

MS7042M1 Version:10A

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| | |

CPU:

Intel Northwood/Prescott
Up to 3.6GHz (FMB1.5)

System Chipset:

PM800/PT800 (North Bridge)
VIA 8237 (South Bridge)

On Board Chipset:

BIOS -- ISA EEPROM
AC'97 Codec --CMI9761
LPC Super I/O -- W83697HF
LAN -- VIA VT6103 PHY
IEEE1394 -- VIA VT6307
CLOCK -- CY28341-3

Main Memory:

DDR * 2 (Max 2GB)

Expansion Slots:

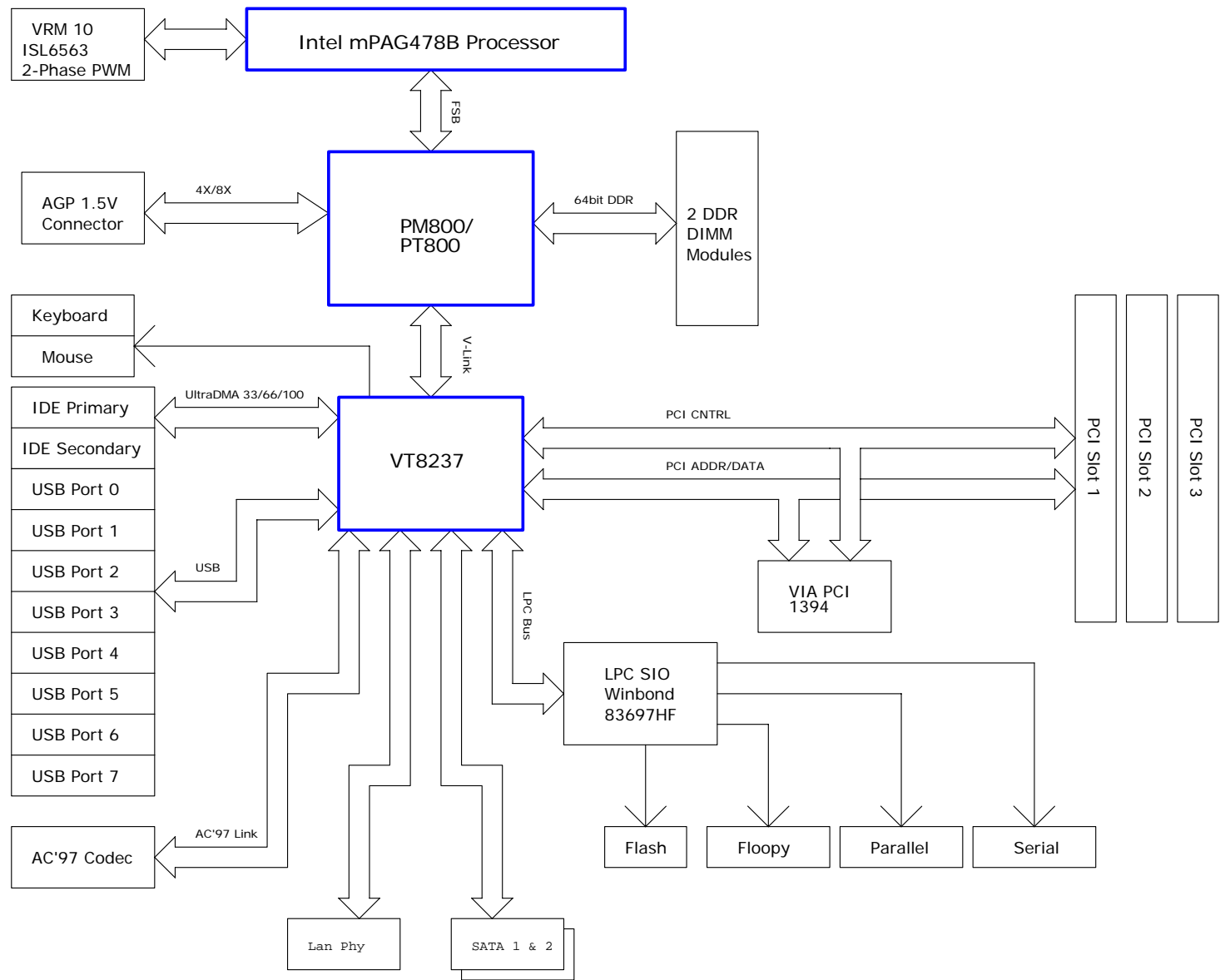
AGP * 1
PCI2.3 SLOT * 3

PWM:

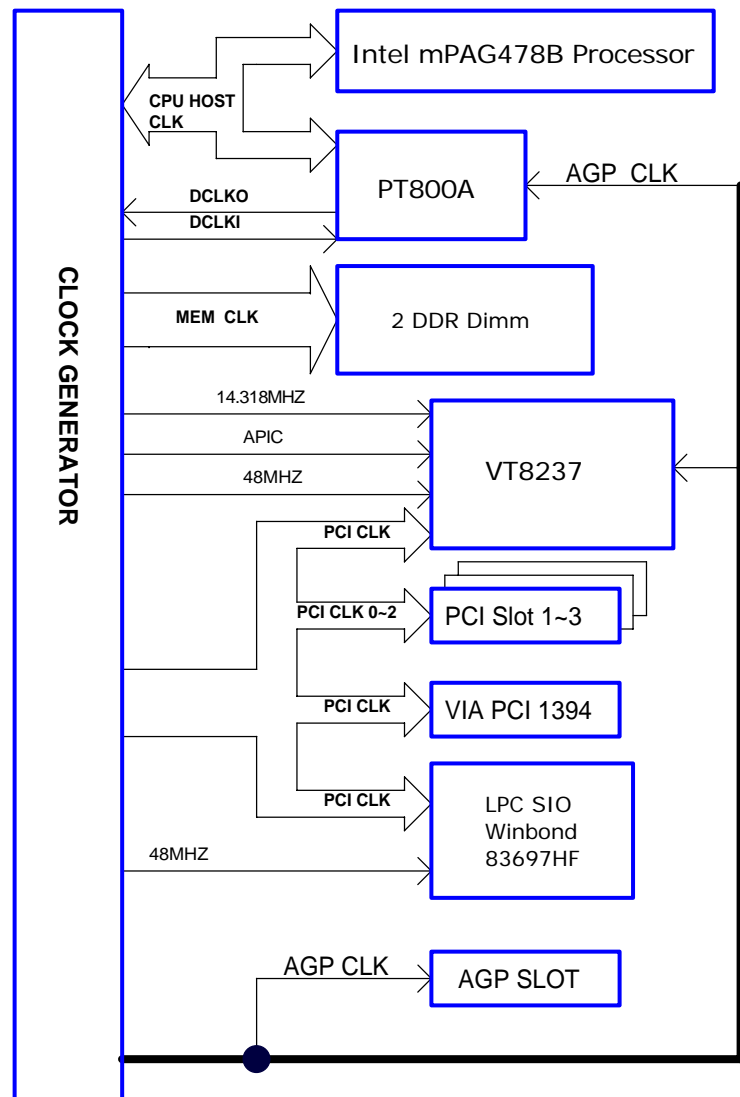
Controller: STL6710

| | | | |
|-------------------|----------------------------|-------|---------|
| Micro-Star | | | |
| Title COVER SHEET | | | |
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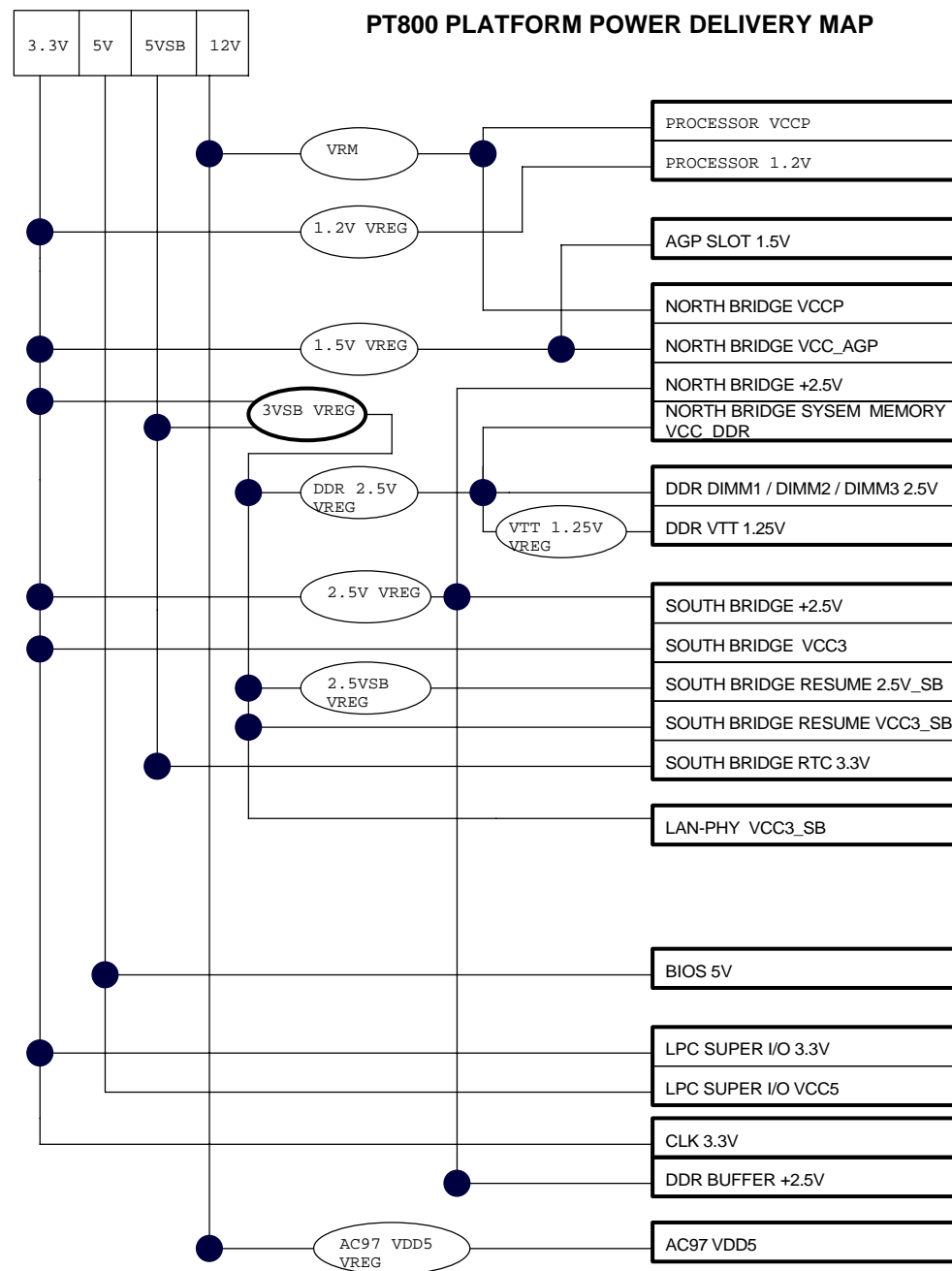
Block Diagram



PT800 PLATFORM CLOCK GENERATOR MAP



PT800 PLATFORM POWER DELIVERY MAP



Micro-Star

| | | | |
|-------------------|----------------------------|-------|---------|
| Title | | | |
| PWR AND CLOCK MAP | | | |
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SB-VT8327

| GPIO Pin | Type | Function | Power well |
|----------|------|----------|------------|
| GPI 0 | I | GPI 0 | RESUME |
| GPI 1 | I | IDE2 CBD | RESUME |
| GPO 0 | I | GPO 0 | RESUME |
| GPO 1 | I | GPO 0 | RESUME |
| GPIO A | I | NB STR S | MAIN |
| GPIO B | I | IOQ DEPH | MAIN |
| GPIO C | I | NB STR S | MAIN |
| GPIO D | I | GTL PULL | MAIN |

I/O-83697HF

| | | | |
|---------|-----|----------|------|
| GPIO 10 | I/O | GAME GP4 | MAIN |
| GPIO 11 | I/O | GAME GP6 | MAIN |
| GPIO 12 | I/O | GAME GP2 | MAIN |
| GPIO 13 | I/O | GAME GP0 | MAIN |
| GPIO 14 | I/O | GAME GP3 | MAIN |
| GPIO 15 | I/O | GAME GP1 | MAIN |
| GPIO 16 | I/O | GAME GP7 | MAIN |
| GPIO 17 | I/O | GAME GP5 | MAIN |
| GPIO 50 | I/O | GAME TXD | MAIN |
| GPIO 51 | I/O | GAME RXD | MAIN |

DDR DIMM Config.

| DEVICE | ADDRESS | CLOCK |
|--------|----------|---|
| DIMM 1 | 1010000B | MDCLKA0/A#0 MDCLKA1/A#1 MDCLKA2/A#2 |
| DIMM 2 | 1010001B | MDCLKB0/B#0 MDCLKB1/B#1 MDCLKB2/B#2 |

PCI Config.

| DEVICE | MCP1 INT Pin | REQ#/GNT# | IDSEL | CLOCK | CLK GEN PIN OUT |
|------------|--------------------------------------|------------------|-------|----------|-----------------|
| PCI Slot 1 | PIRQ#A PIRQ#B PIRQ#C PIRQ#D | PREQ#0 PGNT#0 | AD16 | PCICLK0 | 15 (PCI_CLK0) |
| PCI Slot 2 | PIRQ#B PIRQ#C PIRQ#D PIRQ#A | PREQ#1 PGNT#1 | AD17 | PCICLK1 | 17 (PCI_CLK1) |
| | PIRQ#D PIRQ#A PIRQ#B PIRQ#C | PREQ#3 PGNT#3 | AD19 | PCICLK3 | 14 (PCI_CLK1) |
| PCI Slot 3 | PIRQ#C PIRQ#D PIRQ#A PIRQ#B | PREQ#2 PGNT#2 | AD18 | PCICLK2 | 18 (PCI_CLK2) |
| PCI 1394 | PIRQ#E | PREQ#4 PGNT#4 | AD20 | 1394PCLK | 10(1394PCLK) |

PCI RESET DEVICE

| Signals | Source | Target |
|----------|--------|-----------------------|
| PCIRST# | SB | MS7, AGP slot |
| PCIRST#1 | MS7 | NB, SIO |
| PCIRST#2 | MS7 | PCI slot 1-3 |
| DEV_RST# | MS7 | PCI 1394 |
| HDRST# | MS7 | Primary, Scondary IDE |

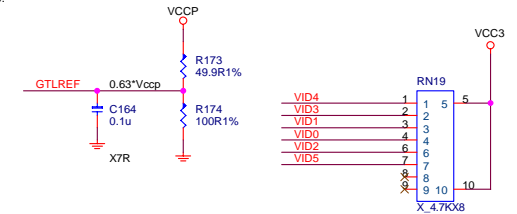
CPU SIGNAL BLOCK

VIDPWRGD DC Specifications

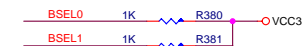
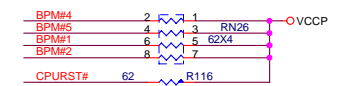
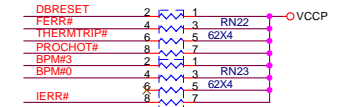
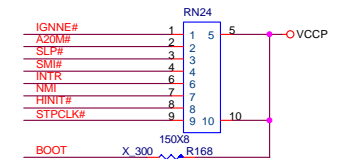
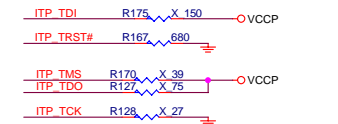
| | Min | Typ | Max |
|-----|-----|-----|-----|
| VIL | | | 0.3 |
| VIH | 0.9 | | |

It must route to the enable pin of PWM and CK-409.
VIDGD to Vccp delay time is from 1ms to 10ms.
VIDGD rising time is 150ns.

CPU GTL REFERENCE VOLTAGE BLOCK

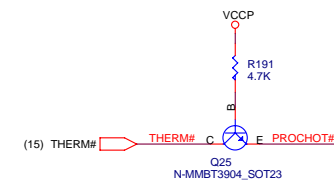


CPU ITP BLOCK



CPU STRAPPING RESISTORS

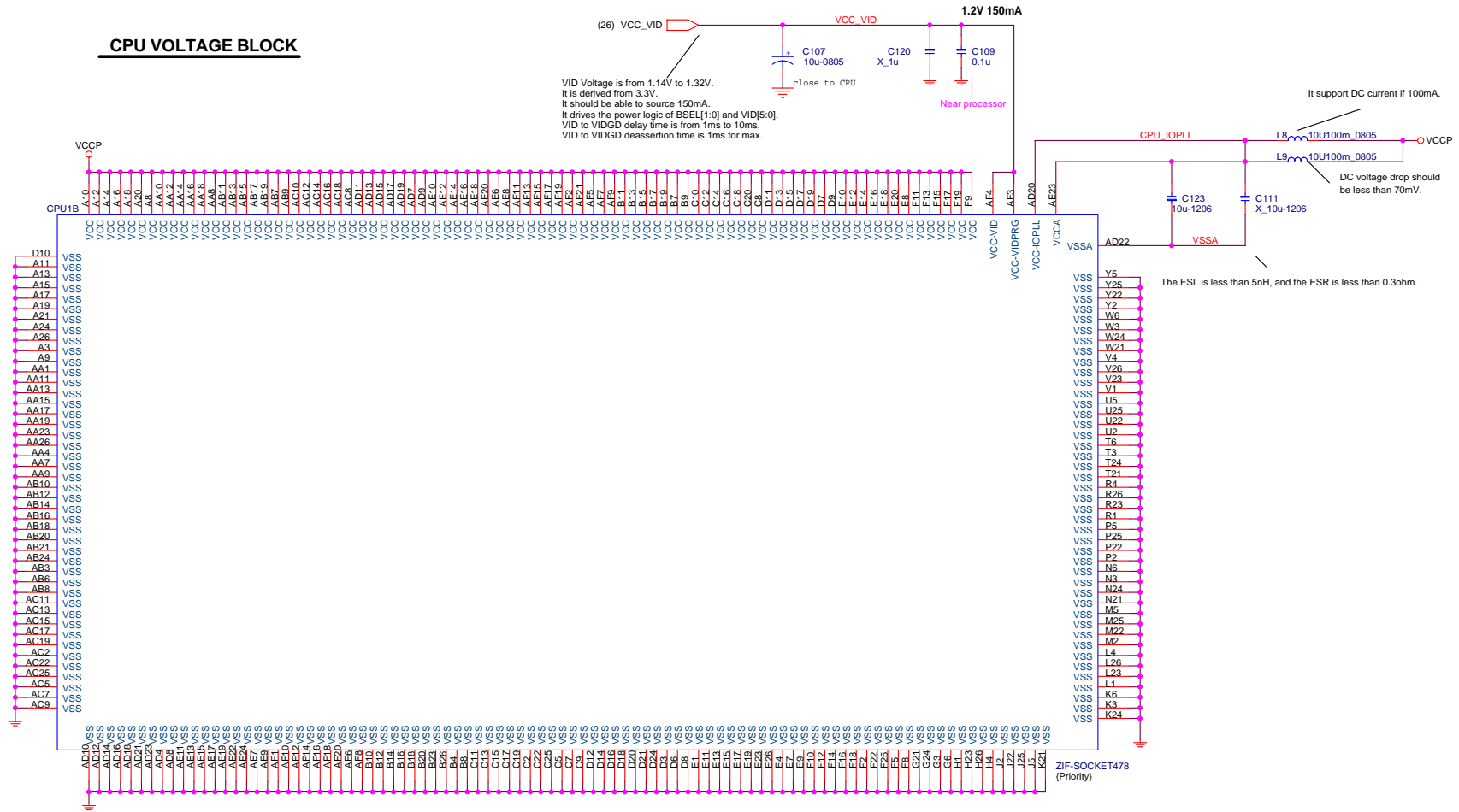
ALL COMPONENTS CLOSE TO CPU



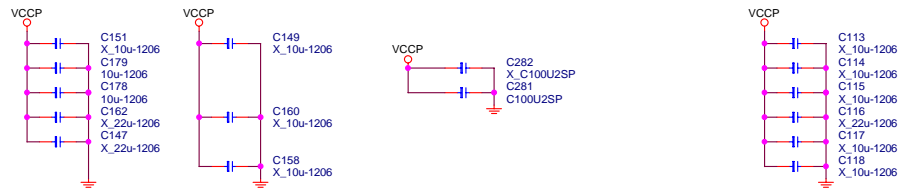
Micro-Star

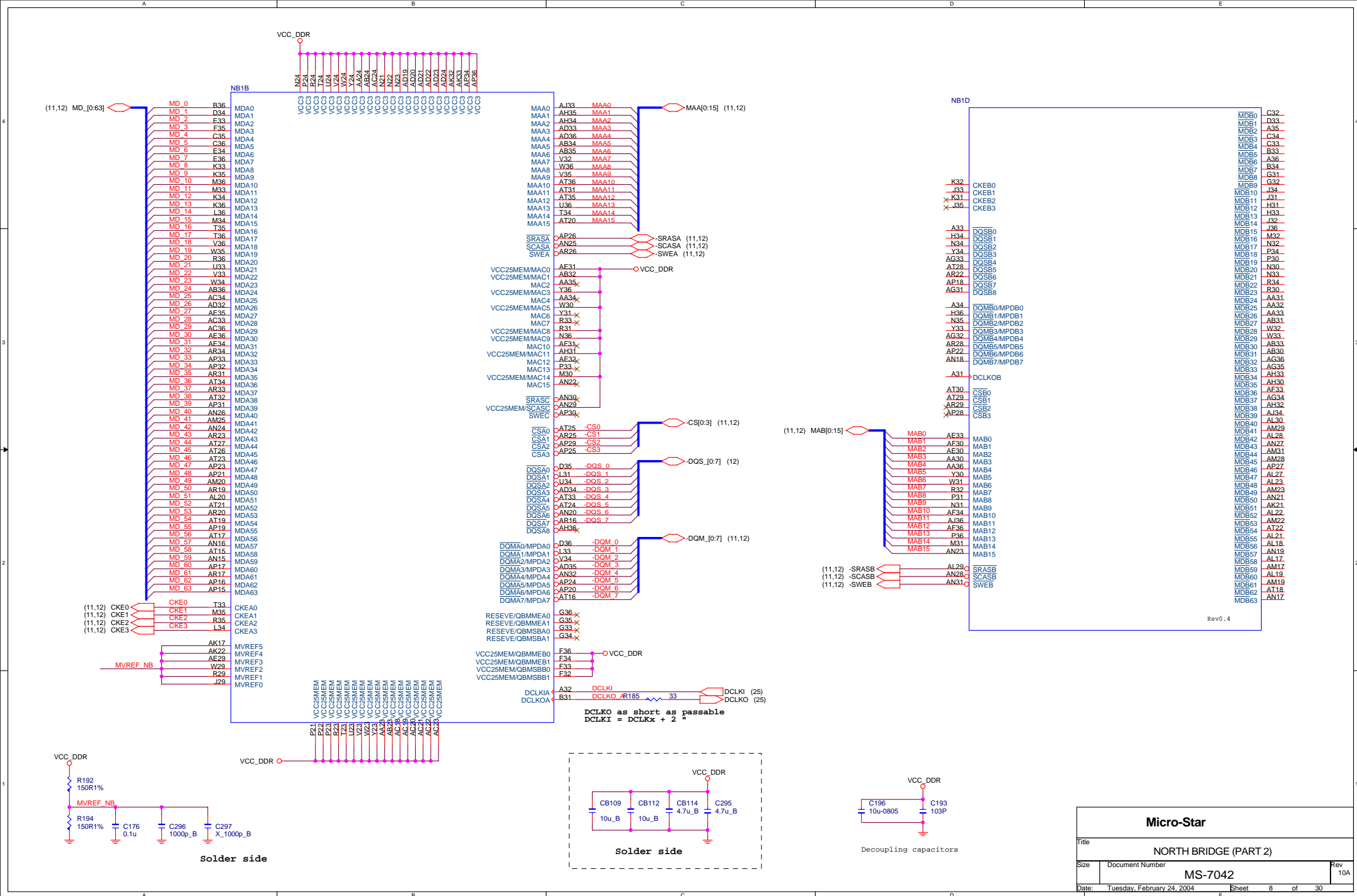
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|---------|----------------------------|---------|--------------------------|
| Title | | | Intel mPGA478B - Signals |
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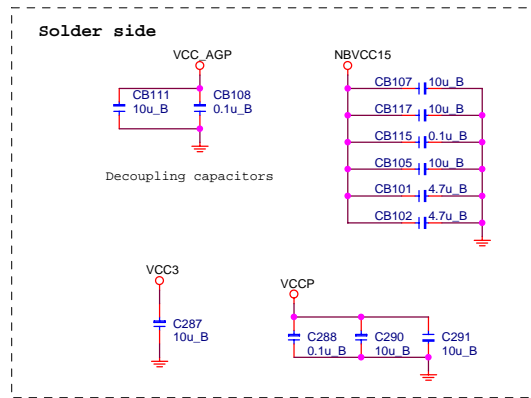
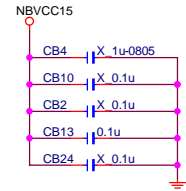
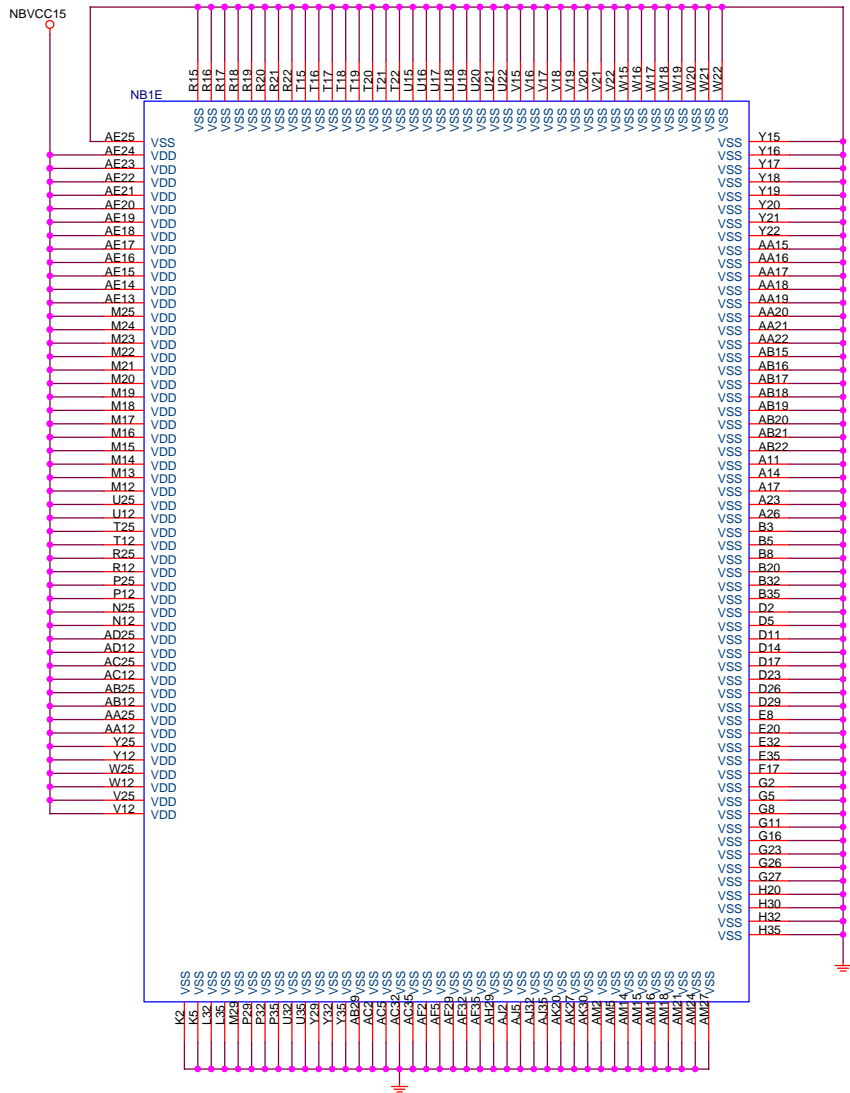
CPU VOLTAGE BLOCK



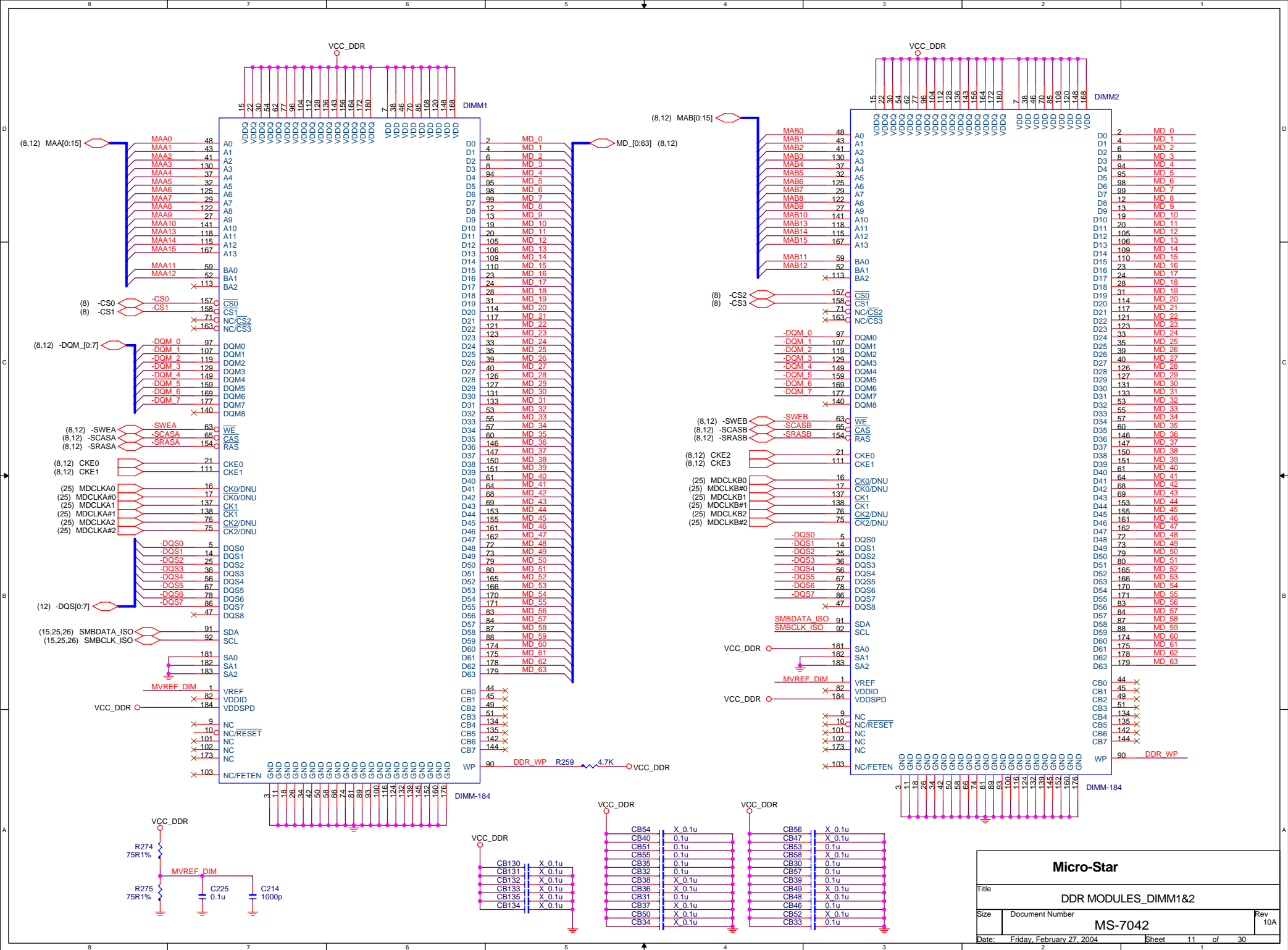
CPU DECOUPLING CAPACITORS







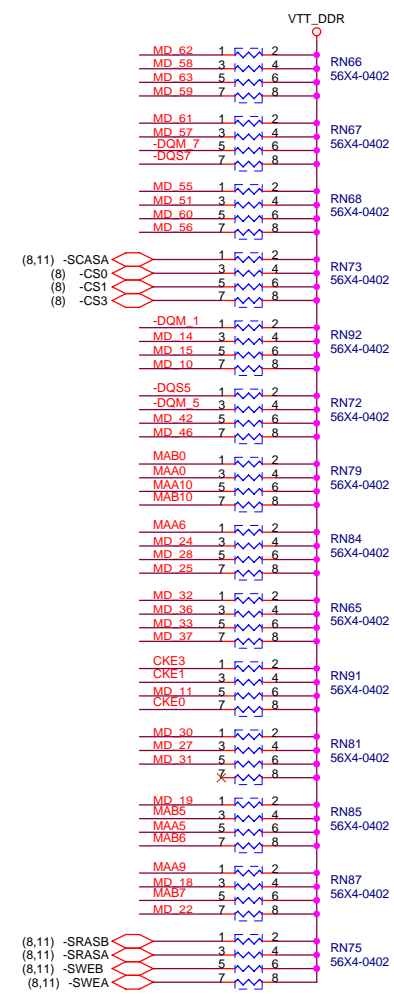
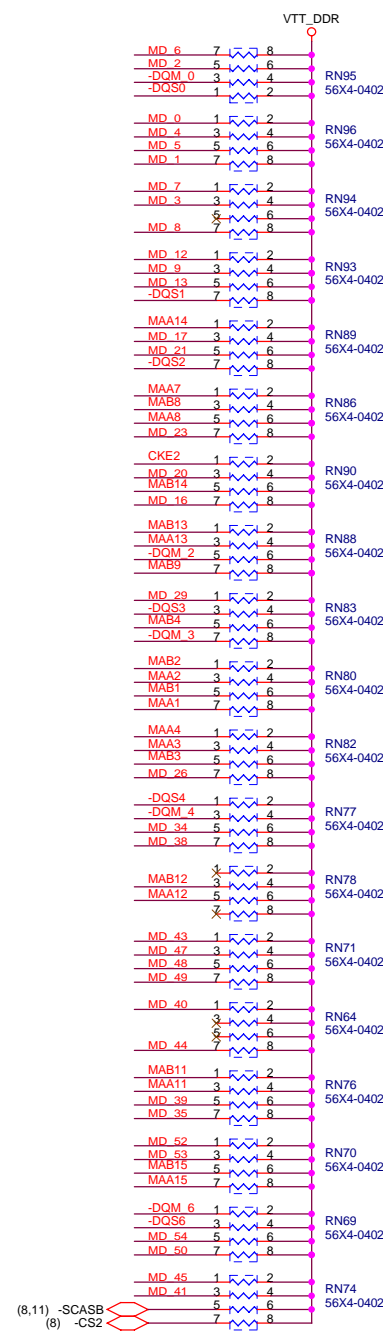
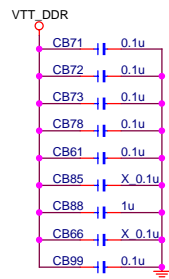
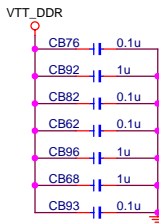
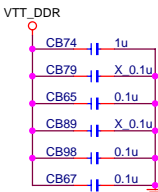
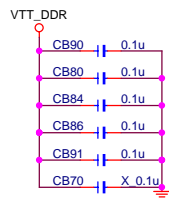
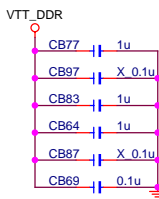
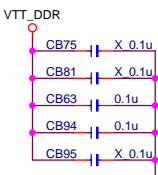
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|----------------------|----------------------------|--|----------------|
| Title | | | |
| NORTH BRIDGE (PART4) | | | |
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(8,11) MD_[0:63]

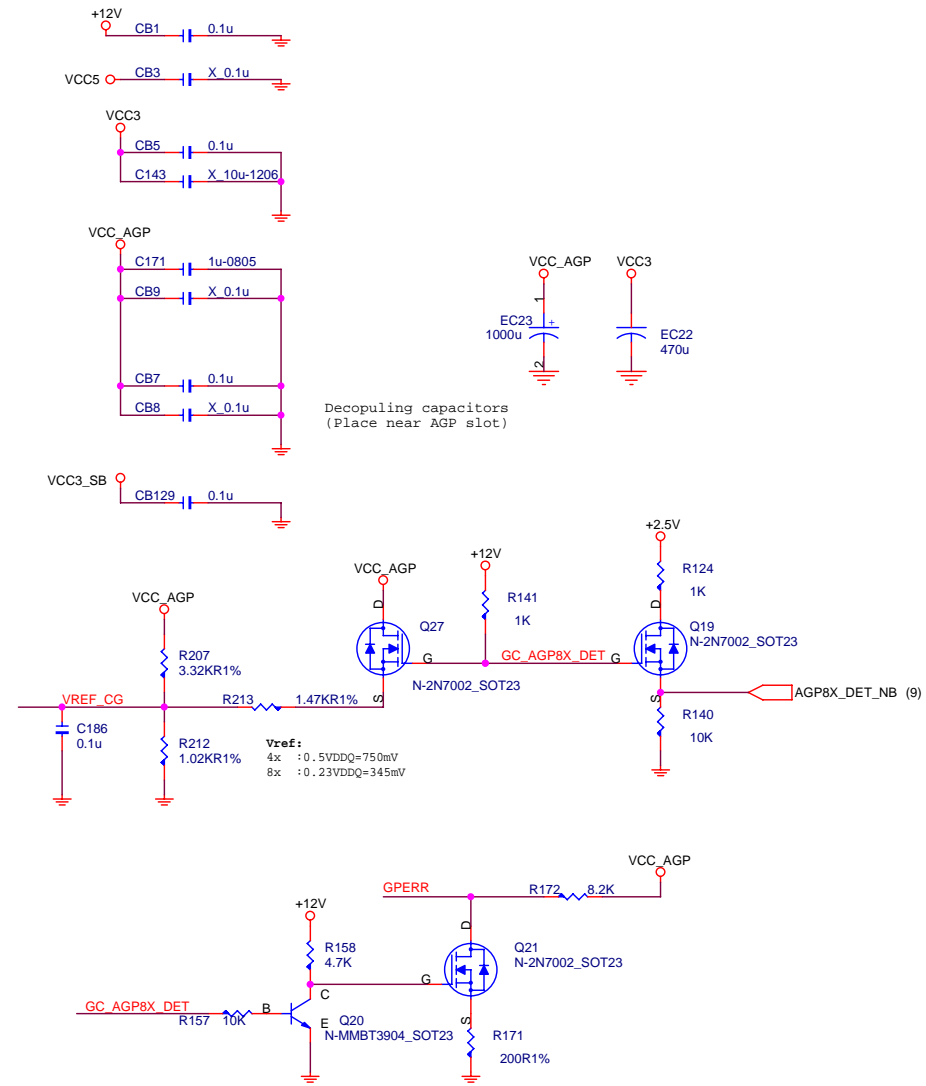
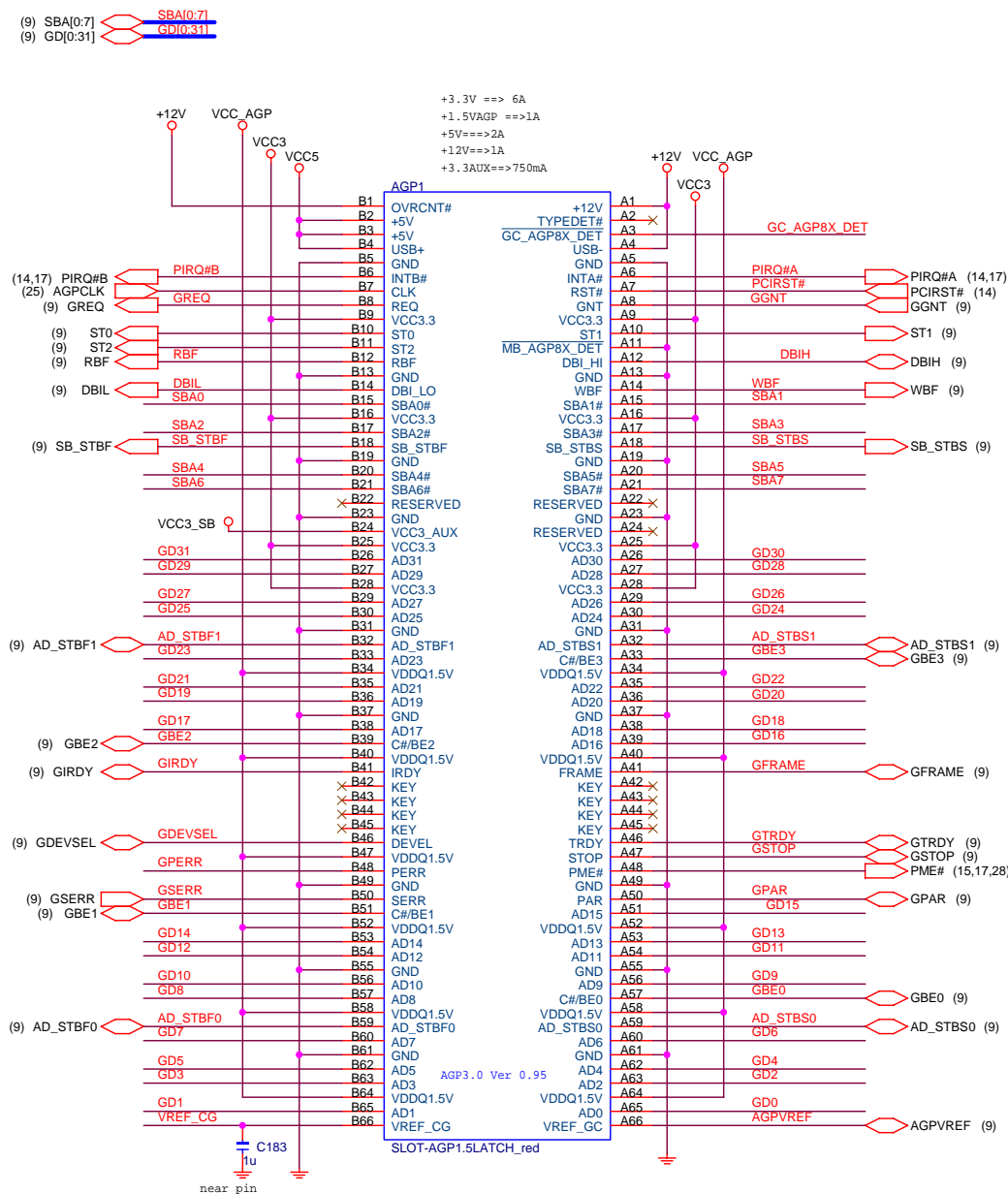
(8) -DQS_[0:7]

(8,11) -DQM_[0:7]

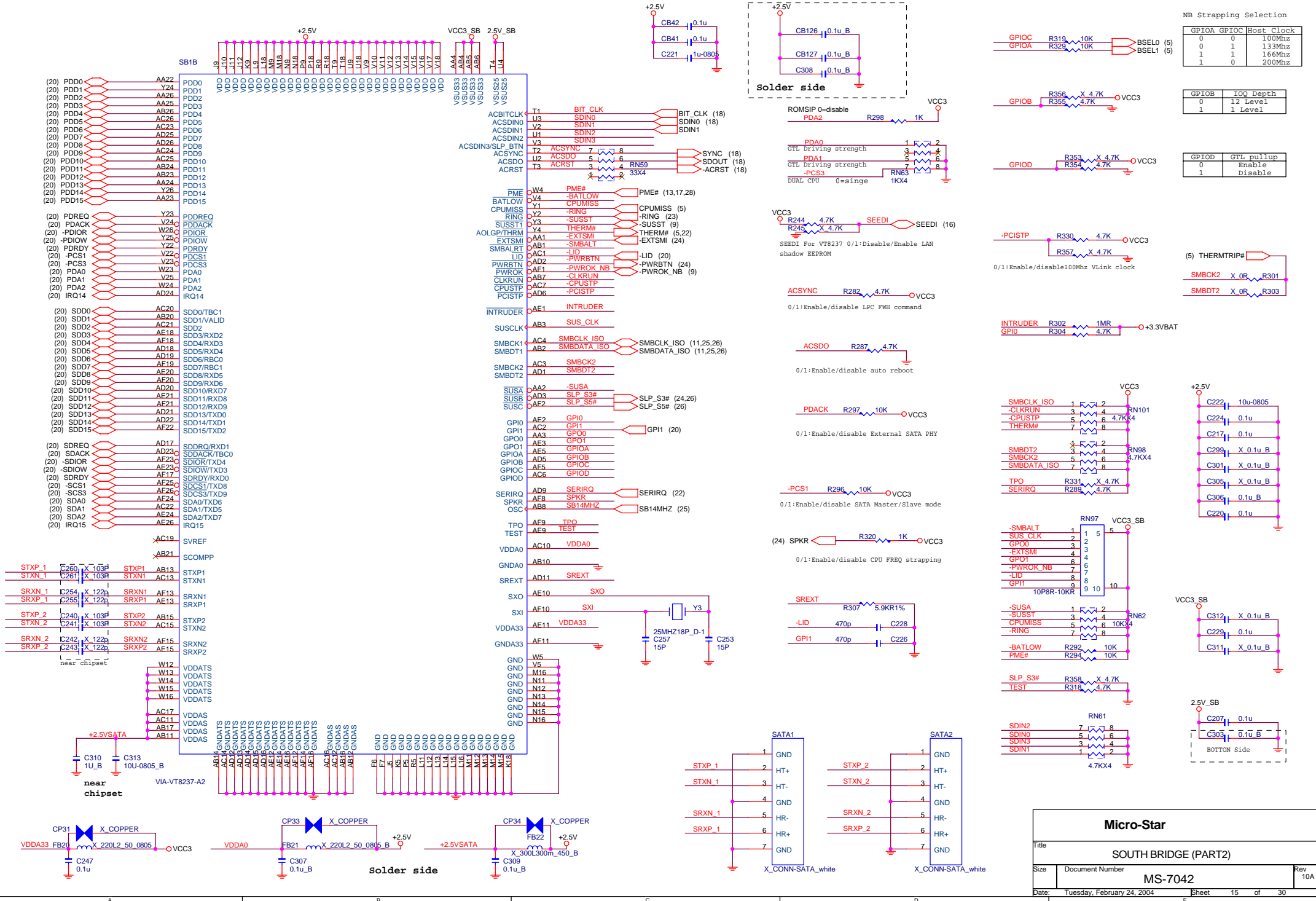


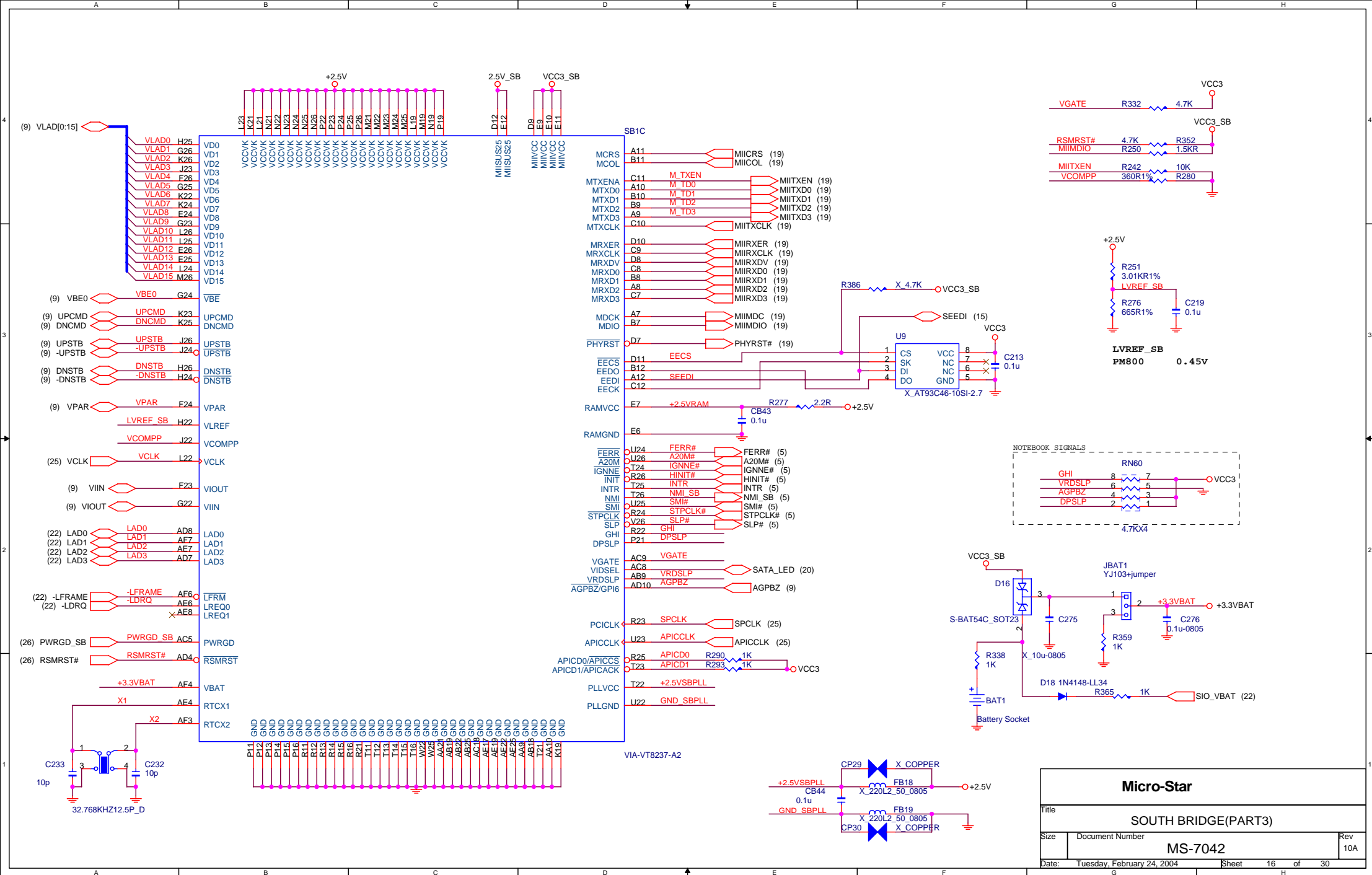
(8,11) MAA[0:15]
(8,11) MAB[0:15]
(8,11) CKE[0:3]

| Micro-Star | | | |
|---------------|----------------------------|-------|----------|
| Title | | | |
| DDR TERMINALS | | | |
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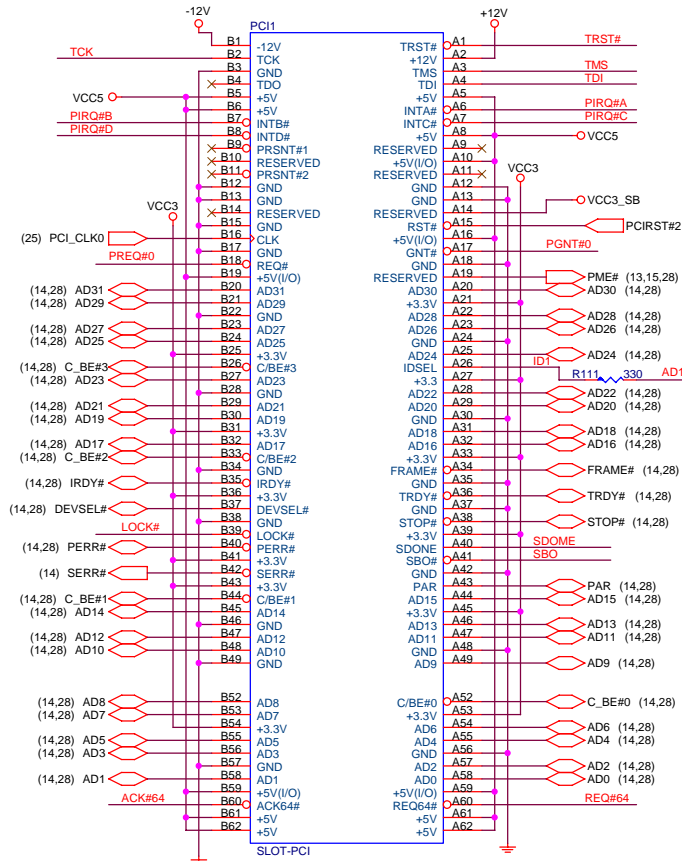


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| Title | | | |
| AGPSLOT | | | |
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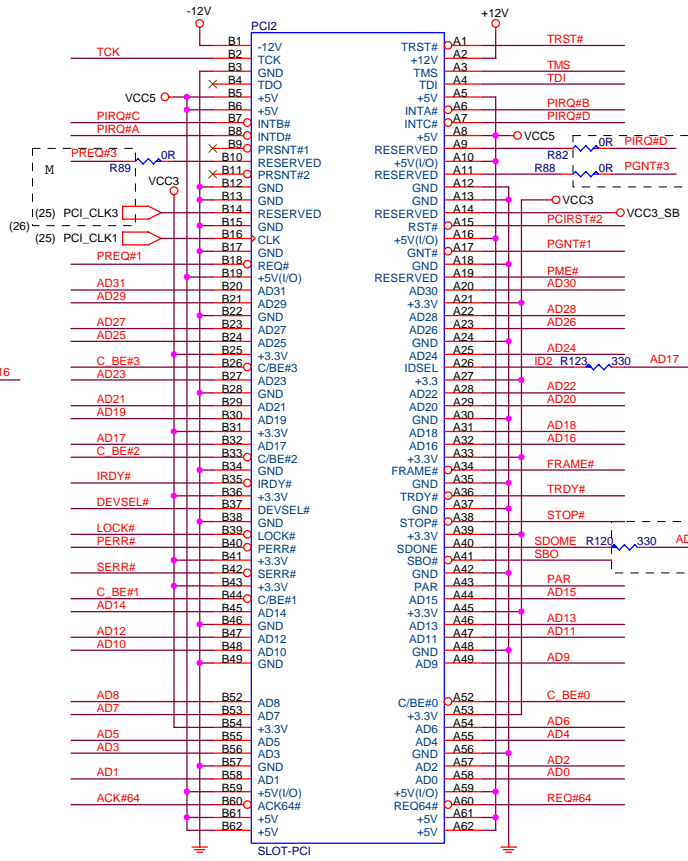


PCI SLOT 1 (PCI VER: 2.2 COMPLY)



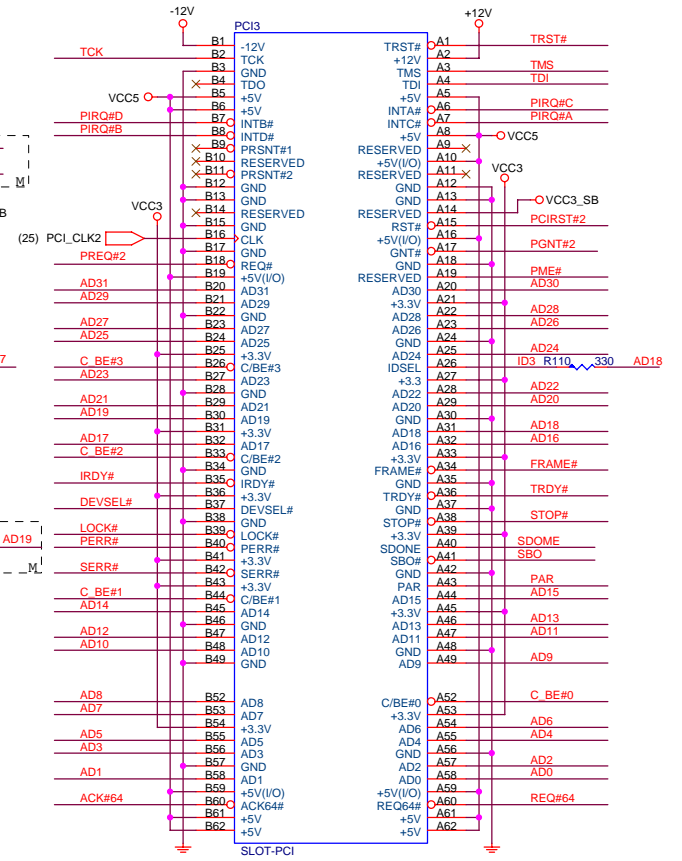
AD16, PREQ#0, PIRQ#A

PCI SLOT 2 (PCI VER: 2.2 COMPLY)



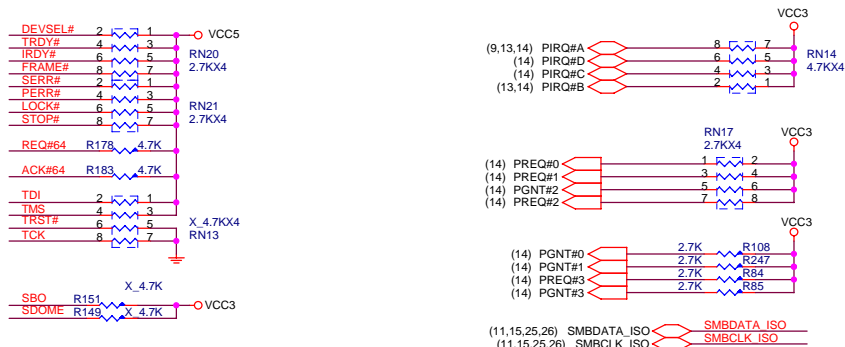
AD17, PREQ#1, PIRQ#B
AD19, PREQ#3, PIRQ#D

PCI SLOT 3 (PCI VER: 2.2 COMPLY)

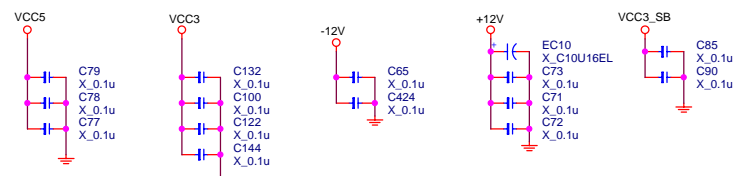


AD18, PREQ#2, PIRQ#C

PCI PULL-UP / DOWN RESISTORS

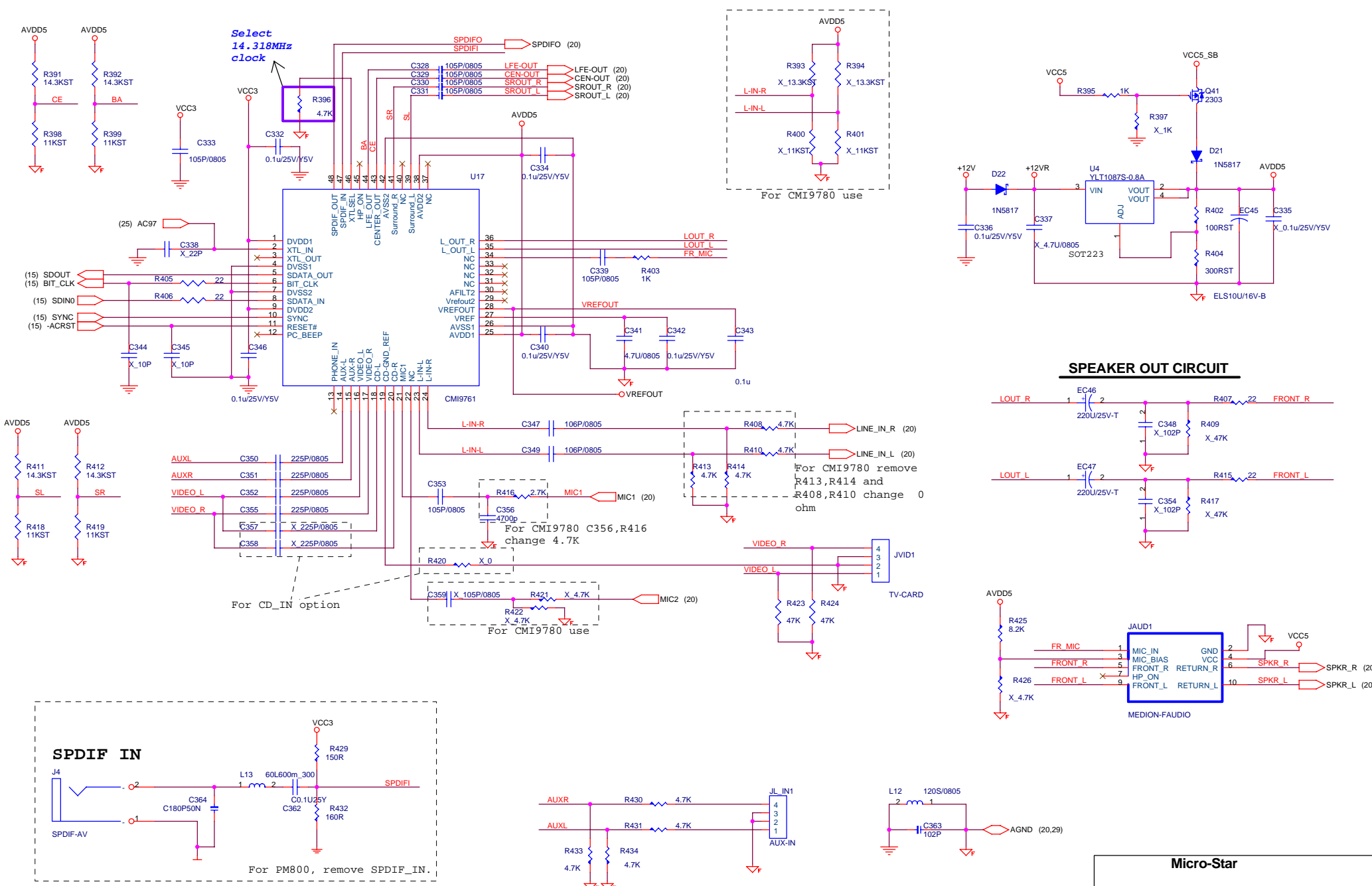


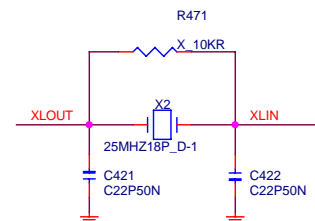
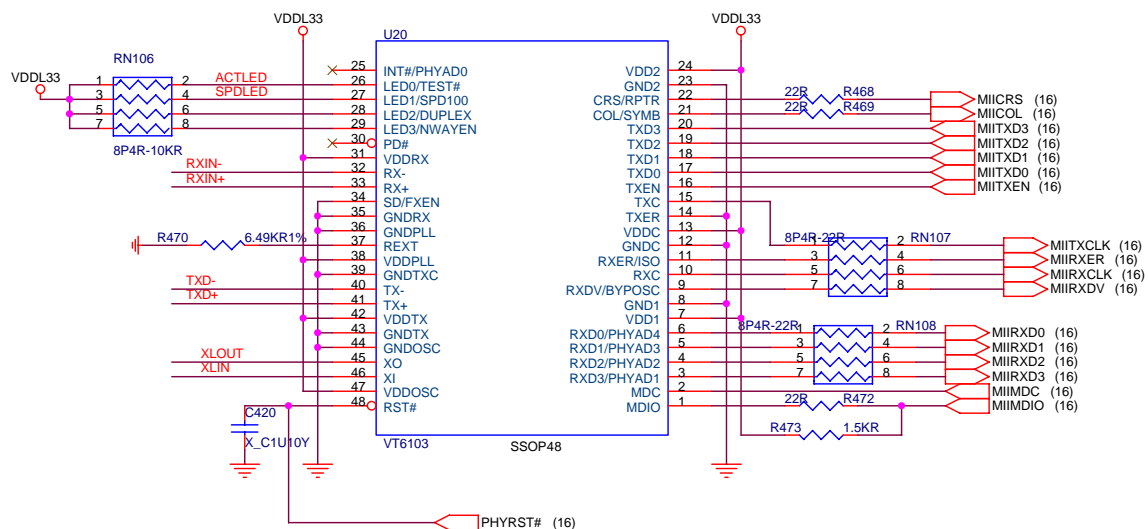
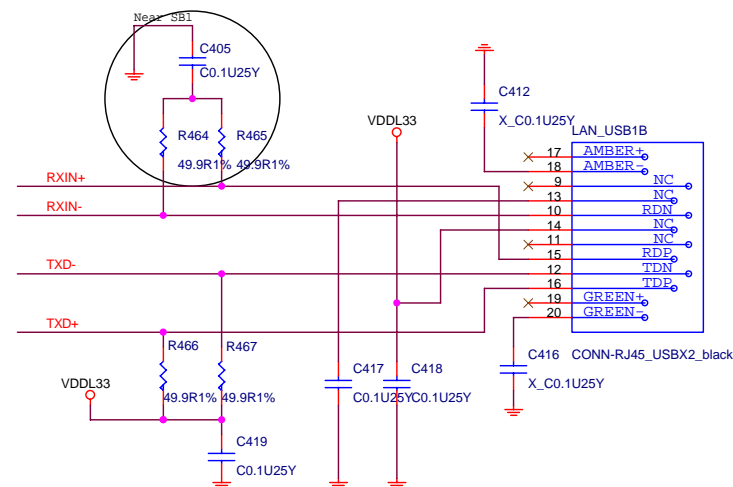
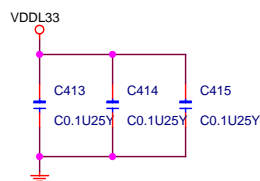
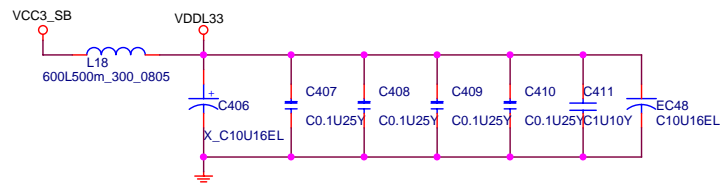
PCI SLOT DECOUPLING CAPACITORS



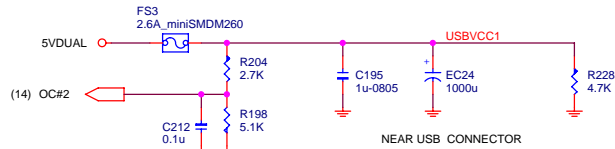
Micro-Star

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| Title | | | | PCI 1 & 2 & 3 Slots | | | |
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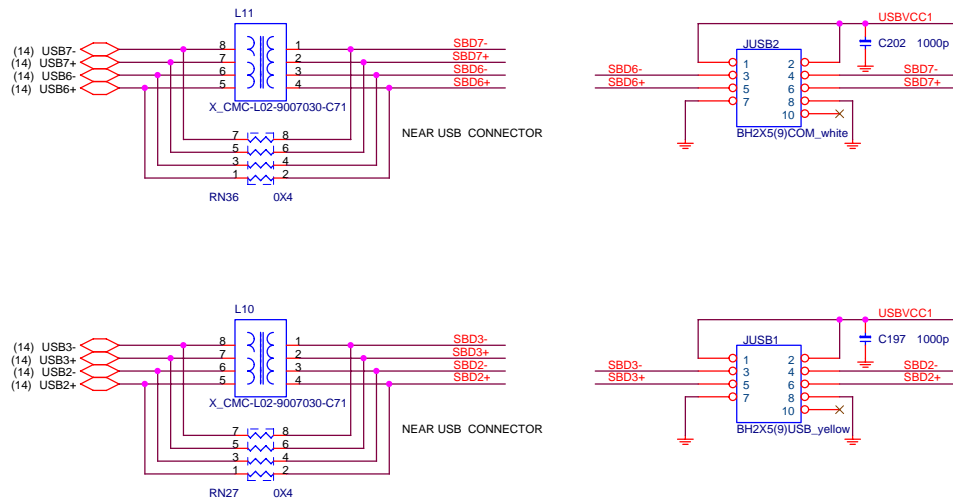




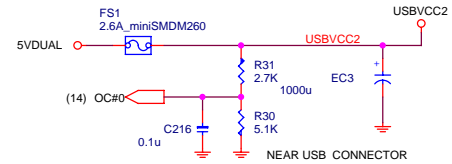
POWER CIRCUIT FOR USB PORT 4,5,6,7



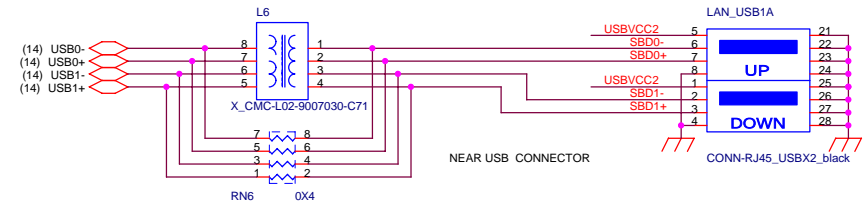
REAR PANEL USB CONNECTOR FOR USB PORT 4,5,6,7



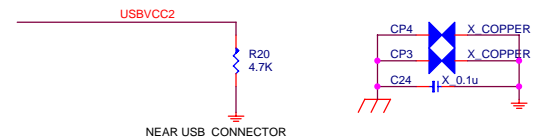
POWER CIRCUIT FOR USB PORT 2,3



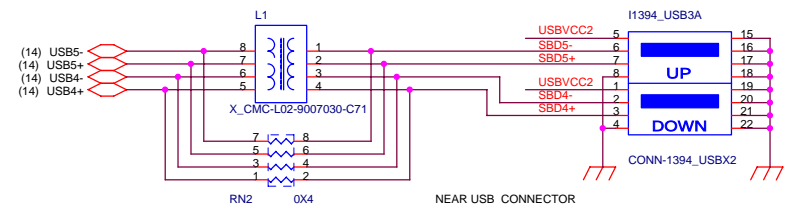
REAR PANEL USB CONNECTOR FOR USB PORT 2,3



POWER CIRCUIT FOR USB PORT 0,1



REAR PANEL USB CONNECTOR FOR USB PORT 0,1



Micro-Star

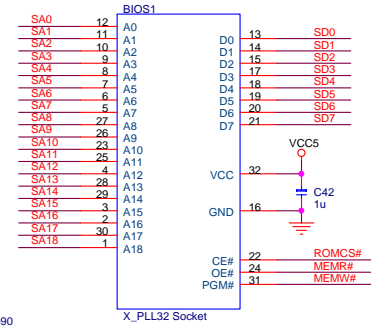
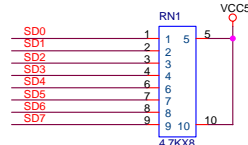
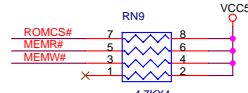
| Title | | |
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| USB Connectors | | |
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STRAPS

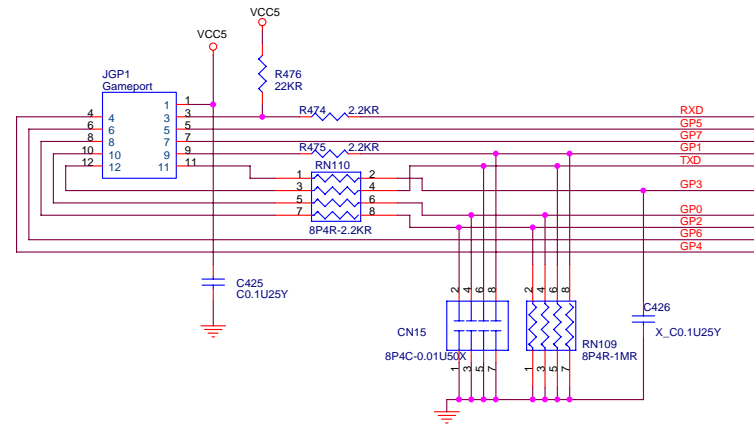
| | | |
|-------|------------|------------|
| RTSA# | L: CFAD=2E | H: CFAD=4E |
| SOUTB | L: 24MHZ | H: 48MHZ |



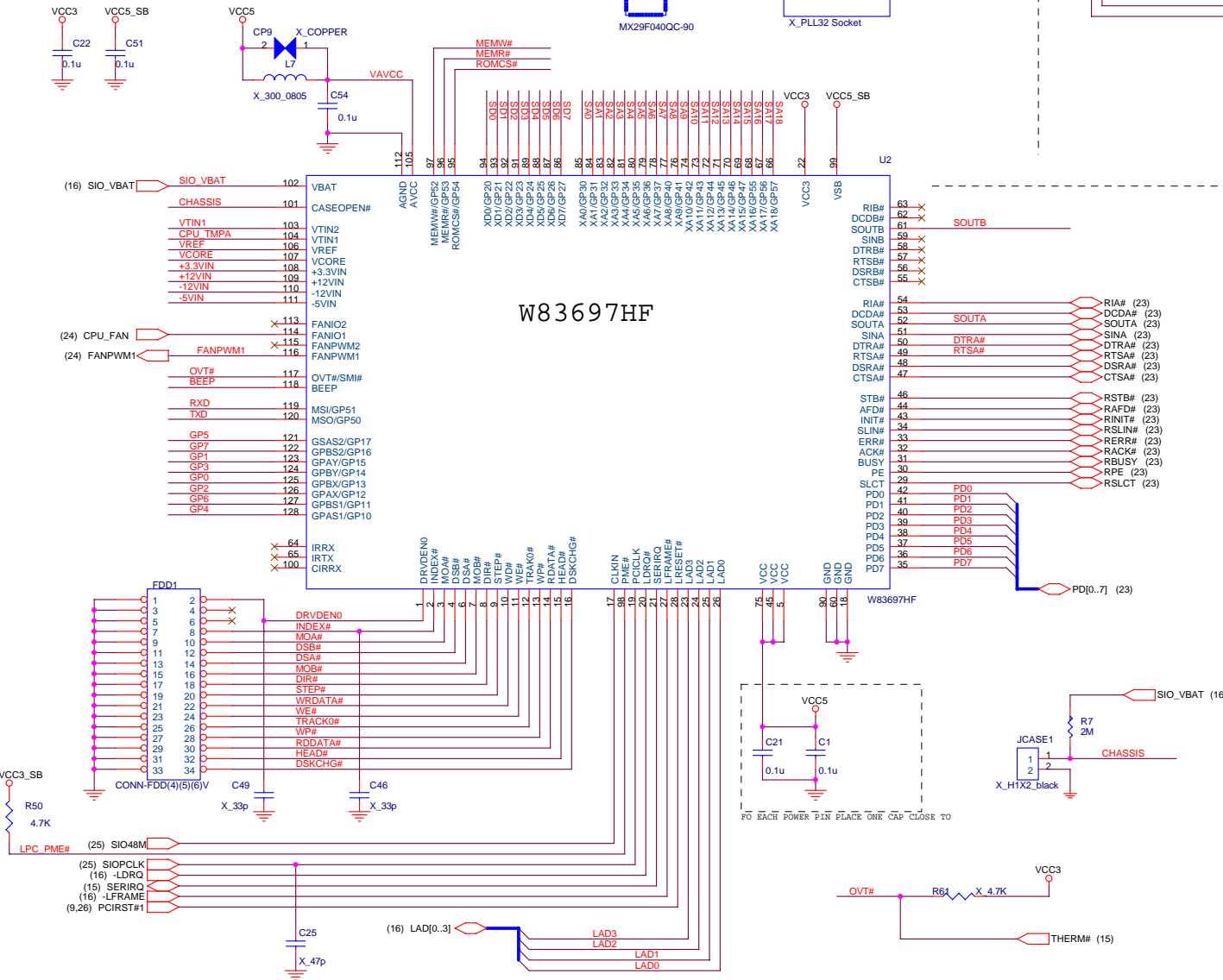
Flash Rom



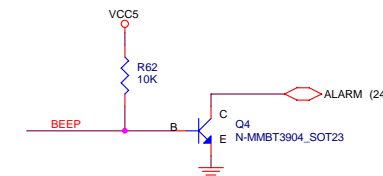
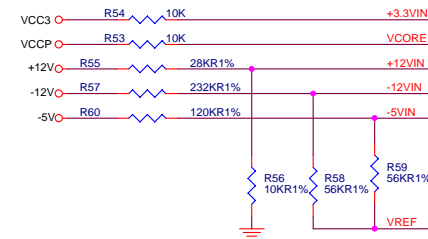
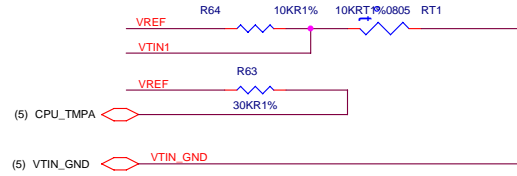
GAME PORT



W83697HF

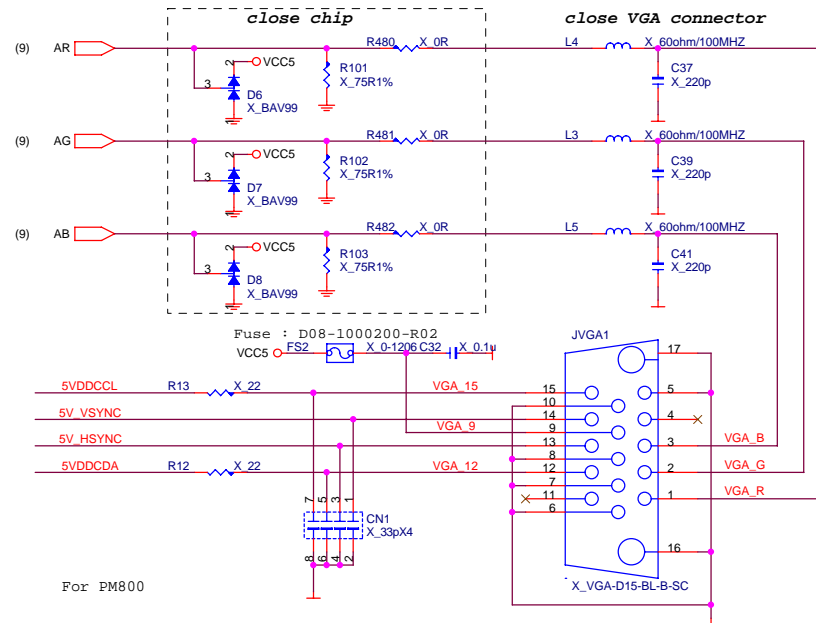
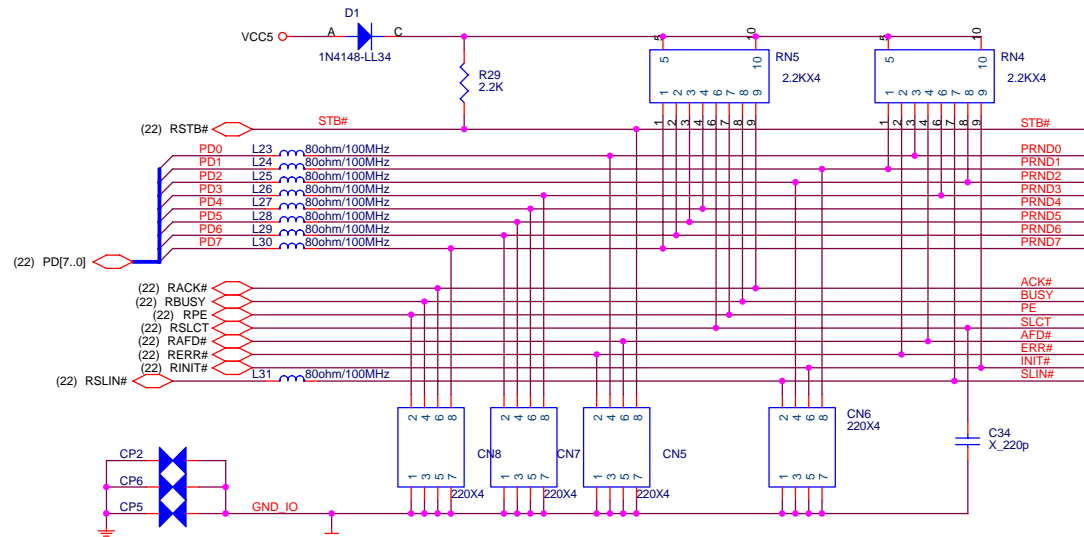
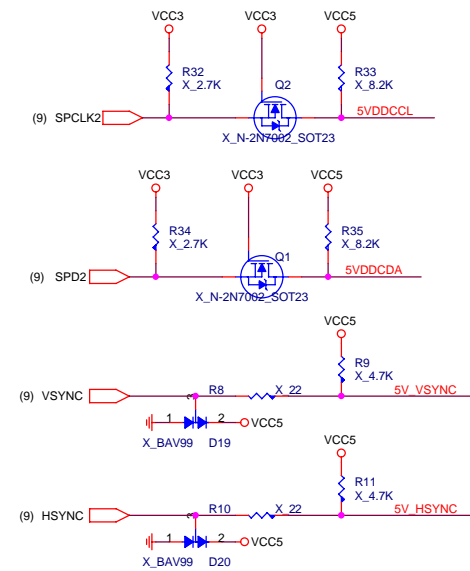
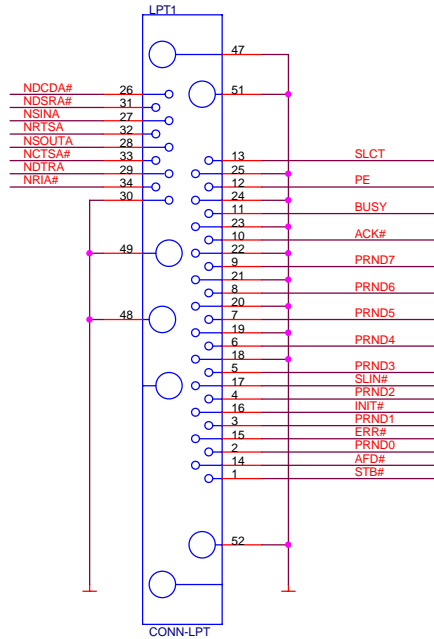


Hardware Monitor



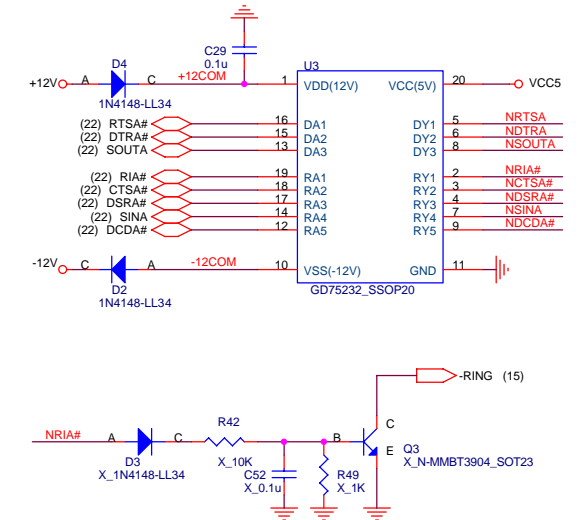
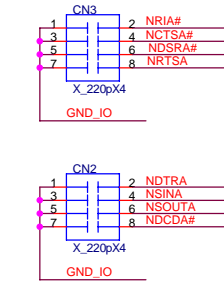
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| Title | | |
| LPC I/O(W83697HF) | | |
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Parallel Port



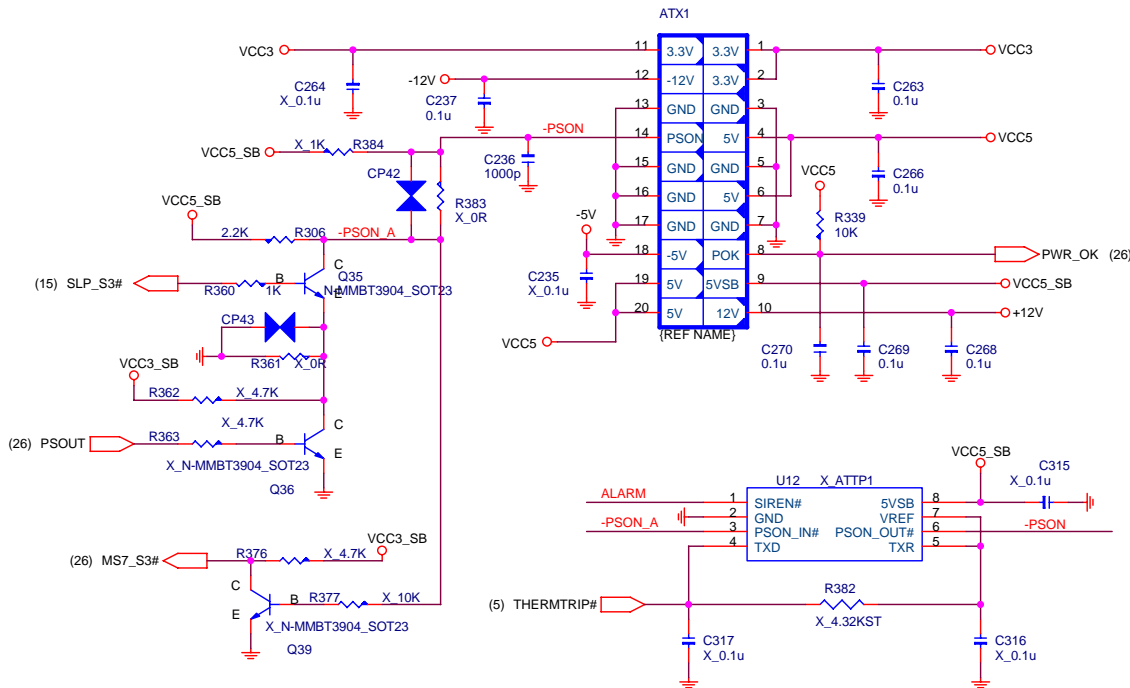
For PM800

Serial Port

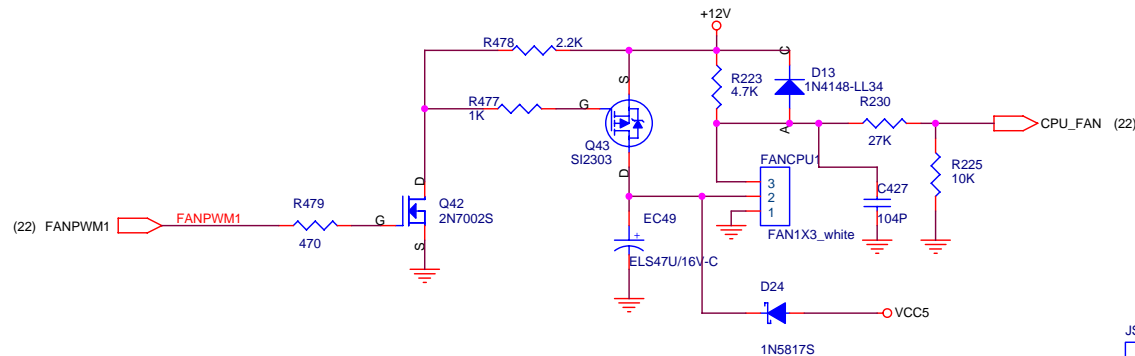


| | | | |
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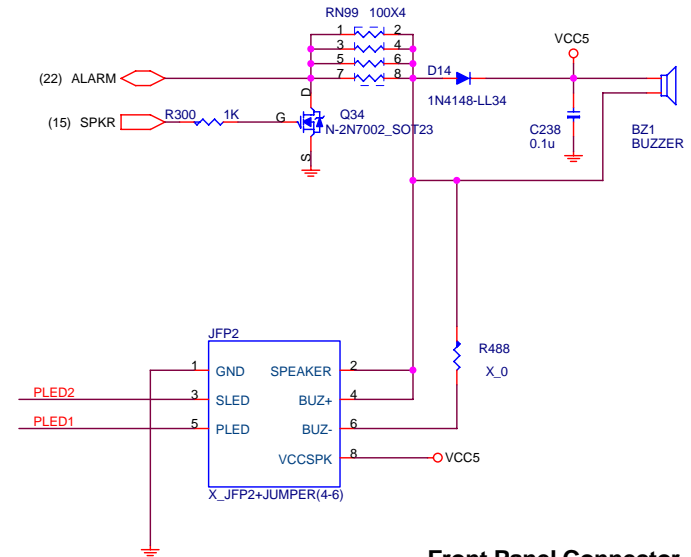
ATX Connector



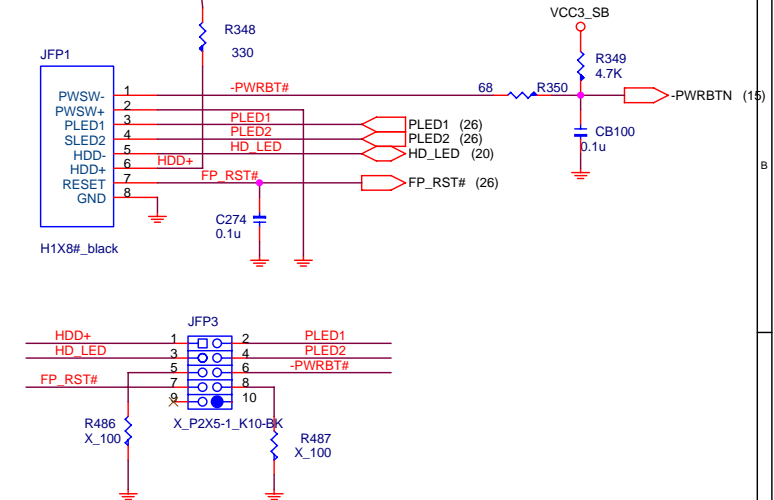
CPU FAN



MSI Front Panel Connector

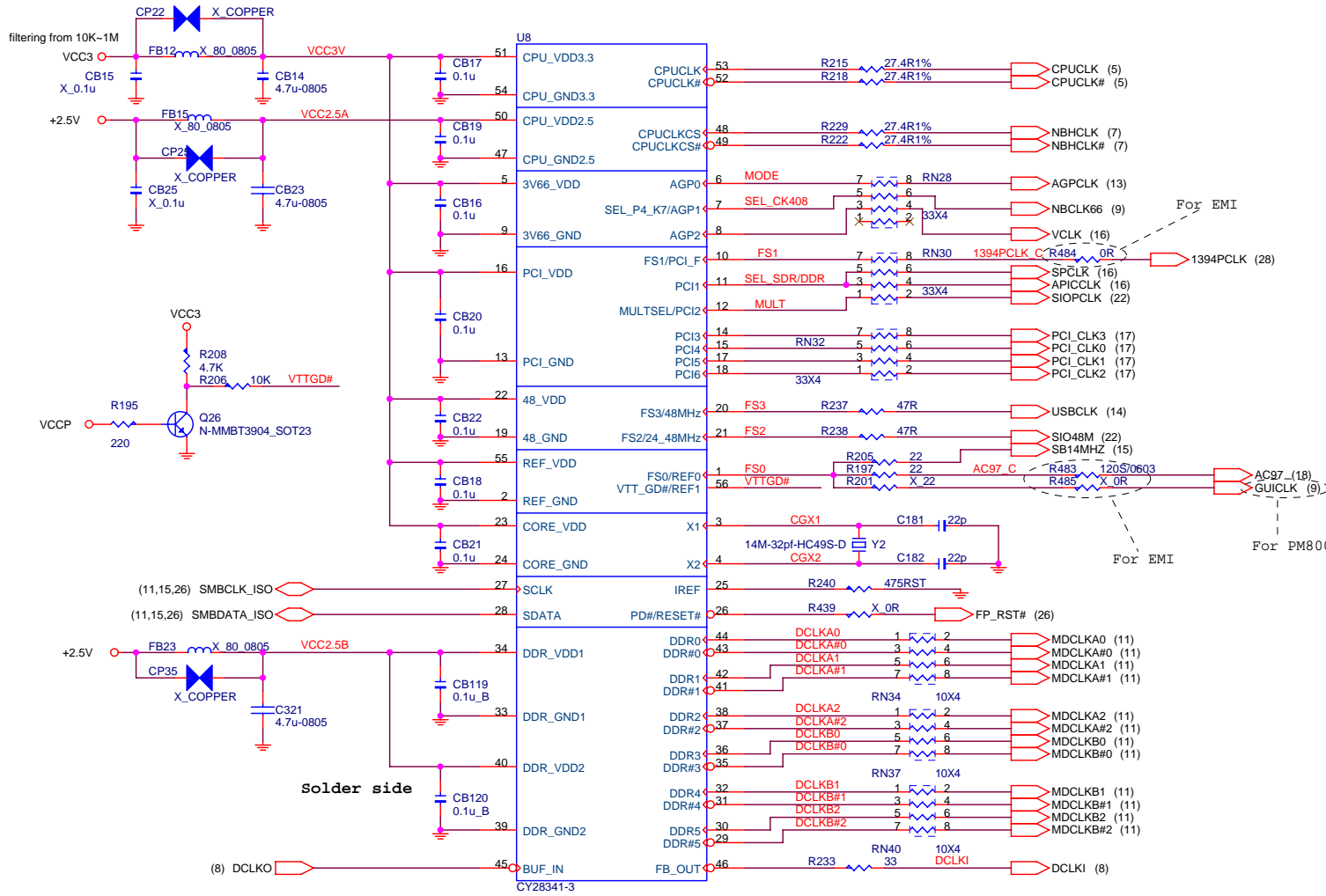


Front Panel Connector

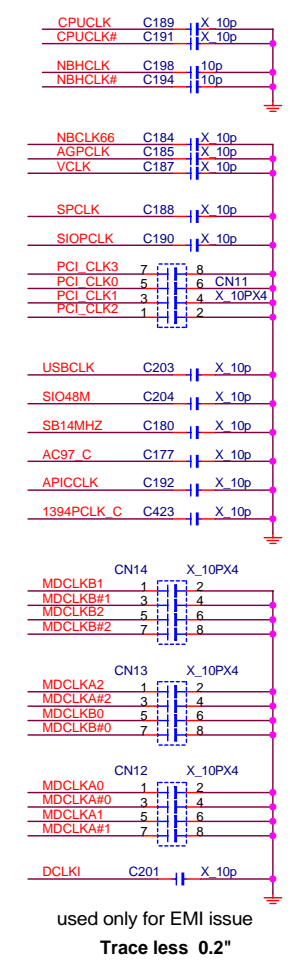


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| | | | | | |
|-------|---------------------------|--|-----------------------------|--|-------|
| Title | | | ATX Connector & Front Panel | | |
| Size | Document Number | | | | Rev |
| | MS-7042 | | | | 10A |
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| | 24 | | | | of |
| | 30 | | | | |

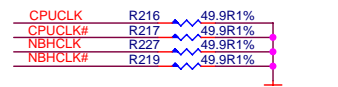


Pull-Down Capacitors



used only for EMI issue
Trace less 0.2"

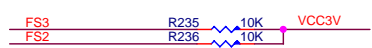
Shut Source Termination Resistors



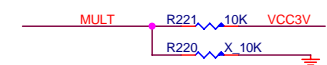
Trace less 0.2" 49.9ohm for 50ohm M/B impedance



CLOCK STRAPPING RESISTORS



| FS3 | FS2 | FS1 | FS0 | FSB (MHz) |
|-----|-----|-----|-----|-----------|
| 1 | 1 | 0 | 0 | 100 MHz |
| 1 | 1 | 0 | 1 | 133 MHz |
| 1 | 1 | 1 | 0 | 200 MHz |
| 1 | 1 | 1 | 1 | 166 MHz |



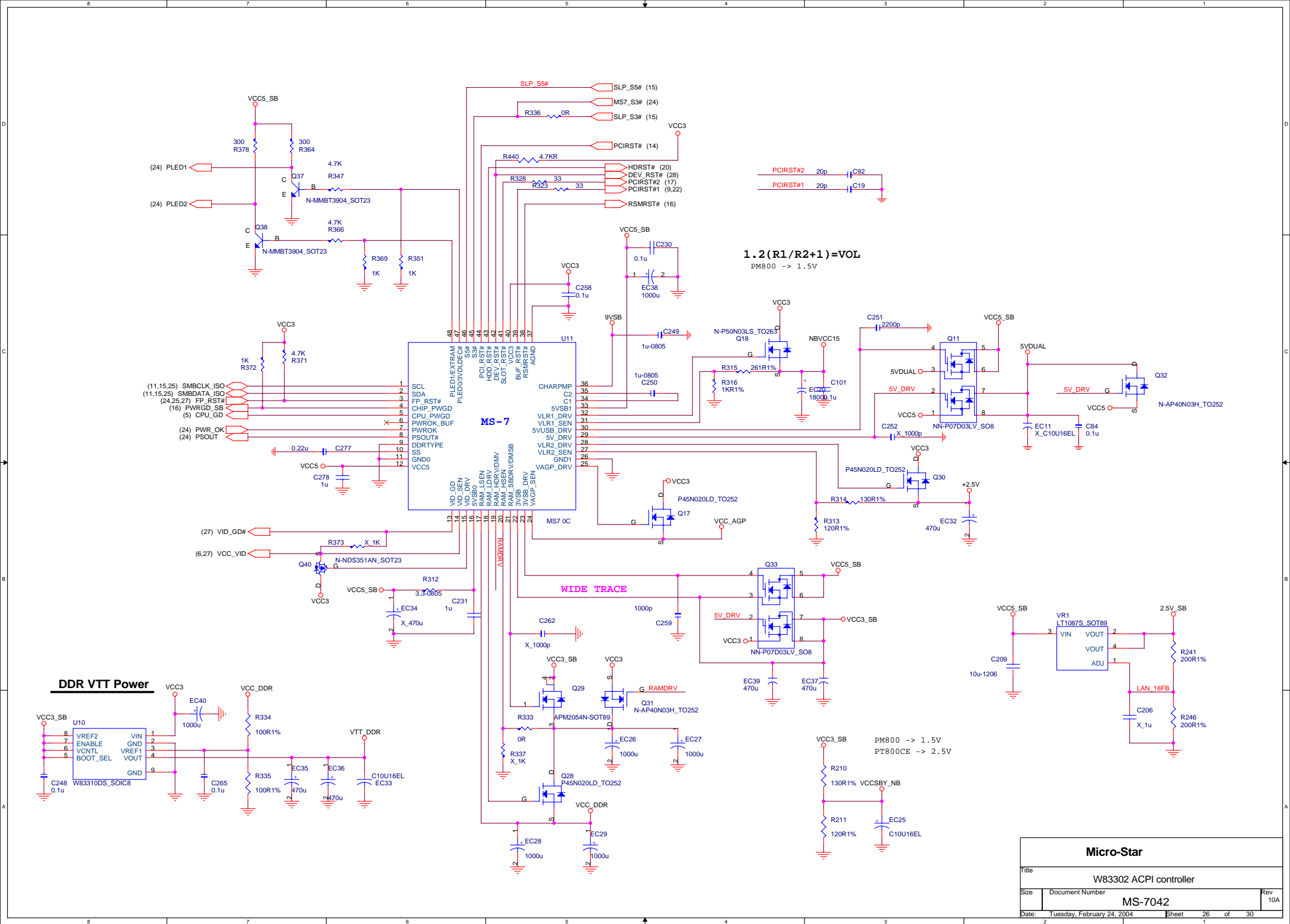
| MULT | Rr | Iref | Ioh | Voh |
|------|-----|--------|--------|------|
| 0 | 221 | 5.00mA | 4*Iref | 1.0V |
| 1 | 475 | 2.32mA | 6*Iref | 0.7V |

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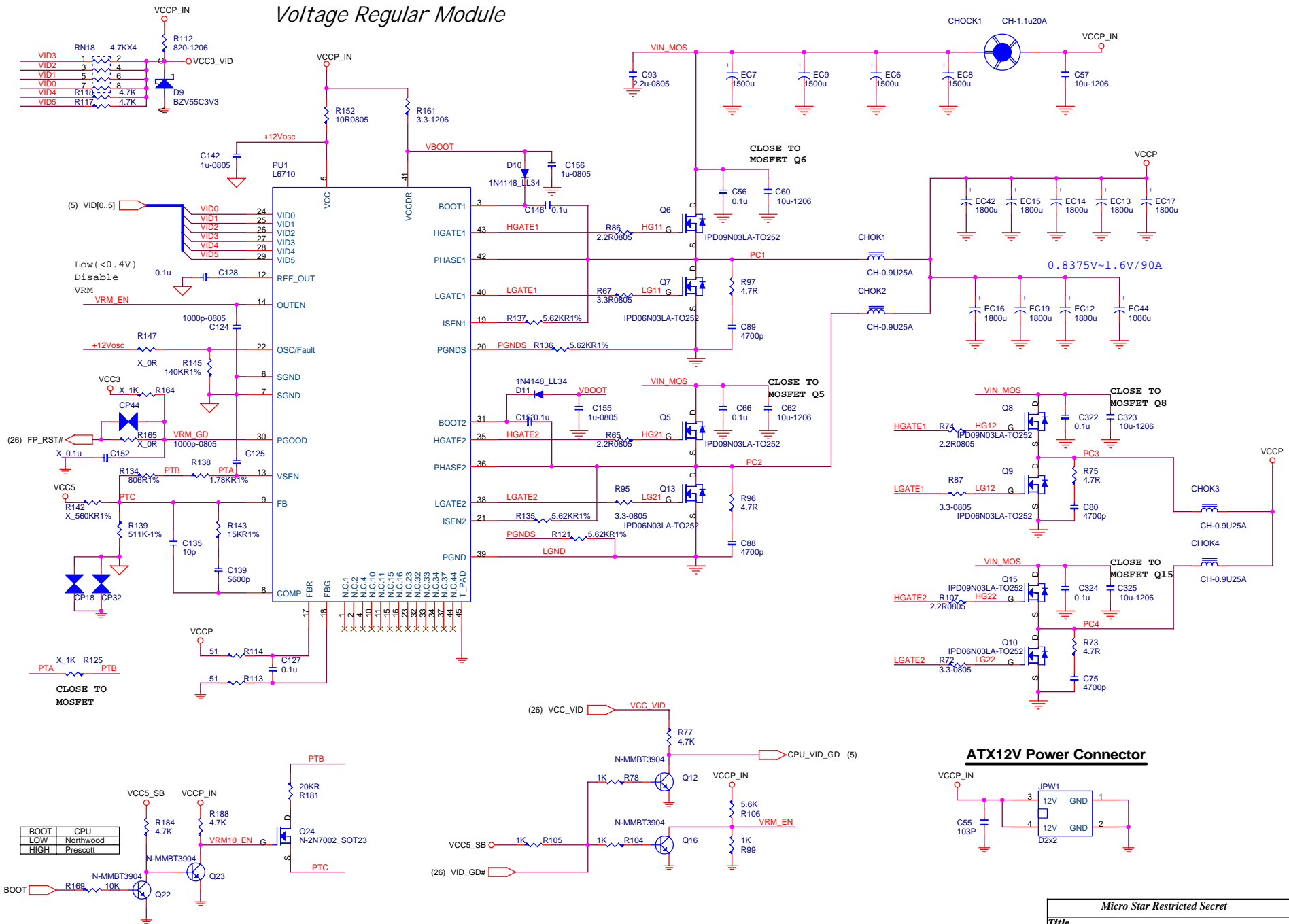
Title: **Clock Generator**

| | | |
|------|-----------------|-----|
| Size | Document Number | Rev |
| | MS-7042 | 10A |

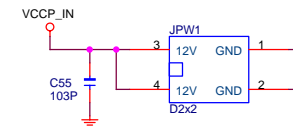
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Voltage Regular Module

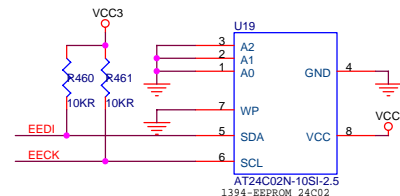
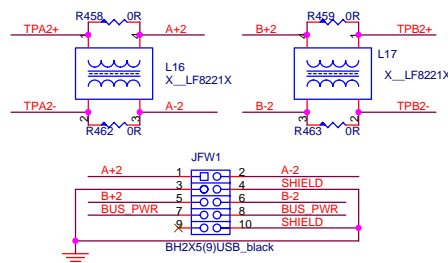
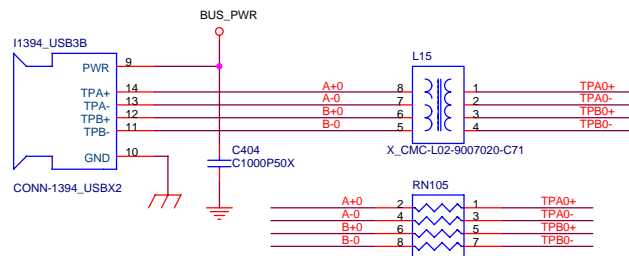
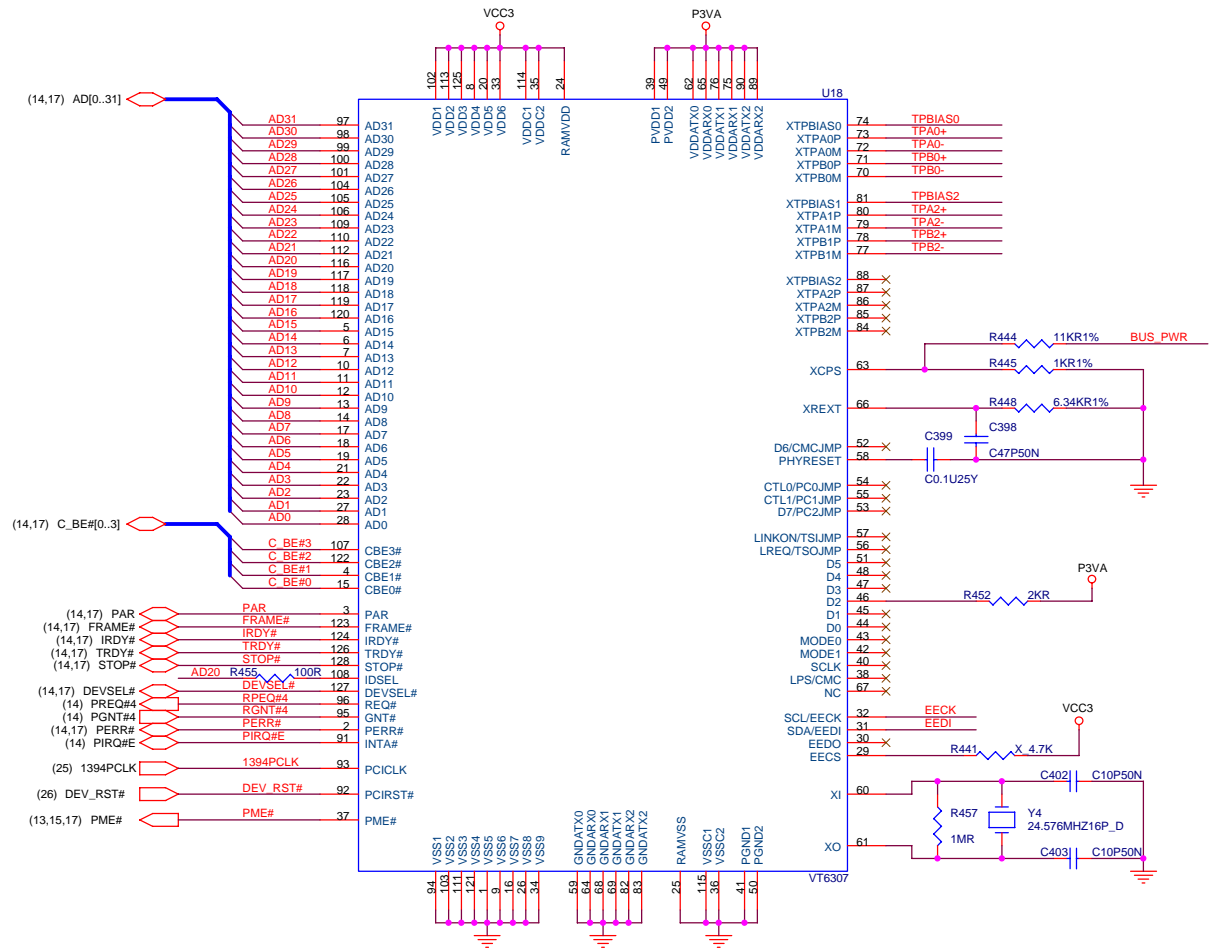
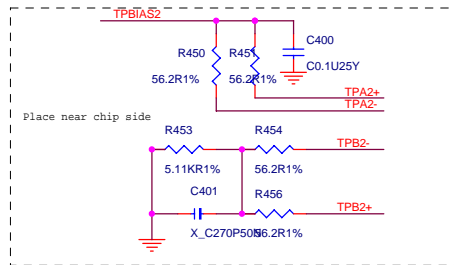
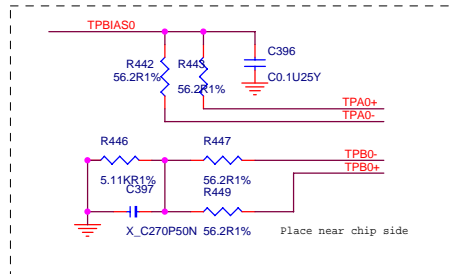
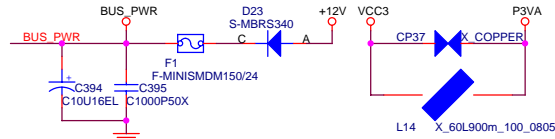
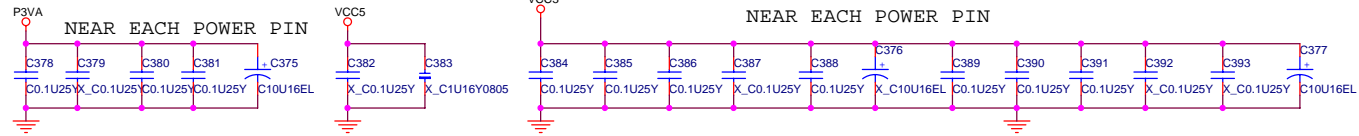


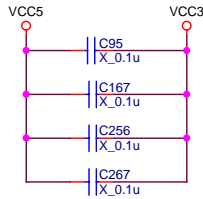
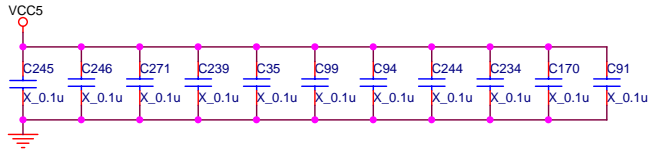
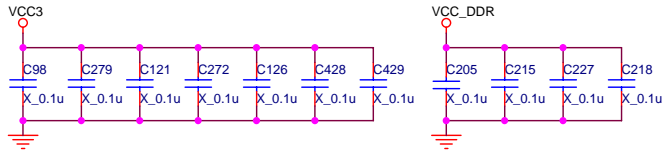
ATX12V Power Connector



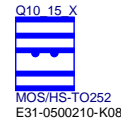
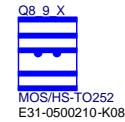
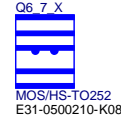
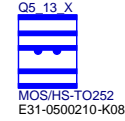
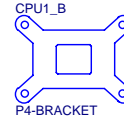
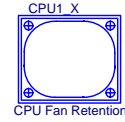
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|---|--|----------|
| <i>Micro Star Restricted Secret</i> | | |
| <i>Title</i> | <i>VRM 10 - L6710</i> | Rev |
| <i>Document Number</i> | <i>MS-7042</i> | 10A |
| MICRO-STAR INT'L No. 66, 4 th De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw | Last Revision Date: Tuesday, February 24, 2004 Sheet | 27 of 30 |

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AD20 PIRQ#E

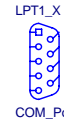




Manual Parts



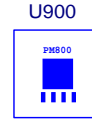
7042-10A



JAUD1(5-6)1
JUMPER-1X2A_green

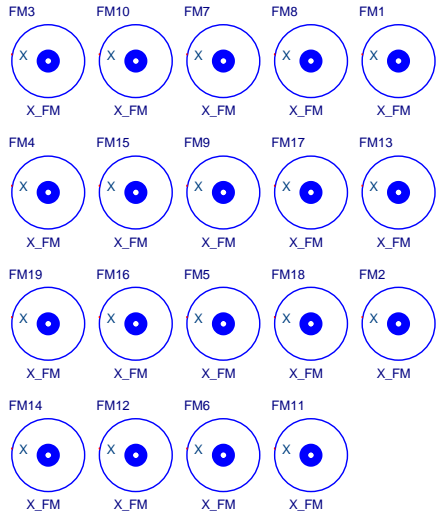
JAUD1(9-10)1
JUMPER-1X2A_green

Option Parts

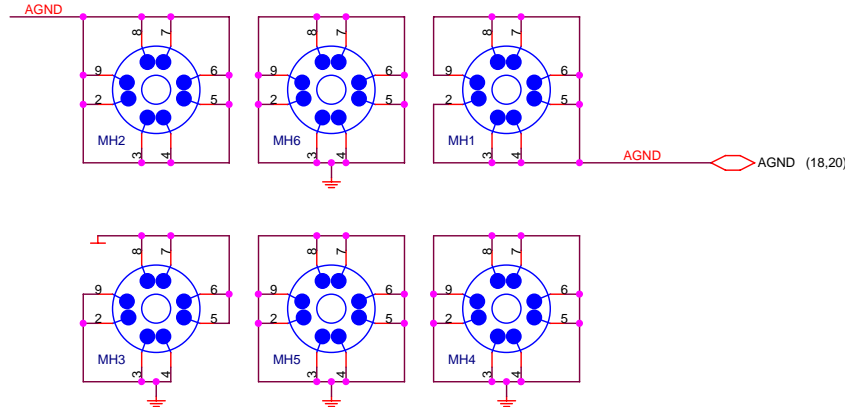


PM800

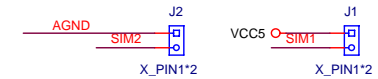
Optics Orientation Holes



Mounting Holes



Simulation



Micro-Star

| Title | | | |
|----------|---------------------------|--|----------|
| EMI PART | | | |
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- 54321
- D
- C
- B
- A
- 54321
- Version 0A change to 100 note:
1. Remove R441 for VIA1394 EEPROM can flash normally.----Page28

2. Correct JFP1 pin-out direction.

3. Correct VIA1394 front-pin header.

4. Remove R386 for LAN-ID resume normally from S3 state.----Page 16

5. Add L23-L31(80-ohm Bead) for EMI issue.----Page 23