

# Compal Confidential

## NAL00 Schematics Document

AMD L310/L110 Processor with RS780MN/SB710/M92-S2/S3 LP

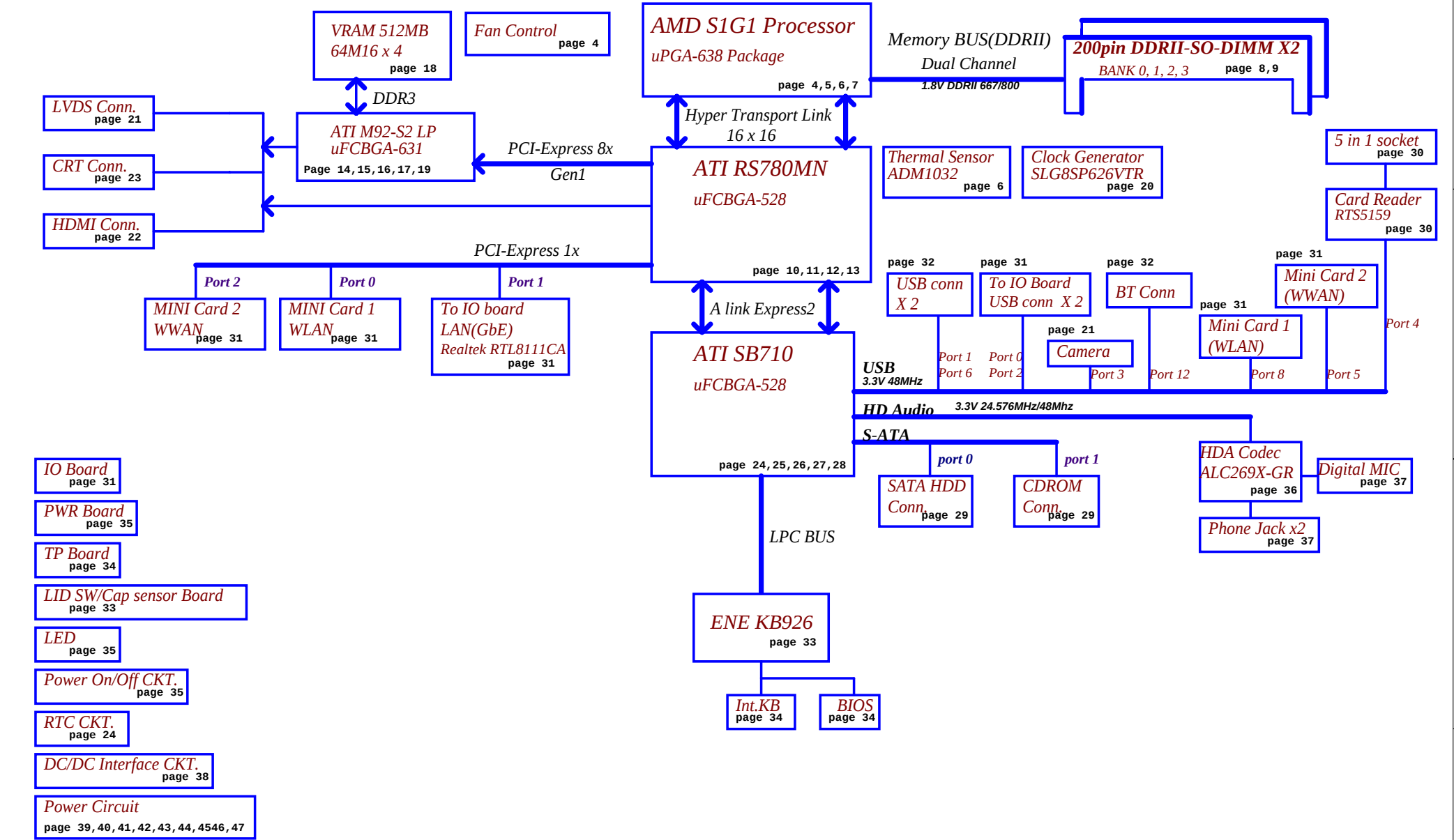
2009-04-24

REV : 0.2

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                      |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06 | Deciphered Date    | 2009/10/06 | Title                    | SCHEMATICS,MB A5401  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Document Number          | 401728               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Monday, May 04, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 1 of 49              |

Compal Confidential

Model Name : NAL00



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                      |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|----------------------|---------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                      |               |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Monday, May 04, 2009 | Sheet 2 of 49 |

| Power Plane | Description                                 | S1  | S3  | S5  |
|-------------|---------------------------------------------|-----|-----|-----|
| VIN         | Adapter power supply (19V)                  | 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 (0.7-1.2V)             | ON  | OFF | OFF |
|             |                                             |     |     |     |
| +NB_CORE    | 1.0V switched power rail                    | ON  | OFF | OFF |
| +0.9V       | 0.9V switched power rail for DDR terminator | ON  | ON  | OFF |
| +1.1VS      | 1.1V switched power rail for NB VDDC & VGA  | ON  | OFF | OFF |
| +1.2V_HT    | 1.2V switched power rail                    | ON  | OFF | OFF |
| +VGA_CORE   | 0.90-0.95V switched power rail              | ON  | OFF | OFF |
| +1.5VS      | 1.5V power rail for PCIE Card               | ON  | OFF | OFF |
| +1.8V       | 1.8V power rail for CPU VDDIO and DDR       | ON  | ON  | OFF |
| +1.8VS      | 1.8V switched power rail                    | ON  | OFF | OFF |
| +2.5VS      | 2.5V for CPU_VDDA                           | ON  | OFF | OFF |
| +3VALW      | 3.3V always on power rail                   | ON  | ON  | ON* |
| +3V_LAN     | 3.3V power rail for LAN                     | ON  | ON  | ON  |
| +3VS        | 3.3V switched power rail                    | ON  | OFF | OFF |
| +5VALW      | 5V always on power rail                     | ON  | ON  | ON* |
| +5VS        | 5V switched power rail                      | ON  | OFF | OFF |
| +VSB        | VSB always on power rail                    | ON  | ON  | ON* |
| +RTCVCC     | RTC power                                   | ON  | ON  | ON  |

## External PCI Devices

### EC SM Bus1 address

## EC SM Bus2 address

**SB700**  
**SM Bus 1 address**

| 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   |

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

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

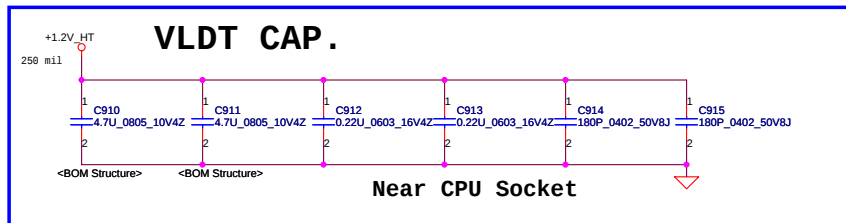
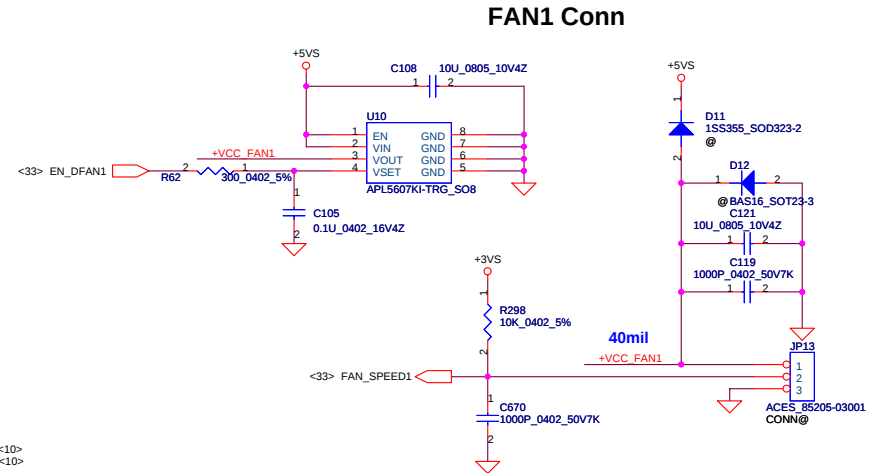
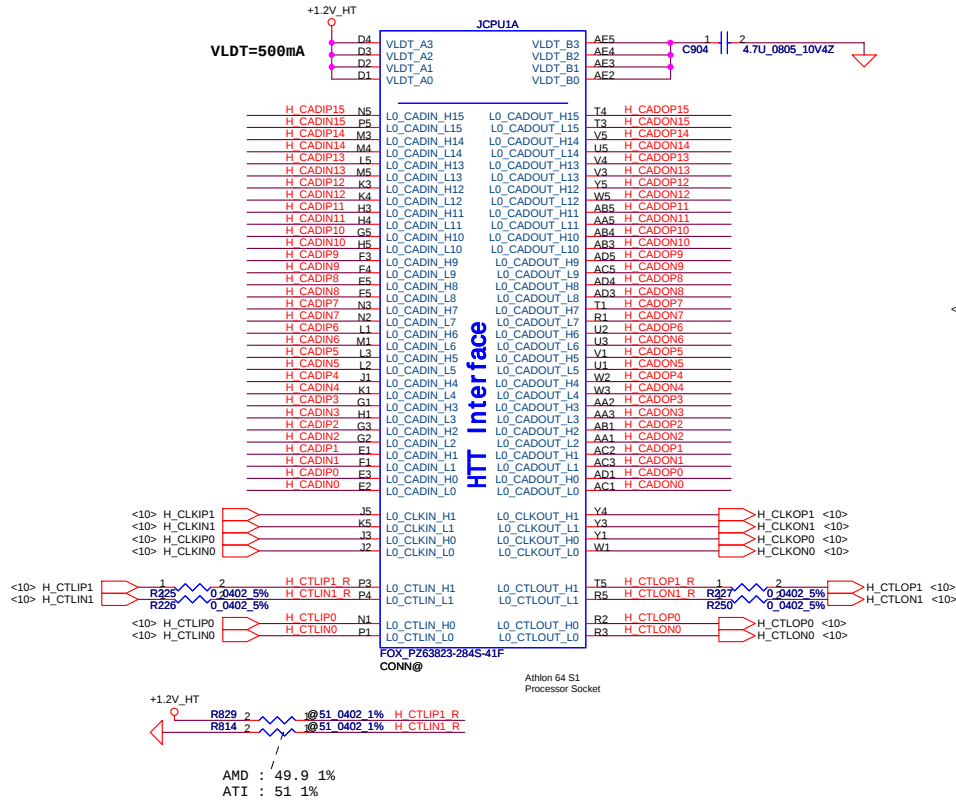
|                      |            |                 |                             |                |
|----------------------|------------|-----------------|-----------------------------|----------------|
|                      | SB700      | SB700           | RS780MN                     | DISPLAY OUTPUT |
|                      | PX_GPIO0   | PX_GPIO1        | PX_GPIO2                    |                |
| Function Description | dGPU_Reset | dGPU_PWR_Enable | PX Mode Switch              |                |
| IGP only mode        | X          | X               | X                           |                |
| PowerXpress mode     | H : Enable | H : Enable      | L : iGPU(DC) / H : dGPU(AC) | LVDS / CRT     |

|                      | KB926            |                |                   |                  |                  |                 |
|----------------------|------------------|----------------|-------------------|------------------|------------------|-----------------|
|                      | PX_GPIO1         | PX_GPIO2       | PX_+3VS           | PX_+1.8VS        | PX_+VGA_CORE     | PX_GPIO2_NB     |
| Function Description | Enable +1.1VS_PX | PX MODE SWITCH | Enable +3VS_DELAY | Enable +1.8VS_PX | Enable +VGA_CORE | Trigger from SB |
| IGP only mode        | X                | X              | X                 | X                | X                | X               |
| PowerXpress mode     | H : Enable       | Reserved       | H : Enable        | H : Enable       | H : Enable       | Reserved        |

|                      |                                                                     |
|----------------------|---------------------------------------------------------------------|
|                      | KB926                                                               |
|                      | PX_GPIO1_SB                                                         |
| Function Description | Trigger from SB to Enable (PX_GPIO1/PX_+3VS/PX_+1.8VS/PX_+VGA_CORE) |
| IGP only mode        | X                                                                   |
| PowerXpress mode     | H : Enable                                                          |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                 |                          |       |    |                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------|-----------------|--------------------------|-------|----|---------------------|
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| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Monday, May 04, 2009 |                 | Sheet                    | 3     | of | 49                  |

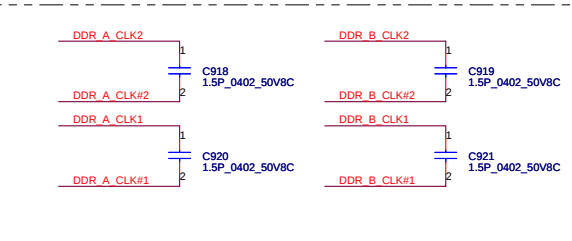
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<10> H\_CADIN[0..15] H\_CADIN[0..15] <10>  
H\_CADOP[0..15] H\_CADOP[0..15] <10>  
H\_CADON[0..15] H\_CADON[0..15] <10>



| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                      |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Sheet                    | 4 of 49              |

The diagram illustrates the DDR1 Data bus architecture. It features a central vertical bus labeled "DDR1 Data". To the left, a list of DDR B signals (DDR B D063 to DDR B D001) is connected to the bus. To the right, a list of DDR A signals (DDR A D063 to DDR A D001) is connected to the bus. Below the main bus, there are two additional sections: DDR B D057 to DDR B D001 and DDR A D057 to DDR A D001. The JCPUIC block is connected to the DDR1 Data bus. The DDR A\_D[63..0] and DDR A\_DM7[0..] buses are also shown, with DDR A\_DM7[0..] connected to the DDR A D057 to DDR A D001 signals.

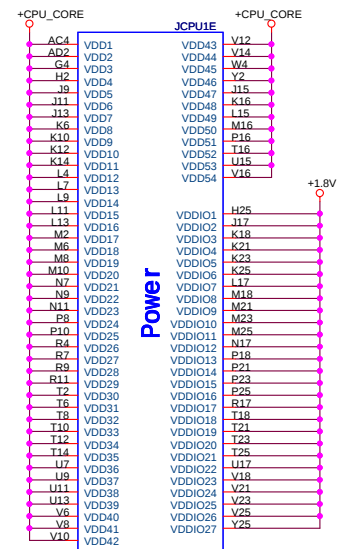
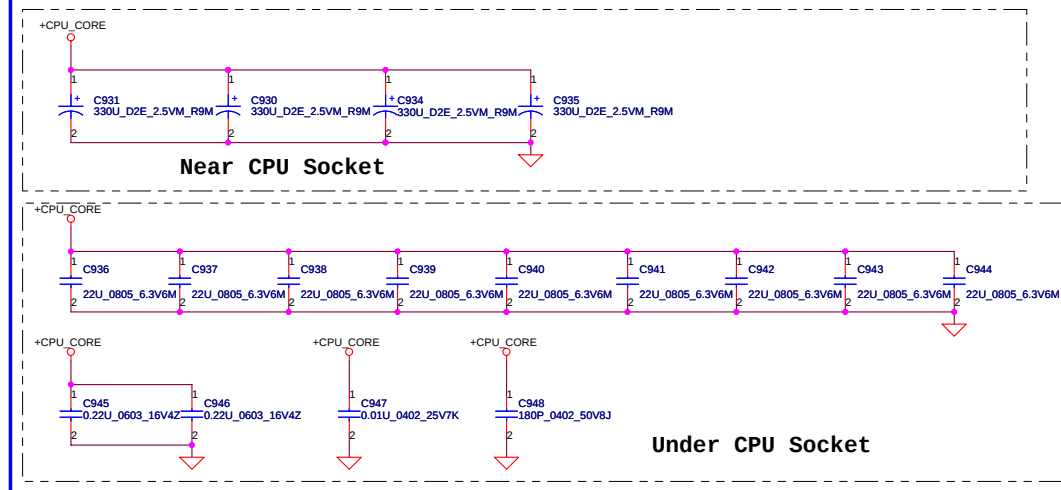
| DDR B D063 | ADR11 | MB DATA63 | MA DATA63 | A412 | DDR A D063 |
|------------|-------|-----------|-----------|------|------------|
| DDR B D062 | AF11  | MB DATA62 | MA DATA62 | A412 | DDR A D062 |
| DDR B D061 | AE14  | MB DATA61 | MA DATA61 | A414 | DDR A D061 |
| DDR B D060 | AE14  | MB DATA60 | MA DATA60 | A414 | DDR A D060 |
| DDR B D059 | Y11   | MB DATA59 | MA DATA59 | W11  | DDR A D059 |
| DDR B D058 | AB11  | MB DATA58 | MA DATA58 | Y12  | DDR A D058 |
| DDR B D057 | AC12  | MB DATA57 | MA DATA57 | A413 | DDR A D057 |
| DDR B D056 | AE13  | MB DATA56 | MA DATA56 | A413 | DDR A D056 |
| DDR B D055 | AE15  | MB DATA55 | MA DATA55 | AD15 | DDR A D055 |
| DDR B D054 | AE16  | MB DATA54 | MA DATA54 | AB15 | DDR A D054 |
| DDR B D053 | AE19  | MB DATA53 | MA DATA53 | AD17 | DDR A D053 |
| DDR B D052 | AD14  | MB DATA52 | MA DATA52 | Y17  | DDR A D052 |
| DDR B D051 | AD14  | MB DATA51 | MA DATA51 | Y14  | DDR A D051 |
| DDR B D050 | AC14  | MB DATA50 | MA DATA50 | W14  | DDR A D050 |
| DDR B D049 | AE18  | MB DATA49 | MA DATA49 | W16  | DDR A D049 |
| DDR B D048 | AD18  | MB DATA48 | MA DATA48 | AD17 | DDR A D048 |
| DDR B D047 | AD20  | MB DATA47 | MA DATA47 | Y18  | DDR A D047 |
| DDR B D046 | AE23  | MB DATA46 | MA DATA46 | AD19 | DDR A D046 |
| DDR B D045 | AC20  | MB DATA45 | MA DATA45 | AD21 | DDR A D045 |
| DDR B D044 | AE24  | MB DATA44 | MA DATA44 | A421 | DDR A D044 |
| DDR B D043 | AE24  | MB DATA43 | MA DATA43 | AB18 | DDR A D043 |
| DDR B D042 | AD22  | MB DATA42 | MA DATA42 | A421 | DDR A D042 |
| DDR B D041 | AD22  | MB DATA41 | MA DATA41 | A420 | DDR A D041 |
| DDR B D040 | AE25  | MB DATA40 | MA DATA40 | Y20  | DDR A D040 |
| DDR B D039 | AD26  | MB DATA39 | MA DATA39 | A422 | DDR A D039 |
| DDR B D038 | AD26  | MB DATA38 | MA DATA38 | Y22  | DDR A D038 |
| DDR B D037 | AE25  | MB DATA37 | MA DATA37 | W21  | DDR A D037 |
| DDR B D036 | AE26  | MB DATA36 | MA DATA36 | W22  | DDR A D036 |
| DDR B D035 | AD24  | MB DATA35 | MA DATA35 | A421 | DDR A D035 |
| DDR B D034 | AD24  | MB DATA34 | MA DATA34 | AB22 | DDR A D034 |
| DDR B D033 | AE23  | MB DATA33 | MA DATA33 | AB24 | DDR A D033 |
| DDR B D032 | AC23  | MB DATA32 | MA DATA32 | Y24  | DDR A D032 |
| DDR B D031 | G23   | MB DATA31 | MA DATA31 | H22  | DDR A D031 |
| DDR B D030 | G26   | MB DATA30 | MA DATA30 | H20  | DDR A D030 |
| DDR B D029 | D23   | MB DATA29 | MA DATA29 | E22  | DDR A D029 |
| DDR B D028 | C26   | MB DATA28 | MA DATA28 | E21  | DDR A D028 |
| DDR B D027 | G25   | MB DATA27 | MA DATA27 | J18  | DDR A D027 |
| DDR B D026 | G25   | MB DATA26 | MA DATA26 | H24  | DDR A D026 |
| DDR B D025 | E24   | MB DATA25 | MA DATA25 | F22  | DDR A D025 |
| DDR B D024 | E23   | MB DATA24 | MA DATA24 | F20  | DDR A D024 |
| DDR B D023 | B24   | MB DATA23 | MA DATA23 | C23  | DDR A D023 |
| DDR B D022 | C24   | MB DATA22 | MA DATA22 | B22  | DDR A D022 |
| DDR B D021 | C20   | MB DATA21 | MA DATA21 | F18  | DDR A D021 |
| DDR B D020 | B25   | MB DATA20 | MA DATA20 | F18  | DDR A D020 |
| DDR B D019 | C20   | MB DATA19 | MA DATA19 | E20  | DDR A D019 |
| DDR B D018 | D24   | MB DATA18 | MA DATA18 | D22  | DDR A D018 |
| DDR B D017 | A21   | MB DATA17 | MA DATA17 | C19  | DDR A D017 |
| DDR B D016 | D20   | MB DATA16 | MA DATA16 | G18  | DDR A D016 |
| DDR B D015 | D18   | MB DATA15 | MA DATA15 | G17  | DDR A D015 |
| DDR B D014 | C18   | MB DATA14 | MA DATA14 | E14  | DDR A D014 |
| DDR B D013 | D14   | MB DATA13 | MA DATA13 | F14  | DDR A D013 |
| DDR B D012 | C14   | MB DATA12 | MA DATA12 | H17  | DDR A D012 |
| DDR B D011 | A20   | MB DATA11 | MA DATA11 | H17  | DDR A D011 |
| DDR B D010 | A19   | MB DATA10 | MA DATA10 | E17  | DDR A D010 |
| DDR B D009 | A16   | MB DATA9  | MA DATA9  | F15  | DDR A D009 |
| DDR B D008 | A15   | MB DATA8  | MA DATA8  | H15  | DDR A D008 |
| DDR B      |       |           |           |      |            |



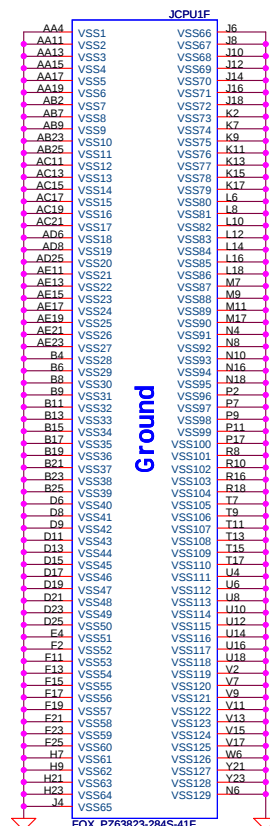
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| Date: Monday, May 04, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |            | Sheet                    | 5                    | of 49 |



## VDD(+CPU\_CORE) decoupling.

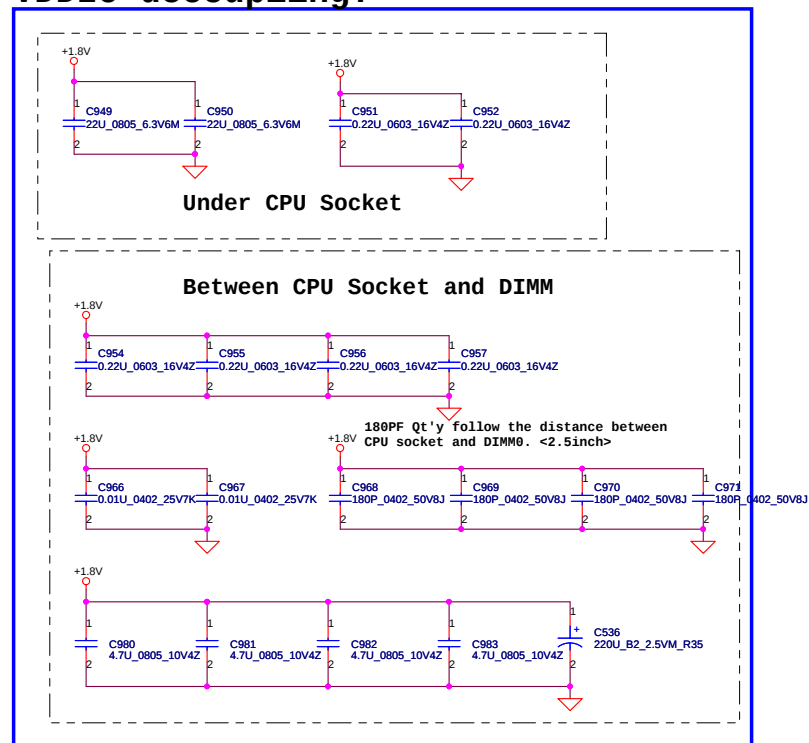


FOX\_P263823-284S-41F  
CONN@  
Athlon 64 S1  
Processor Socket

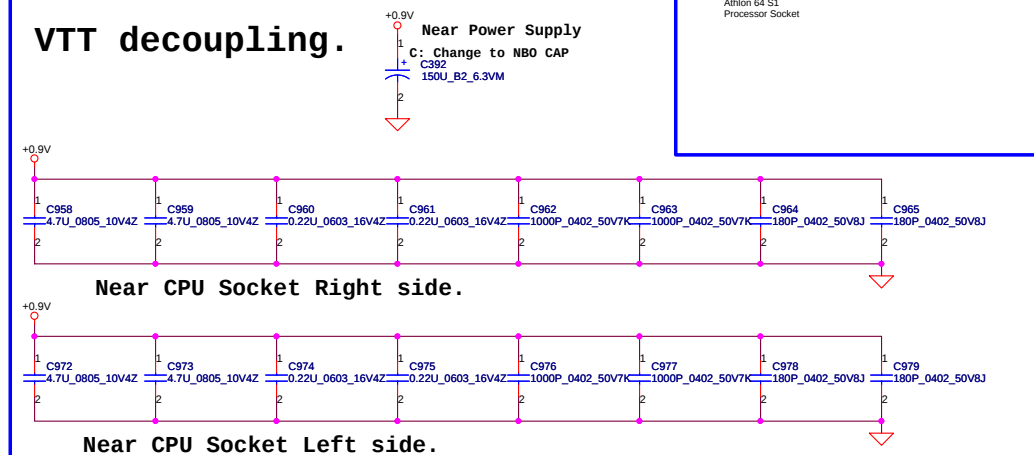


FOX\_P263823-284S-41F  
CONN@  
Athlon 64 S1  
Processor Socket

## VDDIO decoupling.



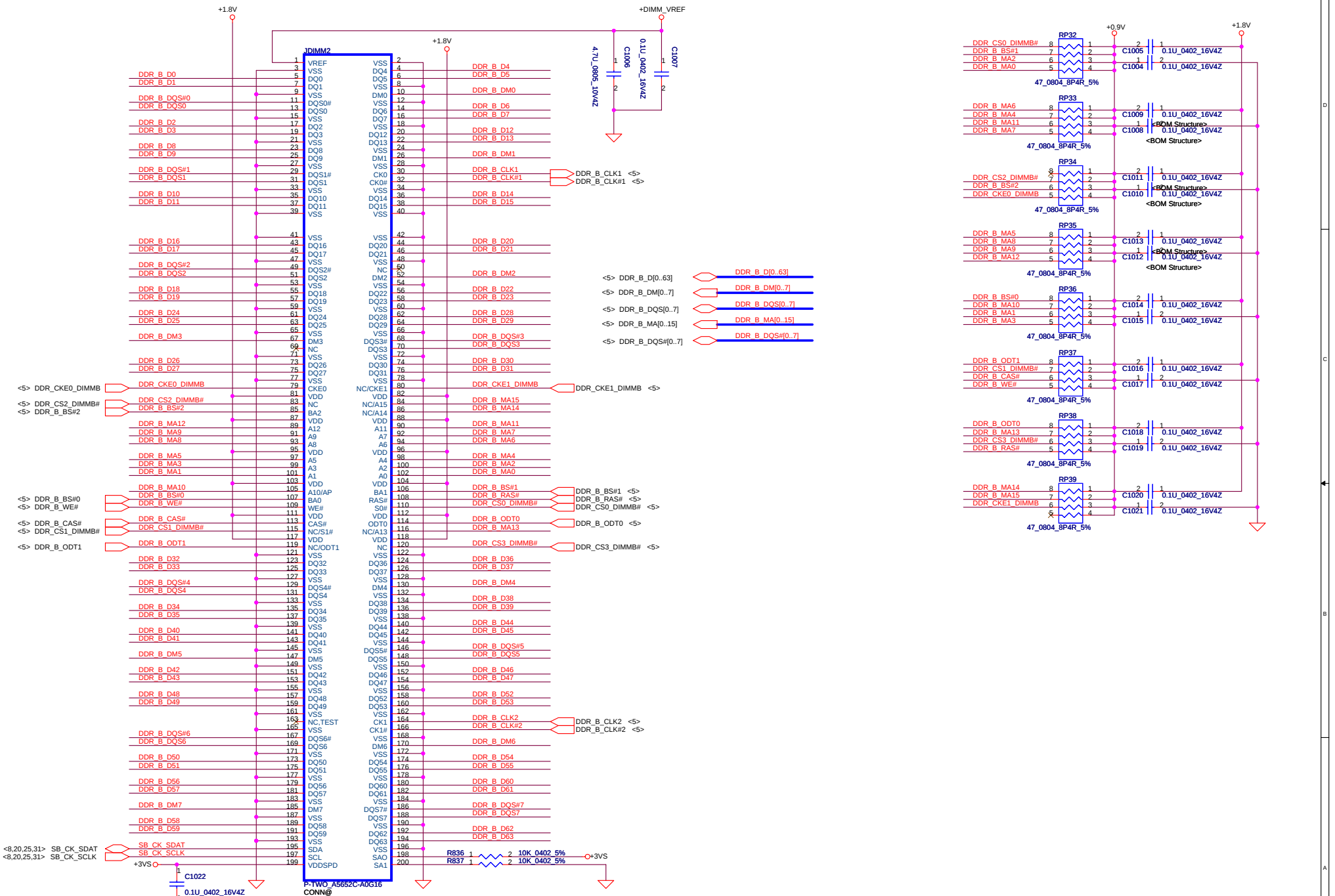
## VTT decoupling.



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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Sheet                    | 7 of 49              |

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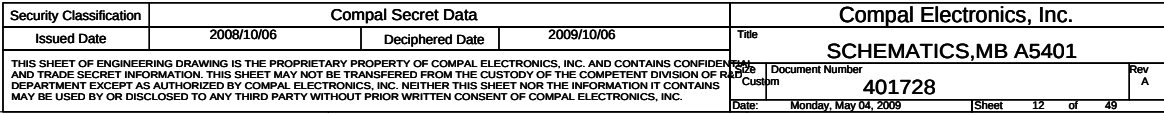


DIMM2 H:5.2mm (BOT)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |                    |            |                          |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------|------------|--------------------------|---------------|
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| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |                    |            | Monday, May 04, 2009     | Sheet 9 of 49 |









Layout Note: 50 mil for VSSDL



MEM\_A9(NC)  
MEM\_A10(NC)  
MEM\_A11(NC)  
MEM\_A12(NC)  
MEM\_A13(NC)  
  
MEM\_BA0(NC)  
MEM\_BA1(NC)  
MEM\_BA2(NC)  
  
MEM\_RASb(NC)  
MEM\_CASb(NC)  
MEM\_Web(NC)  
MEM\_Csb(NC)  
MEM\_Cke(NC)

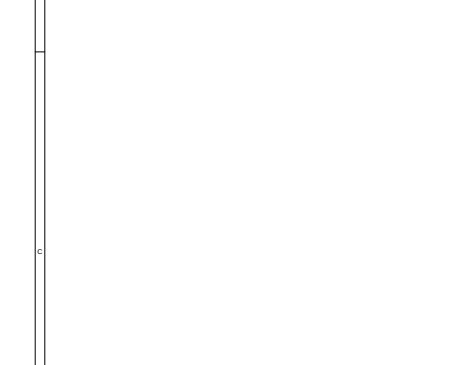
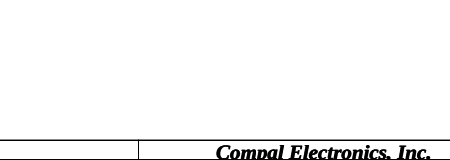
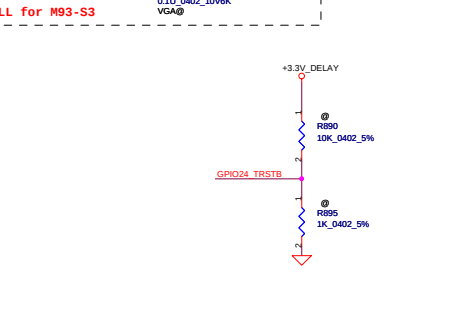
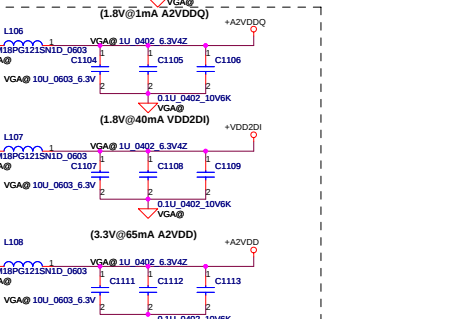
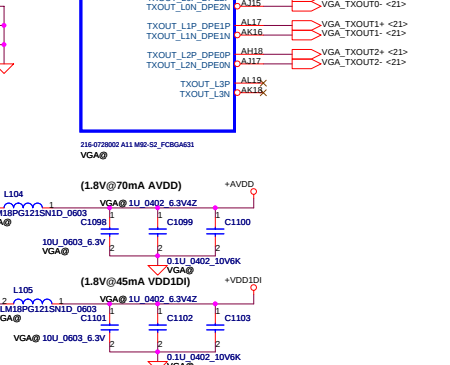
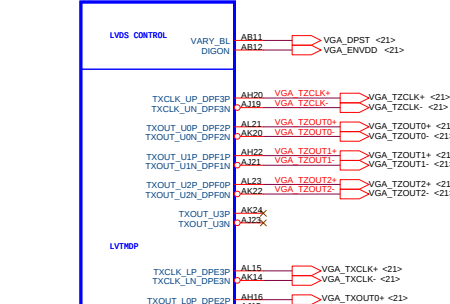
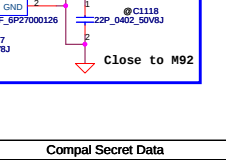
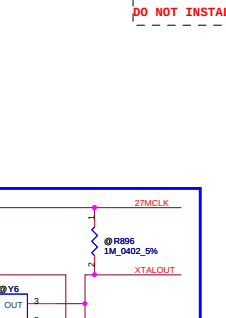
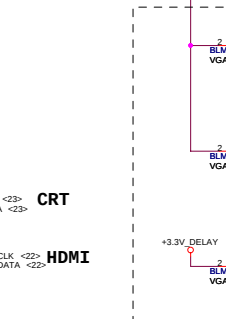
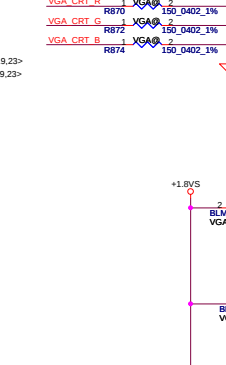
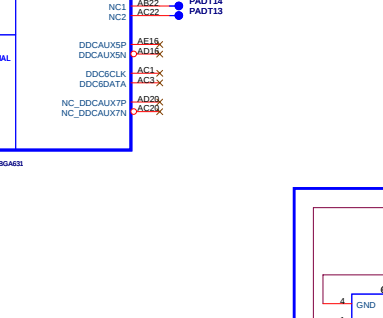
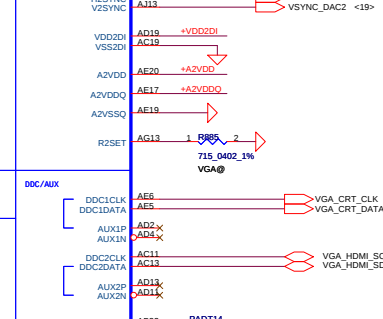
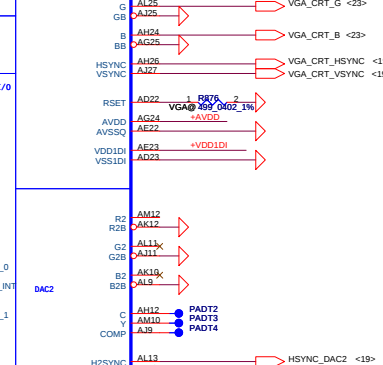
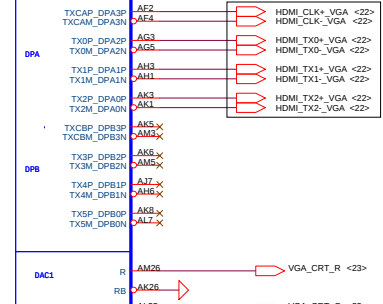
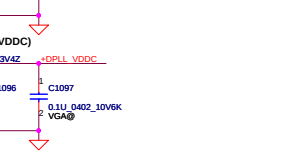
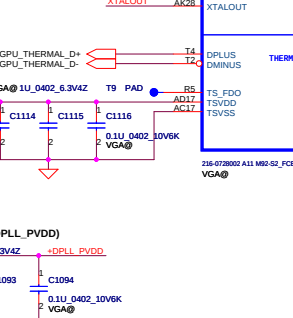
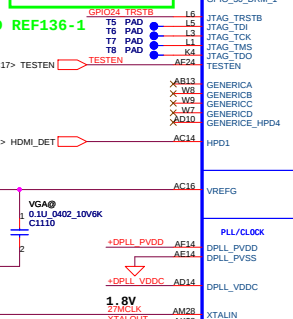
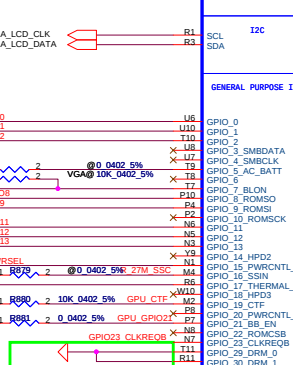
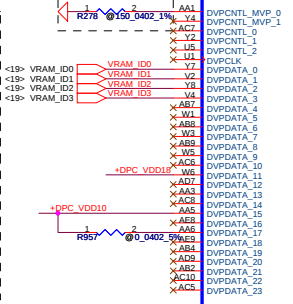
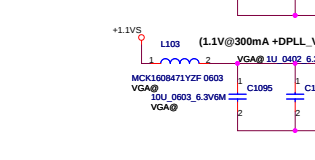
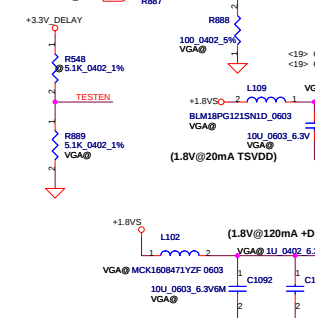
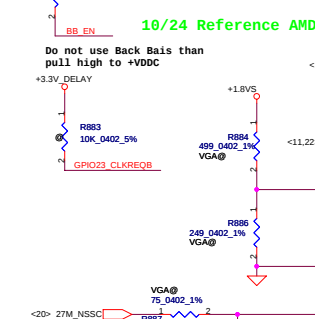
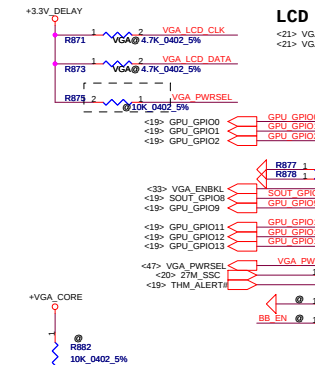
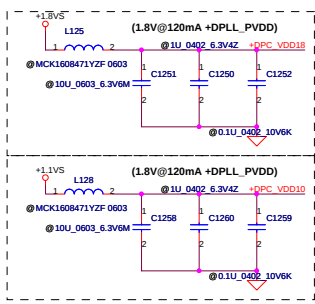
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+1.8VS=W/S=20/10mil For Memory PLL power  
+1.1VS=W/S=20/10mil For Memory PLL power

<11,23> GMCH\_CRT\_HSYNC  

alexainf@hotmail.com

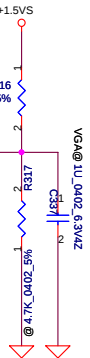
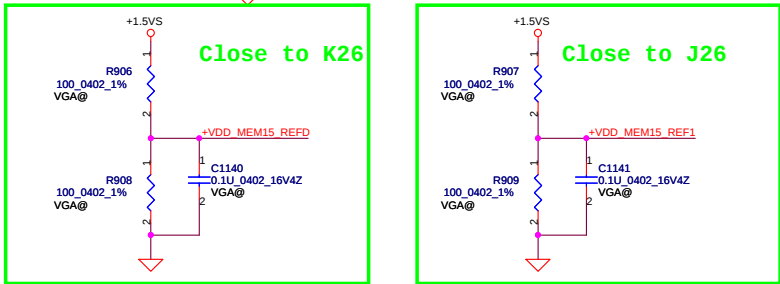


For M92-S2: DO NOT Install any Component in this Box.

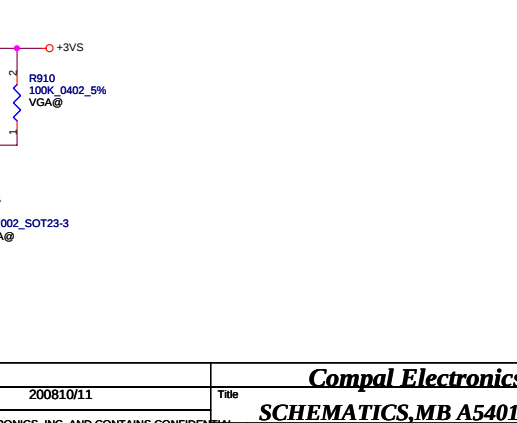
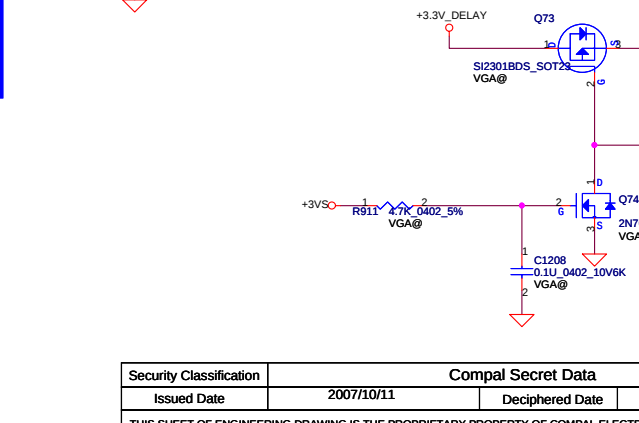
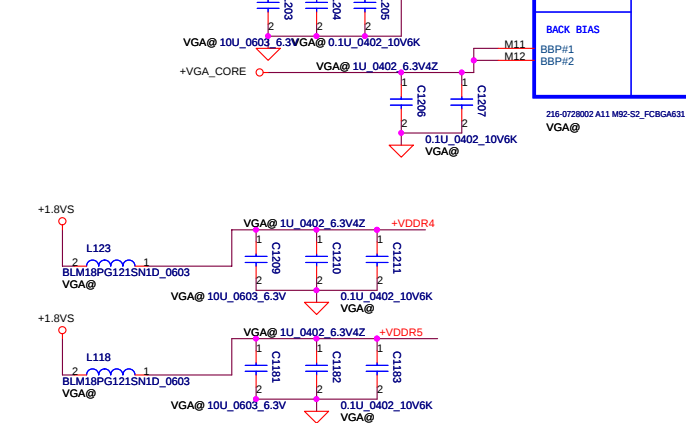
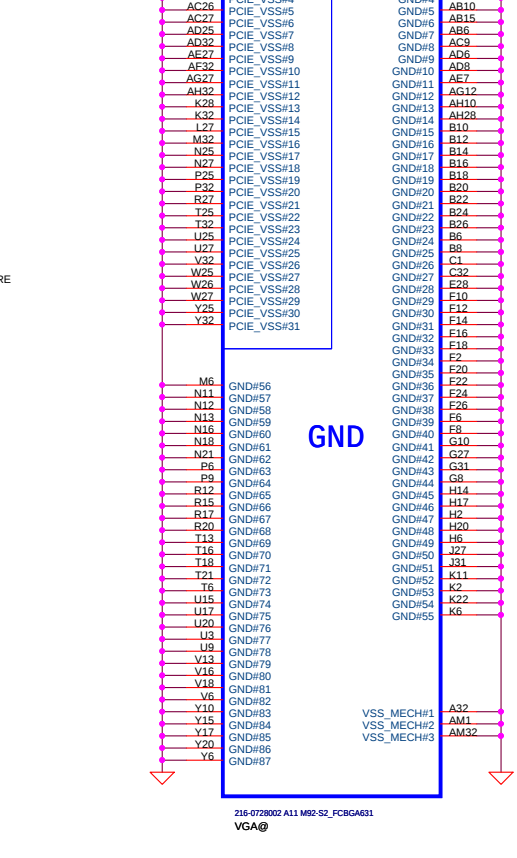
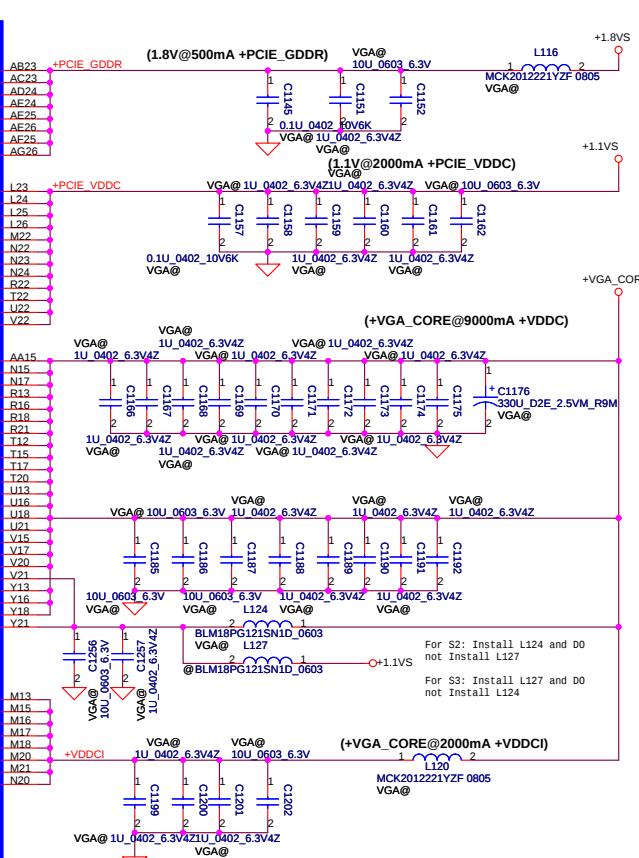
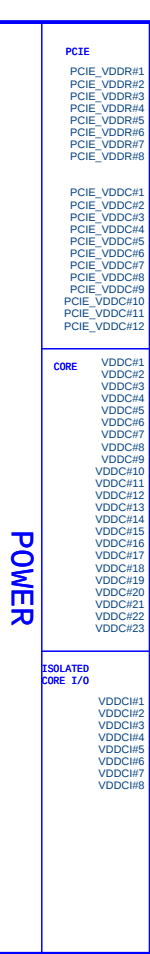
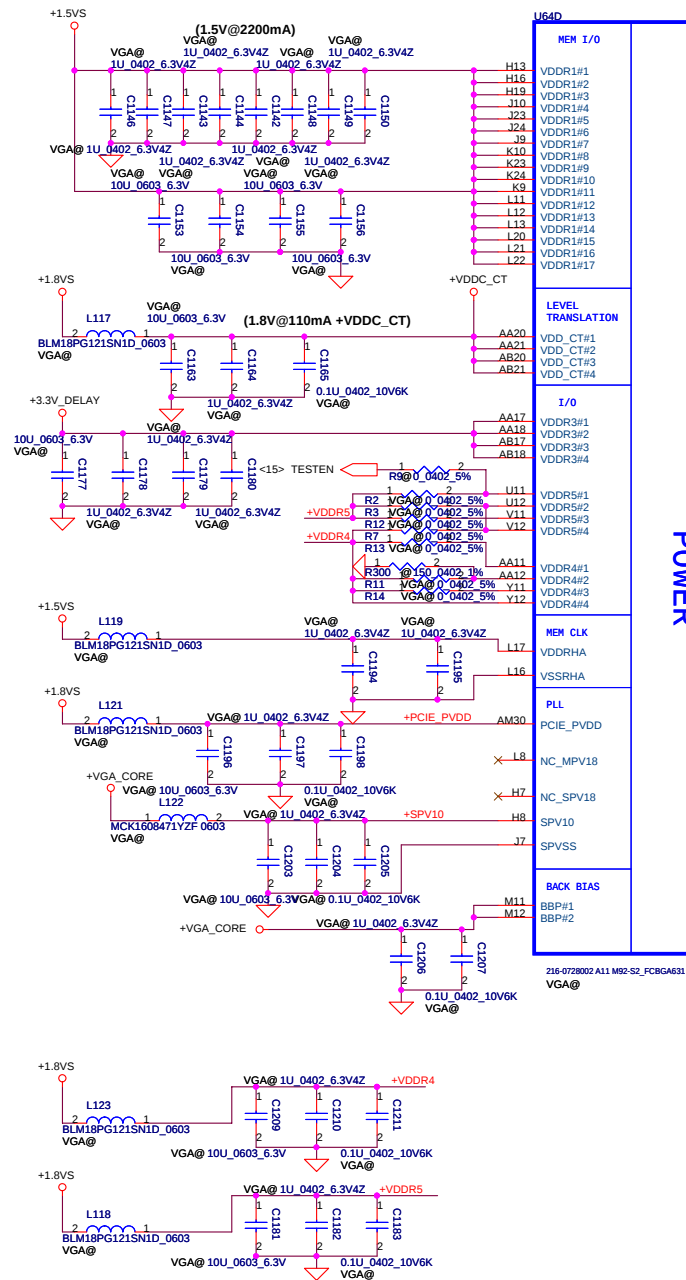


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            | Compal Secret Data   |            | Title           |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------|------------|-----------------|----------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2007/10/11 | Deciphered Date      | 2008/10/11 | Document Number | 401728   |
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| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | Monday, May 04, 2009 |            | Sheet           | 15 of 49 |

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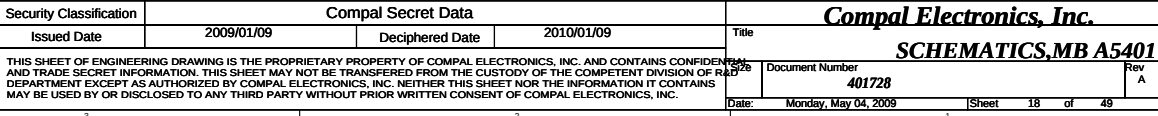


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                                                                |     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 401728                                                         | A   |
| Date: Monday, May 04, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | Sheet 16 of 49     |            |                                                                |     |

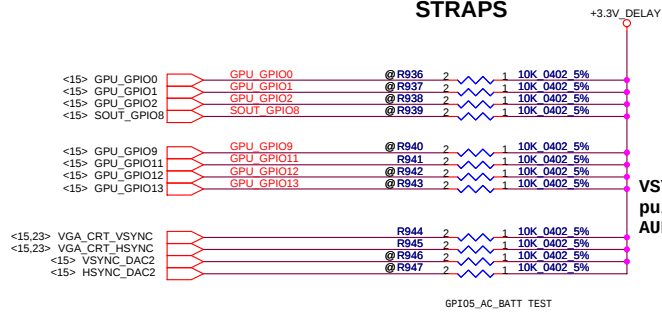


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title                |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|----------------------|----------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/10/11 | Deciphered Date    | 2008/10/11 | SCHEMATICS, MB A5401 |          |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 401728               | A        |
| Date: Monday, May 04, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                    |            | Sheet                | 17 of 49 |

hexainf@normal.com

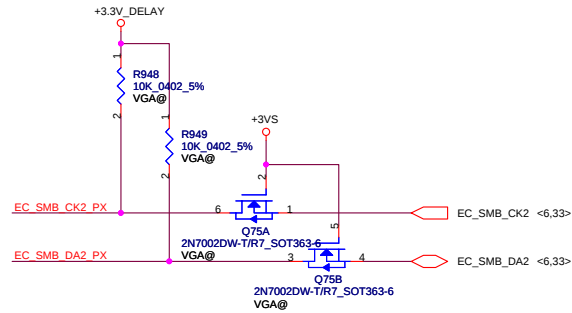


## STRAPS

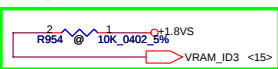
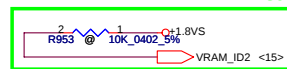
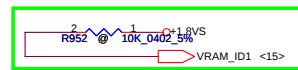
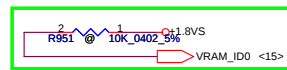
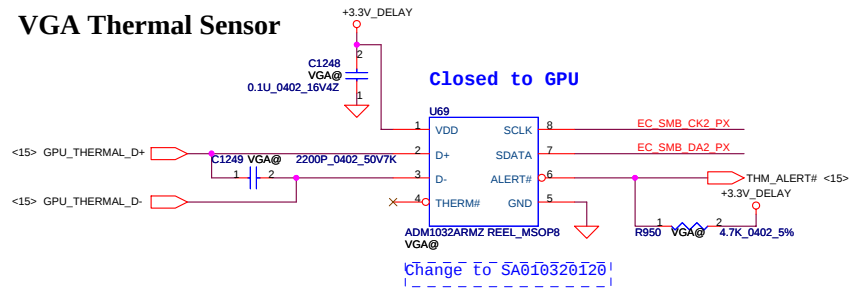


VSYNC\_DAC1 and HSYNC\_DAC1  
pull up to HDMI & DISPLAYPORT  
AUDIO function

GPIO5\_AC\_BATT\_TEST



## VGA Thermal Sensor



Internal pull low

## CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOs ARE USED,  
THEY MUST NOT CONFLICT DURING RESET

| STRAPS               | PIN            | DESCRIPTION OF DEFAULT SETTINGS                                                                                                                                                 | RECOMMENDED SETTINGS |
|----------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| TX_PWRS_ENB          | GPIO0          | PCIE FULL TX OUTPUT SWING                                                                                                                                                       | 1                    |
| TX_DEEMPH_EN         | GPIO1          | PCIE TRANSMITTER DE-EMPHASIS ENABLED                                                                                                                                            | 1                    |
| BIF_GEN2_EN_A        | GPIO2          | PCIE GNE2 ENABLED                                                                                                                                                               | 1                    |
| BIF_CLK_PM_EN        | GPIO8          | BIF_CLK_PM_EN                                                                                                                                                                   | 0                    |
| BIF_VGA_DIS          | GPIO9          | VGA ENABLED                                                                                                                                                                     | 0                    |
| BIF_RX_PLL_CALIB_BP  | GPIO21         |                                                                                                                                                                                 | 0                    |
| BIOS_ROM_EN          | GPIO_22_ROMCSB |                                                                                                                                                                                 | 1                    |
| ROMIDCFG(2:0)        | GPIO[13:11]    | BIF_RX_PLL_CALIB_BP                                                                                                                                                             | 0 0 1                |
| VIP_DEVICE_STRAP_ENA | V2SYNC         | ENABLE EXTERNAL BIOS ROM                                                                                                                                                        | 0                    |
| SMS_EN_HARD          | H2SYNC         | SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT                                                                                                                                  | 0                    |
| CCBPASS              | GENERICC       | IGNORE VIP DEVICE STRAPS                                                                                                                                                        | 0                    |
| AUD[1]               | HSYNC          | AUD[1] AUD[0]<br>0 0 No audio function<br>0 1 Audio for DisplayPort and HDMI if dongle is detected<br>1 0 Audio for DisplayPort only<br>1 1 Audio for both DisplayPort and HDMI | X X                  |
| AUD[0]               | VSYNC          |                                                                                                                                                                                 |                      |

## AMD RESERVED CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOs ARE USED,  
THEY MUST NOT CONFLICT DURING RESET

H2SYNC GENERICC

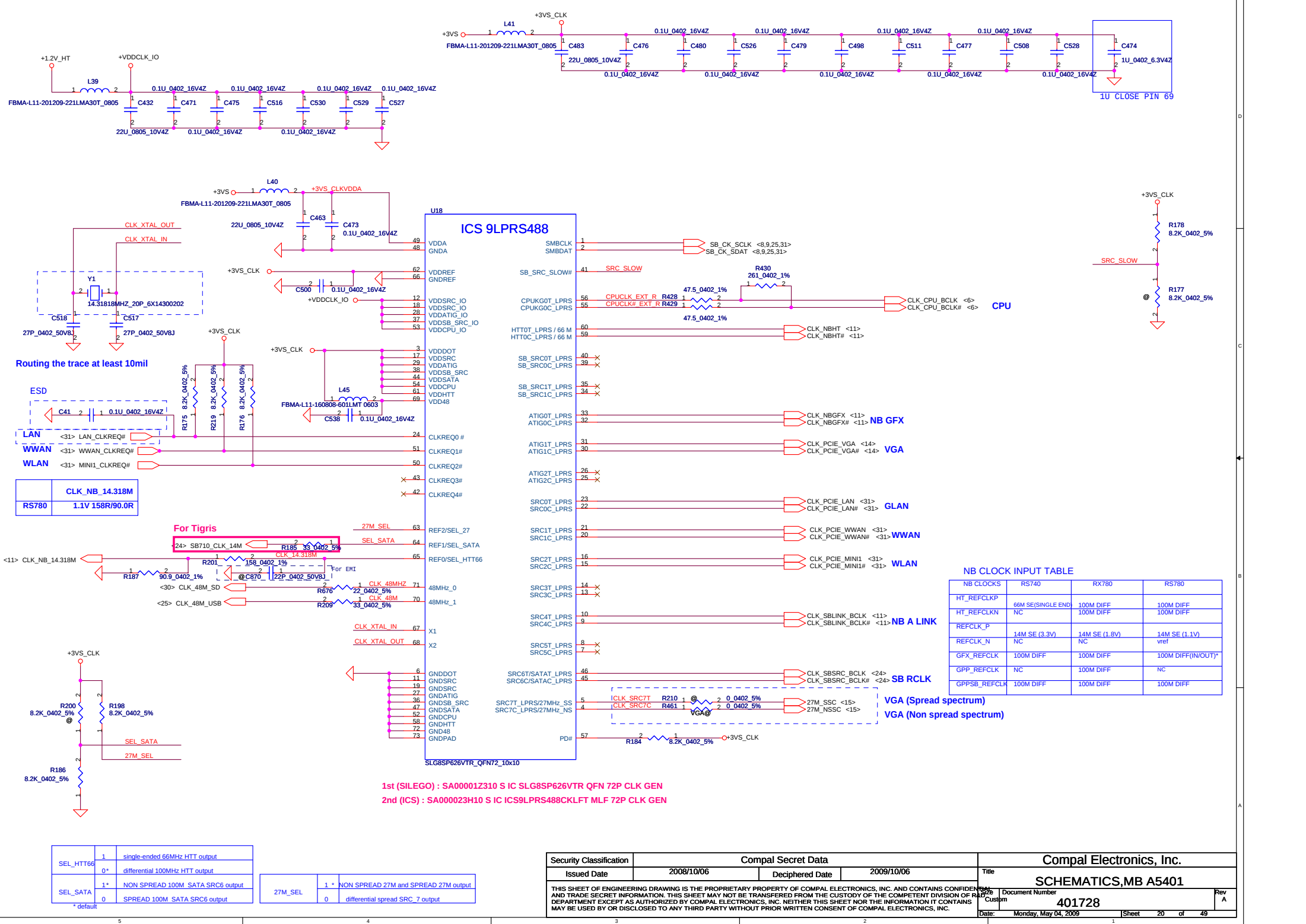
PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOs ARE USED,  
THEY MUST NOT CONFLICT DURING RESET

GPIO\_28\_TDO GPIO21\_BB\_EN

VRAM\_ID0=VRAM\_ID0\_0  
VRAM\_ID1=VRAM\_ID1\_1  
VRAM\_ID2=VRAM\_ID2\_2  
VRAM\_ID3=VRAM\_ID3\_3

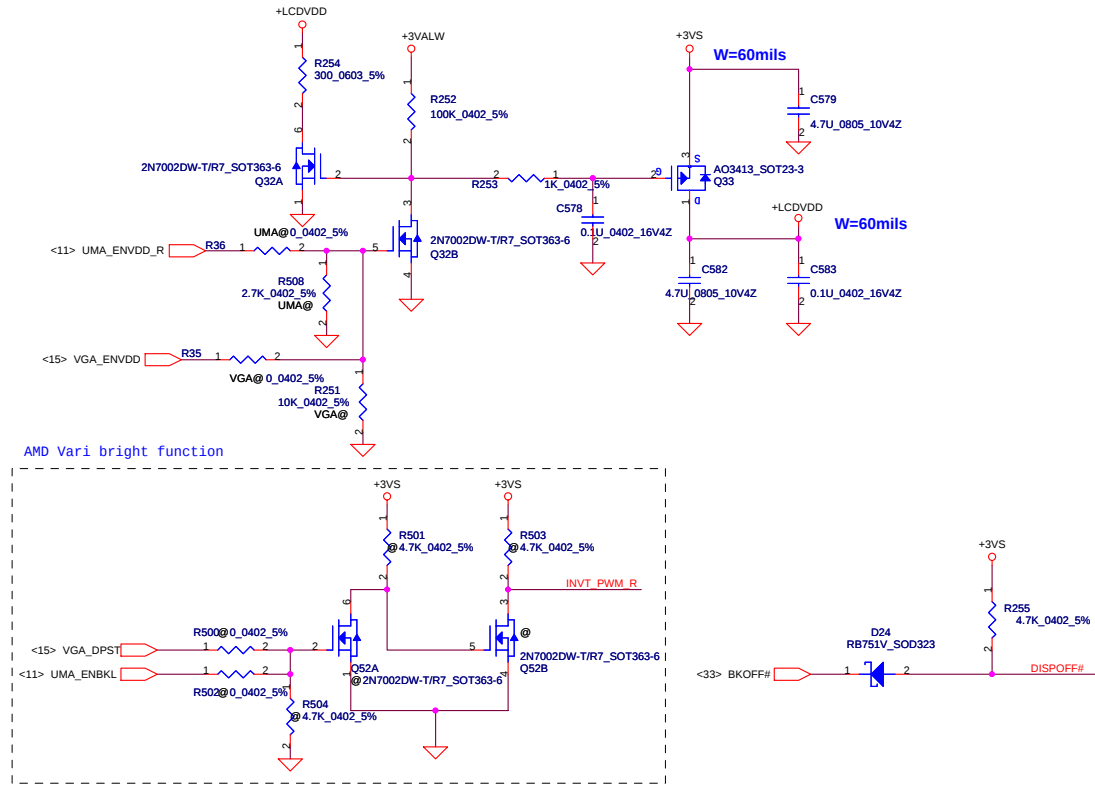
| STRAPS       | PIN               | GPU       | Project | VRAM size | Vendor Part Number# | Compal Part Number# | VRAM_ID 3,2,1,0 |
|--------------|-------------------|-----------|---------|-----------|---------------------|---------------------|-----------------|
| VRAM_ID[3:0] | DVPDATA (3,2,1,0) | M92 S2-LP | JM51_PU | 512MB(x4) | Samsung 64Mx16 1.5V | SA000035700         | 0 0 0 0         |
|              |                   |           | JM51_PU | 512MB(x4) | Hynix 64Mx16 1.5V   | SA000032400         | 0 0 0 1         |
|              |                   |           |         |           |                     |                     | 0 0 1 0         |
|              |                   |           |         |           |                     |                     | 0 0 1 1         |
|              |                   |           |         |           |                     |                     | 0 1 0 0         |
|              |                   |           |         |           |                     |                     | 0 1 0 1         |
|              |                   |           |         |           |                     |                     |                 |
|              |                   |           |         |           |                     |                     |                 |
|              |                   |           |         |           |                     |                     |                 |
|              |                   |           |         |           |                     |                     |                 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                            |                |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Title                      |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/10/11         | Deciphered Date | 2008/10/11 | Compal Electronics, Inc.   |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | 401728                     | A              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date: Monday, May 04, 2009 | Sheet 19 of 49 |

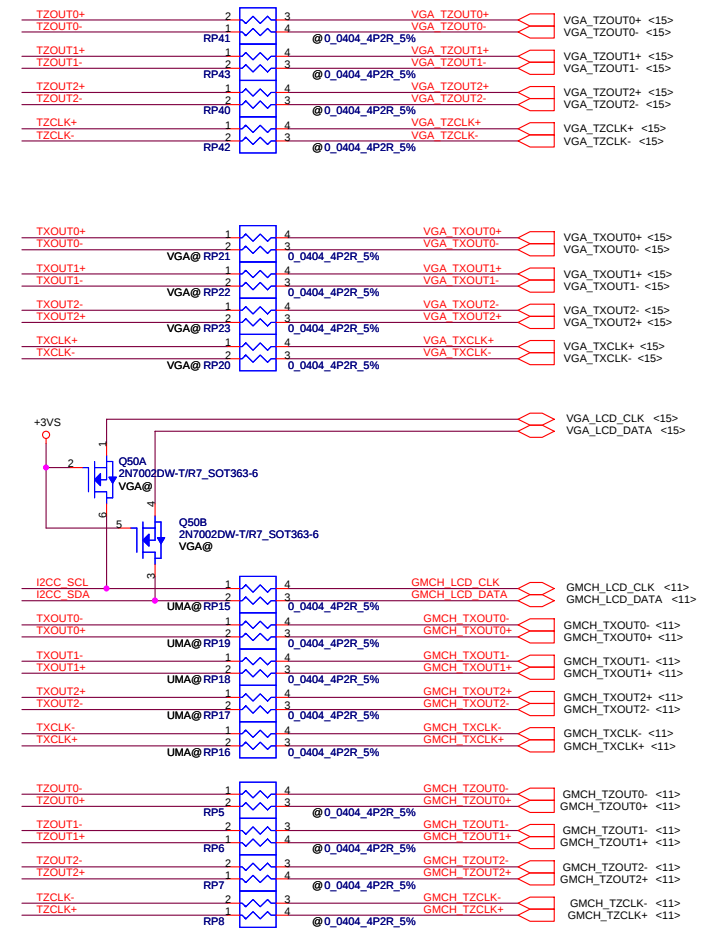
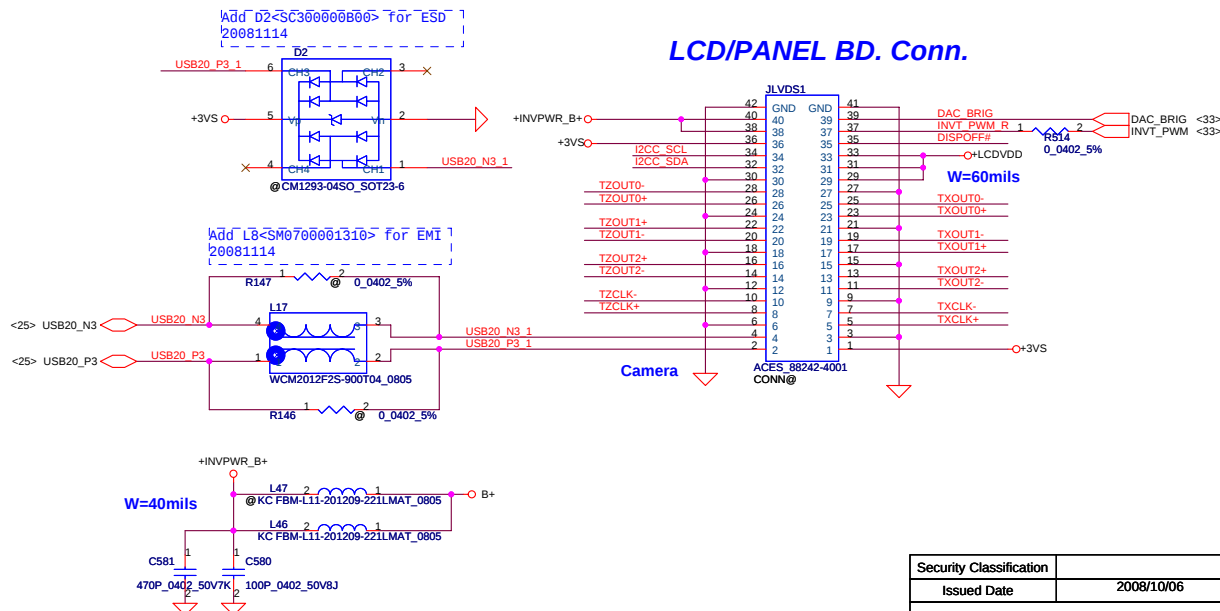


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                      |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                      |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Monday, May 04, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 20 of 49             |

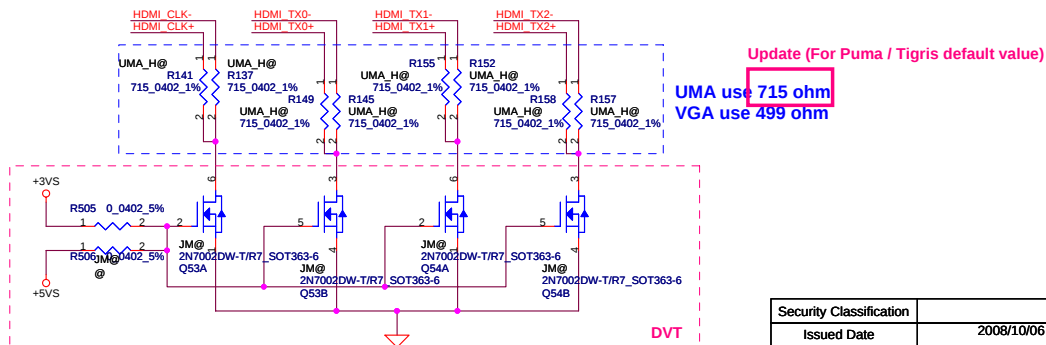
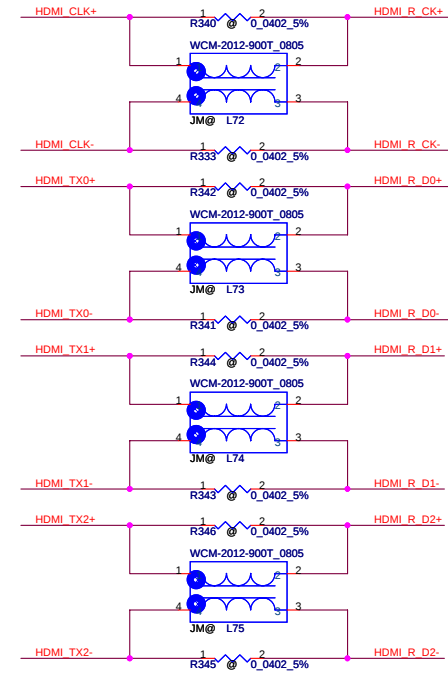
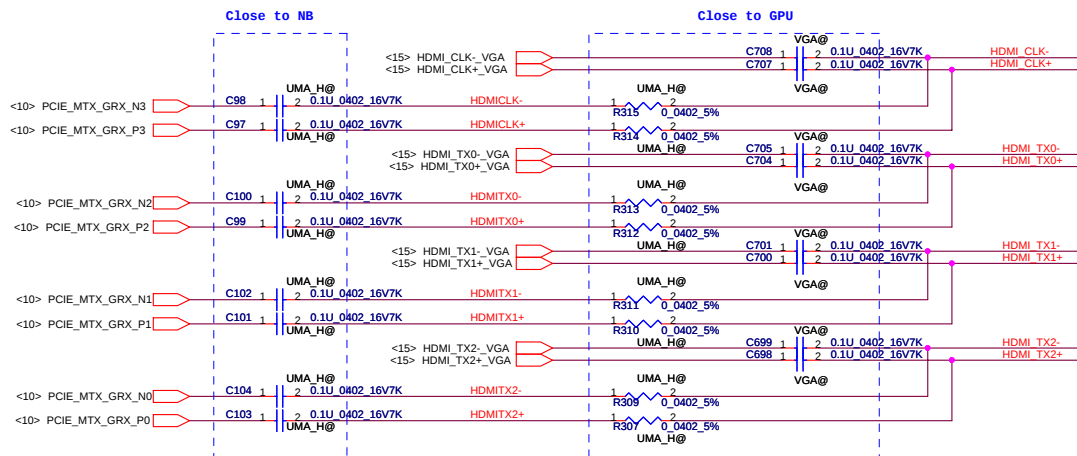
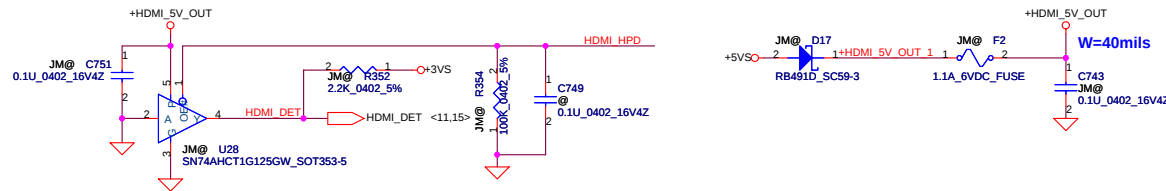
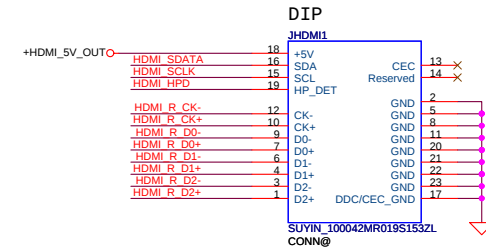
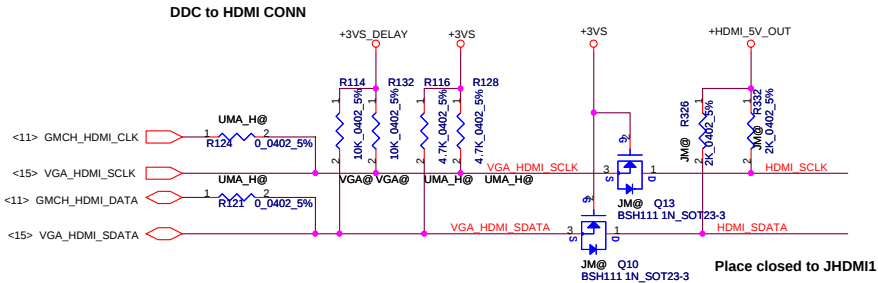
## LCD POWER CIRCUIT



## LCD/PANEL BD. Conn.

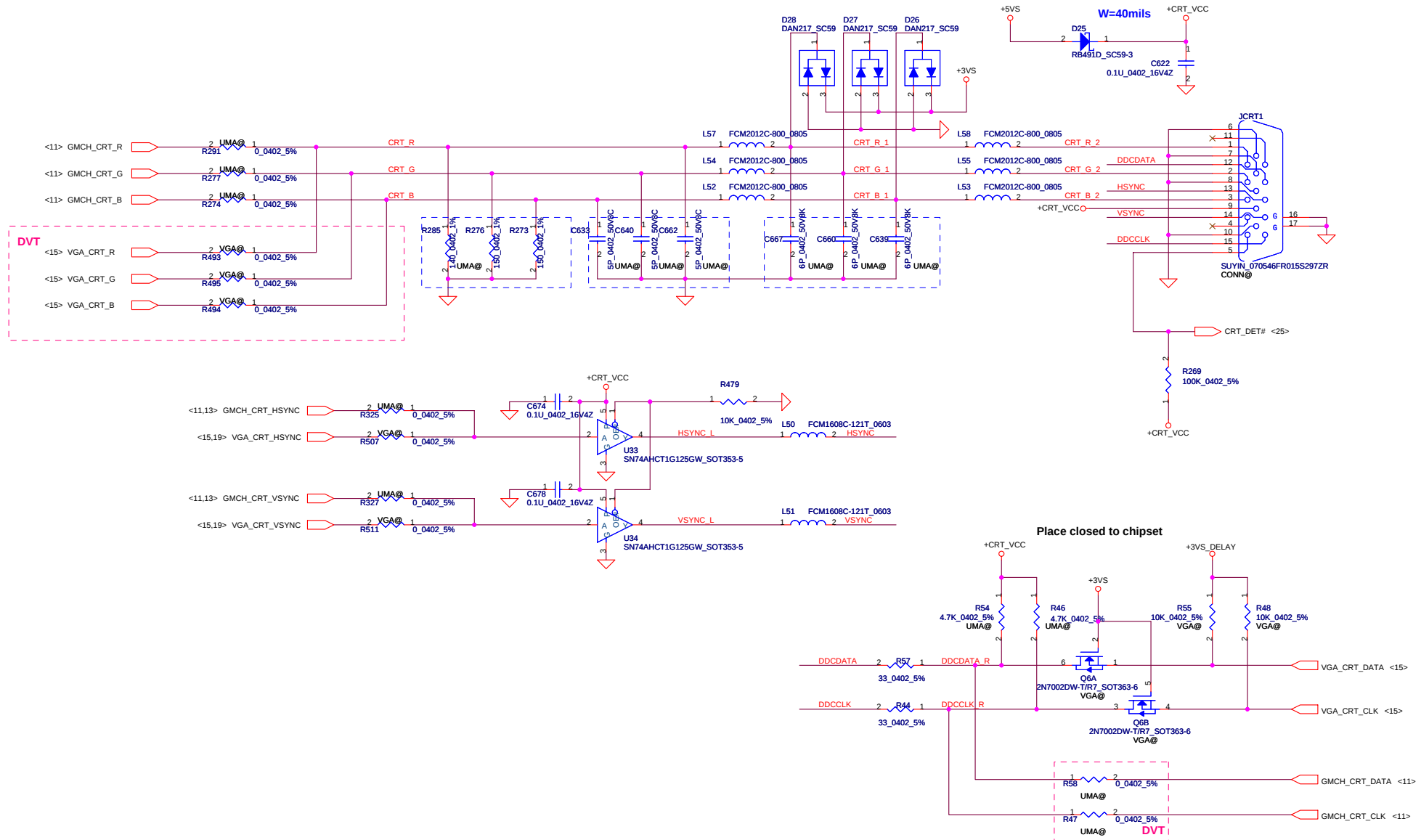


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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  | 401728                     |  |  |  | Rev A                    |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  | Date: Monday, May 04, 2009 |  |  |  | Sheet 21 of 49           |  |  |  |



| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  | Compal Secret Data |  |  |  | Compal Electronics, Inc. |  |  |  |
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| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  | 2008/10/06         |  |  |  | Deciphered Date          |  |  |  |
| 2008/10/06                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  | 2009/10/06         |  |  |  | Title                    |  |  |  |
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| Date: Monday, May 04, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  | 401728             |  |  |  | Rev A                    |  |  |  |
| Sheet 22 of 49                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |                    |  |  |  |                          |  |  |  |

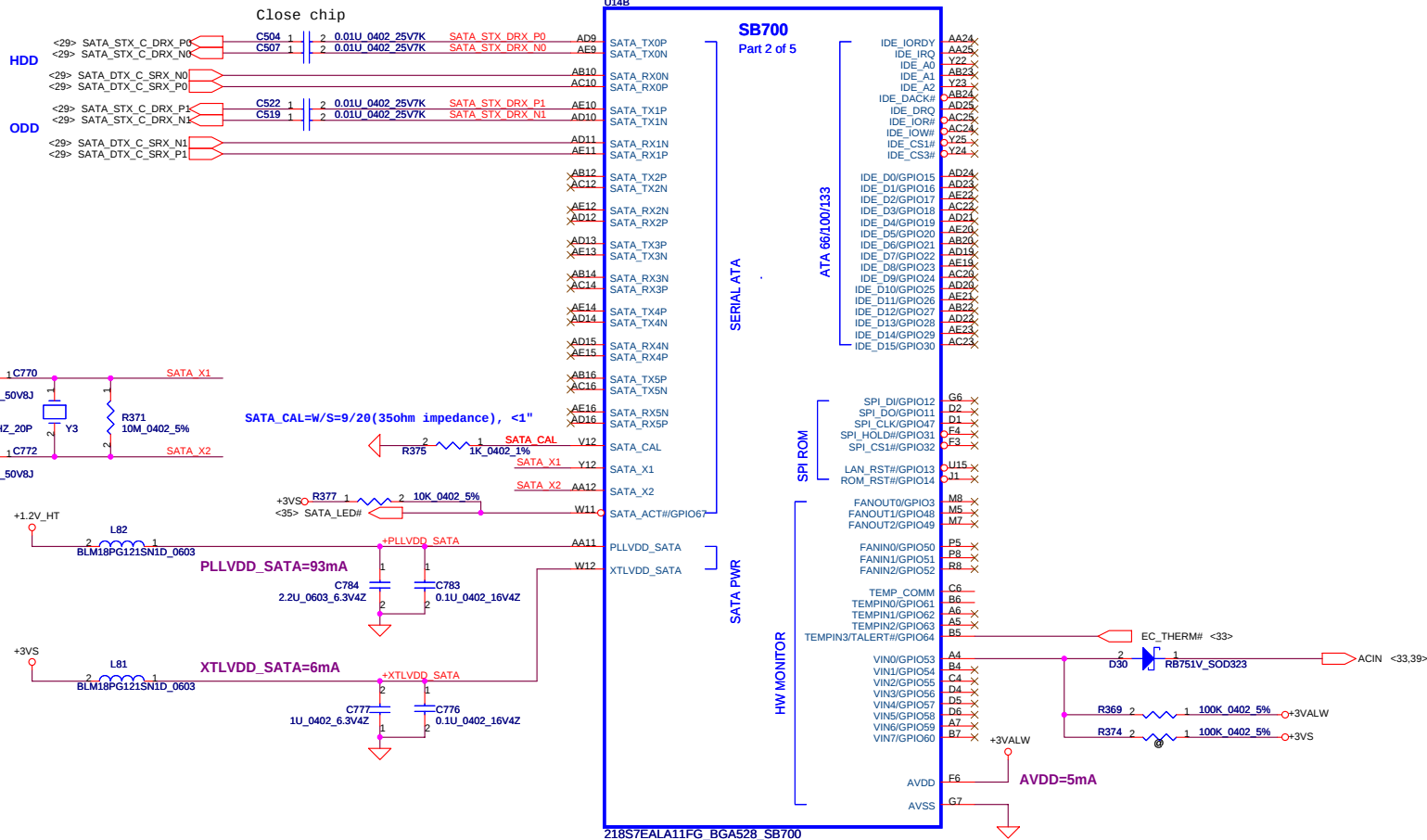
# CRT CONNECTOR



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                     |  |                      |  |                |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|---------------------|--|----------------------|--|----------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                     |  |                      |  |                |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2008/10/06         |  | Deciphered Date |  | 2009/10/06               |  | Title               |  |                      |  |                |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Document Number     |  | 401728               |  | Rev A          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Date                |  | Monday, May 04, 2009 |  | Sheet 23 of 49 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                     |  |                      |  |                |  |







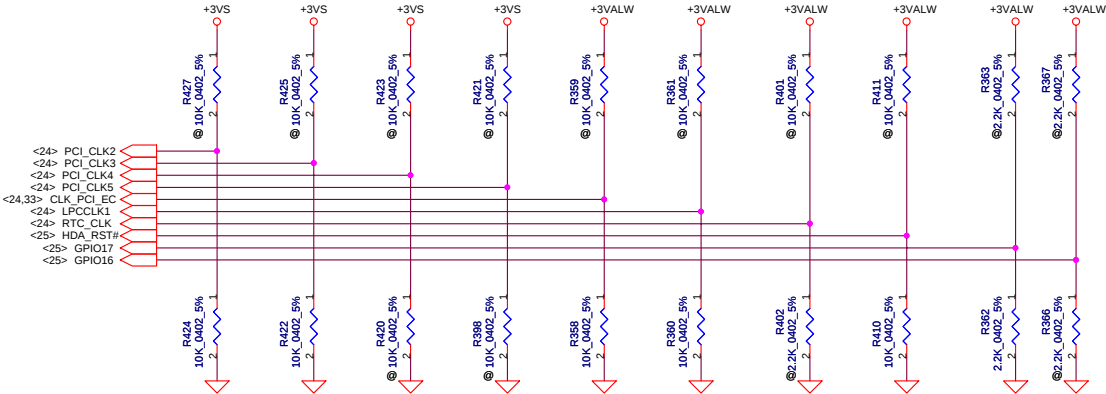
| Port Number | Pri/SEC,Mas/Slave assignment | SATA drive controlled by |
|-------------|------------------------------|--------------------------|
| Port 0      | Primary master               | SATA controler           |
| Port 1      | Secondary master             | SATA controler           |
| Port 2      | Primary slave                | SATA controler           |
| Port 3      | Secondary slave              | SATA controler           |
| Port 4      | Primary (Secondary) master   | PATA controler           |
| Port 5      | Primary (Secondary) slave    | PATA controler           |



REQUIRED STRAPS

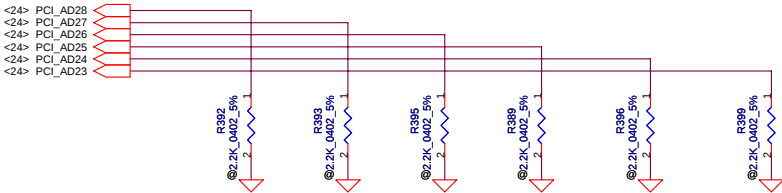
NOTE: SB700 HAS INTERNAL 15K PULL UP RESISTOR FOR RTC\_CLK

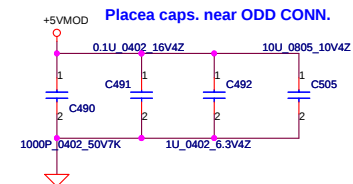
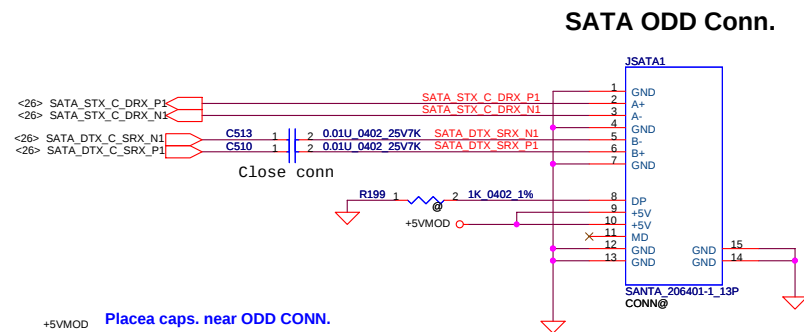
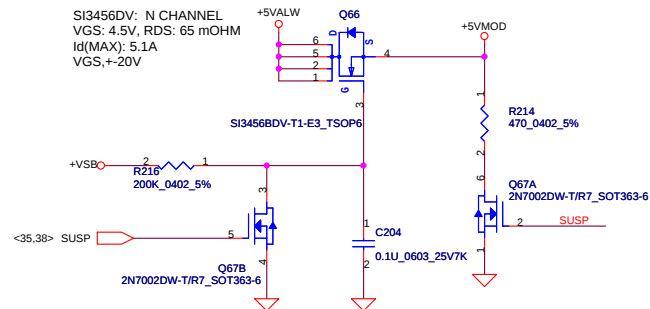
|           | PCI_CLK2                                 | PCI_CLK3                             | PCI_CLK4 | PCI_CLK5 | LPC_CLK0<br>CLK_PCI_EC                 | LPC_CLK1                          | RTC_CLK                                                 | AZ_RST_CD#                    | GP17                                                                 | GP16 |
|-----------|------------------------------------------|--------------------------------------|----------|----------|----------------------------------------|-----------------------------------|---------------------------------------------------------|-------------------------------|----------------------------------------------------------------------|------|
| PULL HIGH | BOOTFAIL<br>TIMER<br>ENABLED             | USE<br>DEBUG<br>STRAPS               | RESERVED | RESERVED | ENABLE PCI<br>MEM BOOT                 | CLKGEN<br>ENABLED                 | INTERNAL<br>RTC<br><br>DEFAULT                          | EC<br>ENABLED                 | Internal pull up<br>H,H = Reserved<br>H,L = SPI ROM<br>L,L = FWH ROM |      |
| PULL LOW  | BOOTFAIL<br>TIMER<br>DISABLED<br>DEFAULT | IGNORE<br>DEBUG<br>STRAPS<br>DEFAULT |          |          | DISABLE PCI<br>MEM BOOT<br><br>DEFAULT | CLKGEN<br>DISABLED<br><br>DEFAULT | EXT. RTC<br>(PD on X1,<br>apply<br>32KHz to<br>RTC_CLK) | EC<br>DISABLED<br><br>DEFAULT |                                                                      |      |



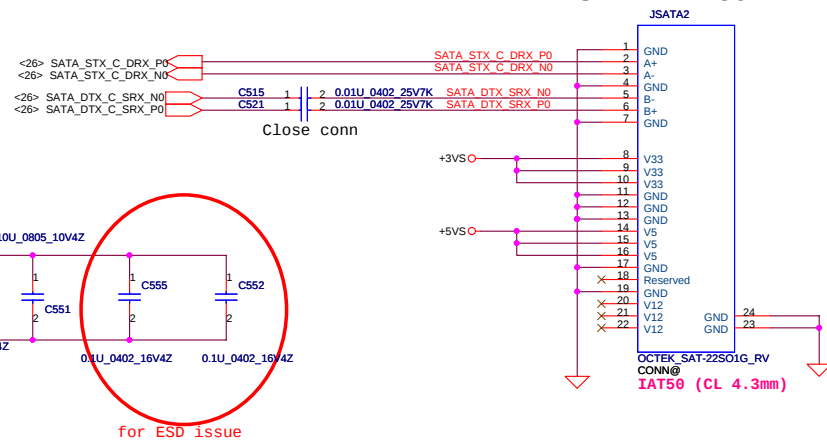
DEBUG STRAPS  
SB700 HAS 15K INTERNAL PU FOR PCI\_AD[28:23]

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





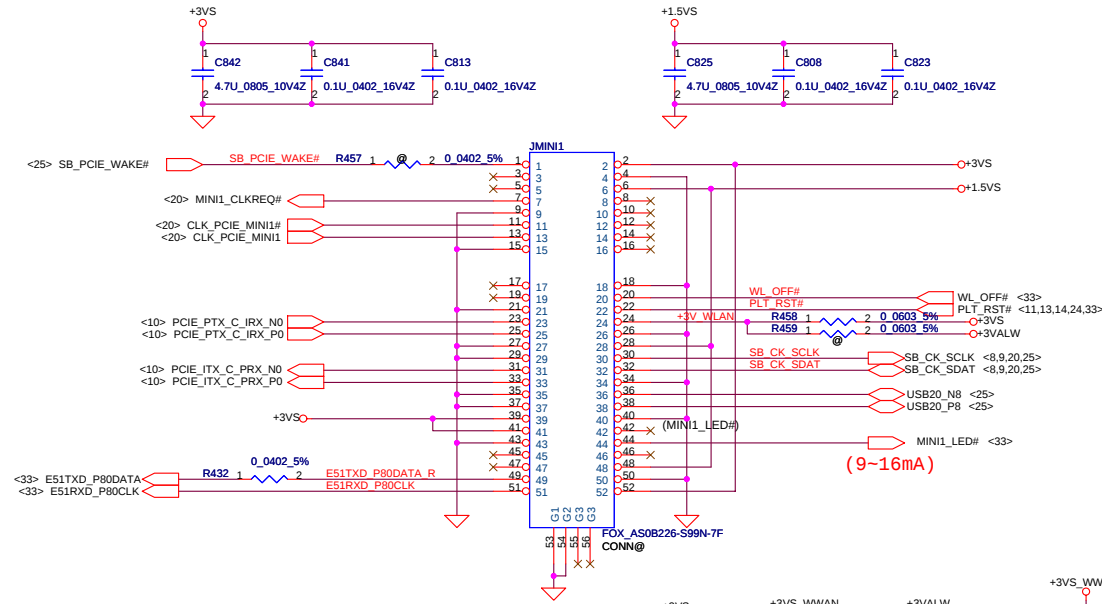
### SATA HDD Conn.



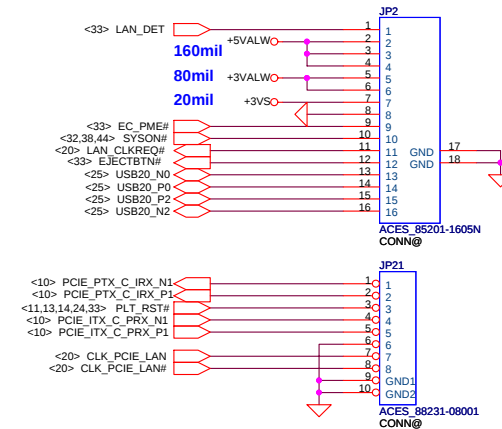
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                      |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|----------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                      |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Monday, May 04, 2009 | Sheet 29 of 49 |



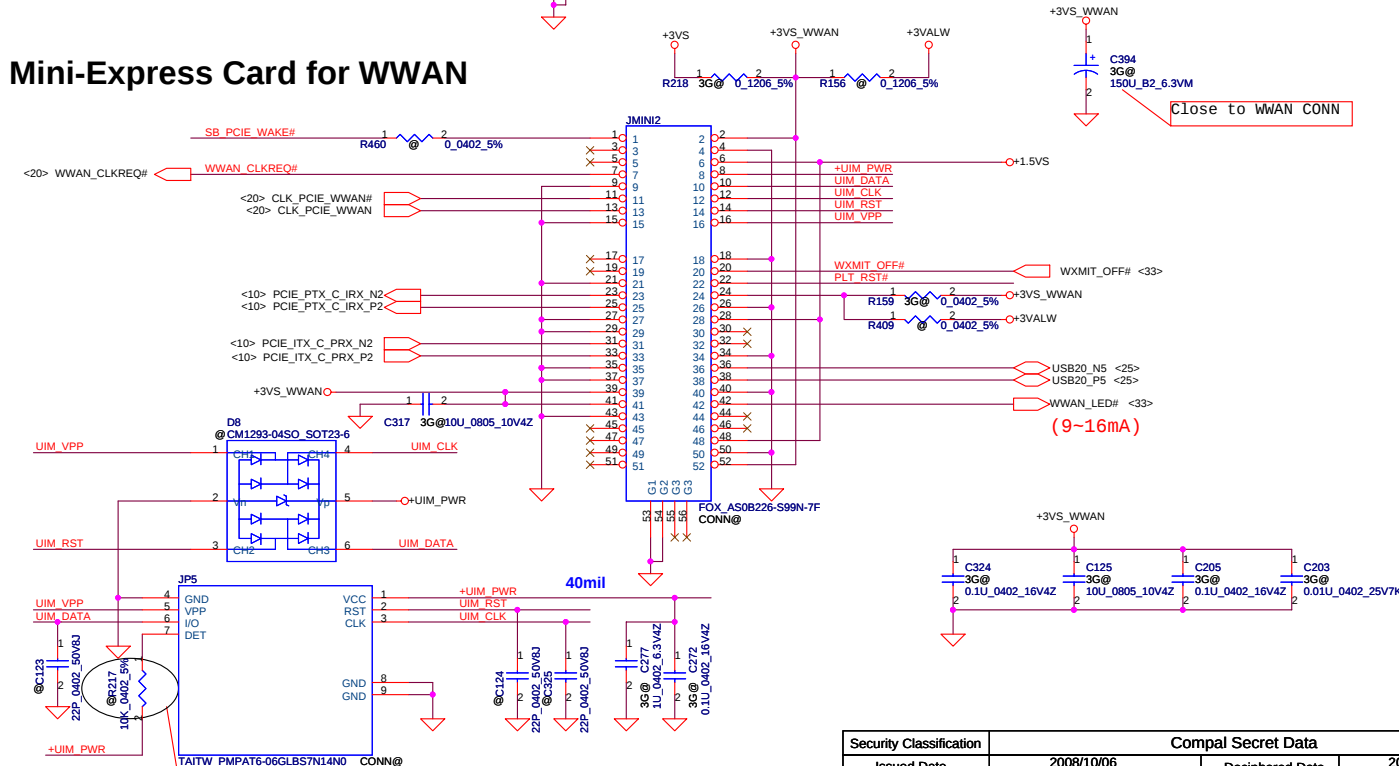
## For Wireless LAN



| Mini Card Power Rating |                    |        |                      |
|------------------------|--------------------|--------|----------------------|
| Power                  | Primary Power (mA) |        | Auxiliary Power (mA) |
|                        | Peak               | Normal | Normal               |
| +3VS                   | 1000               | 750    |                      |
| +3V                    | 330                | 250    | 250 (wake enable)    |
| +1.5VS                 | 500                | 375    | 5 (Not wake enable)  |



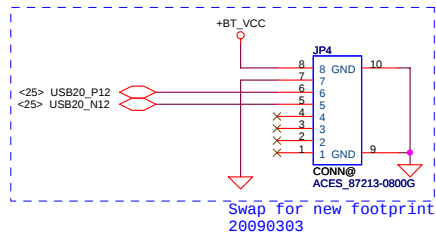
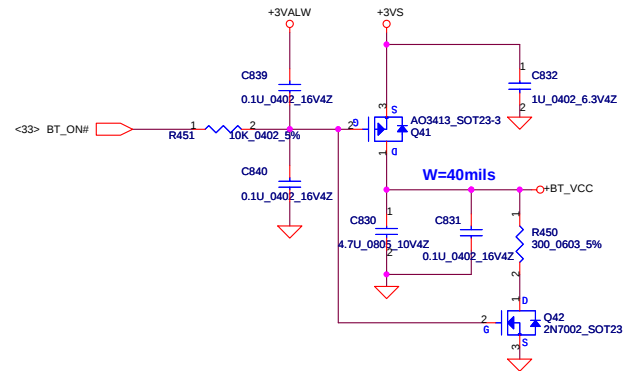
## Mini-Express Card for WWAN



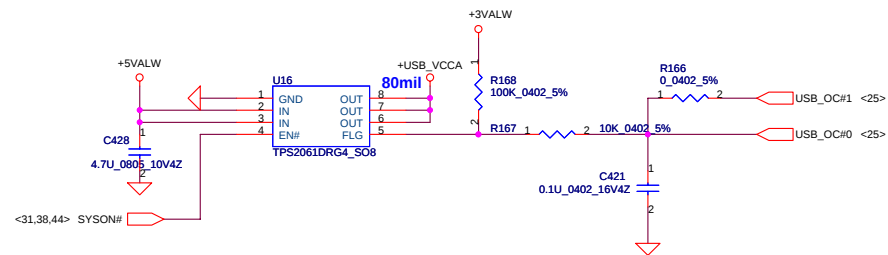
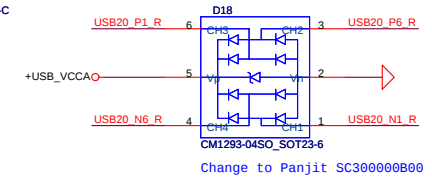
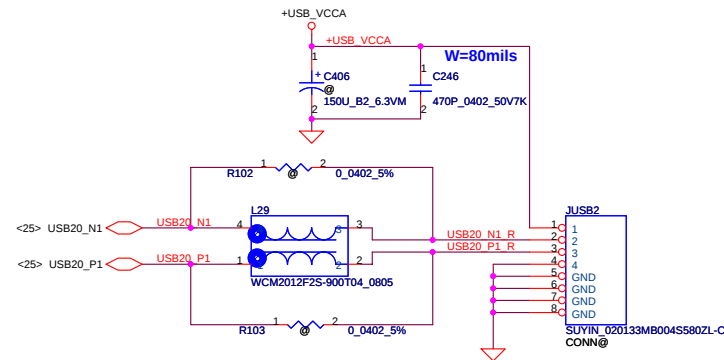
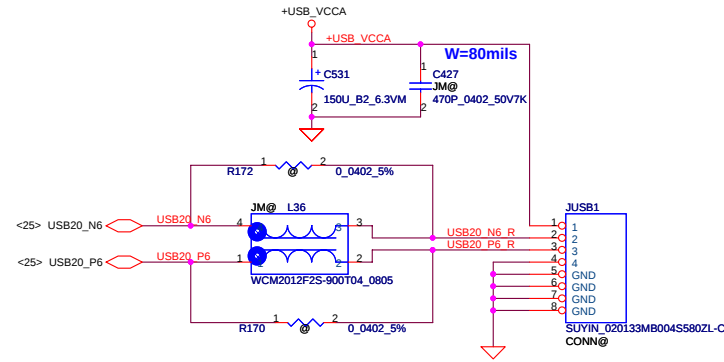
Reserve for SIM card does not meet rise time and pull-up is needed.

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                      |
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| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06 | Deciphered Date    | 2009/10/06 | Title                    | SCHEMATICS,MB A5401  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Monday, May 04, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 31 of 49             |

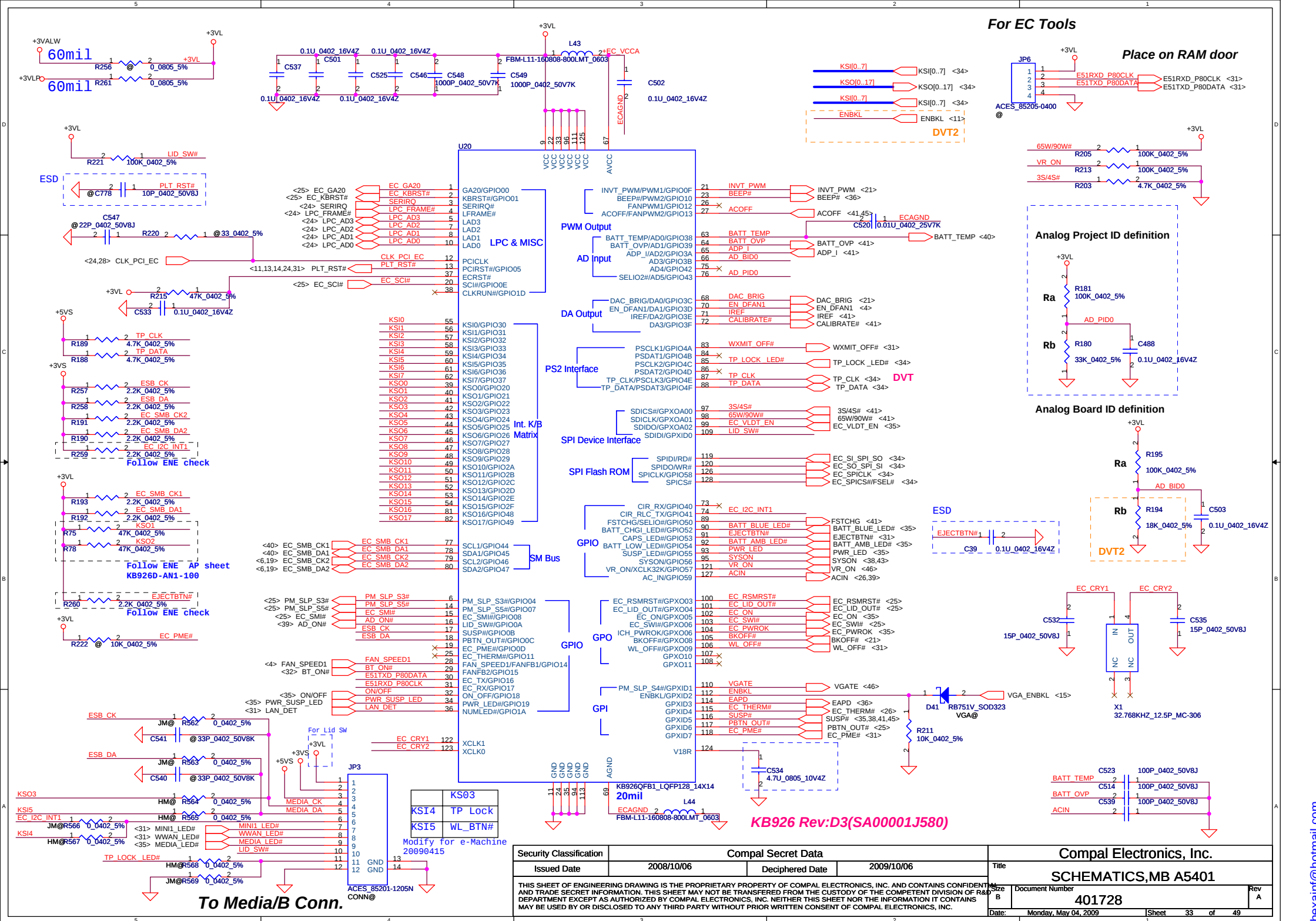
## Bluetooth Conn.



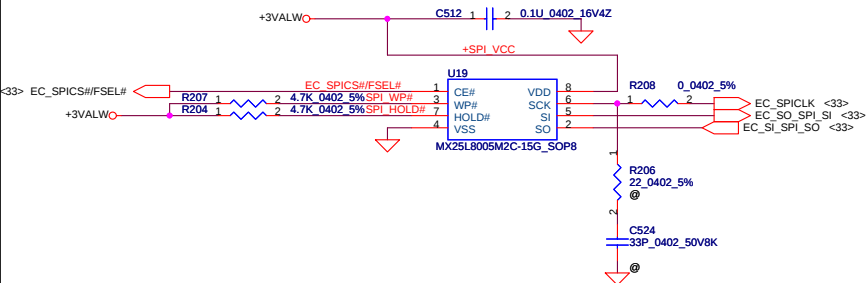
## USB PORT x 2



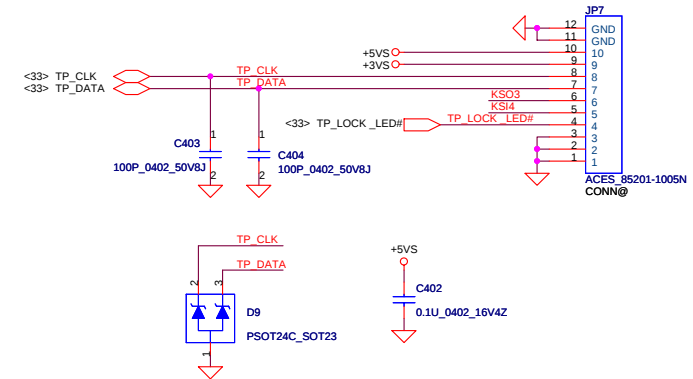
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                      |  |                |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2008/10/06         |  | Deciphered Date |  | 2009/10/06               |  | Title                |  |                |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Document Number          |  | 401728               |  | Rev A          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Date:                    |  | Monday, May 04, 2009 |  | Sheet 32 of 49 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                      |  |                |  |



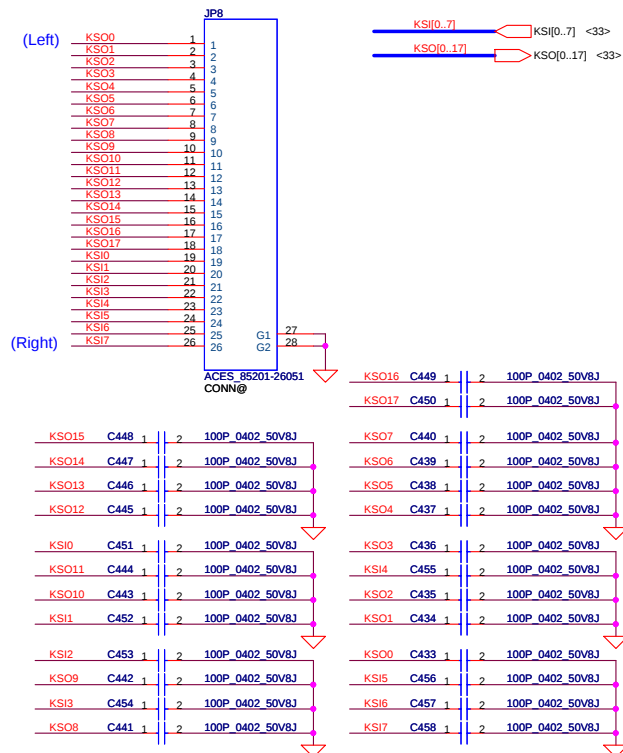
**BIOS(SYS / EC / VGA)**



**To TP/B Conn.**



**INT\_KBD Conn.**

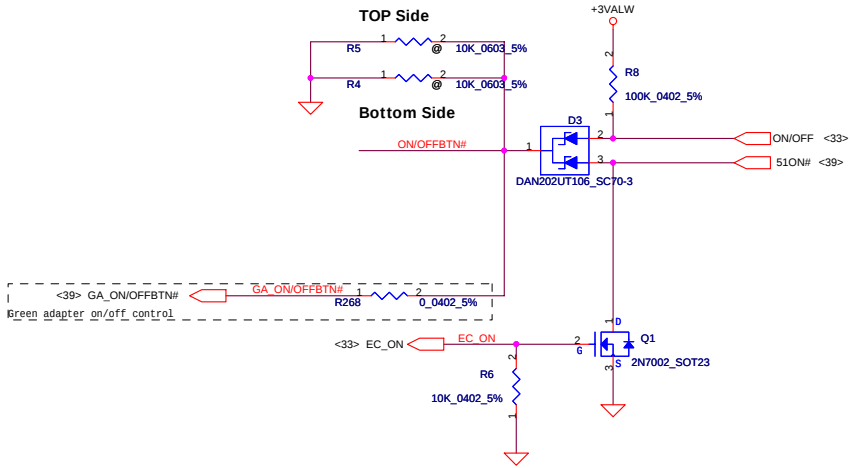


|      | KS04    | KS02        | KS03                               |
|------|---------|-------------|------------------------------------|
| KS15 | WL_BTN# | Volume Down | Back Up                            |
| KS16 | BT_BTN# | Volume Up   | Program (KBLG0)<br>Battery (KALG0) |
| KS14 |         |             | T/P lock                           |

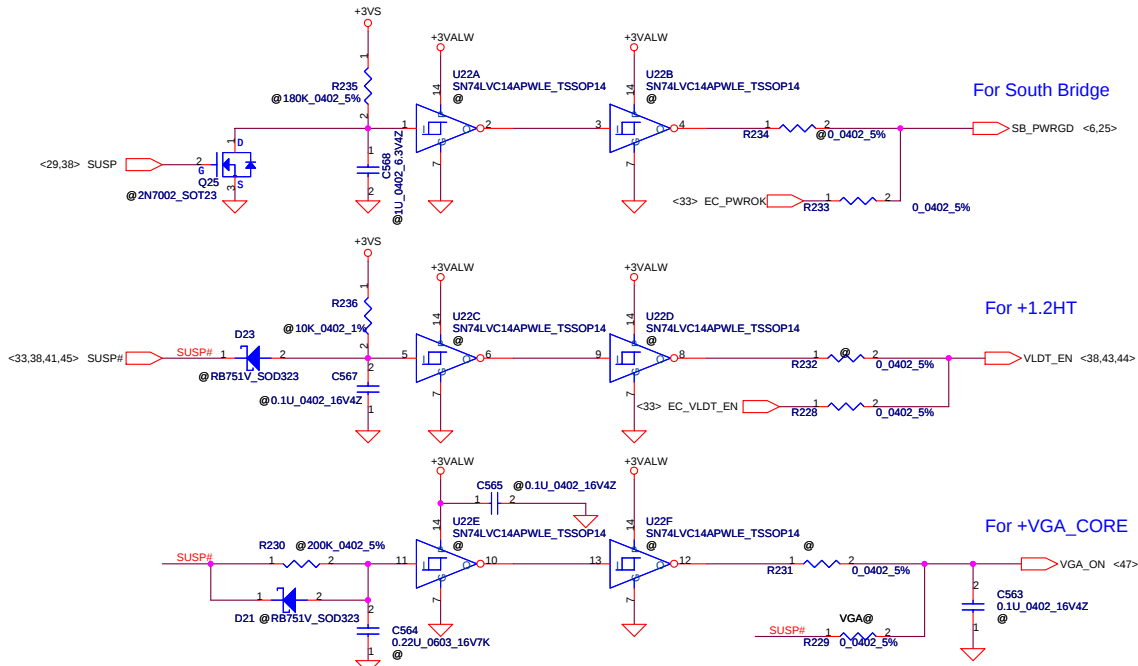
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                    |            |                          |                     |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | Compal Secret Data |            | Compal Electronics, Inc. |                     |
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| Date: Monday, May 04, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                    |            | Sheet 34 of 49           |                     |

## Power Button

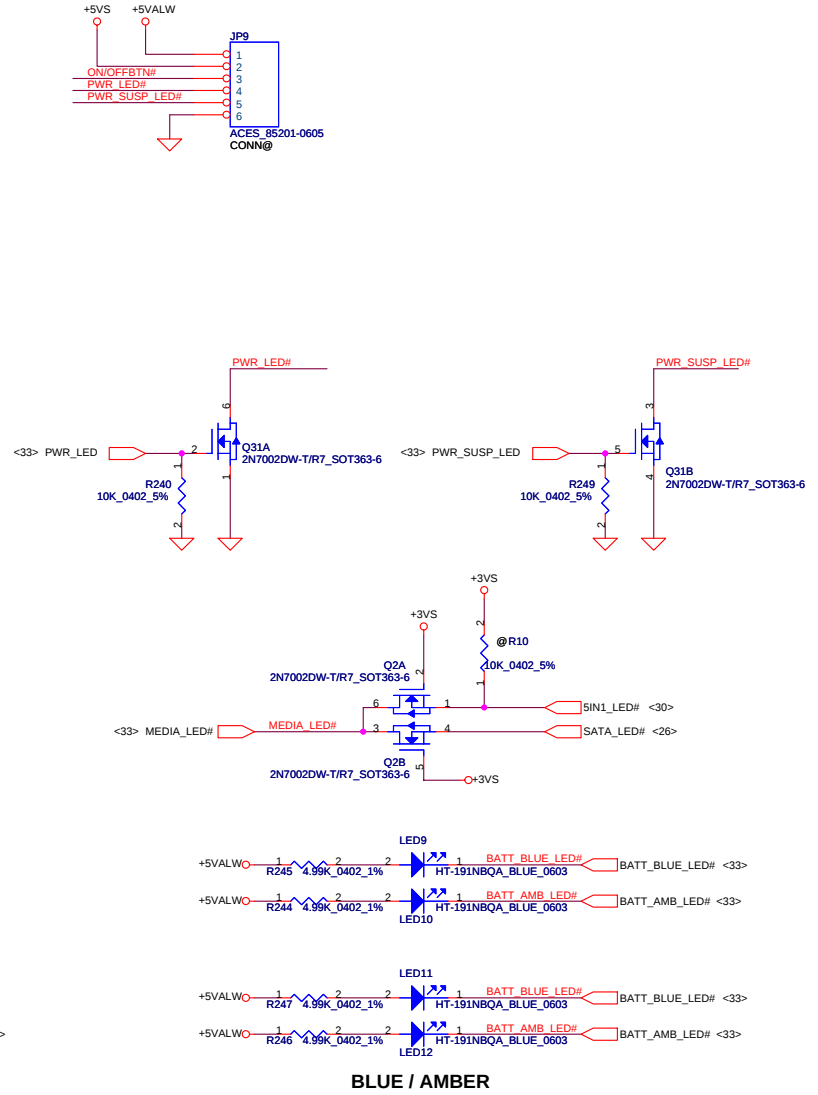
ON/OFF switch



### ***Power ON Circuit***

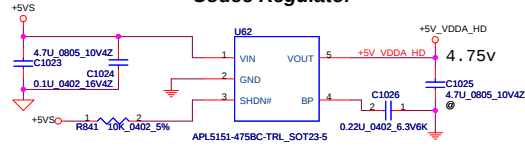


**To PWR/B Conn.**

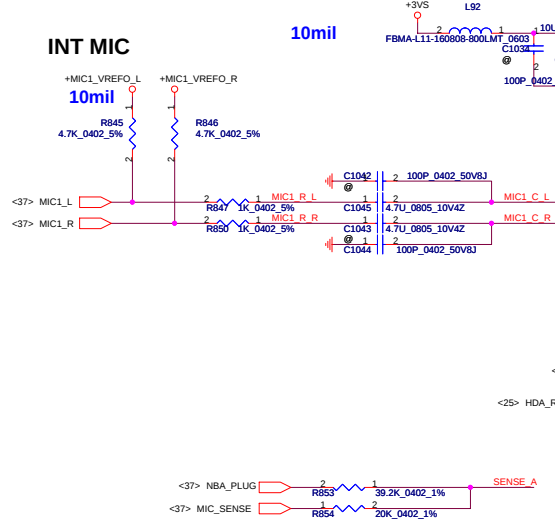


|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |            |                            |                      |       |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Compal Secret Data |                 |            | Compal Electronics, Inc.   |                      |       |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |            | Date: Monday, May 04, 2009 | Sheet 35 of 49       |       |

## Codec Regulator

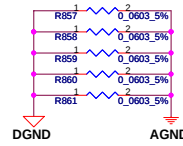


## INT MIC

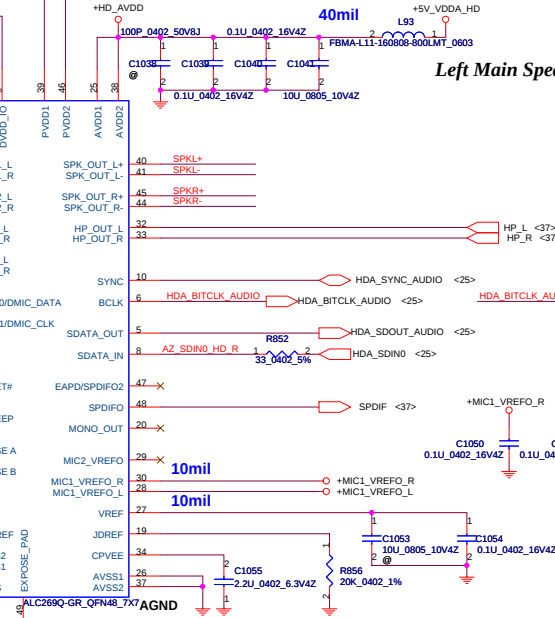


| Sense Pin | Impedance | Codec Signals       |
|-----------|-----------|---------------------|
| SENSE A   | 39.2K     | PORT-A (PIN 32, 33) |
|           | 20K       | PORT-B (PIN 21, 22) |
|           | 10K       | PORT-C (PIN 23, 24) |
|           | 5.1K      | PORT-D (PIN 48)     |
| SENSE B   | 39.2K     | PORT-E (PIN 14, 15) |
|           | 20K       | PORT-F (PIN 16, 17) |
|           | 10K       | PORT-G (PIN 20)     |
|           | 5.1K      | PORT-H (PIN 47)     |

## DGND To AGND Bypass

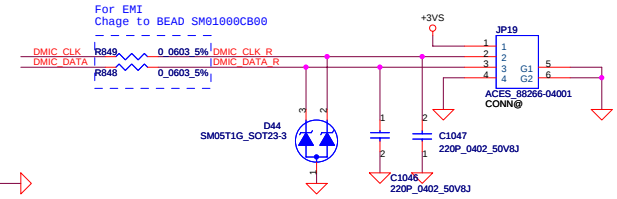
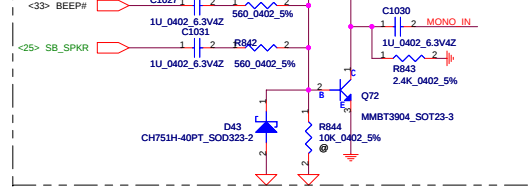


## Left Main Speaker Connector

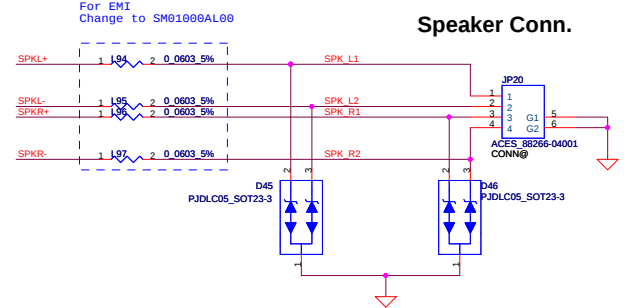


## Beep Circuit

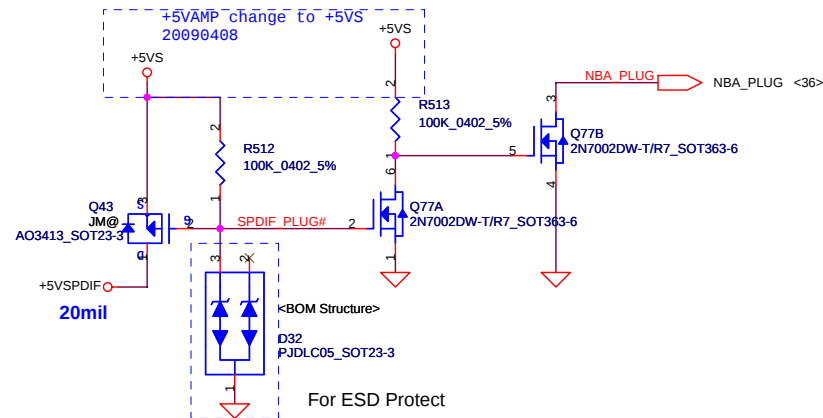
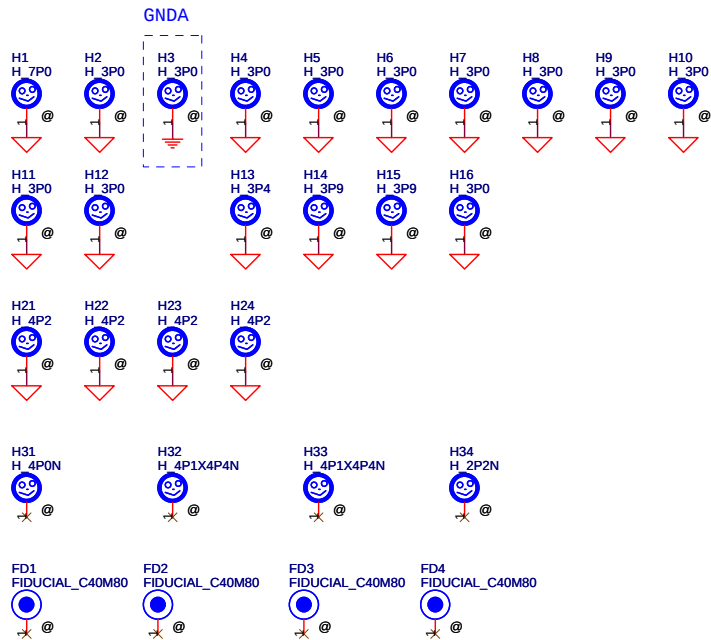
### EC Beep



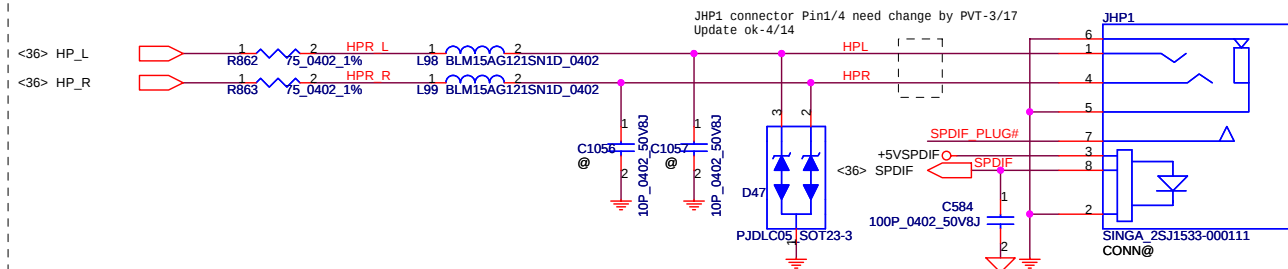
## Speaker Conn.



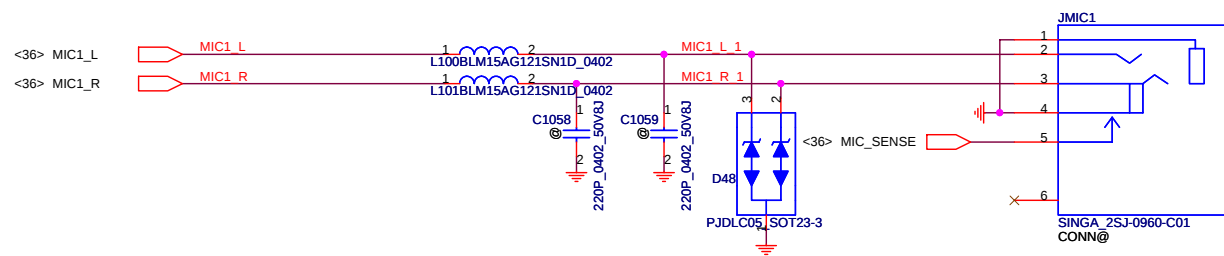
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                 |                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|--------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compal Secret Data   | Title           | Compal Electronics, Inc. |
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| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Monday, May 04, 2009 | Sheet           | 36 of 49                 |



## HeadPhone JACK

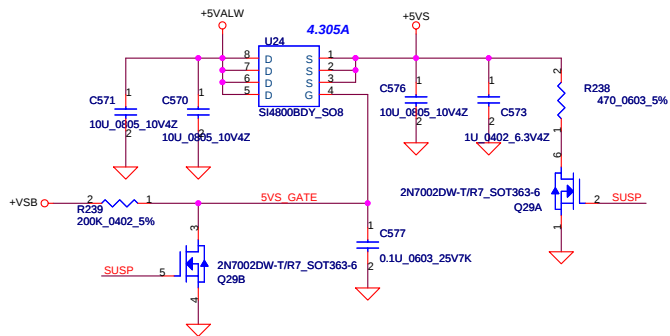


## Ext.MIC JACK

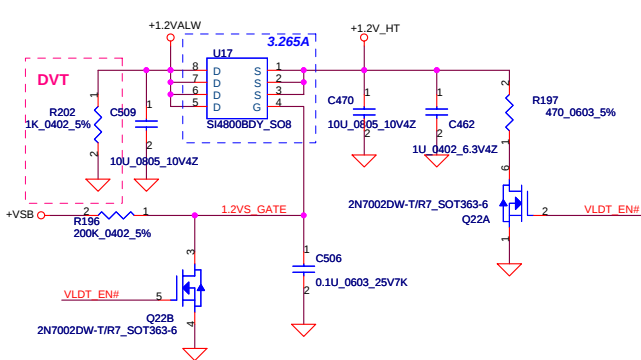


|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |  |                          |                      |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Compal Secret Data |                 |  | Compal Electronics, Inc. |                      |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    | Deciphered Date |  | Title                    | SCHEMATICS,MB A5401  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |  | Date:                    | Monday, May 04, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |  | Sheet                    | 37 of 49             |

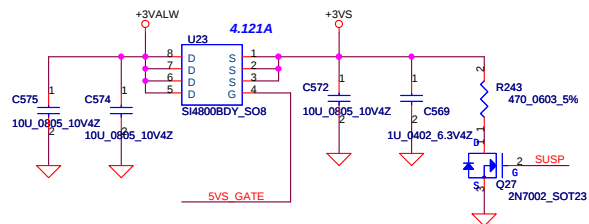
### +5VALW TO +5VS



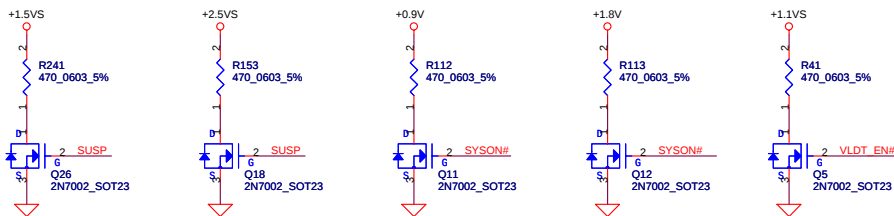
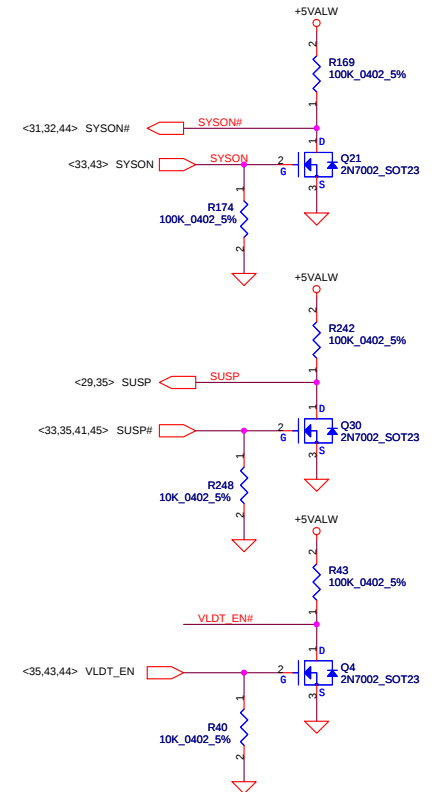
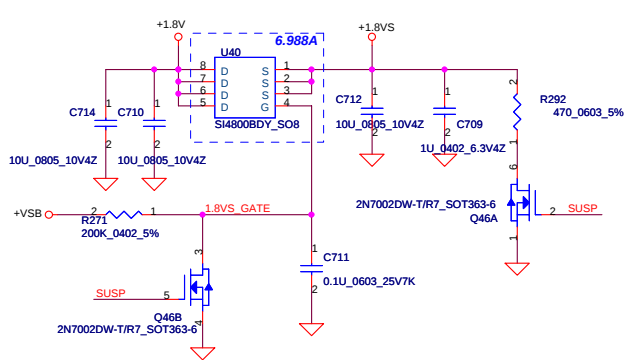
### +1.2VALW TO +1.2V\_HT



### +3VALW TO +3VS

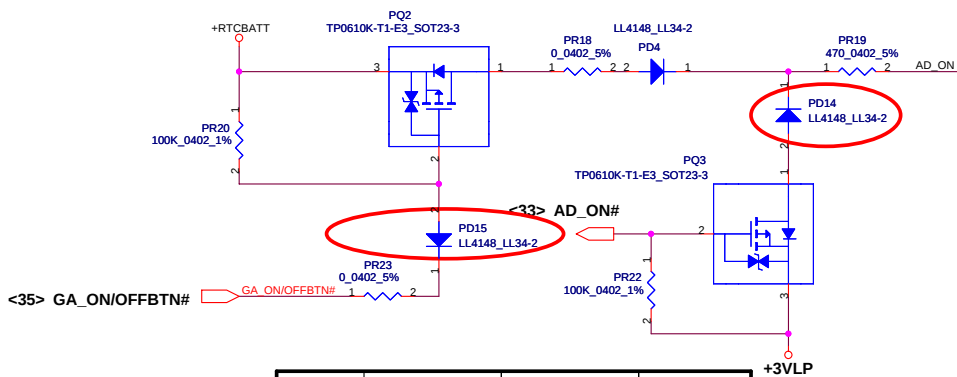
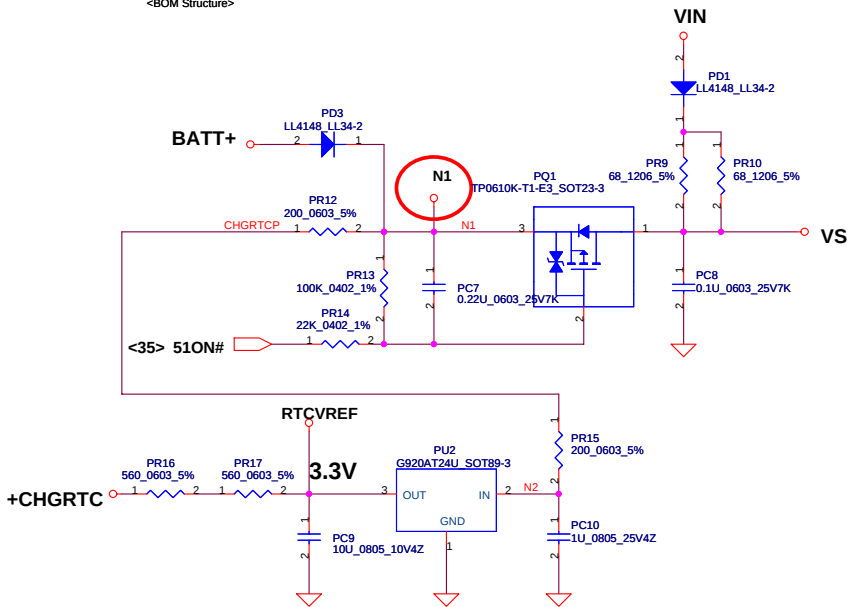
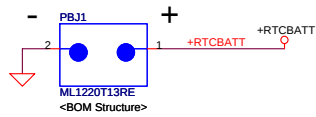
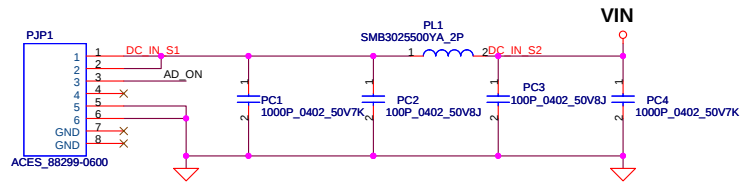


### +1.8V to +1.8VS



| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06 | Deciphered Date    | 2009/10/06 | Title                    |     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 401728                   | A   |
| Date: Monday, May 04, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                    |            | Sheet                    | 49  |

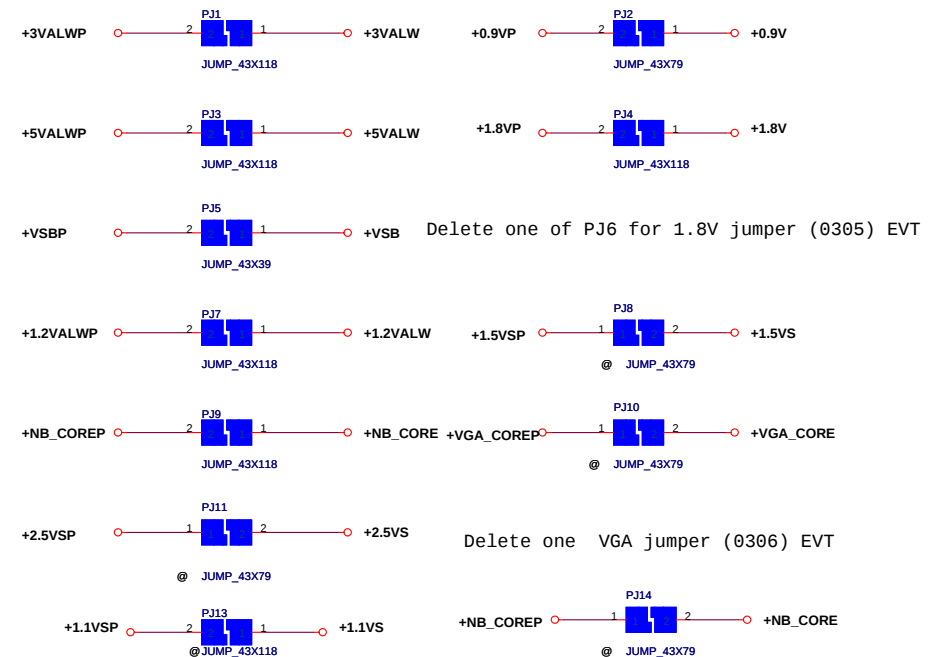
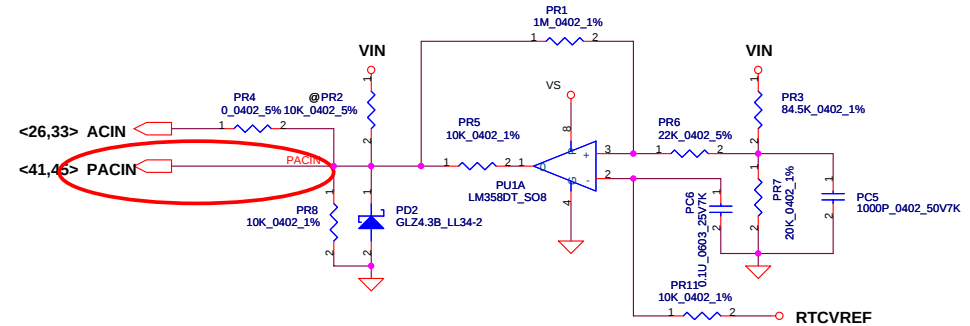
03/05 change footprint (refer to the JAL70)



|        |            |          |       |
|--------|------------|----------|-------|
|        | S5 W/O WOL | S5 W WOL | S3/S0 |
| AD_ON# | H          | L        | L     |

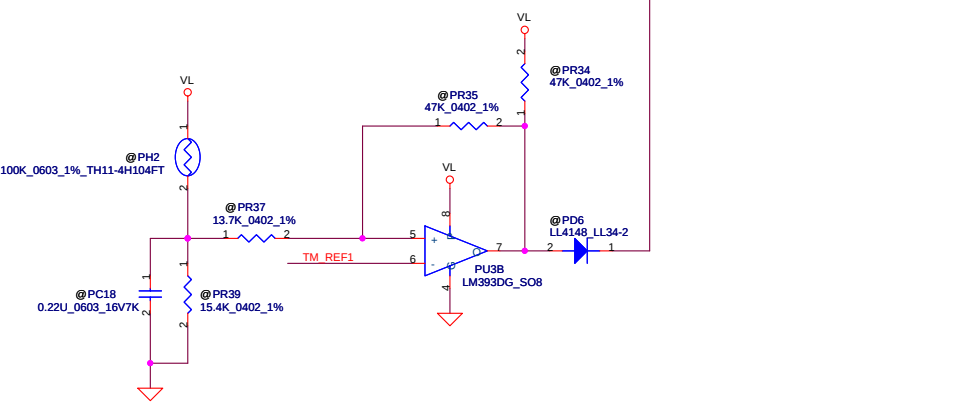
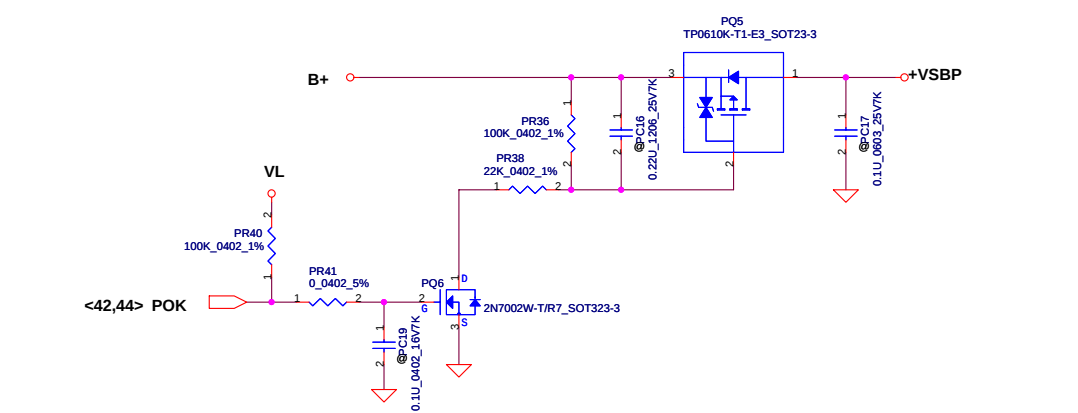
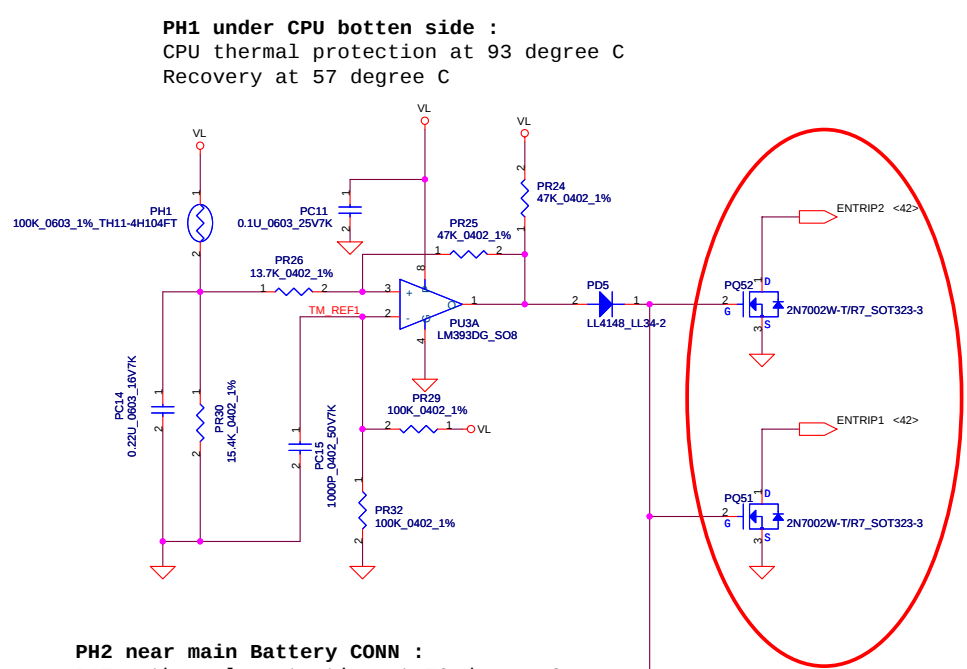
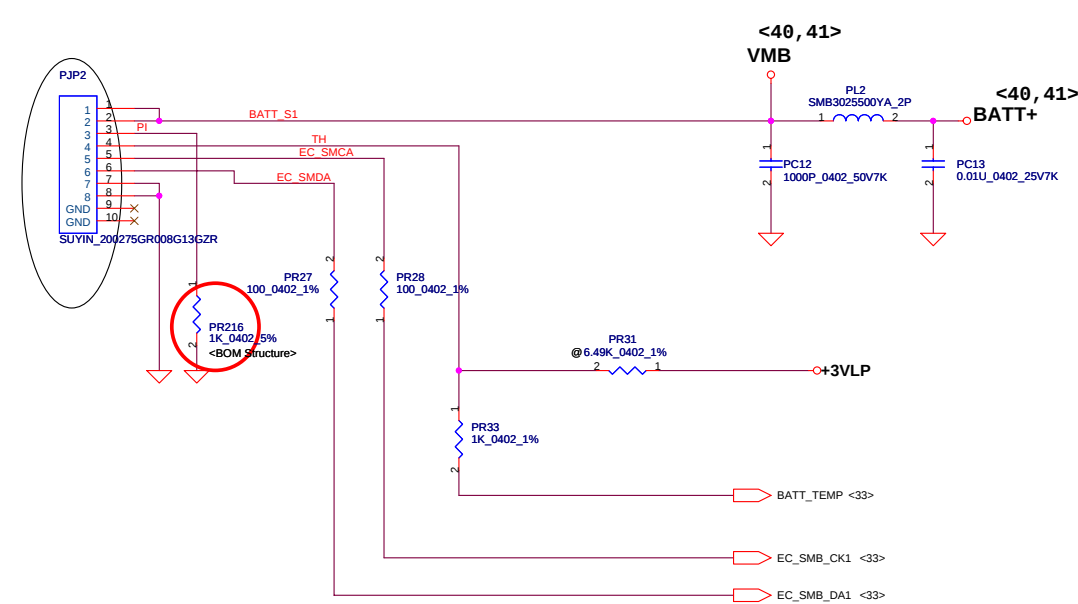
## Vin Dectector

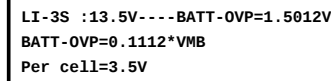
|       | Min.    | Typ     | Max.    |
|-------|---------|---------|---------|
| H-->L | 16.976V | 17.525V | 17.728V |
| L-->H | 17.430V | 17.901V | 18.384V |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                              |                           |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|------------------------------|---------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.     |                           |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/09/20 | Deciphered Date    | 2008/09/20 | Title<br>SCHEMATICS,MB A5401 |                           |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                         | Monday, May 04, 2009      | Sheet 39 of 49 |

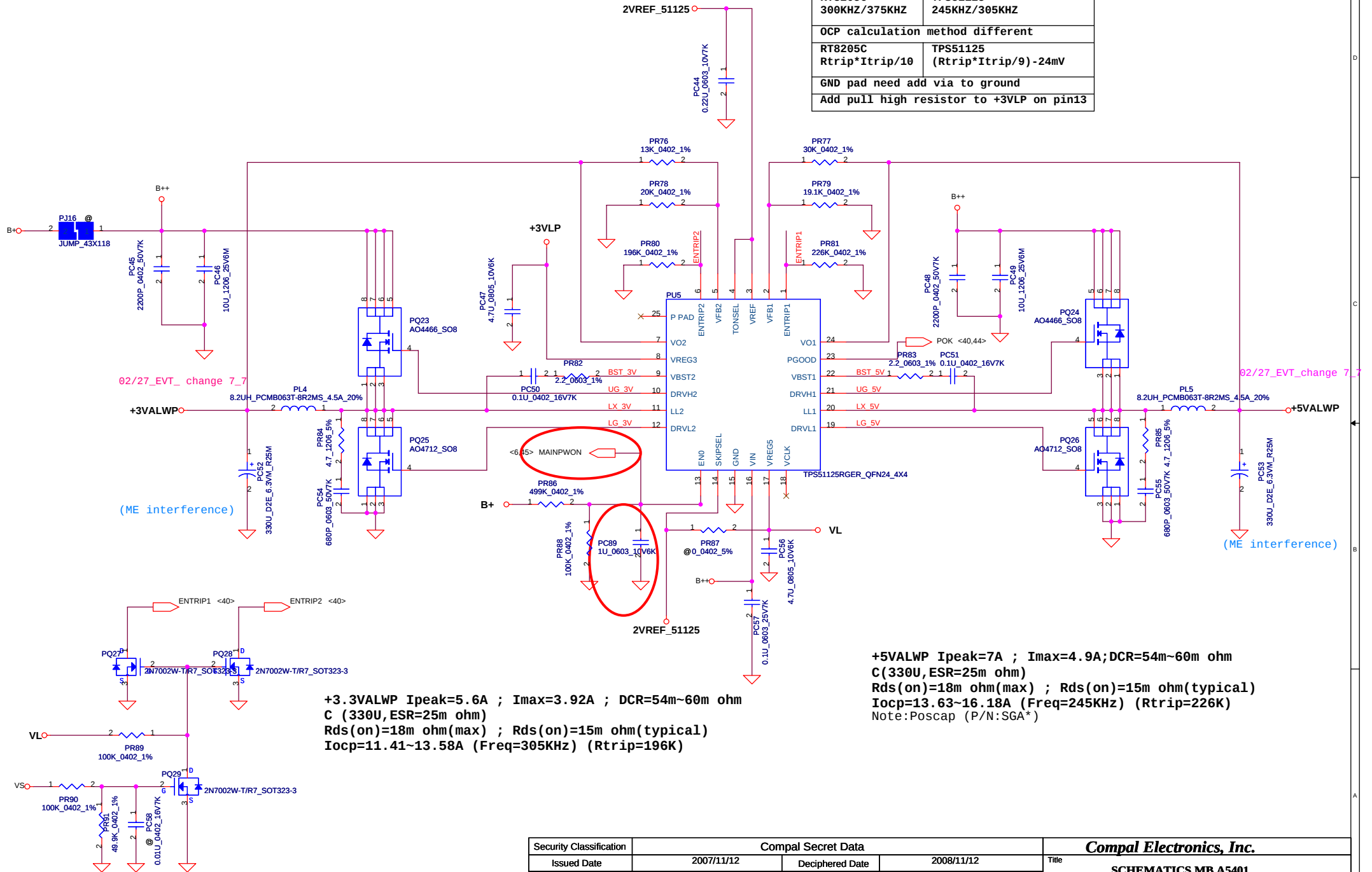
--03/05--0K-->add OLB to Library)  
--03/09--PJP1 mirror to correct location (update OK)



$$CP = 85\% \cdot I_{ada} ; CP = 4.07A$$


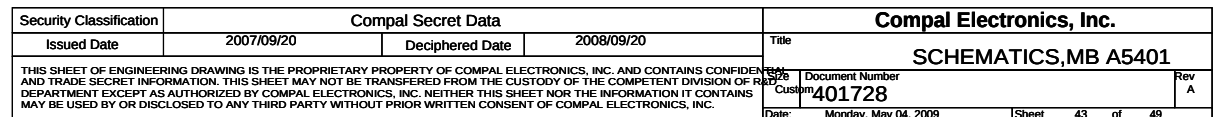
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                     |                      |       |    |     |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|---------------------|----------------------|-------|----|-----|----|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                     |                      |       |    |     |    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2007/09/20         |  | Deciphered Date |  | 2008/09/20               |  | Title               |                      |       |    |     |    |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Part Number         | Document Number      |       |    | Rev |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Customer            | 401728               |       |    | A   |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Date:               | Monday, May 04, 2009 | Sheet | 41 | of  | 49 |

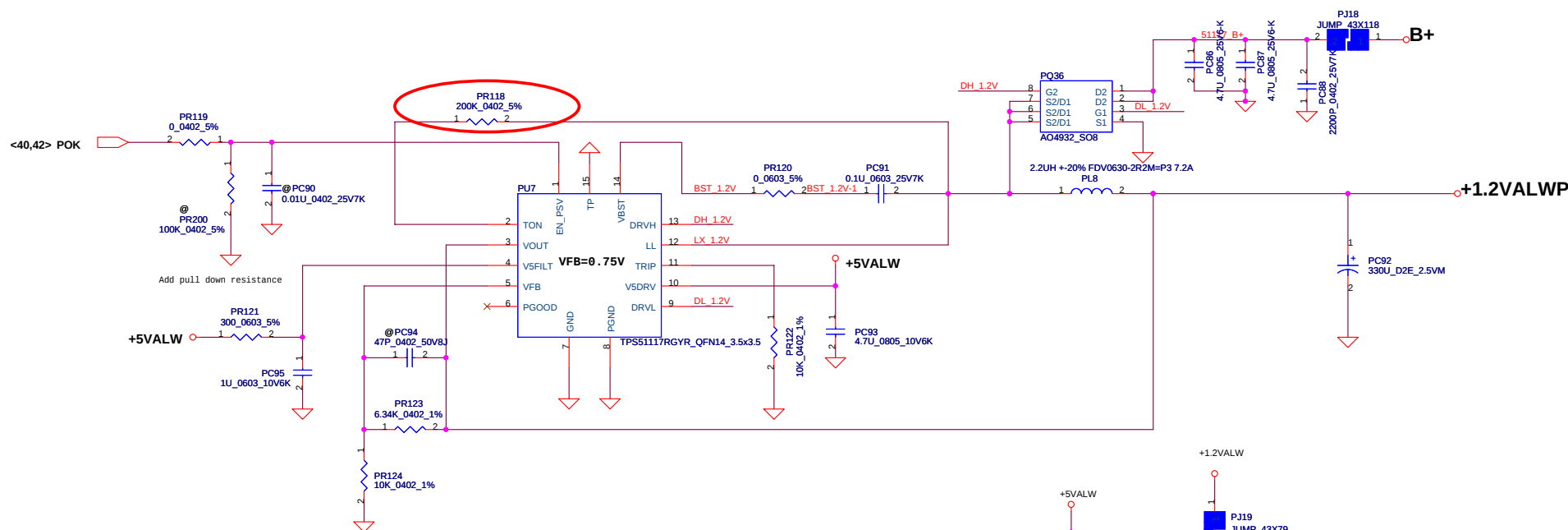
| Frequency different                      |                                  |
|------------------------------------------|----------------------------------|
| RT8205C<br>300KHZ/375KHZ                 | TPS51125<br>245KHZ/305KHZ        |
| OCP calculation method different         |                                  |
| RT8205C<br>Rtrip*Itrip/10                | TPS51125<br>(Rtrip*Itrip/9)-24mV |
| GND pad need add via to ground           |                                  |
| Add pull high resistor to +3VLP on pin13 |                                  |



| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/11/12 | Deciphered Date    | 2008/11/12 | Title                    | SCHEMATICS, MB A5401 |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Monday, May 04, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 42 of 49             |

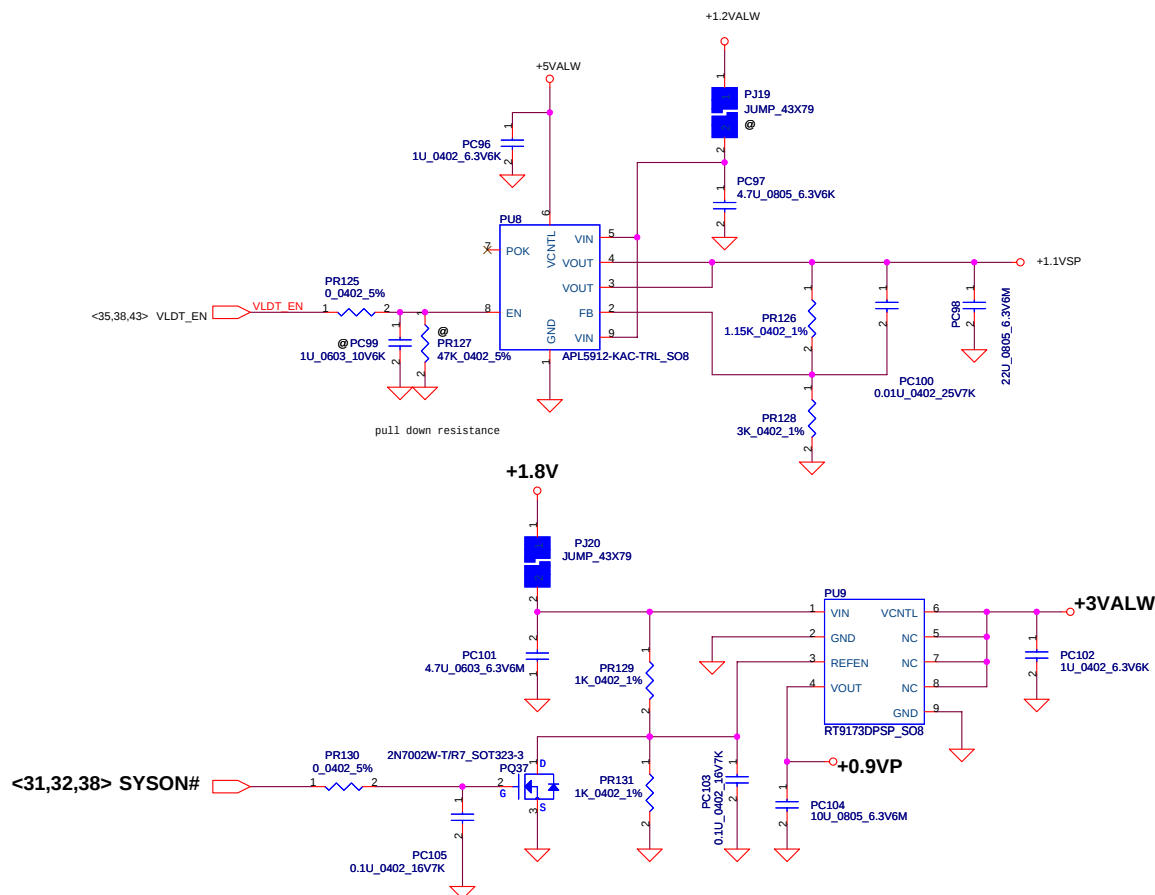
DCR=3.5m ohm /tolerance :20%/(L=1uH )  
C(330U,ESR=15m ohm)  
1.8VP Ipeak=11.93A, Imax=8.351A, Iocp=1.2\*Ipeak=14.316A  
Fsw=1/1.5E-10\*22k =303K  
Vo=Vref\*((PR97+PR99)/PR97)  
Roset=change to 8.66k ohm (remember)  
Csen=change to 0.033UF=33PF (remember)  
Iocp=20.619A





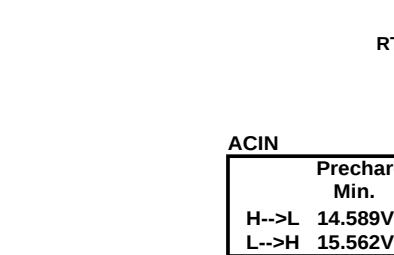
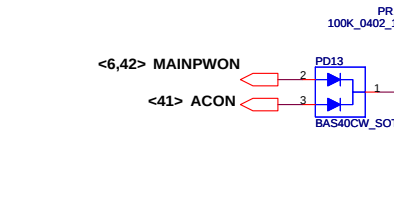
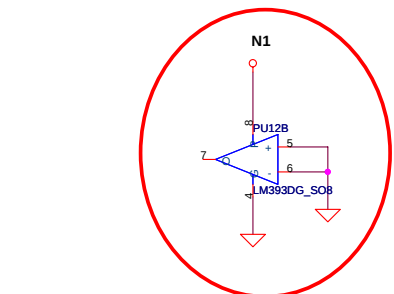
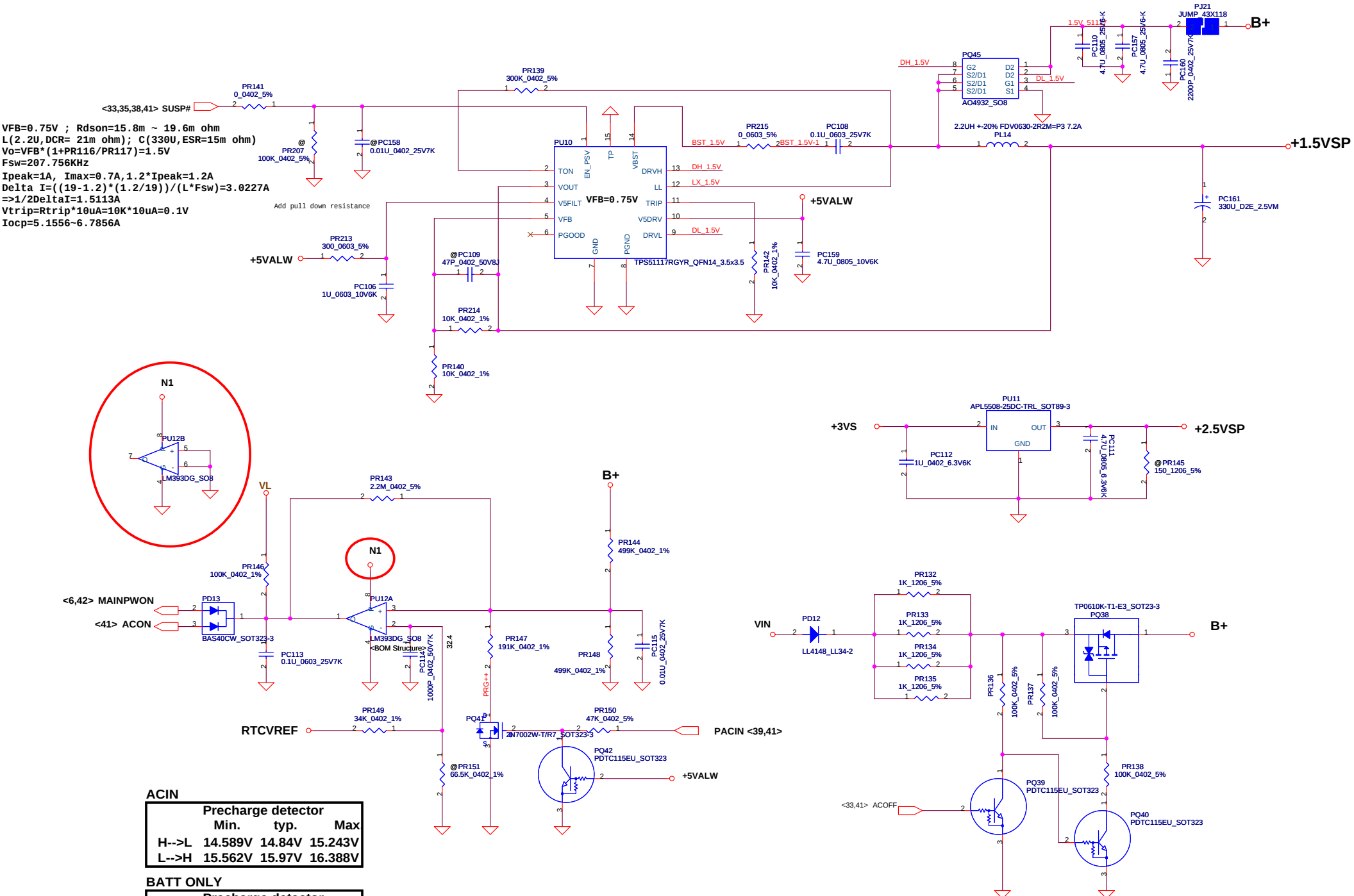
VFB=0.75V ; Rdson=15.8m ~ 19.6m ohm  
 L(2.2U,DCR=21m ohm) ; C(330U,ESR=15 mohm)  
 $V_o = VFB \cdot (1 + PR116/PR117) = 1.2V$   
 $F_{sw} = 274.6KHz$

$I_{peak} = 2.865A$ ,  $I_{max} = 2.0055A$ ,  $1.2 \cdot I_{peak} = 3.438A$   
 $\Delta I = ((19 - 1.2) \cdot (1.2/19)) / (L \cdot F_{sw}) = 2.589A$   
 $\Rightarrow 1/2 \Delta I = 1.2945A$   
 $V_{trip} = R_{trip} \cdot I_{0uA} = 10K \cdot 10uA = 0.1V$   
 $I_{ocp} = 4.938 \sim 6.568A$



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------|----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Compal Electronics, Inc. |                            |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/09/20         | Deciphered Date | 2008/09/20               | Title                      |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Rev A                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Date: Monday, May 04, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Sheet 44 of 49             |

VFB=0.75V ; Rdson=15.8m ~ 19.6m ohm  
L(2.2U,DCR= 21m ohm); C(330U,ESR=15m ohm)  
Vo=VFB\*(1+PR116/PR117)=1.5V  
Fsw=207.756KHz  
Ipeak=1A, Imax=0.7A,1.2\*Ipeak=1.2A  
Delta I=((19-1.2)\*(1.2/19))/(L\*Fsw)=3.0227A  
=>1/2DeltaI=1.5113A  
Vtrip=Rtrip\*10uA=10K\*10uA=0.1V  
Iocp=5.1556~6.7856A

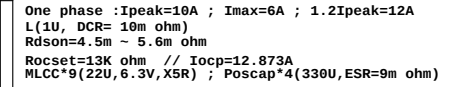


| ACIN               |         |        |         |
|--------------------|---------|--------|---------|
| Precharge detector |         |        |         |
|                    | Min.    | typ.   | Max     |
| H-->L              | 14.589V | 14.84V | 15.243V |
| L-->H              | 15.562V | 15.97V | 16.388V |

| BATT ONLY          |        |        |        |
|--------------------|--------|--------|--------|
| Precharge detector |        |        |        |
|                    | Min.   | typ.   | Max    |
| H-->L              | 6.138V | 6.214V | 6.359V |
| L-->H              | 7.196V | 7.349V | 7.505V |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------|----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Compal Electronics, Inc. |                            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Rev A                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Date: Monday, May 04, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Sheet 45 of 49             |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                      |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/09/20 | Deciphered Date    | 2008/09/20 | Title                    | SCHEMATICS, MB A5401 |
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| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Monday, May 04, 2009     | Sheet 46 of 49       |



| Item | Fixed Issue             | Reason for change                    | Rev. | PG # | Modify List                                                                    | Date       | Phase |
|------|-------------------------|--------------------------------------|------|------|--------------------------------------------------------------------------------|------------|-------|
| 1    | ADD circuit             | Switch NB_core voltage               | 0.1  | 50   | ADD PC107, PC105, PR121, PR123, PR122, PR102, PQ25, PQ28 at UMA Sku            | 2009/01/04 | DVT   |
| 2    | ADD circuit             | Switch NB_core voltage               | 0.1  | 51   | ADD PC110, PC111, PC108, PC109, PC1113, PR1128, PR194, PR129, PR127 at UMA Sku | 2009/01/04 | DVT   |
| 3    | ADD snubber             | EMI requestmrnt                      | 0.1  | 50   | Add PR104 4.7 ohm and PC83 680p                                                | 2009/01/04 | DVT   |
| 4    | ADD snubber             | EMI requestmrnt                      | 0.1  | 50   | Add PR108 4.7 ohm and PC89 680p                                                | 2009/01/04 | DVT   |
| 5    | ADD CPU boot            | EMI requestmrnt                      | 0.1  | 53   | Add PR229 2.2 ohm                                                              | 2009/01/04 | DVT   |
| 6    | ADD CPU boot            | EMI requestmrnt                      | 0.1  | 53   | Add PR243 2.2 ohm                                                              | 2009/01/04 | DVT   |
| 7    | Change resistance value | Switch NB_core voltage               | 0.1  | 50   | Change PR95 from 51 Kohm to 39.2 Kohm                                          | 2009/01/04 | DVT   |
| 8    | Change resistance value | Switch NB_core voltage               | 0.1  | 50   | Change PR122 from 12 Kohm to 226 Kohm                                          | 2009/01/04 | DVT   |
| 9    | Change resistance value | soft start of Switch NB_core voltage | 0.1  | 50   | Change PR123 from 0 ohm to 10 Kohm                                             | 2009/01/04 | DVT   |
| 10   | Change capacitor value  | soft start of Switch NB_core voltage | 0.1  | 50   | Change PC105 from 0.01 uF to 0.1 uF                                            | 2009/01/04 | DVT   |
| 11   | Change IC part number   | Change IC part number                | 0.1  | 48   | Change PU4 part number to SA00002V400                                          | 2009/01/04 | DVT   |

