

# Compal Confidential

## JALA0 M/B Schematics Document

Intel Penryn Processor with Cantiga + DDRII + ICH9M

(With Ati & nVidia MXM/B)

2008-04-18

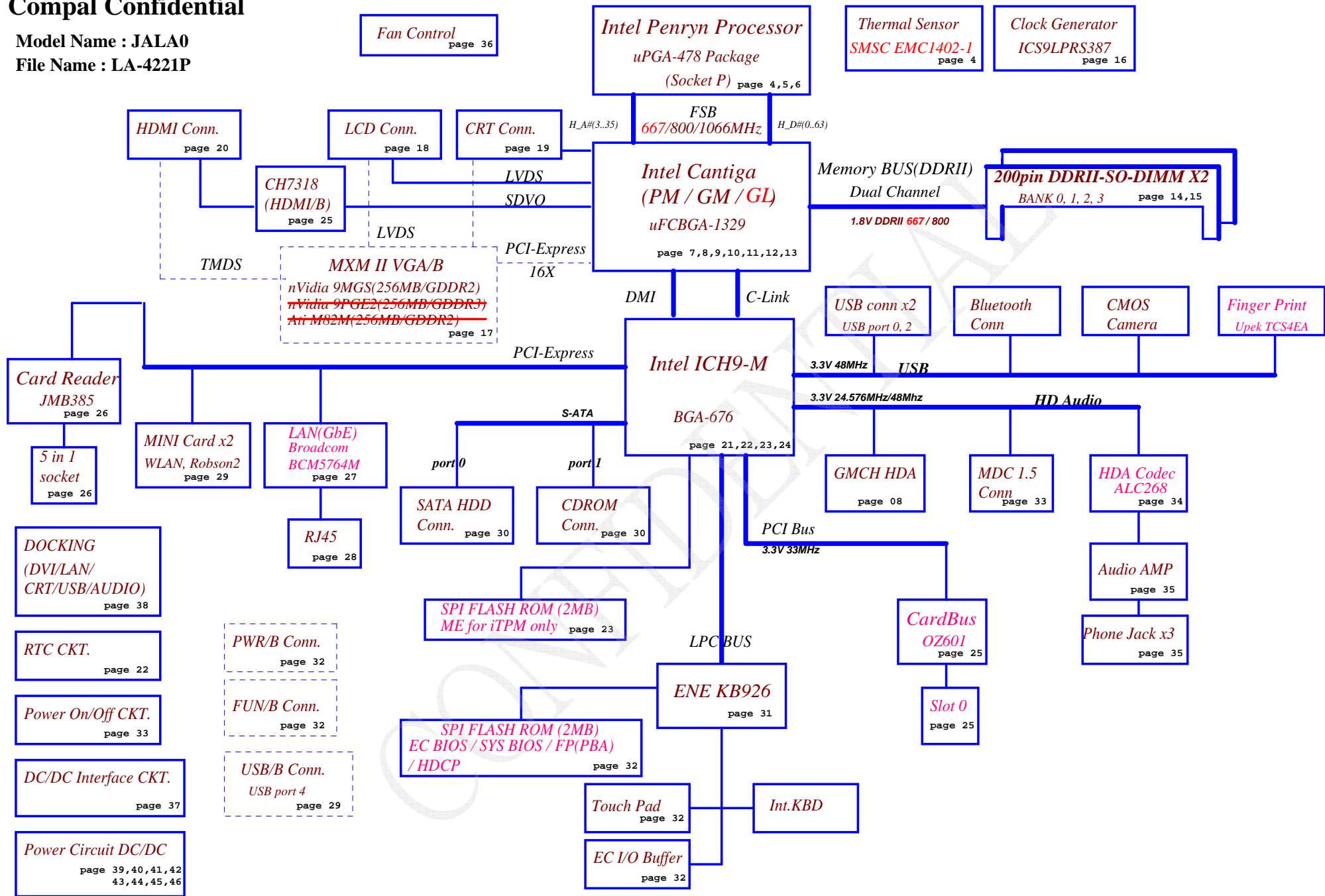
REV:1.0

|   |            |                    |            |                          |                    |
|---|------------|--------------------|------------|--------------------------|--------------------|
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| Issued Date   | 2007/09/20 | Deciphered Date    | 2008/09/20 | Title                    | SCHEMATIC MB A4221 |
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|   |            |                    |            | Document Number          | 401552             |
| Date: Thursday, October 16, 2008  |            |                    |            | Sheet                    | 1 of 50            |

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Model Name : JALAO

File Name : LA-4221P



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|   |            |                    |            | Date                     | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 2 of 50                    |

Voltage Rails

| Power Plane | Description                                 | S1  | S3  | S5  |
|-------------|---|-----|-----|-----|
| VIN         | Adapter power supply (19V)                  | N/A | N/A | N/A |
| B+          | AC or battery power rail for power circuit. | N/A | N/A | N/A |
| +CPU_CORE   | Core voltage for CPU                        | ON  | OFF | OFF |
| +0.9VS      | 0.9V switched power rail for DDR terminator | ON  | OFF | OFF |
| +1.05VS     | 1.05V switched power rail                   | ON  | OFF | OFF |
| +1.25VS     | 1.25V switched power rail                   | ON  | OFF | OFF |
| +1.5VS      | 1.5V switched power rail                    | ON  | OFF | OFF |
| +1.8V       | 1.8V power rail for DDR                     | ON  | ON  | OFF |
| +1.8VS      | 1.8V switched power rail                    | ON  | OFF | OFF |
| +2.5VS      | 2.5V switched power rail                    | ON  | OFF | OFF |
| +3VALW      | 3.3V always on power rail                   | ON  | ON  | ON* |
| +3V         | 3.3V power rail for SB                      | ON  | ON  | X   |
| +3V_LAN     | 3.3V power rail for LAN                     | ON  | ON  | X   |
| +3VS        | 3.3V switched power rail                    | ON  | OFF | OFF |
| +5VALW      | 5V always on power rail                     | ON  | ON  | ON* |
| +5VS        | 5V switched power rail                      | ON  | OFF | OFF |
| +VSB        | VSB always on power rail                    | ON  | ON  | ON* |
| +RTCVCC     | RTC power                                   | ON  | ON  | ON  |

Note : ON\* means that this power plane is ON only with AC power available, otherwise it is OFF.

External PCI Devices

| Device        | IDSEL# | REQ#/GNT# | Interrupts |
|---------------|--------|-----------|------------|
| Cardbus OZ601 | AD16   | 0         | PIRQE      |

EC SM Bus1 address

| Device           | Address     |
|------------------|-------------|
| Smart Battery    | 0001 011X b |
| EEPROM(24C16/02) | 1010 000X b |
| GPU(MXM/B)       | 1001 111X b |

EC SM Bus2 address

| Device         | Address     |
|----------------|-------------|
| ADT7421        | 1001 100X b |
| (LAN BCM5764M) | Reserved    |

ICH9M SM Bus address

| Device                        | Address    |
|-------------------------------|------------|
| Clock Generator (ICS9LPRS387) | 1101 001Xb |
| DDR DIMM0                     | 1001 000Xb |
| DDR DIMM1                     | 1001 010Xb |
| LAN BCM5764M                  | Reserved   |
| (MINI CARD_WL_Robson)         | Reserved   |

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

Board ID / SKU ID Table for AD channel

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

BOARD ID Table

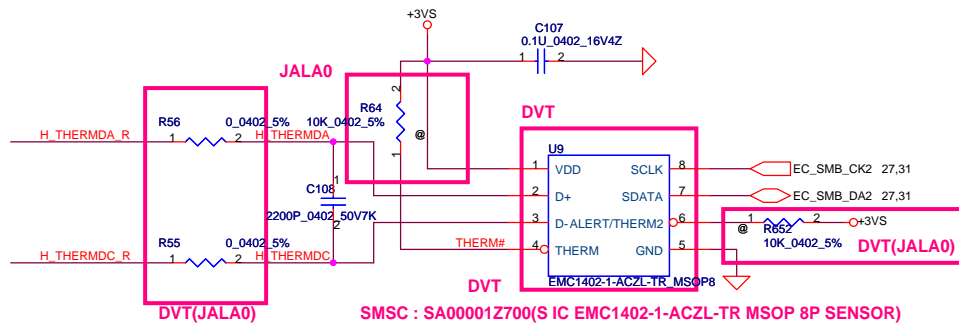
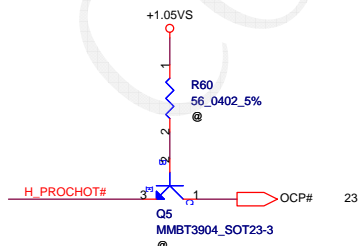
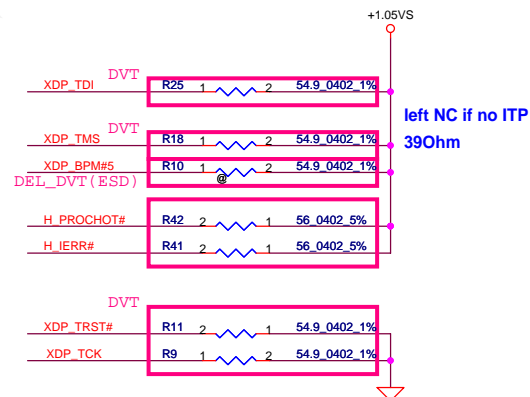
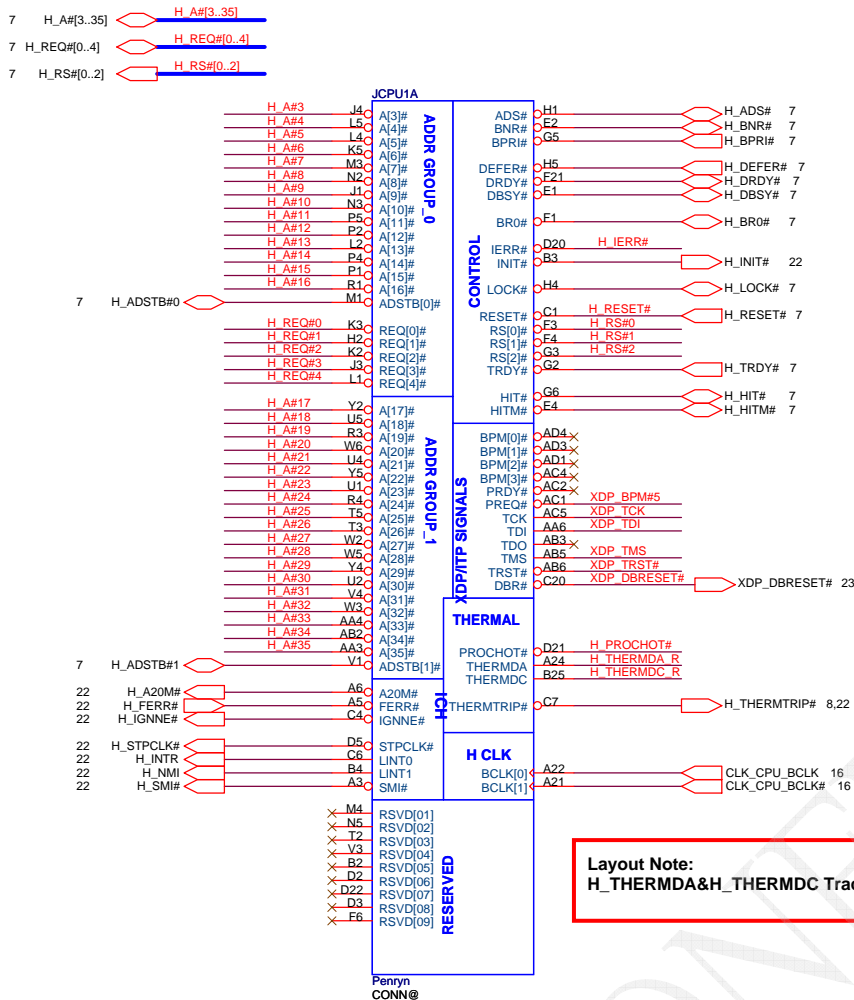
| Board ID | PCB Revision |
|----------|--------------|
| 0        | 0.1          |
| 1        | 0.2          |
| 2        | 0.3          |
| 3        | 1.0          |
| 4        | 1A           |
| 5        |              |
| 6        |              |
| 7        |              |

BTO Option Table

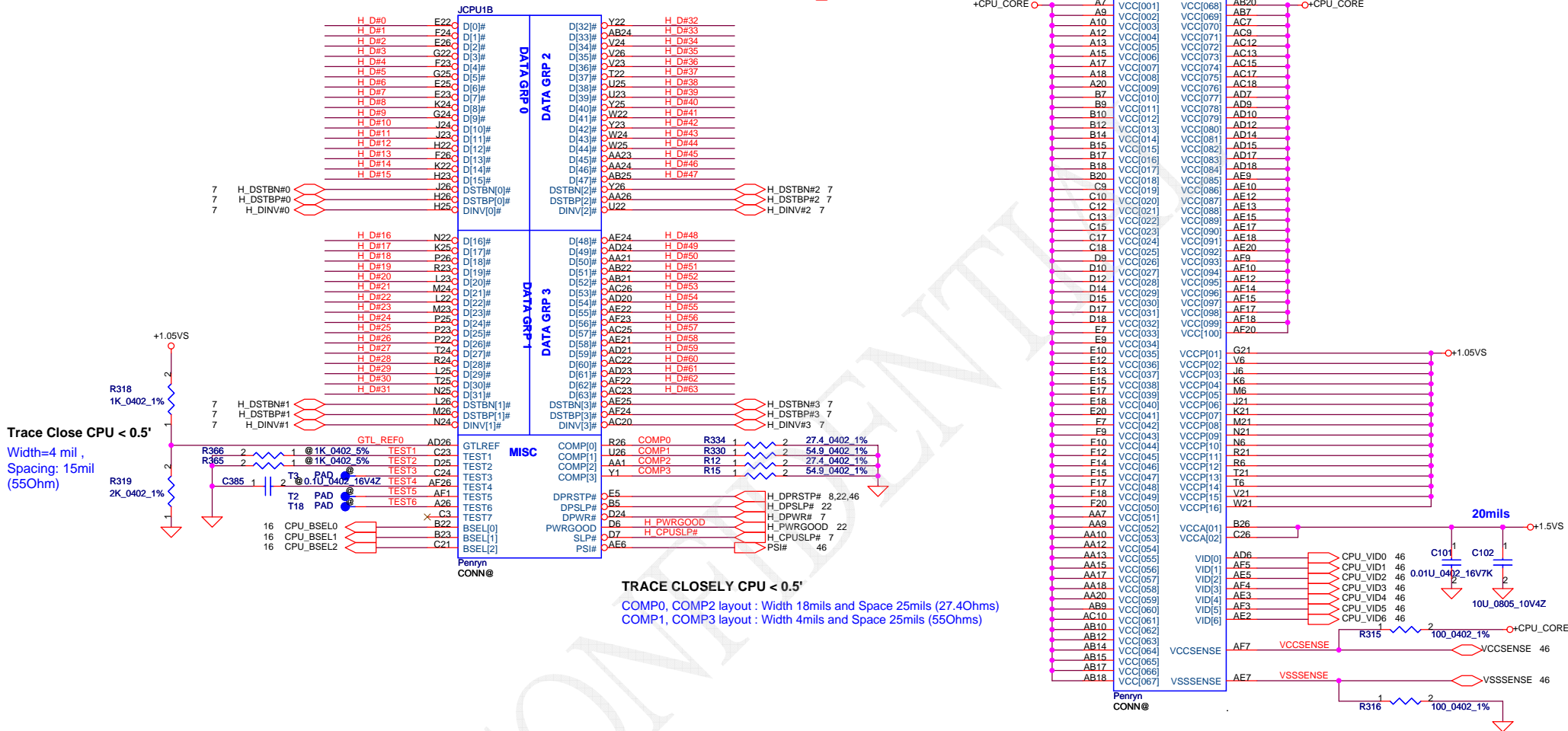
| BTO Item       | BOM Structure |
|----------------|---------------|
| Discrete_H     | PM@           |
| UMA            | GM@           |
| UMA_H          | UMAGM@        |
| UMA_L          | UMAGL@        |
| Kinabalu_H     | MAIN@         |
| Kinabalu_L     | VALUE@        |
| RTC Batt       | 45@           |
| ICH9M BASE     | ICH9MB@       |
| ICH9M ENHANCE  | ICH9ME@       |
| SB ROM(2MB)    | SPI2MB@       |
| SB ROM(4MB)    | SPI4MB@       |
| iTPM enable    | WITHITPM@     |
| iTPM disable   | WOITPM@       |
| HDMI enable    | HDMI@         |
| HDMI GM DET    | HDMIGM@       |
| HDMI GL/PM DET | HDMILPM@      |

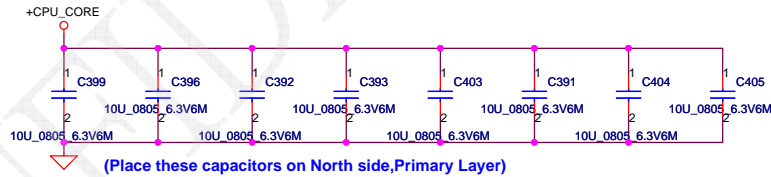
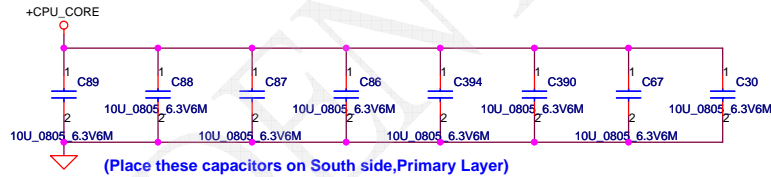
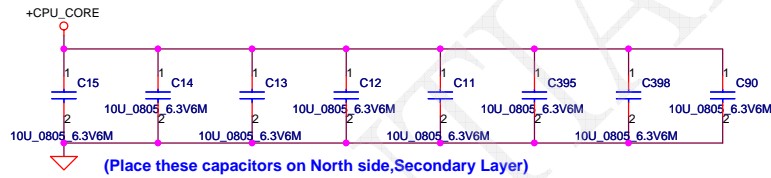
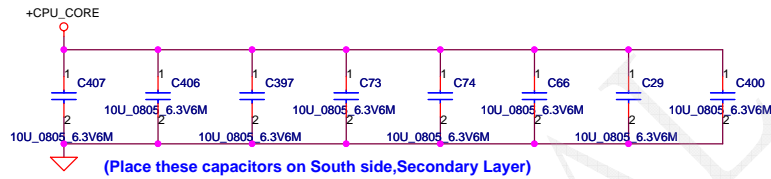
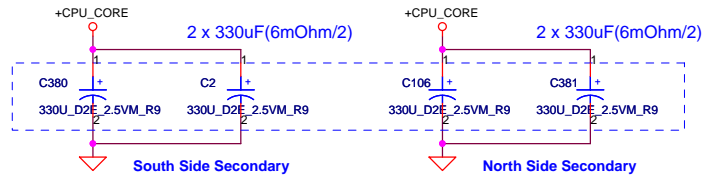
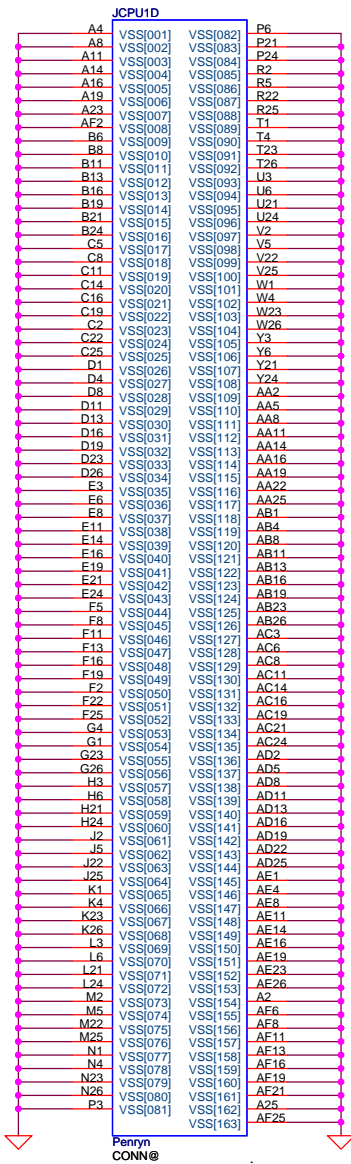
Kinabalu\_L : UMA(GL) & w/o Dock & w/o Mini card 2 & w/o iTPM

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|   |                    |                 |            | Date:                      | 401552             |       |
|   |                    |                 |            | Thursday, October 16, 2008 |                    |       |
|   |                    |                 |            | Sheet                      | 3                  | of 50 |

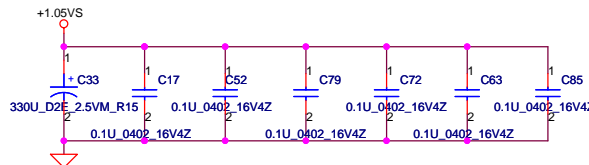


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|---|--|----------------------------|--|-----------------|--|--------------------------|--|--------------------|--|-------|--|
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| Size  |  | Document Number            |  |                 |  |                          |  |                    |  | Rev   |  |
| B   |  | 401552                     |  |                 |  |                          |  |                    |  | D     |  |
| Date:   |  | Thursday, October 16, 2008 |  |                 |  | Sheet                    |  | 4                  |  | of 50 |  |





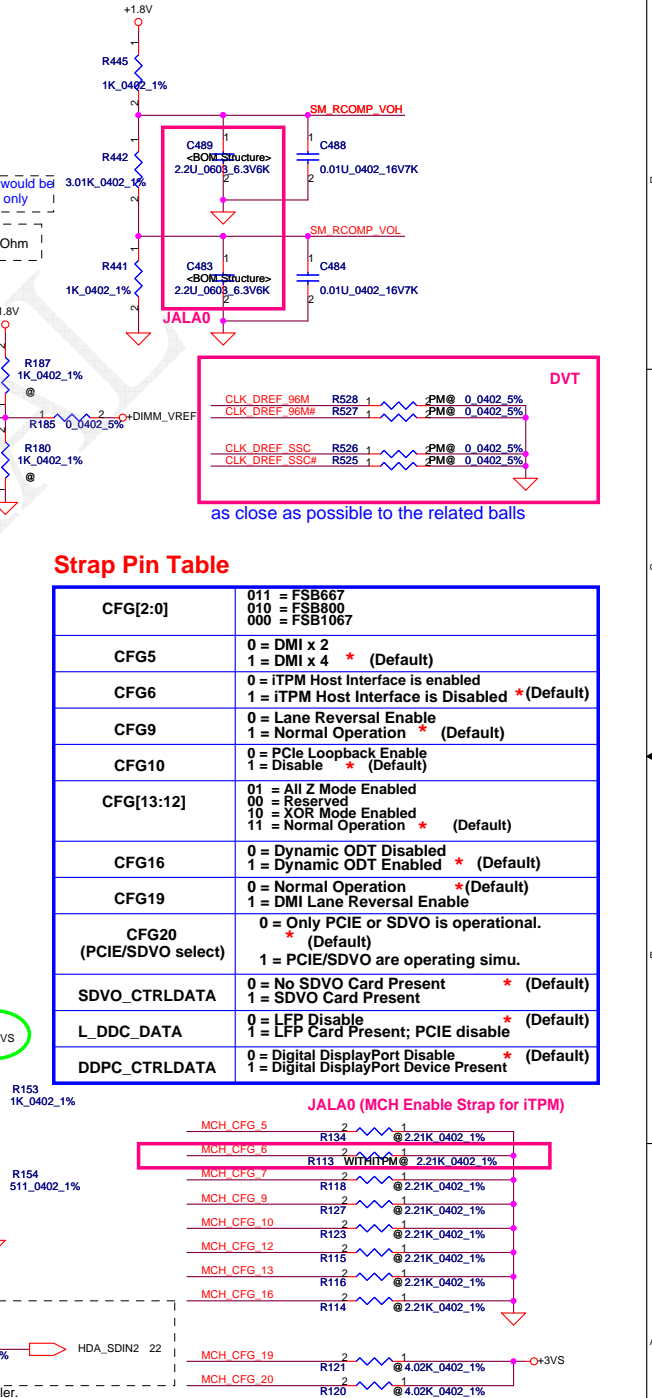
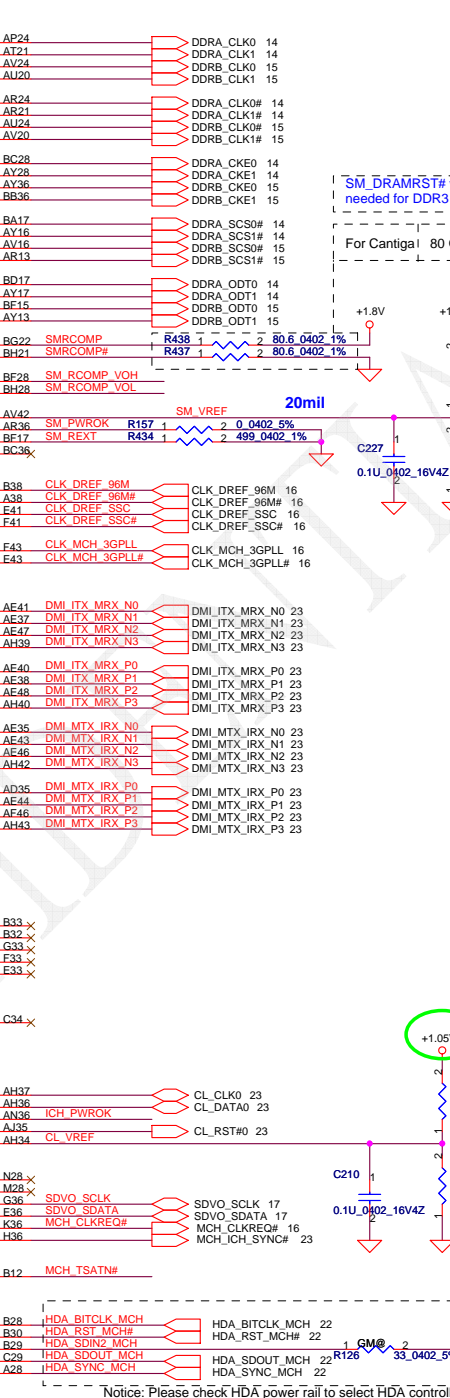
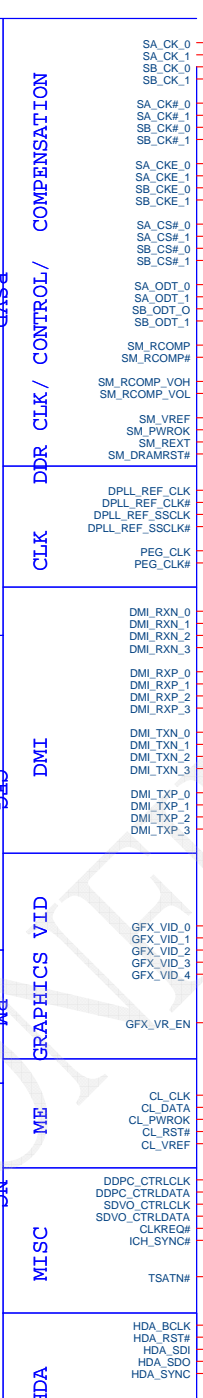
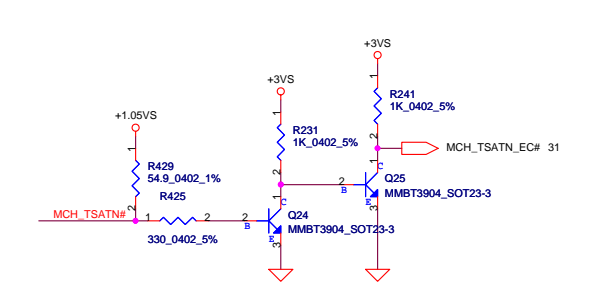
| +CPU-CORE<br>Decoupling | C,uF    | ESR, mohm | ESL,nH   |
|-------------------------|---------|-----------|----------|
| SPCAP,Polymer           | 4X330uF | 6m ohm/4  | 1.8nH/6  |
| MLCC 0805 X5R           | 32X22uF | 3m ohm/32 | 0.6nH/32 |
|                         | 32X10uF | 3m ohm/32 | 0.6nH/32 |



|   |            |                    |            |                          |                            |
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|   |            |                    |            | Sheet                    | 6 of 50                    |

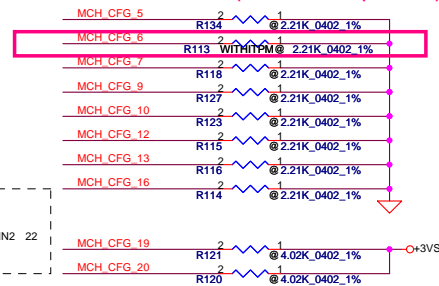






| Strap Pin Table             |  |
|-----------------------------|--|
| CFG[2:0]                    | 011 = FSB667<br>010 = FSB800<br>000 = FSB1067  |
| CFG5                        | 0 = DMI x 2<br>1 = DMI x 4 * (Default)   |
| CFG6                        | 0 = iTPM Host Interface is enabled<br>1 = iTPM Host Interface is Disabled * (Default)                  |
| CFG9                        | 0 = Lane Reversal Enable<br>1 = Normal Operation * (Default)   |
| CFG10                       | 0 = PCIe Loopback Enable<br>1 = Disable * (Default)  |
| CFG[13:12]                  | 01 = All Z Mode Enabled<br>00 = Reserved<br>10 = XOR Mode Enabled<br>11 = Normal Operation * (Default) |
| CFG16                       | 0 = Dynamic ODT Disabled<br>1 = Dynamic ODT Enabled * (Default)  |
| CFG19                       | 0 = Normal Operation * (Default)<br>1 = DMI Lane Reversal Enable                                       |
| CFG20<br>(PCIE/SDVO select) | 0 = Only PCIE or SDVO is operational.<br>(Default)<br>1 = PCIE/SDVO are operating simu.                |
| SDVO_CTRLDATA               | 0 = No SDVO Card Present * (Default)<br>1 = SDVO Card Present  |
| L_DDC_DATA                  | 0 = LFP Disable * (Default)<br>1 = LFP Card Present; PCIE disable                                      |
| DDPC_CTRLDATA               | 0 = Digital DisplayPort Disable * (Default)<br>1 = Digital DisplayPort Device Present                  |

### JALA0 (MCH Enable Strap for iTPM)



Notice: Please check HDA power rail to select HDA controller

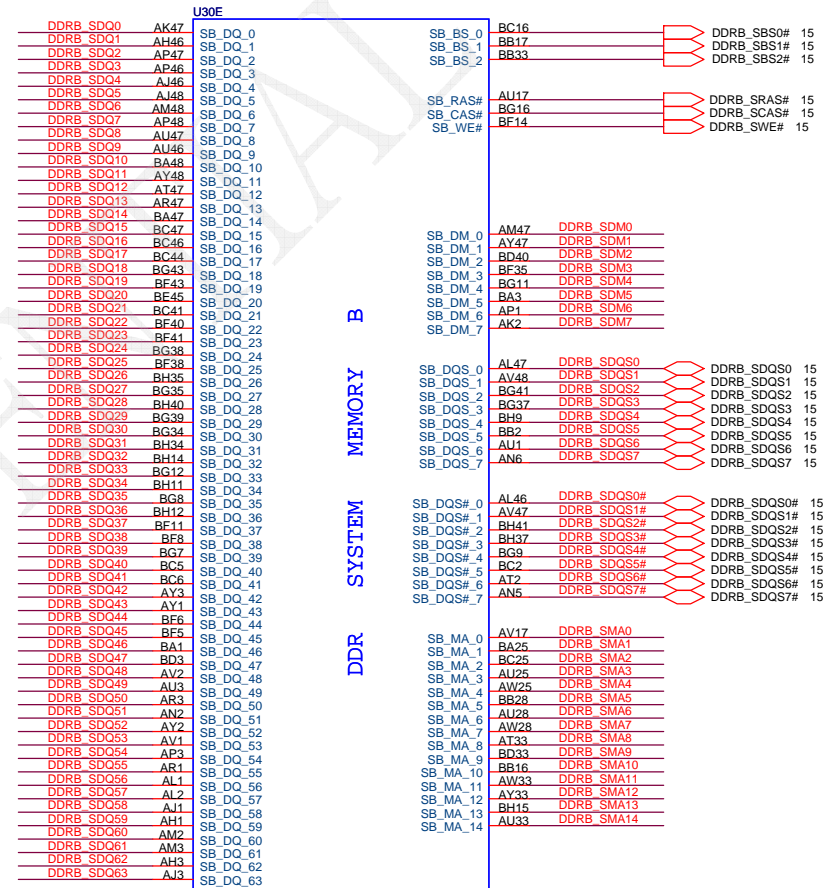


14 DDRA\_SDQ[0..63] < DDRA\_SDQ[0..63]  
14 DDRA\_SDM[0..7] < DDRA\_SDM[0..7]  
14 DDRA\_SMA[0..14] < DDRA\_SMA[0..14]

15 DDRB\_SDQ[0..63] < DDRB\_SDQ[0..63]  
15 DDRB\_SDM[0..7] < DDRB\_SDM[0..7]  
15 DDRB\_SMA[0..14] < DDRB\_SMA[0..14]



CANTIGA ES\_FCBGA1329  
UMAGM@



CANTIGA ES\_FCBGA1329  
UMAGM@

DVT CANTIGA GM: SA00001P930  
(S IC EB88CTGM QR32 B0 FCBGA 1329 MCH GM)

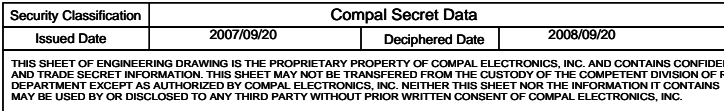
Pre-MP CANTIGA GM: SA00002JTBO  
(S IC AC82GM45 SLB94 B3 FCBGA1329 GM ABO!)

PVT CANTIGA GM: SA00002JT10  
(S IC AC88CTGM QT62 B2 FCBGA 1329 GMCH GM)

PVT2 CANTIGA GM: SA00002JT50  
(S IC AC88CTGM QU36 B3 FCBGA 1329 GMCH GM)

|   |            |                    |            |                               |                    |
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| Date: Thursday, October 16, 2008  |            | Sheet 9 of 50      |            | Size B Document Number 401552 |                    |









U30I

|      |        |         |      |
|------|--------|---------|------|
| AL48 | VSS_1  | VSS_100 | AM36 |
| AR48 | VSS_2  | VSS_101 | AE36 |
| AL48 | VSS_3  | VSS_102 | P36  |
| BB47 | VSS_4  | VSS_103 | L36  |
| AW47 | VSS_5  | VSS_104 | J36  |
| AN47 | VSS_6  | VSS_105 | F36  |
| AJ47 | VSS_7  | VSS_106 | BH21 |
| AF47 | VSS_8  | VSS_107 | AH35 |
| AD47 | VSS_9  | VSS_108 | AA35 |
| AB47 | VSS_10 | VSS_109 | Y35  |
| Y47  | VSS_11 | VSS_110 | U35  |
| T47  | VSS_12 | VSS_111 | T35  |
| N47  | VSS_13 | VSS_112 | BF34 |
| L47  | VSS_14 | VSS_113 | AM34 |
| GA47 | VSS_15 | VSS_114 | AJ34 |
| BD46 | VSS_16 | VSS_115 | AF34 |
| BA46 | VSS_17 | VSS_116 | AE34 |
| AY46 | VSS_18 | VSS_117 | W34  |
| AV46 | VSS_19 | VSS_118 | B34  |
| AR46 | VSS_20 | VSS_119 | A34  |
| AM46 | VSS_21 | VSS_120 | BG33 |
| V46  | VSS_22 | VSS_121 | BC33 |
| R46  | VSS_23 | VSS_122 | BA33 |
| PA46 | VSS_24 | VSS_123 | AV33 |
| H46  | VSS_25 | VSS_124 | AR33 |
| F46  | VSS_26 | VSS_125 | AL33 |
| BF44 | VSS_27 | VSS_126 | AH33 |
| AH44 | VSS_28 | VSS_127 | BC33 |
| AD44 | VSS_29 | VSS_128 | P33  |
| AA44 | VSS_30 | VSS_129 | L33  |
| Y44  | VSS_31 | VSS_130 | H33  |
| U44  | VSS_32 | VSS_131 | N32  |
| T44  | VSS_33 | VSS_132 | K32  |
| M44  | VSS_34 | VSS_133 | F32  |
| F44  | VSS_35 | VSS_134 | C32  |
| BC43 | VSS_36 | VSS_135 | A31  |
| AV43 | VSS_37 | VSS_136 | AN29 |
| AM43 | VSS_38 | VSS_137 | T29  |
| J43  | VSS_39 | VSS_138 | N29  |
| C43  | VSS_40 | VSS_139 | H29  |
| BG42 | VSS_41 | VSS_140 | F29  |
| AY42 | VSS_42 | VSS_141 | A29  |
| AT42 | VSS_43 | VSS_142 | BG28 |
| AW42 | VSS_44 | VSS_143 | BD28 |
| AJ42 | VSS_45 | VSS_144 | BA28 |
| AE42 | VSS_46 | VSS_145 | AV28 |
| NA2  | VSS_47 | VSS_146 | AT28 |
| L42  | VSS_48 | VSS_147 | BG14 |
| BD41 | VSS_49 | VSS_148 | AJ28 |
| AU41 | VSS_50 | VSS_149 | AA14 |
| AM41 | VSS_51 | VSS_150 | C14  |
| AH41 | VSS_52 | VSS_151 | BG13 |
| AD41 | VSS_53 | VSS_152 | AE28 |
| AA41 | VSS_54 | VSS_153 | AB28 |
| Y41  | VSS_55 | VSS_154 | Y28  |
| U41  | VSS_56 | VSS_155 | P28  |
| T41  | VSS_57 | VSS_156 | K28  |
| M41  | VSS_58 | VSS_157 | H28  |
| G41  | VSS_59 | VSS_158 | F28  |
| B41  | VSS_60 | VSS_159 | C28  |
| BG40 | VSS_61 | VSS_160 | BF26 |
| BB40 | VSS_62 | VSS_161 | L13  |
| AV40 | VSS_63 | VSS_162 | G13  |
| AN40 | VSS_64 | VSS_163 | E13  |
| H40  | VSS_65 | VSS_164 | BF12 |
| E40  | VSS_66 | VSS_165 | AV12 |
| AT39 | VSS_67 | VSS_166 | C26  |
| AM39 | VSS_68 | VSS_167 | BH25 |
| AJ39 | VSS_69 | VSS_168 | BD25 |
| AE39 | VSS_70 | VSS_169 | BB25 |
| N39  | VSS_71 | VSS_170 | AV25 |
| L39  | VSS_72 | VSS_171 | AR25 |
| B39  | VSS_73 | VSS_172 | AJ25 |
| BH38 | VSS_74 | VSS_173 | AC25 |
| BC38 | VSS_75 | VSS_174 | Y25  |
| BA38 | VSS_76 | VSS_175 | N25  |
| AJ38 | VSS_77 | VSS_176 | L25  |
| AH38 | VSS_78 | VSS_177 | J25  |
| AD38 | VSS_79 | VSS_178 | G25  |
| AA38 | VSS_80 | VSS_179 | E26  |
| Y38  | VSS_81 | VSS_180 | BF24 |
| U38  | VSS_82 | VSS_181 | AO12 |
| T38  | VSS_83 | VSS_182 | AT24 |
| J38  | VSS_84 | VSS_183 | AJ24 |
| F38  | VSS_85 | VSS_184 | AH24 |
| C38  | VSS_86 | VSS_185 | AF24 |
| BF37 | VSS_87 | VSS_186 | AB24 |
| BB37 | VSS_88 | VSS_187 | R24  |
| AW37 | VSS_89 | VSS_188 | L24  |
| AT37 | VSS_90 | VSS_189 | K24  |
| AN37 | VSS_91 | VSS_190 | J24  |
| AJ37 | VSS_92 | VSS_191 | G24  |
| H37  | VSS_93 | VSS_192 | F24  |
| C37  | VSS_94 | VSS_193 | E24  |
| RG36 | VSS_95 | VSS_194 | BH23 |
| BD36 | VSS_96 | VSS_195 | AG23 |
| AK15 | VSS_97 | VSS_196 | Y23  |
| AU36 | VSS_98 | VSS_197 | B23  |
|      | VSS_99 | VSS_198 | AJ6  |
|      |        | VSS_199 |      |

CANTIGA ES\_FCBGA1329  
UMAGM®

U30J

|      |         |         |     |
|------|---------|---------|-----|
| BG21 | VSS_199 | VSS_297 | AH8 |
| L12  | VSS_200 | VSS_298 | Y8  |
| AW21 | VSS_201 | VSS_299 | L8  |
| AU21 | VSS_202 | VSS_300 | E8  |
| AP21 | VSS_203 | VSS_301 | B8  |
| AN21 | VSS_204 | VSS_302 | AY7 |
| AH21 | VSS_205 | VSS_303 | AU7 |
| AF21 | VSS_206 | VSS_304 | AN7 |
| AB21 | VSS_207 | VSS_305 | AJ7 |
| R21  | VSS_208 | VSS_306 | AE7 |
| U21  | VSS_209 | VSS_307 | AA7 |
| J21  | VSS_210 | VSS_308 | N7  |
| G21  | VSS_211 | VSS_309 | J7  |
| BC20 | VSS_212 | VSS_310 | BG6 |
| AJ34 | VSS_213 | VSS_311 | BD6 |
| AW20 | VSS_214 | VSS_312 | AV6 |
| AT20 | VSS_215 | VSS_313 | AT6 |
| AJ20 | VSS_216 | VSS_314 | AM6 |
| AG20 | VSS_217 | VSS_315 | M6  |
| Y20  | VSS_218 | VSS_316 | C6  |
| N20  | VSS_219 | VSS_317 | BA5 |
| K20  | VSS_220 | VSS_318 | AH5 |
| F20  | VSS_221 | VSS_319 | AD5 |
| C20  | VSS_222 | VSS_320 | Y5  |
| BG19 | VSS_223 | VSS_321 | L5  |
| A18  | VSS_224 | VSS_322 | J5  |
| BC17 | VSS_225 | VSS_323 | H5  |
| AW17 | VSS_226 | VSS_324 | F5  |
| AT17 | VSS_227 | VSS_325 | BE4 |
| R17  | VSS_228 |         |     |
| M17  | VSS_229 | VSS_327 | BC3 |
| H17  | VSS_230 | VSS_328 | AV3 |
| C17  | VSS_231 | VSS_329 | AL3 |
|      | VSS_232 | VSS_330 | R3  |
|      | VSS_233 | VSS_331 | P3  |
|      |         | VSS_332 | F3  |
| BA16 | VSS_235 | VSS_333 | BA2 |
|      |         | VSS_334 | AW2 |
| AU16 | VSS_237 | VSS_335 | AU2 |
| AN16 | VSS_238 | VSS_336 | AP2 |
| K16  | VSS_239 | VSS_337 | AJ2 |
| G16  | VSS_240 | VSS_338 | AH2 |
| E16  | VSS_241 | VSS_339 | AE2 |
| BD28 | VSS_242 | VSS_340 | AD2 |
| AC15 | VSS_243 | VSS_341 | AC2 |
| W15  | VSS_244 | VSS_342 | Y2  |
| A15  | VSS_245 | VSS_343 | M2  |
| BG14 | VSS_246 | VSS_344 | K2  |
| AA14 | VSS_247 | VSS_345 | AM1 |
| C14  | VSS_248 | VSS_346 | AA1 |
| BG13 | VSS_249 | VSS_347 | P1  |
| AE28 | VSS_250 | VSS_348 | H1  |
| AB28 | VSS_251 | VSS_349 |     |
| Y28  | VSS_252 | VSS_350 |     |
| P28  |         |         |     |
| K28  |         |         |     |
| H28  |         |         |     |
| F28  |         |         |     |
| C28  |         |         |     |
| BF26 |         |         |     |
| L13  |         |         |     |
| G13  |         |         |     |
| E13  |         |         |     |
| BF12 |         |         |     |
| AV12 |         |         |     |
| C26  |         |         |     |
| BH25 |         |         |     |
| BD25 |         |         |     |
| BB25 |         |         |     |
| AV25 |         |         |     |
| AR25 |         |         |     |
| AJ25 |         |         |     |
| AC25 |         |         |     |
| Y25  |         |         |     |
| N25  |         |         |     |
| L25  |         |         |     |
| J25  |         |         |     |
| G25  |         |         |     |
| E26  |         |         |     |
| BF24 |         |         |     |
| AO12 |         |         |     |
| AT24 |         |         |     |
| AJ24 |         |         |     |
| AH24 |         |         |     |
| AF24 |         |         |     |
| AB24 |         |         |     |
| R24  |         |         |     |
| L24  |         |         |     |
| K24  |         |         |     |
| J24  |         |         |     |
| G24  |         |         |     |
| F24  |         |         |     |
| E24  |         |         |     |
| BH23 |         |         |     |
| AG23 |         |         |     |
| Y23  |         |         |     |
| B23  |         |         |     |
| AJ6  |         |         |     |

VSS

CANTIGA ES\_FCBGA1329  
UMAGM®

VSS\_NCTF

VSS\_SCB

NC

|             |      |
|-------------|------|
| VSS_297     | AH8  |
| VSS_298     | Y8   |
| VSS_299     | L8   |
| VSS_300     | E8   |
| VSS_301     | B8   |
| VSS_302     | AY7  |
| VSS_303     | AU7  |
| VSS_304     | AN7  |
| VSS_305     | AJ7  |
| VSS_306     | AE7  |
| VSS_307     | AA7  |
| VSS_308     | N7   |
| VSS_309     | J7   |
| VSS_310     | BG6  |
| VSS_311     | BD6  |
| VSS_312     | AV6  |
| VSS_313     | AT6  |
| VSS_314     | AM6  |
| VSS_315     | M6   |
| VSS_316     | C6   |
| VSS_317     | BA5  |
| VSS_318     | AH5  |
| VSS_319     | AD5  |
| VSS_320     | Y5   |
| VSS_321     | L5   |
| VSS_322     | J5   |
| VSS_323     | H5   |
| VSS_324     | F5   |
| VSS_325     | BE4  |
|             |      |
| VSS_327     | BC3  |
| VSS_328     | AV3  |
| VSS_329     | AL3  |
| VSS_330     | R3   |
| VSS_331     | P3   |
| VSS_332     | F3   |
| VSS_333     | BA2  |
| VSS_334     | AW2  |
| VSS_335     | AU2  |
| VSS_336     | AP2  |
| VSS_337     | AJ2  |
| VSS_338     | AH2  |
| VSS_339     | AE2  |
| VSS_340     | AD2  |
| VSS_341     | AC2  |
| VSS_342     | Y2   |
| VSS_343     | M2   |
| VSS_344     | K2   |
| VSS_345     | AM1  |
| VSS_346     | AA1  |
| VSS_347     | P1   |
| VSS_348     | H1   |
| VSS_349     |      |
| VSS_350     |      |
|             |      |
| VSS_351     | U24  |
| VSS_352     | U28  |
| VSS_353     | U25  |
| VSS_354     | U29  |
|             |      |
| VSS_NCTF_1  | AF32 |
| VSS_NCTF_2  | AB32 |
| VSS_NCTF_3  | V32  |
| VSS_NCTF_4  | AJ30 |
| VSS_NCTF_5  | AM29 |
| VSS_NCTF_6  | AE29 |
| VSS_NCTF_7  | AB29 |
| VSS_NCTF_8  | U26  |
| VSS_NCTF_9  | U23  |
| VSS_NCTF_10 | AL20 |
| VSS_NCTF_11 | V20  |
| VSS_NCTF_12 | AC19 |
| VSS_NCTF_13 | AL17 |
| VSS_NCTF_14 | AJ17 |
| VSS_NCTF_15 | AA17 |
| VSS_NCTF_16 | U17  |
|             |      |
| VSS_SCB_1   | BH48 |
| VSS_SCB_2   | BH1  |
| VSS_SCB_3   | A48  |
| VSS_SCB_4   | C1   |
| VSS_SCB_5   | A3   |
|             |      |
| NC_26       | E1   |
| NC_27       | D2   |
| NC_28       | C3   |
| NC_29       | B4   |
| NC_30       | A5   |
| NC_31       | A6   |
| NC_32       | A43  |
| NC_33       | A44  |
| NC_34       | B45  |
| NC_35       | C46  |
| NC_36       | D47  |
| NC_37       | B47  |
| NC_38       | A46  |
| NC_39       | F48  |
| NC_40       | E48  |
| NC_41       | C48  |
| NC_42       | B48  |

PVT2

CANTIGA GM: SA00002JT50  
(S IC AC88CTGM QU36 B3 FCBGA 1329 GMCH GM)

DVT

CANTIGA GM: SA00001P930  
(S IC EB88CTGM QR32 B0 FCBGA 1329 MCH GM)

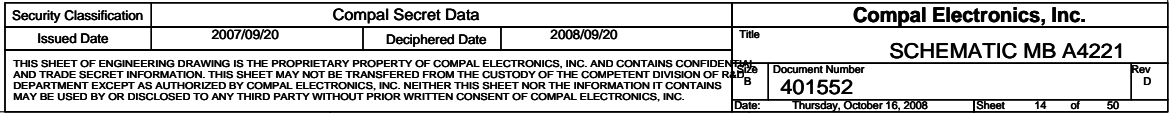
Pre-MP

CANTIGA GM: SA00002JT80  
(S IC AC82GM45 SLB94 B3 FCBGA1329 GM ABOI)

PVT

CANTIGA GM: SA00002JT10  
(S IC AC88CTGM QT62 B2 FCBGA 1329 GMCH GM)

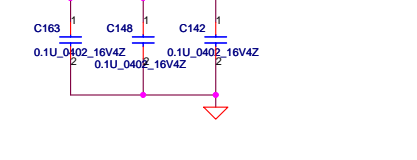
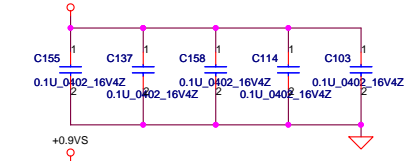
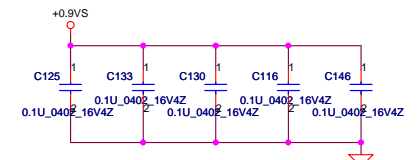
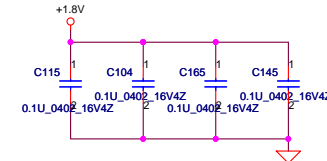
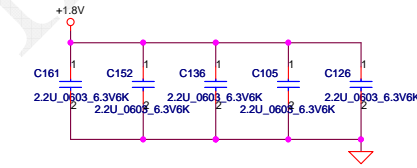
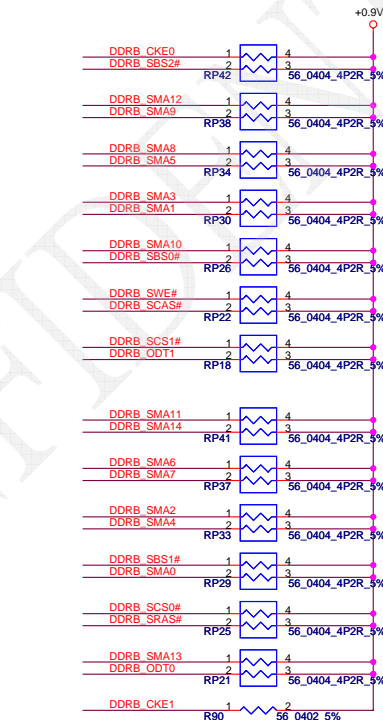
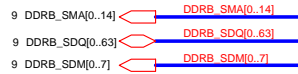
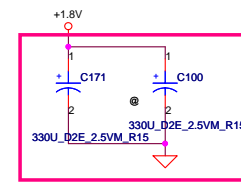
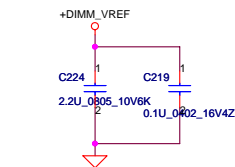
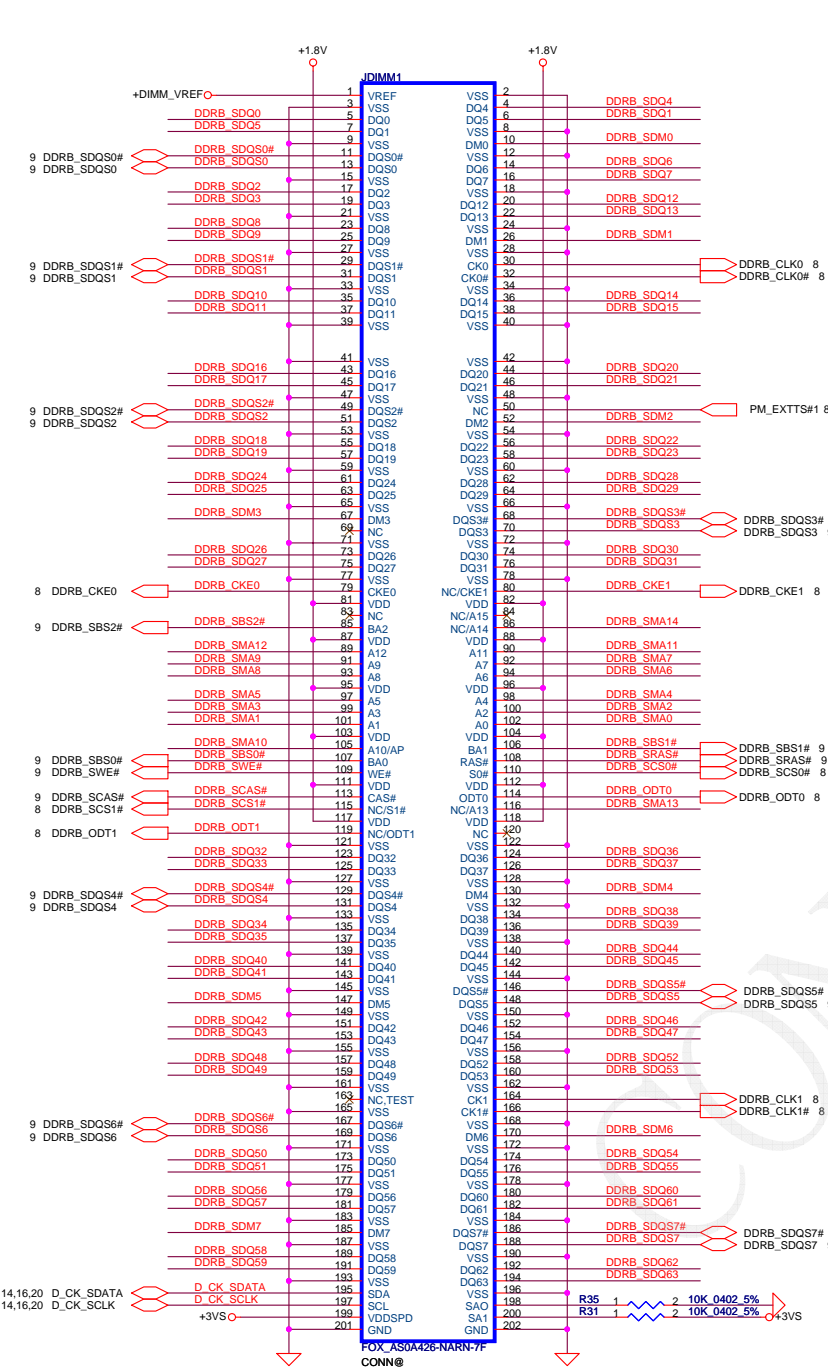
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|   |                    |                 |                          | Rev D                            |
|   |                    |                 |                          | Date: Thursday, October 16, 2008 |
|   |                    |                 |                          | Sheet 13 of 50                   |





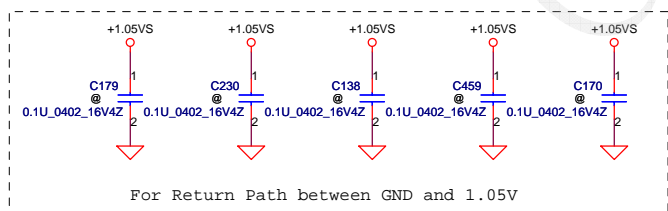
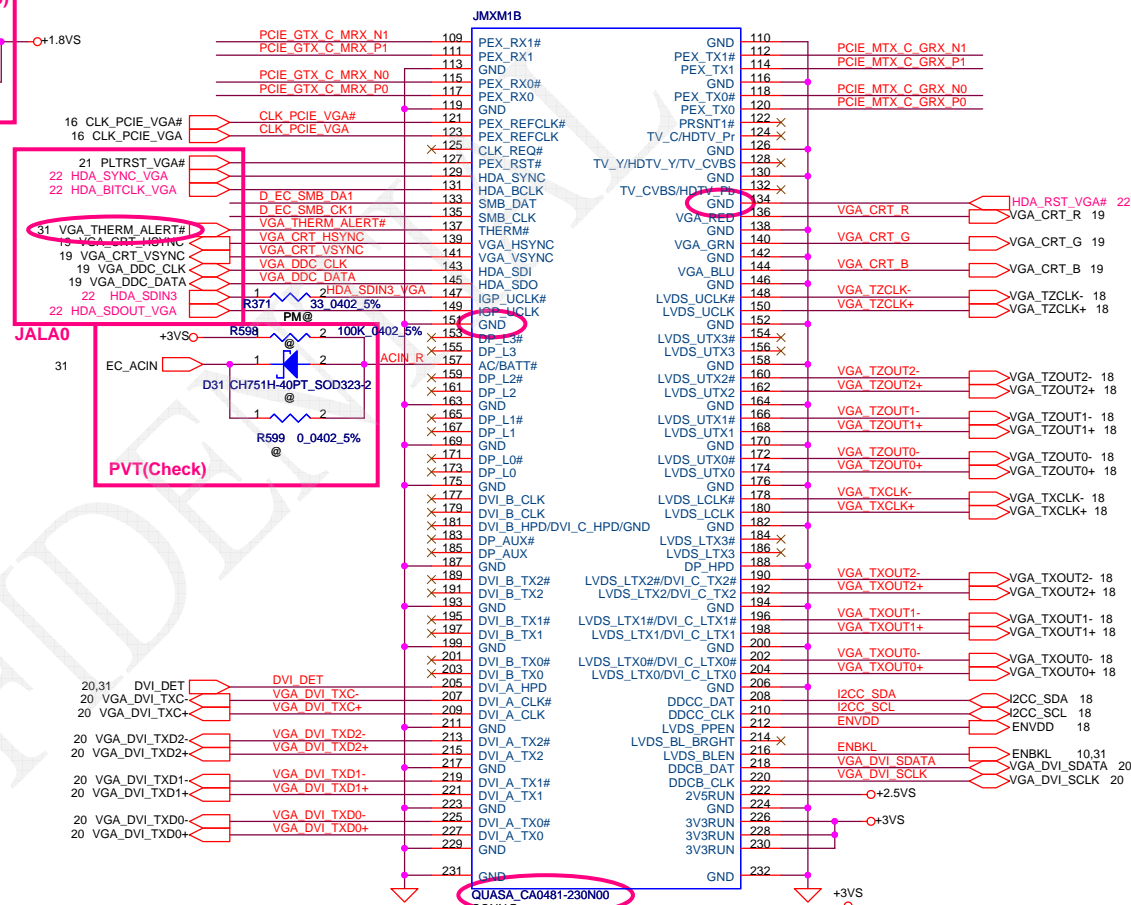
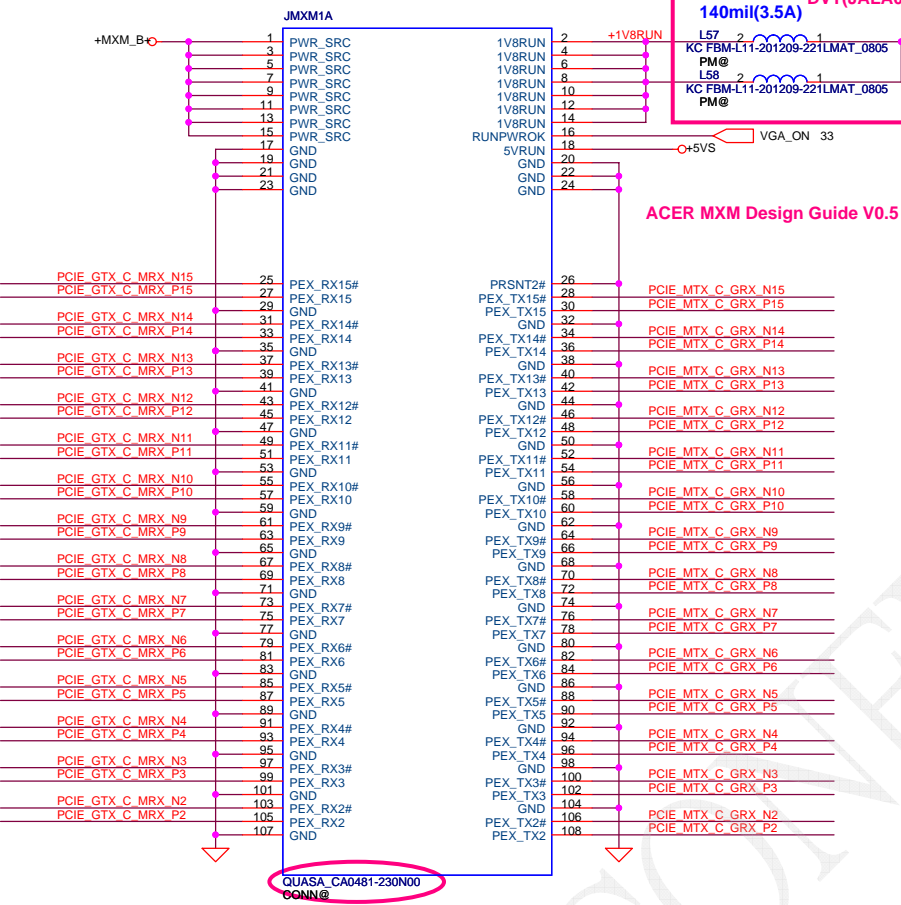
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| Security Classification   |            | Compal Secret Data |            | Compal Electronics, Inc. |                            |
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|   |            |                    |            | Date                     | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 15 of 50                   |

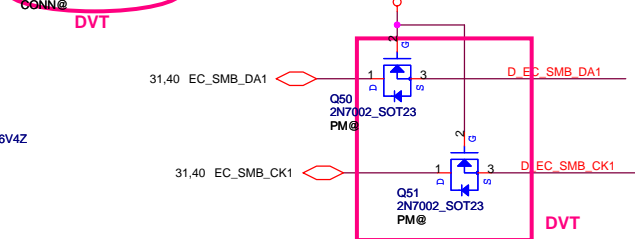
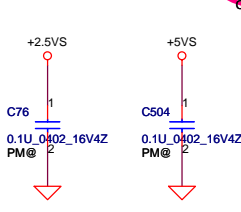
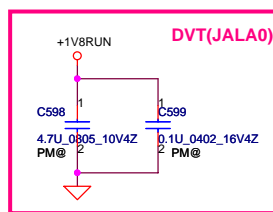




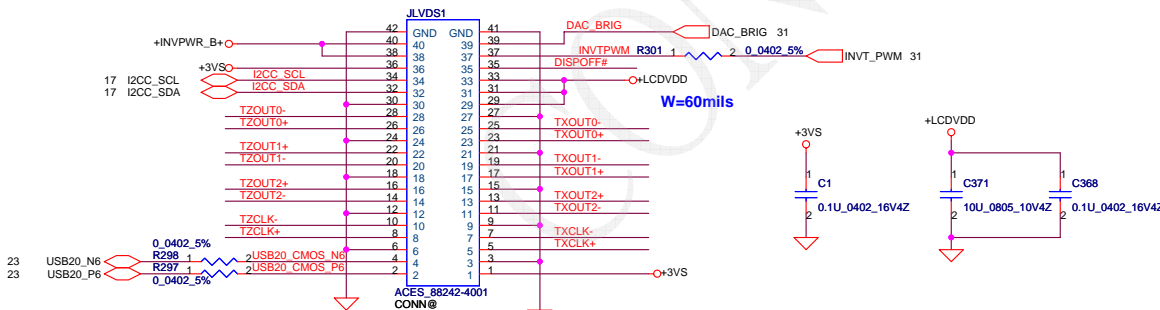
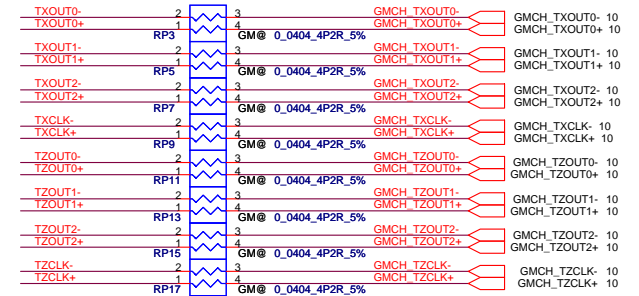
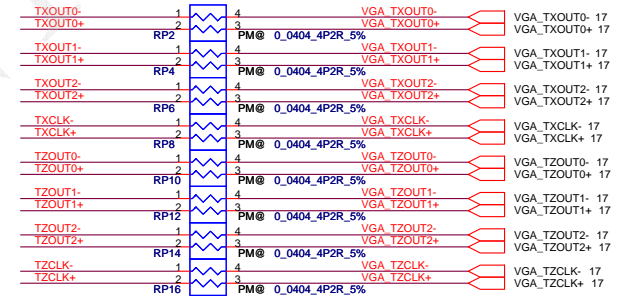
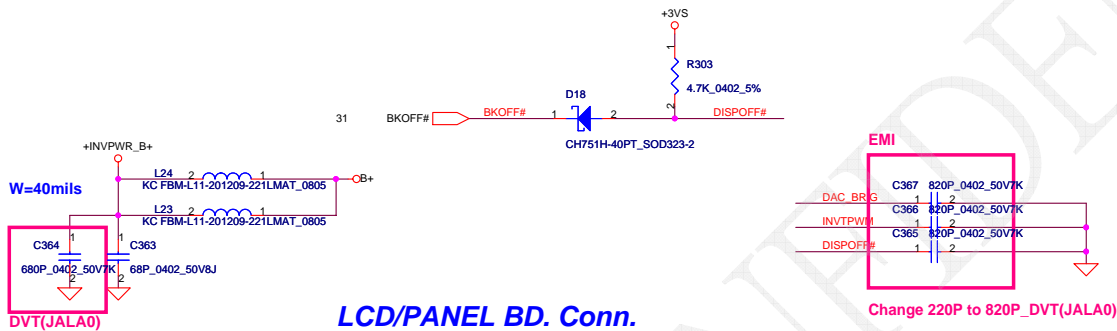
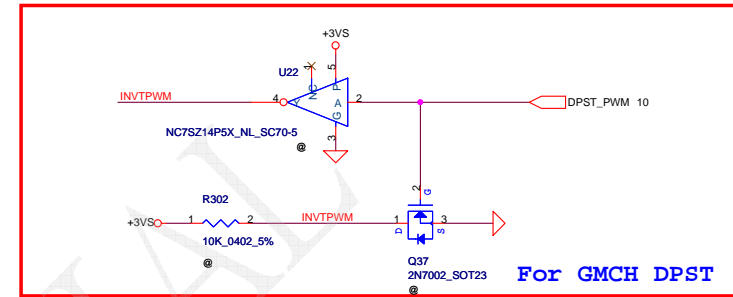
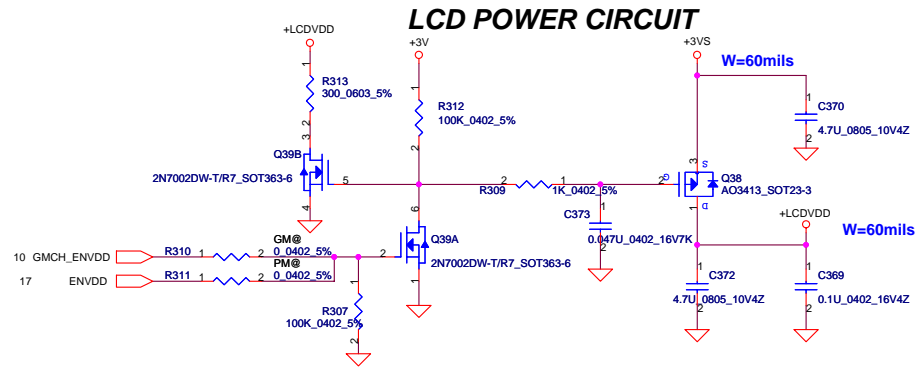
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10 PCIE\_MTX\_C\_GRX\_P[0..15] PCIE\_MTX\_C\_GRX\_P[0..15]  
10 PCIE\_GTX\_C\_MRX\_N[0..15] PCIE\_GTX\_C\_MRX\_N[0..15]  
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For Return Path between GND and 1.05V

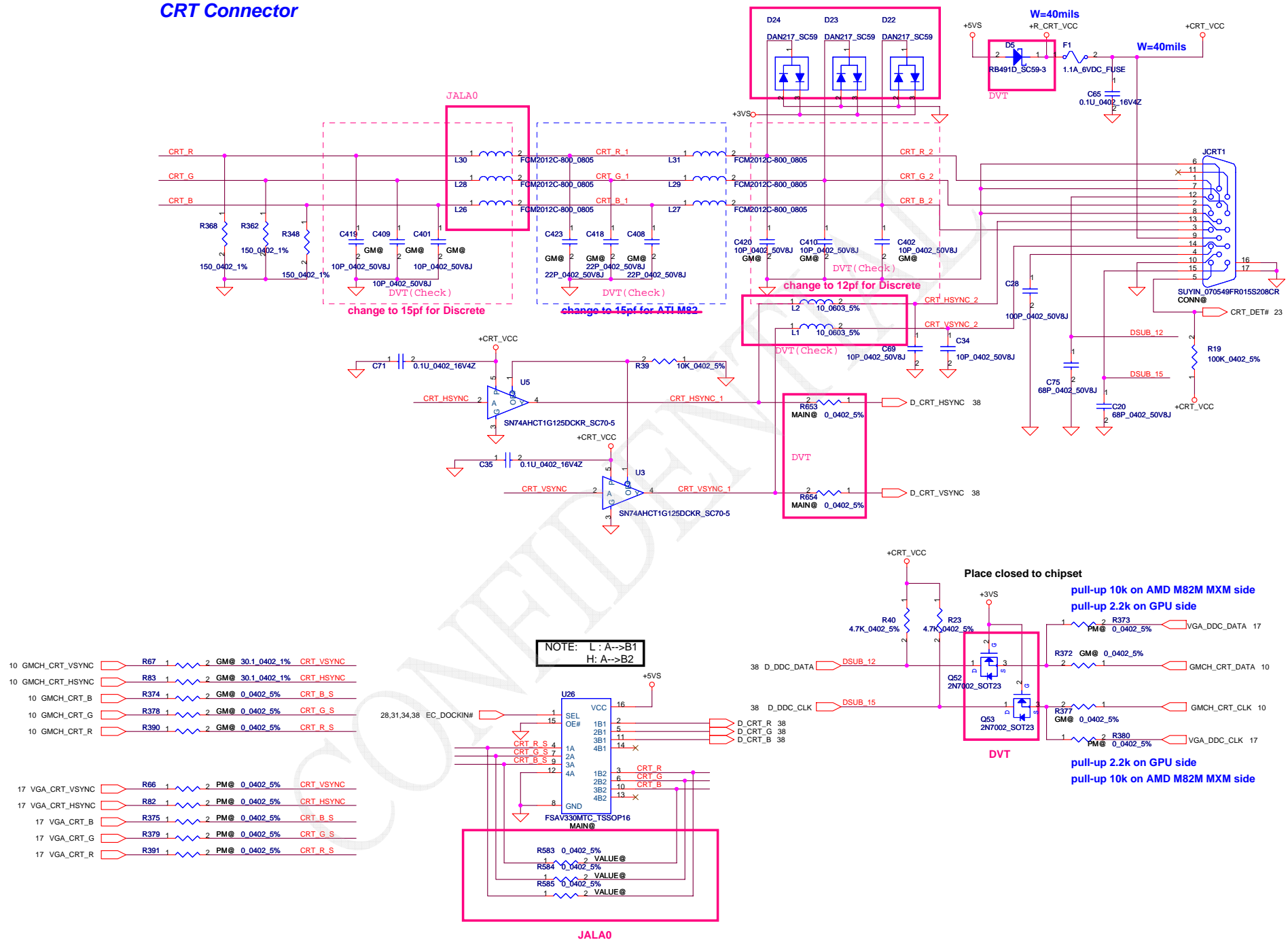


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| Date  |            | Thursday, October 16, 2008 |            | Sheet 17 of 50           |  |



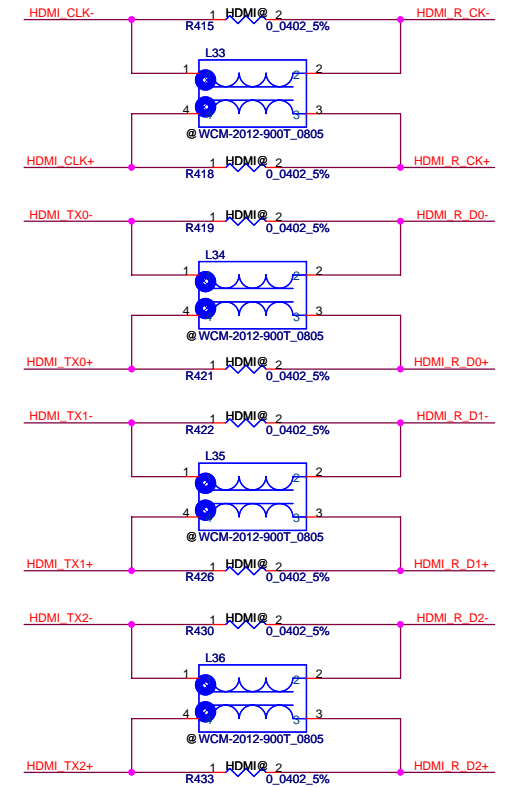
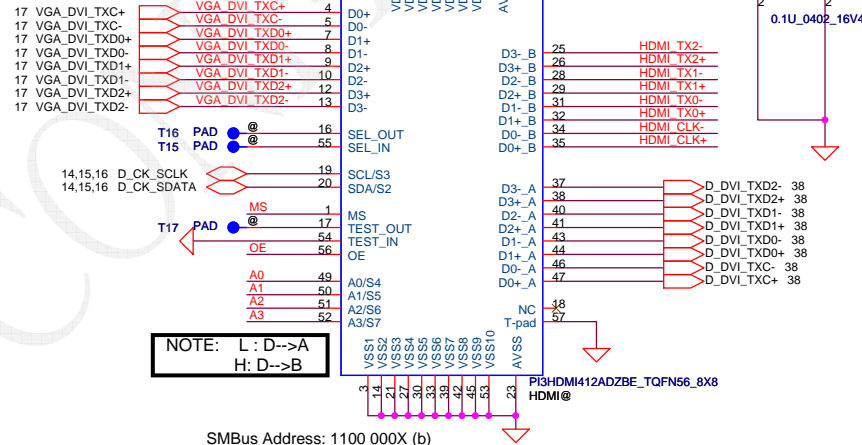
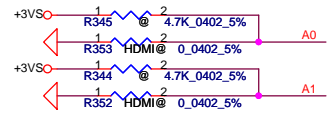
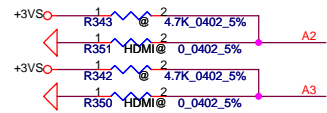
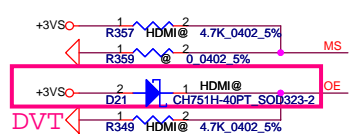
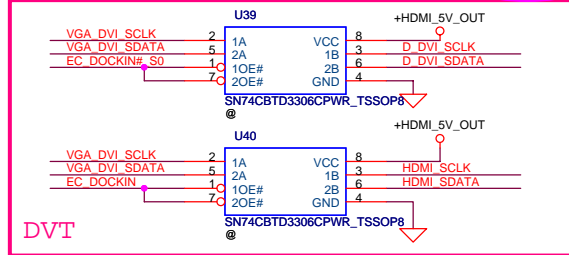
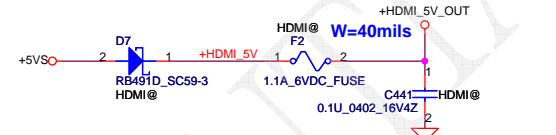
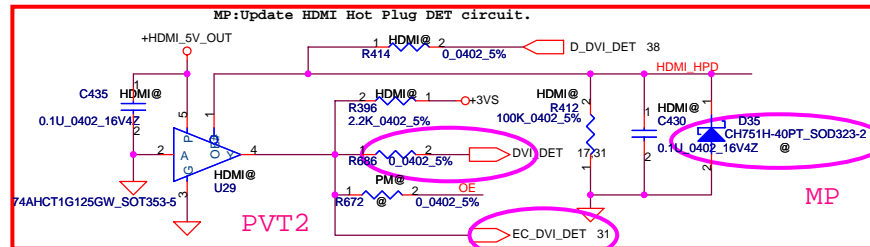
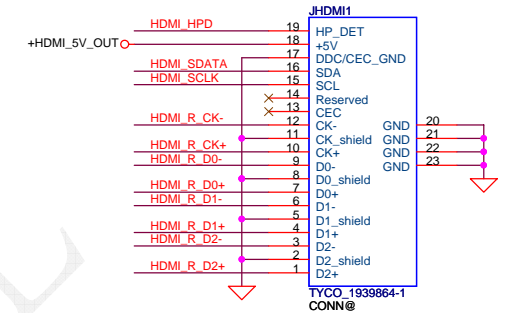
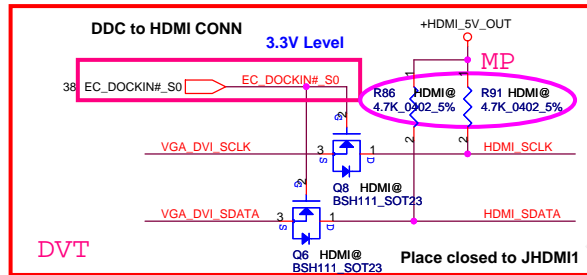
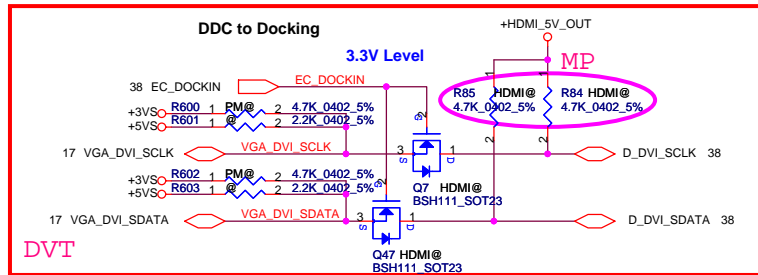
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|   |  |  |  |                    |  |  |  | Sheet 18 of 50                   |  |  |  |

## CRT Connector



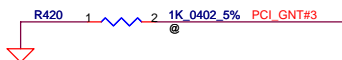
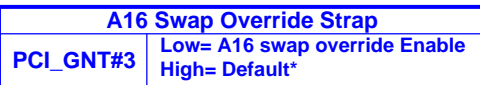
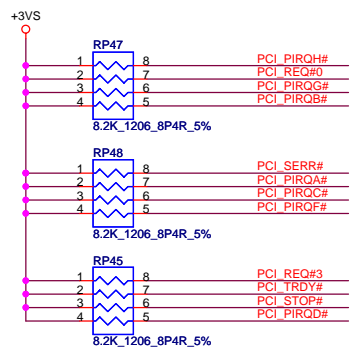
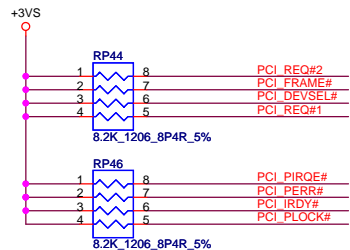
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| Security Classification   |                            | Compal Secret Data |            | Compal Electronics, Inc. |                    |
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|   |                            |                    |            | 401552                   |                    |
| Date:   | Thursday, October 16, 2008 | Sheet              | 19         | of                       | 50                 |



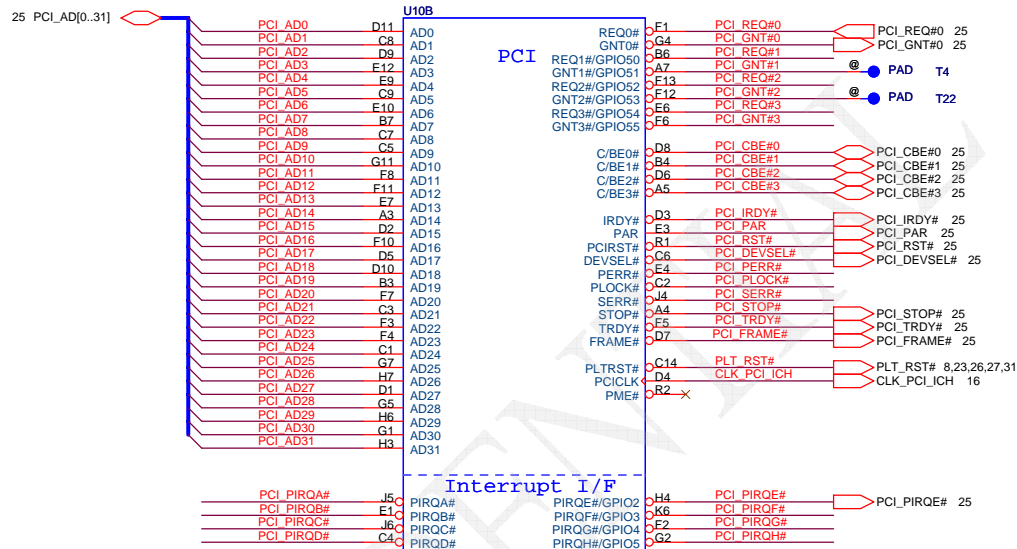


|   |            |                    |            |                          |                            |
|---|------------|--------------------|------------|--------------------------|----------------------------|
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|   |            |                    |            | Custom                   | 401552                     |
|   |            |                    |            | Date                     | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 20 of 50                   |





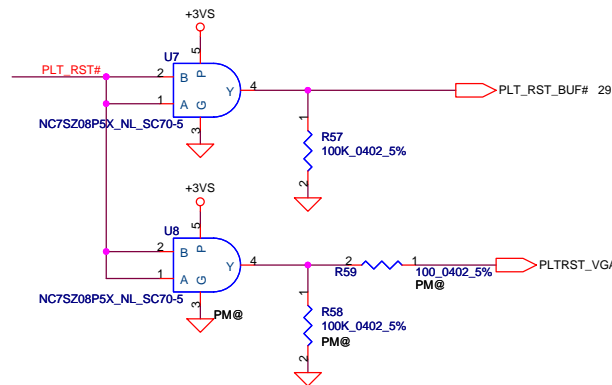
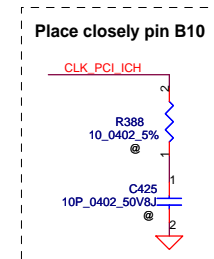
| Boot BIOS Strap |          |                    |
|-----------------|----------|--------------------|
| PCI_GNT#0       | SPI_CS#1 | Boot BIOS Location |
| 0               | 1        | SPI                |
| 1               | 0        | PCI                |
| 1               | 1        | LPC*     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



DVT ICH9-M: SA00002AN10  
(S IC NH82801IBM QP23 A2 FCBGA 676P ICH9M)

PVT ICH9-M: SA00002JH00  
(S IC AF82801IBM QT09 A3 PBG 676P ICH9M)

Pre-MP ICH9-M: SA00002JH70  
(S IC AF82801IBM SLB8Q A3 676P ICH9M ABO!)

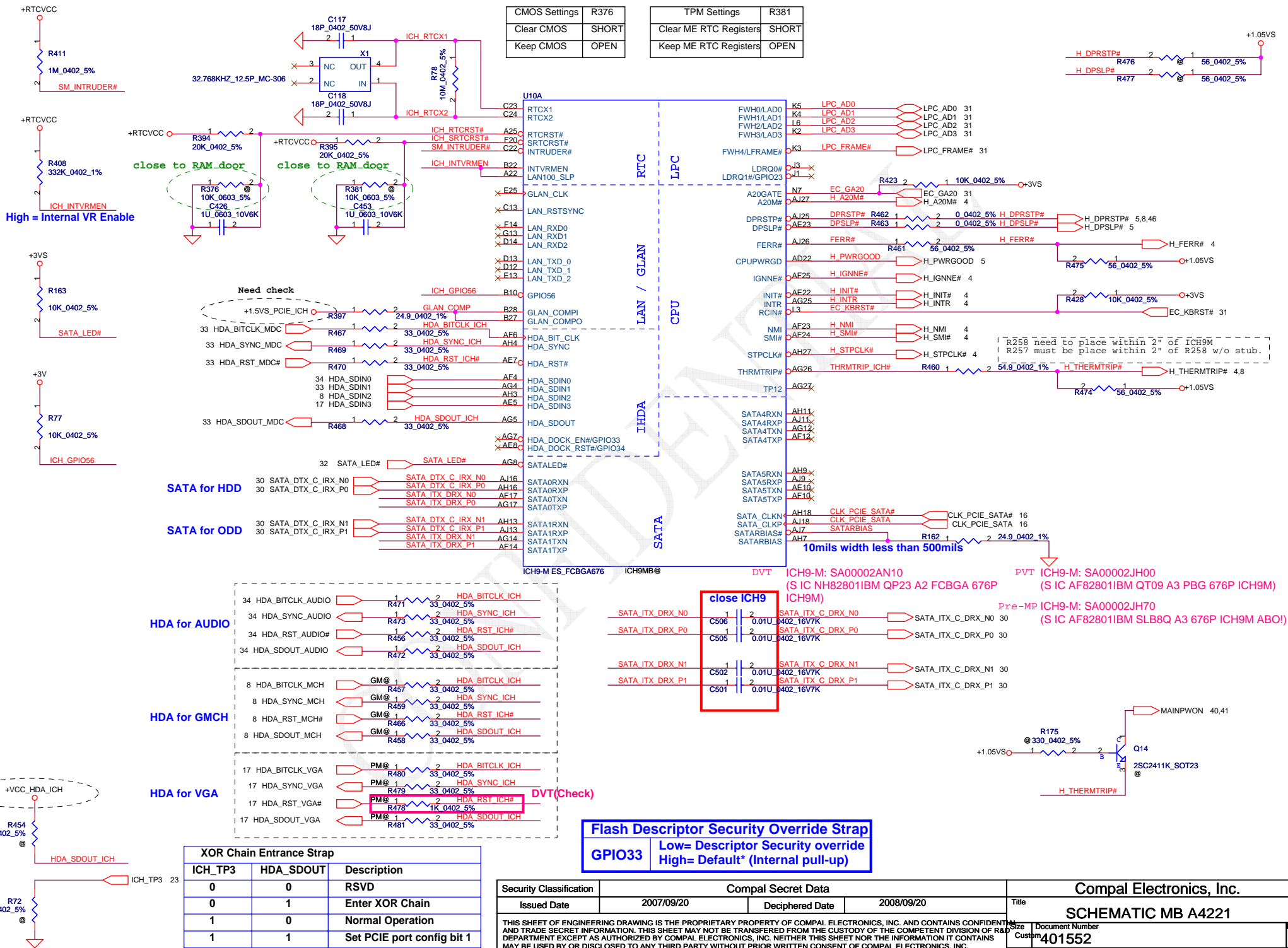


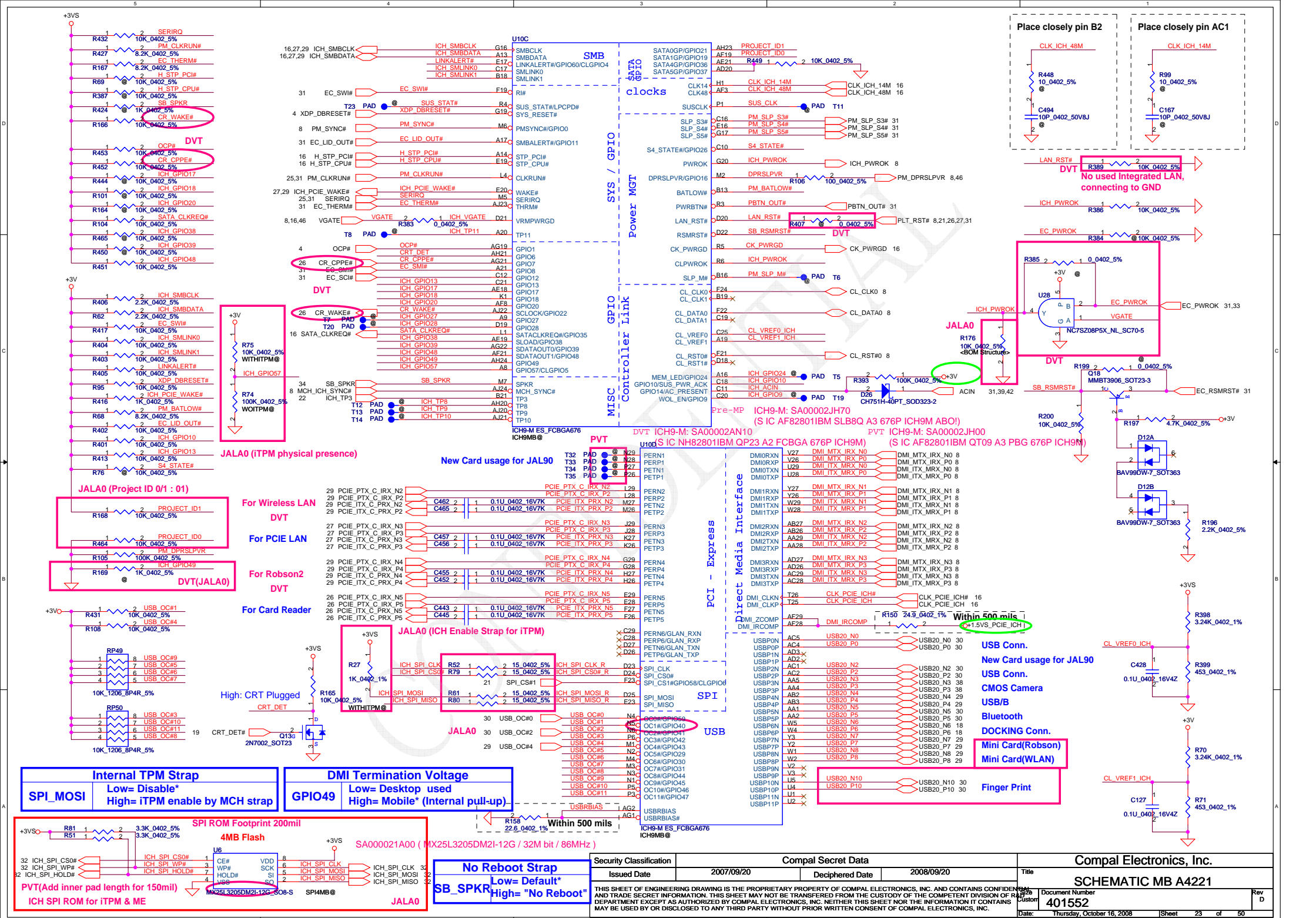
For VGA/B

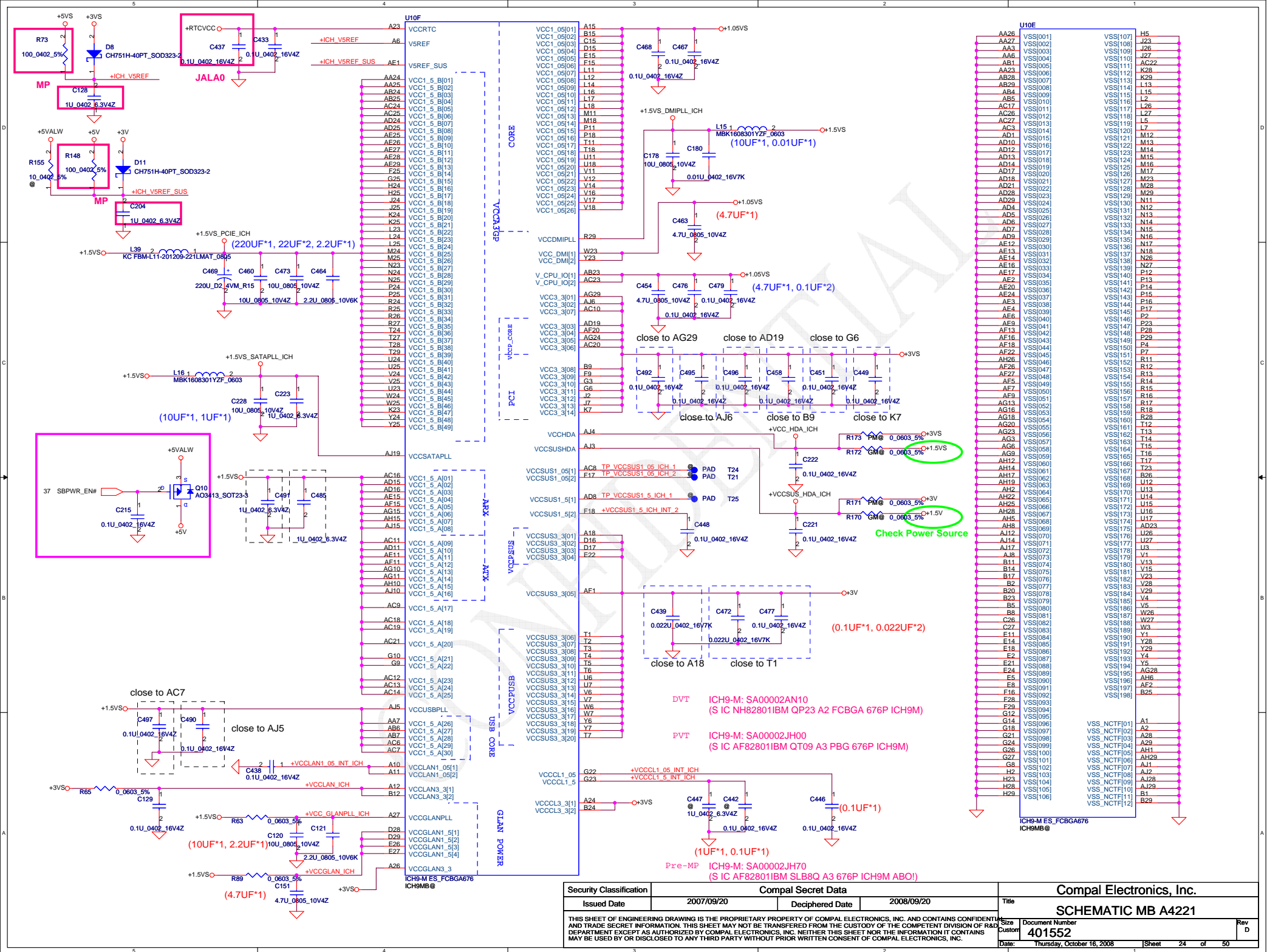
|   |            |                    |            |                          |                            |
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| Security Classification   |            | Compal Secret Data |            | Compal Electronics, Inc. |                            |
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|   |            |                    |            | Date                     | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 21 of 50                   |

| CMOS Settings |       |
|---------------|-------|
| Clear CMOS    | SHORT |
| Keep CMOS     | OPEN  |

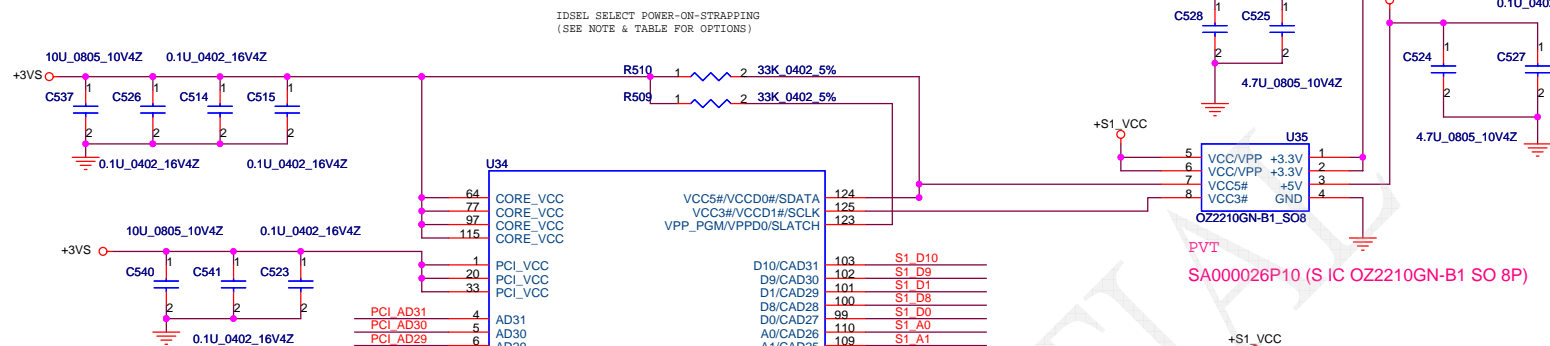
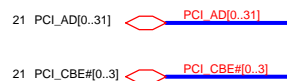
| TPM Settings           |       |
|------------------------|-------|
| Clear ME RTC Registers | SHORT |
| Keep ME RTC Registers  | OPEN  |



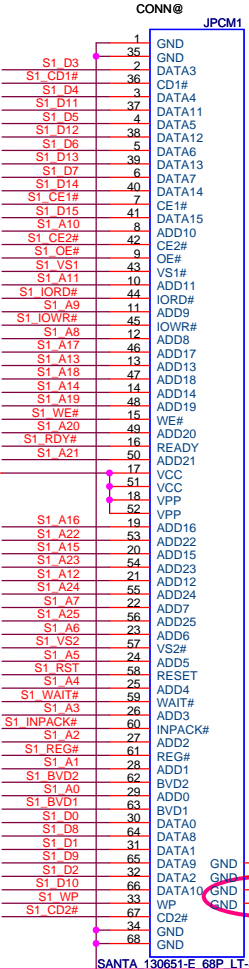






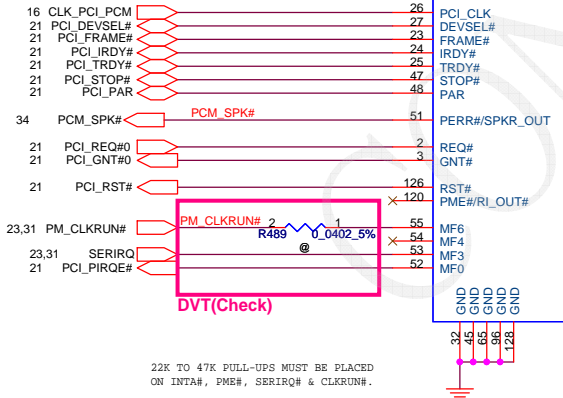
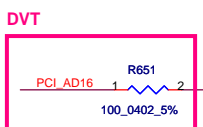


## PCMCIA Socket



Footprint as SANTA\_130651-E\_68P\_LT-S  
DVT(JALA0)

| VCC5#<br>(124) | VPP_PGM<br>(123) | IDSEL SELECT |
|----------------|------------------|--------------|
| DOWN           | DOWN             | AD18         |
| DOWN           | UP               | AD20         |
| UP             | DOWN             | AD25         |
| UP             | UP               | PIN F4       |



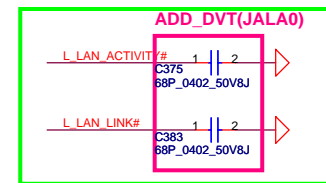
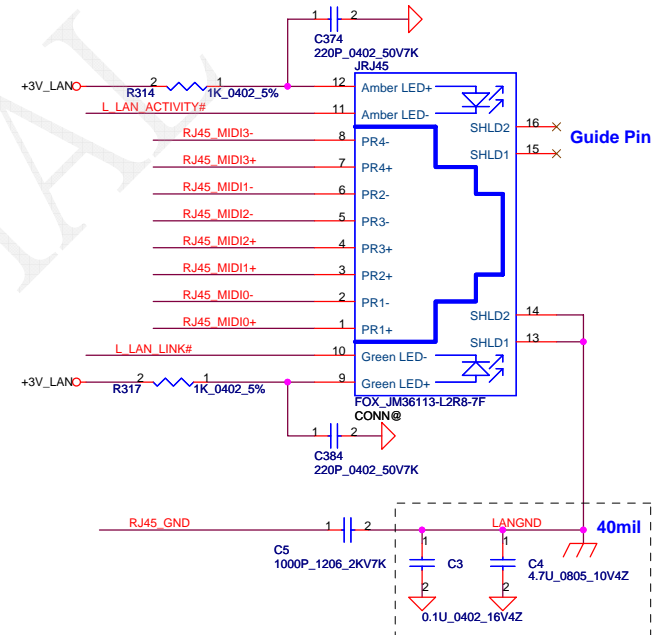
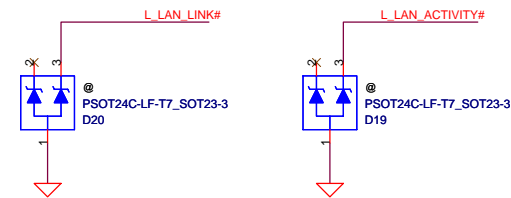
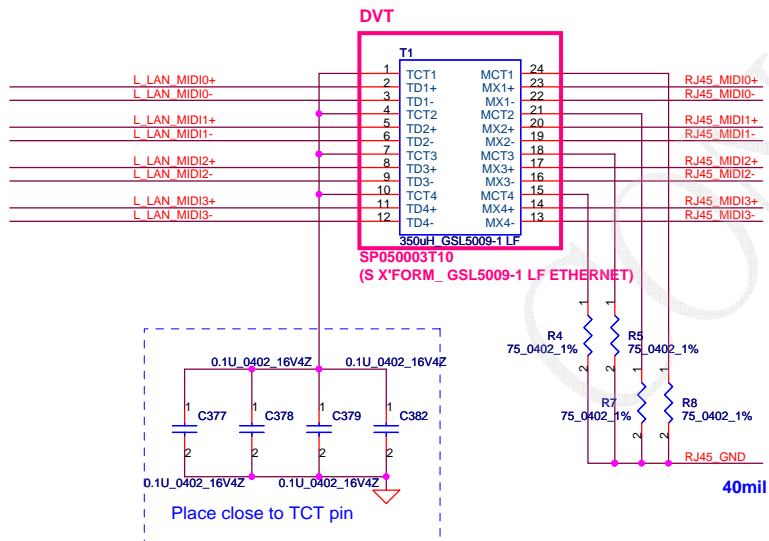
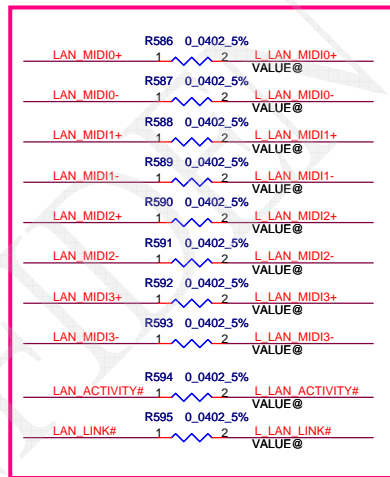
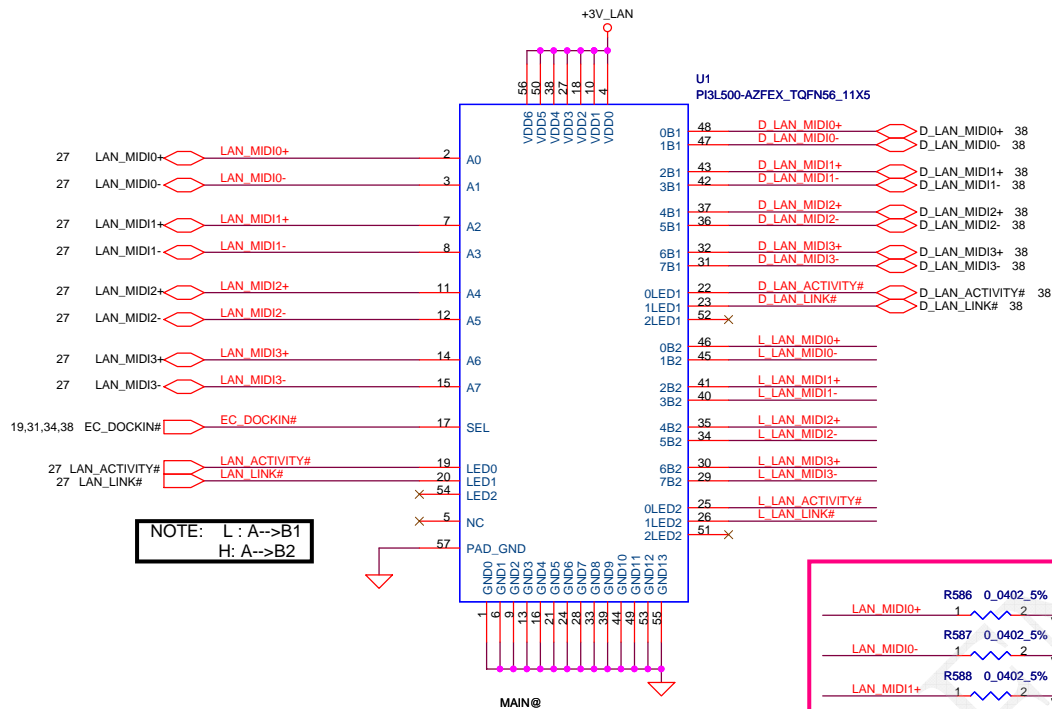
22K TO 47K PULL-UPS MUST BE PLACED  
ON INTA#, PME#, SERIRQ# & CLKRUN#.

|   |                    |                 |            |                          |                            |                |
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|   |                    |                 |            | Date:                    | Thursday, October 16, 2008 | Sheet 25 of 50 |





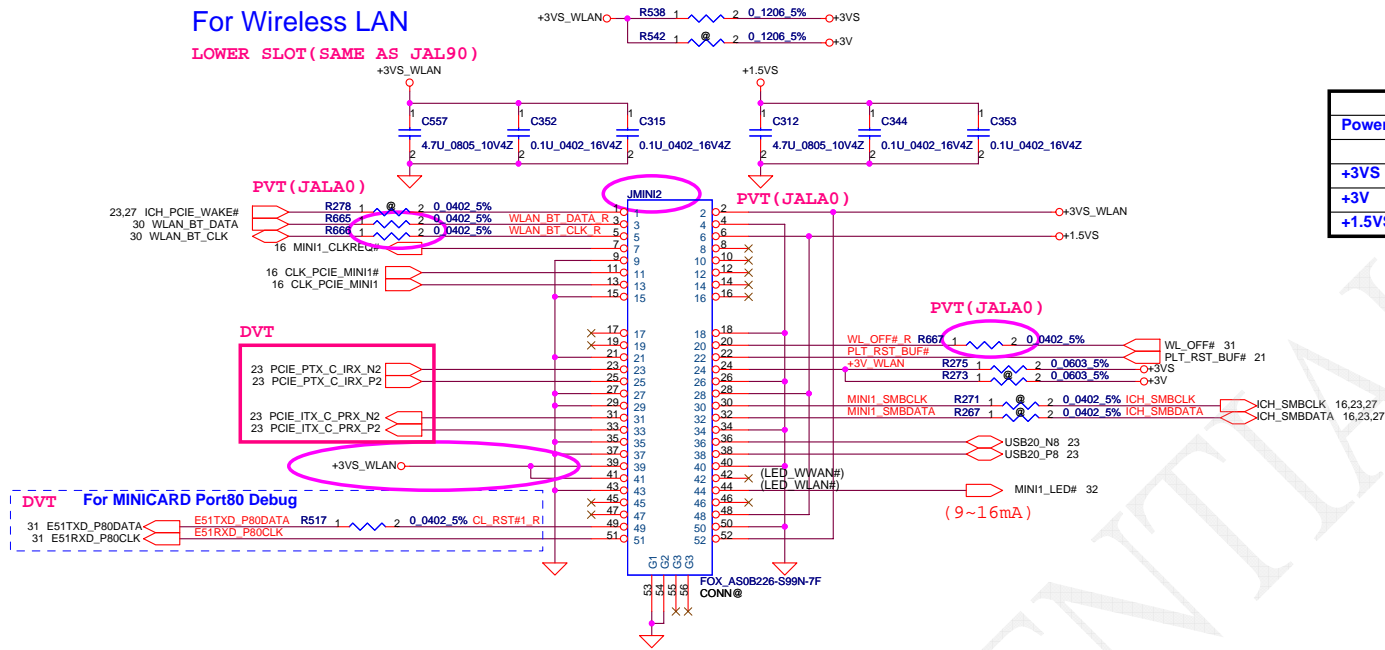




|   |            |                    |            |                          |                            |
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| Security Classification   |            | Compal Secret Data |            | Compal Electronics, Inc. |                            |
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|   |            |                    |            | Date:                    | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 28 of 50                   |

## For Wireless LAN

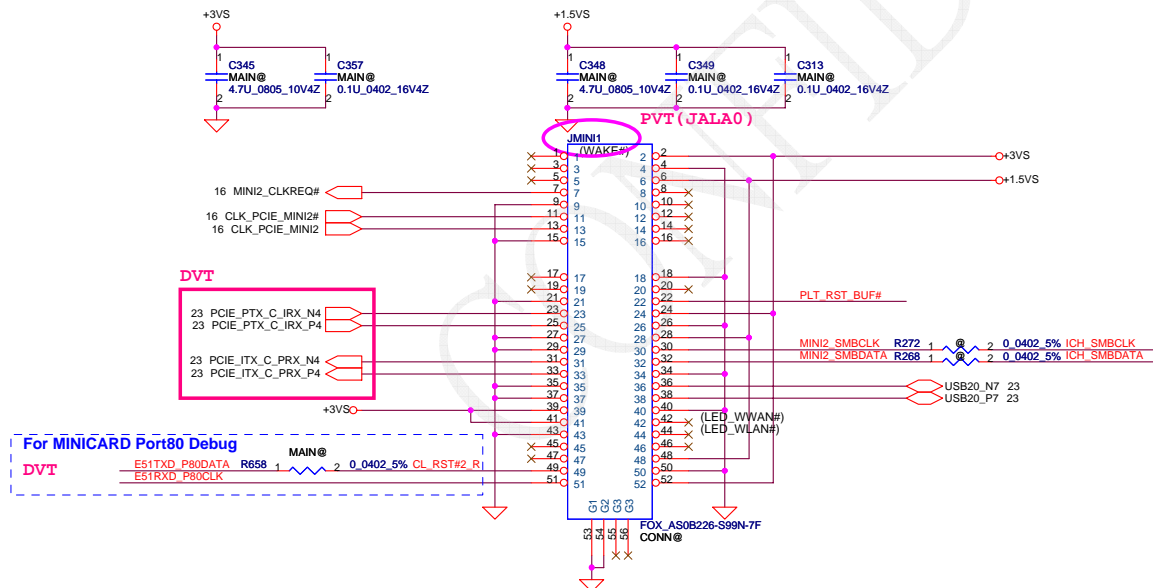
LOWER SLOT(SAME AS JAL90)



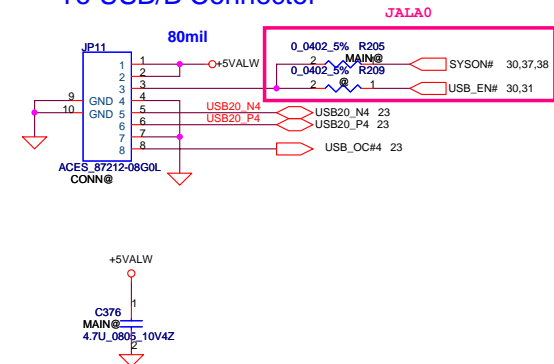
| Mini Card Power Rating |                    |        |                      |
|------------------------|--------------------|--------|----------------------|
| Power                  | Primary Power (mA) |        | Auxiliary Power (mA) |
|                        | Peak               | Normal | Normal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

## For Robson2

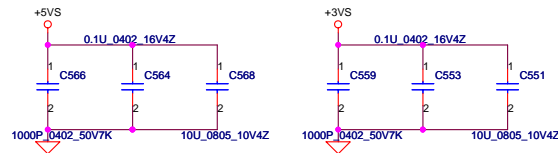
UPPER SLOT(SAME AS JAL90)



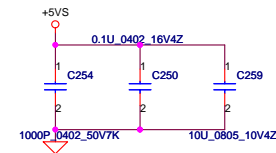
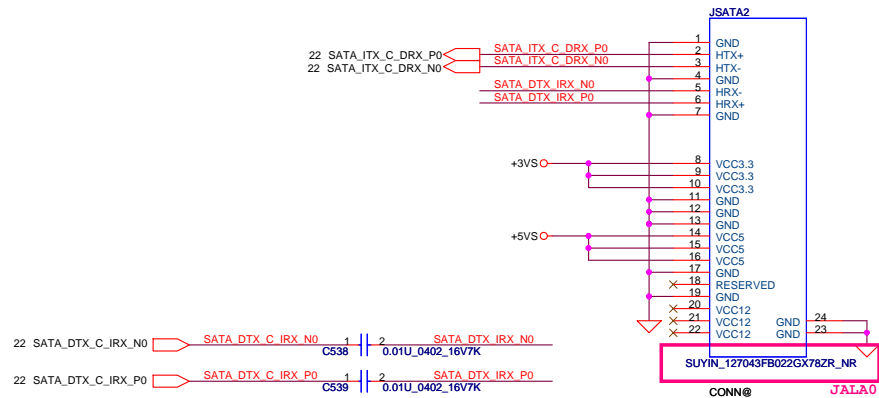
## To USB/B Connector



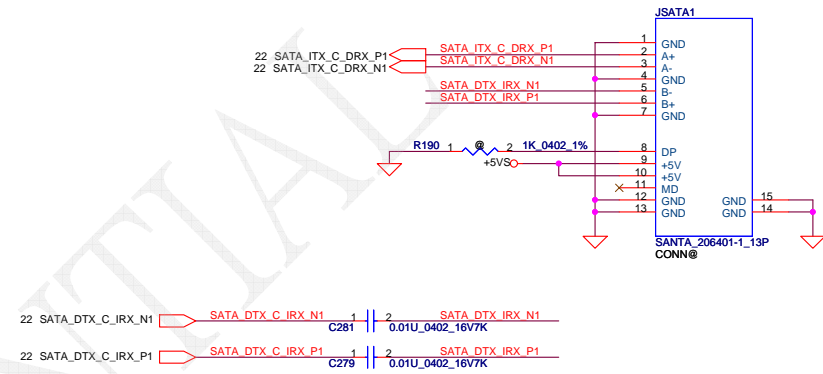
| Security Classification   |  |  |  | Compal Secret Data         |  |  |  | Compal Electronics, Inc. |  |  |  |
|---|--|--|--|----------------------------|--|--|--|--------------------------|--|--|--|
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| Date:   |  |  |  | Thursday, October 16, 2008 |  |  |  | Sheet 29 of 50           |  |  |  |



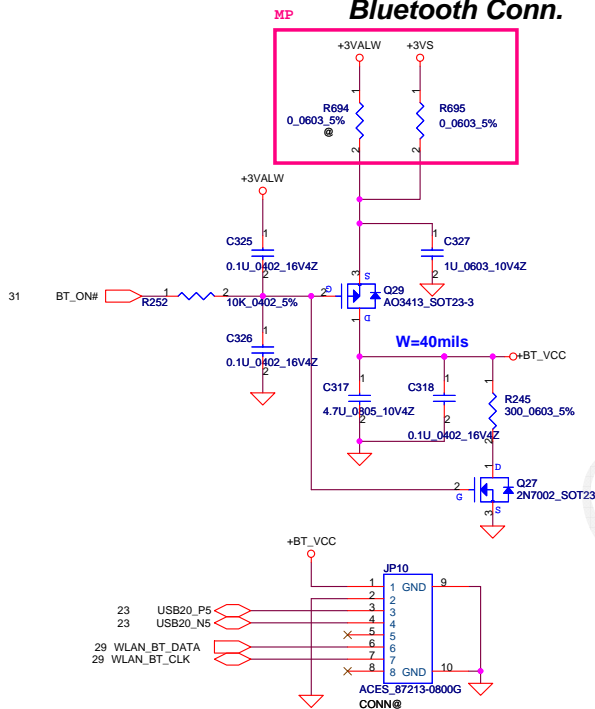
### SATA HDD Conn.



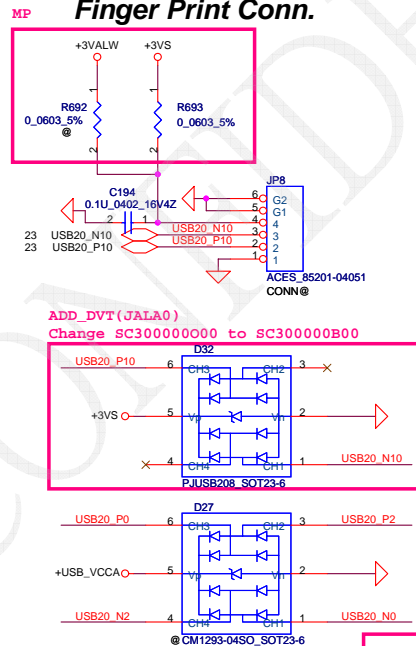
### SATA ODD Conn.



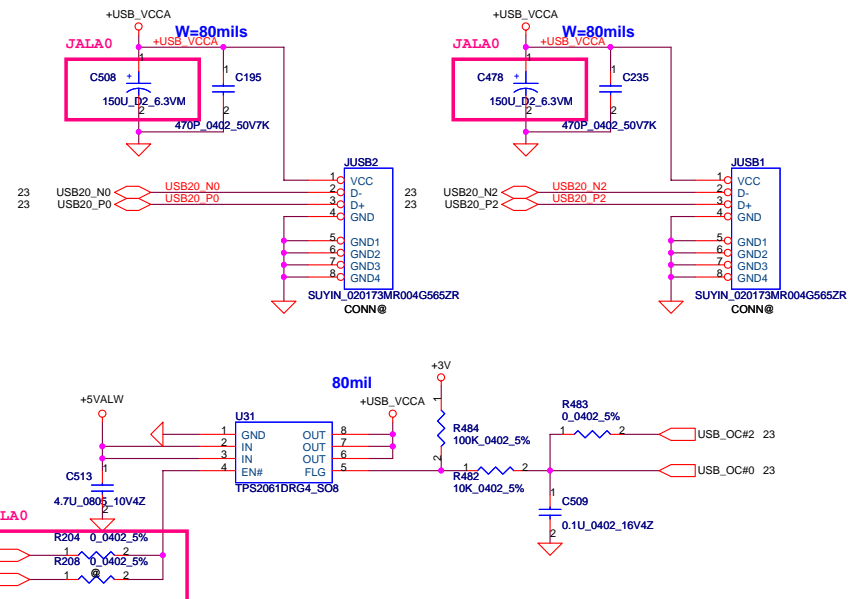
### Bluetooth Conn.



### Finger Print Conn.

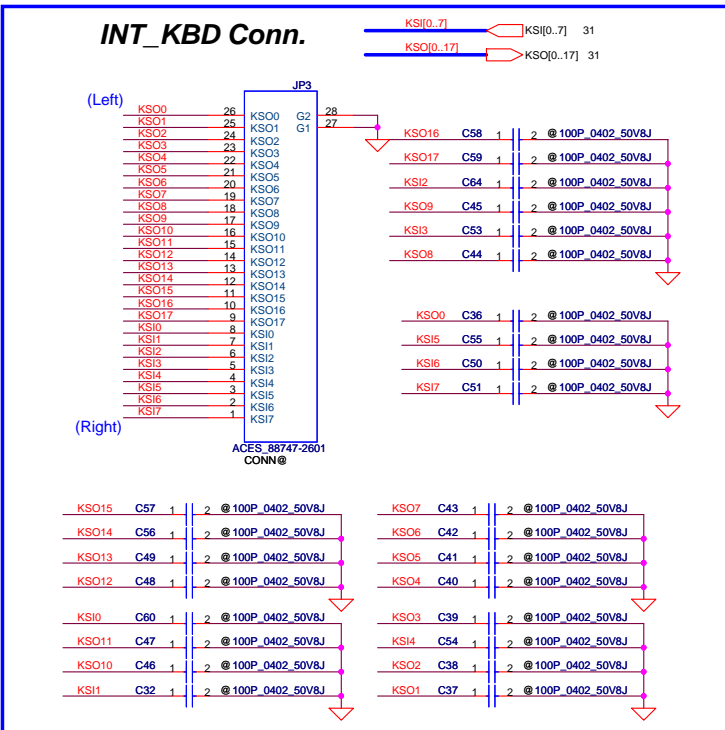
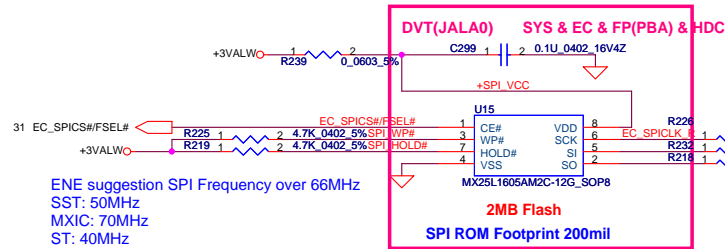


### USB CONN. (Stack-up Type)



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|   |                    |                 |            | 401552                           |                |
|   |                    |                 |            | Date: Thursday, October 16, 2008 | Sheet 30 of 50 |

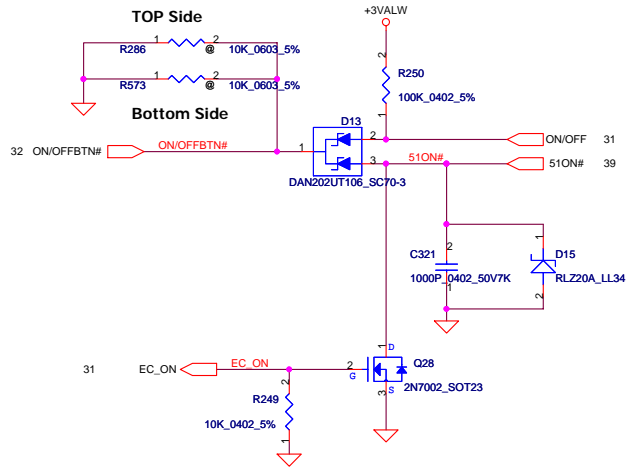




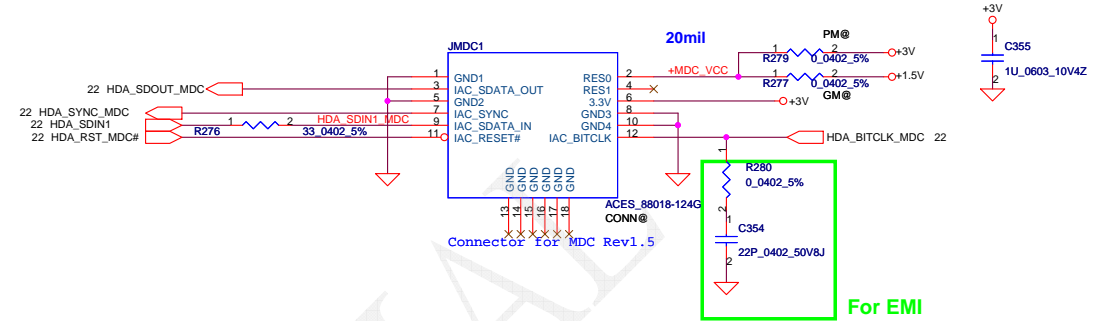


## Power Button

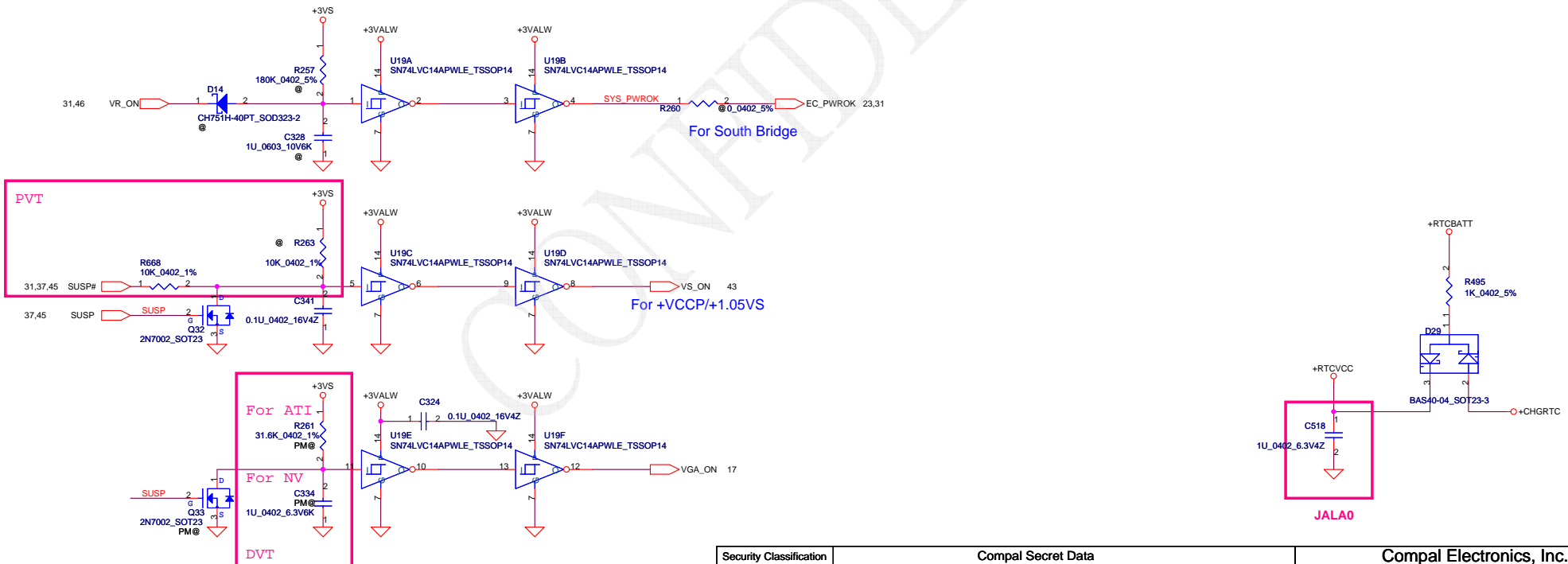
ON/OFF switch



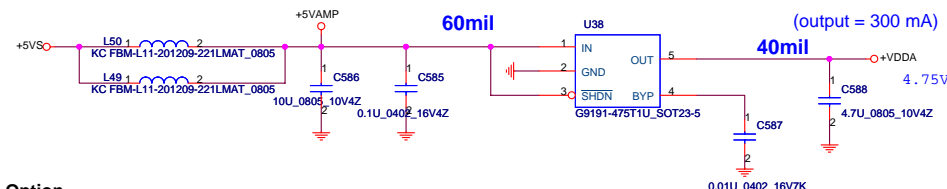
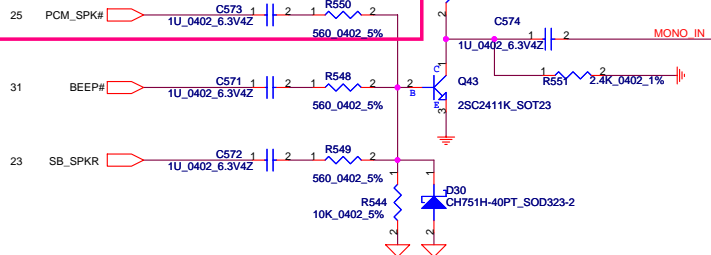
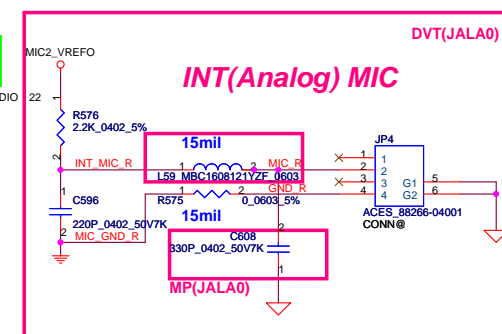
## HDA MDC Conn.



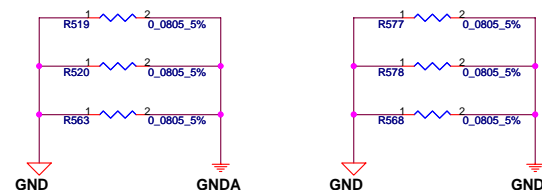
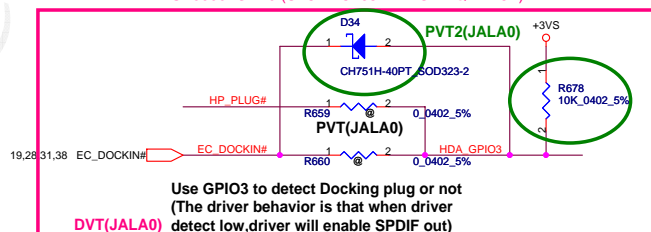
## Power ON Circuit



|   |  |                    |  |                 |  |                          |  |                    |  |                            |  |                |  |
|---|--|--------------------|--|-----------------|--|--------------------------|--|--------------------|--|----------------------------|--|----------------|--|
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|   |  |                    |  |                 |  |                          |  | Document Number    |  | 401552                     |  | Rev D          |  |
|   |  |                    |  |                 |  |                          |  | Date               |  | Thursday, October 16, 2008 |  | Sheet 33 of 50 |  |

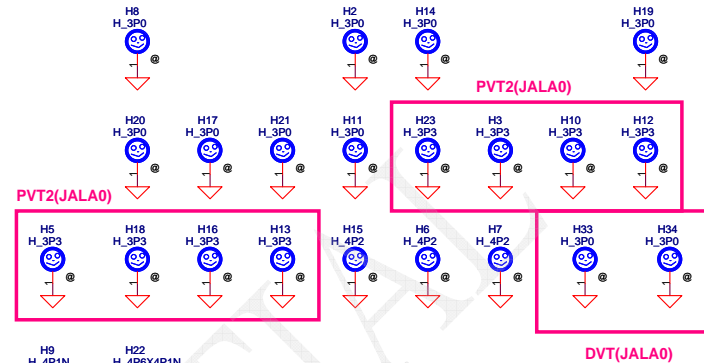
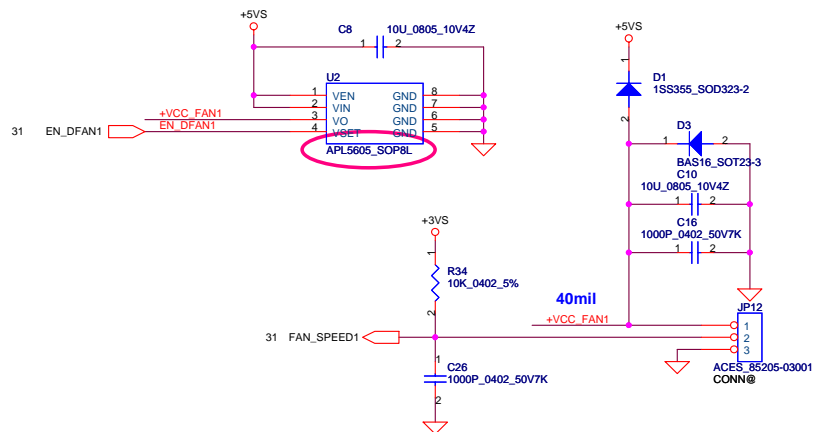
[illegible]

| Sense Pin | Impedance | Codec Signals       |
|-----------|-----------|---------------------|
| SENSE A   | 39.2K     | PORT-A (PIN 39, 41) |
|           | 20K       | PORT-B (PIN 21, 22) |
|           | 10K       | PORT-C (PIN 23, 24) |
|           | 5.1K      | PORT-D (PIN 35, 36) |
| SENSE B   | 39.2K     | PORT-E (PIN 14, 15) |
|           | 20K       | PORT-F (PIN 16, 17) |
|           | 10K       | PORT-G (PIN 43, 44) |
|           | 5.1K      | PORT-H (PIN 45, 46) |

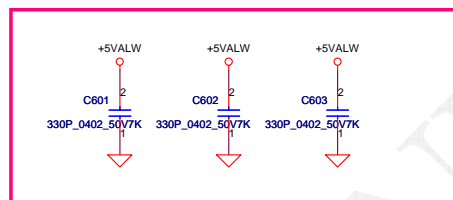




## FAN1 Conn



## EMI



## ADD\_DVT(JALA0)

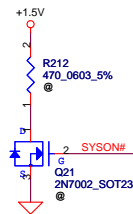
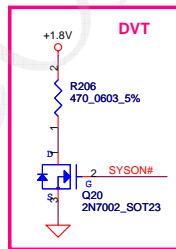
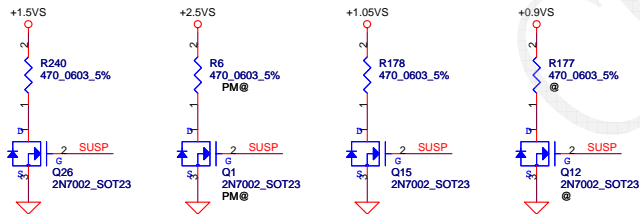
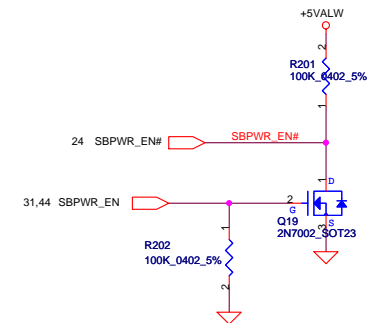
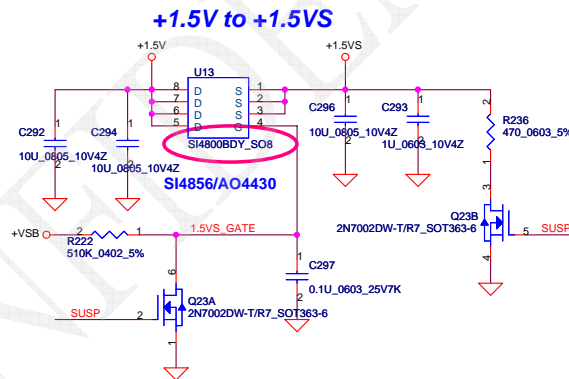
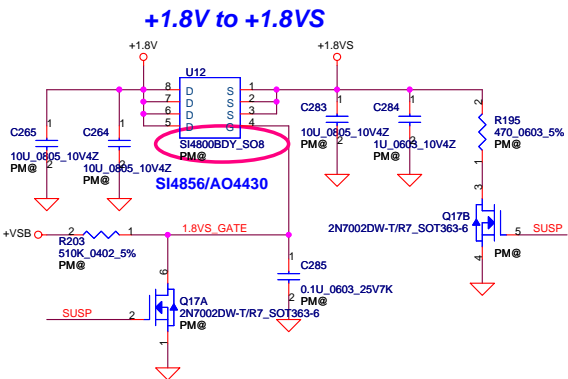
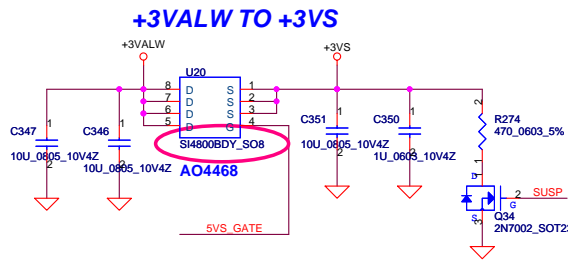
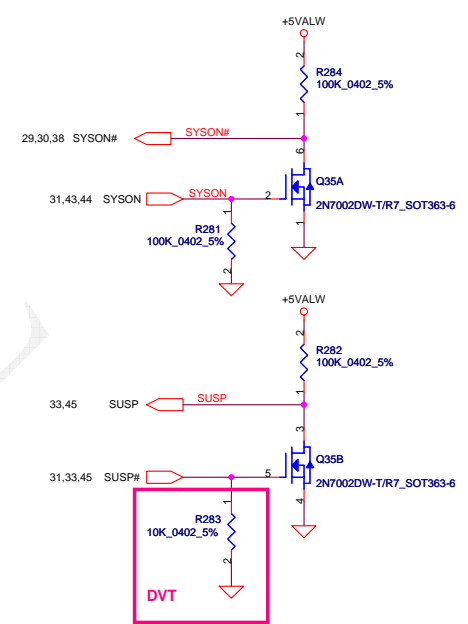
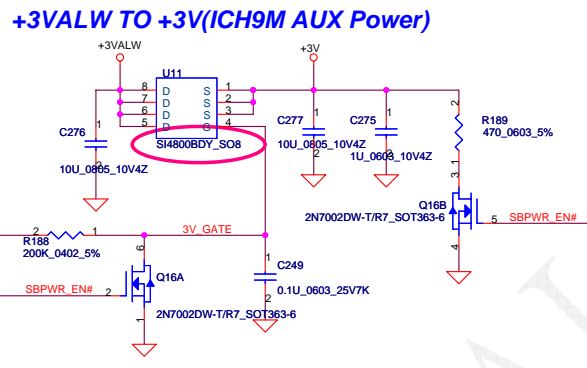
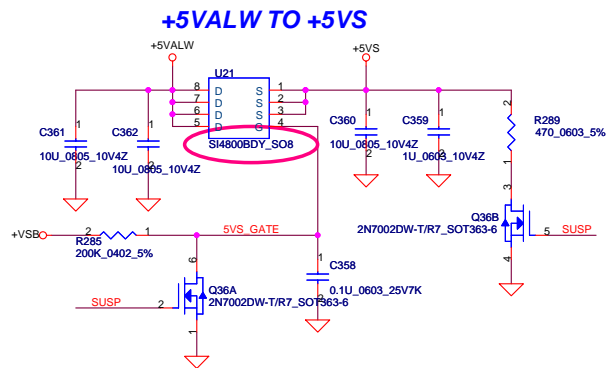
## EMI



## ADD\_PVT(JALA0)



|   |                    |                 |            |                          |                            |
|---|--------------------|-----------------|------------|--------------------------|----------------------------|
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|   |                    |                 |            | Sheet                    | 36 of 50                   |

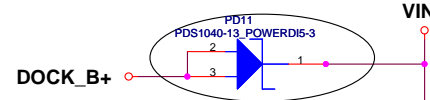


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|   |            |                    |            | Date                     | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 37 of 50                   |

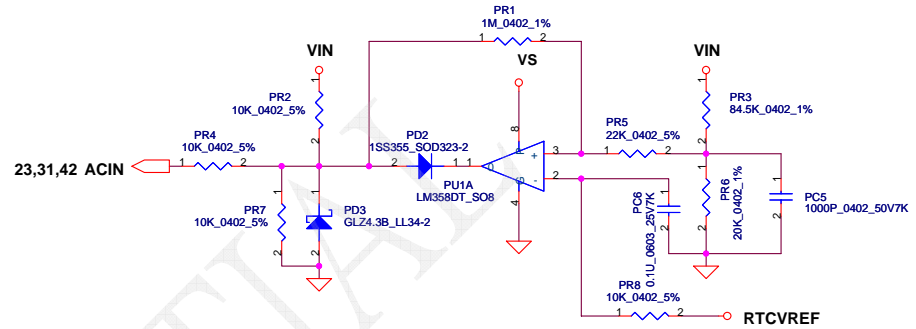
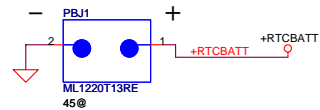
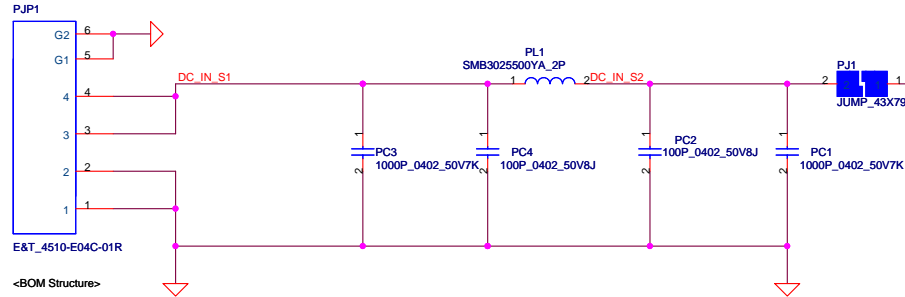




Place at HW side

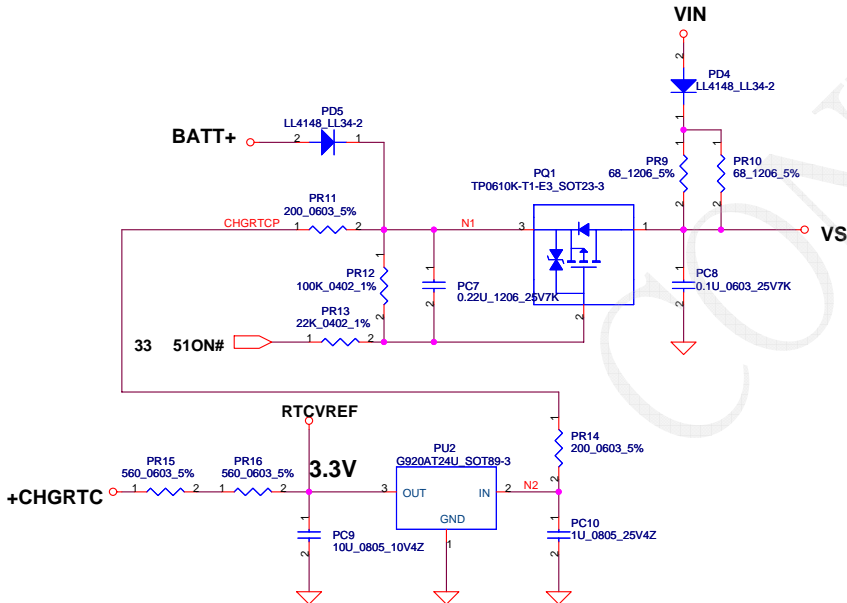
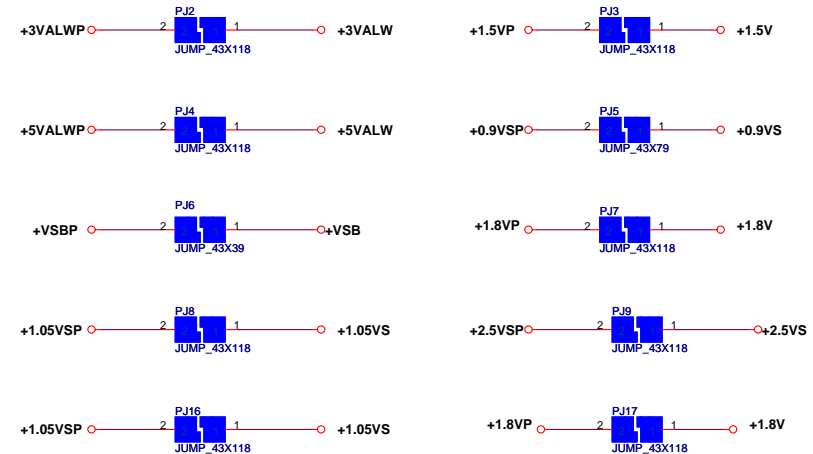


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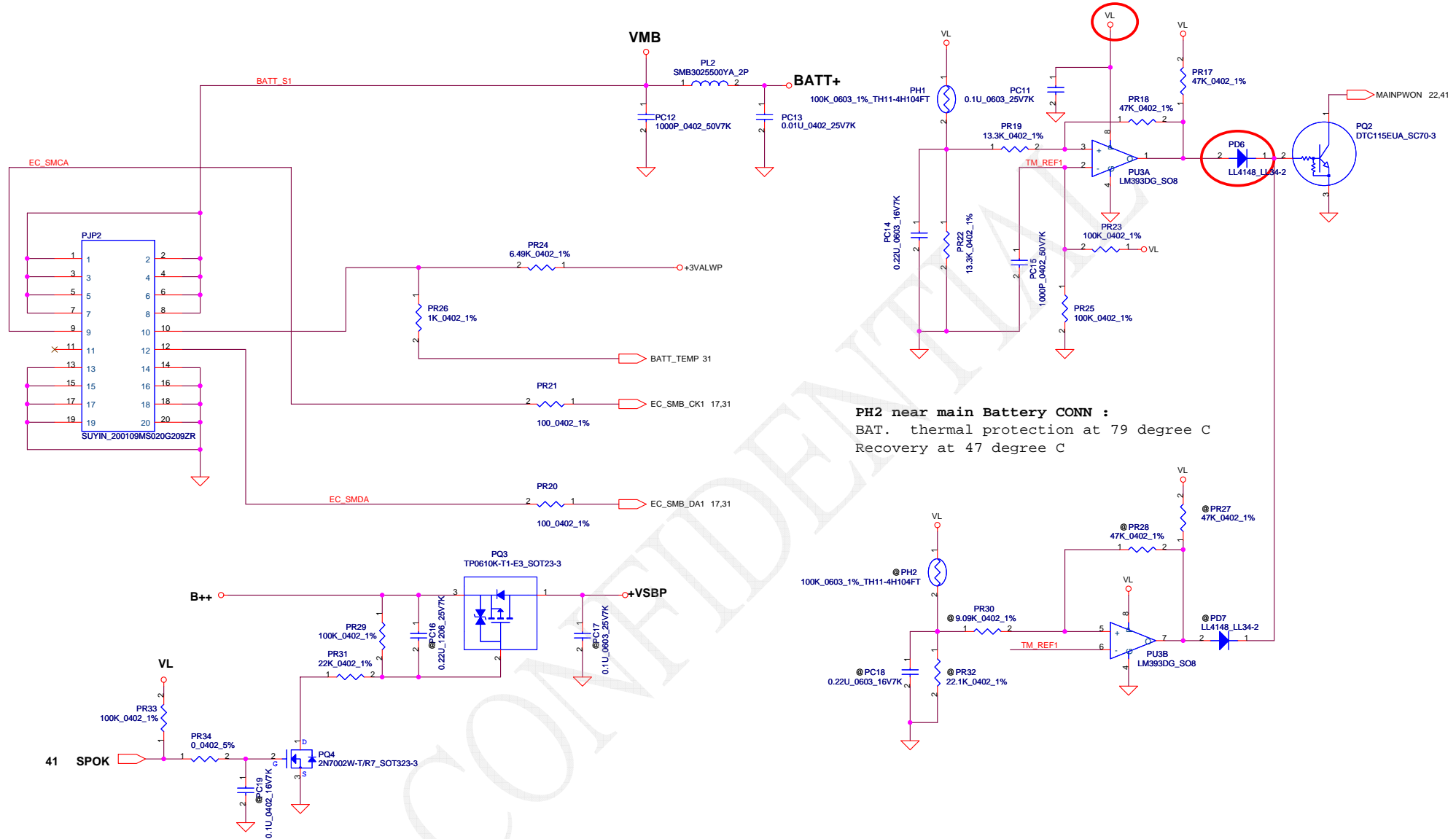
## Vin Detector

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



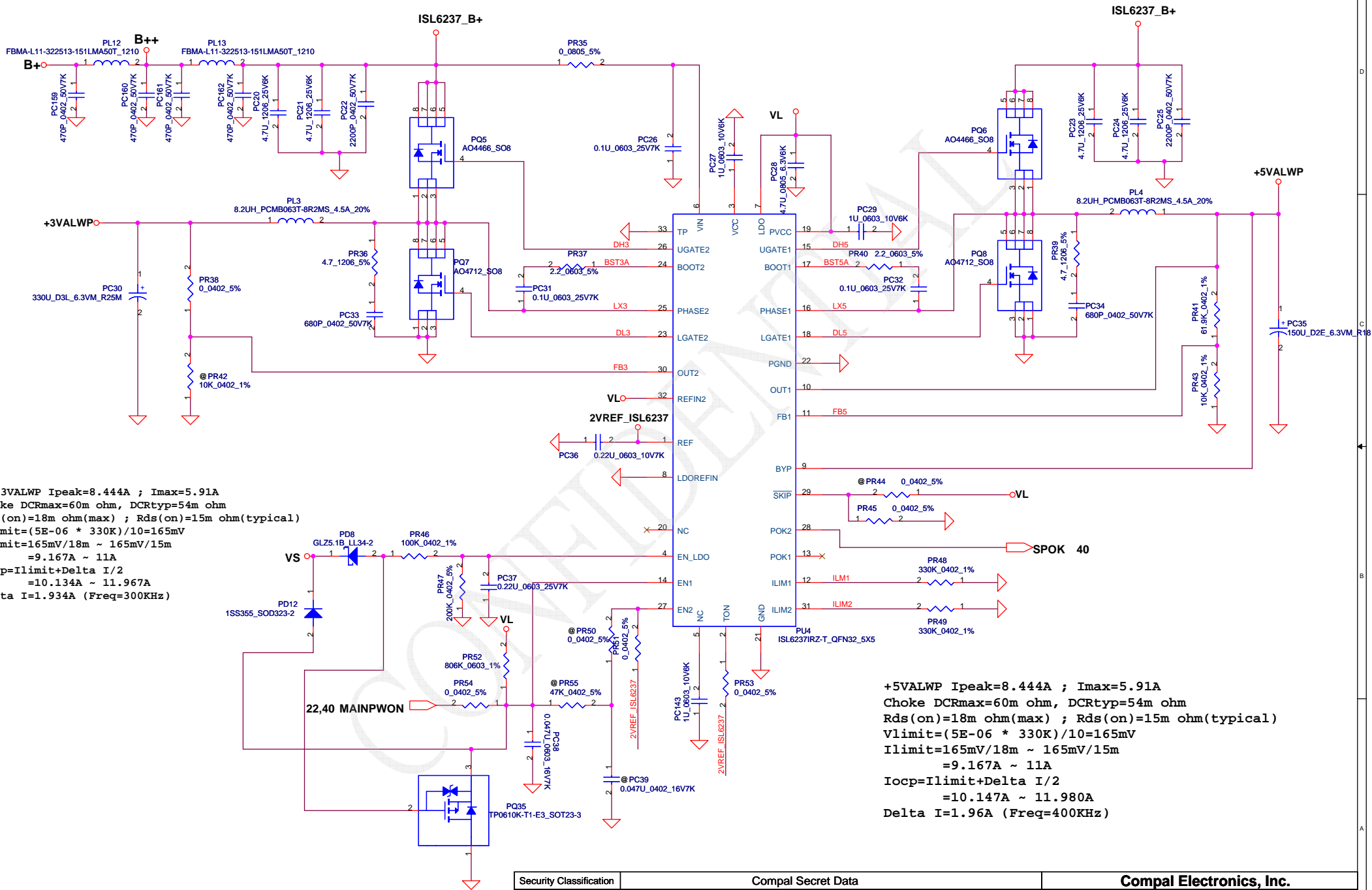
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| Date:   | Thursday, October 16, 2008 | Sheet           | 39         | of                       | 50                 |

PH1 under CPU botten side :  
CPU thermal protection at 96 degree C  
Recovery at 60 degree C

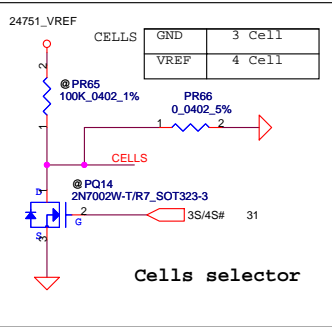
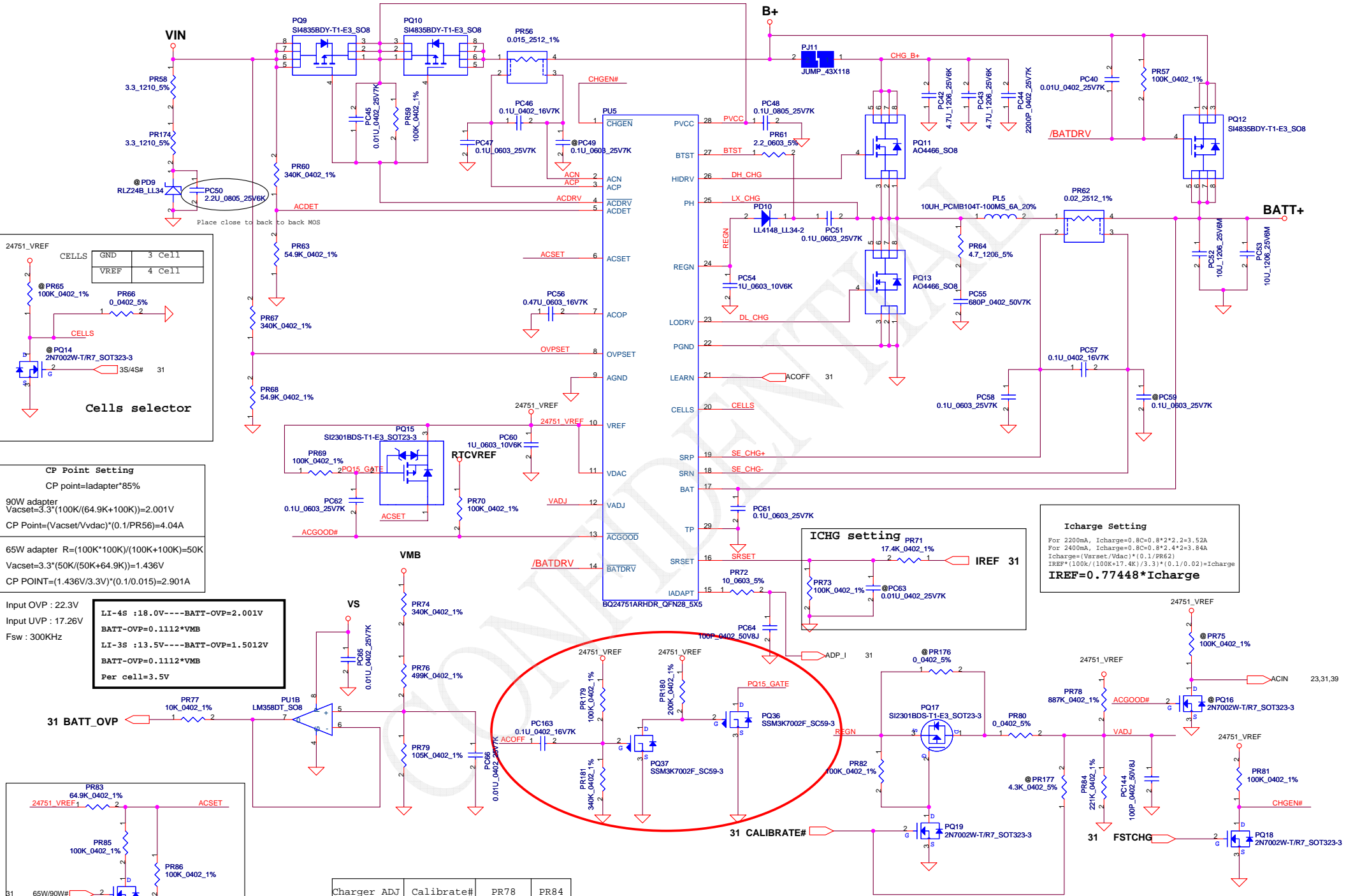


PH2 near main Battery CONN :  
BAT. thermal protection at 79 degree C  
Recovery at 47 degree C

|   |            |                    |            |                          |                            |
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|   |            |                    |            | Sheet                    | 40 of 50                   |



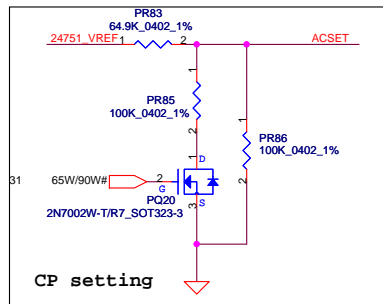
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|   |            |                    |            | Date                     | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 41 of 50                   |



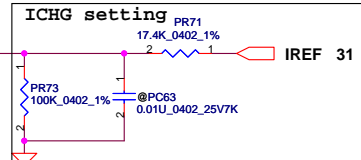
**CP Point Setting**  
 CP point=ladder\*85%  
 90W adapter  
 $V_{acset}=3.3 \cdot (100K/(64.9K+100K))=2.001V$   
 $CP\ Point=(V_{acset}/V_{vdac}) \cdot (0.1/PR56)=4.04A$   
 65W adapter  $R=(100K \cdot 100K)/(100K+100K)=50K$   
 $V_{acset}=3.3 \cdot (50K/(50K+64.9K))=1.436V$   
 $CP\ POINT=(1.436V/3.3V) \cdot (0.1/0.015)=2.901A$

Input OVP : 22.3V  
 Input UVP : 17.26V  
 Fsw : 300KHz

LI-4S : 18.0V---BATT-OVP=2.001V  
 BATT-OVP=0.1112\*VMB  
 LI-3S : 13.5V---BATT-OVP=1.5012V  
 BATT-OVP=0.1112\*VMB  
 Per cell=3.5V

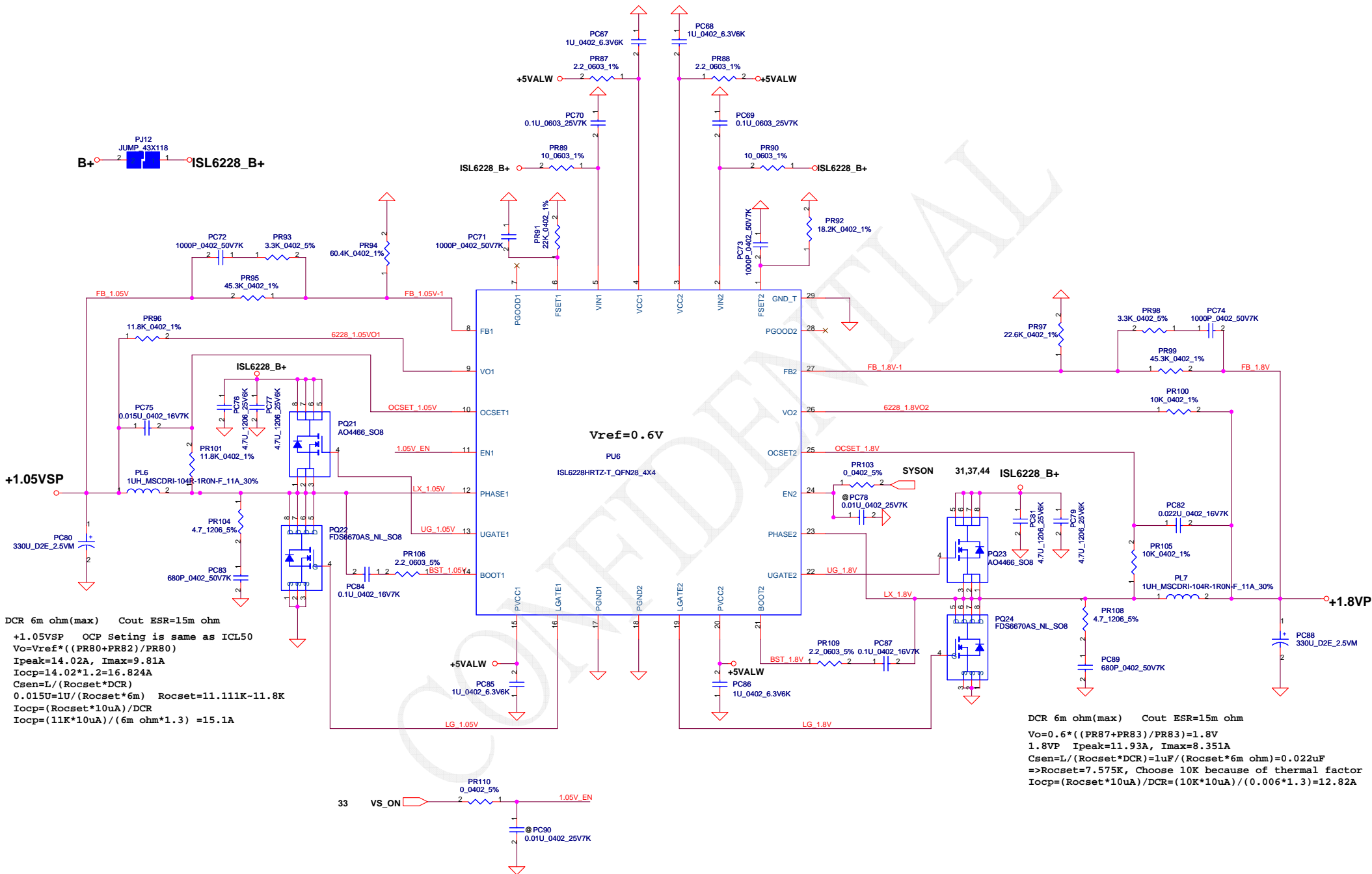


| Charger ADJ | Calibrate# | PR78 | PR84 |
|-------------|------------|------|------|
| 4.0V        | L          | @    | @    |
| 4.1V        | L          | 887K | 221K |
| 4.2V        | H          | @    | @    |

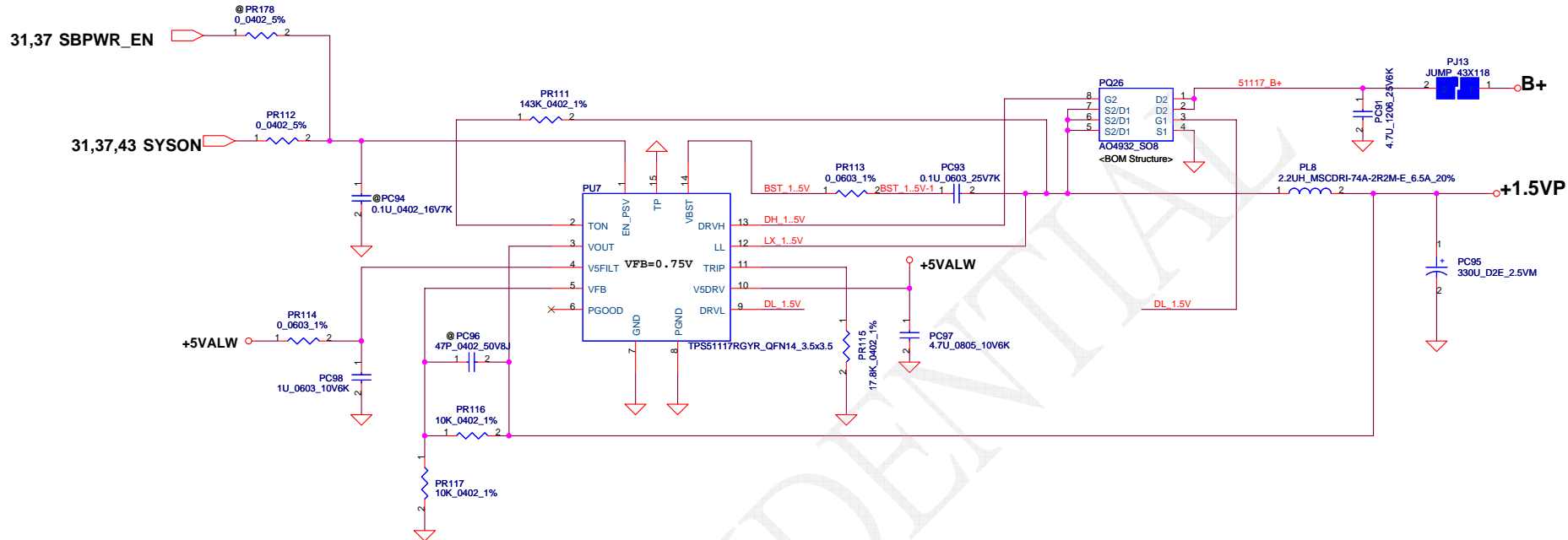


**Icharge Setting**  
 For 2200mA,  $I_{charge}=0.8C=0.8 \cdot 2.2=3.52A$   
 For 2400mA,  $I_{charge}=0.8C=0.8 \cdot 2.4=3.84A$   
 $I_{charge}=(V_{acset}/V_{dac}) \cdot (0.1/PR62)$   
 $IREF \cdot (100K/(100K+17.4K)/3.3) \cdot (0.1/0.02)=I_{charge}$   
 **$IREF=0.77448 \cdot I_{charge}$**





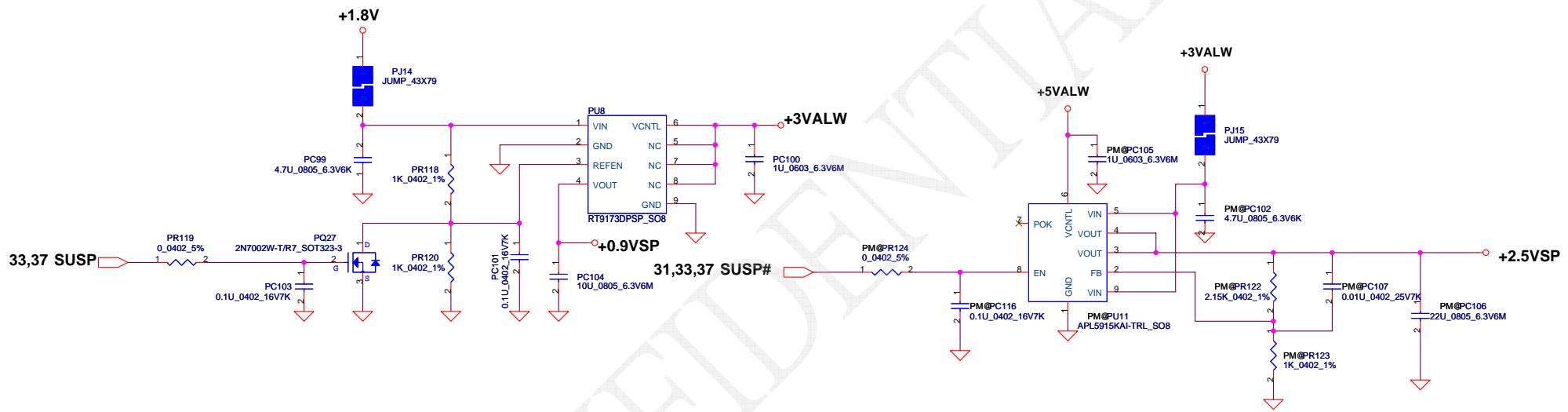
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|   |            |                    |            | Date:                    | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 43 of 50                   |



$V_{FB}=0.75V$   
 $V_o=V_{FB} \cdot (1+PR87/PR88)=0.75 \cdot (1+10K/10K)=1.5V$   
 $Ton=19 \cdot e^{-12 \cdot 143000 \cdot ((2/3) \cdot V_o+100mV)/19}+50ns$   
 $=2.645e-7 \text{ us}$   
 $=>V_o/Vin=D=Ton/Ts \Rightarrow Ts=3.35us$   
 $Fsw=298KHz$

$Cout \text{ ESR}=15m \text{ ohm}$   
 $I_{peak}=4.71A, I_{max}=3.297A, I_{ocp}=5.652A$   
 $\Delta I=((19-1.5) \cdot (1.5/19))/(L \cdot Fsw)=2.107A$   
 $=>1/2 \Delta I=1.053A$   
 $V_{trip}=R_{trip} \cdot I_{ocp}=17.8K \cdot 10uA=0.178V$   
 $I_{ocpmin}=V_{trip}/R_{dsonmax} \cdot 1.2+1.053A$   
 $=0.178/(0.027 \cdot 1.2)+1.053=5.493A+1.053A=6.546A$   
 $I_{ocpmax}=(0.178/(0.021 \cdot 1.1))+1.053A=7.705A+1.053A$   
 $=8.758A$   
 $I_{ocp}=6.546A-8.758A$

|   |                    |                 |                          |                    |
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| Document Number   |                    |                 |                          | Rev D              |
| 401552  |                    |                 |                          |                    |
| Date: Thursday, October 16, 2008  |                    |                 |                          | Sheet 44 of 50     |



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|   |            |                    |            | Date: Thursday, October 16, 2008 | Sheet 45 of 50 |



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

Page 1 of 2  
for PWR

| Item | Fixed Issue                         | Reason for change  | Rev. | PG# | Modify List   | Date     | Phase |
|------|-------------------------------------|--|------|-----|---|----------|-------|
| 1    | Delete PD1.                         | Because we can cost down and DOCK_B+ has another one.                          | 0.1  | 39  | 1 Delete PD1 SCSB540C080 (S SCH DIO B540C-13-F SMC)   | 20071108 | EVT   |
| 2    | 3/5V exit on battery mode shutdown. | To prevent 3/5V exit on battery mode shutdown.                                 | 0.2  | 41  | Add SC100001K00 (S DIO 1SS355 SOD323 T/R-5K   | 20071221 | DVT   |
| 3    | PD11 has over temp. issue.          | Because PD11 has over temperature issue in JAQ60, we change it to a 10A diode. | 0.2  | 39  | Change PD11 from SCSB540C080 to SCS00002F00 .   | 20071221 | DVT   |
| 4    | Add snubber in 3/5V by EMI request. | Add snubber in 3/5V by EMI request.  | 0.2  | 41  | Add PR36 and PR39 to SD001470B80  | 20071221 | DVT   |
| 5    | Down size.                          | Down size. by sourcer request.   | 0.2  | 46  | Change PC136 from SE025821K80 to SE000003W00  | 20071221 | DVT   |
| 6    | Down size.                          | Down size. by sourcer request.   | 0.2  | 46  | Change PC120 and PC129 from SE024681J80 to SE074681K80  | 20071221 | DVT   |
| 7    | Down size.                          | Down size. by sourcer request.   | 0.2  | 43  | Change PC72 and PC74 from SE068102J80 to SE074102K80  | 20071221 | DVT   |
| 8    | 2nd source trial run TI controller. | 2nd source trial run TI controller.  | 0.2  | 41  | Add PC143 SE080105K80   | 20071221 | DVT   |
| 9    | Add snubber in 3/5V by EMI request. | Add snubber in 3/5V by EMI request.  | 0.2  | 41  | Add PC33 and PC34 SE074681K80   | 20071221 | DVT   |
| 10   | To meet Jeta SPEC.                  | To meet Jeta SPEC.   | 0.2  | 42  | Add PC144 SE074102K80   | 20071221 | DVT   |
| 12   | Add EMI solution.                   | Add 3/5V boost resistor.   | 0.3  | 41  | Add PR37, PR40 SD013220B80 (S RES 1/10W 2.2 +-5% 0603)  | 20080102 | DVT   |
| 13   | Add EMI solution.                   | Add charger boost resistor.  | 0.3  | 42  | Add PR61 SD013220B80 (S RES 1/10W 2.2 +-5% 0603)  | 20080102 | DVT   |
| 14   | Add EMI solution.                   | Add charger snubber.   | 0.3  | 42  | Add PR64 SD001470B80(S RES 1/4W 4.7 +-5% 1206)<br>Add PC55 SE074681K80(S CER CAP 680P 50V K X7R 0402 )  | 20080102 | DVT   |
| 15   | Add EMI solution.                   | Add 1.05V/1.8V boost resistor.   | 0.3  | 43  | Add PR106, PR109 SD013220B80 (S RES 1/10W 2.2 +-5% 0603)  | 20080102 | DVT   |
| 16   | Add EMI solution.                   | Add 1.05V snubber.   | 0.3  | 43  | Add PR104 SD001470B80(S RES 1/4W 4.7 +-5% 1206)<br>Add PC83 SE074681K80(S CER CAP 680P 50V K X7R 0402 ) | 20080102 | DVT   |
| 17   | Add EMI solution.                   | Add 1.8V snubber.  | 0.3  | 43  | Add PR108 SD001470B80(S RES 1/4W 4.7 +-5% 1206)<br>Add PC89 SE074681K80(S CER CAP 680P 50V K X7R 0402 ) | 20080102 | DVT   |
| 18   | Add EMI solution.                   | Add CPU boost resistor.  | 0.3  | 46  | Add PR138, PR152 SD013220B80 (S RES 1/10W 2.2 +-5% 0603)  | 20080102 | DVT   |
| 19   | Add EMI solution.                   | Add 3/5V input capacitor filter..  | 0.3  | 41  | Add PC159, PC160, PC161, PC162 SE074471K80(S CER CAP 470P 50V K X7R 0402)                               | 20080102 | DVT   |
| 20   | Add EMI solution.                   | Add 3/5V input beat  | 0.3  | 41  | Add PL12, PL13 SM010016410(S SUPPRE KC FBMA-L11-322513-151LMA50T)                                       | 20080102 | DVT   |
| 21   |                                     |  |      |     |   |          |       |
| 22   |                                     |  |      |     |   |          |       |
| 23   |                                     |  |      |     |   |          |       |

|  |            |                    |            |                          |                            |
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|  |            |                    |            | Date:                    | Thursday, October 16, 2008 |
|  |            |                    |            | Sheet                    | 47 of 50                   |



| PHASE | PAGE | MODIFICATION LIST  | PURPOSE   |
|-------|------|--|---|
| DVT   | P.4  | Change R25 , R18 , R11 , R19 from 56 to 54.9 ohm                           | Reference standard circuit  |
|       | P.4  | Delete R10   | Foe ESD   |
|       | P.4  | Change CPU temp sensor U9 , R55 / R56 from 100 to0 ohm , delete R64 / R652 | ADI had issue , for SMSC / Fintek temp sensor , no used for OD output |
|       | P.8  | Change R525 , R527 connected from +1.05Vs to GND                           | Reference standard circuit  |
|       |      | Change Cantiga GM U30 as SA00001P930 (Ver:B0)                              | Revision upgrade  |
|       |      | Change Cantiga PM U30 as SA00001Z030 (Ver:B0)                              |   |
|       | P.12 | Change L42 , L18 , C499 , C229 , C280 , C232 as GM@                        | Reference standard circuit  |
|       |      | Change R596 , R597 as PM@  | For UMA CRT   |
|       | P.12 | Add C597 (220U)  | Reserved  |
|       | P.12 | Add C597 (220U)  | Reference standard circuit  |
|       | P.12 | Change R110 , C187 , C196 as stuff , R117 un-stuff                         | DFX   |
|       | P.12 | C461 down size as 10U_0603   | NA  |
|       | P.16 | Change Q30 (dual N-MOS) as Q48 , Q49 (2 single N-MOS)                      | NA  |
|       | P.17 | C500 down size as 680P_0402  | For BOM   |
|       | P.17 | Add L57 , L58 , C598 , C599 for +1V8RUN                                    | +1V8RUN ripple (+1V8RUN is for MXM +PEX1V2)                           |
|       | P.17 | Add R599 as 0ohm   | Reserve R598 , D31  |
|       | P.17 | Update JMXM1 footprint   | NA  |
|       | P.17 | Change Q41 (dual N-MOS) as Q50 , Q51 (2 single N-MOS)                      | NA  |
|       | P.18 | C364 down size as 680P_0402  | For BOM   |
|       | P.18 | C365 , C366 , C367 change from 220P to 820P                                | For EMI   |
|       | P.19 | D5 change as RB411DT146_SOT23-3  | Common part   |
|       | P.19 | Change Q40 (dual N-MOS) as Q52 , Q53 (2 single N-MOS)                      | NA  |
|       | P.19 | Change C401 , C409 , C419 as 15P   | For DISCRETE CRT  |
|       | P.19 | Change C402 , C410 , C420 as 12P   | For DISCRETE CRT  |
|       | P.19 | C408 , C418 , C423 (22P) stuff for UMA only                                | For UMA CRT only  |
|       | P.19 | Change L1 , L2 from FCM1608C-121T_0603 as 10ohm_0603                       | For CRT   |
|       | P.20 | Change Q7 from 2N7002_SOT23(Dual N-MOS) as Q7 & Q47(Single BSH111 N-MOS)   | For DVI SMBUS level shifter   |
|       | P.20 | Add R600 & R602 (4.7K ohm) pull high +3Vs                                  | For DVI SMBUS   |
|       | P.20 | Reserve R601 & R603 (2.7K ohm) pull high +5Vs                              | For DVI SMBUS   |
|       | P.20 | Reserve U39 & U40 (SN74CBTD3306CPWR_TSSOP8)                                | For DVI & HDMI SMBUS  |
|       | P.20 | Change D21 from RB751V_SOD323 as CH751H-40PT_SOD323-2                      | NA  |
|       | P.22 | Change R478 from 33 ohm as 1K ohm  | Customer request  |
|       | P.22 | LAN_RST# connect to GND  | No used Integrated LAN  |
|       | P.22 | R169 un-stuff  | For mobile  |
|       | P.22 | Add CR_CPPE#(GPIO7) & CR_WAKE#(GPIO22)                                     | For JMB385 power management   |
|       | P.22 | Swap PCIE(x1) port 2 & port 4  | NA  |
|       | P.22 | R385 un-stuff , U28 stuff  | For sequence  |
|       | P.25 | U34.127 is used as external IDSEL  | NA  |
|       | P.25 | R489 un-stuff  | For PCMCIA Lan card not support PM_CLKRUN# function                   |
|       | P.25 | Update JPCM1 footprint   | For DFX   |
|       | P.26 | Reserve R655 , R656 , D33 for CR_CPPE# & CR_WAKE#                          | For JMB385 power management   |
|       | P.26 | Cantiga JMB385 U32 as SA00001W910 (Ver:B)                                  | Revision upgrade  |
|       | P.27 | Delete BCM5787M co-lay schematic   | NA  |
|       | P.27 | Update U25 footprint   | For DFX   |
|       | P.28 | Change T1 from GSL5009 as GSL5009-1(SP050003T10)                           | NA  |
|       | P.28 | Add C375 , C383 (68P)  | For EMI   |
|       | P.29 | Add R658   | Add 80 port function on JMINI2  |
|       | P.30 | D32(SC300000B00) stuff   | For ESD   |
|       | P.31 | Add R604   | NA  |
|       | P.31 | R248 change from 0 ohm as 8.2K ohm   | Foe Board ID as 1 define  |

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|   |            |                    |            | Date                     | Thursday, October 16, 2008 |
|   |            |                    |            | Sheet                    | 48 of 50                   |

| PHASE | PAGE        | MODIFICATION LIST   | PURPOSE   |   |
|-------|-------------|---|---|---|
| DVT   | P.31        | C286 change from 3.3U as 4.7U   | Stable KB926 internal +1.8V regulator , ENE suggestion value          |   |
|       | P.32        | JP6 pin define reverse  | NA  |   |
|       | P.32        | Change SW3 & SW4 type   | NA  |   |
|       | P.32        | U15 change from 1MB as 2MB capacity SPI ROM                               | Add Finger print code   |   |
|       | P.33        | R261 change from 10K as 31.6K   | Fix ATI MXM sku can't power on for battery mode issue                 |   |
|       | P.33        | C334 change from 0.1U as 1U   | Fix nVIDIA MXM sku power on issue                                     |   |
|       | P.34        | Delete Internal(Digital) MIC reserved circuit                             | NA  |   |
|       | P.34        | Change R574 (0 ohm) as L59 (MBC160812LYZF)                                | For EMI   |   |
|       | P.34        | Add R660 to connect HDA_GPIO3 with DOCKIN#                                | For docking spdif feature enable                                      |   |
|       | P.34        | Change R574 (0 ohm) as L59 (MBC160812LYZF)                                | For EMI   |   |
|       | P.35        | R559 / R560 change from 47 ohm as 75 ohm                                  | For Audio precision FSOV  |   |
|       | P.35        | R561 / R562 / R566 / R571 change from 75 ohm as 1K ohm                    | For ESD , Realtek suggestion value                                    |   |
|       | P.36        | Add C601 , C602 , C603 (330P) on +5VALW                                   | For EMI   |   |
|       | P.37        | R283 change from 100K to 10K  | NA  |   |
|       | P.37        | R206 , Q20 stuff  | For +1.8V discharge   |   |
|       | P.38        | Add switch to enable/disable EC_DOCKIN#_S0 for HDMI SMBUS                 | NA  |   |
|       | P.38        | Update JDOCK1 footprint   | NA  |   |
|       | PVT1        | P.16  | Change C308 / C311 (33P) as 27P                                       | For RTC accuracy  |
| P.23  |             | Use 4MB SPI ROM   | For Kinabalu_High & Kinabalu_Low                                      |   |
| P.23  |             | Add test point T32 / T33 / T34 / T35                                      | Reserved for PCIe(X1) port 1  |   |
| P.25  |             | Change U35 as SA000026P10(OZ2210GN-B1)                                    | For B1 version  |   |
| P.27  |             | Change U23 as SA000025P20(BCM5764MKMLG P20)                               | For B0 version  |   |
| P.27  |             | Reserved R673 , R674 (0 ohm)  | For Lan SMBUS   |   |
| P.27  |             | Reserved Lan GPIO0(LAN_ALERT#) / LAN_ALERT#_EC / R675 , R676 , R677 to EC | For Lan ASF workaround  |   |
| P.27  |             | U23 Pin17 / Pin5 / Pin55 connect to U23 Pin18 for power +Lan_VDDIO_1.2    | U23 Pin18 is power source +Lan_VDDIO_1.2 for U23 Pin17 / Pin5 / Pin55 |   |
| P.27  |             | U23 Pin38 / Pin52 NC  | NA  |   |
| P.29  |             | Change JMINI1 for Robson2 , chnage JMINI2 for Wireless                    | NA  |   |
| P.31  |             | Add LAN_ALERT#_EC & EC_ACIN for EC  | Reserved for ASF workrund & Nvidia MXM power saving                   |   |
| P.33  |             | Add R668(10K) & reserved R263(10K)  | Fine tune +1.05VS timing for UMA boot display flash                   |   |
| P.34  |             | Change U36 as ALC268-VB1-GR(SA00001GD10)                                  | Version upgrade   |   |
| P.34  |             | Stuff R659 & un-stuff R660  | For SPDIF feature on docking  |   |
| P.36  |             | Add C604 , C605 (820P_0402)   | For EMI   |   |
| P.50  |             | Chipset change as GM(SA00002JT10) / PM(SA00002JJ00) / ICH9M(SA00002JH00)  | Version upgrade   |   |
| PVT2  |             | P.27  | Update U23 CIS symbol   | U23 Pin38 , 52 can't be changed as NC                                   |
|       |             | P.34  | Add D34 , R678  | For ACER docking SPDIF feature (No SPDIF on board)                      |
|       | P.38        | Update JDOCK1 CIS symbol  | Docking connector modify (add boss x 2) for DFX                       |   |
|       | P.35        | Delete D2 , D4 (Int SPK ESD diode)  | NA  |   |
|       | P.34        | Delete D9 (Int MIC ESD diode)   | NA  |   |
|       | P.35        | Add C609 , C610 (330P_0603) on Right SPK                                  | For EMI   |   |
|       | P.34        | Add C608 (330P_0603) on Int MIC   | For EMI   |   |
|       | P.08        | Add Test point (T39 , T40 , T41 , T42)                                    | Add Management Engine JTAG pins                                       |   |
|       | P.27        | Add C612 , C614 (0.1u_0402) for +LAN_AVDD                                 | For lower 1000Base-T Comm-Mode O/P Voltage < 50mV                     |   |
|       | P.27        | Add C615 , C616 , C617 (0.1u_0402) for +LAN_AVDDL                         | For lower 1000Base-T Comm-Mode O/P Voltage < 50mV                     |   |
|       | P.08        | Add U41, R679 , R680 , R681 , R682 , R683 , R684 , R685 , T43             | Reserved for Management Engine JTAG debug                             |   |
|       | P.07        | Chipset change as GM(SA00002JT50) / PM(SA00002JJ50)                       | Version upgrade   |   |
|       | P.20 , P.31 | Add EC_DVI_DET , EC_GPIOB , EC_GPIOC , R687 , R688 , R691                 | Reserved for DVI detect delay control (by EC)                         |   |
|       | MP          | P.24  | R73 , R148 change from 10_0402 to 100_0402                            | For USB issue on ICH9M A3 stepping                                      |
|       |             |   | C128 , C204 change from 0.1U_0402 to 1U_0402                          |   |
|       |             | P.34 , P.35   | C608 , C609 , C610 change from 330P_0603 to 330P_0402                 | For 330P_0402 is standard part  |
|       |             | P.31  | Change R248 as 33K  | Board ID upgrade  |
|       |             | P.30  | Add R692 / R693 (0_0603)  | Reserved S3 power rail for check finger print sensor S3 resume too slow |

|   |            |                    |            |                                  |                        |
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|   |            |                    |            | Date: Thursday, October 16, 2008 | Sheet 49 of 50         |

PHASE

PAGE

MODIFICATION LIST

PURPOSE

P.20 Add D35  
P.30 Add R694 / R695 (0\_0603)  
P.27 Delete C612 , C614 , C615 , C616 , C617 (0.1u\_0402)  
P.16 Stuff R689 / R690  
  
P.35 R559 , R560 change from 75 to 54.9 ohm  
Chipset change as GM(SA00002JTB0) / PM(SA00002JJA0) / ICH9M(SA00002JH70)  
P.32 R291 , R294 change from 300\_0402\_5% to 240\_0402\_5%  
P.20 R84 , R85 , R86 , R91 change from 2K\_0402\_5% to 4.7K\_0402\_5%  
P.35 R304 , R305 change from 0 to 49.9 ohm  
P.03 Date:06042008 Add BOM Structure : WITHITPM@ , WOITPM@  
P.50 Chipset change as GL40(SA00002Q830)  
P.20 Add BOM Structure : HDMI@  
P.38 Add R223 & C306 for LOW sku (Remove BOM Structure : Main@)  
P.37 Change U11 , U12 , U13 , U20 , U21 as SI4800 (SB548000310)  
P.36 Change U2 as APL5605(SA00001Z900)

Reserved for HDMI\_HPD  
Reserved for check  
No need  
Reserved for LAN power saving  
  
For FSOV between 420mv~480mv  
Version upgrade  
For ACER Hank's request to fine tune brighter  
For UMA DVI/HDMI monitor P193WA (x) detect issue (On JAL90)  
For FSOV between 420mv~480mv with docking  
Update BOM as WOITPM(iTPM disable)  
NA  
NA  
Prevent DOCKIN# as floating & make wrong behavior  
Prevent MOSFET burn out issue  
Due to original G993(SA009930010) is EOL

## PCB

ZZZ



PCB 047 LA-4221P REV1 M/B

LA4221MB Rev0: DA600007R00  
LA4221MB Rev1: DA600007R10  
LA4221MB with Sub/B Rev1: DAZ04800100

## IC

U30



CANTIGA ES\_FCBGA1329

DVT CANTIGA PM: SA00001ZO30 (S IC EB88CTPM QR34 B0 FCBGA 1329 ES)  
PVT CANTIGA PM: SA00002JJ00 (S IC AC88CTPM QT78 B2 FCBGA 1329 PM)  
PVT2 CANTIGA PM: SA00002JJ50 (S IC AC88CTPM QU38 B3 FCBGA 1329 PM)  
Pre-MP CANTIGA PM: SA00002JJA0 (S IC AC82PM45 SLB97 B3 FCBGA1329 PM ABO!)

U30



CANTIGA ES\_FCBGA1329

DVT(Check\_TBD) CANTIGA GL: SA000023Z00 (S IC CANTIGA ES FCBGA 1329 MCH GL)  
PVT CANTIGA GL: SA00002Q830 (S IC AC88CTGL QU37 B3 FCBGA 1329 GMCH GL)  
MP CANTIGA GL: SA00002Q810 (S IC AC82GL40 SLB95 B3 GL CANTIGA ABO!)

## DC Cable

ZZZ



DC Cable (65W)

@ PVT(54 Rank)

DC301003R00(CONN SET 048 DCJACK-MB 2DW-G756-I50 65W)

ZZZ



DC Cable (90W)

@ PVT(54 Rank)

DC301003S00(CONN SET 048 DCJACK-MB 2DW-G756-I49 90W)

U10



ICH9-M ES\_FCBGA676

ICH9-M: SA00002G120  
(S IC AF82801IEM QT10 A3 PBGA 676P ICH9M)

U6



W25X16-VSSIG\_S08

## 2MB Flash

MP Winbond: SA00001KN00  
(S IC FL 16MBIT W25X16-VSSIG SOIC 8P)

## For Discrete

## CRT

C419 C409 C401  
PM@2 15P\_0402\_50V8J 15P\_0402\_50V8J  
15P\_0402\_50V8J 15P\_0402\_50V8J

15P\_0402\_50V8J: SE071150J80  
12P\_0402\_50V8J: SE071120J80

C420 C410 C402  
PM@2 12P\_0402\_50V8J 12P\_0402\_50V8J  
12P\_0402\_50V8J 12P\_0402\_50V8J

DVT(Check)

## MCH

R128 PM@ 0\_0402\_5%  
R129 PM@ 0\_0402\_5%  
R119 PM@ 0\_0402\_5%  
R138 PM@ 0\_0402\_5%  
R139 PM@ 0\_0402\_5%  
R140 PM@ 0\_0402\_5%  
R143 PM@ 0\_0402\_5%

0\_0402\_5%: SD028000080

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