

# ***KSKAA***

## ***Bradford 10M/10MG***

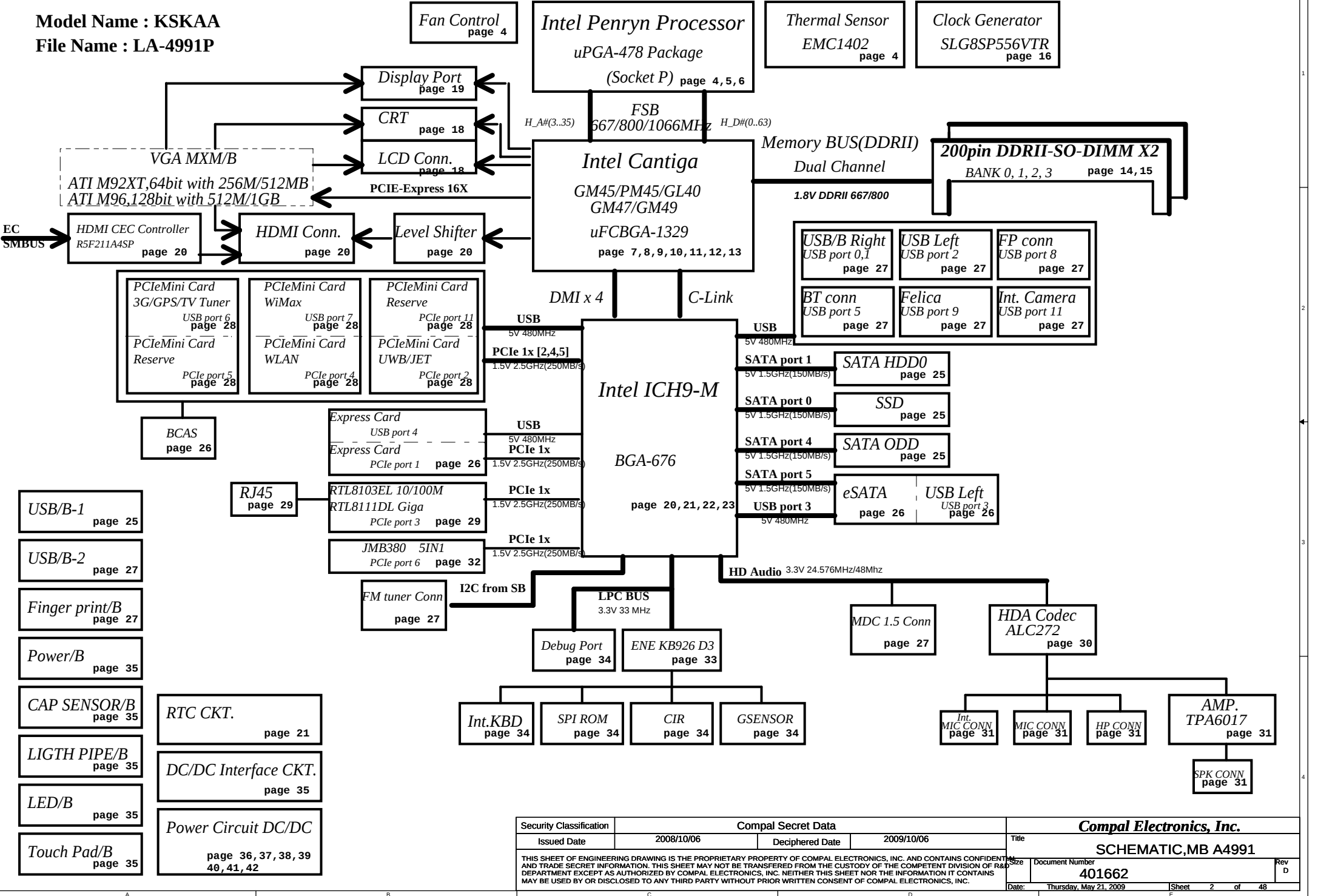
### **LA-4991P REV 1.0 Schematic**

**Intel Penryn/ Cantiga/ ICH9M**  
**2008-05-07 Rev. 1.0**

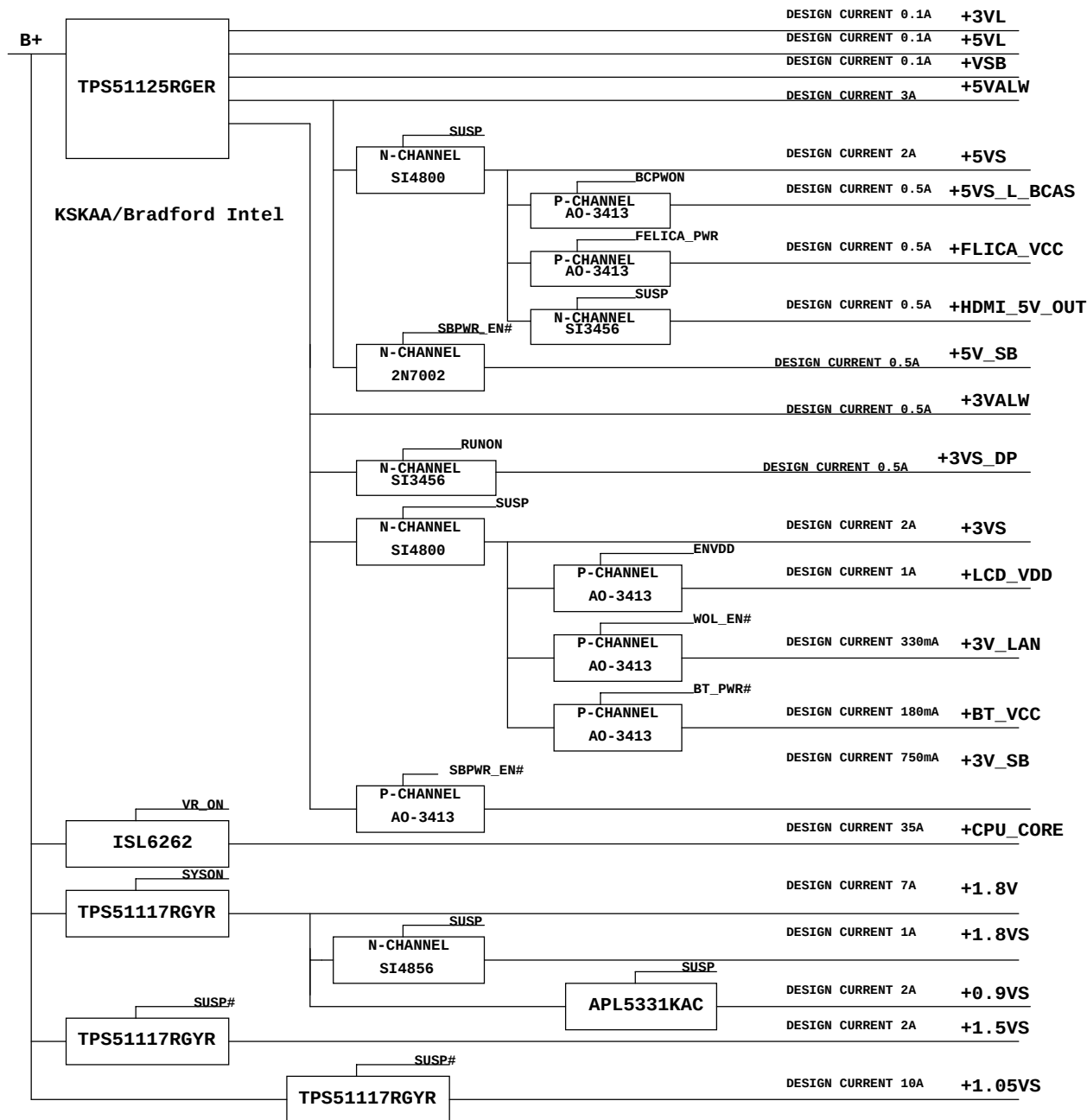
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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                        |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06 | Deciphered Date    | 2009/10/06 | Title                    | SCHEMATIC,MB A4991     |
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Compal Confidential

Model Name : KSKAA  
File Name : LA-4991P



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                    |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 401662                   | Rev D              |
| Date: Thursday, May 21, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                    |            | Sheet                    | 2 of 48            |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                        |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 3 of 48                |

Voltage Rails

| Power Plane     | Description                                 | S1 | S3  | S5  | G3  |
|-----------------|---------------------------------------------|----|-----|-----|-----|
| VIN             | Adapter power supply (19V)                  | ON | ON  | ON  | OFF |
| B+              | AC or battery power rail for power circuit. | ON | ON  | ON  | ON  |
| +CPU_CORE       | Core voltage for CPU                        | ON | OFF | OFF | OFF |
| +0.9VS          | 0.9V switched power rail for DDR terminator | ON | OFF | OFF | OFF |
| +1.05VS         | 1.05V switched power rail                   | ON | OFF | OFF | OFF |
| +1.5VS          | 1.5V switched power rail                    | ON | OFF | OFF | OFF |
| +1.8V           | 1.8V power rail for DDR                     | ON | ON  | OFF | OFF |
| +3VALW          | 3.3V always on power rail                   | ON | ON  | ON  | OFF |
| +3VL            | 3.3V always on power rail                   | ON | ON  | ON  | ON  |
| +3V_SB          | 3.3V power rail for LAN                     | ON | ON  | OFF | OFF |
| +3V_LAN         | 3.3V power rail for LAN                     | ON | ON  | OFF | OFF |
| +3V_WLAN        | 3.3V power rail for LAN                     | ON | ON  | OFF | OFF |
| +3VS            | 3.3V switched power rail                    | ON | OFF | OFF | OFF |
| +5VALW          | 5V always on power rail                     | ON | ON  | ON  | OFF |
| +5VL            | 5V always on power rail                     | ON | ON  | ON  | ON  |
| +5V_SB          | 5V power rail for SB                        | ON | ON  | OFF | OFF |
| +5VS            | 5V switched power rail                      | ON | OFF | OFF | OFF |
| +VSB            | VSB always on power rail                    | ON | ON  | ON  | OFF |
| +RTCVCC         | RTC power                                   | ON | ON  | ON  | ON  |
| +CPU_CORE       | Core voltage for VGA chip                   | ON | ON  | OFF | OFF |
| +VGA_PCIE_1.1VS | 1.1V switched power rail for VGA PCIE       | ON | ON  | OFF | OFF |
| +1.8VS          | 1.8V power rail for VRAM                    | ON | ON  | OFF | OFF |

External PCI Devices

EC SM Bus1 address

| Power | Device             | Address     | Power | Device       | Address     |
|-------|--------------------|-------------|-------|--------------|-------------|
| +3VL  | EC KB926 D3        |             | +3VS  | EC KB926 D3  |             |
| +5VL  | Smart Battery      | 0001 011X b |       |              |             |
| +5VL  | HDMI-CEC           | 0011 010x b | +3VS  | CPU THM Sen  |             |
|       |                    |             |       | SMSC SMC1402 | 0100 110x b |
| +3VL  | FUN/B (CAP Sensor) |             |       |              |             |

EC SM Bus2 address

ICH9M SM Bus address

| Power  | Device                       | Address    |
|--------|------------------------------|------------|
| +3V_SB | ICH9M                        |            |
|        | Clock Generator (SLG8SP556V) | 1101 001Xb |
| +3VS   | DDR DIMM0                    | 1001 000Xb |
| +3VS   | DDR DIMM1                    | 1001 010Xb |
| +3VS   | Express                      |            |
| +3VS   | FM Module                    |            |

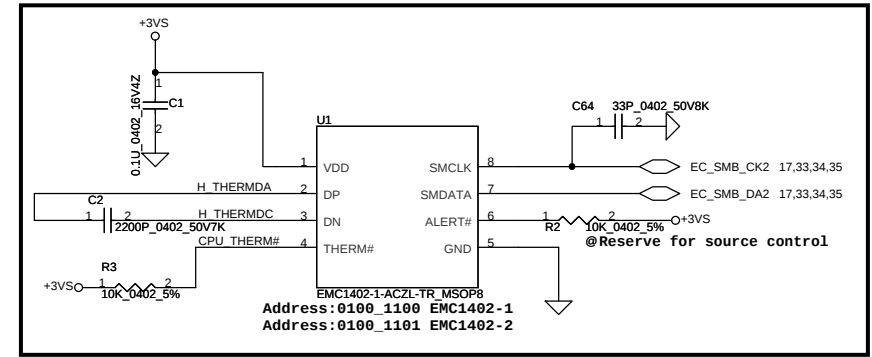
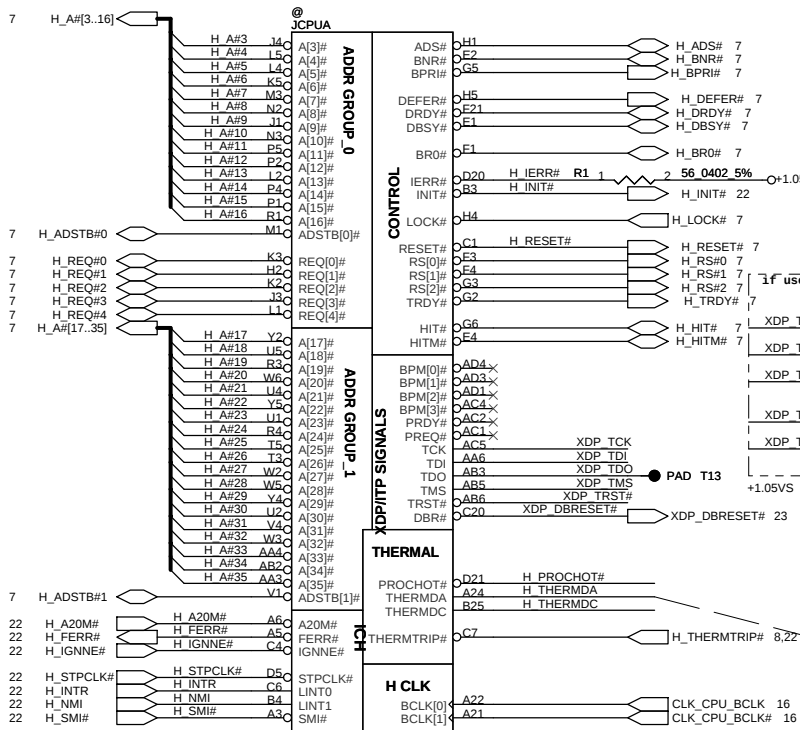
| STATE \ SIGNAL       | SLP_S1# | SLP_S3# | SLP_S4# | SLP_S5# |  |  |
|----------------------|---------|---------|---------|---------|--|--|
| Full ON              | HIGH    | HIGH    | HIGH    | HIGH    |  |  |
| S1(Power On Suspend) | LOW     | HIGH    | HIGH    | HIGH    |  |  |
| S3 (Suspend to RAM)  | LOW     | LOW     | HIGH    | HIGH    |  |  |
| S4 (Suspend to Disk) | LOW     | LOW     | LOW     | HIGH    |  |  |
| S5 (Soft OFF)        | LOW     | LOW     | LOW     | LOW     |  |  |
| G3                   | LOW     | LOW     | LOW     | LOW     |  |  |

BTO Option Table

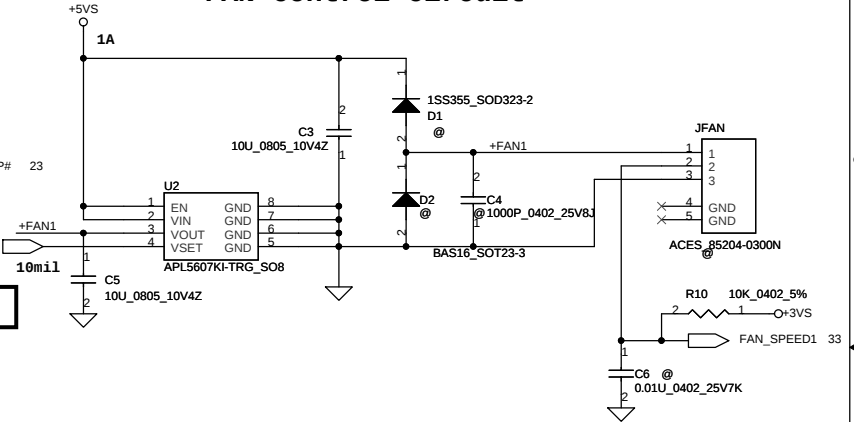
| Function    | HDMI       |           |        | CRT | Display | LAN     |         |         |
|-------------|------------|-----------|--------|-----|---------|---------|---------|---------|
| description | (Y)        |           |        | (Q) | (Z)     | (E)     | (C)     |         |
| explain     | Intel(UMA) | ATI MXM/B | COMMON |     |         | 10/100M | Giga    |         |
| BTO         | IHDMI@     | NIHDMI@   | HDMI@  | H@  | CRT@    | DP@     | 8103EL@ | 8111DL@ |

| Function    | 3G SIM slot | Mini card | Felica | Finger printer | CIR  | CAMERA & MIC |      | BLUE T00TH |
|-------------|-------------|-----------|--------|----------------|------|--------------|------|------------|
| description | (3)         | (D2)      | (J)    | (F)            | (I)  | (X)          |      | (B)        |
| explain     |             | Two Cards |        |                |      | CAMERA       | MIC  |            |
| BTO         | 3G@         | 3G@       | FLICA@ | FP@            | CIR@ | CAM@         | MIC@ | BT@        |

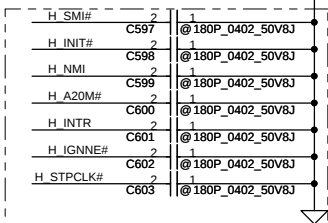
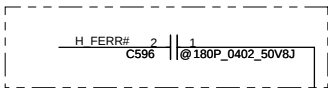
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |                 |  |            |                          | Date:              | Thursday, May 21, 2009 |  | Sheet | 4 of 48 |



## FAN Control Circuit

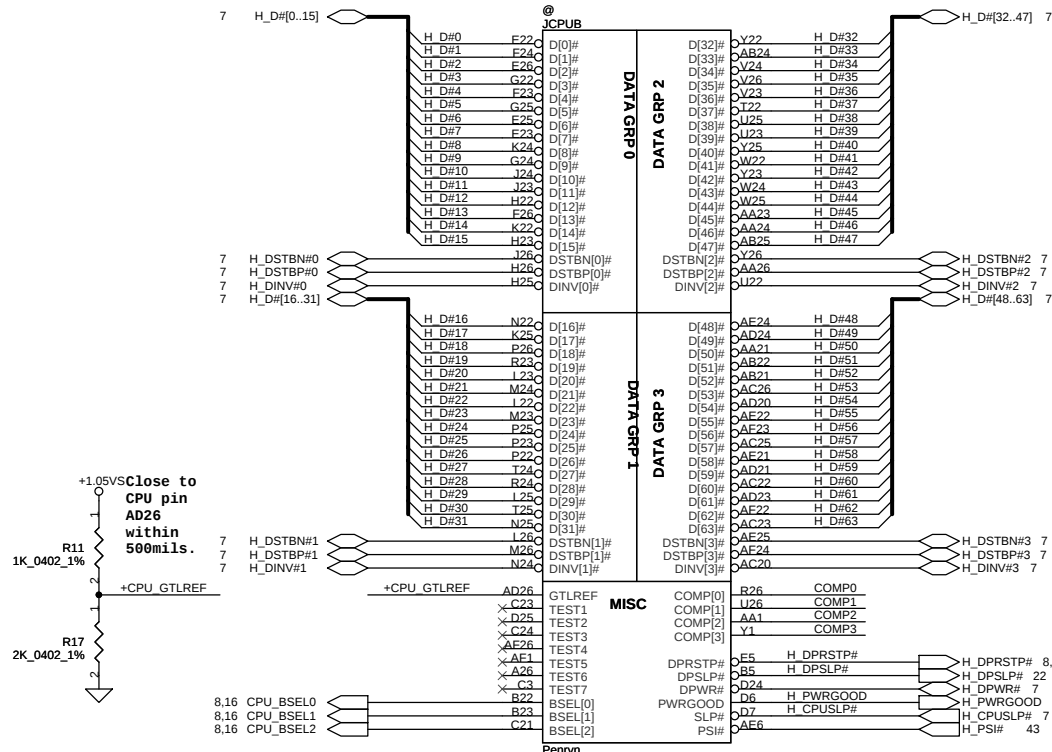


Reserve for debug close to South Bridge

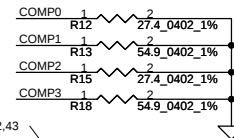


Reserve for debug close to CPU

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                        |
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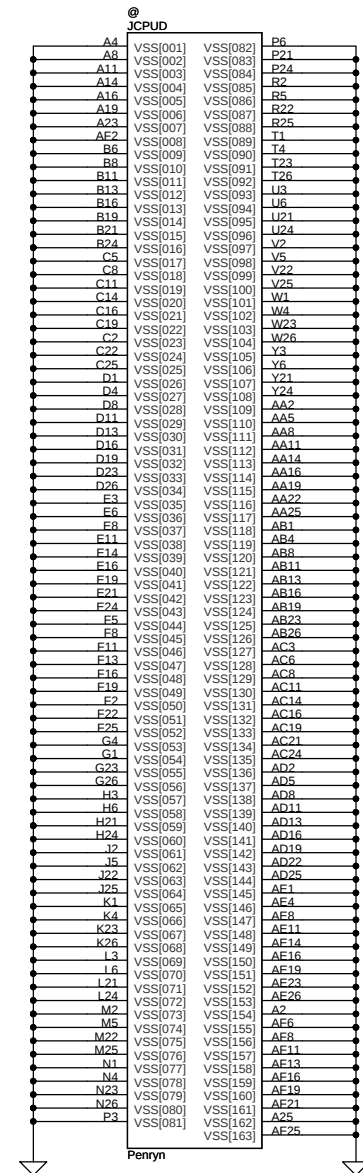


Resistor placed within 0.5" of CPU pin. Trace should be at least 25 mils away from any other toggling signal. COMP[0,2] trace width is 18 mils. COMP[1,3] trace width is 4 mils.



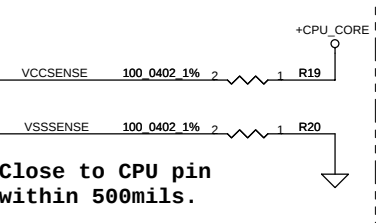
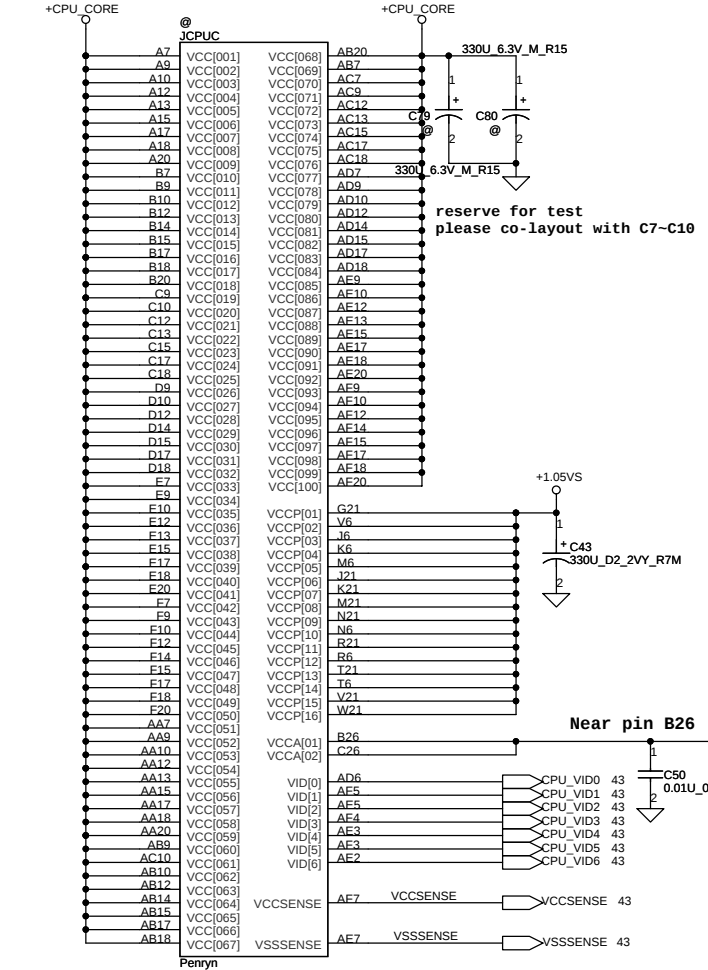
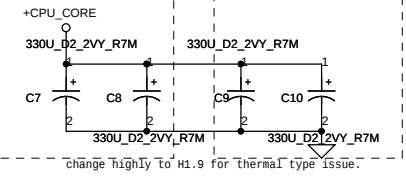
layout note: Please use "Daisy Chain" to layout and the signal (H\_DPRSTP#) is routed from ICH9 to power IC, then to NB and CPU

Reserve for debug close to CPU

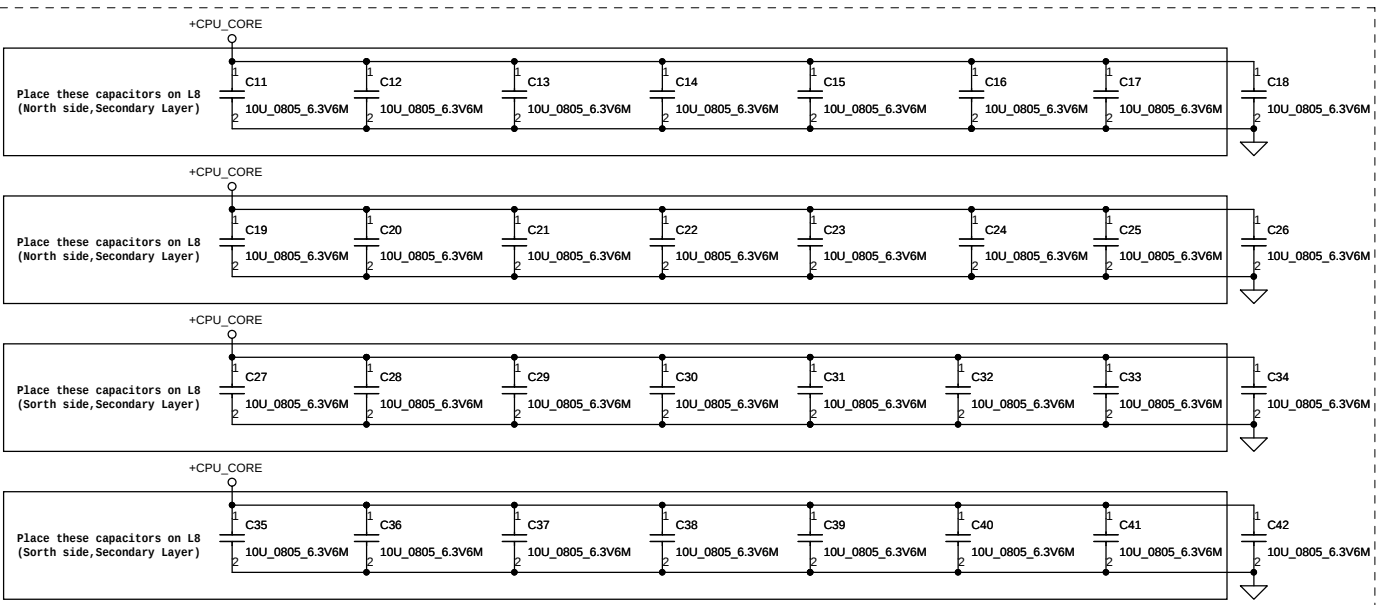


Near CPU CORE regulator

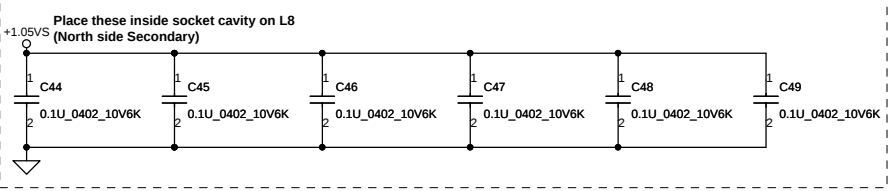
ESR <= 1.5m ohm  
Capacitor > 1980uF



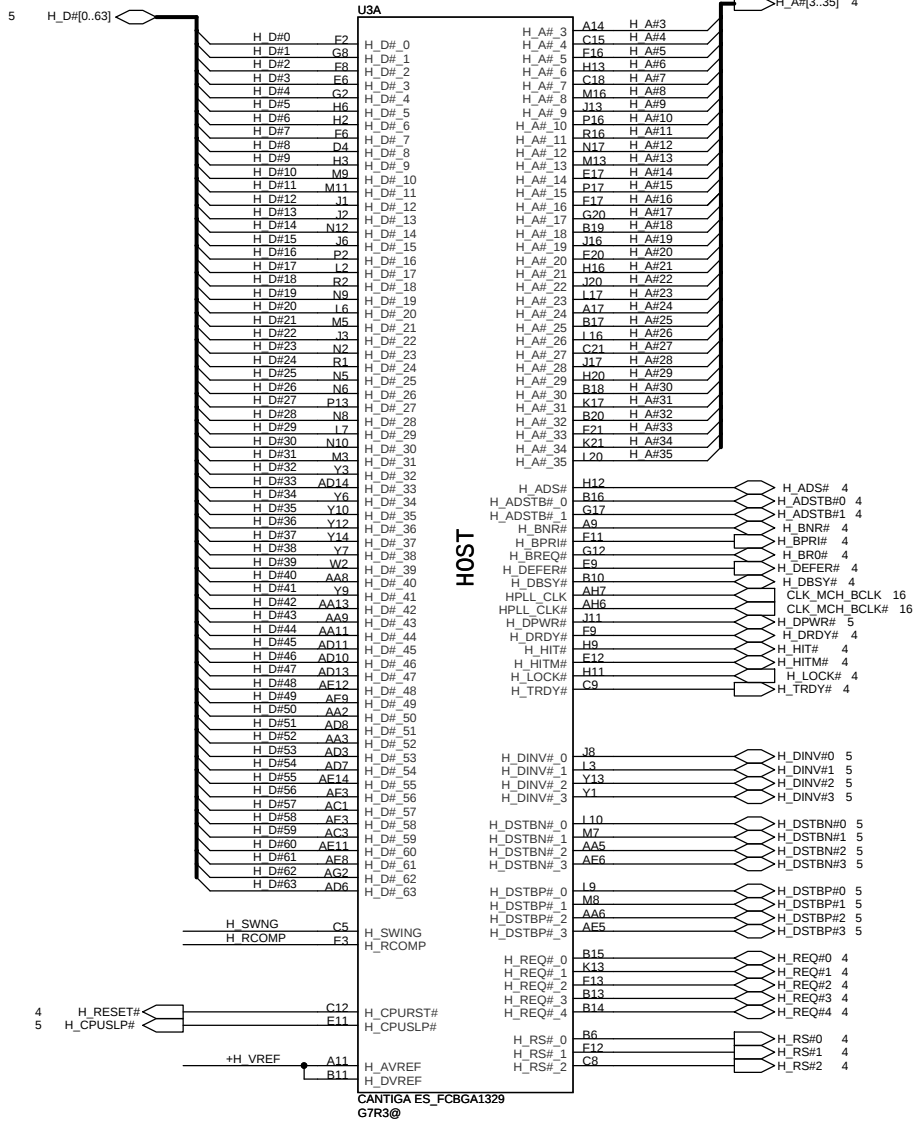
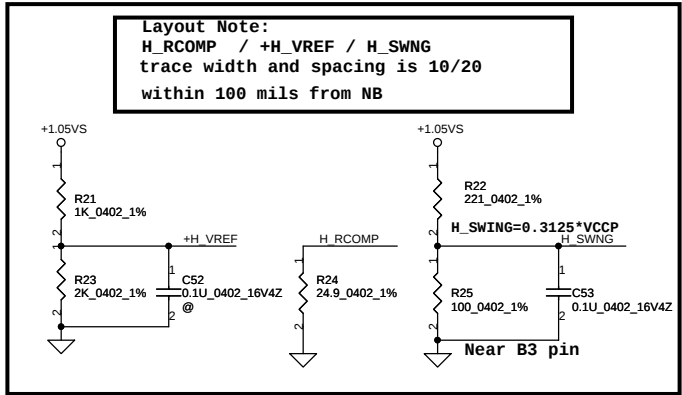
Length match within 25 mils.  
The trace width/space/other is 14/7/25.



Mid Frequency Decoupling



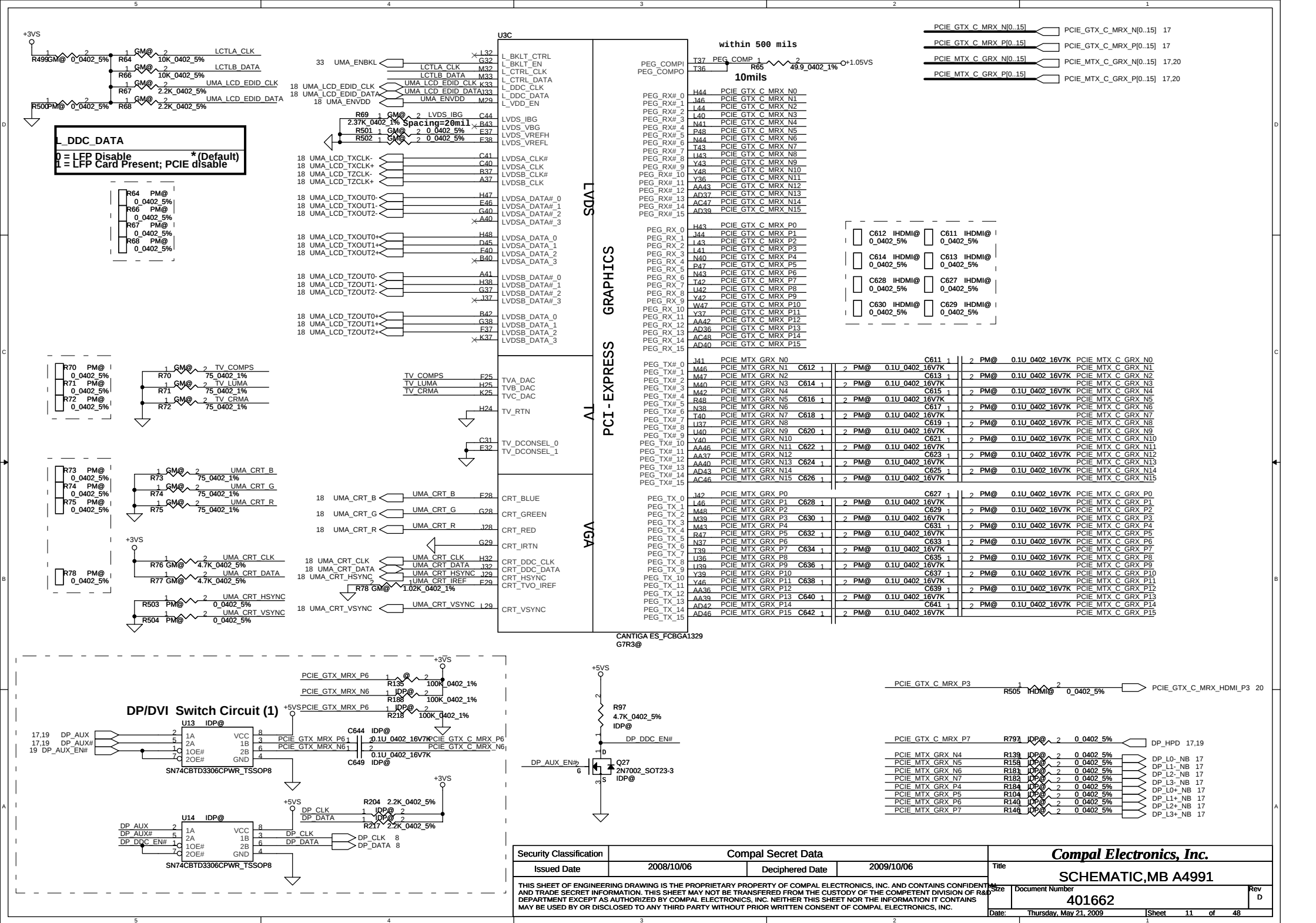
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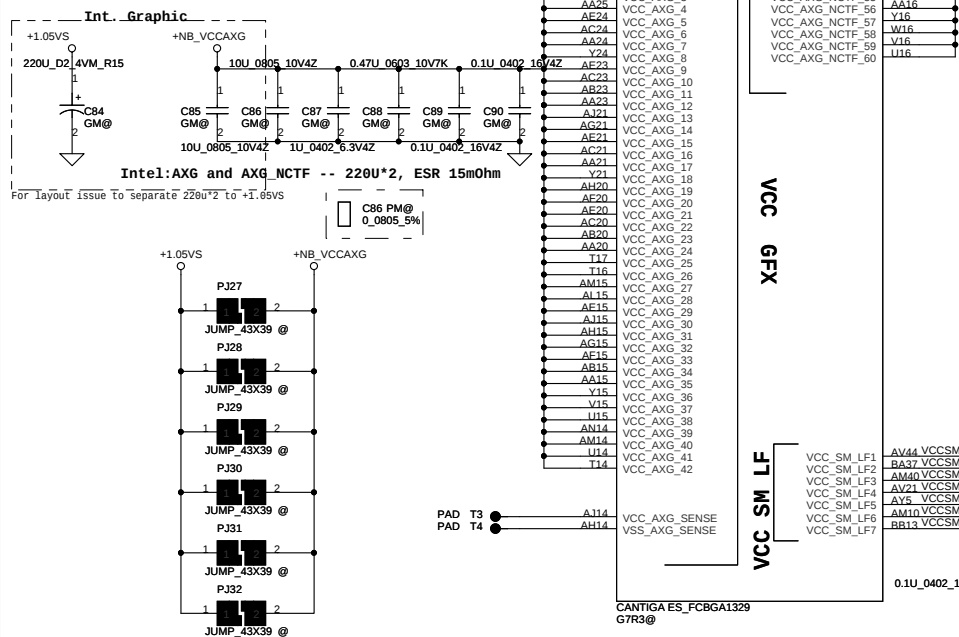
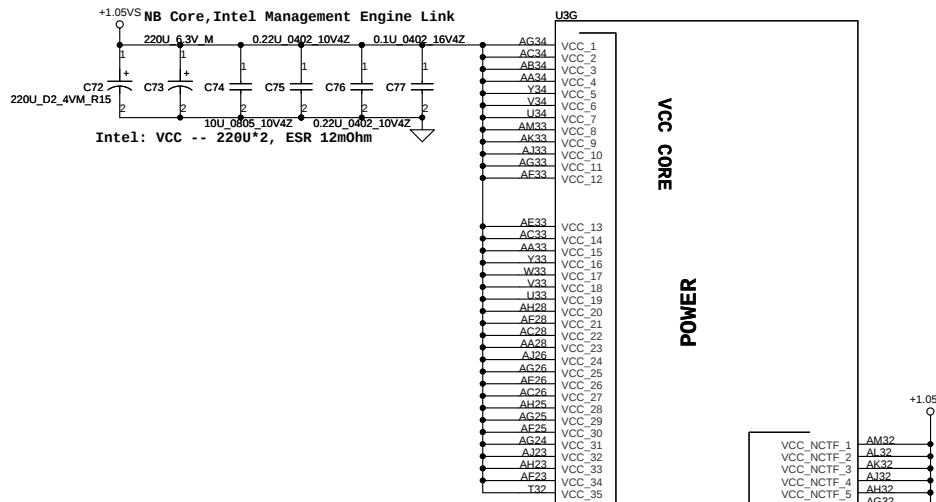


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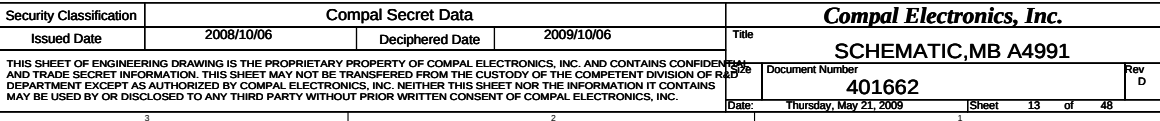


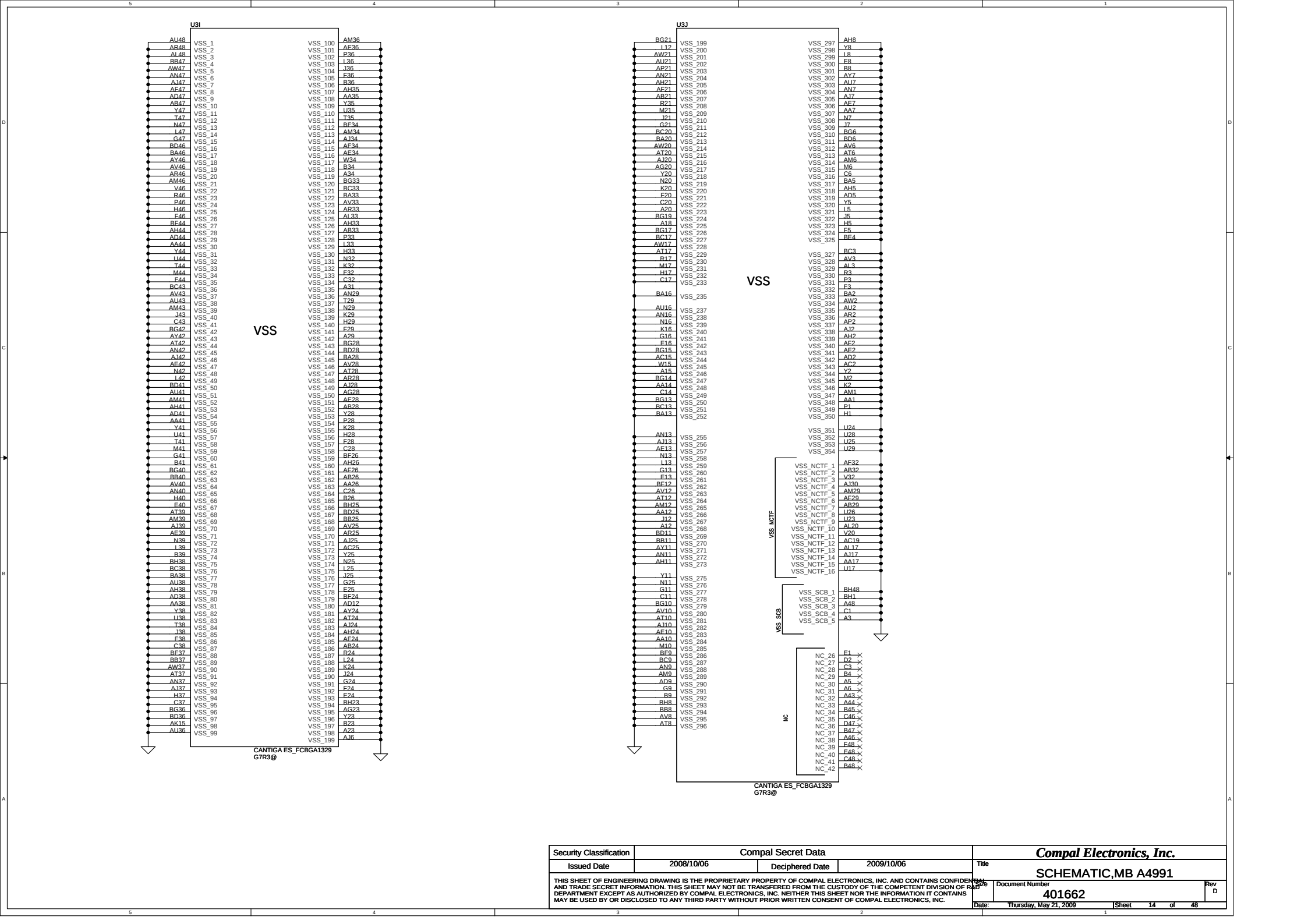


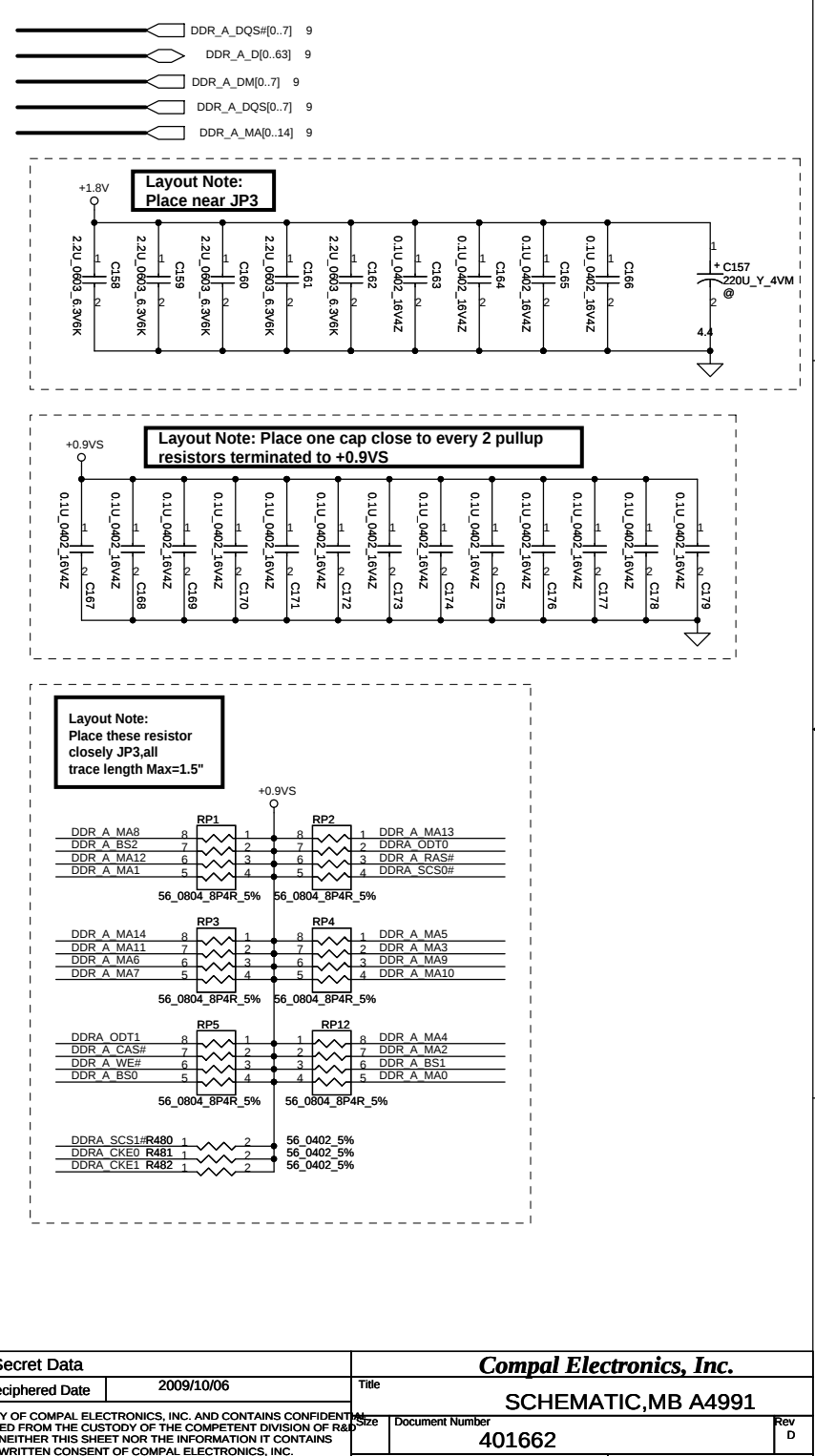
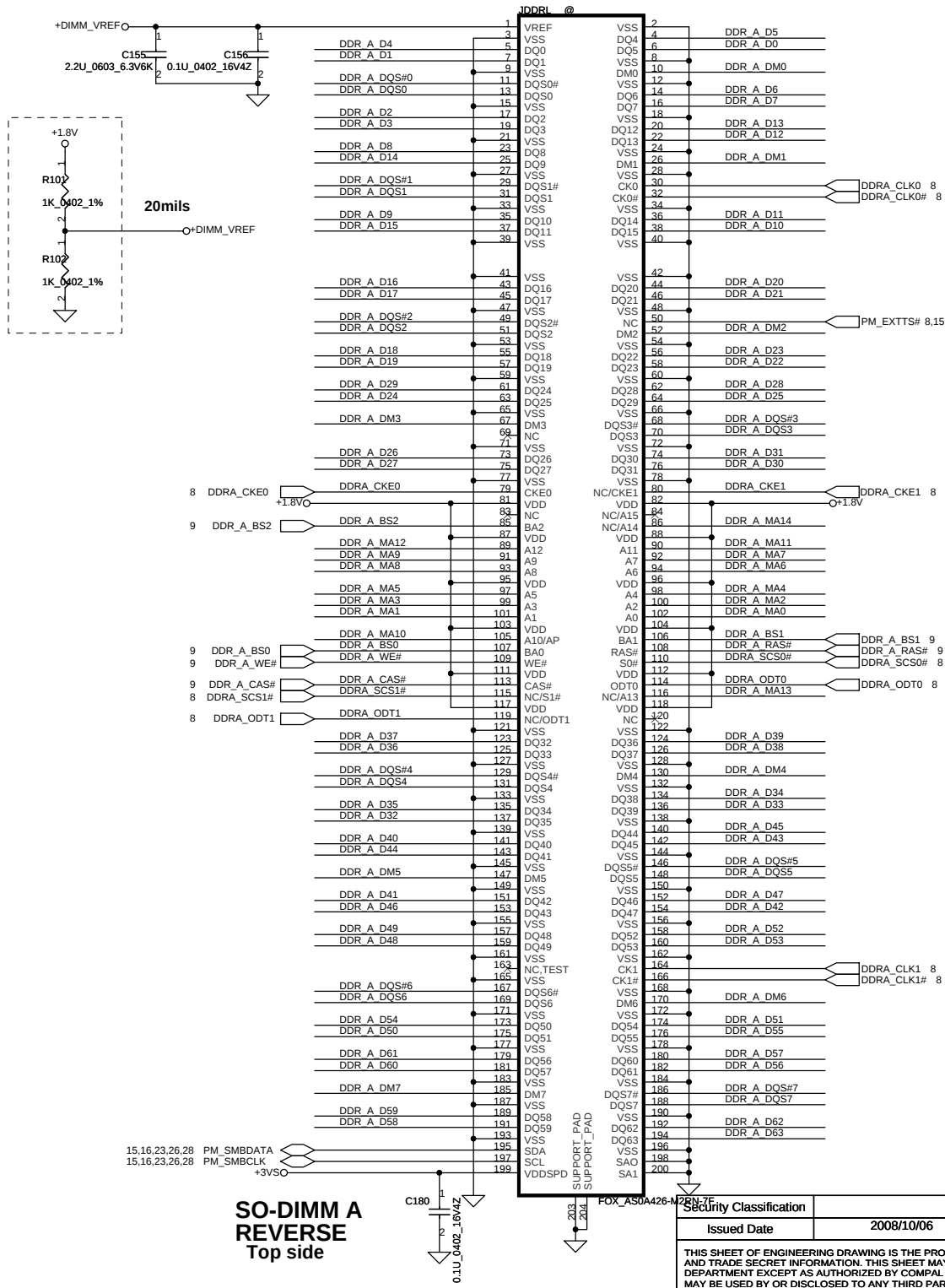




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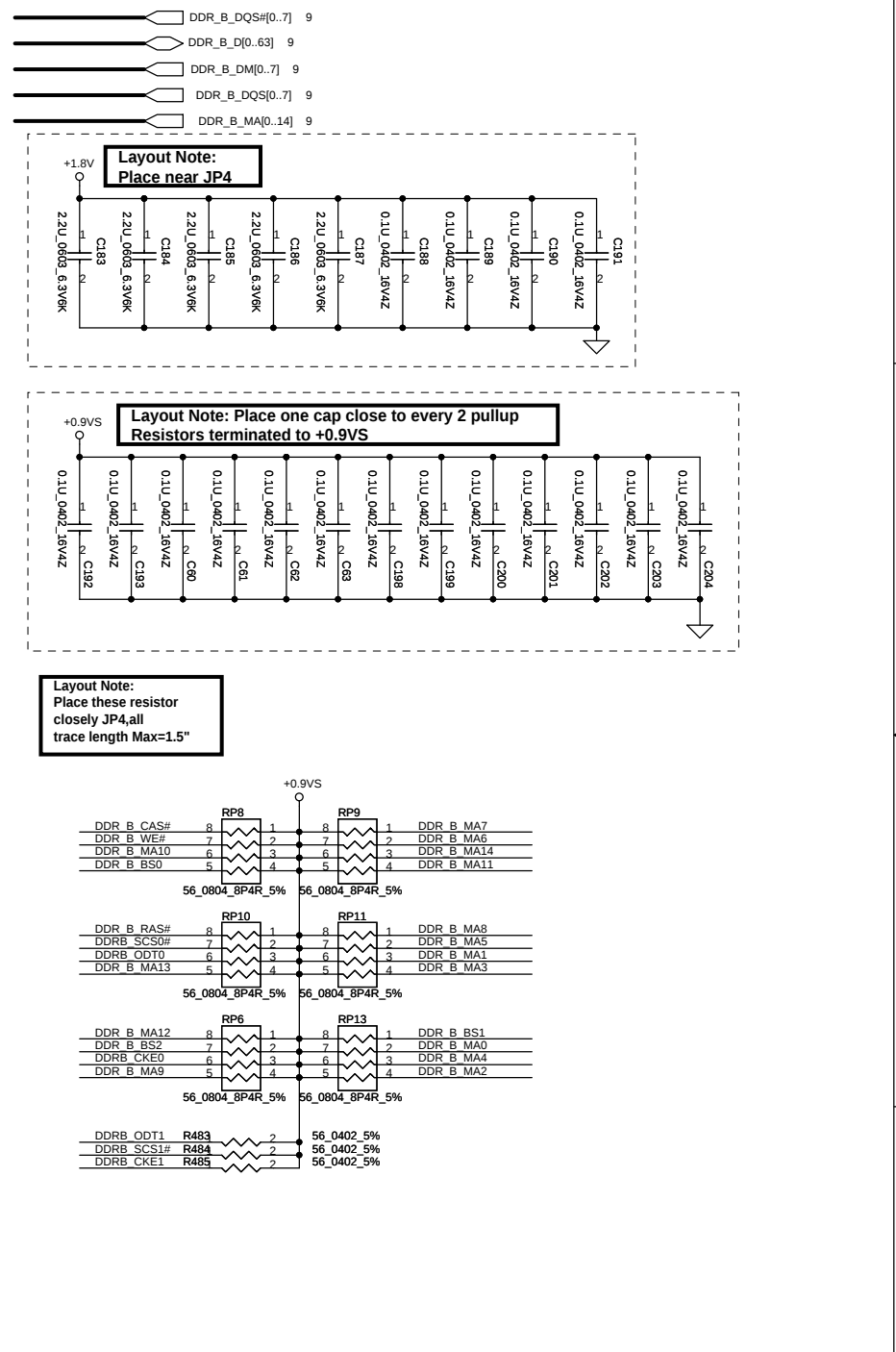
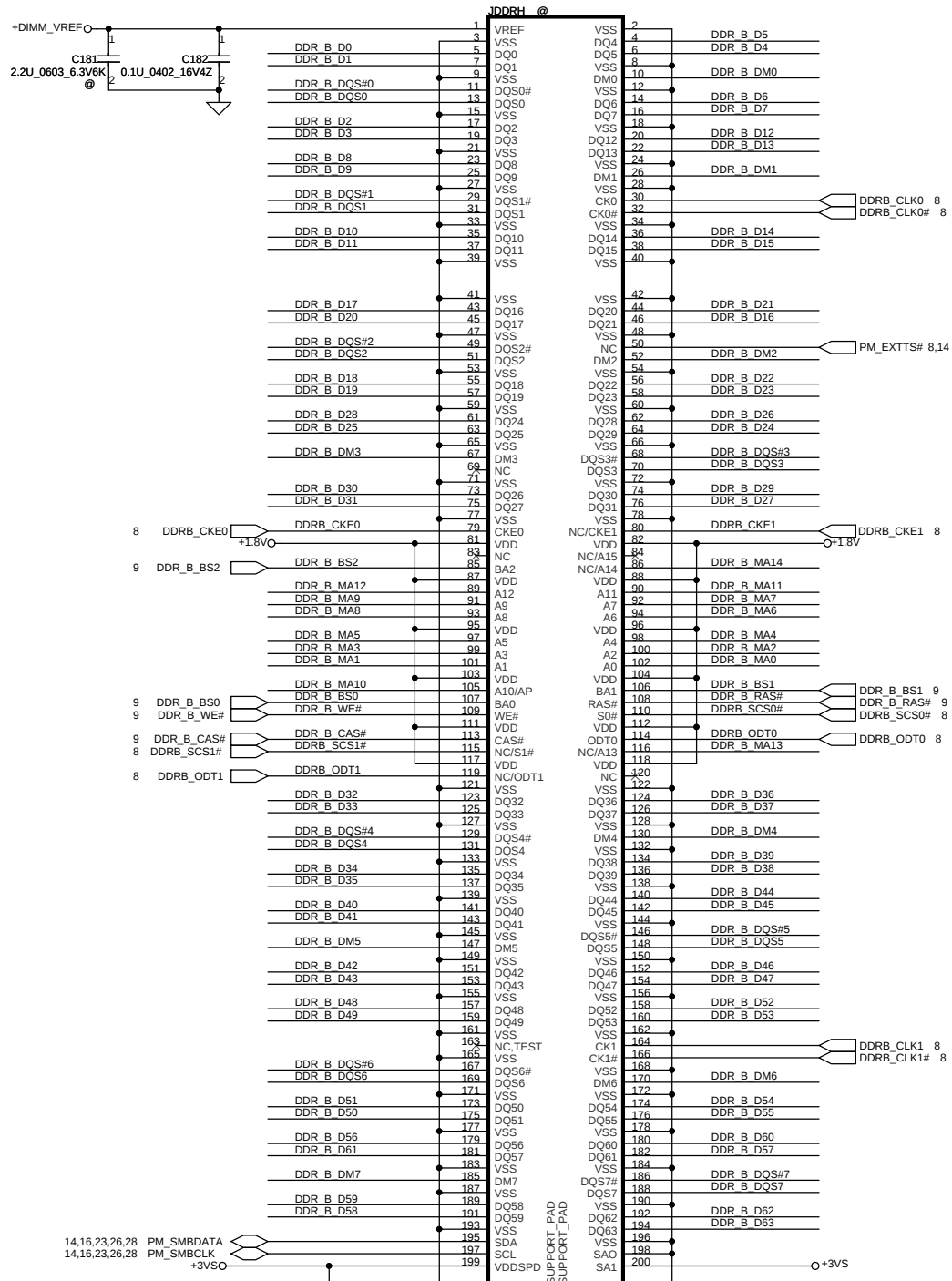
Layout Note:  
Place near JP3

Layout Note: Place one cap close to every 2 pullup resistors terminated to +0.9VS

Layout Note:  
Place these resistor closely JP3,all trace length Max=1.5"

SO-DIMM A  
REVERSE  
Top side

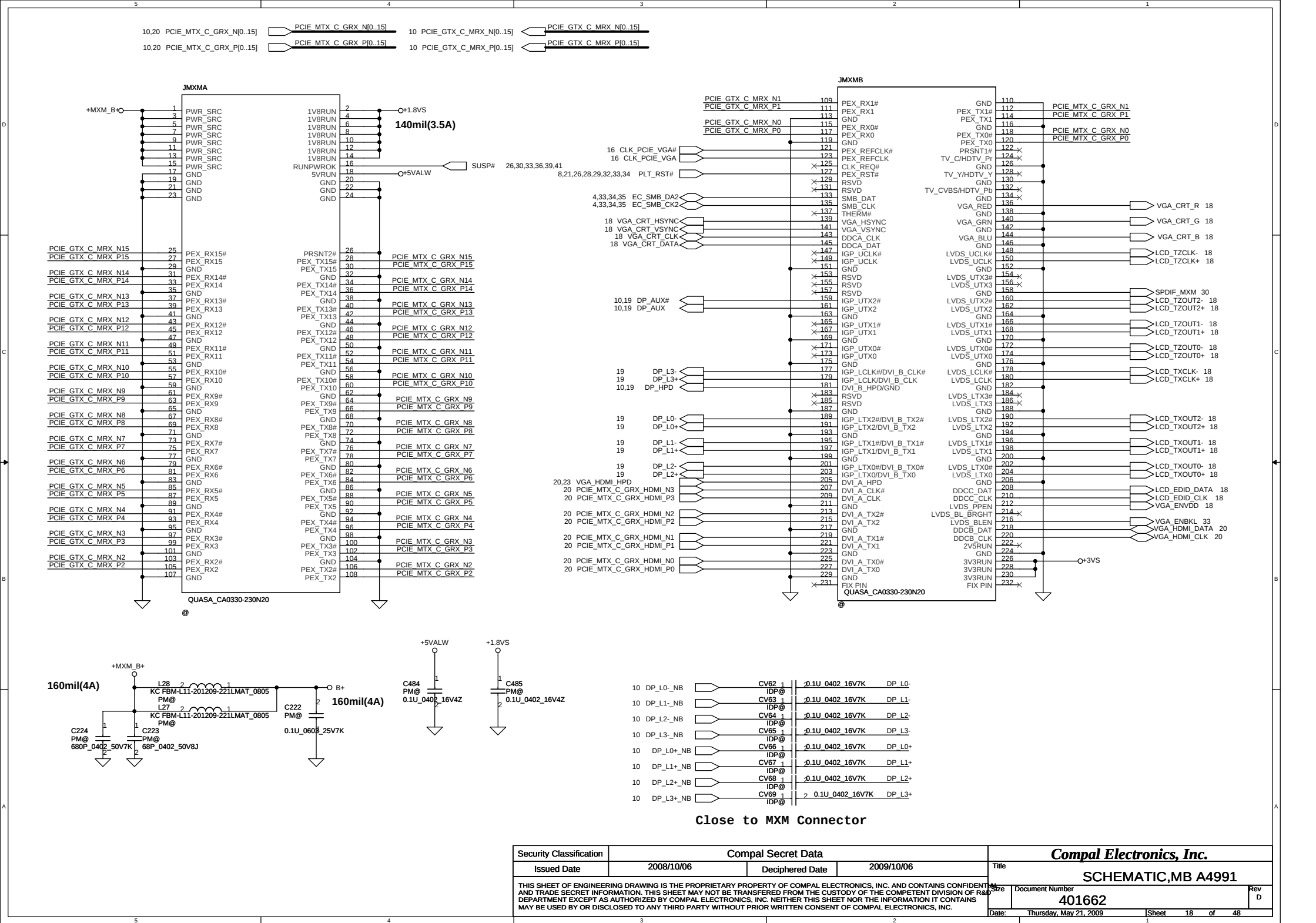
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                       | Thursday, May 21, 2009 | Sheet 15 of 48 |



**SO-DIMM B  
STANDARD  
Bottom side**

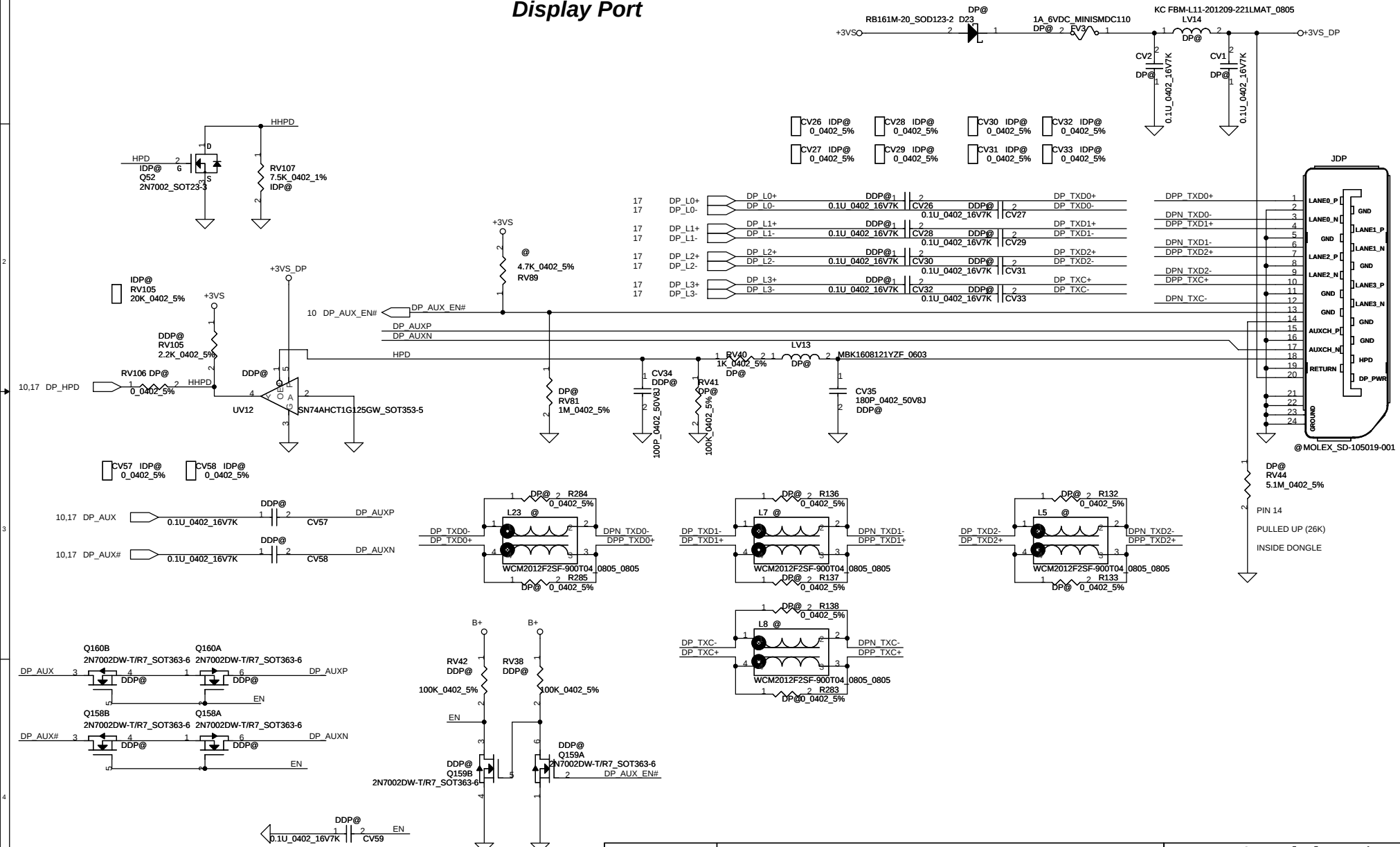
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| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Thursday, May 21, 2009 |  | Sheet              |  | 16         |  | Rev D                    |  |  |  |



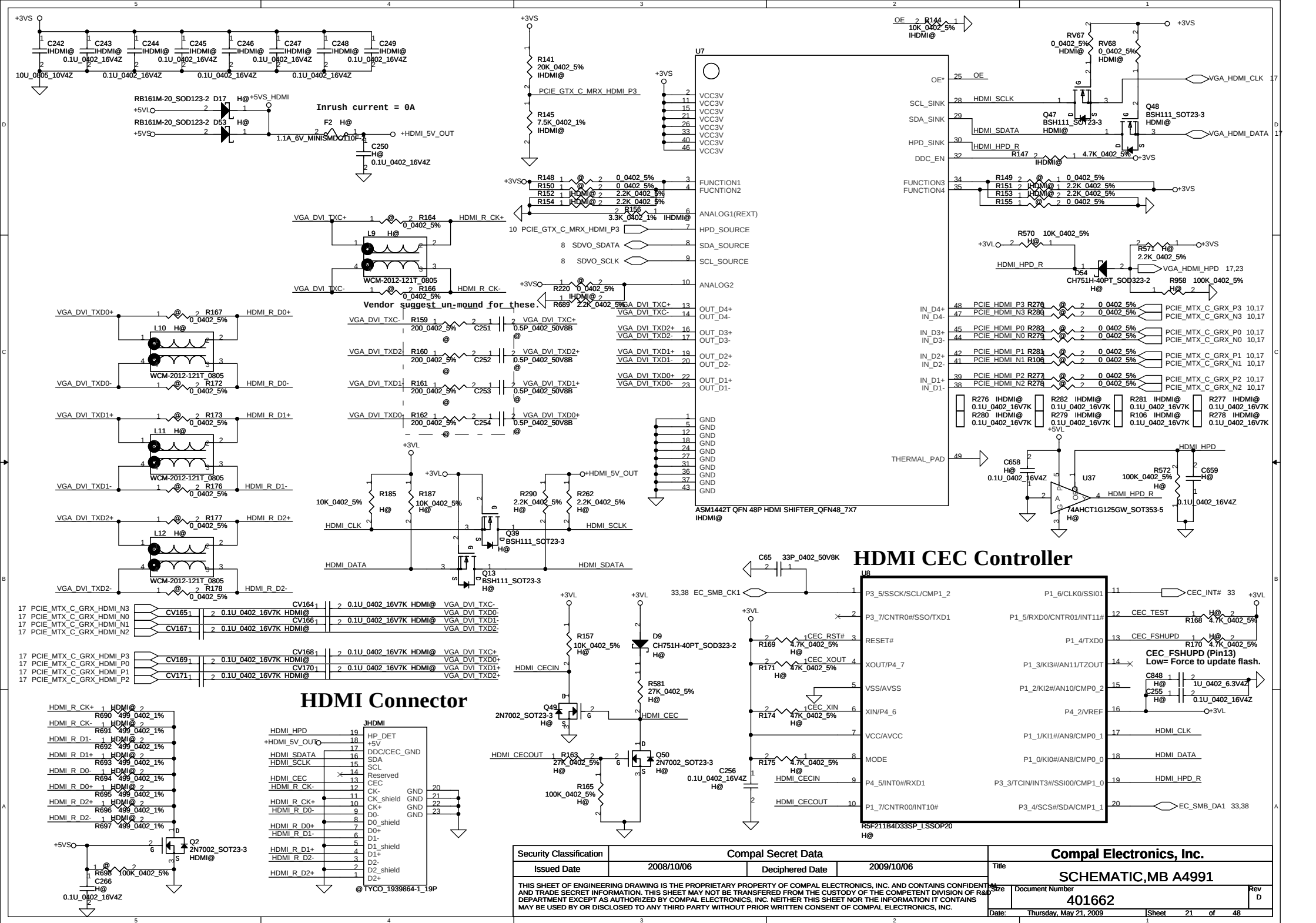


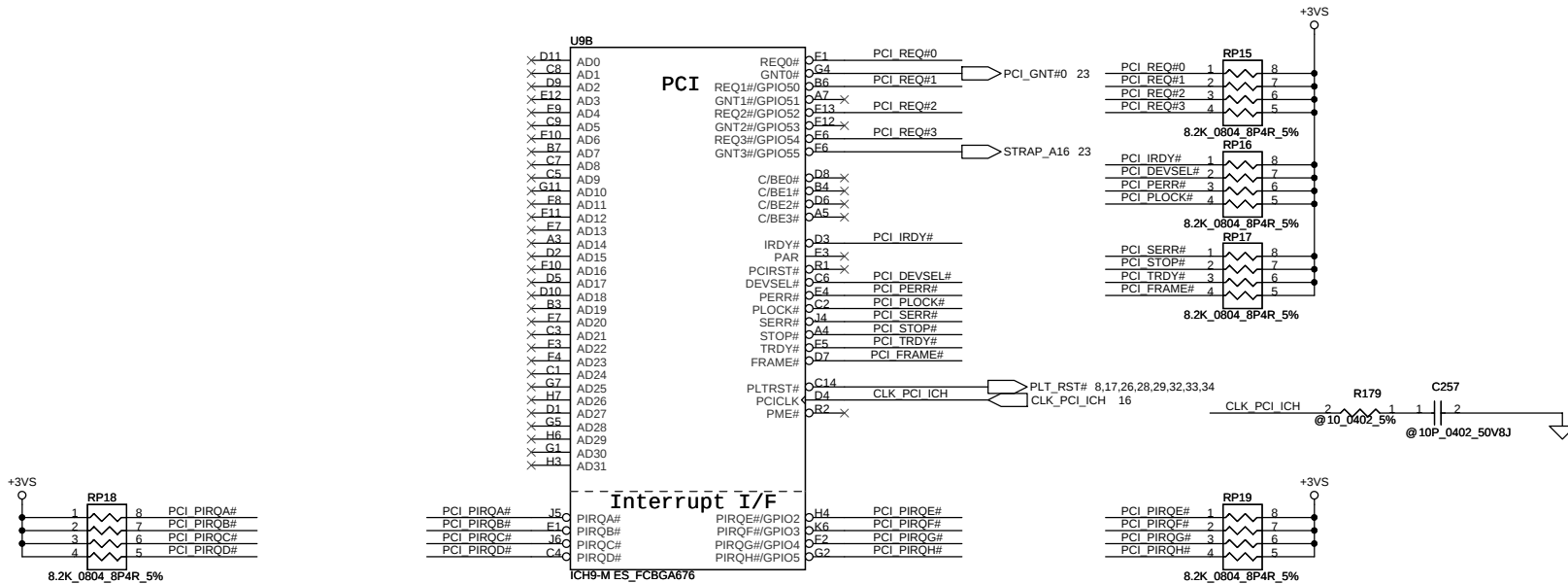
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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------------------------------------------|------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | <b>Compal Electronics, Inc.</b><br><b>SCHEMATIC,MB A4991</b> |                        |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06 | Deciphered Date    | 2009/10/06 | Title                                                        |                        |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                                                        | Thursday, May 21, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                                                        | 19 of 48               |

# Display Port



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                        |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Thursday, May 21, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 20 of 48               |





For Express Card

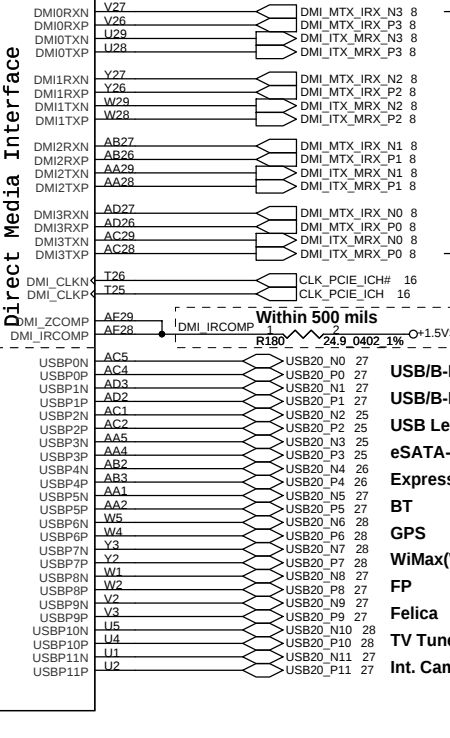
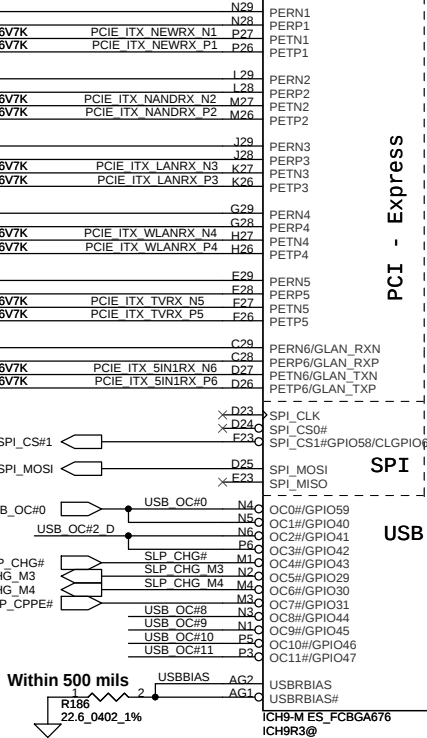
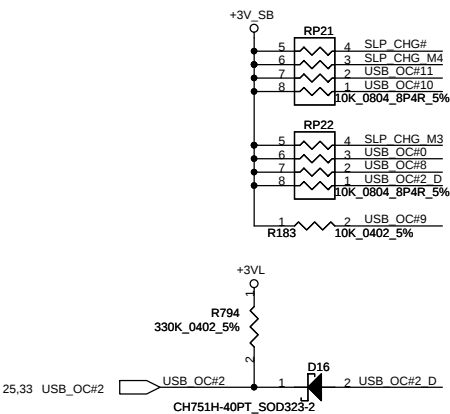
For UWB

For LAN

For WLAN

For 3G/GPS/TV Tuner

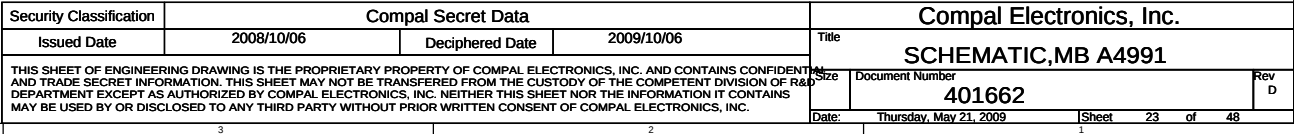
For 5 IN 1

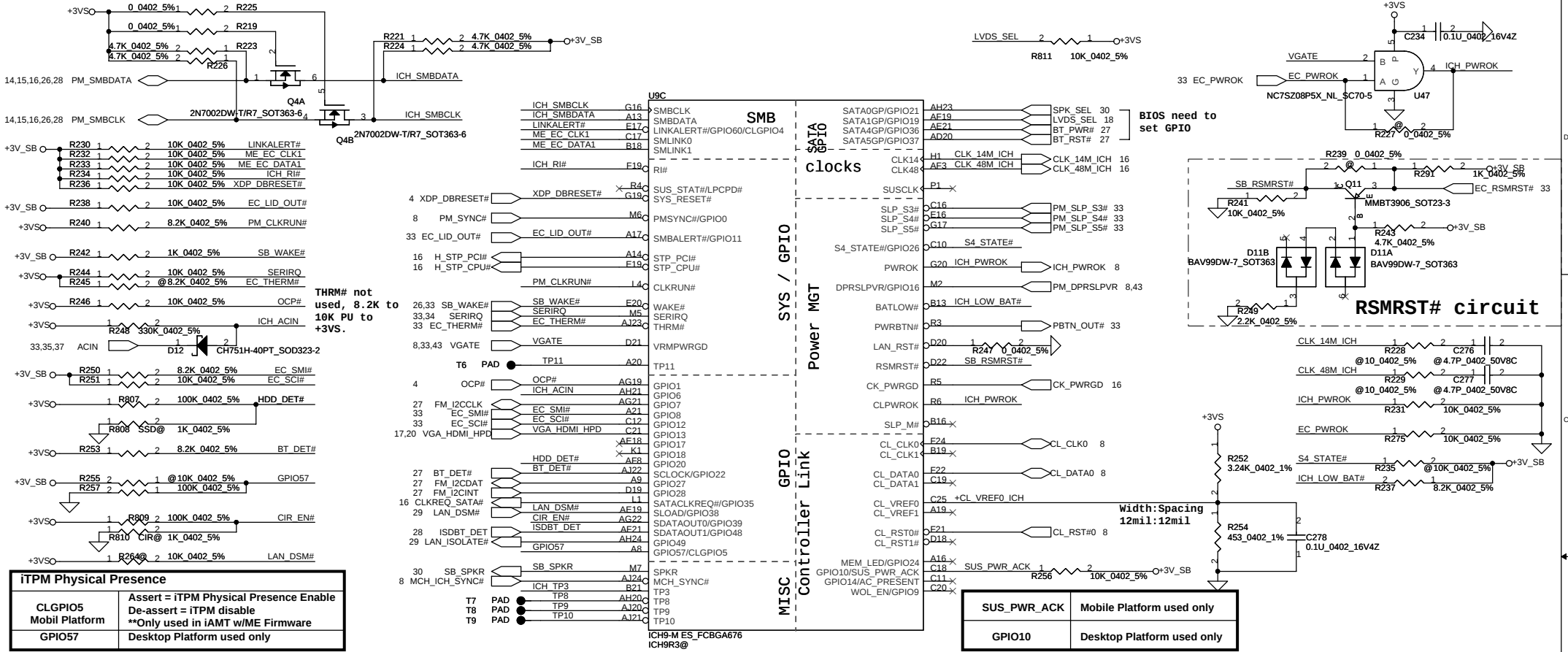


Lane reversal

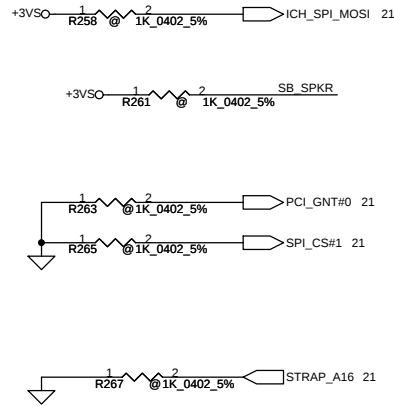
USB/B-Right  
USB/B-Right  
USB Left  
eSATA-USB  
ExpressCard  
BT  
GPS  
WiMax(WLAN)  
FP  
Felica  
TV Tuner  
Int. Camera

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                        |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                        |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Thursday, May 21, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 22 of 48               |





## ICH9M Strap Pin

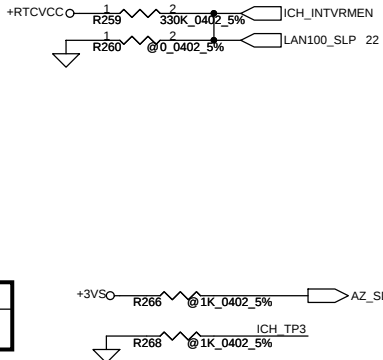


| Internal TPM Strap (Internal pull-down) |                                                 |
|-----------------------------------------|-------------------------------------------------|
| SPI_MOSI                                | Low= Disable<br>High= iTPM enable by MCH strap* |

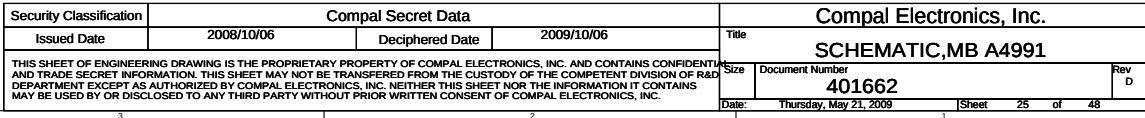
| No Reboot Strap (Internal pull-up) |                                    |
|------------------------------------|------------------------------------|
| SB_SPKR                            | Low= *Default<br>High= "No Reboot" |

| Boot BIOS Strap (Internal pull-up) |          |                    |
|------------------------------------|----------|--------------------|
| PCI_GNT#0                          | SPI_CS#1 | Boot BIOS Location |
| 0                                  | 0        | RESERVED           |
| 0                                  | 1        | SPI                |
| 1                                  | 0        | PCI                |
| 1                                  | 1        | LPC* (Default)     |

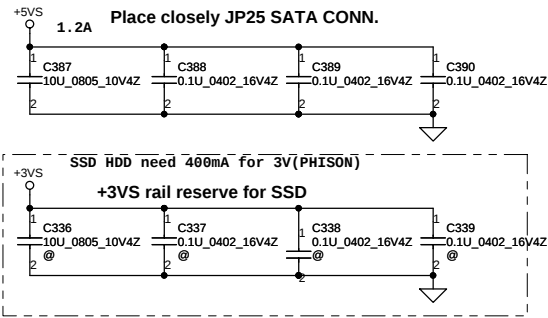
| A16 Swap Override Strap |                                                                    |
|-------------------------|--------------------------------------------------------------------|
| PCI_GNT#3               | Low= A16 swap override Enable<br>High= Default* (Internal pull-up) |



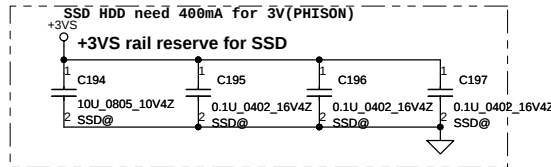
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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|------------------------|-----------------|----------------|--|--|-------|--|
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| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                    |  |                 |  |                          |  | Thursday, May 21, 2009 |                 | Sheet 24 of 48 |  |  |       |  |



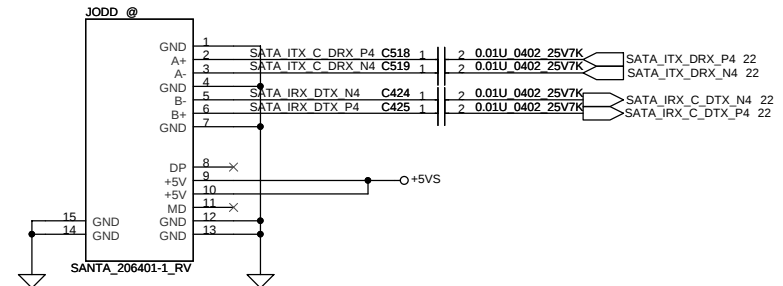
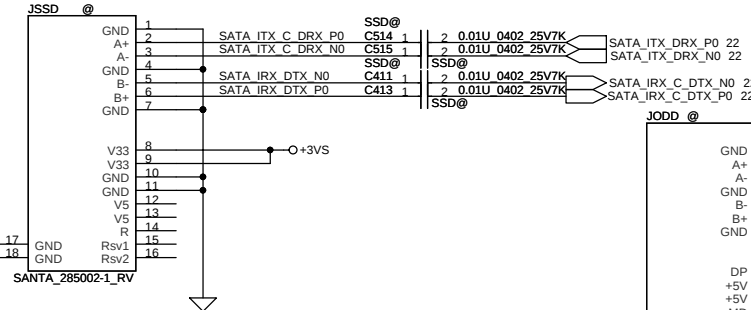
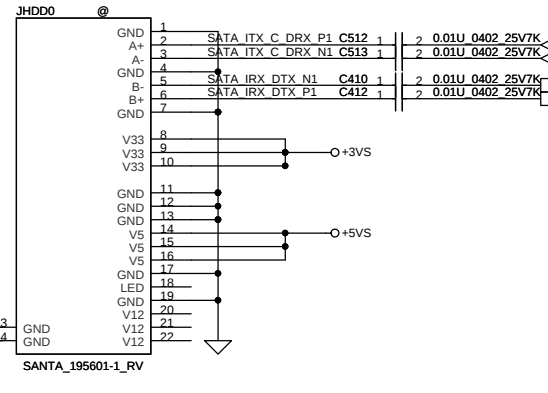
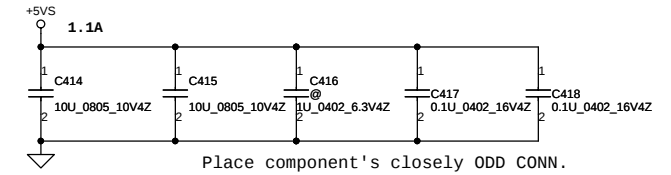
## SATA HDD Conn.



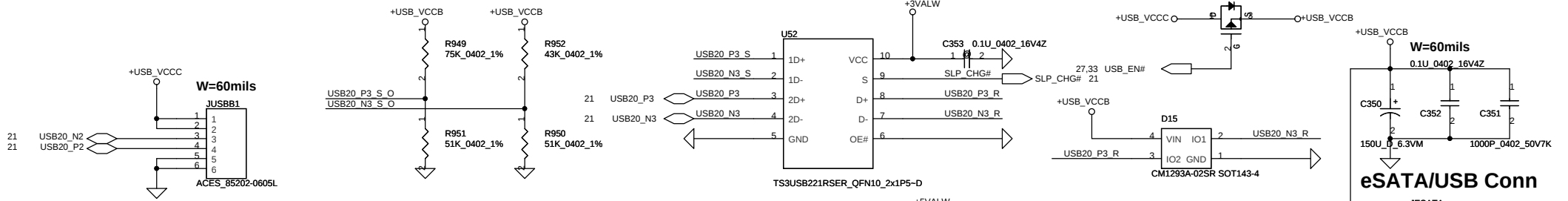
## SSD Conn.



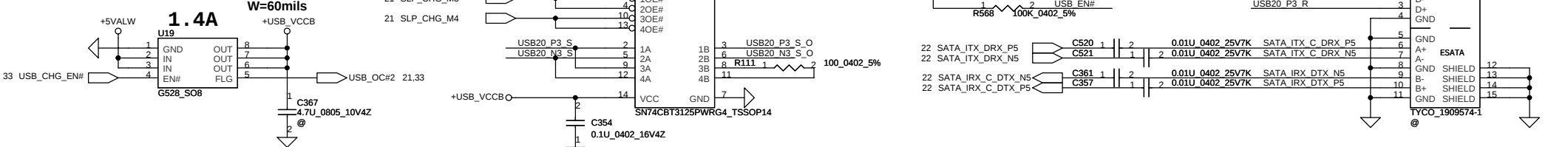
## SATA ODD Conn



## USB Conn.



## eSATA/USB

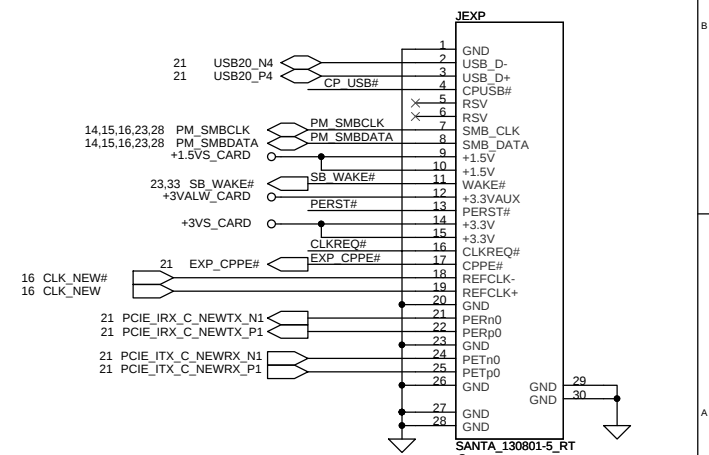
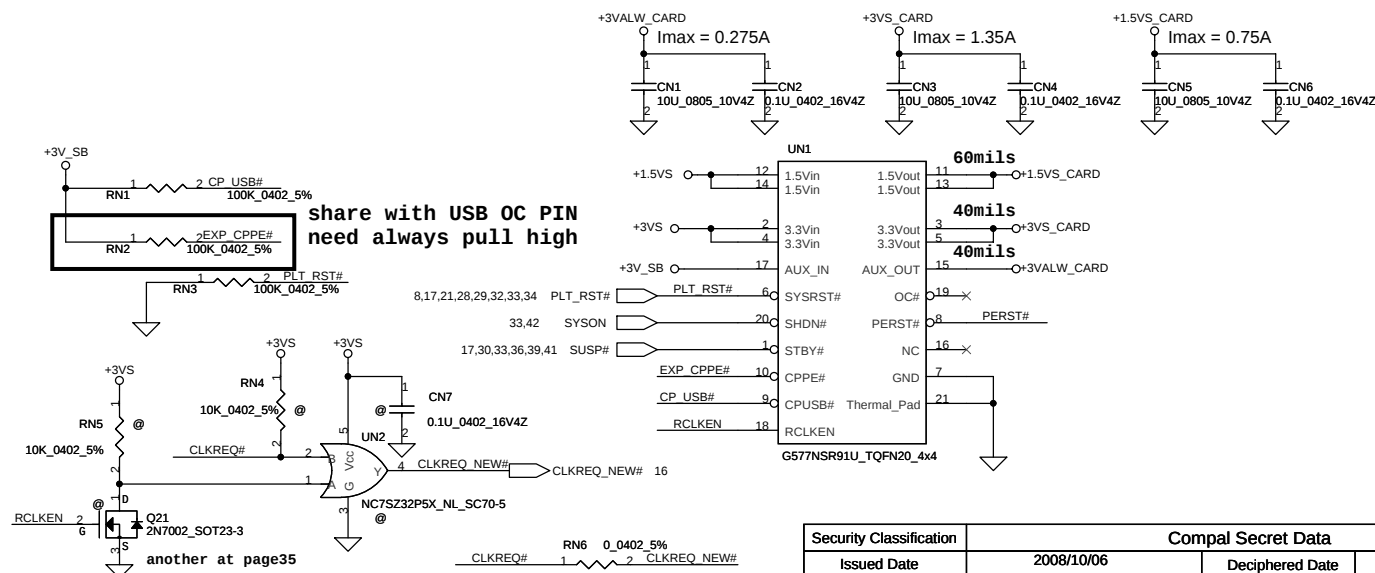
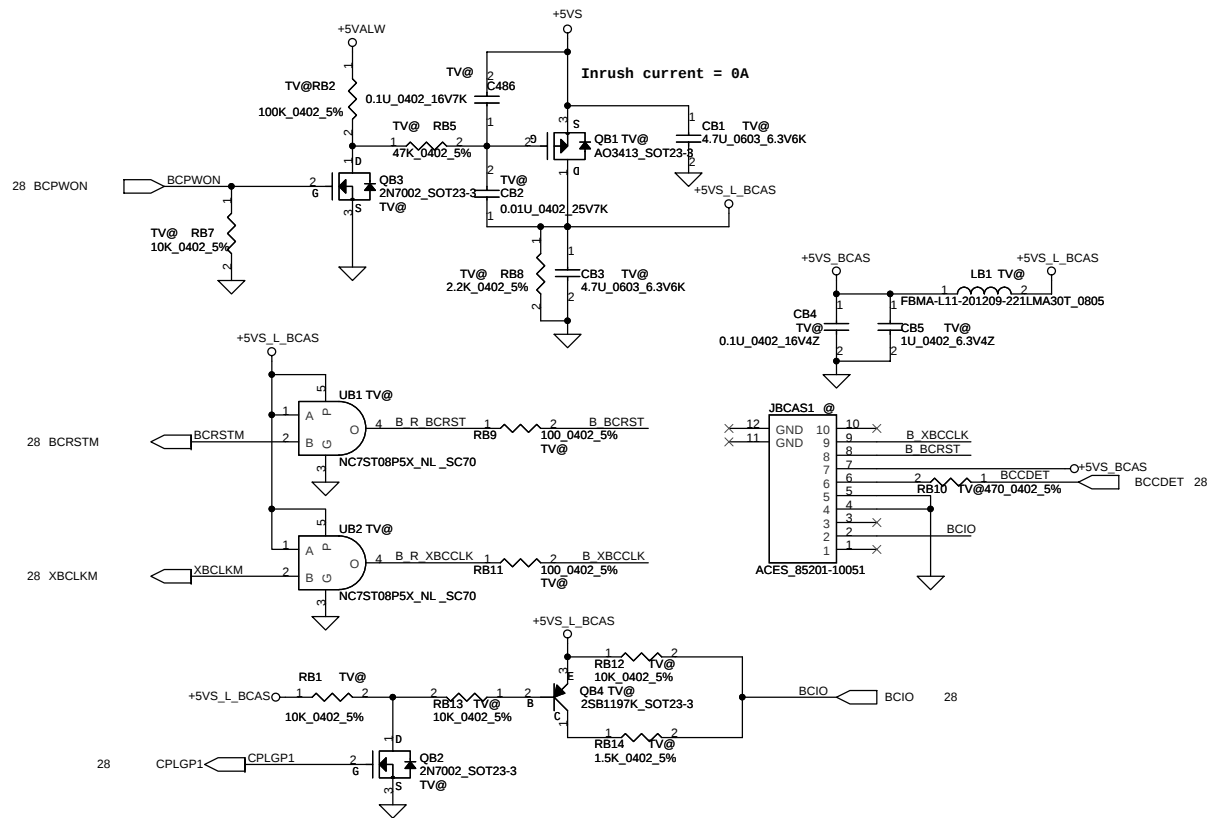


|        | SLP_CHG_M3 | SLP_CHG_M4 |
|--------|------------|------------|
| Mode 3 | HIGH       | LOW        |
| Mode 4 | LOW        | HIGH       |

| SLP_CHG | FUNCTION |
|---------|----------|
| LOW     | D=1D     |
| HIGH    | D=2D     |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                        |  |                 |  |          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|------------------------|--|-----------------|--|----------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                        |  |                 |  |          |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Size                   |  | Document Number |  | Rev D    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | 401662                 |  |                 |  |          |  |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                    |  |                 |  |                          |  | Thursday, May 21, 2009 |  | Sheet           |  | 26 of 48 |  |

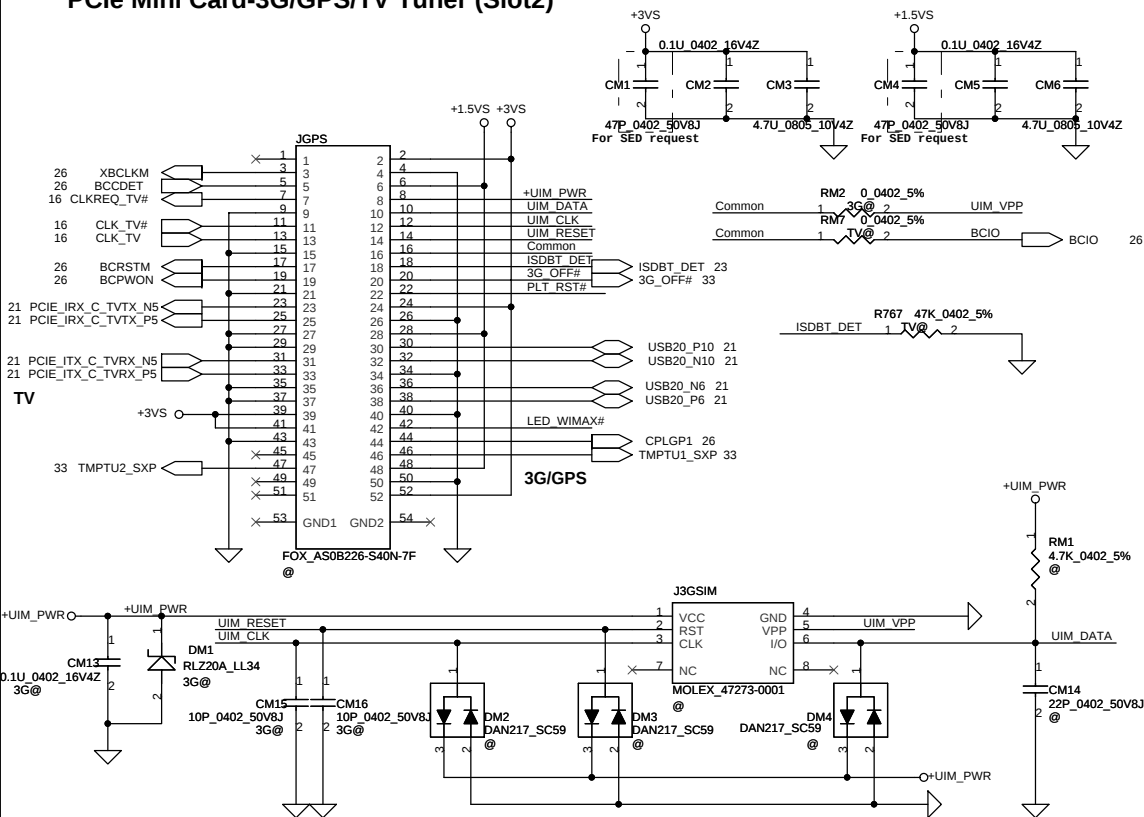
## B-CAS Circuit



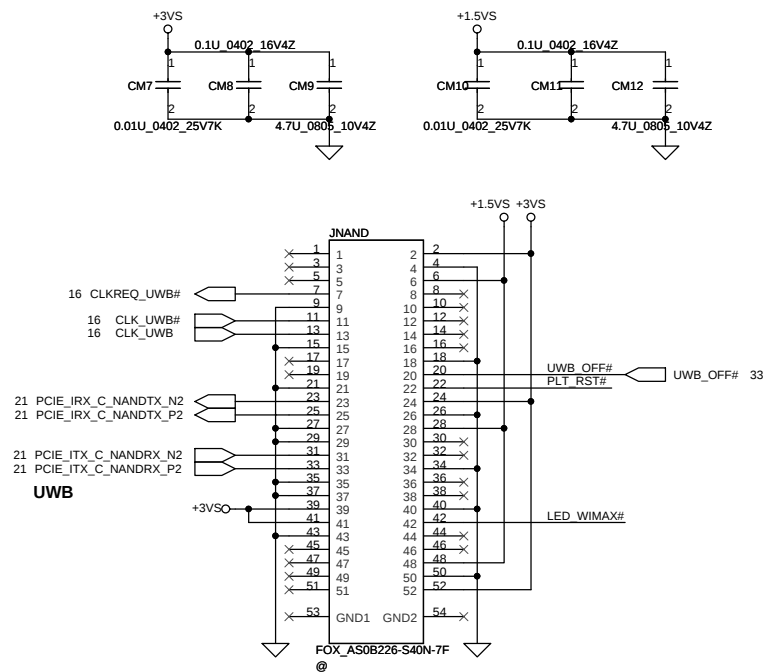
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | <b>Compal Electronics, Inc.</b> |                            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                           | Thursday, May 21, 2009     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                           | 27 of 48                   |



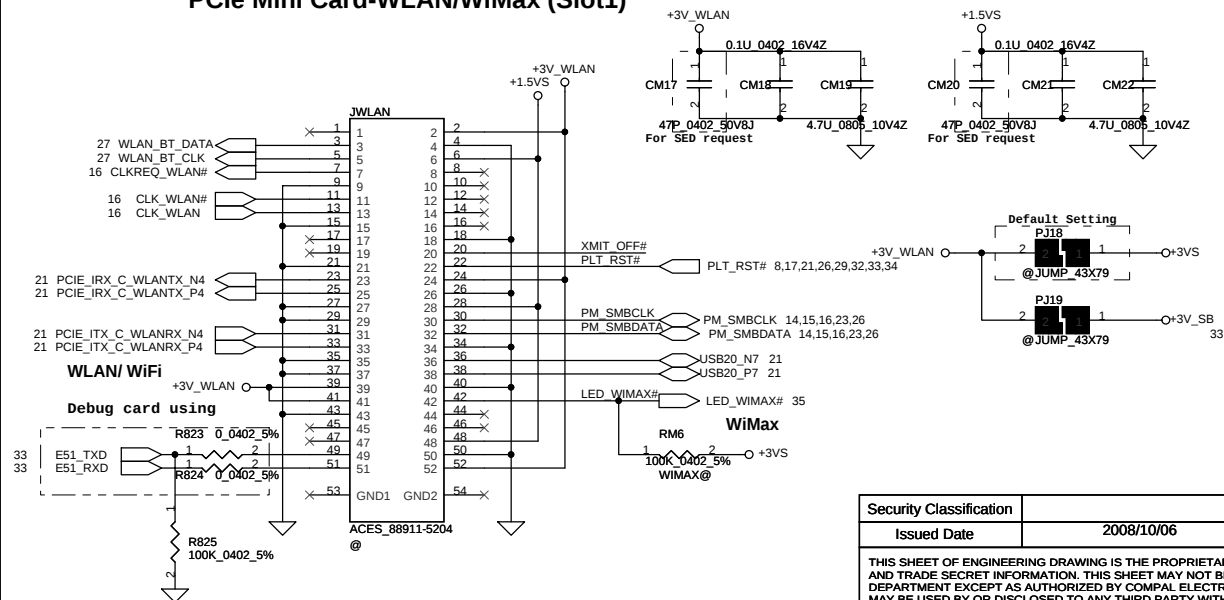
### PCIe Mini Card-3G/GPS/TV Tuner (Slot2)



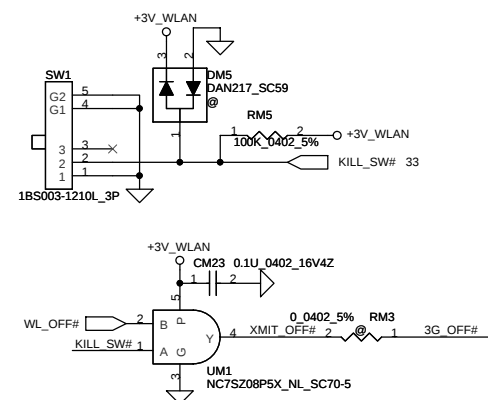
## UWB/JET (Slot3)



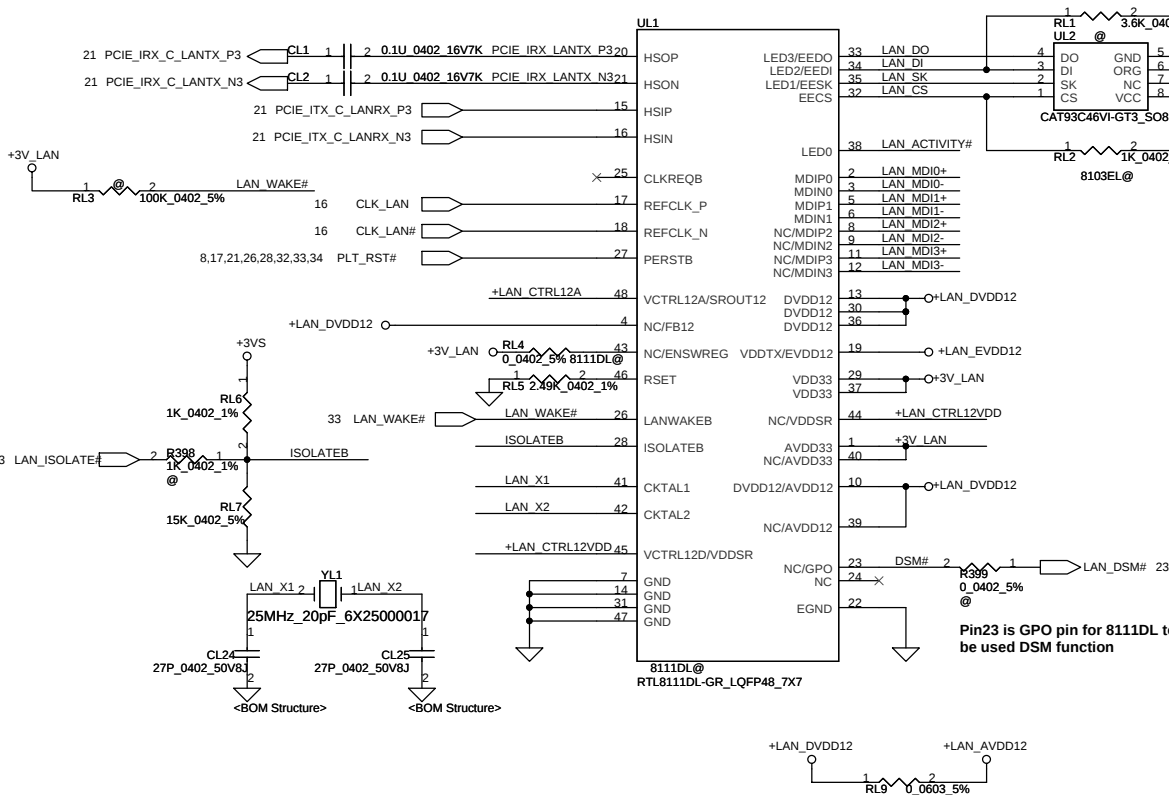
### PCle Mini Card-WLAN/WiMax (Slot1)



## Kill SWITCH

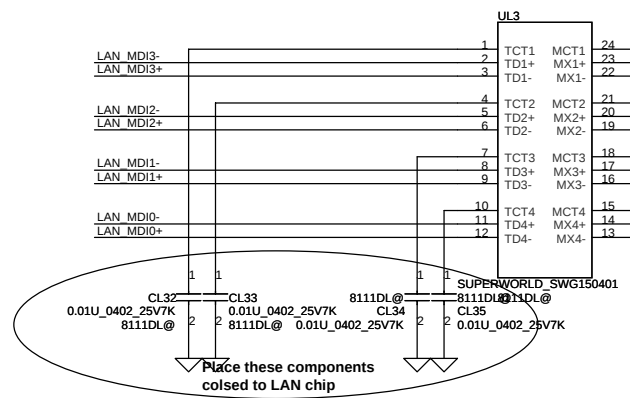


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                        |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Thursday, May 21, 2009 | Sheet 29 of 48 |

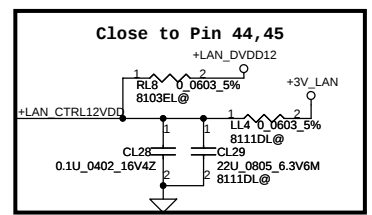
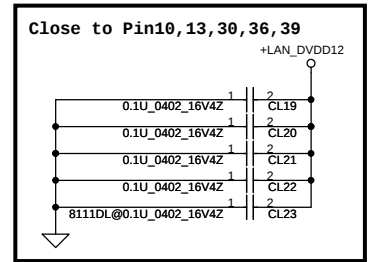
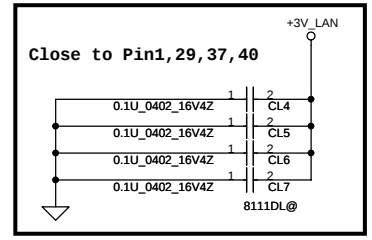
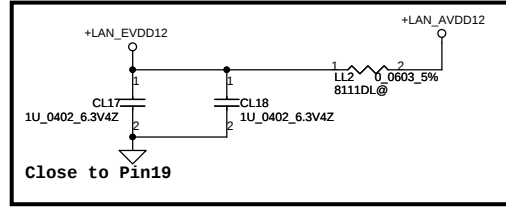
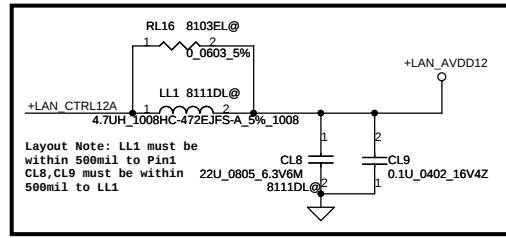


pin assignments table for difference

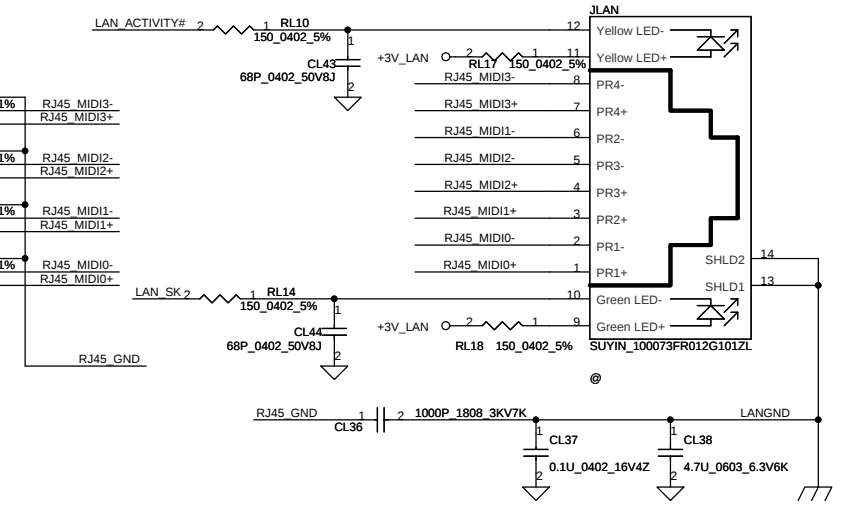
| Pin | 8111DL  | 8103EL |
|-----|---------|--------|
| 4   | FB12    | NC     |
| 8   | MDIP2   | NC     |
| 9   | MDIN2   | NC     |
| 10  | AVDD12  | DVDD12 |
| 11  | MDIP3   | NC     |
| 12  | MDIN3   | NC     |
| 19  | EVDD12  | VDDTX  |
| 23  | GPO     | NC     |
| 33  | EED0    | LED3   |
| 34  | EED1    | LED2   |
| 35  | EESK    | LED1   |
| 39  | AVDD12  | NC     |
| 40  | AVDD33  | NC     |
| 43  | ENSR    | NC     |
| 44  | VDDSR   | NC     |
| 45  | VDDSR   | NC     |
| 48  | SR0UT12 | NC     |



Place these components  
colsed to LAN chip

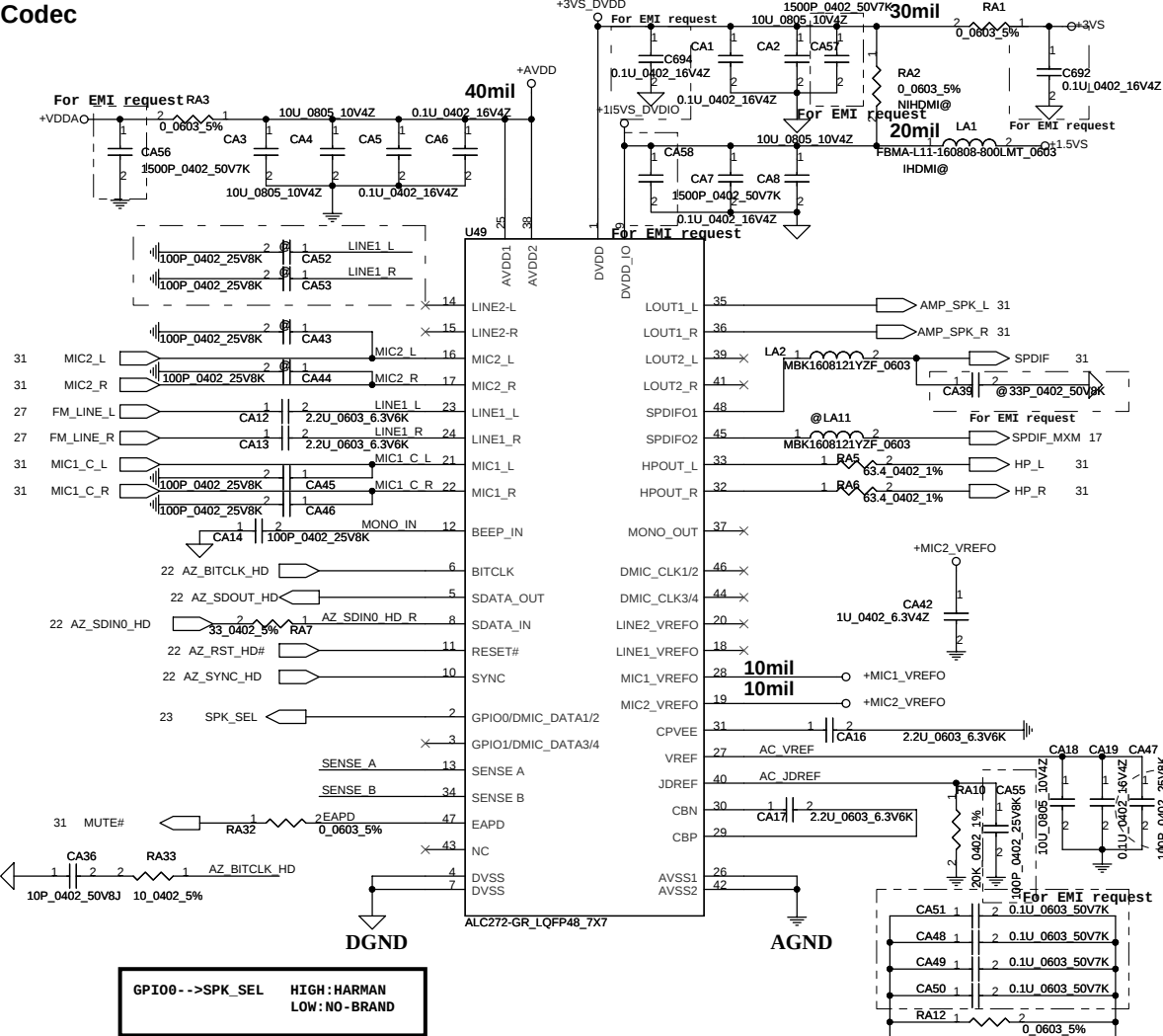


## LAN Conn.

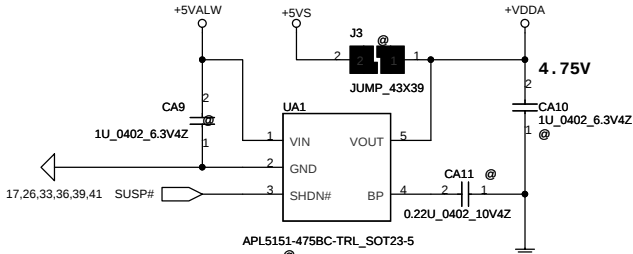


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------|
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| Date: Thursday, May 21, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                    |            | Sheet                    | 30 of 48 |

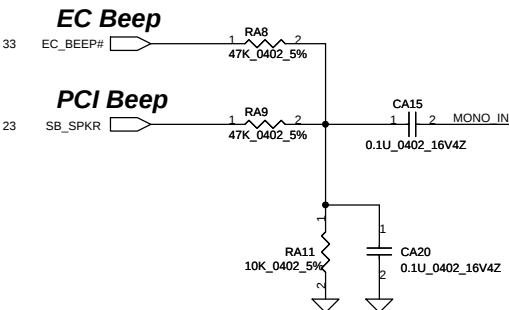
Codec



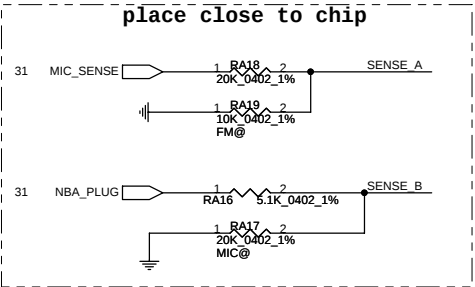
Audio regulator



Beep sound

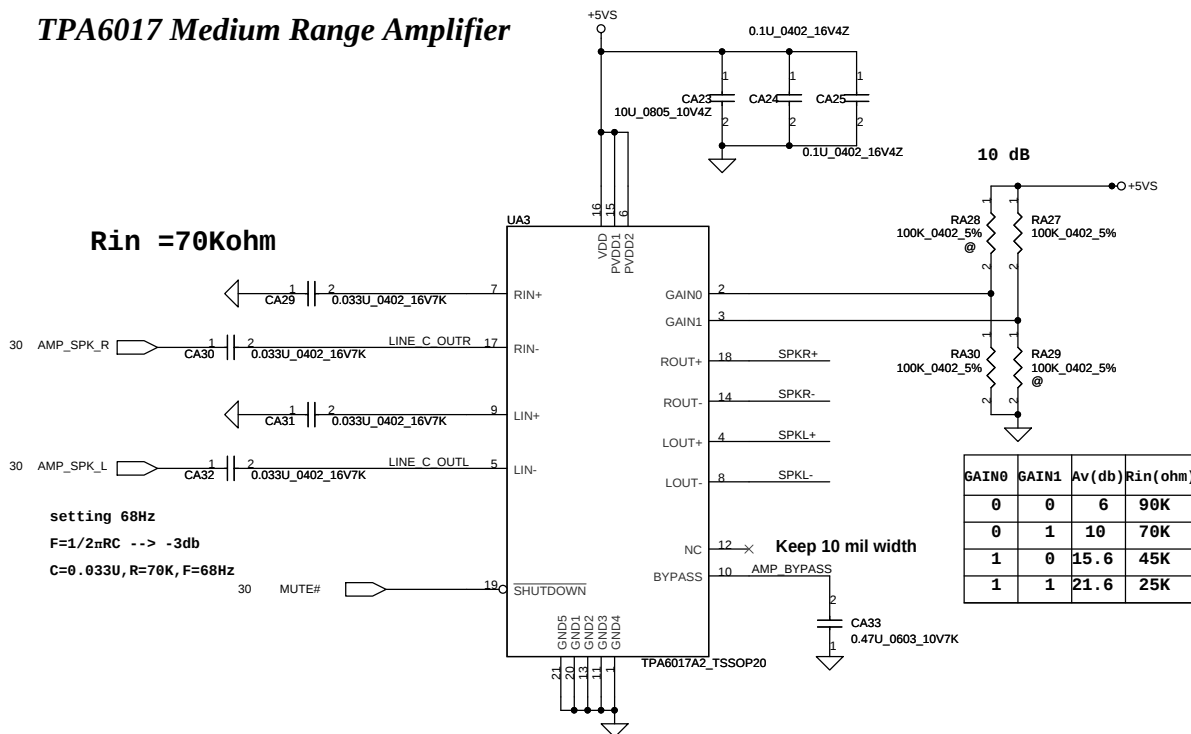


| Sense Pin | Impedance | Codec Signals       | Function      |
|-----------|-----------|---------------------|---------------|
| SENSE A   | 39.2K     | PORT-A (PIN 39, 41) |               |
|           | 20K       | PORT-B (PIN 21, 22) | Ext. MIC      |
|           | 10K       | PORT-C (PIN 23, 24) | FM tuner      |
| SENSE B   | 5.1K      | PORT-D (PIN 35, 36) | SPK out       |
|           | 39.2K     | PORT-E (PIN 14, 15) |               |
|           | 20K       | PORT-F (PIN 16, 17) | Int. MIC      |
|           | 10K       | PORT-H (PIN 37)     |               |
|           | 5.1K      | PORT-I (PIN 32, 33) | Headphone out |

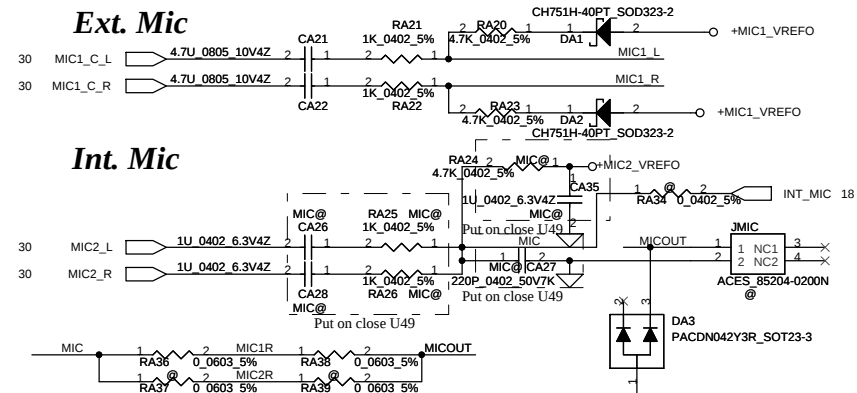


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                        |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Thursday, May 21, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 31 of 48               |

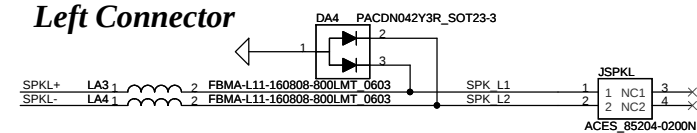
## TPA6017 Medium Range Amplifier



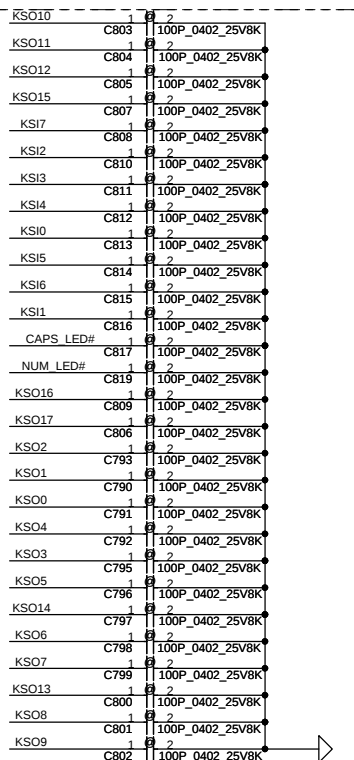
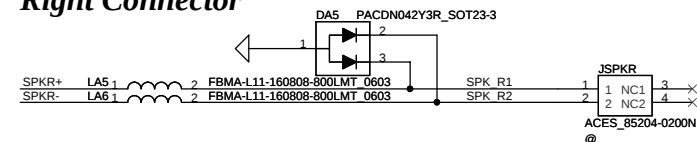
| GAIN0 | GAIN1 | Av (db) | Rin (ohm) |
|-------|-------|---------|-----------|
| 0     | 0     | 6       | 90K       |
| 0     | 1     | 10      | 70K       |
| 1     | 0     | 15.6    | 45K       |
| 1     | 1     | 21.6    | 25K       |



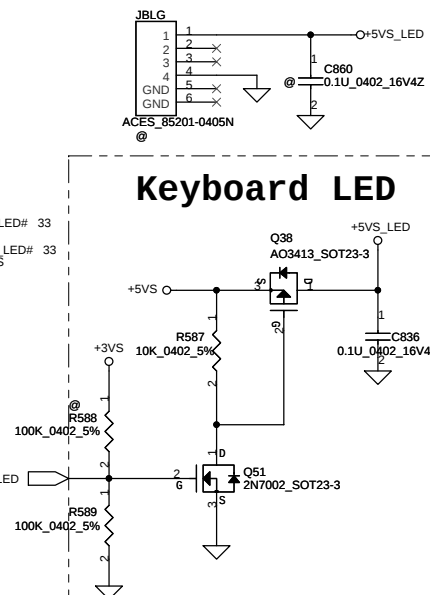
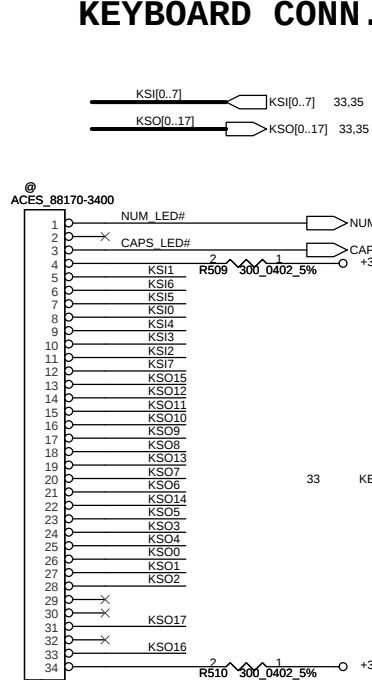
### Left Connector



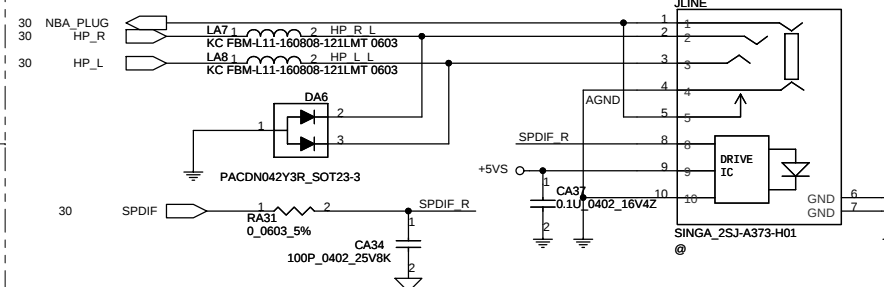
### *Right Connector*



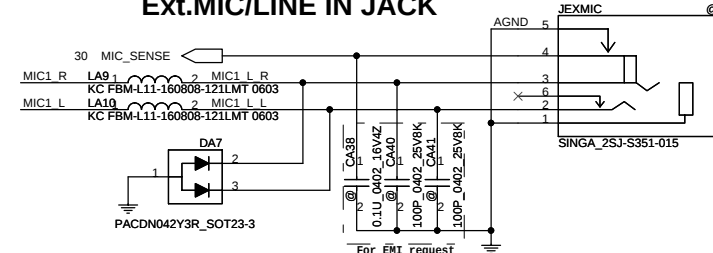
## KEYBOARD CONN.



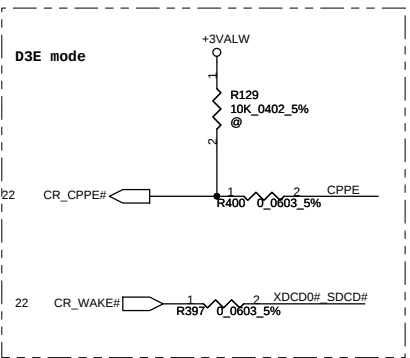
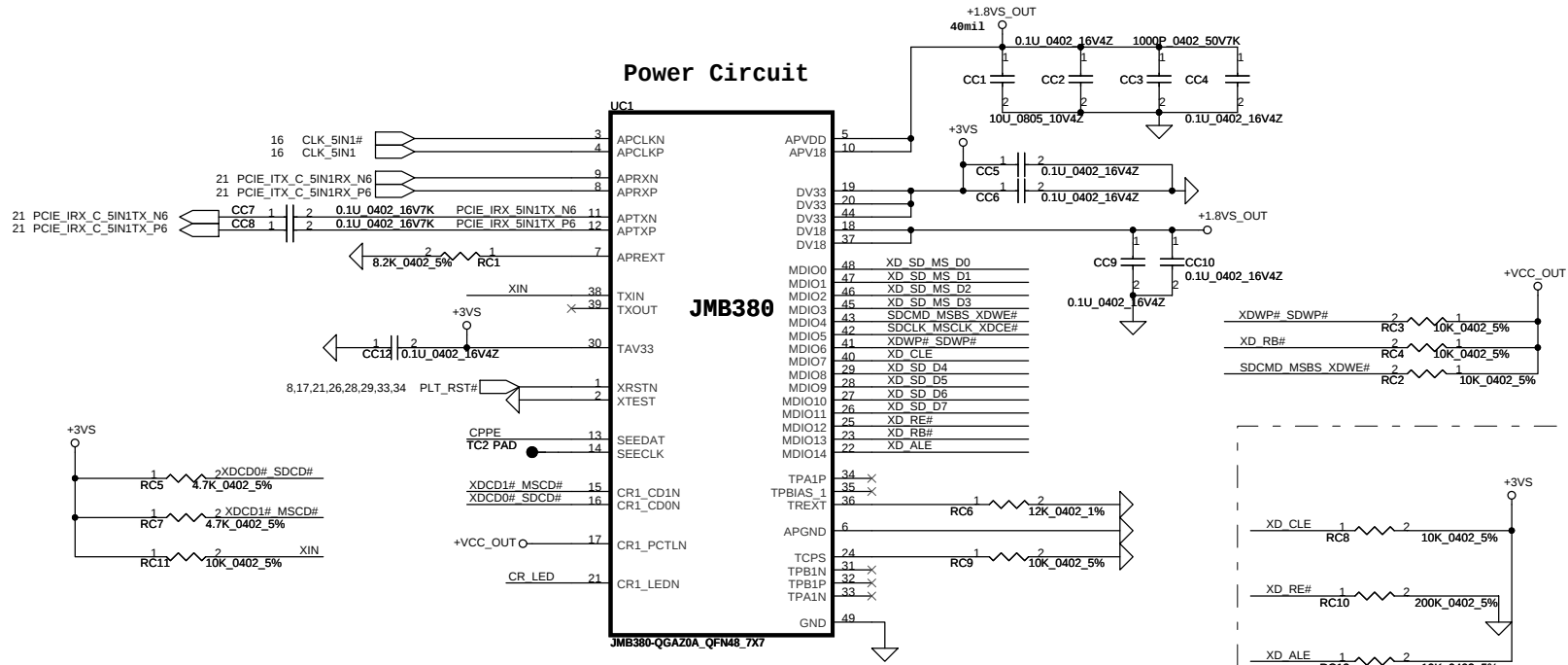
### HeadPhone/LINE Out JACK



**Ext.MIC/LINE IN JACK**

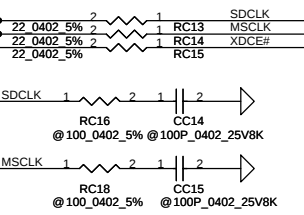
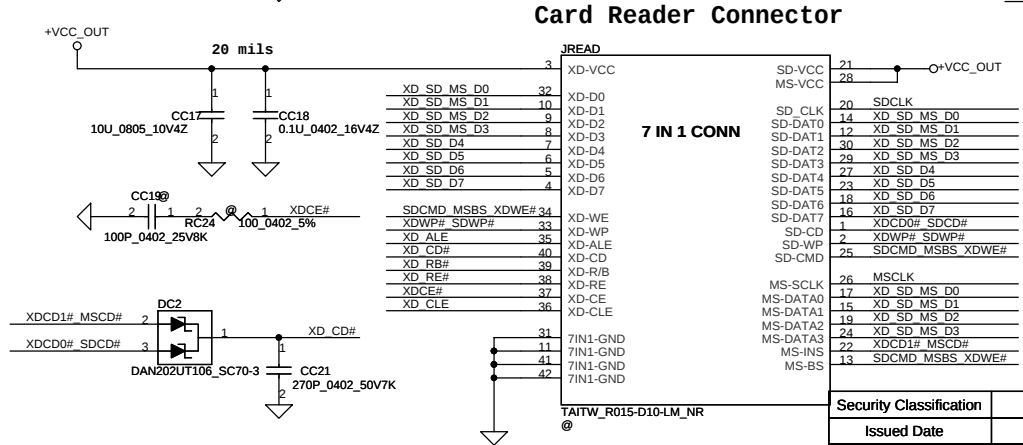
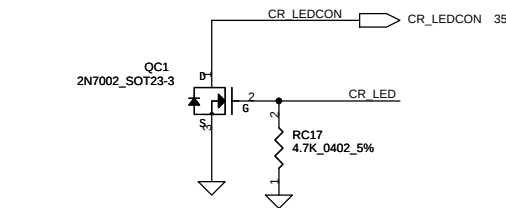


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                                 |                     |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|---------------------------------|---------------------|-------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | <b>Compal Electronics, Inc.</b> |                     |       |
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| Date: Thursday, May 21, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |            | Sheet                           | 32                  | of 48 |

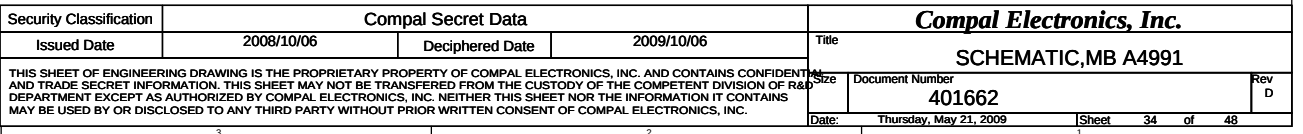


| Strapping setting |                      |                     |
|-------------------|----------------------|---------------------|
| Pin name          | Description          |                     |
|                   | High                 | low                 |
| MDIO7             | on-board             | add-in card         |
| MDIO12            | +VCC_OUT high active | +VCC_OUT low active |
| MDIO14            | CR_LED high active   | CR_LED low active   |

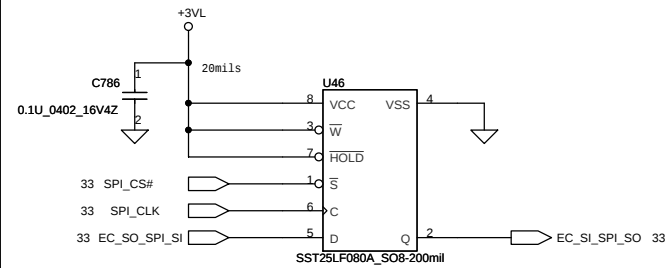
P.S CR1\_PCTLN aslo can out 3V with 250mA for 5IN1 using.(MDIO12 can't be seted after MP IC)



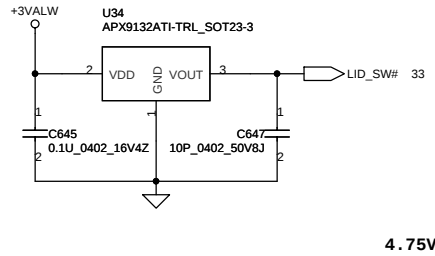
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                        |  | Compal Secret Data |  |            |  | Compal Electronics, Inc. |  |  |  |
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| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Thursday, May 21, 2009 |  | Sheet              |  | 33         |  | of 48                    |  |  |  |



## SPI Flash (16Mb\*1)



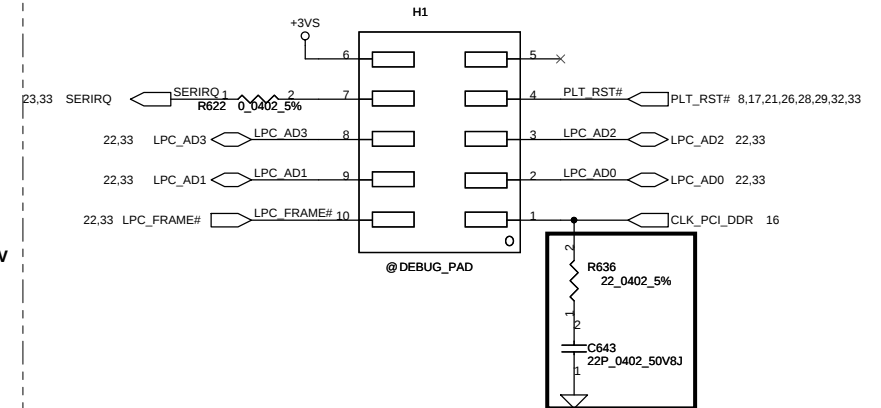
## Lid SW



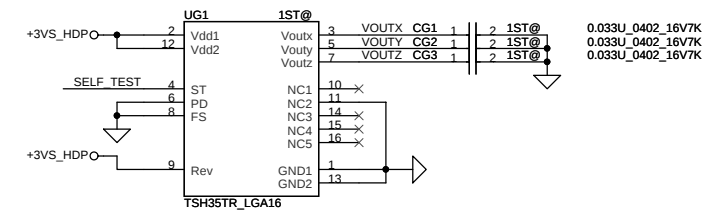
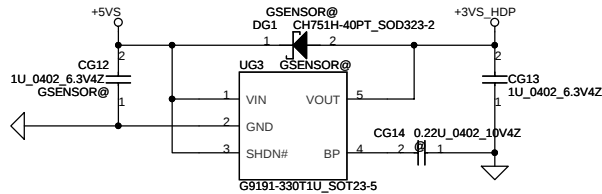
4.75V

## LPC Debug Port

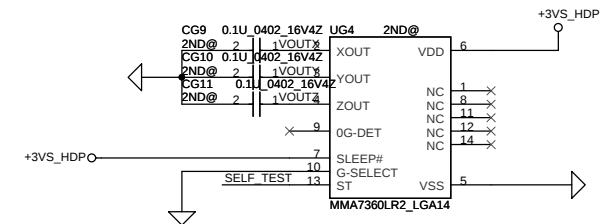
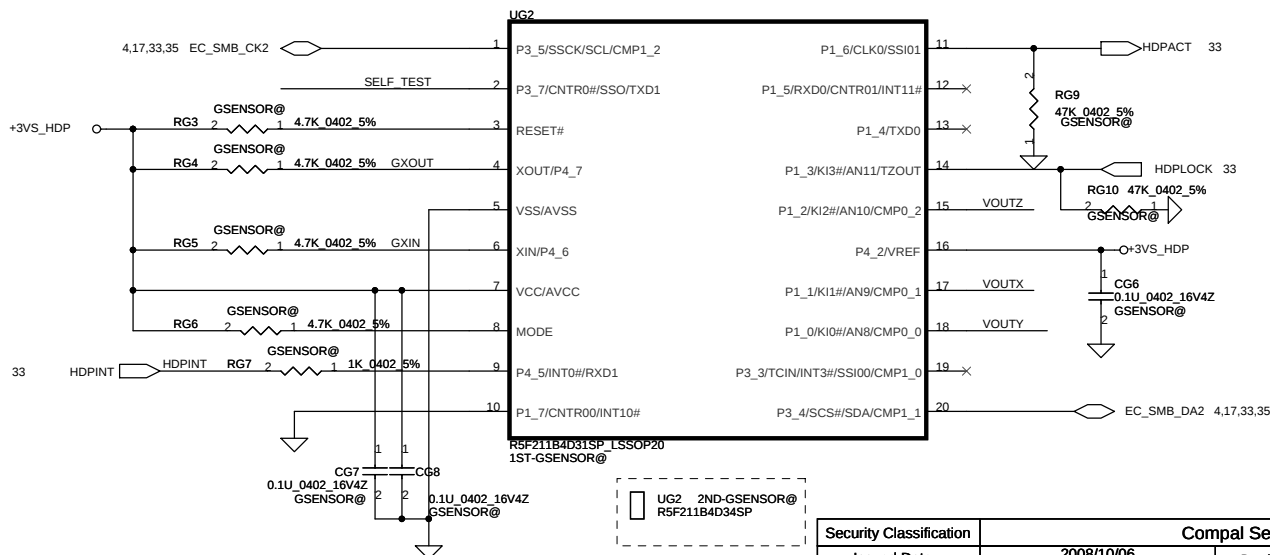
Please place the PAD under DDR DIMM.



## G-Sensor

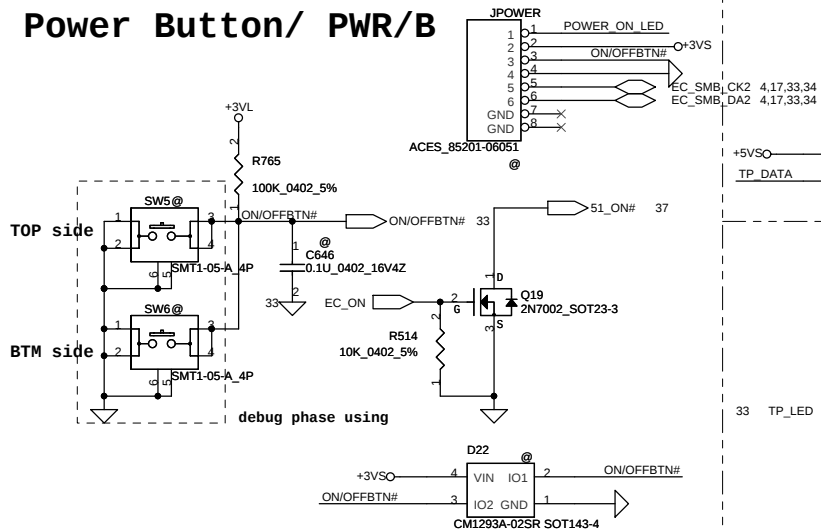


0.033U\_0402\_16V7K  
0.033U\_0402\_16V7K  
0.033U\_0402\_16V7K

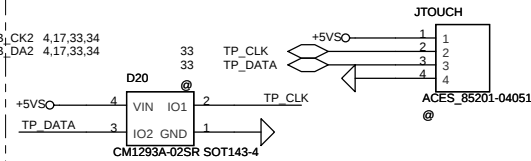


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  | Compal Secret Data |                 | Compal Electronics, Inc.     |                 |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |                    |                 | Date: Thursday, May 21, 2009 | Sheet 35 of 48  |

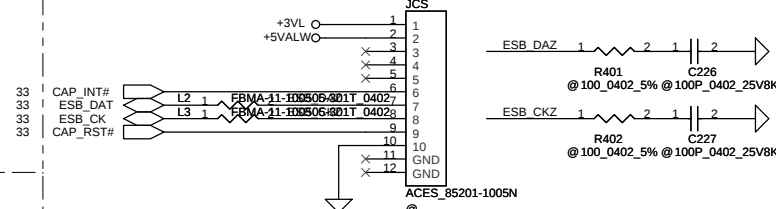
## Power Button/ PWR/B



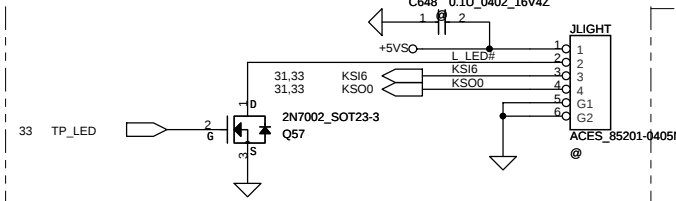
## Touch/B Connector



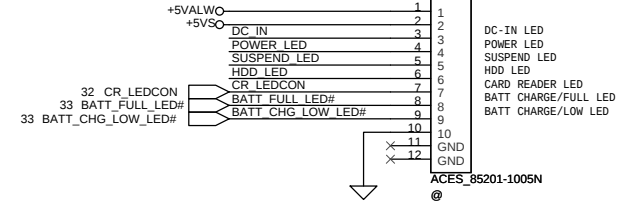
## Caps Sensor Connector



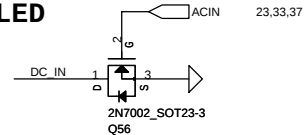
## Light Pipe Connector



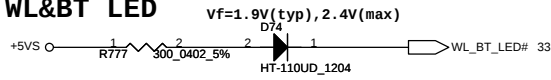
## LED/B Connector



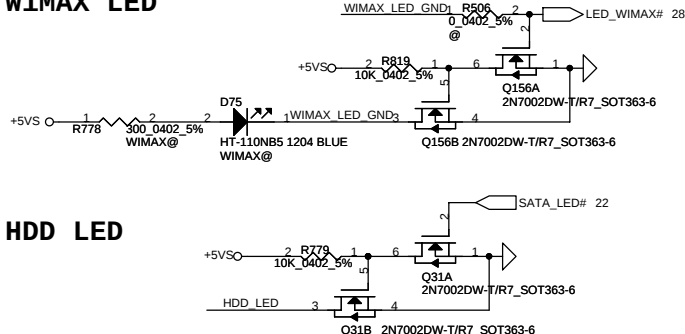
## DC-IN LED



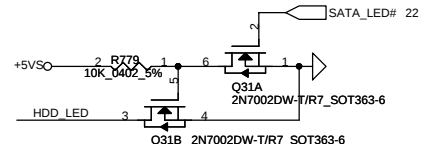
## WL&BT LED



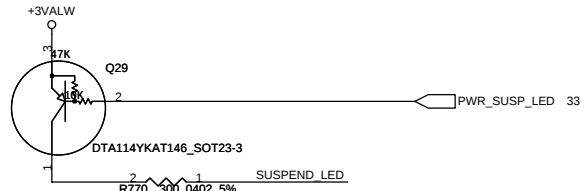
## WiMAX LED



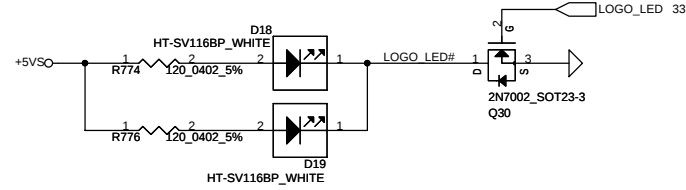
## HDD LED



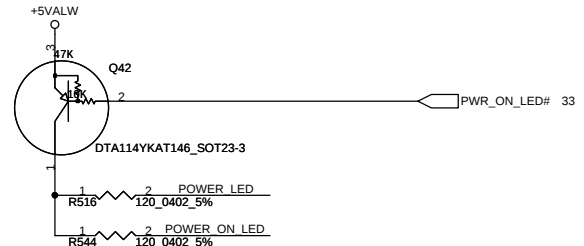
## SUSPEND LED



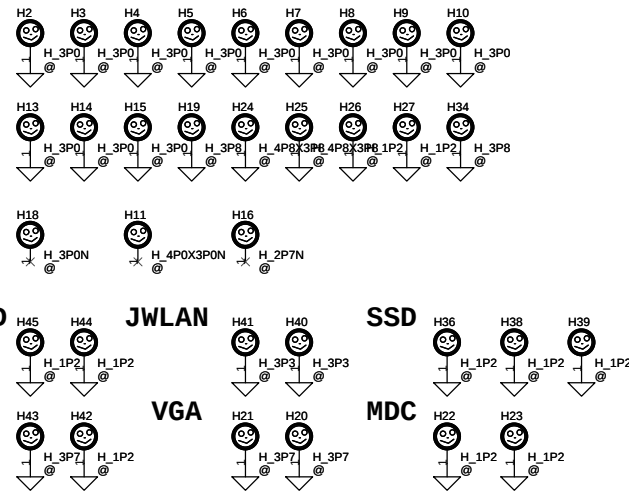
## Satellite LED



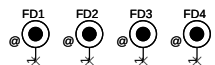
## POWER LED



## Screw Hole



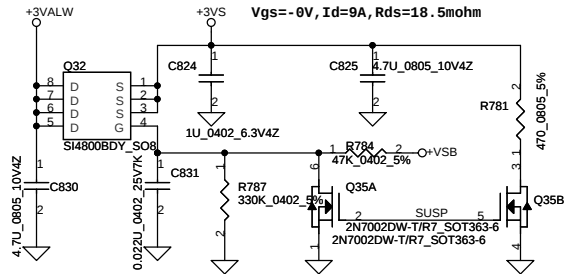
## PCB Federal Mark PAD



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                        |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 36 of 48               |

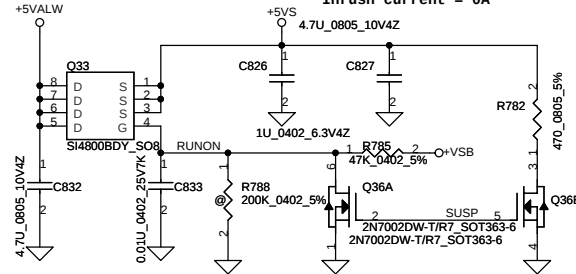
### +3VALW TO +3VS

Inrush current = 0A  
Vgs = -0V, Id = 9A, Rds = 18.5mohm



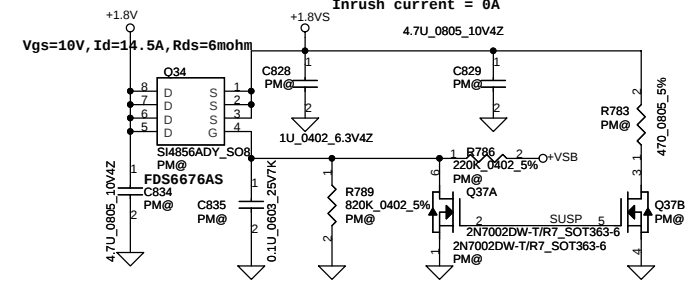
### +5VALW TO +5VS

Inrush current = 0A



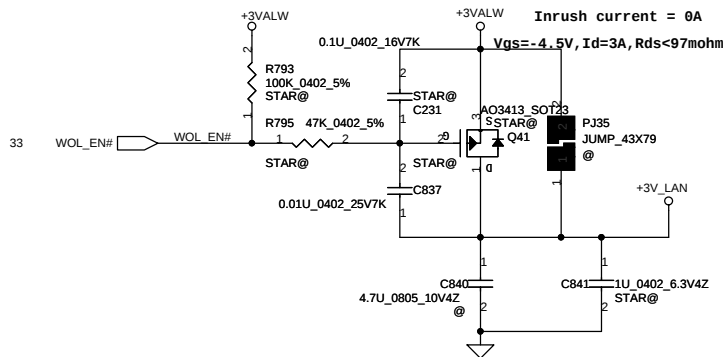
### +1.8V to +1.8VS

Inrush current = 0A



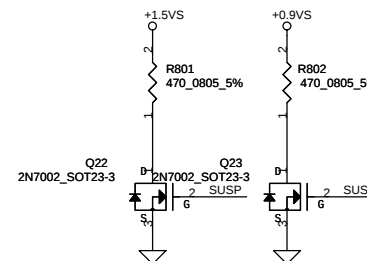
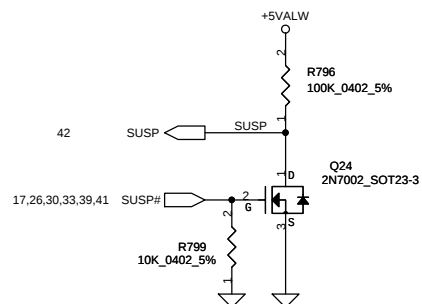
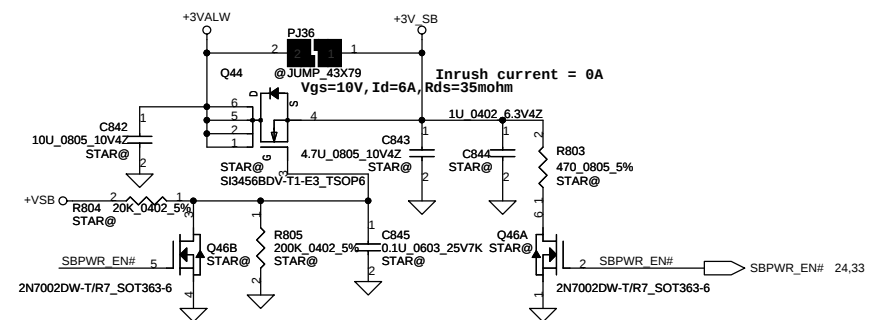
### +3VALW TO +3V\_LAN

Inrush current = 0A



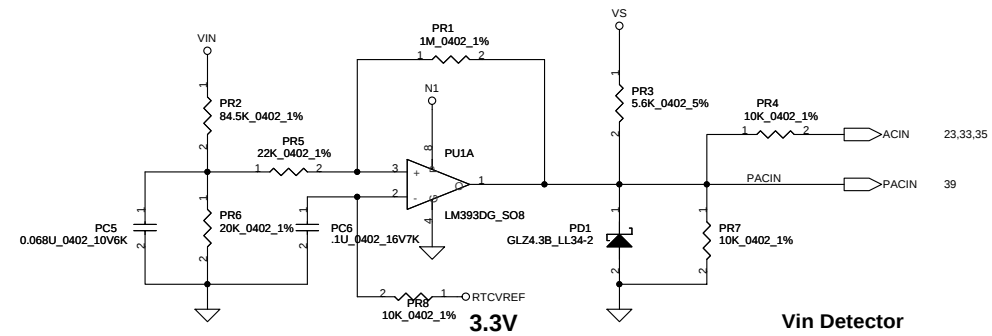
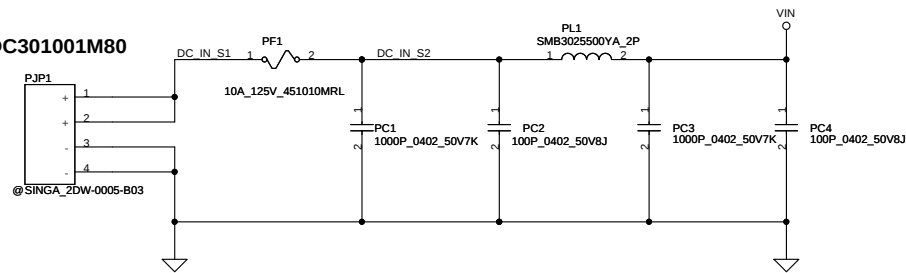
### +3VALW TO +3V\_SB

Inrush current = 0A



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|---------------------|
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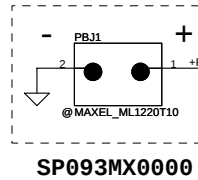
# DC301001M80



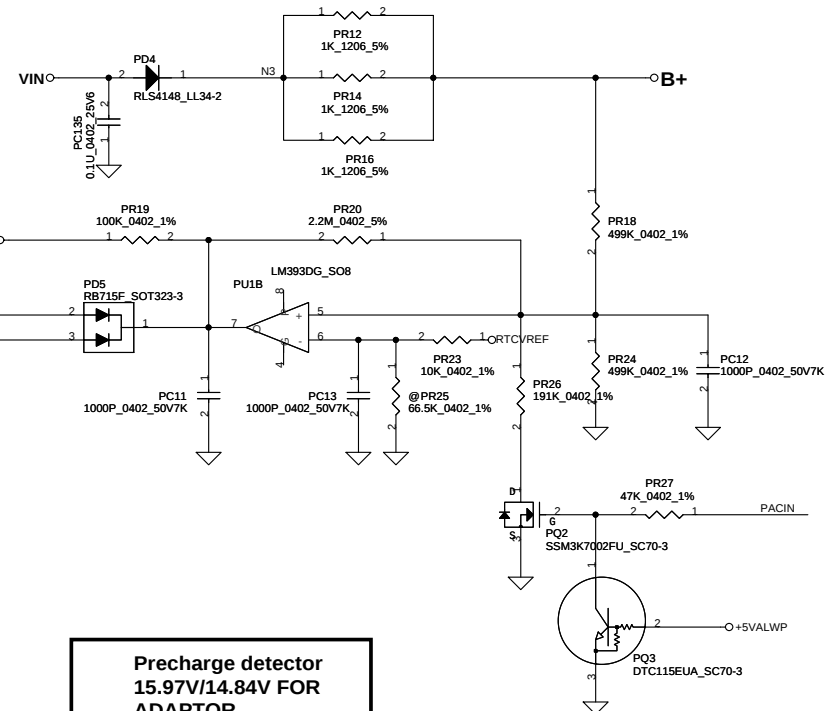
## Vin Detector

High 18.384 17.901 17.430  
Low 17.728 17.257 16.976

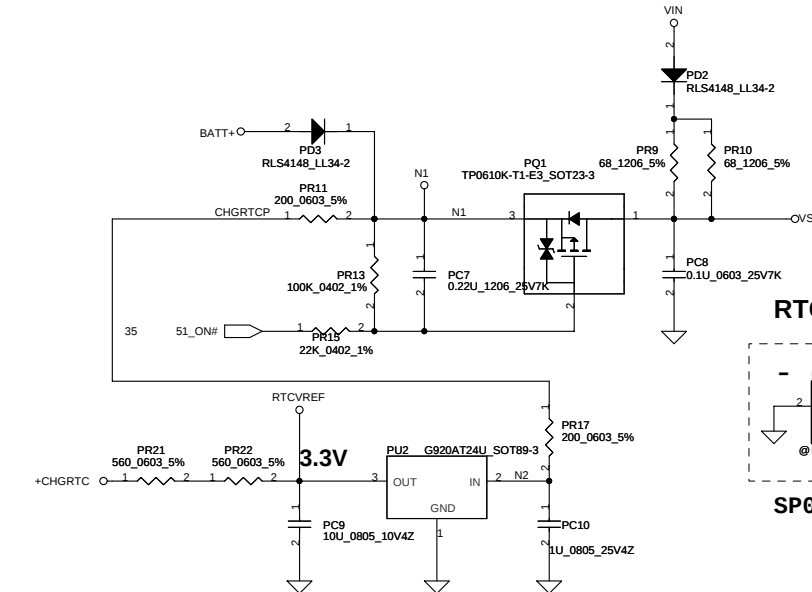
## RTC Battery



40 EN0  
39 ACON

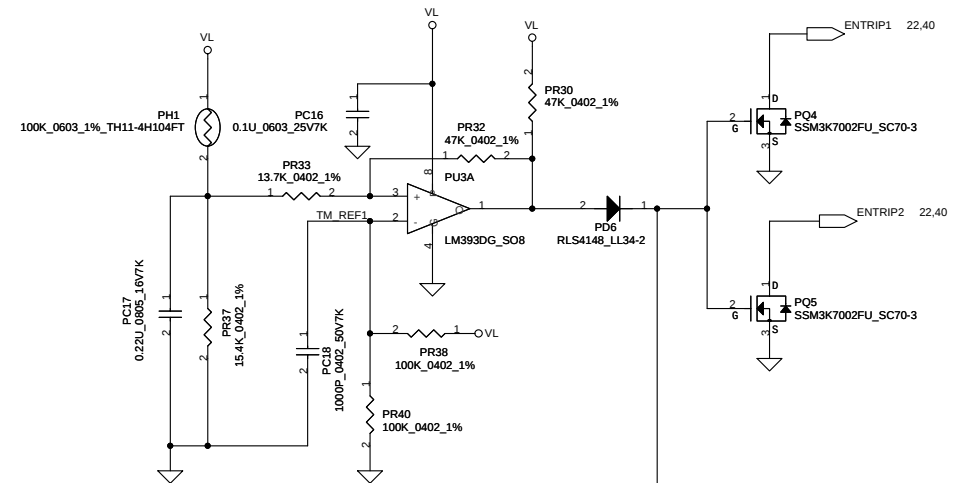


Precharge detector  
15.97V/14.84V FOR  
ADAPTOR

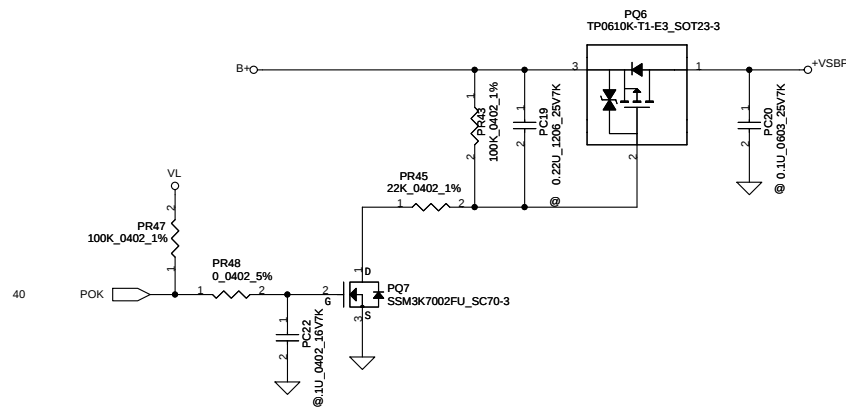
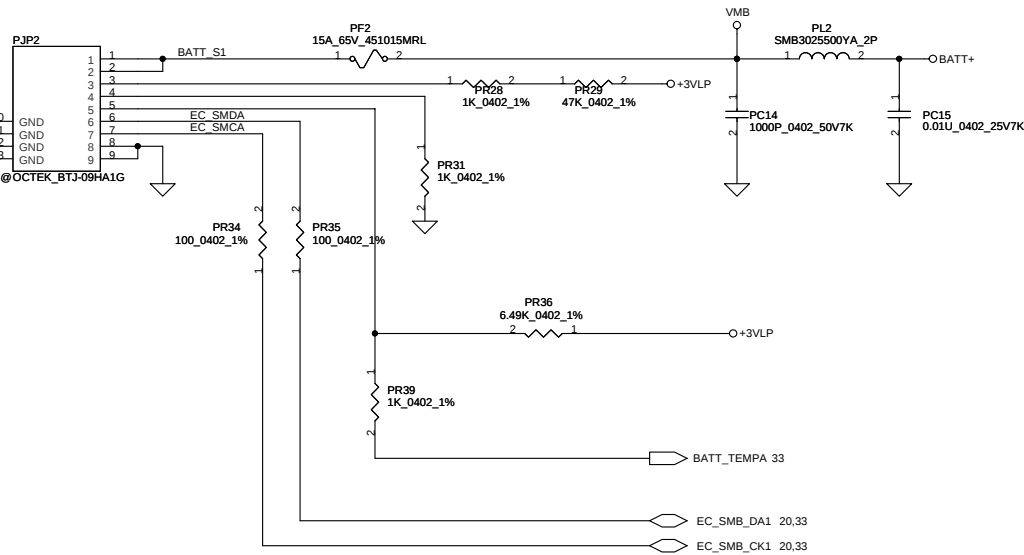
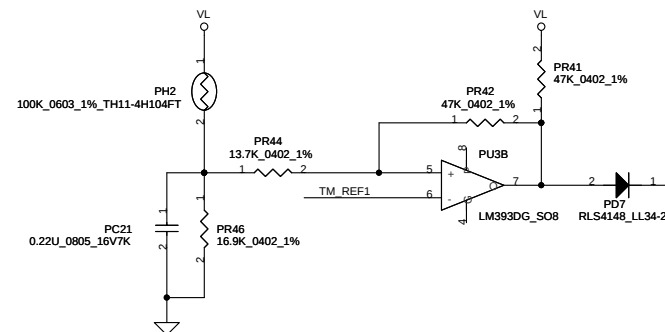


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                    |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          | Rev D              |
| Date: Thursday, May 21, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |            |                          | Sheet 38 of 48     |

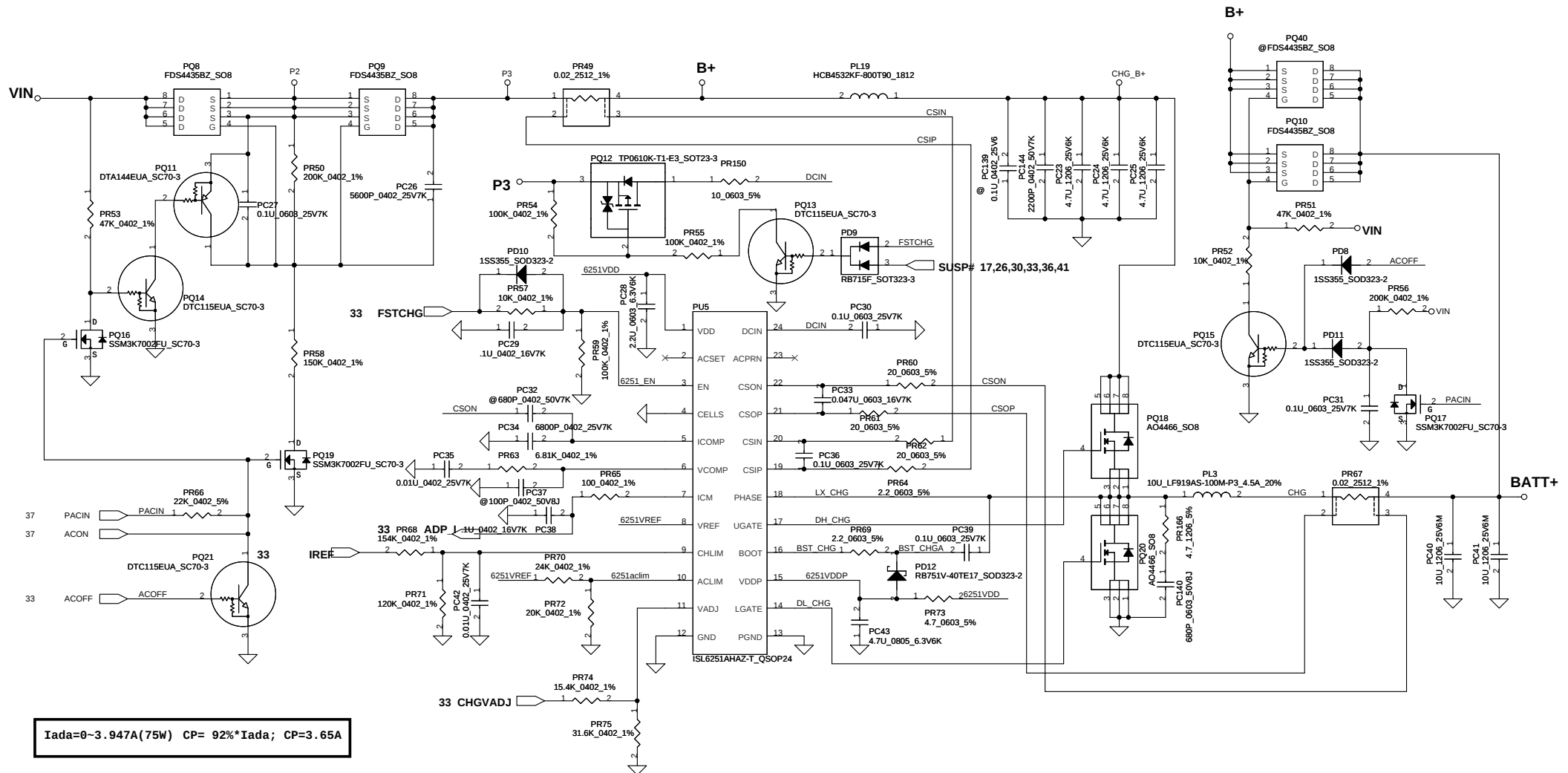
PH1 under CPU bottom side :  
CPU thermal protection at 92 degree C  
Recovery at 56 degree C



PH2 near main Battery CONN :  
BAT. thermal protection at 90 degree C  
Recovery at 53 degree C



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                        |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06 | Deciphered Date    | 2009/10/06 | Title                    | SCHEMATIC,MB A4991     |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |            |                    |            | Document Number          | 401662                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Thursday, May 21, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 39 of 48               |



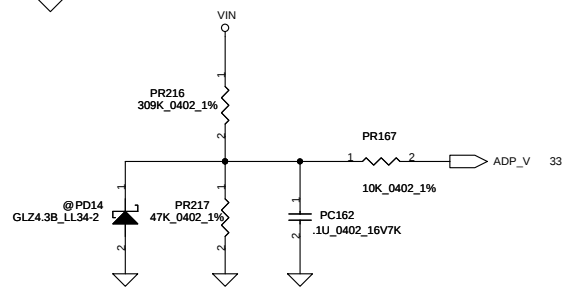
$I_{ada}=0-3.947A(75W)$   $CP= 92\%*I_{ada}$ ;  $CP=3.65A$

CP mode  
 $V_{ac1m}=2.39*(20K//152K/(20K//152K+24K//152K))=1.09986V$   
 $I_{input}=(1/0.02)*((0.05*V_{ac1m})/2.39+0.05)$   
 where  $V_{ac1m}=1.09986V$ ,  $I_{input}=3.65A$

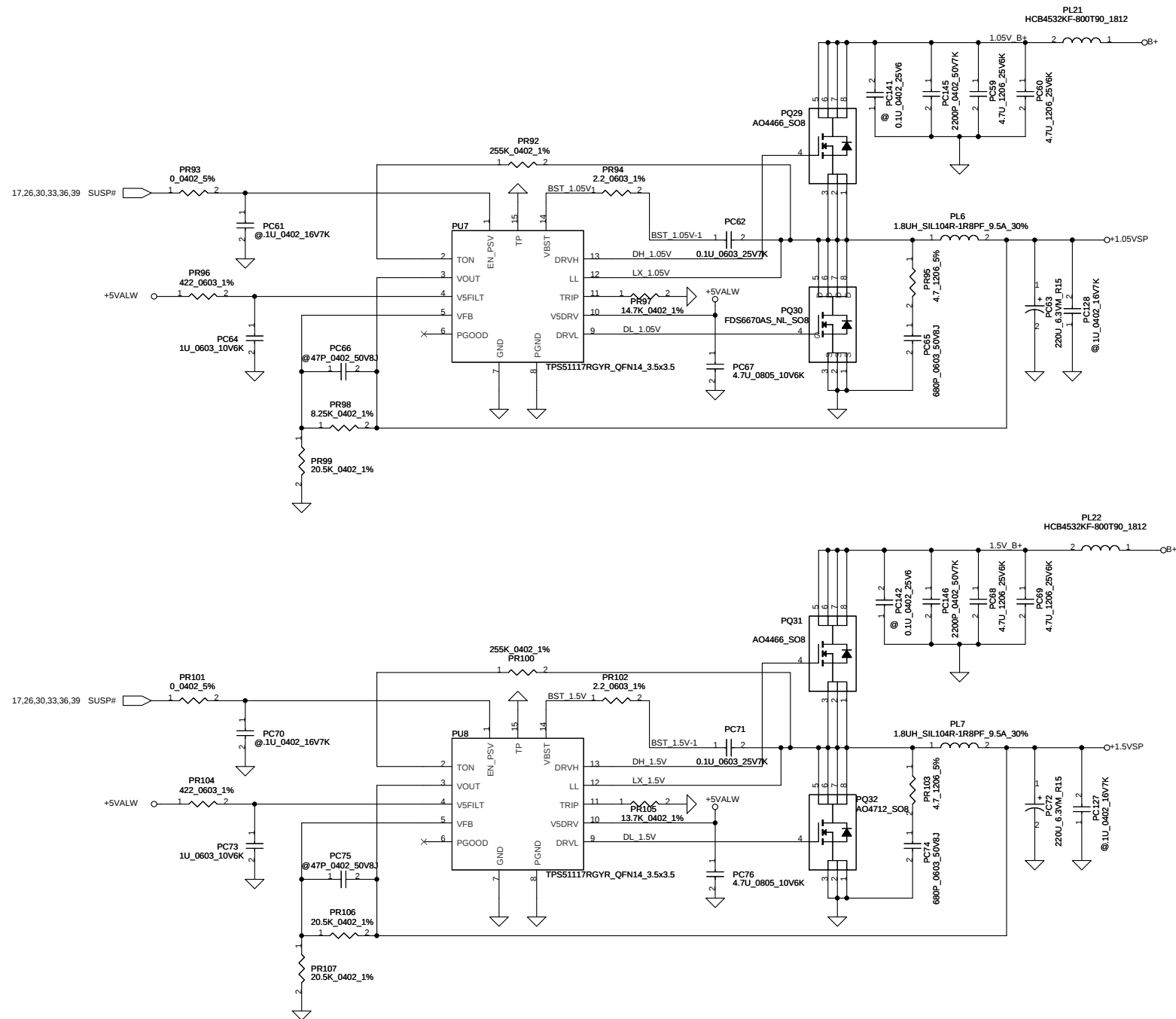
CC=0.25A~3A  
 IREF=1.016\*Icharge  
 IREF=0.254V~3.048V  
 VCHLIM need over 95mV

| CHGVADJ=(Vcell-4)/0.10627 |         |
|---------------------------|---------|
| Vcell                     | CHGVADJ |
| 4V                        | 0V      |
| 4.2V                      | 1.882V  |
| 4.35V                     | 3.2935V |

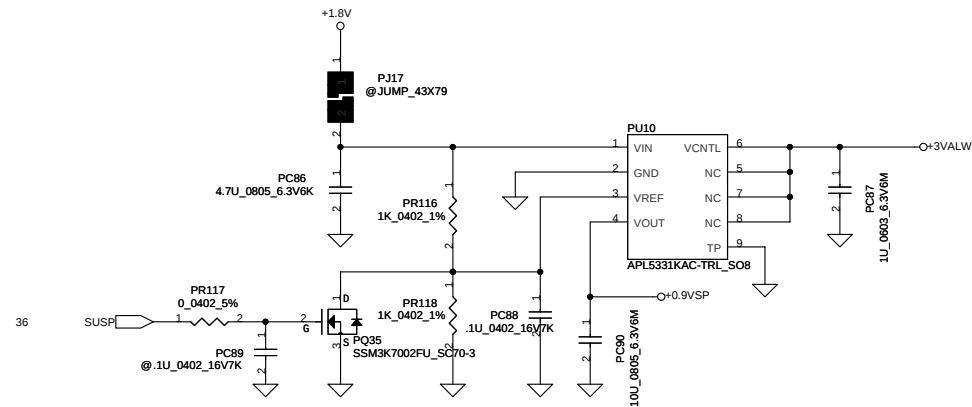
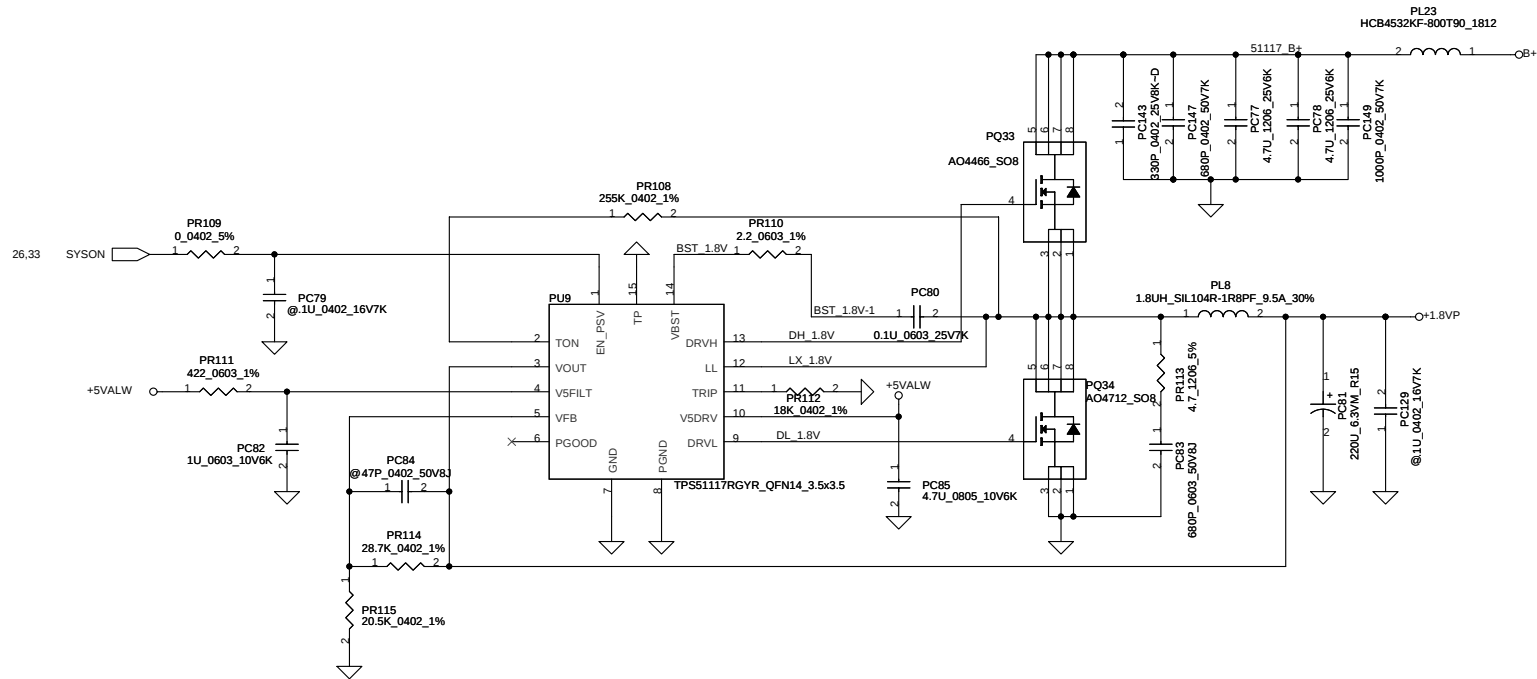
| CELLS       | VDD | GND | Float |
|-------------|-----|-----|-------|
| CELL number | 4   | 3   | 2     |



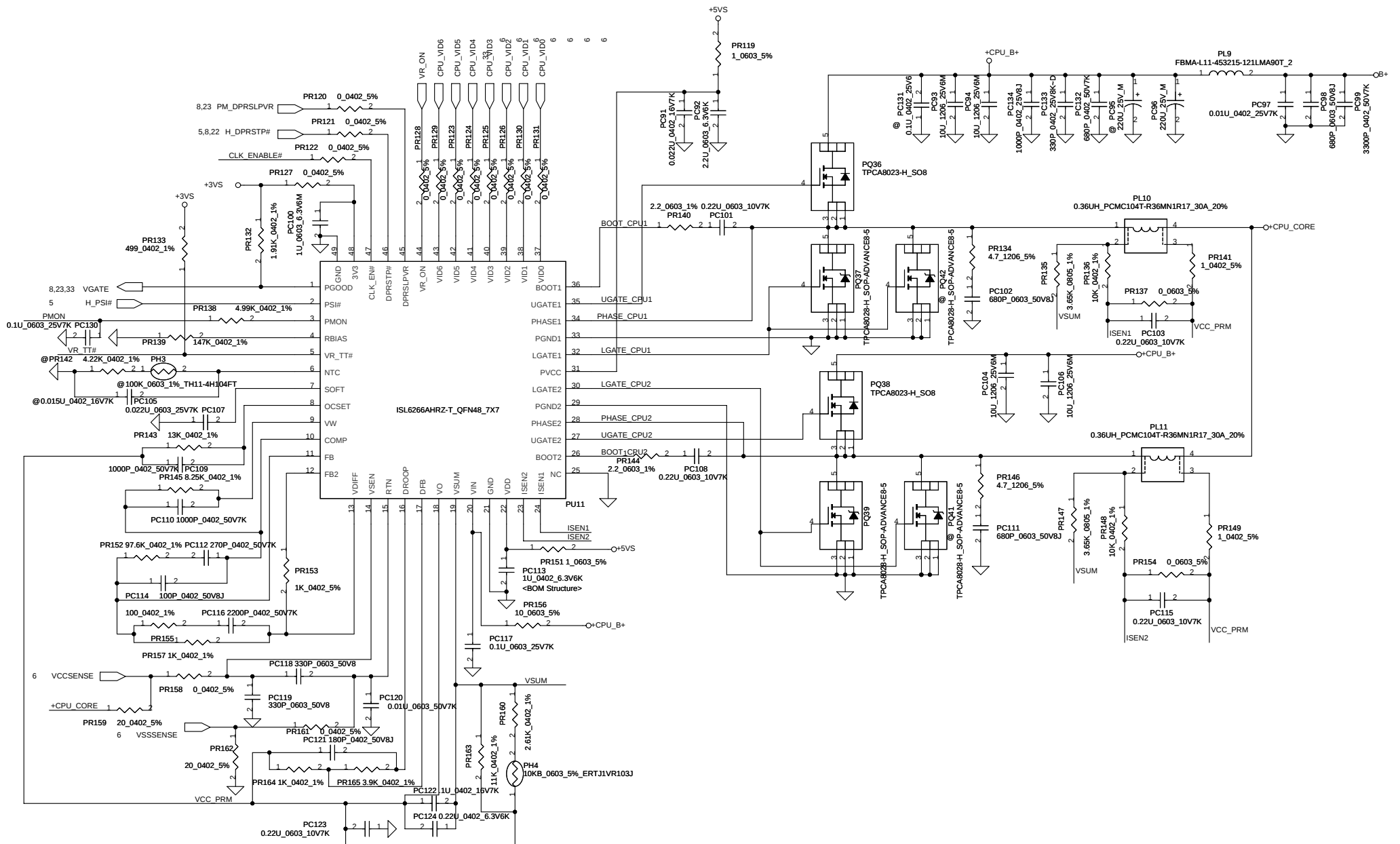




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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06 | Deciphered Date    | 2009/10/06 | Title                    |          |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |            |                    |            | Document Number          | Rev D    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 401662                   |          |
| Date: Thursday, May 21, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                    |            | Sheet                    | 42 of 48 |



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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title              |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06 | Deciphered Date    | 2009/10/06 | SCHEMATIC,MB A4991 |          |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |            |                    |            | Document Number    | Rev D    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 401662             |          |
| Date: Thursday, May 21, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                    |            | Sheet              | 43 of 48 |



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| Security Classification |  | Compal Secret Data |  | Title                        |  |
| Issued Date             |  | Deciphered Date    |  | SCHEMATIC,MB A4991           |  |
| 2008/10/06              |  | 2009/10/06         |  | Document Number              |  |
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|                         |  |                    |  | Date: Thursday, May 21, 2009 |  |
|                         |  |                    |  | Sheet 44 of 48               |  |

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| EVT     | DCIN/DECTOR      | Change location PU3A to PU1B                                                                                                                                                                                                     |  | Circuit modify         |  |   |  |
|         |                  | Change ENTRIP1 to EN0 ,ENTRIP2 to ACON<br>VL to RTCVREF in PR23 Pin6<br>Change PR23 to10k ohm, PR25 to unpop<br>Delete PD13                                                                                                      |  |                        |  |   |  |
| EVT     | BATTERY CONN/OTP | Change location PU4A to PU3A                                                                                                                                                                                                     |  | Circuit modify         |  |   |  |
| EVT     | +CPU_CORE        | Add PR137 0ohm_0402,PR154 0ohm_0402                                                                                                                                                                                              |  | Circuit modify         |  |   |  |
| EVT     | 3VALWP/5VALWP    | Change PR82 and PR83 to 2.2ohm<br>Add PC136 1000P_0402,PC137 330P_0402,<br>PC138 680P_0402                                                                                                                                       |  | EMI request            |  |   |  |
| EVT     | 1.8VP/0.9VSP     | Change PR110 to 2.2ohm                                                                                                                                                                                                           |  | EMI request            |  |   |  |
| EVT     | +CPU_CORE        | Change PR140 and PR144 to 2.2ohm,<br>PL9 to FBMA-L11-453215-121LMA90T_2<br>Add PC131 0.1U_00402,PC132 680P_0402,<br>PC133 330P_0402, PC134 1000P_0402<br>PC102 680P_0603,PC111 680P_0603<br>PR134 4.7ohm _0402,PR146 4.7ohm_0402 |  | EMI request            |  |   |  |
| EVT     | CHARGER          | Change PR70 to 24k ohm                                                                                                                                                                                                           |  | Circuit modify for 75W |  |   |  |
| EVT     | CHARGER          | Change PL3 to 10UH_4.5A_20%,PR71 to 120Kohm                                                                                                                                                                                      |  | Circuit modify         |  |   |  |
| DVT     | 1.8VP/0.9VSP     | Add PC143 330P_0402,PC147 680P_0402<br>PC149 680P_0402                                                                                                                                                                           |  | EMI request            |  |   |  |
| DVT     | CHARGER          | Add PC139 0.1U_0402, PC144 2200P_0402,<br>PC140 680P_0603,PR166 4.7ohm_0603<br>Change PR69 to 2.2 ohm                                                                                                                            |  | SED request            |  |   |  |
| DVT     | 3VALWP/5VALWP    | Add PC148 0.1U_0402,PC54 680P_0603,<br>PC55 680P_0603,PR84 4.7ohm_1206,<br>PR85 4.7ohm_1206                                                                                                                                      |  | SED request            |  |   |  |
| DVT     | 1.05V/1.5V       | Add PC141 0.1U_0402, PC142 0.1U_0402,<br>PC145 2200P_0402,PC146 2200P_0402,<br>PC65 680P_0603,PC74 680P_0603,<br>PR95 4.7 ohm_0402,PR103 4.7 ohm_0402<br>Change PR94 and PR102 to2.2 ohm                                         |  | SED request            |  |   |  |
| DVT     | 1.8VP/0.9VSP     | Add PC143 0.1U_0402,PC147 2200P_0402,<br>PC83 680P_0603,PR113 4.7 ohm_0402                                                                                                                                                       |  | SED request            |  |   |  |
| DVT     | CHARGER          | Change PR71 to 120k ohm                                                                                                                                                                                                          |  | Circuit modify         |  |   |  |
| DVT     | CHARGER          | Change PR70 to 75k ohm                                                                                                                                                                                                           |  | Circuit modify for 65W |  |   |  |
| DVT     | +CPU_CORE        | Change PR145 to 11.3k ohm                                                                                                                                                                                                        |  | Circuit modify         |  |   |  |
| PVT     | DCIN/DECTOR      | Change PU1 Pin8 from VS to N1                                                                                                                                                                                                    |  | Circuit modify         |  |   |  |
| PVT-3   | DCIN/DECTOR      | Change PC135 from 0.1U_0402_16V<br>to 0.1U_0402_25V                                                                                                                                                                              |  | Circuit modify         |  |   |  |
| PVT-3   | CHARGER          | Change PR74 to 15.4k ohm<br>Change PJ12 to PL19,add PR167 10K ohm                                                                                                                                                                |  | Circuit modify         |  |   |  |
| PVT-3   | 3VALWP/5VALWP    | Change PJ13 to PL20                                                                                                                                                                                                              |  | Circuit modify         |  |   |  |
| PVT-3   | 1.05V/1.5V       | Change PJ14 to PL21,Change PJ15 to PL22                                                                                                                                                                                          |  | Circuit modify         |  |   |  |
| PVT-3   | 1.8VP/0.9VSP     | Change PJ16 to PL23                                                                                                                                                                                                              |  | Circuit modify         |  |   |  |
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PIR (Product Improve Record)

KSKAA LA-4991P SCHEMATIC CHANGE LIST  
REVISION CHANGE:

Revision Change: 0.1 to 0.2

| NO | DATE  | PAGE | MODIFICATION LIST                                     | PURPOSE                                |
|----|-------|------|-------------------------------------------------------|----------------------------------------|
| 1  | 12/12 | 4    | Add R14                                               | Spec requestion                        |
| 2  | 12/12 | 8    | Add U3.N28->DP_CLK and U3.M28->DP_DATA                | support dongle                         |
| 3  | 12/12 | 10   | Add R97, Q27, U13, U14                                | support dongle                         |
| 4  | 12/12 | 12   | Add C225                                              | For EMI reserv                         |
| 5  | 12/12 | 23   | Add J3                                                | For cost down                          |
| 6  | 12/12 | 19   | Add Q160A/B, Q158A/B, Q159A/B, RV42, RV38, Rv45, CV59 | Support dongle                         |
| 7  | 12/12 | 19   | Add RV107                                             |                                        |
| 8  | 12/12 | 23   | Change HDMI_HPD_R to VGA_HDMI_R from U9C.C21 to D58.2 | power connect error                    |
| 9  | 12/12 | 32   | QC1 Stuff                                             | For card reader LED display            |
| 10 | 12/12 | 33   | Change R758 and R759 from 2.2K to 4.7K                | Display port request reference voltage |
| 11 | 12/12 | 34   | Change Gsenser LDO solution==>UG1,D61,C611,C612,C613  | For cost down                          |
| 12 | 12/12 | 35   | Change JPOWER from 4pin to 6pin                       | Add light sensor circuit for test      |
| 13 | 12/12 | 35   | Change L2,L3 use FBMA-121-100505-301T_0402            | Caps sensoe EMI reserve                |
| 14 | 12/12 | 35   | Add R401,R402,C226,C227                               | Caps sensoe EMI reserve                |
| 15 | 12/12 | 36   | Change C835 from 0.1uf to 0.22uf                      | For power sequence                     |

Revision Change: 0.2 to 0.3

| NO | DATE  | PAGE | MODIFICATION LIST                                                | PURPOSE                  |
|----|-------|------|------------------------------------------------------------------|--------------------------|
| 1  | 12/24 | 16   | Change R107,R108 use (FBMH1608HM601)BEAD                         | For SED team request     |
| 2  | 12/24 | 16   | Change C212,C219 from 0.1uf to 47pf                              | For SED team request     |
| 3  | 12/24 | 16   | Add C228,C229,C230                                               | For SED team request     |
| 4  | 12/24 | 19   | Add Q52                                                          | For UMA display port use |
| 5  | 12/24 | 20   | Add Q13, Q39, R290, R262, R204, R220, R958, C65                  | For CEC function         |
| 6  | 12/24 | 27   | Delete Q26 and change R432 from 1M to 100K, R441 from 100K to 1K | Correct BT schematic     |
| 7  | 12/24 | 29   | Change CM1,CM4,CM17,CM20 from 0.01uf to 47P                      | For SED team request     |
| 8  | 12/24 | 33   | Change HDPDP netname to HDPLOCK and HDPACT to HDPINT             | For customer request     |
| 9  | 12/24 | 34   | Add R62,R610 and change 2ND source                               | For customer request     |
| 10 | 12/24 | 34   | Change U61.6 pull down and U63.3 from GND to +5VS                | For customer request     |

Revision Change: 0.3 to 0.4

| NO | DATE  | PAGE | MODIFICATION LIST                                           | PURPOSE                            |
|----|-------|------|-------------------------------------------------------------|------------------------------------|
| 1  | 02/02 | 35   | Change Q29.3,Q42.3 from +5VALW to +3VALW                    | For suspend LED breathing concern  |
| 2  | 02/02 | 17   | connect JMXMB.158 via a bead(SM010032020) to U49.45         | For VGA SPDIF request              |
| 3  | 02/02 | 17   | Reserve JMXMB.134 for HDA_RST                               | For VGA SPDIF request              |
| 4  | 02/02 | 34   | UG2 from R5F211B4D23SP to R5F211B4D31SP(SA000037Y60)        | For cost down request              |
| 5  | 02/02 | 20   | U8 from R5F211A4C32SP to R5F211B4D33SP(SA000037Z70)         | For cost down request              |
| 6  | 02/02 | 33   | Change U43.79,U43.80 pull high from +3VS_HDP change to +3Vs | For G-Sensor issue                 |
| 7  | 02/02 | 27   | ADD R293 R294 for Camera output to LVDS                     | For Camera issue                   |
| 8  | 02/02 | 20   | Change Q39 , Q13 footprint                                  | Due to footprint error             |
| 9  | 02/02 | 17   | DELETE R185,R217,R218,R227,R275,R105,R187,R188,R790,R791    | For Display port issue             |
|    |       | 17   | ADD CV62,CV63,CV64,CV65,CV66,CV67,CV68,CV69                 |                                    |
|    |       | 19   | ADD RV89                                                    |                                    |
| 10 | 02/02 | 34   | ADD D16,R794                                                | For ESATA surpport charge on S4/S5 |
| 11 | 02/02 | 31   | CA35 Move to RA24 right side                                | For MIC issue                      |
| 12 | 02/02 | 27   | JFM1 change to JFM                                          | For common design request          |
| 13 | 02/02 | 28   | JUWB change to JNAND                                        | For common design request          |
| 14 | 02/04 | 19   | DELETE D20 ,ADD Q162                                        | For Display port change design     |

ISPD

|           |                               |                 |                                       |
|-----------|-------------------------------|-----------------|---------------------------------------|
| NB_PM_R3  | U3<br>CANTIGA PM<br>PMR3@     | PCB             | ZZZ<br>PCB ZKU LA-4991P REV0          |
| NB_PM_R1  | U3<br>CANTIGA PM<br>PMR1@     | DC-IN           | PJP1<br>PJP1<br>45@                   |
| NB_G5_R3  | U3<br>CANTIGA GM45<br>GSR3@   | Trans<br>former | UL3<br>10/100M transformer<br>8103EL@ |
| NB_GL_R1  | U3<br>CANTIGA GL40<br>GMLR1@  | LAN             | UL1<br>8103EL<br>8103EL@              |
| NB_GL_R3  | U3<br>CANTIGA GL40<br>GMLR3@  | SB_GL_R1        | U9<br>ICH9-M ES<br>ICH9R1@            |
| NB_GM7_R1 | U5<br>CANTIGA GM47<br>GMLR1@  |                 |                                       |
| NB_GM_R3  | U6<br>CANTIGA GM47<br>@       |                 |                                       |
| NB_GM9_R1 | U10<br>CANTIGA GM49<br>GMLR1@ |                 |                                       |
| NB_GM9_R3 | U11<br>CANTIGA GM49<br>@      |                 |                                       |

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                           |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|---------------------------|----------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/10/06         | Deciphered Date | 2009/10/06 | Title                    | SCHEMATIC,MB A4991        |          |
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| Date: Thursday, May 21, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |            | Sheet 46 of 48           |                           |          |

PIR (Product Improve Record)

KSKAA LA-4991P SCHEMATIC CHANGE LIST  
REVISION CHANGE:

Revision Change: 0.3 to 0.4

| NO | DATE  | PAGE | MODIFICATION LIST                                                      | PURPOSE                                      |
|----|-------|------|------------------------------------------------------------------------|----------------------------------------------|
| 15 | 02/04 | 18   | ADD C267                                                               | For LVDS change PMOS Design                  |
| 16 | 02/04 | 26   | ADD C486                                                               | For B-CAS change PMOS Design                 |
| 17 | 02/04 | 20   | DELETE D8,D53 ,ADD Q161,R130,C876                                      | Change HDMI design                           |
| 18 | 02/04 | 27   | ADD C232,C233                                                          | For Blue tooth and Felica change PMOS Design |
| 19 | 02/04 | 34   | unmount R62 ; mount CG12,D61,U63,CG14,CG13                             | For G-Sensor Design change                   |
| 20 | 02/04 | 36   | ADD C837                                                               | For +3VALW -> +3V_LAN Change PMOS Design     |
| 21 | 02/04 | 26   | unmount RN4,RN5,CN7,UN2,Q21 ; mount RN6                                | For cost down                                |
| 22 | 02/04 | 30   | DELETE UA1,CA11                                                        | For cost down                                |
| 23 | 02/04 | 19   | DELETE R134,R135,L6                                                    | For EMI Request                              |
| 24 | 02/04 | 30   | DELETE R204,R220                                                       | For HDMI issue                               |
| 25 | 02/04 | 19   | Modify JBLG footprint to ACES_85201-0405N_4P                           | For KB Bcaklight                             |
| 26 | 02/05 | 33   | exchange U43.25 , U43.26                                               | For Backlight KB issue                       |
| 27 | 02/05 | 26   | JEXP USB20_N8,USB20_P8 Change to USB20_N4,USB20_P4                     | For design change                            |
| 28 | 02/05 | 27   | JFP USB20_N4,USB20_P4 Change to USB20_N8,USB20_P8                      | For design change                            |
| 29 | 02/05 | 35   | D20,D22                                                                | For EMI request                              |
| 30 | 02/05 | 27   | D21                                                                    | For EMI request                              |
| 31 | 02/05 | 31   | C860                                                                   | For EMI request                              |
| 32 | 02/05 | 25   | Change D15 PN to SC300000P00                                           | For EMI request                              |
| 33 | 02/05 | 31   | Change DA4,DA5,DA6,DA7 PN to SCA00000G00                               | For EMI request                              |
| 34 | 02/05 | 30   | Change CA36 to 10p ,RA33 to 10 ohm                                     | For EMI request                              |
| 35 | 02/05 | 30   | C694                                                                   | For EMI request                              |
| 36 | 02/05 | 20   | HDMI CEC schematic modify                                              | Cut-in New Design                            |
| 37 | 02/06 | 10   | ADD C644,C649,R204,R217,R218,R188,R135                                 | For Display port issue                       |
| 38 | 02/05 | 30   | Modify J3 Footprint to JUMP_43X39                                      | For Design request                           |
| 39 | 02/05 | 28   | Modify J3GSIM footprint to MOLEX_47273-0001_6P-S                       | For ME request                               |
| 40 | 02/07 | 19   | Remove RV45 ,RV81 Change to 1Mohm                                      | For Display port issue                       |
| 41 | 02/07 | 10   | U13.2 Change DP_AUX_NB to DP_AUX<br>U13.5 Change DP_AUX#_NB to DP_AUX# | For Display port issue                       |
| 42 | 02/07 | 10   | U14.2 Change DP_AUX_NB to DP_AUX<br>U14.5 Change DP_AUX#_NB to DP_AUX# | For Display port issue                       |
| 43 | 02/07 | 10   | R797.2 Change DP_HPD_NB to DP_HPD                                      | For Display port issue                       |
| 44 | 02/10 | 26   | change JBCAS1 connect method                                           | For B-CAS issue                              |
| 45 | 02/10 | 33   | ADD D4                                                                 | leakage electircity issue                    |
| 46 | 02/10 | 28   | Change JWLAN +3VS->+3V_LAN                                             | For Design change                            |
| 47 | 02/10 | 28   | ADD PJ18,PJ19                                                          | For Design change                            |
| 48 | 02/10 | 19   | Remove RV37,RV79                                                       | For Display port issue                       |
| 49 | 02/10 | 10   | ADD R135                                                               | For Display port issue                       |
| 50 | 02/10 | 8    | ADD RA35,CA43                                                          | For HDMI noise issue                         |
| 51 | 02/10 | 20   | ADD R220,Q26,R558,C861                                                 | Cut-in New design                            |
| 52 | 02/11 | 20   | Change R156 to 4.12kohm                                                | For HDMI issue                               |
| 53 | 02/11 | 20   | UV12.1,UV12.5 don't connect                                            | For design issue                             |
| 54 | 02/11 | 28   | RM6.2 change to +3VS                                                   | For design issue                             |
| 55 | 02/11 | 20   | C861 footprint change to 0603                                          | For design issue                             |
| 56 | 02/11 | 29   | UL3 PN -> SP050005L00                                                  | For EMI request                              |
| 57 | 02/11 | 34   | UG1 PN -> SA000039900                                                  | For customer request                         |
| 58 | 02/11 | 32   | Remove 1394 function                                                   | For customer request                         |

Revision Change: 0.5 to 0.6

| NO | DATE  | PAGE | MODIFICATION LIST                                         | PURPOSE                             |
|----|-------|------|-----------------------------------------------------------|-------------------------------------|
| 01 | 04/01 | 32   | Replace JMB380 to JMB385                                  | Layout placement high limit         |
| 02 | 04/01 | 32   | Remove RC11, add RC2,XC1,RC6,CC11,CC13                    | Replacement JMB380                  |
| 03 | 04/01 | 32   | Remove J1394,RC20,RC21,RC22,RC23,CC16,RC19,CC20           | Remove 1394 , request from customer |
| 04 | 04/01 | 19   | Remove Q162, Add D23                                      | Customer request                    |
| 05 | 04/01 | 29   | Change CL43 connect to JLAN pin12                         | For common design with KSKAE        |
| 06 | 04/01 | 29   | Change CL44 connect to JLAN pin10                         | For common design with KSKAE        |
| 07 | 04/01 | 18   | Change R673 from 0 to 10K                                 | For common design with KSKAE        |
| 08 | 04/01 | 27   | Change R722 from 0 to 100K                                | For common design with KSKAE        |
| 09 | 04/02 | 20   | Remove Q161,Q26,R220,R558,C861, Add D53                   | For common design with KSKAE        |
| 10 | 04/02 | 28   | Add R825                                                  | ES Status review                    |
| 11 | 04/02 | 32   | Remove CC11, CC13, XC1, RC2, RC6, RC9                     | For common design with KSKAE        |
| 12 | 04/03 | 30   | Add CA56, CA57, CA58                                      | FOR EMC status update               |
| 13 | 04/03 | 32   | Add RC2, RC6, RC9, RC11                                   | FOR JMB380 W/O 1394                 |
| 14 | 04/06 | 20   | Change U7 from STHDLS101TQT to CH7318C-BF                 | FOR HDMI fuction measure            |
| 15 | 04/06 | 20   | Change L9,L10,L11,L12 from WCM-2012-900T to WCM-2012-121T | FOR EMI request                     |
| 16 | 04/06 | 27   | Change R722 from 10K ohm to 0ohm                          | Need meet Blue tooth spec           |

PIR (Product Improve Record)

KSKAA LA-4991P SCHEMATIC CHANGE LIST  
REVISION CHANGE:

Revision Change: 0.4 to 0.5

| NO | DATE  | PAGE | MODIFICATION LIST                                                    | PURPOSE                                                                          |
|----|-------|------|----------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 01 | 03/14 | 18   | Change R103 from 100K to 10K with BKOFF#                             | To solve some panel still have white screen when insert and un-insert AC adapter |
| 02 | 03/14 | 18   | Mount R431 and un-mount R429                                         | For LVDS connector with camera power to +5VS For design change                   |
| 03 | 03/14 | 20   | Change U8 net for HDMI_SCLK/SDATA to HDMI CLK/DATA to CEC            | For wrong connect impact leakage current                                         |
| 04 | 03/14 | 20   | Change R570 from 100K to 10K                                         | To avoid low voltage when insert HDMI device                                     |
| 05 | 03/14 | 20   | Change C861 floorprint from 0603 to 0402                             | For common design with KSWAA                                                     |
| 06 | 03/14 | 21   | Change R794 connect to D16 pin1                                      | For wrong pull-up rail of USB_OC#2                                               |
| 07 | 03/14 | 21   | Exchange U9 USB port4 and port8                                      | For customer request                                                             |
| 08 | 03/14 | 23   | Add U47,R227,C234 and remove D4                                      | For CMOS discharge fail                                                          |
| 09 | 03/14 | 25   | Mount C350 and unmount C353                                          | For USB power function                                                           |
| 10 | 03/14 | 26   | Change RN1 and RN2 pull high from +3VALW to +3V_SB                   | For common design with KSWAA                                                     |
| 11 | 03/14 | 27   | Add R428 with 0ohm for reserve +5VALW                                | For use module on camera connector & LVDS connector                              |
| 12 | 03/14 | 27   | JFM inverse connection                                               | For pin no match with MB and cable                                               |
| 13 | 03/14 | 28   | Connect to JGPS.49 and JGPS.51 reserve                               | To avoid some issue happen                                                       |
| 14 | 03/14 | 28   | Unmount RM3                                                          | For common design with KSKAE                                                     |
| 15 | 03/14 | 28   | un-mount RL3 with +3V_LAN for LAN_WAKE#                              | For common design with KSKAA                                                     |
| 16 | 03/14 | 30   | Add CA43,CA44,CA45,CA46,CA52,CA53 on codec input/power pins          | For common design with KSKAE                                                     |
| 17 | 03/14 | 31   | Add R790,R791,R792,R798 with 100ohm                                  | For speaker ouput voltage to high                                                |
| 18 | 03/14 | 31   | Change Q38 from SI2301BDS to A03413 and change R587 from 100K to 10K | For use module on camera connector & LVDS connector                              |
| 19 | 03/14 | 32   | Add RC9 with 10K                                                     | For common design with KSKAE                                                     |
| 20 | 03/14 | 32   | Change schematic design from JMB380 to JMB385                        | For customer change spec                                                         |
| 21 | 03/14 | 33   | R751 pull-up to +3VL of CEC_INT#                                     | For common design with KSKAE                                                     |
| 22 | 03/14 | 33   | Change R755 and R756 from 4.7K to 2.2K and pull up +3VL              | For common design with KSKAE                                                     |
| 23 | 03/14 | 33   | Exchange HDPINT and HDPACT                                           | For G-sensor function work normal                                                |
| 24 | 03/14 | 33   | un-mount R788 for +5VS power switch                                  | For reduce inrush current                                                        |
| 25 | 03/14 | 33   | Add R761,R762,R763,R764                                              | To prevent voltage leakage in S5                                                 |
| 26 | 03/14 | 34   | Change U63 from APL5151 to G9191 and unmount C613                    | For common design with KSKAE                                                     |
| 27 | 03/14 | 35   | Connect JLIGHT pin5,6 to GND                                         | For common design with KSKAE                                                     |
| 28 | 03/14 | 36   | un-mount R594 for +5V_SB power switch                                | Let the power switch can get more Vgs voltage when battery low voltage state     |
| 29 | 03/14 | 36   | change R789 from 330K to 820K and R786 from 100K to 220K             | For +1.8VS power sequence For power question request                             |
| 30 | 03/15 | 36   | Remove R790,R791,R792,R798 with 100ohm                               | For speaker out voltage is normal                                                |
| 31 | 03/15 | 36   | Add RA12 with 0ohm                                                   | For common desin with KSKAE                                                      |

Revision Change: 0.6 to 1.0

| NO | DATE  | PAGE | MODIFICATION LIST                                        | PURPOSE                                      |
|----|-------|------|----------------------------------------------------------|----------------------------------------------|
| 01 | 04/10 | 23   | Add R811 and connect to U9C.AF18                         | For single and dual panel select             |
| 02 | 04/10 | 20   | Change R156 from 4.12K to 976 ohm                        | For change level shifter IC of HDMI function |
| 03 | 04/10 | 31   | Add RA36, RA37, RA38, RA39 with 0ohm                     | For Int. MIC noise                           |
| 04 | 04/10 | 35   | Change Q42 power from +3VALW to +5VALW                   | For Power LED too dark issue                 |
| 05 | 04/10 | 20   | Add R220 with 0ohm                                       | For use ASM1442T reserve.                    |
| 06 | 04/20 | 20   | Change U7 to ASM1442T                                    | For HDMI signal quality bad issue            |
| 07 | 04/20 | 20   | Delete R149,R159,R160,R161,R162,C251,C252,C253,C254      | For HDMI signal quality bad issue            |
| 08 | 04/20 | 20   | Change R151,R152,R153,R154,R689 to 2.2K and R156 to 3.3K | For HDMI signal quality bad issue            |
| 09 | 05/05 | 20   |                                                          | For HDMI signal quality bad issue            |