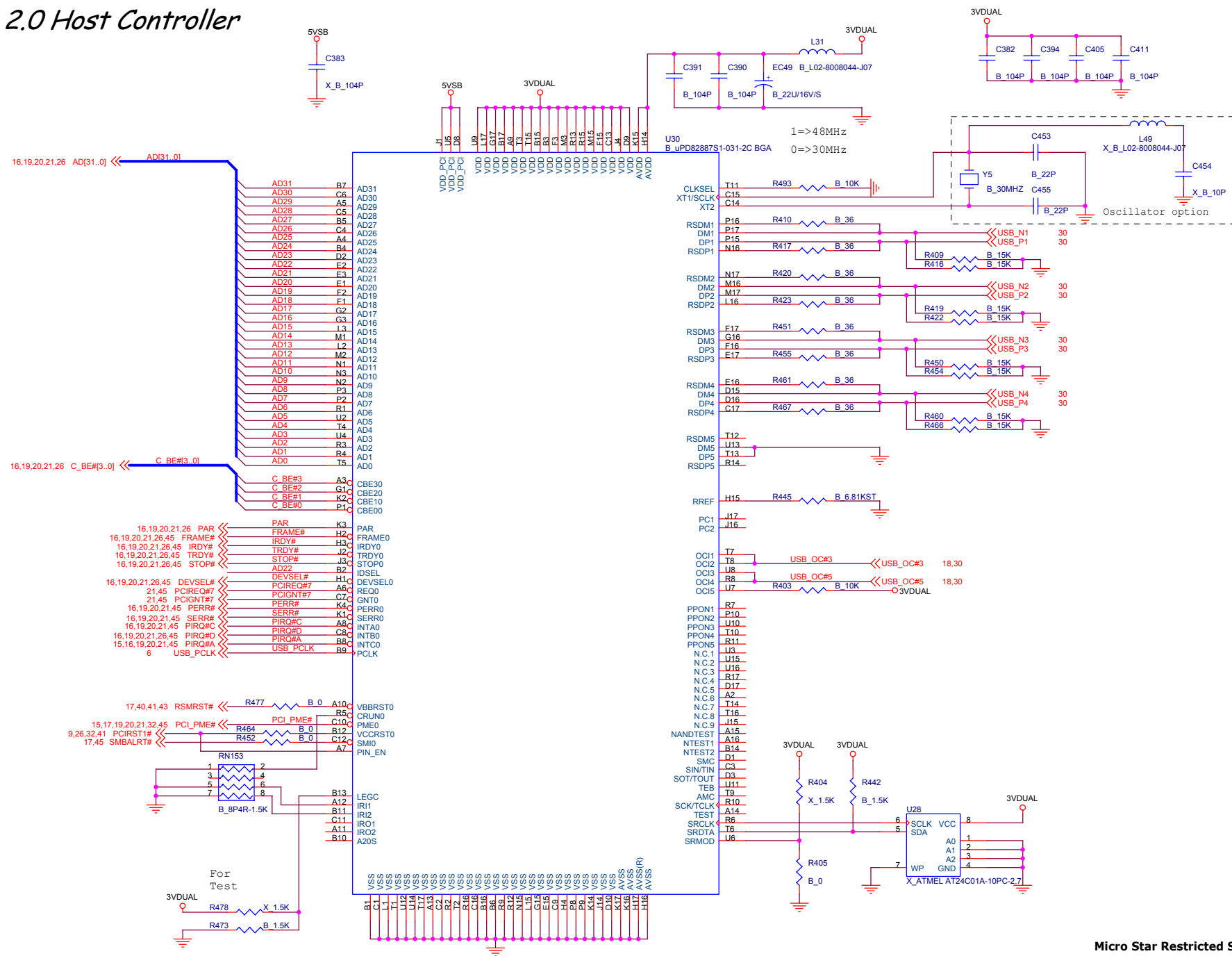


For 100/133/166 power strapping

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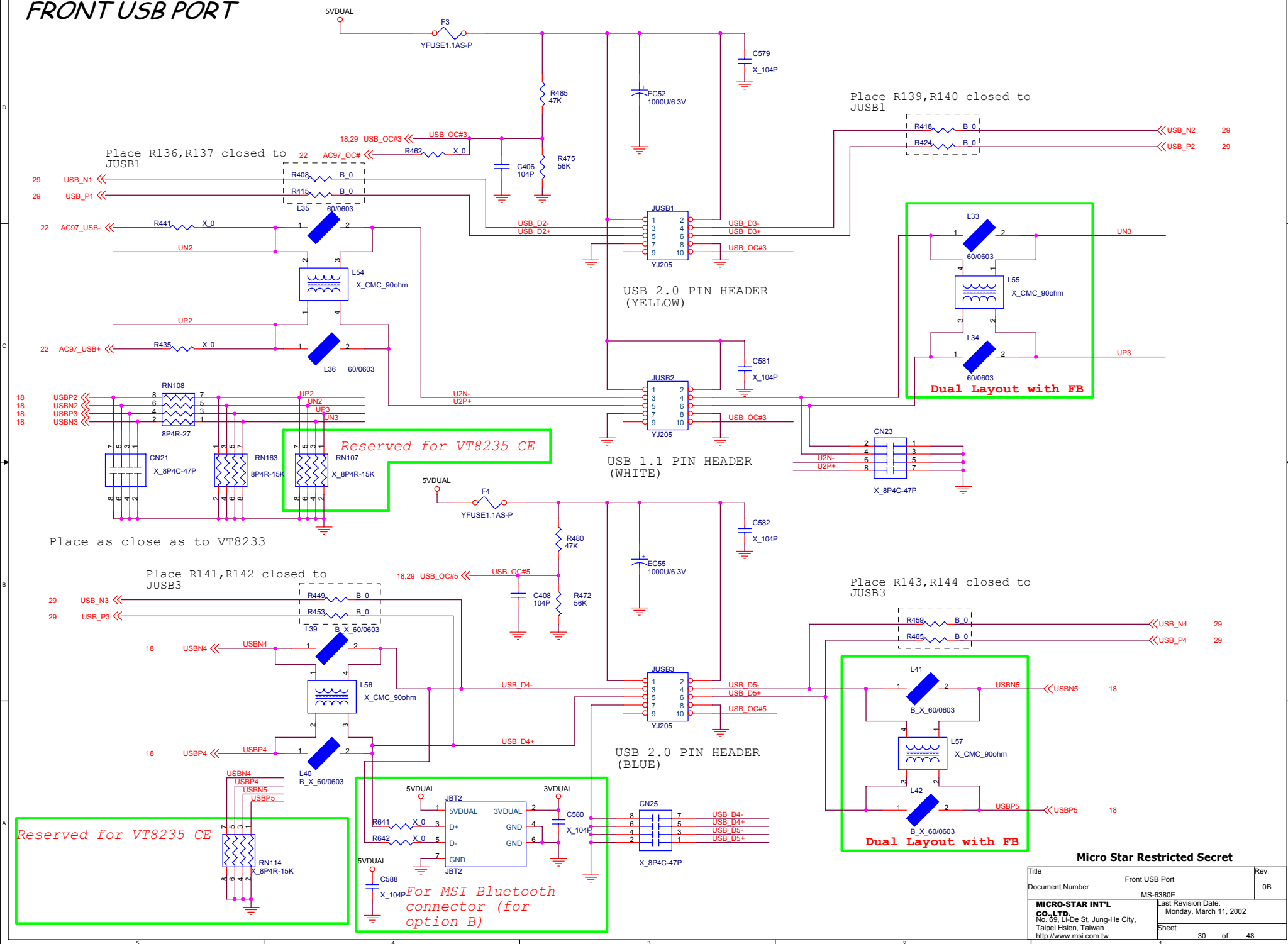
USB 2.0 Host Controller



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FRONT USB PORT



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REAR USB PORT

5VDUAL

F2

YFUSE1.1AS-P

KBVCC

R55 47K

EC7 1000U/6.3V

C36 104P

R59 47K

KBGND

KBGND

18 USB_OC#1

USB_OC#1

C27 104P

R54 56K

STACKED USB CONNECTOR

UN0

UP0

UN1

UP1

KBGND

KBGND

KBGND

USB1

YUSB-D1

L8 60S/0603

L58 X_CMC_90ohm

L9 60S/0603

Dual Layout with FB

UN0

UP0

UN1

UP1

Reserved for VT8235 CE

USBN0

USBP0

USBP1

USBN1

RN104 8P4R-27

CN20 X_8P4C-47P

RN164 8P4R-15K

RN103 X_8P4R-15K

CN2 8P4C-47P

KBGND

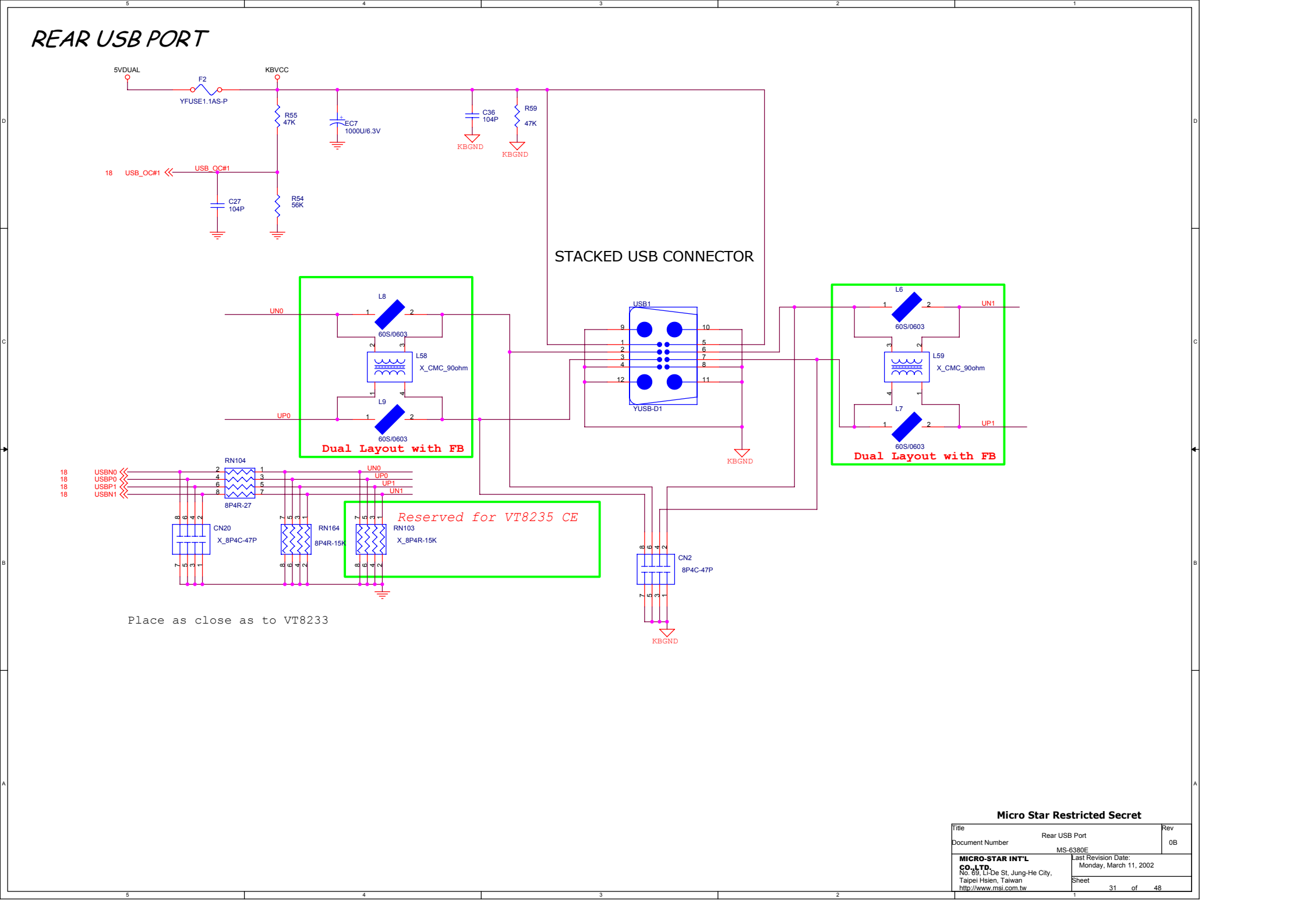
KBGND

KBGND

Place as close as to VT8233

Micro Star Restricted Secret

Title	Rear USB Port	Rev
Document Number	MS-6380E	0B
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REAR USB PORT

5VDUAL

F2

YFUSE1.1AS-P

KBVCC

R55 47K

EC7 1000U/6.3V

C36 104P

R59 47K

KBGND

KBGND

18 USB_OC#1

USB_OC#1

C27 104P

R54 56K

STACKED USB CONNECTOR

UN0

UP0

L8 60S/0603

L58 X_CMC_90ohm

L9 60S/0603

Dual Layout with FB

UN1

UP1

L6 60S/0603

L59 X_CMC_90ohm

L7 60S/0603

Dual Layout with FB

USB1

YUSB-D1

KBGND

KBGND

USB0

USBP0

USBP1

USBN1

RN104 8P4R-27

CN20 X_8P4C-47P

RN164 8P4R-15K

RN103 X_8P4R-15K

Reserved for VT8235 CE

CN2 8P4C-47P

KBGND

Place as close as to VT8233

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Title	Rear USB Port	Rev
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REAR USB PORT

5VDUAL

F2

YFUSE1.1AS-P

KBVCC

R55 47K

EC7 1000U/6.3V

C36 104P

R59 47K

KBGND

KBGND

18 USB_OC#1

USB_OC#1

C27 104P

R54 56K

STACKED USB CONNECTOR

UN0

UP0

L8 60S/0603

L58 X_CMC_90ohm

L9 60S/0603

Dual Layout with FB

UN1

UP1

L6 60S/0603

L59 X_CMC_90ohm

L7 60S/0603

Dual Layout with FB

USB1

YUSB-D1

KBGND

KBGND

USB0

USBP0

USBP1

USBN1

RN104 8P4R-27

CN20 X_8P4C-47P

RN164 8P4R-15K

RN103 X_8P4R-15K

Reserved for VT8235 CE

CN2 8P4C-47P

KBGND

Place as close as to VT8233

Micro Star Restricted Secret

Title	Rear USB Port	Rev
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REAR USB PORT

5VDUAL

F2

YFUSE1.1AS-P

KBVCC

R55 47K

EC7 1000U/6.3V

C36 104P

R59 47K

KBGND

KBGND

18 USB_OC#1

USB_OC#1

C27 104P

R54 56K

STACKED USB CONNECTOR

UN0

UP0

L8 60S/0603

L58 X_CMC_90ohm

L9 60S/0603

Dual Layout with FB

UN1

UP1

L6 60S/0603

L59 X_CMC_90ohm

L7 60S/0603

Dual Layout with FB

USB1

YUSB-D1

KBGND

KBGND

USB0

USBP0

USBP1

USBN1

RN104 8P4R-27

CN20 X_8P4C-47P

RN164 8P4R-15K

RN103 X_8P4R-15K

Reserved for VT8235 CE

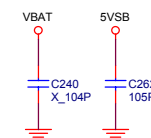
CN2 8P4C-47P

KBGND

Place as close as to VT8233

Micro Star Restricted Secret

Title	Rear USB Port	Rev
Document Number	MS-6380E	0B
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, March 11, 2002	
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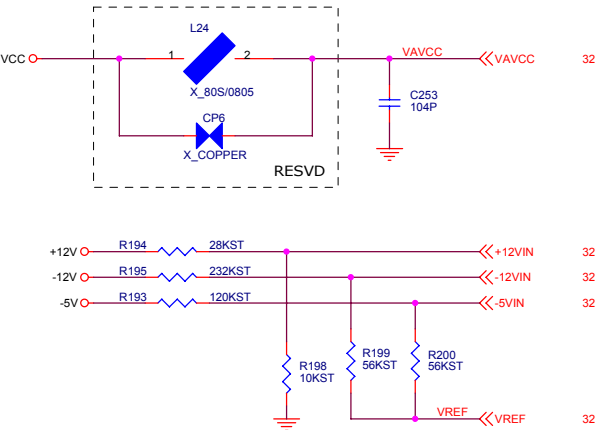
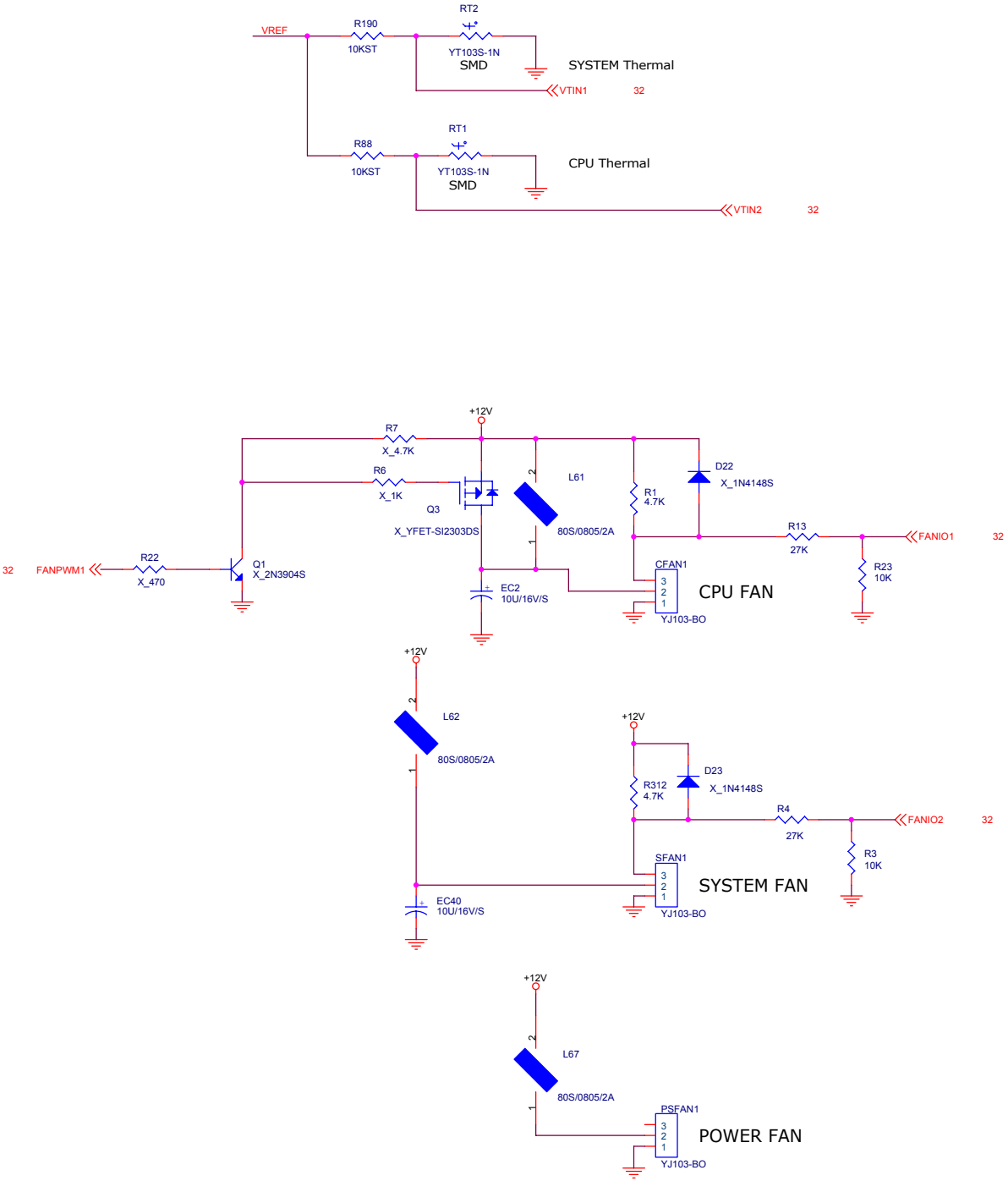


VCC3

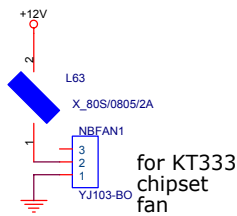
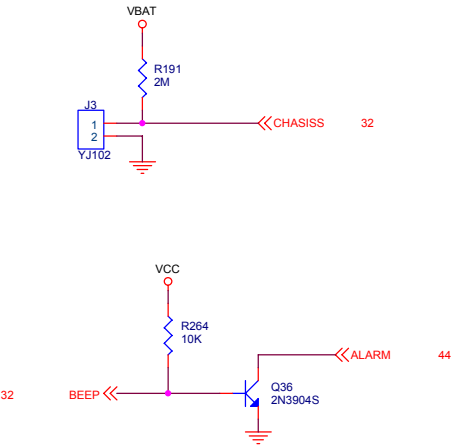
C292

104P

Hardware Monitor

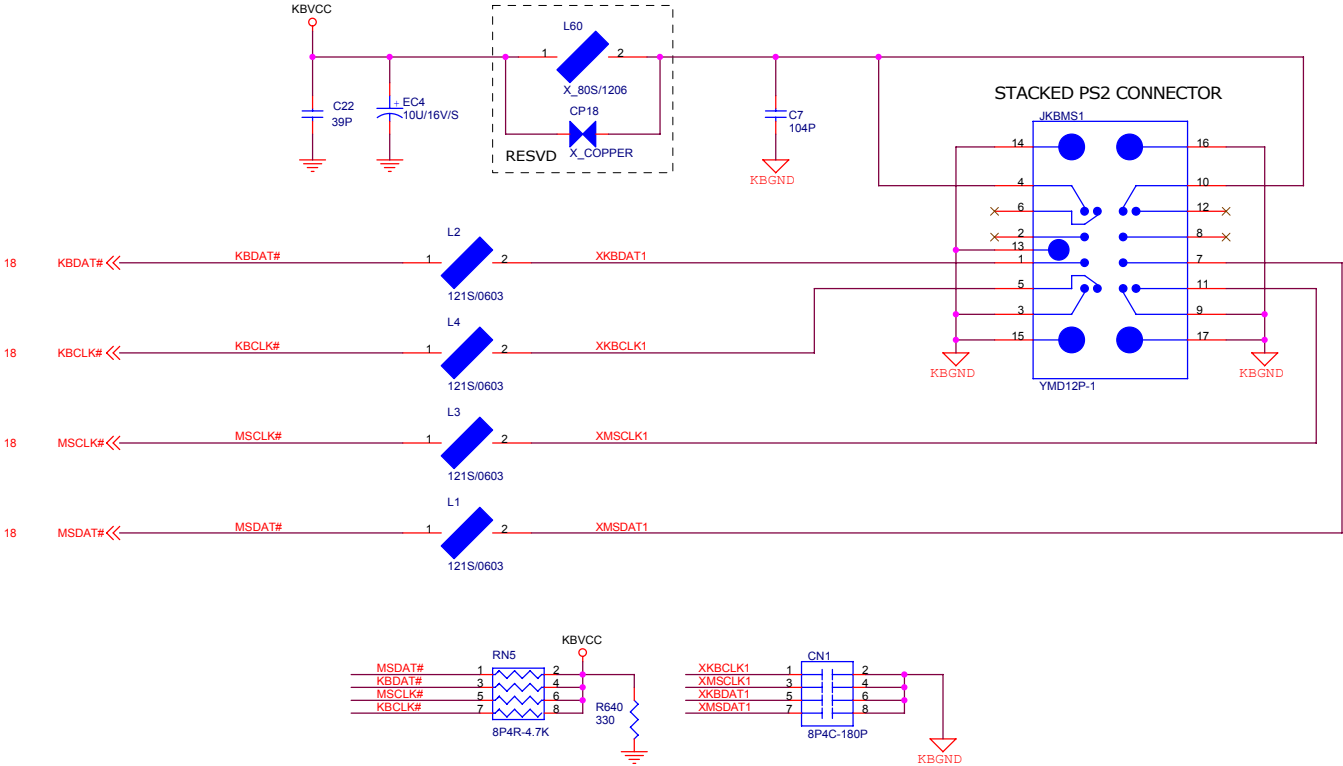


Chassis Intrusion Header

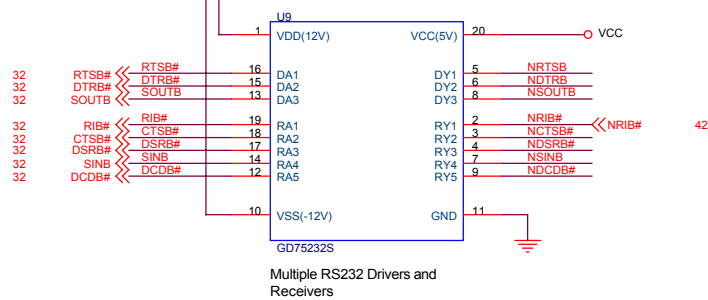
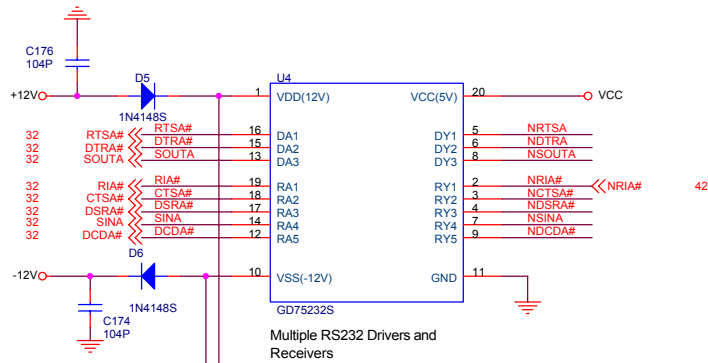
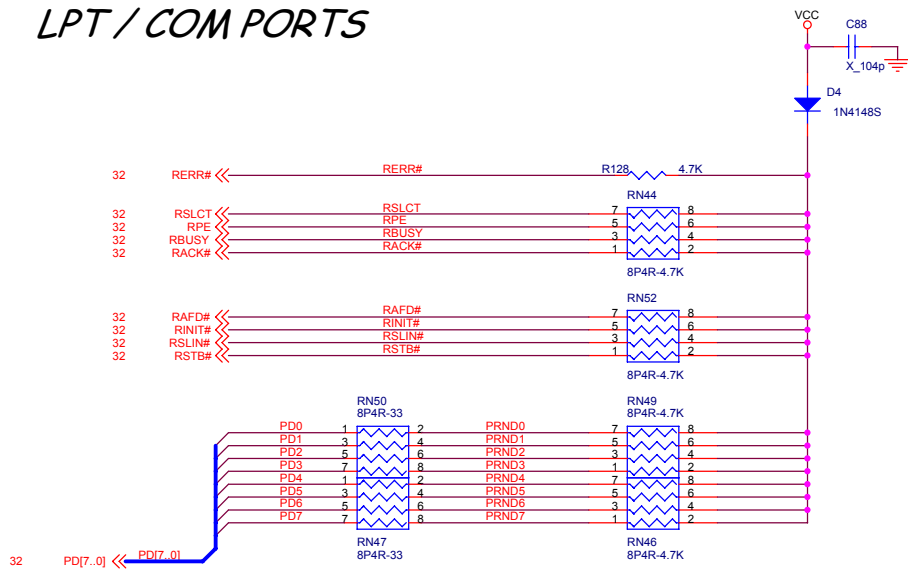


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Title	Hardware Monitor	Rev
Document Number	MS-6380E	0B
MICRO-STAR INT'L CO., LTD.		Last Revision Date:
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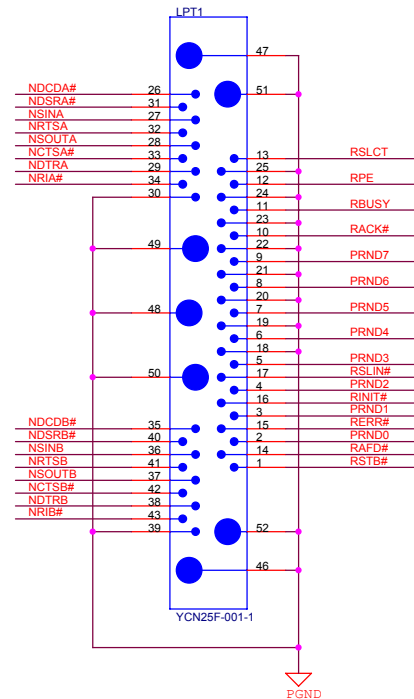
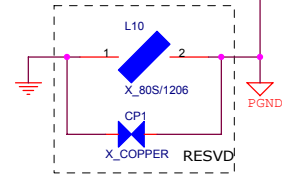
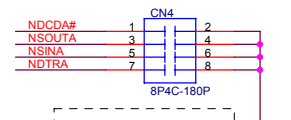
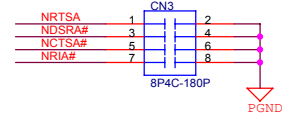
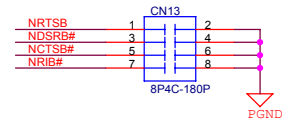
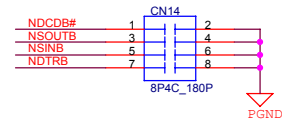
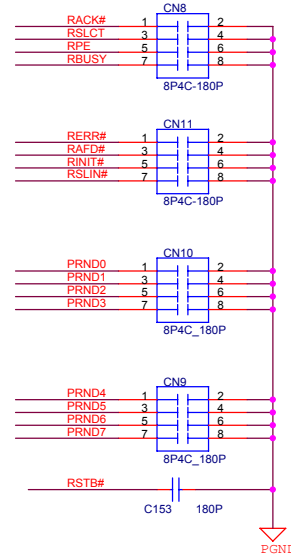
Keyboard/Mouse Ports



LPT / COM PORTS



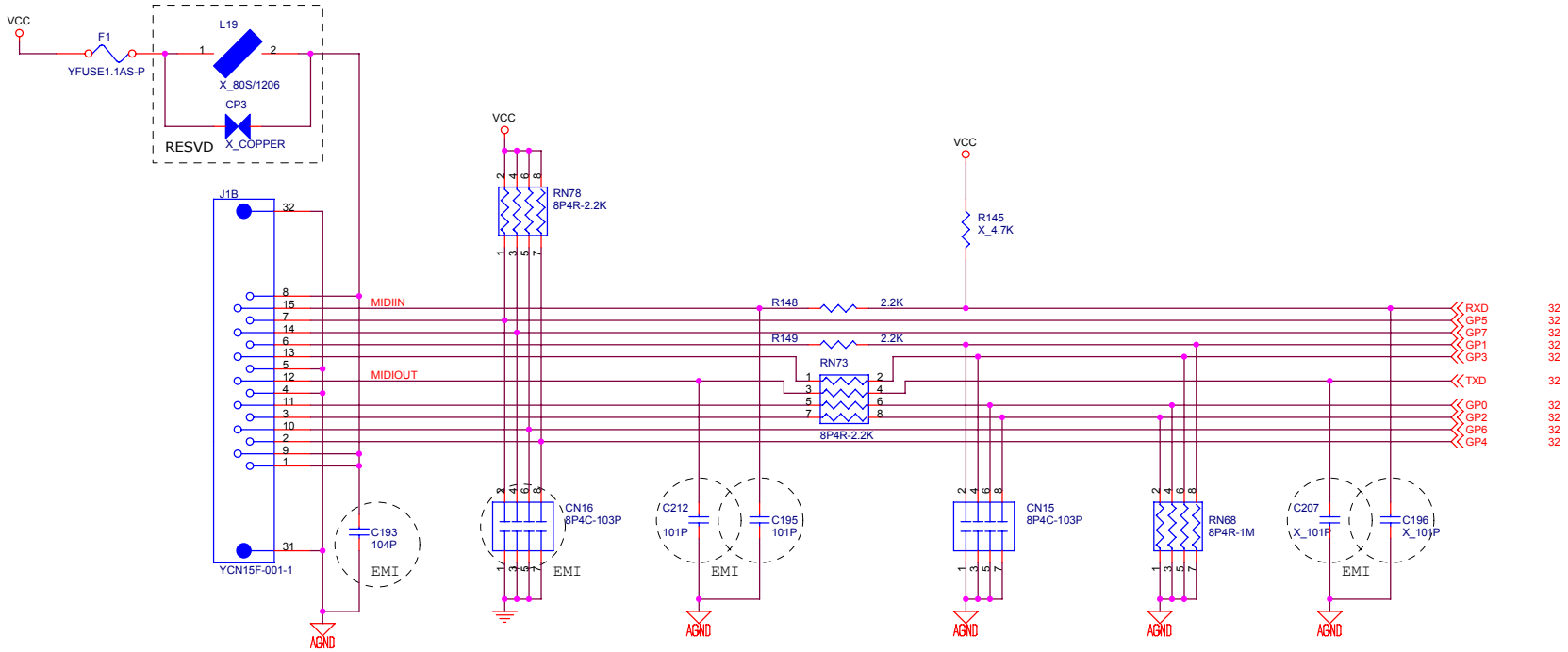
For EMI



Micro Star Restricted Secret

Title	LPT / COM Port	Rev
Document Number	MS-6380E	0B
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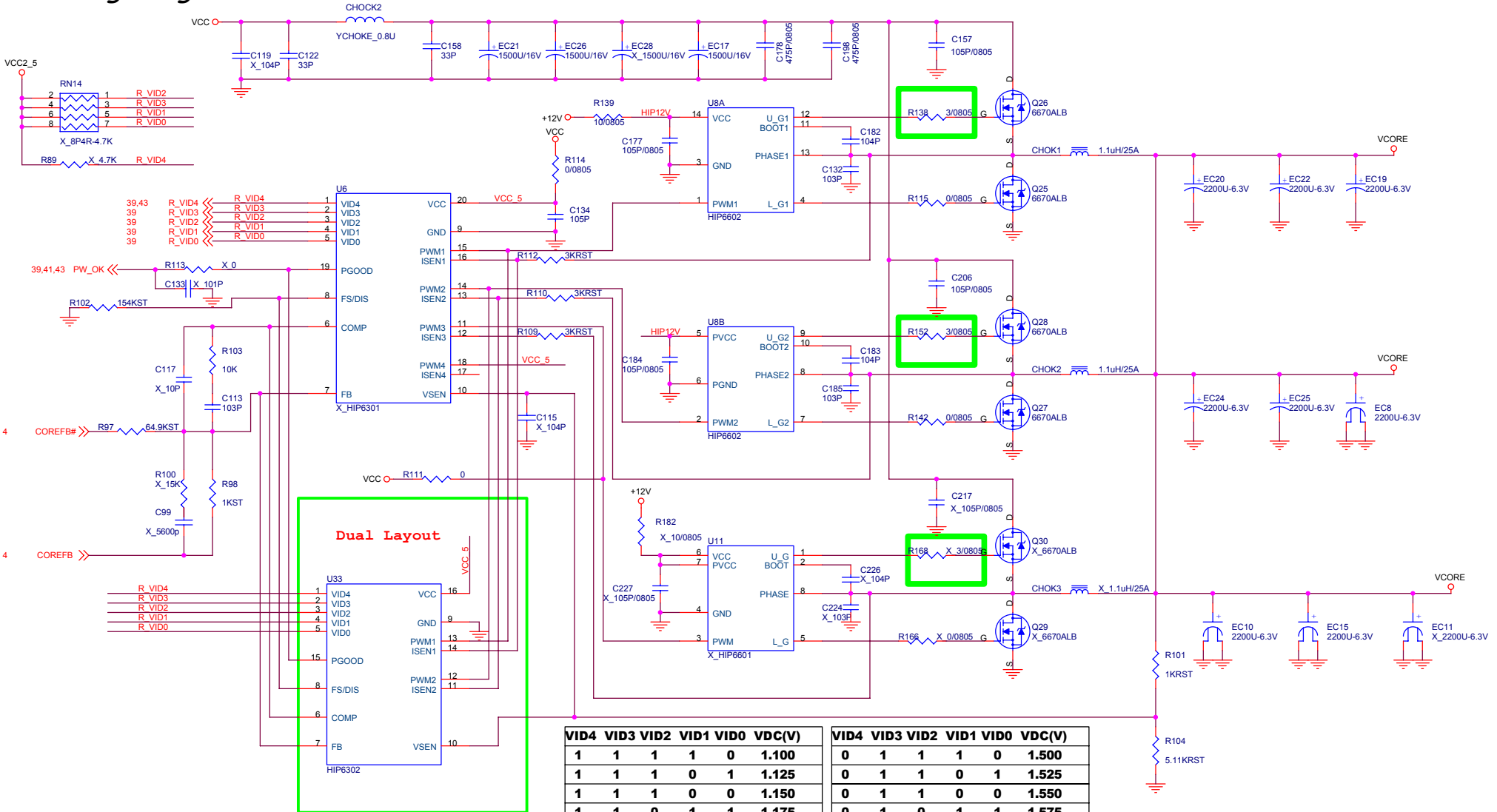
GAME PORT



GAME PORT HEAD

Micro Star Restricted Secret		
Title	Game Port	Rev
Document Number	MS-6380E	0B
MICRO-STAR INT'L		Last Revision Date:
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http://www.msi.com.tw		

Voltage Regular Module

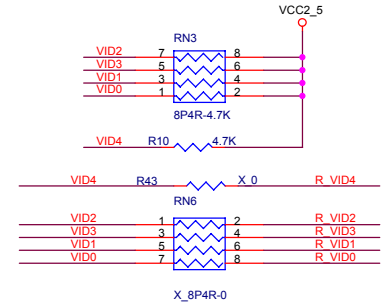
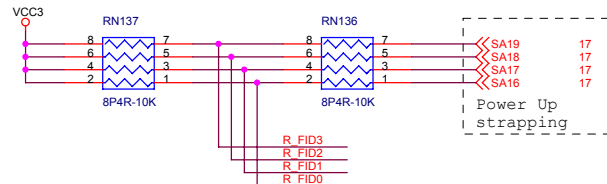
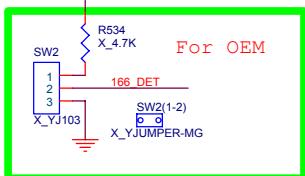
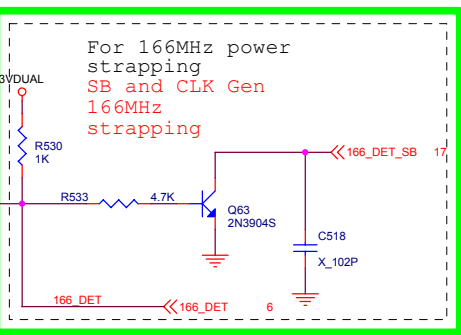
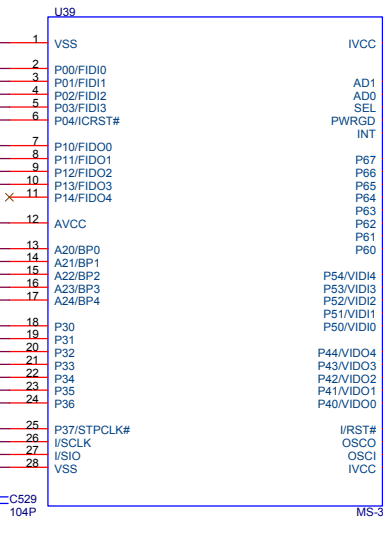
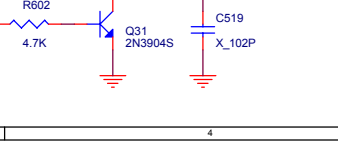
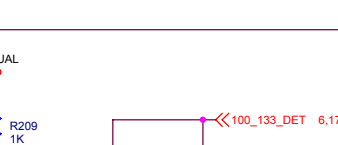
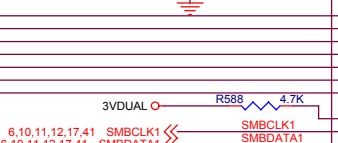
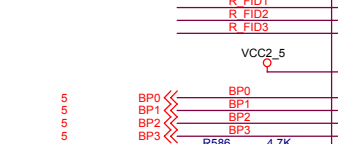
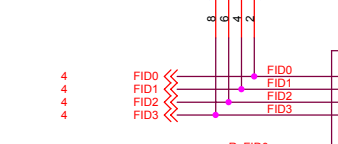
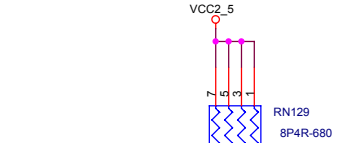
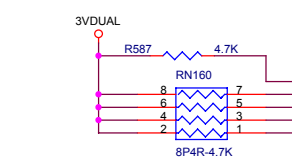
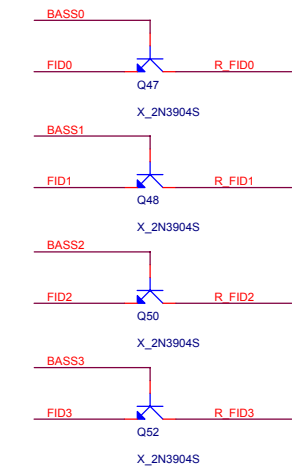
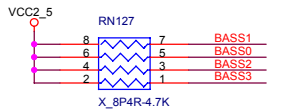


VID4	VID3	VID2	VID1	VID0	VDC(V)
1	1	1	1	0	1.100
1	1	1	0	1	1.125
1	1	1	0	0	1.150
1	1	0	1	1	1.175
1	1	0	1	0	1.200
1	1	0	0	1	1.225
1	1	0	0	0	1.250
1	0	1	1	1	1.275
1	0	1	1	0	1.300
1	0	1	0	1	1.325
1	0	1	0	0	1.350
1	0	0	1	1	1.375
1	0	0	1	0	1.400
1	0	0	0	1	1.425
1	0	0	0	0	1.450
0	1	1	1	1	1.475

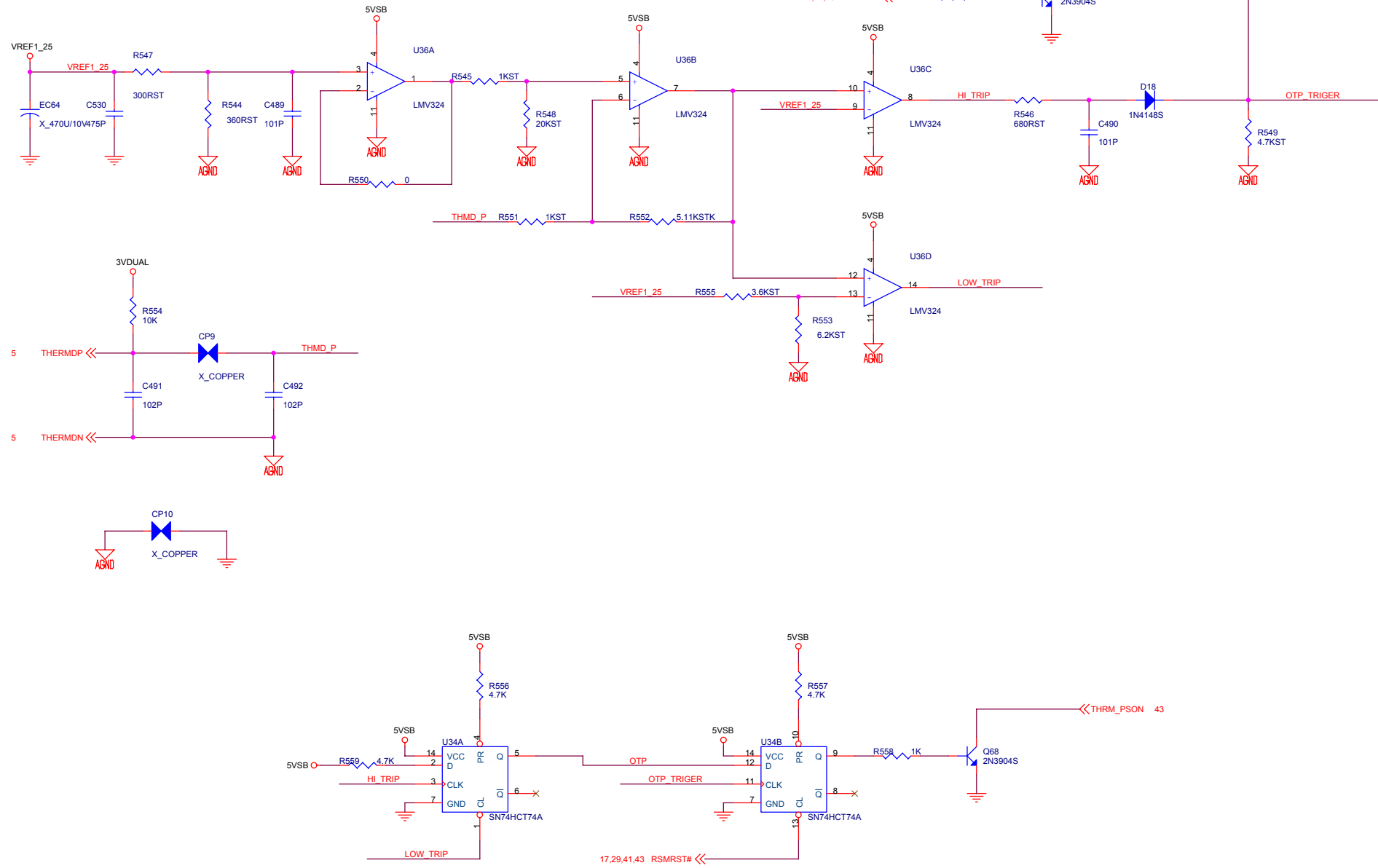
VID4	VID3	VID2	VID1	VID0	VDC(V)
0	1	1	1	0	1.500
0	1	1	0	1	1.525
0	1	1	0	0	1.550
0	1	0	1	1	1.575
0	1	0	1	0	1.600
0	1	0	0	1	1.625
0	1	0	0	0	1.650
0	0	1	1	1	1.675
0	0	1	1	0	1.700
0	0	1	0	1	1.725
0	0	1	0	0	1.750
0	0	0	1	1	1.775
0	0	0	1	0	1.800
0	0	0	0	1	1.825
0	0	0	0	0	1.850
1	1	1	1	1	OFF

CPU Ratio / CPU Vcore / Smart LEDSetting

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



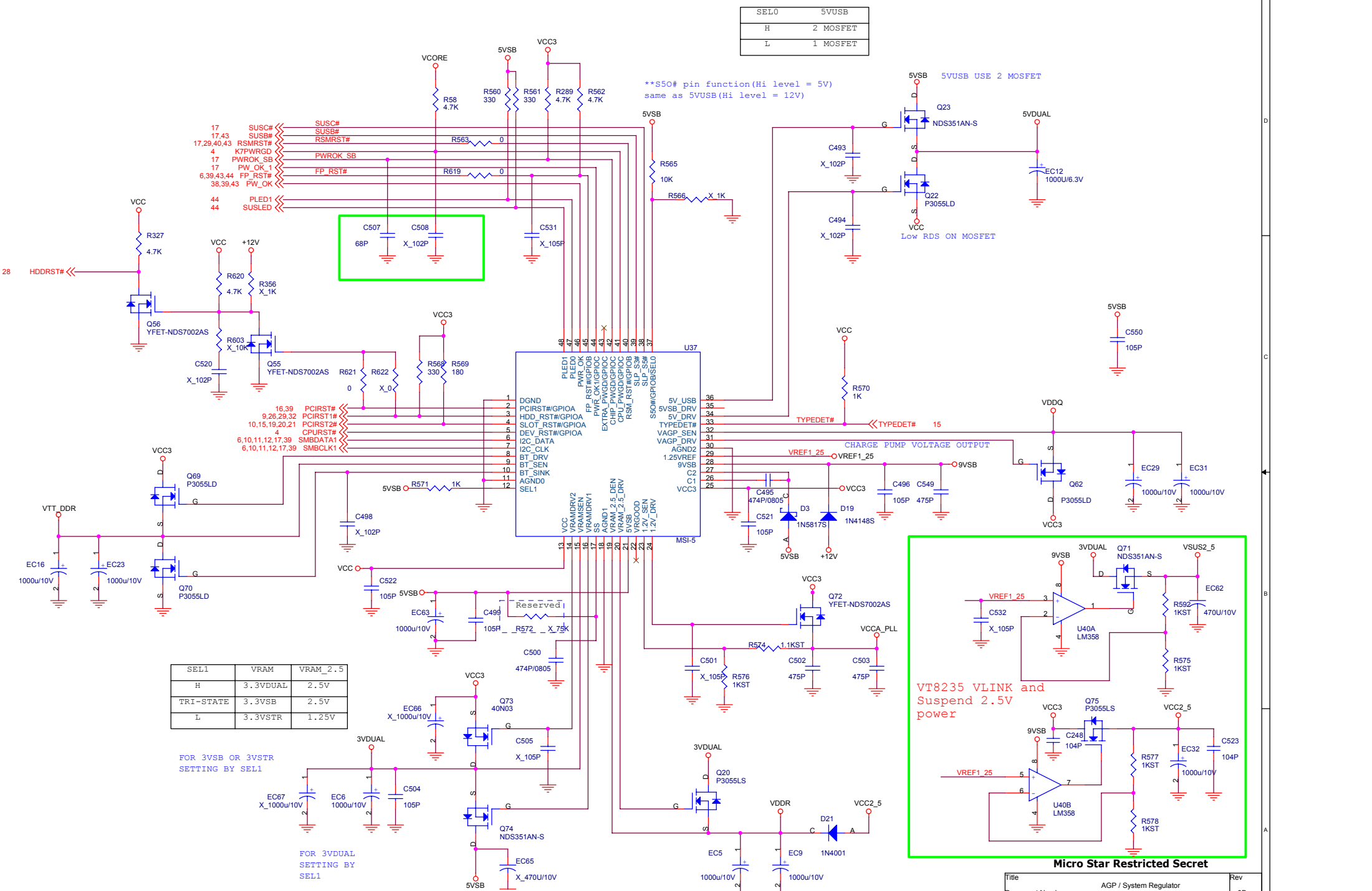
AMD CPU Thermal Protection Circuit



Micro Star Restricted Secret

Title	AMD CPU Thermal Protection Circuit	Rev	0B
Document Number	MS-6380E	Last Revision Date:	Monday, March 11, 2002
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SELO	5VUSB
H	2 MOSFET
L	1 MOSFET



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

FOR 3VSB OR 3VSTR
SETTING BY SEL1

FOR 3VDUAL
SETTING BY
SEL1

** SETTING 3VSTR THEN VREF
BECOME TO 1.25V

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

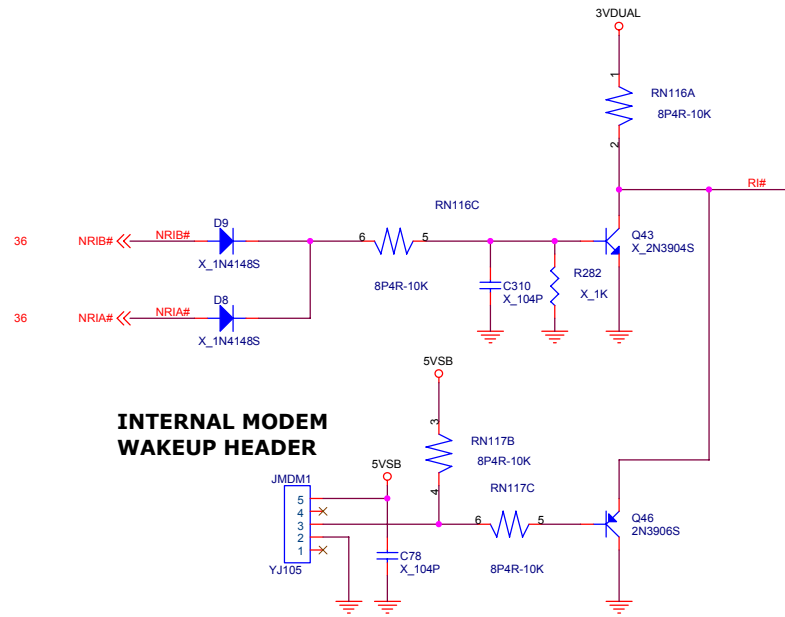
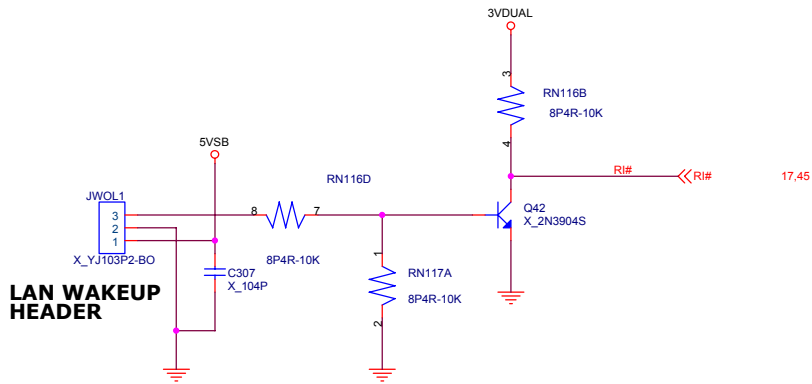
5VSB 5VUSB USE 2 MOSFET
Low RDS ON MOSFET

VT8235 VLINK and
Suspend 2.5V
power

Micro Star Restricted Secret

Title	AGP / System Regulator	Rev
Document Number	MS-6308E	0B
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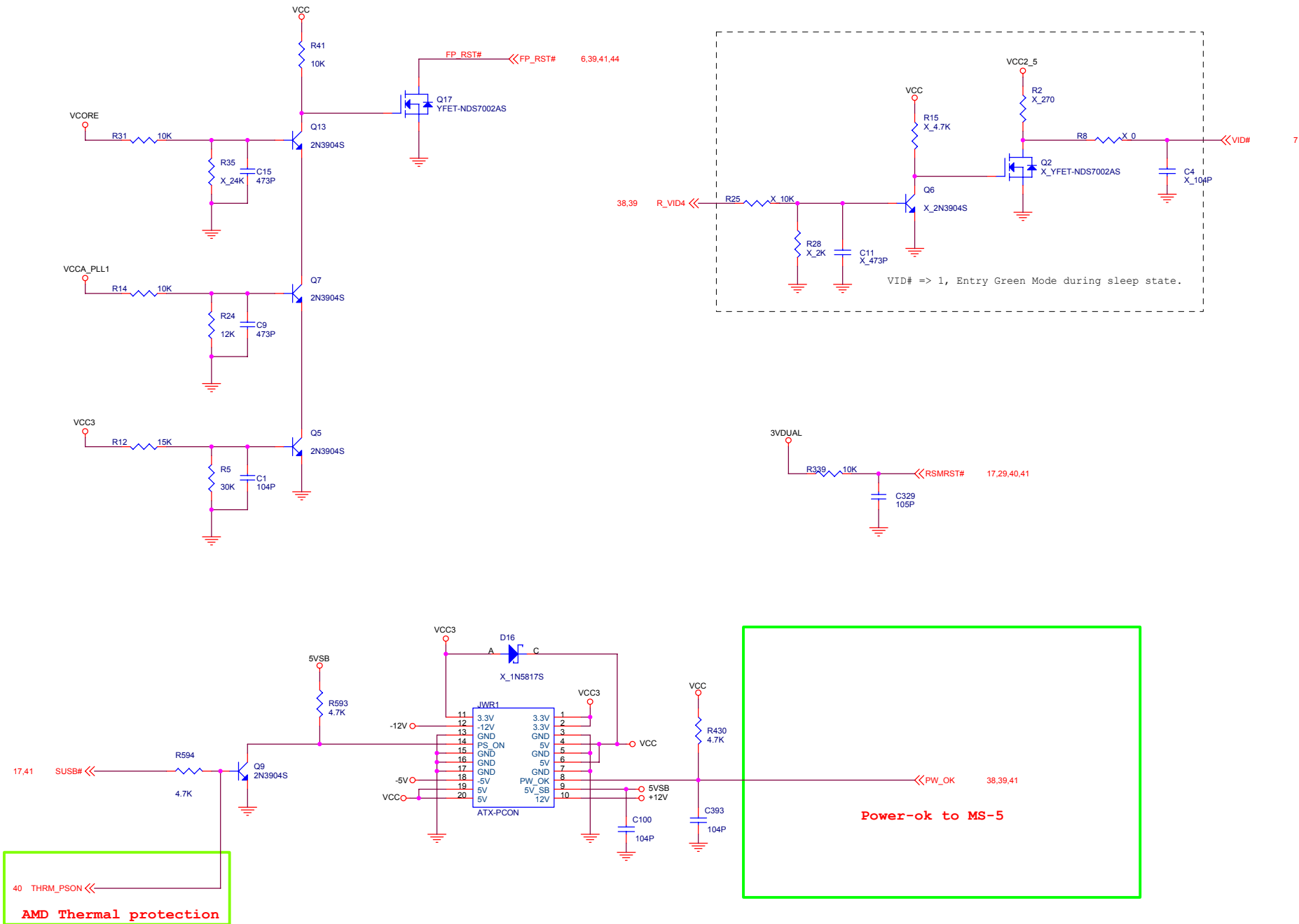
POWER Management



Micro Star Restricted Secret

Title	Power Management	Rev
Document Number	MS-6380E	0B
MICRO-STAR INT'L No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Monday, March 11, 2002	
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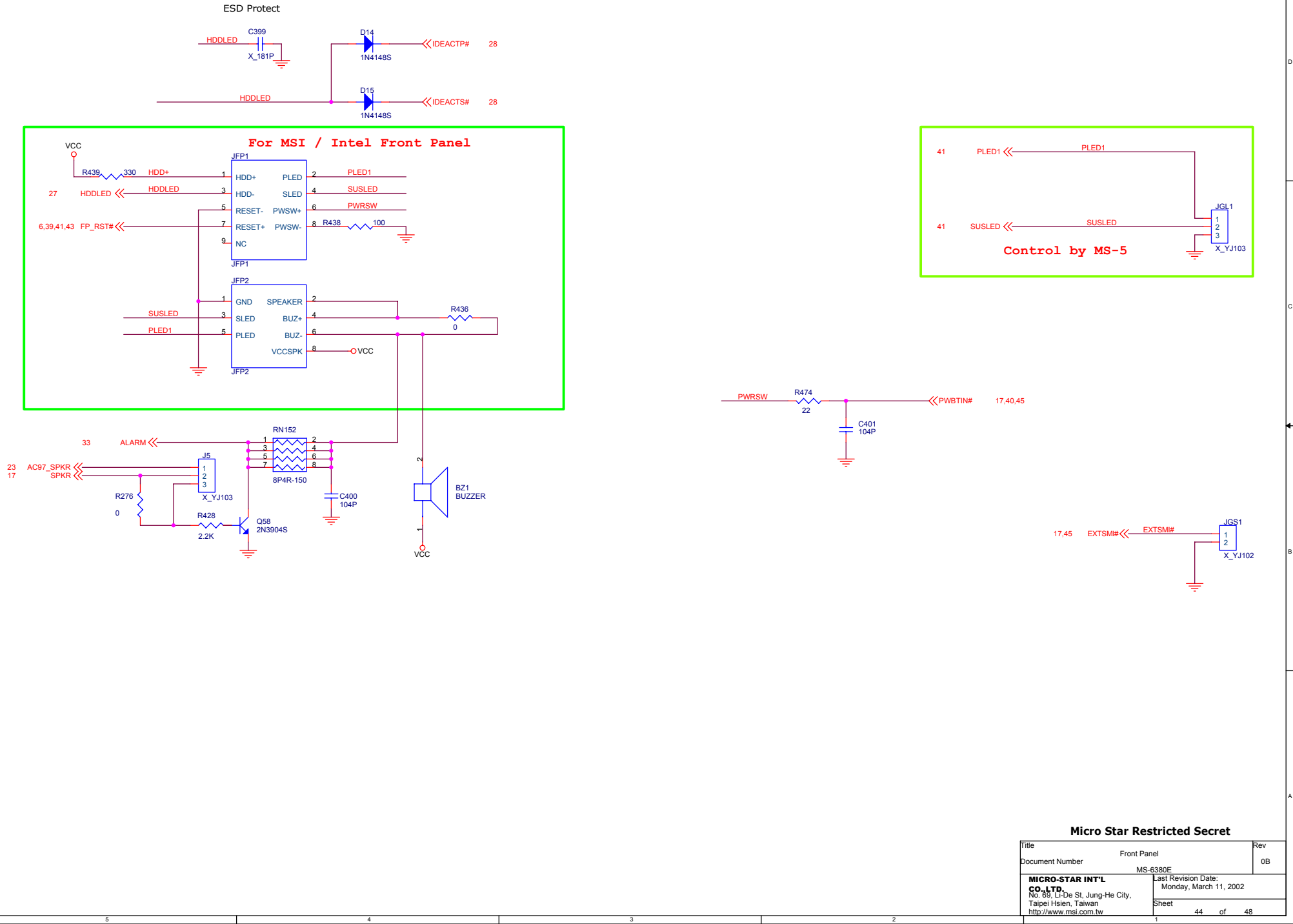
POWER OK Circuits



Micro Star Restricted Secret

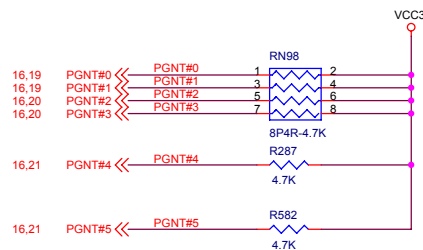
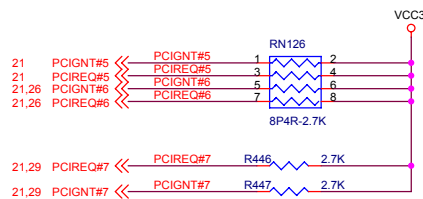
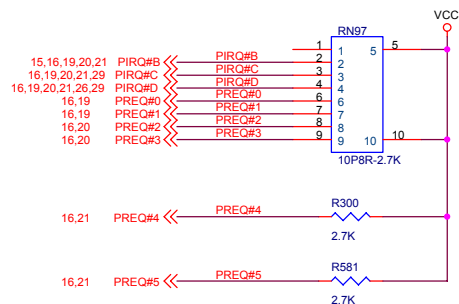
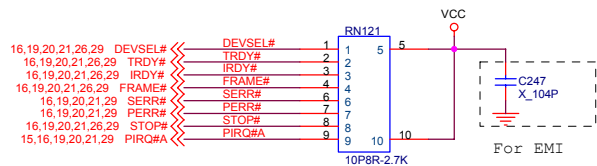
Title	Power OK Circuits	Rev
Document Number	MS-6380E	0B
MICRO-STAR INT'L No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, March 11, 2002
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FRONT PANEL

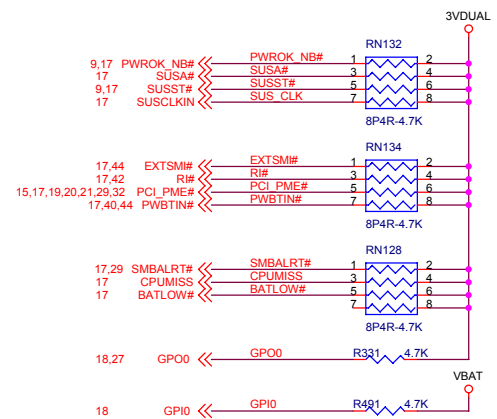
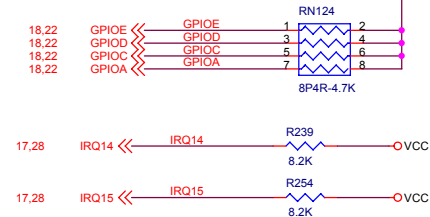
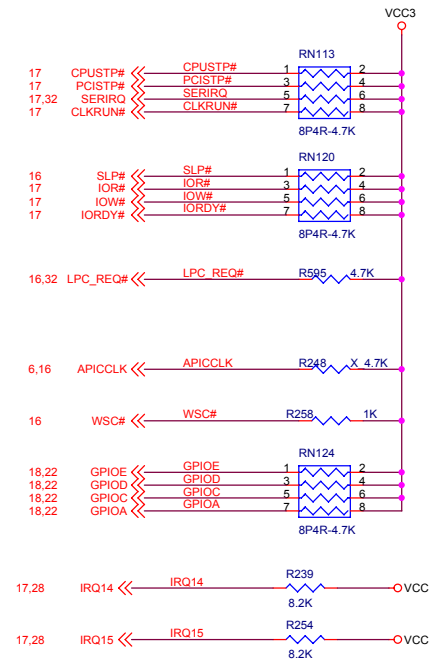


PULL-UP RESISTORS

PCI BUS



SB Pull up resistors



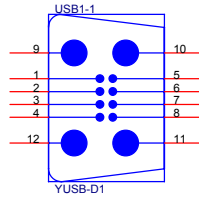
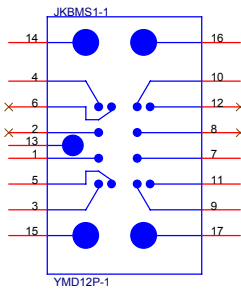
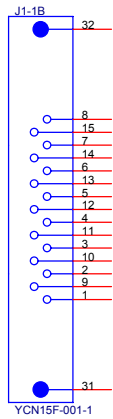
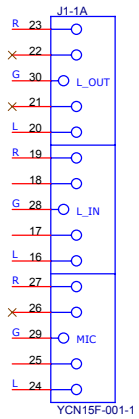
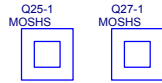
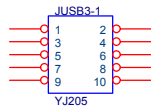
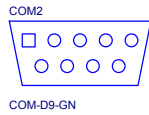
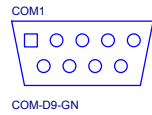
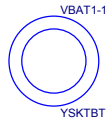
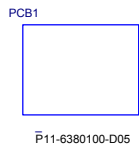
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Title	Pull up Resistor	Rev
Document Number	MS-6380E	0B
MICRO-STAR INT'L CO., LTD. No. 69, Li-De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw		Last Revision Date: Monday, March 11, 2002
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00A to 00B Schematic change list		Page
1	fixed VCC2_5 / VSUS2_5 OP feedback circuit error	41
2	Change MS-3 core power to 3VDUAL fixed jumpless 100/133/166) power strapping status error when system wakeup from S3.	39
3	change NB DDR power to VDDR	8
4	fixed XA BUS circuit link to flash rom error	34
5	add 6 channel connector for ALC650.	23
6	add blue tooth connector for MSI feature	30
7	add ALC650 GPIO to control MICIN BIAS when switch MICIN to LEF-OUT GPIO assert LOW to off MICIN BIAS by 7002 NMOS.	25
8	change DLED control by VT8233 GPOA,C,D,E.Because MS-3 core power connect to 3VDUAL that cause DLED active when S5 status	22
9	change MS-5 softstar cap to 0805 size.	41
10	fixed USB D3+,D3- error.	30

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{Title}			
Size	Document Number		Rev
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