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G43T-AM3

Rev: 1.1  
Support EuP Lot 6

The EAGLELAKE module Specification :

- 1. MEMORY : 2 channel/4 DIMM DDR3 socket
- 2. SLOT : 1 PCI-E by 16 / 1 PCI-E by 1 /2 PCI
- 3. With 12 port Usb 2.0 & 6 port S-ATA 2
- 4. LAN : INTEL 82576V 10/100/1000M LAN
- 5. AUDIO : REALTEK ALC888S Audio Codec
- 6. I/O : Super I/O ITE 8720 with PS2 K&M
- 7. VIDEO : VGA & HDMI

|                                            |
|--------------------------------------------|
| McCreary(Corporate) ,vPro                  |
| Eaglelake Q: Corporate Integrated Graphics |

|                                             |
|---------------------------------------------|
| Boulder Creek(consumer) ,VIIV               |
| * Eaglelake G: Consumer Integrated Graphics |
| Eaglelake P: Consumer Discrete Graphics     |

|             |                 |              |
|-------------|-----------------|--------------|
| PCB         | Total Thickness | Core Prepreg |
| BearLake    | 62 mil          | 50 mil       |
| * EagleLake | 59 mil          | 47 mil       |



| DEVICE | IDSEL | INT#    | REQ# | GNT# |
|--------|-------|---------|------|------|
| PCI1   | 17    | E/F/G/H | PEQ1 | GNT1 |
| PCI2   | 18    | F/G/H/E | PEQ0 | GNT0 |
|        |       |         |      |      |
|        |       |         |      |      |

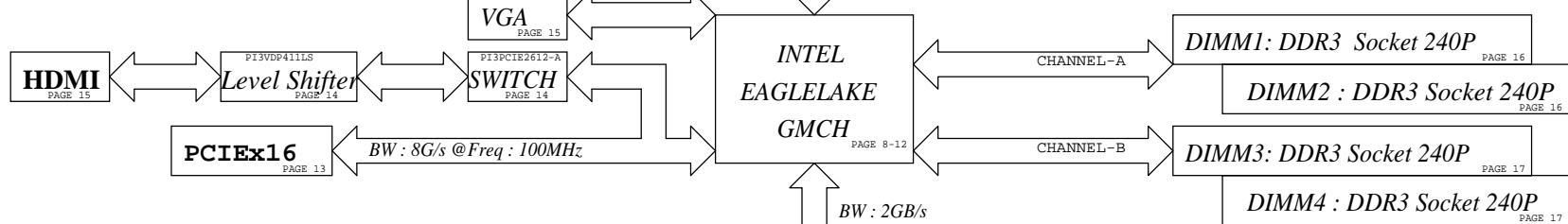
**INTEL  
LGA 775 pin**  
Intel P4 Processor Core 2 Duo  
& Core 2 Quad & Dual Core

PAGE 4-6

FSB : 800MHz & Freq : 200MHz  
FSB : 1066MHz & Freq : 266MHz  
FSB : 1333MHz & Freq : 333MHz

BW : 10GB/s

DDR3 : 800/1066/1333MHz  
BW:10.6G/s @ DDR3 :1333MHz single-channel  
BW:21G/s @ DDR3 :1333MHz dual-channel



BW : 480MB/s @ Freq : 48MHz

PS. USBLAN is RJ45+2 port USB conn  
PS. USB1394 is 1394+2 port USB conn

USBLAN  
2 ports  
USB1394  
2 ports  
USB1  
2 ports  
USB2  
2 ports  
USB3  
2 ports  
USB4  
2 ports

USB V2.0  
PAGE 25

BW : 500MB/s @ Freq : 100MHz

PCIE X 1  
PAGE 26

INTEL LAN  
82567V  
(Giga PHY)  
PAGE 31

USBLAN  
RJ45  
PAGE 31

PCI Slot 120pin @ AD17  
PAGE 27

PCI Slot 120pin @ AD18  
PAGE 27  
BW : 133MB/s @ Freq : 33MHz

SPI ROM  
PAGE 23

ITE 8720  
Super I/O  
128pin PQFP  
PAGE 28

1394 VT6315N  
PAGE 24

1394 Header  
PAGE 24

HD Audio  
Codec  
ALC888S  
PAGE 32

Line In  
Front out  
Mic In  
Center/Bass out  
Surround  
SIDE Surround  
PAGE 33

SATA1 7Pin

SATA2 7pin

SATA3 7Pin

SATA4 7Pin

SATA5 7pin

SATA6 7pin

SATA-II  
BW : 3G/s  
PAGE 26



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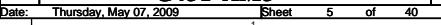
Title **System Block Diagram**

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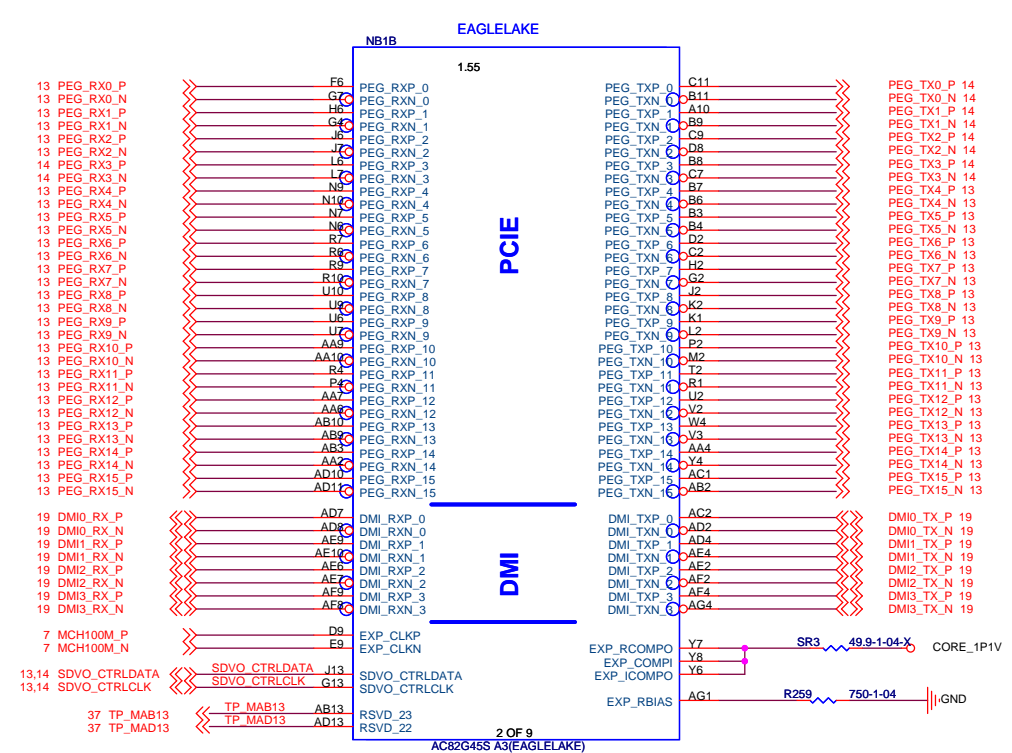
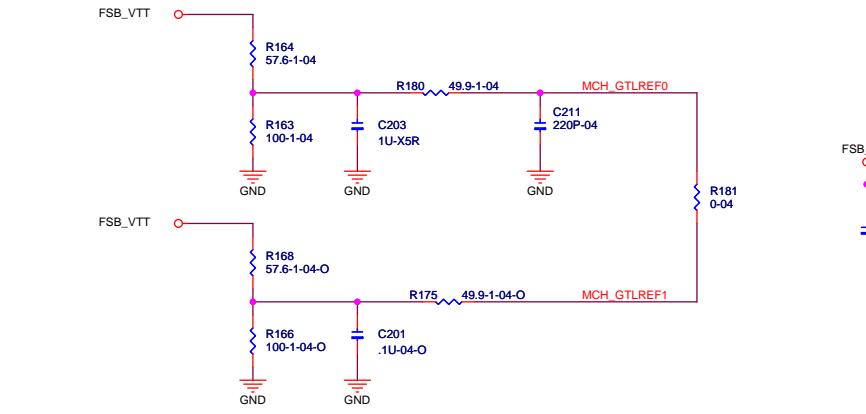
PCB : 244 x 244 x 1.5 mm ; 4 layers











| SDVO_CTRLDATA (STRAP) PORT B |                                          |
|------------------------------|------------------------------------------|
| 1                            | SDVO CARD PRESENT, PEG DISABLED          |
| 0                            | SDVO DISABLED (DEFAULT INTERNAL PULL-UP) |

(PEG) PCI Express Graphics

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Title: **MCH PCIe/DMI/FSB**

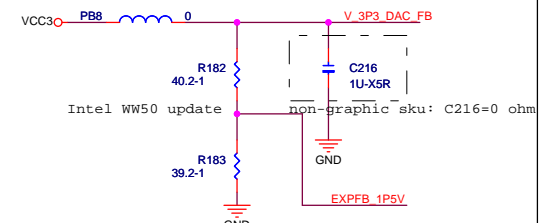
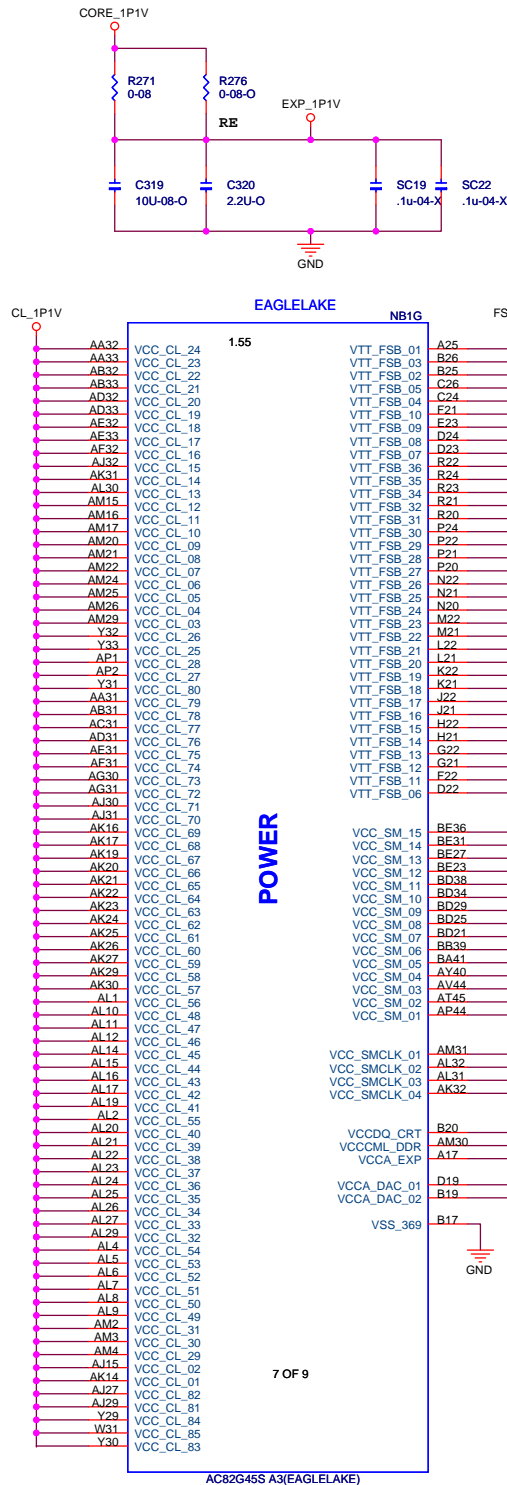
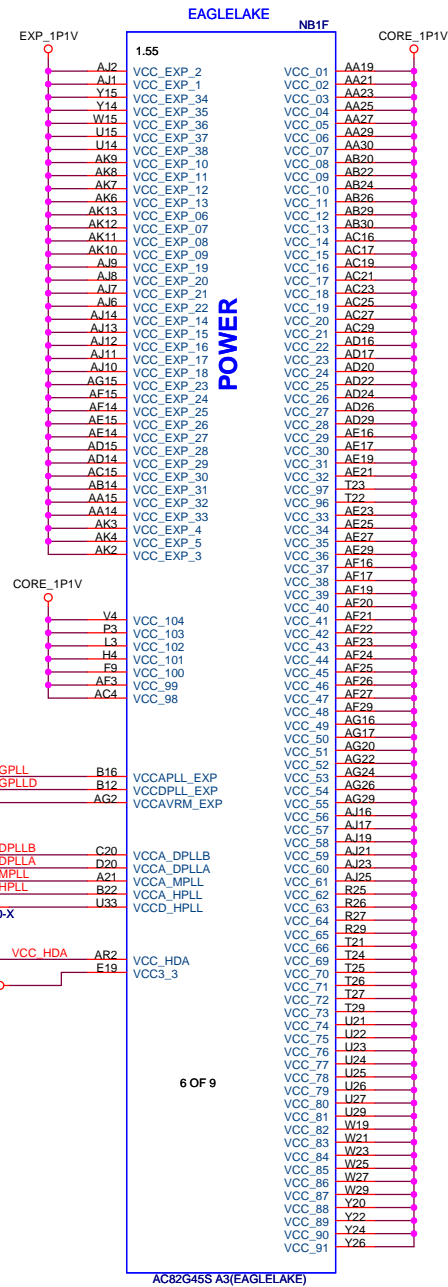
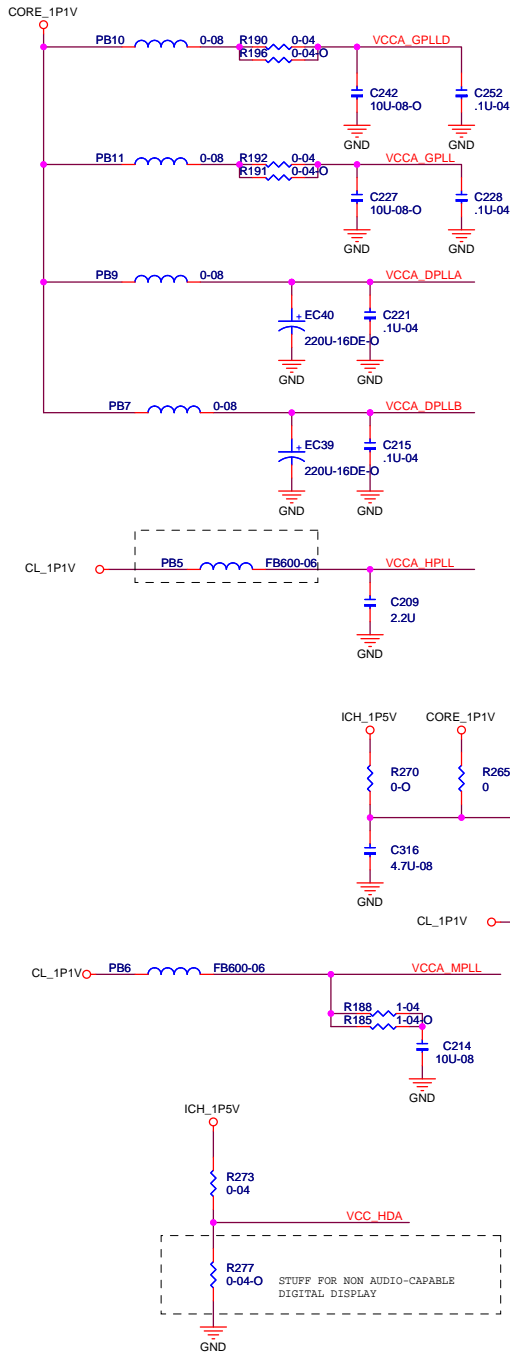
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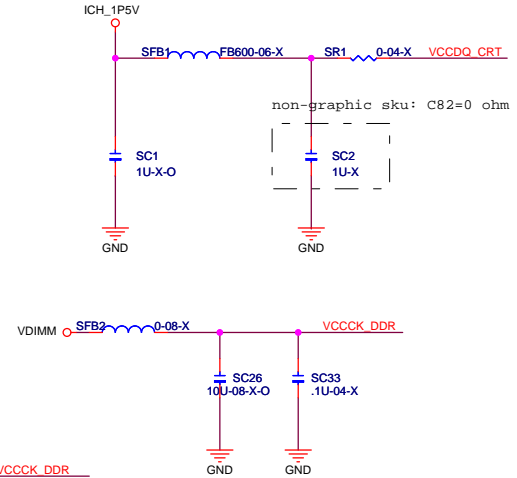


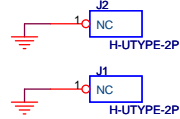
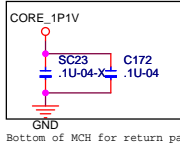
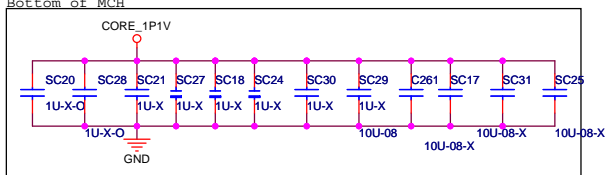
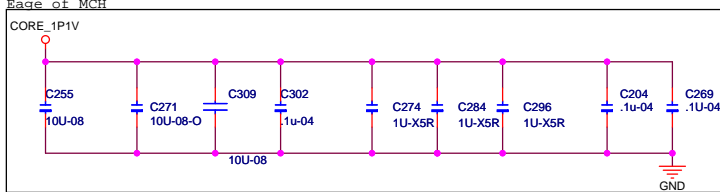
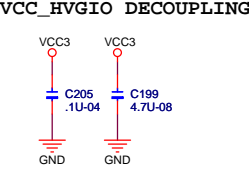
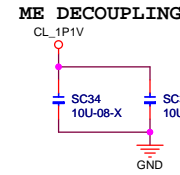
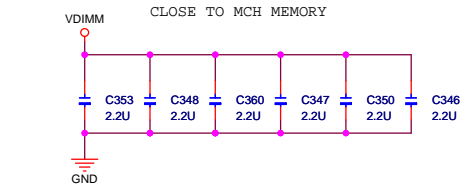
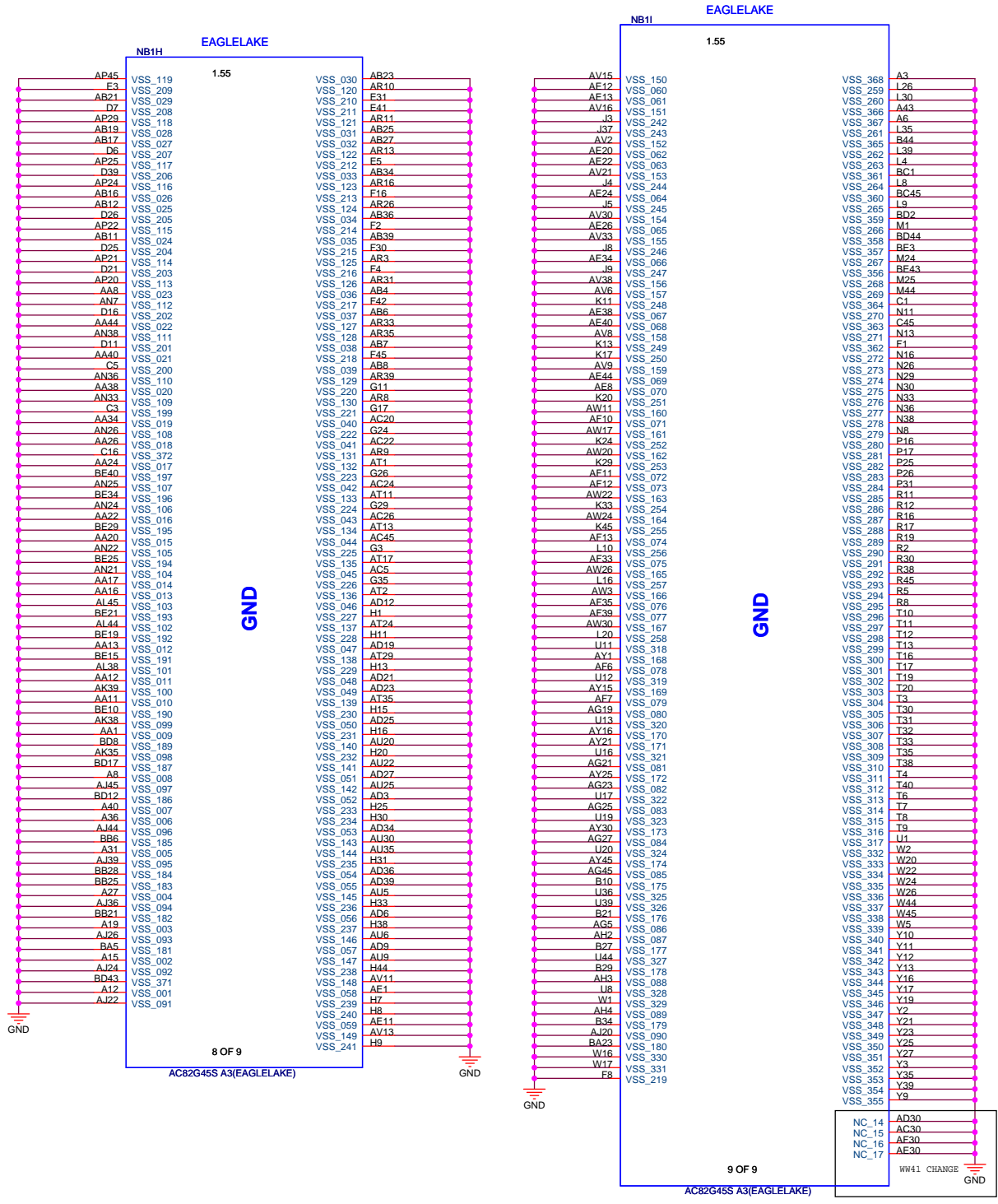


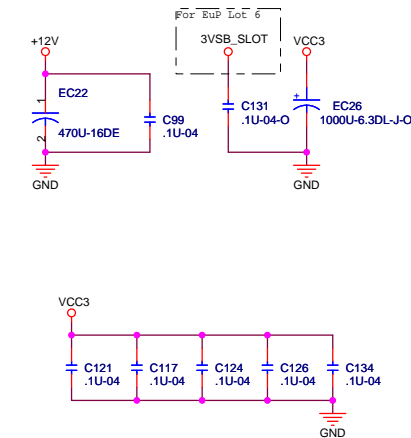
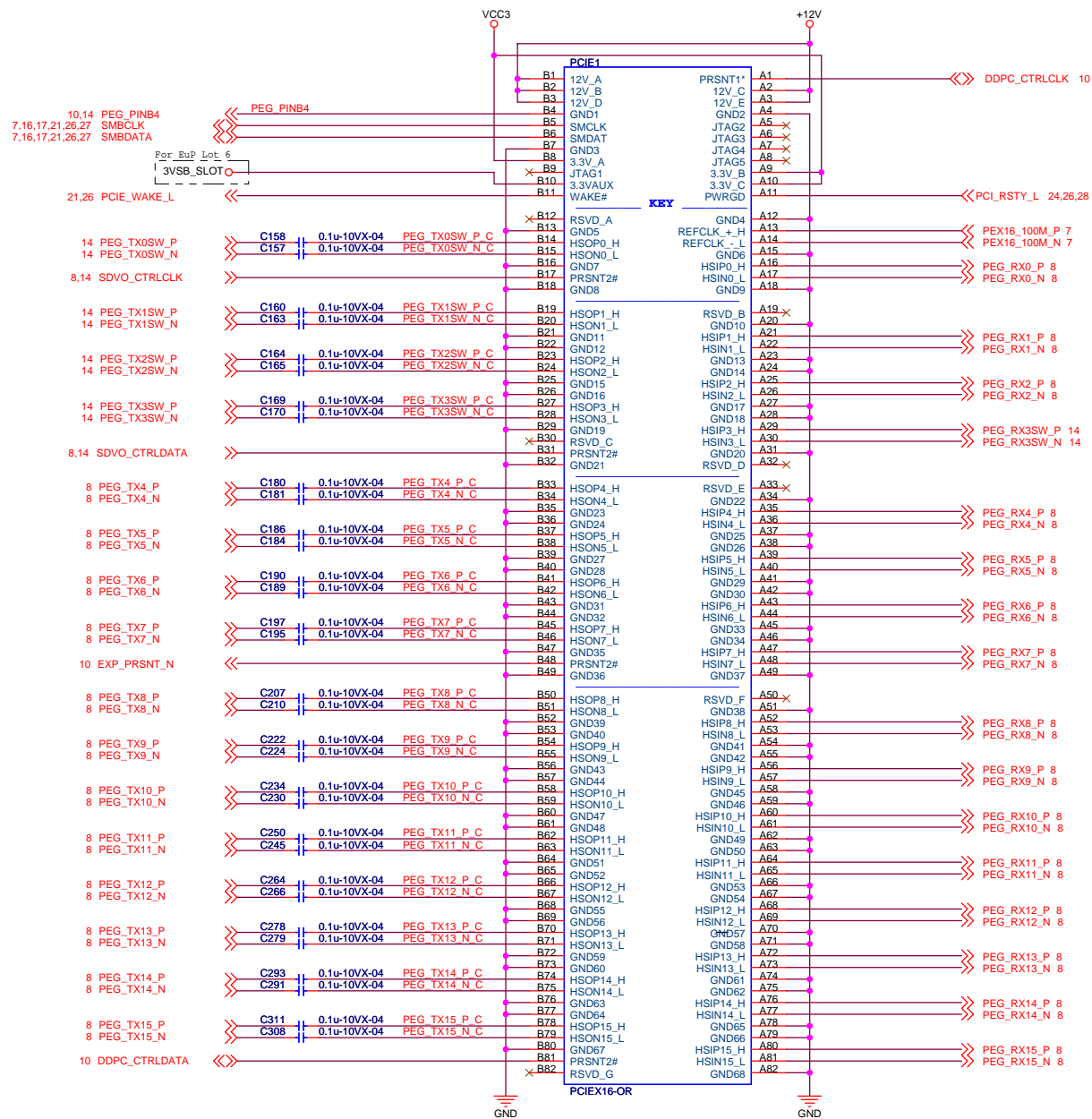


| EAGLELAKE SQU TYPE |     |           |
|--------------------|-----|-----------|
| Q                  | SQU | RE==NC    |
| G                  | SQU | RE==NC    |
| P                  | SQU | RE==0 ohm |

\* Intel WW43 UPDATA

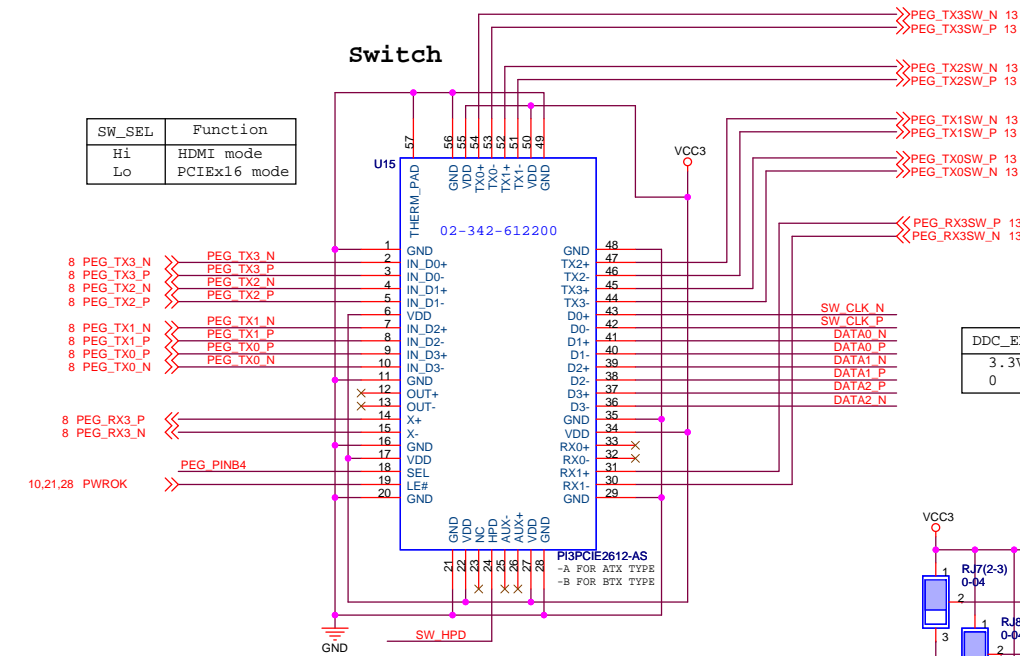




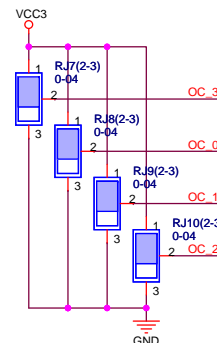


| SW_SEL | Function     |
|--------|--------------|
| Hi     | HDMI mode    |
| Lo     | PCIEx16 mode |

## Switch



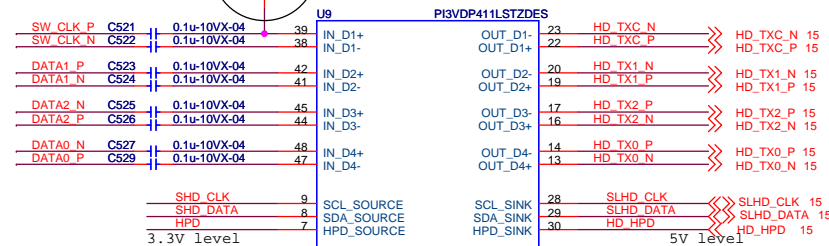
| DDC_EN | Passgate |
|--------|----------|
| 3.3V   | Enable   |
| 0      | Disable  |



Level shifter noise issue

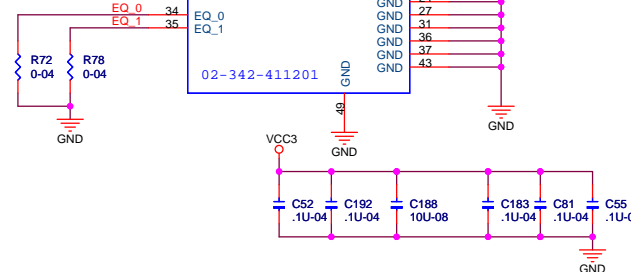
9/30

## Level Shifter



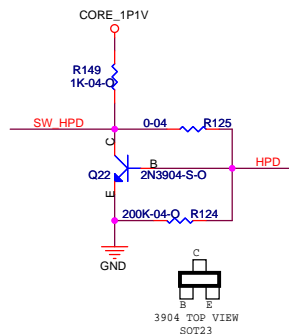
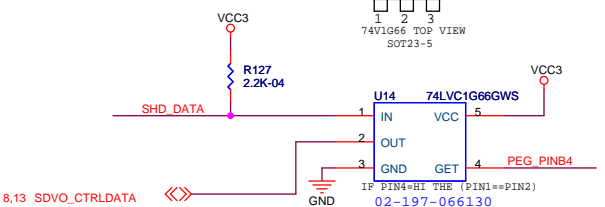
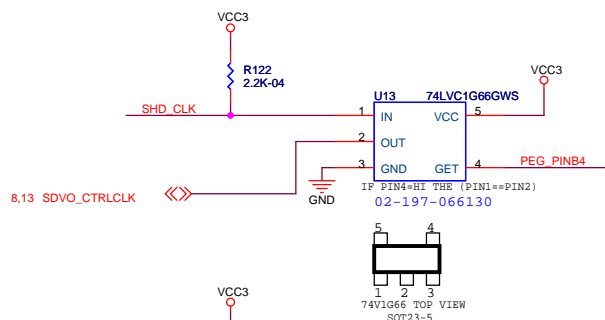
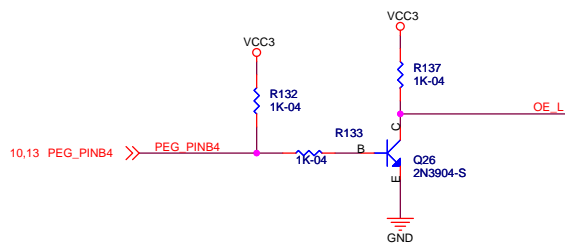
| HD_HPDI | Status    |
|---------|-----------|
| Hi      | Plugged   |
| Lo      | unplugged |

HD\_HPDI:Internal 100K pull low



| OC_3 | OC_2 | OC_1 | OC_0 | Vswing (mV) | Pre/De-emphasis |
|------|------|------|------|-------------|-----------------|
| 0    | 0    | 0    | 0    | 500         | 0               |
| 0    | 0    | 0    | 1    | 600         | 0               |
| 0    | 0    | 1    | 0    | 750         | 0               |
| .    | .    | .    | .    | .           | .               |

| EQ_0 | EQ_1 | Equalization (dB) |
|------|------|-------------------|
| 0    | 0    | 3                 |
| 0    | 1    | 7.2               |
| 1    | 0    | 1                 |
| 1    | 1    | 20                |



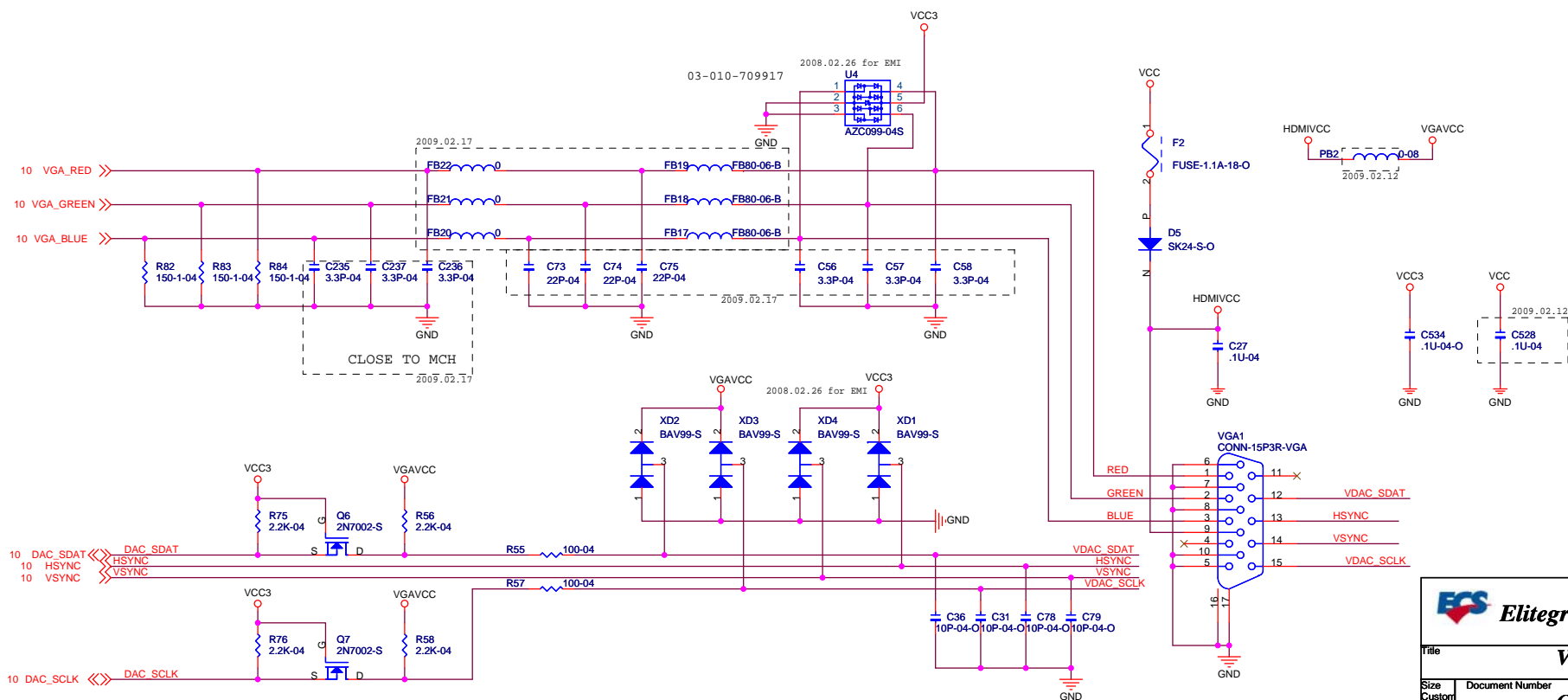
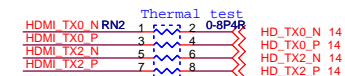
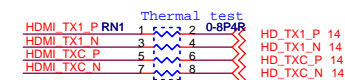
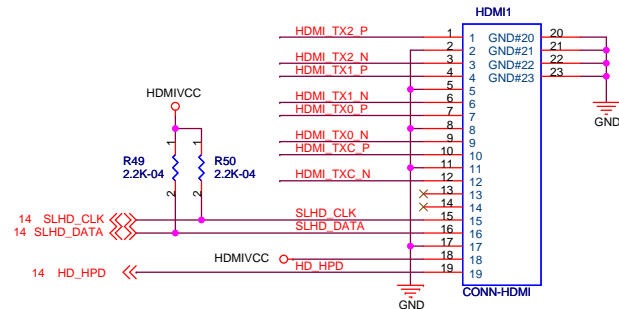
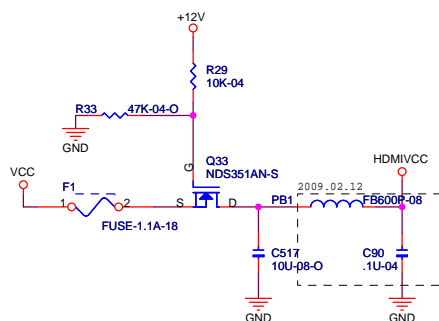
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**HDMI Interface (Switch, Level shifter)**

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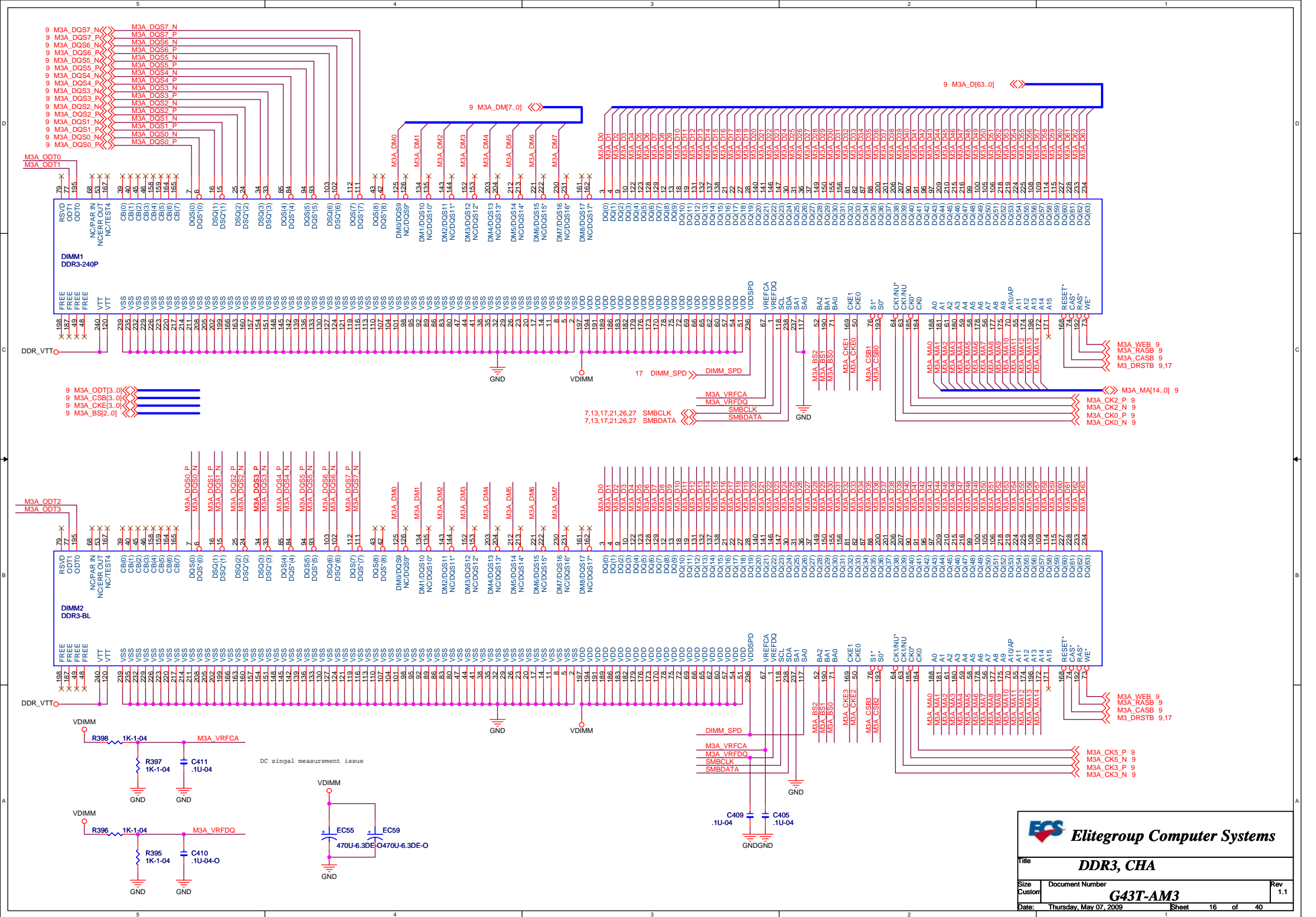
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Title: **VGA/HDMI CONN**

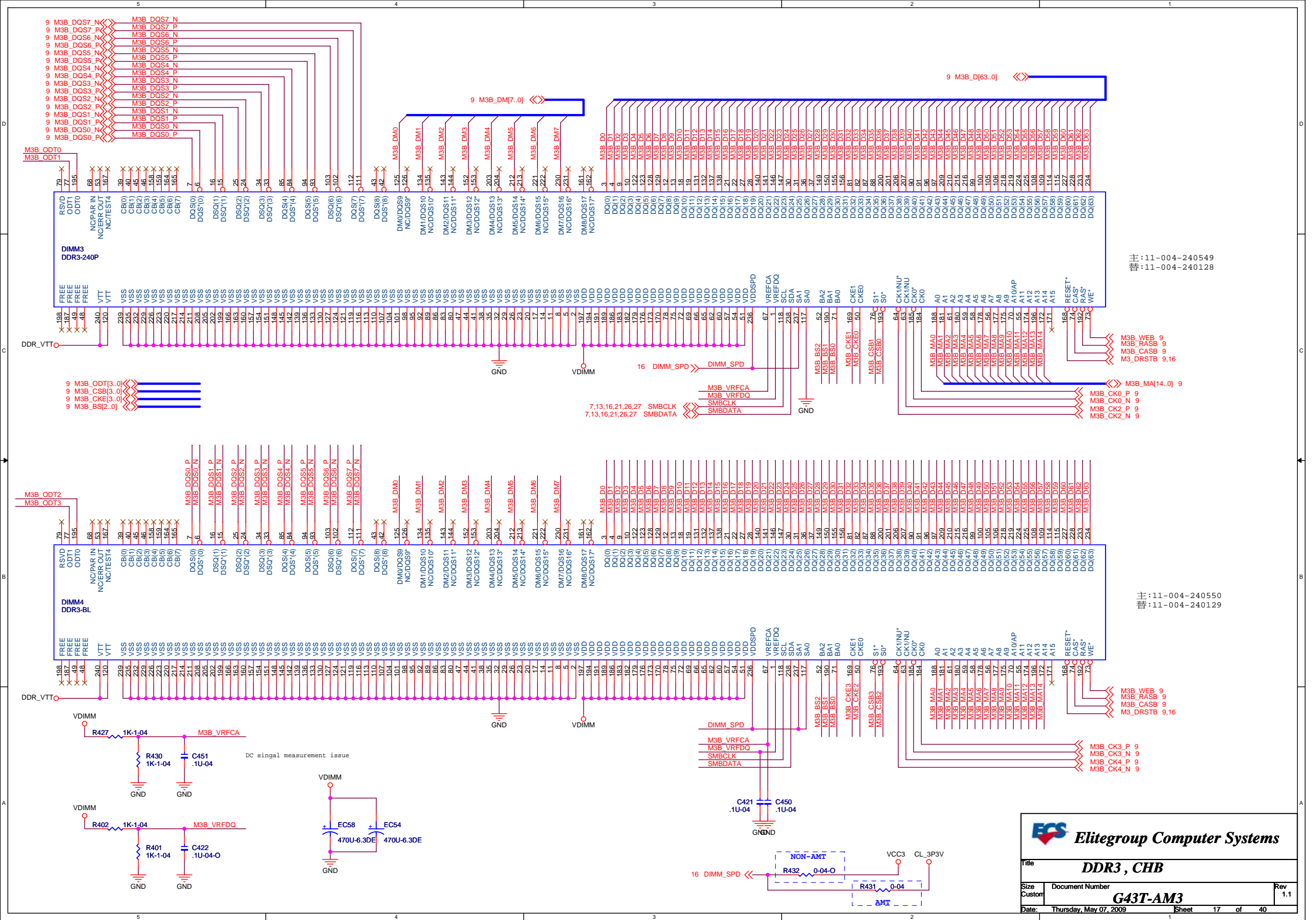
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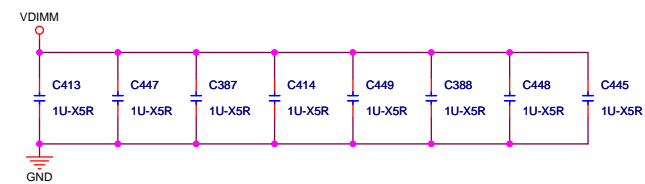
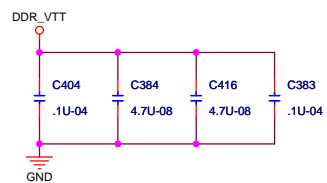
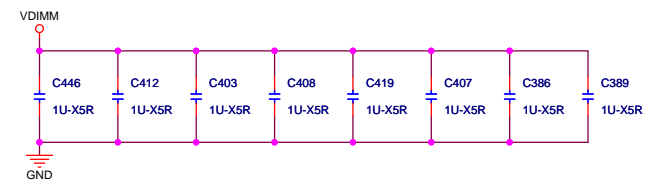
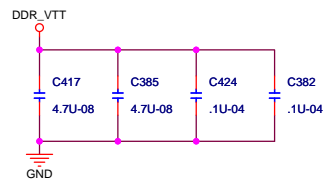
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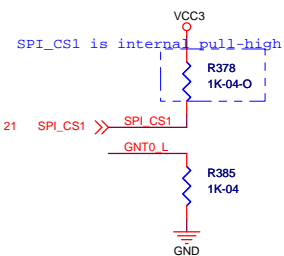
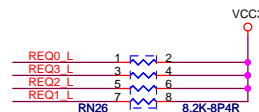
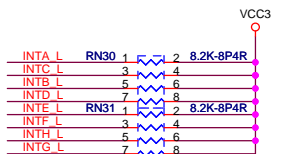
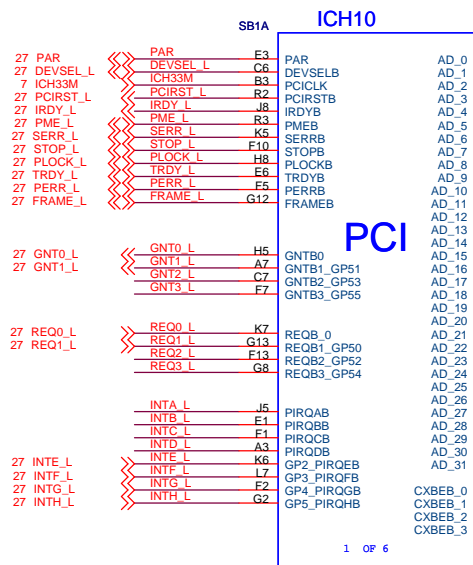
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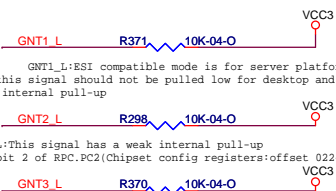
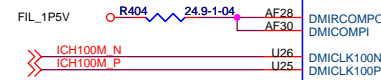
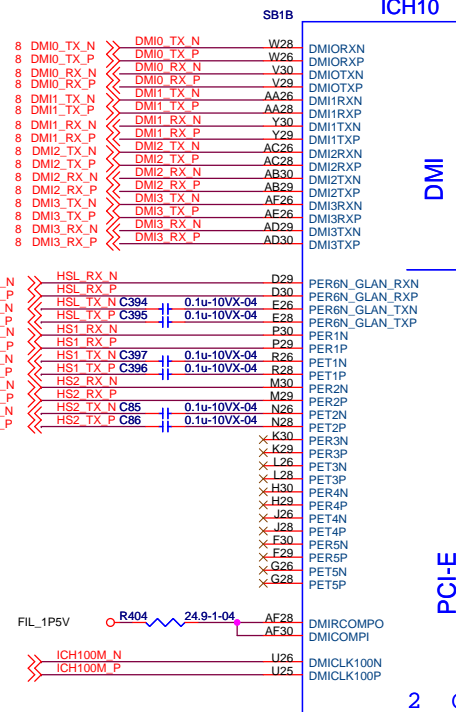






| BOOT BIOS DESTINATION SELECTION |         |                       |
|---------------------------------|---------|-----------------------|
| GNT0_L                          | SPI_CS1 | BOOT BIOS DESTINATION |
| 0                               | 1       | SPI                   |
| 1                               | 0       | PCI                   |
| 1                               | 1       | LPC                   |
| 0                               | 0       | Reserved              |

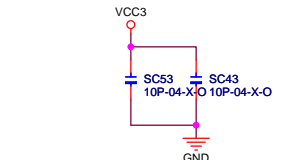
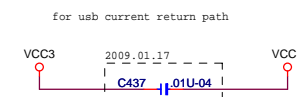
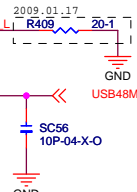
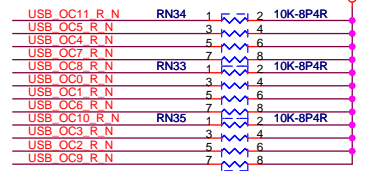
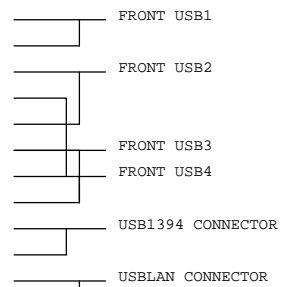
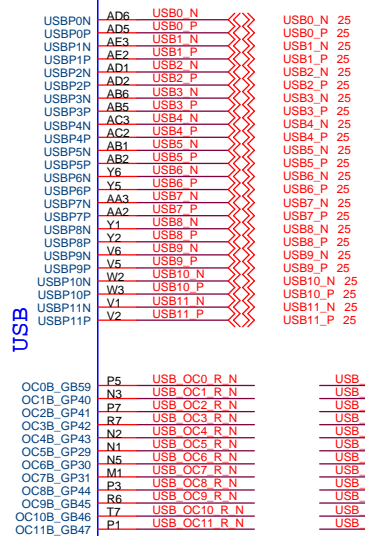
\*Default

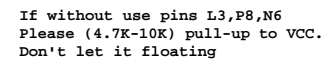


GNT1\_L:ES1 compatible mode is for server platforms only  
this signal should not be pulled low for desktop and mobile  
internal pull-up

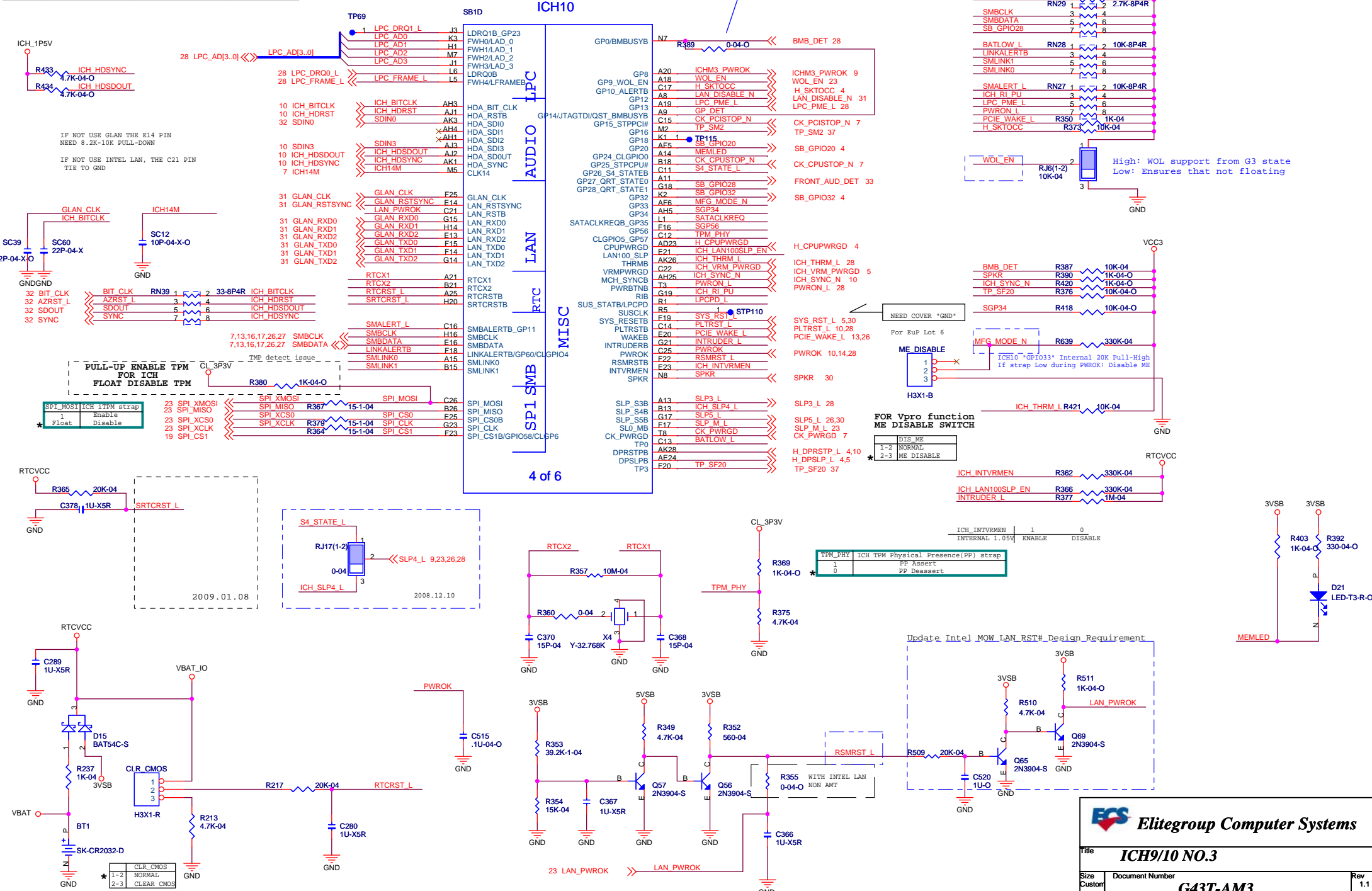
GNT2\_L:This signal has a weak internal pull-up  
Sets bit 2 of RPC.PC2(Chipset config registers:offset 0224h)when sampled low

GNT3\_L:this indicates the the system is strapped to the "top-block" swap mode  
Internal pull-up This signal should not be pulled low unless using XOR chain testing

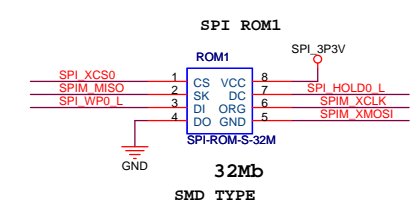
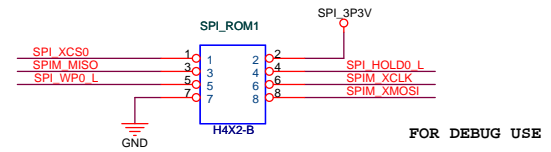
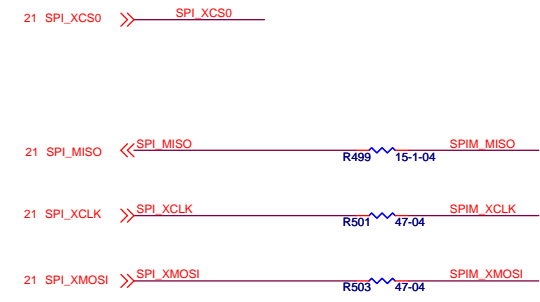
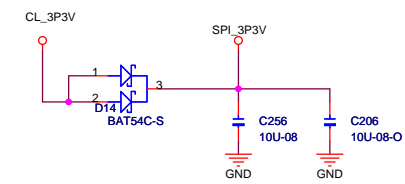
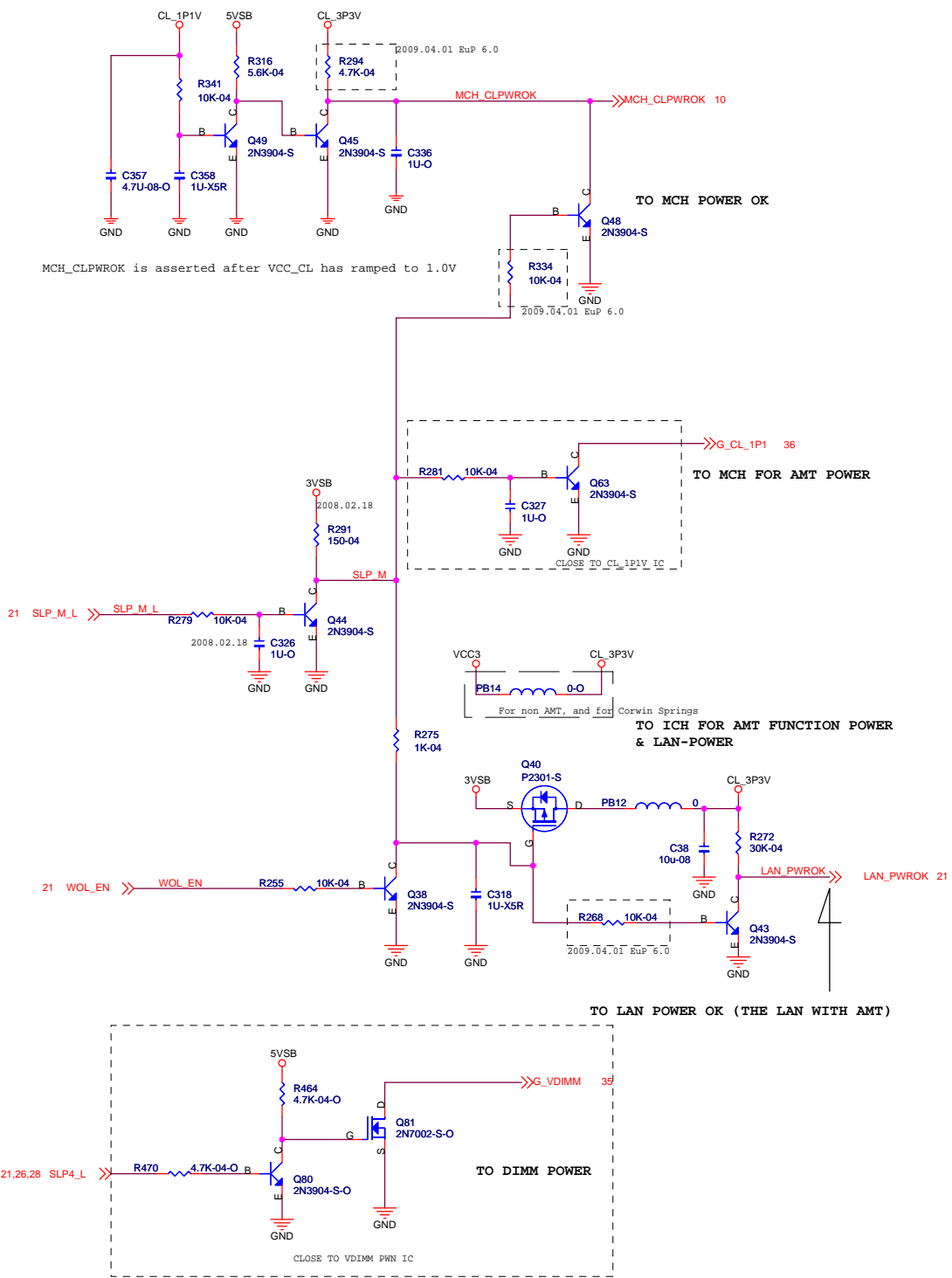


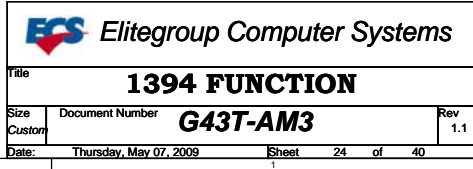


|         | ICH 10,C12 pin | ICH 10,C26 pin | MCH,L17 pin |
|---------|----------------|----------------|-------------|
| Disable | Pulldown       | Float          | Float       |
| Enable  | Pullhi         | Pullhi         | Pulldown    |

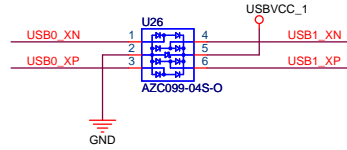
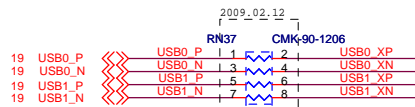




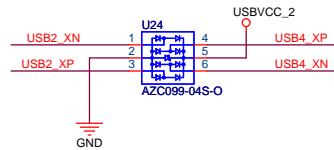
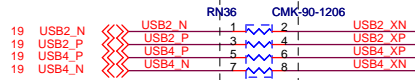
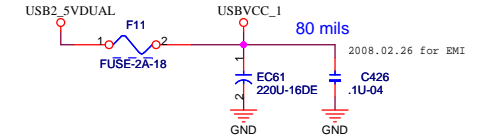
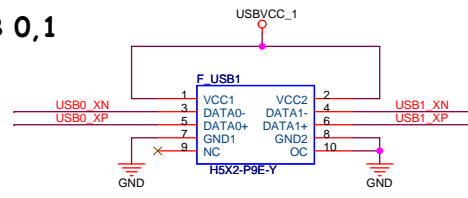




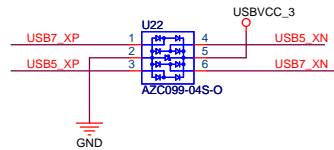
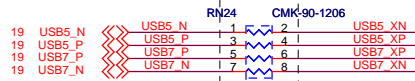
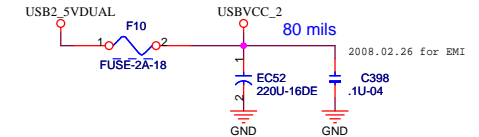
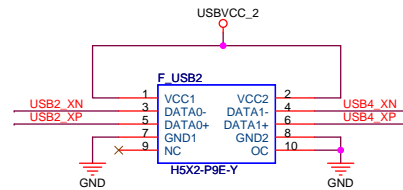




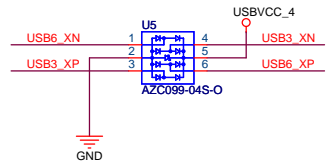
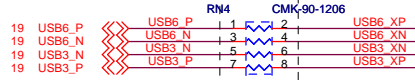
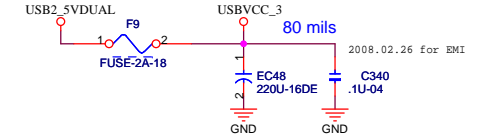
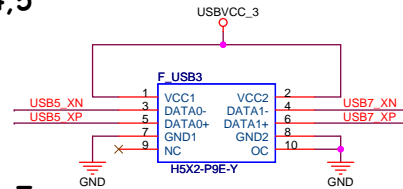
## USB 0,1



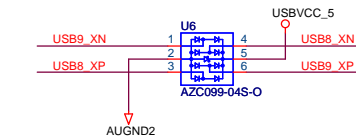
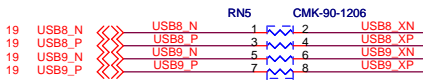
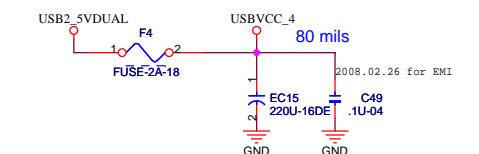
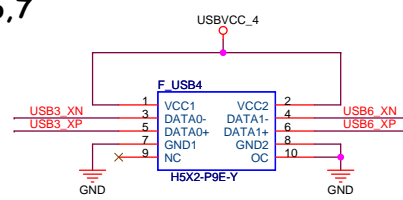
## USB 2,3



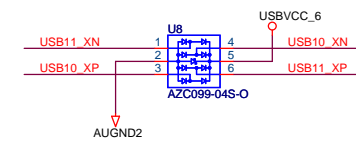
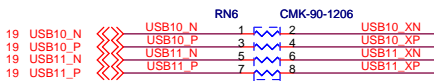
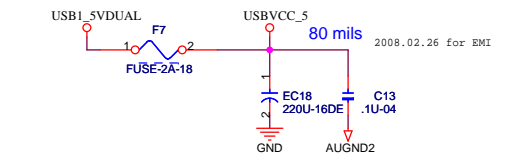
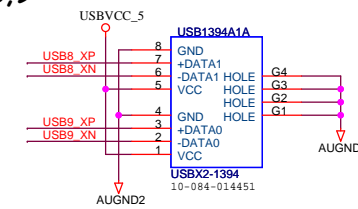
## USB 4,5



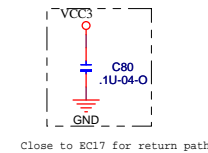
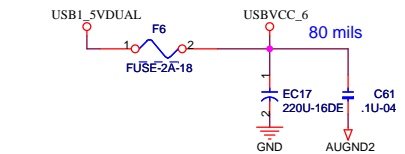
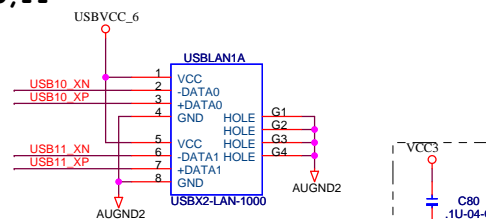
## USB 6,7

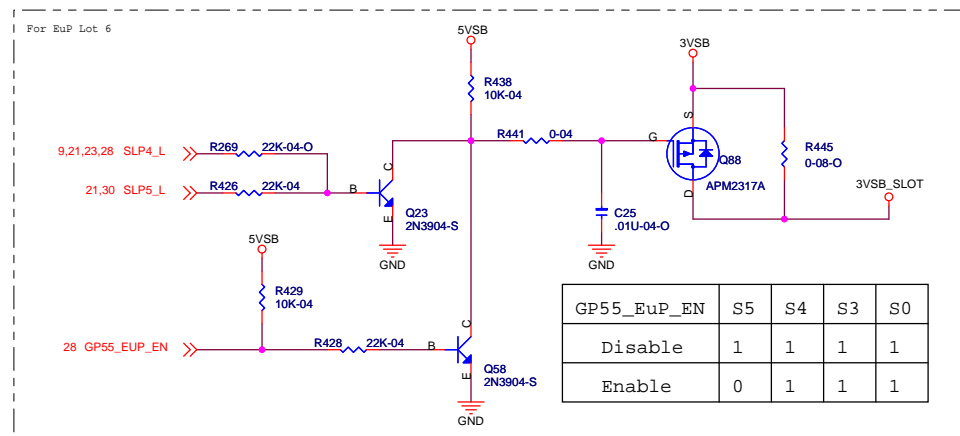
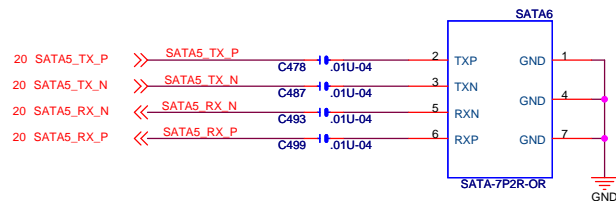


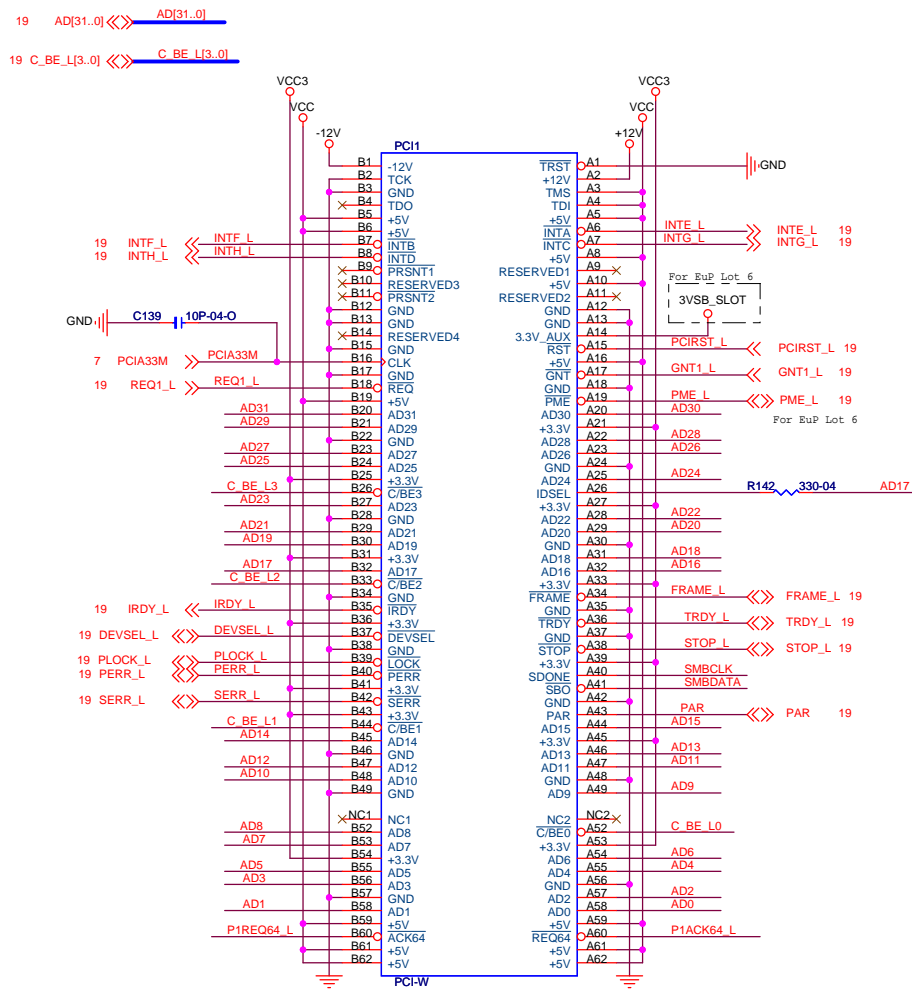
## USB 8,9



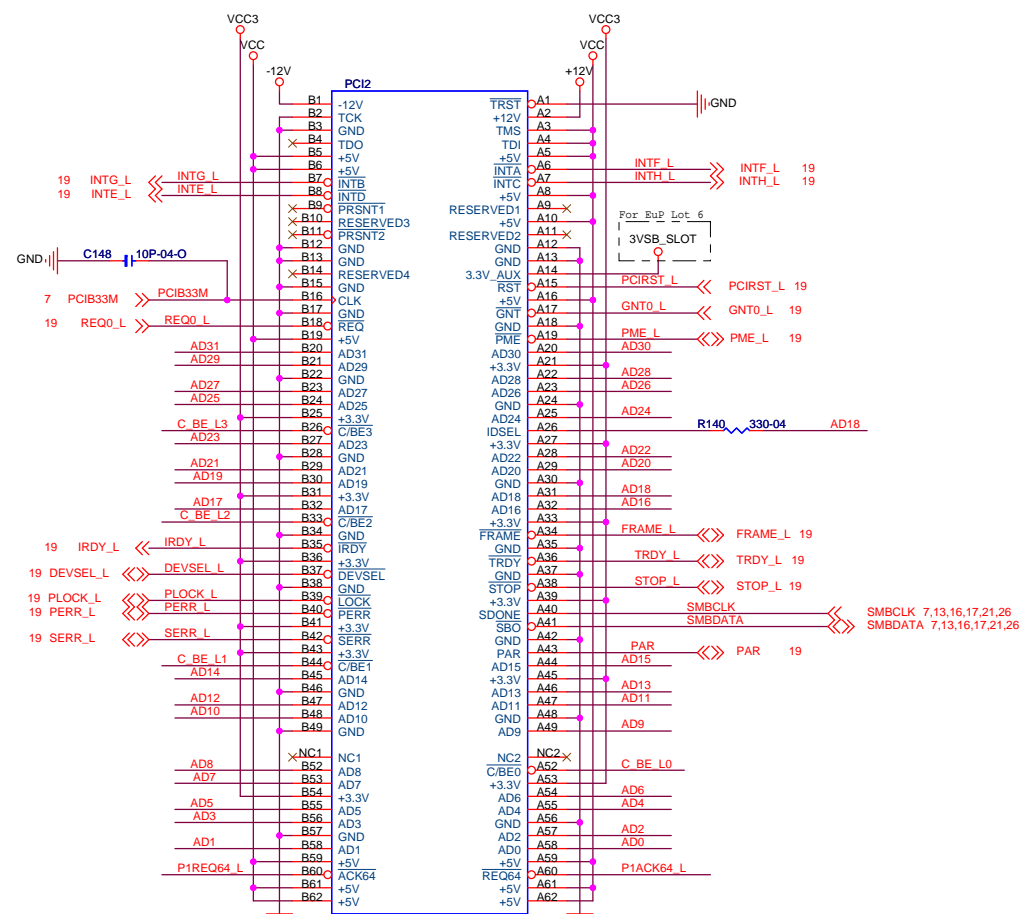
## USB 10,11



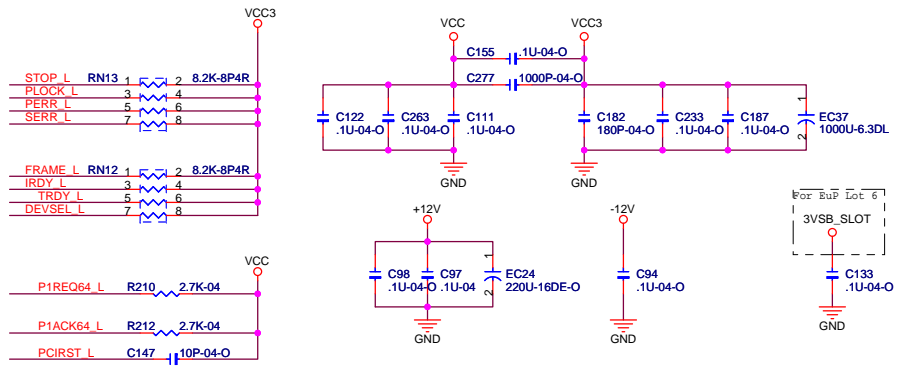




INT:E  
IDSEL:AD17

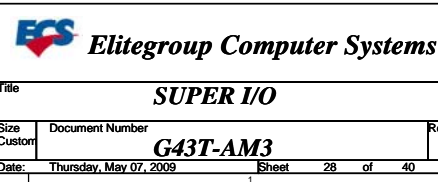


INT:F  
IDSEL:AD18



**Elitegroup Computer Systems**

|        |                        |  |               |    |       |
|--------|------------------------|--|---------------|----|-------|
| Title  |                        |  | <b>PCI X2</b> |    |       |
| Size   | Document Number        |  |               |    | Rev   |
| Custom | <b>G43T-AM3</b>        |  |               |    | 1.1   |
| Date:  | Thursday, May 07, 2009 |  | Sheet         | 27 | of 40 |



LPT

**FDD**

COM1 &amp; COM2

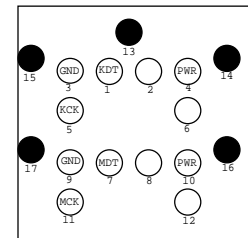
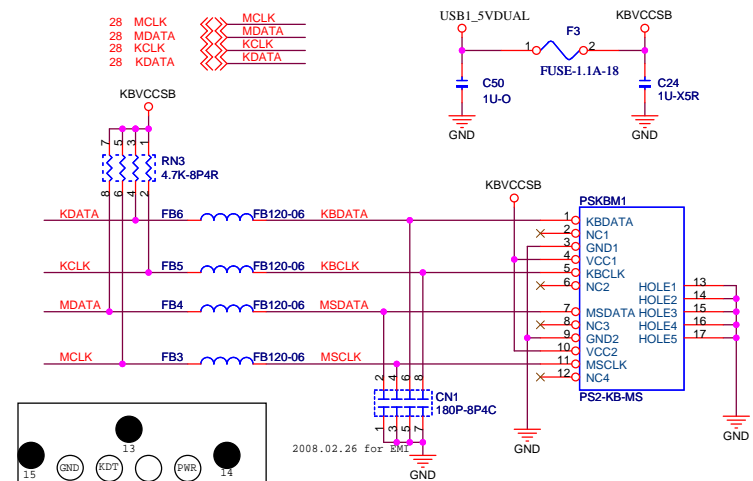
IR

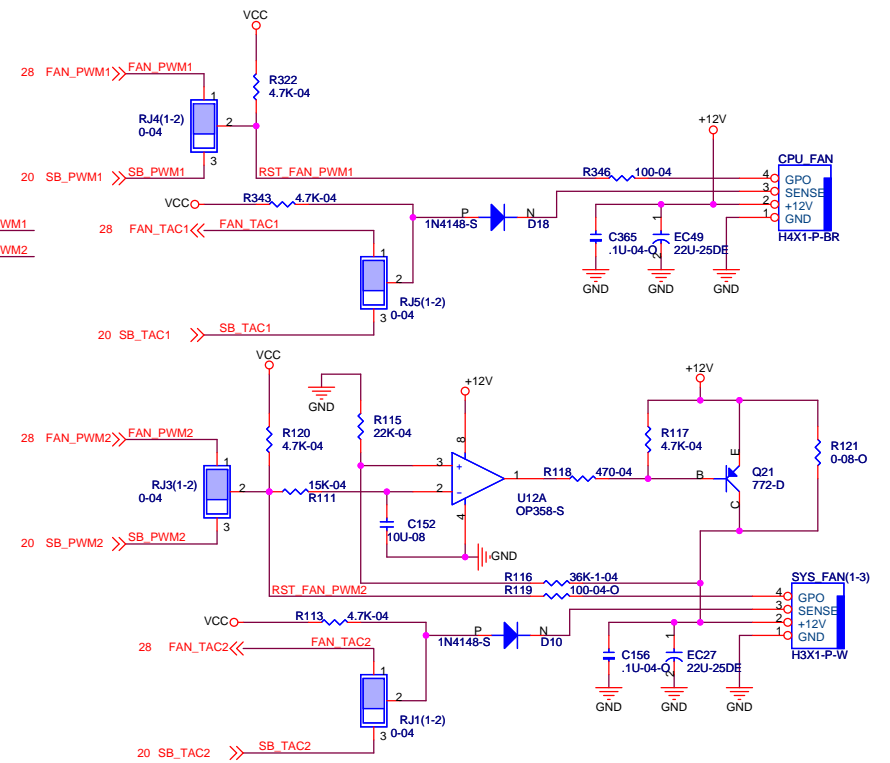
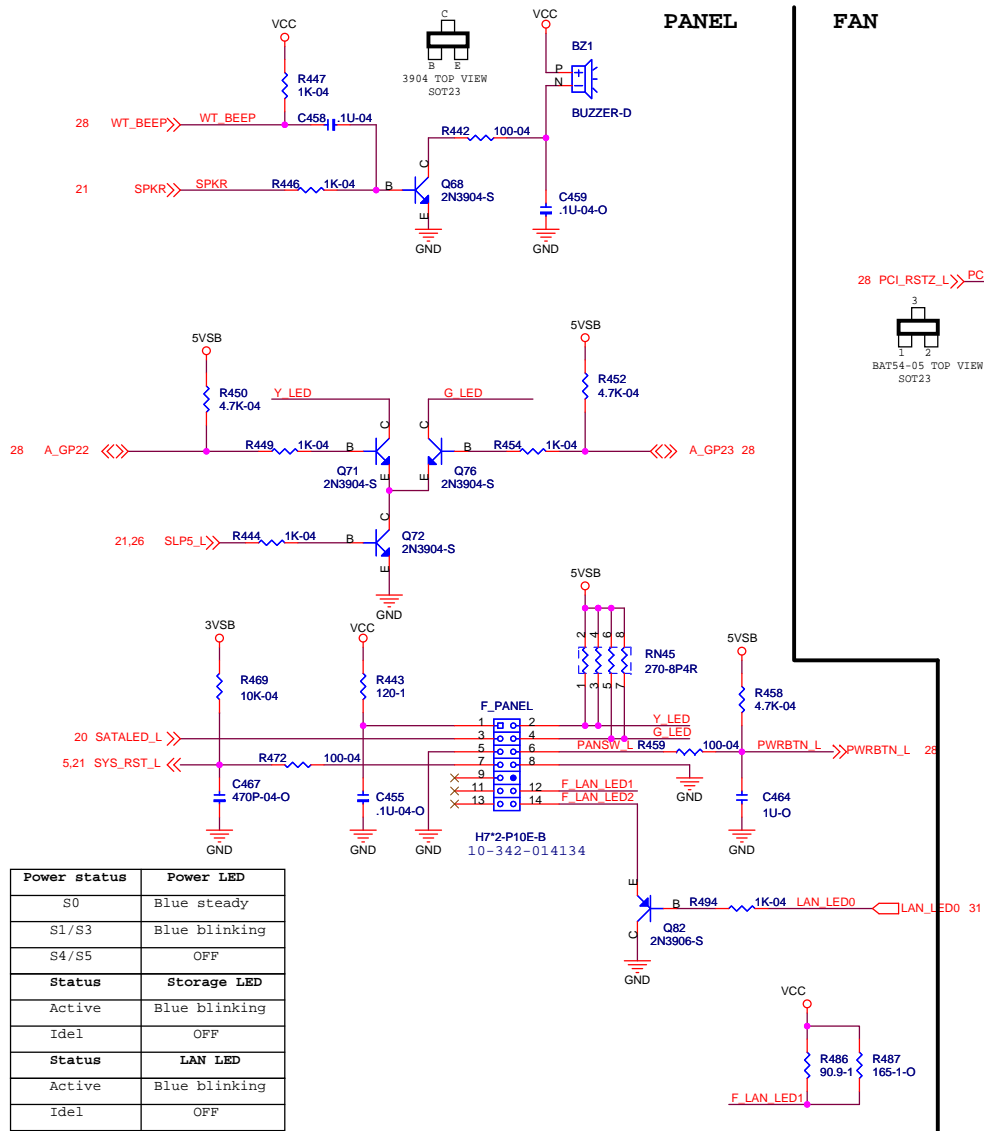
COM1 USE CONNECTOR

COM2 USE Header

TO SYSTEM WAKE-UP

## KEYBOARD & MOUSE

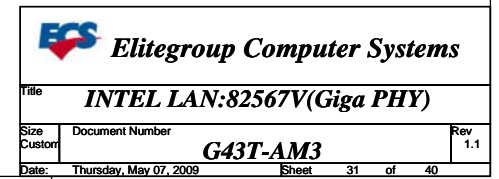


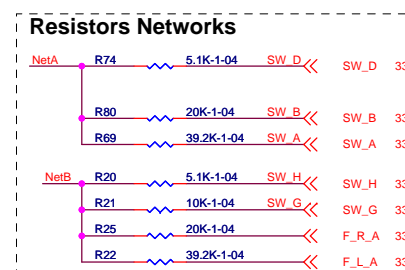
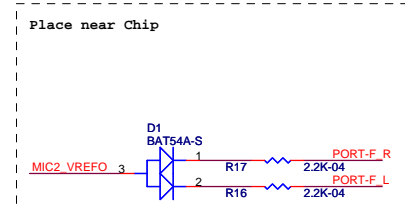
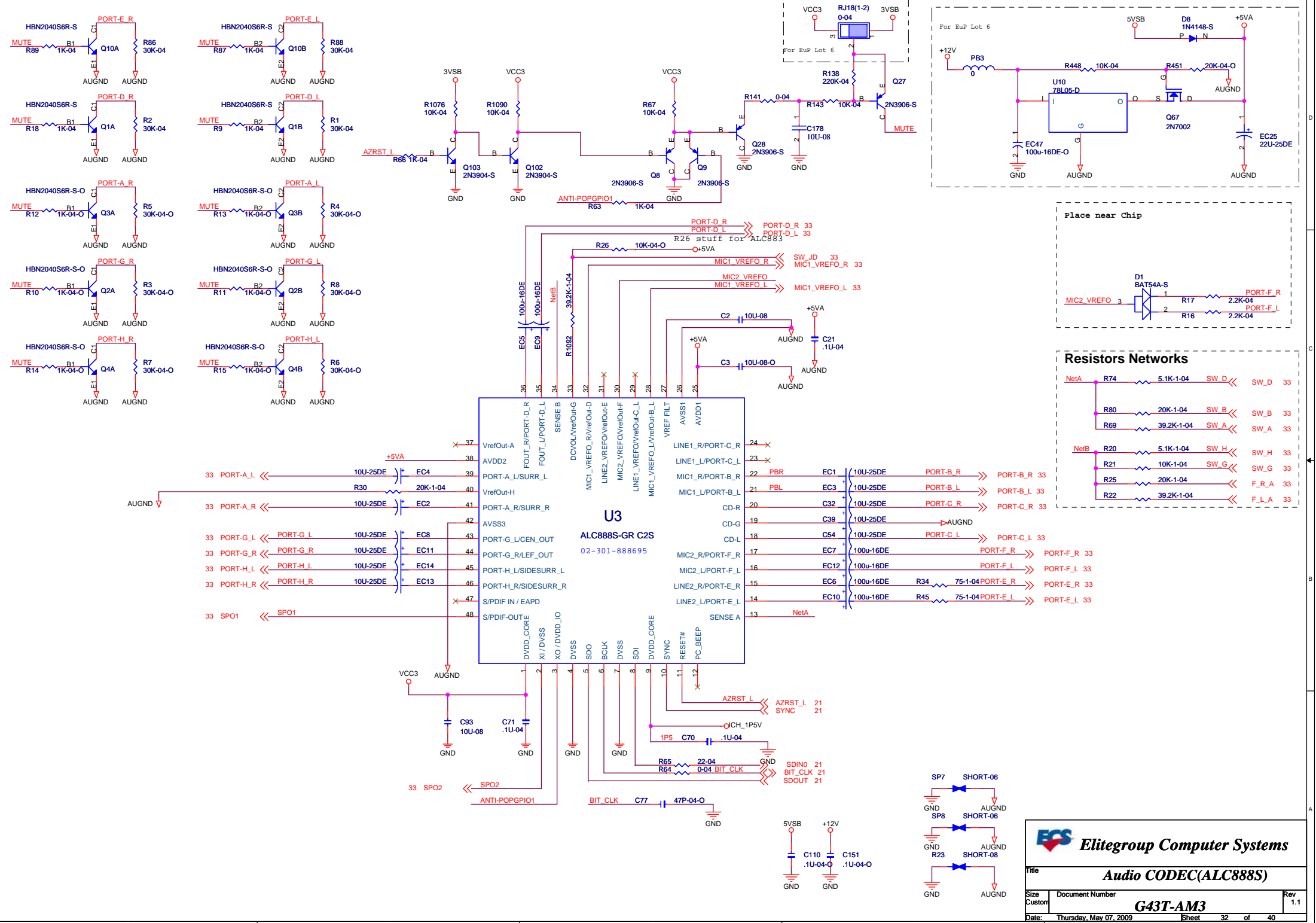


BACKUP FROM SIO GPIO

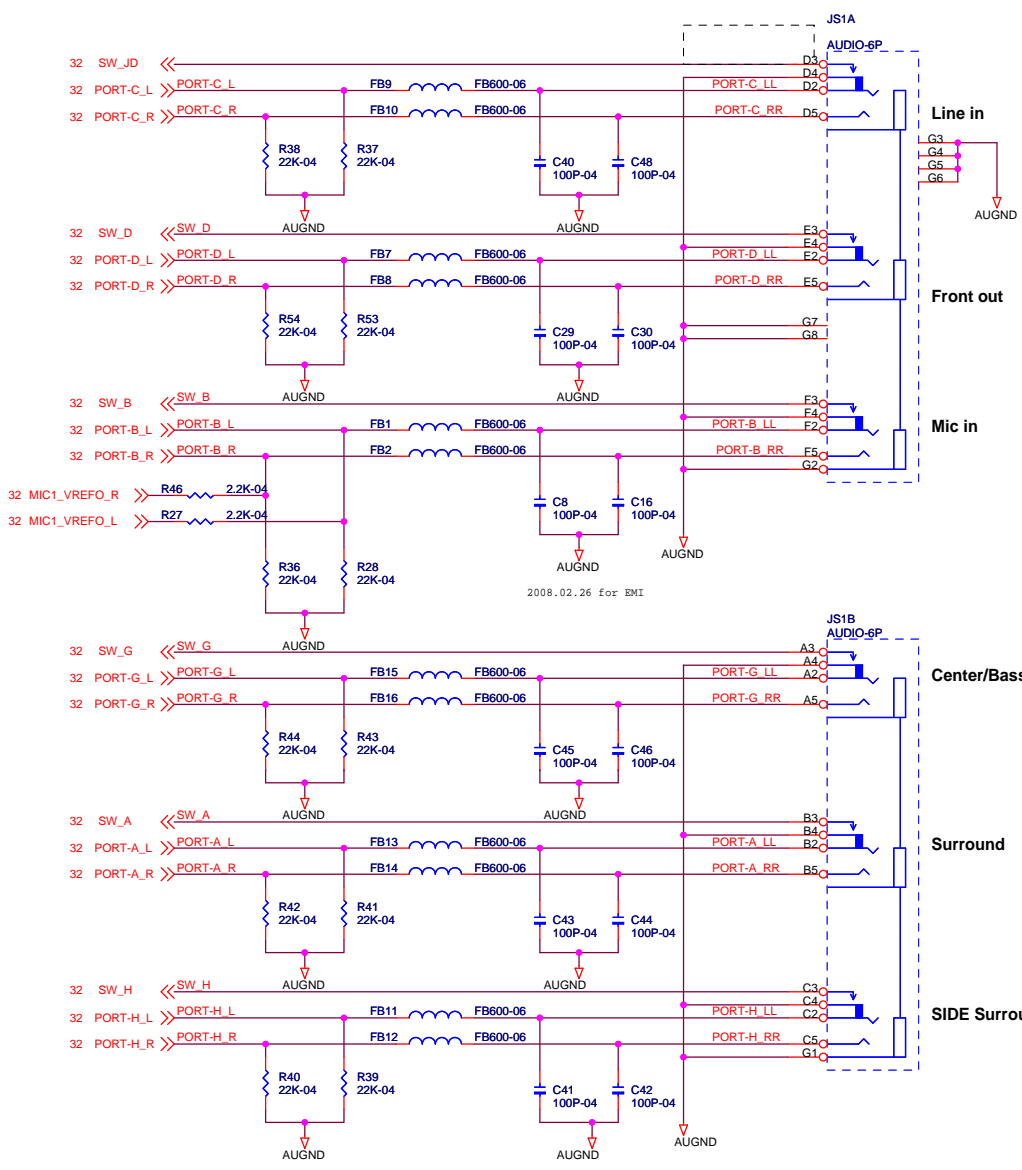
FOR F/W SET

|                               |                              |
|-------------------------------|------------------------------|
| 82567LM                       | 82567LF                      |
| Digital Office<br>AMT support | Digital Home<br>Viiv support |



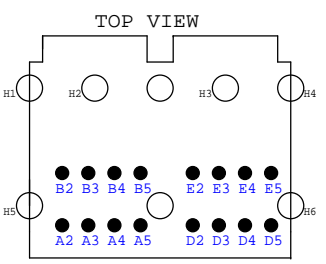
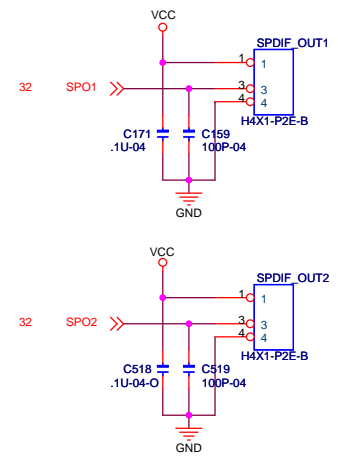
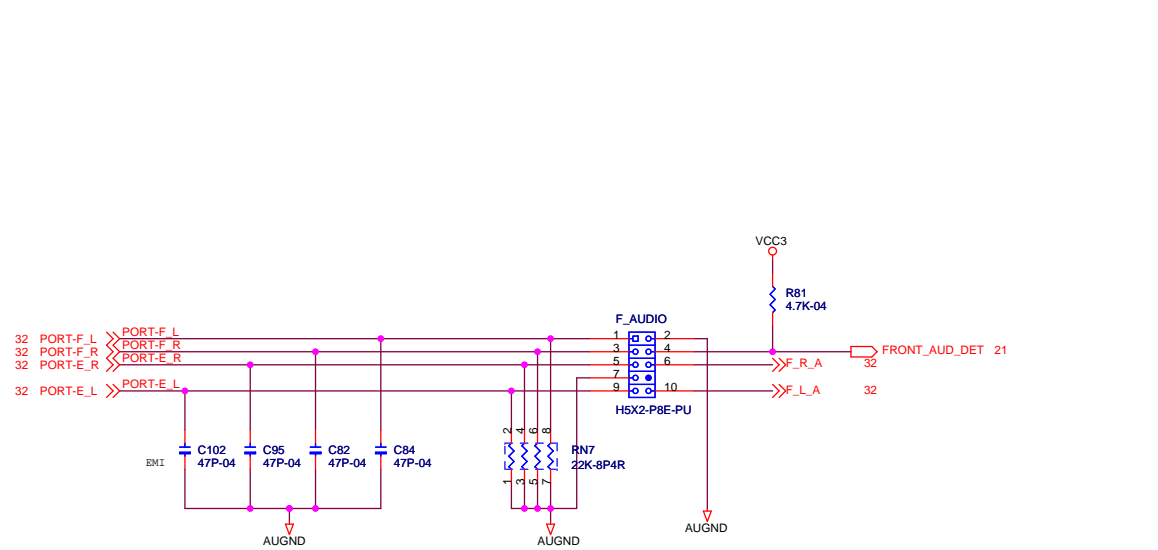







2008.02.26 for EMI

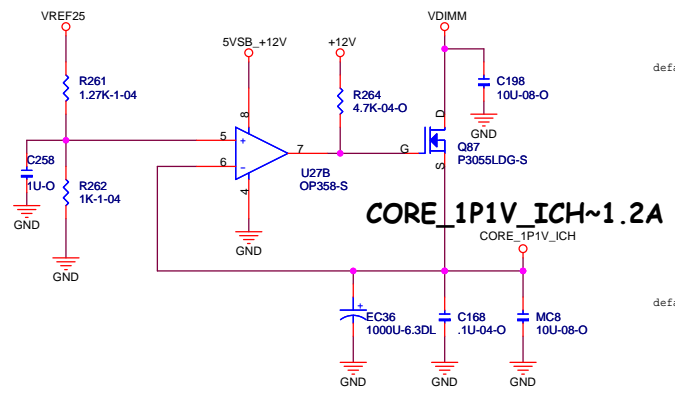
2008.02.26 for EMI



|                                                                                                                          |                                 |         |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------|
|  <b>Elitegroup Computer Systems</b> |                                 |         |
| Title <b>AUDIO Connector</b>                                                                                             |                                 |         |
| Size Custom                                                                                                              | Document Number <b>G43T-AM3</b> | Rev 1.1 |
| Date: Thursday, May 07, 2009                                                                                             | Sheet 33                        | of 40   |







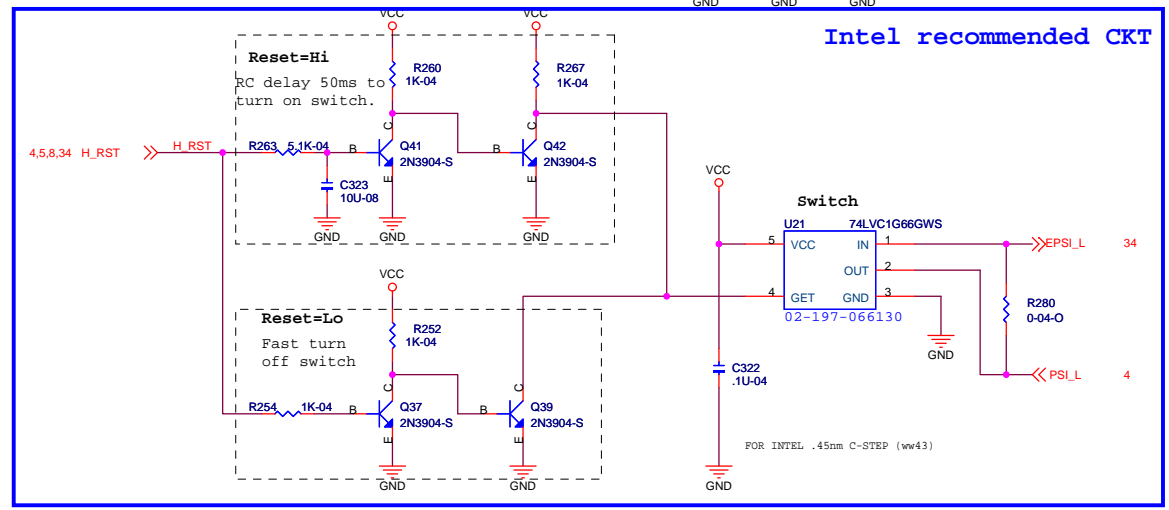
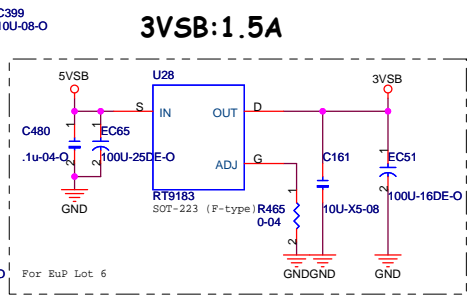
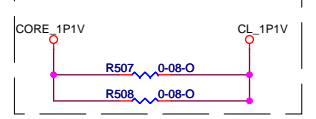
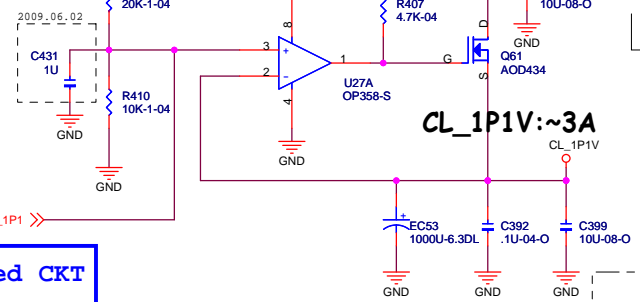
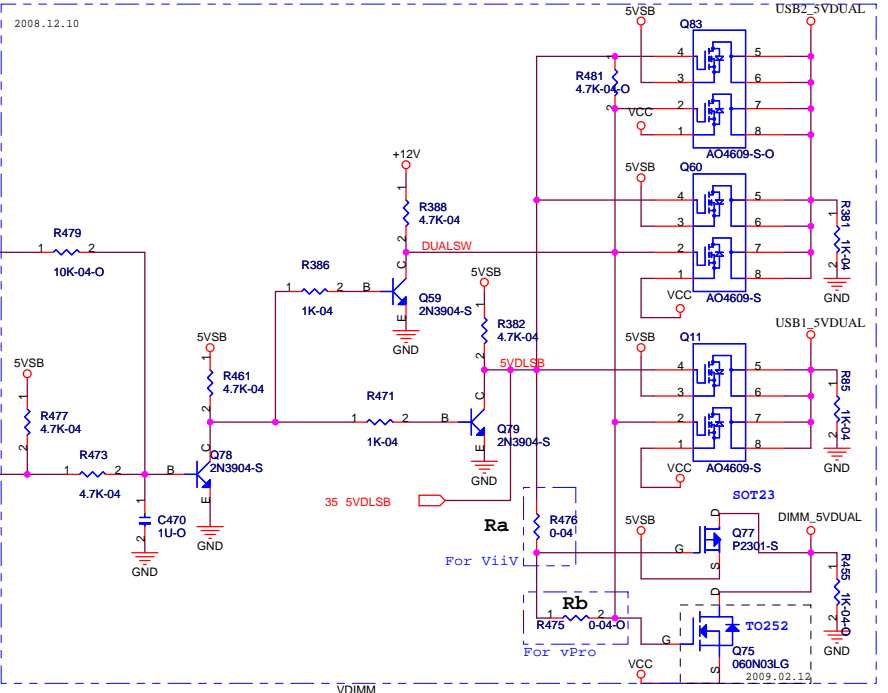
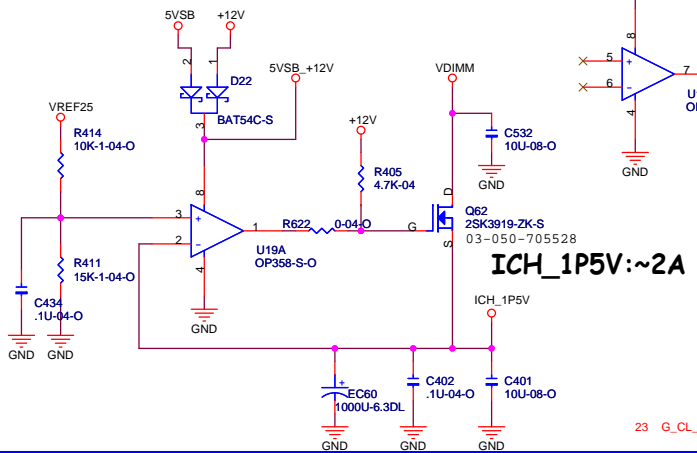
If stuff Ra

| Status    | Target      |             |             | Super I/O<br>8720-CX |
|-----------|-------------|-------------|-------------|----------------------|
|           | USB2_5VDUAL | USB1_5VDUAL | DIMM_5VDUAL |                      |
| AC plug   | 0           | 0           | 0           | GPIO_S4_S5=0D=1      |
| S0,S1     | VCC         | VCC         | VCC         | GPIO_S4_S5=1         |
| S3        | 5VSB        | 5VSB        | 5VSB        | GPIO_S4_S5=0         |
| S4,S5     | 5VSB        | 5VSB        | 5VSB        | GPIO_S4_S5=0         |
| default * | 0           | 0           | 0           | GPIO_S4_S5=1         |

If stuff Rb

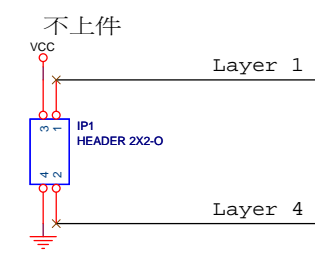
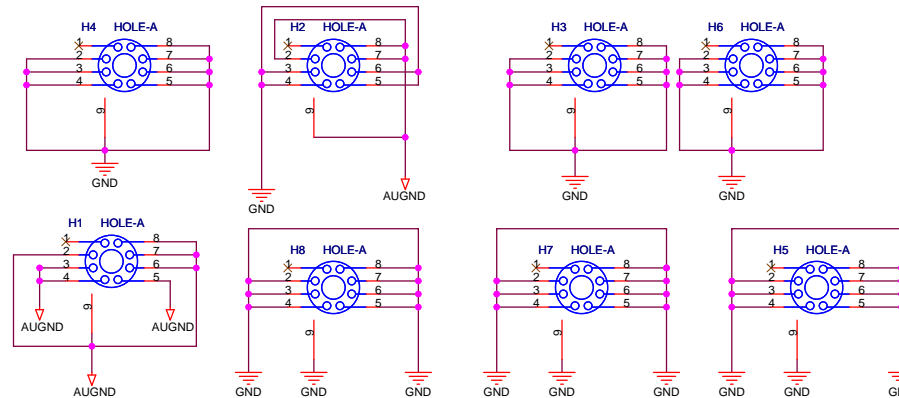
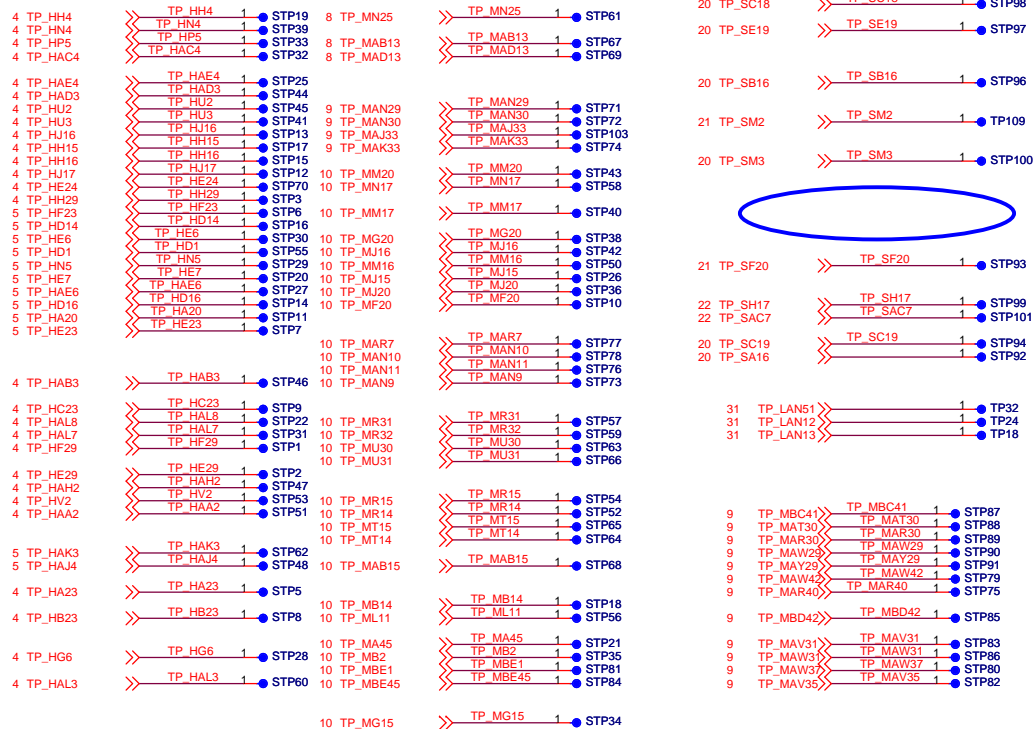
| Status    | Target      |             |             | Super I/O<br>8720-CX |
|-----------|-------------|-------------|-------------|----------------------|
|           | USB2_5VDUAL | USB1_5VDUAL | DIMM_5VDUAL |                      |
| AC plug   | 0           | 0           | 5VSB        | GPIO_S4_S5=0D=1      |
| S0,S1     | VCC         | VCC         | VCC         | GPIO_S4_S5=1         |
| S3        | 5VSB        | 5VSB        | 5VSB        | GPIO_S4_S5=0         |
| S4,S5     | 5VSB        | 5VSB        | 5VSB        | GPIO_S4_S5=0         |
| default * | 0           | 0           | 5VSB        | GPIO_S4_S5=1         |

When power off, the ICH\_1P5V will be removed



To VRM IC

From CPU



1080 : trace width 4 mil 50 ohm  
 Trace Length 3150 mils  
 Spacing: 1.clearance to itself 50/4/50(S:W:S)  
 2.clearance to other signal 3W

| ATX P/S WITH 1A STBY CURRENT |       |       |       |       |
|------------------------------|-------|-------|-------|-------|
| 5VSB                         | 5V    | 3.3V  | 12V   | -12V  |
| +/-5%                        | +/-5% | +/-5% | +/-5% | +/-5% |

AO4609

*DIMM\_5VDUAL*

RT9214 SW  
POWER1.5V

OP\_1A  
1.1V MOSFET  
LINEAR  
TO252

*VDIMM*

9173D  
POWER 0.75V

RT8106A SW  
POWER1.1V

OP\_2A  
1.1V MOSFET  
LINEAR  
TO252

OP\_2B  
1.5V MOSFET  
LINEAR  
TO252

OP\_3A  
1.1V MOSFET  
LINEAR  
TO252

3.3V LDO  
REGULATOR  
1086

P2301

*CL\_3P3V*

BCP69

*LAN\_1P8V*

5VAA LDO  
REGULATOR  
78L05

AO4609

*VCCDUAL*

| PCI Slot (per slot) |        | X1 PCIe per |        | X16 PCIe per |        |
|---------------------|--------|-------------|--------|--------------|--------|
| 5V                  | 5.0A   | 3.3V        | 3.0A   | 3.3V         | 3.0A   |
| 3.3V                | 7.6A   | 12V         | 0.5A   | 12V          | 5.5A   |
| 12V                 | 0.5A   | 3.3Vaux     | 0.375A | 3.3Vaux      | 0.375A |
| 3.3Vaux             | 0.375A | -12V        | 0.1A   |              |        |

| USB X6 FR |      | USB X6 IO |      | 2XPS/2 |      |
|-----------|------|-----------|------|--------|------|
| VDD       | 2.0A | VDD       | 2.0A | 5VDual | 1.0A |
| 5VDual    |      | 5VDual    |      |        |      |

*VCORE*

*FSB VTT*

*CORE\_1P1V*

*V\_1P5\_ICH*

*CORE\_1P1V\_ICH*

*+5VA*

| Intel 775 CPU |      |      |
|---------------|------|------|
| VCCP          |      | 95A  |
| VTT           | 1.1V | 4.6A |

| DDR3 4DIMMs |       |       |
|-------------|-------|-------|
| VTT_DDR     | 0.75V | 0.83A |
| VDD MEM     | 1.5V  | 7.2A  |

| Intel EAGLELAKE |      |     |
|-----------------|------|-----|
| VTT             | 1.1V | TBD |
| VCCSM           | 1.5V | TBD |
| VCC             | 1.1V | 20A |
| VCC_EXP         | 1.1V | TBD |
| VCC_CL          | 1.1V | TBD |
| Misc 3.3V       | 3.3V | TBD |

| Intel ICH9/10  |      |        |
|----------------|------|--------|
| V_CPU_IO 1.1V  | 1.1V | TBD    |
| VCC1_5A 1.5V   | 1.5V | 1.652A |
| VCC1_5B 1.5V   | 1.5V | 0.646A |
| VCC1_1 1.1V    | 1.1V | 1.16A  |
| VCC3 3.3V      | 3.3V | 0.308A |
| VCCSUS3_3 3.3V | 3.3V | 0.2A   |
| VCCGLAN 1.5V   | 1.5V | 87mA   |
| VCCGLAN 3.3V   | 3.3V | 1mA    |
| VCCCL_3.3V     | 3.3V | 19mA   |
| VCCLAN_3.3V    | 3.3V | 19mA   |
| VCCDMI 1.1V    | 1.1V | 41mA   |
| VCCRTC 3.3V    | 3.3V | 6uA    |
| VCCHDA 1.5V    | 1.5V | 32mA   |
| VCCHDASUS 1.5V | 1.5V | 33mA   |

| ETHERNET |      |         |
|----------|------|---------|
| VDDIO    | 3.3V | 15.5mA  |
| VDDC     | 1.8V | 418.2mA |
| VDDC     | 1.0V | 277.2mA |

| SUPER I/O |      |      |
|-----------|------|------|
| 5VSB      | 5V   | 15mA |
| VCC       | 5V   | 60mA |
| BAT 3.3V  | 3.3V | 2uA  |

| AZALIA    |      |      |
|-----------|------|------|
| DVDD 3.3V | 3.3V | 40mA |
| AVDD      | 5V   | 51mA |

| VT6308P   |      |         |
|-----------|------|---------|
| 3.3V      | 3.3V | 82.68mA |
| CONN. 12V | 12V  | 1.5A    |

*RTCVC*

BATTERY

