MS-7233

Version 0A
08/09/2005 Update

CPU:

Intel LGA775 Processor

System Chipset:

SIS 656 + SiS 965L

On Board Chipset:

LPC Super I/O -- W83697HF
LAN PHY -- VT6103
IEEE1394 -- VT6307
AC97 CODEC -- RealTek ALC850

CLOCK Chip :

ICS953401+ Buffer ICS9P932

Main Memory:

DDR2 DIMM Slot *4

Expansion Slots:

PCI EXPRESS x16 Slot *1
PCI EXPRESS x1 Slot *1
PCI2.2 Slot *2

PWM:

INTERSIL ISL6565ACV

PCI Routing

PCI 2	INTC# IDSEL=AD23 MASTER=PREQ#1 PGNT#1 CPICLK4	INTB# IDSEL=AD21 MASTER=PREQ#3 PGNT#3 PCICLK3	INTA# IDSEL=AD20 MASTER=PREQ#5 PGNT#5 PCICLK0
PCI 3	INTD# IDSEL=AD19 MASTER=PREQ#2 PGNT#2 PCICLK2		
1394	INTC# IDSEL=AD22 MASTER=PREQ#4 PGNT#4 1394PCLK		

MSI MICRO-STAR

Title: Cover Sheet

Size | Document Number: MS-7233 | Rev: 0A

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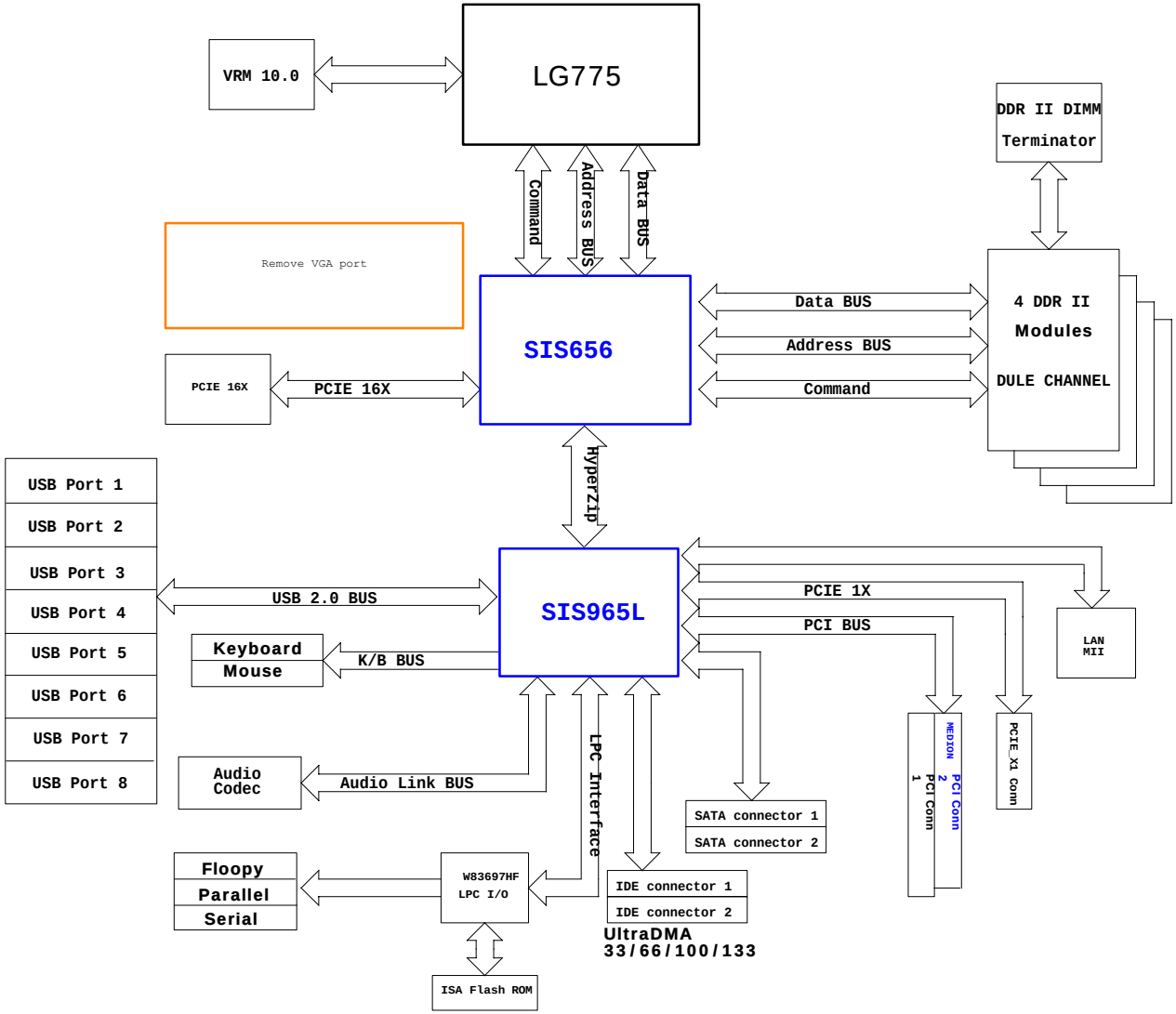
Block Diagram

MS-7114 Ver:2.0



MICRO-STAR

Title: Block Diagram

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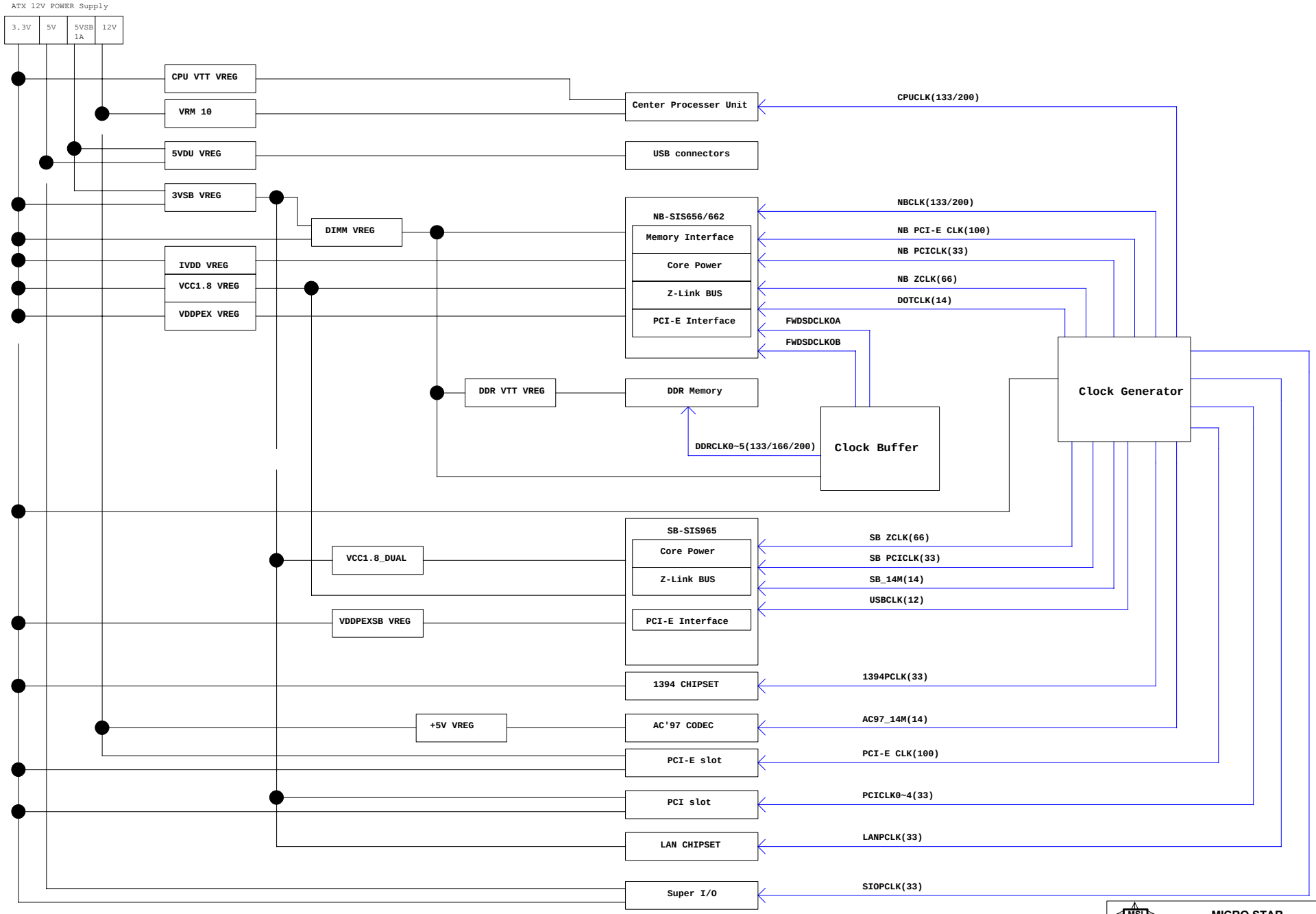
Power Delivery Map



CLOCK Delivery Map

MICRO-STAR

Title: Power & Clock delivery

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CPU SIGNAL BLOCK

REV:0A

REV:0A

CPU1A

ZIF-SOCK775-15u

PLACE RESISTORS OUTSIDE SOCKET CAVITY IF NO ROOM FOR VARIABLE RESISTOR DON'T PLACE

PLACE BPM TERMINATION NEAR CPU

REV:0A

MSI	MICRO-STAR		
Title	Intel LGA775 CPU - Signals		
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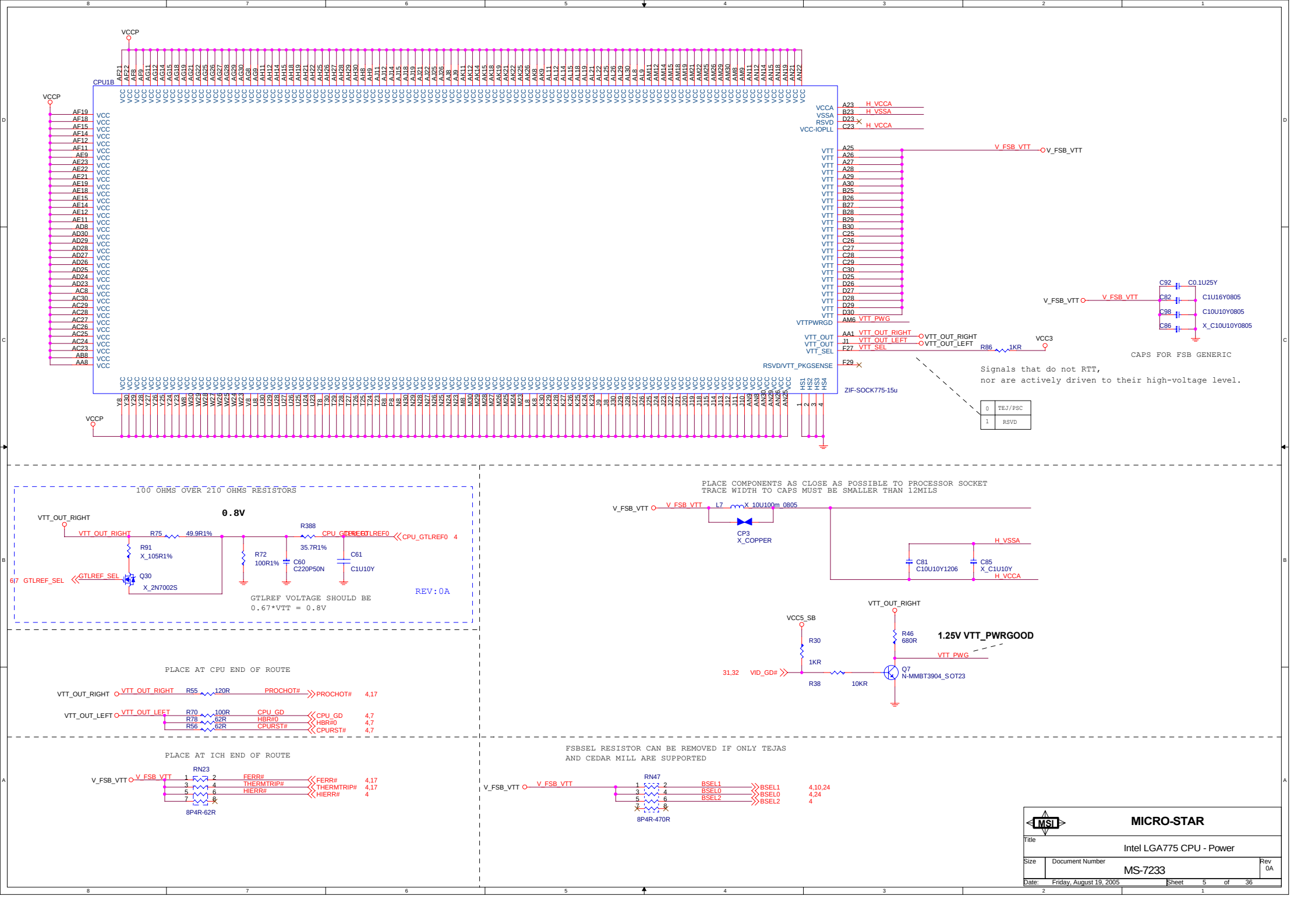
CPU1B
ZIF-SOCK775-15u
VCCP
VTT_OUT_RIGHT
VTT_OUT_LEFT
V_FSB_VTT
VTT_PWG
VCC3
R86 1KR
C92 C0.1U25Y
C82 C1U16Y0805
C98 C10U10Y0805
C86 X_C10U10Y0805
CAPS FOR FSB GENERIC
Signals that do not RTT,
nor are actively driven to their high-voltage level.
0 TEJ/PSC
1 RSVD
100 OHMS OVER 210 OHMS RESISTORS
0.8V
R75 49.9R1%
R388 35.7R1%
R72 100R1%
R91 X_105R1%
C60 C220P50N
C61 C1U10Y
Q30 X_2N7002S
GTLREF_SEL
CPU_GTLREF0
GTLREF VOLTAGE SHOULD BE
0.67*VTT = 0.8V
REV:0A
PLACE COMPONENTS AS CLOSE AS POSSIBLE TO PROCESSOR SOCKET
TRACE WIDTH TO CAPS MUST BE SMALLER THAN 12MILS
L7 X_10U100m_0805
CP3
X_COPPER
C81 C10U10Y1206
C85 X_C1U10Y
H_VSSA
H_VCCA
VCC5_SB
R30 1KR
R38 10KR
R46 680R
Q7 N-MMBT3904_SOT23
1.25V VTT_PWRGOOD
VID_GD#
PLACE AT CPU END OF ROUTE
R55 120R
R70 100R
R78 62R
R56 62R
PROCHOT#
CPU_GD
HBR#0
CPURST#
PLACE AT ICH END OF ROUTE
RN23
8P4R-62R
FERR#
THERMTRIP#
HIERR#
FSBSEL RESISTOR CAN BE REMOVED IF ONLY TEJAS
AND CEDAR MILL ARE SUPPORTED
RN47
8P4R-470R
BSEL1
BSEL0
BSEL2
MSI
MICRO-STAR
Intel LGA775 CPU - Power
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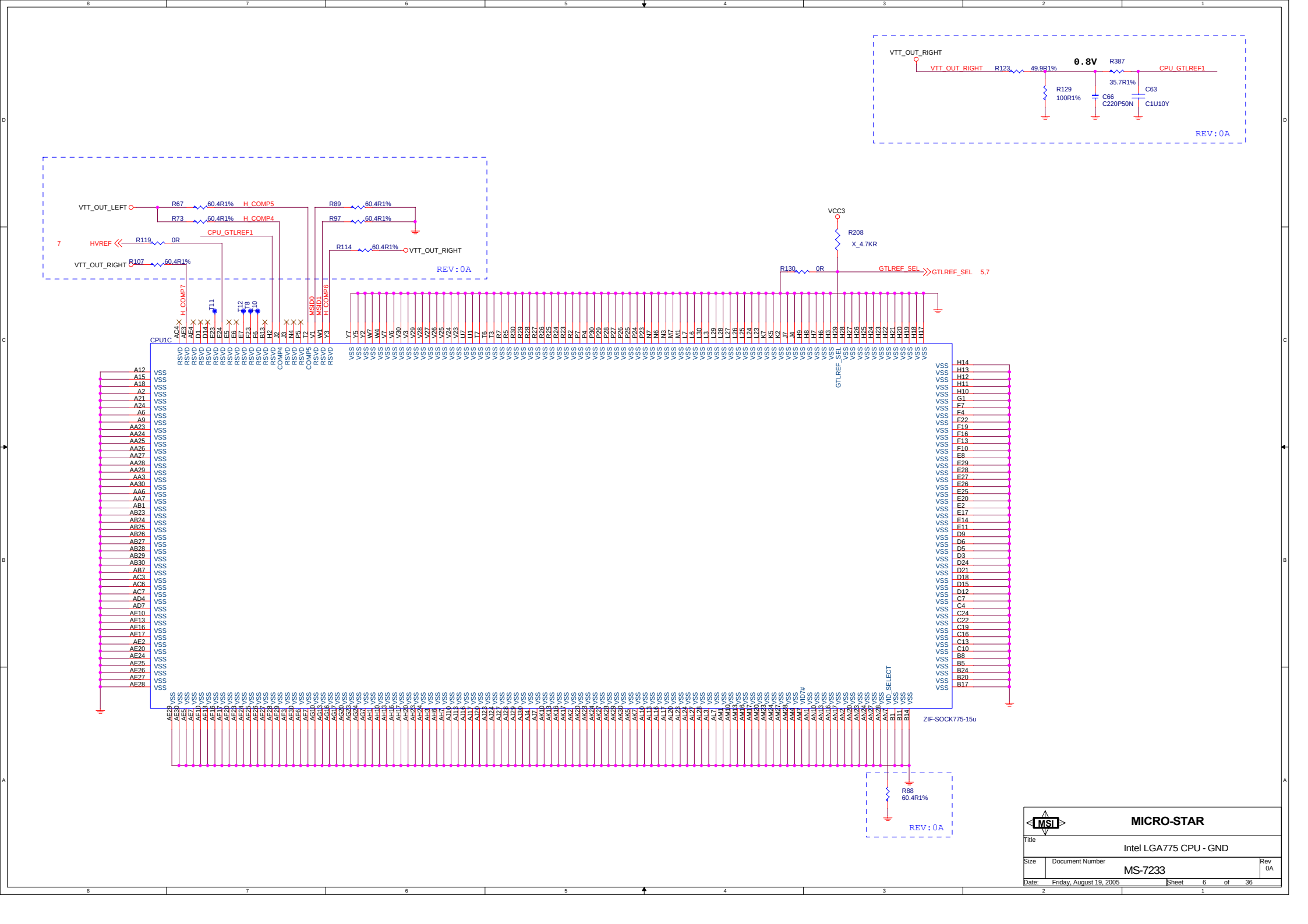
VTT_OUT_RIGHT
VTT_OUT_RIGHT
R123
49.9R1%
0.8V
R387
35.7R1%
CPU_GTLREF1
R129
100R1%
C66
C220P50N
C63
C1U10Y
REV:0A
VTT_OUT_LEFT
R67
60.4R1%
H_COMP5
R73
60.4R1%
H_COMP4
CPU_GTLREF1
7
HVREF
R119
0R
VTT_OUT_RIGHT
R107
60.4R1%
R89
60.4R1%
R97
60.4R1%
R114
60.4R1%
VTT_OUT_RIGHT
REV:0A
VCC3
R208
X_4.7KR
R130
0R
GTLREF_SEL
GTLREF_SEL
5,7
CPU1C
H_COMP7
MSID0
MSID1
H_COMP6
COMP4
COMP5
GTLREF_SEL
VID_SELECT
VID7#
ZIF-SOCK775-15u
R88
60.4R1%
REV:0A
MICRO-STAR
Title
Intel LGA775 CPU - GND
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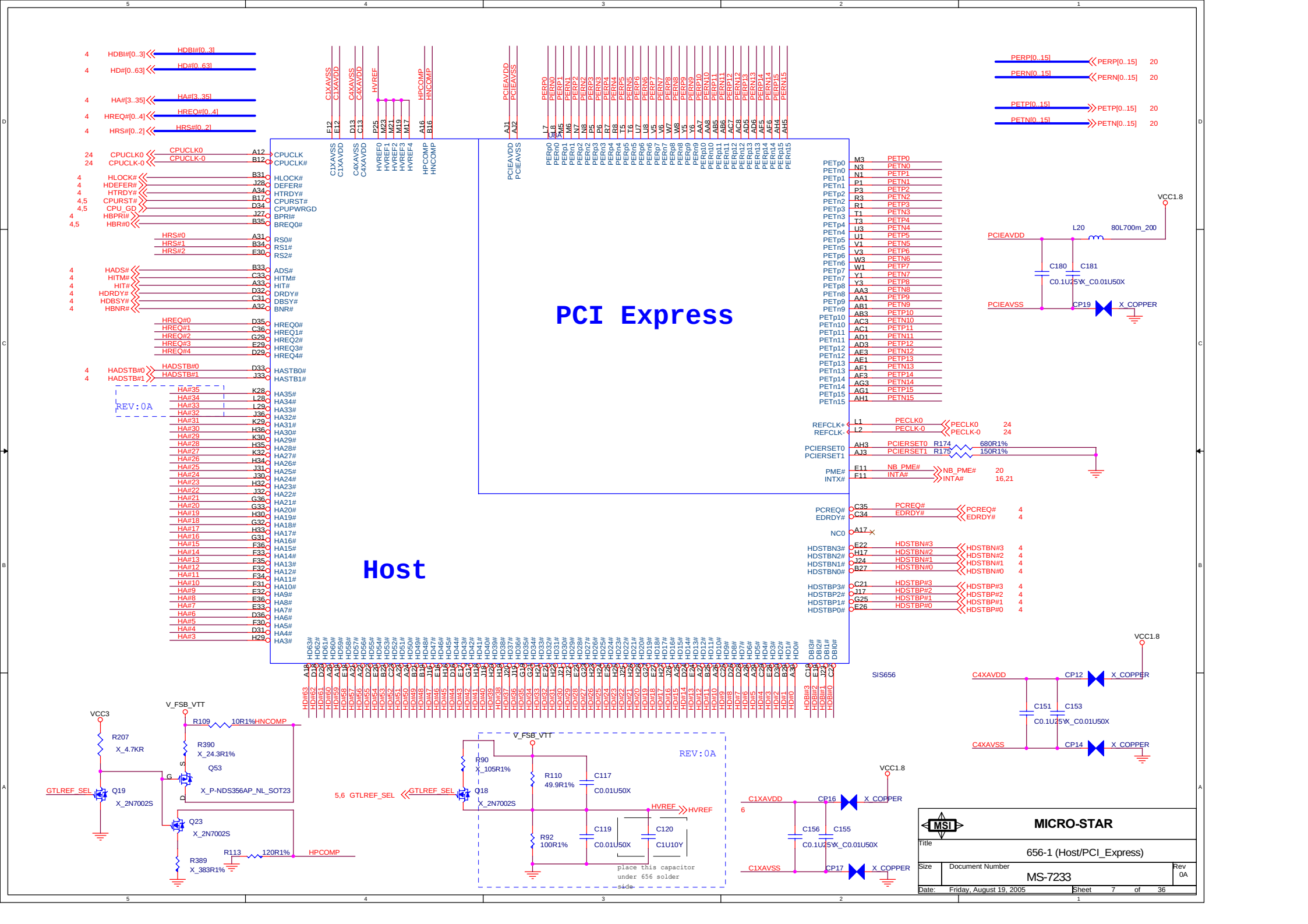
PCI Express
Host
REV:0A
REV:0A
SIS656
V_FSB_VTT
place this capacitor under 656 solder side
MICRO-STAR
656-1 (Host/PCI_Express)
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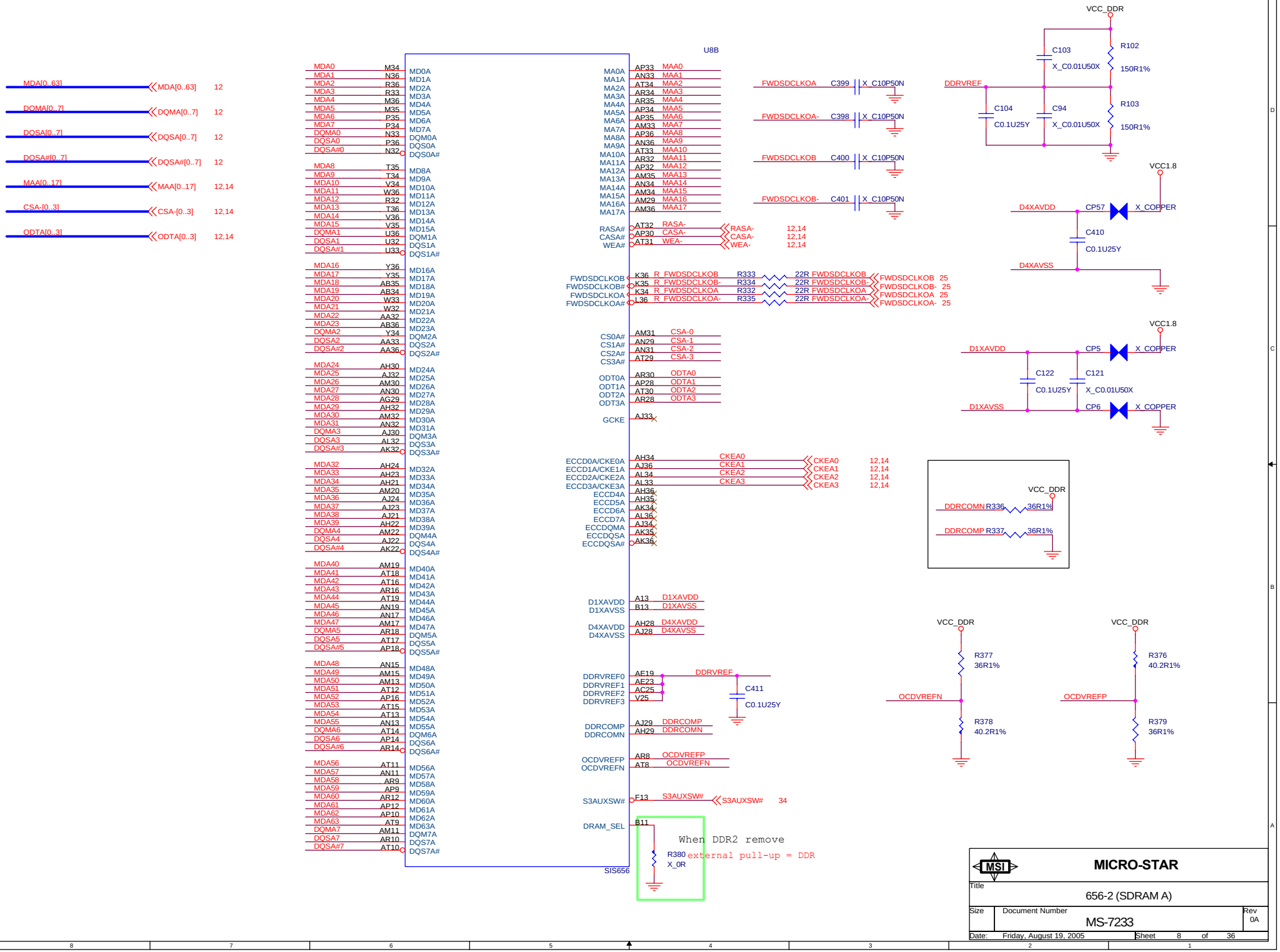
MDA[0..63] MDA[0..63] 12
DQMA[0..7] DQMA[0..7] 12
DQSA[0..7] DQSA[0..7] 12
DQSA#[0..7] DQSA#[0..7] 12
MAA[0..17] MAA[0..17] 12,14
CSA-[0..3] CSA-[0..3] 12,14
ODTA[0..3] ODTA[0..3] 12,14
U8B
SIS656
VCC_DDR
C103 X_C0.01U50X
R102 150R1%
DDRVREF
C104 C0.1U25Y
C94 X_C0.01U50X
R103 150R1%
VCC1.8
D4XAVDD CP57 X_COPPER
C410 C0.1U25Y
D4XAVSS
D1XAVDD CP5 X_COPPER
C122 C0.1U25Y
C121 X_C0.01U50X
D1XAVSS CP6 X_COPPER
DDRCOMN R336 36R1%
DDRCOMP R337 36R1%
R377 36R1%
R378 40.2R1%
OCDVREFN
R376 40.2R1%
R379 36R1%
OCDVREFP
FWDSDCLKOA C399 X_C10P50N
FWDSDCLKOA- C398 X_C10P50N
FWDSDCLKOB C400 X_C10P50N
FWDSDCLKOB- C401 X_C10P50N
C411 C0.1U25Y
When DDR2 remove
external pull-up = DDR
R380 X_0R
MICRO-STAR
656-2 (SDRAM A)
MS-7233
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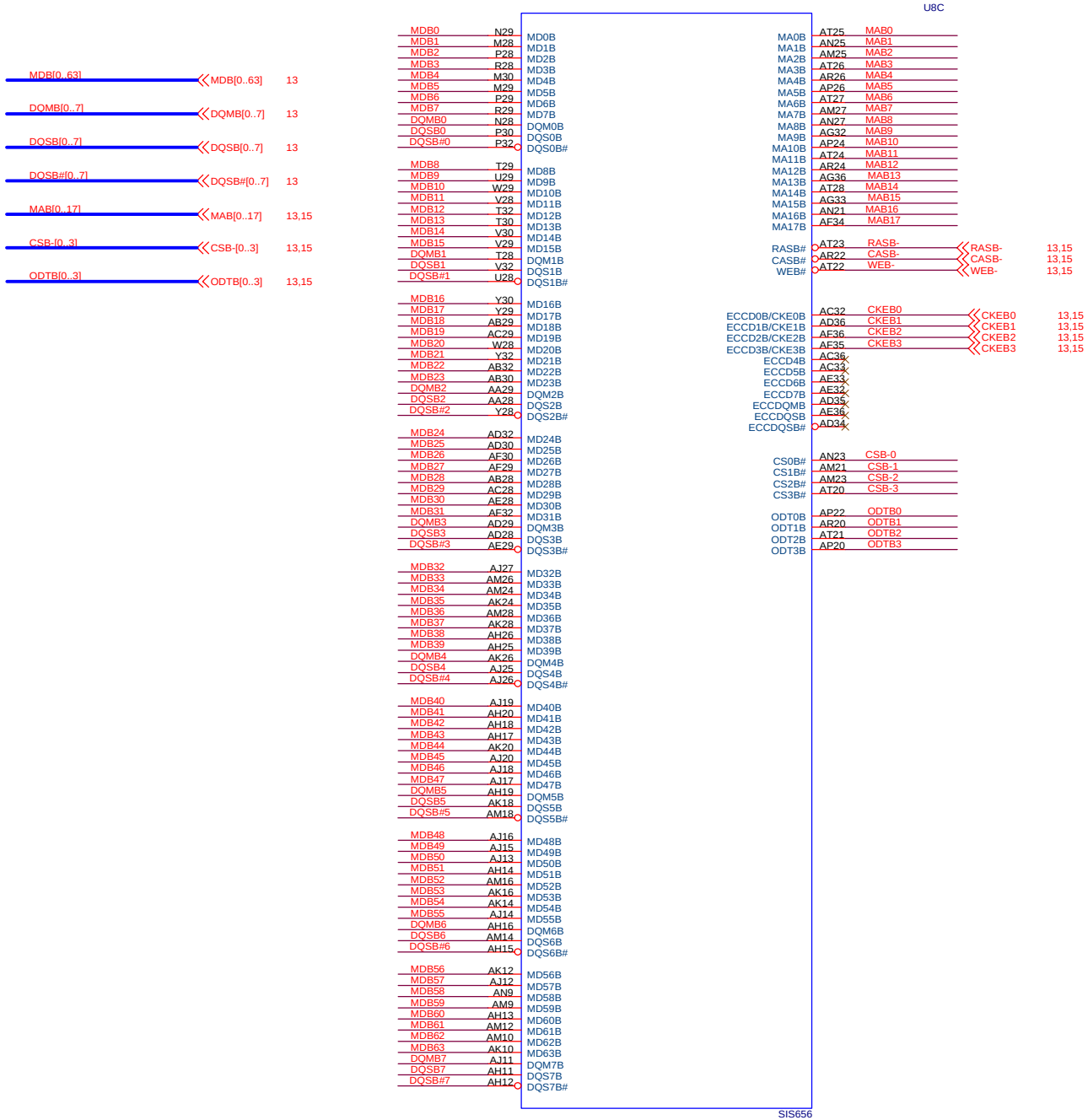

MSI	MICRO-STAR	
Title	656-2 (SDRAM B)	
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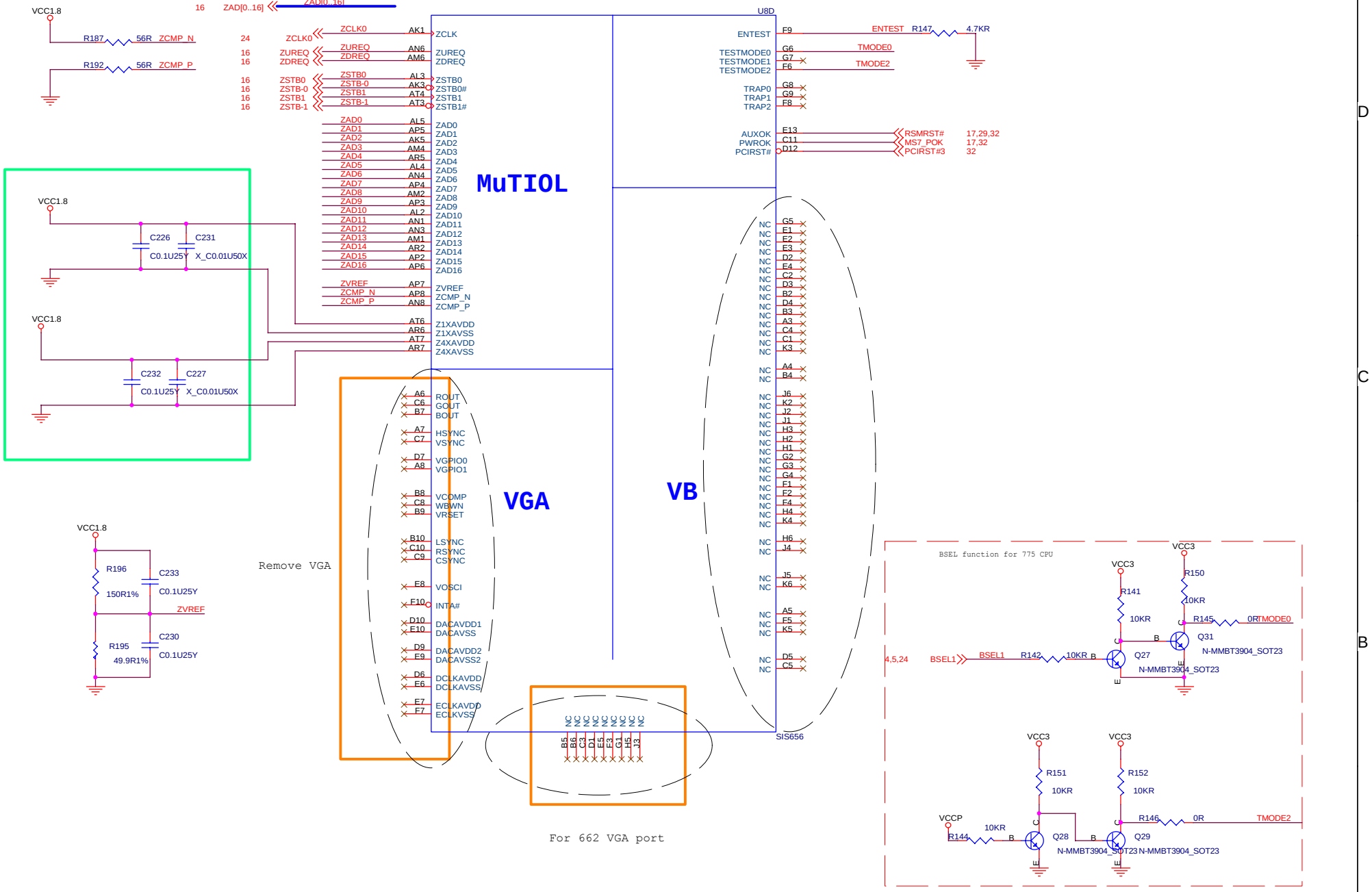

Company	MICRO-STAR
Title	656-4 (HyperZip/Misc)
Size	
Document Number	MS-7233
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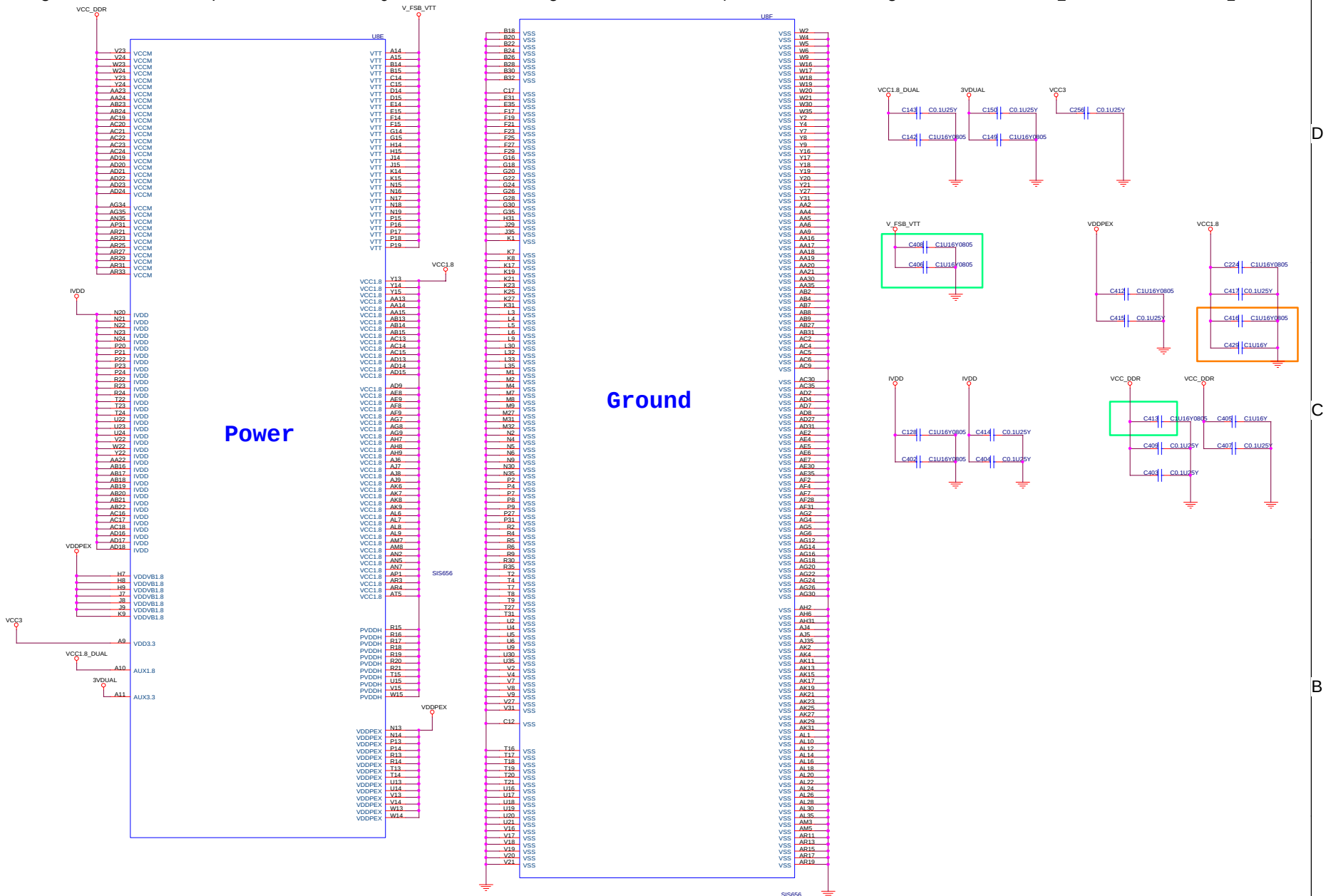

MICRO-STAR			
Title	656-5 (Power)		
Size	Document Number	MS-7233	Rev 0A
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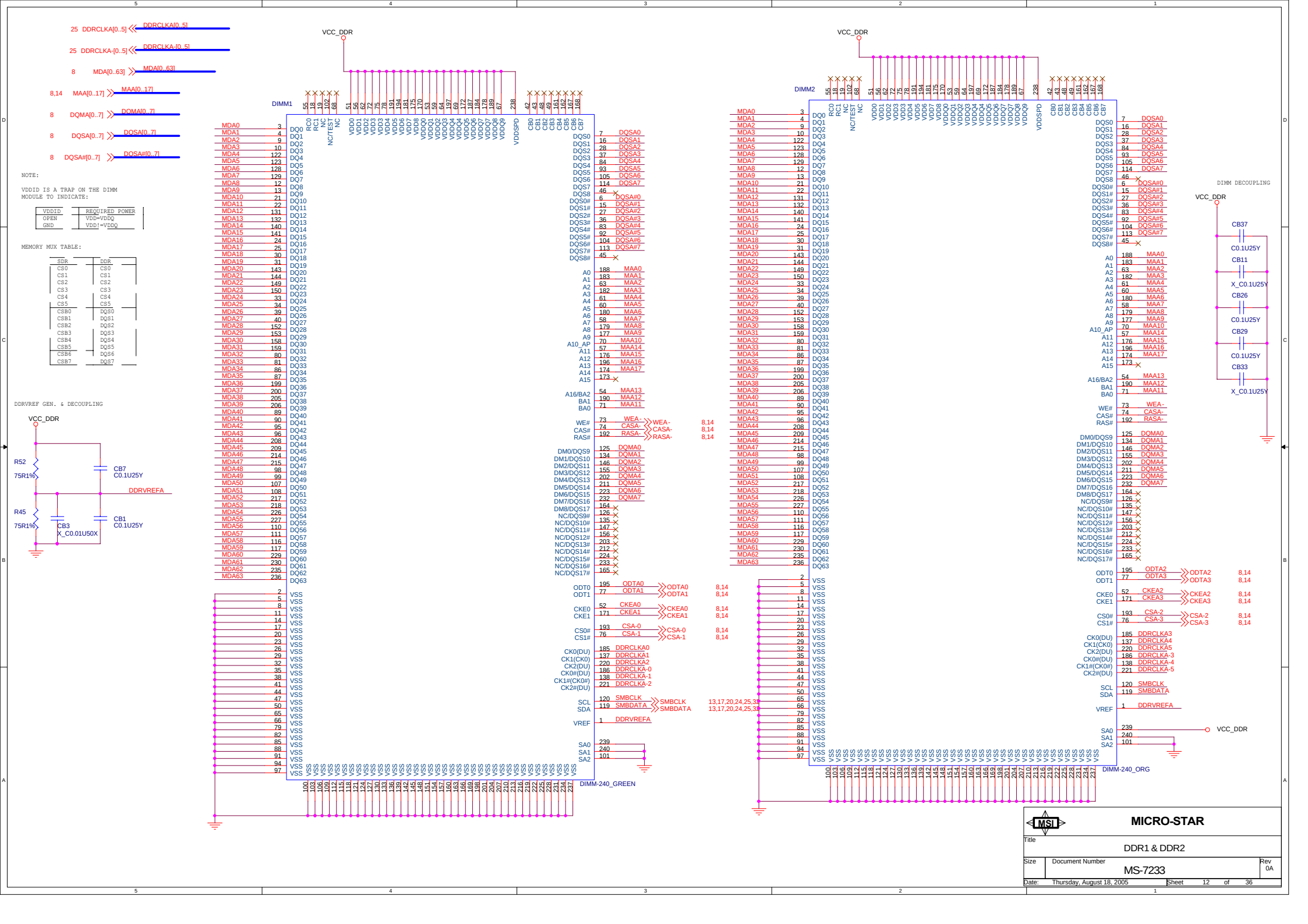
25 DDRCLKA[0..5]
DDRCLKA[0..5]
25 DDRCLKA-[0..5]
DDRCLKA-[0..5]
8 MDA[0..63]
MDA[0..63]
8,14 MAA[0..17]
MAA[0..17]
8 DQMA[0..7]
DQMA[0..7]
8 DQSA[0..7]
DQSA[0..7]
8 DQSA#[0..7]
DQSA#[0..7]
NOTE:
VDDID IS A TRAP ON THE DIMM MODULE TO INDICATE:
VDDID | REQUIRED POWER
OPEN | VDD=VDDQ
GND | VDD!=VDDQ
MEMORY MUX TABLE:
SDR | DDR
CS0 | CS0
CS1 | CS1
CS2 | CS2
CS3 | CS3
CS4 | CS4
CS5 | CS5
CSB0 | DQS0
CSB1 | DQS1
CSB2 | DQS2
CSB3 | DQS3
CSB4 | DQS4
CSB5 | DQS5
CSB6 | DQS6
CSB7 | DQS7
DDRVREF GEN. & DECOUPLING
VCC_DDR
R52
75R1%
R45
75R1%
CB7
C0.1U25Y
CB1
C0.1U25Y
CB3
X_C0.01U50X
DDRVREFA
VCC_DDR
DIMM1
DIMM-240_GREEN
DIMM2
DIMM-240_ORG
DIMM DECOUPLING
VCC_DDR
CB37
C0.1U25Y
CB11
X_C0.1U25Y
CB26
C0.1U25Y
CB29
C0.1U25Y
CB33
X_C0.1U25Y
MICRO-STAR
Title
DDR1 & DDR2
Size
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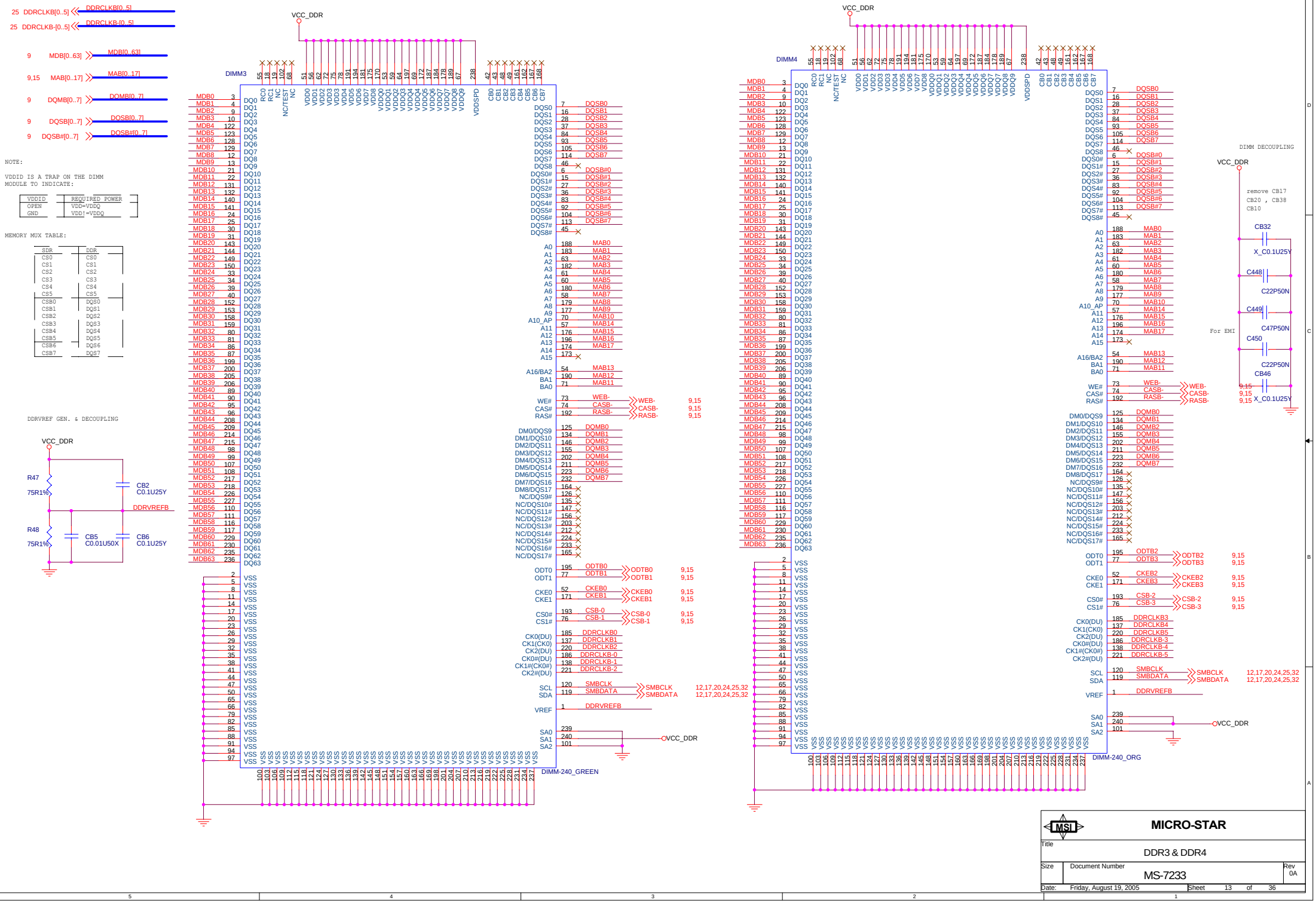
25 DDRCLKB[0..5]
DDRCLKB[0..5]
25 DDRCLKB-[0..5]
DDRCLKB-[0..5]
9 MDB[0..63]
MDB[0..63]
9,15 MAB[0..17]
MAB[0..17]
9 DQMB[0..7]
DQMB[0..7]
9 DQSB[0..7]
DQSB[0..7]
9 DQSB#[0..7]
DQSB#[0..7]
NOTE:
VDDID IS A TRAP ON THE DIMM MODULE TO INDICATE:
VDDID REQUIRED POWER
OPEN VDD=VDDQ
GND VDD!=VDDQ
MEMORY MUX TABLE:
SDR DDR
CS0 CS0
CS1 CS1
CS2 CS2
CS3 CS3
CS4 CS4
CS5 CS5
CSB0 DQS0
CSB1 DQS1
CSB2 DQS2
CSB3 DQS3
CSB4 DQS4
CSB5 DQS5
CSB6 DQS6
CSB7 DQS7
DDRVREF GEN. & DECOUPLING
VCC_DDR
R47
75R1%
R48
75R1%
CB2
C0.1U25Y
DDRVREFB
CB5
C0.01U50X
CB6
C0.1U25Y
DIMM3
DIMM-240_GREEN
DIMM4
DIMM-240_ORG
DIMM DECOUPLING
remove CB17
CB20 , CB38
CB10
CB32
X_C0.1U25Y
C448
C22P50N
C449
C47P50N
For EMI
C450
C22P50N
CB46
X_C0.1U25Y
MICRO-STAR
Title
DDR3 & DDR4
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DDR TERMINATOR

SSTL-2 Termination Resistors

MAA[0..17] — MAA[0..17] 8,12

CSA-[0..3] — CSA-[0..3] 8,12

ODTA[0..3] — ODTA[0..3] 8,12

	SDR		DDR		
		Rs		Rs	Rtt
MD/DQM(/DQS)	LV-CMOS	0/10/-	SSTL-2	10	33
MA/Control	LV-CMOS	10	SSTL-2	0	33
CS	LV-CMOS	0	SSTL-2	0	47
CKE	OD 3.3V		OD 2.5V		

VTT_DDR

MAA12	RN98	2	1	8P4R-56R0402	
MAA10		4	3		
MAA0		6	5		
MAA2		8	7		
MAA1	RN99	2	1	8P4R-56R0402	
MAA3		4	3		
MAA4		6	5		
MAA5		8	7		
MAA6	RN100	2	1	8P4R-56R0402	
MAA8		4	3		
MAA7		6	5		
MAA14		8	7		
MAA9	RN101	2	1	8P4R-56R0402	
MAA15		4	3		
MAA13		6	5		
MAA17		8	7		
CSA-2	RN102	2	1	8P4R-56R0402	
CSA-0		4	3		
8,12 RASA-	RASA-	6	5		
MAA11		8	7		
8,12 WEA-	WEA-	R351	56R		
ODTA3	RN103	2	1	8P4R-56R0402	
ODTA1		4	3		
CSA-3		6	5		
CSA-1		8	7		
MAA16	RN104	2	1	8P4R-56R0402	
ODTA2		4	3		
ODTA0		6	5		
8,12 CASA-	CASA-	8	7		
8,12 CKEA2	CKEA2	RN105	2	1	8P4R-56R0402
8,12 CKEA3	CKEA3		4	3	
8,12 CKEA0	CKEA0		6	5	
8,12 CKEA1	CKEA1		8	7	

DECOUPLING CAPACITOR FOR SSTL-2 END TERMIANTION VTT ISLAND

VTT_DDR

CB12 C1U10Y

CB14 C1U10Y

CB13 C1U10Y

CB15 C1U10Y

CB16 C1U50N0402

VTT_DDR

CB4 C10U10Y1206

CB52 C10U10Y1206

CB53 C10U10Y1206

remove CT3 , CB28 , CB19 , CB21 , CB18 , CB39

MICRO-STAR

Title: DDRA TERMINATOR

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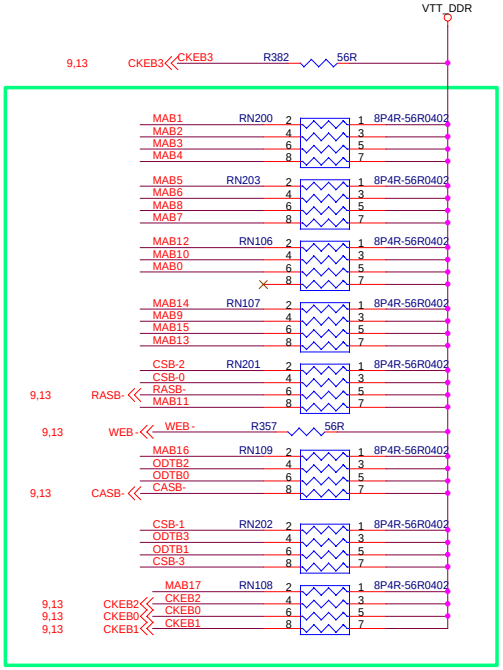
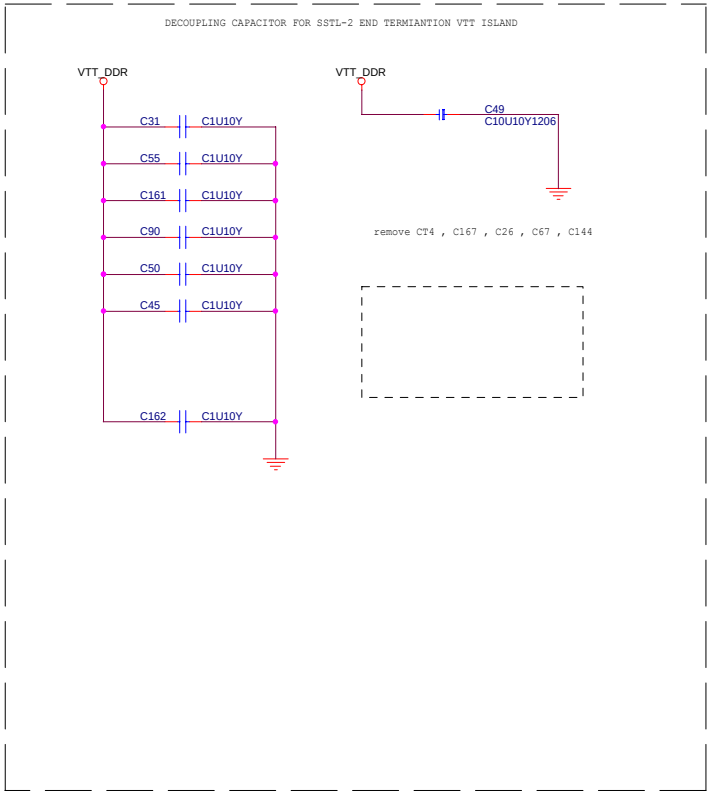
DDR TERMINATOR

MAB[0..17] — MAB[0..17] 9,13
CSB-[0..3] — CSB-[0..3] 9,13
ODTB[0..3] — ODTB[0..3] 9,13

SSTL-2 Termination Resistors

	SDR	Rs	DDR	Rs	Rtt
MD/DQM(/DQS)	LV-CMOS	0/10/-	SSTL-2	10	33
MA/Control	LV-CMOS	10	SSTL-2	0	33
CS	LV-CMOS	0	SSTL-2	0	47
CKE	DD 3.3V		DD 2.5V		





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Title	DDRB TERMINATOR	
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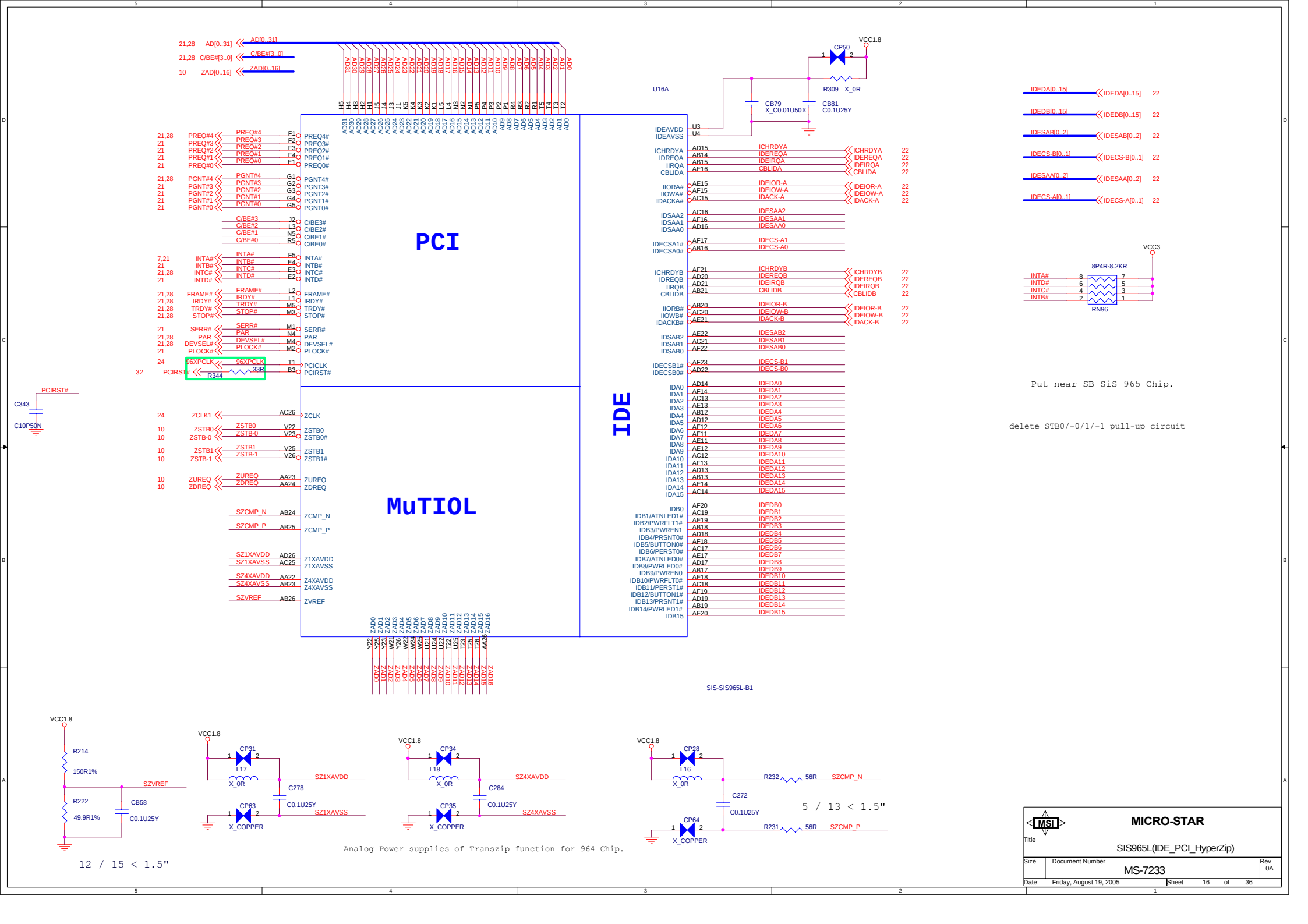
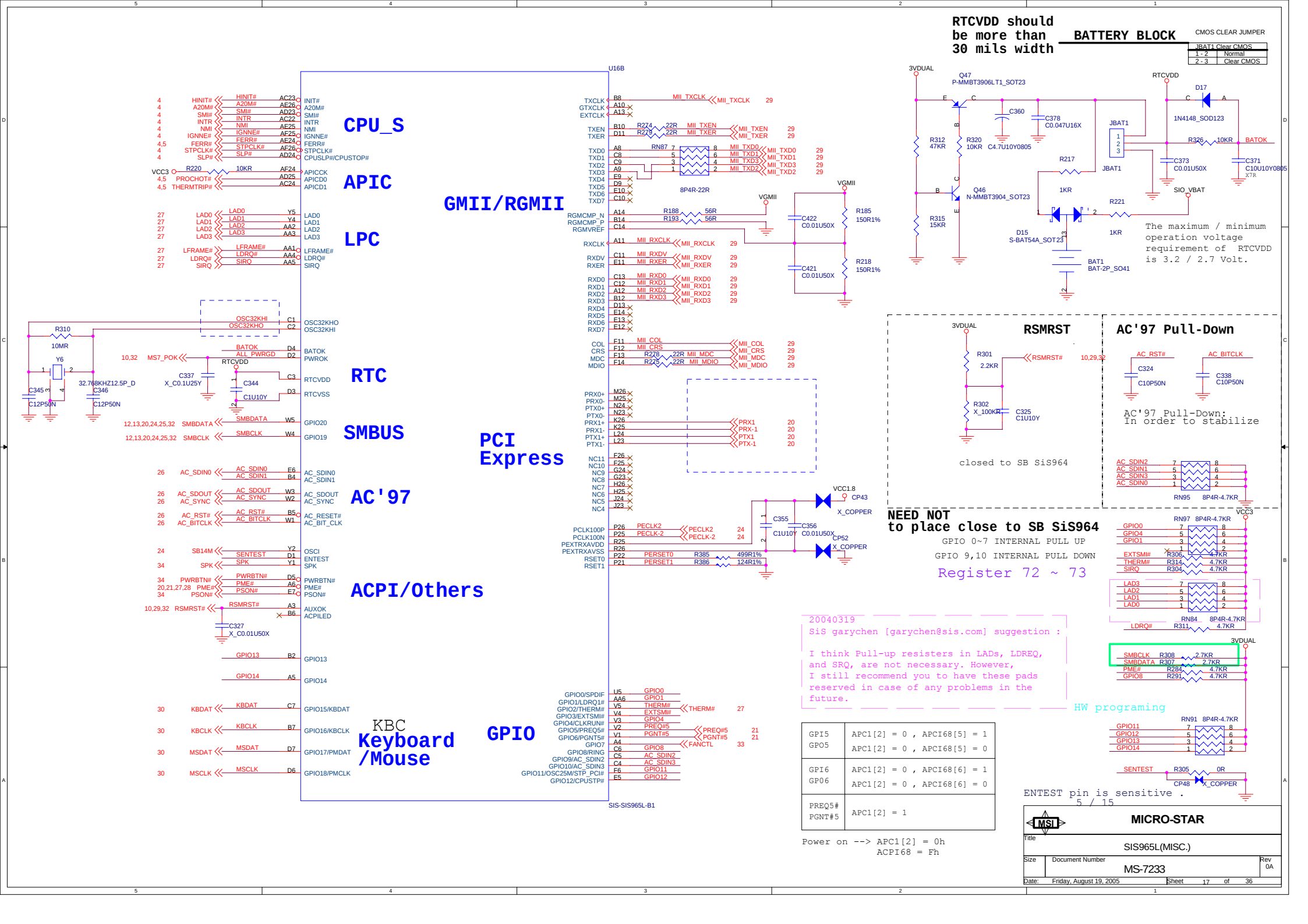

PCI
IDE
MuTIOL
U16A
SIS-SIS965L-B1
Put near SB SiS 965 Chip.
delete STB0/-0/1/-1 pull-up circuit
Analog Power supplies of Transzip function for 964 Chip.
12 / 15 < 1.5"
5 / 13 < 1.5"
MICRO-STAR
SIS965L(IDE_PCI_HyperZip)
MS-7233
Friday, August 19, 2005



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

GPI5 GPO5	APC1[2] = 0 , APCI68[5] = 1 APC1[2] = 0 , APCI68[5] = 0
GPI6 GPO6	APC1[2] = 0 , APCI68[6] = 1 APC1[2] = 0 , APCI68[6] = 0
PREQ5# PGNT#5	APC1[2] = 1

Title	SIS965L(MISC.)
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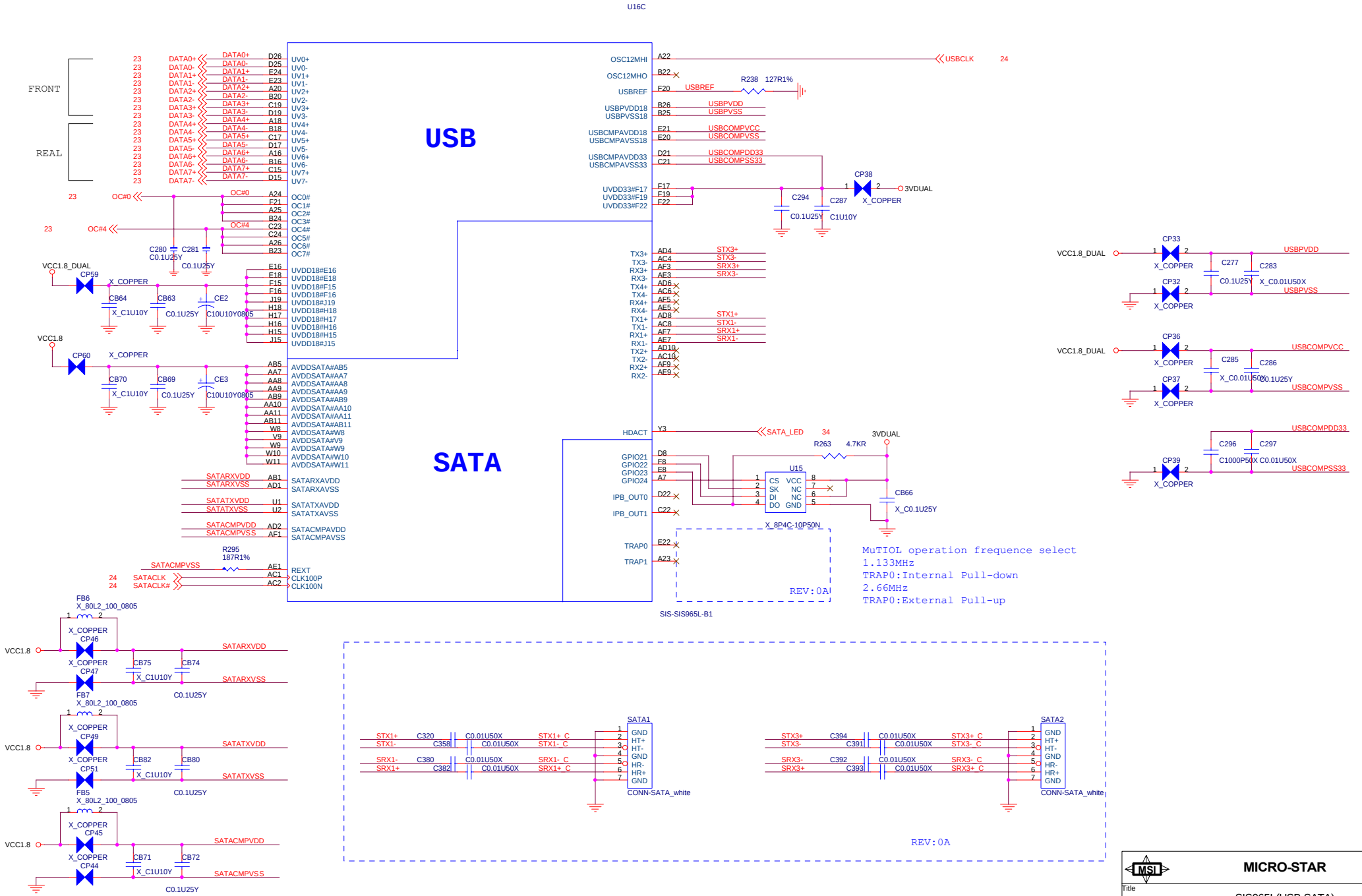
MICRO-STAR



MSI	MICRO-STAR		
Title	SIS965L(USB-SATA)		
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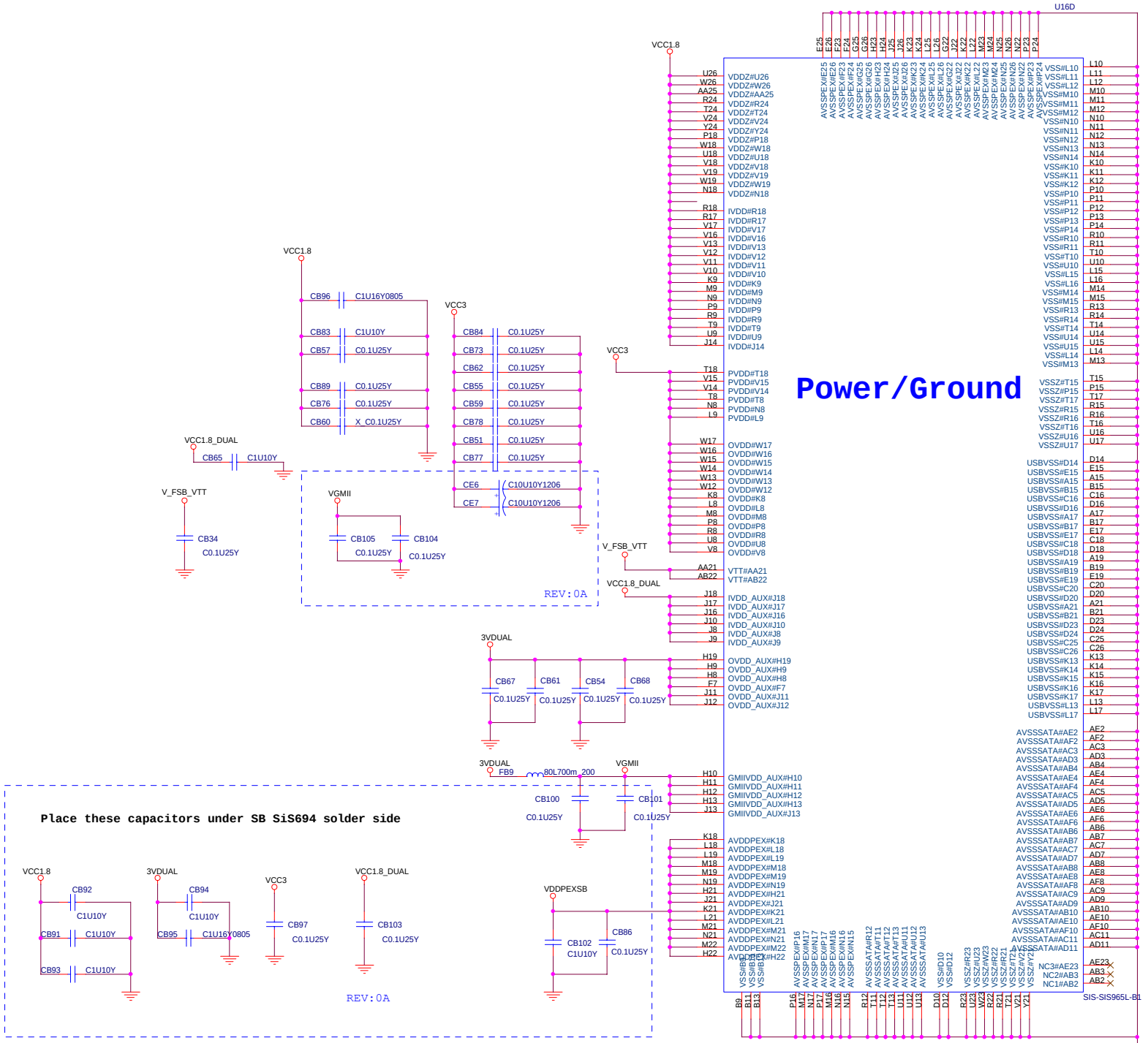

Title	SIS965L(POWER)
Size	Document Number: MS-7233
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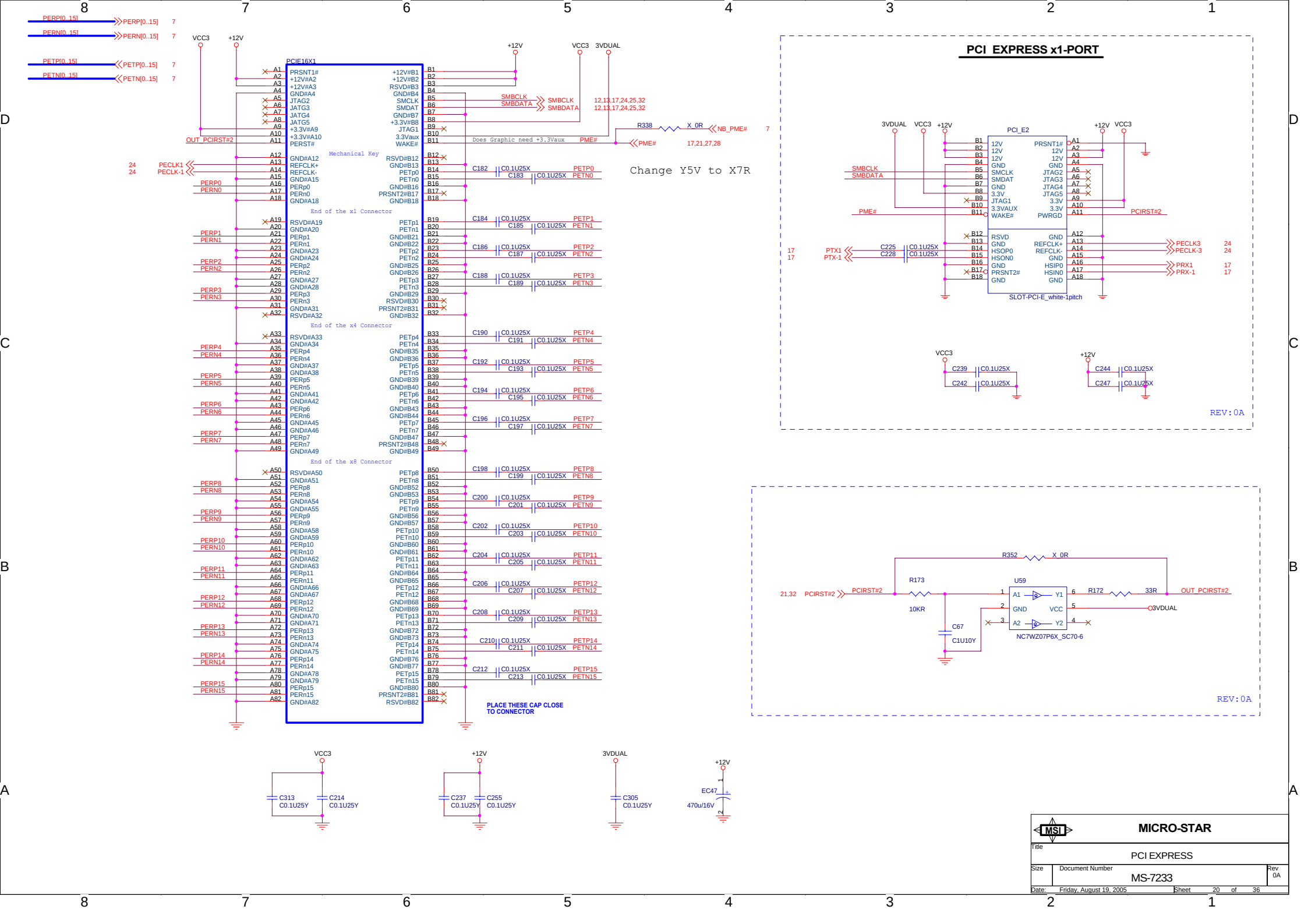
PCIE16X1
PCI EXPRESS x1-PORT
PCI_E2
SLOT-PCI-E_white-1pitch
Change Y5V to X7R
PLACE THESE CAP CLOSE TO CONNECTOR
REV:0A
MICRO-STAR
PCI EXPRESS
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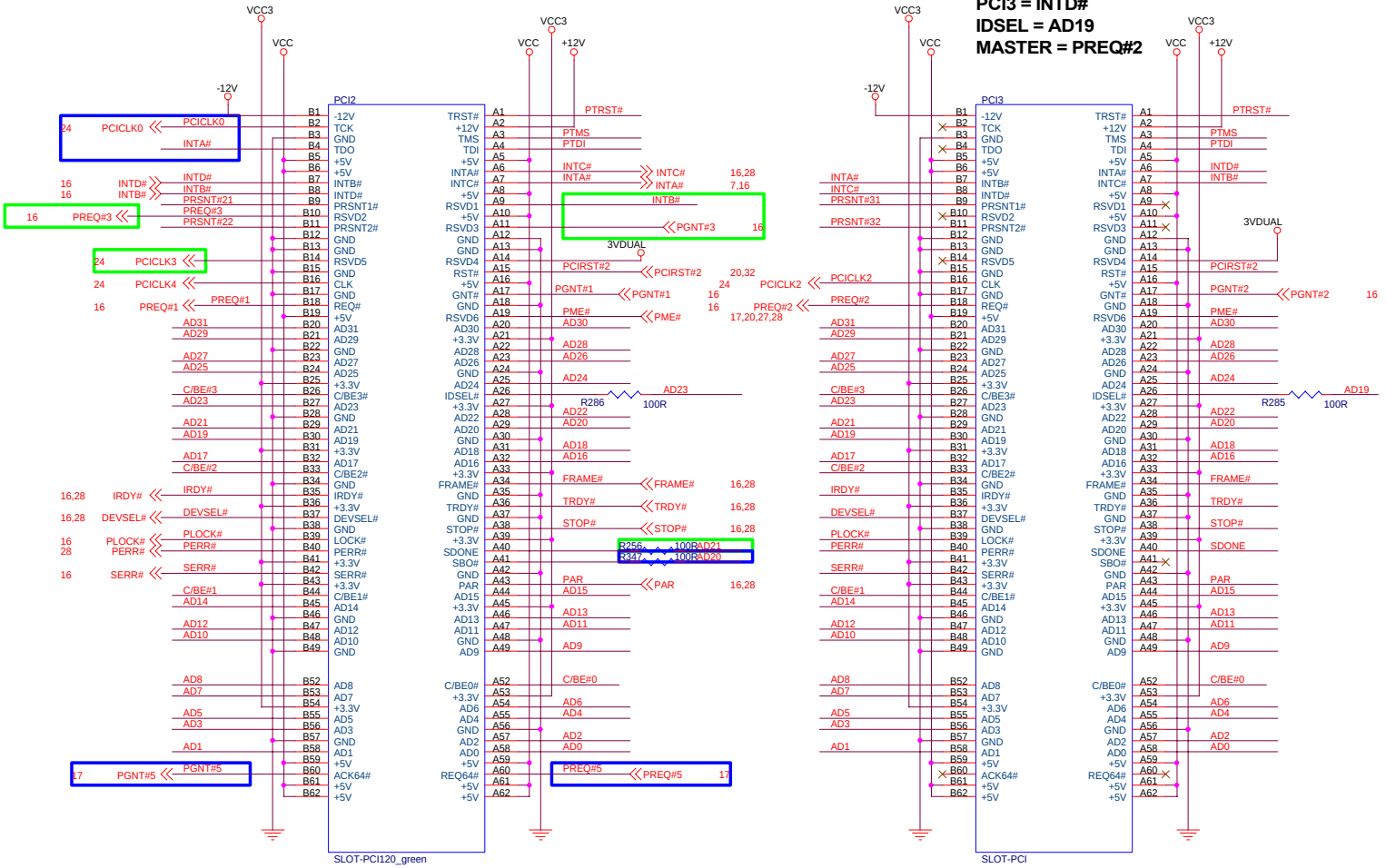
PCI SLOT 2,3(PCI VER:2.3 COMPLY)

PCI2 = INTC# and INTB#
IDSEL = AD23 and AD21
MASTER = PREQ#1 and PREQ#3

PCI3 = INTD#
IDSEL = AD19
MASTER = PREQ#2



20040319
SiS DG06 Page 55/44
All PREQ# signals should pull high
even the corresponding PCI slot is
not mounted

PCI BUS PULL-UP

RESERVED

Remove ACK64#
and REQ64#
and SBO#

MSI	MICRO-STAR	
Title	PCI slot 1 & 2 & 3	
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IDE BOOT TIME ISSUE ,VER:1

IDE1 & IDE2

20040319
SiS AP note : A964008

20040319
SiS DG06 Page 53/42

IDEDA7 — R277 5.6KR

16 IDEDA[0..15] — IDEDA[0..15]

32 HDDRST# — HDDRST# — R183 22R — HDRSTP#

VCC3 — R120 X_4.7KR

IDE1

HDRSTP#	1	2	
IDEDA7	3	4	IDEDA8
IDEDA6	5	6	IDEDA9
IDEDA5	7	8	IDEDA10
IDEDA4	9	10	IDEDA11
IDEDA3	11	12	IDEDA12
IDEDA2	13	14	IDEDA13
IDEDA1	15	16	IDEDA14
IDEDA0	17	18	IDEDA15
	19		
	21	22	
	23	24	
	25	26	
	27	28	
	29	30	
	31	32	
IDESAA1	33	34	CBLIDA
IDESAA0	35	36	IDESAA2
IDECS-A0	37	38	IDECS-A1
	39	40	

16 IDEREQA
16 IDEIOW-A
16 IDEIOR-A
16 ICHRDYA
16 IDACK-A
16 IDEIRQA

N32-2201061-H06 Blue

R108 X_10KR
R138 X_5.6KR

34 IDEACTP# — R104 4.7KR — VCC

IDE/BLUE

ATA66/100/133

CBLIDA — 16 — R106 X_15KR

16 IDESAA[0..2] — IDESAA[0..2]

16 IDECS-A[0..1] — IDECS-A[0..1]

IDE BOOT TIME ISSUE ,VER:1

IDEDB7 — R264 5.6KR

PLANE CAP

16 IDEDB[0..15] — IDEDB[0..15]

VCC3 — R115 X_4.7KR

HDDRST# — R182 22R — HDRSTS#

IDE2

HDRSTS#	1	2	
IDEDB7	3	4	IDEDB8
IDEDB6	5	6	IDEDB9
IDEDB5	7	8	IDEDB10
IDEDB4	9	10	IDEDB11
IDEDB3	11	12	IDEDB12
IDEDB2	13	14	IDEDB13
IDEDB1	15	16	IDEDB14
IDEDB0	17	18	IDEDB15
	19		
	21	22	
	23	24	
	25	26	
	27	28	
	29	30	
	31	32	
IDESAB1	33	34	CBLIDB
IDESAB0	35	36	IDESAB2
IDECS-B0	37	38	IDECS-B1
	39	40	

16 IDEREQB
16 IDEIOW-B
16 IDEIOR-B
16 ICHRDYB
16 IDACK-B
16 IDEIRQB

N32-2201071-H06 White

R112 X_10KR
R128 X_5.6KR

16 IDESAB1 — IDESAB1
16 IDESAB0 — IDESAB0
16 IDECS-B0 — IDECS-B0

CBLIDB — CBLIDB 16
IDESAB2 — IDESAB2 16
IDECS-B1 — IDECS-B1 16

34 IDEACTS#

CONN-20P-IDE-white

R100 4.7KR — VCC

R105 X_15KR

ATA66/100/133

16 IDESAB[0..2] — IDESAB[0..2]

16 IDECS-B[0..1] — IDECS-B[0..1]

MICRO-STAR

Title: IDE-ATA

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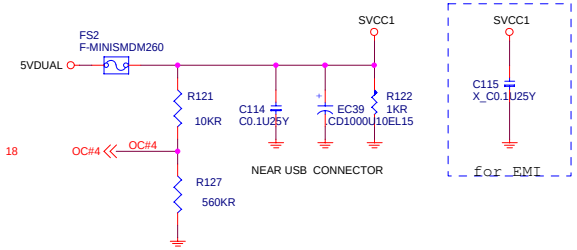
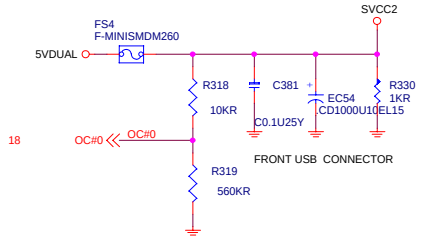
Date: Friday, August 19, 2005 | Sheet 22 of 36

POWER CIRCUIT FOR USB PORT 4,5,6,7

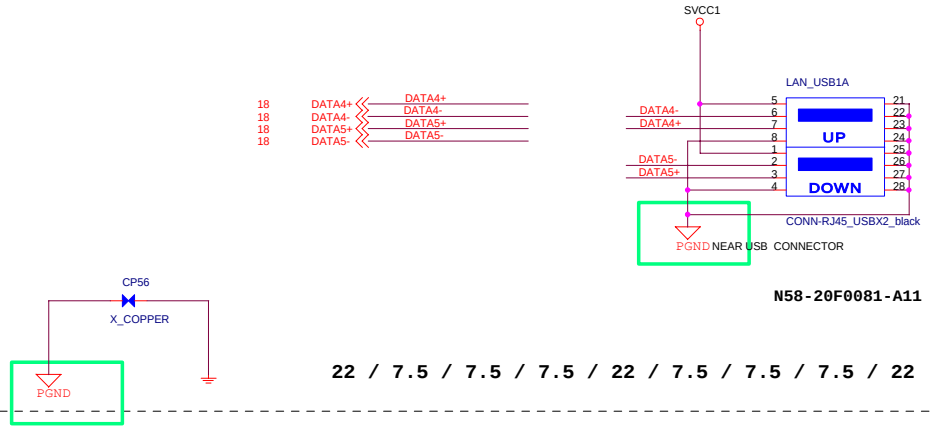


POWER CIRCUIT FOR USB PORT 0,1,2,3



Cheange location and remove

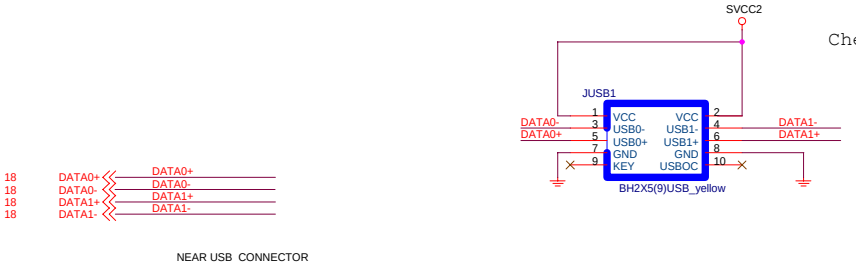
REAR PANEL USB CONNECTOR FOR USB PORT 4,5



N58-20F0081-A11

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

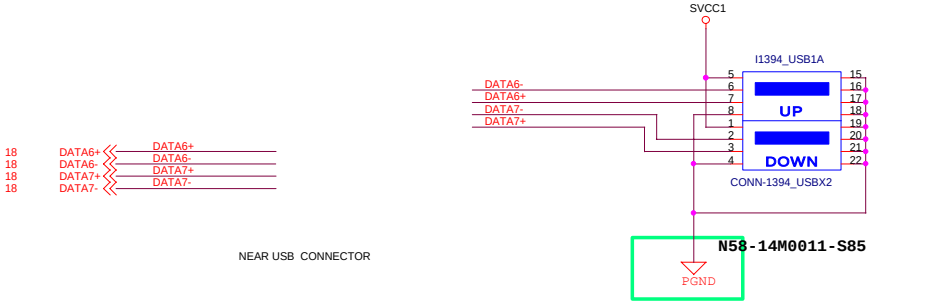
FRONT PANEL USB CONNECTOR FOR USB PORT 0,1



Cheange location and remove

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

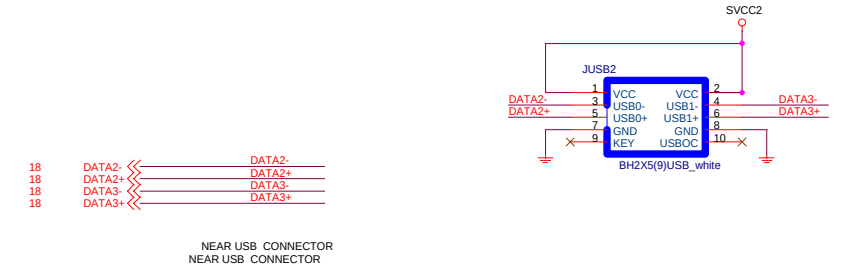
REAR PANEL USB CONNECTOR FOR USB PORT 6,7



N58-14M0011-S85

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

FRONT PANEL USB CONNECTOR FOR USB PORT 2,3



22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

MICRO-STAR

Title: USB CONNECTORS

Size | Document Number: MS-7233 | Rev: 0A

Date: Friday, August 19, 2005 | Sheet 23 of 36

Main Clock Generator

OPTIONS

1. ICS953401

add bead

By-Pass Capacitors
Place near to the Clock Outputs

U9
CS953401CF

FS4	FS3	FS2	FS1	FS0	CPU	PCI
0	0	0	0	0	266.66	33.33
0	0	0	0	1	133.33	33.33
0	0	0	1	0	200.00	33.33
0	0	0	1	1	166.66	33.33

PCICLK0	PCI2 master3
PCICLK2	PCI3
PCICLK3	PCI2 master2
PCICLK4	PCI2 master1

0 = 48M
1 = 12M

0 = enable PCIEXCLK3/4
1 = PCICLK5

0 = Desktop
1 = noteboot

Remove level shift circuit

MICRO-STAR

Title: Main Clock Generator

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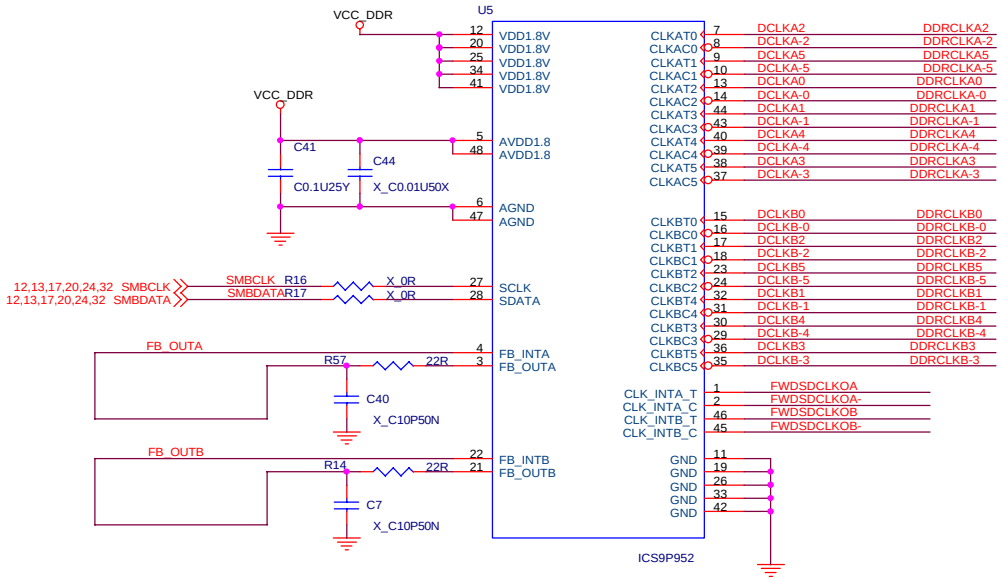
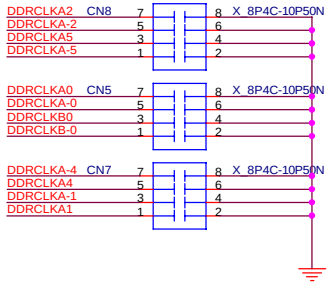
Date: Friday, August 19, 2005 | Sheet 24 of 36

Clock Buffer (DDR II)

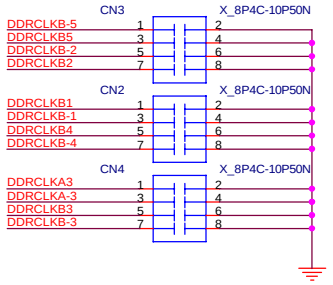
By-Pass Capacitors
Place near to the Clock Buffer

Remove demping resister

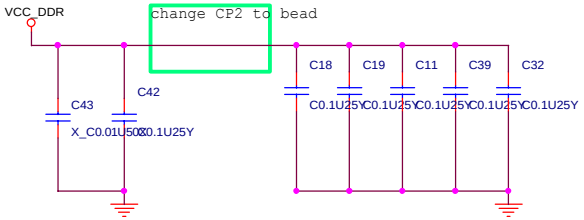




By-Pass Capacitors
Place near to the Clock Buffer



DDRVREF GEN. & DECOUPLING



MSI	MICRO-STAR		
Title	Clock Buffer		
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AUDIO CODEC

For 6 channel codec

CODEC VCC3_3 NEED CAP AS CLOSE AS POSSIBLE.

Close to Y5

Change Cap. from 220uF to 100uF

U19 ALC850

JL_IN1 AUDIO-CDIN1X4

JVID1 BH1X4_red

AUDIO2 JACK-EARX3-13P-1

AUDIO1 AZ AUDIO+SPDIF

CN15 8P4C-1000P50N

CN16 8P4C-1000P50N

JAUDIO

BH2x5(8)-COM-Blue

SPDIF IN

JACK-RCA2P_red

MSI	MICRO-STAR		
Title	AUDIO ALC850 CODEC		
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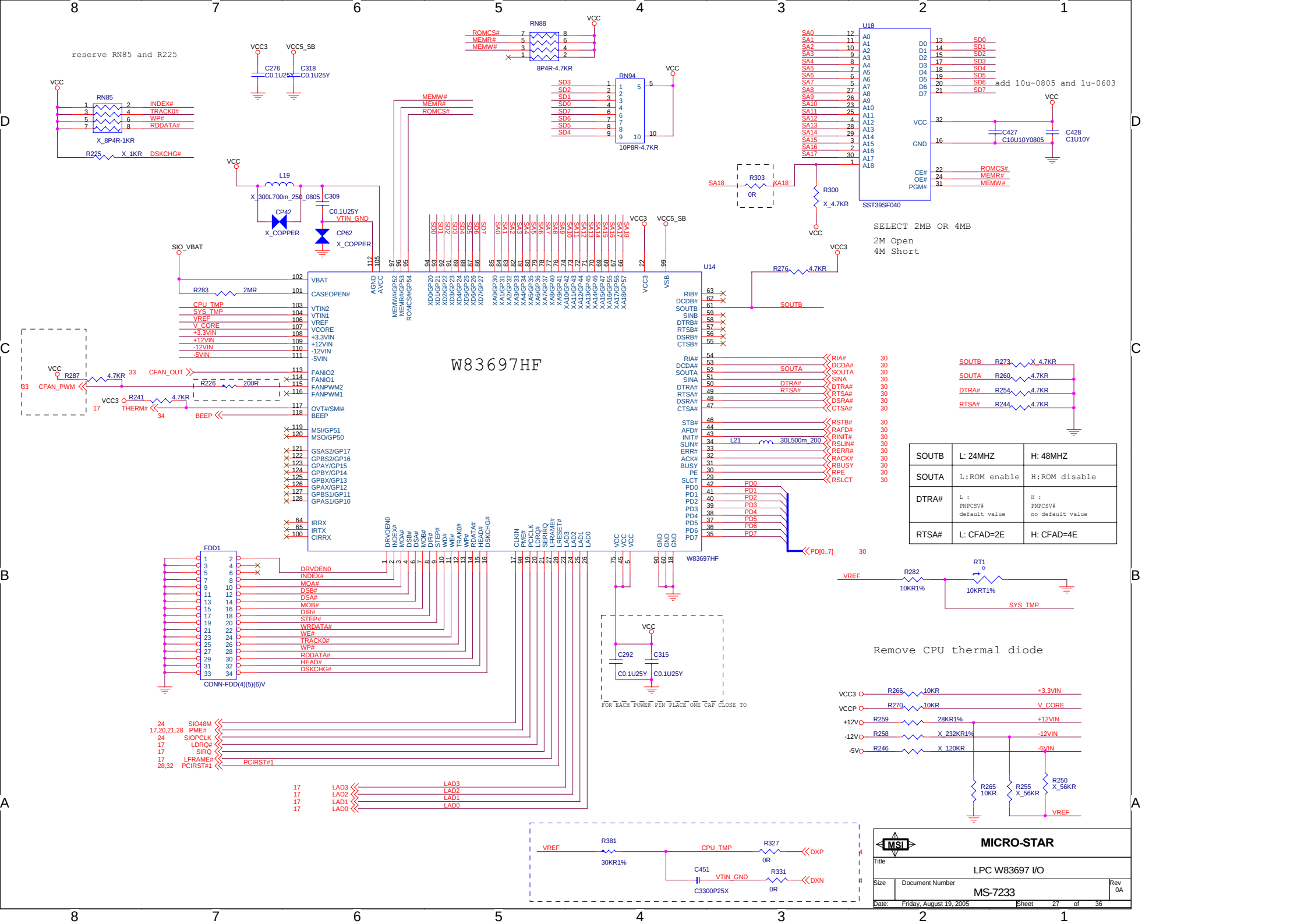
reserve RN85 and R225
add 10u-0805 and 1u-0603
SELECT 2MB OR 4MB
2M Open
4M Short
W83697HF
Remove CPU thermal diode
FOR EACH POWER PIN PLACE ONE CAP CLOSE TO
SOUTB L: 24MHZ H: 48MHZ
SOUTA L:ROM enable H:ROM disable
DTRA# L : PNPCSV# default value H : PNPCSV# no default value
RTSA# L: CFAD=2E H: CFAD=4E
MICRO-STAR
LPC W83697 I/O
MS-7233
Rev 0A
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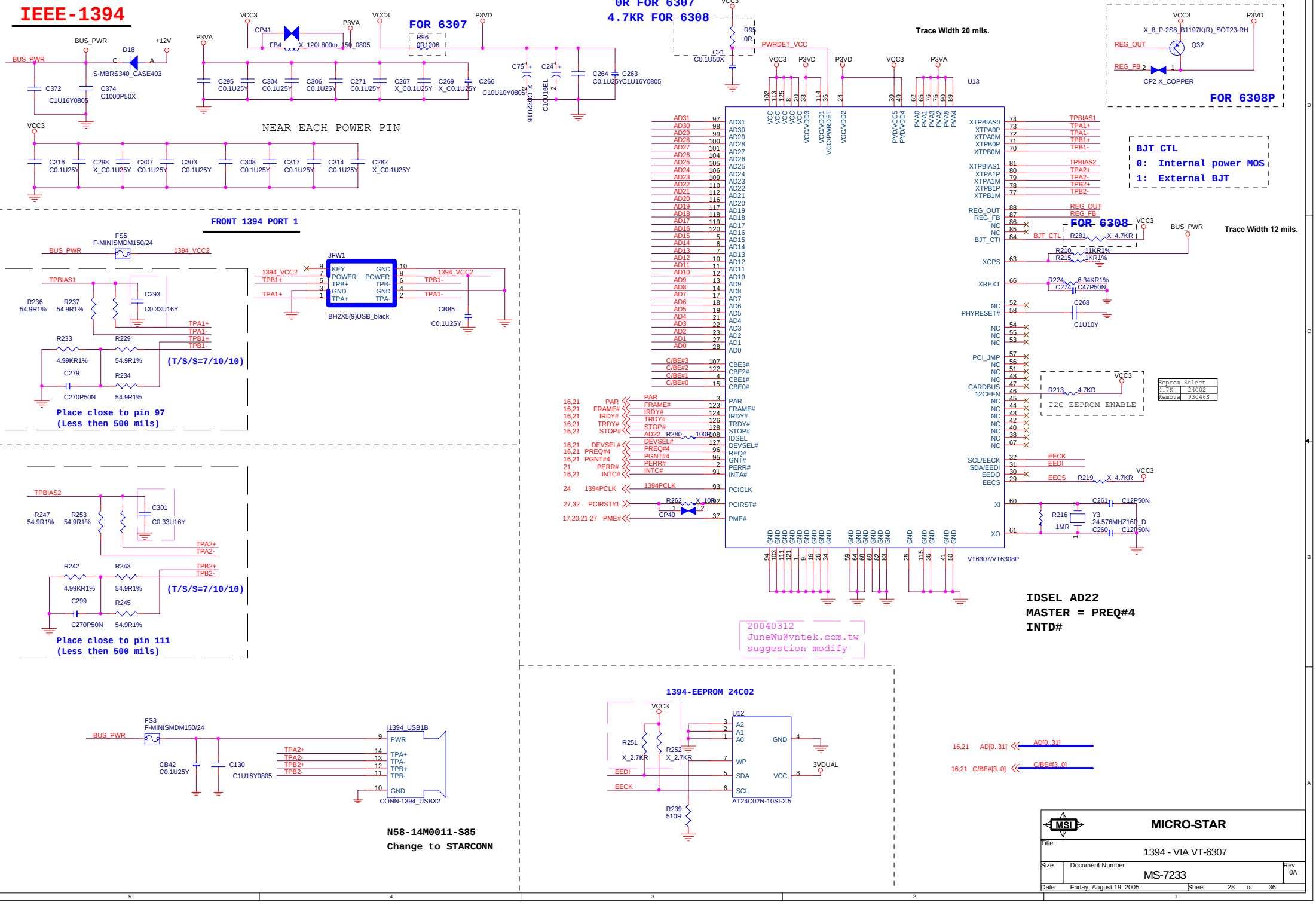
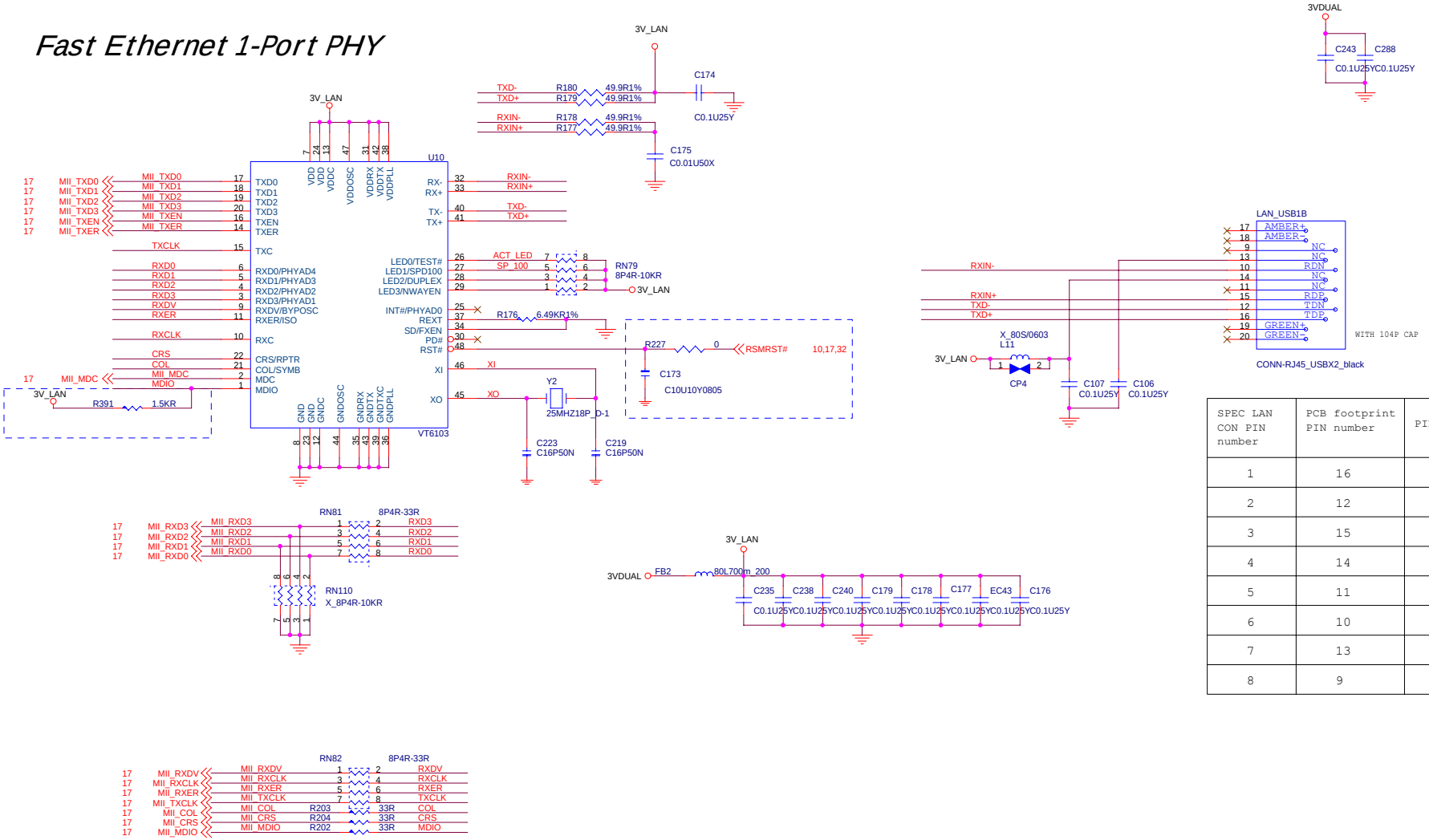
IEEE-1394


0R FOR 6307
4.7KR FOR 6308
FOR 6307
FOR 6308P
Trace Width 20 mils.
Trace Width 12 mils.
NEAR EACH POWER PIN
FRONT 1394 PORT 1
Place close to pin 97
(Less then 500 mils)
Place close to pin 111
(Less then 500 mils)
(T/S/S=7/10/10)
BJT_CTL
0: Internal power MOS
1: External BJT
I2C EEPROM ENABLE
Eeprom Select
4.7K 24C02
Remove 93C46S
VT6307/VT6308P
IDSEL AD22
MASTER = PREQ#4
INTD#
20040312
JuneWu@vntek.com.tw
suggestion modify
1394-EEPROM 24C02
N58-14M0011-S85
Change to STARCONN
MICRO-STAR
1394 - VIA VT-6307
MS-7233
Friday, August 19, 2005

Fast Ethernet 1-Port PHY



SPEC LAN CON PIN number	PCB footprint PIN number	PIN Define
1	16	TXD+
2	12	TXD-
3	15	RXIN+
4	14	TCT
5	11	NC
6	10	RXIN-
7	13	RCT
8	9	NC

MICRO-STAR

Title: LAN

Size | Document Number: MS-7233 | Rev: 0A

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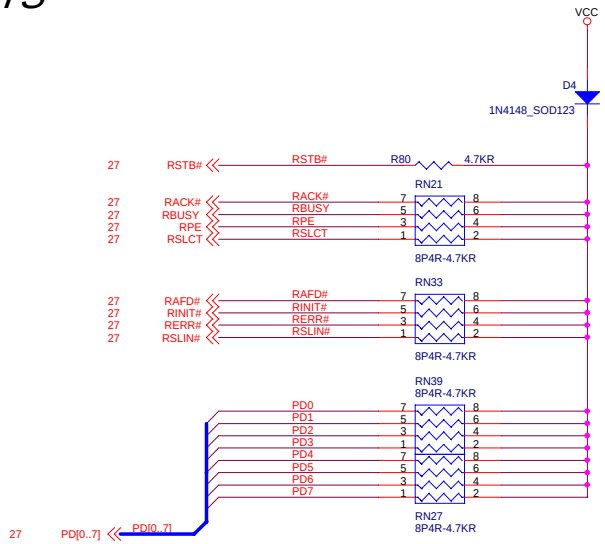
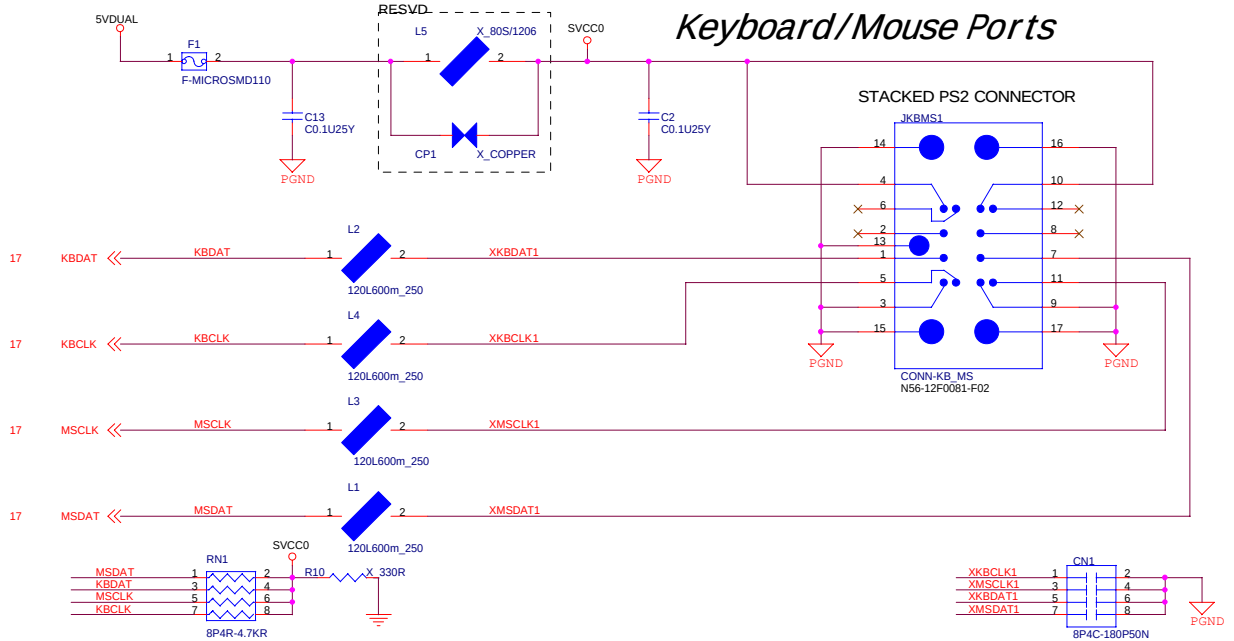
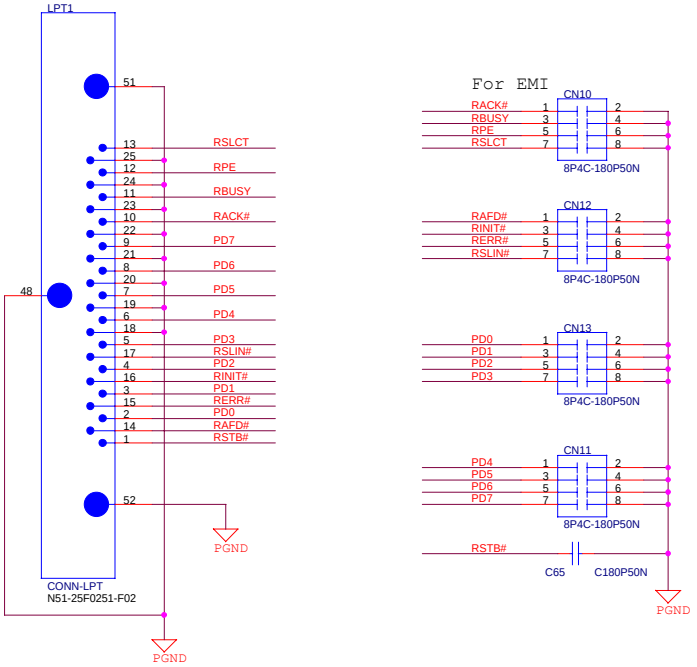
LPT PORTS

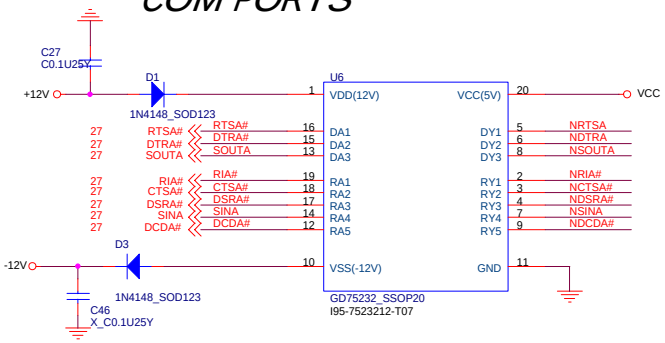


Keyboard/Mouse Ports

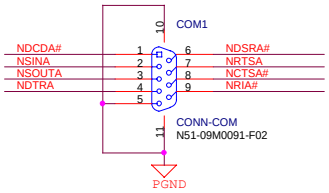


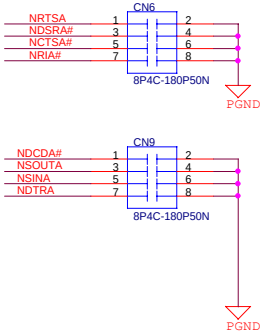


COM PORTS



Multiple RS232 Drivers and Receivers





MSI	MICRO-STAR	
Title	LPT/COM PORT	
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IPF06N03LA	Rds(on)=8.7mΩ(@4.5V,30A),Vgs(on)=1.2~2V,Id=50A,Ciss=3110pf,Qg=10nC,Vds=25V,Vgs=±20V
C100U2SP	ESR<13mΩ,Ripple cur.<2.7A,LC<12uA,105C
.CD3300U6.3EL25	ESR<12mΩ,Ripplecur.<2800mA,105C,longlife3000hrs,KZGSeries
560u_2.5V	ESR=6mΩ,Ripplecur.=4400mA,Lc.<500uA,105C/2000hrs
1800UF/6.3V	ESR<12mΩ, Ripplecur<2350mA,105C, longlife change from 2000hrs to 3000hrs ,KZJ series
0.6uH/40A	0.6u/20%, Isat=40A,Rdc=1.2m ohm,PEW wire
CH-1.2U18A	1.2u/20%,Dip-2/vertical7.5mm,1.2ψ/5.5turns,18A

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

Voltage Regular Module

2A-0530
change 6602 to 6614

MOSFET Gate signal : 20 mils
Phase signal : 20 mils
Boot signal : 16 mils

0.8375~1.6V / 119A

CHECK THIS! CONNECT TO BULK CAPACITOR

CPU DECOUPLING CAPACITORS

C10U10Y1206 10u/10V/Y5V,1206,80/-20%

Place these caps within socket cavity

OS-CON Capactiors

MOSFET Heatsinks

SP Capacitors

EL Capacitors

Solder Side

MICRO-STAR

Title: VRM 10.1 - Intersil 6565ACV 3 Phase

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ACPI Controller

ICH5 300mA
PCI 375+20+20= 415mA
VCC3_SB 715mA

1.7V@250mA

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

Pin48 pull-up 5VSB for DDR2

DDRTYPE
Pull-up 1.8V
Pull-down 2.6V

1.8V STAND BY POWER

5V DUAL Power

Low RDS ON MOSFET

VCC_VID / VID_GOOD

Place MOSFET near CPU

DDR VTT Power

1.25V/2.1A

1.25V/2.9A

5VDIMM

Wide Trace

Close_to_MS6+

Change 4.7K to 2K

CLOSE TO CHIP

change CAP 6.3v to 10v

remove EC65

remove EC14

remove EC63 , EC69

REV:0A

VDDPEXSB W=25mils

Title	ACPI Controller MS7
Size	Document Number: MS-7233
Rev	0A
Date:	Friday, August 19, 2005
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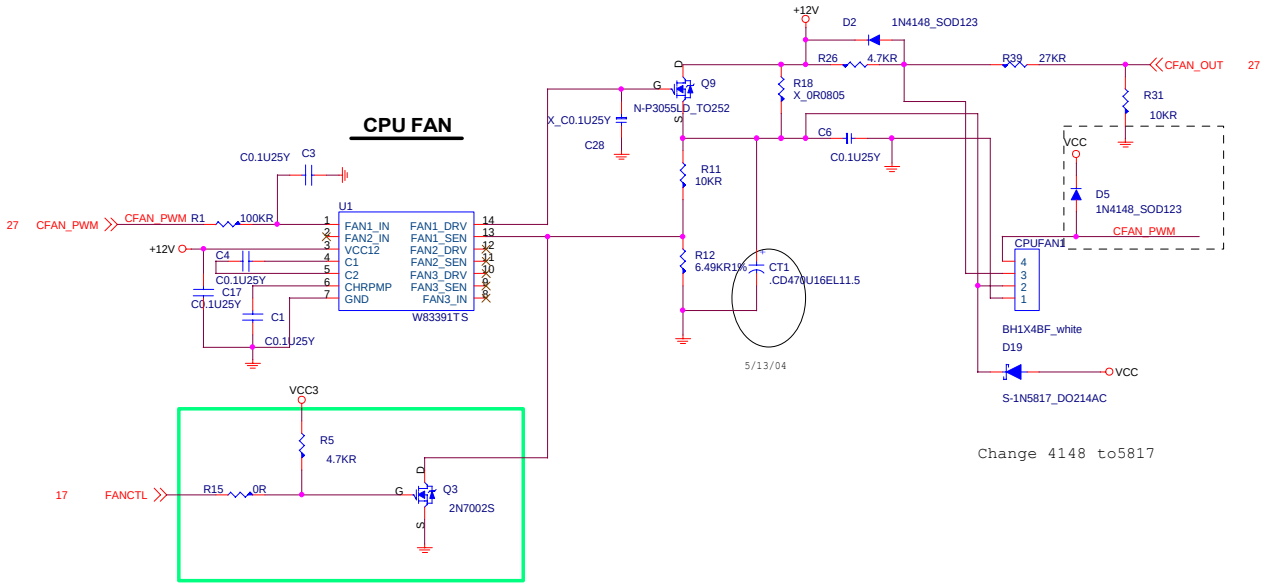
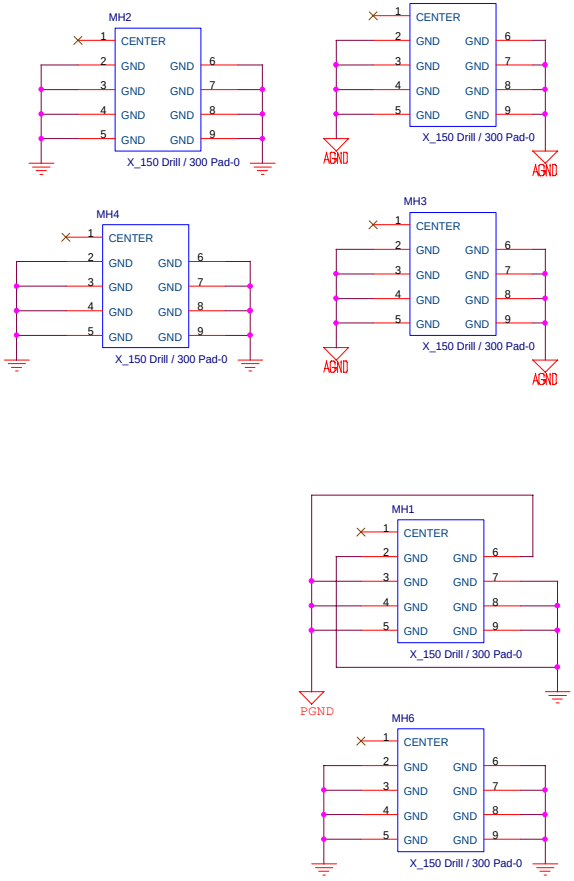
MICRO-STAR

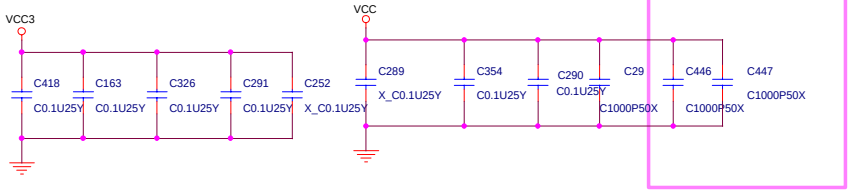
ATX VIA-Hole * 9

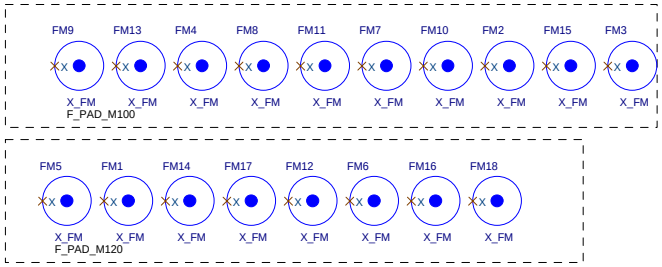


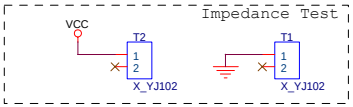
Change 4148 to5817



BULK / Decopuling







MSI	MICRO-STAR	
Title	FAN	
Size	Document Number MS-7233	Rev 0A
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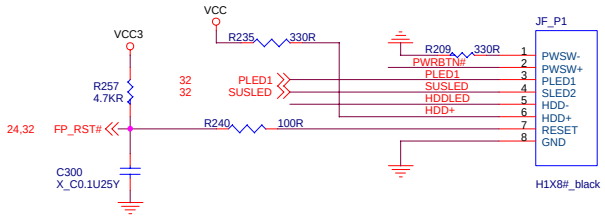
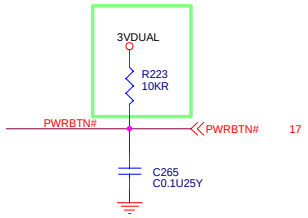
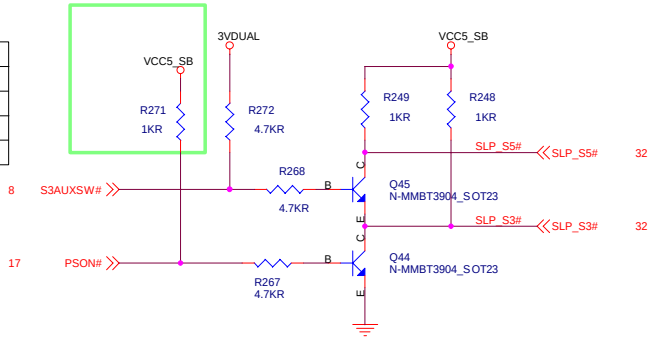
FRONT PANEL

For MSI / Front Panel

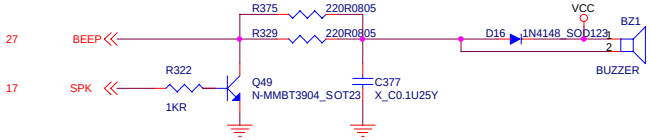




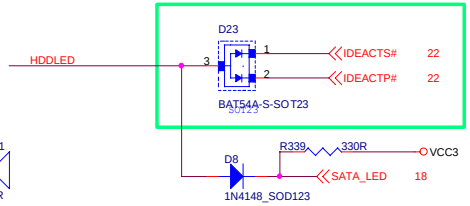
	S0	S3	S5
S3AUXSW#	1	0	1
PSON#	0	1	1
SLP_S5#	1	1	0
SLP_S3#	1	0	0



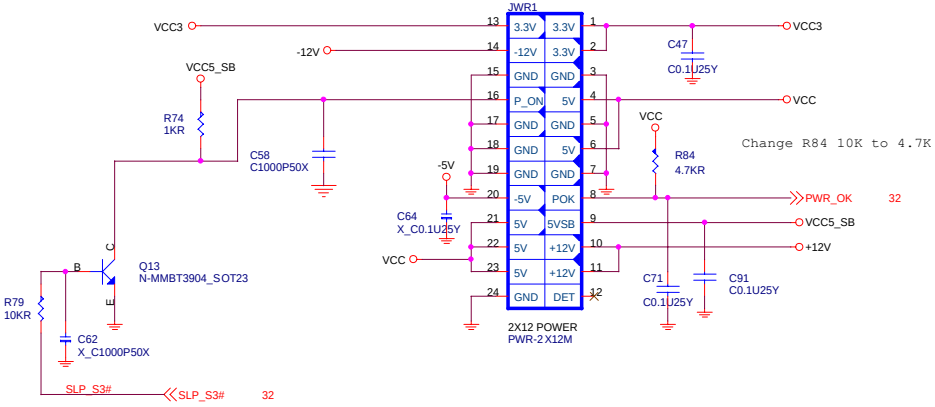
Add 220R 0805

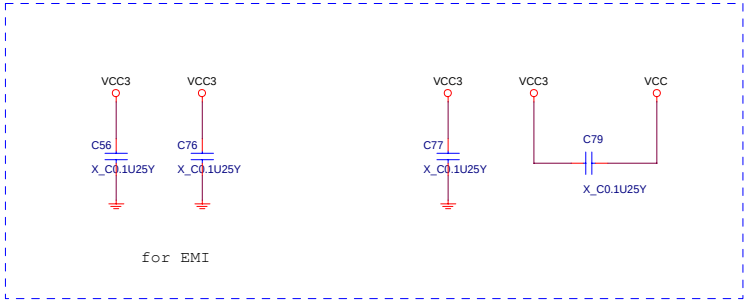


Change 8148*2 to BAT54A



ATX Connector





MSI **MICRO-STAR**

Title: FRONT PANEL

Size	Document Number	Rev
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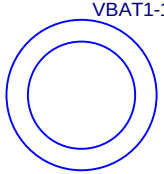
PCB1

P00-071142A-E48

VBAT1-1



BAT-BCR2032P
D06-0100101-P01

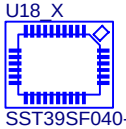
U8_HS

NB-HEATSINK
E31-0401580-E25

U16_HS

X_SB-HEATSINK
E31-0400890-E25

U18_X



SST39SF040-70-4C-NH

MICRO-STAR		
Title: OPTION PARTS		
Size	Document Number: MS-7233	Rev: 0A
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MS-7114 SCHEMATIC HISTORY

Rev	Date	Page	Description
0B	2004		• Transfer from OEM3
1.00	2005/02/05	-19-	• Add bypass CAP 1u under SB solder side
		-18-	• Remove SIS964 OC#4 C419
		-24-	• Clock generator VCC3 add bead and CT2 • Remove BSEL0,1 level shift circuit
		-25-	• Add a bead between VCC_DDR and CBVDD
		-27-	• Reserver FDD signal pull-up RN85
			• Firmware U18 power add C427 , C428
		-33-	• Change Q22 , Q24 , Q50 , Q51 type to T0263
			• Change MS7 ver:RAC to RBC and remove patch circuit
			• Change VTT_DDR reference R25 , R32 to 1K
		-4-	• Remove R50 , R51 direct short
		-7-	• Change R174 to 680R , R175 to 150R
		-8-	• Add a bypass CAP C411 0.1u with DDRVREF
		-10-	• Remove VGA part
		-15-	• DDR terminator CAP all in
		-16-	• Add R344 33R for PCIRST# and remove ZSTB pull-up
		-25-	• Remove RN2 , RN3 , RN4 , RN5 , RN7 , RN8
		-26-	• Add D20 , D21 for Audio 5VSB
			• Change EC58 , EC59 to 100u
			• Add CN15 , CN16 , R342 , R296 , R232 , R346
		-32-	• Change C110 and C23 to 1u
			• Change R8 to 1.5K
			• Add EC10 , EC16 , EC35 to 560u
			• Add EC11 , EC13 , EC32 to 680u
		-7-	• SIS suggest Change R109 to 10R1% , R113 to 120R1% , R90 to 261R1% R110 to 49.9R1% , R92 to 100R1% , C310 to 10p , C319 to 10p , add C117 , C119 to 103p
		-27-	• Remove -5V circuit R246 , R250
		-24-	• Change C154 , C147 to 22p

Rev	Date	Page	Description
2.00	2005/03/09		change DDR to DDR2 change CLK buffer to ICS9P952
	2005/03/23		change DDR2 slot 1/3 PN
2A	2005/05/08		change Hvref voltage with R72 R75 R92 R110 Add MS6+ VDD 5VDIMM voltage

MICRO-STAR

Title: HISTORY

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Date: Thursday, August 18, 2005 | Sheet 36 of 36