

***IALAA***  
***Minnesota 10A/10AG***  
**LA3631P REV 1A Schematic**

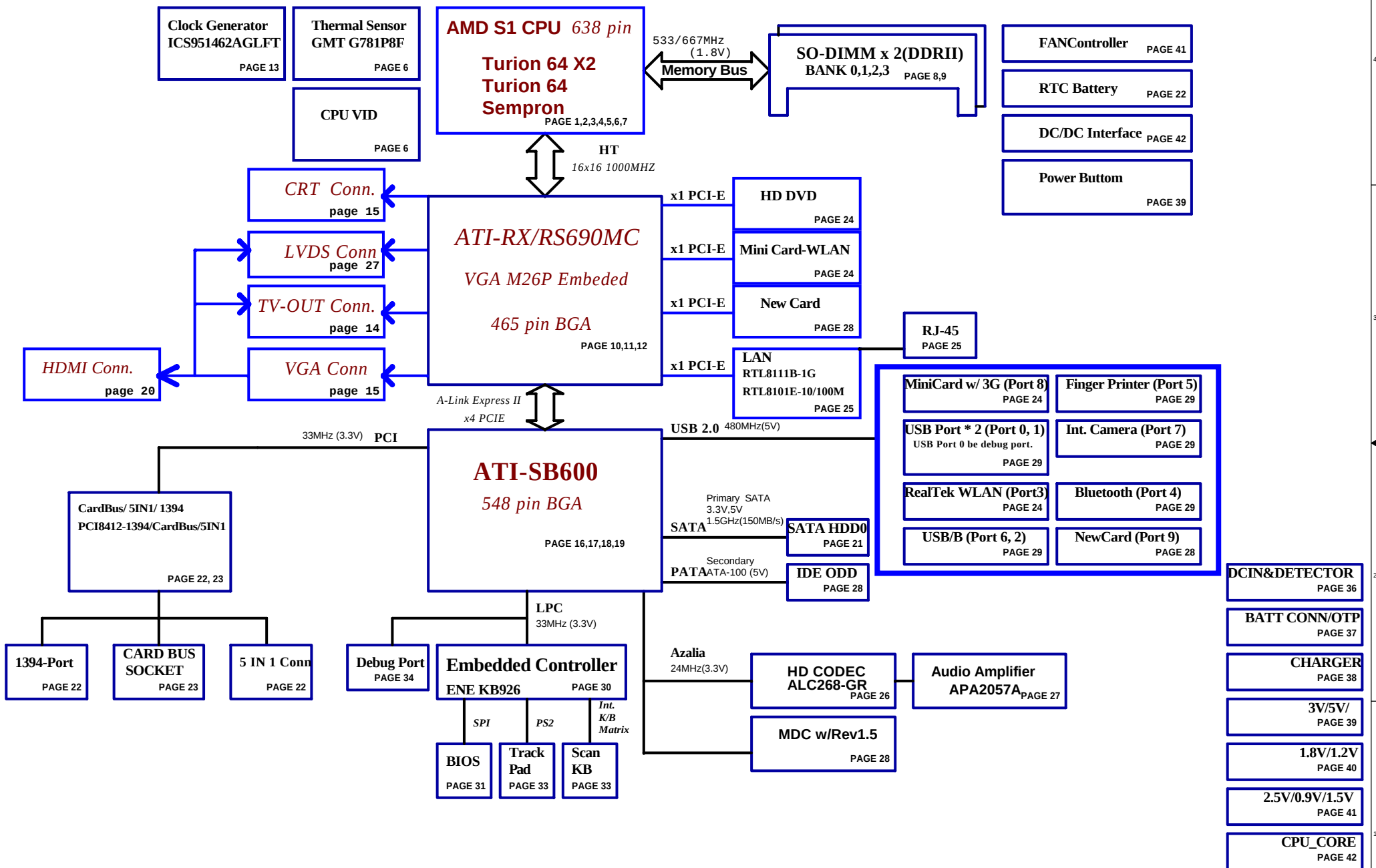
**AMD Turion, Sempron/ATI RX690/RS690MC / ATI SB600**  
**2007-05-04 Rev. 1A**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                               |                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|----------|-------------------------------|-----------------------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          | Compal Electronics, Inc.      |                                               |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4 | Deciphered Date    | 2008/5/4 | Title<br>Cover                |                                               |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Date:<br>Monday, May 14, 2007 | Rev<br>1A                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Sheet<br>1                    | of<br>45                                      |

# Compal confidential IALAA Minnesota10A FUNCTION BLOCK DIAGRAM

File Name : IALAA Minnesota10A LA3631P

P/N :



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          |                                                                |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|----------|----------------------------------------------------------------|-----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |          | Compal Electronics, Inc.                                       |           |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4           | Deciphered Date | 2008/5/4 | Title<br>Black Diagram                                         |           |
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| Date: Monday, May 14, 2007                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |          | Sheet<br>2                                                     | of<br>45  |

Voltage Rails

| Power Plane | Description                                 | S1 | S3  | S5  |
|-------------|---------------------------------------------|----|-----|-----|
| VIN         | Adapter power supply (19V)                  | ON | ON  | ON  |
| B+          | AC or battery power rail for power circuit. | ON | ON  | ON  |
| +RTCVCC     | RTC power                                   | ON | ON  | ON  |
| +VSB        | B+ switched power rail                      | ON | ON  | ON  |
| +5VALW      | 5V always on power rail                     | ON | ON  | ON  |
| +3VALW      | 3.3V always on power rail                   | ON | ON  | ON  |
| +1.2VALW    | 1.2V always on power rail                   | ON | ON  | ON  |
| +1.8V       | 1.8V power rail                             | ON | ON  | OFF |
| +0.9V       | 0.9V switched power rail                    | ON | ON  | OFF |
| +5VS        | 5VS switched power rail                     | ON | OFF | OFF |
| +3VS        | 3.3VS switched power rail                   | ON | OFF | OFF |
| +2.5VS      | 2.5VS switched power rail                   | ON | OFF | OFF |
| +1.8VS      | 1.8VS switched power rail                   | ON | OFF | OFF |
| +1.5VS      | 1.5VS switched power rail                   | ON | OFF | OFF |
| +CPU_CORE   | Core voltage for CPU                        | ON | OFF | OFF |
| +1.2V_HT    | 1.2VS switched power rail                   | ON | OFF | OFF |
|             |                                             |    |     |     |
|             |                                             |    |     |     |
|             |                                             |    |     |     |

Note : ON\* means that this power plane is ON only with AC power available, otherwise it is OFF.

External PCI Devices

| Device              | IDSEL# | REQ#GNT# | Interrupts |
|---------------------|--------|----------|------------|
| 1394/ CardBus/ 5IN1 | AD20   | 2/ 2     | PIRQE/F/G  |

EC SM Bus1 address

| Device        | HEX | Address     |
|---------------|-----|-------------|
| Smart Battery | 16H | 0001 011X b |
| 24C16         | A0H | 1010 000X b |

EC SM Bus2 address

| Device              | HEX | Address     |
|---------------------|-----|-------------|
| CPU Thermal-G781P8F | 98H | 1001 100X b |
| VGA Thermal-        |     |             |

ATi SB600 SM Bus address

SM Bus0 address

| Device                         | HEX | Address |
|--------------------------------|-----|---------|
| Clock GEN.<br>(ICS951462AGLFT) |     |         |
| DDR DIMM0                      | A4  |         |
| DDR DIMM1                      | A6  |         |
| Mini Card-WLAN                 |     |         |
| Mini Card-3G                   |     |         |
| New Card                       |     |         |

SM Bus1 address

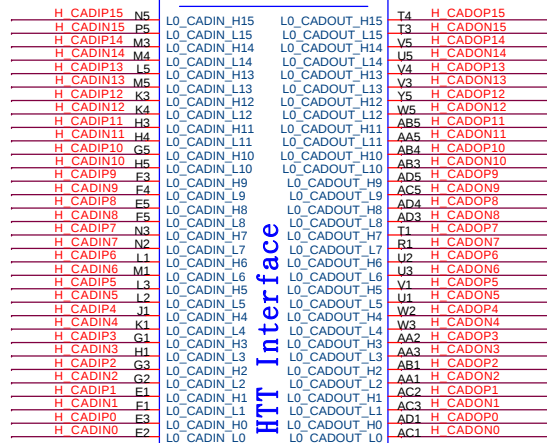
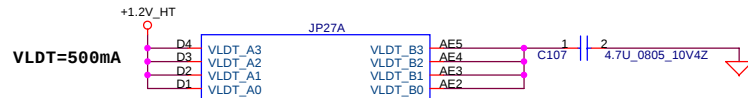
| STATE                | SIGNAL | SLP_S3# | SLP_S5# | +VALW | +V  | +VS | Clock |
|----------------------|--------|---------|---------|-------|-----|-----|-------|
| Full ON              |        | HIGH    | HIGH    | ON    | ON  | ON  | ON    |
| S1(Power On Suspend) |        | HIGH    | HIGH    | ON    | ON  | ON  | LOW   |
| S3 (Suspend to RAM)  |        | LOW     | HIGH    | ON    | ON  | OFF | OFF   |
| S4 (Suspend to Disk) |        | LOW     | LOW     | ON    | OFF | OFF | OFF   |
| S5 (Soft OFF)        |        | LOW     | LOW     | ON    | OFF | OFF | OFF   |

ID Table for AD channel

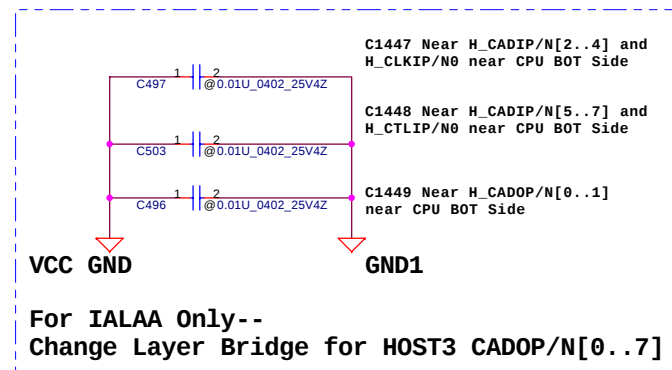
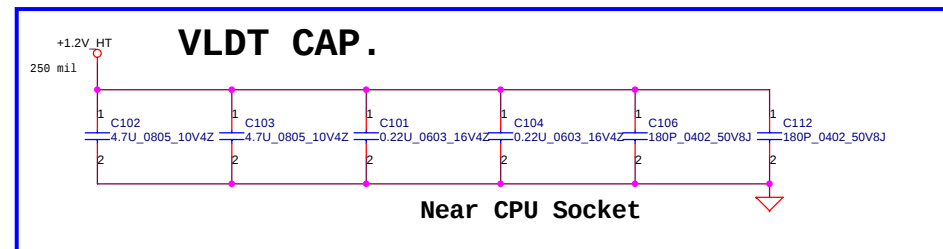
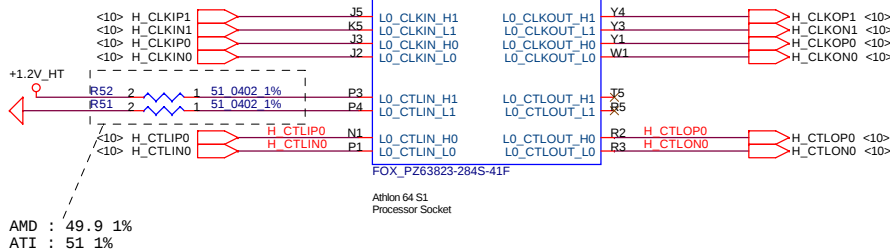
|          |             |             |             |             |
|----------|-------------|-------------|-------------|-------------|
| Vcc      | 3.3V +/- 5% |             |             |             |
| Ra       | 100K +/- 5% |             |             |             |
| Board ID | Rb          | VAD_BID min | VAD_BID typ | VAD_BID max |
| 0        | 0           | 0 V         | 0 V         | 0 V         |
| 1        | 8.2K +/- 5% | 0.216 V     | 0.250 V     | 0.289 V     |
| 2        | 18K +/- 5%  | 0.436 V     | 0.503 V     | 0.538 V     |
| 3        | 33K +/- 5%  | 0.712 V     | 0.819 V     | 0.875 V     |
| 4        | 56K +/- 5%  | 1.036 V     | 1.185 V     | 1.264 V     |
| 5        | 100K +/- 5% | 1.453 V     | 1.650 V     | 1.759 V     |
| 6        | 200K +/- 5% | 1.935 V     | 2.200 V     | 2.341 V     |
| 7        | NC          | 2.500 V     | 3.300 V     | 3.300 V     |

| BTN_ID |  |
|--------|--|
| 0      |  |
| 1      |  |
| 2      |  |
| 3      |  |
| 4      |  |
| 5      |  |
| 6      |  |
| 7      |  |

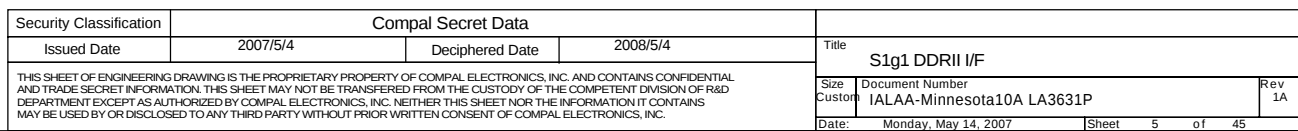
| BTO | BOM STURCTURE |
|-----|---------------|
|     |               |
|     |               |
|     |               |
|     |               |
|     |               |
|     |               |
|     |               |



HTT Interface

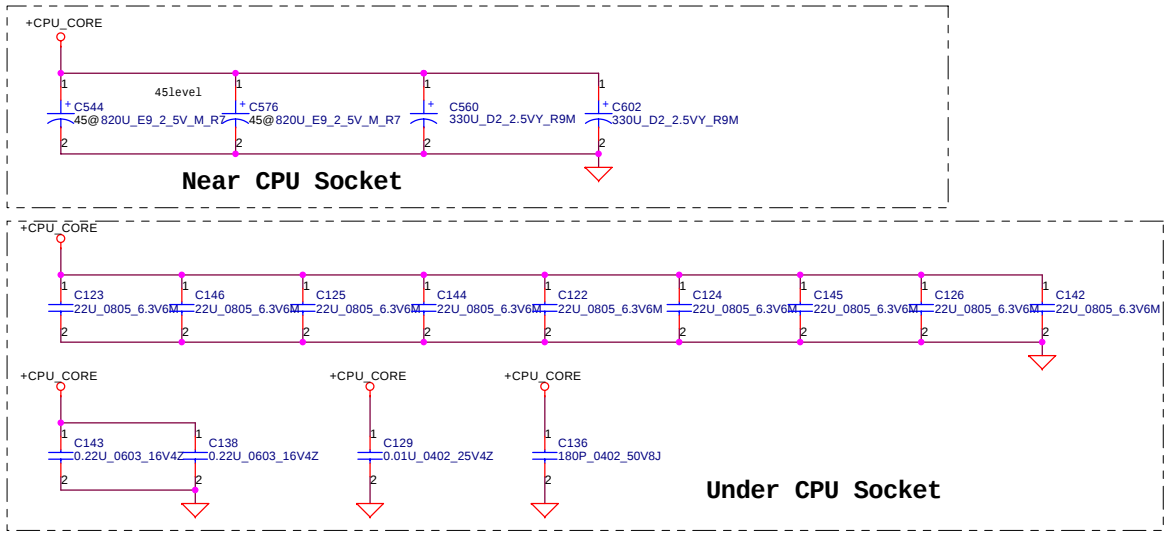


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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------|----------|--------------------------|--|
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| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Document Number            | Rev                |          | 1A                       |  |
| Custom                                                                                                                                                                                                                                                                                                                                                                                                                                                        | IALAA-Minnesota10A LA3631P | Date:              |          | Monday, May 14, 2007     |  |
| Sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            | 4                  |          | of 45                    |  |

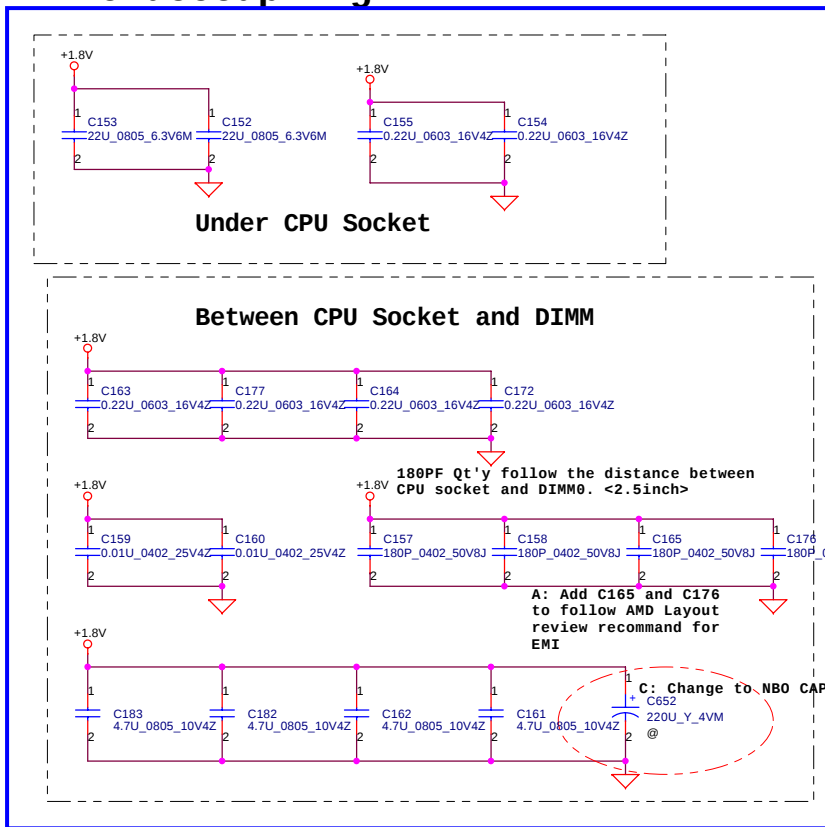




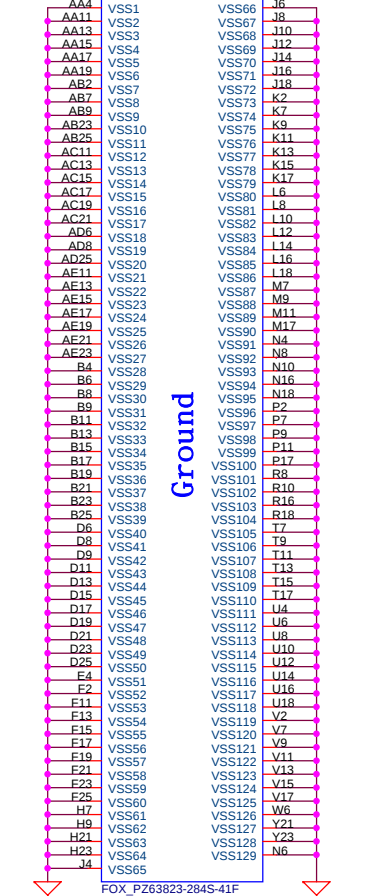
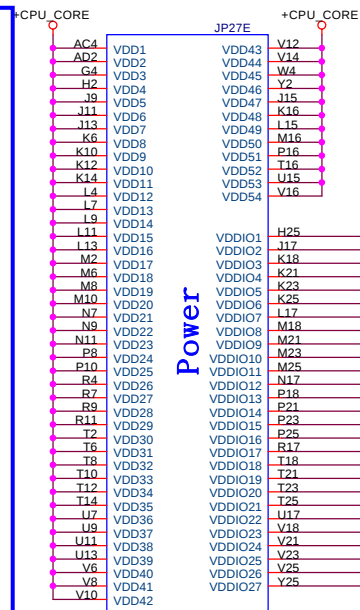
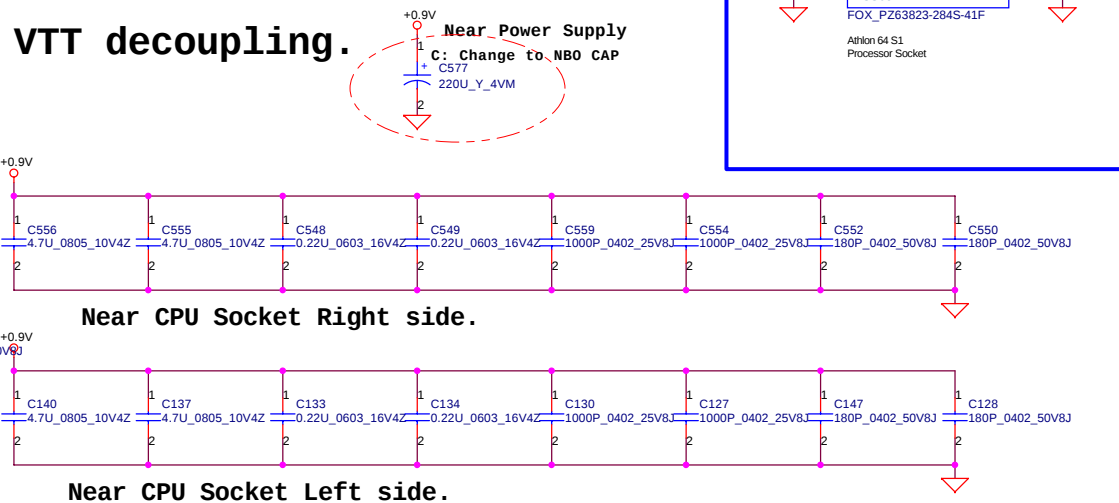
## VDD(+CPU\_CORE) decoupling.



## VDDIO decoupling.

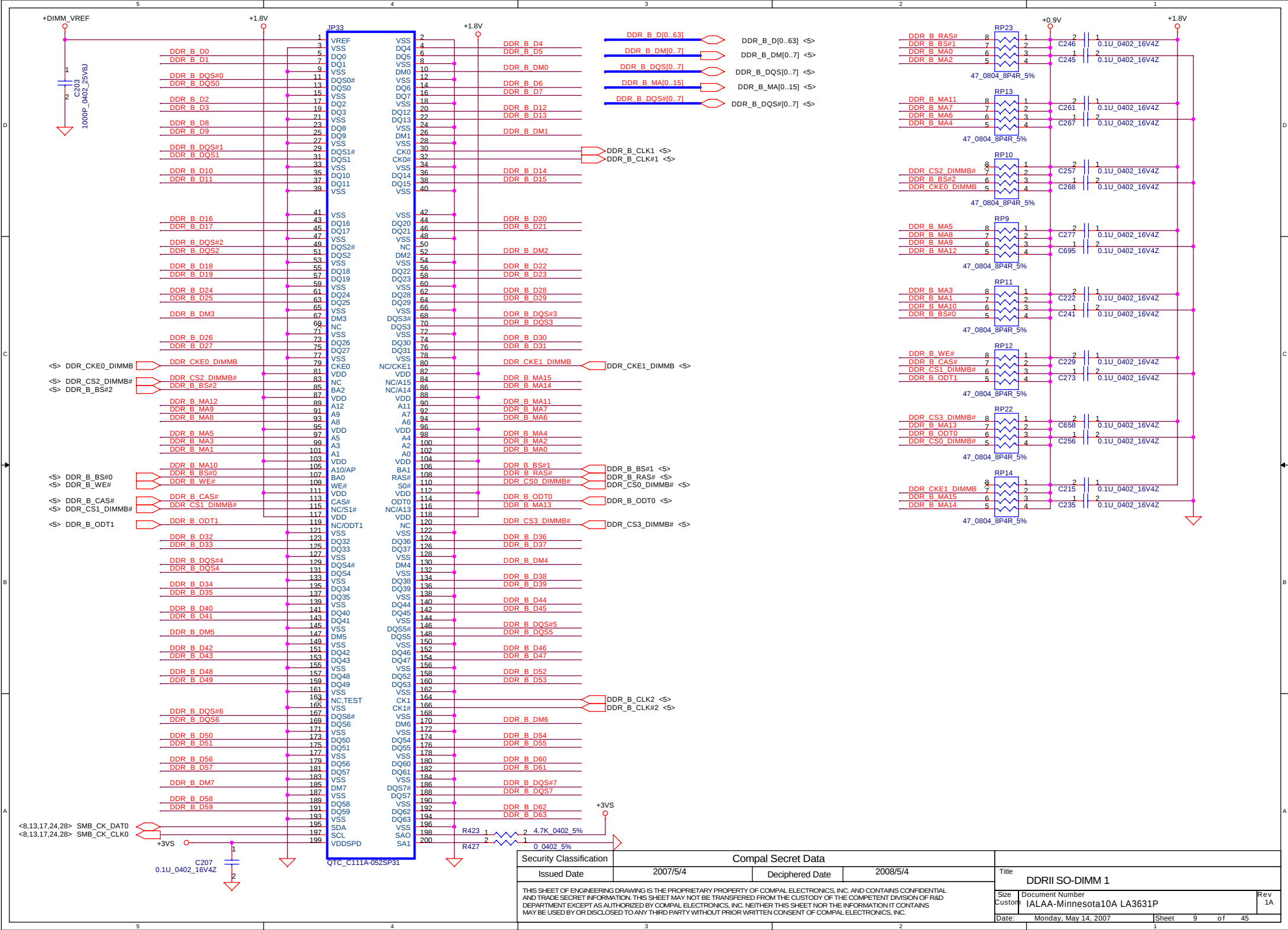


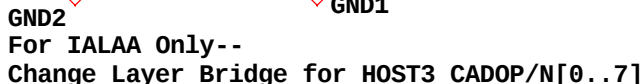
## VTT decoupling.

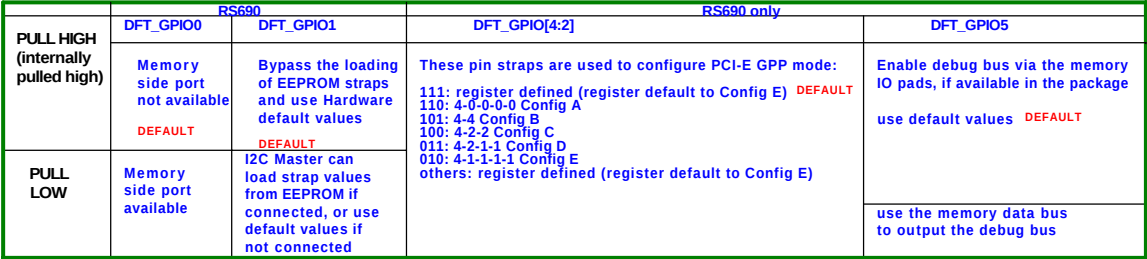


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |  |                 |  |                          |  |                 |  |                            |  |        |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |  |                 |  | Size                     |  | Document Number |  | IALAA-Minnesota10A LA3631P |  | Rev 1A |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |  |                 |  | Custom                   |  |                 |  |                            |  |        |  |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Monday, May 14, 2007 |  | Sheet           |  | 7                        |  | of 45           |  |                            |  |        |  |





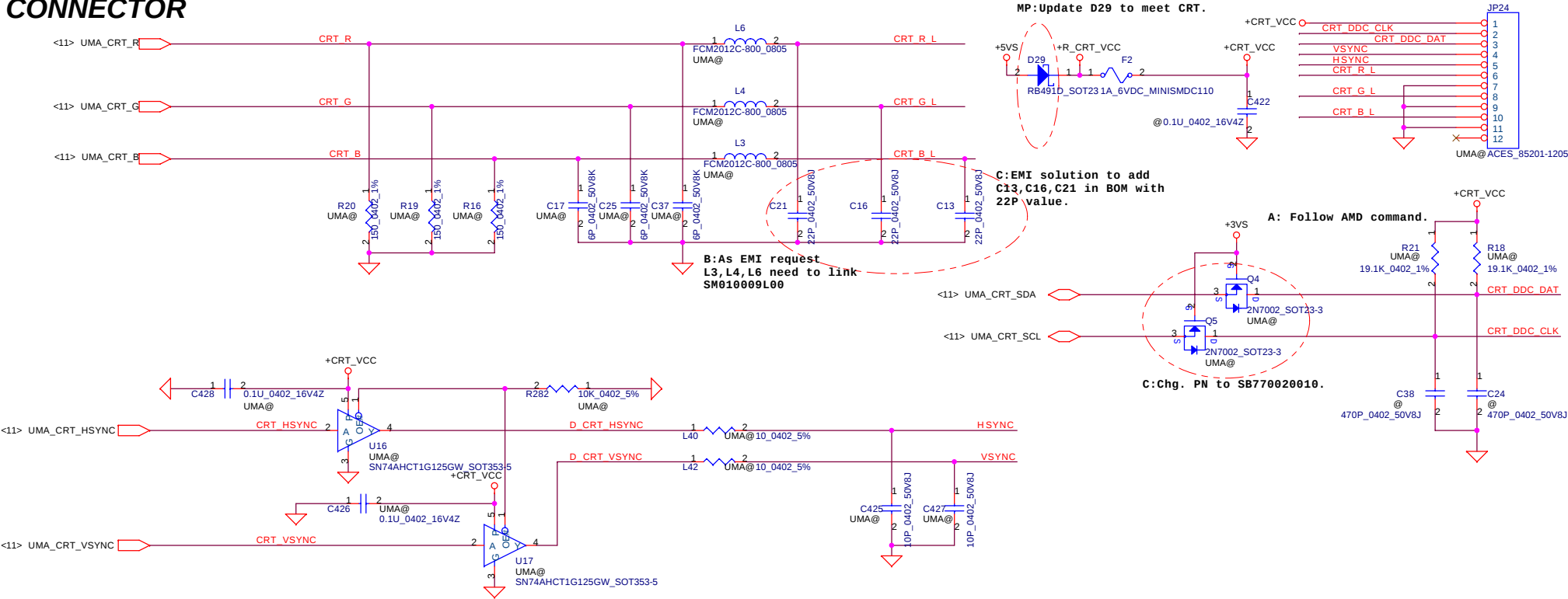




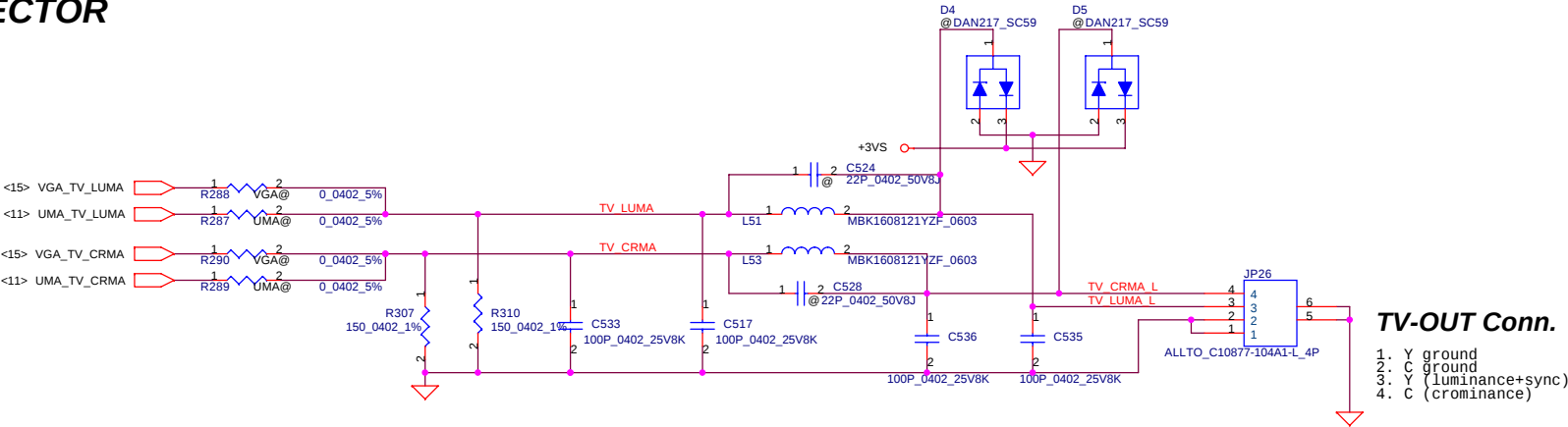




CRT CONNECTOR



TV-OUT CONNECTOR



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                    |                            |                          |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|----------------------------|--------------------------|-------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            | Compal Secret Data |                            | Compal Electronics, Inc. |       |
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| Size B                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Document Number IALAA-Minnesota10A LA3631P | Rev 1A             | Date: Monday, May 14, 2007 | Sheet 14                 | of 45 |

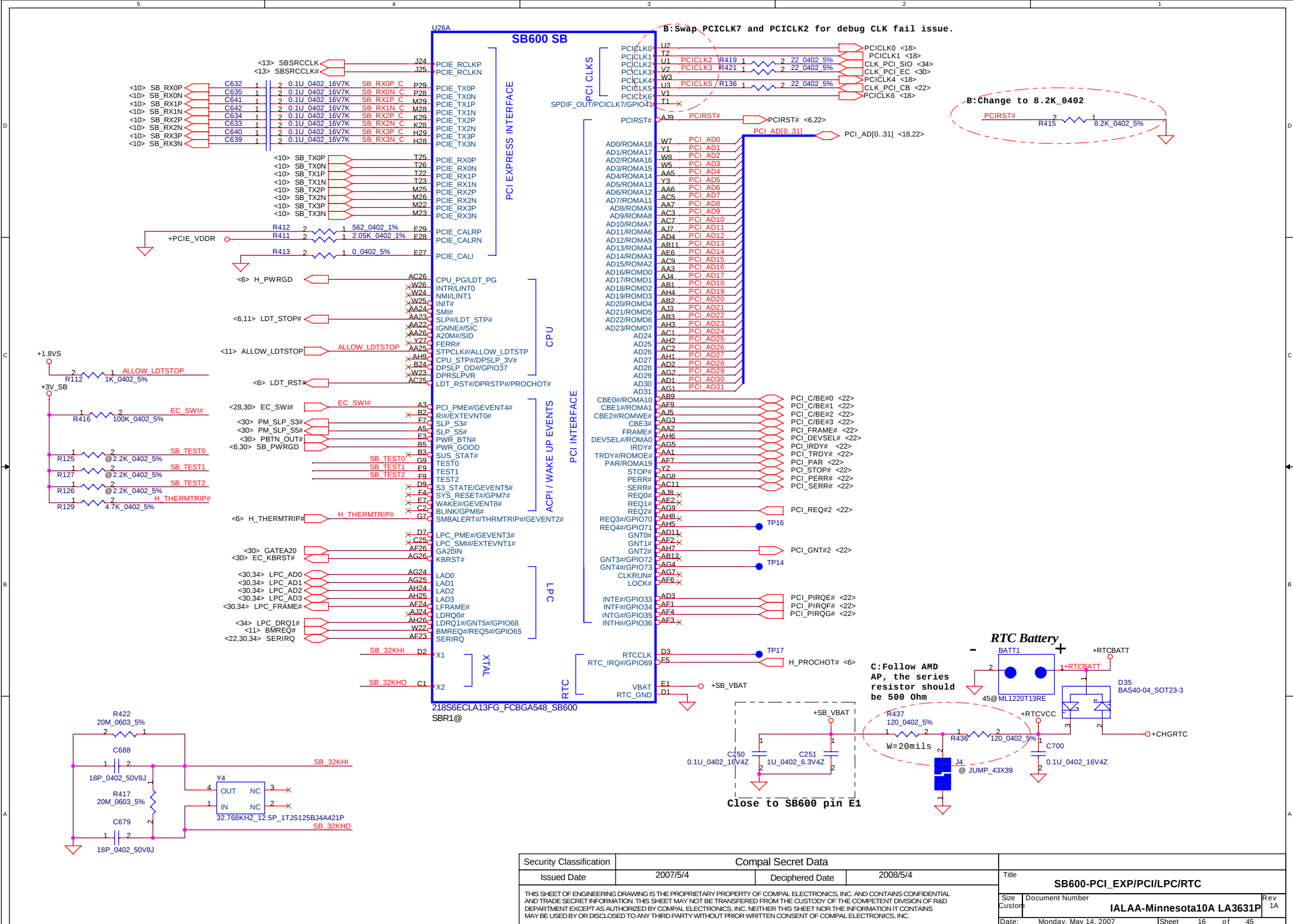
## D

[illegible]

A

## E. MTX

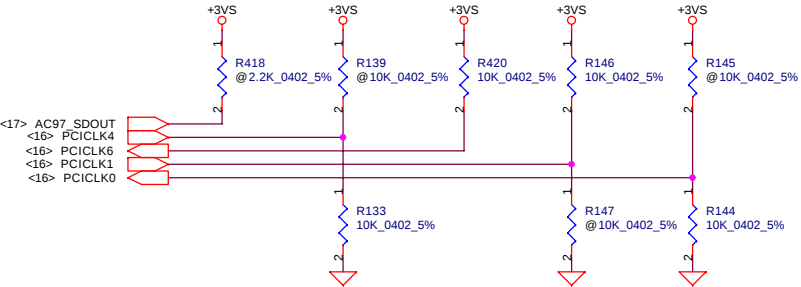
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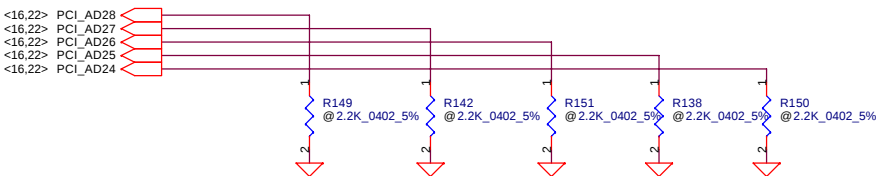
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          |                            |                      |
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| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4 | Deciphered Date    | 2008/5/4 | Title                      |                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | SB600-PCI_EXP/PCI/LPC/RTC  |                      |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Date:                      | Monday, May 14, 2007 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Sheet                      | 16 of 45             |



Standard Straps



Debug Straps



|           | AC_SDOUT                                 | PCI_CLK4<PCICLK4>         | PCI_CLK6<PCICLK6>     | PCI_CLK1<CLK_PCI_LAN>                                                             | PCI_CLK0<PCICLK0> |
|-----------|------------------------------------------|---------------------------|-----------------------|-----------------------------------------------------------------------------------|-------------------|
| PULL HIGH | USE DEBUG STRAPS                         | USE INT. PLL48            | CPU IF=AMD<br>DEFAULT | ROM TYPE:<br>H, H = Reserve<br>H, L = LPC ROM<br>L, H = SPI ROM<br>L, L = FWH ROM | DEFAULT           |
| PULL LOW  | IGNORE DEBUG STRAPS<int'l PD><br>DEFAULT | USE EXT. 48MHZ<br>DEFAULT | CPU IF=Intel          |                                                                                   |                   |

|           | PCI_AD28                  | PCI_AD27               | PCI_AD26                 | PCI_AD25               | PCI_AD24                           | PCI_AD23<A11 only>                |
|-----------|---------------------------|------------------------|--------------------------|------------------------|------------------------------------|-----------------------------------|
| PULL HIGH | USE LONG RESET<br>DEFAULT | USE PCI PLL<br>DEFAULT | USE ACPI BCLK<br>DEFAULT | USE IDE PLL<br>DEFAULT | USE DEFAULT PCIE STRAPS<br>DEFAULT | DISABLE BOOTFAIL TIMER<br>DEFAULT |
| PULL LOW  | USE SHORT RESET           | BYPASS PCI PLL         | BYPASS ACPI BCLK         | BYPASS IDE PLL         | USE EEPROM PCIE STRAPS             | ENABLE BOOTFAIL TIMER             |

Un-Used Inputs Setting--GPIO pins

|                           |                              |
|---------------------------|------------------------------|
| GPIO4/SMARTVOLT/SATA_IS2# | Config. GPIO to Output Mode. |
| GPIO5/SHUTDOWN#           | Config. GPIO to Output Mode. |
| GPIO7/WD_PWRGD            | Config. GPIO to Output Mode. |
| GPIO8/DDC1_SDA            | Config. GPIO to Output Mode. |
| GPIO9/DDC1_SCL            | Config. GPIO to Output Mode. |
| GPIO10/SATA_IS0#          | Config. GPIO to Output Mode. |
| GPIO41/PCICLK7/SPDIF_OUT  | Config. GPIO to Output Mode. |
| GPIO50/FANIN0             | Config. GPIO to Output Mode. |
| GPIO51/FANIN1             | Config. GPIO to Output Mode. |
| GPIO52/FANIN2             | Config. GPIO to Output Mode. |
| GPIO53/VIN0               | Config. GPIO to Output Mode. |
| GPIO54/VIN1               | Config. GPIO to Output Mode. |
| GPIO55/VIN2               | Config. GPIO to Output Mode. |

Un-Used Inputs Setting--GPM pins

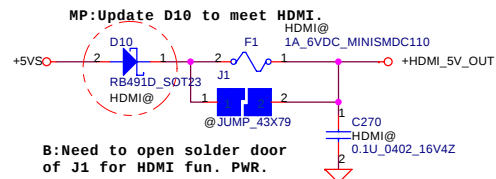
|                |                              |
|----------------|------------------------------|
| GPIO56/VIN3    | Config. GPIO to Output Mode. |
| GPIO57/VIN4    | Config. GPIO to Output Mode. |
| GPIO58/VIN5    | Config. GPIO to Output Mode. |
| GPIO59/VIN6    | Config. GPIO to Output Mode. |
| GPIO60/VIN7    | Config. GPIO to Output Mode. |
| GPIO61/TEMPIN0 | Config. GPIO to Output Mode. |
|                |                              |
| GPOC2#/SCL1    | Config. GPIO to Output Mode. |
| GPOC3#/SDA1    | Config. GPIO to Output Mode. |

Un-Used Inputs Setting--GPM pins

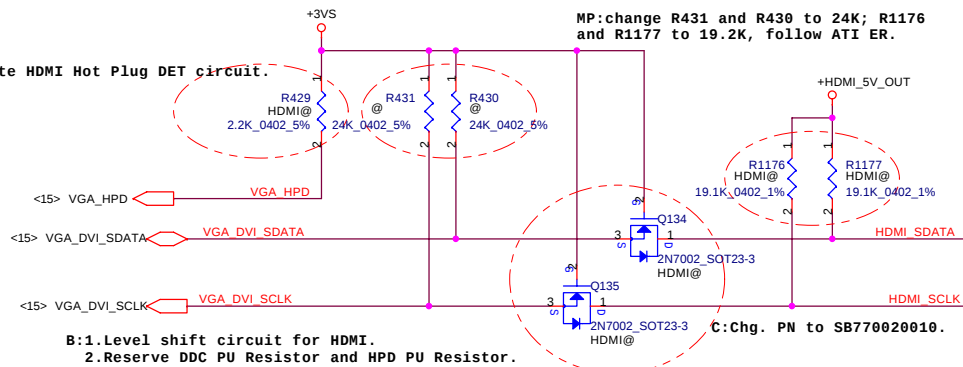
|                          |                          |
|--------------------------|--------------------------|
| GPM5#/DDR3_RST#/USB_OC5# | Config. for internal PU. |
| GEVENT5#/S3_STATE        | Config. for internal PU. |
|                          |                          |
|                          |                          |
|                          |                          |
|                          |                          |
|                          |                          |
|                          |                          |
|                          |                          |
|                          |                          |



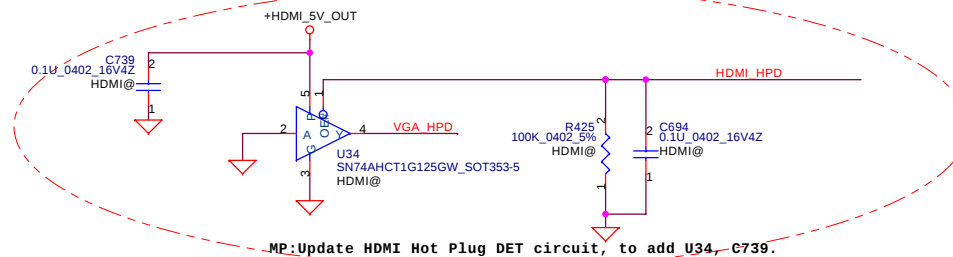
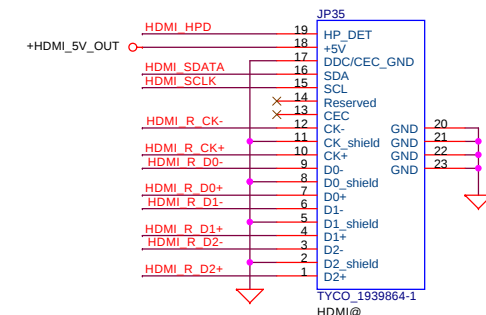
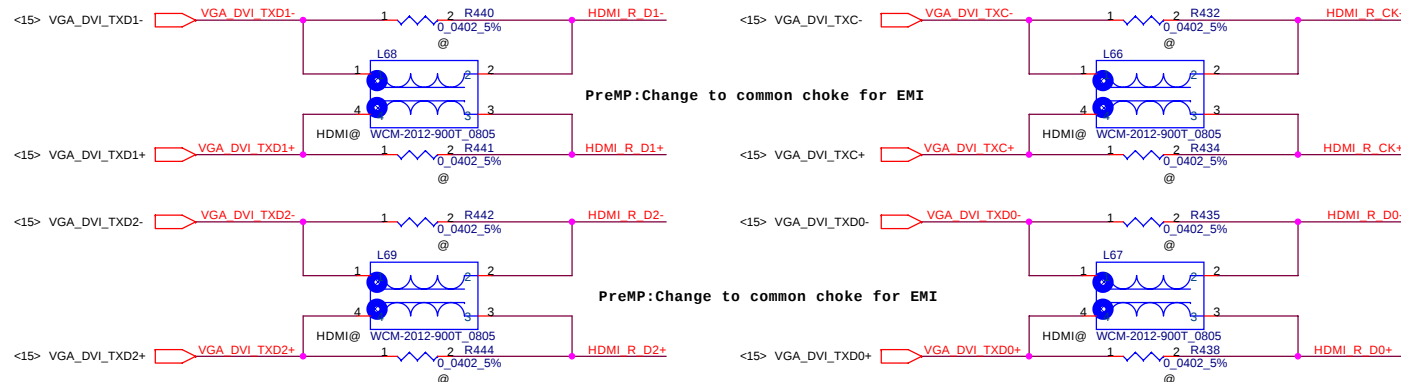
B:Remove HDMI transistor, SiI1932; and support by GPU only.



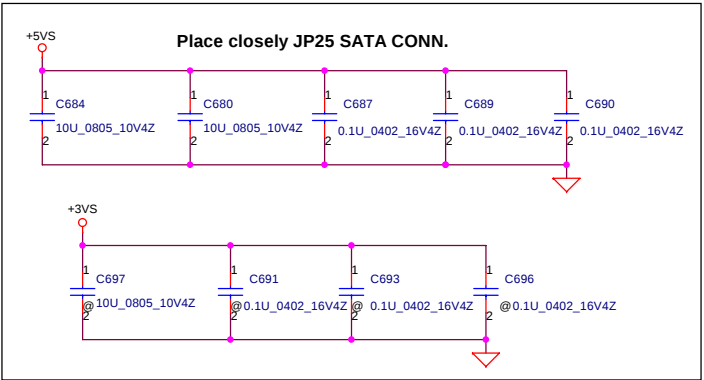
MP:Update HDMI Hot Plug DET circuit.



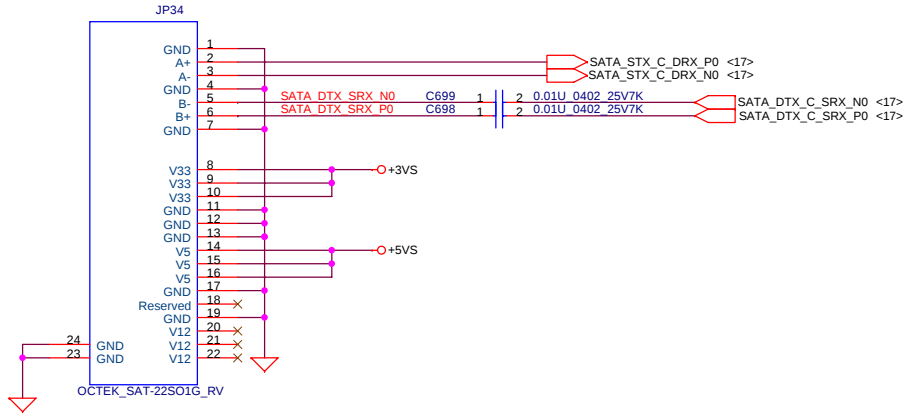
## HDMI Connector



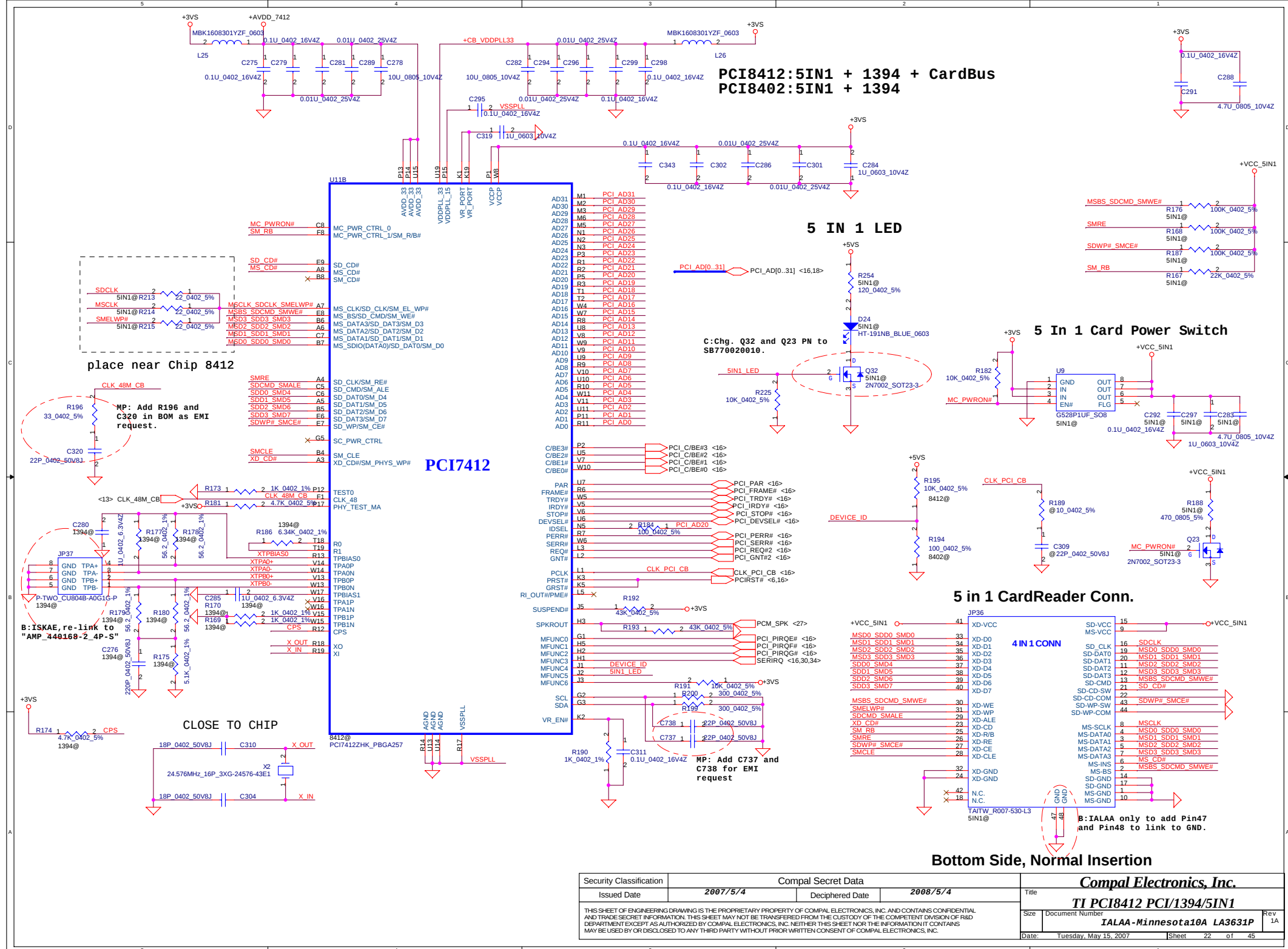
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                 |                            |                          |    |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|----------------------------|--------------------------|----|--|
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| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Custom               | Document Number | IALAA-Minnesota10A LA3631P | Rev                      | 1A |  |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Monday, May 14, 2007 | Sheet           | 20                         | of                       | 45 |  |



# SATA HDD Conn.



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          |                            |                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|----------|----------------------------|---------------------------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |          | Title                      |                                                   |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4           | Deciphered Date | 2008/5/4 | HDD/CDROM                  |                                                   |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | Date: Monday, May 14, 2007 | Sheet 21 of 45                                    |



PCI8412:5IN1 + 1394 + CardBus  
PCI8402:5IN1 + 1394

5 IN 1 LED

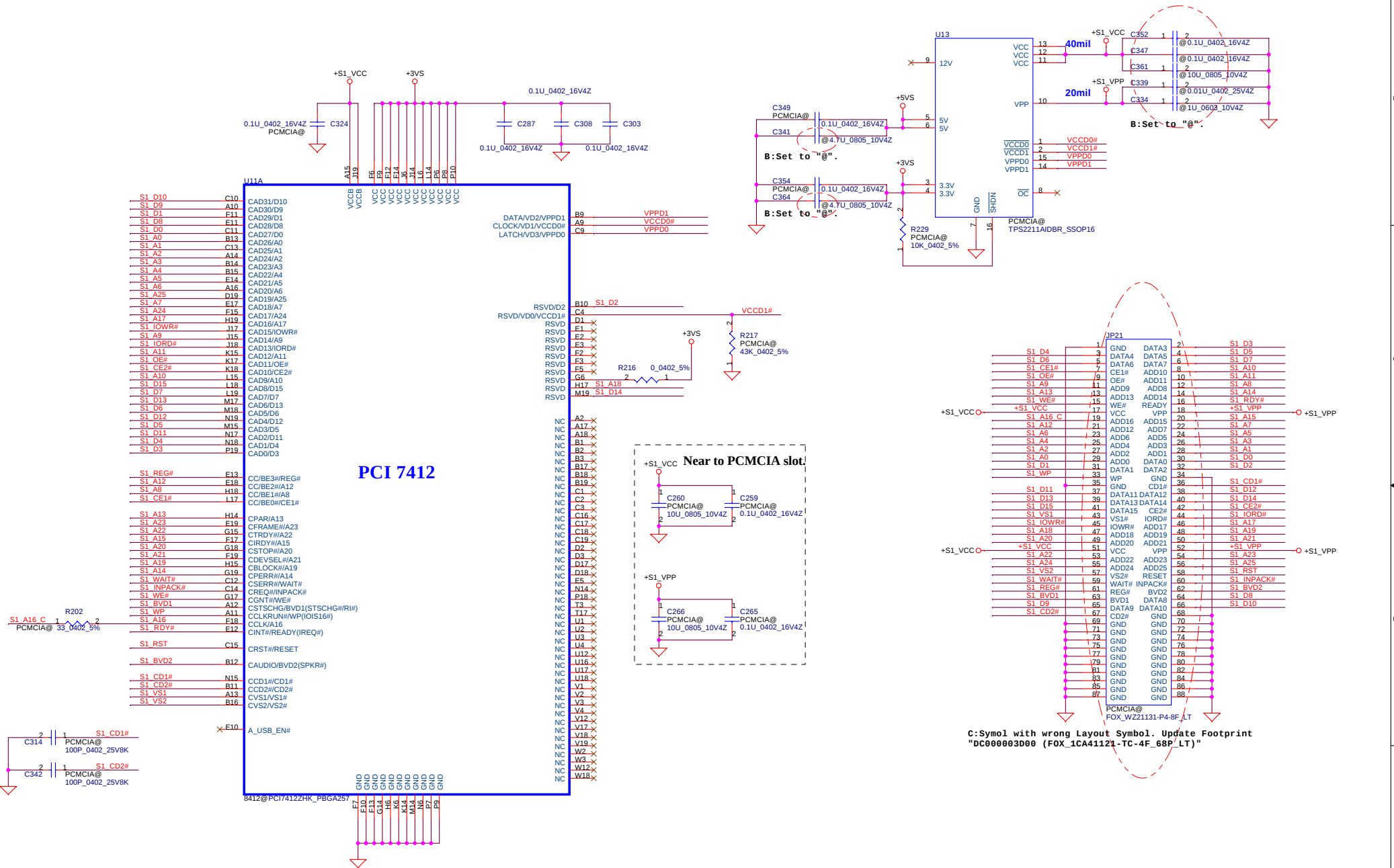
5 In 1 Card Power Switch

5 in 1 CardReader Conn.

Bottom Side, Normal Insertion

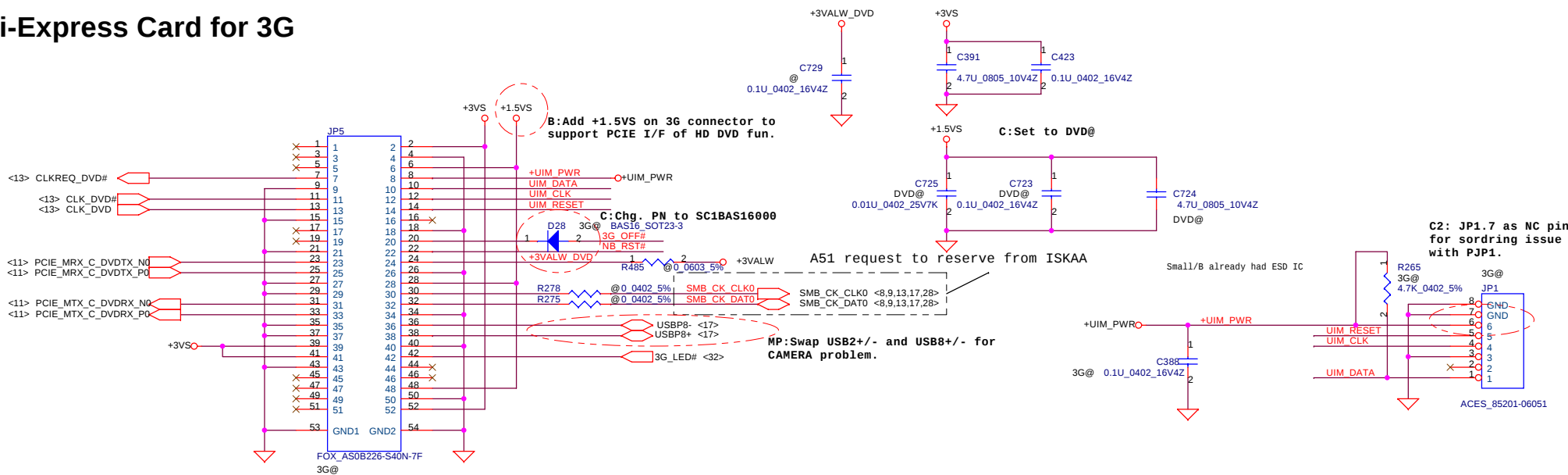
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                            |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|----------|----------------------------|-----------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          | Compal Electronics, Inc.   |                       |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4 | Deciphered Date    | 2008/5/4 | TI PCI8412 PCI/1394/5IN1   |                       |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Date:                      | Tuesday, May 15, 2007 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Sheet                      | 22 of 45              |

# CardBus Power Switch

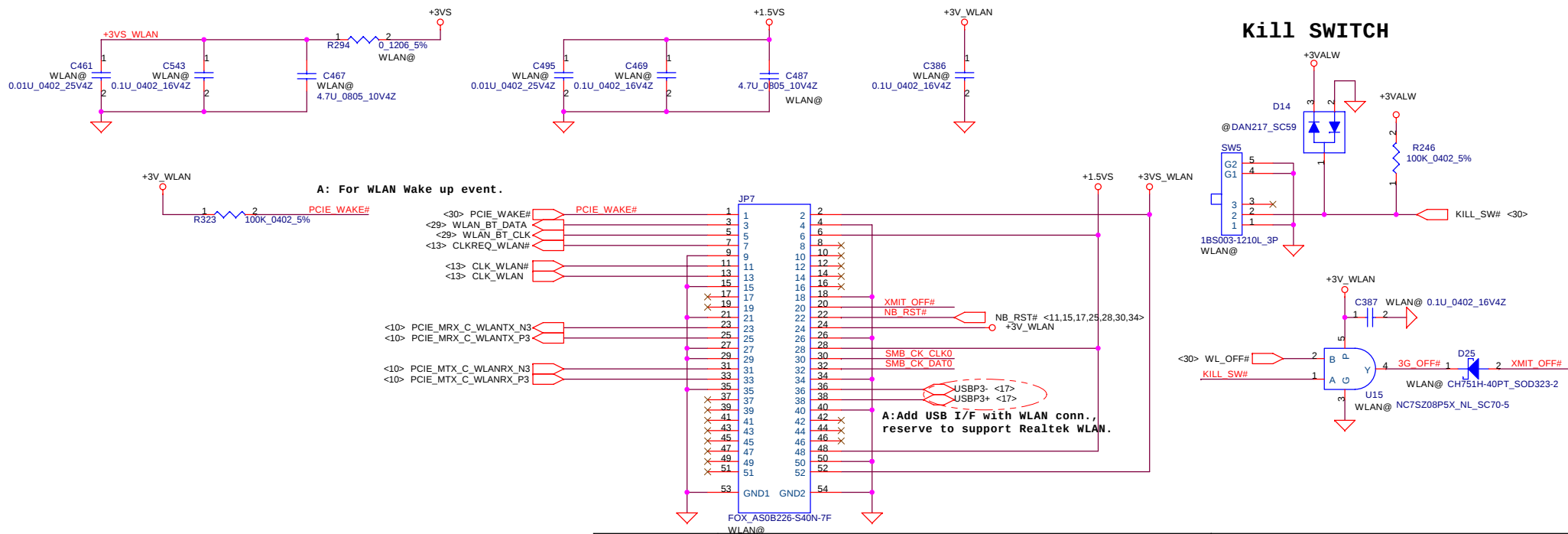


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                            |          |                          |    |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      | Compal Secret Data         |          | Title                    |    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4             | Deciphered Date            | 2008/5/4 | Compal Electronics, Inc. |    |
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| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Document Number      | IALAA-Minnesota10A LA3631P |          | Rev                      | 1A |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Monday, May 14, 2007 | Sheet                      | 23       | of                       | 45 |

Mini-Express Card for 3G



Mini-Express Card for WLAN

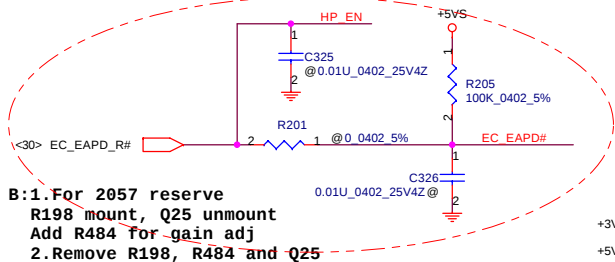


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |  |                          |  |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data   |  | Compal Electronics, Inc. |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | Deciphered Date      |  | MINI PCI SLOT            |  |
| 2007/5/4                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 2008/5/4             |  | Document Number          |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Monday, May 14, 2007 |  | 24 of 45                 |  |
| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Rev                  |  | 1A                       |  |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                      |  |                          |  |

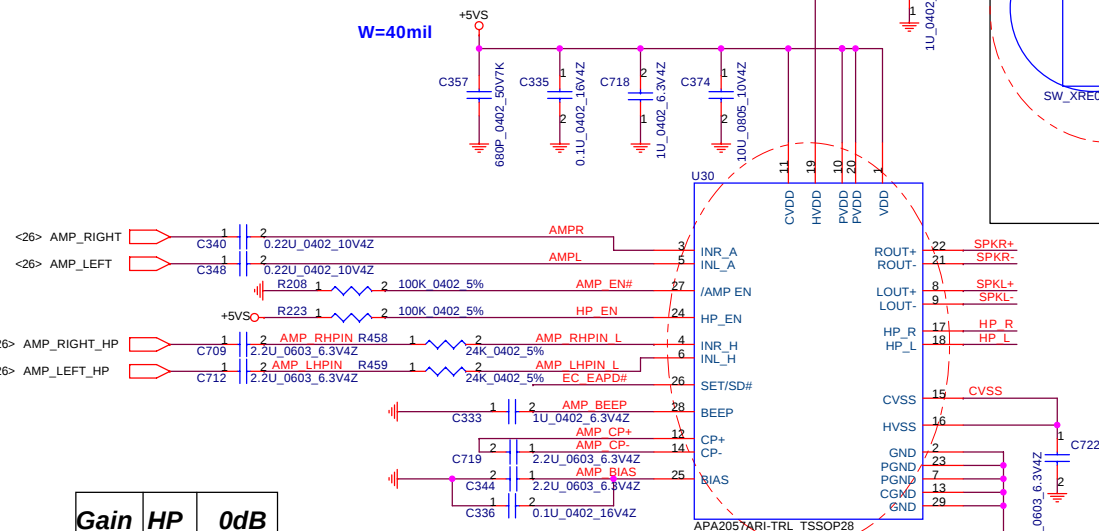


## D

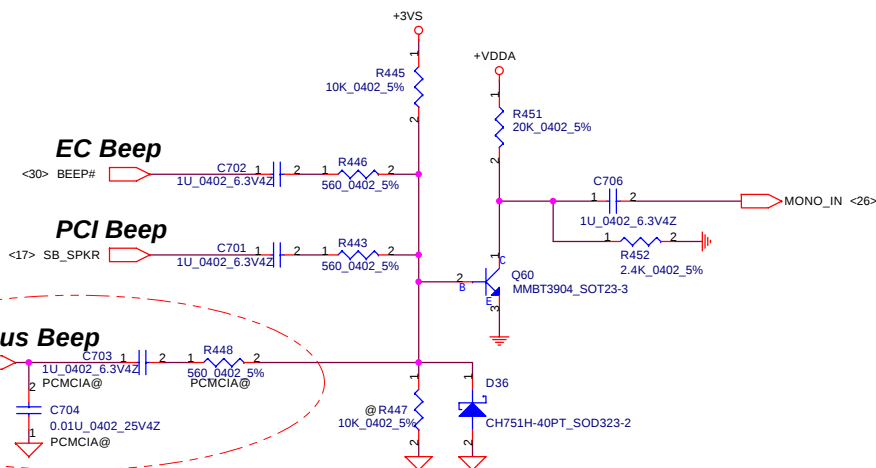
1



W=40mil



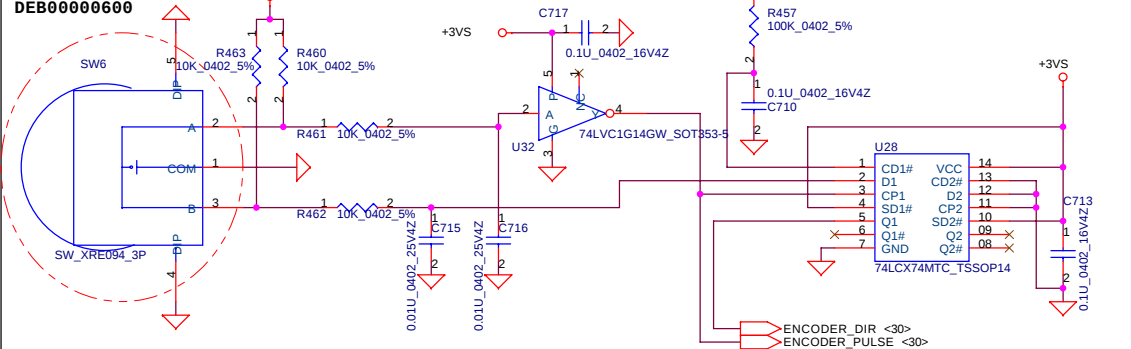
| Gain | HP  | 0dB  |
|------|-----|------|
|      | SPK | 10dB |



**A:Set PCMCIA@ on CardBus Beep circuit**  
**B:Remove NSE\_DPR circuit, bec'z chg. to KB926.**

## Volume Control

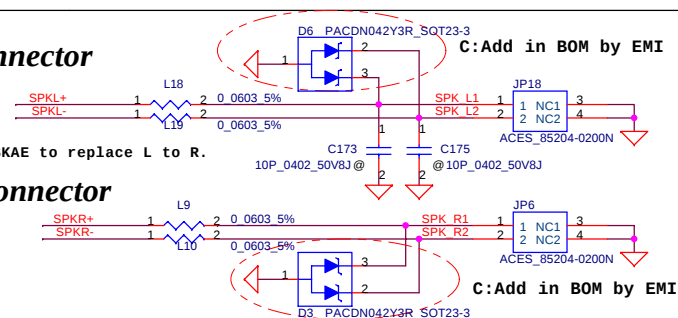
**C:Chang PN to DEB00000600**



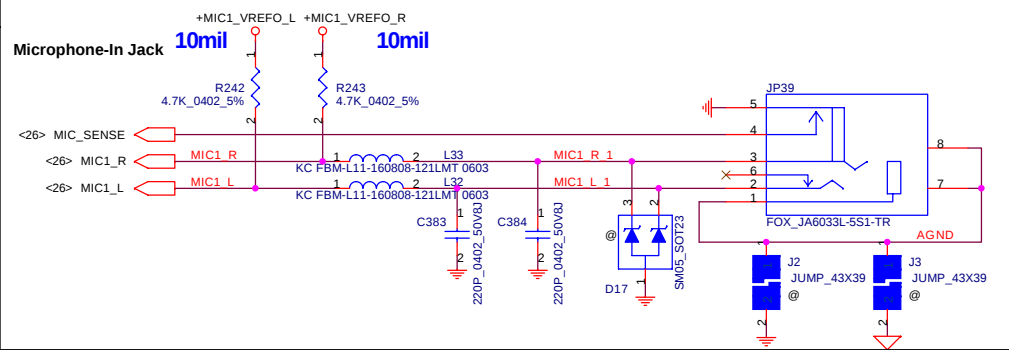
## Left Speaker Connector

**A:sync up with ISKAE to replace L to R.**

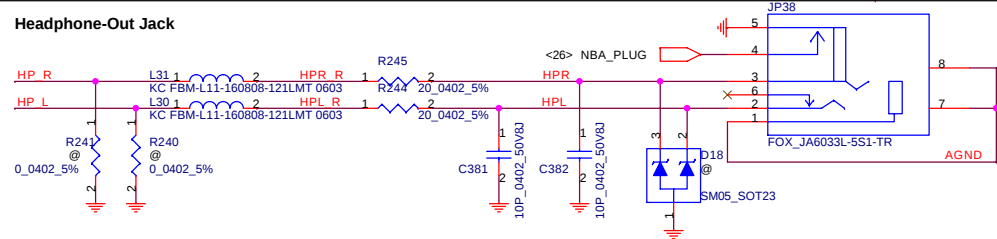
## Right Speaker Connector



## Microphone-In Jack

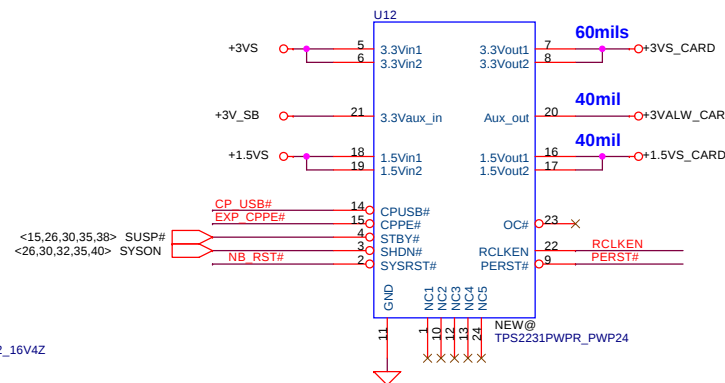
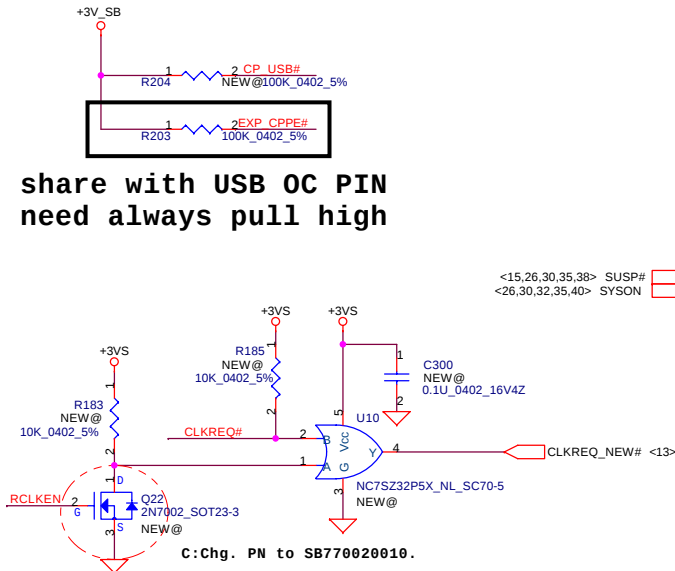
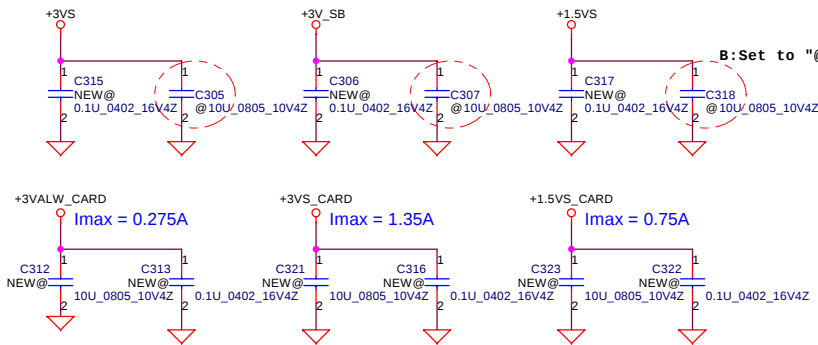
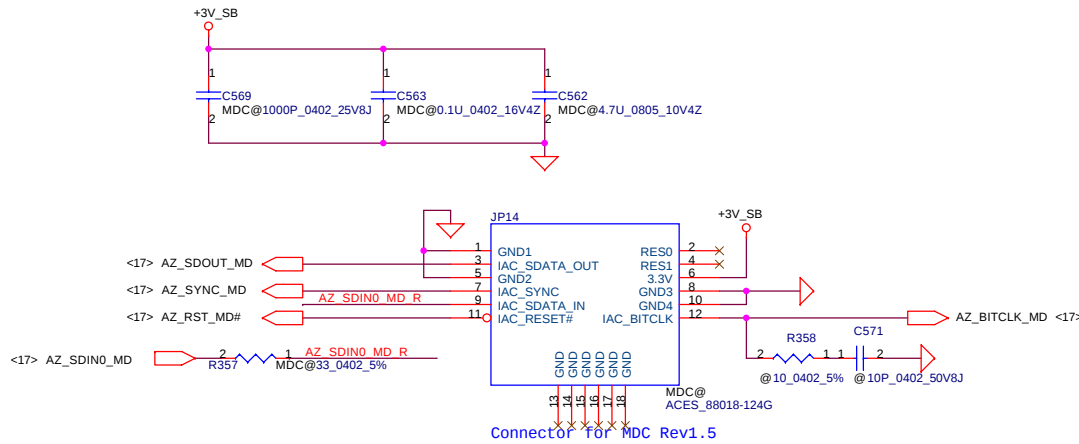


## Headphone-Out Jack



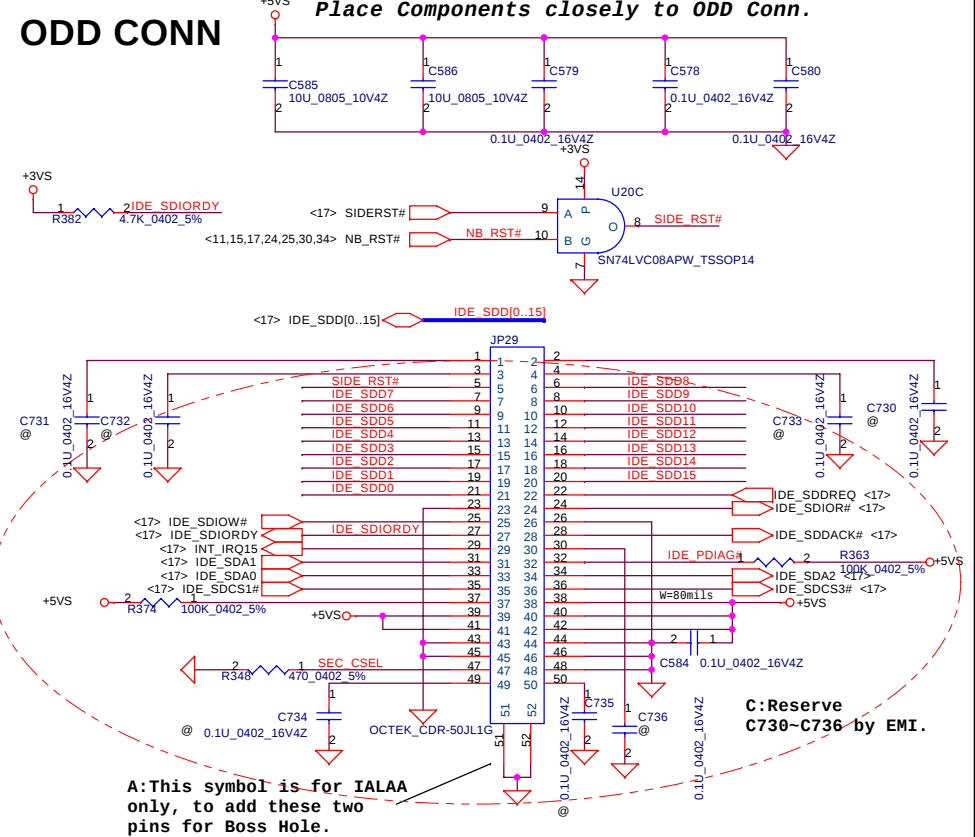
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                            |                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|----------|----------------------------|--------------------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          | Compal Electronics, Inc.   |                                            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Date: Monday, May 14, 2007 | Rev 1A                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Sheet 27                   | of 45                                      |

## MDC 1.5 Conn.

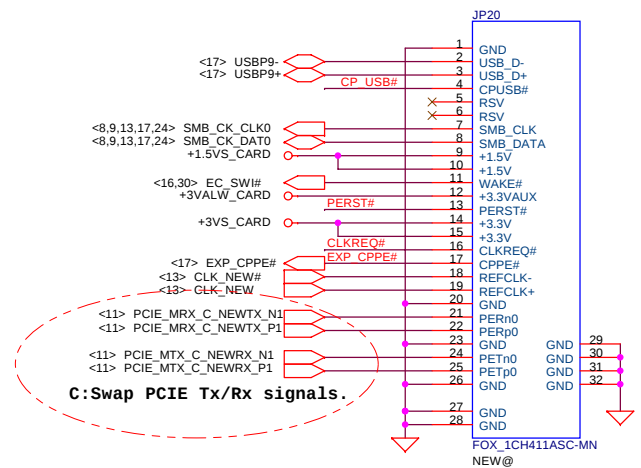


## ODD CONN

Place Components closely to ODD Conn.



B: relink DC030006000.



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                          |                            |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|----------|--------------------------|----------------------------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          | Compal Electronics, Inc. |                            |          |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Size                     | Document Number            | Rev      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                          | IALAA-Minnesota10A LA3631P | 1A       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Date:                    | Monday, May 14, 2007       | Sheet    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                          |                            | 28 of 45 |

Check 5VS or 3VS

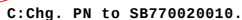


## Fingerprint Conn

**CIR**



## BlueTooth Interface



Pull high at SB600 side

Module ID  
Indication for polarity of reset  
Reset input High Active --> Low ,  
Reset input Low Active --> Open

B:Add PD 4.7K bec'z chg. to KB926.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compal Secret Data |                 |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2007/5/4           | Deciphered Date | 2008/5/4 |
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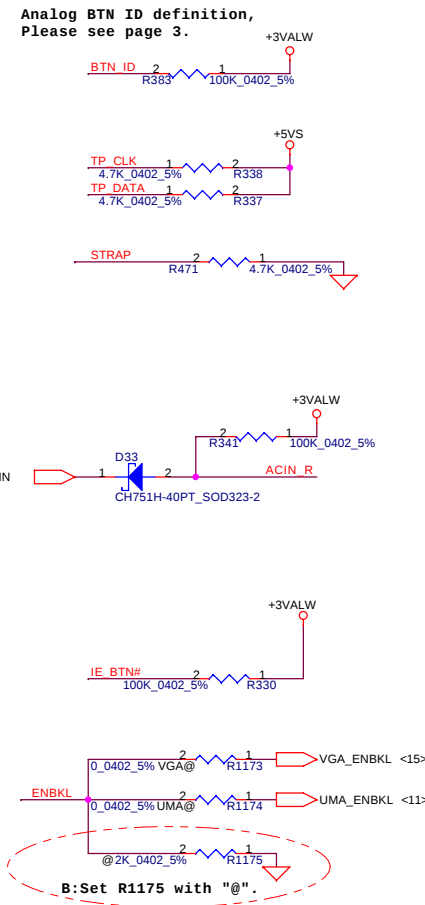
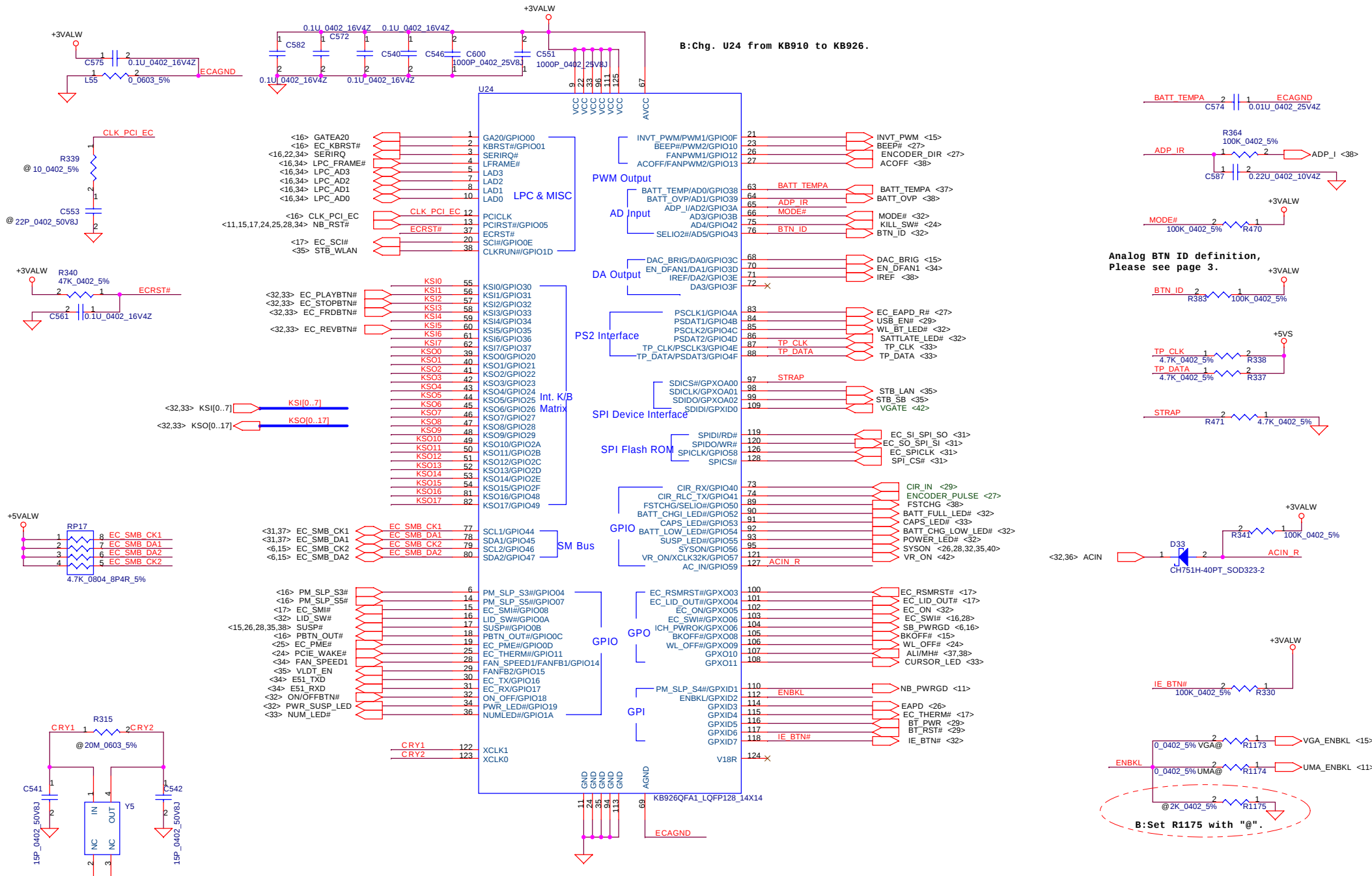
### USB CONN. 1

**USB CONN.2**

## USB Small Board

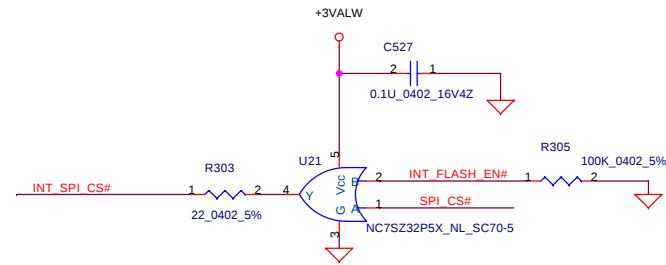


MP:Swap USB2+/- and USB8+/- for CAMERA problem.

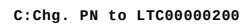


32.768KHZ\_12.5P 17JS125B34A421P  
 MP:ENE's recommend, change C541 and C542 from 10P to 27P.  
 MP:ENE's recommend, change back C541 and C542 from 27P to 15P.

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          | Title     |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|----------|-----------|----------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4 | Deciphered Date    | 2008/5/4 | ENE-KB910 |                      |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Sheet     | 30 of 45             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Rev       | 1A                   |

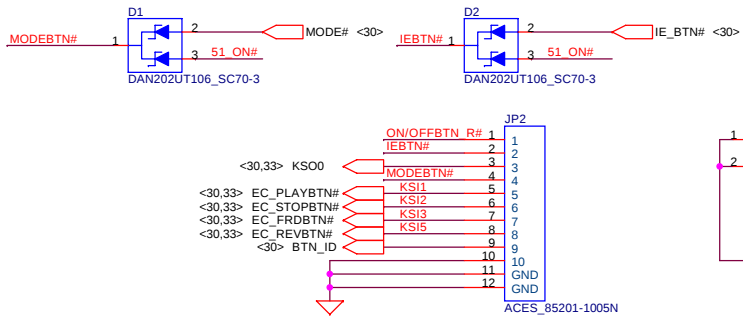


**B:Chg. to SPI ROM.**



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                          |                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|----------|--------------------------|-----------------------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          | Compal Electronics, Inc. |                                               |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                          | Rev 1A                                        |
| Date: Monday, May 14, 2007                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |                    |          | Sheet                    | 31 of 45                                      |

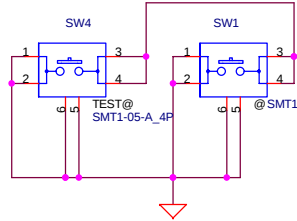
## SW/LED Connector



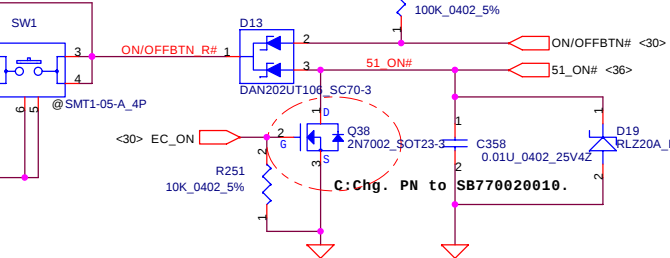
## Power Button

For debug only

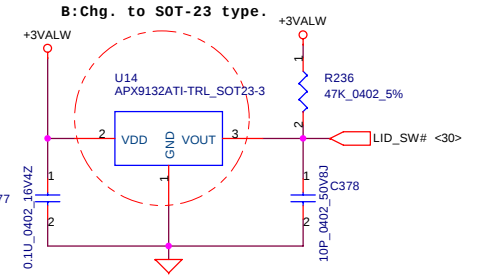
BTN



Remove SW1 from DVT for interfere issue.

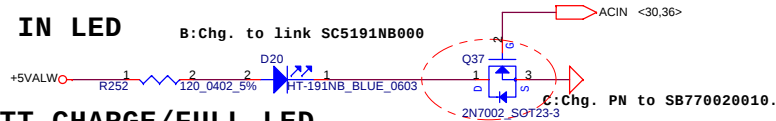


## Lid SW

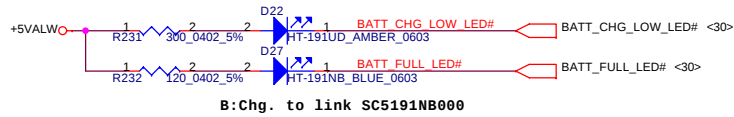


## AC IN LED

B:Chg. to link SC5191NB000

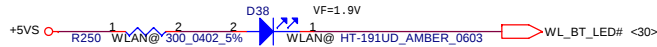


## BATT CHARGE/FULL LED



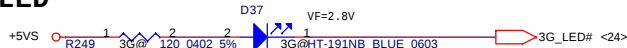
B:Chg. to link SC5191NB000

## WL&BT LED



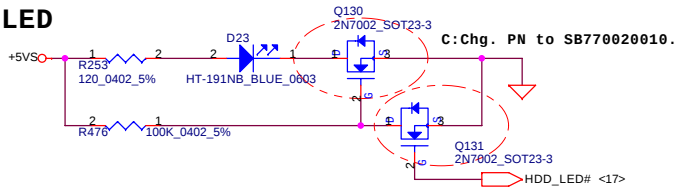
## 3G LED

B:Chg. to link SC5191NB000

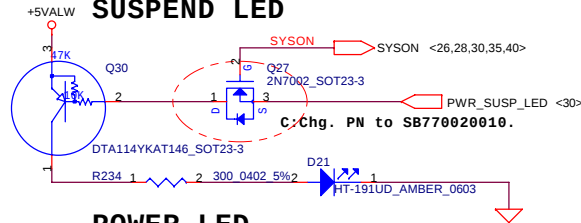


## HDD LED

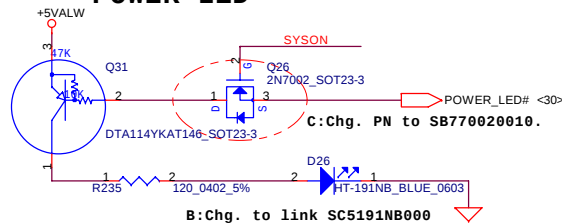
B:Chg. HDD LED control circuit bec'z chg. to KB926.



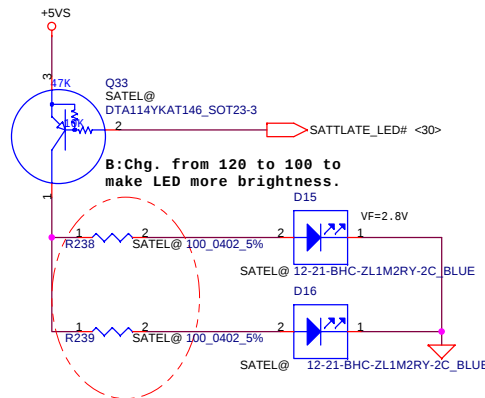
## SUSPEND LED



## POWER LED

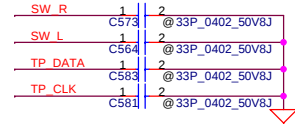
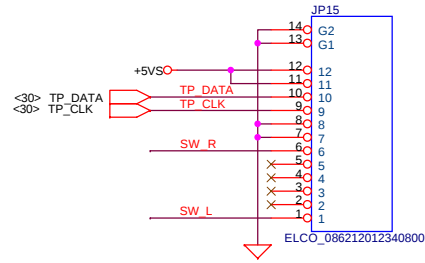


## Satellite LED

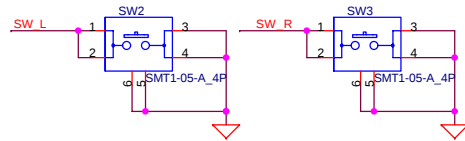


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          |                          |     |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |          | Compal Electronics, Inc. |     |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4           | Deciphered Date | 2008/5/4 | Title                    |     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | Size                     | Rev |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | Document Number          | 1A  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | Customer                 |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | Monday, May 14, 2007     |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | Sheet                    |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | 32                       |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | of                       |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | 45                       |     |

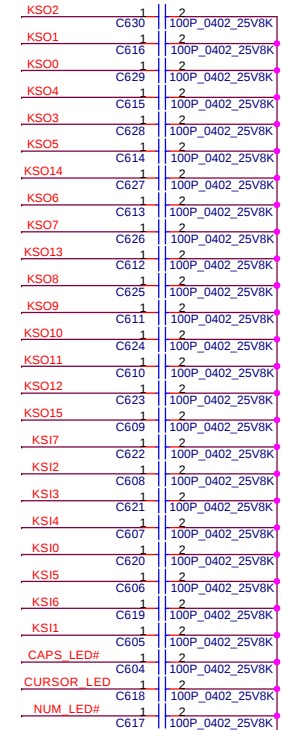
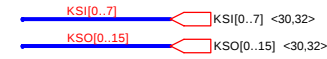
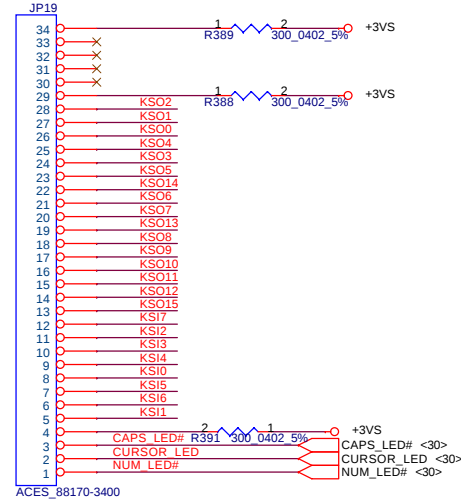
## TP Conn.



## TP Button



## KEYBOARD CONN.



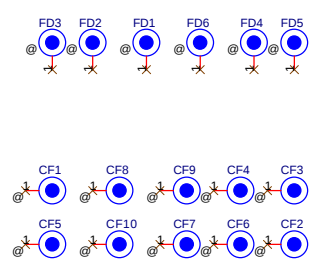
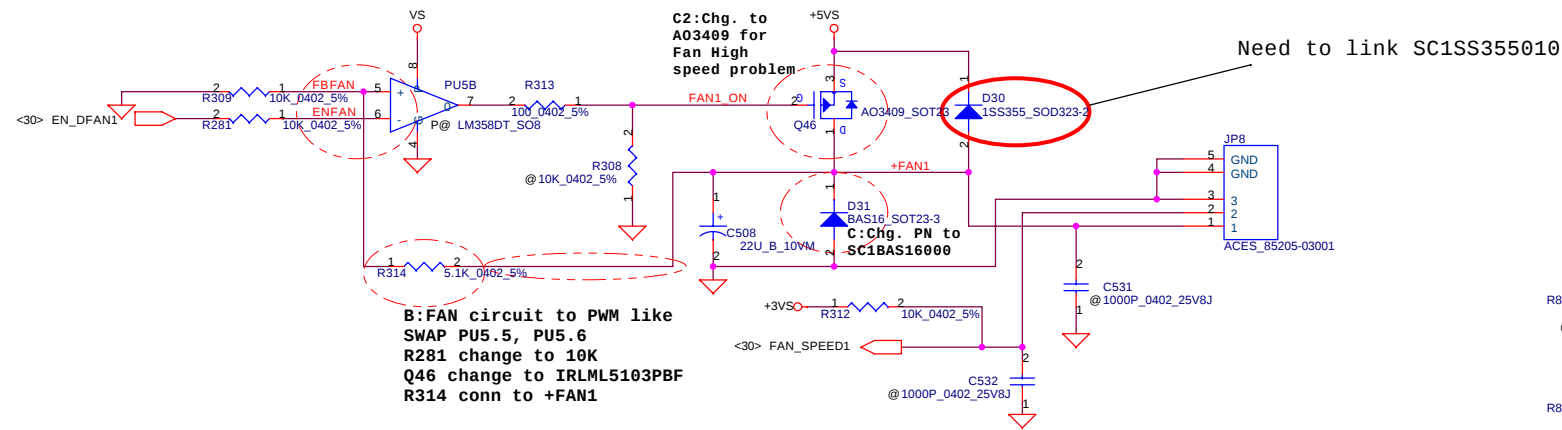
For EMI Request

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                           |  |                           |  |          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|---------------------------|--|---------------------------|--|----------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  |                           |  |                           |  |          |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2007/5/4           |  | Deciphered Date |  | 2008/5/4                  |  | Title                     |  |          |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Size                      |  | Document Number           |  | Rev      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Customer                  |  | ALAA-Minnesota10A LA3631P |  | 1A       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Date:                     |  | Monday, May 14, 2007      |  | Sheet    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                           |  |                           |  | 33 of 45 |  |

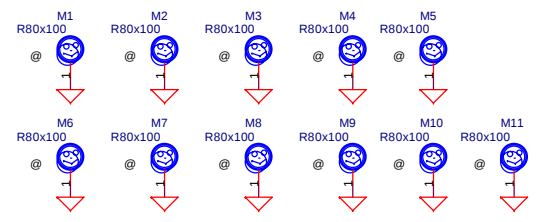
KB/Touch Pad & hibernation

Customer: ALAA-Minnesota10A LA3631P

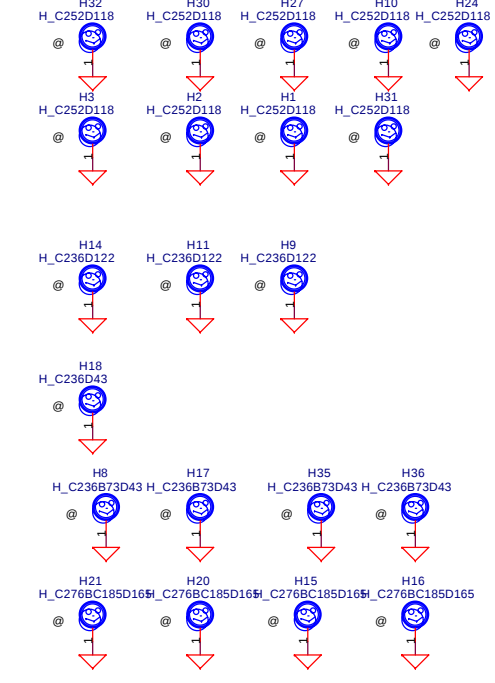
FAN Conn



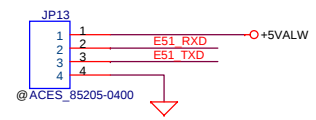
EMI Shielding Clip PADS



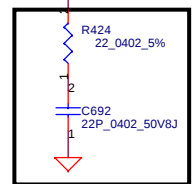
Screw Hole



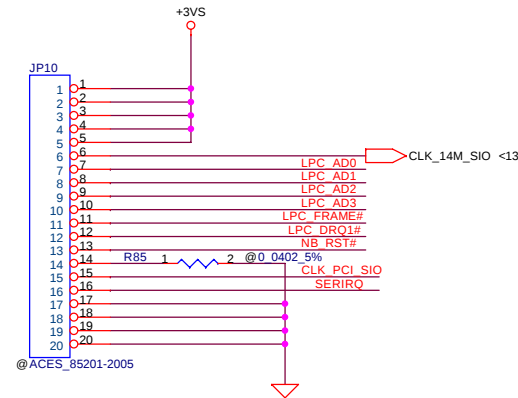
For EC



LPC Debug card



LPC Debug Port



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                          |                        |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          | Compal Electronics, Inc. |                        |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Size                     | Document Number        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Customer                 | Minneapolis10A LA3631P |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Date                     | Monday, May 14, 2007   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Sheet                    | 34 of 45               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Rev                      | 1A                     |

**C:Chg.Q14,Q41 part to re**

The schematic diagram shows the internal structure of the Q14 and Q41 components. It features a differential pair of JFETs (Q14 and Q41) with a common source resistor (R11). The gates are biased by a voltage divider (R98, R99) connected to +1.2V\_HT. The sources are connected to ground through resistors (R180, R181). The drains are connected to +1.2V\_WLW through resistors (R178, R179). The output of Q41 is connected to the input of Q13 through a capacitor (C180).

W Rds(on) part.

C: Q14 and Q41, change par  
MP: Update R137 and R286  
to 0.01u 5X7R to meet PWR  
request.

**C:chg. PN to SB770020010.**

[illegible][illegible]

C:Chg. PN to SB770020010.

**B:Remove Energy Star 4.0 function.**

The schematic diagram illustrates the power supply section of the CPGA017-020-07 module. It shows the internal circuitry for converting the +3VALW input into a regulated +3V output and a sense line (STB\_SB#) for the +3V\_SB pin. The circuit includes a PNP transistor Q133, a MOSFET Q20, and various passive components like capacitors C271, C272, C252, C255, C269 and resistors R143, R164. The circuit is designed to provide a regulated +3V output (labeled +3V) and a sense line (STB\_SB#) to the +3V\_SB pin.

The schematic diagram illustrates the power supply section of the STB LAN#1 module. It features two input lines at the top: +3V\_ALW and +3V\_LAN. The +3V\_ALW line is connected to a P320 connector (pins 2 and 1) and a MOSFET Q132 (Si3456BDV-T1-E3\_TSP06). The +3V\_LAN line is connected to a MOSFET Q7 (2N7002\_SOT23-3) and a diode Q9 (10U\_0603\_25V4Z). A diode Q8 (10U\_0603\_10V4Z) is connected between the +3V\_LAN line and the STB LAN#1 pin of the 2N7002\_SOT23-3 module. Various capacitors (C75, C67, C85, C86, C87) and resistors (R29, R30) are used for filtering and signal conditioning. The output of the circuit is connected to the STB LAN#1 pin of the 2N7002\_SOT23-3 module.

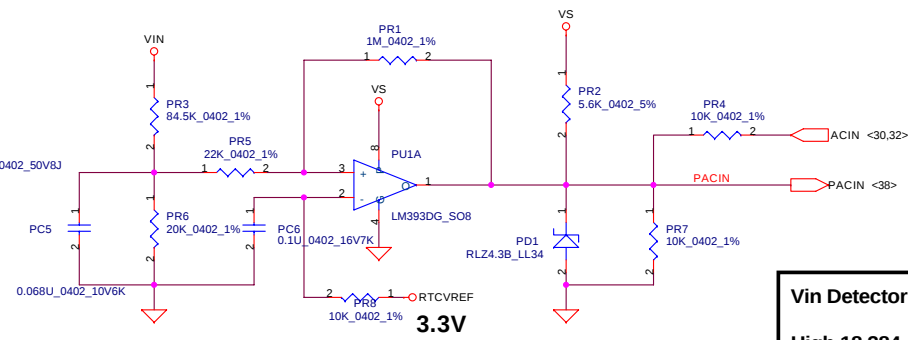
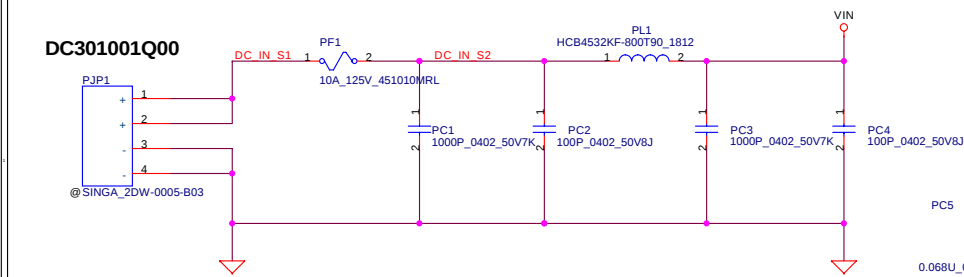
**+1.2V<sub>ALW</sub> TO +1.2V<sub>SB</sub>**

The schematic diagram illustrates the WLAN power management circuit. It features a power switch P322 controlled by Q47 and Q48. The input to the switch is +3VALW, and the output is +3V\_WLAN. The output is connected to the WLAN antenna through a network of capacitors (C518, C525, C494, C509, C526) and resistors (R306, R320). The diagram also shows the connection to the STB\_WLAN# signal line.

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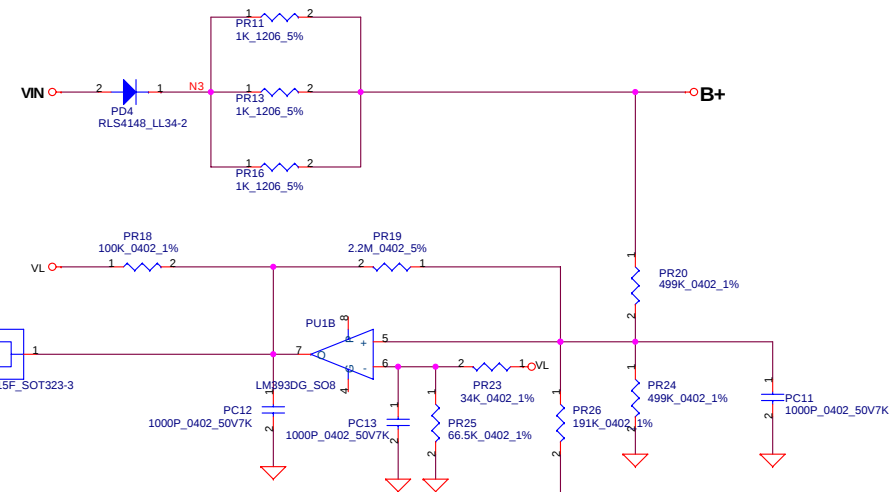
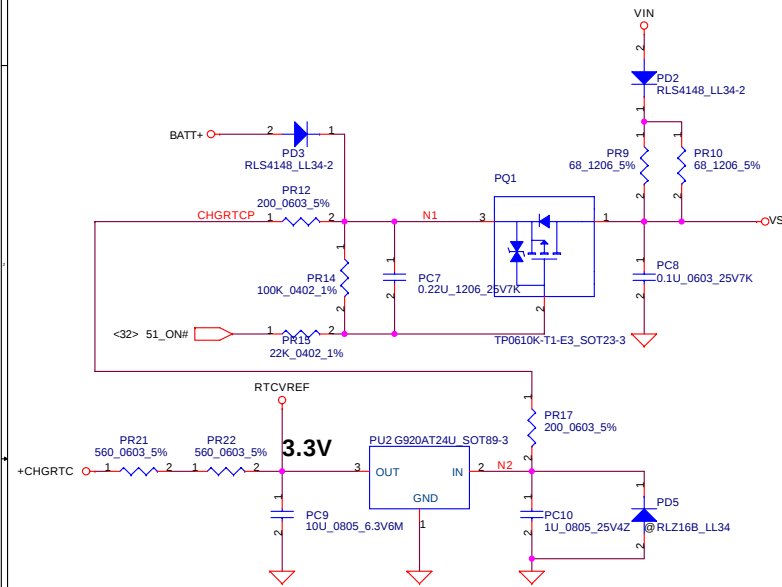
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          |                              |                                              |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|----------|------------------------------|----------------------------------------------|-----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |          | Compal Electronics, Inc.     |                                              |           |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | Size<br>B                    | Document Number<br>IALA-Minnesota10A LA3631P | Rev<br>1A |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |          | Date<br>Monday, May 14, 2007 | Sheet<br>35                                  | of<br>45  |

# DC301001Q00

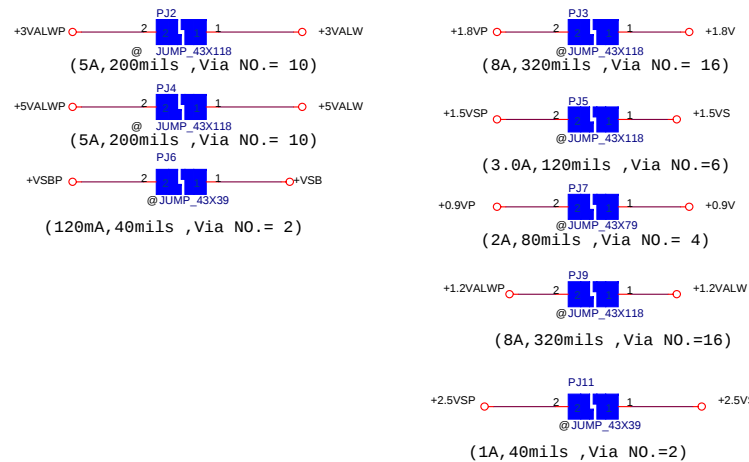


## Vin Detector

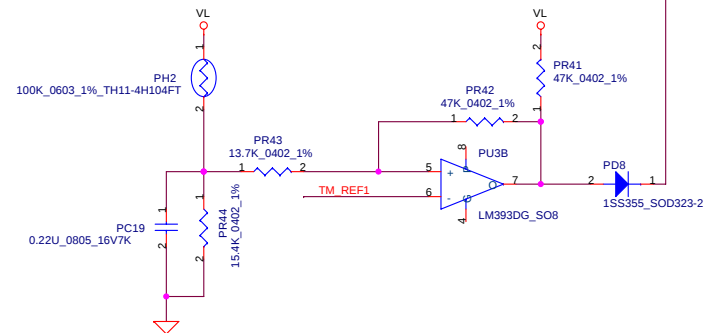
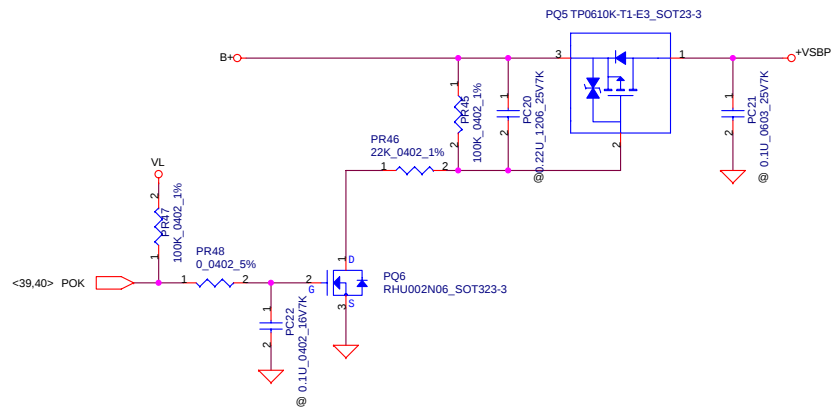
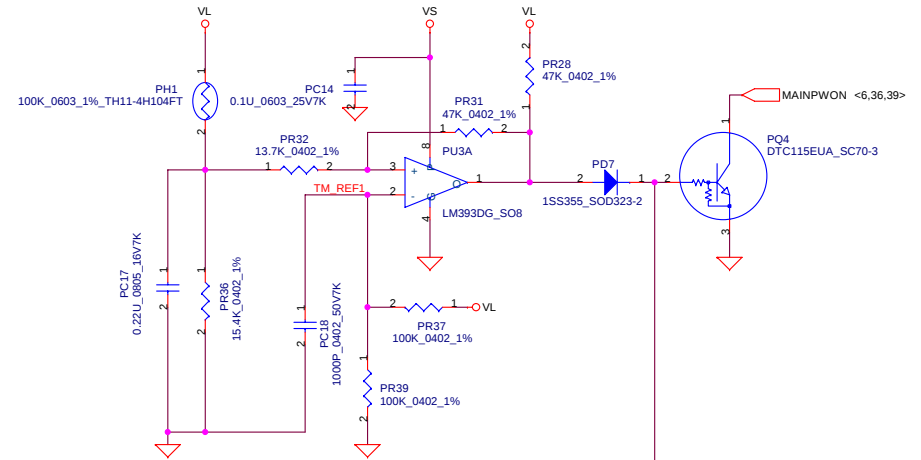
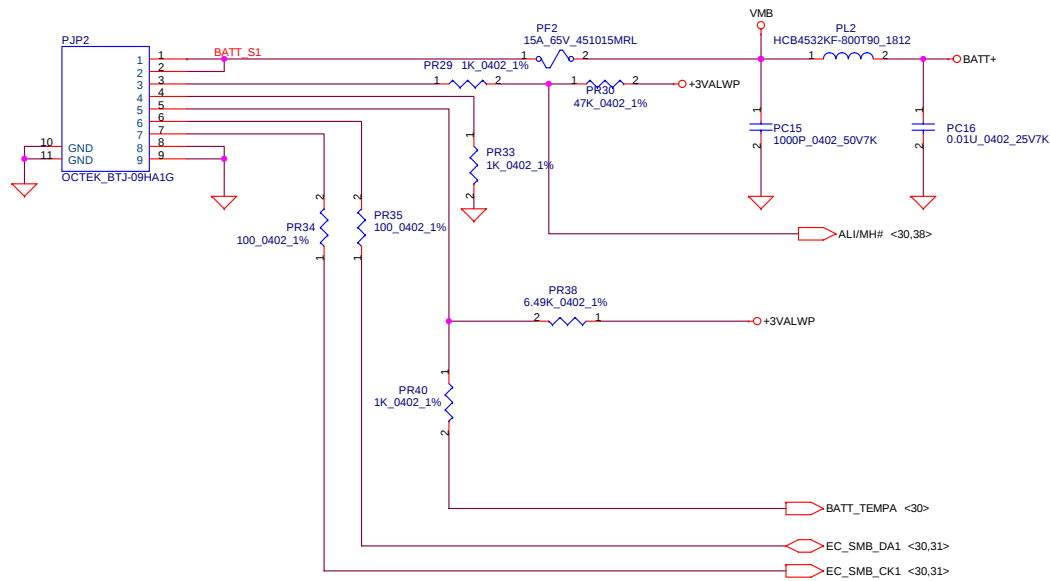
High 18.384 17.901 17.430  
Low 17.728 17.257 16.976



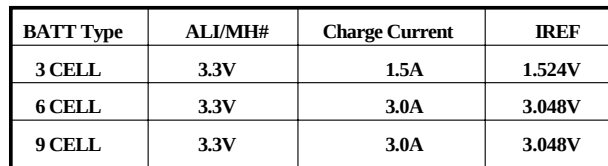
## Precharge detector 15.97V/14.84V FOR ADAPTOR



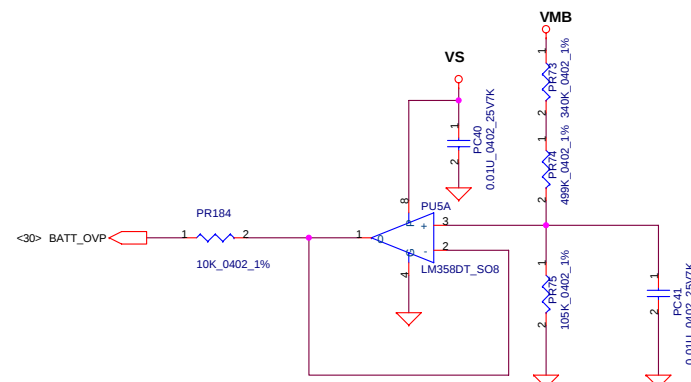
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data   |                            | Compal Electronics, Inc. |                 |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4             | Deciphered Date            | 2008/5/4                 | Title           |
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| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Document Number      | IALAA-Minnesota10A LA3631P |                          | Rev 1A          |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Monday, May 14, 2007 | Sheet                      | 36                       | of 45           |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |                    |  |  |  |                            |  |  |  |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  | Compal Secret Data |  |  |  | Compal Electronics, Inc.   |  |  |  |
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| 2008/5/4                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  | Title              |  |  |  | BATTERY CONN / OTP         |  |  |  |
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| Date: Monday, May 14, 2007                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  | Sheet 37 of 45     |  |  |  |                            |  |  |  |



**IREF=1.016\*Icharge**  
**IREF=0.508V~3.048V**



ALAA-Minnesota10ALA36311  
Security Classification

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| Issued Date |  |
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Deciphered Date

2008/5/4

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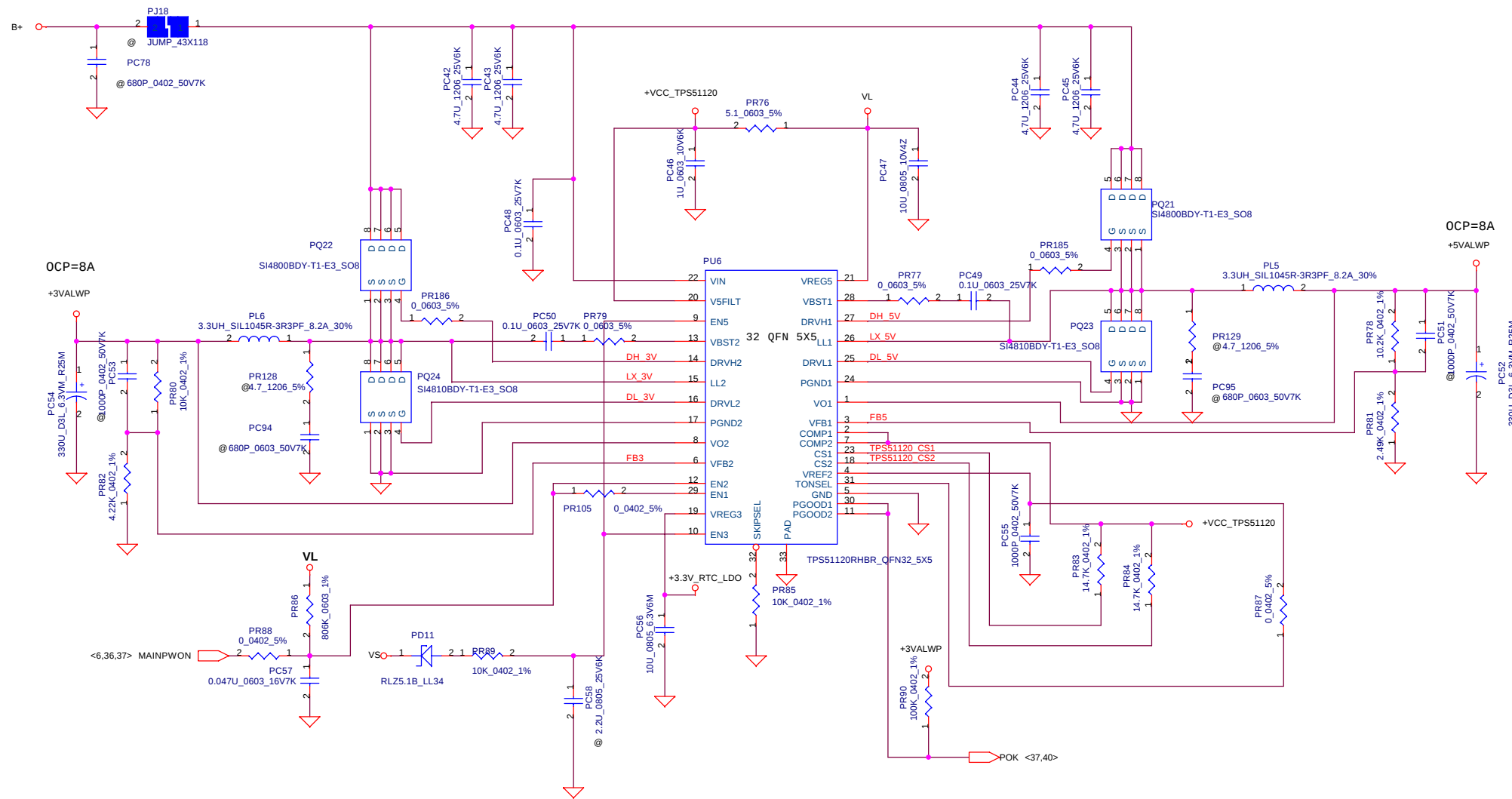
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IALAA-Minnesota10A LA3631P

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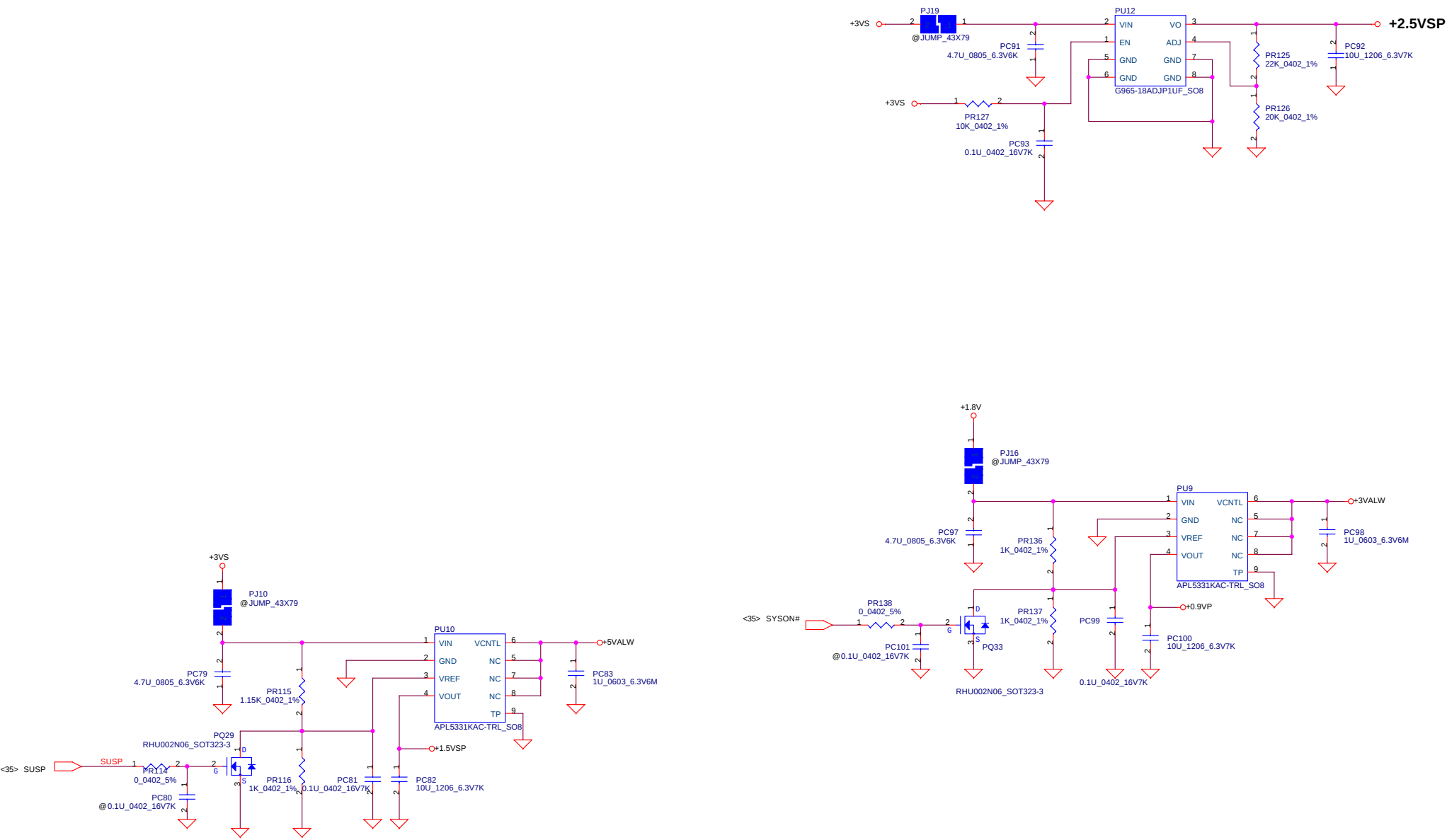
Date: Monday, May 14, 2007

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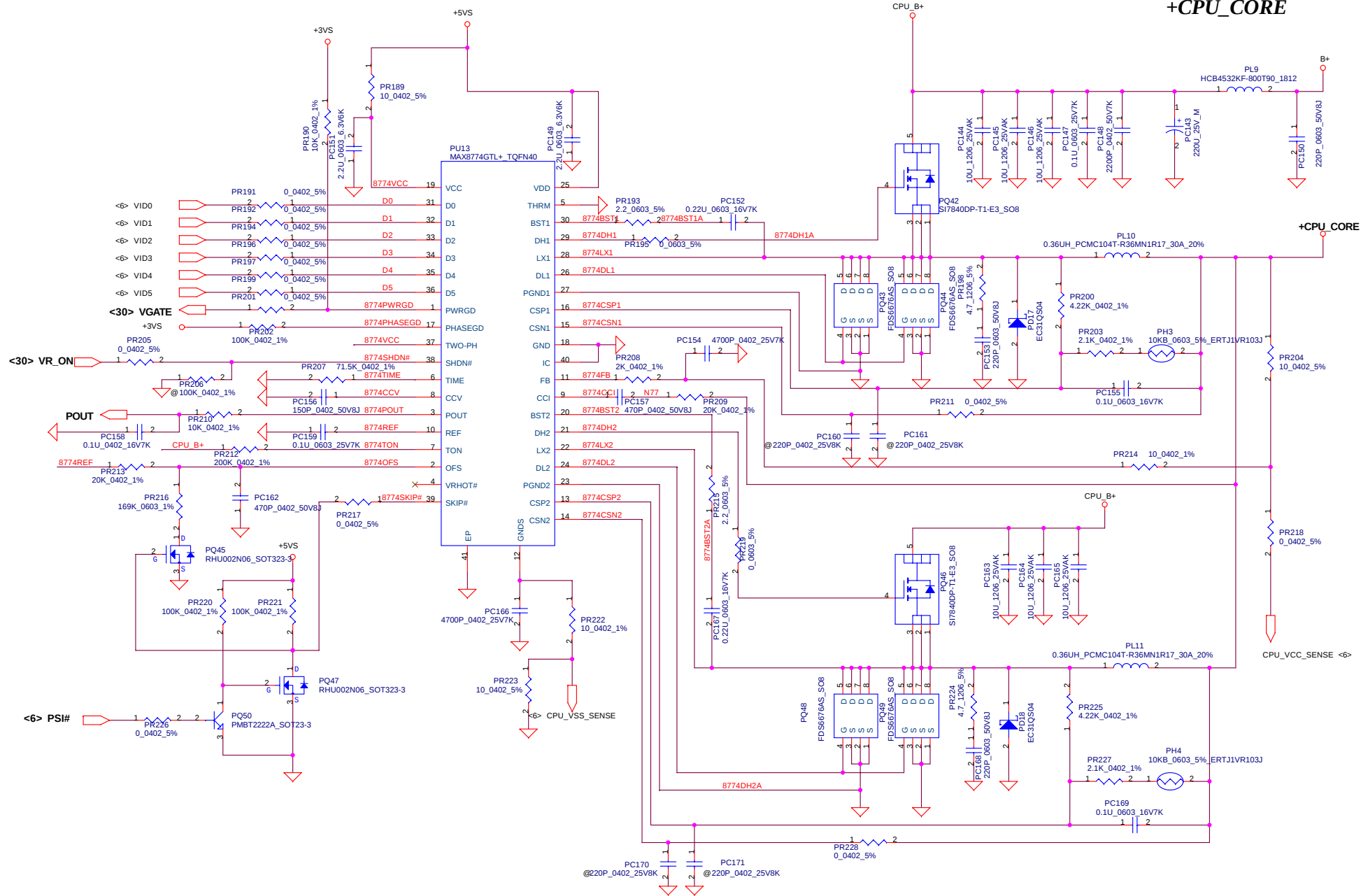


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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | Compal Secret Data |          | Compal Electronics, Inc. |                            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Size                     | Document Number            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Customer                 | IALAA-Minnesota10A LA3631P |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Date:                    | Tuesday, May 15, 2007      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Sheet                    | 39 of 45                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          | Rev                      | 1A                         |





| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  | Compal Secret Data |  |  |  | Compal Electronics, Inc.  |  |  |  |
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| 2007/5/4                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  | 2008/5/4           |  |  |  | Title                     |  |  |  |
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| Date: Monday, May 14, 2007                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  | Sheet 41 of 45     |  |  |  | Rev 1A                    |  |  |  |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                    |          |                          |                                               |
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| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/5/4 | Deciphered Date    | 2008/5/4 | Title                    | +CPU_CORE                                     |
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| Date: Monday, May 14, 2007                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |                    |          | Sheet                    | 42 of 45                                      |

POWER PIR LIST

|        | page | Reason for change                       | Modify list                                             |
|--------|------|-----------------------------------------|---------------------------------------------------------|
| DVT    | 37   | Design change PF2 value                 | Change PF2 Fuse from 12A to 15A                         |
|        | 38   | Design change PU4 schematic             | Add PR117,PR118.                                        |
|        |      |                                         | Change value PC29,PC32,PR56,PR57,PQ18                   |
|        |      |                                         | Remove PR232,PR233,PC173,PC105                          |
|        | 42   | improve CPU-core ripple                 | Change PR214,PR222 from 100 to 10                       |
|        |      |                                         | Change PC155,PC169 from 0.22u to 0.1u                   |
|        |      |                                         | Change PR213 from 31.6K to 20K                          |
|        |      | Add EMI soultion                        | Change PC150,PC153,PC168 from 680P to 220P              |
|        |      |                                         | Change boost resistors PR193,PR215 from 0 to 2.2        |
|        |      |                                         | Change low-side mosfet PQ43,PQ44,PQ48,PQ49 at CPU-core. |
| PVT    | 37   | Design change PH1 temperature set value | Change PR36 from 22K to 15.4K                           |
| Pre-MP | 37   | Design change PH1 temperature set value | Change PR44 from 22K to 15.4K                           |

# HW4 Product Improvement Record (P.I.R.)

| Phase: to |                                   | Date:                   |                                 |                                | Writer:                          |      |             |
|-----------|-----------------------------------|-------------------------|---------------------------------|--------------------------------|----------------------------------|------|-------------|
| Page#     | Action Plan<br>(add; del; change) | Location or<br>Net_List | Before value<br>(Attached file) | After value<br>(Attached file) | Detail Discretion and Root Cause | Rev. | DL/DM Check |

01. 2007/2/12 P30

Rev 0.3 LA-3631P Implement items:

- 01. P06 Update THERMTRIP# control circuit, follow AMD request.
- 02. P07 Change C652 and C557 to SGN00000800
- 03. P08 Swap RP20 signals for DDR shielding.
- 04. P11,P13,P24 Set BOM Structure for UMA@, DVD@
- 05. ALL Change 2N7002 main source to SB770020010 for unit.
- 06. P27 Add D6, D3, ESD Diod for EMI, Chenge Encoder, SW6, PN to DEB00000600
- 07. 15 Unit Q1,Q3,Q52 w/ same part.
- 08. 24,P34 Change D31 and D28 to SC1BAS16000
- 09. P14 Add C13,C16,C21 with 22P for EMI.
- 10. P16 Change R436 and R437 to 120 Ohm to meet ADM request
- 11. P29 Remove R113, R117, R135 and R141 to leave chock for AMD platform
- 12. P28 Reserve C730~C736 by EMI request.
- 13. P21 Swap JP28 LED behaivor signals.
- 14. P28 Swap JP20 RX/TX Lanes sigals for Express Card cna't detect issue.

Rev 0.4 LA-3631P Implement items:

- 01. P24 Cut JP1.7 Pad for soldring issue.
- 02. P34 Change Q46 to SB934090000 for Fan can't meet Max. speed issue.

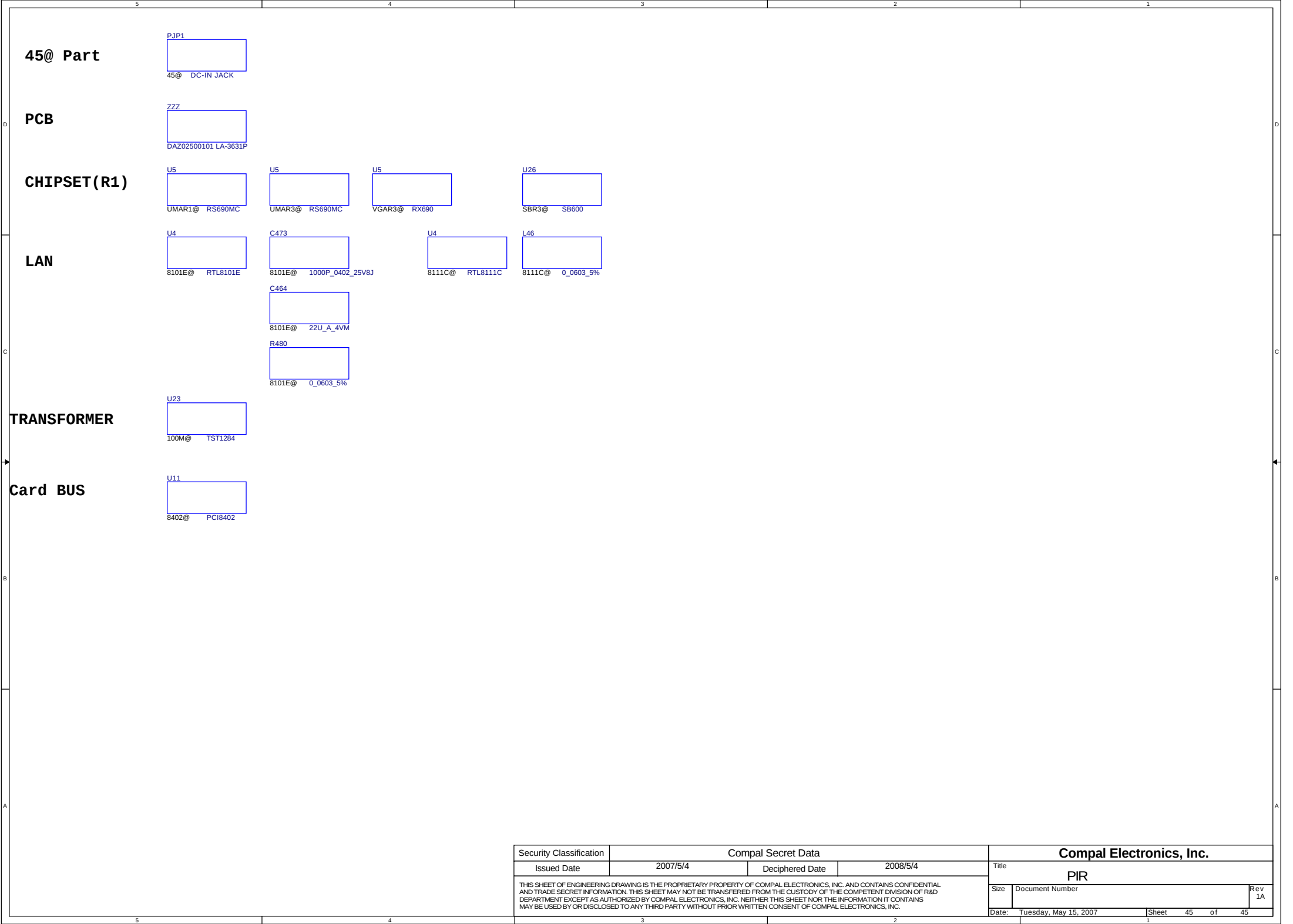
Rev 1.0 LA-3631P Implement items:

- 01. P22 Reserve C737, C738 for EMI solution
- 02. P6 Reserve R490 for PROCHOT funcation
- 03. P11 Add R488, R489 for LCD flash when boot issue

Rev 1A LA-3631P Implement items:

- 01. P22 Add R196 and C320 in BOM as EMI requirment.
- 02. P17 Add U35 and C740, reserve R1178 for LAN Leakage problem
- 03. P19 Change C647 to 22u for sequence and L59 to DCR is 0.40hm to meet AMD requirement.
- 04. P20 Change R431 and R430 to 24K; R1176 and R1177 to 19.2K, follow ATI ER.
- 05. P13 Change R369 from 330hm to 900hm Bead.
- 06. P30 ENE's recommend, change back C541 and C542 from 27P to 15P.
- 07. P06 Reserve pull up resistor R490 for H\_PROCHOT#
- 08. P24/P29 Swap USB2+/- and USB8+/- for CAMERA problem.
- 09. P14/P20 Change D10 and D29 part to meet HDMI and CRT power requirment.
- 10. P20 Update HDMI Hot Plug DET circuit, to add U34, C739.

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