

# Compal confidential

## Schematics Document

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

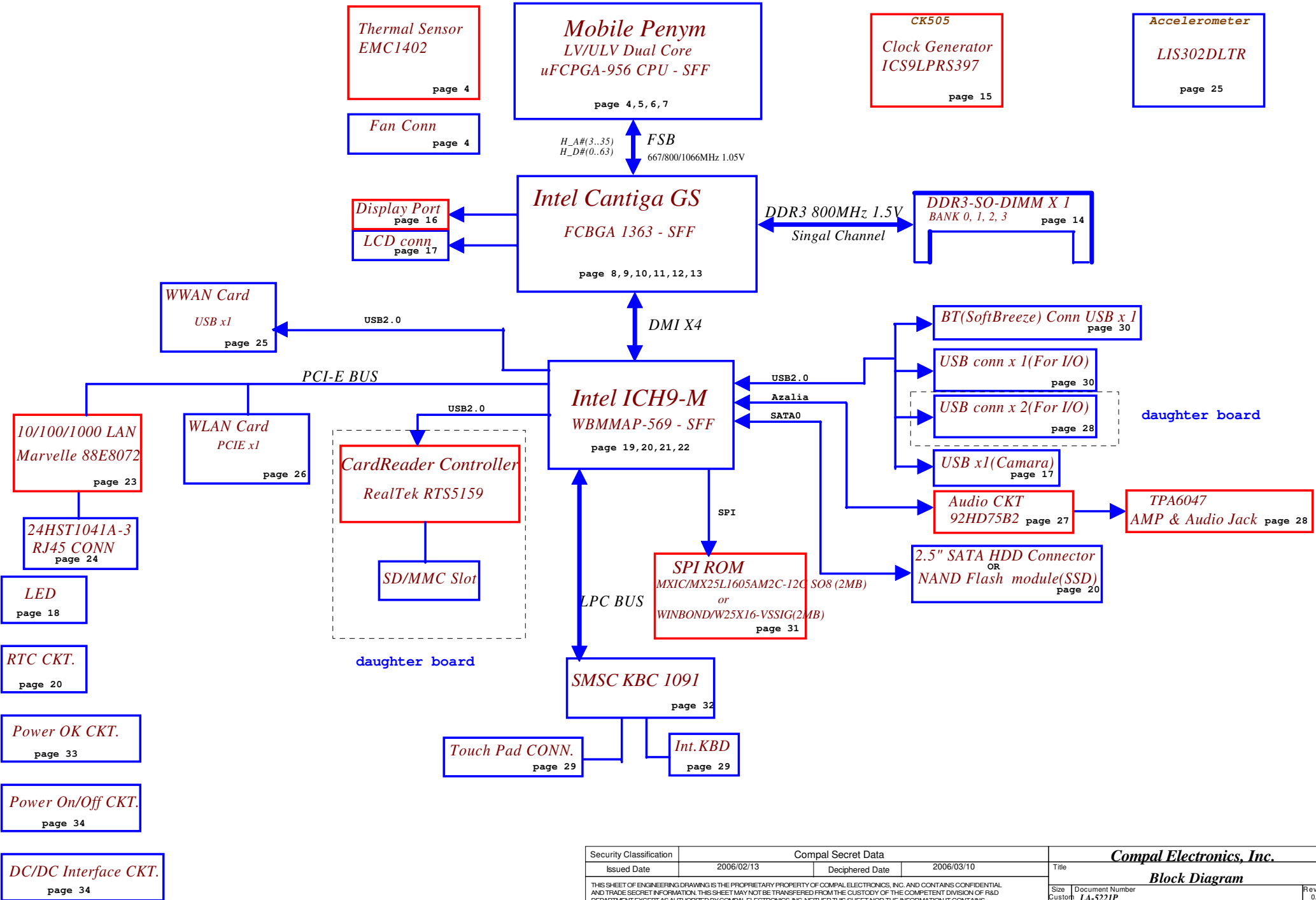
Fossil

2009-02-03

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

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |             |                 |       |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title       |                 |       |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2006/02/13 | Deciphered Date    | 2006/03/10 | Cover Sheet |                 |       |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom      | LA-522IP        | 0.1   |
| Date: Tuesday, February 03, 2009                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                    |            | Sheet       | 1               | of 45 |

# Fossil

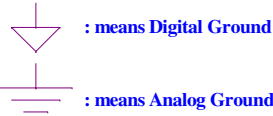


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                            |                 |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Tuesday, February 03, 2009 | 0.1             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                      | 2 of 45         |

Voltage Rails ( O MEANS ON X MEANS OFF )

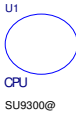
| <div>power plane</div> <div>State</div> | <div>+B</div> <div>+3VL</div> | <div>+5VALW</div> <div>+3VALW</div> | <div>+1.8V</div> | <div>+5VS</div> <div>+3VS</div> <div>+1.5VS</div> <div>+0.9V</div> <div>+VCCP</div> <div>+CPU_CORE</div> |
|-----------------------------------------|-------------------------------|-------------------------------------|------------------|----------------------------------------------------------------------------------------------------------|
| 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 just reserve , no build  
CONN@ : means ME part.  
45@ : means install after SMT.

ULV723@ mean CPU ULV723 (U1) for L01  
SU9300@ mean CPU SU9300 (U1) for L02



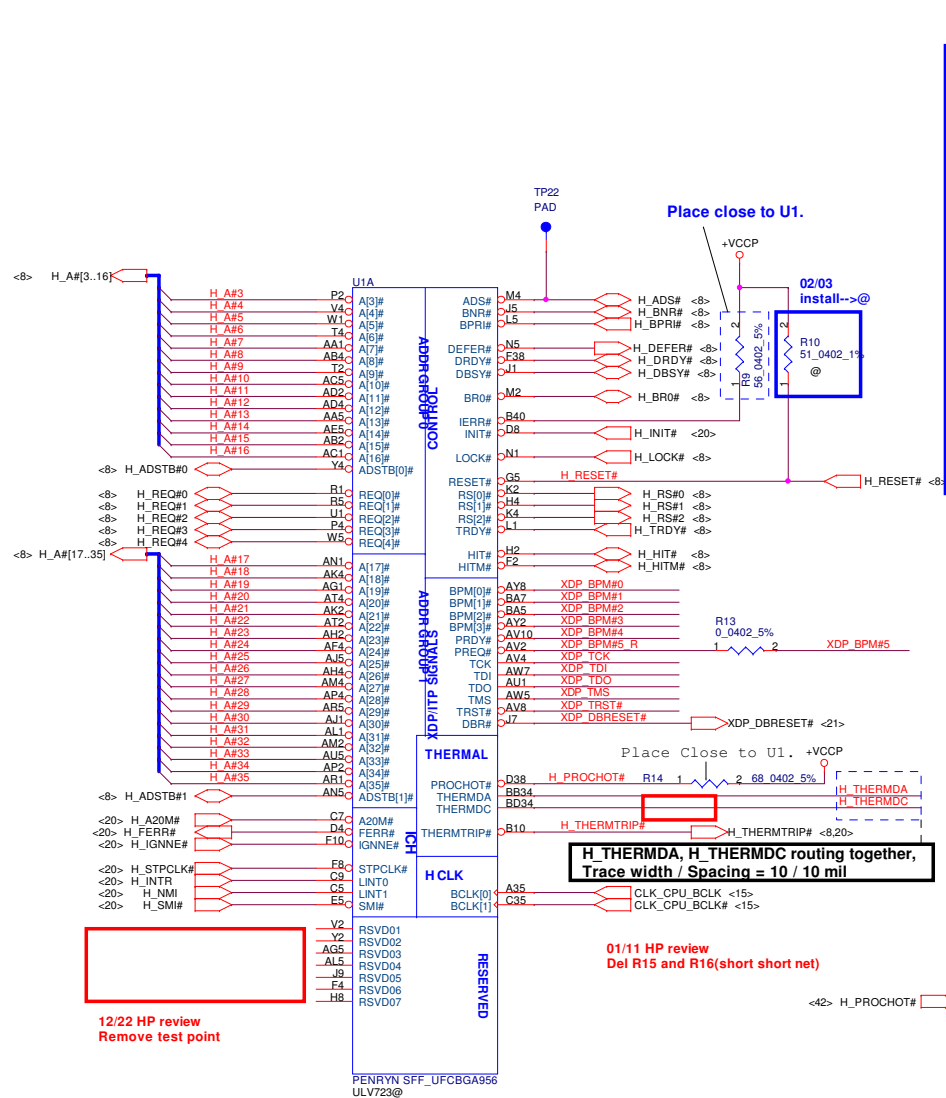
I2C / SMBUS ADDRESSING

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

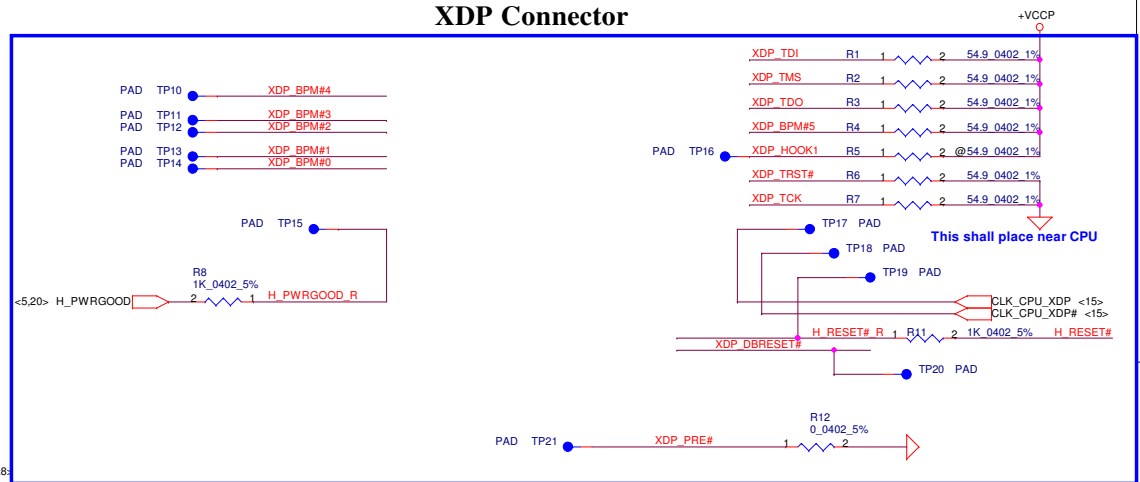
SMBUS Control Table

|                            | SOURCE  | INVERTER | BATT | SERIAL EEPROM | THERMAL SENSOR (CPU) | SODIMM | CLK CHIP | MINI CARD | LCD |
|----------------------------|---------|----------|------|---------------|----------------------|--------|----------|-----------|-----|
| SMB_EC_CK1<br>SMB_EC_DA1   | KB926   | X        | V    | V             | X                    | X      | X        | X         | X   |
| SMB_EC_CK2<br>SMB_EC_DA2   | KB926   | X        | X    | X             | V                    | X      | X        | X         | X   |
| SMB_CK_CLK1<br>SMB_CK_DAT1 | ICH9    | X        | X    | X             | X                    | V      | V        | V         | X   |
| LCD_CLK<br>LCD_DAT         | Cantiga | X        | X    | X             | X                    | X      | X        | X         | V   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|-----------------------------|
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Size<br>Custom           | Document Number<br>LA-522IP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Tuesday, February 03, 2009  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Sheet                    | 3 of 45                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Rev                      | 0.1                         |

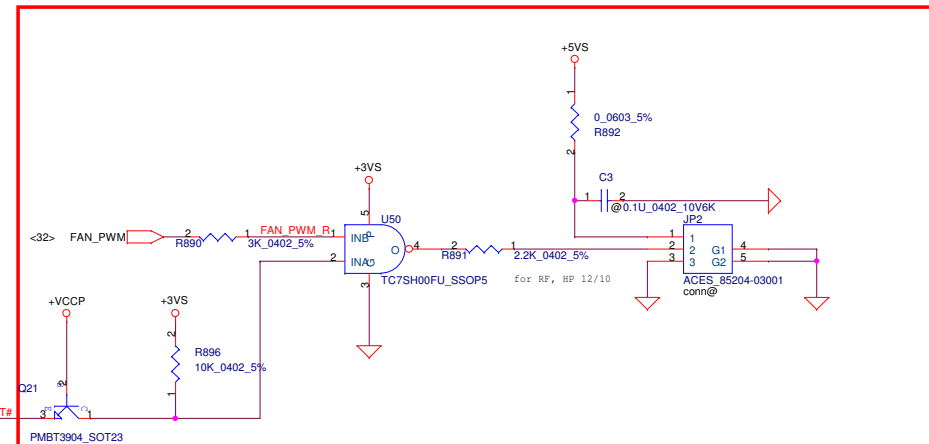


## XDP Connector

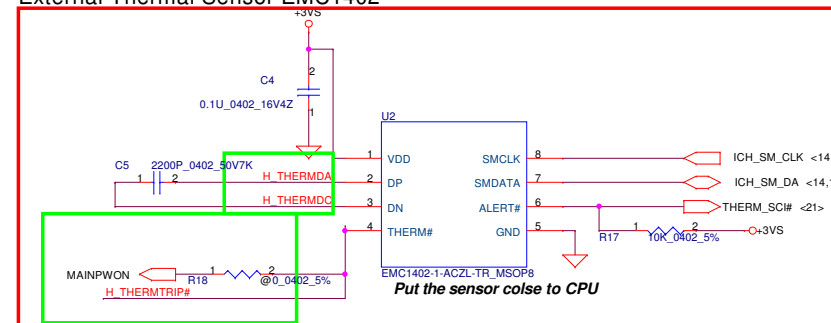


## PWM Fan Control circuit

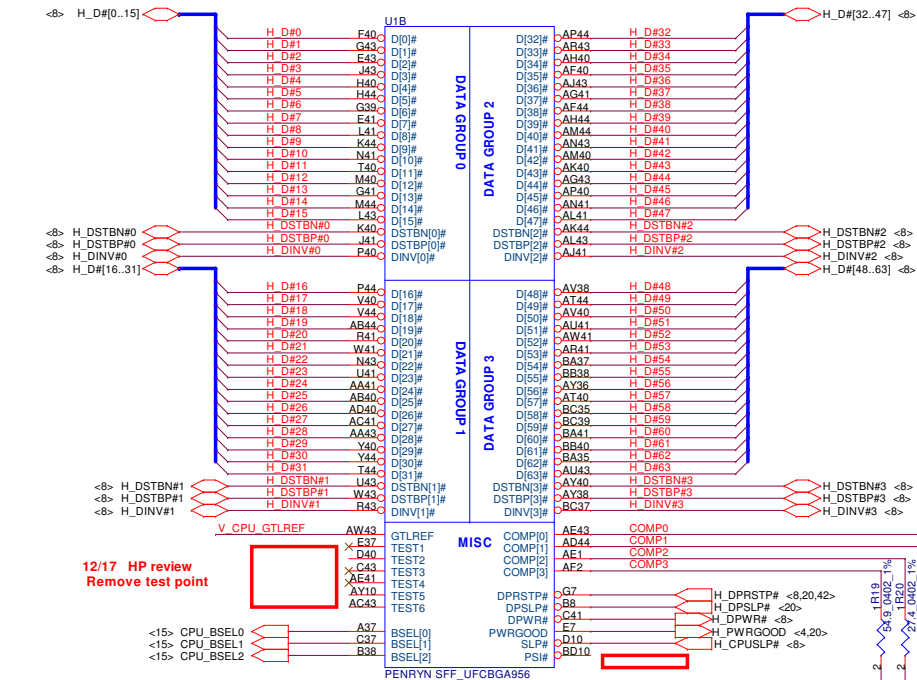
12/22 Follow consumer design



## External Thermal Sensor EMC1402



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          |                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------|--------------------------------------------------|
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Rev<br>0.1                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Date: Tuesday, February 03, 2009   Sheet 4 of 45 |



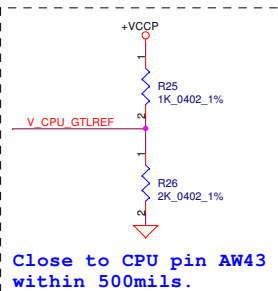
layout note: Route TEST3 & TEST5 traces on ground referenced layer to the TPs

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

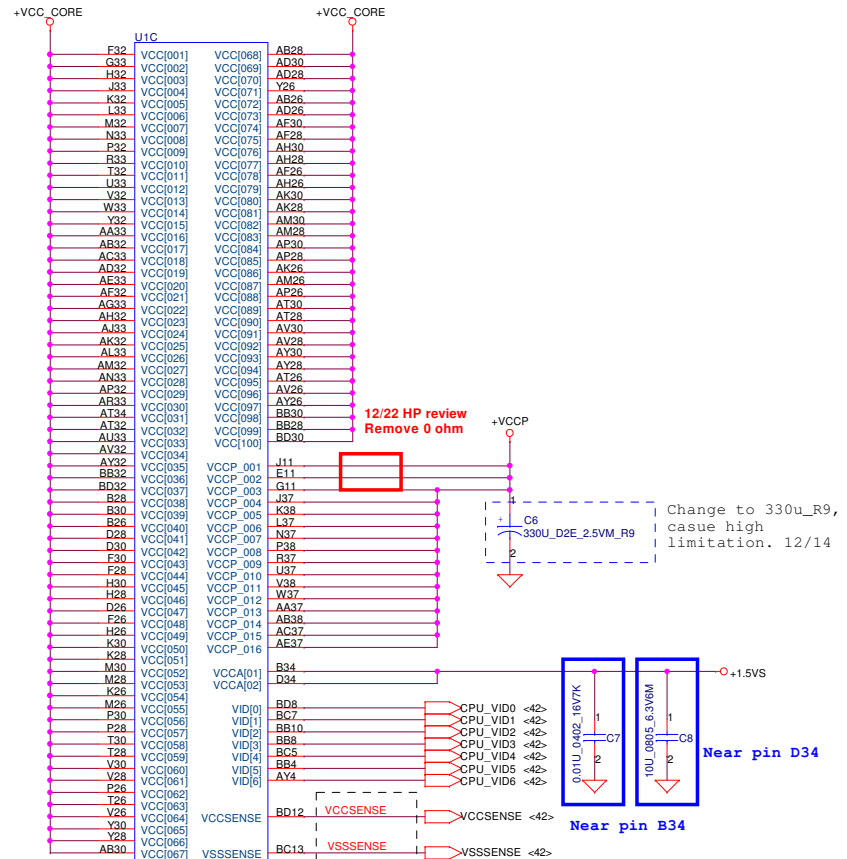
Cause CPU core power change to 1 phase, and not need support the pin, leave it as TP. 10/02

12/22 HP review  
Remove test point

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.



Close to CPU pin AW43 within 500mils.



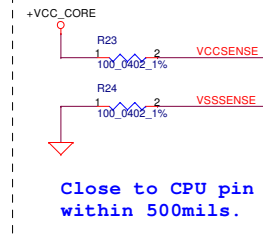
12/22 HP review  
Remove 0 ohm

Change to 330u\_R9, casue high limitation. 12/14

Near pin D34

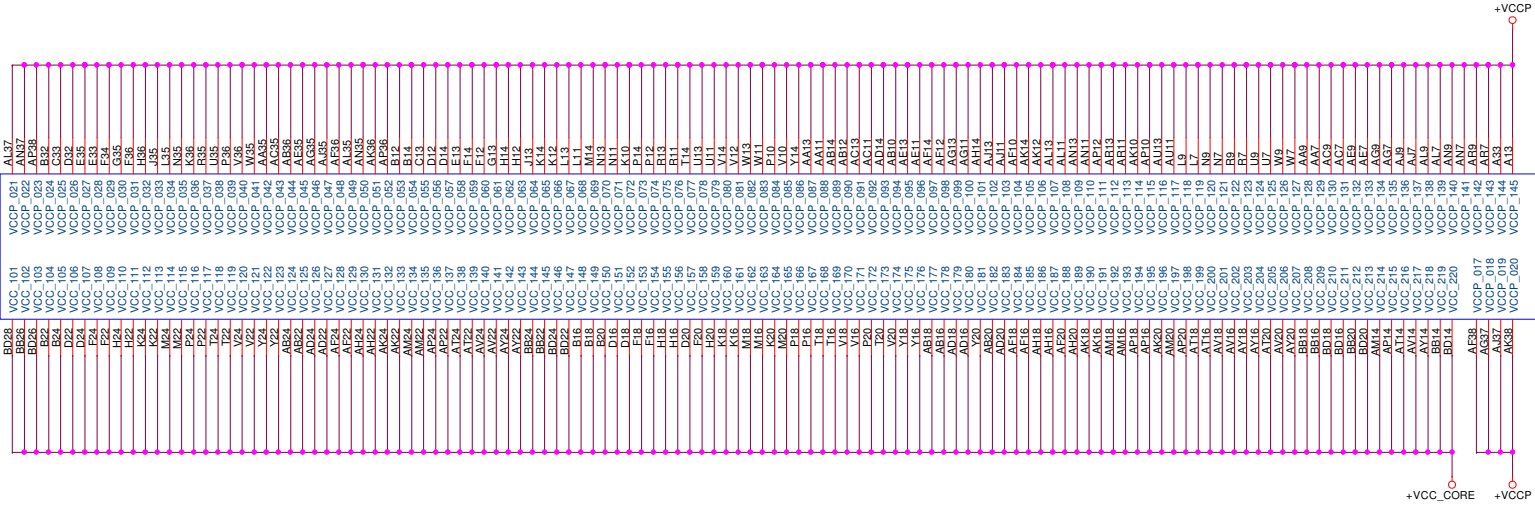
Near pin B34

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



Close to CPU pin within 500mils.

ULV723@



U1F  
PENRYN SFF\_UFCBGA956

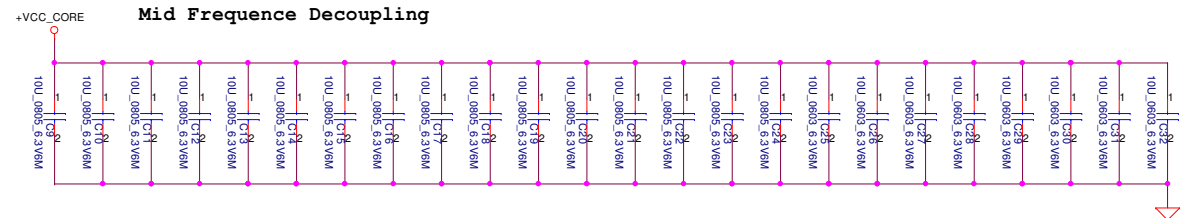
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| Date: Tuesday, February 03, 2009                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                    |            | Sheet                    | 6 of 45         |

| U1D  |          |          | U1E  |      |         |         |      |
|------|----------|----------|------|------|---------|---------|------|
| B42  | VSS[001] | VSS[082] | AM36 | G25  | VSS_164 | VSS_280 | AA15 |
| F44  | VSS[002] | VSS[083] | AR35 | G23  | VSS_165 | VSS_281 | AC15 |
| D44  | VSS[003] | VSS[084] | AV34 | G21  | VSS_166 | VSS_282 | Y10  |
| F42  | VSS[004] | VSS[085] | AW35 | J25  | VSS_167 | VSS_283 | AD10 |
| H42  | VSS[005] | VSS[086] | AW35 | J23  | VSS_168 | VSS_284 | AH12 |
| K42  | VSS[006] | VSS[087] | AW33 | J21  | VSS_169 | VSS_285 | AE15 |
| M42  | VSS[007] | VSS[088] | AT36 | L26  | VSS_170 | VSS_286 | AG15 |
| P42  | VSS[008] | VSS[089] | AV34 | L25  | VSS_171 | VSS_287 | AJ15 |
| T42  | VSS[009] | VSS[090] | BB36 | L23  | VSS_172 | VSS_288 | AM10 |
| Y42  | VSS[010] | VSS[091] | BA33 | N25  | VSS_173 | VSS_289 | AN15 |
| AB42 | VSS[011] | VSS[092] | BB36 | N23  | VSS_174 | VSS_290 | AR15 |
| AD42 | VSS[012] | VSS[093] | BD36 | R25  | VSS_175 | VSS_291 | AT12 |
| AF42 | VSS[013] | VSS[094] | C27  | R23  | VSS_176 | VSS_292 | AW13 |
| AH42 | VSS[014] | VSS[095] | E29  | R21  | VSS_177 | VSS_293 | AW15 |
| AK42 | VSS[015] | VSS[096] | E29  | U25  | VSS_178 | VSS_294 | AY12 |
| AM42 | VSS[016] | VSS[097] | E29  | U23  | VSS_179 | VSS_295 | AU15 |
| AP42 | VSS[017] | VSS[098] | E27  | U21  | VSS_180 | VSS_296 | AT10 |
| AV44 | VSS[018] | VSS[099] | E27  | W25  | VSS_181 | VSS_297 | BA13 |
| AT44 | VSS[019] | VSS[100] | G27  | W23  | VSS_182 | VSS_298 | BA11 |
| AV44 | VSS[020] | VSS[101] | E31  | W21  | VSS_183 | VSS_299 | BB12 |
| AT42 | VSS[021] | VSS[102] | G31  | W23  | VSS_184 | VSS_300 | BC11 |
| AV42 | VSS[022] | VSS[103] | J27  | AA25 | VSS_185 | VSS_301 | AT10 |
| Y42  | VSS[023] | VSS[104] | J29  | AA23 | VSS_186 | VSS_302 | BA13 |
| BA43 | VSS[024] | VSS[105] | L29  | AA21 | VSS_187 | VSS_303 | BA11 |
| BB42 | VSS[025] | VSS[106] | L27  | AC25 | VSS_188 | VSS_304 | BB12 |
| C39  | VSS[026] | VSS[107] | N27  | AC23 | VSS_189 | VSS_305 | BC11 |
| E39  | VSS[027] | VSS[108] | A27  | AC21 | VSS_190 | VSS_306 | B6   |
| G37  | VSS[028] | VSS[109] | A25  | AE25 | VSS_191 | VSS_307 | D6   |
| H38  | VSS[029] | VSS[110] | A23  | AE23 | VSS_192 | VSS_308 | G9   |
| J39  | VSS[030] | VSS[111] | L31  | AE21 | VSS_193 | VSS_309 | F6   |
| M38  | VSS[031] | VSS[112] | N31  | AG25 | VSS_194 | VSS_310 | K8   |
| N39  | VSS[032] | VSS[113] | R27  | AG23 | VSS_195 | VSS_311 | K6   |
| R39  | VSS[033] | VSS[114] | U29  | AG21 | VSS_196 | VSS_312 | M8   |
| T38  | VSS[034] | VSS[115] | U27  | AJ25 | VSS_197 | VSS_313 | M6   |
| U39  | VSS[035] | VSS[116] | U27  | AJ23 | VSS_198 | VSS_314 | P8   |
| W39  | VSS[036] | VSS[117] | U31  | AJ21 | VSS_199 | VSS_315 | T8   |
| Y38  | VSS[037] | VSS[118] | W29  | AL25 | VSS_200 | VSS_316 | V8   |
| AA39 | VSS[038] | VSS[119] | W27  | AL23 | VSS_201 | VSS_317 | Y8   |
| AC39 | VSS[039] | VSS[120] | W31  | AN25 | VSS_202 | VSS_318 | Y6   |
| AD38 | VSS[040] | VSS[121] | AA29 | AN23 | VSS_203 | VSS_319 | AB8  |
| AE39 | VSS[041] | VSS[122] | AA27 | AN21 | VSS_204 | VSS_320 | AD8  |
| AF39 | VSS[042] | VSS[123] | AC29 | AR25 | VSS_205 | VSS_321 | AE8  |
| AG39 | VSS[043] | VSS[124] | AC27 | AR23 | VSS_206 | VSS_322 | AF8  |
| AH38 | VSS[044] | VSS[125] | AC31 | AR21 | VSS_207 | VSS_323 | AG8  |
| AJ39 | VSS[045] | VSS[126] | AE29 | AU25 | VSS_208 | VSS_324 | AH8  |
| AK39 | VSS[046] | VSS[127] | AE27 | AU23 | VSS_209 | VSS_325 | AI8  |
| AL39 | VSS[047] | VSS[128] | AG29 | AU21 | VSS_210 | VSS_326 | AM8  |
| AM38 | VSS[048] | VSS[129] | AJ29 | AW25 | VSS_211 | VSS_327 | AN8  |
| AN39 | VSS[049] | VSS[130] | AJ27 | AW23 | VSS_212 | VSS_328 | AP8  |
| AR39 | VSS[050] | VSS[131] | AG31 | AW21 | VSS_213 | VSS_329 | AT8  |
| AR37 | VSS[051] | VSS[132] | AJ31 | BA25 | VSS_214 | VSS_330 | AV8  |
| AT38 | VSS[052] | VSS[133] | AE31 | BA23 | VSS_215 | VSS_331 | AW8  |
| AU39 | VSS[053] | VSS[134] | AG31 | BA21 | VSS_216 | VSS_332 | AX8  |
| AJ37 | VSS[054] | VSS[135] | AL29 | BC25 | VSS_217 | VSS_333 | AY8  |
| AW39 | VSS[055] | VSS[136] | AL27 | BC23 | VSS_218 | VSS_334 | BA8  |
| AW37 | VSS[056] | VSS[137] | AN29 | BC21 | VSS_219 | VSS_335 | BB8  |
| BA39 | VSS[057] | VSS[138] | AN27 | C17  | VSS_220 | VSS_336 | BC8  |
| BC41 | VSS[058] | VSS[139] | AN27 | C19  | VSS_221 | VSS_337 | BD8  |
| BD40 | VSS[059] | VSS[140] | AN31 | E19  | VSS_222 | VSS_338 | B4   |
| B36  | VSS[060] | VSS[141] | AR23 | E17  | VSS_223 | VSS_339 | C3   |
| H34  | VSS[061] | VSS[142] | AR27 | G19  | VSS_224 | VSS_340 | E3   |
| D36  | VSS[062] | VSS[143] | AR31 | G17  | VSS_225 | VSS_341 | G3   |
| M36  | VSS[063] | VSS[144] | AR31 | J19  | VSS_226 | VSS_342 | J3   |
| K34  | VSS[064] | VSS[145] | AU23 | J17  | VSS_227 | VSS_343 | L3   |
| M34  | VSS[065] | VSS[146] | AU27 | L19  | VSS_228 | VSS_344 | N3   |
| P34  | VSS[066] | VSS[147] | AW29 | L17  | VSS_229 | VSS_345 | AV6  |
| T34  | VSS[067] | VSS[148] | AW27 | N19  | VSS_230 | VSS_346 | AW7  |
| V34  | VSS[068] | VSS[149] | AW31 | N17  | VSS_231 | VSS_347 | AY6  |
| T36  | VSS[069] | VSS[150] | BA29 | R19  | VSS_232 | VSS_348 | BA9  |
| Y34  | VSS[070] | VSS[151] | BA27 | R17  | VSS_233 | VSS_349 | BB6  |
| AB34 | VSS[071] | VSS[152] | BA29 | U19  | VSS_234 | VSS_350 | BC9  |
| AD34 | VSS[072] | VSS[153] | BC29 | U17  | VSS_235 | VSS_351 | BD6  |
| AF34 | VSS[073] | VSS[154] | BC27 | W19  | VSS_236 | VSS_352 | B4   |
| AH34 | VSS[074] | VSS[155] | BC31 | W17  | VSS_237 | VSS_353 | C3   |
| AK34 | VSS[075] | VSS[156] | C21  | AA19 | VSS_238 | VSS_354 | E3   |
| AM34 | VSS[076] | VSS[157] | C23  | AA17 | VSS_239 | VSS_355 | G3   |
| AP34 | VSS[077] | VSS[158] | C25  | AC19 | VSS_240 | VSS_356 | J3   |
| AM34 | VSS[078] | VSS[159] | E25  | AC17 | VSS_241 | VSS_357 | L3   |
| AP34 | VSS[079] | VSS[160] | E23  | AE19 | VSS_242 | VSS_358 | N3   |
| AM34 | VSS[080] | VSS[161] | E21  | AE17 | VSS_243 | VSS_359 | AV6  |
| AP34 | VSS[081] | VSS[162] |      | AG19 | VSS_244 | VSS_360 | AW7  |
|      |          | VSS[163] |      | AJ19 | VSS_245 | VSS_361 | AX9  |
|      |          |          |      | AJ17 | VSS_246 | VSS_362 | AY6  |
|      |          |          |      | AL19 | VSS_247 | VSS_363 | BA9  |
|      |          |          |      | AN19 | VSS_248 | VSS_364 | BB6  |
|      |          |          |      | AN17 | VSS_249 | VSS_365 | BC9  |
|      |          |          |      | AR19 | VSS_250 | VSS_366 | BD6  |
|      |          |          |      | AR17 | VSS_251 | VSS_367 | B4   |
|      |          |          |      | AU19 | VSS_252 | VSS_368 | C3   |
|      |          |          |      | AU17 | VSS_253 | VSS_369 | E3   |
|      |          |          |      | AW19 | VSS_254 | VSS_370 | G3   |
|      |          |          |      | AW17 | VSS_255 | VSS_371 | J3   |
|      |          |          |      | BA19 | VSS_256 | VSS_372 | L3   |
|      |          |          |      | BA17 | VSS_257 | VSS_373 | N3   |
|      |          |          |      | BC19 | VSS_258 | VSS_374 | AV6  |
|      |          |          |      | BC17 | VSS_259 | VSS_375 | AW7  |
|      |          |          |      | C11  | VSS_260 | VSS_376 | AX9  |
|      |          |          |      | C15  | VSS_261 | VSS_377 | AY6  |
|      |          |          |      | E15  | VSS_262 | VSS_378 | BA9  |
|      |          |          |      | G15  | VSS_263 | VSS_379 | BB6  |
|      |          |          |      | H10  | VSS_264 | VSS_380 | BC9  |
|      |          |          |      | M12  | VSS_265 | VSS_381 | BD6  |
|      |          |          |      | J15  | VSS_266 | VSS_382 | B4   |
|      |          |          |      | L15  | VSS_267 | VSS_383 | C3   |
|      |          |          |      | N15  | VSS_268 | VSS_384 | E3   |
|      |          |          |      | M10  | VSS_269 | VSS_385 | G3   |
|      |          |          |      | T12  | VSS_270 | VSS_386 | J3   |
|      |          |          |      | R15  | VSS_271 | VSS_387 | L3   |
|      |          |          |      | U15  | VSS_272 | VSS_388 | N3   |
|      |          |          |      | W15  | VSS_273 | VSS_389 | AV6  |
|      |          |          |      | T10  | VSS_274 | VSS_390 | AW7  |
|      |          |          |      | Y12  | VSS_275 | VSS_391 | AX9  |
|      |          |          |      | AD12 | VSS_276 | VSS_392 | AY6  |
|      |          |          |      |      | VSS_277 | VSS_393 | BA9  |
|      |          |          |      |      | VSS_278 | VSS_394 | BD4  |
|      |          |          |      |      | VSS_279 | VSS_395 |      |

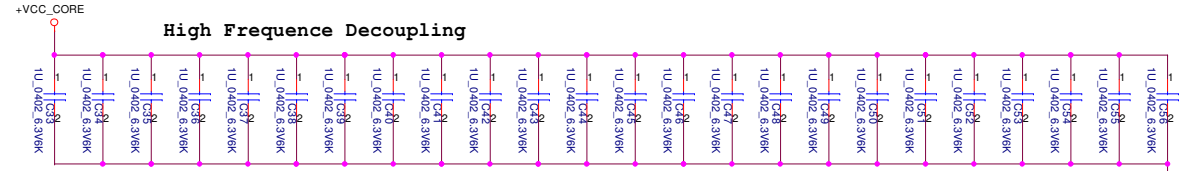
ULV723@

ULV722@

## Mid Frequency Decoupling



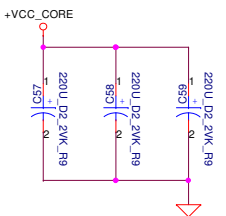
## High Frequency Decoupling



6/14 :Replace 12pcs 10uF\_0805 to 24 pcs 1uF\_0402 for CPU transient fail issue.

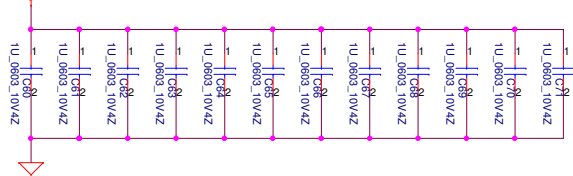
## ESR <= 1.5m ohm

## Near CPU CORE regulator

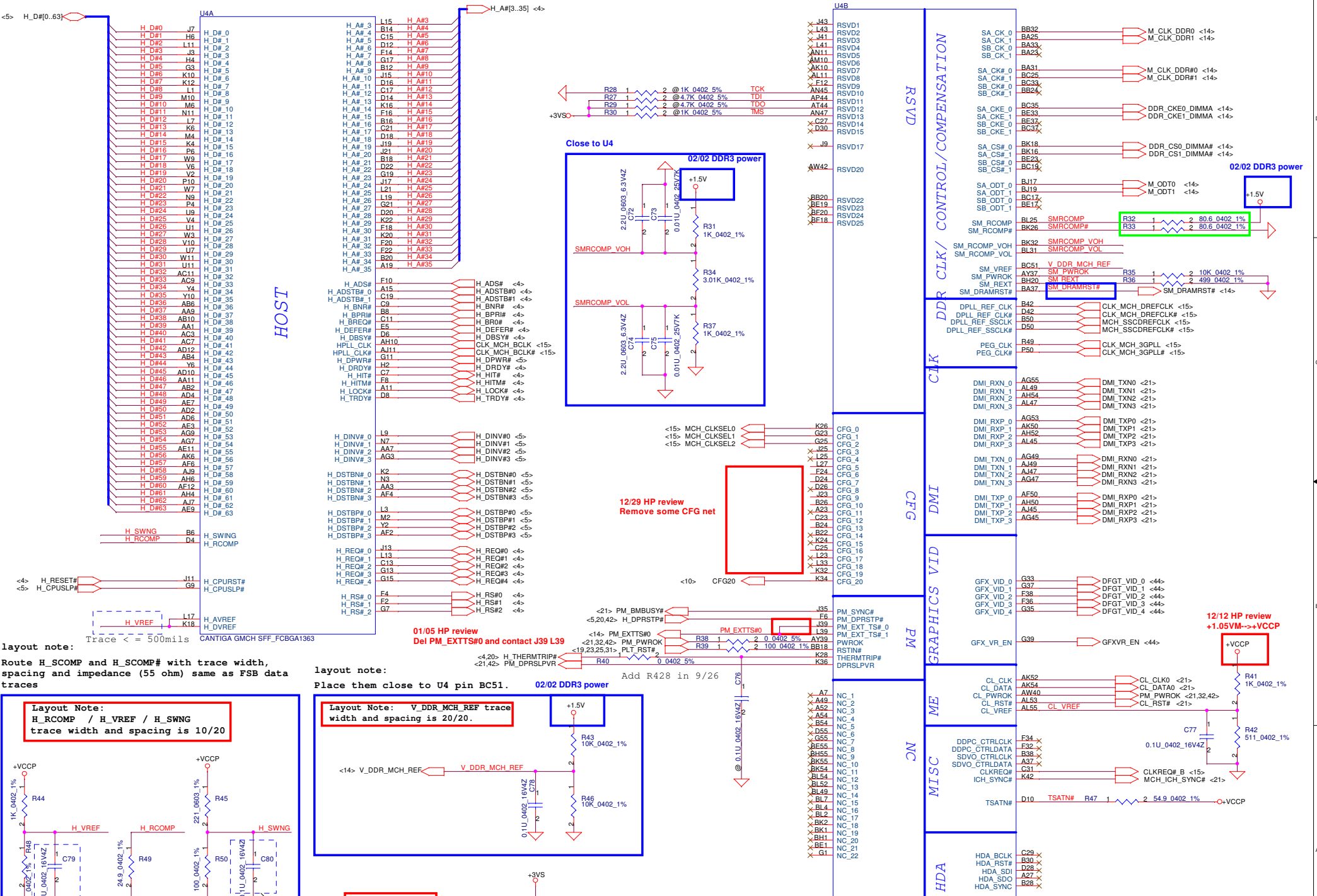


Del C37 to improve power plan. 6/14

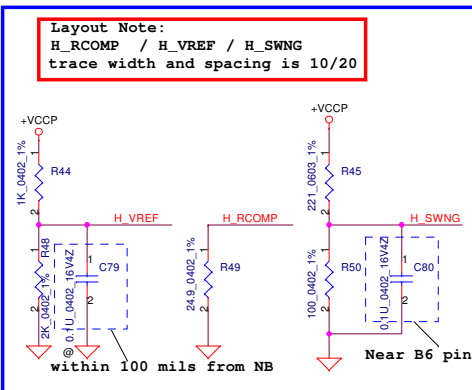
## +VCCP



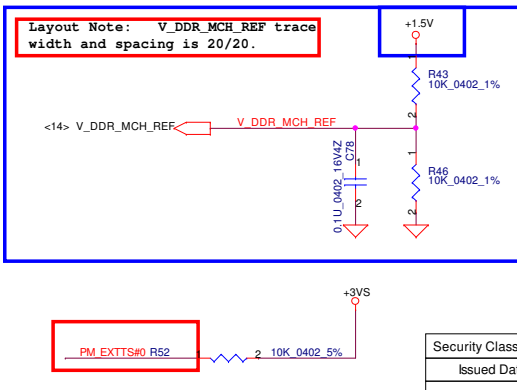
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Title      |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|----|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2006/02/13         | Deciphered Date | 2006/03/10 | 7  |
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| Compal Electronics, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                 |            | 7  |
| Penryn(3/3)-GND/Bypass                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |            | 7  |
| Size Document Number                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |            | 7  |
| Custom LA-5221P                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | 7  |
| Date Tuesday, February 03, 2009                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | 7  |
| Sheet 7 of 45                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |            | 7  |
| Rev 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                 |            | 7  |

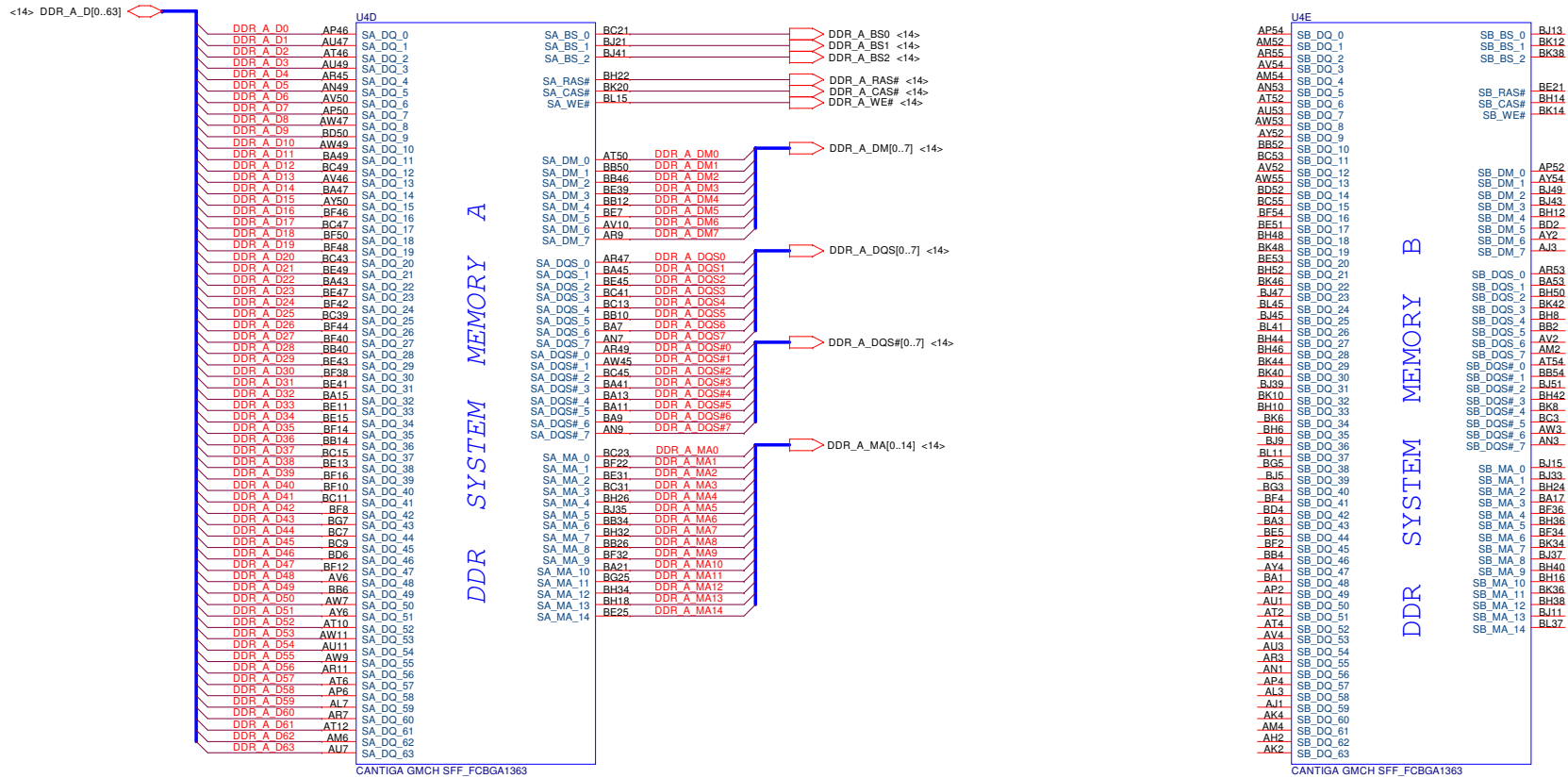


layout note:  
Route H\_SCOMP and H\_SCOMP# with trace width, spacing and impedance (55 ohm) same as FSB data traces



layout note:  
Place them close to U4 pin BC51.

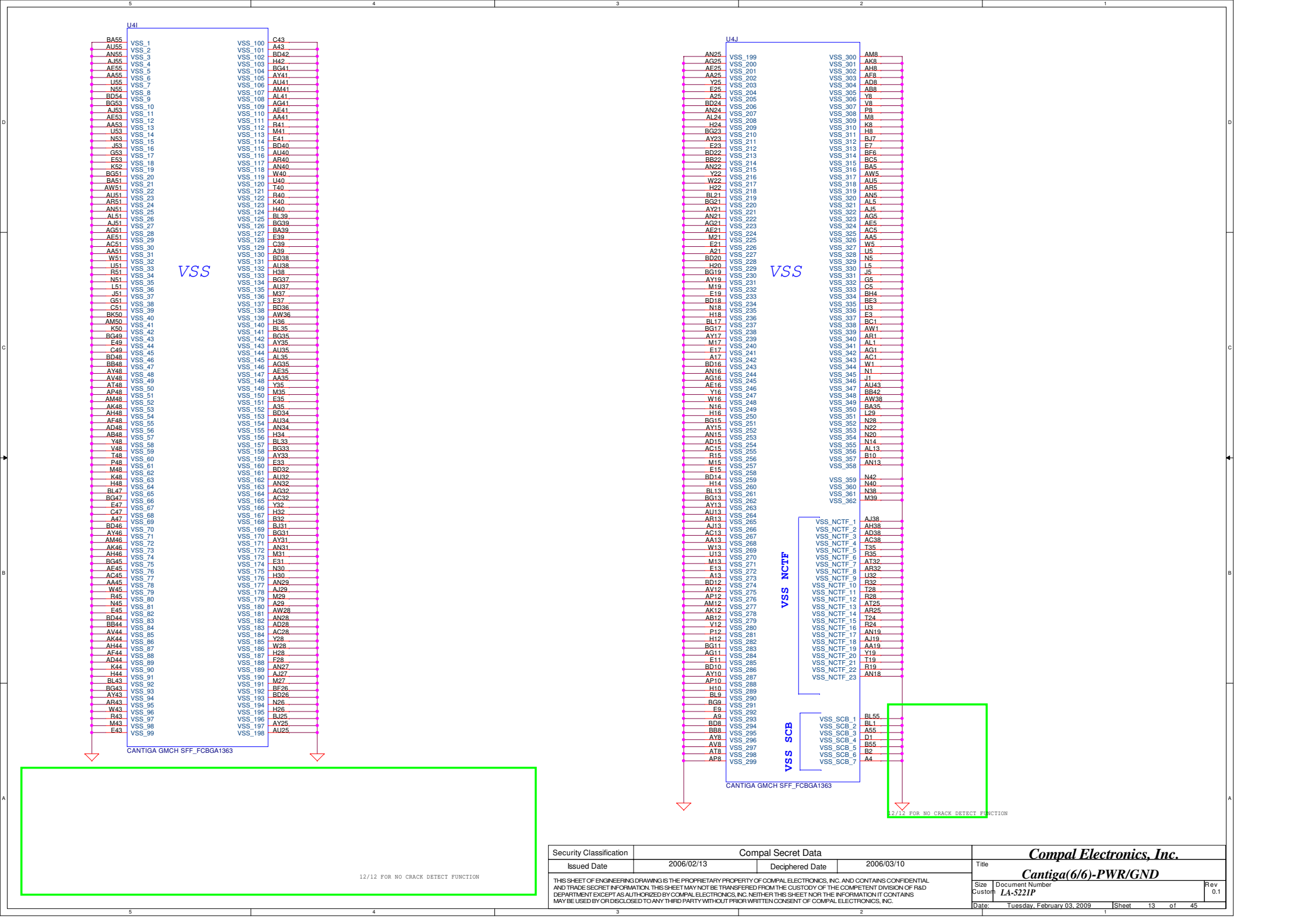


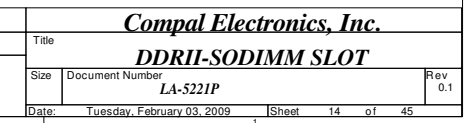
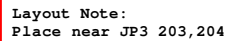
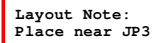






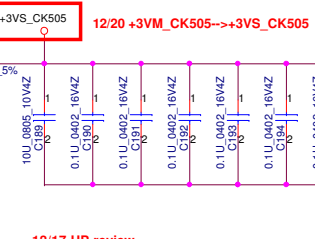
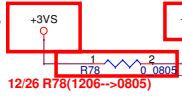




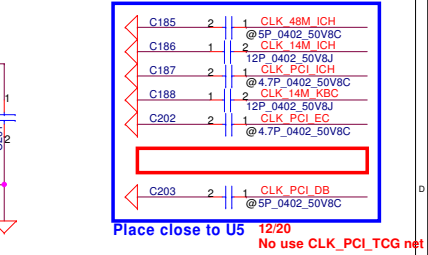
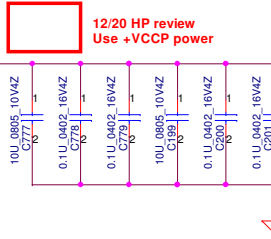
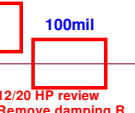


| FSLC<br>CLKSEL2 | FSLB<br>CLKSEL1 | FSLA<br>CLKSEL0 | CPU<br>MHz | FSB<br>MHz | SRC<br>MHz | PCI<br>MHz |
|-----------------|-----------------|-----------------|------------|------------|------------|------------|
| 0               | 0               | 0               | 266        | 1066       | 100        | 33.3       |
| 0               | 1               | 0               | 200        | 800        | 100        | 33.3       |
| 0               | 1               | 1               | 166        | 667        | 100        | 33.3       |

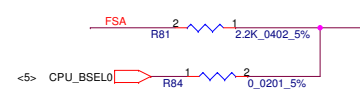
12/17 HP review  
+3VM-->+3VS



12/17 HP review  
+1.05VM-->+VCCP



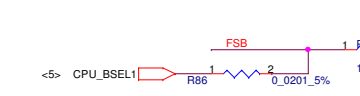
12/20 HP review  
Remove reserved pull +VCCP R



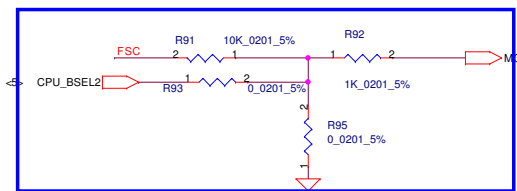
12/20 HP review  
Remove reserved pull low R



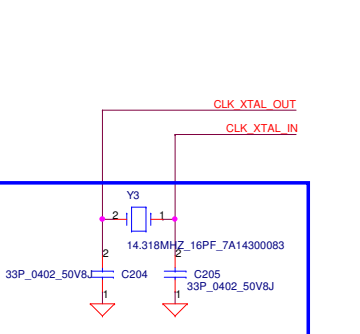
12/20 HP review  
Remove reserved pull +VCCP R



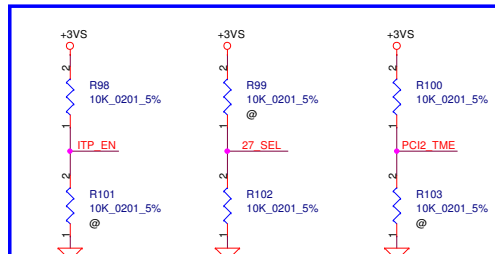
12/20 HP review  
Remove reserved pull low R



12/31 Use 0201 size



12/31 Y3 sue 5032 size and confirm C204 C205 c value

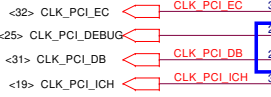


12/31 Use 0201 size

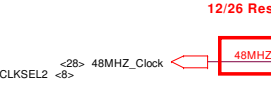


01/05 Reserved for WWAN

01/08 33 ohm-->22ohm



12/26 Reserved for card reader clk



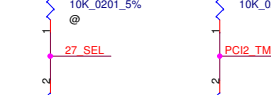
01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm

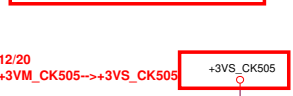


01/08 33 ohm-->22ohm

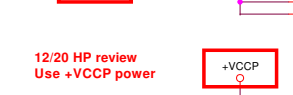


01/08 33 ohm-->22ohm

12/17 HP review  
Remove damping R



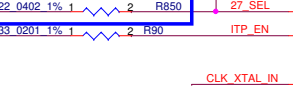
12/20  
+3VM\_CK505-->+3VS\_CK505



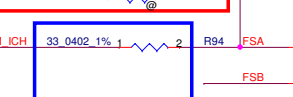
12/20 HP review  
Use +VCCP power



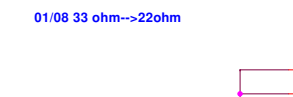
12/20 HP review  
Use +VCCP power



12/26 Reserved for card reader clk



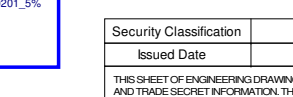
01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm

12/17 HP review  
Remove damping R



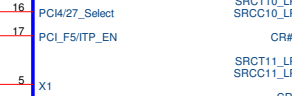
12/20  
+3VM\_CK505-->+3VS\_CK505



12/20 HP review  
Use +VCCP power



12/20 HP review  
Use +VCCP power



12/26 Reserved for card reader clk



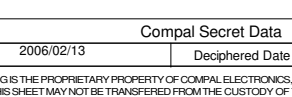
01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm

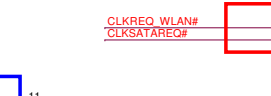


01/08 33 ohm-->22ohm

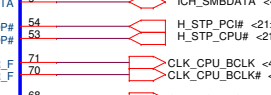


01/08 33 ohm-->22ohm

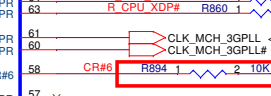
12/17 HP review  
Remove damping R



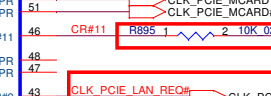
12/20  
+3VM\_CK505-->+3VS\_CK505



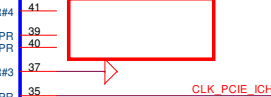
12/20 HP review  
Use +VCCP power



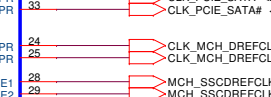
12/20 HP review  
Use +VCCP power



12/26 Reserved for card reader clk



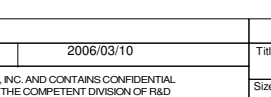
01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm

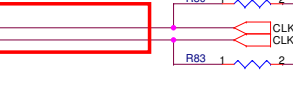


01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm

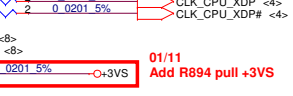
12/17 HP review  
Remove damping R



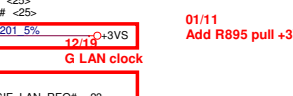
12/20  
+3VM\_CK505-->+3VS\_CK505



12/20 HP review  
Use +VCCP power



12/20 HP review  
Use +VCCP power



12/26 Reserved for card reader clk



01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm

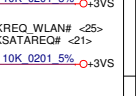


01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm

12/17 HP review  
Remove damping R



12/20  
+3VM\_CK505-->+3VS\_CK505



12/20 HP review  
Use +VCCP power



12/20 HP review  
Use +VCCP power



12/26 Reserved for card reader clk



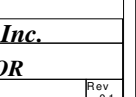
01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm



01/08 33 ohm-->22ohm

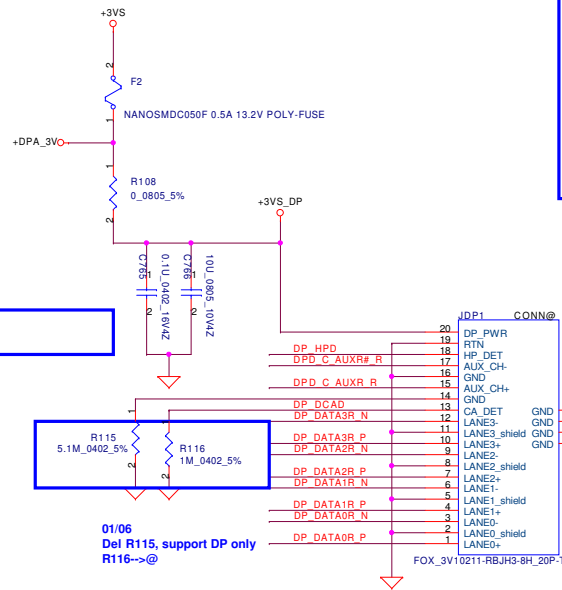


01/08 33 ohm-->22ohm

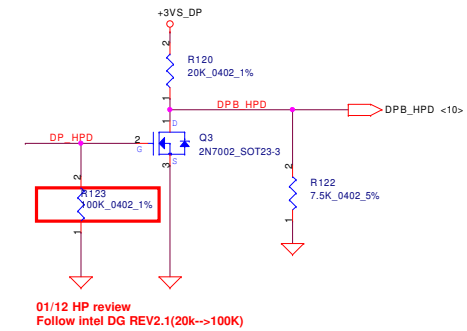
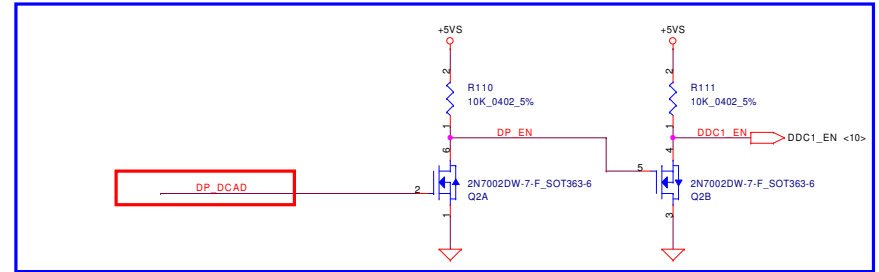
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data         |                 | Title      |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|------------|--|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2006/02/13                 | Deciphered Date | 2006/03/10 |  |
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| Compal Electronics, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |                 |            |  |
| CLOCK GENERATOR                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |                 |            |  |
| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Document Number            | Rev             |            |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               | LA-5221P                   | 0.1             |            |  |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Tuesday, February 03, 2009 | Sheet           | 15 of 45   |  |



01/12  
Del reserved ESD part, because M/B no more space

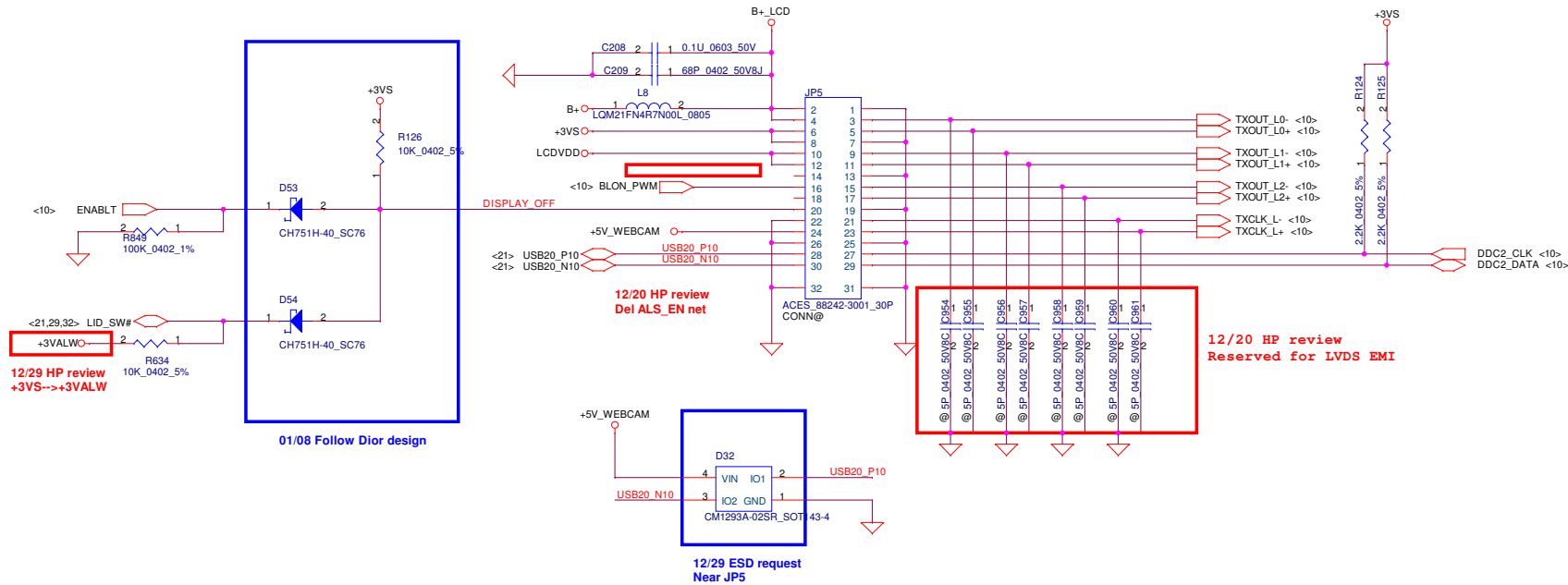


01/06  
Del R115, support DP only  
R116-->@

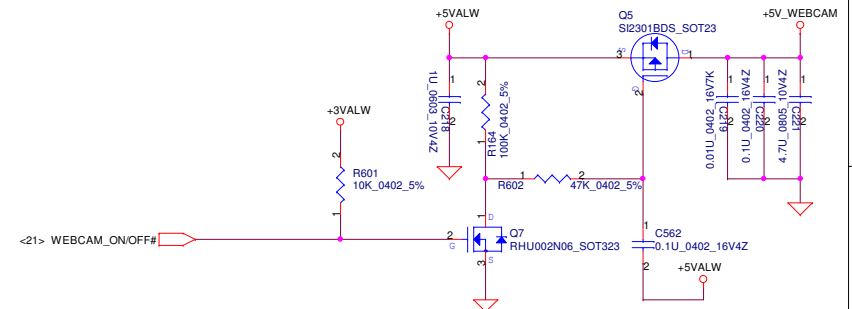
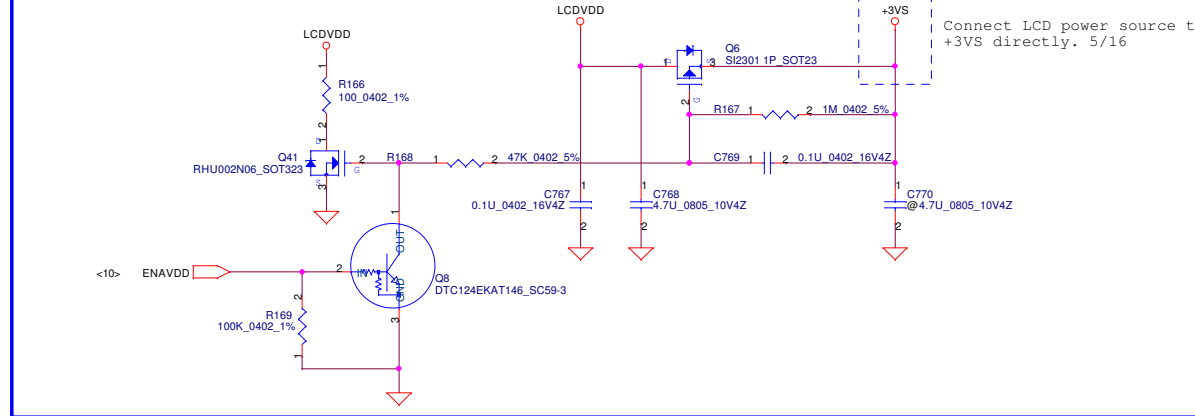


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                            |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/09/15 | Deciphered Date    | 2009/12/31 | Title                    | Display Port Connector     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | LA-5221P                 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Tuesday, February 03, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 16 of 45                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.1                        |

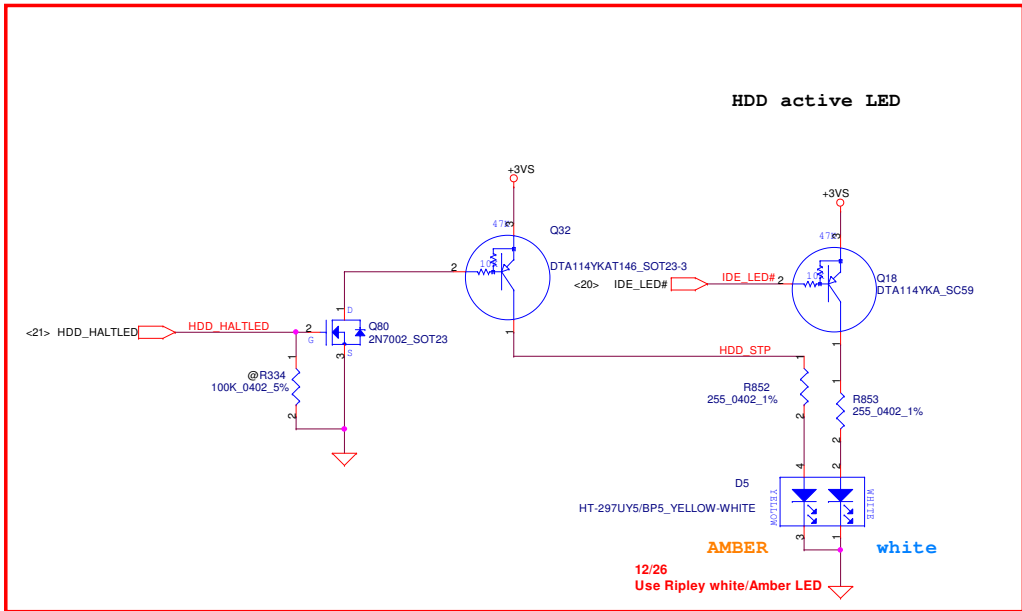
## LED/PANEL BD. CONN.



## LCD POWER CIRCUIT

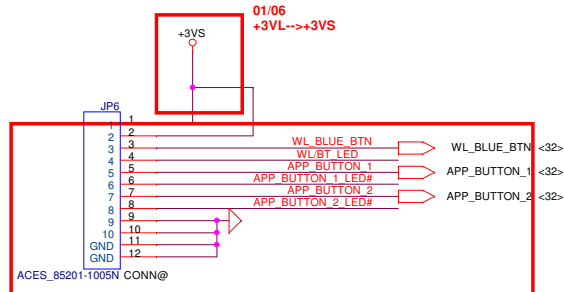


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|---------------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2005/03/10 | Deciphered Date    | 2006/03/10 | Title                    | LCD CONN & Q-Switch & GPIO Ext. |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | LA-5221P                 | Rev 0.1                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Tuesday, February 03, 2009      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 17 of 45                        |



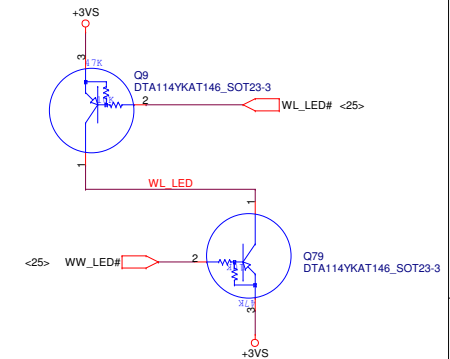
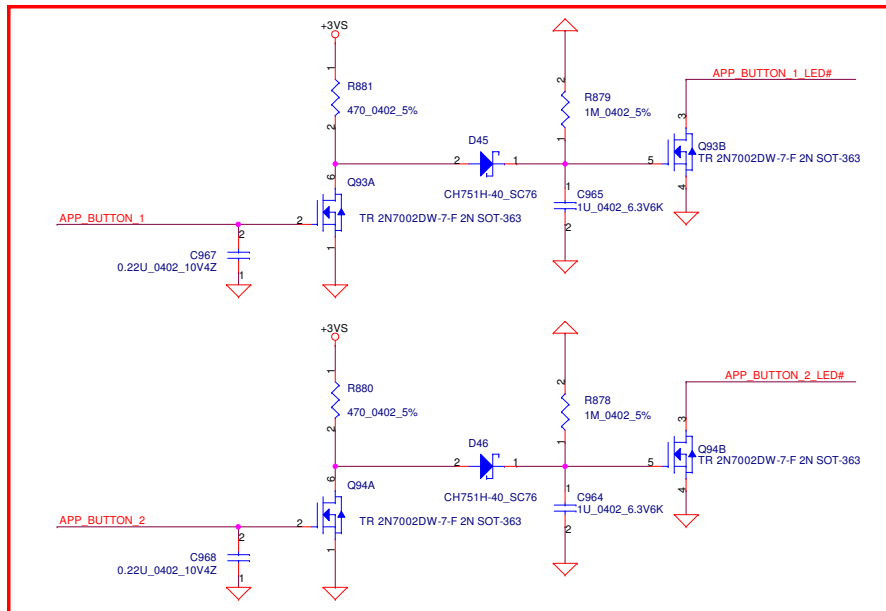
12/26  
Modify HD LED control(follow skyy)

## To LED small board

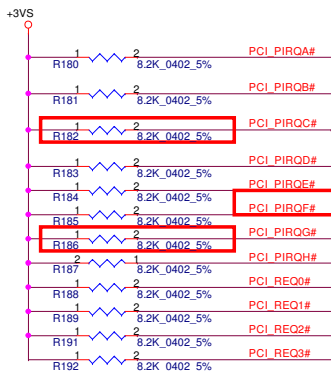
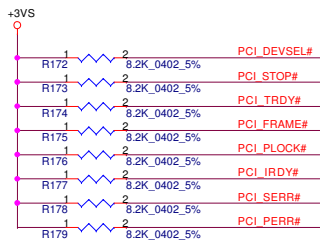


01/06  
Confirm LED GPIO ok

01/06  
Small board no more space,so add circuit on main board

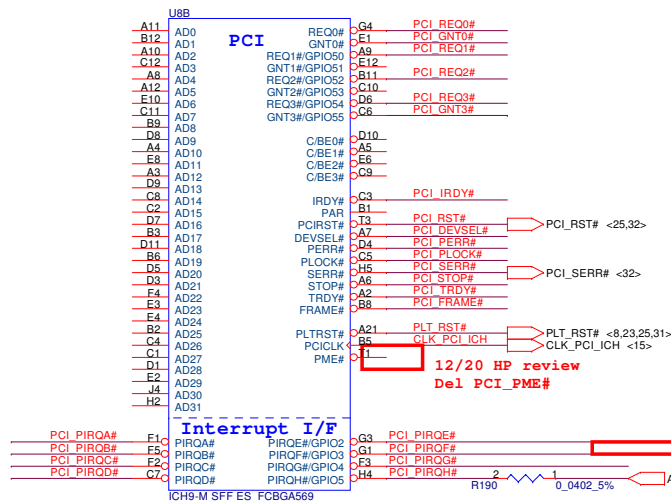


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                 |            | Compal Secret Data |  | Title                      |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|------------|--------------------|--|----------------------------|-----------------|
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |            |                    |  | Date                       | Rev             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |            |                    |  | Tuesday, February 03, 2009 | 0.1             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |            |                    |  | Sheet                      | 18 of 45        |



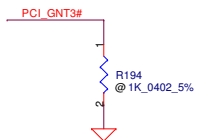
01/13 HP review  
Add R182 and R186

12/20 HP review  
Update net (No ODD\_DET#)

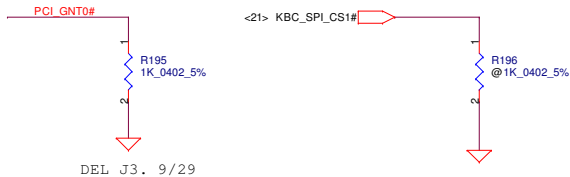


12/20 HP review  
Update net (No ODD\_DET#)

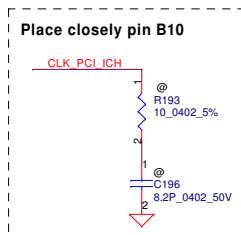
| A16 swap override Strap |                                                 |
|-------------------------|-------------------------------------------------|
| PCI_GNT3#               | Low= A16 swap override Enble<br>High= Default * |

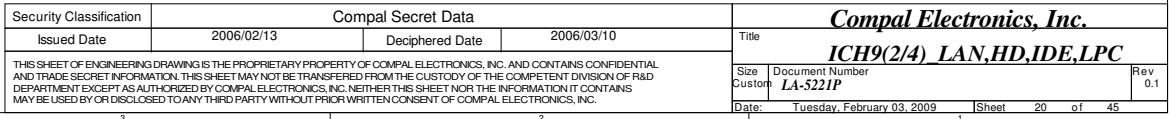


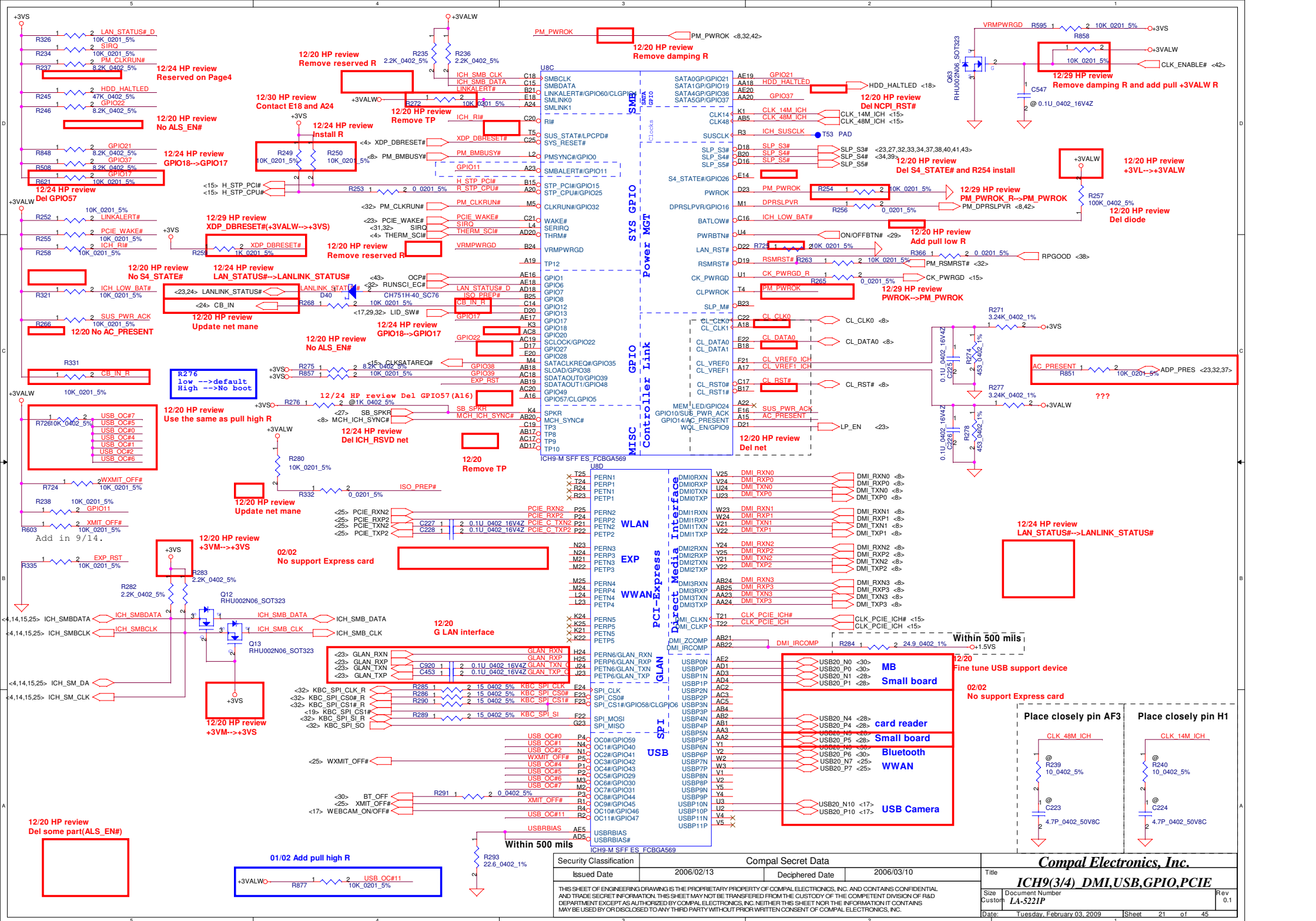
| Boot BIOS Strap |          |                    |
|-----------------|----------|--------------------|
| PCI_GNT0#       | SPI_CS#1 | Boot BIOS Location |
| 0               | 1        | SPI *              |
| 1               | 0        | PCI                |
| 1               | 1        | LPC      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



DEL J3. 9/29











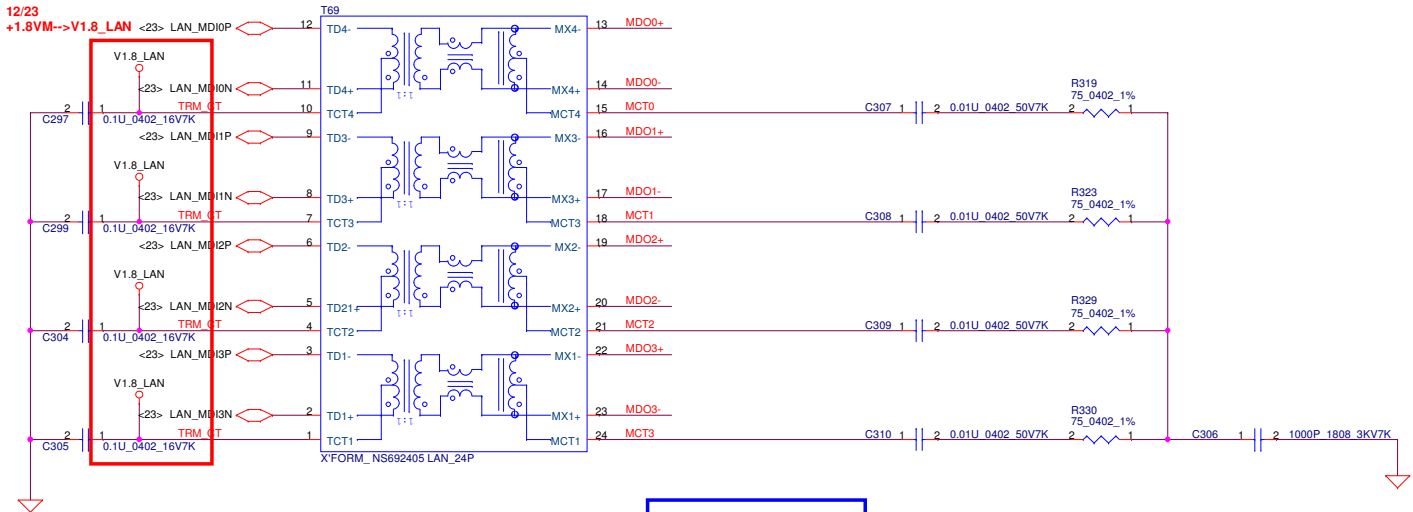


12/15 No support Docking

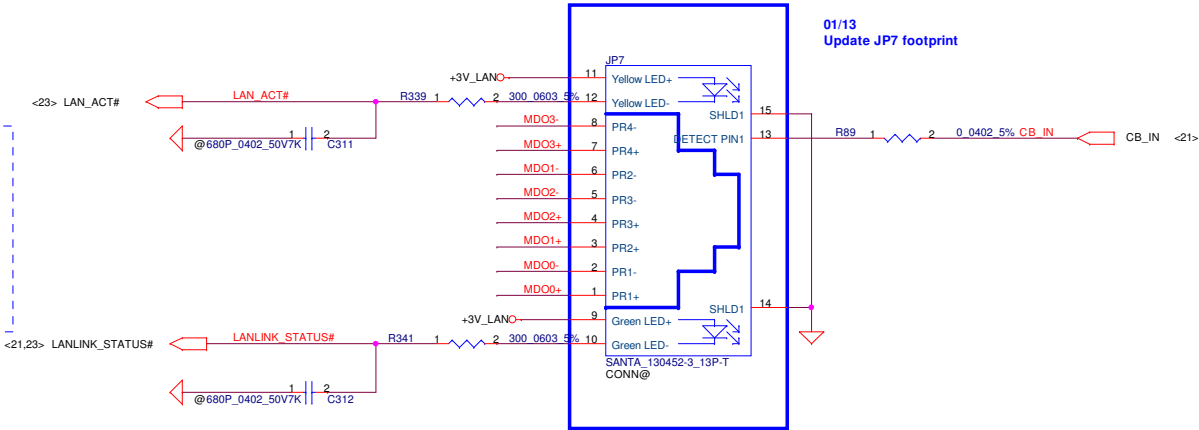
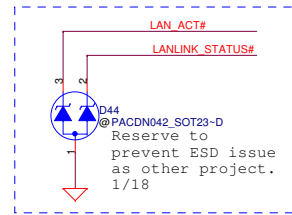
Delete all termination cause they are already inside BOAZMAN. 9/28

12/23

+1.8VM-->V1.8\_LAN



12/29 HP review  
Del Q23 Q24



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------------------------|
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Tuesday, February 03, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 24 of 45                   |

0.01uF 0402-16V7K  
C815  
0.1uF 0402-16V4Z  
C816  
4.7uF 0805-10V4Z  
C817

+1.5VS

0.01uF 0402-16V7K  
C818  
0.1uF 0402-16V4Z  
C819  
4.7uF 0805-10V4Z  
C820

+1.5VS

WWLAN/WiMax Mini-Express Card  
half size

Del R345 & improve  
+3V\_WLAN. 12/11

+3VS

12/17 HP review  
Del PCI\_WAKE#

<15> CLKREQ\_WLAN#

<15> CLK\_PCIE\_MCARD#

<15> CLK\_PCIE\_MCARD#

2/21

<19,32> PCI\_RST#

<15> CLK\_PCIE\_DEBUC#

PCIE\_RXN2

PCIE\_RXP2

R346 1 2 0.0402 5% PCIE\_C\_RXN2

R347 1 2 0.0402 5% PCIE\_C\_RXP2

+3VS

12/17 HP review  
+3V\_WLAN-->+3VS

12/17 HP review  
Del net and TP

IP13

2/21

LPC\_FRAME#

LPC\_AD3

LPC\_AD2

LPC\_AD1

LPC\_AD0

XMIT\_D\_OFF#

PLT\_RST#

PLT\_RST# <8,19,23,31>

12/29 HP review  
Del Pin30 ICH\_SMB\_CLK  
Del Pin32 ICH\_SMB\_DATA

WL\_LED#

WL\_LED# <18>

FOX\_AS0B226-S40N-7F  
CONN@

GND1 GND2

12/17 HP review  
Remove reserved part(No mini card control pin)

XMIT\_D\_OFF#

CH751H40\_SC76

XMIT\_OFF# <21>

Add to prevent leakage issue.

**Mini-Express Card--WWAN**

**Full size**

**12/20 HP review**  
Use +3VS power

**12/20 HP review**  
Remove reserved part(No mini card control pin)

**12/20 HP review**  
Change value to 47K 9/27

**12/29 HP review**  
Del Pin30 ICH\_SMB\_CLK  
Del Pin32 ICH\_SMB\_DATA

**12/20 HP review**  
Del PLT\_RST#

**12/20 HP review**  
Change Power rail same as pin2, 52. 8/16

**12/20 HP review**  
Reserve for 800 & 900MHz EMI issue. 8/16

**Security Classification**

**Issued Date**

**2005/05/26**

[illegible]

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |            |                                 |                                              |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|---------------------------------|----------------------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                             | Compal Secret Data |                 |            | <b>Compal Electronics, Inc.</b> |                                              |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2005/05/26         | Deciphered Date | 2006/07/26 | Title                           | <b>WLAN&amp;WWAN Mini-Card/Accelerometer</b> |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                 |            | Date:                           | Tuesday, February 03, 2009                   | Sheet 25 of 45 |

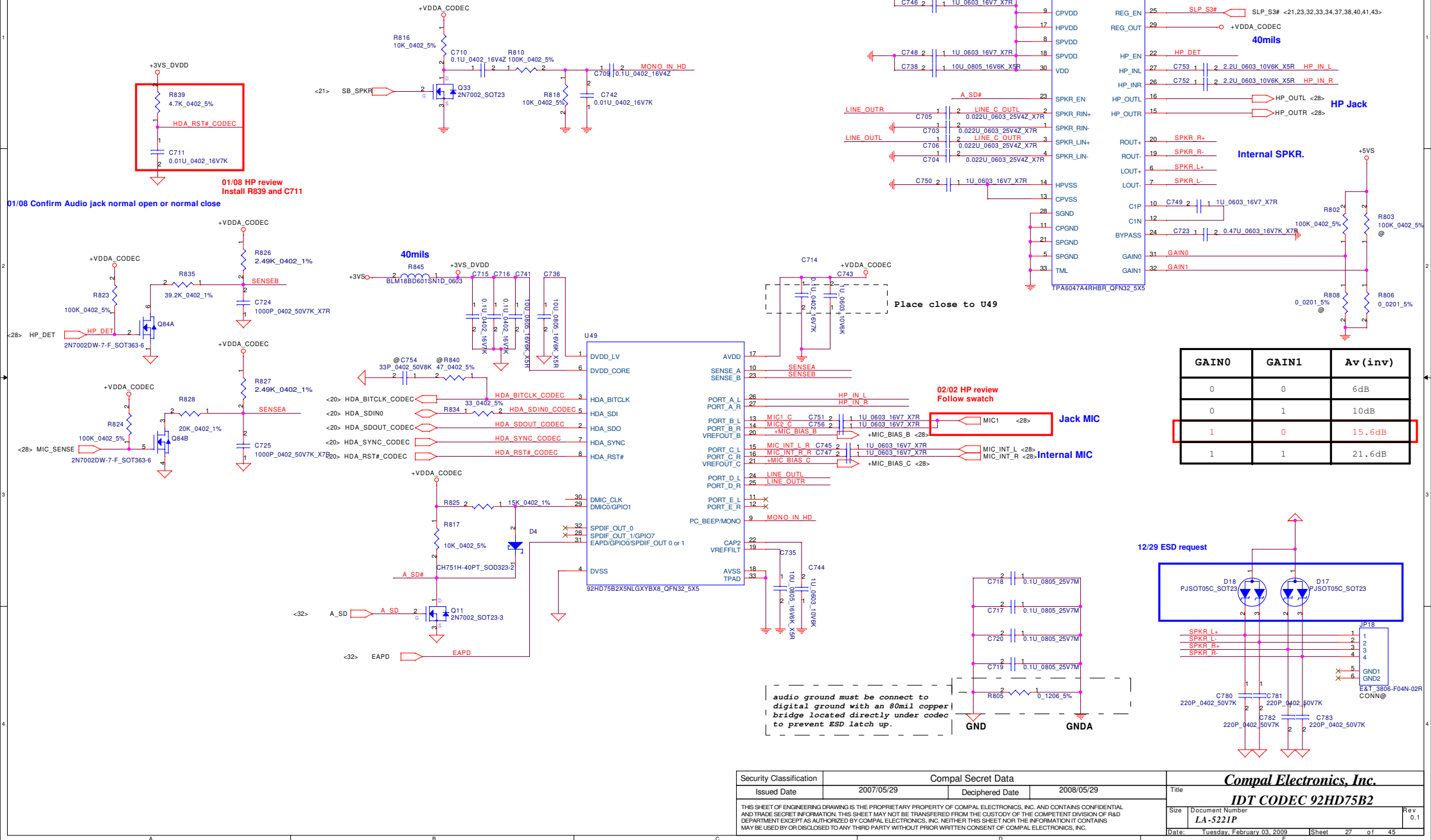
12/17 Remove to small board

|                   |                            |       |          |
|-------------------|----------------------------|-------|----------|
| Title             |                            |       |          |
| Card reader board |                            |       |          |
| Size              | Document Number            |       | Rev      |
|                   | LA-5221P                   |       | 0.1      |
| Date:             | Tuesday, February 03, 2009 | Sheet | 26 of 45 |

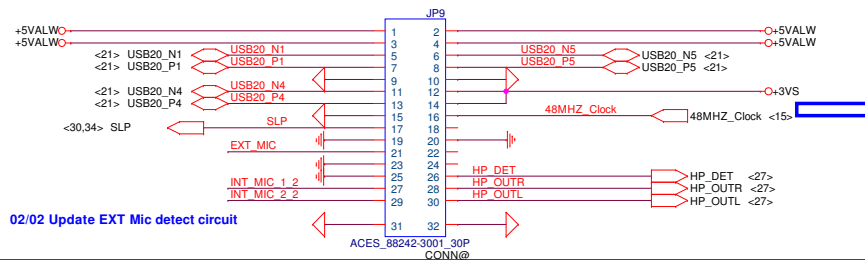
TPA6044 no longer needed. So delete BOM options & co-layout components for TPA6044. SGND and SGND1 nets can also be deleted. Only TPA6041 will be supported. 9/5

# AMP. FOR INTERNAL SPEAKER

11/25

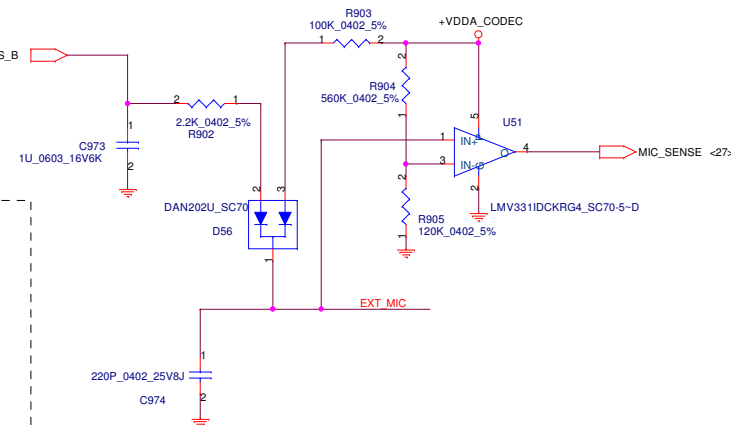
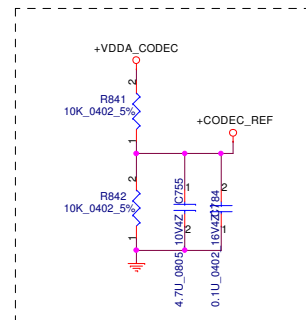


01/10 Fine tune pin define Use the same conn JP9

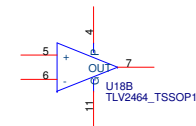
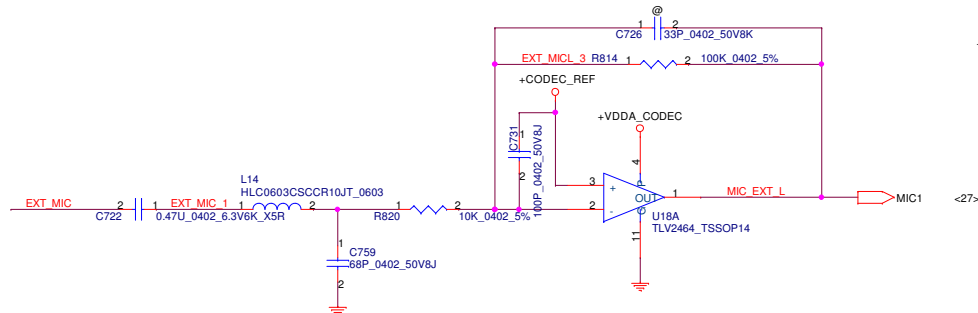


12/26 Reserved for card reader

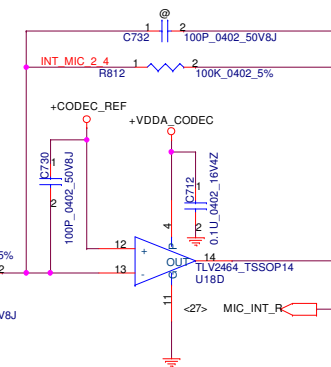
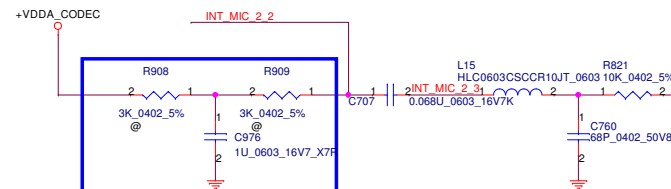
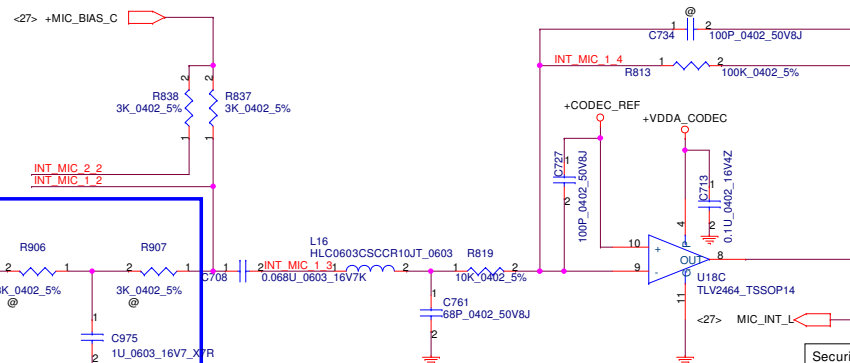
Place close to U18



## AMP. FOR EXTERNAL MICROPHONE



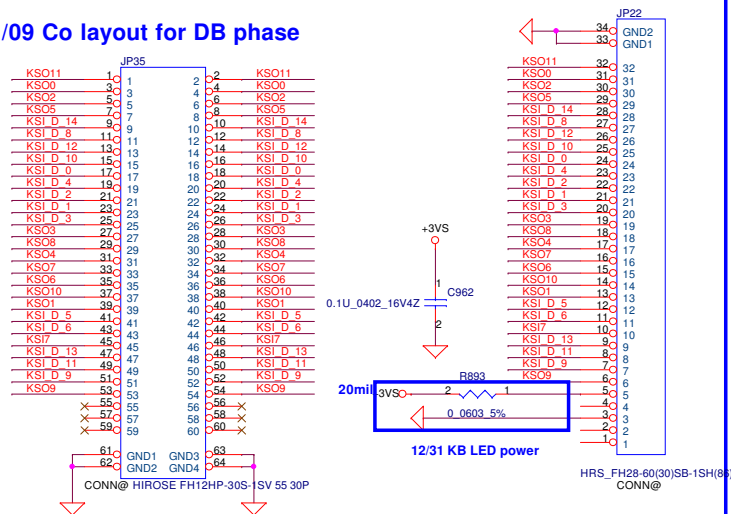
## AMP. FOR INTERNAL MICROPHONE



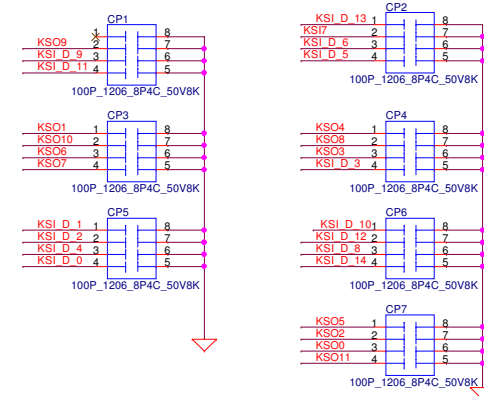
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                  |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|------------------|----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Title            |                            |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2007/05/29         | Deciphered Date | 2008/05/29 | AMP & Audio Jack |                            |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date             | Tuesday, February 03, 2009 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Sheet            | 28 of 45                   |

# INT\_KBD CONN.

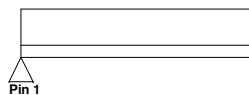
## 01/09 Co layout for DB phase



<32> KSO[0..11] KSI[0..7]

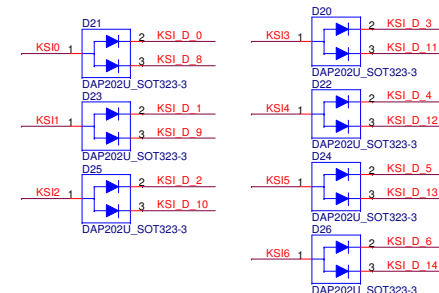


## Dior KB up contact

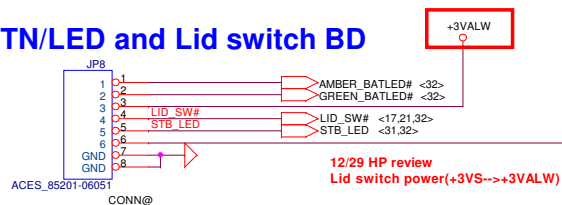


DB use

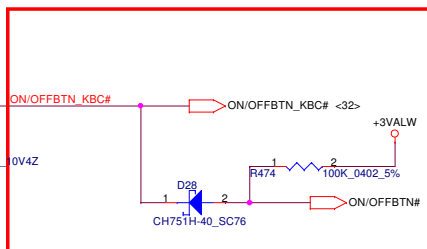
Pin1 reserve , so net name is reserve for Fossil down contact



## Power BTN/LED and Lid switch BD

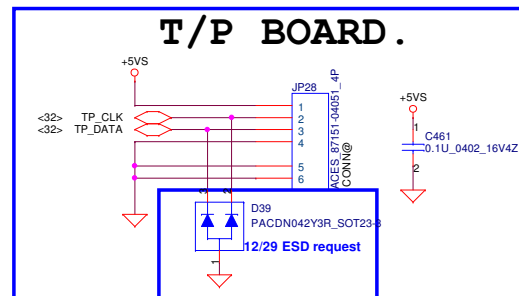


PS:GND use DC in jack GND

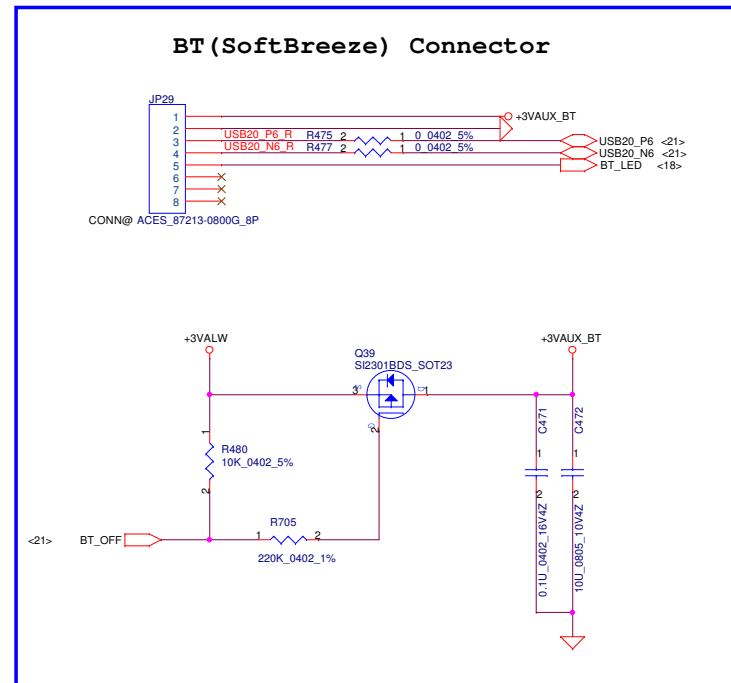
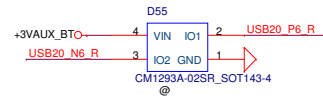


12/20 HP review  
Modify ON/OFFBTN# circuit

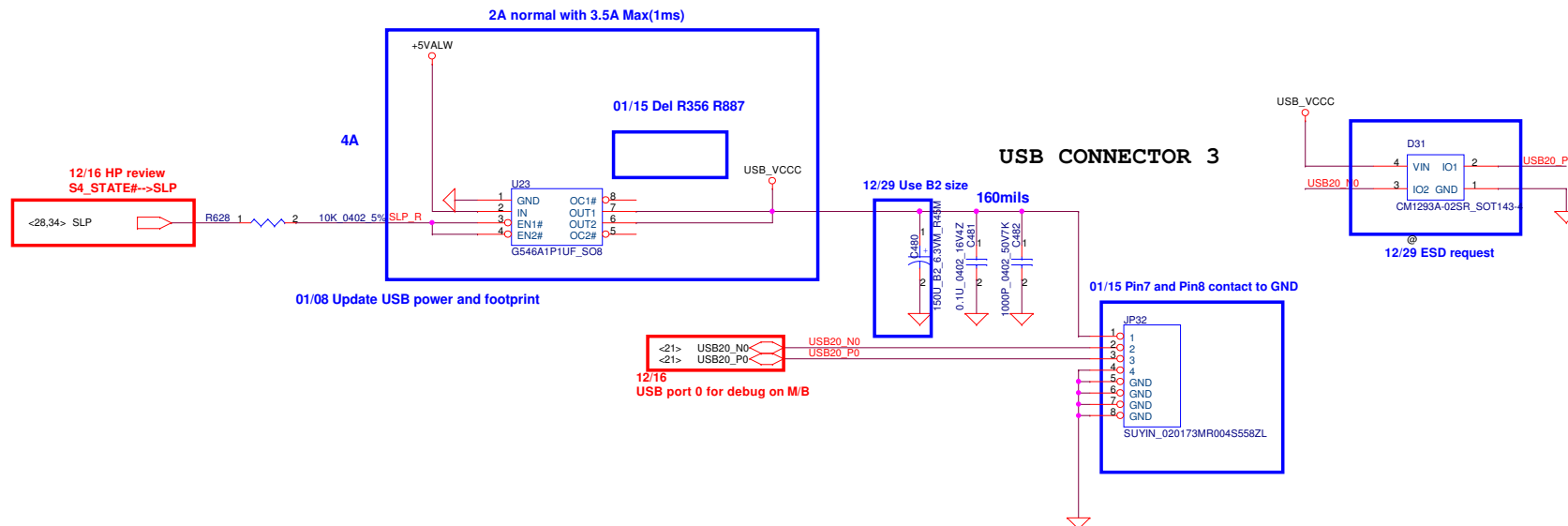
## T/P BOARD.



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                            |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|----------------------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc.   |  |
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| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Document Number    | Rev             |            | Date                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               | LA-5221P           | 0.1             |            | Tuesday, February 03, 2009 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    | Sheet           | 29         | of 45                      |  |



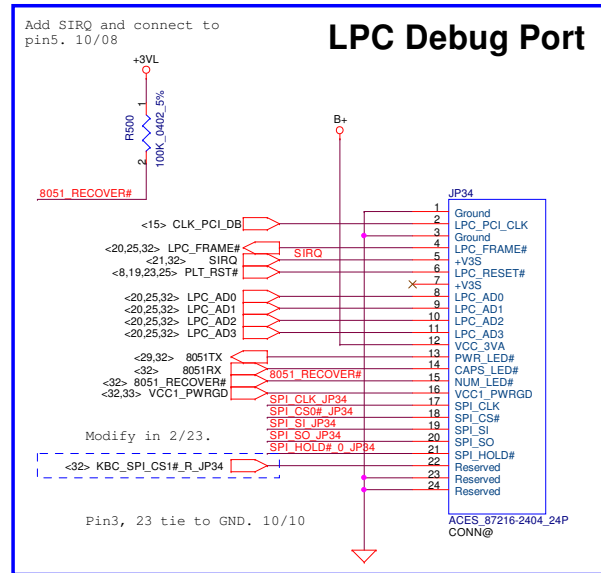
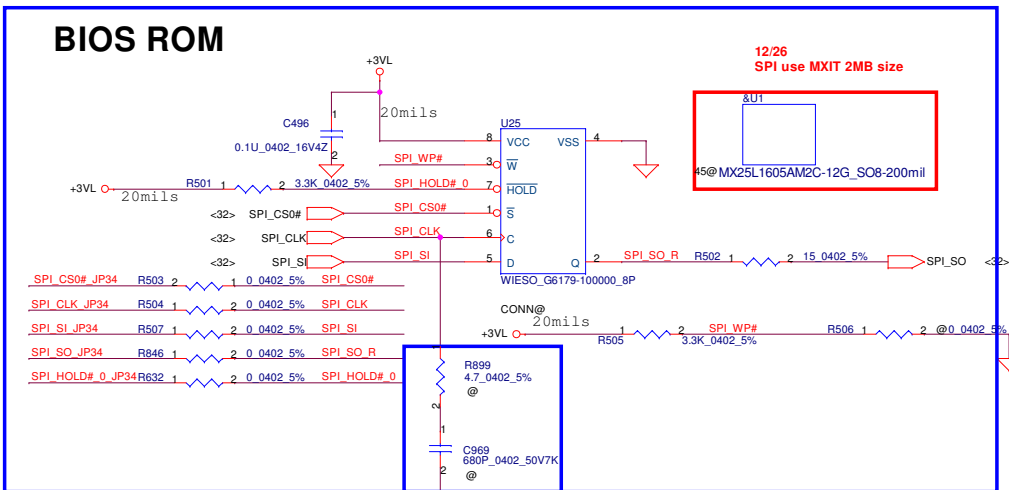
12/16 change to small board



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                            |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|----------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Title                    |                            |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2006/02/13         | Deciphered Date | 2006/07/26 | Compal Electronics, Inc. |                            |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Tuesday, February 03, 2009 | Sheet 30 of 45 |

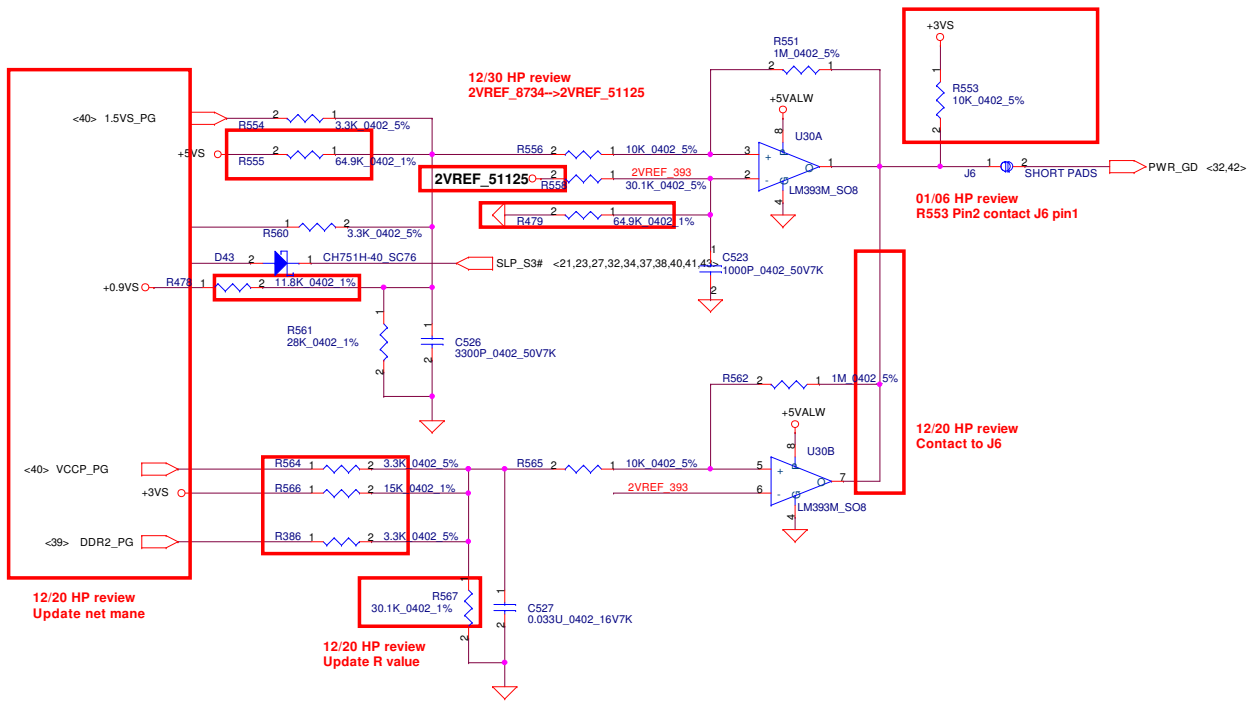
01/23  
U25 is conn  
&U1 is SPI ROM

## BIOS ROM



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                               |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|-------------------------------|-----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Title                         |                 |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2005/03/10         | Deciphered Date | 2006/03/10 | TCG/BIOS ROM/PS2/SW LPC DEBUG |                 |
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| Date: Tuesday, February 03, 2009                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |            | Sheet 31                      | of 45           |

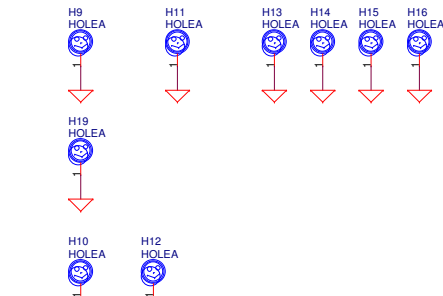




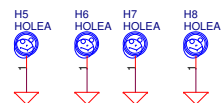
# WWAN Card STANDOFF



# WWLAN Card STANDOFF



# CPU support



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|-----------------------------|
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Sheet                    | 33 of 45                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Rev                      | 0.1                         |

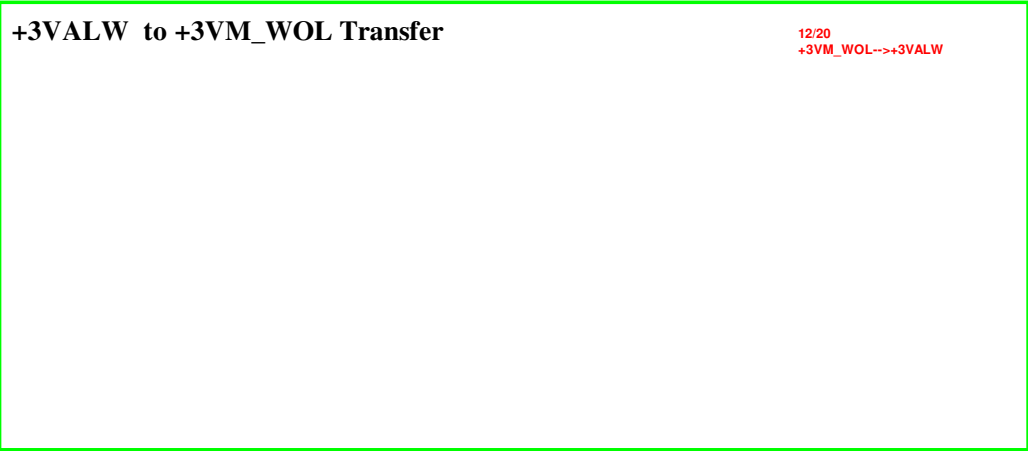
+1.05VM to +VCCP Transfer

12/12  
+1.05VN-->+VCCP

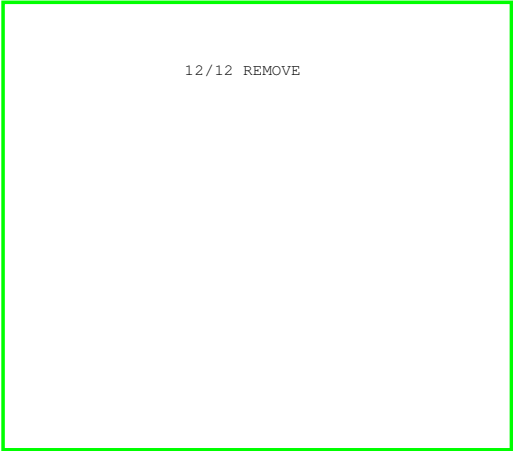


+3VALW to +3VM\_WOL Transfer

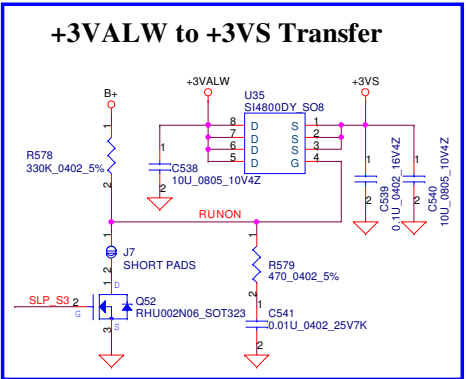
12/20  
+3VM\_WOL-->+3VALW



12/12 REMOVE

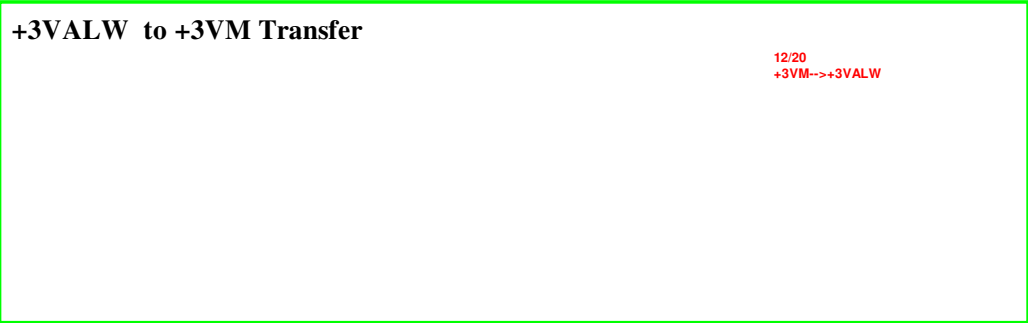


+3VALW to +3VS Transfer

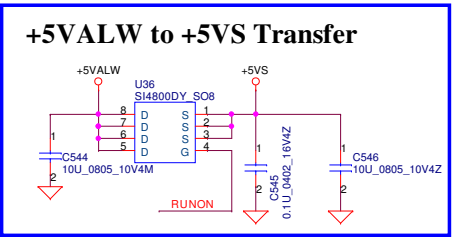


+3VALW to +3VM Transfer

12/20  
+3VM-->+3VALW

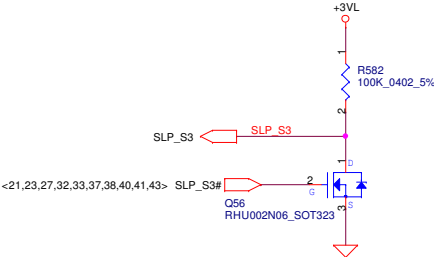


+5VALW to +5VS Transfer



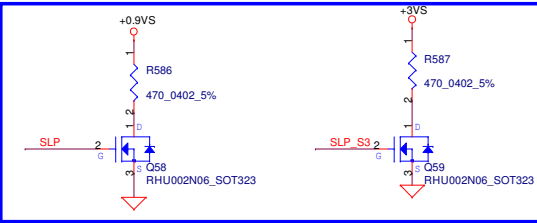
12/20 HP review  
SLP control

01/16 del part

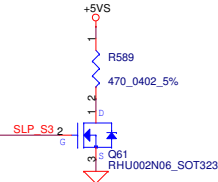


Discharge circuit-1

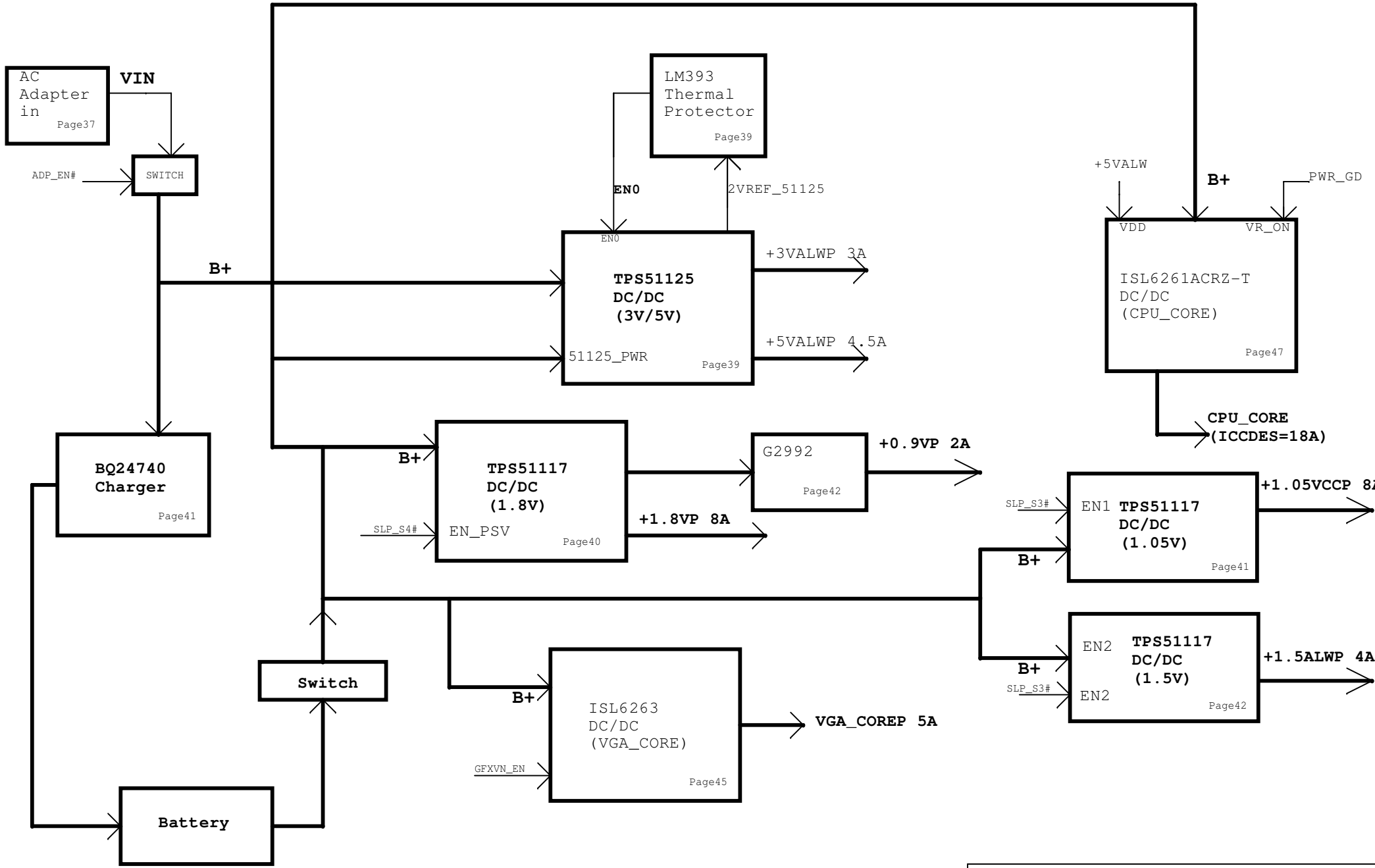
01/16 del part



01/16 del part

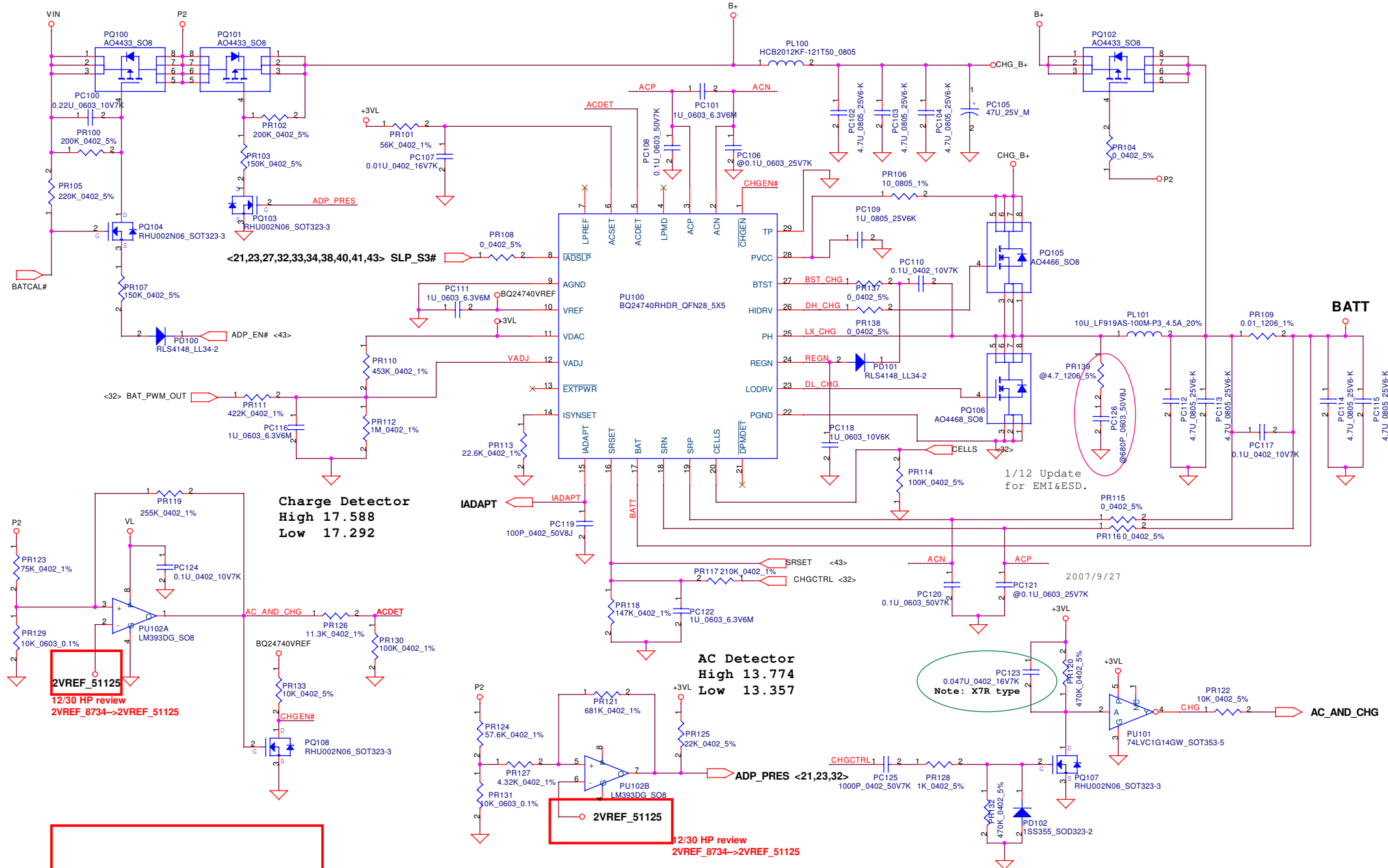


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|----------------|-----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title          |                 |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2006/02/13 | Deciphered Date    | 2006/07/26 | DC/DC Circuits |                 |
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| Date: Tuesday, February 03, 2009                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                    |            | Sheet 34       | of 45           |



|                     |                            |                |
|---------------------|----------------------------|----------------|
| Title               |                            |                |
| POWER BLOCK DIAGRAM |                            |                |
| Size                | Document Number            | Rev            |
| Date:               | Tuesday, February 03, 2009 | Sheet 35 of 45 |





Charge Detector  
High 17.588  
Low 17.292

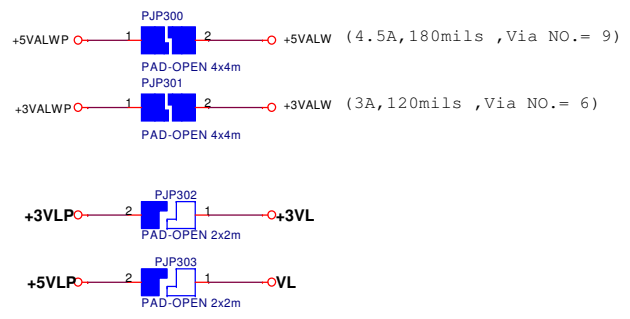
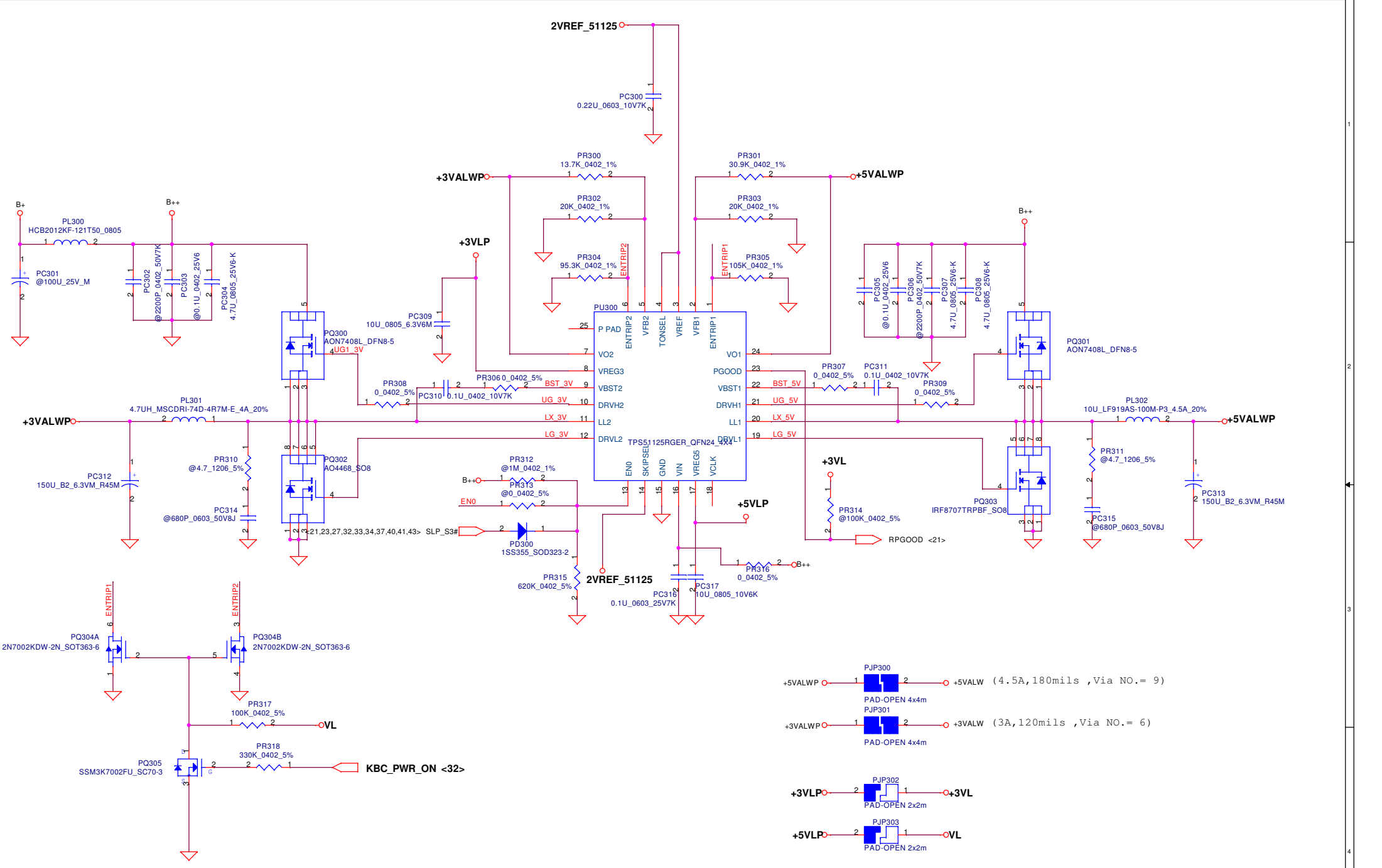
AC Detector  
High 13.774  
Low 13.357

2VREF\_51125  
12/30 HP review  
2VREF\_8734-->2VREF\_51125

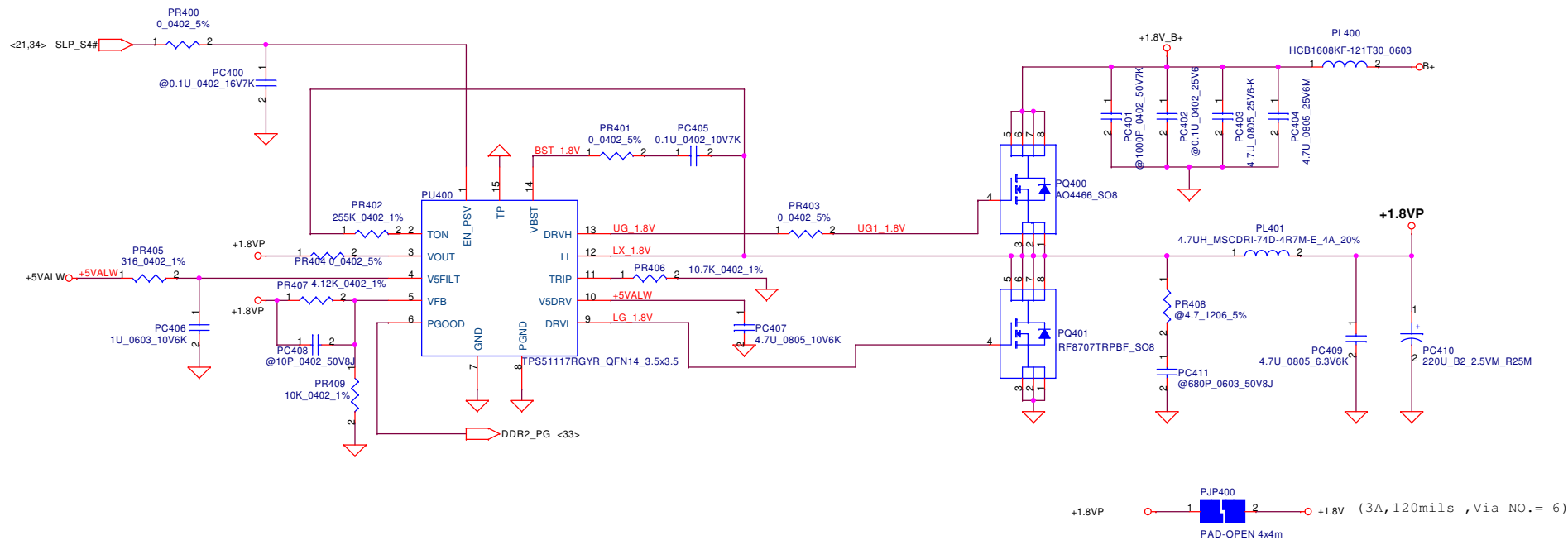
12/30 HP review  
2VREF\_8734-->2VREF\_51125

12/30 HP review  
Del this circuit

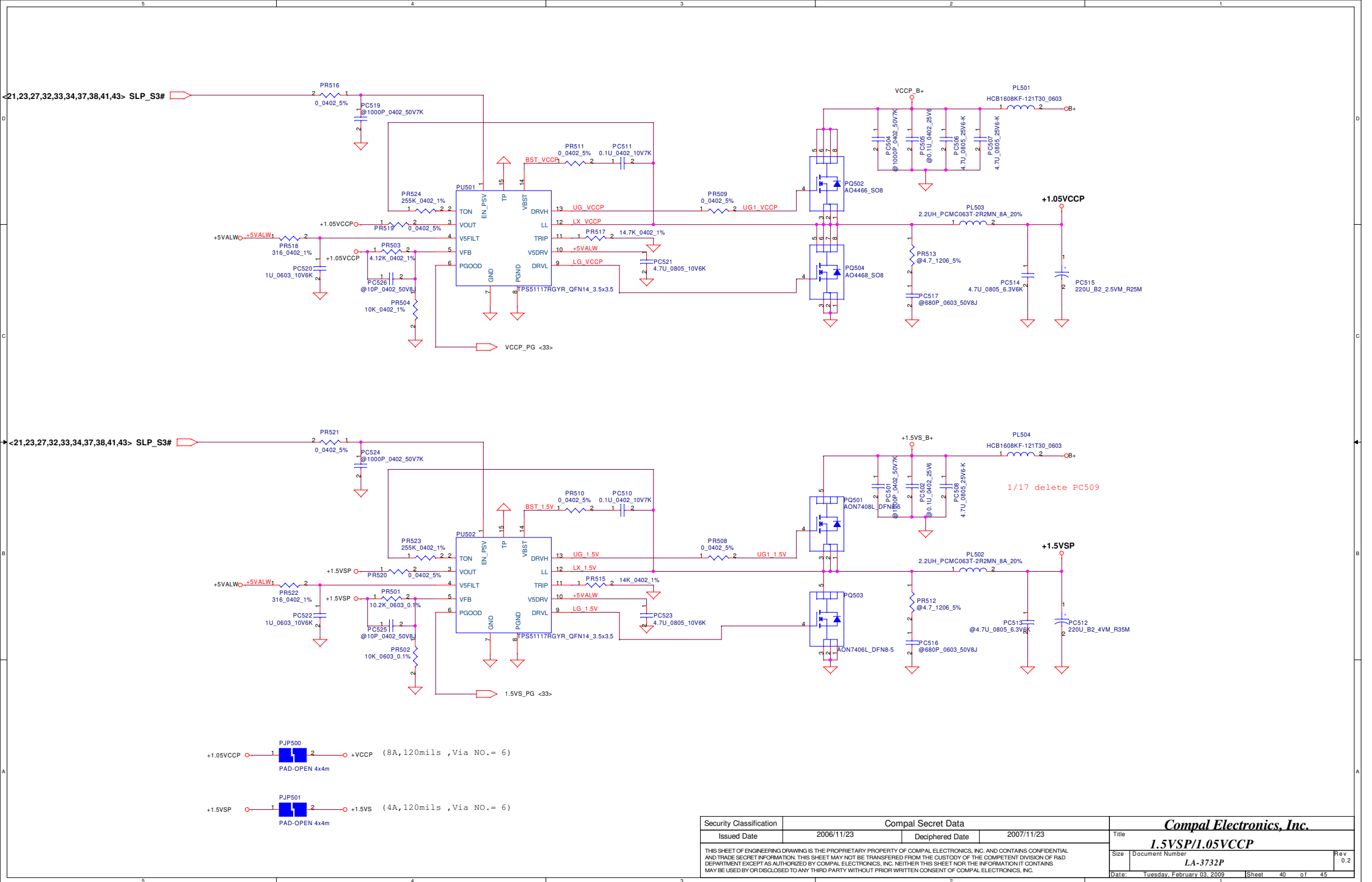
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                    |            |                          |       |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | Compal Secret Data |            | Compal Electronics, Inc. |       |
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| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Document Number | Rev                |            | LA-3941P                 |       |
| Date: Tuesday, February 03, 2009                                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Sheet              |            | 37                       | of 45 |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                                  |                          |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title                            |                          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2008/09/15 | Deciphered Date    | 2009/09/15 | 3.3VALWP/5VALWP                  |                          |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet 38 of 45                   |                          |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                 |
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| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                 |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | LA-3942P                 |                 |
| Date: Tuesday, February 03, 2009                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                    |            | Sheet                    | 39 of 45        |

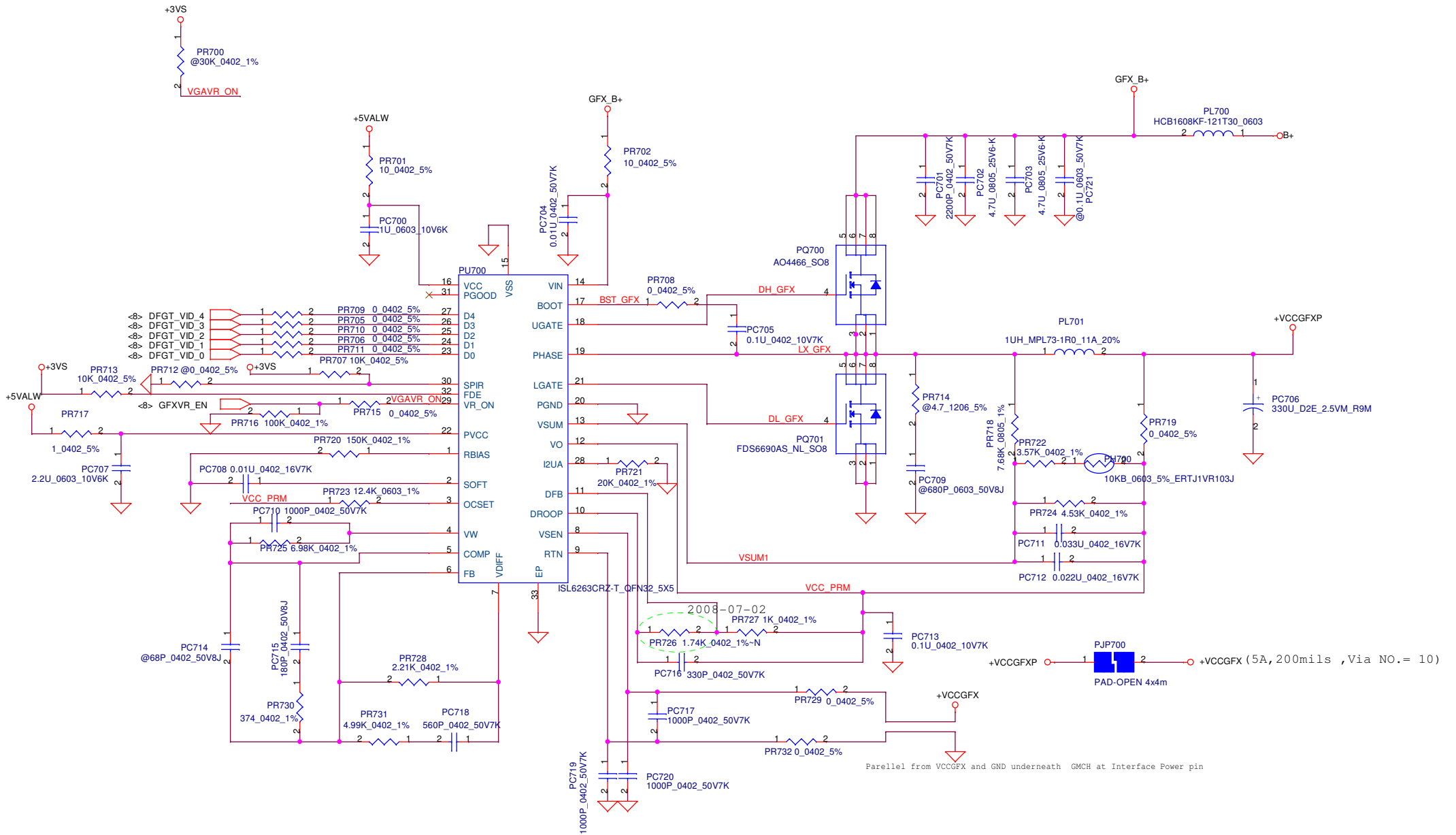


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| Security Classification |  | Compal Secret Data |                 | Compal Electronics, Inc. |                                  |                 |
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|                         |  |                    |                 |                          | Sheet                            | 40 of 45        |









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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Tuesday, February 03, 2009 | 44 of 45 |

