

# Compal confidential

## Schematics Document

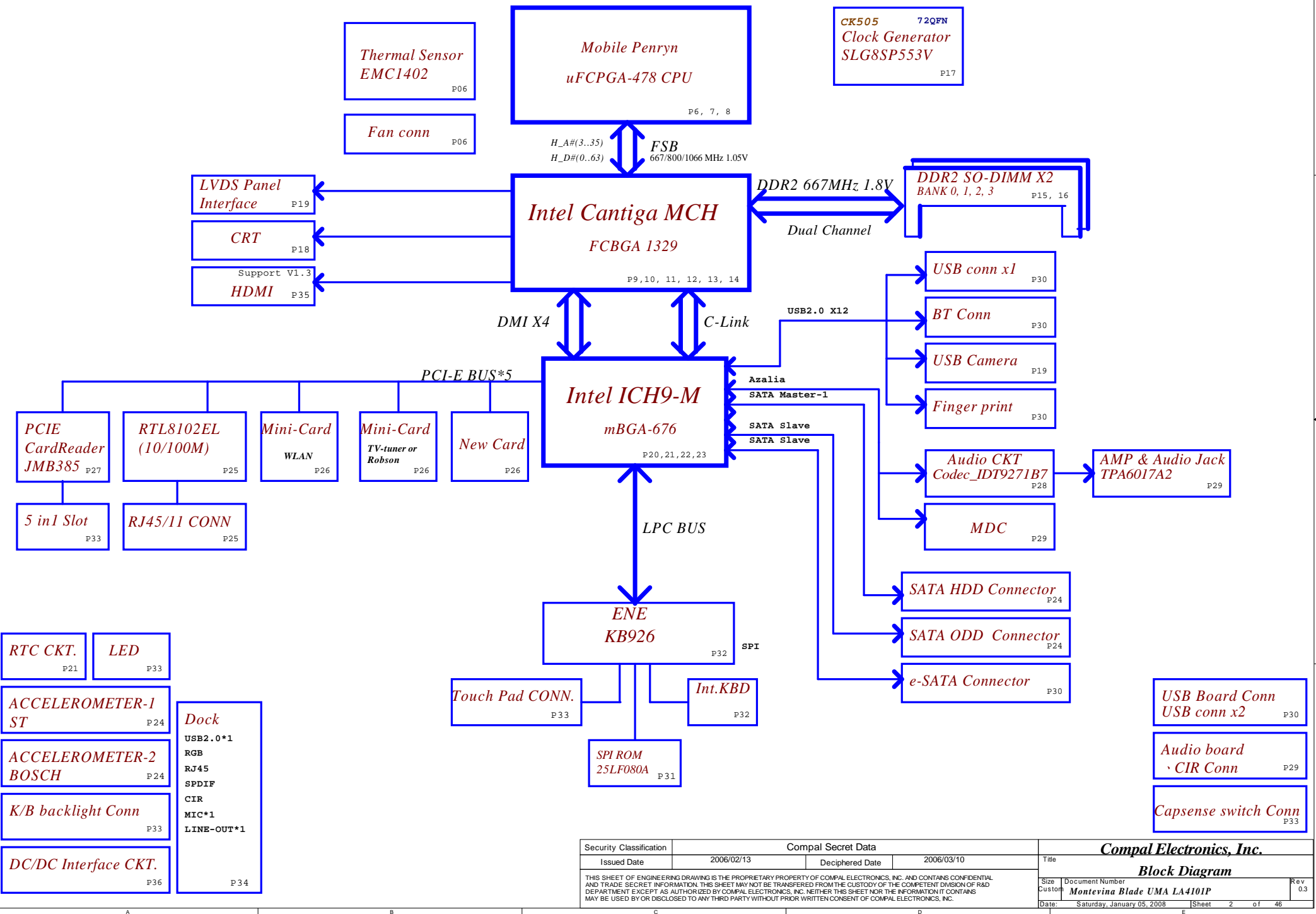
Mobile Penryn uFCPGA with Intel  
Cantiga\_GM+ICH9-M core logic

2008-01-01

|             |      |  |
|-------------|------|--|
| 機<br>等<br>密 | 硬體二部 |  |
|             | 產出人員 |  |
|             | 產出日期 |  |
|             | 解密日期 |  |

|   |            |                    |            |             |                             |       |
|---|------------|--------------------|------------|-------------|-----------------------------|-------|
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|   |            |                    |            | Custom      | Montevina Blade UMA LA4101P | 0.3   |
| Date: Saturday, January 05, 2008  |            |                    |            | Sheet       | 1                           | of 46 |

## Montevina Consumer 14" UMA

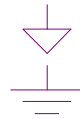


## Voltage Rails

O MEANS ON X MEANS OFF

| power plane<br>State           | +B | +5VALW<br>+3VALW | +1.8V | +5VS<br>+3VS<br>+1.5VS<br>+0.9V<br>+VCCP<br>+CPU_CORE<br>+2.5VS<br>+1.8VS |
|--------------------------------|----|------------------|-------|---|
| S0                             | O  | O                | O     | O   |
| S1                             | O  | O                | O     | O   |
| S3                             | O  | O                | O     | X   |
| S5 S4/AC                       | O  | O                | X     | X   |
| S5 S4/ Battery only            | O  | X                | X     | X   |
| S5 S4/AC & Battery don't exist | X  | X                | X     | X   |

## Symbol Note :



: means Digital Ground



: means Analog Ground

|           |   |
|-----------|---|
| @ :       | means just reserve , no build                             |
| 45@ :     | means need be mounted when 45 level assy or rework stage. |
| DEBUG@ :  | means just reserve for debug.                             |
| BATT @ :  | means need be mounted when 45 level assy or rework stage. |
| CONN@ :   | means ME part   |
| ESATA @ : | means just reserve for ESATA                              |
| GS @ :    | means just reserve for G sensor                           |
| FP @ :    | means just reserve for Finger Print                       |
| Multi @ : | means just reserve for Multi Bay                          |
| NewC@ :   | means just reserve for New card                           |
| DOCK@ :   | means just reserve for Docking                            |
| Main@ :   | means just reserve for Main stream                        |
| OPP@ :    | means just reserve for OPP                                |
| 2MiniC@ : | means just reserve for 2nd Mini card slot                 |

## USB assignment:

|        |                       |
|--------|-----------------------|
| USB-0  | Right side            |
| USB-1  | Right side            |
| USB-2  | Left side(with ESATA) |
| USB-3  | Dock                  |
| USB-4  | Camera                |
| USB-5  | WLAN                  |
| USB-6  | Bluetooth             |
| USB-7  | Finger Printer        |
| USB-8  | MiniCard(WWAN/TV)     |
| USB-9  | Express card          |
| USB-10 | X                     |
| USB-11 | X                     |

## PCIe assignment:

|        |                  |
|--------|------------------|
| PCIe-1 | TV /WWAN/Robeson |
| PCIe-2 | X                |
| PCIe-3 | WLAN             |
| PCIe-4 | GLAN (Realtek)   |
| PCIe-5 | Card reader      |
| PCIe-6 | New Card         |

## SMBUS Control Table

|                            | SOURCE  | INVERTER | BATT | SERIAL EEPROM | Thermal Sensor | SODIMM | CLK CHIP | MINI CARD | LCD | Cap sensor board | NEW CARD | G sensor |
|----------------------------|---------|----------|------|---------------|----------------|--------|----------|-----------|-----|------------------|----------|----------|
| SMB_EC_CK1<br>SMB_EC_DA1   | KB926   | X        | V    | V             | X              | X      | X        | X         | X   | V                | X        | X        |
| SMB_EC_CK2<br>SMB_EC_DA2   | KB926   | X        | X    | X             | V              | X      | X        | X         | X   | X                | X        | X        |
| SMB_CK_CLK1<br>SMB_CK_DAT1 | ICH9    | X        | X    | X             | X              | V      | V        | V         | X   | X                | V        | V        |
| LCD_CLK<br>LCD_DAT         | Cantiga | X        | X    | X             | X              | X      | X        | X         | V   | X                | X        | X        |

43154432L01 : Main@/DEBUG@/DOCK@/NewC@/FP@/ESATA@/GS@/Multi@/2MiniC@  
 43154432L02 : Main@/DEBUG@/DOCK@/NewC@/FP@/ESATA@/GS@/2MiniC@  
 43154432L03 : Main@/DEBUG@/DOCK@/NewC@/FP@/2MiniC@  
 43154432L04 : OPP@/DEBUG@  
 43154432L05 : OPP@/DEBUG@

## I2C / SMBUS ADDRESSING

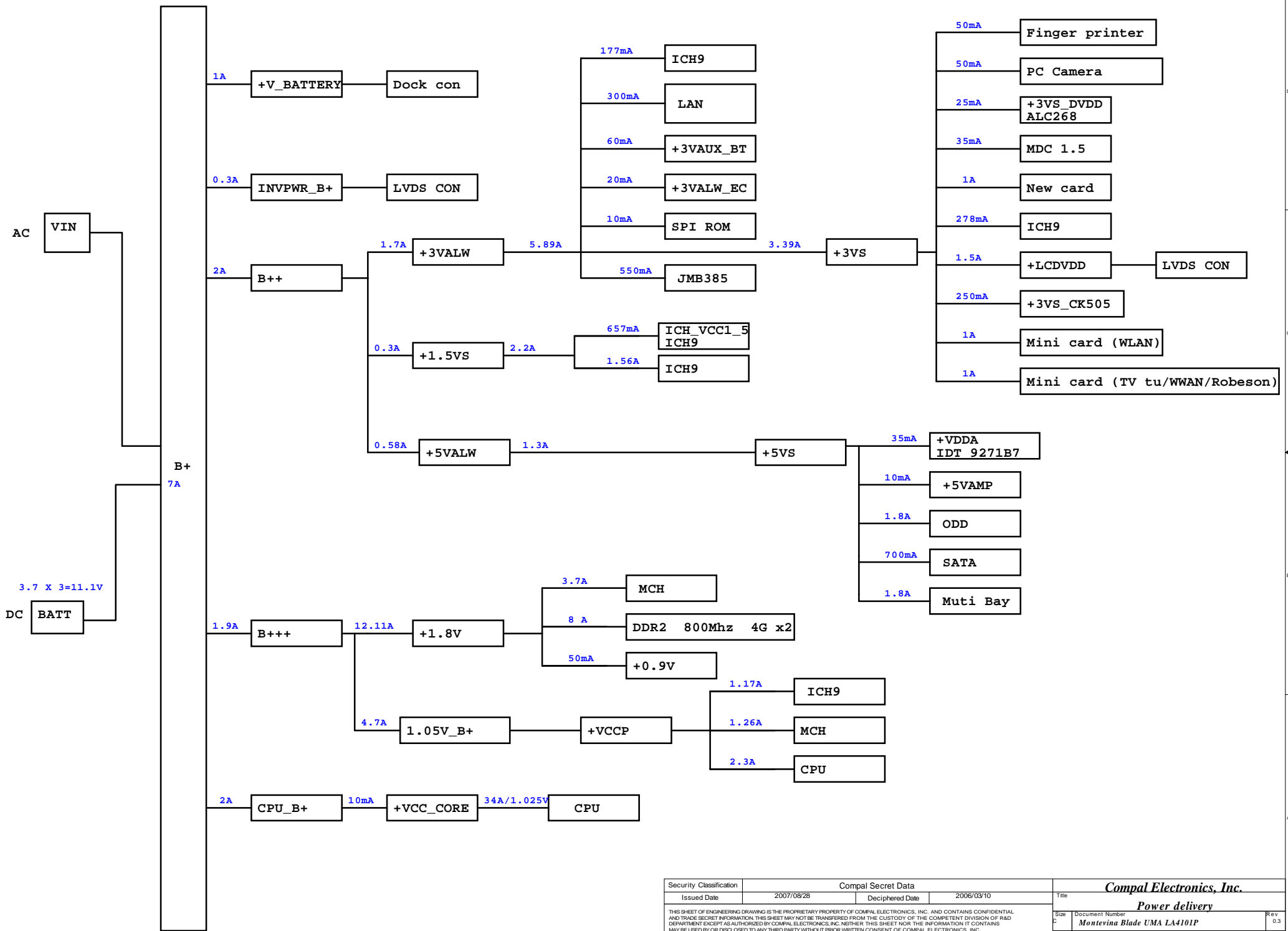
| DEVICE                 | HEX | ADDRESS         |
|------------------------|-----|-----------------|
| DDR SO-DIMM 0          | A0  | 1 0 1 0 0 0 0 0 |
| DDR SO-DIMM 1          | A4  | 1 0 1 0 0 1 0 0 |
| CLOCK GENERATOR (EXT.) | D2  | 1 1 0 1 0 0 1 0 |

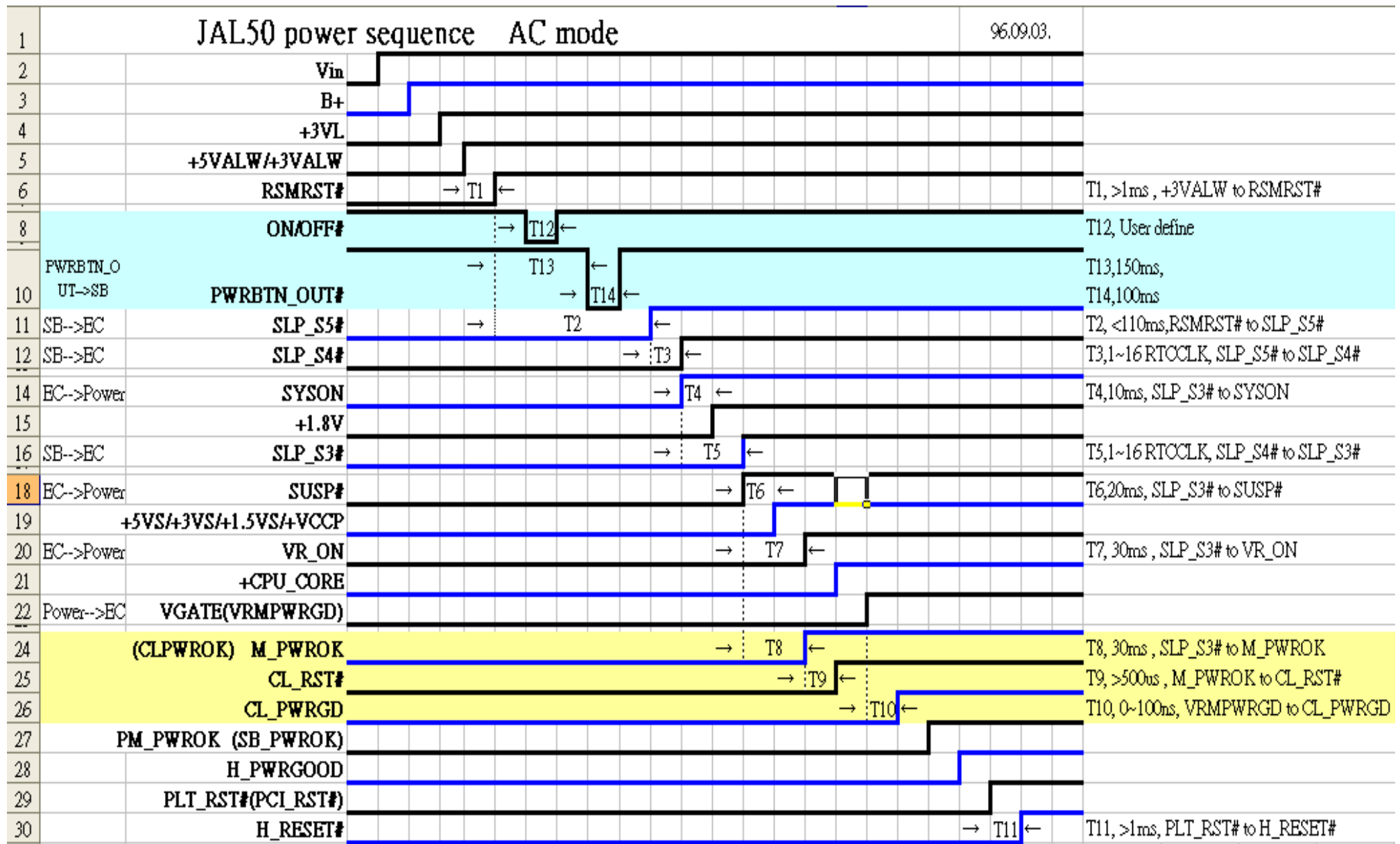
43154432L01 : UMA GM PA FF (SI-1)  
 43154432L02 : UMA GM PR FF (SI-1)  
 43154432L03 : UMA GL PR FF-  
 43154432L04 : UMA GM OPP (SI-1)  
 43154432L05 : UMA GL OPP

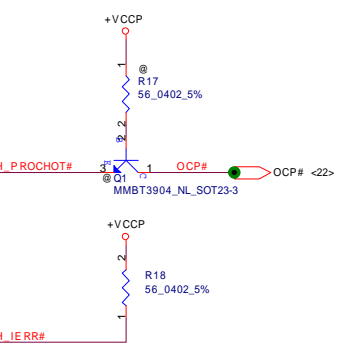
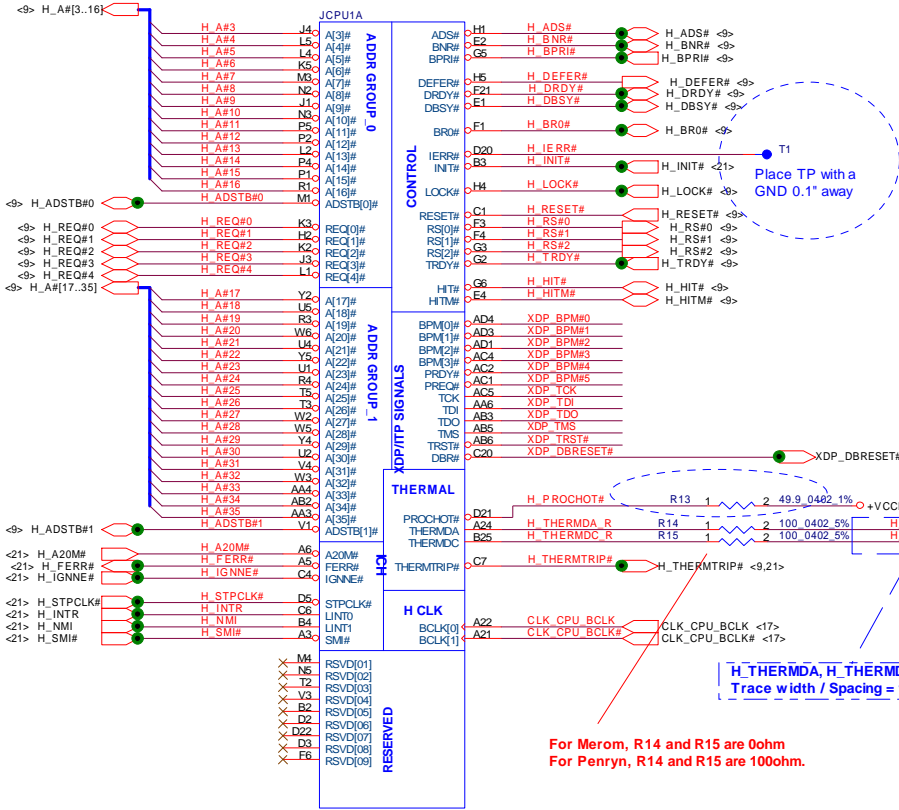
Cantiga GM45 B0(QR32) : SA00001P930  
 ICH9M A2 ES2 Base : SA00002AN10

DA600007100 --->Main  
 DAZ03V00100 --->OPP

|   |                            |                 |                             |            |
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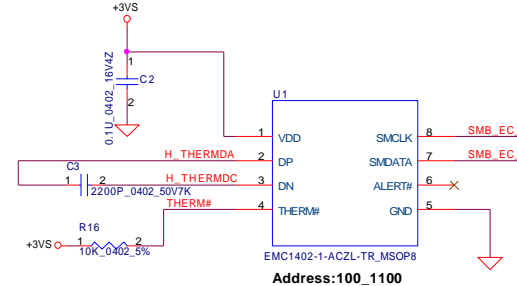
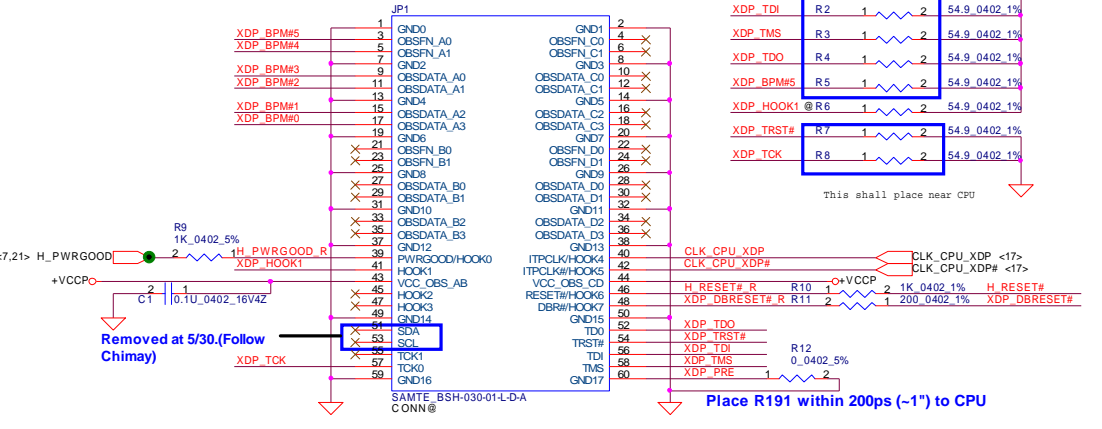




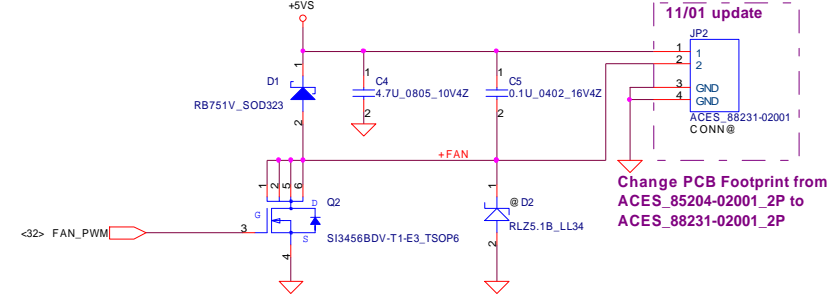
For Merom, R14 and R15 are 0ohm  
For Penryn, R14 and R15 are 100ohm.

H\_THERMDA, H\_THERMDC routing together,  
Trace width / Spacing = 10 / 10 mil

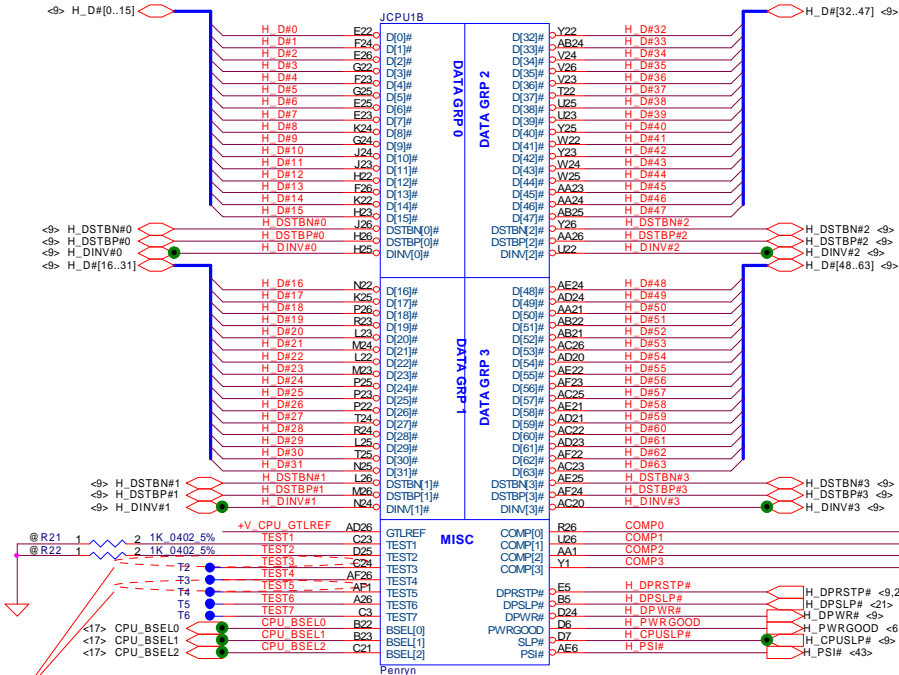
## ITP-XDP Connector



## PWM Fan Control circuit



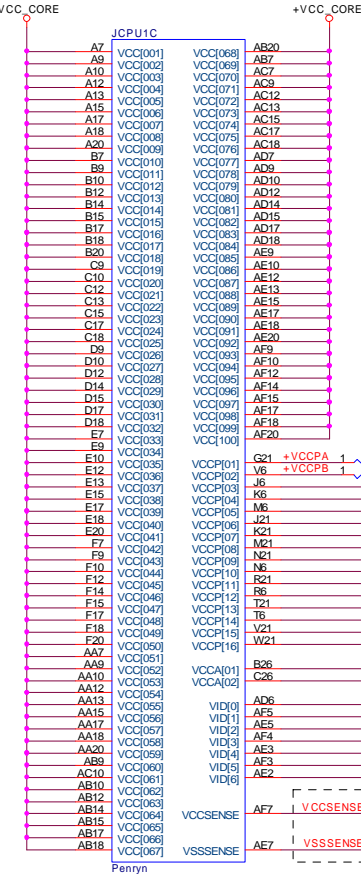
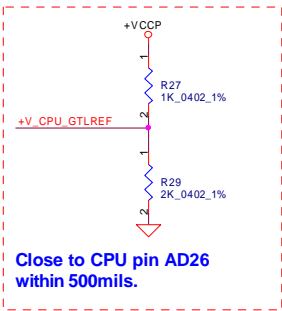
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| Size  | Custom                     | Document Number    | Montevina Blade UMA LA4101P | Rev                       | 0.3 |
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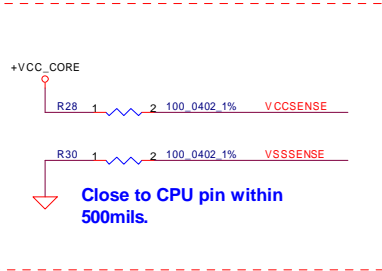
\* Route the TEST3 and TEST5 signals through a ground referenced Zo = 55-ohm trace that ends in a via that is near a GND via and is accessible through an oscilloscope connection.

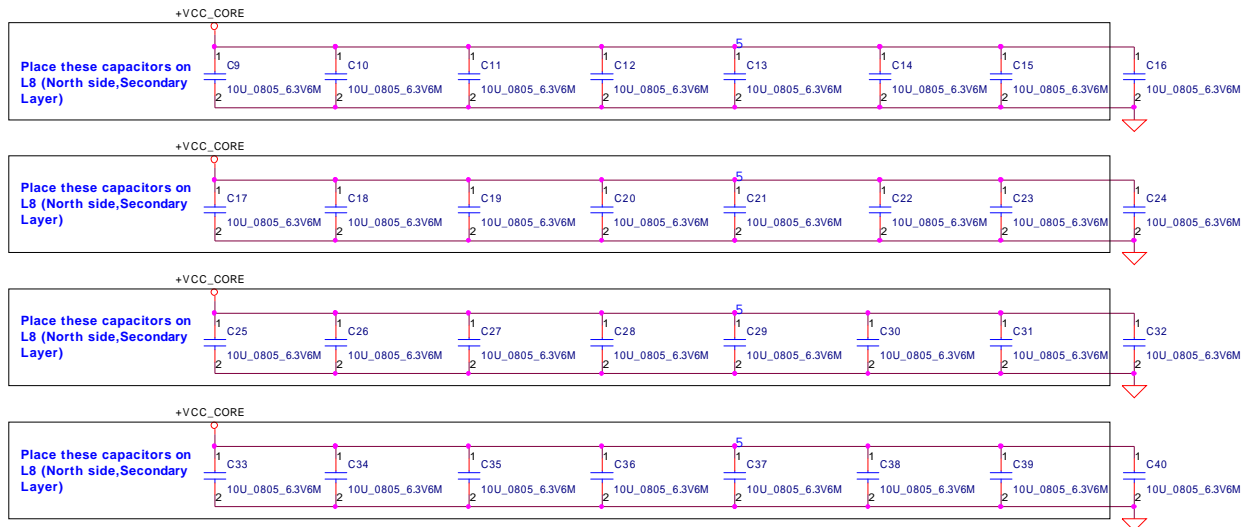
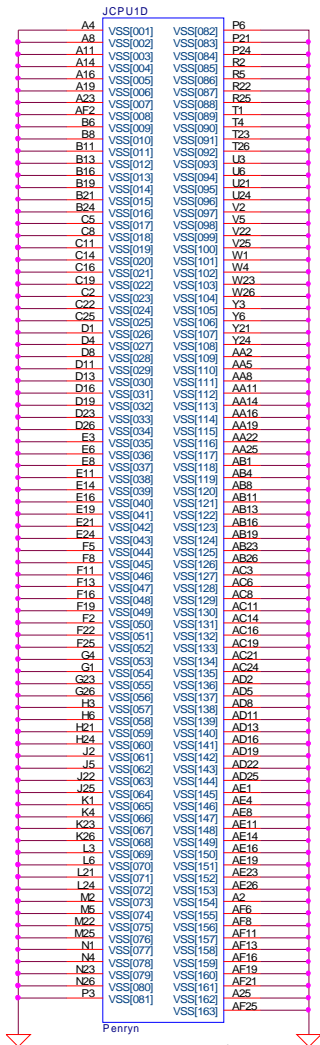
| CPU_BSEL | CPU_BSEL2 | CPU_BSEL1 | CPU_BSEL0 |
|----------|-----------|-----------|-----------|
| 166      | 0         | 1         | 1         |
| 200      | 0         | 1         | 0         |
| 266      | 0         | 0         | 0         |

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.



Length match within 25 mils. The trace width/space/other is 20/7/25.

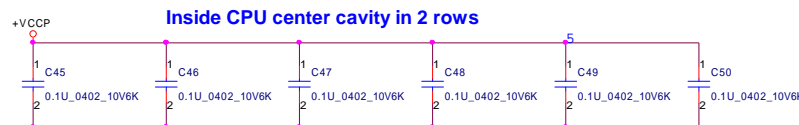
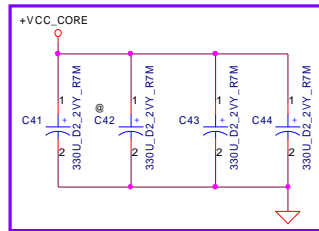




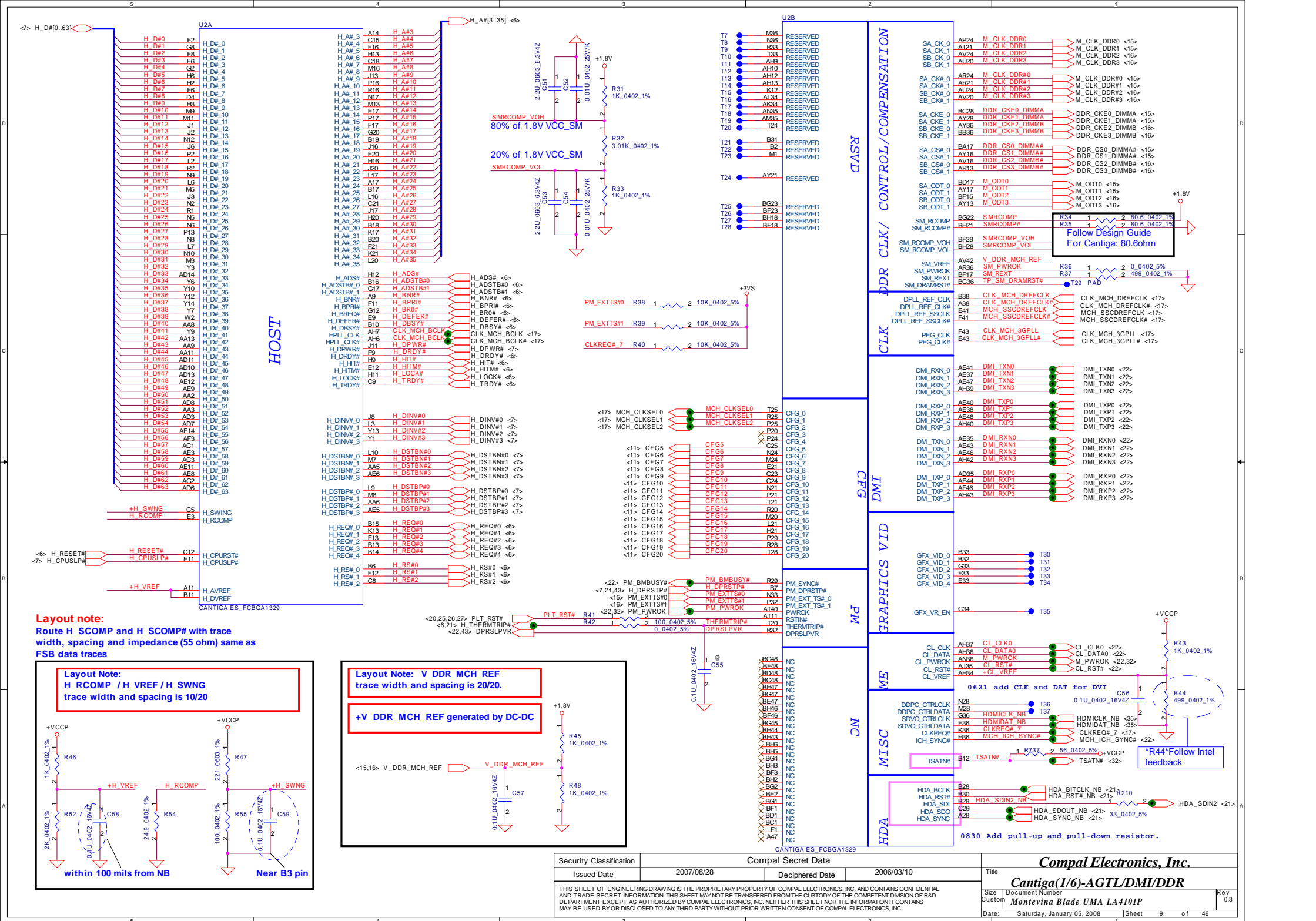
Mid Frequency Decoupling

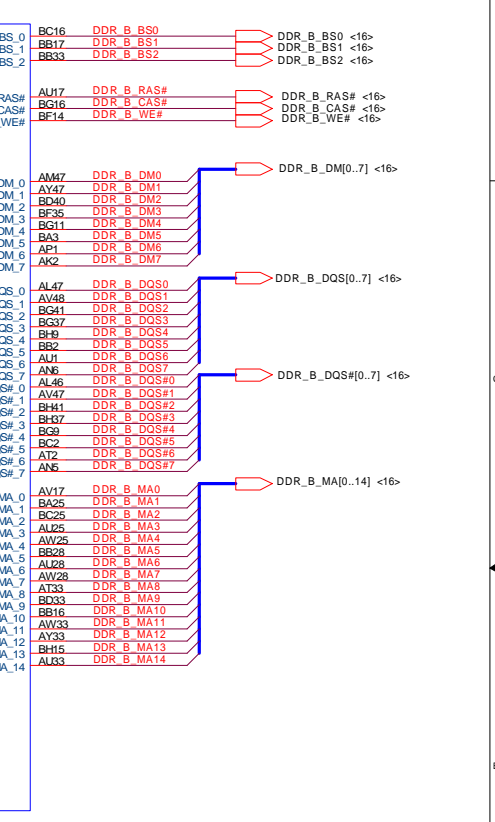
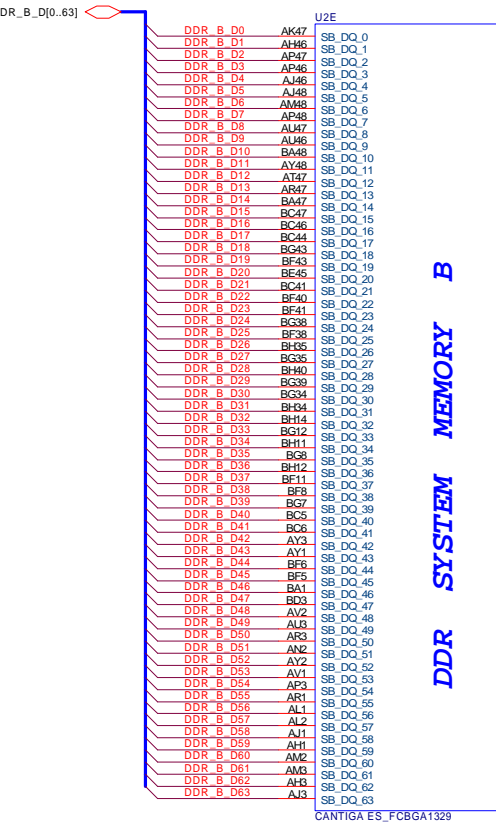
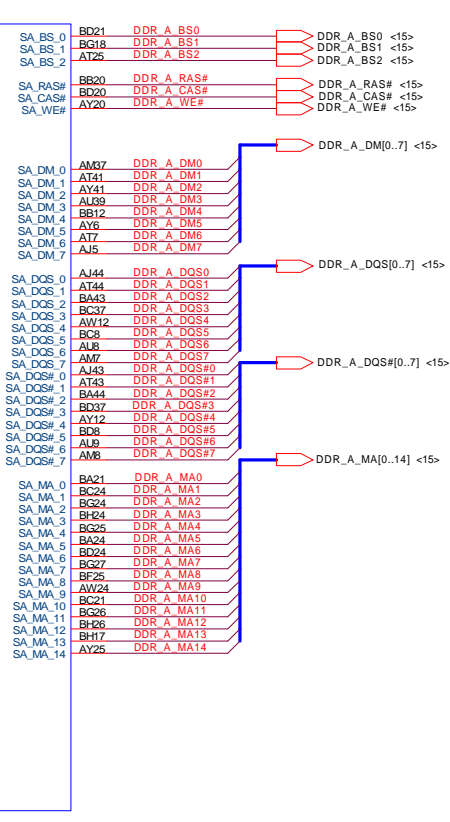
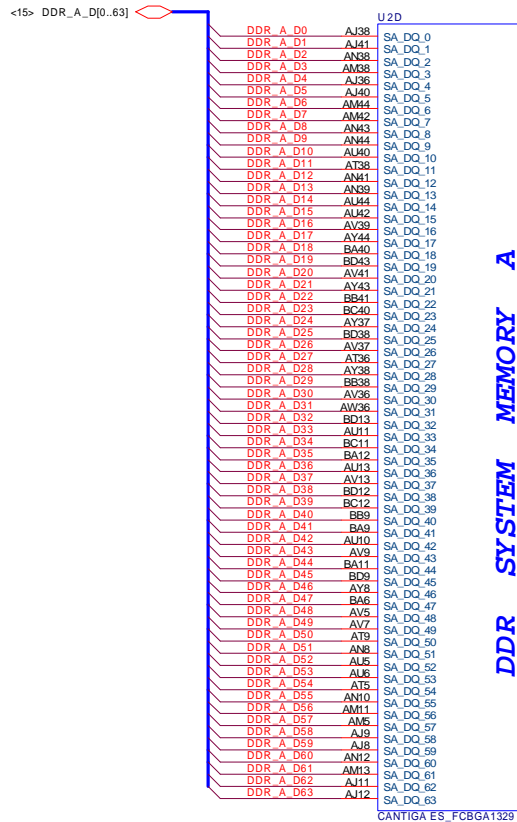
Near CPU CORE regulator

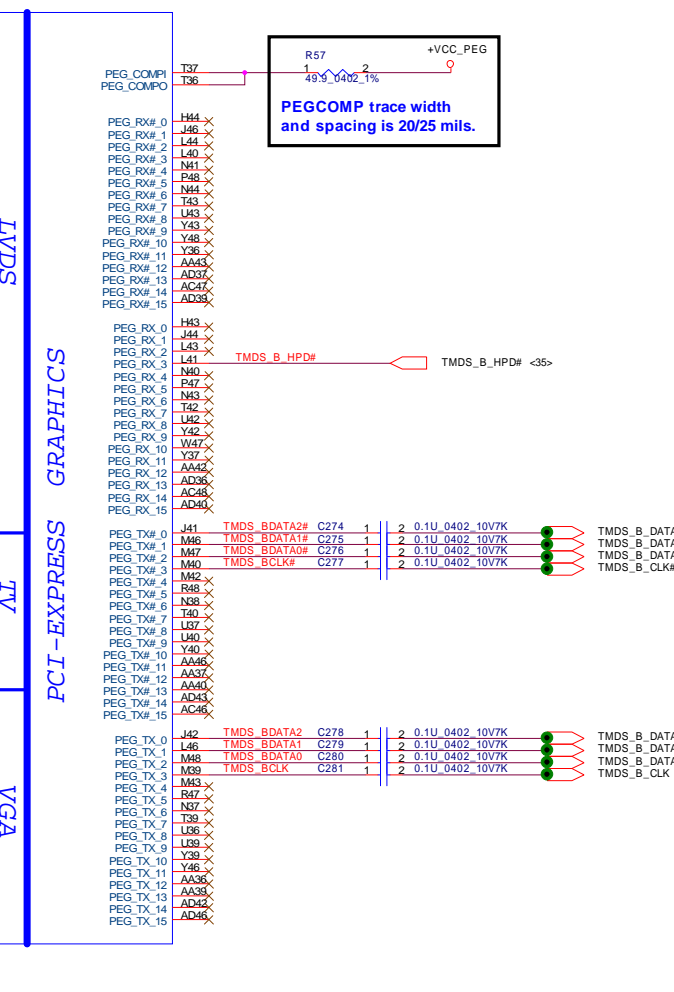
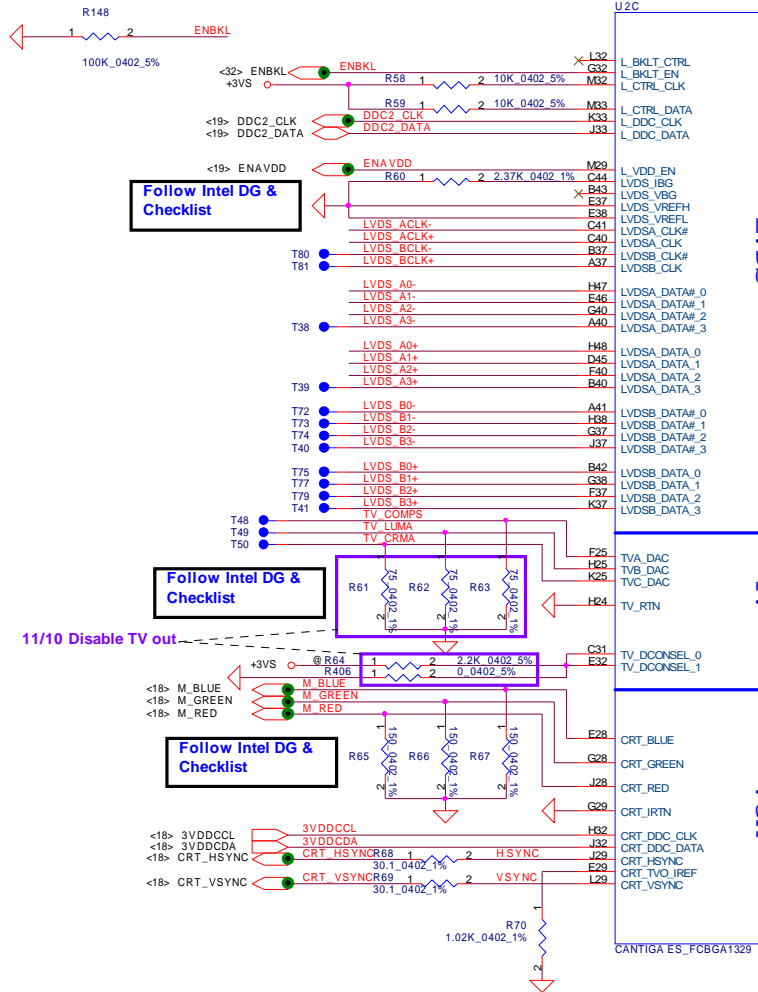
ESR <= 1.5m ohm  
Capacitor > 1980uF



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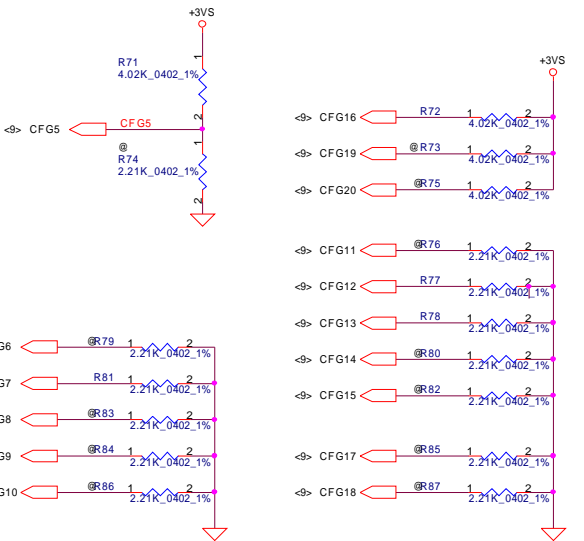
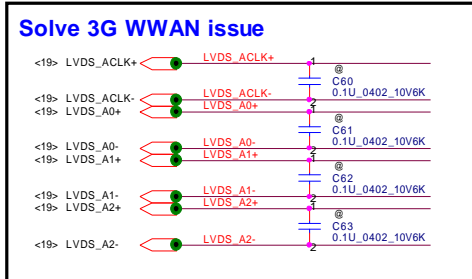




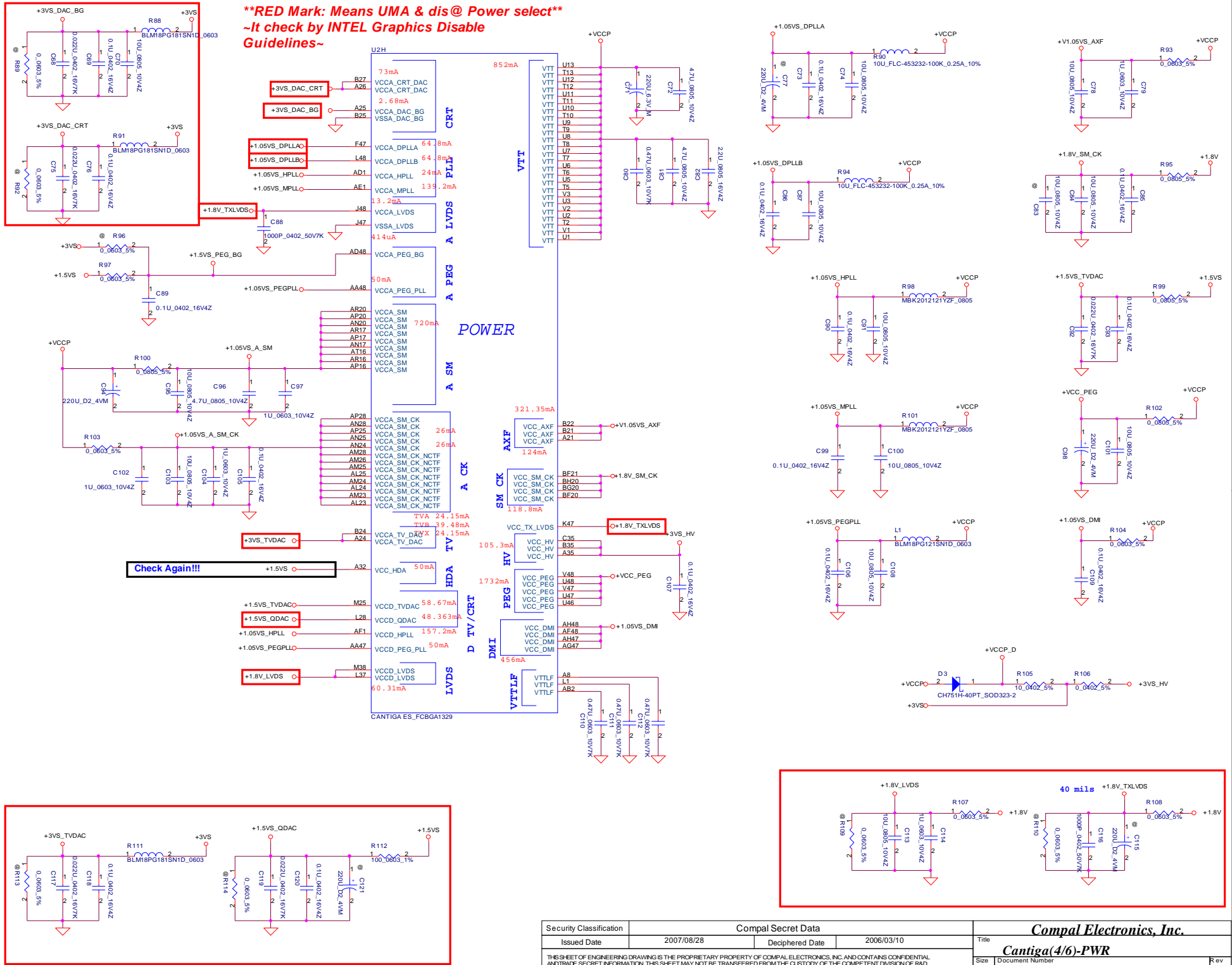


### Strap Pin Table

|   |  |
|---|--|
| CFG[2:0] FSB Freq select                    | 000 = FSB 1066MHz<br>010 = FSB 800MHz<br>011 = FSB 667MHz<br>Others = Reserved                         |
| CFG[4:3]                                    | Reserved   |
| CFG5 (DMI select)                           | 0 = DMI x 2<br>1 = DMI x 4 *   |
| CFG6  | 0 = The iTPM Host Interface is enable<br>1 = The iTPM Host Interface is disable *                      |
| CFG7 (Intel Management Engine Crypto strap) | 0 =(TLS)chiper suite with no confidentiality<br>1 =(TLS)chiper suite with confidentiality *            |
| CFG8  | Reserved   |
| CFG9 (PCIe Graphics Lane Reversal)          | 0 = Reverse Lane,15->0, 14->1<br>1 = Normal Operation,Lane Number in order *                           |
| CFG10 (PCIe Lookback enable)                | 0 = Enable<br>1 = Disable *  |
| CFG11                                       | Reserved   |
| CFG[13:12] (XOR/ALLZ)                       | 00 = Reserved<br>01 = XOR Mode Enabled<br>10 = All Z Mode Enabled<br>11 = Normal Operation (Default) * |
| CFG[15:14]                                  | Reserved   |
| CFG16 (FSB Dynamic ODT)                     | 0 = Disabled<br>1 = Enabled *  |
| CFG[18:17]                                  | Reserved   |
| CFG19 (DMI Lane Reversal)                   | 0 = Normal Operation (Lane number in Order) *<br>1 = Reverse Lane                                      |
| CFG20 (PCIe/SDVO concurrent)                | 0 = Only PCIe or SDVO is operational. *<br>1 = PCIe/SDVO are operating simu.                           |



**\*\*RED Mark: Means UMA & dis@ Power select\*\***  
**~It check by INTEL Graphics Disable**  
**Guidelines~**

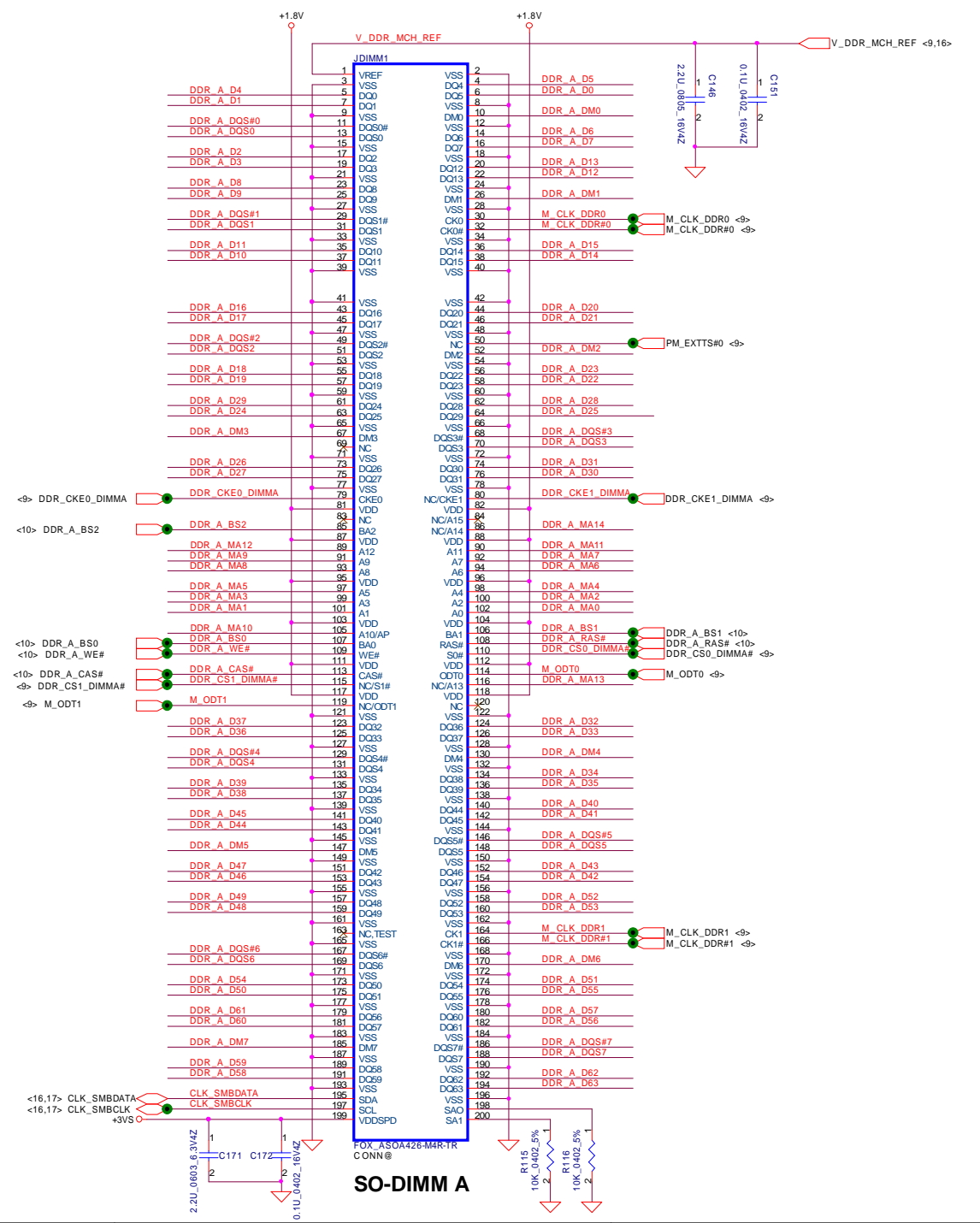
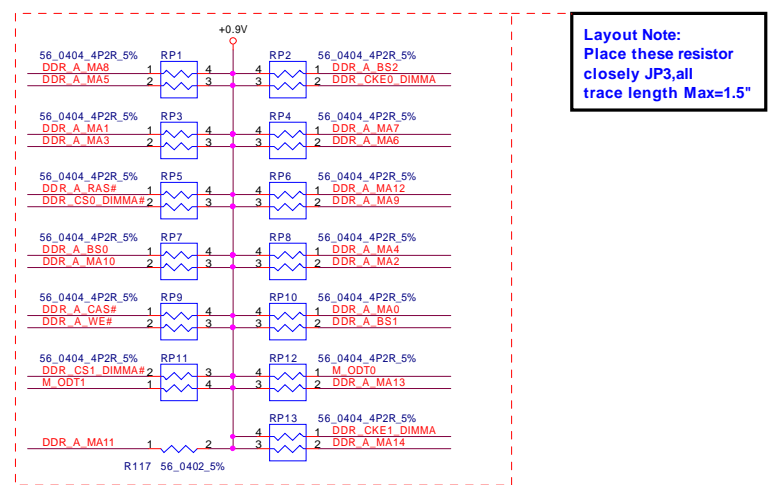


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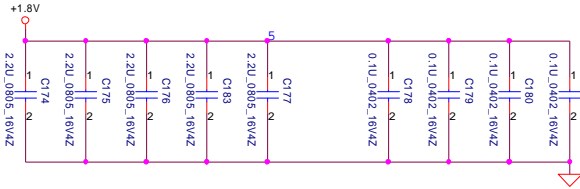
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|   |  |                    |                 |                                 |            | Size                         | Document Number            |       |    |    | Rev |
|   |  |                    |                 |                                 |            | Montervina Blade UMA LA410IP |                            |       |    |    | 0.3 |
|   |  |                    |                 |                                 |            | Date                         | Saturday, January 05, 2008 | Sheet | 14 | of | 46  |



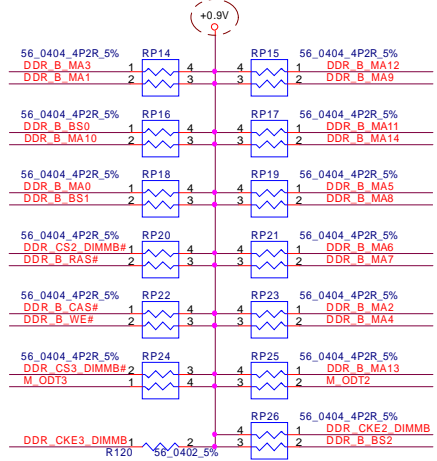
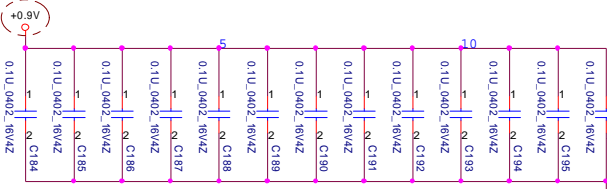
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| Security Classification   |            | Compal Secret Data |            | <b>Compal Electronics, Inc.</b><br><b>DDRII-SODIMM SLOT1</b> |                |
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|   |            |                    |            | Date: Saturday, January 05, 2008                             |                |
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<10> DDR\_B\_DQS#0..7  
<10> DDR\_B\_D[0..63]  
<10> DDR\_B\_DM[0..7]  
<10> DDR\_B\_DQS#0..7  
<10> DDR\_B\_MA[0..14]

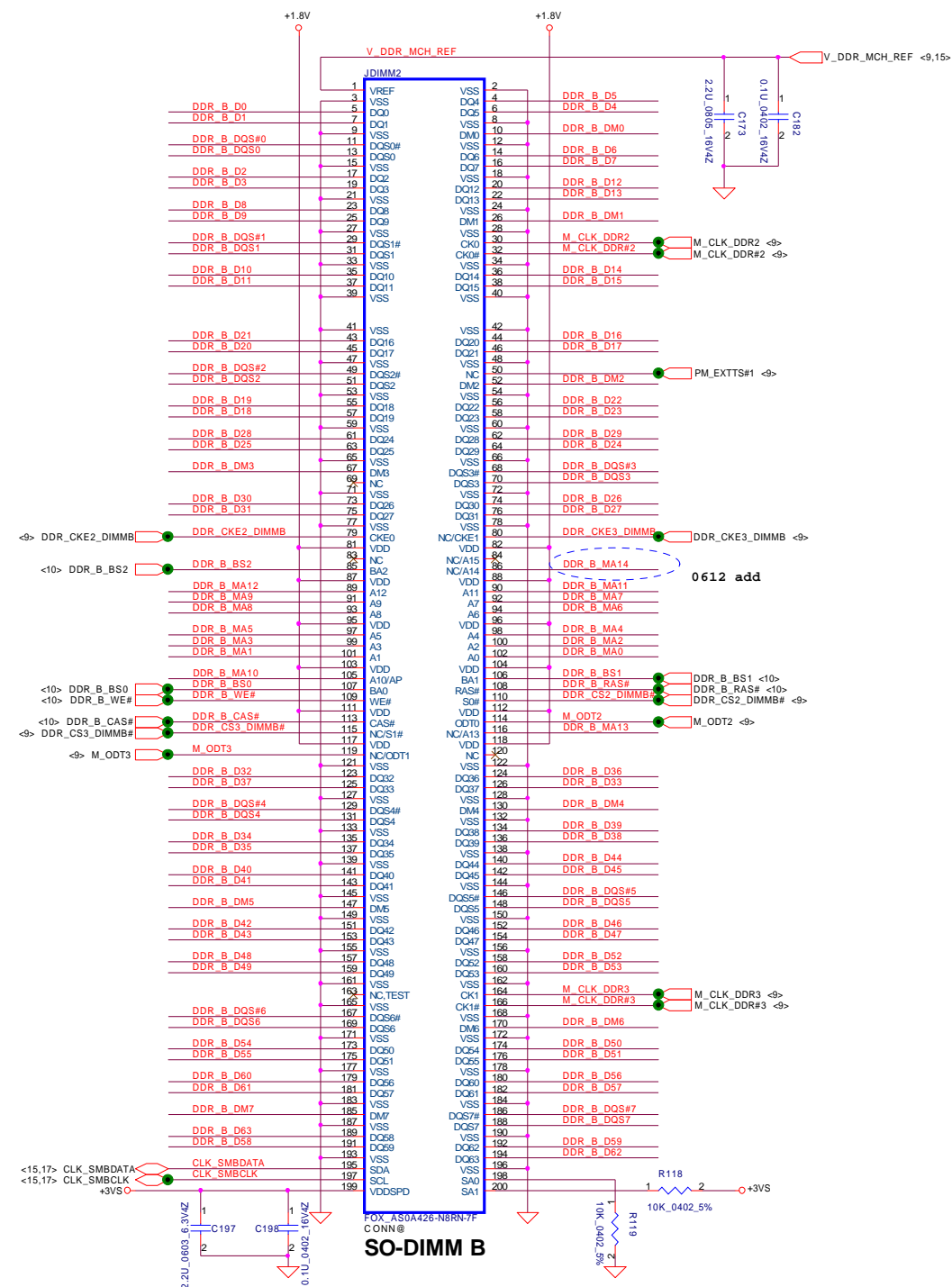
Layout Note:  
Place near  
JP18



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

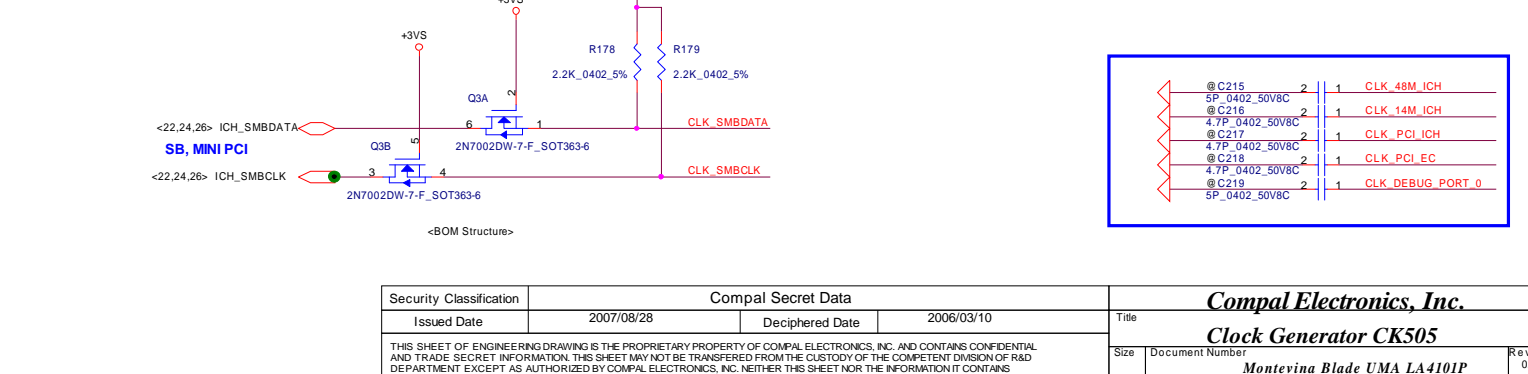
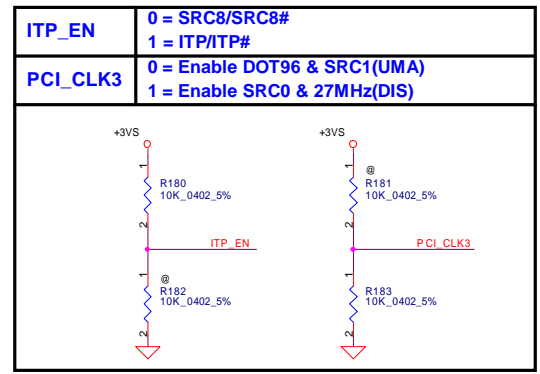
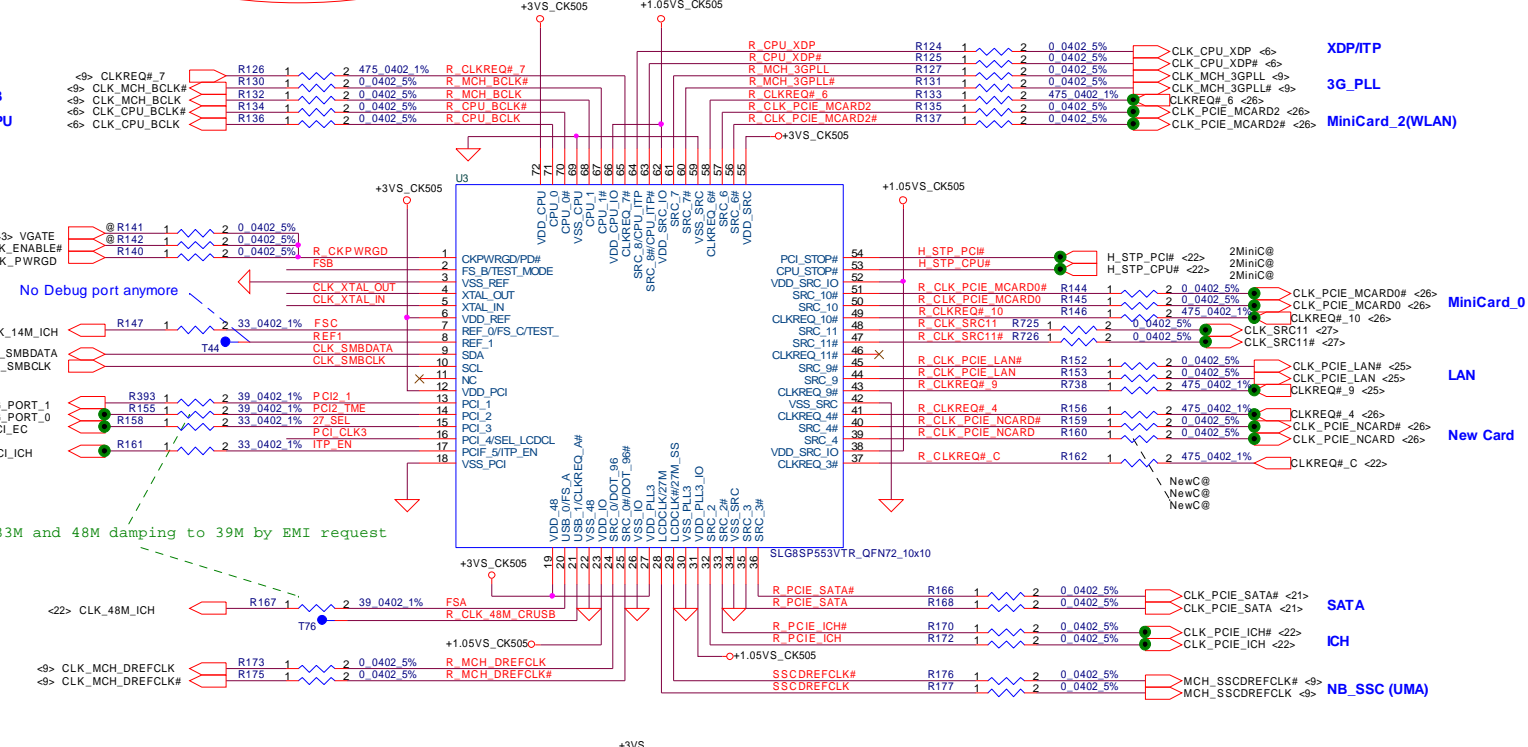
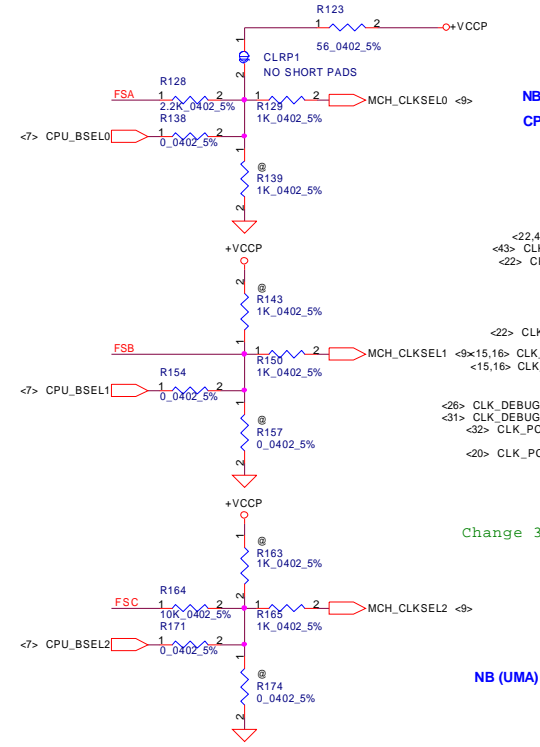
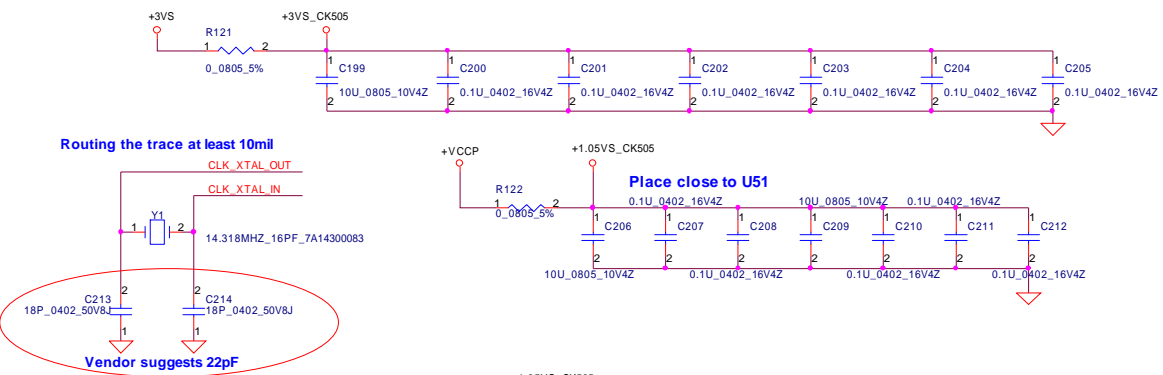


Layout Note:  
Place these resistor  
closely JP3,all  
trace length Max=1.5"

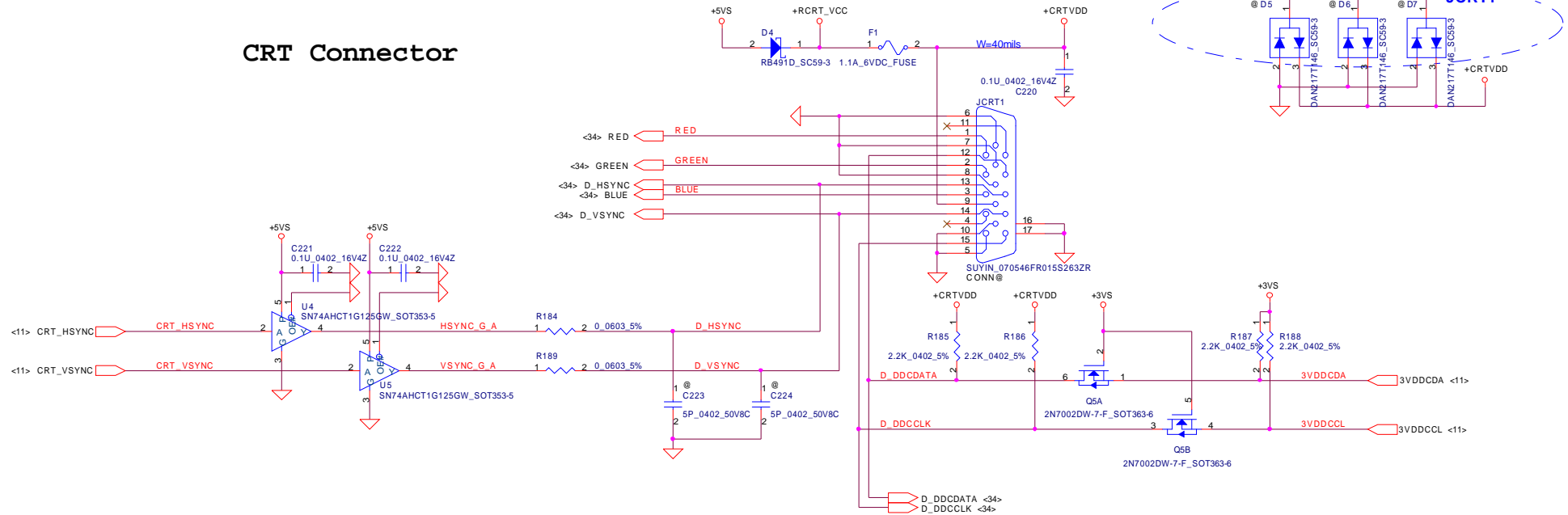


| Security Classification   |  |  |  | Compal Secret Data |  |  |  | Title                      |  |  |  |
|---|--|--|--|--------------------|--|--|--|----------------------------|--|--|--|
| Issued Date   |  |  |  | Deciphered Date    |  |  |  | 2006/02/13                 |  |  |  |
| 2006/02/13  |  |  |  | 2006/03/10         |  |  |  | 2006/03/10                 |  |  |  |
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| 1   |  |  |  | 1                  |  |  |  | 1                          |  |  |  |

| FSC      | FSB     | FSA     | CPU | SRC | PCI  | REF    | DOT_96 | USB  |
|----------|---------|---------|-----|-----|------|--------|--------|------|
| CLKSEL2  | CLKSEL1 | CLKSEL0 | MHz | MHz | MHz  | MHz    | MHz    | MHz  |
| 0        | 0       | 0       | 266 | 100 | 33.3 | 14.318 | 96.0   | 48.0 |
| 0        | 0       | 1       | 133 | 100 | 33.3 | 14.318 | 96.0   | 48.0 |
| 0        | 1       | 0       | 200 | 100 | 33.3 | 14.318 | 96.0   | 48.0 |
| 0        | 1       | 1       | 166 | 100 | 33.3 | 14.318 | 96.0   | 48.0 |
| 1        | 0       | 0       | 333 | 100 | 33.3 | 14.318 | 96.0   | 48.0 |
| 1        | 0       | 1       | 100 | 100 | 33.3 | 14.318 | 96.0   | 48.0 |
| 1        | 1       | 0       | 400 | 100 | 33.3 | 14.318 | 96.0   | 48.0 |
| 1        | 1       | 1       |     |     |      |        |        |      |
| Reserved |         |         |     |     |      |        |        |      |

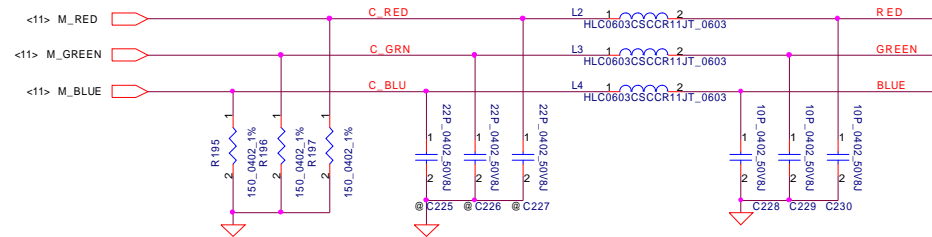


# CRT Connector



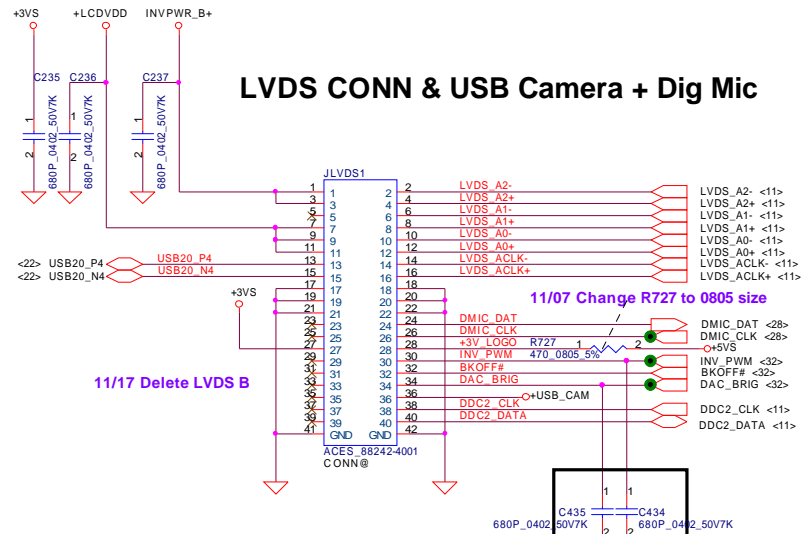
## CRT Termination/EMI Filter

11/07 Change CRT louting NB-->Docking-->CRT connector

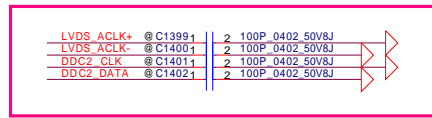


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|---|------------|--------------------|------------|-----------------------------|-----------------|
| Issued Date   | 2007/08/28 | Deciphered Date    | 2006/07/26 | Compal Electronics, Inc.    |                 |
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|   |            |                    |            | Montevina Blade UMA LA4101P |                 |
| Date: Saturday, January 05, 2008  |            |                    |            | Sheet                       | 18 of 46        |

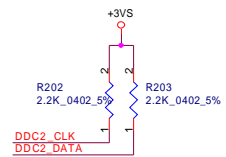
## LVDS CONN & USB Camera + Dig Mic



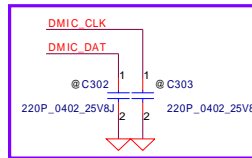
0308 Install all cap for EMI request.



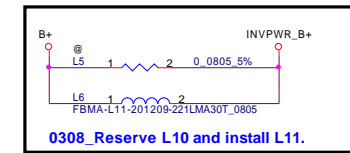
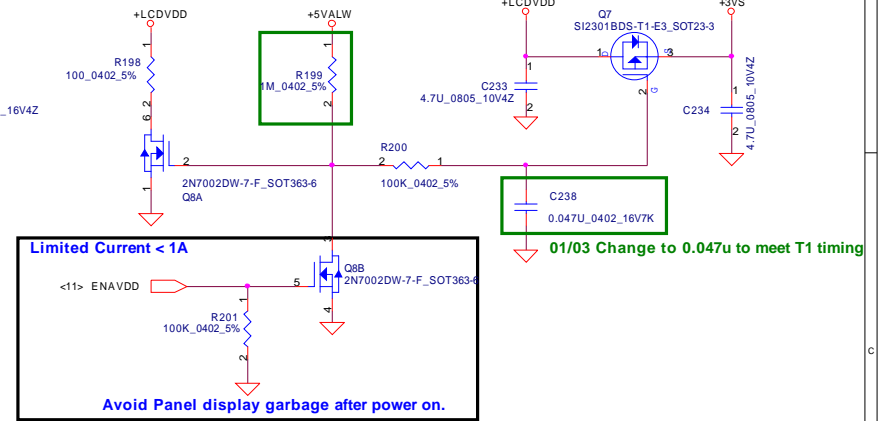
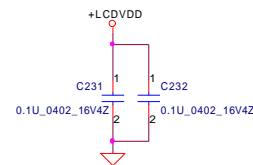
0831 EMI request



Must close JLVS1 pin 24 + 26

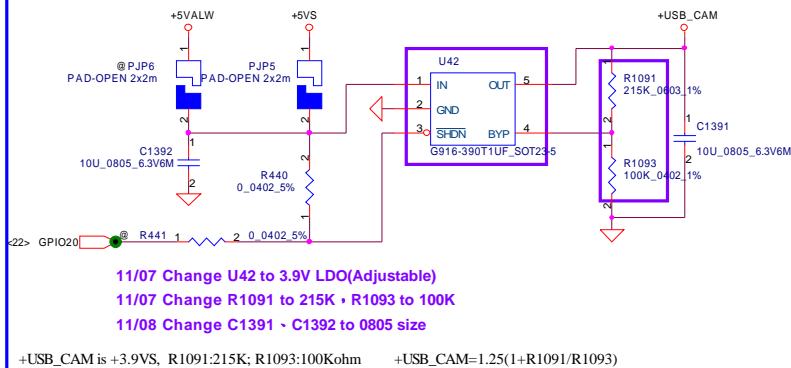


11/09 EMI reserver



0308 Reserve L10 and install L11.

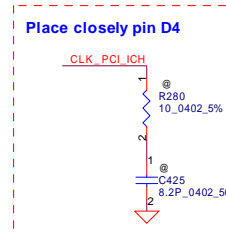
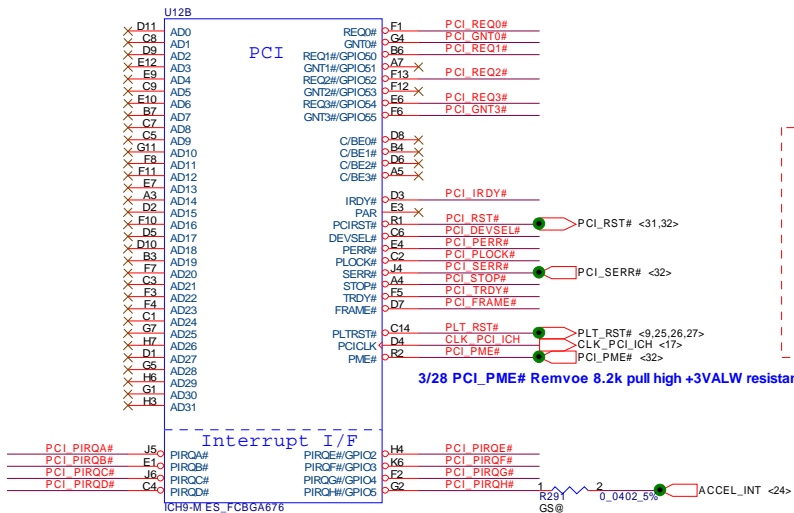
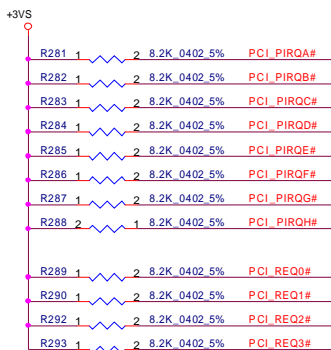
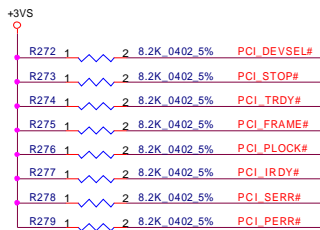
## USB Camera



|   |                    |                 |            |                             |                 |
|---|--------------------|-----------------|------------|-----------------------------|-----------------|
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| Issued Date   | 2007/08/28         | Deciphered Date | 2006/07/26 | Title                       |                 |
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|   |                    |                 |            | Montevina Blade UMA LA4101P |                 |
|   |                    |                 |            | Date:                       | Rev             |
| Saturday, January 05, 2008  |                    |                 |            | Sheet                       | 19 of 46        |

LCD CONN.

0.3



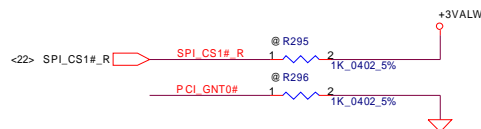
### A16 swap override Strap

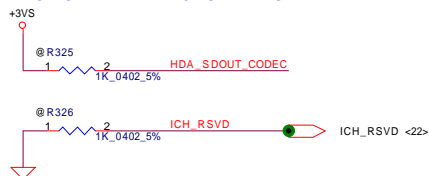
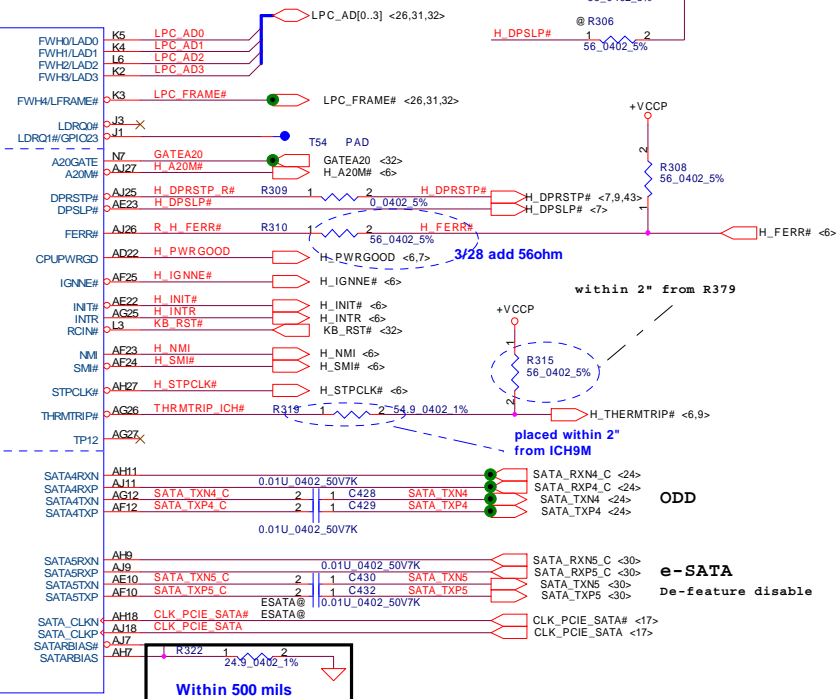
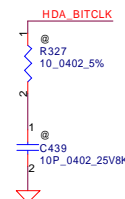
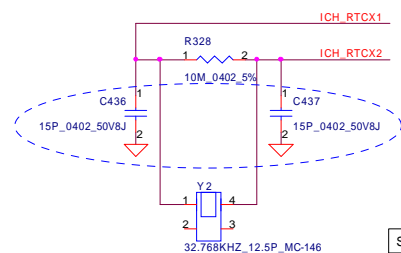
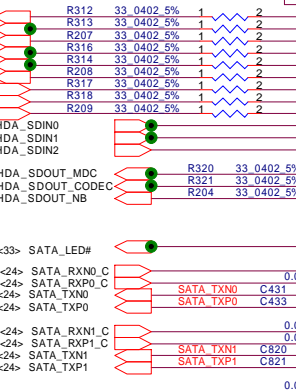
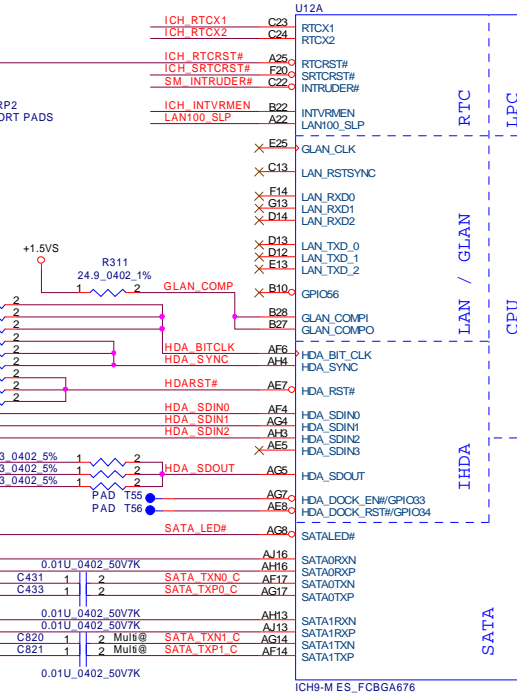
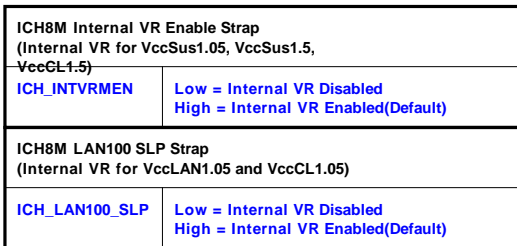
PCI\_GNT3# Low= A16 swap override Enable  
High= Default \*



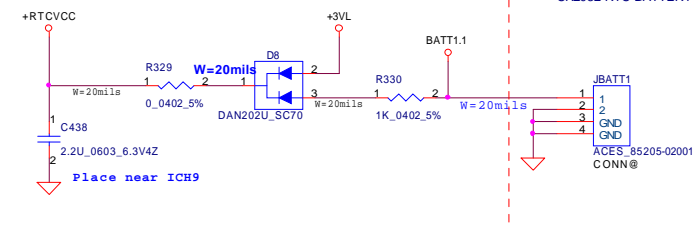
### Boot BIOS Strap

| PCI_GNT0# | SPI_CS#1 | Boot BIOS Location |
|-----------|----------|--------------------|
| 0         | 1        | SPI                |
| 1         | 0        | PCI                |
| 1         | 1        | LPC *              |

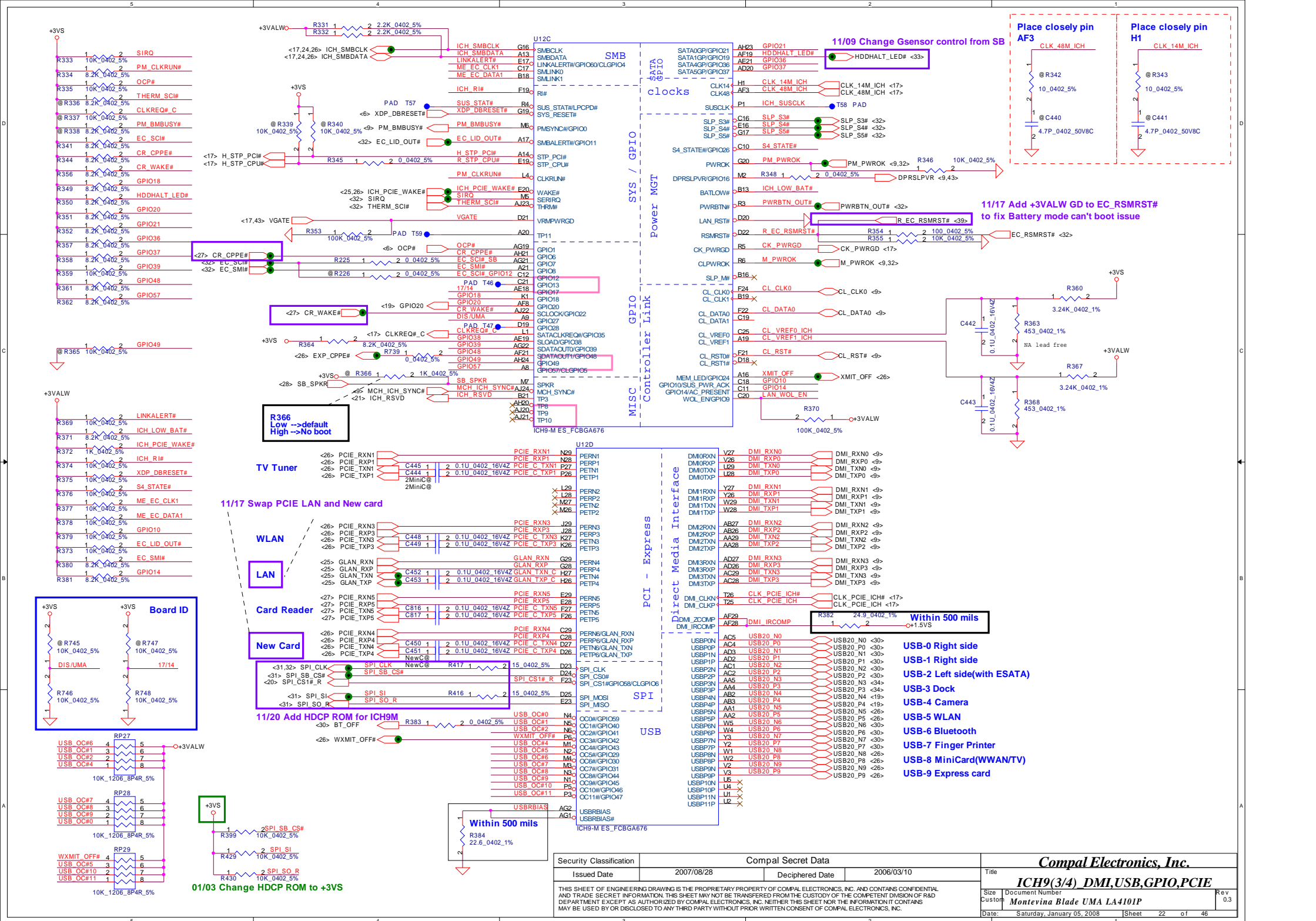




| ICH_RSVD | HDA_SDOUT_CODECD |  |
|----------|------------------|--|
| 0        | 0                |  |
| 0        | 1                |  |
| 1        | 0                |  |
| 1        | 1                |  |

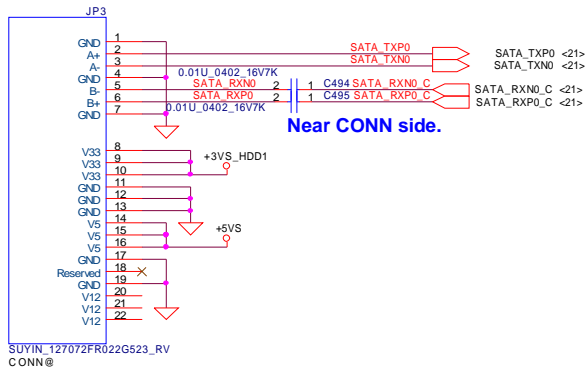


|   |  |                    |  |                 |  |                          |  |                          |                             |  |  |  |       |    |     |    |
|---|--|--------------------|--|-----------------|--|--------------------------|--|--------------------------|-----------------------------|--|--|--|-------|----|-----|----|
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|   |  |                    |  |                 |  |                          |  | Size                     | Document Number             |  |  |  |       |    | Rev |    |
|   |  |                    |  |                 |  |                          |  | Custom                   | Montevina Blade UMA LA410IP |  |  |  |       |    | 0.3 |    |
|   |  |                    |  |                 |  |                          |  | Date:                    | Saturday, January 05, 2008  |  |  |  | Sheet | 21 | of  | 46 |

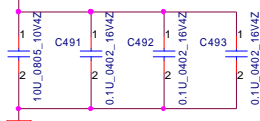




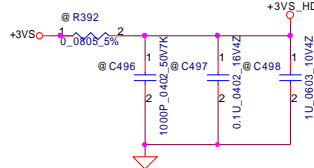
## HDD Connector



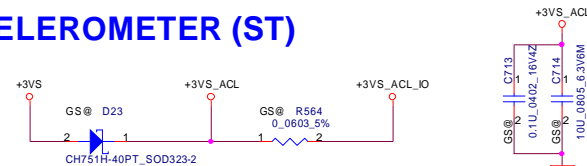
Place near HDD CONN (JP3)



Place near HDD CONN

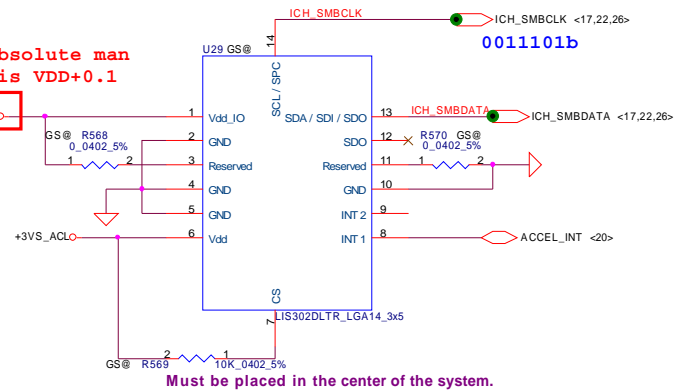


## ACCELEROMETER (ST)

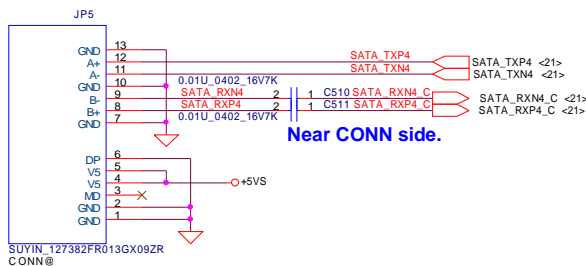


VDDIO absolute man  
rating is VDD+0.1

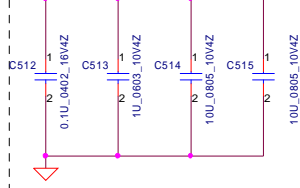
+3VS\_ACL\_IO



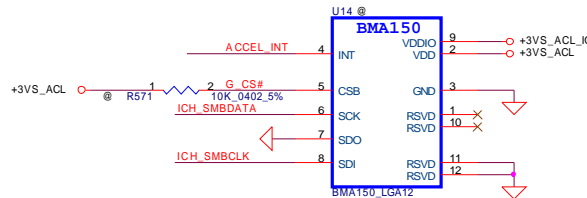
## CD-ROM Connector



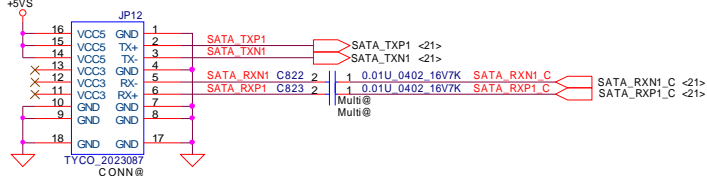
Place caps. near ODD CONN.



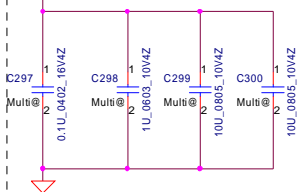
## ACCELEROMETER (Bosch)



## Multi Bay



Place caps. near Multi Bay CONN.

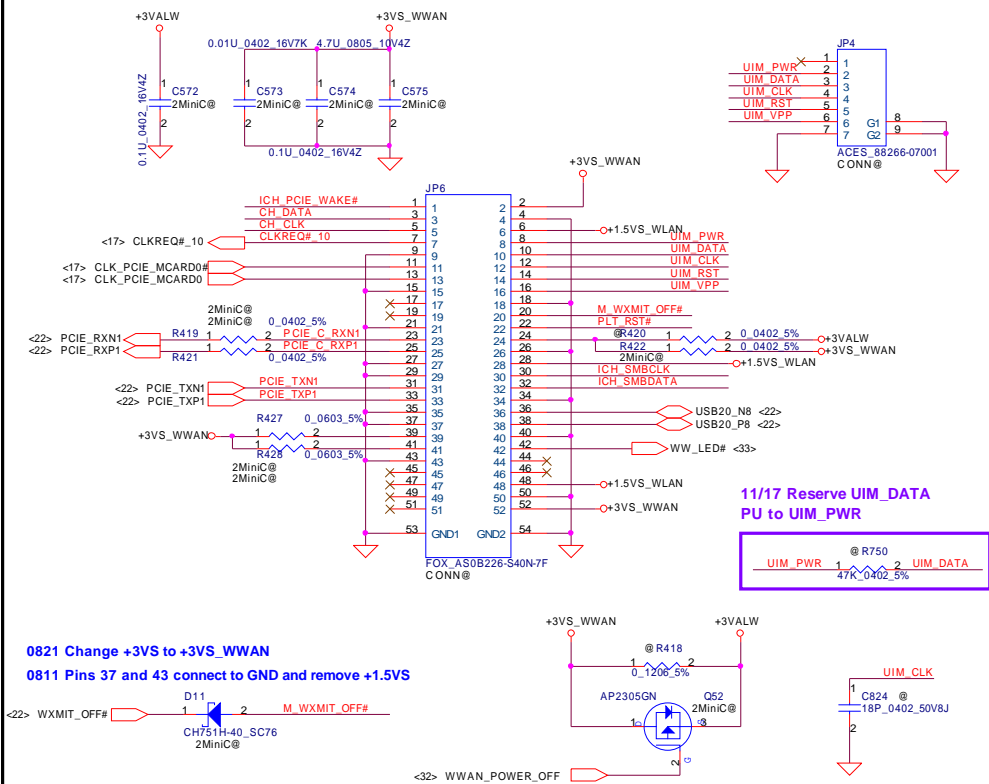


ZZZ2  
PCB-MB

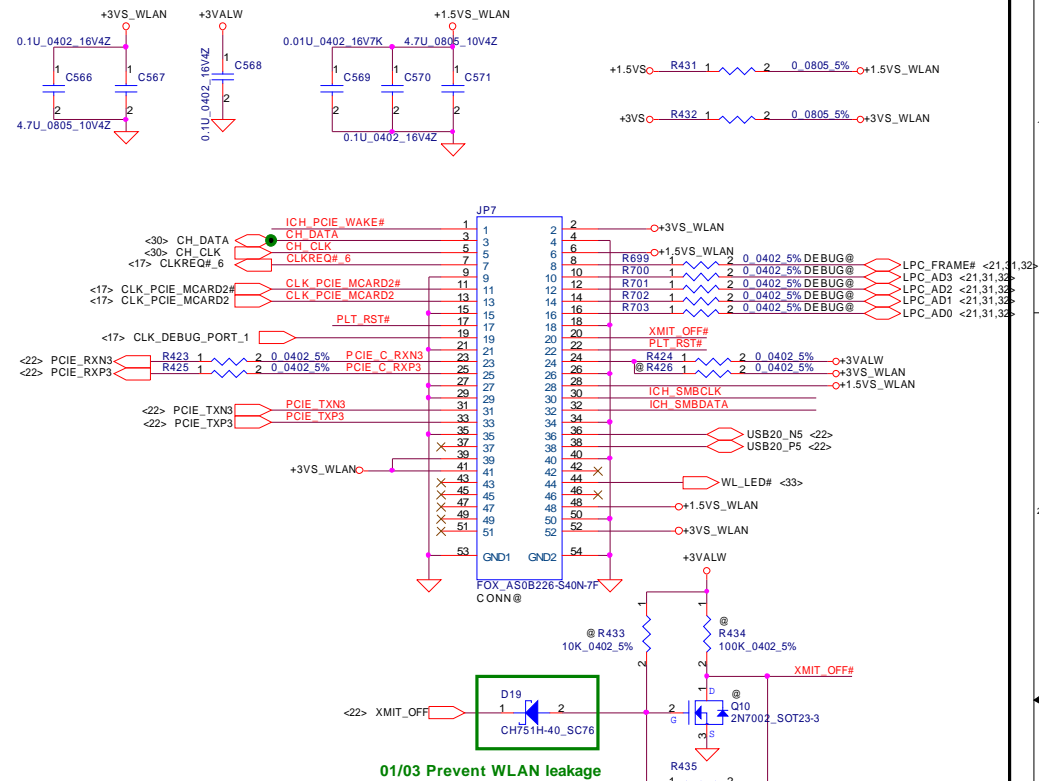
|   |  |                    |                 |                                 |                        |                                    |       |
|---|--|--------------------|-----------------|---------------------------------|------------------------|------------------------------------|-------|
| Security Classification   |  | Compal Secret Data |                 | <i>Compal Electronics, Inc.</i> |                        |                                    |       |
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|   |  |                    |                 |                                 | Size                   | Document Number                    | Rev   |
|   |  |                    |                 |                                 | Custom                 | <i>Montevina Blade UMA LA4101P</i> | 0.3   |
|   |  |                    |                 |                                 | Date:                  | Saturday, January 05, 2008         | Sheet |



# Mini Card 0--TV tuner/WWAN/Robson SIM card Connector

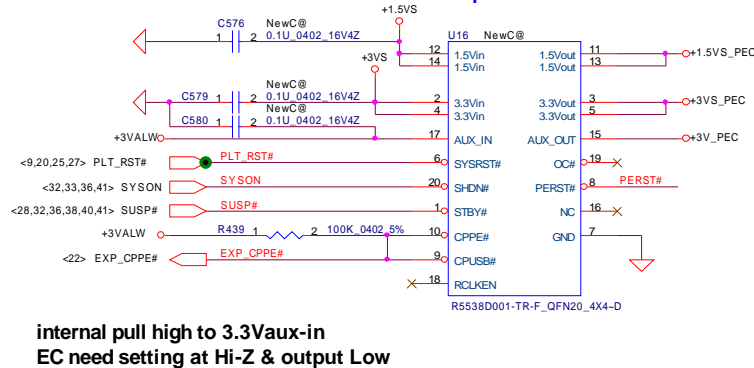


# Mini Card 2---WLAN

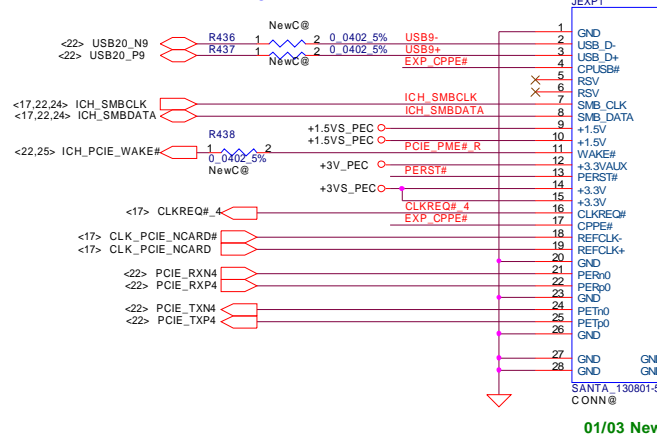


# New Card

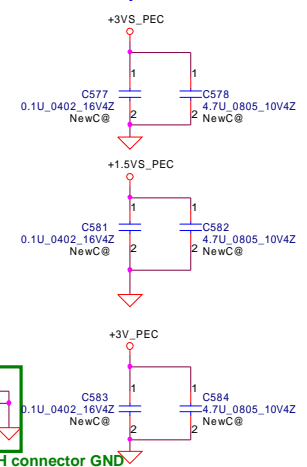
## Express Card Power Switch



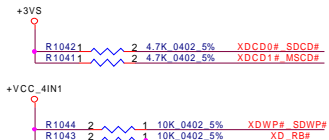
## Close to JEXP



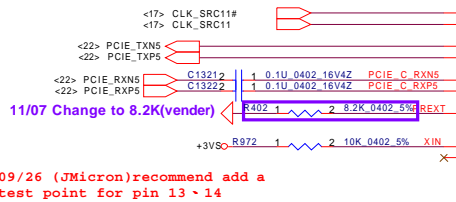
## Near to Express Card slot.



|   |                    |                 |            |                             |                 |
|---|--------------------|-----------------|------------|-----------------------------|-----------------|
| Security Classification   | Compal Secret Data |                 |            | Title                       |                 |
| Issued Date   | 2007/08/28         | Deciphered Date | 2006/07/26 | WLAN, WWAN, New Card        |                 |
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|   |                    |                 |            | Montevina Blade UMA LA4101P |                 |
|   |                    |                 |            | Date                        | Rev             |
|   |                    |                 |            | Saturday, January 05, 2008  | 0.3             |
|   |                    |                 |            | Sheet                       | 26 of 46        |



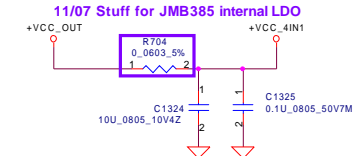
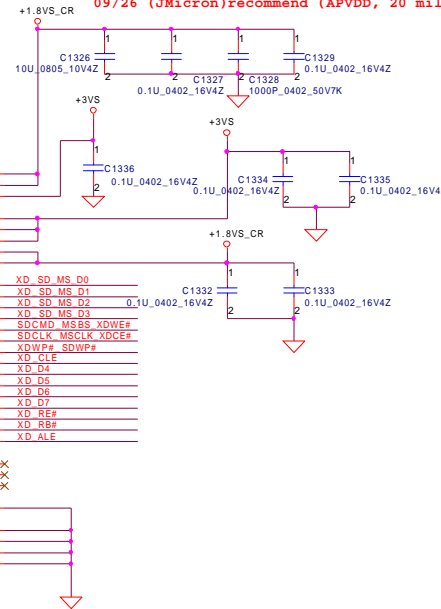
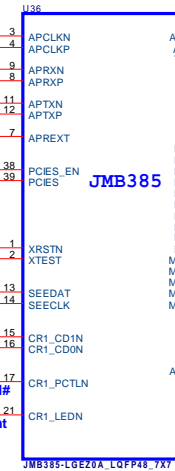
09/26 (JMicon)recommend width/length: 12mil / <250mil for PREXT signal (pin 7)



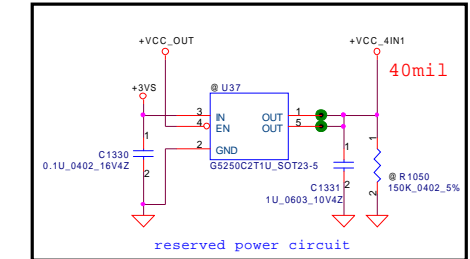
09/26 (JMicon)recommend add a test point for pin 13 ~ 14

11/09 Add D18 for cardreader wake up

+VCC\_OUT0 use for PWR\_EN 8mA sink current

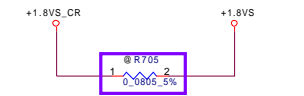


Use 0603 type and over 20 mils trace width on both side  
09/26 (JMicon)recommend change to 0805 size  
09/26 (JMicon)recommend +VCC\_OUT >30mil



11/07 Change U37 correct PCBFootprint SOT23  
11/07 BOM delete for JMB385 internal LDO

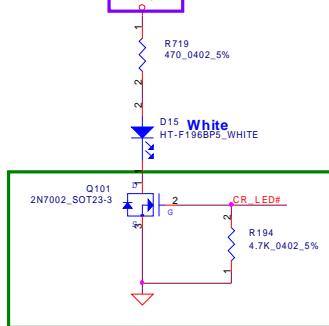
09/26 Must change P mos FET



11/07 Don't stuff for JMB385 internal LDO

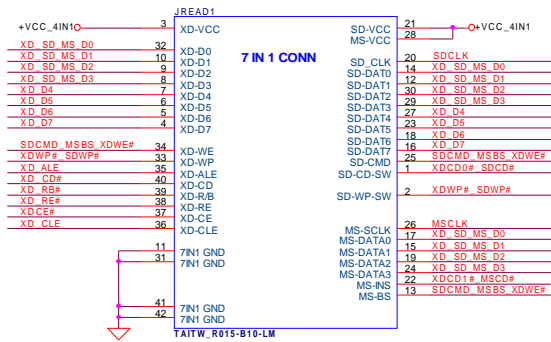
White LED: VF=3V, IF = 5mA, Res = 56ohm

11/09 don't support DIM function



01/03 Change Cardreader LED control

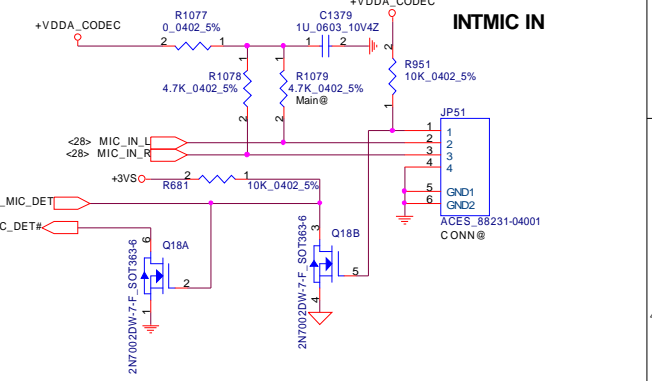
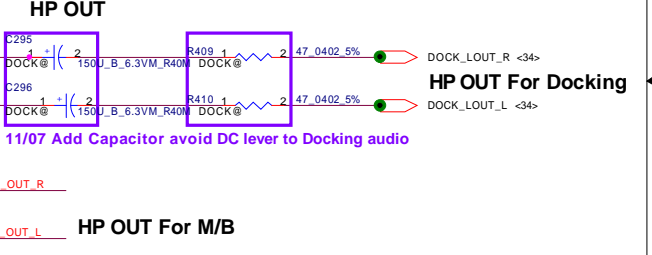
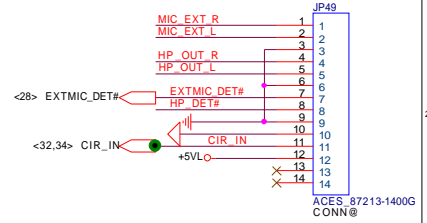
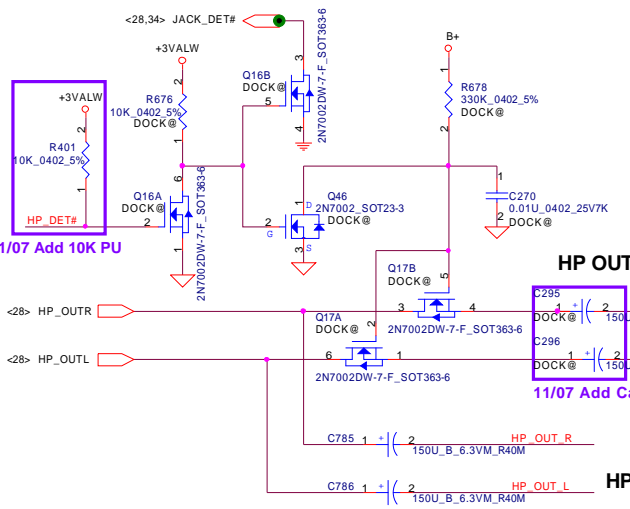
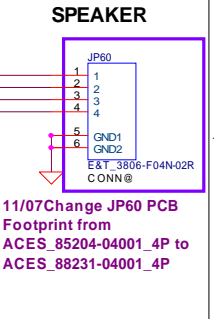
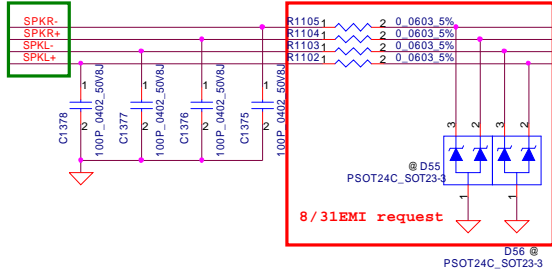
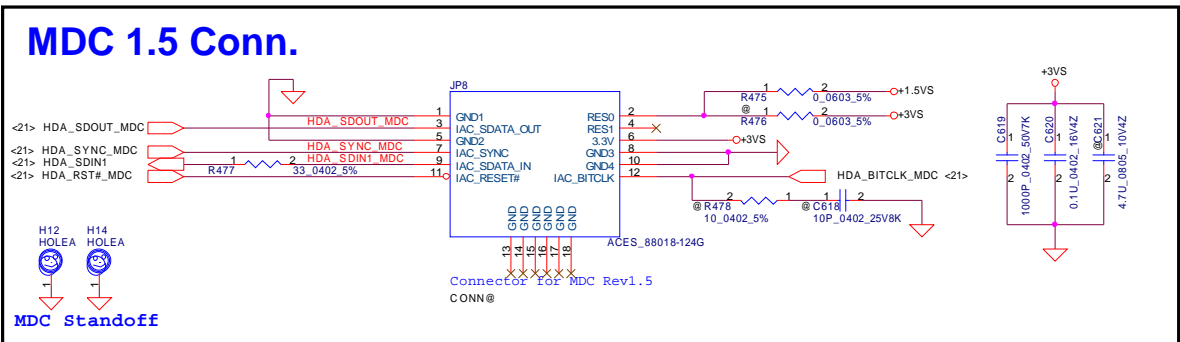
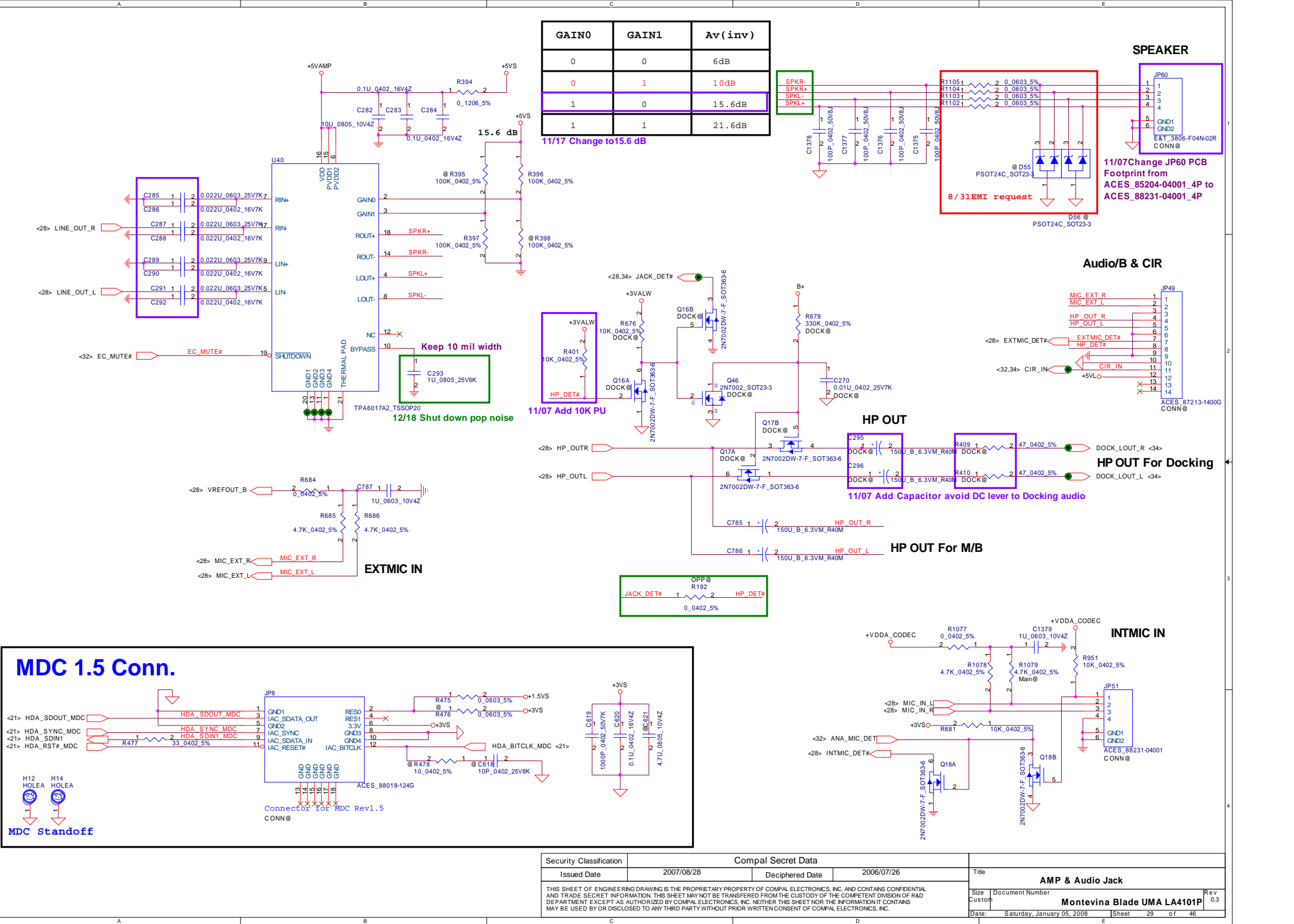
## Card Reader Connector



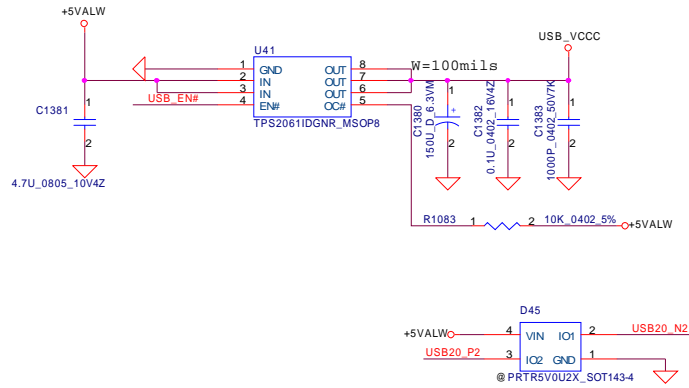
11/17 Update CIS library

|   |            |                    |            |                          |                             |
|---|------------|--------------------|------------|--------------------------|-----------------------------|
| Security Classification   |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |
| Issued Date   | 2007/08/28 | Deciphered Date    | 2006/10/06 | Title                    | USB CardReader&CONN         |
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|   |            |                    |            | Custom                   | Montevina Blade UMA LA4101P |
|   |            |                    |            | Date                     | Saturday, January 05, 2008  |
|   |            |                    |            | Sheet                    | 27 of 46                    |
|   |            |                    |            | Rev                      | 0.3                         |

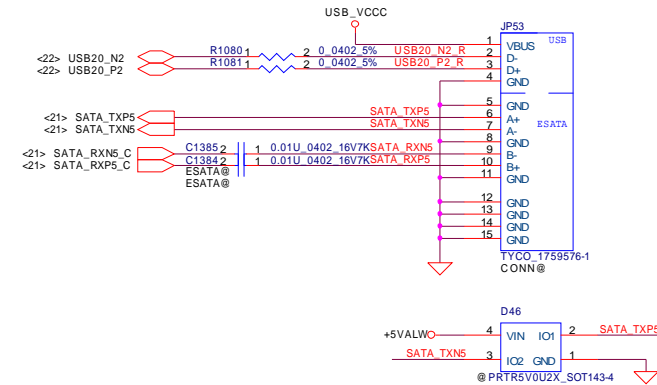




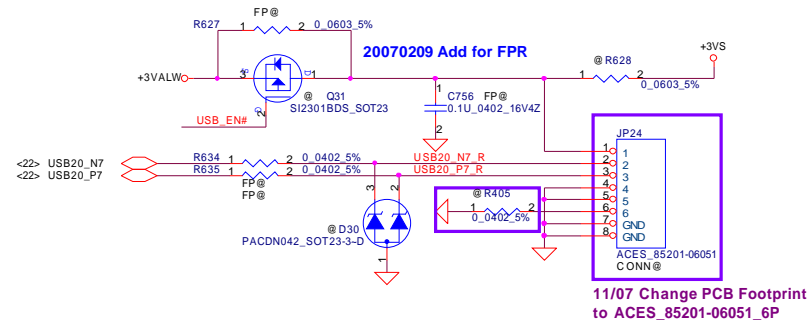
## Left side USB Connector



## Left side ESATA/USB combination Connector

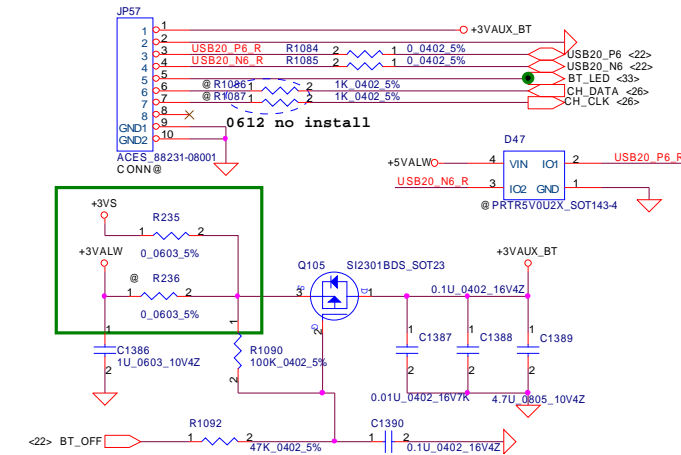


## Finger printer

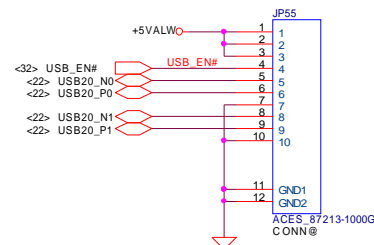


## BT Connector

Need change to New version



## USB cable connector for Right side



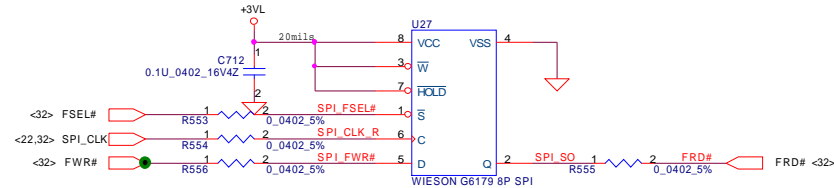
| Security Classification   | Compal Secret Data |                 |            | Title                      |                 |
|---|--------------------|-----------------|------------|----------------------------|-----------------|
| Issued Date   | 2007/08/28         | Deciphered Date | 2006/07/26 | USB, BT, eSATA             |                 |
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|   |                    |                 |            | Date                       | Rev             |
|   |                    |                 |            | Saturday, January 05, 2008 | 0.3             |
|   |                    |                 |            | Sheet                      | 30 of 46        |

Compal Electronics, Inc.

USB, BT, eSATA

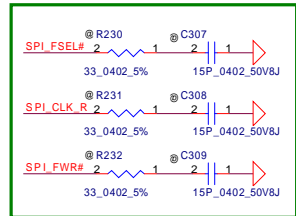
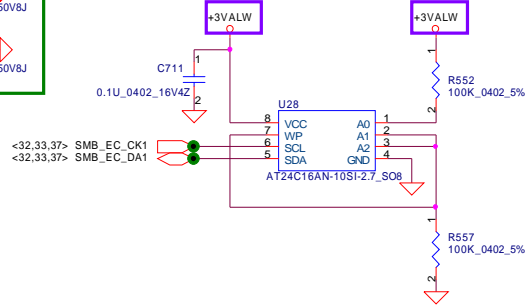
Montevina Blade UMA LA4101P

## SPI ROM

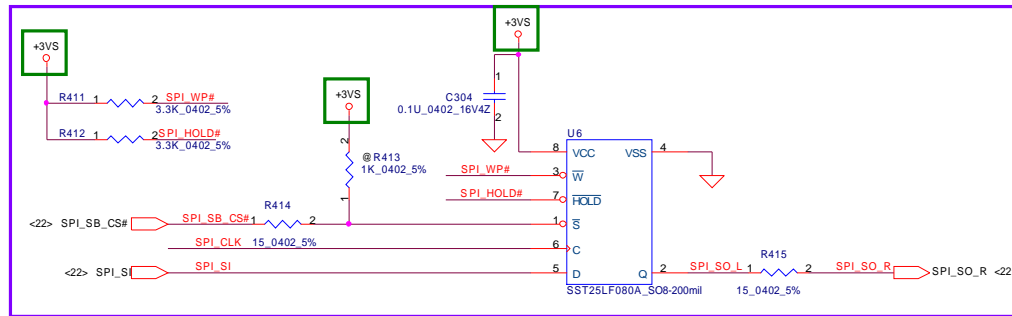


SP07000F500 S SOCKET WIESON G6179-100000 8P SPIFLASH  
WIESO\_G6179-100000\_8P

11/16 Change TO +3VALW



12/27EMI request

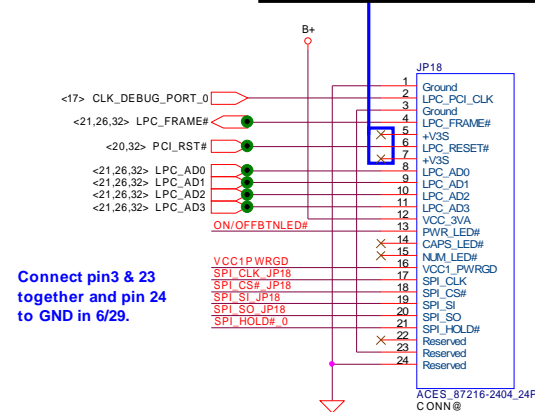


11/17 Add SB HDCP ROM

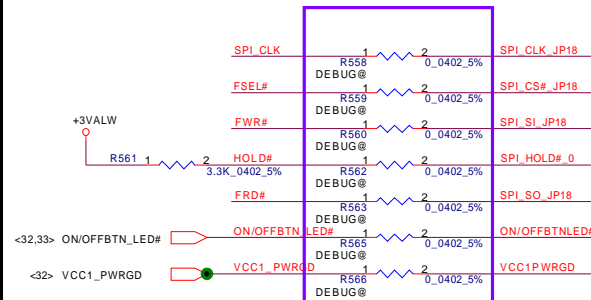
01/03 Change HDCP ROM to +3VS

## LPC Debug Port

Change from +3VL to +3VS. 6/9  
Removed +3VS. 6/13

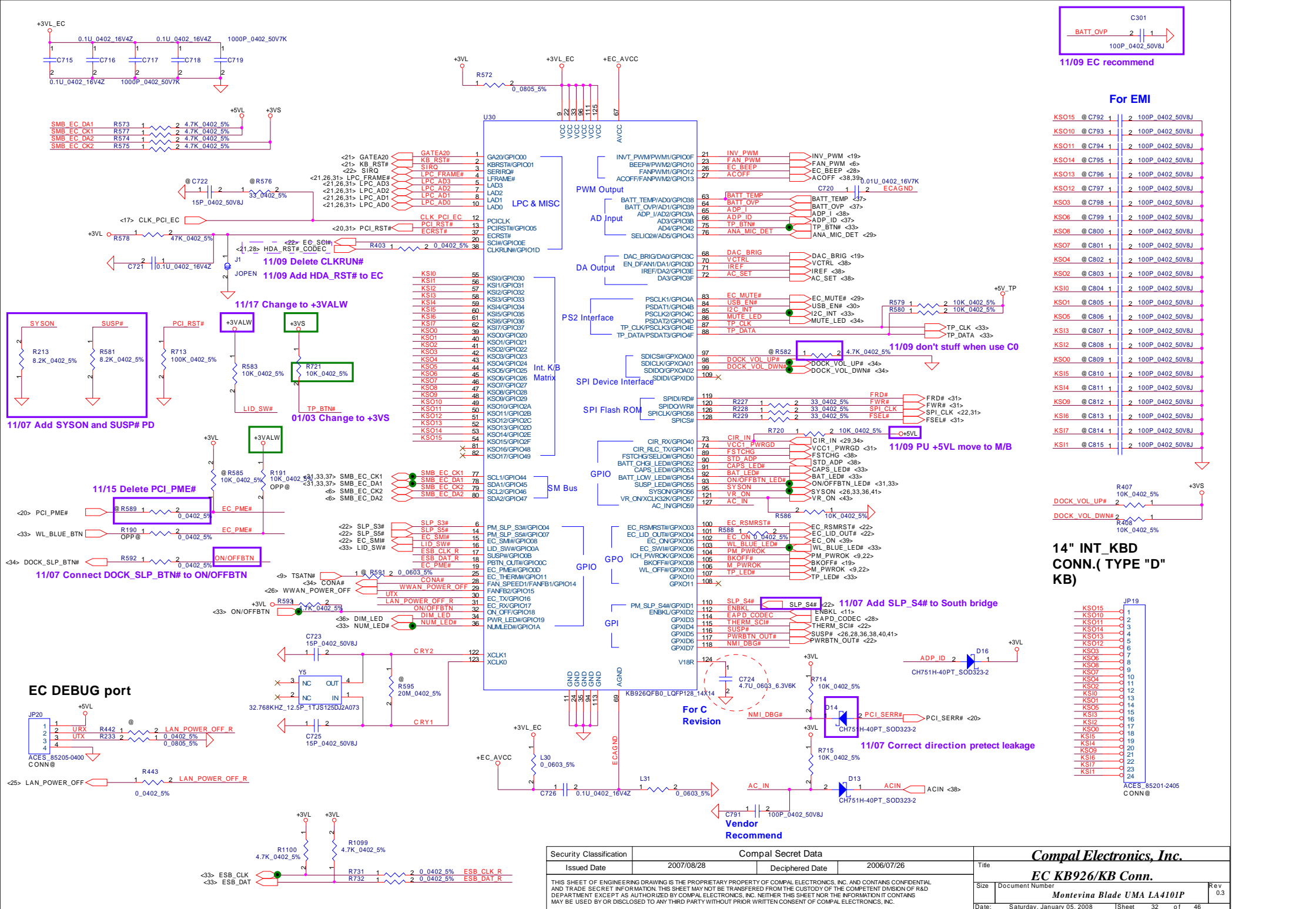


Connect pin3 & 23  
together and pin 24  
to GND in 6/29.

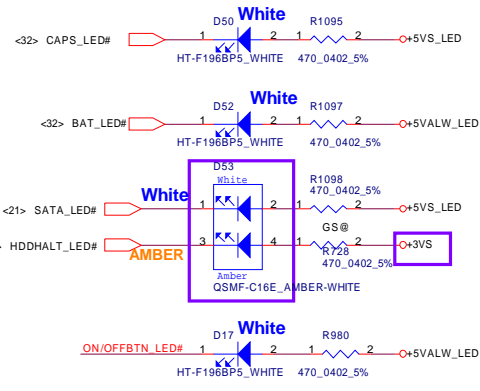


11/07 Add 0 Ohm for debug port

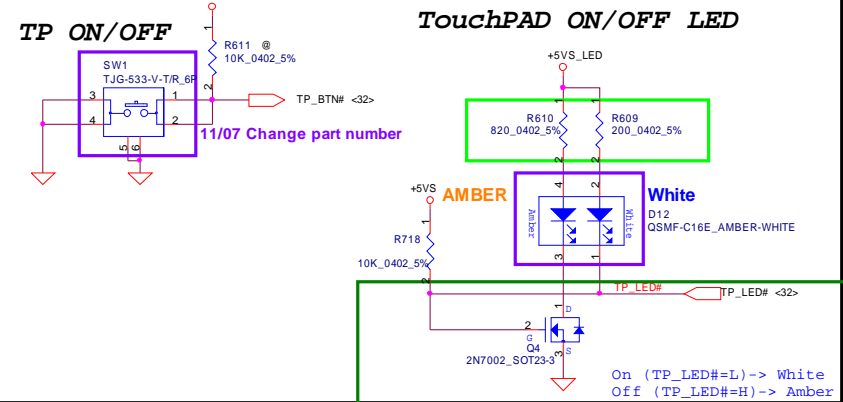
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|---|--------------------|-----------------|------------|-----------------------------|-----------------|
| Security Classification   | Compal Secret Data |                 |            | Title                       |                 |
| Issued Date   | 2007/08/28         | Deciphered Date | 2006/07/26 | Compal Electronics, Inc.    |                 |
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|   |                    |                 |            | Date                        | Rev             |
|   |                    |                 |            | Saturday, January 05, 2008  | 0.3             |
|   |                    |                 |            | Sheet                       | 31 of 46        |



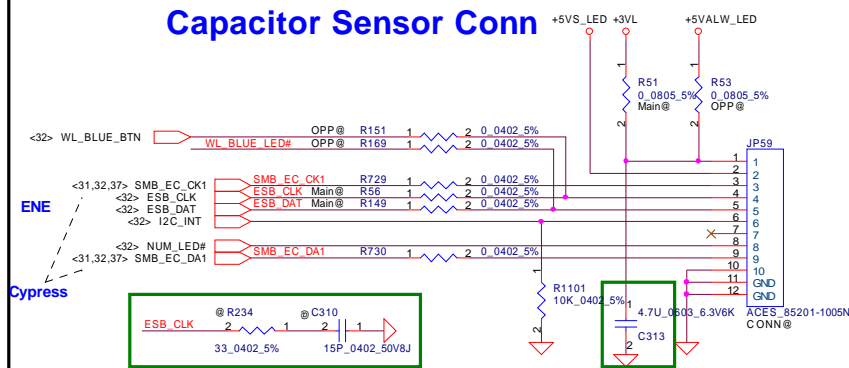
## System LED



## T/P Board (Inclue T/P\_ON/OFF)

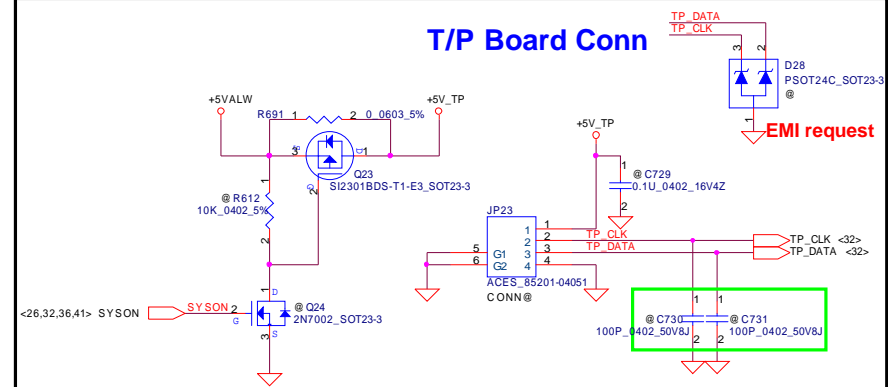


## Capacitor Sensor Conn

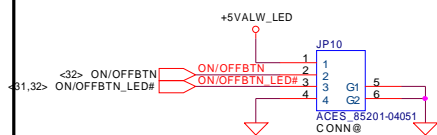


01/03 EMI request

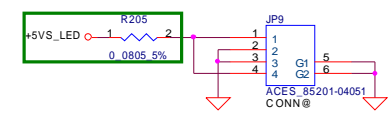
## T/P Board Conn



## ON/OFF Button Connector

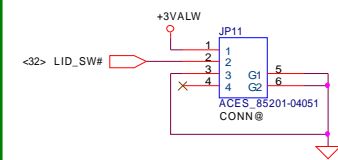


## Keyboard backlight Conn



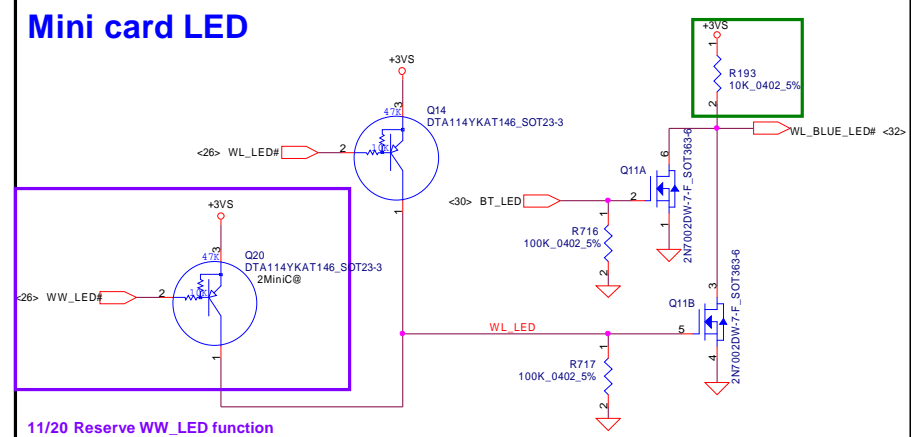
01/03 Keyboard backlight reserve a 0805 size resistor

## Lid Switch Connector



01/03 Change Lid switch connector type

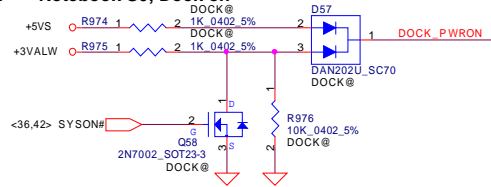
## Mini card LED



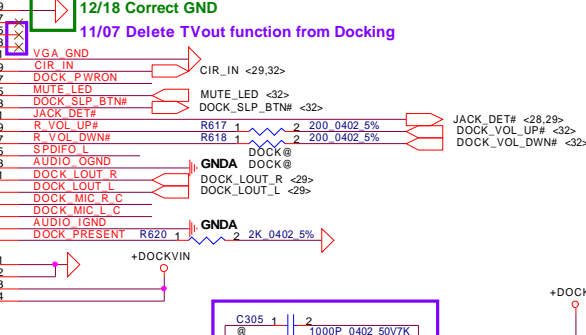
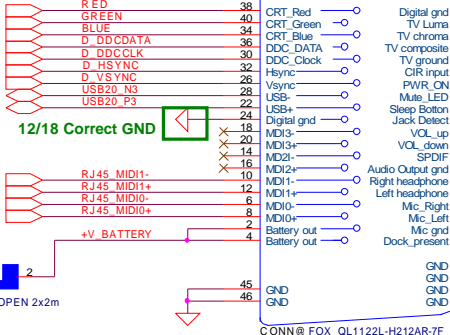
| Security Classification   |            | Compal Secret Data |            | Title                       |                 |
|---|------------|--------------------|------------|-----------------------------|-----------------|
| Issued Date   | 2007/08/28 | Deciphered Date    | 2006/07/26 | Compal Electronics, Inc.    |                 |
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|   |            |                    |            | KBD, ON/OFF, SW, CIR        |                 |
|   |            |                    |            | Montevina Blade UMA LA4101P |                 |
|   |            |                    |            | Date                        | Rev             |
|   |            |                    |            | Saturday, January 05, 2008  | 0.3             |
|   |            |                    |            | Sheet                       | 33 of 46        |

# Atlas/ Saturn Dock

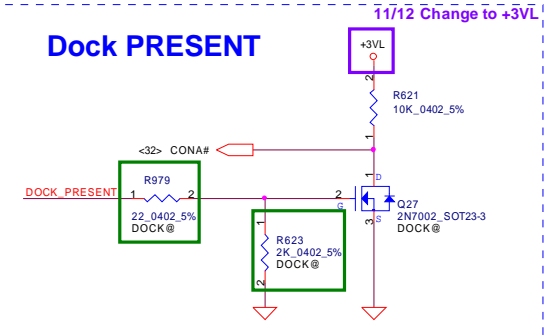
**DOCK\_PWR\_ON Spec**  
**0V = Notebook S4/S5, Dock off**  
**2.5V = Notebook S3, Dock on**  
**4V = Notebook S0, Dock on**



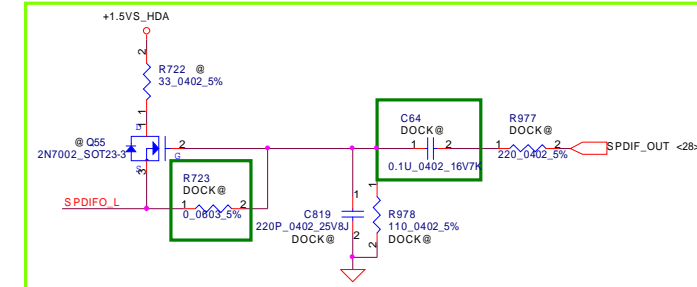
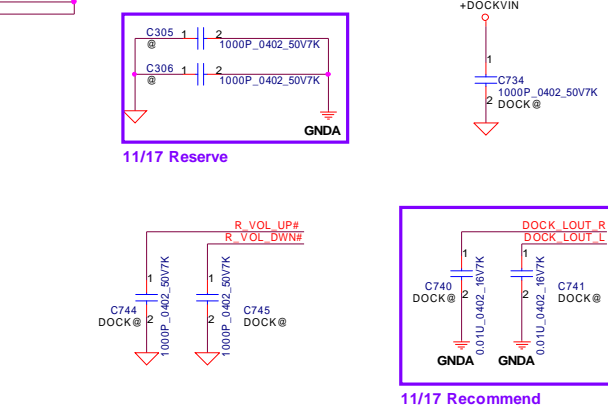
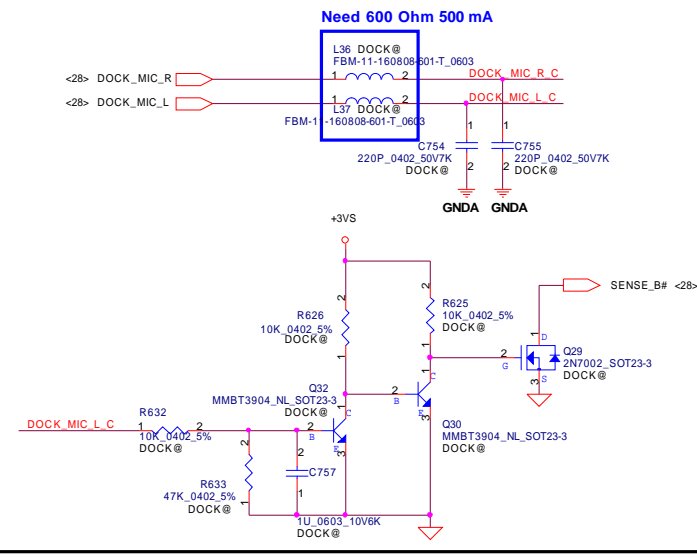
<18> RED  
 <18> GREEN  
 <18> BLUE  
 <18> D-DDC DATA  
 <18> D-DDC CLK  
 <18> D-HSYNC  
 <18> D-VSYNC  
 <22> USB20\_N3  
 <22> USB20\_P3



## Dock PRESENT



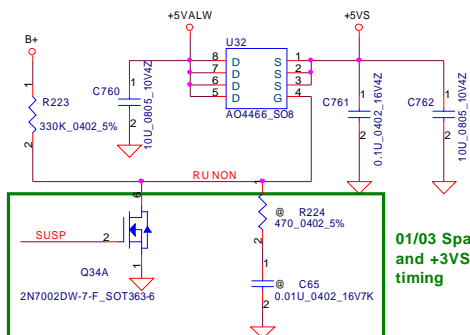
## MIC\_Dock



|   |                    |                 |            |                          |                             |
|---|--------------------|-----------------|------------|--------------------------|-----------------------------|
| Security Classification   | Compal Secret Data |                 |            | Compal Electronics, Inc. |                             |
| Issued Date   | 2007/08/28         | Deciphered Date | 2006/03/10 | Title                    |                             |
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|   |                    |                 |            | Date:                    | Saturday, January 05, 2008  |
|   |                    |                 |            | Sheet                    | 34 of 46                    |
|   |                    |                 |            | Rev                      | 0.3                         |

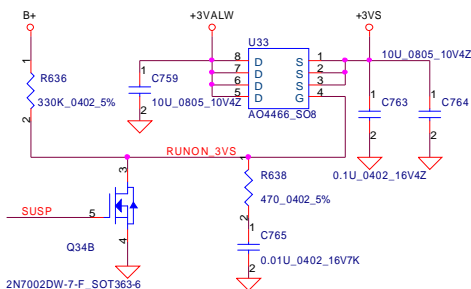


### +5VALW to +5VS Transfer

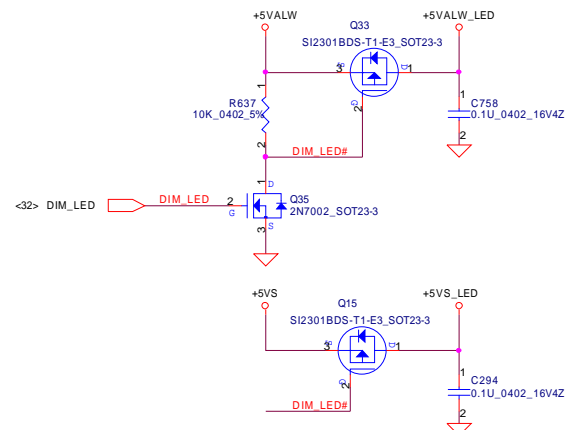


01/03 Sparate+5VS  
and +3VS power  
timing

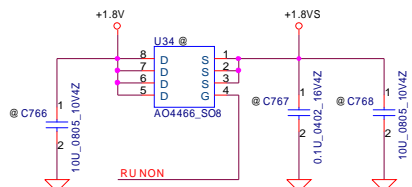
### +3VALW to +3VS Transfer



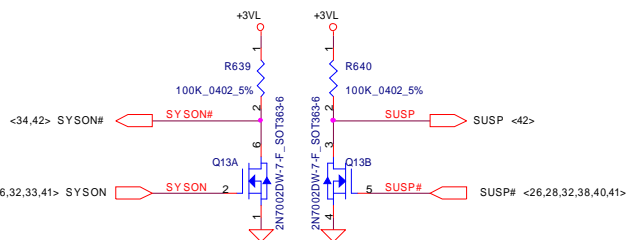
### DIM LED



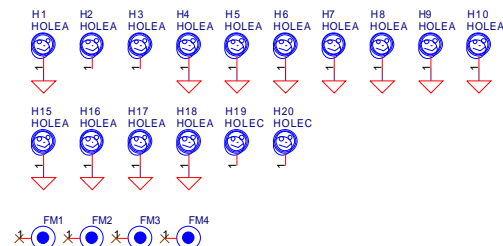
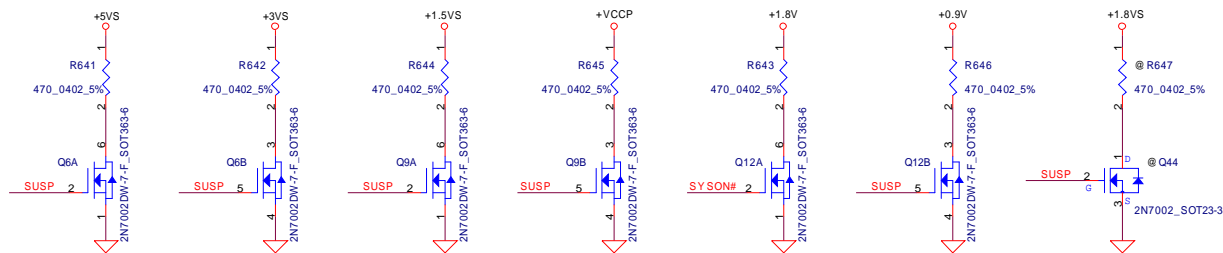
### +1.8V to +1.8VS Transfer



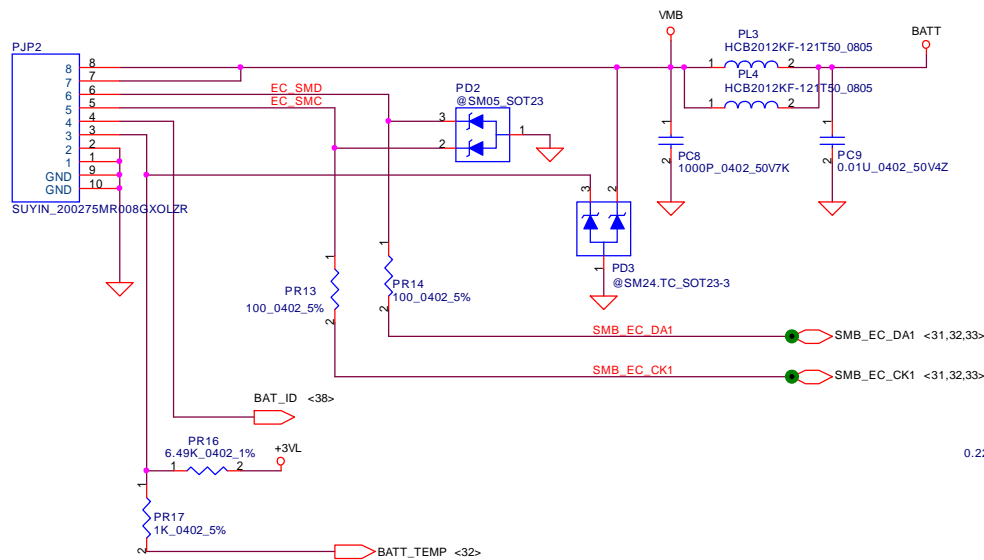
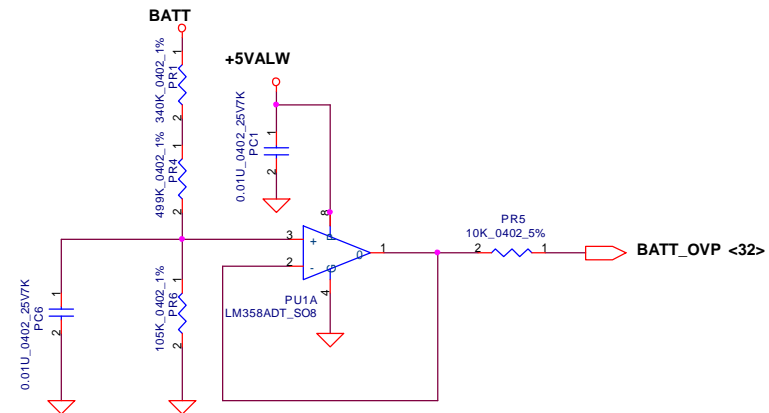
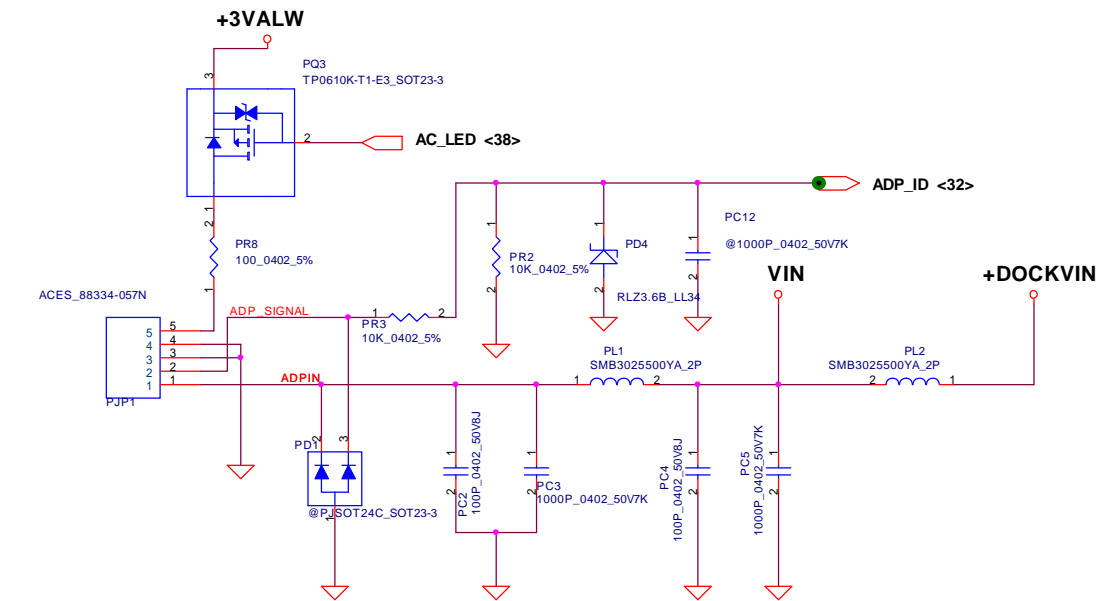
11/07 BOM Delete +1.8VS for Cardreader internal LDO



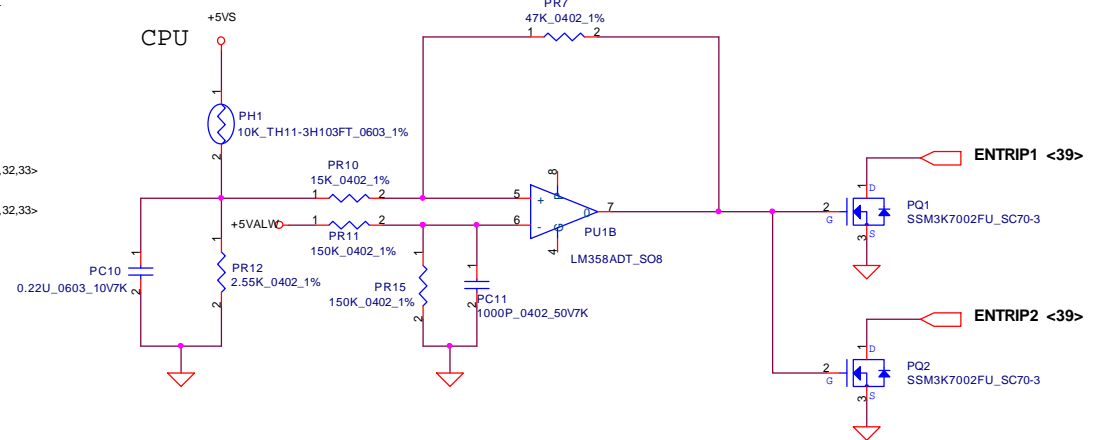
### Discharge circuit



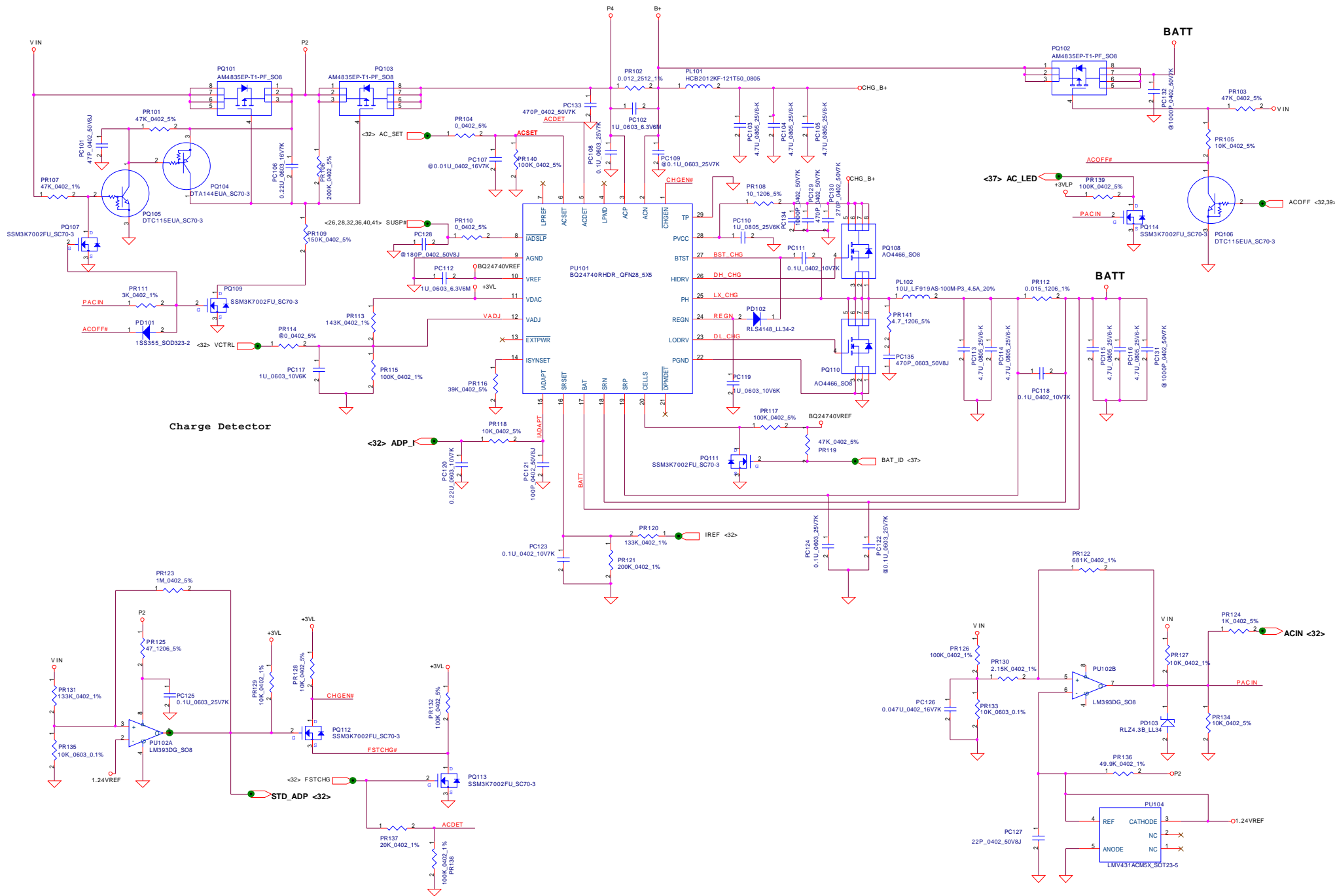
| Security Classification   |  |  |  | Compal Secret Data          |  |  |  | Compal Electronics, Inc. |  |  |  |
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| Issued Date   |  |  |  | Deciphered Date             |  |  |  | Title                    |  |  |  |
| 2007/08/28  |  |  |  | 2006/07/26                  |  |  |  | DC/DC Interface          |  |  |  |
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|   |  |  |  | Document Number             |  |  |  | 0.3                      |  |  |  |
|   |  |  |  | Montevina Blade UMA LA4101P |  |  |  |                          |  |  |  |
| Date:   |  |  |  | Saturday, January 05, 2008  |  |  |  | Sheet 36 of 46           |  |  |  |

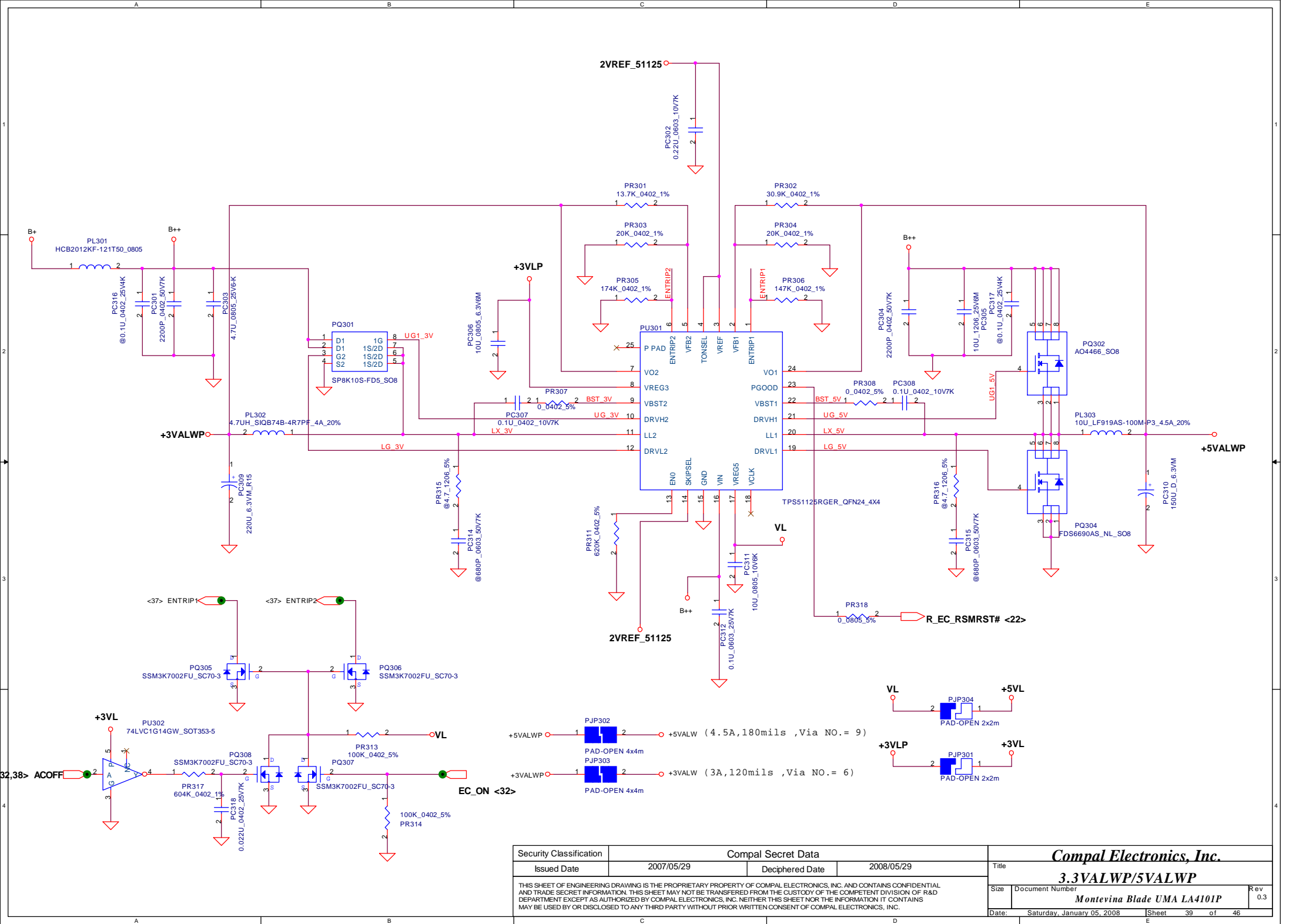


PH1 under CPU botten side :  
CPU thermal protection at 90 +-3 degree C  
Recovery at 47 +-3 degree C



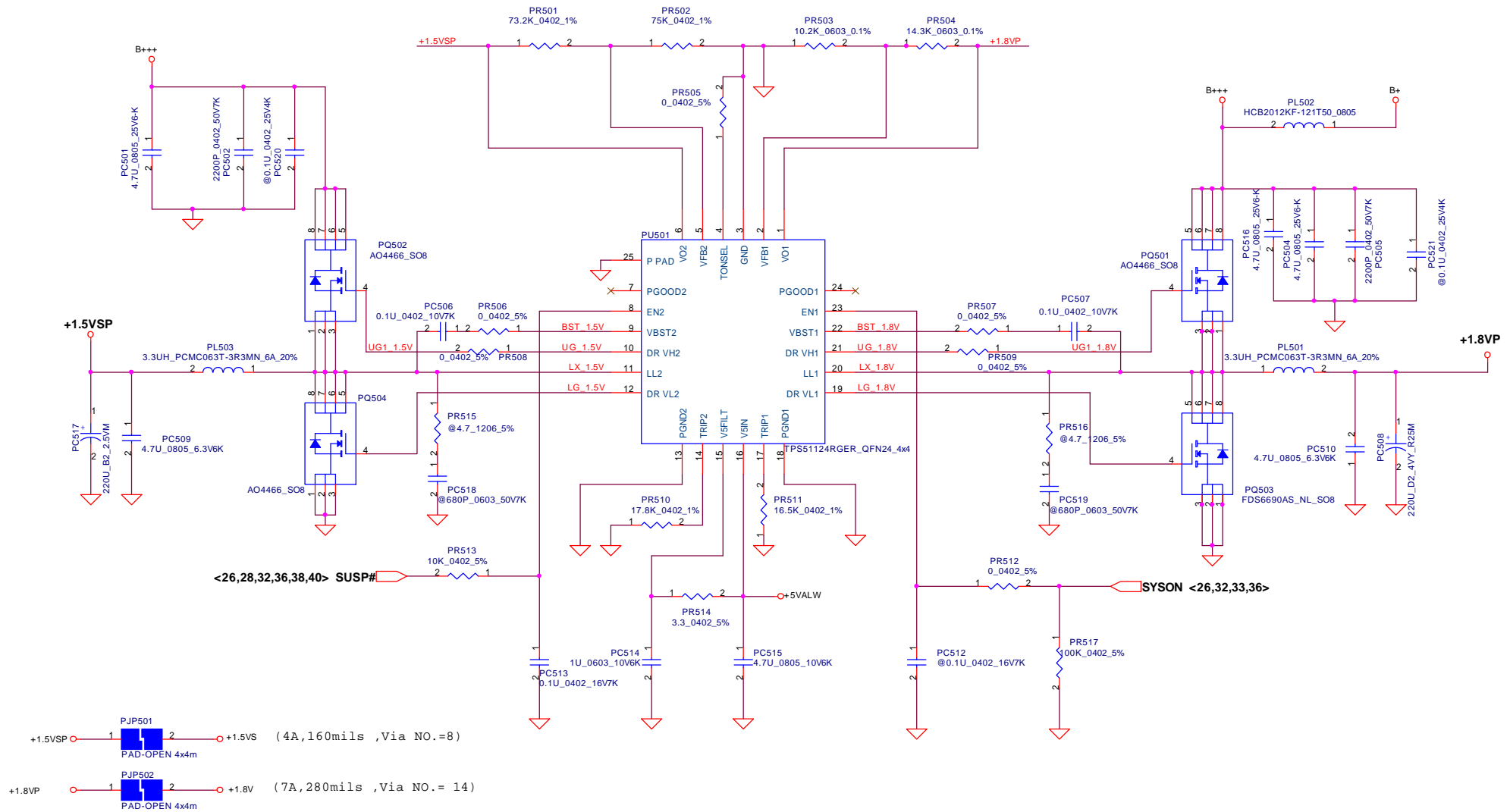
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| Security Classification   |            | Compal Secret Data |            | Title                       |                 |
| Issued Date   | 2007/05/29 | Deciphered Date    | 2008/05/29 | DC Connector/CPU_OTP        |                 |
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|   |            |                    |            | Montevina Blade UMA LA4101P |                 |
|   |            |                    |            | Date                        | Rev             |
|   |            |                    |            | Saturday, January 05, 2008  | 0.3             |
|   |            |                    |            | Sheet                       | 37 of 46        |



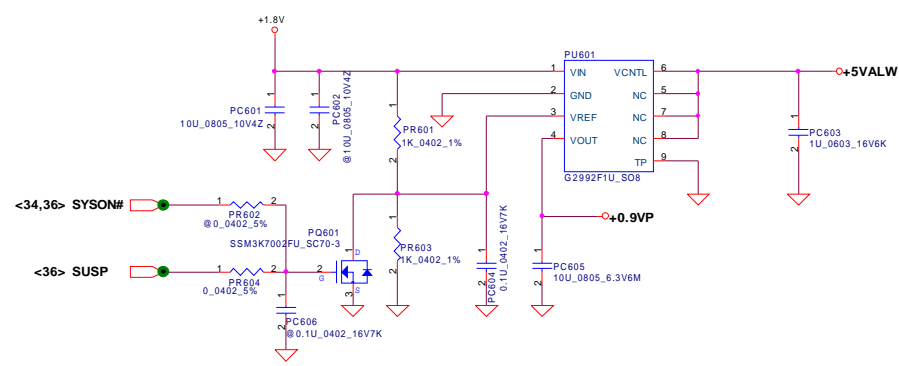


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| Security Classification   |            | Compal Secret Data |            | Title                       |                 |
| Issued Date   | 2007/05/29 | Deciphered Date    | 2008/05/29 | 3.3VALWP/5VALWP             |                 |
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|   |            |                    |            | Montevina Blade UMA LA4101P |                 |
|   |            |                    |            | Date:                       | Rev             |
|   |            |                    |            | Saturday, January 05, 2008  | 0.3             |
|   |            |                    |            | Sheet                       | 39 of 46        |

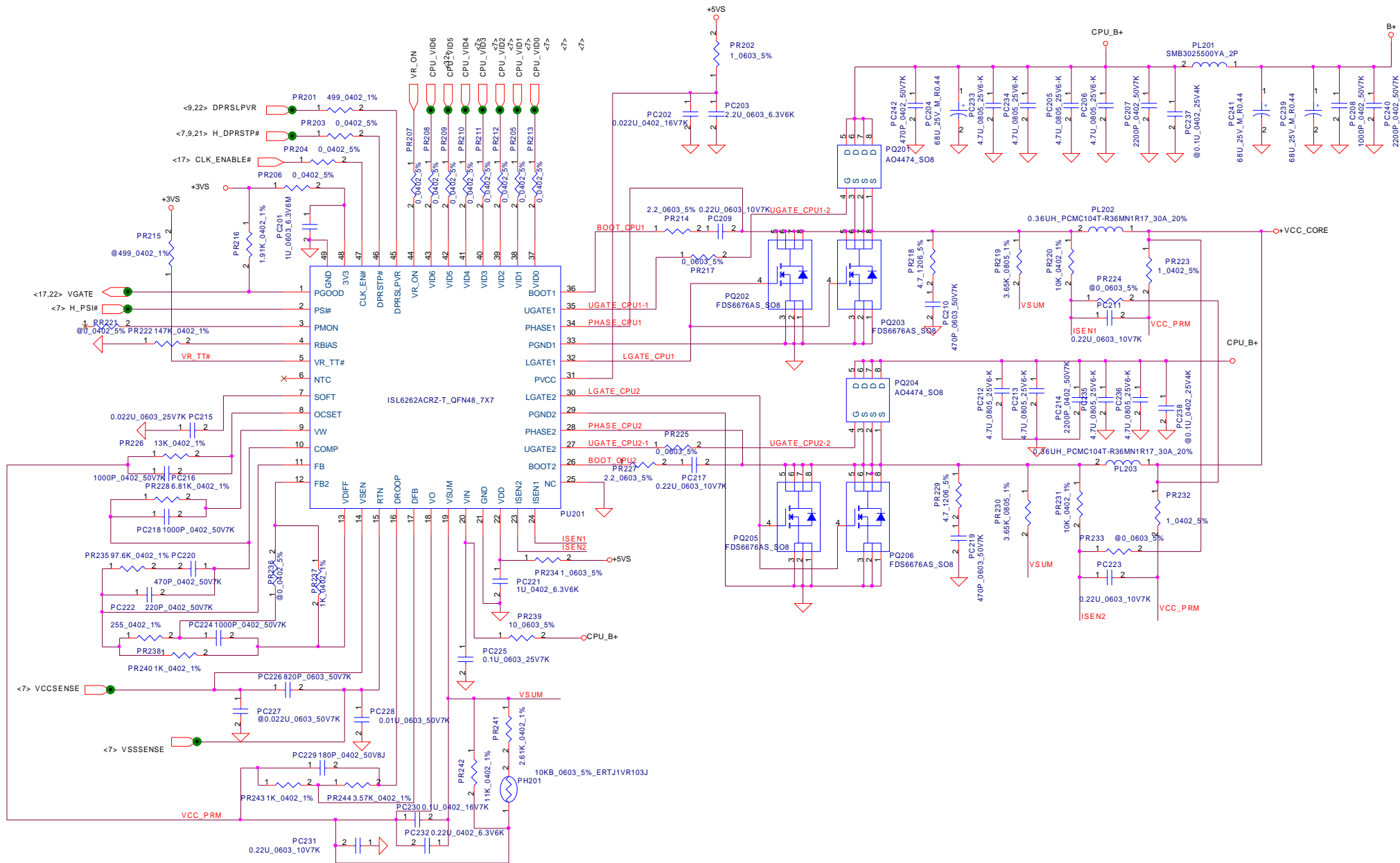




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| Security Classification   |            | Compal Secret Data |            | Title                       |                            |
| Issued Date   | 2007/05/29 | Deciphered Date    | 2008/05/29 | 1.5VSP/1.8VP                |                            |
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|   |            |                    |            | Date:                       | Saturday, January 05, 2008 |
|   |            |                    |            | Sheet                       | 41 of 46                   |
|   |            |                    |            | Rev                         | 0.3                        |



|   |                    |                 |            |                          |                             |                |
|---|--------------------|-----------------|------------|--------------------------|-----------------------------|----------------|
| Security Classification   | Compal Secret Data |                 |            | Compal Electronics, Inc. |                             |                |
| Issued Date   | 2006/11/23         | Deciphered Date | 2007/11/23 | Title                    | 0.9VP/1.1V PCIE             |                |
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|   |                    |                 |            |                          | Montevina Blade UMA LA4101P | 0.3            |
|   |                    |                 |            | Date:                    | Saturday, January 05, 2008  | Sheet 42 of 46 |



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| Item | Fixed Issue (Reason for change)                          | PAGE  | Modify List  | Date  | Phase |
|------|--|-------|--|-------|-------|
| 1    | Transation Fail  | 08    | C41、C42、C43、C44 Change ESR=7m ohm  | 11/21 | SI-1  |
| 2    | Disable TV out function from Docking                     | 11、34 | R61、R62、R63 change to 75 Ohm、TV_DCONSEL_0、TV_DCONSEL_1 connect to GND  | 11/07 | SI-1  |
| 3    | Update Connetor Library                                  |       | CRT(JCRT1)、HDMI(JHDMI1)、ESATA(JP53)、Finger print(JJP24)、FAN(JP2)、Speaker(JP60)、Multi bay(JP12)、Dual LED(D53、D12)                           | 11/17 | SI-1  |
| 4    | Delete LVDS B channel                                    | 11、19 | Schematic Delete   | 11/17 | SI-1  |
| 5    | USB camera Footprint error                               | 19    | Change U42 to G916-390T1UF SOT23, it adjustable mode, R1091=215K、R1093=100K  | 11/07 | SI-1  |
| 6    | Reserve Card reader D3E function                         | 22、27 | GPIO6= CR_CPPE#、GPIO22=CR_WAKE#  | 11/17 | SI-1  |
| 7    | Swap PCIE LAN and New card                               | 22    | Swap PCIE4 and PICE6   | 11/17 | SI-1  |
| 8    | Add HDCP ROM for ICH9M                                   | 22、31 | Add HDCP ROM for ICH9M   | 11/17 | SI-1  |
| 9    | Change G sensor control from SB、LED drive by +5VS        | 22、33 | Change G sensor control from SB  | 11/17 | SI-1  |
| 10   | Avoid Battery mode can't boot issue                      | 22、39 | Add +3VALW GD to EC_RSMRST# to fix Battery mode can't boot issue   | 11/17 | SI-1  |
| 11   | Add G sensor ST and Bosch                                | 24    | Add G sensor ST and Bosch  | 11/17 | SI-1  |
| 12   | Change LAN solution (Marvell to Realtek)                 | 25    | Change LAN solution (Marvell to Realtek)   | 11/17 | SI-1  |
| 13   | LAN can't work   | 25    | U46 Change to correct transformer type   | 11/17 | SI-1  |
| 14   | Cardreader schematic review and update, add D3E function | 27    | R709-->10K、R402-->8.2K、R704-->Stuff、R705-->@、U37-->@、Cardreader LED-->+5VS、add D3E function  | 11/17 | SI-1  |
| 15   | Jack can't detect normal                                 | 28    | R1059 change from 39.2 to 39.2K  | 11/17 | SI-1  |
| 16   | Speaker work un normal                                   | 28    | Add and Stuff C1362、R1065、R596   | 11/17 | SI-1  |
| 17   | HP audio team recommend                                  | 28、29 | C285~C292、C1352、C1354 change to 0.022U、Amp output setup to 15.6 dB、Reserve C305、C306 for GNDA and GND                                      | 11/17 | SI-1  |
| 18   | Audio jack can't detect normal                           | 29    | Add Pull up resistor R401 to +3VALW  | 11/17 | SI-1  |
| 19   | Docking HP audio test fail                               | 29    | Add C295、C296 to avoid DC level, and add R409、R410 to reduce HP out level  | 11/17 | SI-1  |
| 20   | Leakage problem  | 32    | Correct direction prectect leakage   | 11/07 | SI-1  |
| 21   | EC pin define update                                     | 32    | Delete EC_PME#、SYSON PU、SUSP# PU、LID_SW# change to +3VALW、Delete CLKRUN#、R582->@ for C0 chip、CIR PU+5VL、add 100P to BATT_OVP(EC recommend) | 11/07 | SI-1  |
| 22   | Can't Hibernation(SLP_S4#)                               | 32    | Connect SLP_S4# to SB  | 11/17 | SI-1  |
| 23   | EC can't receive docking present                         | 34    | CONA# change +3VL  | 11/12 | SI-1  |
| 24   | HDMI can't detect  | 35    | DDC_EN must enable、TMDS_B_HPDP# inverse  | 11/07 | SI-1  |
| 25   | LVDS power on timing                                     | 19    | C238 change to 0.047u to meet TI timing  | 01/03 | SI-2  |
| 26   | Prevent WWAN nosie                                       | 21    | Add 12p on HDA_SDOUT and HDA_SDOUT   | 01/03 | SI-2  |
| 27   | Power leakage  | 21、31 | Change HDCP ROM to +3VS power plane  | 01/03 | SI-2  |
| 28   | Prevent WLAN leakage                                     | 26    | Add Diode prevent WLAN leakage   | 01/03 | SI-2  |

| Item | Fixed Issue (Reason for change)                 | PAGE | Modify List                                     | Date  | Phase |
|------|---|------|---|-------|-------|
| 29   | New card PTH connector GND                      | 26   | New card PTH connector GND                      | 01/03 | SI-2  |
| 30   | Change Cardreader LED control                   | 27   | Change Cardreader LED control                   | 01/03 | SI-2  |
| 31   | Change SPDIF to SPDIF1                          | 28   | Change to SPDIF1                                | 01/03 | SI-2  |
| 32   | Shut down pop noise                             | 29   | Change C293 to 1U                               | 01/03 | SI-2  |
| 33   | Change BT power to +3VS                         | 30   | Change BT power to +3VS                         | 01/03 | SI-2  |
| 34   | EMI Request                                     | 31   | SPI_FSEL# 、SPI_CLK_R 、SPI_FWR# reserver RC      | 01/03 | SI-2  |
| 35   | Reserver 0 ohm co lay with common choke         | 35   | Reserver 0 ohm co lay with common choke         | 01/03 | SI-2  |
| 36   | Sparate+5VS and +3VS power timing               | 36   | Sparate+5VS and +3VS power timing               | 01/03 | SI-2  |
| 37   | Keyboard backlight reserve a 0805 size resistor | 33   | Keyboard backlight reserve a 0805 size resistor | 01/03 | SI-2  |
| 38   | Change Lid switch connector type                | 33   | Change Lid switch connector type                | 01/03 | SI-2  |
| 39   |   |      |   |       |       |
| 40   |   |      |   |       |       |
| 41   |   |      |   |       |       |
| 42   |   |      |   |       |       |
| 43   |   |      |   |       |       |
| 44   |   |      |   |       |       |
| 45   |   |      |   |       |       |
| 46   |   |      |   |       |       |
| 47   |   |      |   |       |       |
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| 49   |   |      |   |       |       |
| 50   |   |      |   |       |       |
| 51   |   |      |   |       |       |
| 52   |   |      |   |       |       |
| 53   |   |      |   |       |       |
| 54   |   |      |   |       |       |
| 55   |   |      |   |       |       |
| 56   |   |      |   |       |       |

Version Change List ( P. I. R. List ) for Power Circuit

| Item  | Page #                      | Title                 | Date       | Request Owner | Issue Description | Solution Description  | Rev.                    |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
|---|-----------------------------|-----------------------|------------|---------------|-------------------|---|-------------------------|--------------------|--|--|-------------|------------|-----------------|------------|---|--|--|--|---|-------|--|--|------------------------------|--|--|------|-----------------|-----|--------|-----------------------------|-----|-------|----------------------------|----------------|
| 1   | 37                          | DC Connector /CPU_OTP | 11/06      | Compal        | Add PD4 & PC12    | Add PD4 & PC12  |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 2   | 39                          | 3.3VALWP/5VALWP       | 11/06      | Compal        | for Layout        | Change PQ301 cancel PQ303   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 3   | 38                          | Charger               | 11/06      | Compal        | EMI solution      | Add pc128   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 4   | 43                          | +CPU_CORE             | 11/06      | Compal        | EMI solution      | Add PC240   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 5   | 39                          | 3.3VALWP/5VALWP       | 11/14      | Compal        | for Layout        | Change PL303 and PC310  |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 6   | 38                          | Charger               | 12/31      | Compal        | EMI solution      | Add PC129, PC130, PC131, PC132, PC133   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 7   | 43                          | +CPU_CORE             | 12/31      | Compal        | EMI solution      | Add PC242   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 8   | 39                          | 3.3VALWP/5VALWP       | 12/31      | Compal        | PWR request       | Add PU302, control signal changed to ACOFF  |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 9   |                             |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 10  |                             |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 11  |                             |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 12  |                             |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 13  |                             |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| 14  |                             |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
|   |                             |                       |            |               |                   | <table><tr><td>Security Classification</td><td colspan="3">Compal Secret Data</td></tr><tr><td>Issued Date</td><td>2007/08/02</td><td>Deciphered Date</td><td>2008/08/02</td></tr><tr><td colspan="4">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&amp;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.</td></tr></table> | Security Classification | Compal Secret Data |  |  | Issued Date | 2007/08/02 | Deciphered Date | 2008/08/02 | 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. |  |  |  | <table><tr><td colspan="3">Title</td></tr><tr><td colspan="3">Power Changed-List History-1</td></tr><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>Custom</td><td>Montevina Blade UMA LA4101P</td><td>0.3</td></tr><tr><td>Date:</td><td>Saturday, January 05, 2008</td><td>Sheet 46 of 46</td></tr></table> | Title |  |  | Power Changed-List History-1 |  |  | Size | Document Number | Rev | Custom | Montevina Blade UMA LA4101P | 0.3 | Date: | Saturday, January 05, 2008 | Sheet 46 of 46 |
| Security Classification   | Compal Secret Data          |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
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| Title   |                             |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| Power Changed-List History-1  |                             |                       |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| Size  | Document Number             | Rev                   |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| Custom  | Montevina Blade UMA LA4101P | 0.3                   |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |
| Date:   | Saturday, January 05, 2008  | Sheet 46 of 46        |            |               |                   |   |                         |                    |  |  |             |            |                 |            |   |  |  |  |   |       |  |  |                              |  |  |      |                 |     |        |                             |     |       |                            |                |