

Compal Confidential

Model Name : P5LJ0 & P5LS0

File Name : LA-7221P

Compal Confidential

JM50-HR M/B Schematics Document

Intel Sandy Bridge Processor with DDRIII + Cougar Point PCH  
Nvidia N12P-GS/GV

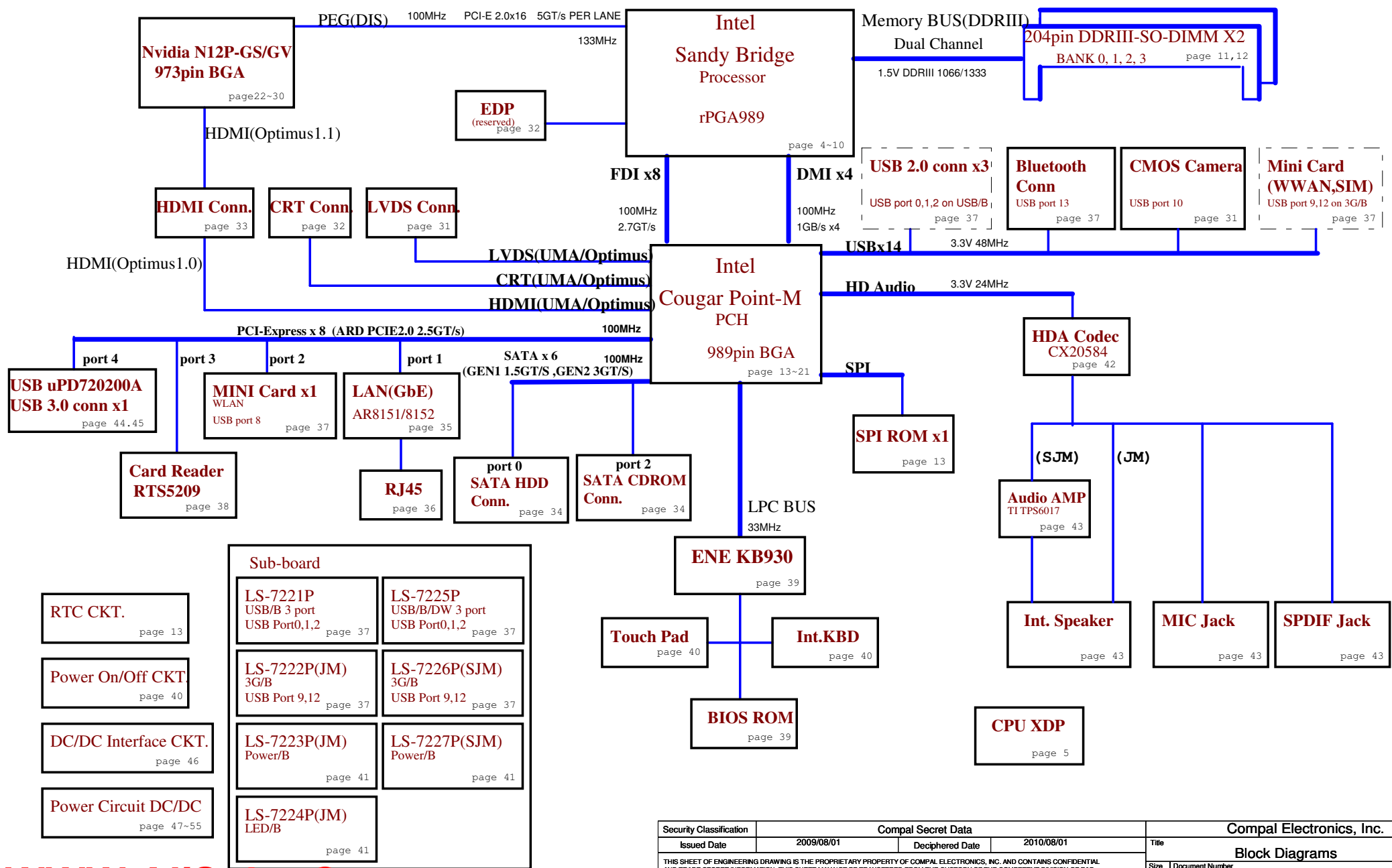
2010-02-16

REV: 0.5

| MB PCB      |                           |
|-------------|---------------------------|
| Part Number | Description               |
| DA80000MA00 | PCB 01N LA-7221P REV0 M/B |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                                 |                 |            |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|---------------------------------|-----------------|------------|----|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  | Compal Electronics, Inc.        |                 |            |    |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  | Size                            | Document Number | Rev        |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  | Custom                          | LA-7221P        | 0.2        |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  | Date: Friday, February 18, 2011 |                 |            |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  | Sheet                           | 1               | of         | 59 |

Fan Control  
page 45



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 16, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 2 of 59                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.2                          |

Voltage Rails

| Power Plane                                                                                     | Description                                                 | S1  | S3  | S5  |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----|-----|-----|
| VIN                                                                                             | Adapter power supply (19V)                                  | N/A | N/A | N/A |
| BATT+                                                                                           | Battery power supply (12.6V)                                | N/A | N/A | N/A |
| B+                                                                                              | AC or battery power rail for power circuit.                 | N/A | N/A | N/A |
| +CPU_CORE                                                                                       | Core voltage for CPU                                        | ON  | OFF | OFF |
| +VGA_CORE                                                                                       | Core voltage for GPU                                        | ON  | OFF | OFF |
| +VGFX_CORE                                                                                      | Core voltage for UMA graphic                                | ON  | OFF | OFF |
| +0.75VS                                                                                         | +0.75VP to +0.75VS switched power rail for DDR terminator   | ON  | OFF | OFF |
| +1.0VSDGPU                                                                                      | +1.0VSPDGPU to +1.0VSDGPU switched power rail for GPU       | ON  | OFF | OFF |
| +1.05VS_VCCP                                                                                    | +1.05VS_VCCPP to +1.05VS_VCCP switched power rail for CPU   | ON  | OFF | OFF |
| +1.05VS_PCH                                                                                     | +1.05VS_VCCP to +1.05VS_PCH power for PCH                   | ON  | OFF | OFF |
| +1.5V                                                                                           | +1.5VP to +1.5V power rail for DDRIII                       | ON  | ON  | OFF |
| +1.5VS                                                                                          | +1.5V to +1.5VS switched power rail                         | ON  | OFF | OFF |
| +1.5VSDGPU                                                                                      | +1.5VS to +1.5VSDGPU switched power rail for GPU            | ON  | OFF | OFF |
| +1.8VS                                                                                          | (+5VALW or +3VALW) to 1.8V switched power rail to PCH & GPU | ON  | OFF | OFF |
| +3VALW                                                                                          | +3VALW always on power rail                                 | ON  | ON  | ON* |
| +3VALW_EC                                                                                       | +3VALW always to KBC                                        | ON  | ON  | ON* |
| +3V_LAN                                                                                         | +3VALW to +3V_LAN power rail for LAN                        | ON  | ON  | ON* |
| +3VALW_PCH                                                                                      | +3VALW to +3VALW_PCH power rail for PCH (Short Jumper)      | ON  | ON  | ON* |
| +3VS                                                                                            | +3VALW to +3VS power rail                                   | ON  | OFF | OFF |
| +5VALW                                                                                          | +5VALWP to +5VALW power rail                                | ON  | ON  | ON* |
| +5VALW_PCH                                                                                      | +5VALW to +5VALW_PCH power rail for PCH (Short resister)    | ON  | ON  | ON* |
| +5VS                                                                                            | +5VALW to +5VS switched power rail                          | ON  | OFF | OFF |
| +VSB                                                                                            | +VSBP to +VSB always on power rail for sequence control     | ON  | ON  | ON* |
| +RTCVCC                                                                                         | RTC power                                                   | ON  | ON  | ON  |
| Note : ON* means that this power plane is ON only with AC power available, otherwise it is OFF. |                                                             |     |     |     |

EC SM Bus1 address

| Device        | Address     | Device | Address |
|---------------|-------------|--------|---------|
| Smart Battery | 0001 011X b |        |         |

EC SM Bus2 address

PCH SM Bus address

| Device                                              | Address    |
|-----------------------------------------------------|------------|
| Clock Generator (9LVS3199AKLFT, RTM890N-631-VB-GRT) | 1101 0010b |
| DDR DIMM0                                           | 1001 000Xb |
| DDR DIMM2                                           | 1001 010Xb |

3G & BT Config

3G SKU: 3G@

BT SKU: BT@

BOM Config

JM UMA Only: BT@/3G@/UMA@/UMAO@/JM@/8151@  
JM OPTIMUS: BT@/3G@/UMA@/OPT@/JM@/8151@/GV@/GS@  
SJM UMA Only: BT@/3G@/UMA@/UMAO@/SJM@/8151@  
SJM OPTIMUS: BT@/3G@/UMA@/OPT@/SJM@/8151@/GV@/GS@

BOM P/N (JM/SJM)

4319BOBOL01/L21 UMA W3G HDMI  
4319BOBOL02/L22 UMA N3G HDMI  
4319BOBOL03/L23 N12PGS 1GW3G HDMI  
4319BOBOL04/L24 N12PGS 1GN3G HDM  
4319BOBOL05/L25 N12PGS 2GW3G HDMI  
4319BOBOL06/L26 N12PGS 2GN3G HDMI  
4319BOBOL07/L27 N12PGV 512W3G HDMI  
4319BOBOL08/L28 N12PGV 512N3G HDMI

VRAM BOM Config

X76289BOL01 512M SAM 64M16  
X76289BOL02 512M HYN 64M16  
X76289BOL03 1G SAM 64M16  
X76289BOL04 1G HYN 64M16  
X76289BOL05 2G SAM 128M16  
X76289BOL06 2G HYN 128M16

| STATE                 | SIGNAL | SLP_S1# | SLP_S3# | SLP_S4# | SLP_S5# | +VALW | +V  | +VS | Clock |
|-----------------------|--------|---------|---------|---------|---------|-------|-----|-----|-------|
| Full ON               |        | HIGH    | HIGH    | HIGH    | HIGH    | ON    | ON  | ON  | ON    |
| S1 (Power On Suspend) |        | LOW     | HIGH    | HIGH    | HIGH    | ON    | ON  | ON  | LOW   |
| S3 (Suspend to RAM)   |        | LOW     | LOW     | HIGH    | HIGH    | ON    | ON  | OFF | OFF   |
| S4 (Suspend to Disk)  |        | LOW     | LOW     | LOW     | HIGH    | ON    | OFF | OFF | OFF   |
| S5 (Soft OFF)         |        | LOW     | LOW     | LOW     | LOW     | ON    | OFF | OFF | OFF   |

Board ID / SKU ID Table for AD channel

| Vcc      | 3.3V +/- 5%  |             |             |             |
|----------|--------------|-------------|-------------|-------------|
| Ra/Rc/Re | 100K +/- 5%  |             |             |             |
| Board ID | Rb / Rd / Rf | 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     |

BOARD ID Table

| Board ID | PCB Revision |
|----------|--------------|
| 0        | 0.1          |
| 1        | 0.2          |
| 2        | 0.3          |
| 3        | 1.0          |
| 4        |              |
| 5        |              |
| 6        |              |
| 7        |              |

BTO Option Table

| BTO Item         | BOM Structure |
|------------------|---------------|
| UMA Only         | UMAO@         |
| UMA with OPTIMUS | UMA@          |
| OPTIMUS1.0       | OPT@          |
| OPTIMUS1.1       | OPT11@        |
| N12P-GS@         | GS@           |
| N12P-GV@         | GV@           |
| VRAM             | X76@          |
| Connector        | CONN@         |
| 3G               | 3G@           |
| Blue Tooth       | BT@           |
| EDP              | EDP@          |
| LAN Chip AR8151  | 8151@         |
| LAN Chip AR8152  | 8152@         |
| JM Board         | JM@           |
| SJM Board        | SJM@          |
| Unpop            | @             |
| Power GPU        | VGA@          |
|                  |               |
|                  |               |
|                  |               |

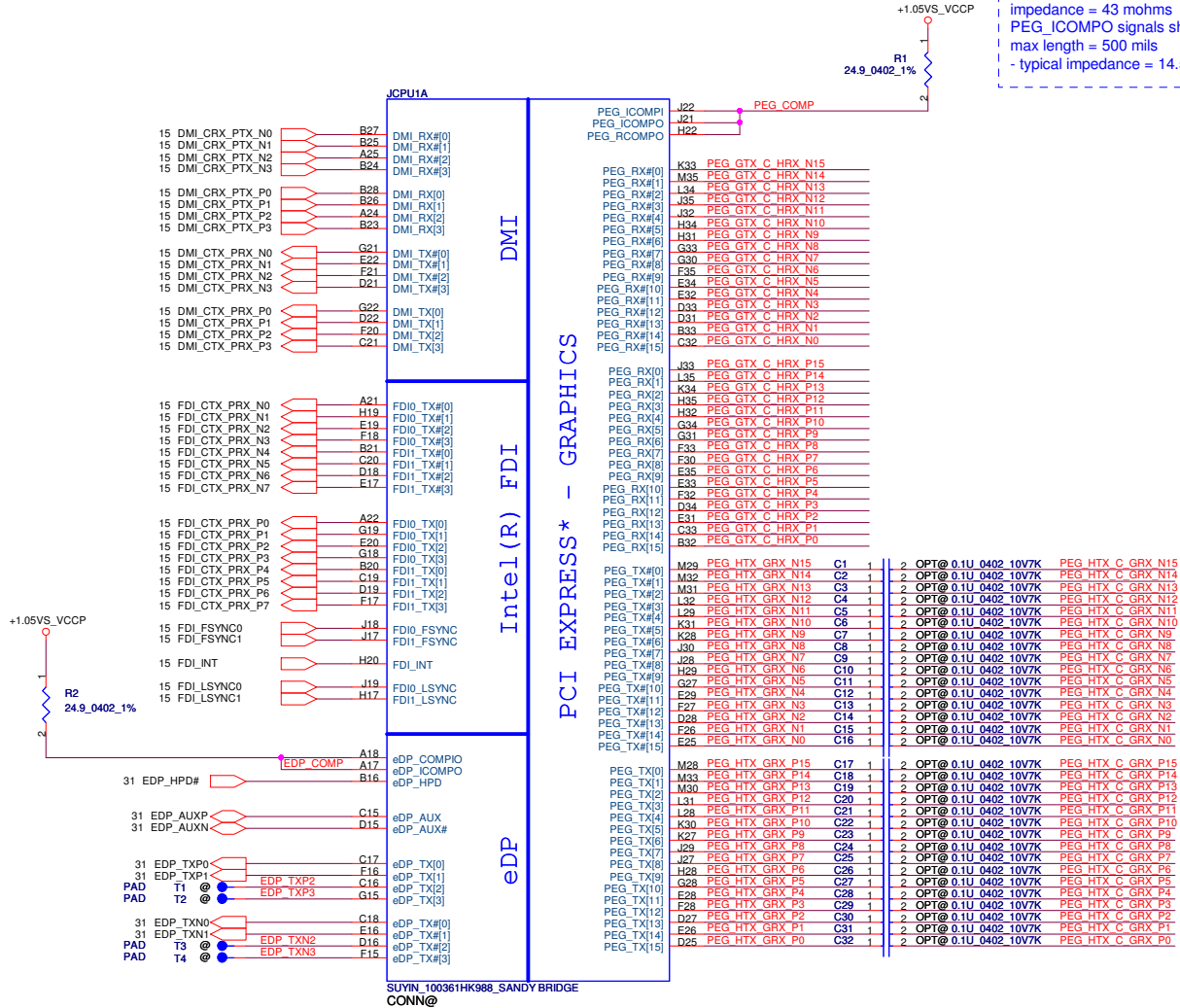
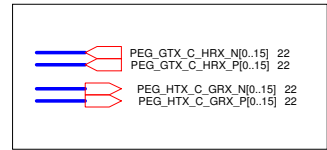
USB Port Table

| USB 2.0 | USB 1.1 | Port | 3 External USB Port |
|---------|---------|------|---------------------|
| EHCI1   | UHCI0   | 0    | USB/B (Right Side)  |
|         |         | 1    | USB/B (Right Side)  |
|         |         | 2    | USB/B (Right Side)  |
|         | UHCI1   | 3    |                     |
|         |         | 4    |                     |
|         |         | 5    |                     |
| EHCI2   | UHCI2   | 6    |                     |
|         |         | 7    |                     |
|         |         | 8    | Mini Card(WLAN)     |
|         | UHCI3   | 9    | Mini Card(WWAN)     |
|         |         | 10   | Camera              |
|         |         | 11   |                     |
|         | UHCI4   | 12   | SIM Card            |
|         |         | 13   | Blue Tooth          |

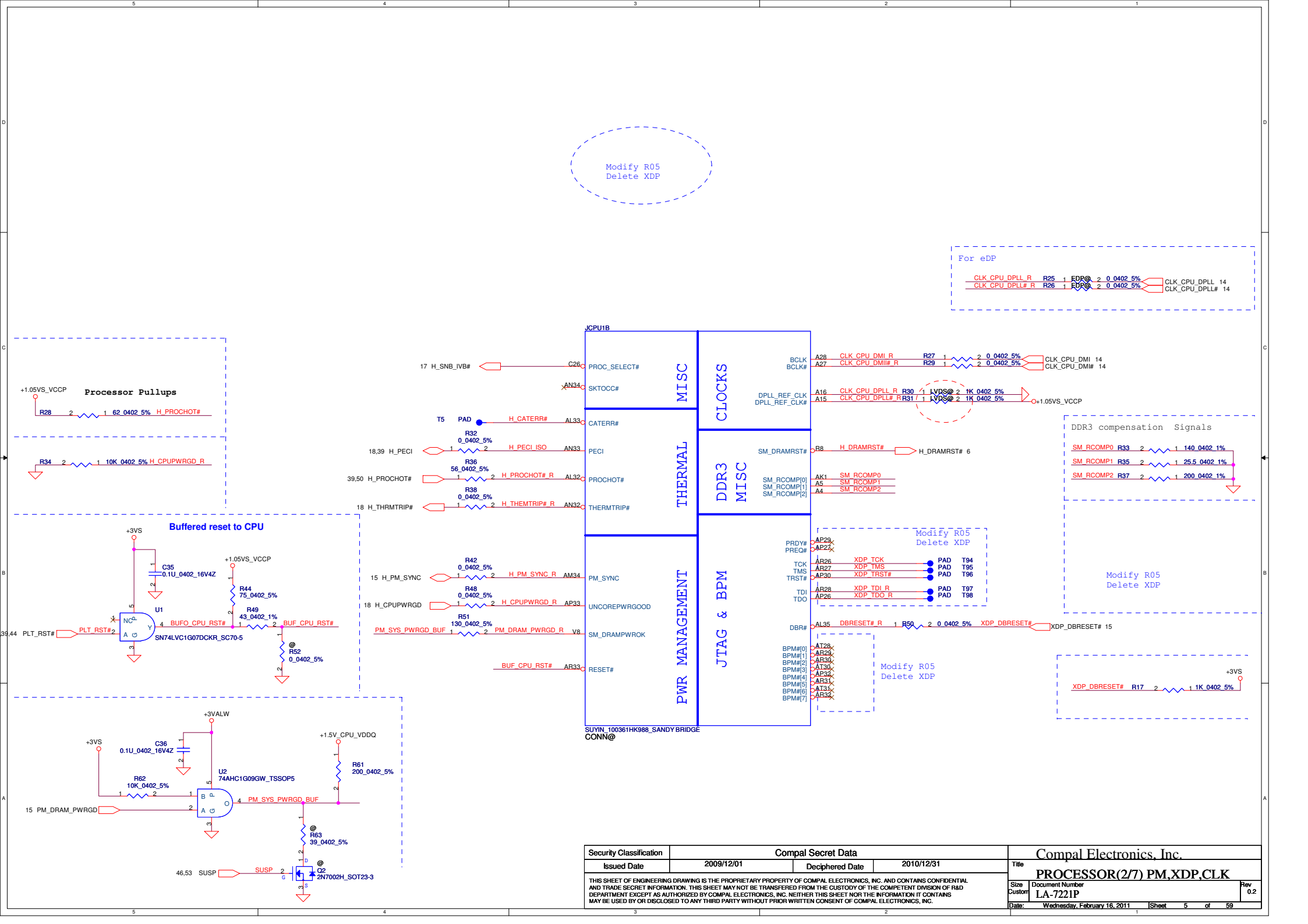
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date                     | Wednesday, February 16, 2011 | Sheet 3 of 59 |

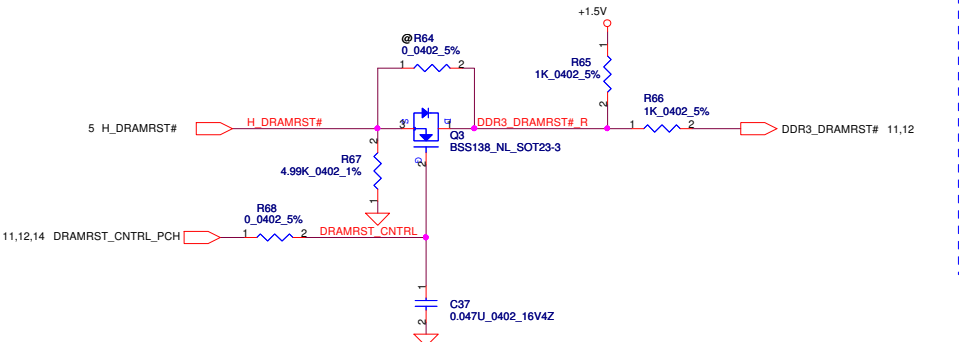
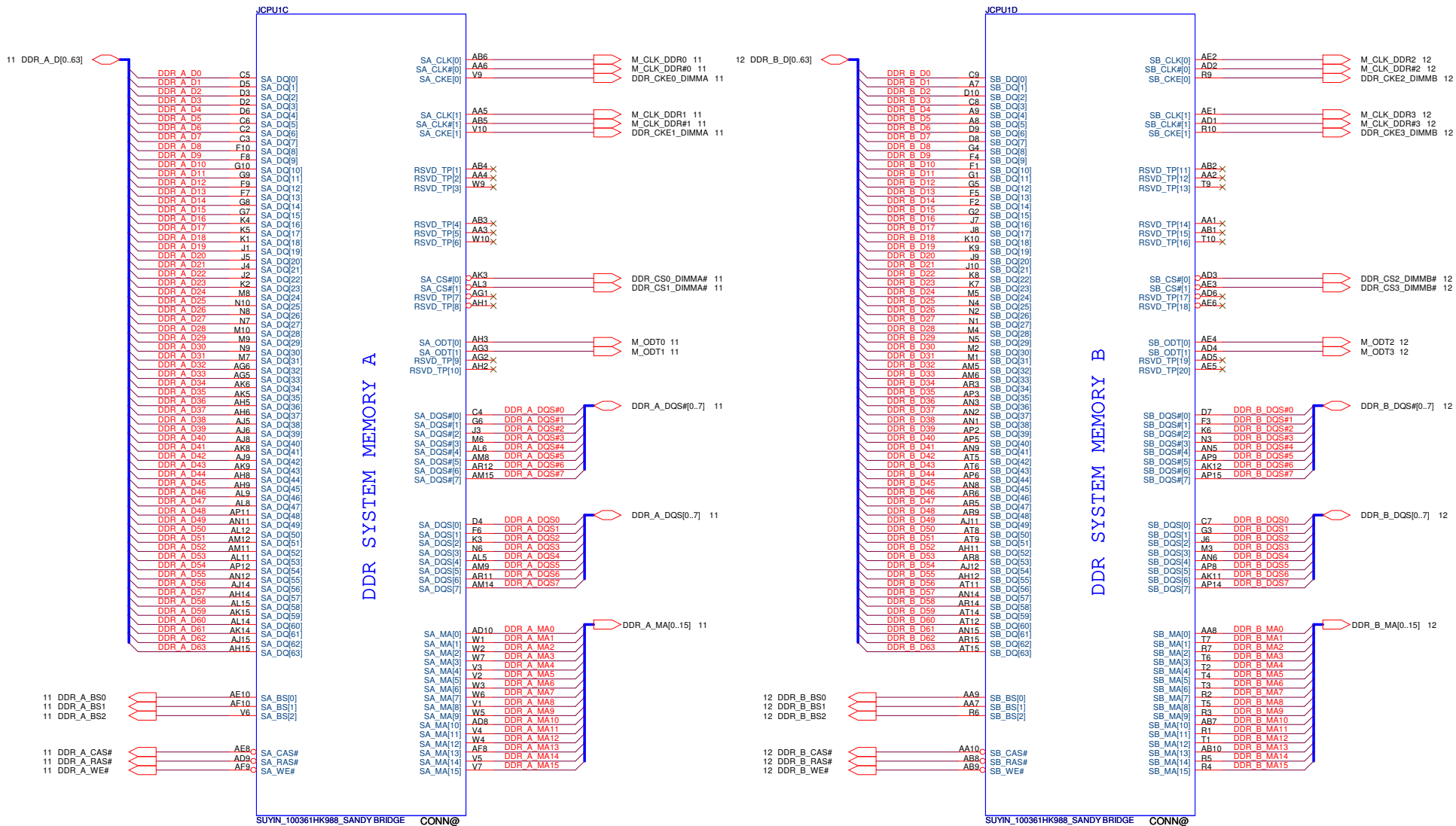
eDP\_COMPIO and ICOMPO signals should be shorted near balls and routed with typical impedance <25 mohms

PEG\_ICOMPI and RCOMPO signals should be shorted and routed with - max length = 500 mils - typical impedance = 43 mohms  
PEG\_ICOMPO signals should be routed with - max length = 500 mils - typical impedance = 14.5 mohms



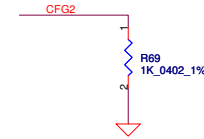
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 4 of 59                      |



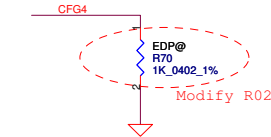


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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 6 of 59                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.2                          |

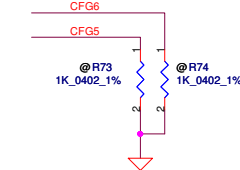
# CFG Straps for Processor



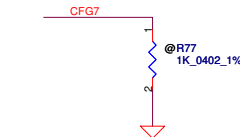
| PEG Static Lane Reversal - CFG2 is for the 16x |                                                                                                |
|------------------------------------------------|------------------------------------------------------------------------------------------------|
| CFG2                                           | 1: Normal Operation; Lane # definition matches socket pin map definition<br>* 0: Lane Reversed |



| Display Port Presence Strap |                                                                                                                                                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CFG4                        | 1 : Disabled; No Physical Display Port attached to Embedded Display Port<br>* 0 : Enabled; An external Display Port device is connected to the Embedded Display Port |



| PCIe Port Bifurcation Straps |                                                                                                                                                                                                                                                        |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CFG[6:5]                     | * 11: (Default) x16 - Device 1 functions 1 and 2 disabled<br>10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled<br>01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)<br>00: x8,x4,x4 - Device 1 functions 1 and 2 enabled |

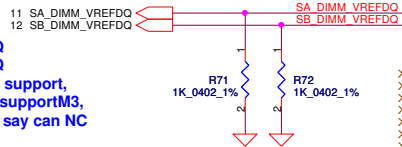


| PEG DEFER TRAINING |                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------|
| CFG7               | 1: (Default) PEG Train immediately following xxRESETB de assertion<br>0: PEG Wait for BIOS for training |

AJ31 change to VAXG\_VAL\_SENSE  
AH31 change to VSSAXG\_VAL\_SENSE  
AJ33 change to VCC\_VAL\_SENSE  
AH33 change to VSS\_VAL\_SENSE

RSVD6 and RSVD7 had changed to  
SA\_DIMM\_VREFDQ and SB\_DIMM\_VREFDQ

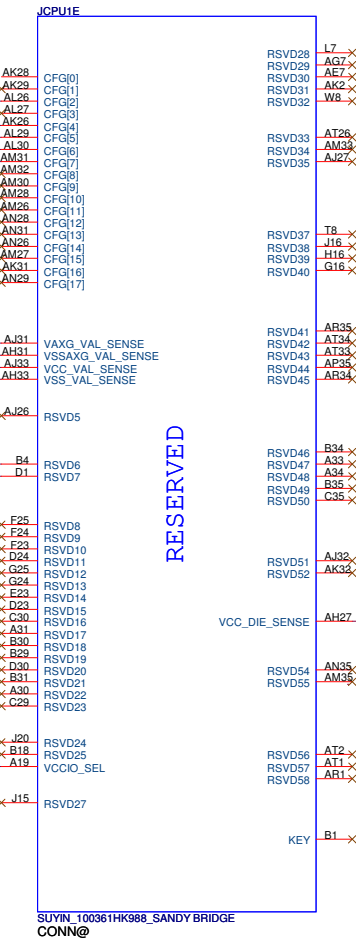
**SA\_DIMM\_VREFDQ**  
**SB\_DIMM\_VREFDQ**  
For Future CPU M3 support,  
Sandy bridge not support M3,  
Check list1.0&CRB say can NC



| VCCIO_SEL |                                                 |
|-----------|-------------------------------------------------|
| A19       | * 1/NC : (Default) +1.05VS_VTT<br>0: +1.0VS_VTT |

**VCCIO\_SEL** For 2012 CPU support  
RSVD26 had changed the name to VCCIO\_SEL  
Need PH +3VS 10K at +1.05VS\_VTT source  
for 2012 processor +1.05V and +1.0V select

RESERVED



## POWER

*SV type CPU*

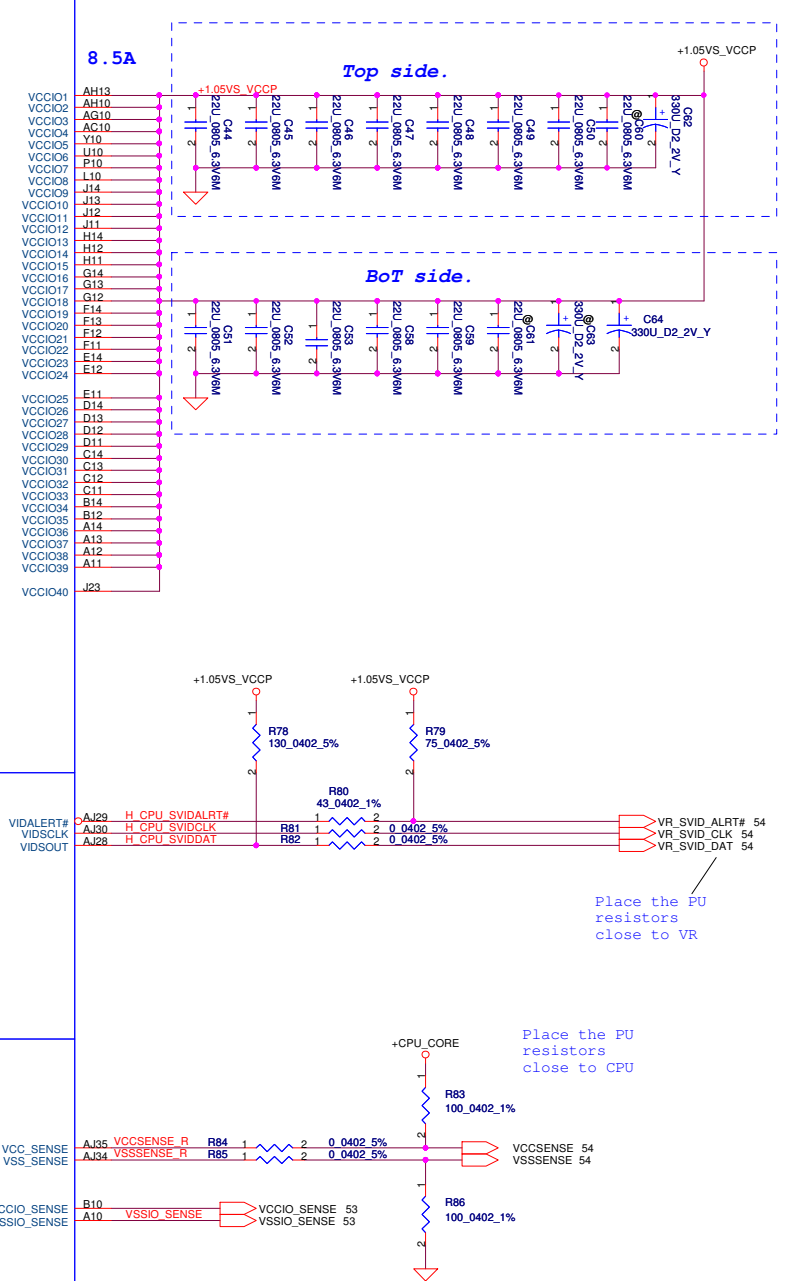
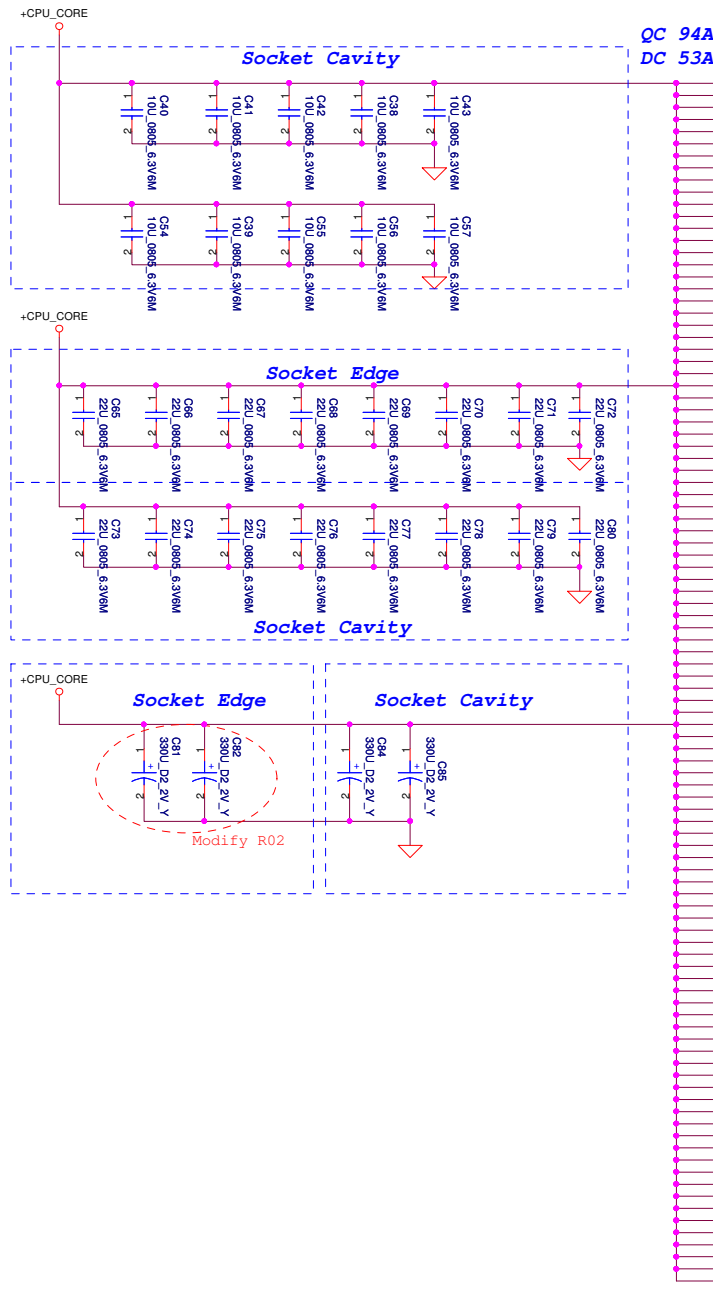
JCPU1F

## PEG AND DDR

## CORE SUPPLY

SVID

## SENSE LINES

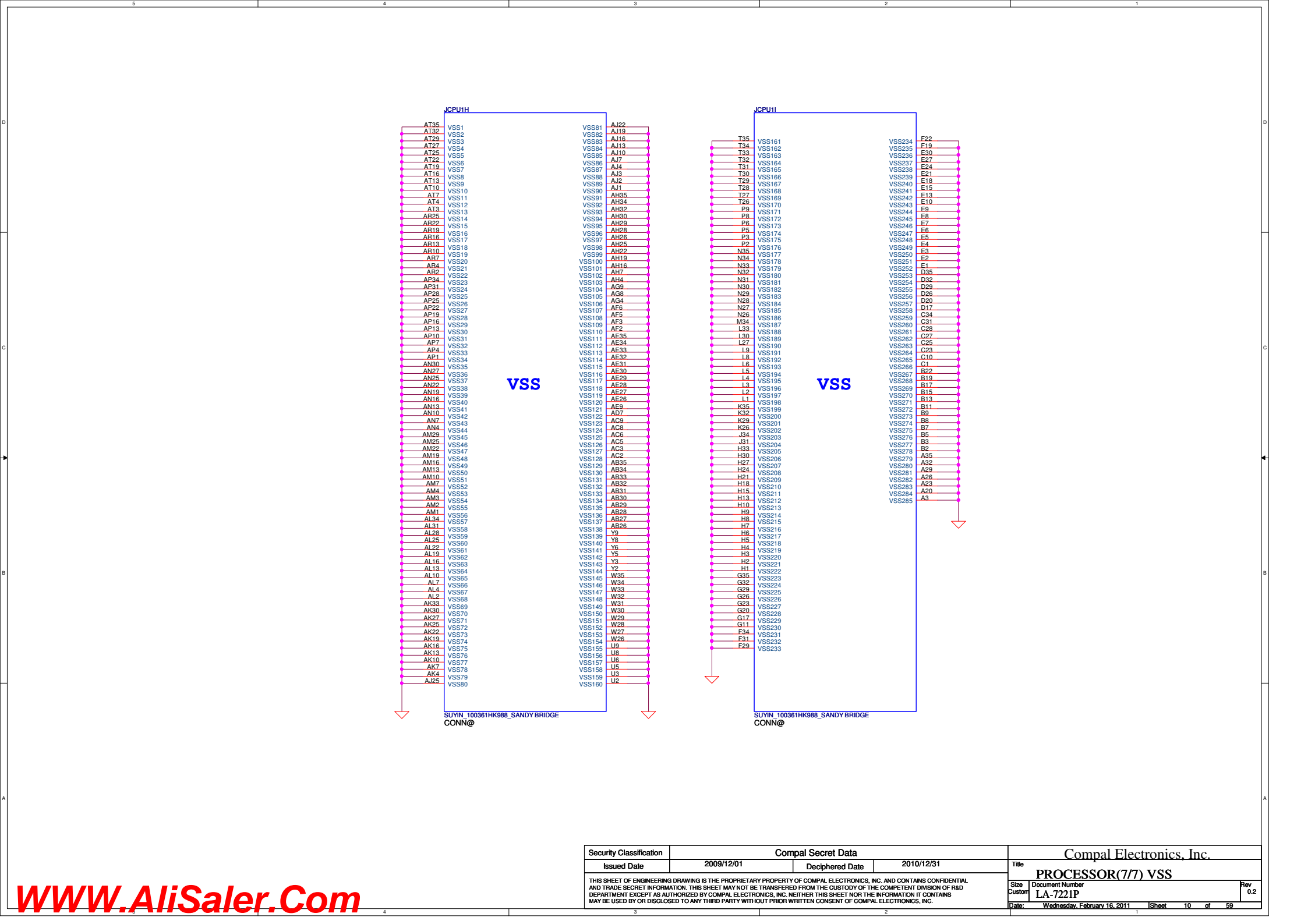


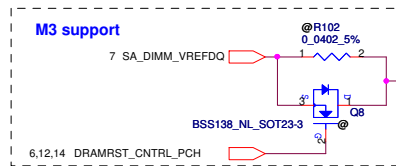
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |            |  |                    |  |            |  |                                      |  |                  |  |
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| SECURITY CLASSIFICATION<br>SUTIN 10U36THK988 SANDY BRIDGE COINING                                                                                                                                                                                                                                                                                                                                                                                             |  |            |  | Compal Secret Data |  |            |  | Compal Electronics, Inc.             |  |                  |  |
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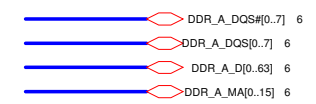
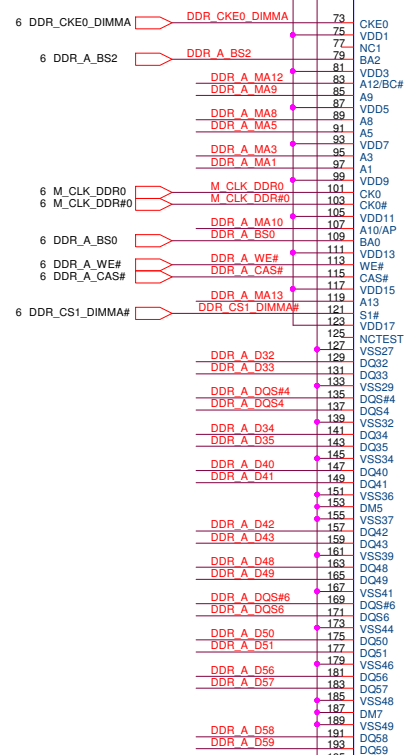




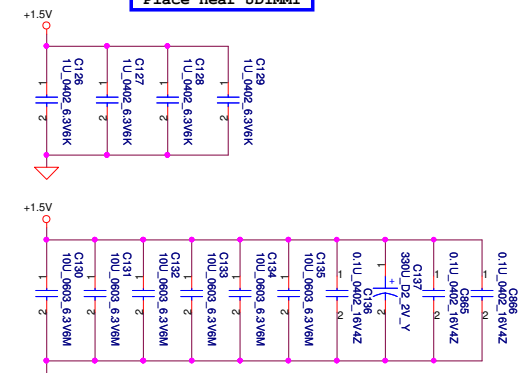




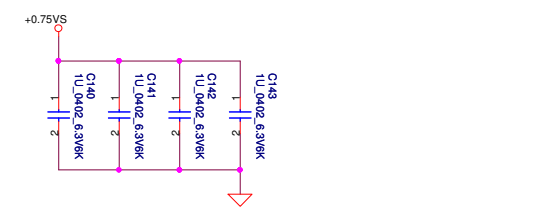
All VREF traces should have 10 mil trace width



Layout Note:  
Place near JDIMM1



Layout Note:  
Place near JDIMM1.203,204

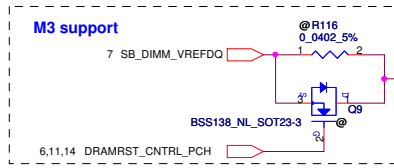


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**DIMM\_A Reserve H:4mm**

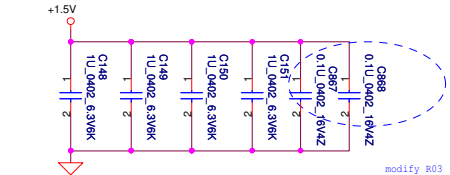
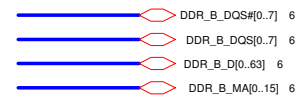
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |  |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|--|------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |  |            |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2009/12/01 | Deciphered Date    | 2010/12/31 | Title                    |                              |  |            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Size                     | Document Number              |  | Rev<br>0.2 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                   | LA-7221P                     |  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 16, 2011 |  | Sheet      |

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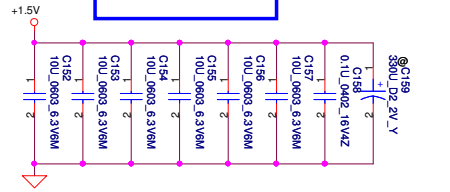
10/04 Check footprint ok



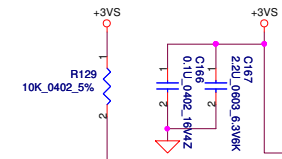
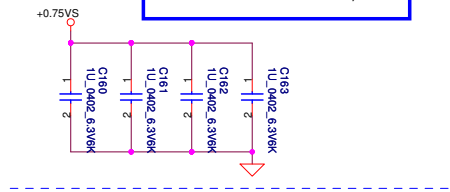
All VREF traces should have 10 mil trace width



Layout Note:  
Place near JDIMM2

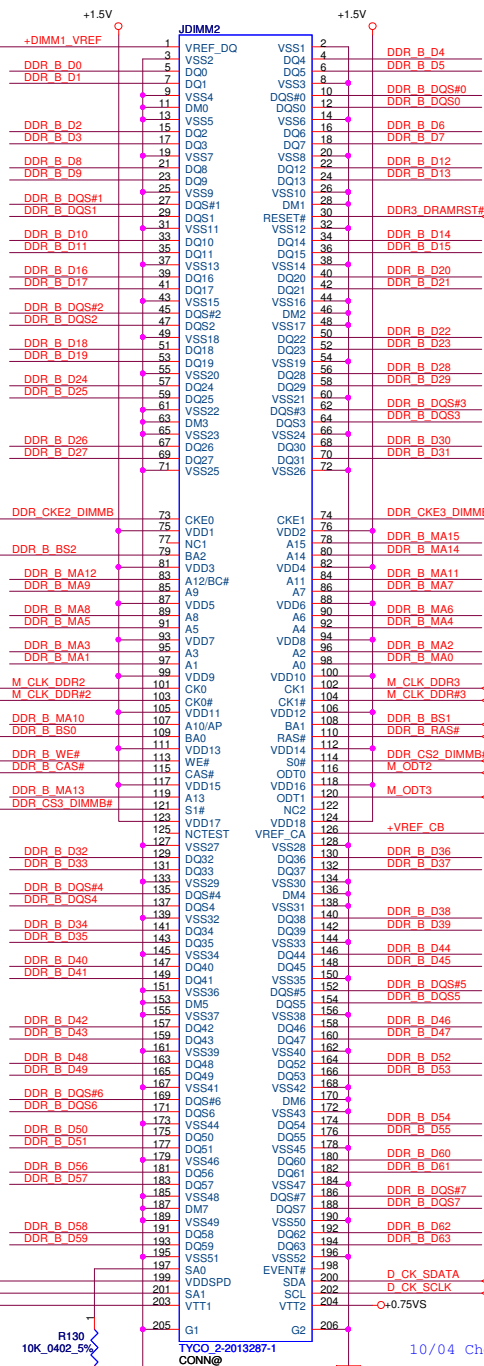


Layout Note:  
Place near JDIMM2.203,204

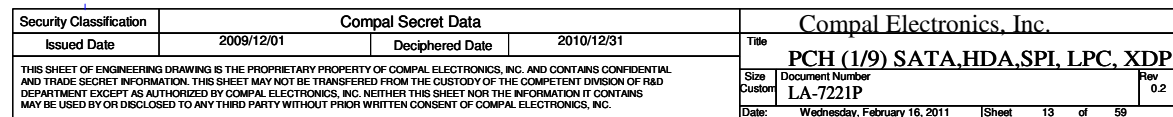


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DIMM\_B Reverse type H:4mm

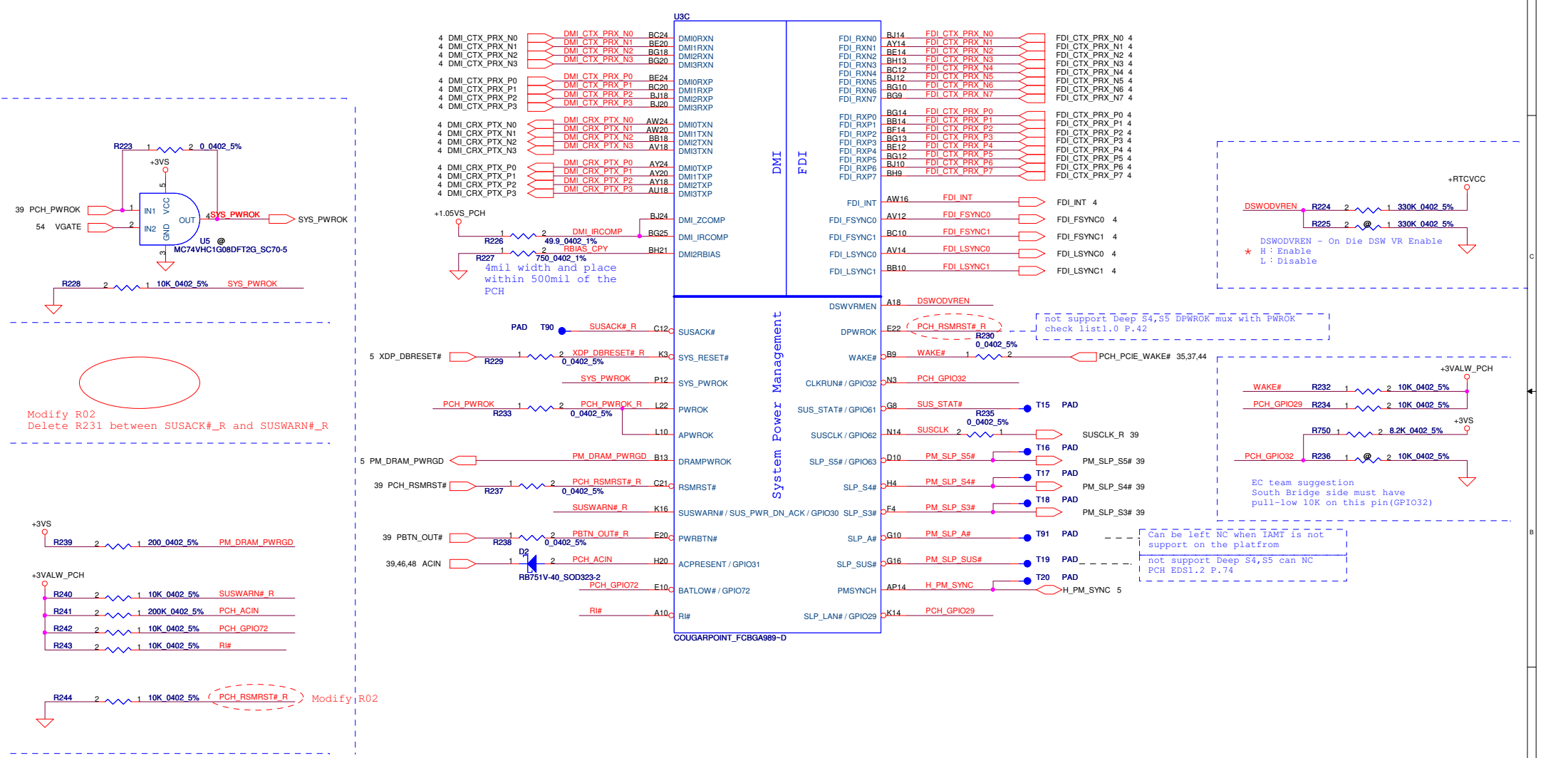
WWW.AliSaler.Com



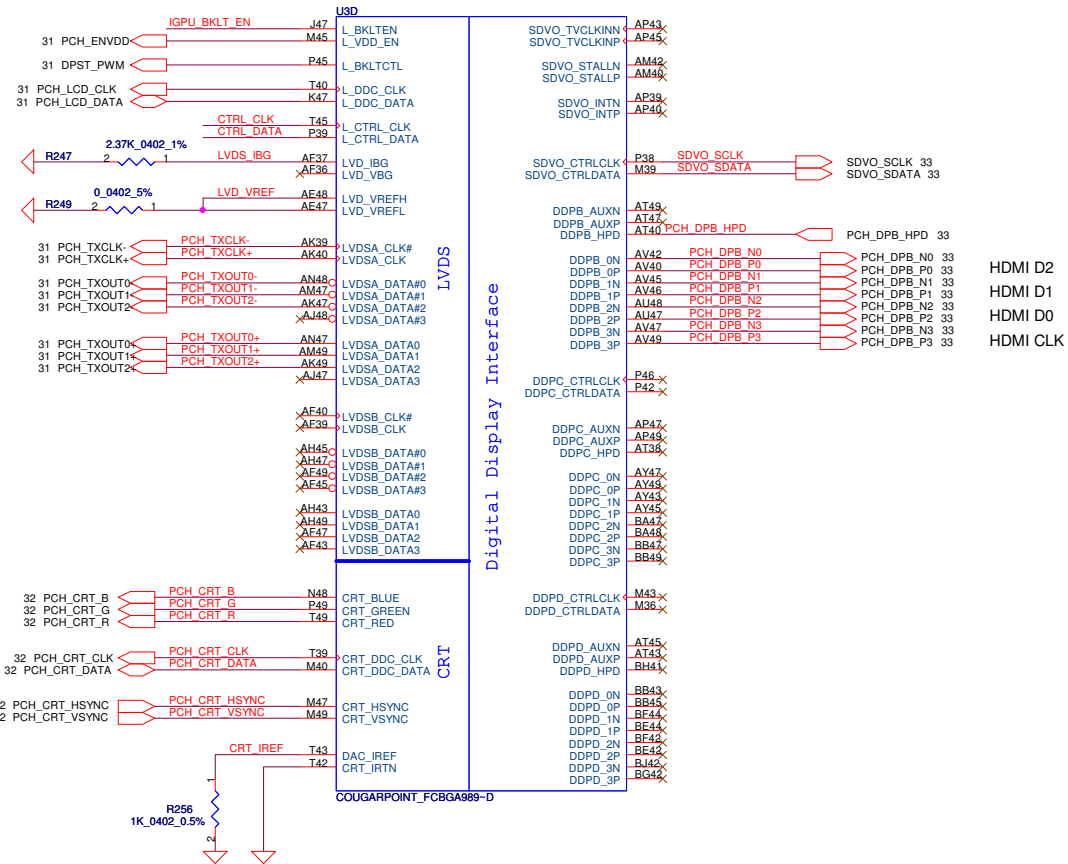
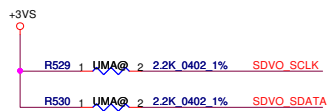
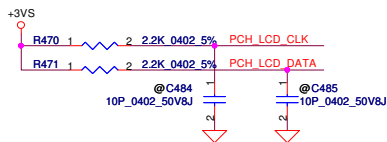
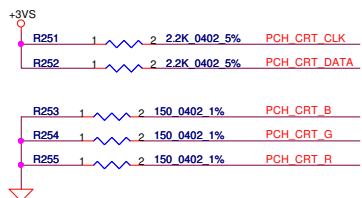
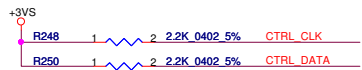
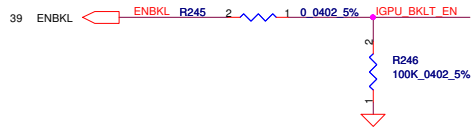
| Security Classification |  |                              |  | Compal Secret Data |  |            |  | Compal Electronics, Inc. |  |  |  |
|-------------------------|--|------------------------------|--|--------------------|--|------------|--|--------------------------|--|--|--|
| Issued Date             |  | 2009/12/01                   |  | Deciphered Date    |  | 2010/12/31 |  | Title                    |  |  |  |
|                         |  |                              |  |                    |  |            |  | DDRIII DIMMB             |  |  |  |
| Size                    |  | Document Number              |  |                    |  |            |  | Rev                      |  |  |  |
| Custom                  |  | LA-7221P                     |  |                    |  |            |  | 0.2                      |  |  |  |
| Date:                   |  | Wednesday, February 16, 2011 |  | Sheet              |  | 12         |  | of 59                    |  |  |  |







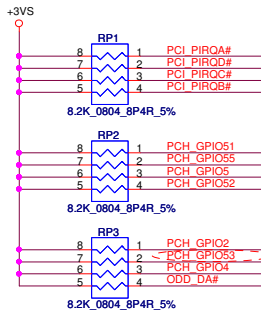




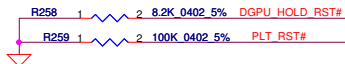
| Security Classification |  |                              |  | Compal Secret Data |  |            |  | Compal Electronics, Inc.   |  |     |  |
|-------------------------|--|------------------------------|--|--------------------|--|------------|--|----------------------------|--|-----|--|
| Issued Date             |  | 2009/12/01                   |  | Deciphered Date    |  | 2010/12/31 |  | Title                      |  |     |  |
|                         |  |                              |  |                    |  |            |  | PCH (4/9) LVDS,CRT,DP,HDMI |  |     |  |
| Size                    |  | Document Number              |  |                    |  |            |  | Rev                        |  | 0.2 |  |
| Custom                  |  | LA-7221P                     |  |                    |  |            |  |                            |  |     |  |
| Date:                   |  | Wednesday, February 16, 2011 |  | Sheet              |  | 16         |  | of                         |  | 59  |  |

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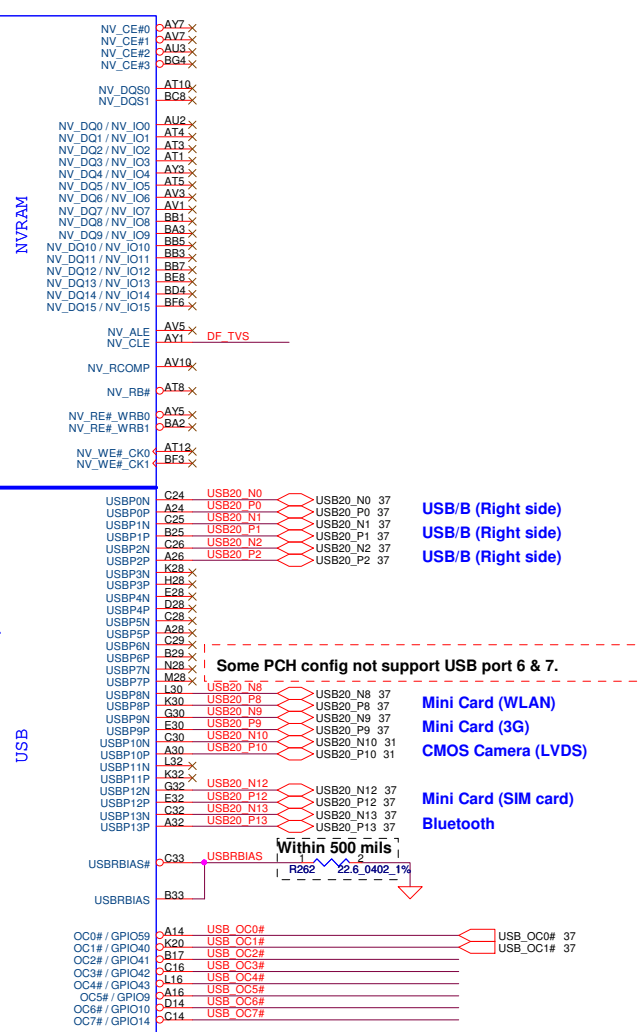
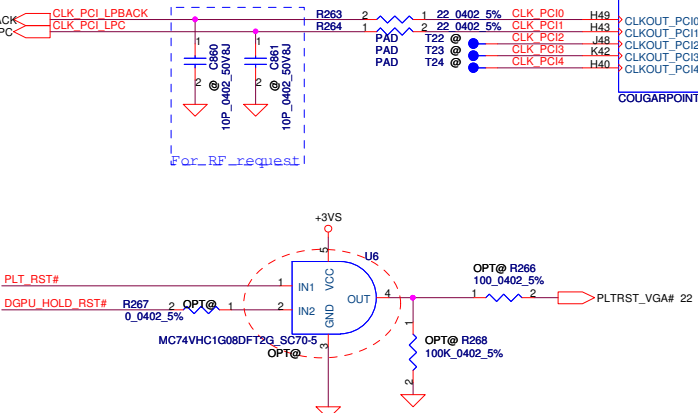
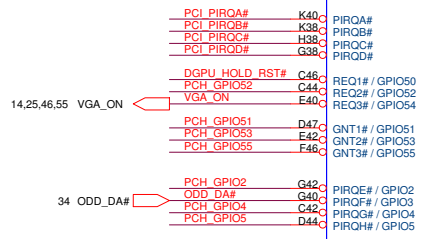




Modify R02

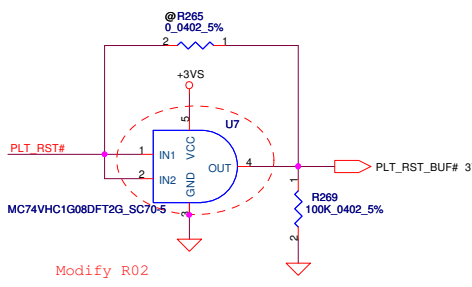
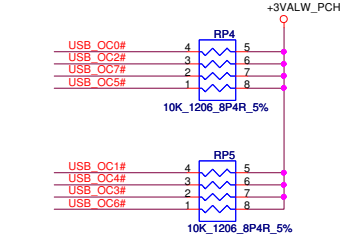
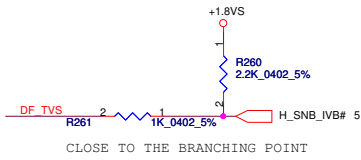


| Boot BIOS Strap bit1 BBS1 |       |       |             |
|---------------------------|-------|-------|-------------|
|                           | Bit11 | Bit10 | Destination |
| GNT1# / GPIO51            | 0     | 1     | Reserved    |
|                           | 1     | 0     | PCI         |
|                           | 1     | 1     | SPI         |
|                           | 0     | 0     | LPC         |



| DMI Termination Voltage |                      |
|-------------------------|----------------------|
| DF_TVS                  | Set to Vcc when HIGH |
|                         | Set to Vss when LOW  |

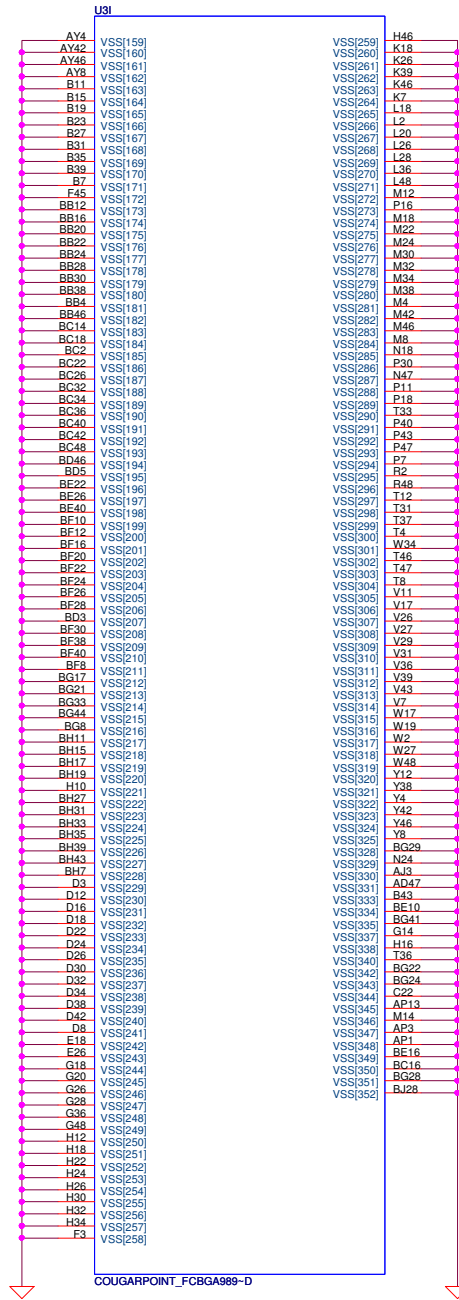
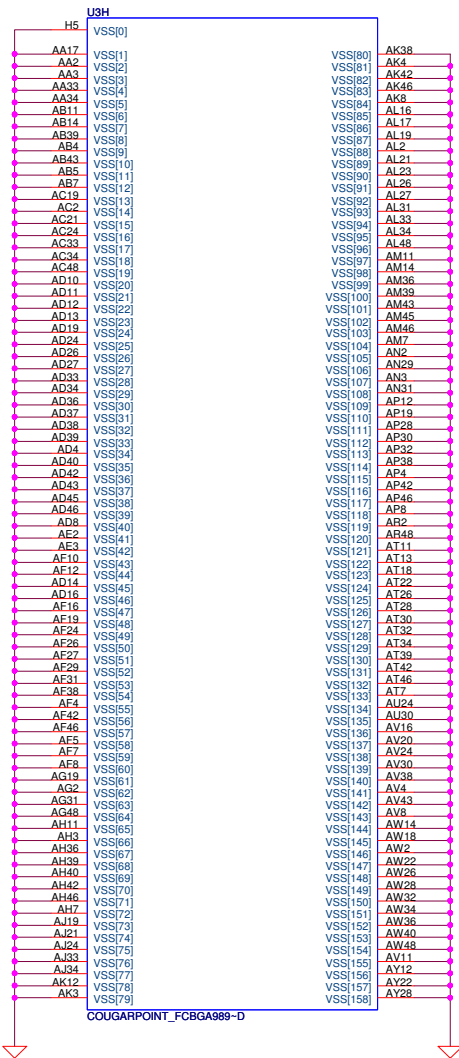
DG1.2 CRB1.0 PH 2.2K series 1K









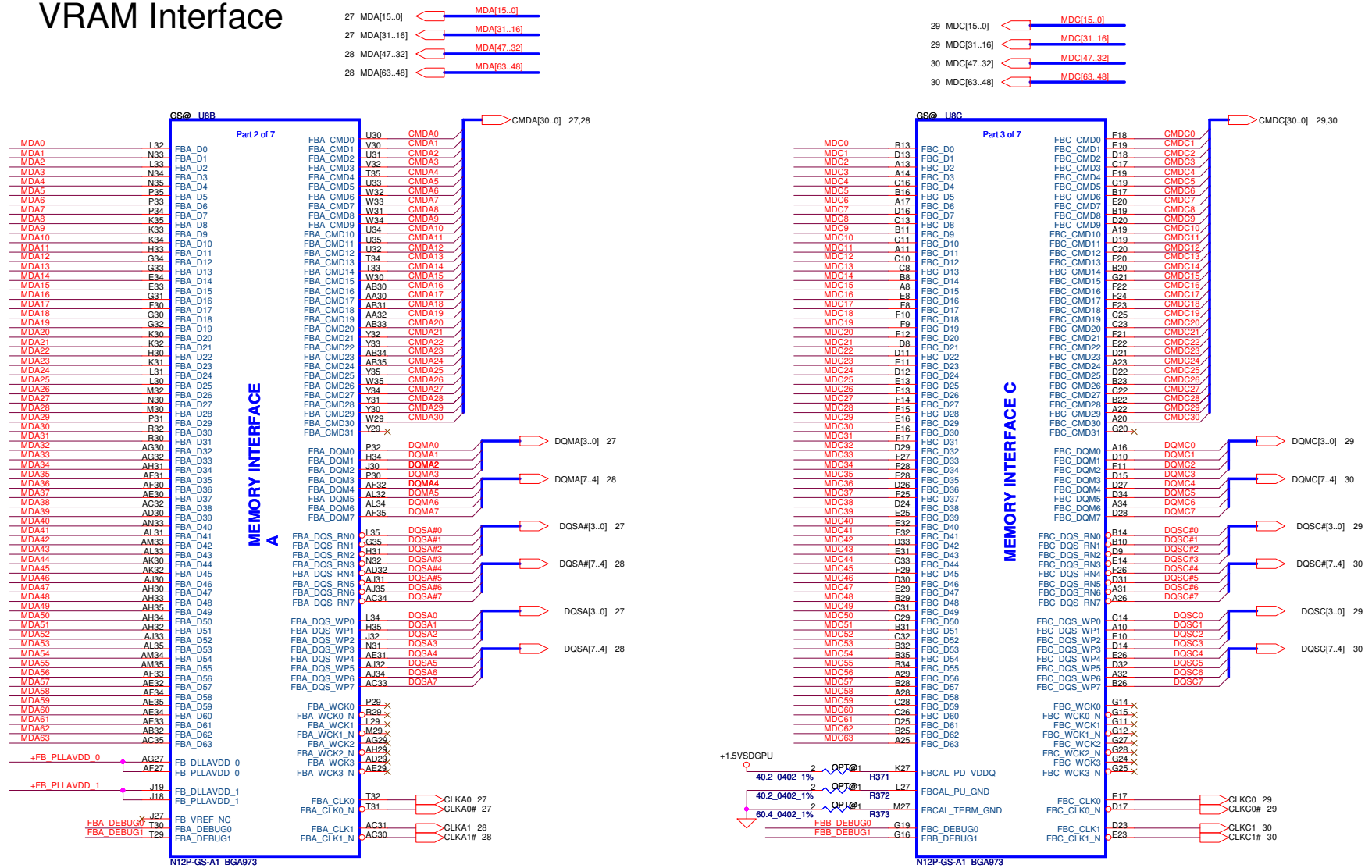


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                 |            | Compal Secret Data |            | Compal Electronics, Inc.              |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|---------------------------------------|-----------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                             | 2009/12/01 | Deciphered Date    | 2010/12/31 | Title                                 | PCH (9/9) VSS               |
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|                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Date:<br>Wednesday, February 16, 2011 | Rev<br>0.2                  |
|                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Sheet<br>21                           | of<br>59                    |

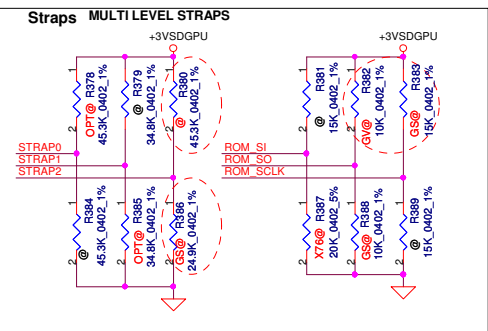
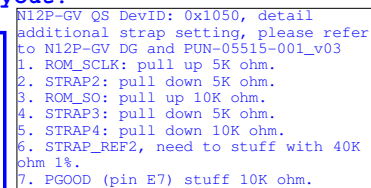




# VRAM Interface



11/8, For GB2-128(GS) & GB2b-128(GV) colayout.  
the circuit is for GB2b-128(GV-B) package.



| N11P-GS                           | strap0   | strap1   | strap2                   | ROM_SI   | ROM_SO             | ROM_SCLK                |
|-----------------------------------|----------|----------|--------------------------|----------|--------------------|-------------------------|
| 64MX16<br>Samsung<br>SA00004GS10  | H<br>45K | L<br>35K | L 25k(GS@)<br>L 5k (GV@) | L<br>20K | H (GV@)<br>L (GS@) | H 15K(GS@)<br>H 5K(GV@) |
| 64MX16<br>Hynix<br>SA000041S40    | H<br>45K | L<br>35K | L 25k(GS@)<br>L 5k (GV@) | L<br>15K | H (GV@)<br>L (GS@) | H 15K(GS@)<br>H 5K(GV@) |
| 128MX16<br>Samsung<br>SA00003M060 | H<br>45K | L<br>35K | L 25k(GS@)               | L<br>45K | H (GV@)<br>L (GS@) | H 15K(GS@)              |
| 128MX16<br>Hynix<br>SA00003VS10   | H<br>45K | L<br>35K | L 25k(GS@)               | L<br>35K | H (GV@)<br>L (GS@) | H 15K(GS@)              |

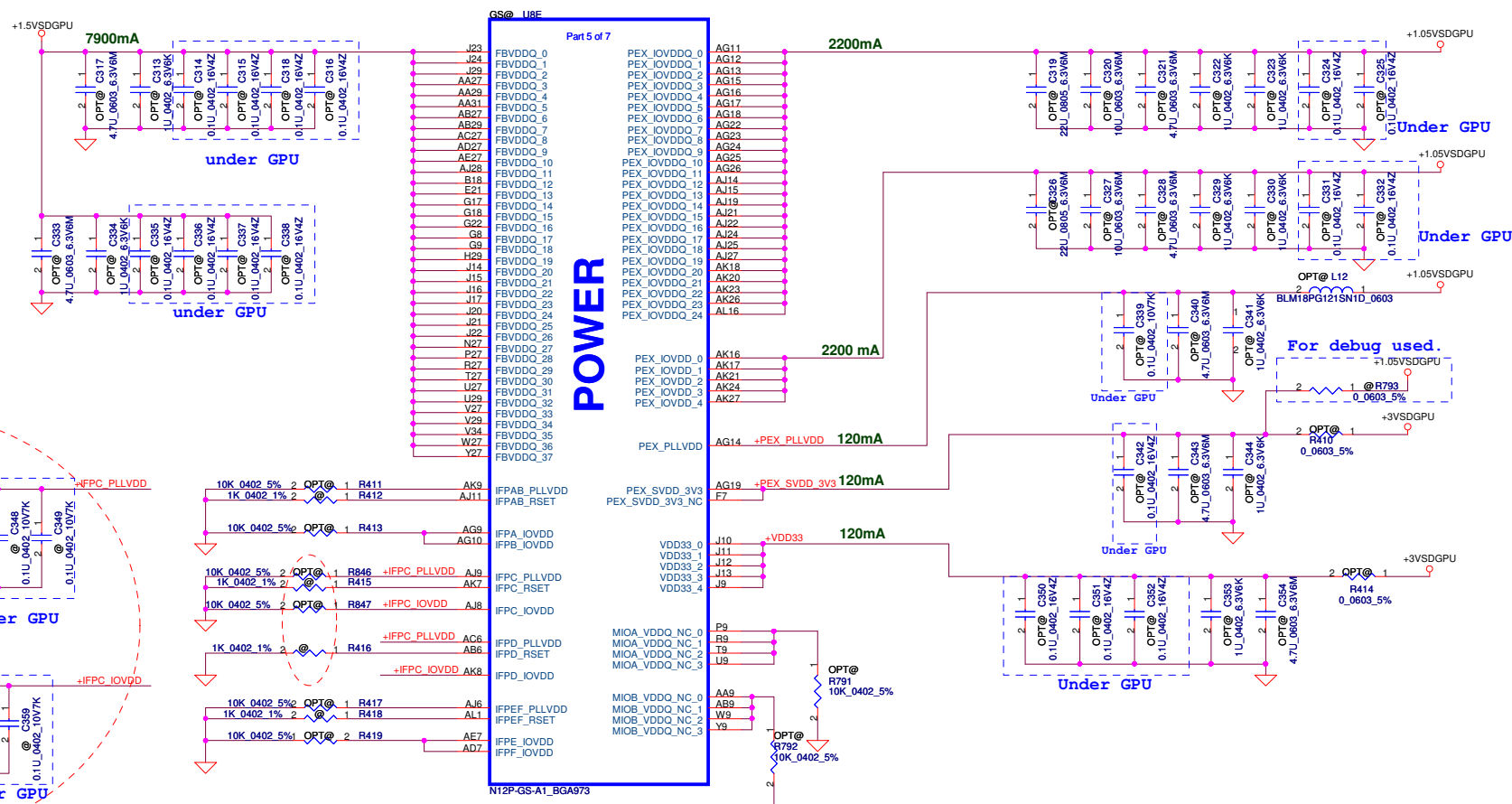
| Resistor Values | Pull-up to +3VS | Pull-down to Gnd |
|-----------------|-----------------|------------------|
| 5K              | 1000            | 0000             |
| 10K             | 1001            | 0001             |
| 15K             | 1010            | 0010             |
| 20K             | 1011            | 0011             |
| 25K             | 1100            | 0100             |
| 30K             | 1101            | 0101             |
| 35K             | 1110            | 0110             |
| 45K             | 1111            | 0111             |

| GPU     | DeviceID | ROM_SCLK    | STRAP2        |
|---------|----------|-------------|---------------|
| N12P-GS | 0x0DF4   | Pull up 15K | Pull down 25K |
| N12P-GE | 0x0DF5   | Pull up 15K | Pull down 30K |
| N12P-GV | 0x1050   | Pull up 5K  | Pull down 5K  |

|                                                           |       |      |                        |
|-----------------------------------------------------------|-------|------|------------------------|
| Hynix (900MHZ)<br>64MX16 H5TQ1G63DFR-11C<br>SA000041S40   | 512MB | 0010 | PD 15K (SD034150280)   |
|                                                           | 1GB   | 0010 | PD 15K (SD034150280)   |
| Hynix 2G<br>128MX16 H5TQ2G63BFR-12C<br>SA00003VS10        | 2GB   | 0110 | PD 34.8k (SD034348280) |
| Samsung (900MHZ)<br>64MX16 K4W1G1646G-BC11<br>SA00004GS10 | 512MB | 0011 | PD 20K (SD028200280)   |
|                                                           | 1GB   | 0011 | PD 20K (SD028200280)   |
| Samsung 2G<br>128M16 K4W2G1646C-HC12<br>SA00003MQ60       | 2GB   | 0111 | PD 45.3K (SD034453280) |

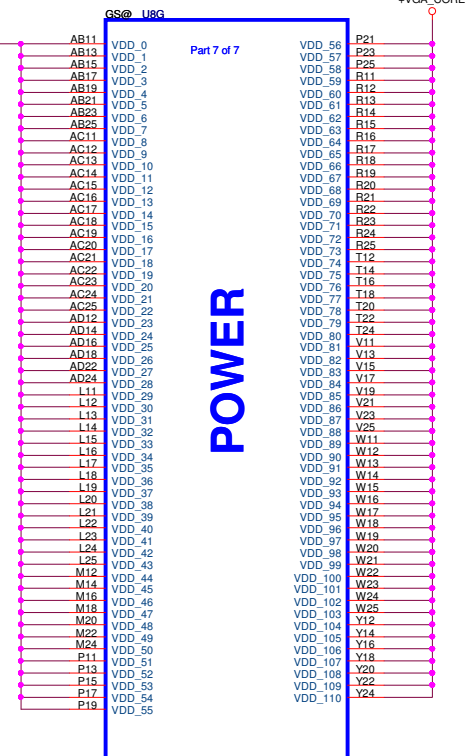
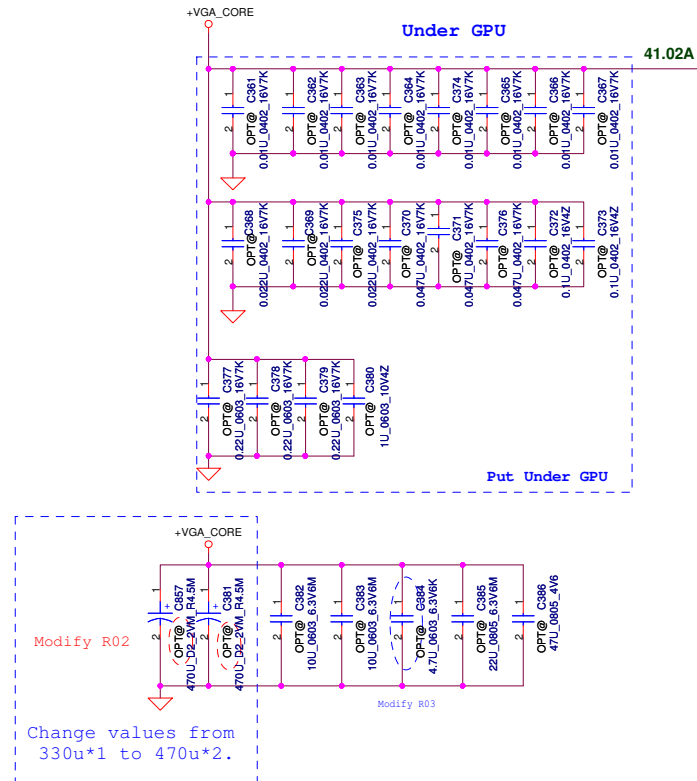
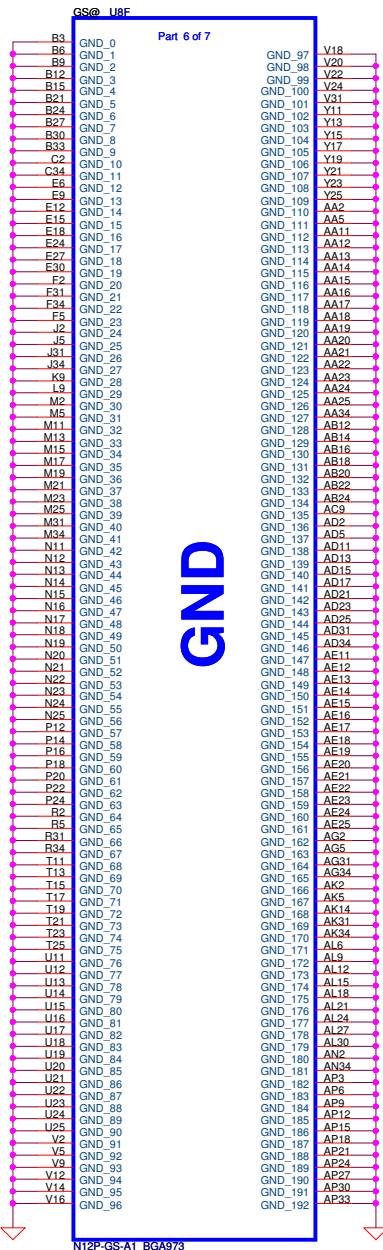
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|-------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |       |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2009/11/23 | Deciphered Date    | 2010/11/23 | Title                    | N12P LVDS 3/9                |       |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Customer                 | LA-7221P                     | 0.1   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 16, 2011 | Sheet |





Modify R03  
not support optimus 1.1

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2009/11/23 | Deciphered Date    | 2010/11/23 | Title                    | N12P POWER & GND 4/9         |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                   | LA-7212P                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 16, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 25 of 59                     |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/09/28 | Deciphered Date    | 2011/09/28 | Title                    |                              |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Size                     | Document Number              | Rev<br>0.2     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                   | LA-7221P                     |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 16, 2011 | Sheet 26 of 59 |

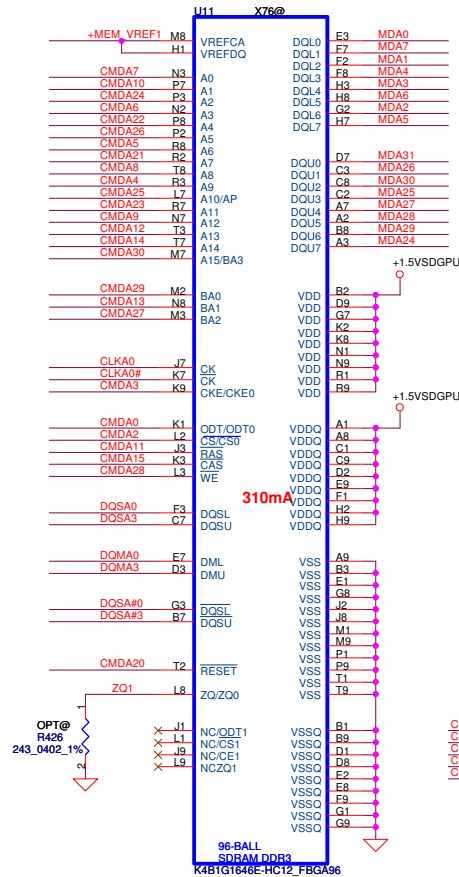
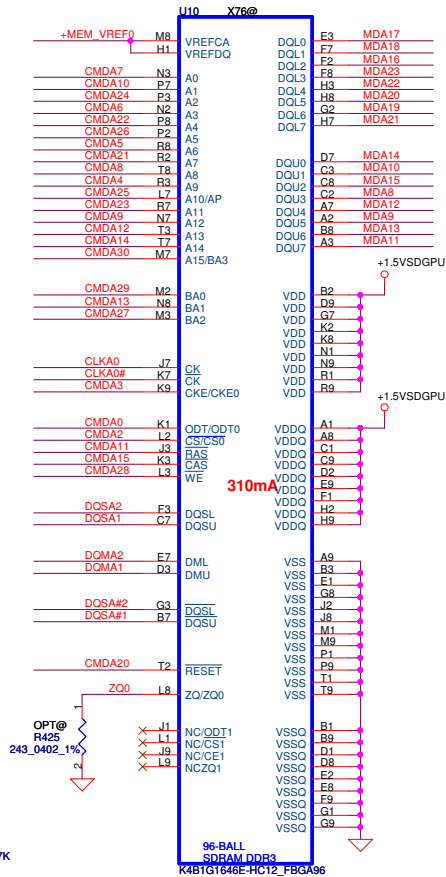
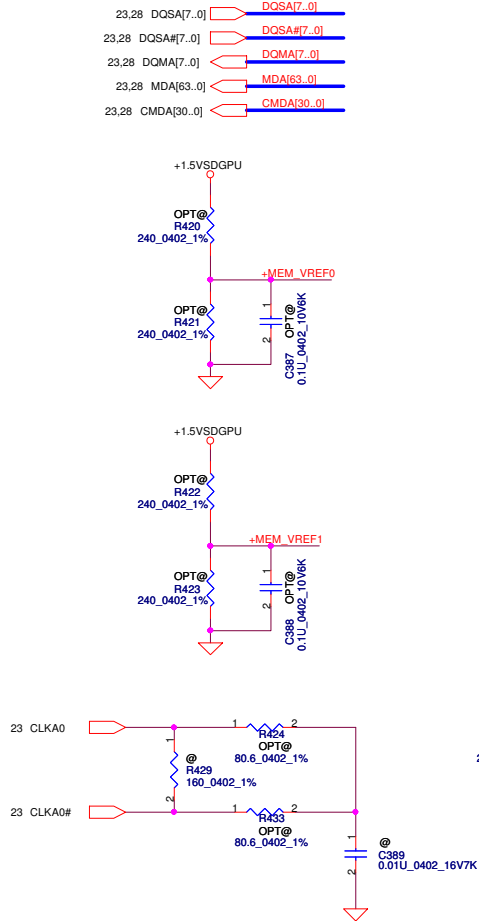
# VRAM DDR3 chips (GS=1GB, GV=512M)

128Mx16 DDR3\*8==>2GB (GS)

64Mx16 DDR3\*8==>1GB (GS)

64Mx8 DDR3\*4==>512M

(The 512M DDR3\*4 are used at MEMORY INTERFACE A for GV)



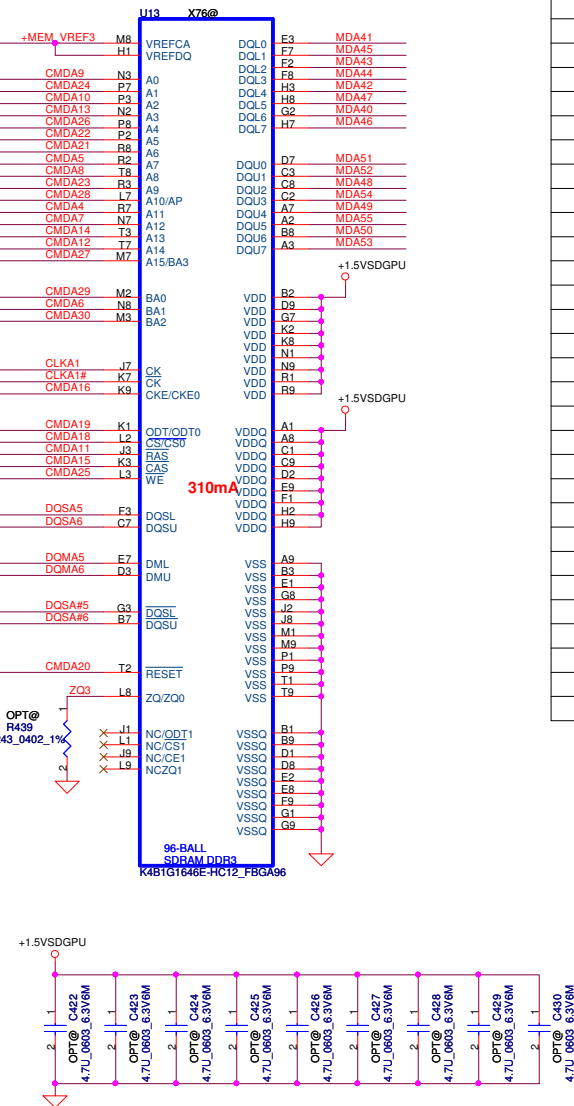
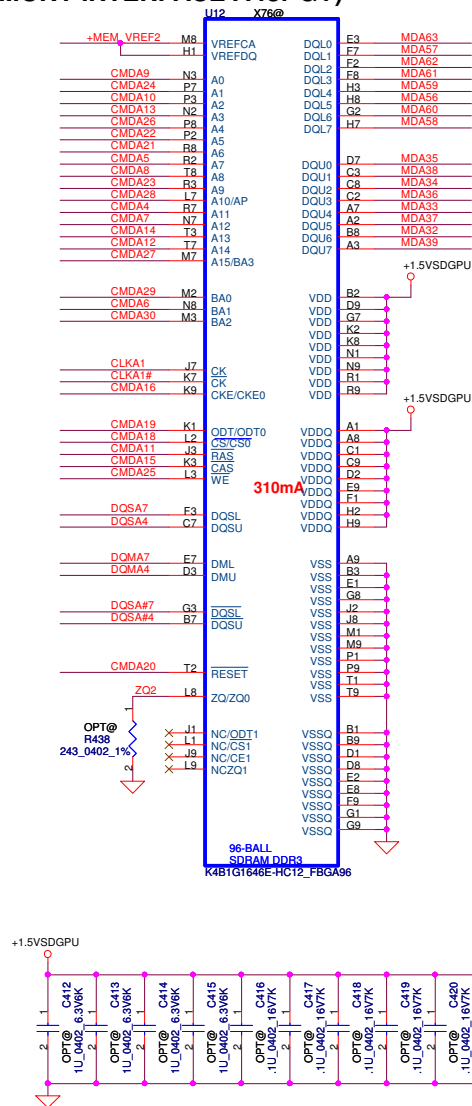
| **Mode E Address | Mode C Address | 0..31  | 32..63 |
|------------------|----------------|--------|--------|
| CMD3             | CMD0           | CKE_L  |        |
| CMD8             | CMD1           | A8     | A8     |
| CMD2             | CMD2           | CS0_L# |        |
| CMD21            | CMD3           | A7     | A6     |
| CMD24            | CMD4           | A2     | A1     |
| CMD23            | CMD5           | A11    | A9     |
| CMD26            | CMD6           | A5     | A4     |
| CMD7             | CMD7           | A0     | A12    |
| CMD15            | CMD8           | CAS*   | CAS*   |
| CMD13            | CMD9           | BA1    | A3     |
| CMD4             | CMD10          | A9     | A11    |
| CMD18            | CMD11          | CS0_H# |        |
| CMD29            | CMD12          | BA0    | BA0    |
| CMD27            | CMD13          | BA2    | A15    |
| CMD6             | CMD14          | A3     | BA1    |
| CMD17            | CMD15          | CS1_H# |        |
| CMD19            | CMD16          | ODT_H  |        |
| CMD22            | CMD17          | A4     | A5     |
| CMD12            | CMD18          | A13    | A14    |
| CMD28            | CMD19          | WE*    | A10    |
| CMD10            | CMD20          | A1     | A2     |
| CMD25            | CMD21          | A10    | WE*    |
| CMD9             | CMD22          | A12    | A0     |
| CMD1             | CMD23          | CS1_L# |        |
| CMD11            | CMD24          | RAS*   | RAS*   |
| CMD0             | CMD25          | ODT_L  |        |
| CMD5             | CMD26          | A6     | A7     |
| CMD16            | CMD27          |        | CKE_H  |
| CMD20            | CMD28          | RST    | RST    |
| CMD14            | CMD29          | A14    | A13    |
| CMD30            | CMD30          | A15    | BA2    |
| CMD31            | Not Available  |        |        |

| Command Bit | Default Pull-down |
|-------------|-------------------|
| ODTx        | 10k               |
| CKEx        | 10k               |
| RST         | 10k               |
| CS*         | No Termination    |

Samsung :  
SA00004GS10 (S IC D3 64M16 K4W1G1646G-BC11 FBGA ABO! )  
SA000047Q20 (S IC D3 128M16 K4W2G1646C-HC11 FBGA 96P ABO! )  
Hynix :  
SA000041S40 (S IC D3 64Mx16 H5TQ1G63DFR-11C FBGA ABO! )  
SA00003YO20 (S IC D3 128M16 H5TQ2G63BFR-11C FBGA ABO! )

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data | Compal Electronics, Inc.           |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------|-------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2009/11/23         | Deciphered Date                    | 2010/11/23        |
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| Size<br>Custom                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    | Document Number<br><b>LA-7221P</b> | Rev<br><b>0.2</b> |
| Date: Wednesday, February 16, 2011                                                                                                                                                                                                                                                                                                                                                                                                                            |                    | Sheet                              | 27 of 59          |

**(The 512M DDR3\*4 are used at MEMORY INTERFACE A for GV)**



| Mode E Address | Mode C Address | 0..31  | 32..63 |
|----------------|----------------|--------|--------|
| CMD3           | CMD0           | CKE_L  |        |
| CMD8           | CMD1           | A8     | A8     |
| CMD2           | CMD2           | CS0_L# |        |
| CMD21          | CMD3           | A7     | A6     |
| CMD24          | CMD4           | A2     | A1     |
| CMD23          | CMD5           | A11    | A9     |
| CMD26          | CMD6           | A5     | A4     |
| CMD7           | CMD7           | A0     | A12    |
| CMD15          | CMD8           | CAS*   | CAS*   |
| CMD13          | CMD9           | BA1    | A3     |
| CMD4           | CMD10          | A9     | A11    |
| CMD18          | CMD11          |        | CS0_H# |
| CMD29          | CMD12          | BA0    | BA0    |
| CMD27          | CMD13          | BA2    | A15    |
| CMD6           | CMD14          | A3     | BA1    |
| CMD17          | CMD15          |        | CS1_H# |
| CMD19          | CMD16          |        | ODT_H  |
| CMD22          | CMD17          | A4     | A5     |
| CMD12          | CMD18          | A13    | A14    |
| CMD28          | CMD19          | WE*    | A10    |
| CMD10          | CMD20          | A1     | A2     |
| CMD25          | CMD21          | A10    | WE*    |
| CMD9           | CMD22          | A12    | A0     |
| CMD1           | CMD23          | CS1_L# |        |
| CMD11          | CMD24          | RAS*   | RAS*   |
| CMD0           | CMD25          | ODT_L  |        |
| CMD5           | CMD26          | A6     | A7     |
| CMD16          | CMD27          |        | CKE_H  |
| CMD20          | CMD28          | RST    | RST    |
| CMD14          | CMD29          | A14    | A13    |
| CMD30          | CMD30          | A15    | BA2    |
| CMD31          | Not Available  |        |        |

# VRAM DDR3 chips (GS=1GB, GV=512M)

128Mx16 DDR3\*8==>2GB (GS)

64Mx16 DDR3\*8==>1GB (GS)

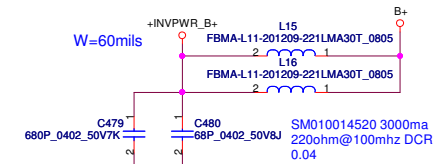
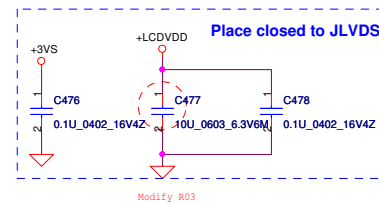
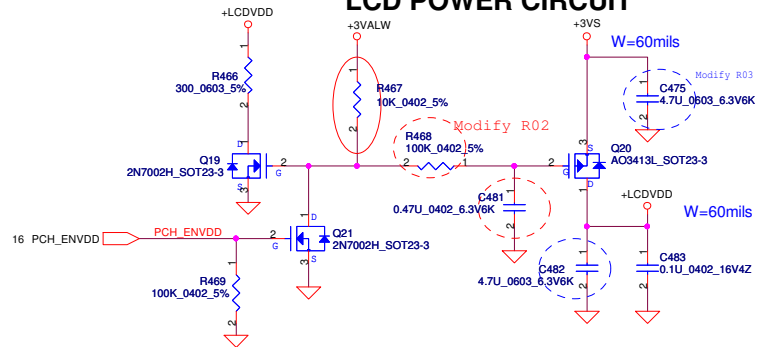
| Mode E Address | Mode C Address | 0..31  | 32..63 |
|----------------|----------------|--------|--------|
| CMD3           | CMD0           | CKE_L  |        |
| CMD8           | CMD1           | A8     | A8     |
| CMD2           | CMD2           | CS0_L# |        |
| CMD21          | CMD3           | A7     | A6     |
| CMD24          | CMD4           | A2     | A1     |
| CMD23          | CMD5           | A11    | A9     |
| CMD26          | CMD6           | A5     | A4     |
| CMD7           | CMD7           | A0     | A12    |
| CMD15          | CMD8           | CAS*   | CAS*   |
| CMD13          | CMD9           | BA1    | A3     |
| CMD4           | CMD10          | A9     | A11    |
| CMD18          | CMD11          |        | CS0_H# |
| CMD29          | CMD12          | BA0    | BA0    |
| CMD27          | CMD13          | BA2    | A15    |
| CMD6           | CMD14          | A3     | BA1    |
| CMD17          | CMD15          |        | CS1_H# |
| CMD19          | CMD16          |        | ODT_H  |
| CMD22          | CMD17          | A4     | A5     |
| CMD12          | CMD18          | A13    | A14    |
| CMD28          | CMD19          | WE*    | A10    |
| CMD10          | CMD20          | A1     | A2     |
| CMD25          | CMD21          | A10    | WE*    |
| CMD9           | CMD22          | A12    | A0     |
| CMD1           | CMD23          | CS1_L# |        |
| CMD11          | CMD24          | RAS*   | RAS*   |
| CMD0           | CMD25          | ODT_L  |        |
| CMD5           | CMD26          | A6     | A7     |
| CMD16          | CMD27          |        | CKE_H  |
| CMD20          | CMD28          | RST    | RST    |
| CMD14          | CMD29          | A14    | A13    |
| CMD30          | CMD30          | A15    | BA2    |
| CMD31          | Not Available  |        |        |
|                |                | LOW    | HIGH   |

|      | Command Bit | Default Pull-downs |
|------|-------------|--------------------|
| DDR3 | ODTx        | 10k                |
|      | CKEx        | 10k                |
|      | RST         | 10k                |
|      | CS*         | No Termination     |

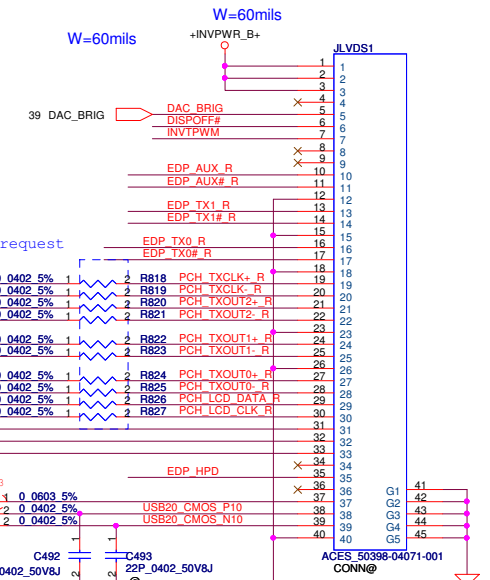
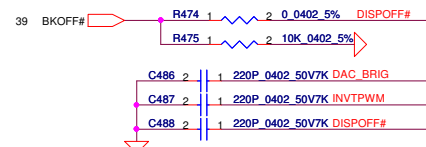
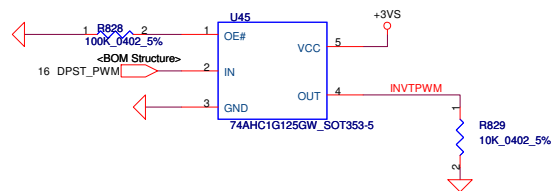
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                 |            | Compal Electronics, Inc. |                              |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|------------|--------------------------|------------------------------|----------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2009/11/23 | Deciphered Date | 2010/11/23 | Title                    | N12P DDR3 8/9                |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |            | Custom                   | LA-7221P                     | 0.2            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |            | Date:                    | Wednesday, February 16, 2011 | Sheet 29 of 59 |

128Mx16 DDR3\*8==>2GB (GS)  
64Mx16 DDR3\*8==>1GB (GS)

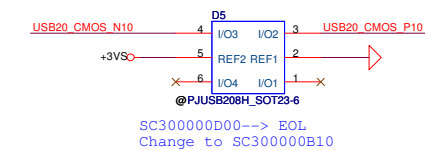
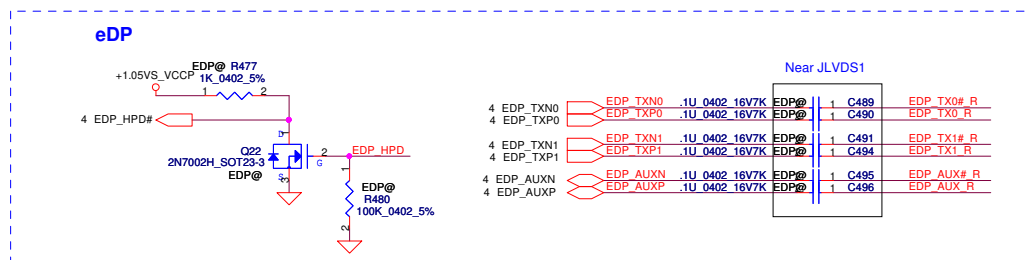
## LCD POWER CIRCUIT



**LCD/LED PANEL Conn.**

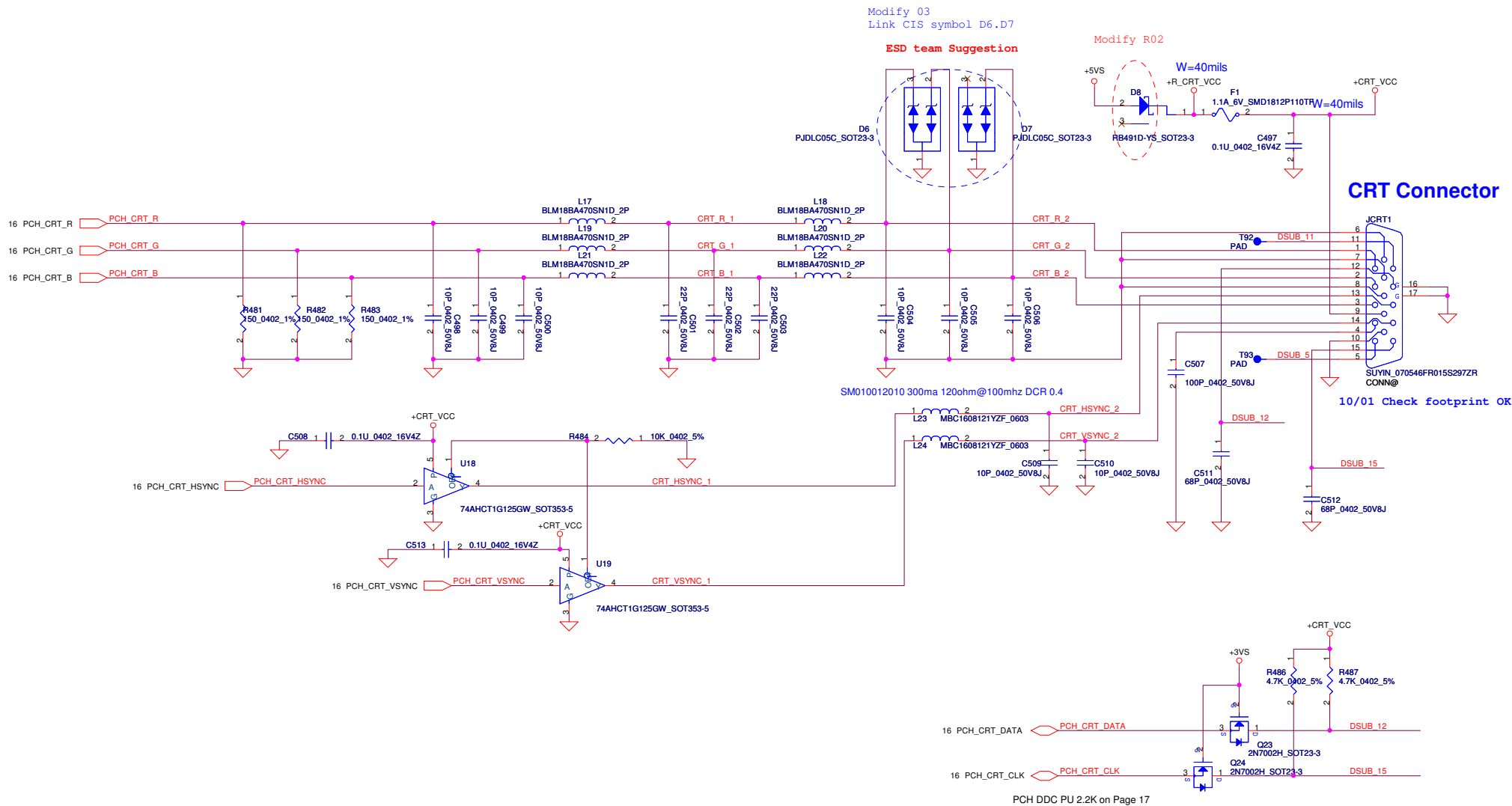


10/01 Check footprint OK



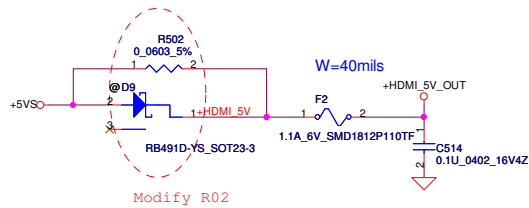
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                              |                 |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|------------------------------|-----------------|------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.     |                 |            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Size                         | Document Number | Rev<br>0.2 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Customer                     | A-7221P         |            |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Wednesday, February 16, 2011 | ISheet 31 of 59 |            |





|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                              |  |            |  |          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|------------------------------|--|------------|--|----------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                              |  |            |  |          |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2009/08/01         |  | Deciphered Date |  | 2010/08/01               |  | Title                        |  |            |  |          |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Size                     |  | Document Number              |  | Rev<br>0.2 |  |          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Custom                   |  | LA-7221P                     |  |            |  |          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Date                     |  | Wednesday, February 16, 2011 |  | Sheet      |  | 32 of 59 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                              |  |            |  |          |  |





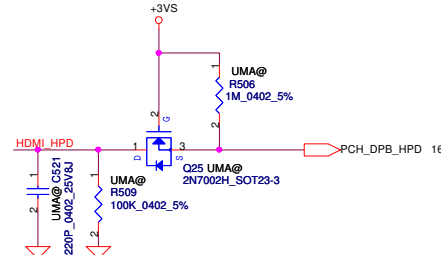
### UMA & Optimus 1.0

|               |      |      |   |   |                |           |
|---------------|------|------|---|---|----------------|-----------|
| 16 PCH_DPB_N0 | C515 | UMA@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX2- |
| 16 PCH_DPB_P0 | C516 | UMA@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX2+ |
| 16 PCH_DPB_N1 | C517 | UMA@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX1- |
| 16 PCH_DPB_P1 | C518 | UMA@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX1+ |
| 16 PCH_DPB_N2 | C519 | UMA@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX0- |
| 16 PCH_DPB_P2 | C520 | UMA@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX0+ |
| 16 PCH_DPB_N3 | C522 | UMA@ | 2 | 1 | .1U_0402_16V7K | HDMI_CLK- |
| 16 PCH_DPB_P3 | C523 | UMA@ | 2 | 1 | .1U_0402_16V7K | HDMI_CLK+ |

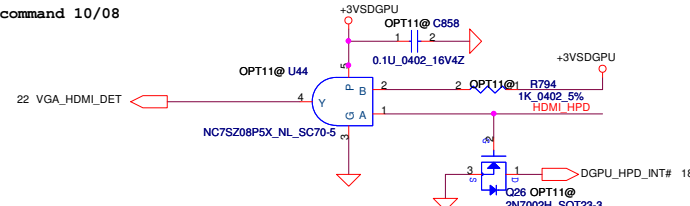
### Optimus 1.1

|                   |      |        |   |   |                |           |
|-------------------|------|--------|---|---|----------------|-----------|
| 24 VGA_HDMI_TXD2- | C524 | OPT11@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX2- |
| 24 VGA_HDMI_TXD2+ | C525 | OPT11@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX2+ |
| 24 VGA_HDMI_TXD1- | C526 | OPT11@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX1- |
| 24 VGA_HDMI_TXD1+ | C527 | OPT11@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX1+ |
| 24 VGA_HDMI_TXD0- | C528 | OPT11@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX0- |
| 24 VGA_HDMI_TXD0+ | C529 | OPT11@ | 2 | 1 | .1U_0402_16V7K | HDMI_TX0+ |
| 24 VGA_HDMI_TXC-  | C530 | OPT11@ | 2 | 1 | .1U_0402_16V7K | HDMI_CLK- |
| 24 VGA_HDMI_TXC+  | C531 | OPT11@ | 2 | 1 | .1U_0402_16V7K | HDMI_CLK+ |

### UMA/OPT1.0

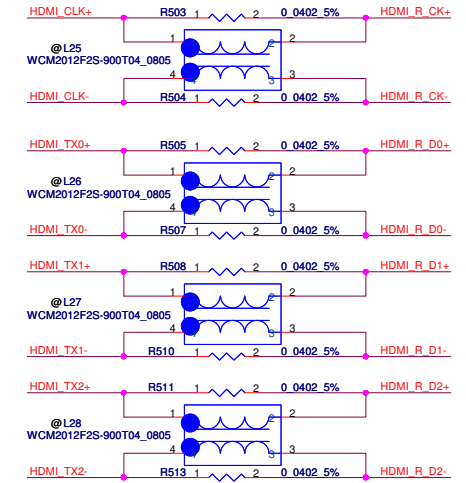


### NVIDIA Recommend 10/08 OPT1.1



Modify 03  
Link CIS symbol L25.L26.L27.L28

SM070001310 400ma 90ohm@100mhz DCR 0.3

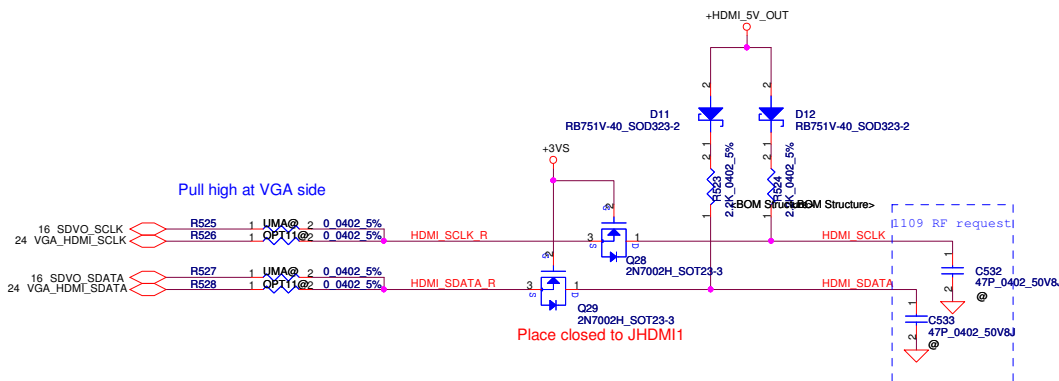


Optimus 1.0--> 680\_0402\_5%  
Optimus 1.1--> 499\_0402\_1%

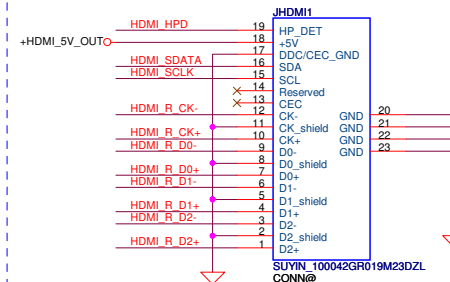
### Optimus 1.1 Option Component

|      |   |        |     |         |
|------|---|--------|-----|---------|
| R515 | 2 | OPT11@ | 499 | 0402_1% |
| R516 | 2 | OPT11@ | 499 | 0402_1% |
| R517 | 2 | OPT11@ | 499 | 0402_1% |
| R518 | 2 | OPT11@ | 499 | 0402_1% |
| R519 | 2 | OPT11@ | 499 | 0402_1% |
| R520 | 2 | OPT11@ | 499 | 0402_1% |
| R521 | 2 | OPT11@ | 499 | 0402_1% |
| R522 | 2 | OPT11@ | 499 | 0402_1% |

Pull high at VGA side



### HDMI connector

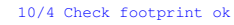


10/13 Link CIS symbol OK!

Modify R02  
SDVO\_CTRL.DATA strap pull high at PCH side

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data           |                 | Compal Electronics, Inc. |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------|--------------------------|-----------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2009/08/01                   | Deciphered Date | 2010/08/01               | Title     |
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| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Custom                       | Document Number | LA-7221P                 | Rev       |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Wednesday, February 16, 2011 | Sheet           | 33                       | of 59     |

## CL 4.0 mm



Modify R03

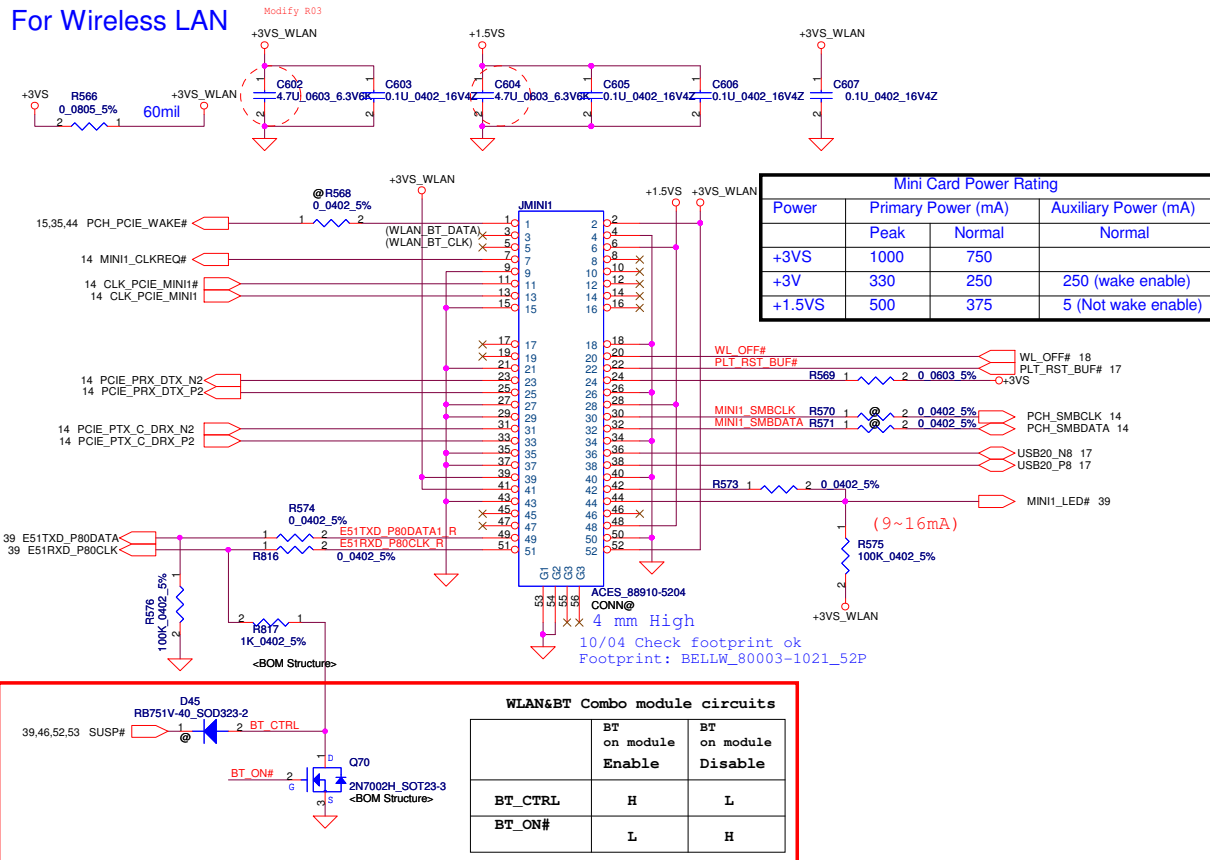


|                |                                    |                   |
|----------------|------------------------------------|-------------------|
| Size<br>Custom | Document Number<br><b>LA-7221P</b> | Rev<br><b>0.2</b> |
| Date:          | Wednesday, February 16, 2011       | Sheet 34 of 59    |

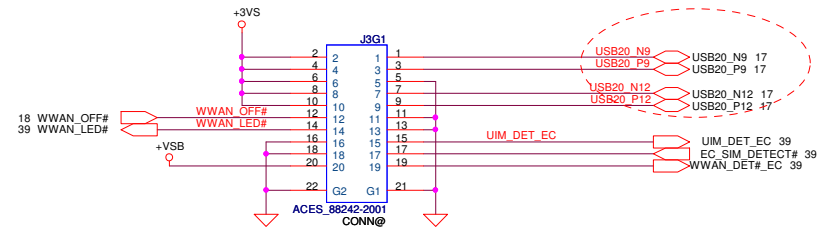
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                                |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------------|-------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.       |       |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/08/10 | Deciphered Date    | 2010/08/01 | Title<br>LAN Board AR8151 RevB |       |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Customer Number<br>LA-7221P    | 0.2   |
| Date: Wednesday, February 16, 2011                                                                                                                                                                                                                                                                                                                                                                                                                            |            | Sheet              |            | 35                             | of 59 |



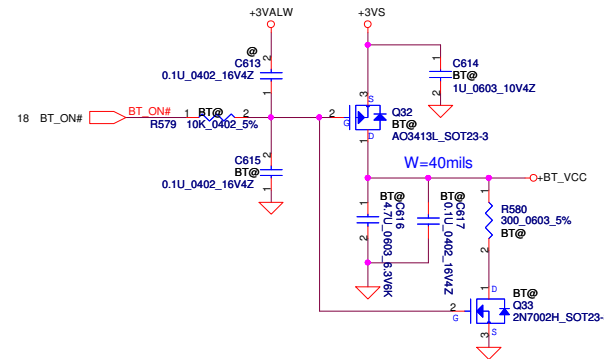
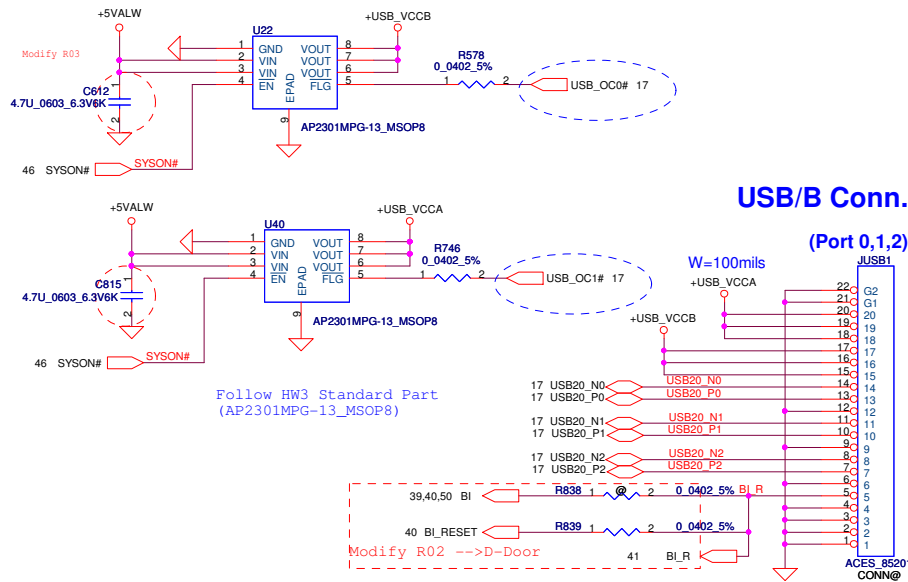
## For Wireless LAN



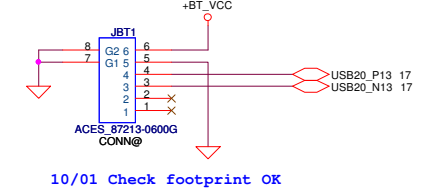
## For 3G / GPS To 3G Module Connect



Modify R02  
Change 3G Power to 3G board  
Change L49 . L50.R764.R765.R766.R767 to 3G Board. (RF suggestion )

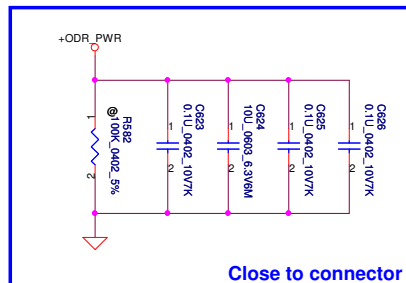


## BT Conn. (Port 13)



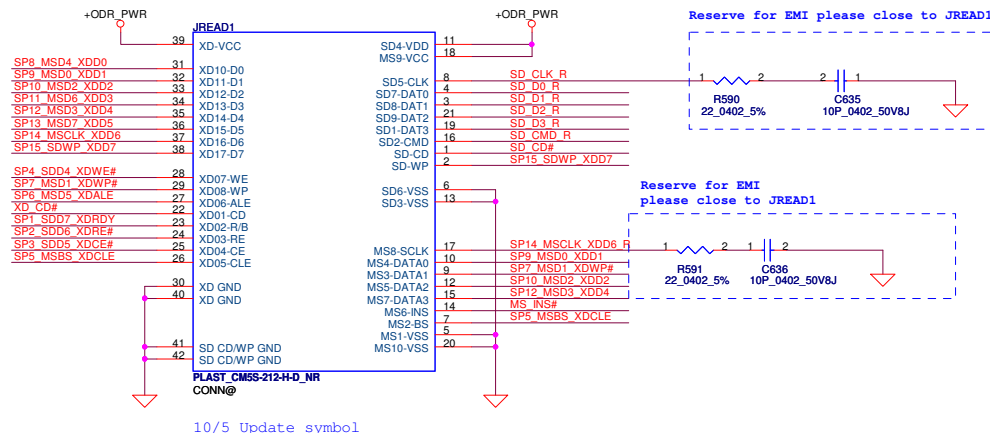
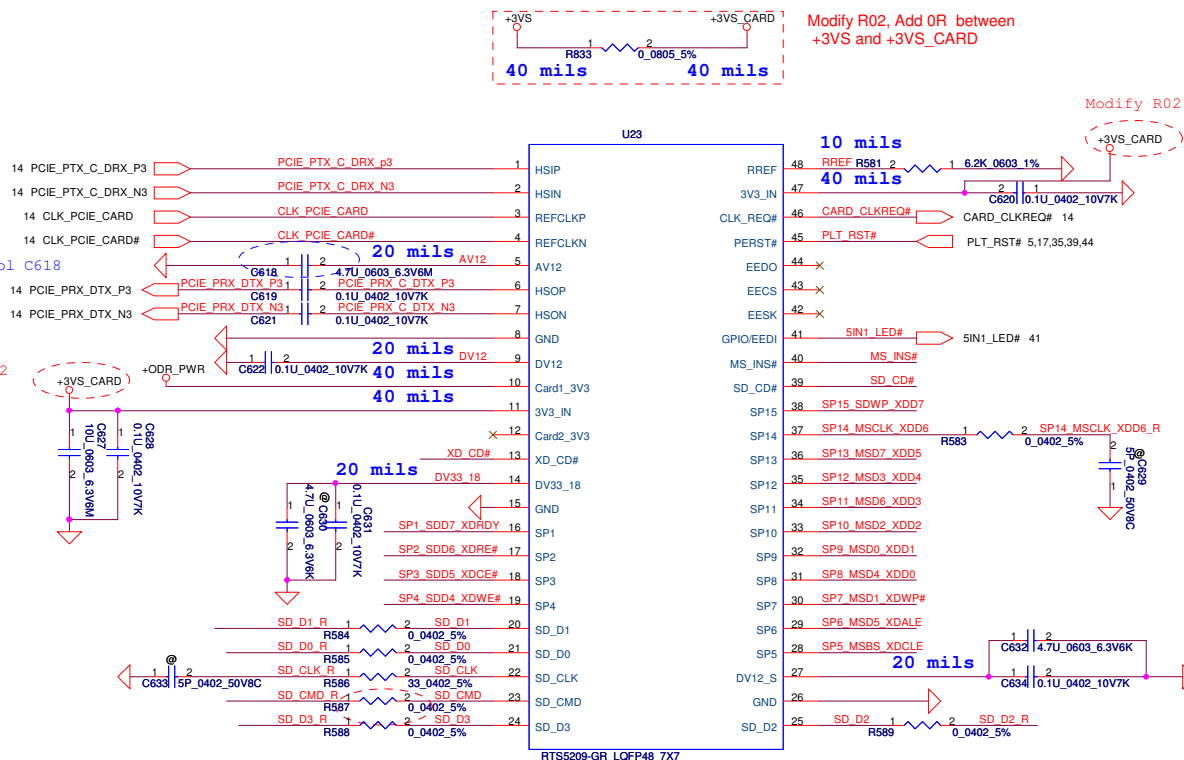
|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                    |  |                                    |  |                              |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|------------------------------------|--|------------------------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Compal Secret Data |  | Compal Electronics, Inc.           |  |                              |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 2008/08/10         |  | Deciphered Date                    |  | 2010/08/01                   |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                    |  | MINI CARD (WLAN & TV-Tuner)/USB/BT |  |                              |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                    |  | Size                               |  | Document Number              |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                    |  | Customer                           |  | LA-7221P                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                    |  | Date:                              |  | Wednesday, February 16, 2011 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                    |  | Sheet                              |  | 37 of 59                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                    |  |                                    |  | 0.2                          |  |

# Card Reader



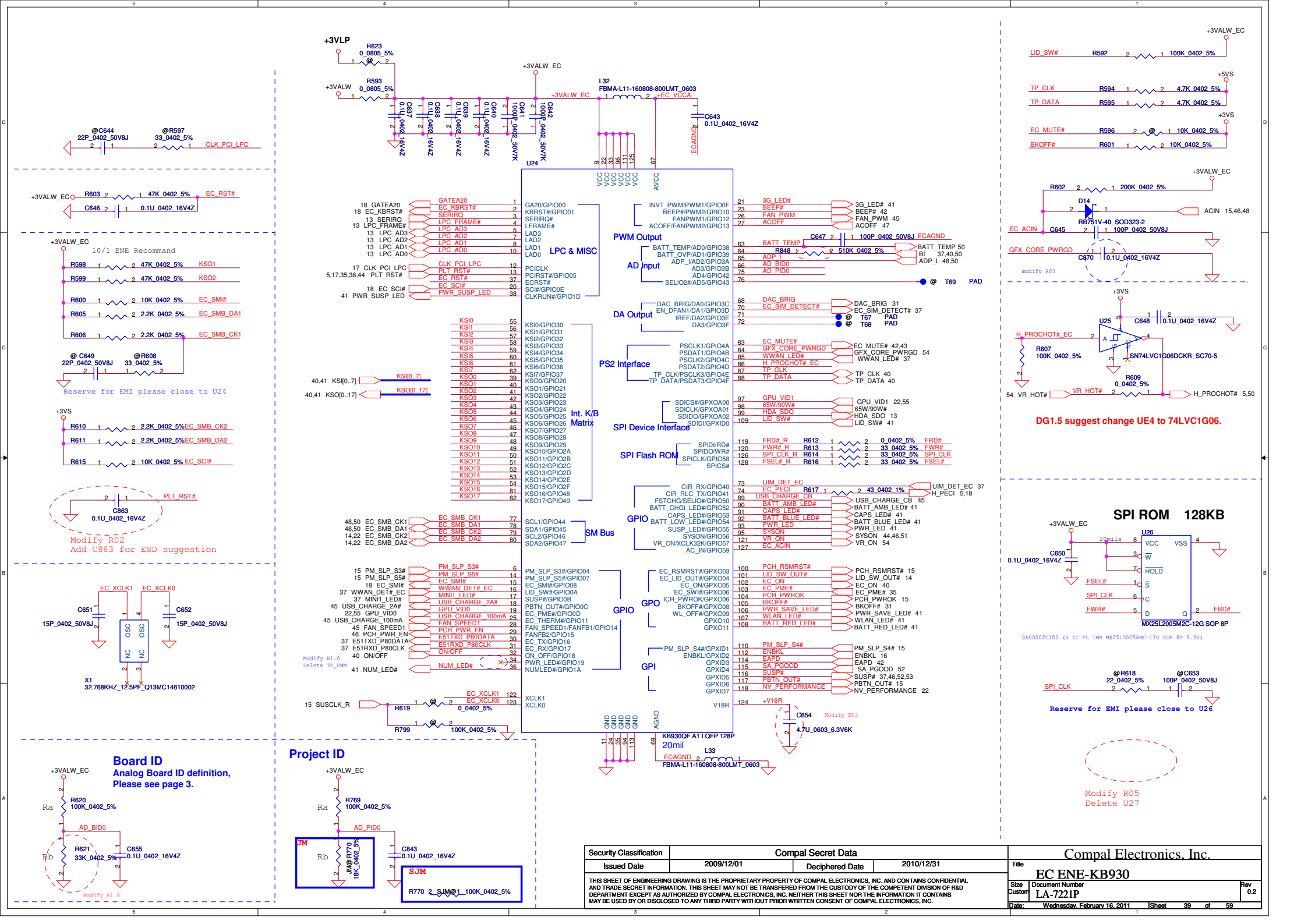
Modify 03  
Link CIS symbol C618

Modify R02



10/5 Update symbol

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/08/10 | Deciphered Date    | 2010/08/01 | Title                    |                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Size                     | Document Number              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                   | LA-7221P                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Wednesday, February 16, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 38 of 59                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.2                          |



Modify R02  
KB connector use JKB2,JKB1 reserved.



10/04 Check footprint ok



ON/OFF switch



Modify R02

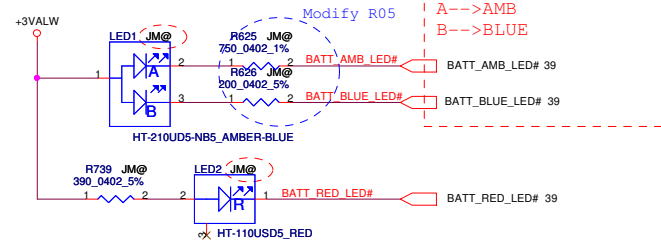


|       |                                 |
|-------|---------------------------------|
| Title | I/O Port & K/B Connector/PWR OK |
|-------|---------------------------------|

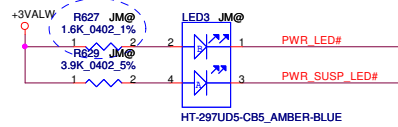


## Battery LED (JM)

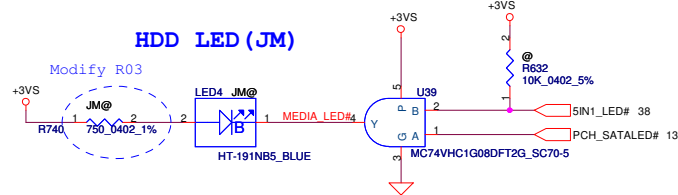
Side View LED with Blue/Amber/Red Color



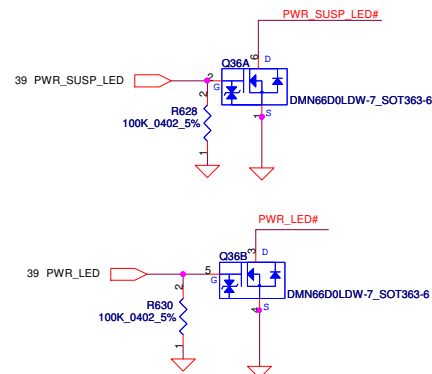
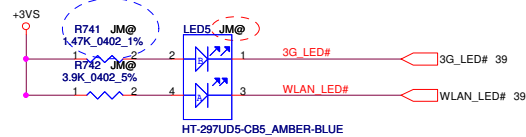
## Power LED (JM)



## HDD LED (JM)

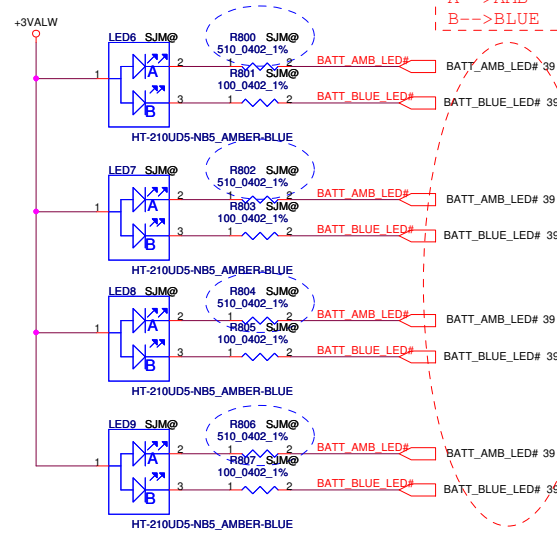


## 3G/Wireless LED (JM)

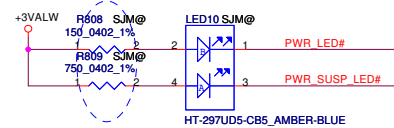


## Battery LED (SJM)

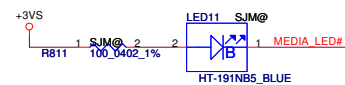
Modify R05



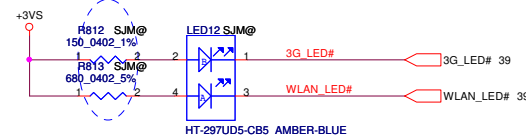
## Power LED (SJM)



## HDD LED (SJM)



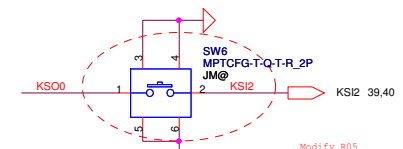
## 3G/Wireless LED (SJM)



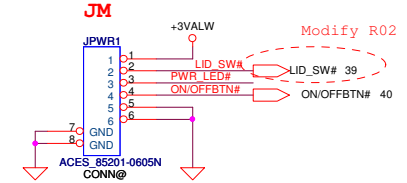
| LED Status | Power/SUS |      | Battery |        | 3G/WLAN |      | BlueTooth | ACIN |
|------------|-----------|------|---------|--------|---------|------|-----------|------|
|            | ON        | SUS  | Full    | Charge | 3G      | WLAN |           |      |
|            |           | Blue | Amber   | Blue   | Amber   | Blue | Amber     |      |

Modify R02  
LED\_HT-210UD5-NB5  
A-->AMB  
B-->BLUE

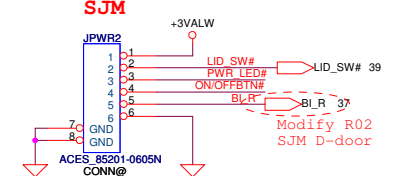
## Battery Indicator BTN (JM only)



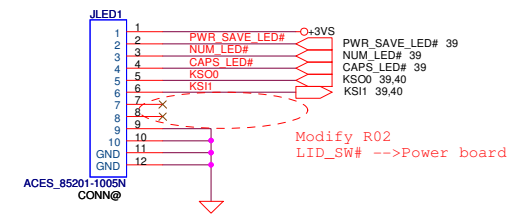
## PWR/B



## SJM



## LED Board (JM only)

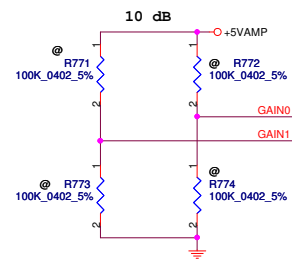


| KSO0 |               |
|------|---------------|
| KSI0 | Battery BTN#  |
| KSI1 | PWR SAVE BTN# |

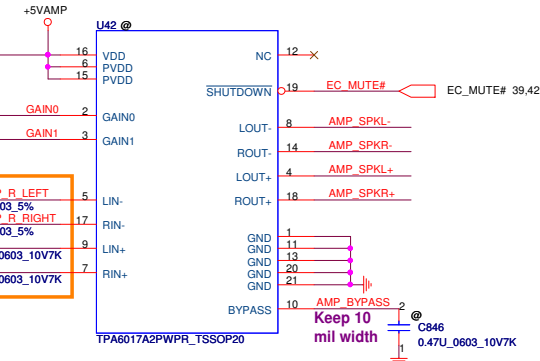
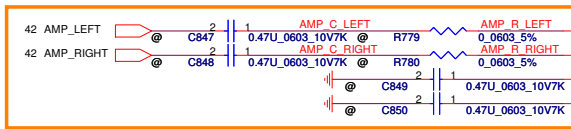
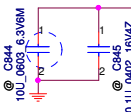
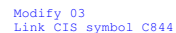
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |            |    |    |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|------------|----|----|----|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |            |    |    |    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/08/10 | Deciphered Date    | 2010/08/01 | Title                    |                              |            |    |    |    |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Size                     | Document Number              | Rev<br>0.2 |    |    |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Customer                 | LA-7221P                     |            |    |    |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 16, 2011 | Sheet      | 41 | of | 59 |



## Audio AMP

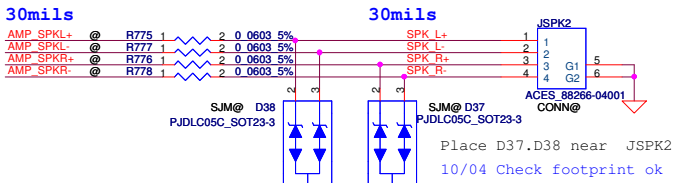


| GAIN0 | GAIN1 | AV(inv) | Ri  |
|-------|-------|---------|-----|
| 0     | 0     | 6dB     | 90k |
| 0     | 1     | 10dB    | 70k |
| 1     | 0     | 15.6dB  | 45k |
| 1     | 1     | 21.6dB  | 25k |



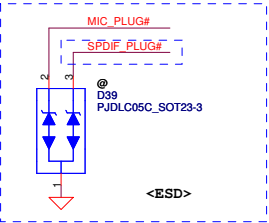
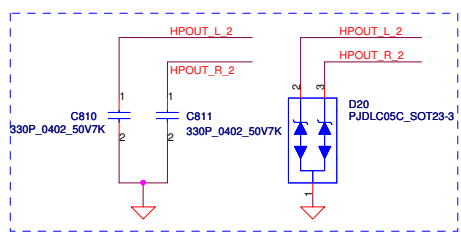
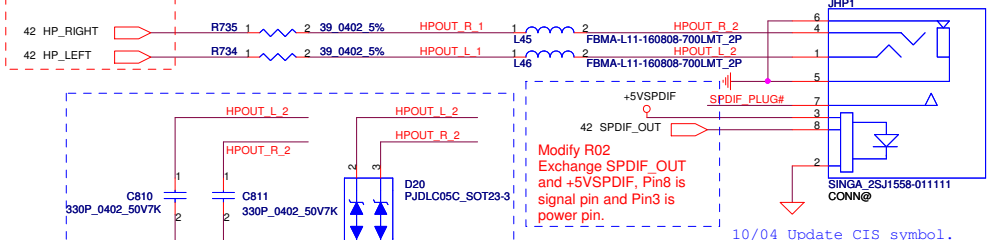
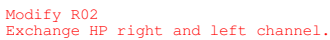
Int. Speaker Conn.

SJM

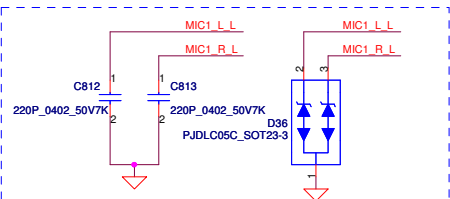
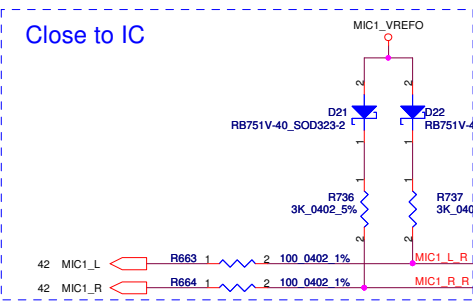


Modify 05 SJM don't use Audio AMP

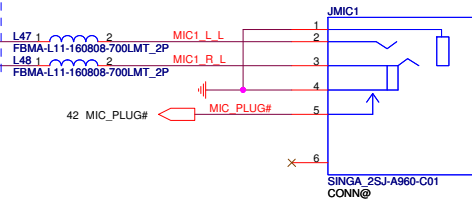
### Headphone Out/SPDIF



Close to IC

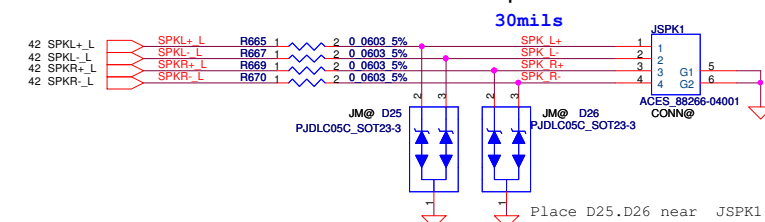


**MIC JACK**

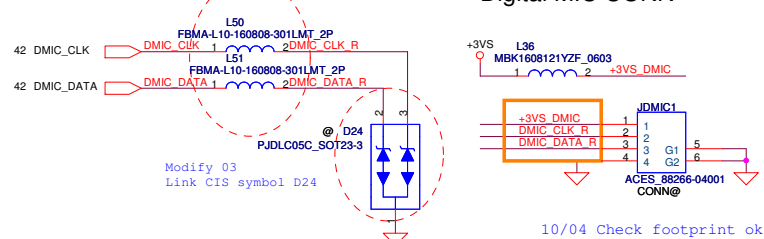


10/04 Check footprint ok  
Footprint:SINGA\_2SJ-0960-D06\_6P

## Int. Speaker Conn.



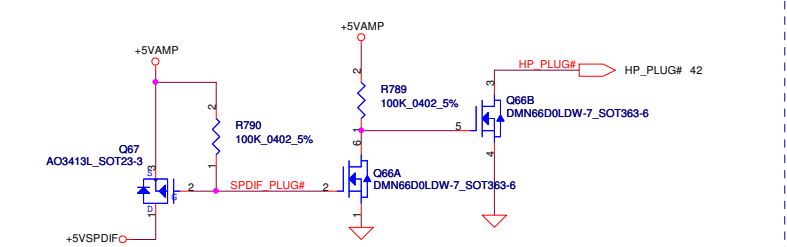
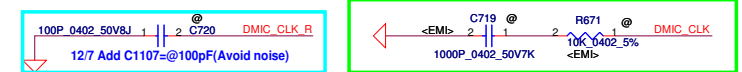
## Digital MIC CONN



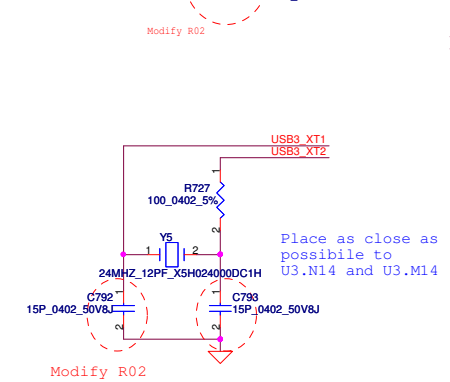
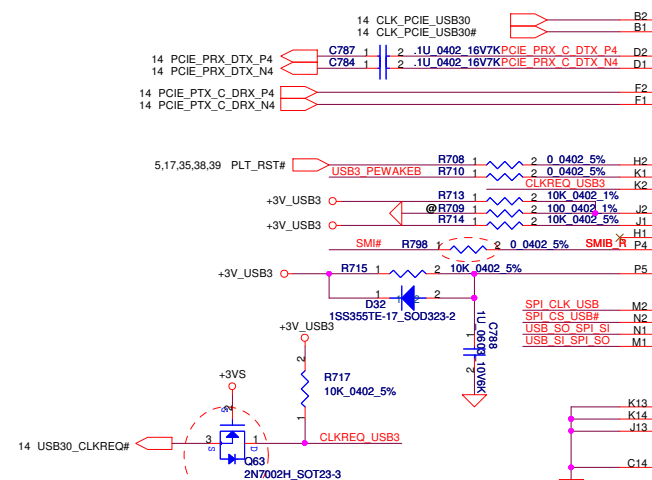
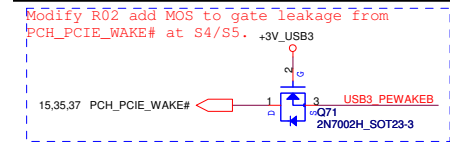
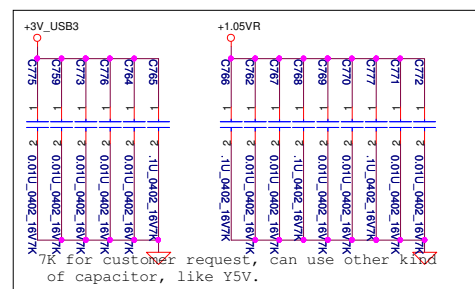
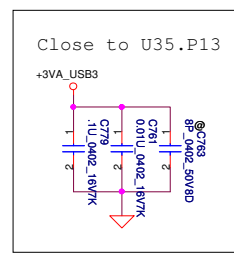
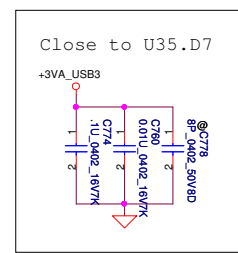
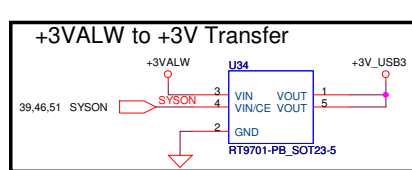
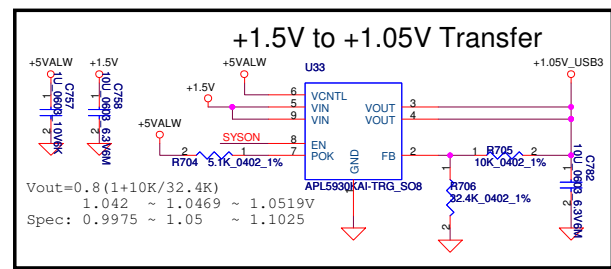
Modify R02

Modify 03  
Link CIS symbol D24

10/04 Check footprint ok



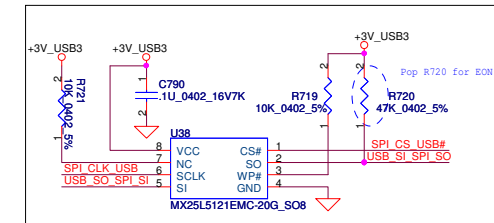
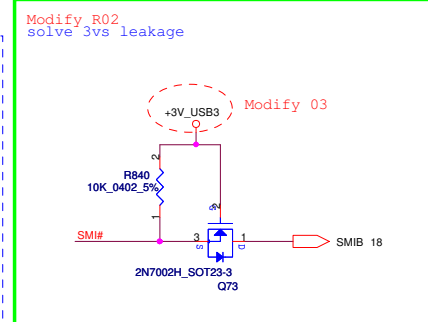
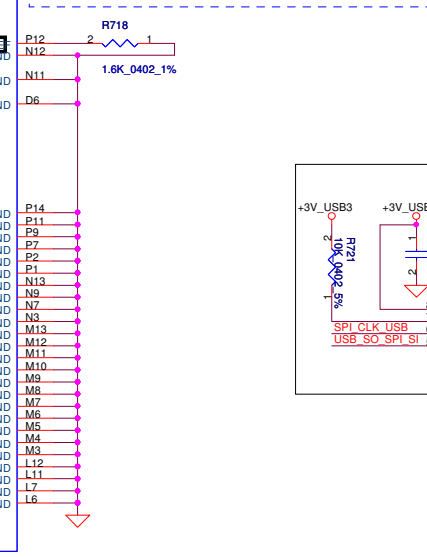
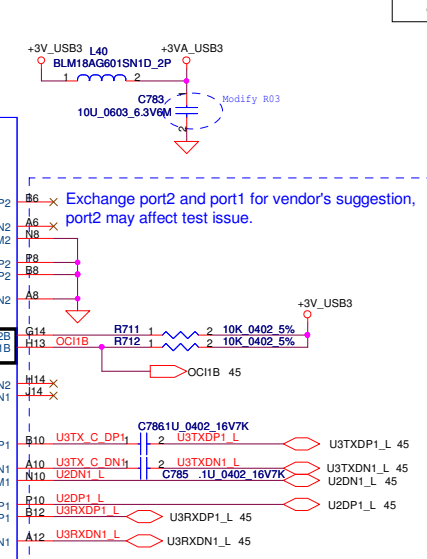
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                              |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|------------------------------|------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.     |                        |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/08/10 | Deciphered Date    | 2010/08/01 | Title                        | Amplifier & Audio Jack |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                       | LA-7221P               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                          | 0.2                    |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Wednesday, February 16, 2011 | Sheet 43 of 59         |



Pin compare table for support USB remote wakeup or not

|                           | AUXDET(Pin J2)         | CSEL(Pin P6) | CLK                                          |
|---------------------------|------------------------|--------------|----------------------------------------------|
| Support USB remote wakeup | pull high 10k to VDD33 | Tied to GND  | Must use 24MHz crystal: mount Y1,R19,C40,C41 |

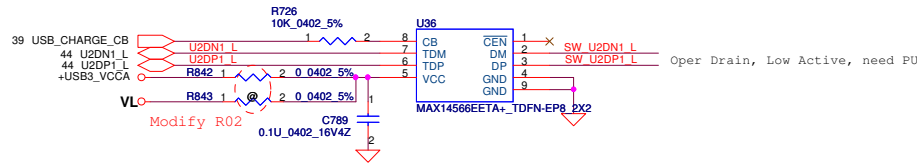
WWW.AliSaler.Com



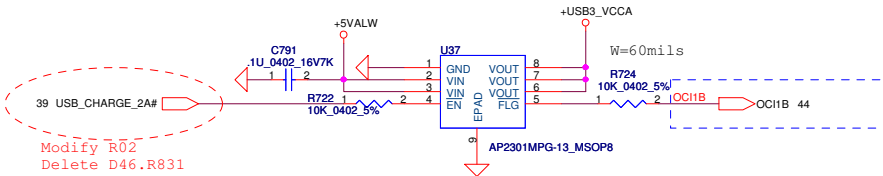
P/N: SA000048H00

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data | Document Number | Rev |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|-----|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/09/28         | LA-7221P        | 0.2 |
| Deciphered Date                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2011/09/28         |                 |     |
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| Date: Wednesday, February 16, 2011                                                                                                                                                                                                                                                                                                                                                                                                                            |                    | Sheet 44 of 59  |     |

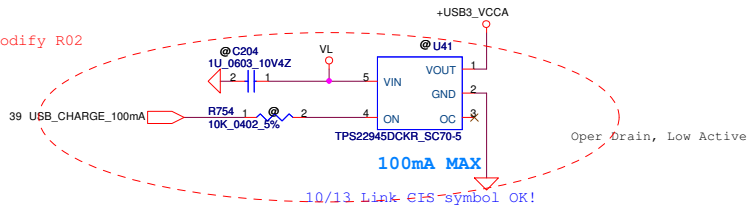
## USB Host Charger



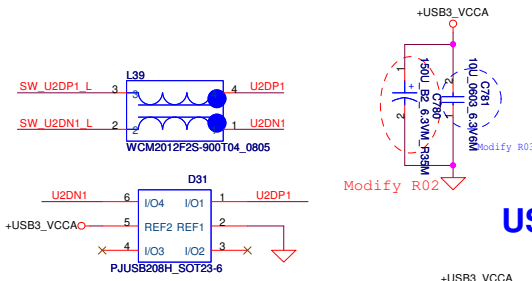
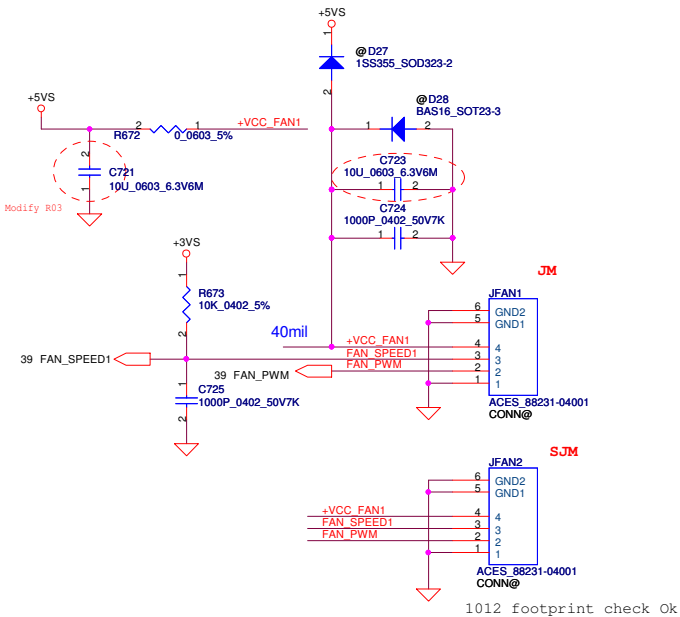
|      |                                              |
|------|----------------------------------------------|
| CB=0 | Auto detection charger identification active |
| CB=1 | Connect DP/DM to TDP/TDM                     |



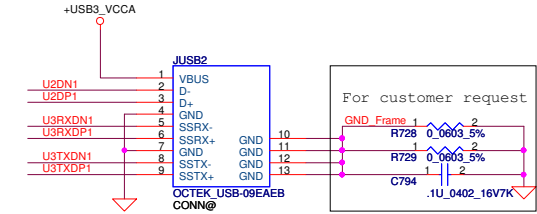
Modify R02



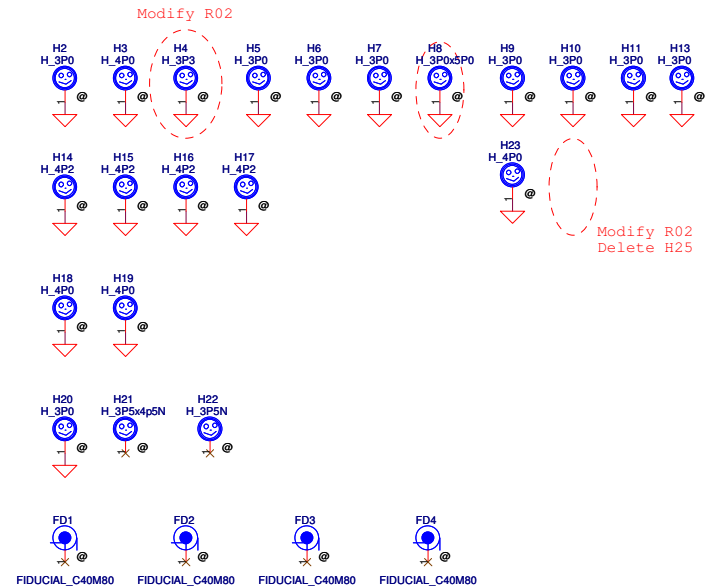
## FAN1 Conn



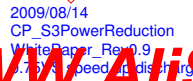
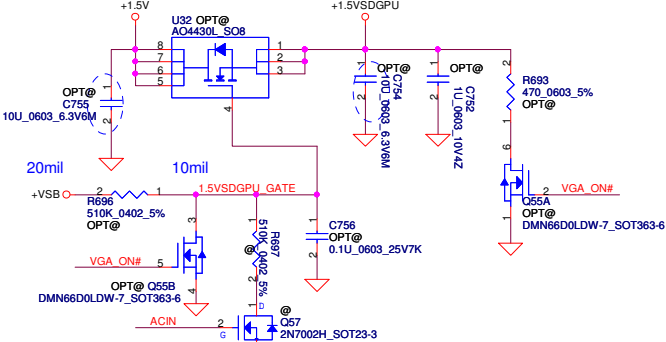
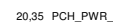
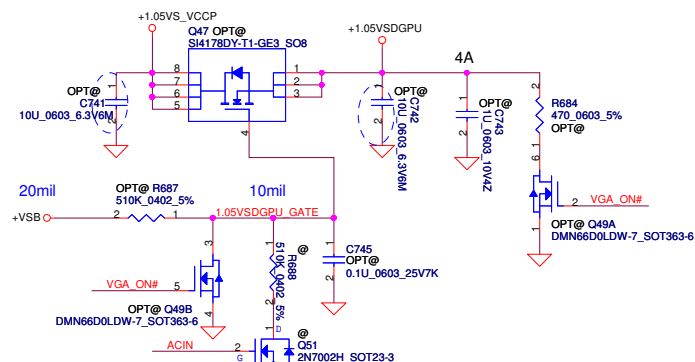
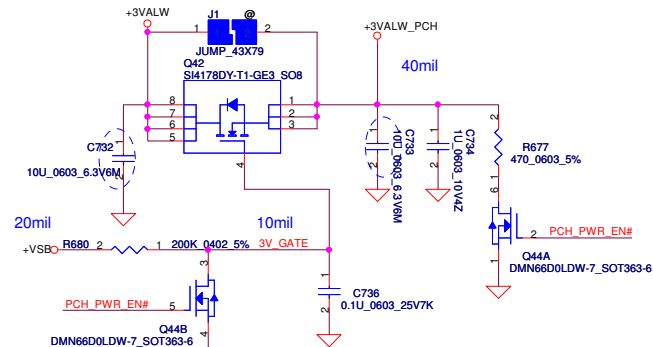
## USB3.0 Connector



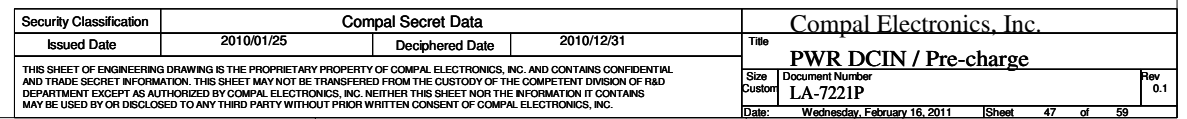
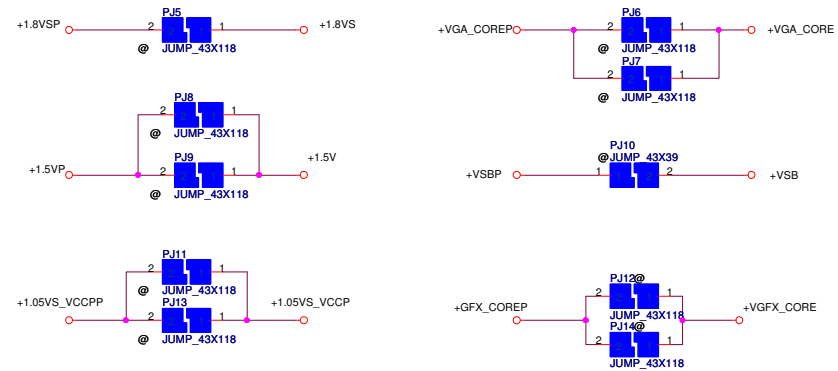
10/05 Update symbol .



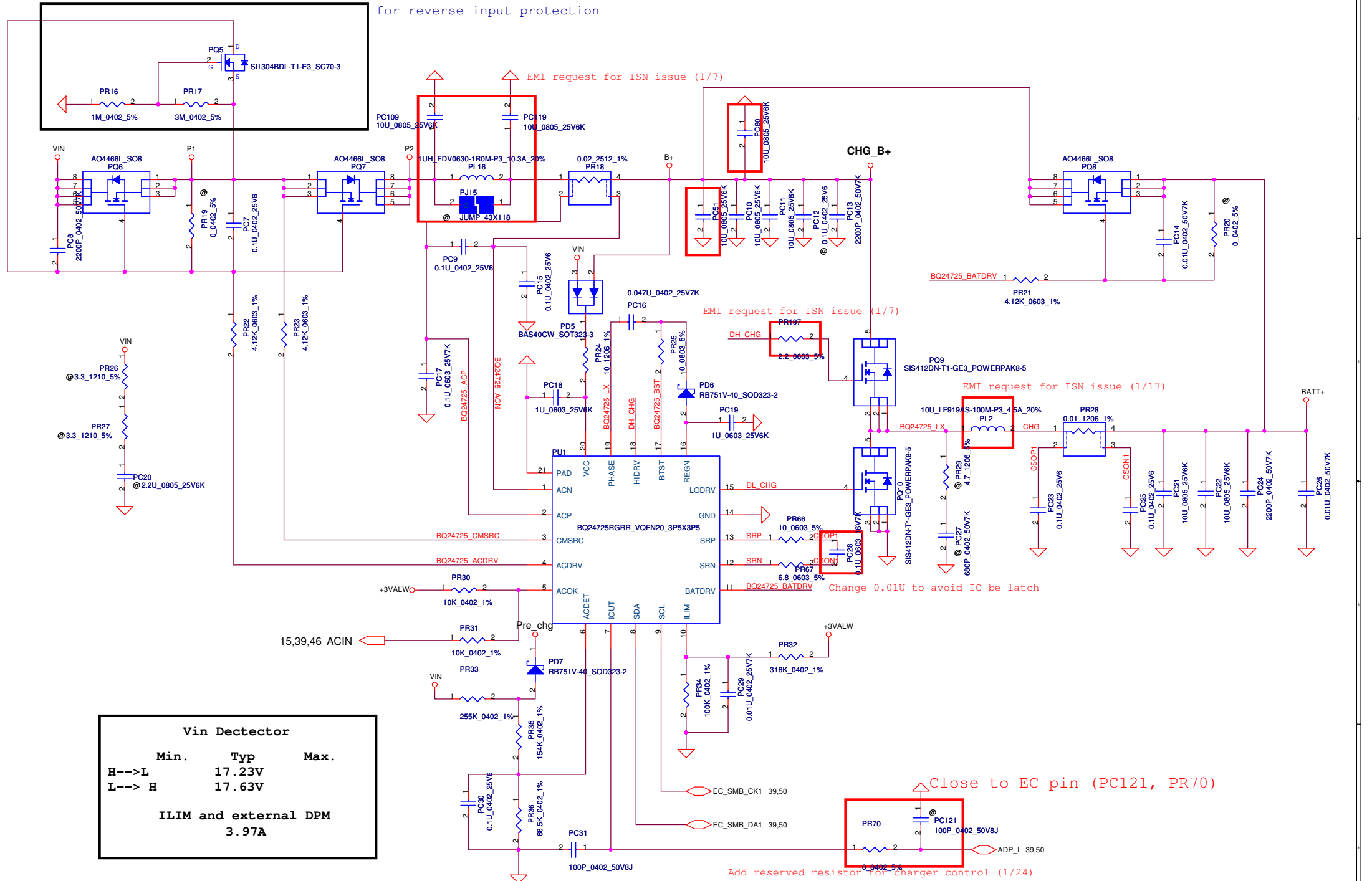
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                              |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                              |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/08/10         | Deciphered Date | 2010/08/01 | Title                    |                              |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Size                     | Document Number              | Rev            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Custom                   | LA-7221P                     | 0.2            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Wednesday, February 16, 2011 | Sheet 45 of 59 |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/09/28 | Deciphered Date    | 2011/09/28 | Title                    | DC Interface                 |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Customer                 | LA-7221P                     | 0.2            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 16, 2011 | Sheet 46 of 59 |





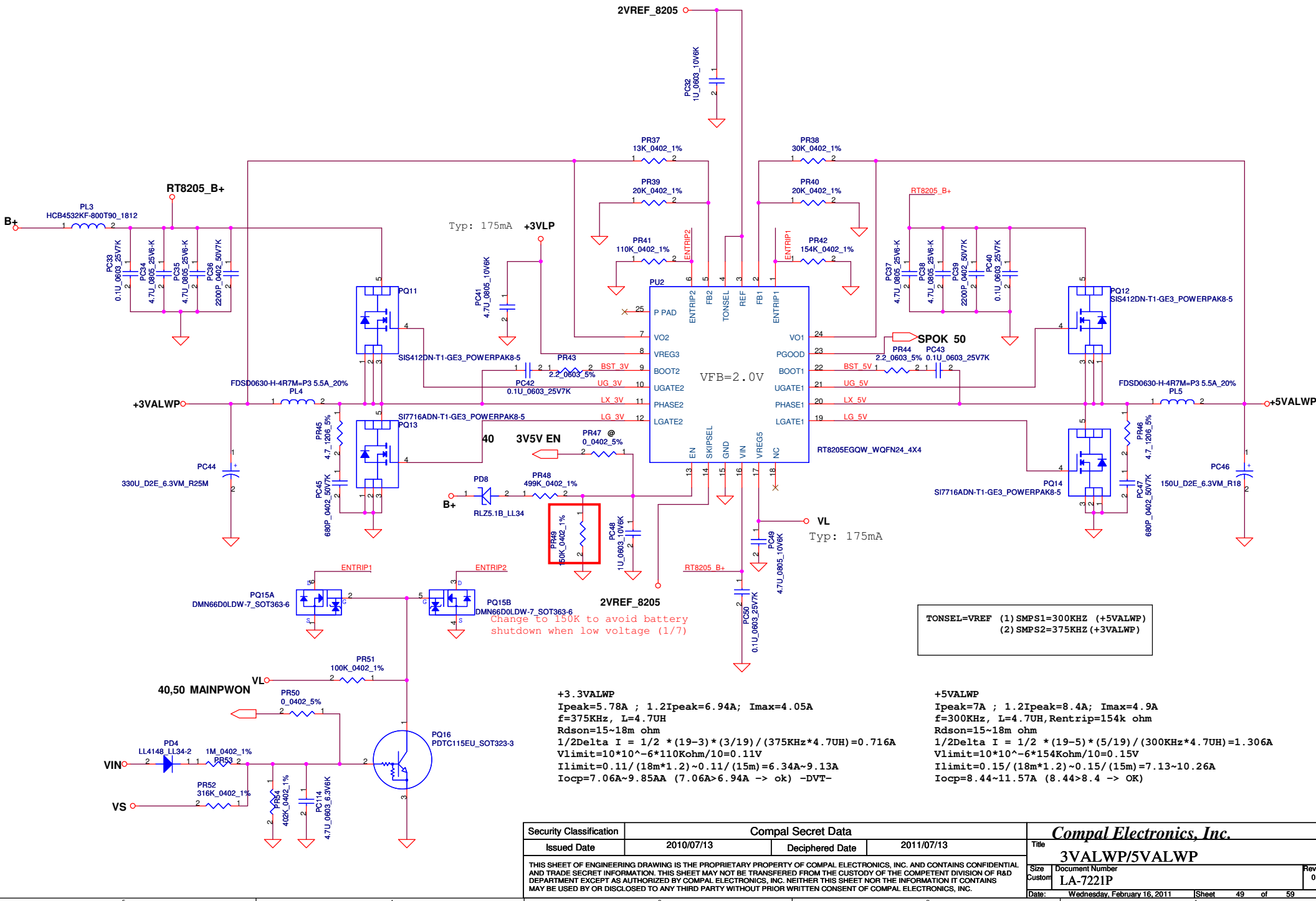


**Vin Detector**

|       | Min. | Typ    | Max. |
|-------|------|--------|------|
| H-->L |      | 17.23V |      |
| L-->H |      | 17.63V |      |

**ILIM and external DPM**  
3.97A

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/01/25 | Deciphered Date    | 2010/12/31 | Title                    |                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                   | LA-7221P                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 16, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 48 of 59                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.1                          |



Typ: 175mA

VF'B=2.0V

Typ: 175mA

Change to 150K to avoid battery shutdown when low voltage (1/7)

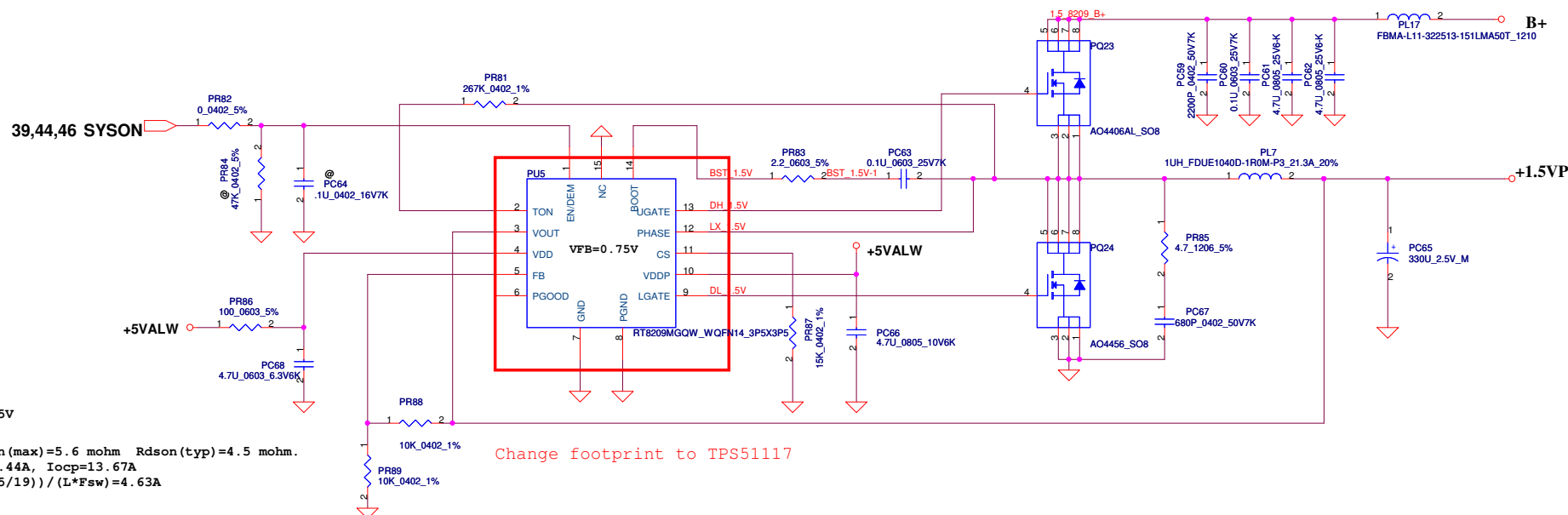
TONSEL=VREF (1) SMPS1=300KHZ (+5VALWP)  
(2) SMPS2=375KHZ (+3VALWP)

+3.3VALWP  
Ipeak=5.78A ; 1.2Ipeak=6.94A; Imax=4.05A  
f=375KHz, L=4.7UH  
Rdson=15~18m ohm  
1/2Delta I = 1/2 \* (19-3) \* (3/19) / (375KHz\*4.7UH)=0.716A  
Vlimit=10\*10^-6\*110Kohm/10=0.11V  
Ilimit=0.11/(18m\*1.2)~0.11/(15m)=6.34A~9.13A  
Iocp=7.06A~9.85AA (7.06A>6.94A -> ok) -DVT-

+5VALWP  
Ipeak=7A ; 1.2Ipeak=8.4A; Imax=4.9A  
f=300KHz, L=4.7UH, Rentrtp=154k ohm  
Rdson=15~18m ohm  
1/2Delta I = 1/2 \* (19-5) \* (5/19) / (300KHz\*4.7UH)=1.306A  
Vlimit=10\*10^-6\*154Kohm/10=0.15V  
Ilimit=0.15/(18m\*1.2)~0.15/(15m)=7.13~10.26A  
Iocp=8.44~11.57A (8.44>8.4 -> OK)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/07/13 | Deciphered Date    | 2011/07/13 | Title                    | 3VALWP/5VALWP                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Wednesday, February 16, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 49 of 59                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.1                          |

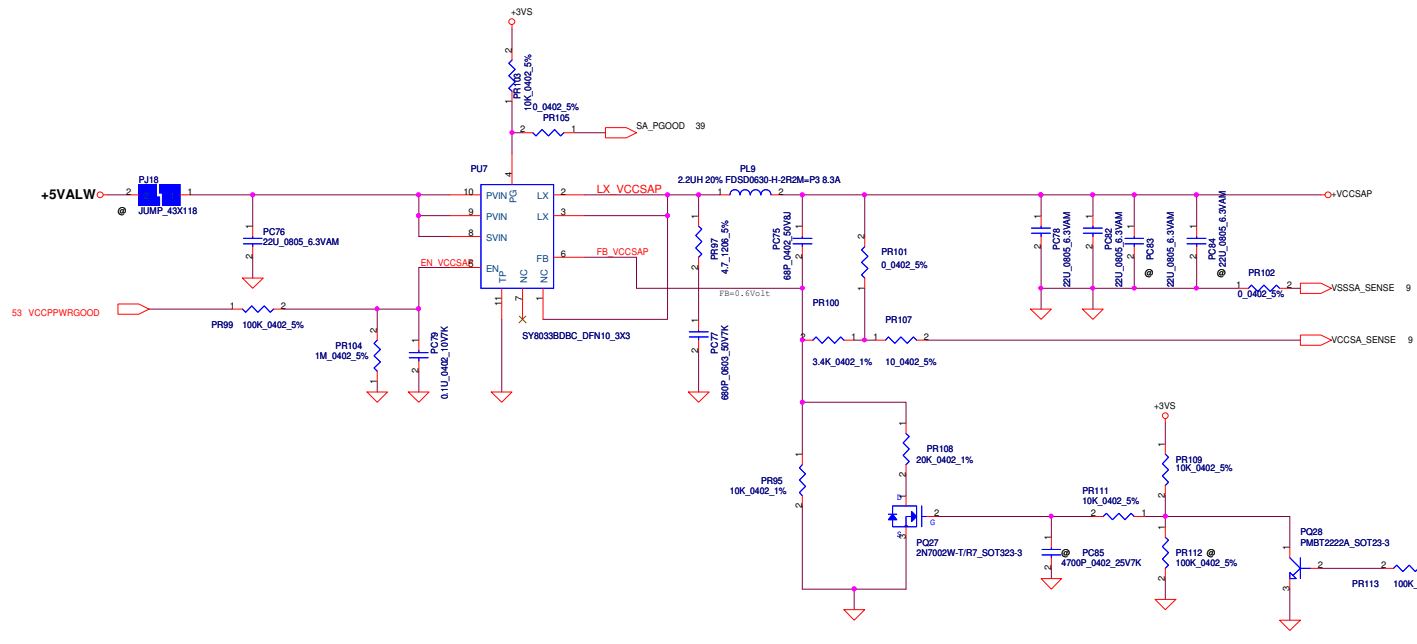
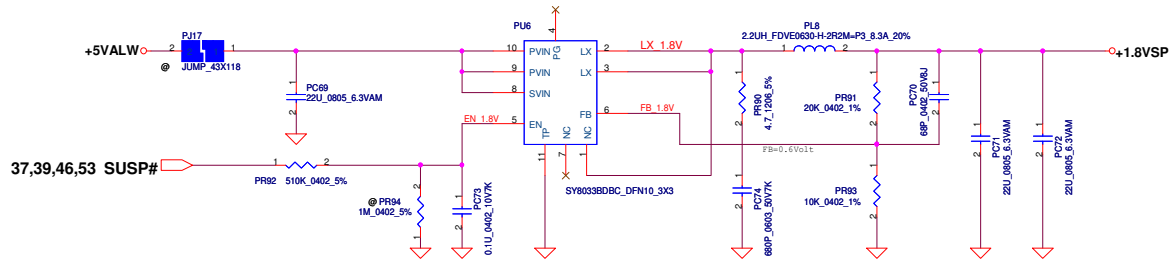




$V_o = 1.5V$      $V_{FB} = 0.75V$   
 $V = 0.75 * (1 + 10K/10K) = 1.5V$   
 $F_{sw} = 298KHz$   
 $C_{out} ESR = 15m \text{ ohm}$      $R_{dson(max)} = 5.6 \text{ mohm}$      $R_{dson(typ)} = 4.5 \text{ mohm}$ .  
 $I_{peak} = 19.53A$ ,  $I_{max} = 23.44A$ ,  $I_{ocp} = 13.67A$   
 $\Delta I = ((19 - 1.5) * (1.5/19)) / (L * F_{sw}) = 4.63A$   
 $\Rightarrow 1/2 \Delta I$      $I = 2.315A$   
 choose  $R_{cs} = 15K$   
 $I_{ocpmax} = ((15K * 11uA) / 0.0045) + 2.315A = 35.65A$   
 $I_{ocpmin} = ((15K * 9uA) / (0.0056 * 1.3)) + 2.315A = 23.06A$   
 $I_{ocp} = 23.06A \sim 35.65A$

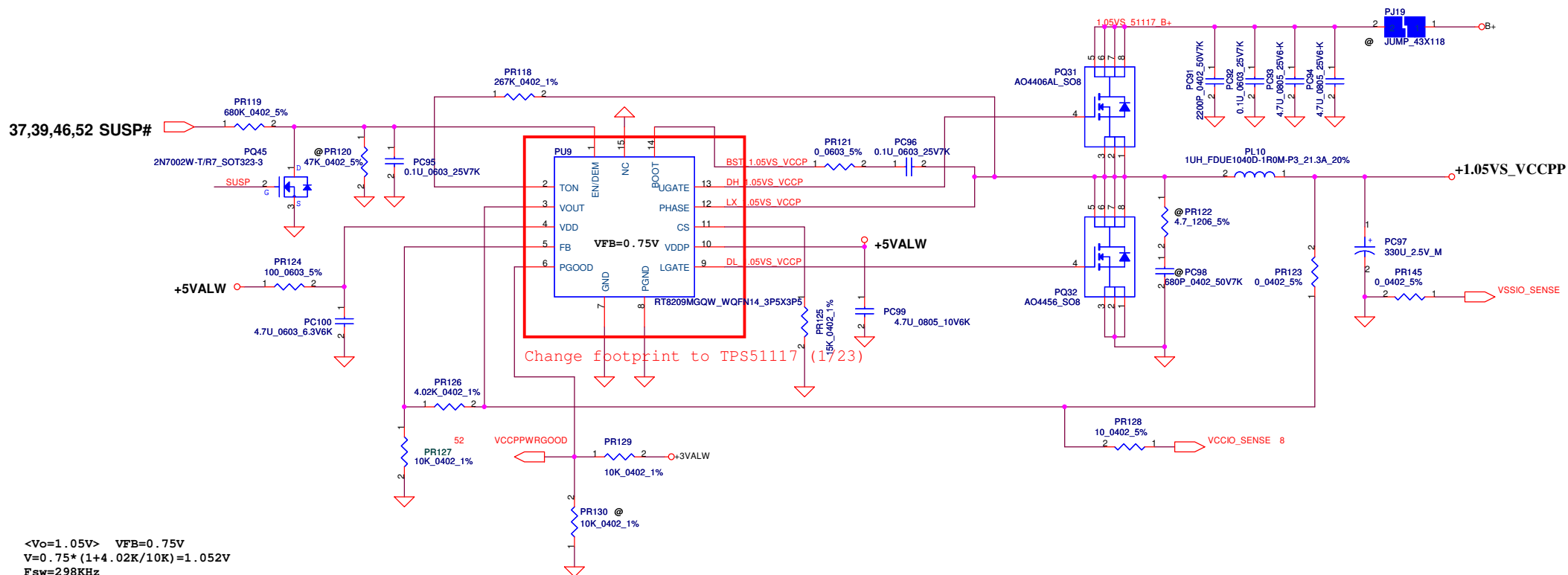
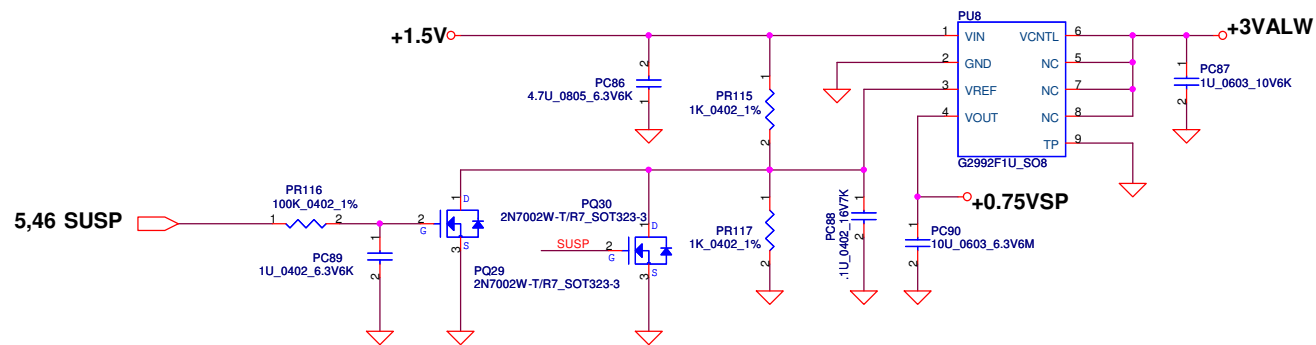
Change footprint to TPS51117

1.8VSP  
 $I_{peak}=3.35A$  ;  $1.2I_{peak}=4.02$  ;  $I_{max}=2.345A$   
 $V_{out}=0.6 \cdot (1 + (20K/10K)) = 1.8V$



| VID[0] | VID[1] | VCCSA Vout | Require on 2011/ 2012 Required |
|--------|--------|------------|--------------------------------|
| 0      | 0      | 0.9 V      | Yes/Yes                        |
| 0      | 1      | 0.8 V      | Yes/Yes                        |
| 1      | 1      | 0.75V      | No/Yes                         |
| 1      | 1      | 0.65V      | No/Yes                         |

Note: Use VCCSA\_SEL to switch High & Low Level for VID[1]  
 (ie. VCCSA\_SEL) due to the VID[0] is don't care for this setting.



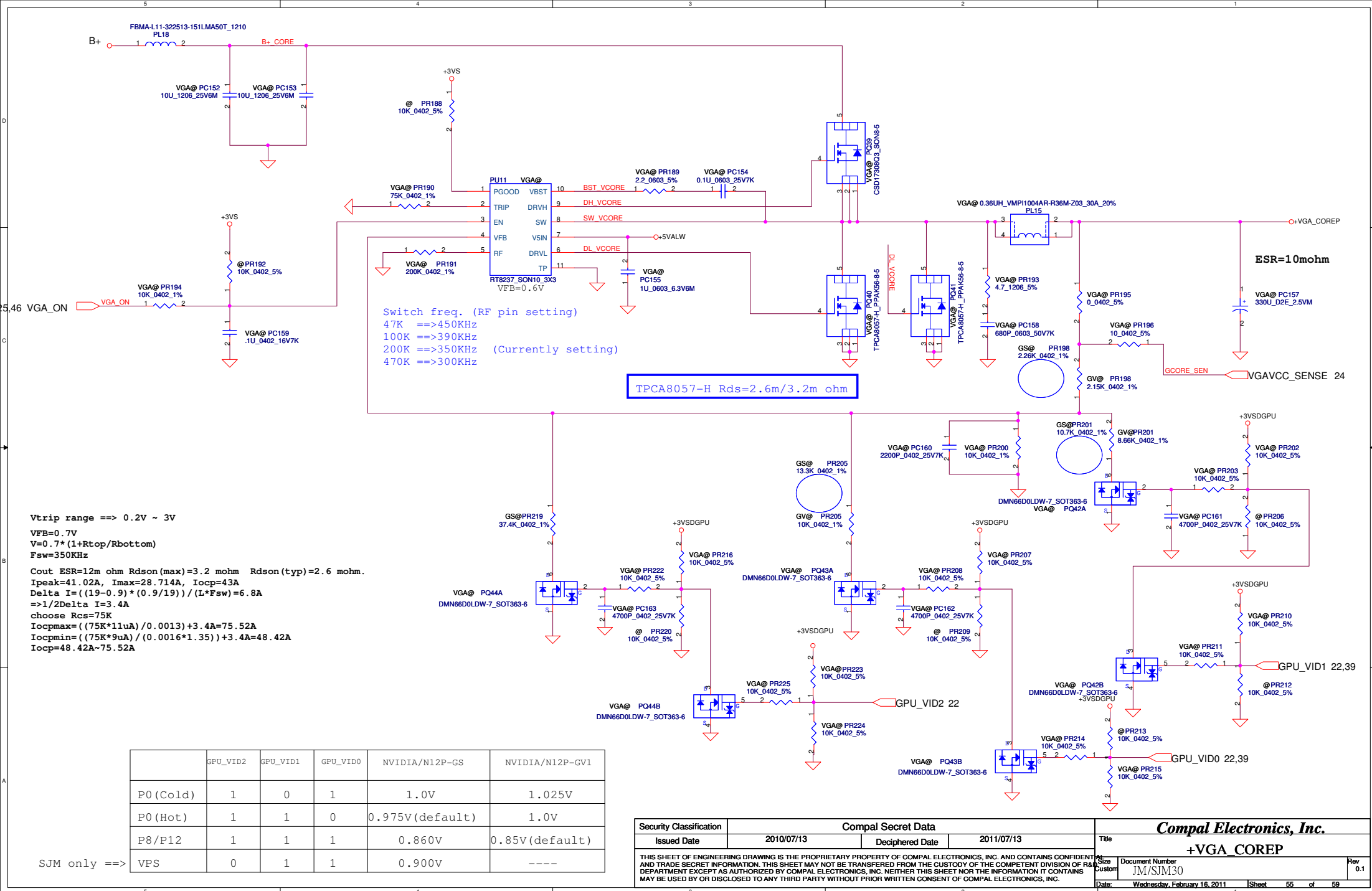
$V_o = 1.05V$     $V_{FB} = 0.75V$   
 $V = 0.75 * (1 + 4.02K/10K) = 1.052V$   
 $F_{sw} = 298KHz$

$C_{out} ESR = 15m \text{ ohm}$     $R_{dson(max)} = 5.6 \text{ mohm}$     $R_{dson(typ)} = 4.5 \text{ mohm}$ .  
 $I_{peak} = 12.866A$ ,  $I_{max} = 9A$ ,  $I_{ocp} = 15.439A$   
 $\Delta I = ((19 - 1.05) * (1.05/19)) / (L * F_{sw}) = 3.33A$   
 $\Rightarrow 1/2 \Delta I = 1.665A$   
choose  $R_{cs} = 15K$   
 $I_{ocpmax} = ((15K * 11uA) / 0.0045) + 1.665A = 37.62A$   
 $I_{ocpmin} = ((15K * 9uA) / (0.0056 * 1.3)) + 1.665A = 23.02A$   
 $I_{ocp} = 23.02A \sim 37.62A$

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| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/07/13 | Deciphered Date    | 2011/07/13 | Title                    | PWR +1.05VS_VCCPP/+0.75VSP   |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Wednesday, February 16, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 53 of 59                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.1                          |







|          | GPU_VID2 | GPU_VID1 | GPU_VID0 | NVIDIA/N12P-GS  | NVIDIA/N12P-GV1 |
|----------|----------|----------|----------|-----------------|-----------------|
| P0(Cold) | 1        | 0        | 1        | 1.0V            | 1.025V          |
| P0(Hot)  | 1        | 1        | 0        | 0.975V(default) | 1.0V            |
| P8/P12   | 1        | 1        | 1        | 0.860V          | 0.85V(default)  |
| VPS      | 0        | 1        | 1        | 0.900V          | ----            |

## Version change list (P.I.R. List)

Page 1 of 2  
for PWR

| Item | Fixed Issue                         | Reason for change                                                            | Rev. | PG#      | Modify List                                                                                                                | Date          | Phase |
|------|-------------------------------------|------------------------------------------------------------------------------|------|----------|----------------------------------------------------------------------------------------------------------------------------|---------------|-------|
| 1    | HW/Edward request                   | Meet Turn off sequence                                                       |      | 53       | Add PQ45                                                                                                                   | 2010<br>11/24 | DVT   |
| 2    | HW/Edward request                   | Meet Turn on sequence                                                        |      | 53       | Change PR119 to 680KΩ, PC95 to 0.1uF                                                                                       | 2010<br>11/27 | DVT   |
| 3    | HW/Edward request                   | Meet new VGA table                                                           |      | 55       | Change PR201, PR205, PR219                                                                                                 | 2010<br>12/03 | DVT   |
| 4    | Battery Turn on time too long       | Change enable 3/5V path                                                      |      |          |                                                                                                                            | 2010<br>12/04 | DVT   |
| 5    | HW/Edward request                   | For USB 3.0 charger function                                                 |      | 47       | Add PJ26                                                                                                                   | 2010<br>12/04 | DVT   |
| 6    | HW/Edward request                   | Don't need VGA_PW_OK net                                                     |      | 55       | Delete net                                                                                                                 | 2010<br>12/04 | DVT   |
| 7    | NVedia request.                     | NVedia request.                                                              | 0.2  | 55       | change PR201 to SD034107280.<br>change PR198 to SD034226180<br>chnage PR205 to SD034133280.<br>Change PR219 to SD034374280 | 2010<br>12/10 | DVT   |
| 8    | HW request.                         | to adjust power sequence to modify.                                          | 0.2  | 52<br>53 | Change PR92 to SD034510380, remove PR94 SD028100480<br>Change PR116 from SD034249280 to SD034100380.                       | 2010<br>12/10 | DVT   |
| 9    | Sourcer request.                    | Change to a normal part.                                                     | 0.2  | 54       | Change PC138 from SE00000R700to SE095224K00                                                                                | 2010<br>12/10 | DVT   |
| 10   | EMI request                         | For ISN issue, add solution on charger and CORE power                        | 0.3  | 48,54    | Add PL16 PC19 PC109 PC80 PC51 PC120 PC81                                                                                   | 2010<br>01/17 | PVT   |
| 11   | EMI request                         | For ISN issue, add solution on charger                                       | 0.3  | 48       | Change PL2 to SH162100M10 (4.7U to 10U)                                                                                    | 2010<br>01/17 | PVT   |
| 12   | TI concern charger IC will be lauch | Negative current reaches 110mV on low side Rdson<br>Charger IC will be lauch | 0.3  | 48       | Change PC38 to SE026104K80 (2.2U to 0.1U)                                                                                  | 2010<br>01/23 | PVT   |
| 13   | RT8209 footprint issue              | The footprint pad is too short, It will happen SMT problem                   | 0.3  | 51<br>53 | Change PU5, PU9 footprint to<br>TPS51117RGYR_QFN14_3P5X3P5                                                                 | 2010<br>01/23 | PVT   |
| 14   |                                     |                                                                              |      |          |                                                                                                                            |               |       |
| 15   |                                     |                                                                              |      |          |                                                                                                                            |               |       |
| 16   |                                     |                                                                              |      |          |                                                                                                                            |               |       |
| 17   |                                     |                                                                              |      |          |                                                                                                                            |               |       |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                                    |  |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|------------------------------------|--|------------|
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Document Number<br>P5LJ0           |  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date: Wednesday, February 16, 2011 |  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Sheet 56 of 59                     |  |            |

| Item | Page# | Title              | Date       | Request<br>Owner | Issue Description                             | Solution Description                                                                                                                                                                                                                                                                                                                                                   | Rev.  |
|------|-------|--------------------|------------|------------------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1    | 41    | Memo               | 2010/11/25 | Compal           | Bom structure error.                          | Correct LED1,LED2,LED5 bom structure to JM@                                                                                                                                                                                                                                                                                                                            | Rev02 |
| 2    | 27~30 | Memo               | 2010/11/25 | Compal           |                                               | Change X76289BOL05(VRAM P/N) from SA00003MQ60 to SA000047Q20<br>Change X76289BOL06(VRAM P/N) from SA00003VS10 to SA00003YO20                                                                                                                                                                                                                                           | Rev02 |
| 3    | 42    | Memo               | 2010/11/25 | Compal           | New Audio Codec IC                            | Change U29 from SA000034010 to SA000034020<br>Change R635 from 0.1ohm to 0 ohm                                                                                                                                                                                                                                                                                         | Rev02 |
| 4    | 41    | LED                | 2010/11/25 | Compal           | Battery LED Color mistake                     | SWAP LED1,LED6,LED7,LED8,LED9 Pin 2 and Pin3<br>(Pin2-->BATT_AMB_LED#,Pin3-->BATT_BLUE_LED#)                                                                                                                                                                                                                                                                           | Rev02 |
| 5    | 07    | EDP                | 2010/12/08 | Compal           | Bom structure error.                          | Correct R70 bom structure to EDP@                                                                                                                                                                                                                                                                                                                                      | Rev02 |
| 6    | 24    | Rework instruction | 2010/12/08 | Compal           | N12P-GV Strap sets up the mistake             | a. Pop R382, Depop R388 (ROM_SO: pull up 10K ohm)<br>b. Pop R380, Change R380 from 15k to 45k. Depop R386.(STRAP2: pull up 45K ohm.)<br>c. Pop R760, Change R760 from 10k to 5k.( STRAP3: pull down 5K ohm.)<br>d. Pop R756. (STRAP4: pull down 10K ohm.)<br>e. Pop R578. (STRAP_REF2, need to stuff with 40K ohm 1%.)<br>f. Pop R757. (PGOOD (pin E7) stuff 10K ohm.) | Rev02 |
| 7    | 05    | XDP                | 2010/12/08 | Compal           |                                               | Depop XDP component                                                                                                                                                                                                                                                                                                                                                    | Rev02 |
| 8    | 07    | EDP                | 2010/12/08 | Compal           | Bom structure error.                          | Correct R70 bom structure to EDP@                                                                                                                                                                                                                                                                                                                                      | Rev02 |
| 9    | 15    | PCH                | 2010/12/08 | Compal           |                                               | Change R244.1 net name from PCH_RSMRST# to PCH_RSMRST#_R<br>Pop R223,Depop U5<br>Delete R231(0 ohm) between SUSACK#_R and SUSWARN#_R<br>Add T90 test point for SUSACK#                                                                                                                                                                                                 | Rev02 |
| 10   | 17    | PCH                | 2010/12/08 | Compal           |                                               | Delete VGA_ON for PD only.<br>Change PR3.2 to PCH_GPIO53<br>Delete R257<br>Change U6,U7 to SA00000OH00                                                                                                                                                                                                                                                                 | Rev02 |
| 11   | 18    | PCH                | 2010/12/08 | Compal           | Power sequence for DGPU_PWROK after 1.5VSDGPU | Add Q75,Q74,R841                                                                                                                                                                                                                                                                                                                                                       | Rev02 |
| 12   | 22    | GPU                | 2010/12/08 | Compal           |                                               | Change R342.1 from R762.2 to R762.1(NV_PERFORMANCE_R)                                                                                                                                                                                                                                                                                                                  | Rev02 |
| 13   | 26    | GPU                | 2010/12/08 | Compal           | Bom structure error.                          | Correct C381 & C857 bom structure to OPT@                                                                                                                                                                                                                                                                                                                              | Rev02 |
| 14   | 31    | LVDS               | 2010/12/08 | Compal           | For LCDVDD rise time sequence issue           | Change R468 from 1k to 100k<br>Change C481 from 0.047u to 0.47u<br>PCH_LCD_CLK & PCH_LCD_DATA,Pull high at PCH side.<br>Add R832 between +3VS and JLVDS1.31.                                                                                                                                                                                                           | Rev02 |
| 15   | 32,33 | CRT.HDMI           | 2010/12/08 | Compal           |                                               | D8, D9 change material to SCS00003600                                                                                                                                                                                                                                                                                                                                  | Rev02 |
| 16   | 33    | HDMI               | 2010/12/08 | Compal           |                                               | Pop R502,Depop D9<br>SDVO_CTRL_DATA strap pull high at PCH side                                                                                                                                                                                                                                                                                                        | Rev02 |
| 17   | 34,44 | ODD.USB3.0         | 2010/12/08 | Compal           |                                               | Change Q31.Q63.Q71 to SB000008J10                                                                                                                                                                                                                                                                                                                                      | Rev02 |
| 18   | 35    | LAN                | 2010/12/08 | Compal           | Auto power on issue                           | Change R541.2 net name from PCH_PCIE_WAKE# to LAN_WAKE#.<br>Pop R541                                                                                                                                                                                                                                                                                                   | Rev02 |
| 19   | 35    | LAN                | 2010/12/08 | Compal           |                                               | Change C583 from 27 to 15P<br>Change C582 from 27to 18P<br>Change Y4 from CL(20P)to CL(12P)<br>Add Q76 and Depop R555                                                                                                                                                                                                                                                  | Rev02 |
| 20   | 36    | Transformer        | 2010/12/08 | Compal           |                                               | Change T63 from SP050003T10 to SP050003T20                                                                                                                                                                                                                                                                                                                             | Rev02 |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Custor                   | LA-7221P                     | 0.2            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Wednesday, February 16, 2011 | Sheet 57 of 59 |

| Item | Page# | Title               | Date       | Request<br>Owner | Issue Description                       | Solution Description                                                                                                                                                                                                                     | Rev.  |
|------|-------|---------------------|------------|------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 21   | 36    | LAN                 | 2010/12/08 | Compal           |                                         | L31 update CIS Symbol and PCB footprint                                                                                                                                                                                                  | Rev02 |
| 22   | 37    | 3G                  | 2010/12/08 | Compal           | 3G Power noise                          | Delete L49.L50.R764.R765.R766.R767.U43.C852.C853.CR781.Q69.C856.C854.<br>C855.C851.R572.R782<br>Change J3G1 Pin 2.4.6.8.10 to +3VS<br>Change R572.3 to +3VS<br>Change J3G1.30 to +VSB<br>Change J3G1.17 to EC_SIM_DETECT#                | Rev02 |
| 23   | 37    | D_Door switch       | 2010/12/08 | Compal           |                                         | Add R838,R839<br>Depop R838<br>Pop R839                                                                                                                                                                                                  | Rev02 |
| 24   | 38    | Card Reader         | 2010/12/08 | Compal           |                                         | Change R590,R591 to 22ohm<br>Change C635,C636 to 10P<br>Add R833 between +3VS and +3VS_CARD                                                                                                                                              | Rev02 |
| 25   | 39    | EC                  | 2010/12/08 | Compal           |                                         | Change R621 from 0ohm to 8.2k(Board ID)<br>Add C863                                                                                                                                                                                      | Rev02 |
| 26   | 40    | TP                  | 2010/12/08 | Compal           | TP Pin define issue                     | Change JTP1 Pin define<br>(Pin-->GND,Pin2-->RIGHT_BTN#,Pin3-->LEFT_BTN#,Pin4-->TP_DATA,<br>Pin5-->TP_CLK,Pin6-->+5VS)<br>Change JTP2 Pin define<br>(Pin-->NC,Pin2-->GND,Pin3-->TP_CLK,Pin4-->TP_DATA,Pin5-->PWM,Pin6-->+5VS)<br>Add C864 | Rev02 |
| 27   | 40    | Power Button        | 2010/12/08 | Compal           |                                         | Change R622.2 from +3VALW to +3VALW_EC                                                                                                                                                                                                   | Rev02 |
| 28   | 40    | Reset Button        | 2010/12/08 | Compal           | Reset system by mainpower and BI        | Add R844,R836.R837.Q72.Q77<br>Change R836 to 1K<br>Change R837 to 10K                                                                                                                                                                    | Rev02 |
| 29   | 41    | Power board         | 2010/12/08 | Compal           |                                         | Change JPWR2.5 from NC pin to BI_R (SJM D_door)<br>Change LID_SW# from LED board(JLED1.8) to Power board(JPWR1.2)                                                                                                                        | Rev02 |
| 30   | 42    | HD Audio Codec      | 2010/12/08 | Compal           | Fix HP/MIC Detect issue                 | Change R649 from 39.2k to 10k<br>Change R650 from 10k to 39.2k                                                                                                                                                                           | Rev02 |
| 31   | 42    | HD Audio Codec      | 2010/12/08 | Compal           |                                         | Change C704,C705 to SE107225K80<br>Delete R637.R638.Q39.Q38.R634. R636.R639.R640.J2<br>Change power from +3VS to +3VS_CODEC.<br>Add R834                                                                                                 | Rev02 |
| 32   | 43    | Headphone Out/SPDIF | 2010/12/08 | Compal           | HP right and left channel inverse issue | Change R735.1 to HP_RIGHT<br>Change R734.1 to HP_LEFT<br>SWAP JHP1.3 and JHP1.8<br>(Pin8-->SPDIF_OUT and Pin3-->+5VSPDIF)                                                                                                                | Rev02 |
| 33   | 43    | Digital MIC         | 2010/12/08 | Compal           |                                         | Delete R666.R668<br>Add L50,L51 300ohm bead(SM010017710)                                                                                                                                                                                 | Rev02 |
| 34   | 44    | USB3.0              | 2010/12/08 | Compal           | Modify SMI circuit for leakage issue    | Delete R797,R830<br>Add R840,Q73.Q71                                                                                                                                                                                                     | Rev02 |
| 35   | 44    | USB3.0              | 2010/12/08 | Compal           |                                         | Change c792.c793 from 12P to 15P                                                                                                                                                                                                         | Rev02 |
| 36   | 45    | USB3.0              | 2010/12/08 | Compal           |                                         | Delete D46<br>Change C780 from SGA19151410(D size) to SGA00002N80(B2 size)<br>Depop U41,C204,R754<br>Add R842,R843                                                                                                                       | Rev02 |
| 37   | 45    | Screw Hole          | 2010/12/08 | Compal           |                                         | Change H4 from H_3P0 to H_3P3<br>Change H8 from H_3P0 to H_3P0x5P0<br>Delete H25                                                                                                                                                         | Rev02 |

| Security Classification |  | Compal Secret Data           |  |                 | Compal Electronics, Inc. |  |  |
|-------------------------|--|------------------------------|--|-----------------|--------------------------|--|--|
| Issued Date             |  | 2009/12/01                   |  | Deciphered Date | 2010/12/31               |  |  |
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|                         |  | Sheet                        |  |                 | 58 of 59                 |  |  |
|                         |  |                              |  |                 | 0.2                      |  |  |

| Item | Page#              | Title        | Date       | Request<br>Owner | Issue Description                   | Solution Description                                                                                                                         | Rev.   |
|------|--------------------|--------------|------------|------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 38   | 46                 | DC Interface | 2010/12/08 | Compal           |                                     | a.+5VS (Change R679 from 20K to 100K)<br>b.+3VS (Change R685 from 47K to 200K)<br>c. +1.5VS (Change R692 from 200K to 750K)                  | Rev02  |
| 39   | 13~21              | PCH          | 2010/12/08 | Compal           |                                     | Change U3 from SA00004EE10 to SA00004EE40                                                                                                    | Rev02  |
| 40   | 38                 | Caed Reader  | 2010/12/08 | Compal           |                                     | Change R587 from SD028330A00 to SD028330A80                                                                                                  | Rev02  |
| 41   | 20.34.<br>35.36.42 | Capacitor    | 2010/12/08 | Compal           |                                     | C226, C540, C549, C566, C573, C576, C580, C590, C712 change material to SE000000K80                                                          | Rev02  |
| 42   | 24                 | GPU          | 2010/12/10 | Compal           | Update N12P-GV QS DevID: 0x1050     | 1. ROM_SCLK: pull up 5K ohm.<br>2. STRAP2: pull down 5K ohm.<br>3. ROM_SO: pull up 10K ohm.                                                  | Rev02  |
| 43   | 44                 | USB3.0       | 2010/12/20 | Compal           | USB driver can't install issue      | Change Q73.2 from +3V_USB3.0 to +3V_USB3<br>Pop R840                                                                                         | Rev03  |
| 44   | 31                 | CMOS Camera  | 2010/12/29 | Compal           |                                     | Add R845,Delete R832                                                                                                                         | Rev03  |
| 45   | 39                 | BI           | 2011/01/03 | Compal           | TI charger short protection prevent | Add R848                                                                                                                                     | Rev03  |
| 46   | 40                 | TP           | 2011/01/03 | Compal           |                                     | Change SW2.SW3 from SN111002700 to SN100000K00                                                                                               | Rev03  |
| 47   | 41                 | LED          | 2011/01/12 | Compal           |                                     | Change R625 from 3.9K to 680 ohm<br>Change R626 from 2.2K to 390 ohm<br>Change R739 from 3.9K to 390 ohm<br>Change R740 from 100 to 3.3K ohm | Rev03  |
| 48   | 46                 | VGA_ON       | 2011/01/13 | Compal           | Restart dGPU loss issue.            | Change R703 from 22K to 100K<br>Add R849 (10K)                                                                                               | Rev04  |
| 49   | 19                 | CRT          | 2011/01/22 | Compal           | water ripple issue                  | Change L1 from SM01000AX00 to SHI00003Y00                                                                                                    | Rev04  |
| 50   | 39                 | EC           | 2011/01/25 | Compal           |                                     | Delete U27                                                                                                                                   | Rev0.5 |
| 51   | 41                 | BTN          | 2011/01/25 | Compal           |                                     | Change SW6 from SN100001C00 to SN100001D10                                                                                                   | Rev0.5 |
| 52   | 39                 | Board ID     | 2011/01/27 | Compal           | Board ID version                    | Change R621 to 33K                                                                                                                           | Rev0.5 |
| 53   | 5                  | CPU XDP      | 2011/01/27 | Compal           |                                     | Delete C34.C35.Q1.R21.R24.JXDP1.R3~R16.R18~R22.R39~R41.R43.R45~R47.R53~R60<br>Add T94~T98                                                    | Rev0.5 |
| 54   | 40                 | TP           | 2011/01/27 | Compal           |                                     | Delete net name TP_PWM                                                                                                                       | Rev0.5 |
| 55   | 18                 | DGPU_PWROK   | 2011/01/27 | Compal           |                                     | Pop C872                                                                                                                                     | Rev0.5 |
| 56   | 44                 | USB3.0       | 2011/01/27 | Compal           | For EEPROM (EON).                   | Pop R720                                                                                                                                     | Rev0.5 |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Friday, February 18, 2011   | Sheet 59 of 59 |