

Compal Confidential

ICL50/51, ICK70/71 Schematics Document

Intel Merom Processor with Crestline(PM965/GM965) + DDRII + ICH8M
(With ATI MXM/B)

2007-8-15

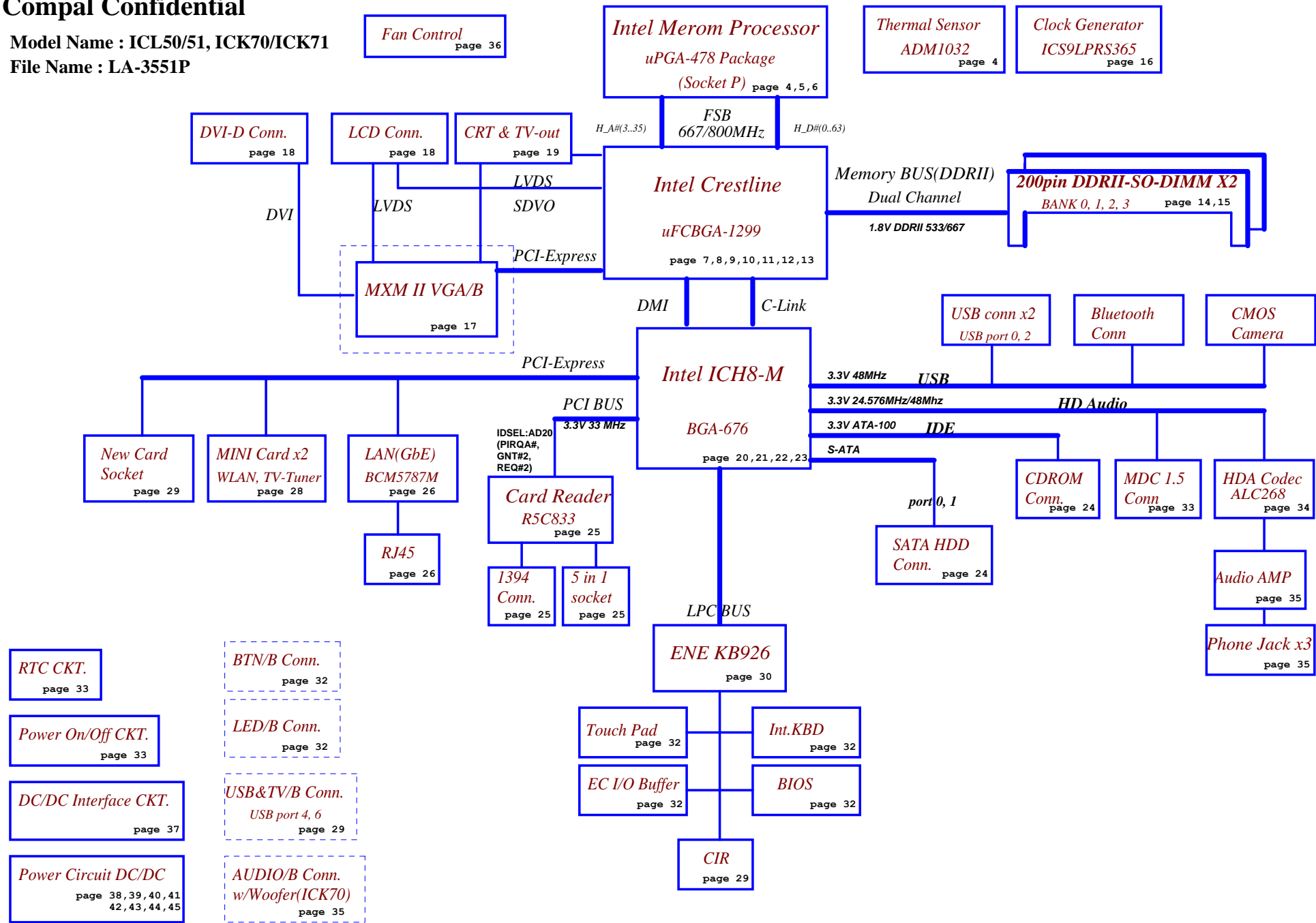
REV: 2.0

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| | | | | Size B | Document Number ICL50/ICK70 M/B LA-3551P Schematic |
| Date: Wednesday, August 15, 2007 | | | | Sheet | 1 of 49 |

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Model Name : ICL50/51, ICK70/ICK71

File Name : LA-3551P



| | | |
|---|--------------------|-----------------|
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| Block Diagrams | | |
| Size | Document Number | Rev |
| B | ICL50/ICK70 M/B LA-3551P Schematic | |
| Date: | Wednesday, August 15, 2007 | Sheet 2 of 49 |

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* |
| +RTCVC | 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 |
|------------------|--------|-----------|----------------|
| 1394/Card Reader | AD16 | 0 | PIRQE PIRQG |

EC SM Bus1 address

| Device | Address |
|------------------|-------------|
| Smart Battery | 0001 011X b |
| EEPROM(24C16/02) | 1010 000X b |
| GMT G781-1 | 1001 101X b |

EC SM Bus2 address

| Device | Address |
|-------------|-------------|
| ADI ADM1032 | 1001 100X b |

ICH8M SM Bus address

| Device | Address |
|-------------------------------|------------|
| Clock Generator (ICS9LPRS365) | 1101 001Xb |
| DDR DIMM0 | 1001 000Xb |
| DDR DIMM2 | 1001 010Xb |

| 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 | V _{AD_BID min} | V _{AD_BID typ} | V _{AD_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

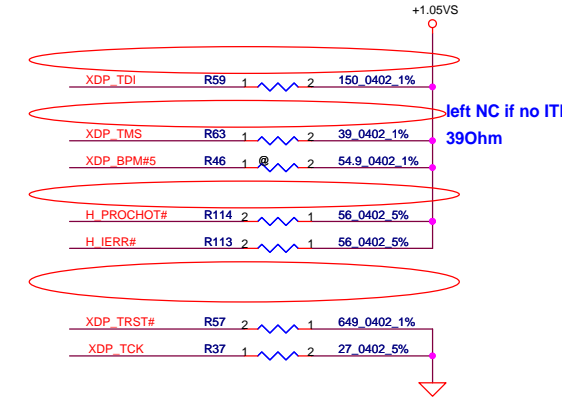
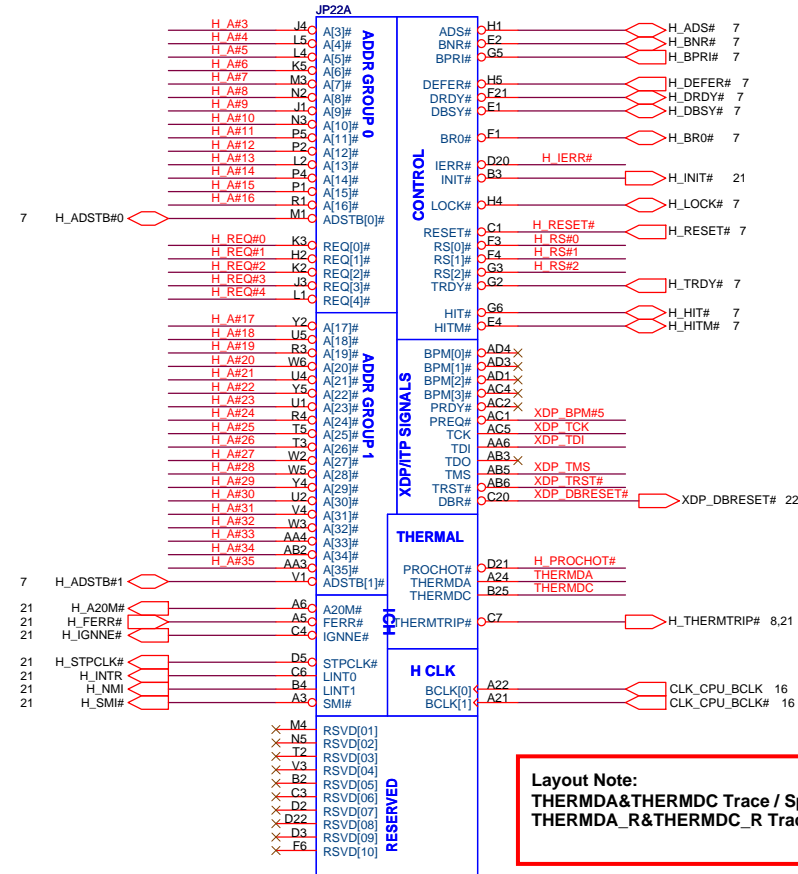
| Board ID | PCB Revision |
|----------|----------------|
| 0 | 0.1 |
| 1 | 0.2 |
| 2 | 0.3 |
| 3 | 1.0 |
| 4 | 1A(Nettiling) |
| 5 | 1A(Acadia 960) |
| 6 | |
| 7 | |

BTO Option Table

| BTO Item | BOM Structure |
|----------|---------------|
| Discrete | PM@ |
| UMA | GM@ |
| | |
| | |
| | |
| | |

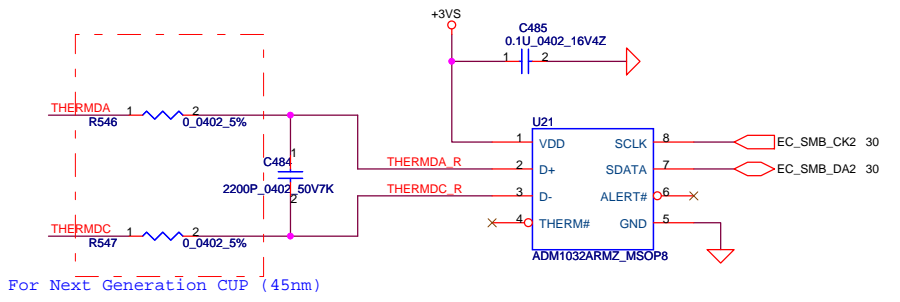
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| | | | | | ICL50/ICK70 M/B LA-3551P Schematic | |
| | | | | Date: | Wednesday, August 15, 2007 | Sheet 3 of 49 |

- 7 H_A#[3..35] H_A#[3..35]
- 7 H_REQ#[0..4] H_REQ#[0..4]
- 7 H_RS#[0..2] H_RS#[0..2]

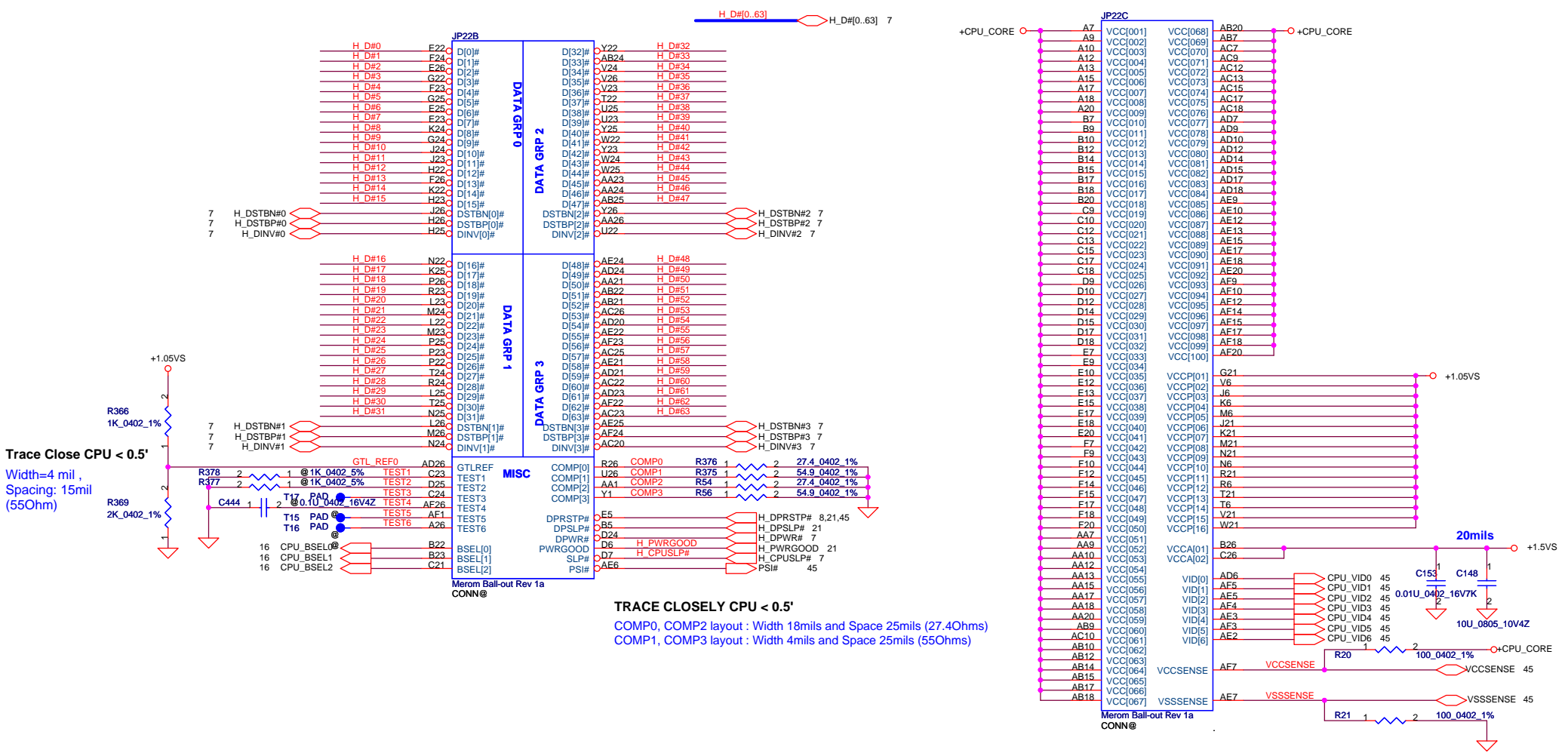


Layout Note:
 THERMDA&THERMDC Trace / Space = 10 / 10 mil
 THERMDA_R&THERMDC_R Trace / Space = 10 / 10 mil

| BSEL2 | BSEL1 | BSEL0 | BCLK |
|-------|-------|-------|------|
| 0 | 1 | 0 | 200 |
| 0 | 1 | 1 | 166 |



For Next Generation CUP (45nm)



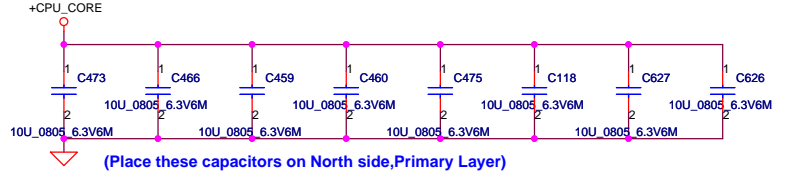
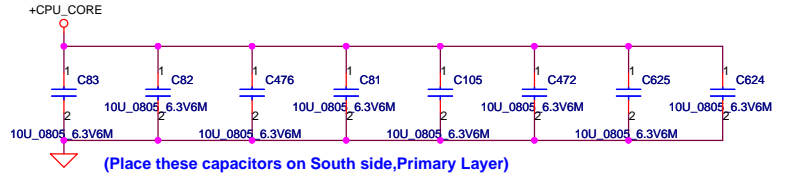
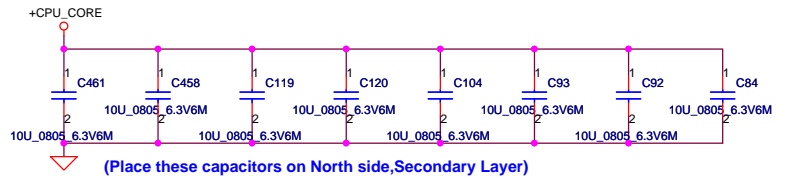
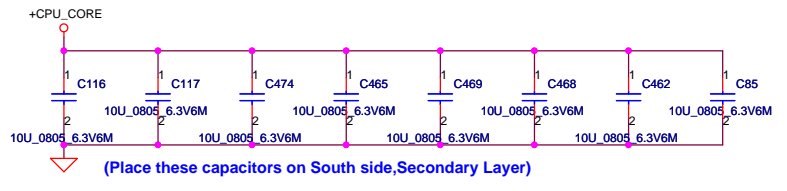
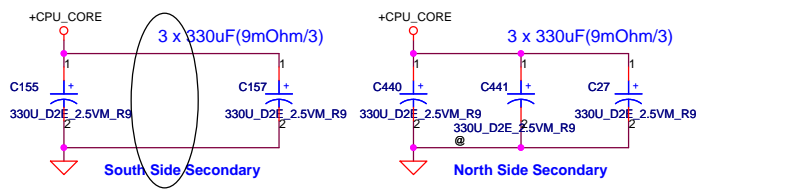
Trace Close CPU < 0.5'
 Width=4 mil
 Spacing: 15mil
 (55Ohm)

TRACE CLOSELY CPU < 0.5'
 COMP0, COMP2 layout : Width 18mils and Space 25mils (27.4Ohms)
 COMP1, COMP3 layout : Width 4mils and Space 25mils (55Ohms)

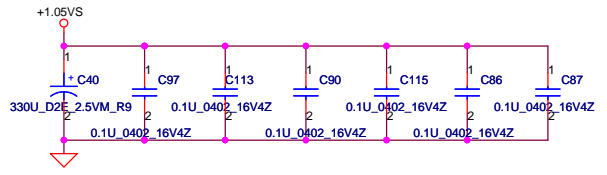
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| Date: | Wednesday, August 15, 2007 | Sheet | 5 | of | 49 |

| JP22D | | |
|-------|----------|----------|
| A4 | VSS[001] | VSS[082] |
| A8 | VSS[002] | VSS[083] |
| A11 | VSS[003] | VSS[084] |
| A14 | VSS[004] | VSS[085] |
| A16 | VSS[005] | VSS[086] |
| A19 | VSS[006] | VSS[087] |
| A23 | VSS[007] | VSS[088] |
| AF2 | VSS[008] | VSS[089] |
| B6 | VSS[009] | VSS[090] |
| B8 | VSS[010] | VSS[091] |
| B11 | VSS[011] | VSS[092] |
| B13 | VSS[012] | VSS[093] |
| B16 | VSS[013] | VSS[094] |
| B19 | VSS[014] | VSS[095] |
| B21 | VSS[015] | VSS[096] |
| B24 | VSS[016] | VSS[097] |
| C5 | VSS[017] | VSS[098] |
| C8 | VSS[018] | VSS[099] |
| C11 | VSS[019] | VSS[100] |
| C14 | VSS[020] | VSS[101] |
| C16 | VSS[021] | VSS[102] |
| C19 | VSS[022] | VSS[103] |
| C2 | VSS[023] | VSS[104] |
| C22 | VSS[024] | VSS[105] |
| C25 | VSS[025] | VSS[106] |
| D1 | VSS[026] | VSS[107] |
| D4 | VSS[027] | VSS[108] |
| D8 | VSS[028] | VSS[109] |
| D11 | VSS[029] | VSS[110] |
| D13 | VSS[030] | VSS[111] |
| D16 | VSS[031] | VSS[112] |
| D19 | VSS[032] | VSS[113] |
| D23 | VSS[033] | VSS[114] |
| E3 | VSS[034] | VSS[115] |
| E6 | VSS[035] | VSS[116] |
| E8 | VSS[036] | VSS[117] |
| E11 | VSS[037] | VSS[118] |
| E14 | VSS[039] | VSS[120] |
| E16 | VSS[040] | VSS[121] |
| E19 | VSS[041] | VSS[122] |
| E21 | VSS[042] | VSS[123] |
| E24 | VSS[043] | VSS[124] |
| F5 | VSS[044] | VSS[125] |
| F8 | VSS[045] | VSS[126] |
| F11 | VSS[046] | VSS[127] |
| F13 | VSS[047] | VSS[128] |
| F16 | VSS[048] | VSS[129] |
| F19 | VSS[049] | VSS[130] |
| F2 | VSS[050] | VSS[131] |
| F22 | VSS[051] | VSS[132] |
| F25 | VSS[052] | VSS[133] |
| G4 | VSS[053] | VSS[134] |
| G1 | VSS[054] | VSS[135] |
| G23 | VSS[055] | VSS[136] |
| G26 | VSS[056] | VSS[137] |
| H3 | VSS[057] | VSS[138] |
| H6 | VSS[058] | VSS[139] |
| H21 | VSS[059] | VSS[140] |
| H24 | VSS[060] | VSS[141] |
| J2 | VSS[061] | VSS[142] |
| J5 | VSS[062] | VSS[143] |
| J22 | VSS[063] | VSS[144] |
| J25 | VSS[064] | VSS[145] |
| K1 | VSS[065] | VSS[146] |
| K4 | VSS[066] | VSS[147] |
| K23 | VSS[067] | VSS[148] |
| K26 | VSS[068] | VSS[149] |
| L3 | VSS[069] | VSS[150] |
| L6 | VSS[070] | VSS[151] |
| L21 | VSS[071] | VSS[152] |
| L24 | VSS[072] | VSS[153] |
| M2 | VSS[073] | VSS[154] |
| M5 | VSS[074] | VSS[155] |
| M22 | VSS[075] | VSS[156] |
| M25 | VSS[076] | VSS[157] |
| N1 | VSS[077] | VSS[158] |
| N4 | VSS[078] | VSS[159] |
| N23 | VSS[079] | VSS[160] |
| N26 | VSS[080] | VSS[161] |
| P3 | VSS[081] | VSS[162] |
| | | VSS[163] |

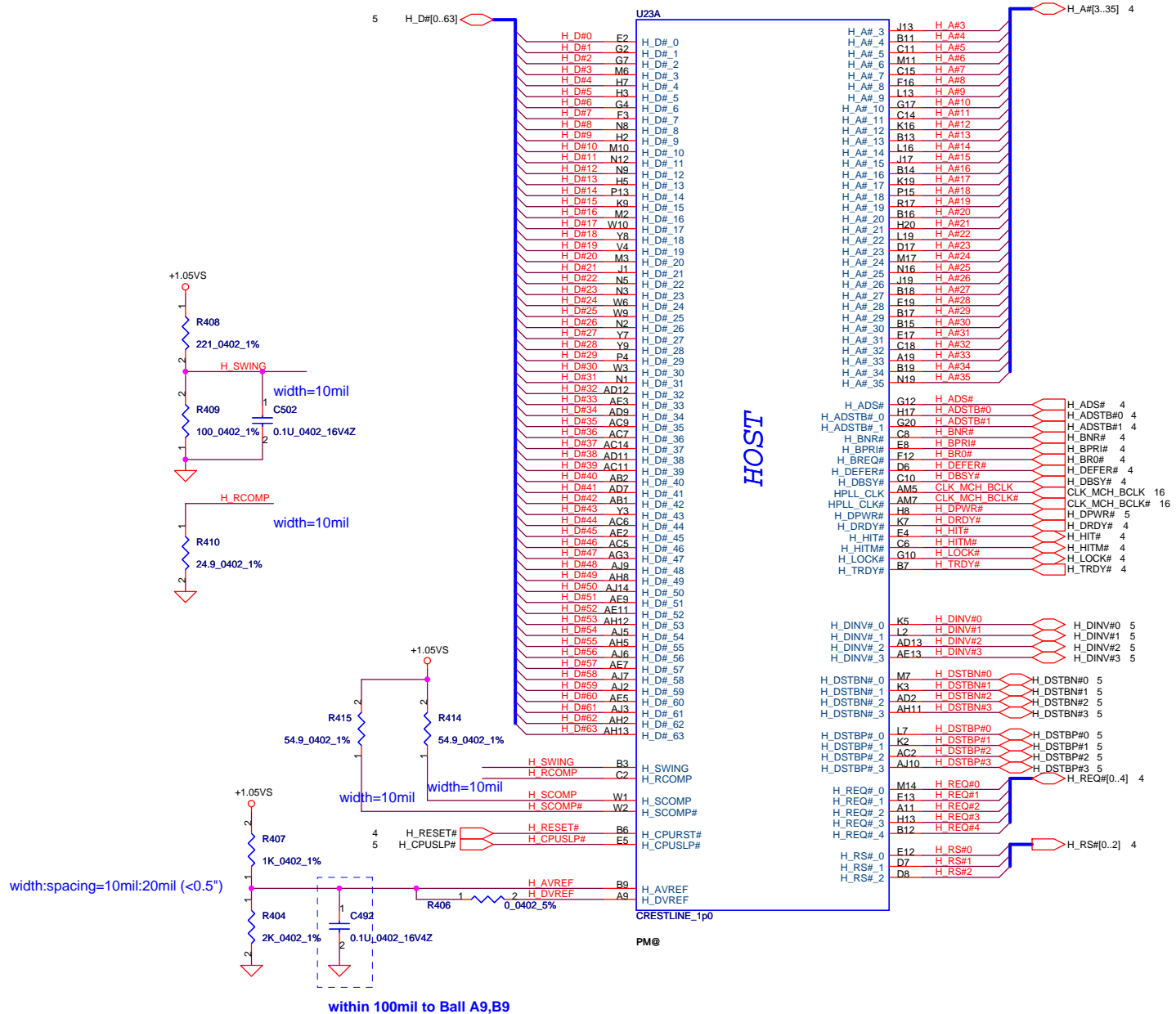
Merom Ball-out Rev 1a
CONN@



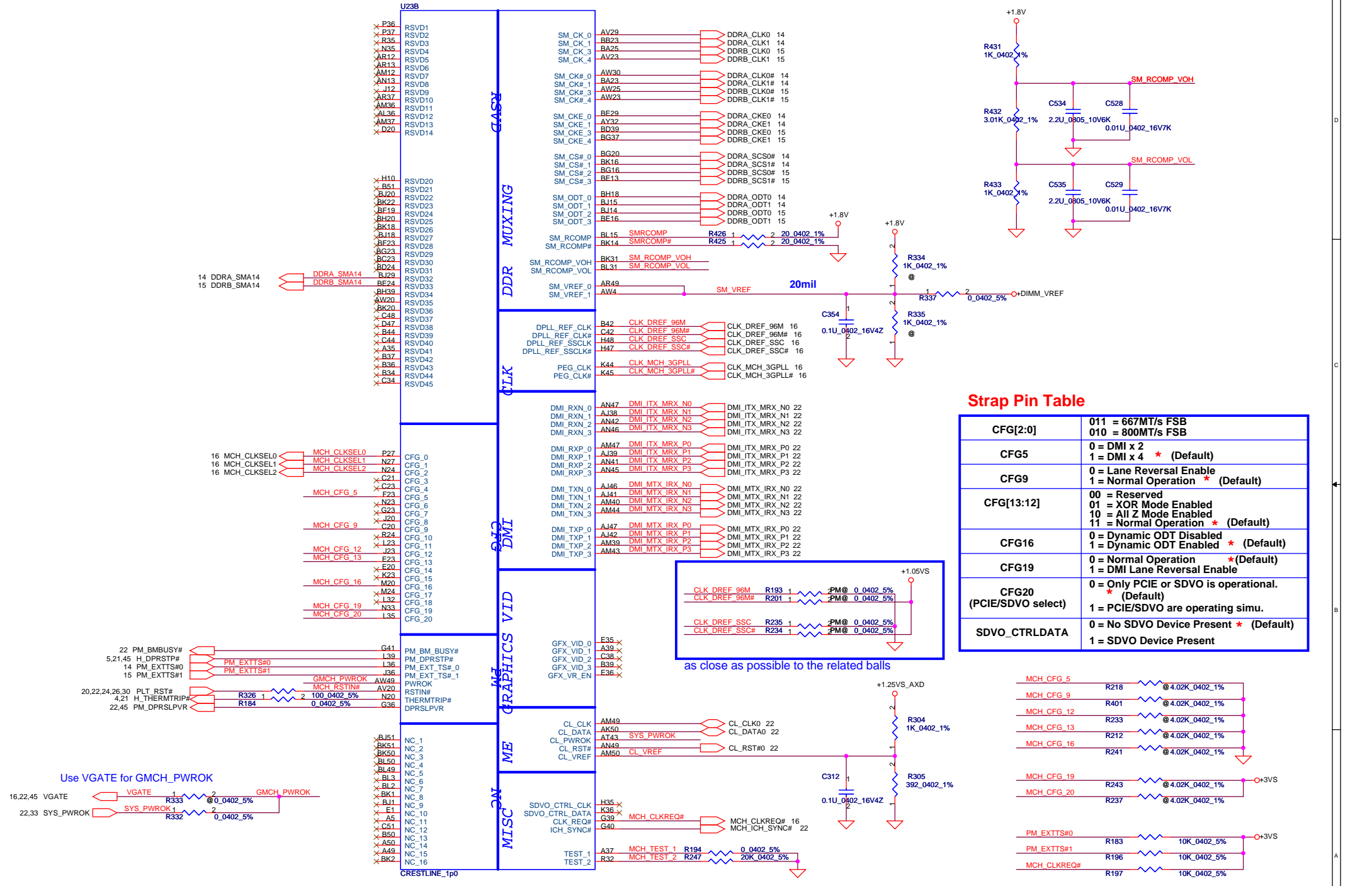
| +CPU-CORE Decoupling | C, uF | ESR, mohm | ESL, nH |
|----------------------|---------|-----------|----------|
| SPCAP, Polymer | 6X330uF | 9m ohm/6 | 1.8nH/6 |
| MLCC 0805 X5R | 32X22uF | 3m ohm/32 | 0.6nH/32 |
| | 32X10uF | 3m ohm/32 | 0.6nH/32 |



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| Date: | Wednesday, August 15, 2007 | Sheet | 6 | of | 49 |

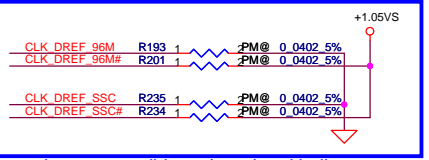
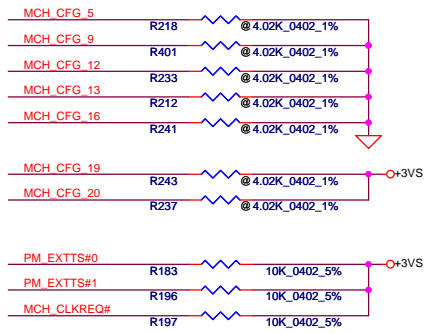


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| Date: | Wednesday, August 15, 2007 | Sheet | 7 | of | 49 |



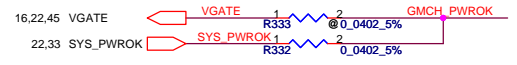
Strap Pin Table

| | |
|--------------------------|--|
| CFG[2:0] | 011 = 667MT/s FSB 010 = 800MT/s FSB |
| CFG5 | 0 = DMI x 2 1 = DMI x 4 * (Default) |
| CFG9 | 0 = Lane Reversal Enable 1 = Normal Operation * (Default) |
| CFG[13:12] | 00 = Reserved 01 = XOR Mode Enabled 10 = All Z Mode Enabled 11 = Normal Operation * (Default) |
| CFG16 | 0 = Dynamic ODT Disabled 1 = Dynamic ODT Enabled * (Default) |
| CFG19 | 0 = Normal Operation * (Default) 1 = DMI Lane Reversal Enable |
| CFG20 (PCIe/SDVO select) | 0 = Only PCIe or SDVO is operational. * (Default) 1 = PCIe/SDVO are operating simu. |
| SDVO_CTRLDATA | 0 = No SDVO Device Present * (Default) 1 = SDVO Device Present |



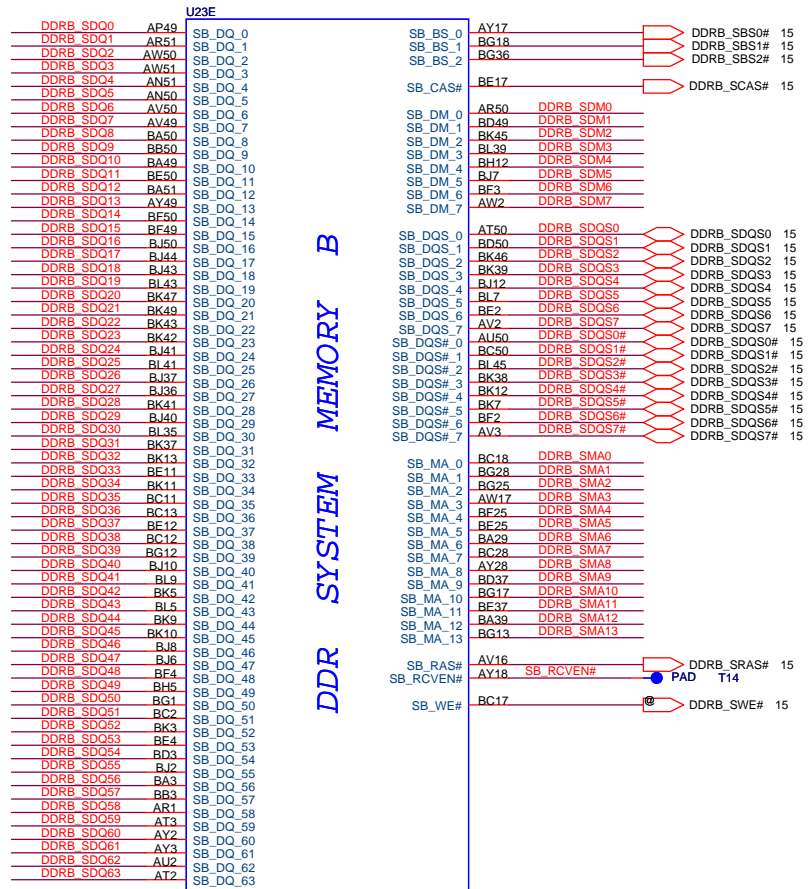
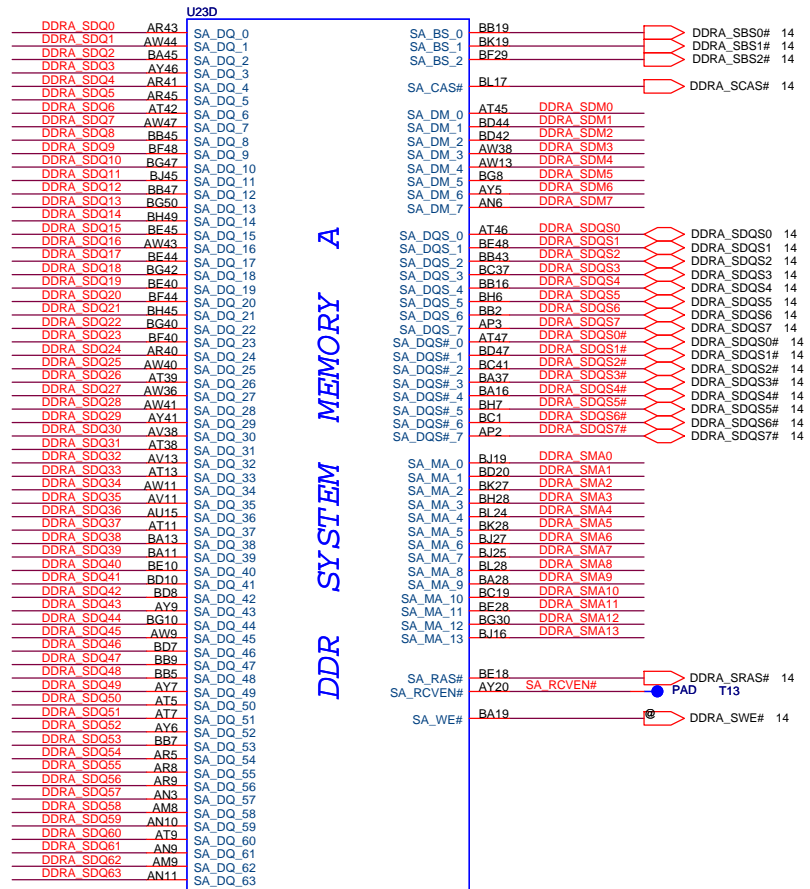
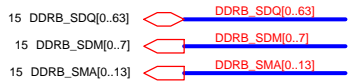
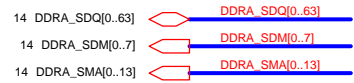
as close as possible to the related balls

Use VGATE for GMCH_PWROK



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| Date: | Wednesday, August 15, 2007 | Sheet 8 of 49 |



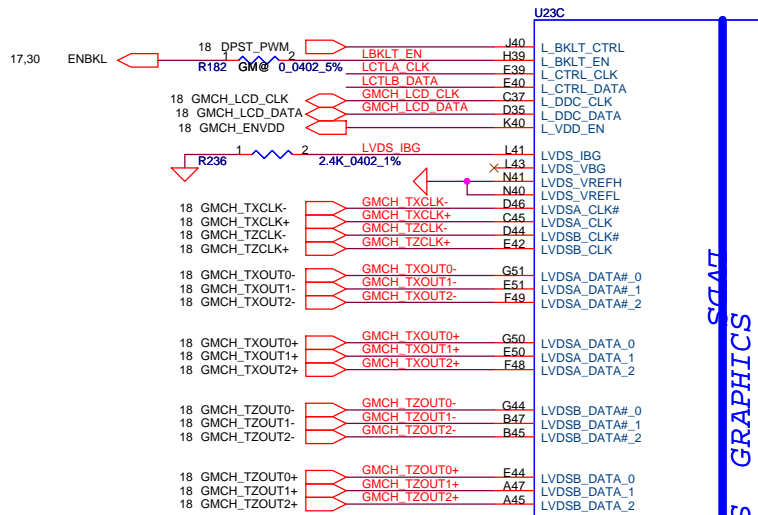
CRESTLINE_1p0

CRESTLINE_1p0

PM@

PM@

| | | | | | |
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| Size B | Document Number | Date: | Wednesday, August 15, 2007 | Sheet | 9 of 49 |
| | ICL50/ICK70 M/B LA-3551P Schematic | | | | |



PCI-EXPRESS GRAPHICS



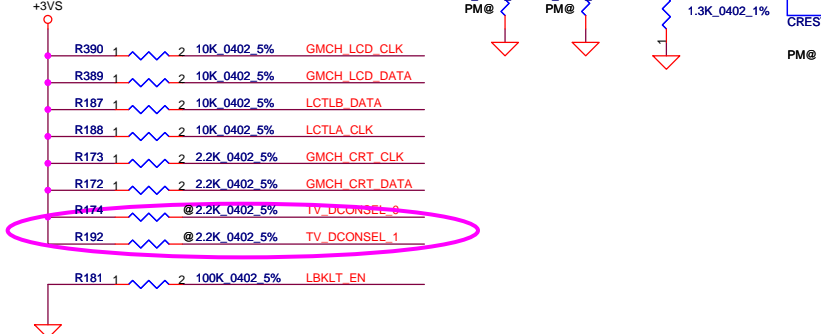
- PEG_RX#_0 J51 PCIE GTX C MRX N0
- PEG_RX#_1 L61 PCIE GTX C MRX N1
- PEG_RX#_2 N45 PCIE GTX C MRX N2
- PEG_RX#_3 T45 PCIE GTX C MRX N3
- PEG_RX#_4 T50 PCIE GTX C MRX N4
- PEG_RX#_5 U40 PCIE GTX C MRX N5
- PEG_RX#_6 Y44 PCIE GTX C MRX N6
- PEG_RX#_7 Y40 PCIE GTX C MRX N7
- PEG_RX#_8 AB51 PCIE GTX C MRX N8
- PEG_RX#_9 W49 PCIE GTX C MRX N9
- PEG_RX#_10 AD44 PCIE GTX C MRX N10
- PEG_RX#_11 AD40 PCIE GTX C MRX N11
- PEG_RX#_12 AG46 PCIE GTX C MRX N12
- PEG_RX#_13 AH49 PCIE GTX C MRX N13
- PEG_RX#_14 AG45 PCIE GTX C MRX N14
- PEG_RX#_15 AG41 PCIE GTX C MRX N15

- PEG_RX_0 J50 PCIE GTX C MRX P0
- PEG_RX_1 L50 PCIE GTX C MRX P1
- PEG_RX_2 M47 PCIE GTX C MRX P2
- PEG_RX_3 U44 PCIE GTX C MRX P3
- PEG_RX_4 T49 PCIE GTX C MRX P4
- PEG_RX_5 T41 PCIE GTX C MRX P5
- PEG_RX_6 W45 PCIE GTX C MRX P6
- PEG_RX_7 W41 PCIE GTX C MRX P7
- PEG_RX_8 AB50 PCIE GTX C MRX P8
- PEG_RX_9 Y48 PCIE GTX C MRX P9
- PEG_RX_10 AC45 PCIE GTX C MRX P10
- PEG_RX_11 AC41 PCIE GTX C MRX P11
- PEG_RX_12 AH47 PCIE GTX C MRX P12
- PEG_RX_13 AG49 PCIE GTX C MRX P13
- PEG_RX_14 AH45 PCIE GTX C MRX P14
- PEG_RX_15 AG42 PCIE GTX C MRX P15

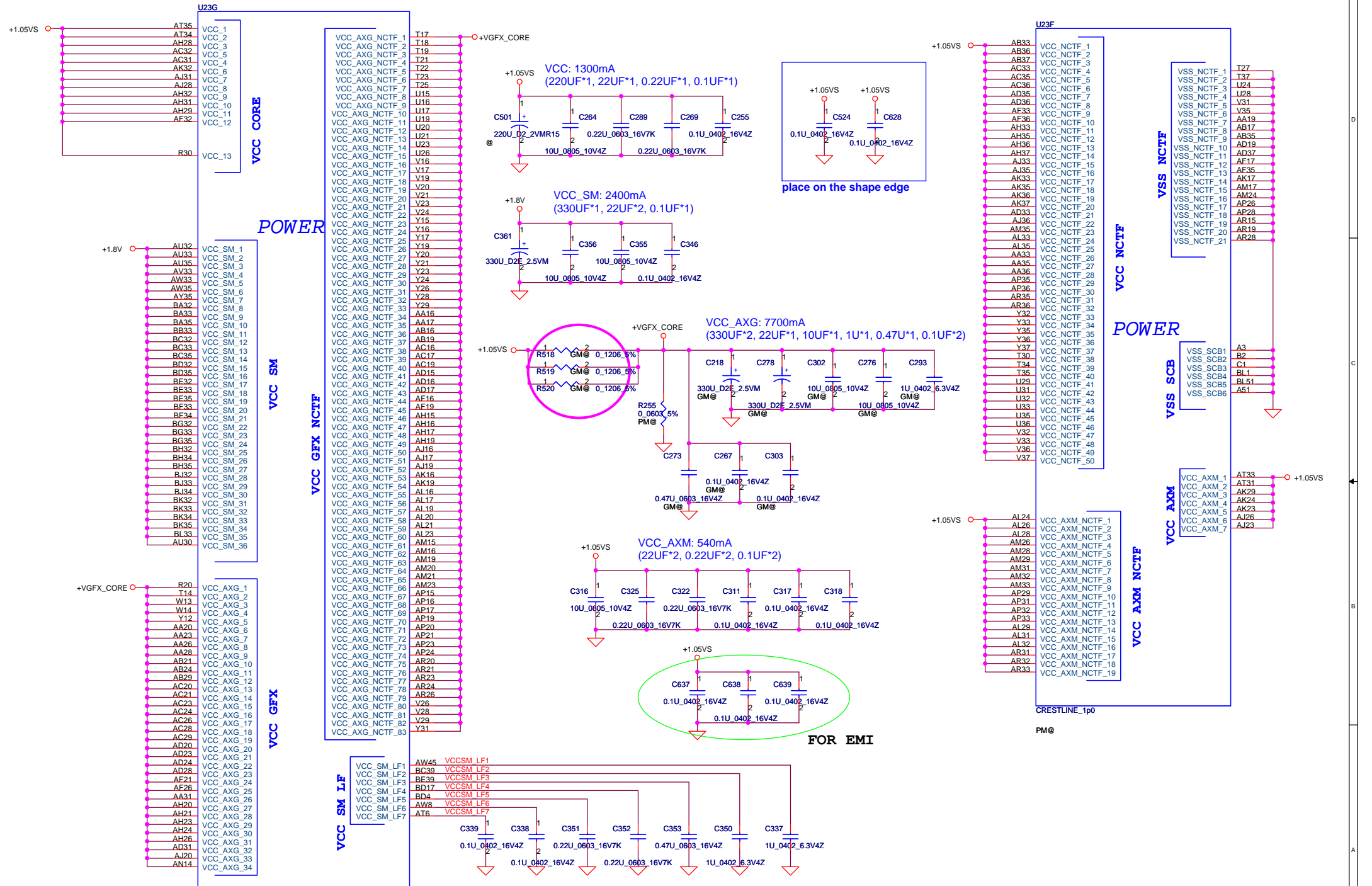
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- PCIE_MTX_C_GRX_P[0..15] 17
- PCIE_GTX_C_MRX_N[0..15] 17
- PCIE_GTX_C_MRX_P[0..15] 17

| | | | | | | | |
|------------|------|------------------|------|---|---|---------------------|--------------------|
| PEG_TX#_0 | N45 | PCIE MTX GRX N0 | C179 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N0 |
| PEG_TX#_1 | U39 | PCIE MTX GRX N1 | C188 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N1 |
| PEG_TX#_2 | U47 | PCIE MTX GRX N2 | C195 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N2 |
| PEG_TX#_3 | N51 | PCIE MTX GRX N3 | C201 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N3 |
| PEG_TX#_4 | R50 | PCIE MTX GRX N4 | C212 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N4 |
| PEG_TX#_5 | T42 | PCIE MTX GRX N5 | C217 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N5 |
| PEG_TX#_6 | W48 | PCIE MTX GRX N6 | C229 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N6 |
| PEG_TX#_7 | W38 | PCIE MTX GRX N7 | C240 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N7 |
| PEG_TX#_8 | W38 | PCIE MTX GRX N8 | C246 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N8 |
| PEG_TX#_9 | AD39 | PCIE MTX GRX N9 | C252 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N9 |
| PEG_TX#_10 | AC46 | PCIE MTX GRX N10 | C261 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N10 |
| PEG_TX#_11 | AC49 | PCIE MTX GRX N11 | C270 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N11 |
| PEG_TX#_12 | AC42 | PCIE MTX GRX N12 | C277 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N12 |
| PEG_TX#_13 | AE49 | PCIE MTX GRX N13 | C285 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N13 |
| PEG_TX#_14 | AE49 | PCIE MTX GRX N14 | C296 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N14 |
| PEG_TX#_15 | AH44 | PCIE MTX GRX N15 | C304 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_N15 |

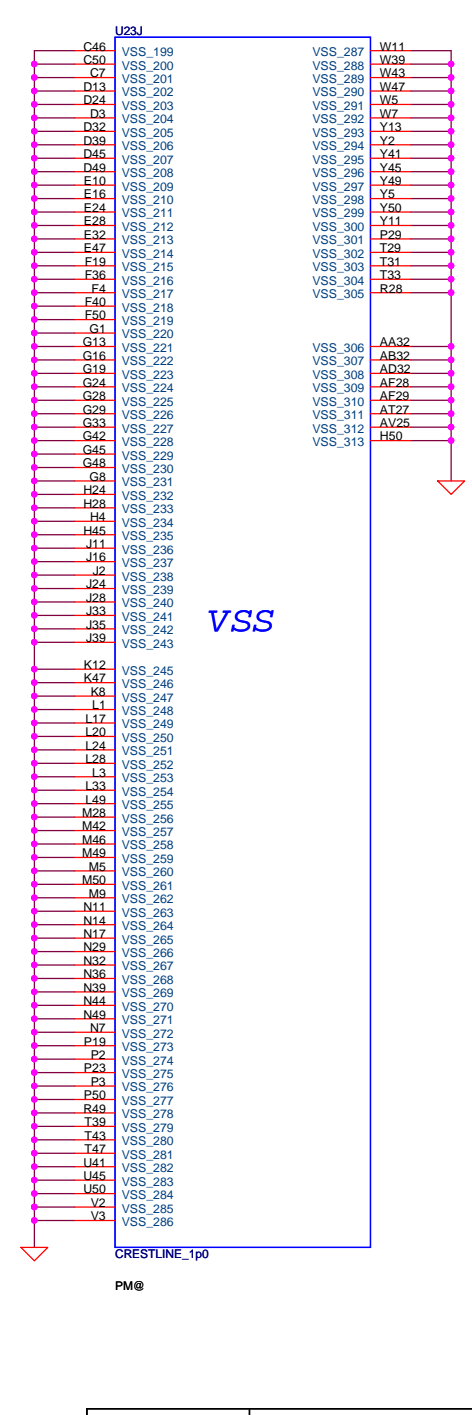
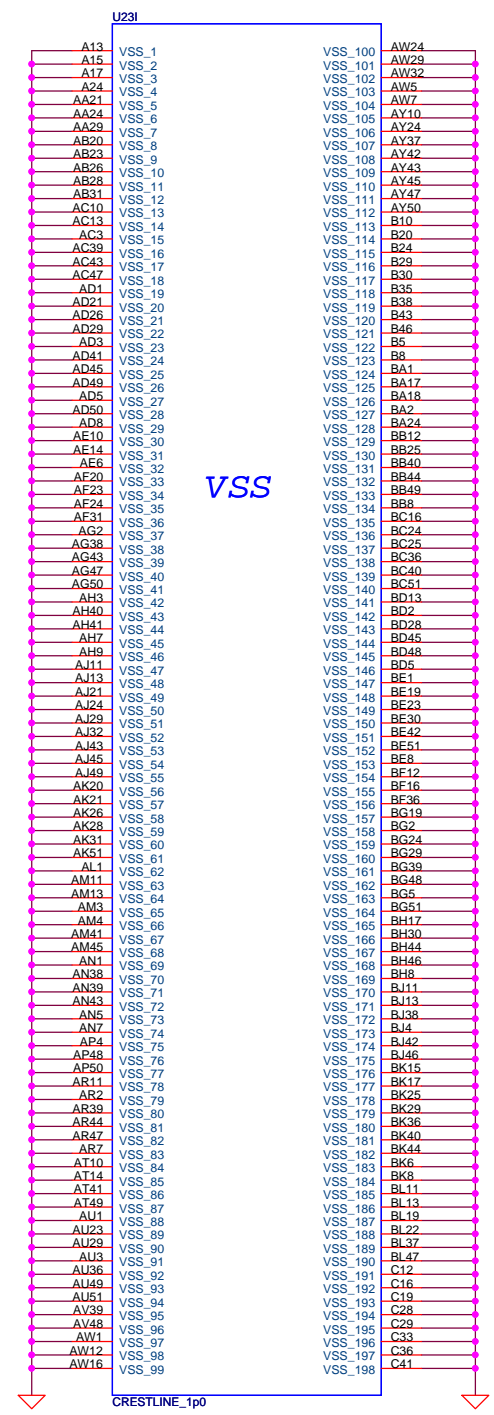
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| PEG_TX_0 | M45 | PCIE MTX GRX P0 | C176 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P0 |
| PEG_TX_1 | T38 | PCIE MTX GRX P1 | C180 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P1 |
| PEG_TX_2 | T46 | PCIE MTX GRX P2 | C189 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P2 |
| PEG_TX_3 | N50 | PCIE MTX GRX P3 | C198 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P3 |
| PEG_TX_4 | R51 | PCIE MTX GRX P4 | C204 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P4 |
| PEG_TX_5 | U43 | PCIE MTX GRX P5 | C214 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P5 |
| PEG_TX_6 | W42 | PCIE MTX GRX P6 | C219 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P6 |
| PEG_TX_7 | Y47 | PCIE MTX GRX P7 | C232 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P7 |
| PEG_TX_8 | Y39 | PCIE MTX GRX P8 | C241 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P8 |
| PEG_TX_9 | AD47 | PCIE MTX GRX P9 | C248 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P9 |
| PEG_TX_10 | AC50 | PCIE MTX GRX P10 | C263 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P10 |
| PEG_TX_11 | AD43 | PCIE MTX GRX P11 | C272 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P11 |
| PEG_TX_12 | AG39 | PCIE MTX GRX P12 | C283 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P12 |
| PEG_TX_13 | AE50 | PCIE MTX GRX P13 | C288 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P13 |
| PEG_TX_14 | AE50 | PCIE MTX GRX P14 | C288 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P14 |
| PEG_TX_15 | AH43 | PCIE MTX GRX P15 | C297 | 1 | 2 | PM@ 0.1U_0402_16V7K | PCIE_MTX_C_GRX_P15 |



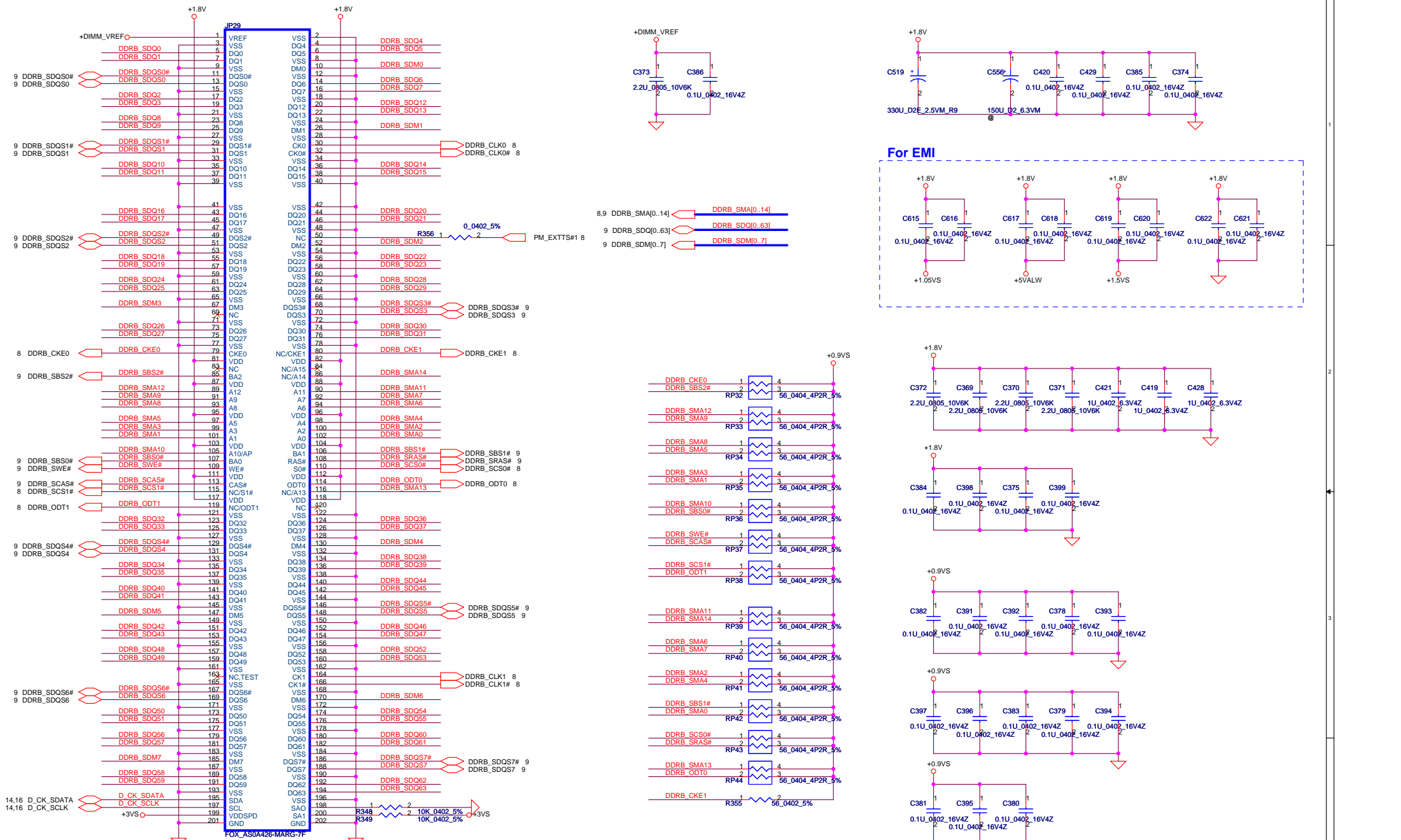
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| Size | Document Number | Date | | Sheet | Rev |
| Custpm | ICL50/ICK70 M/B LA-3551P Schematic | Wednesday, August 15, 2007 | | 10 | 49 |



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| Size | Document Number | Date: | Rev | |
| B | ICL50/ICK70 M/B LA-3551P Schematic | Wednesday, August 15, 2007 | 11 | 49 |
| Date: | | | | Sheet |



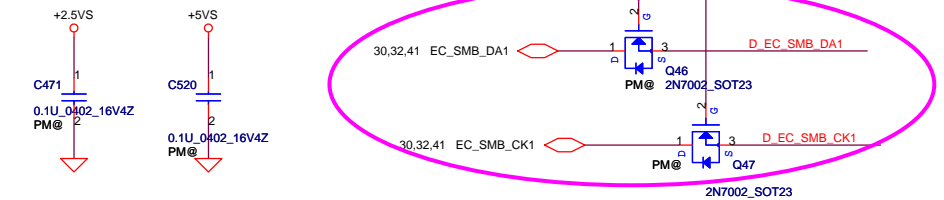
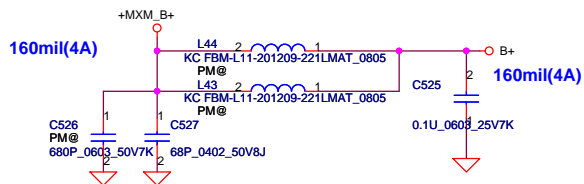
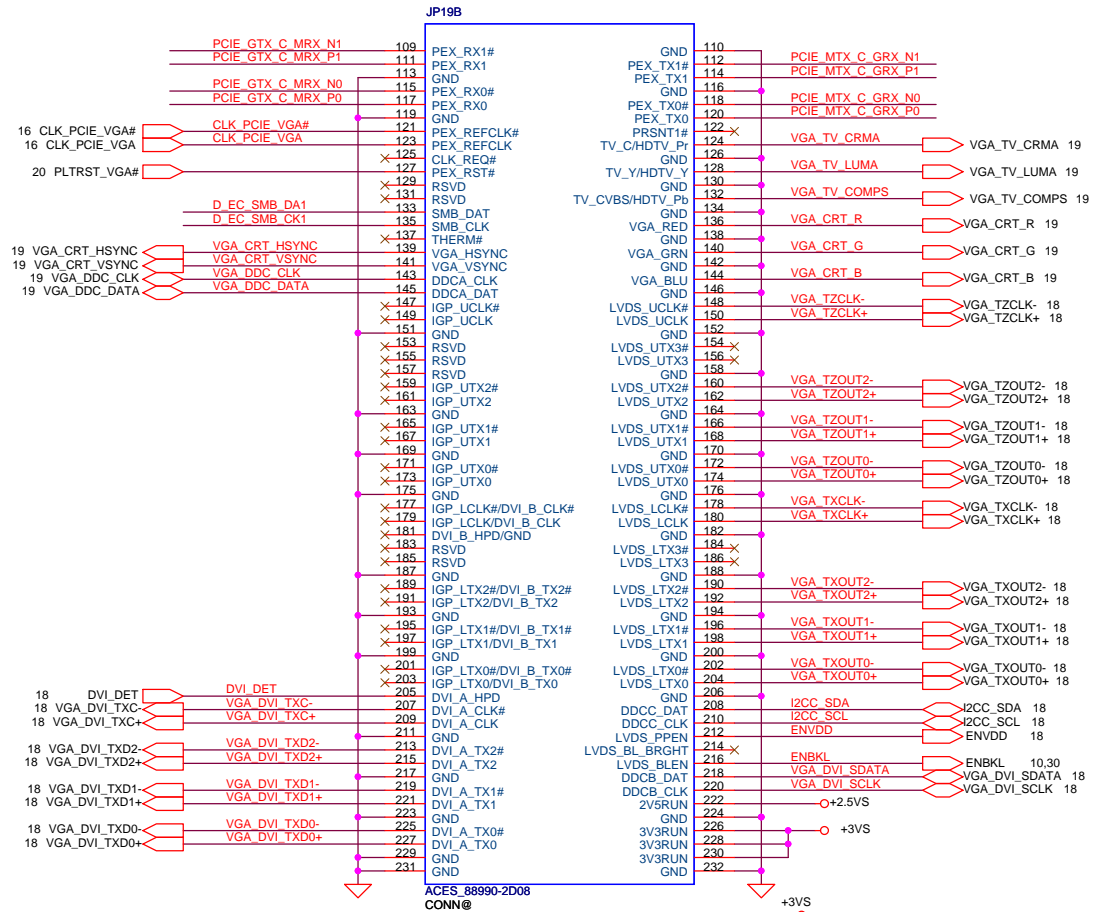
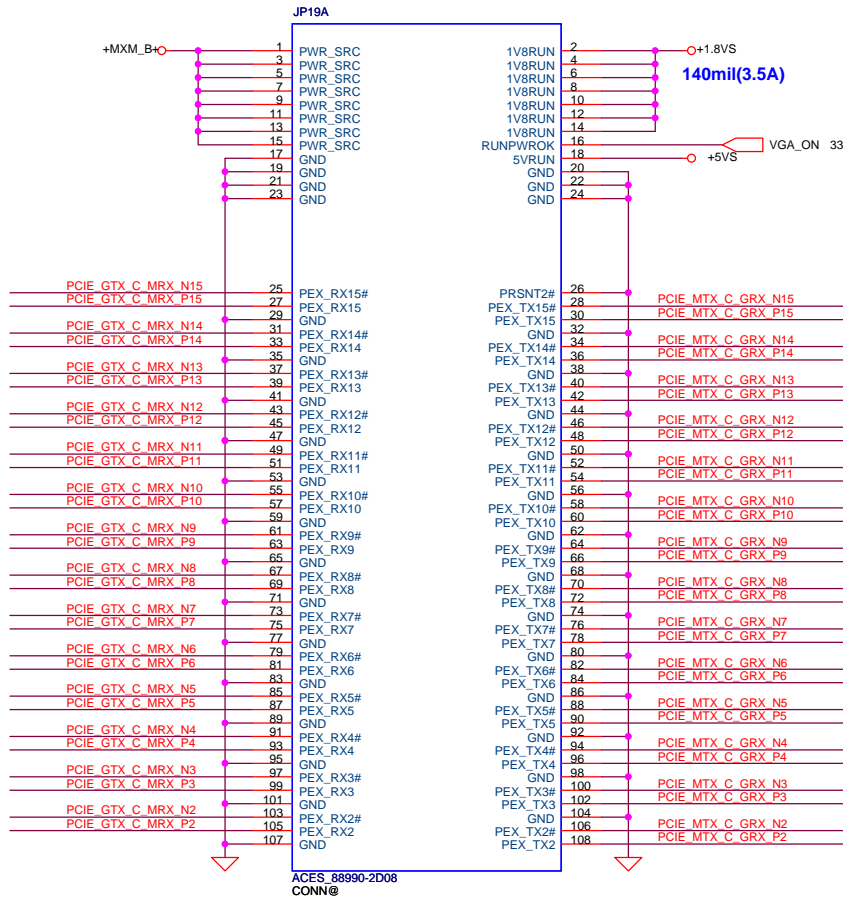
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| Issued Date | 2006/12/25 | Deciphered Date | 2007/12/25 | Compal Electronics, Inc. | |
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| Size B | Document Number | Date | | Rev | |
| | ICL50/ICK70 M/B LA-3551P Schematic | Wednesday, August 15, 2007 | | 13 | 49 |



DIMM1 REV H:9.2mm (BOT)

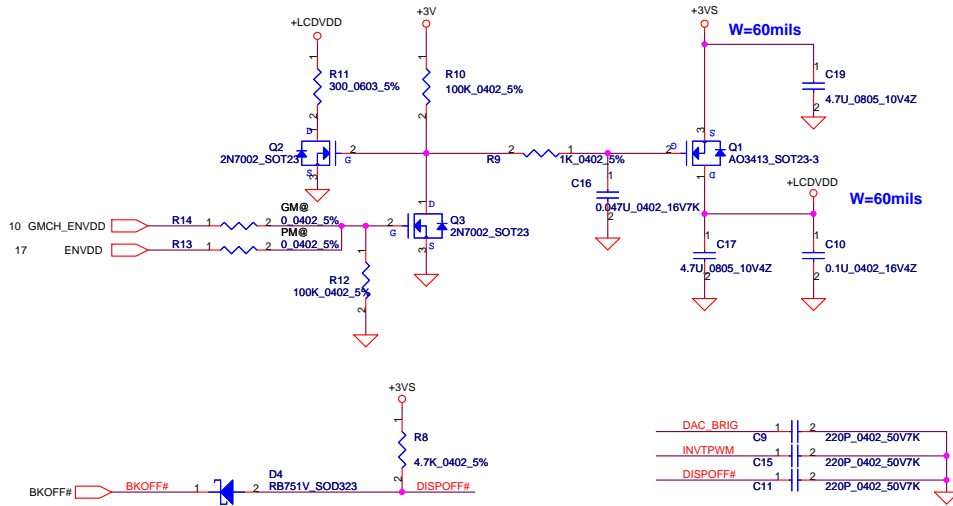
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| | | | | Date: Wednesday, August 15, 2007 | Sheet 15 of 49 |

- 10 PCIE_MTX_C_GRX_N[0..15] PCIE_MTX_C_GRX_N[0..15]
- 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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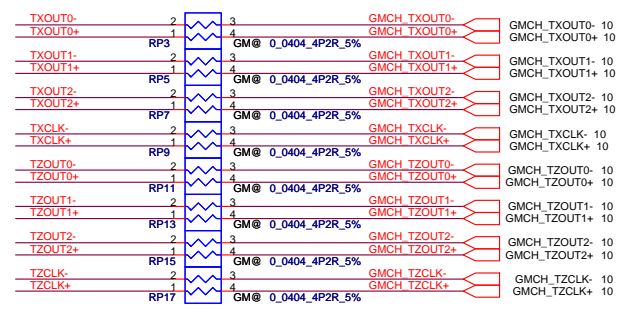
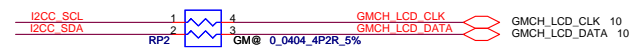
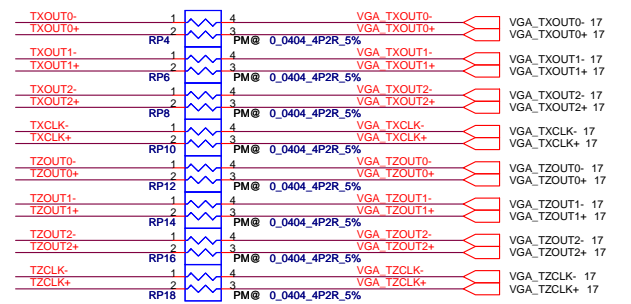
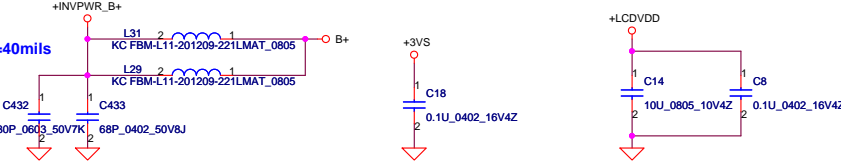
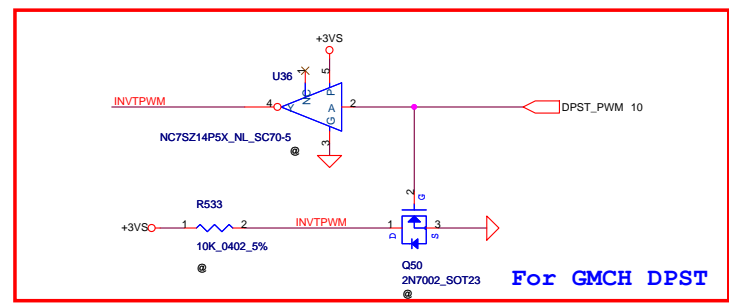
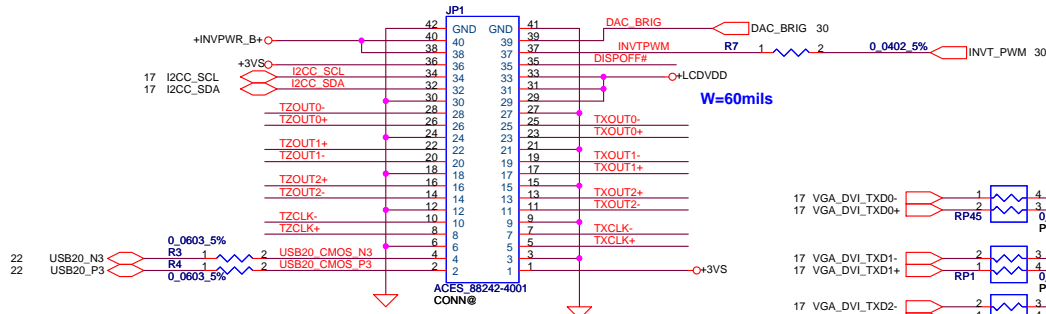


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| Size B | Document Number | ICL50/ICK70 M/B LA-3551P Schematic | | Rev | |
| Date: | Wednesday, August 15, 2007 | Sheet | 17 | of 49 | |

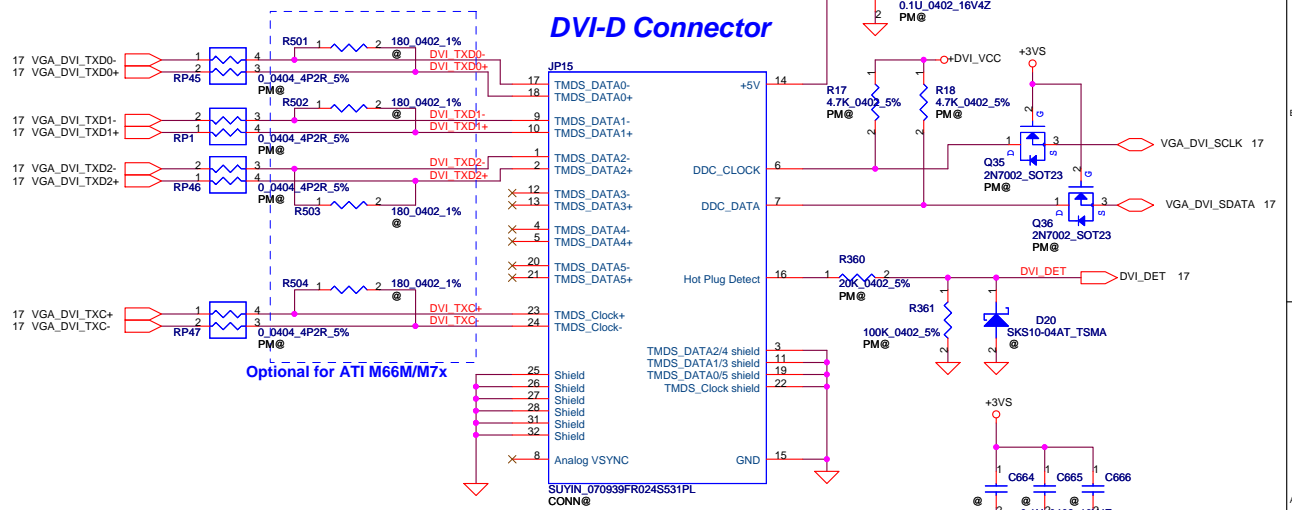
LCD POWER CIRCUIT



LCD/PANEL BD. Conn.



DVI-D Connector

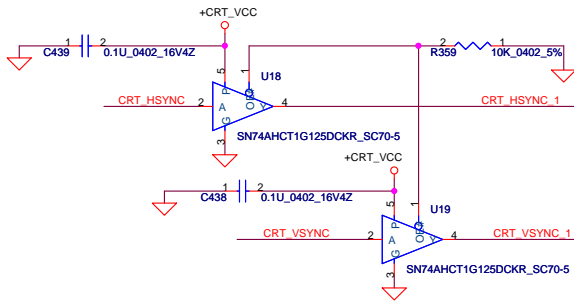
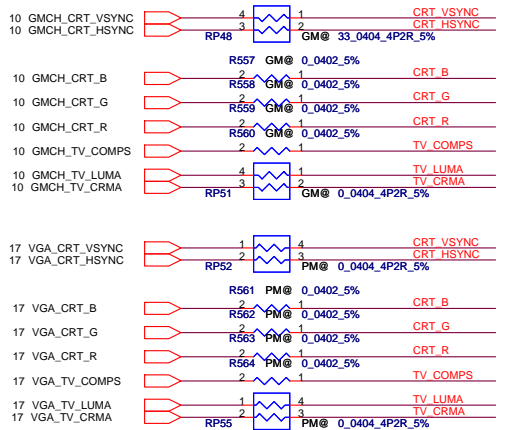
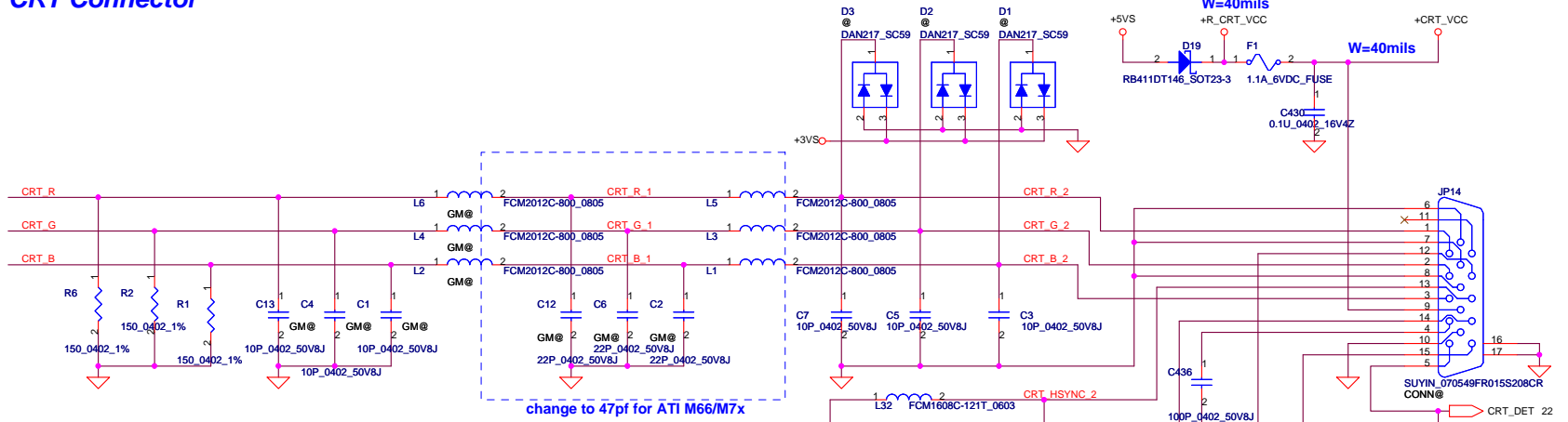


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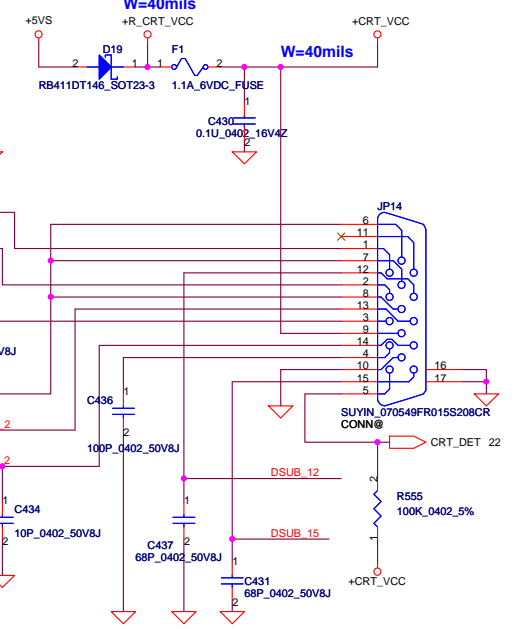
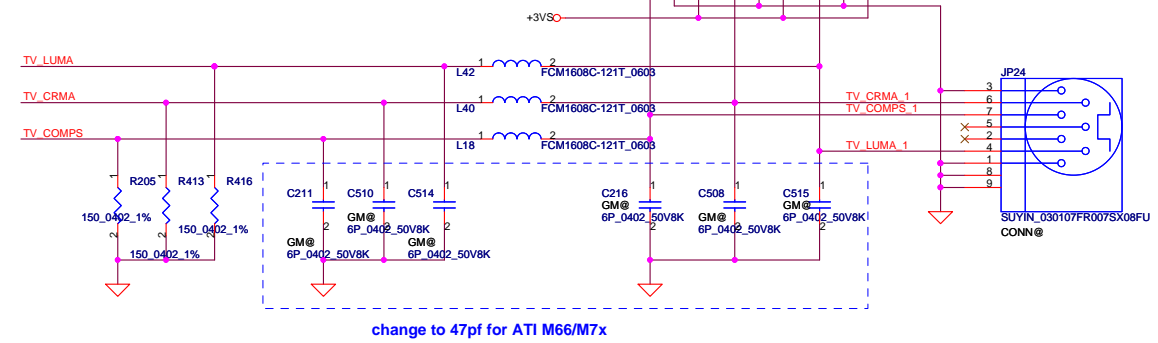
| Compal Electronics, Inc. | | |
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| LVDS & DVI Connector | | |
| Size | Document Number | Rev |
| B | ICL50/ICK70 M/B LA-3551P Schematic | |
| Date: | Thursday, August 23, 2007 | Sheet 18 of 49 |

CRT Connector

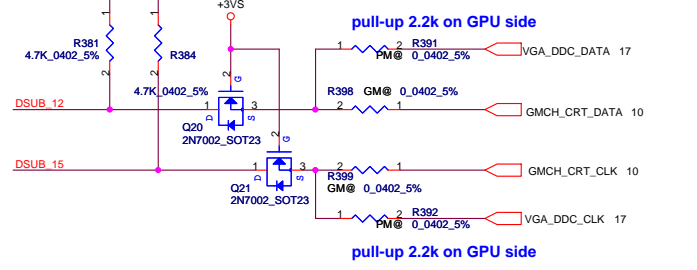


TV-OUT Conn.

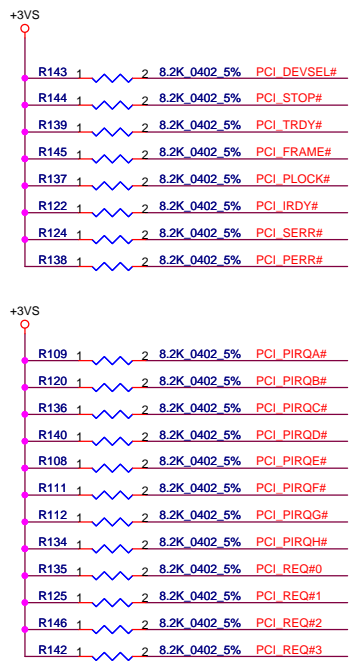
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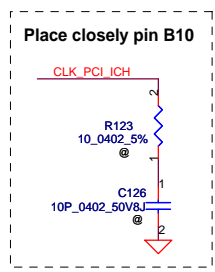
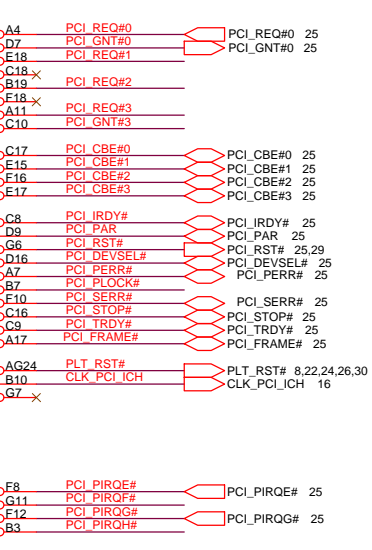
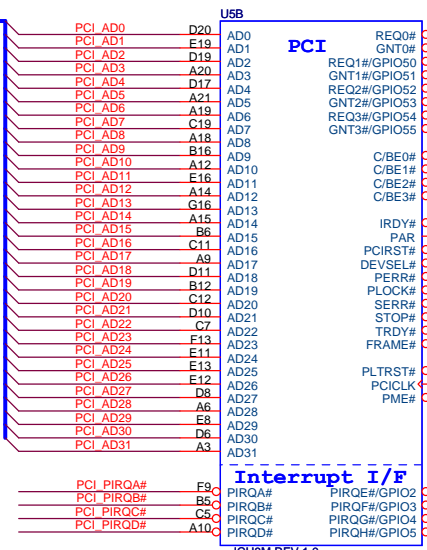
Place closed to chipset



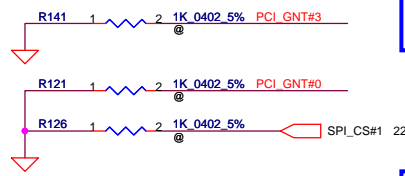
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| | | | | ICL50/ICK70 M/B LA-3551P Schematié | | |
| | | | | Date: | Wednesday, August 15, 2007 | |
| | | | | Sheet | 19 of 49 | |



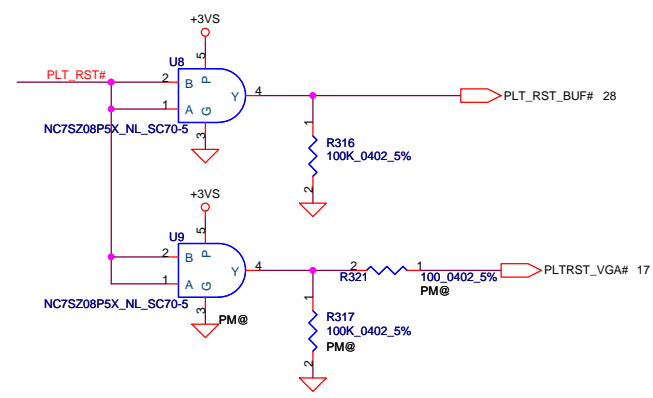
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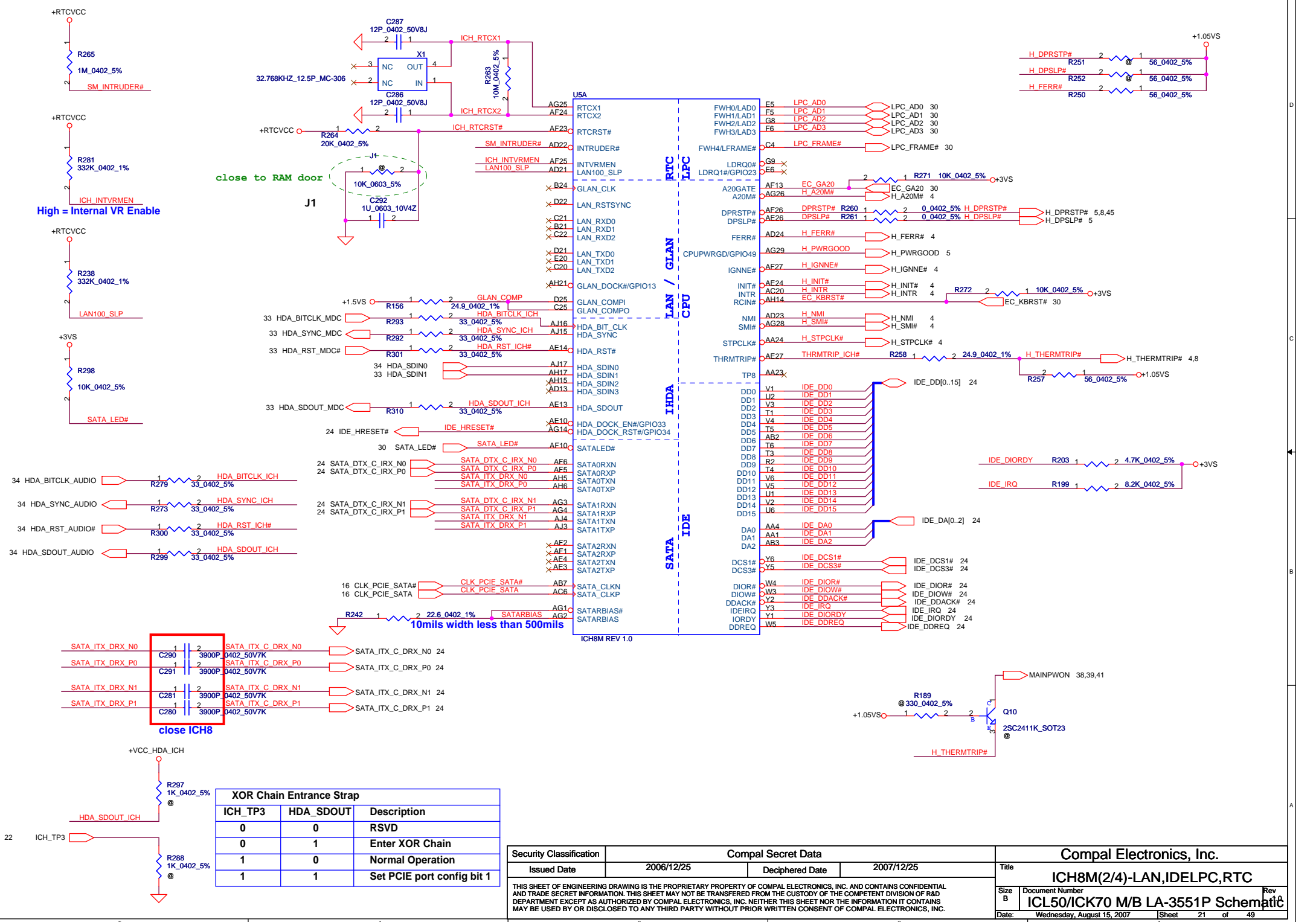


A16 Swap Override Strap
 PCI_GNT#3 Low= A16 swap override Enable
 High= Default*



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





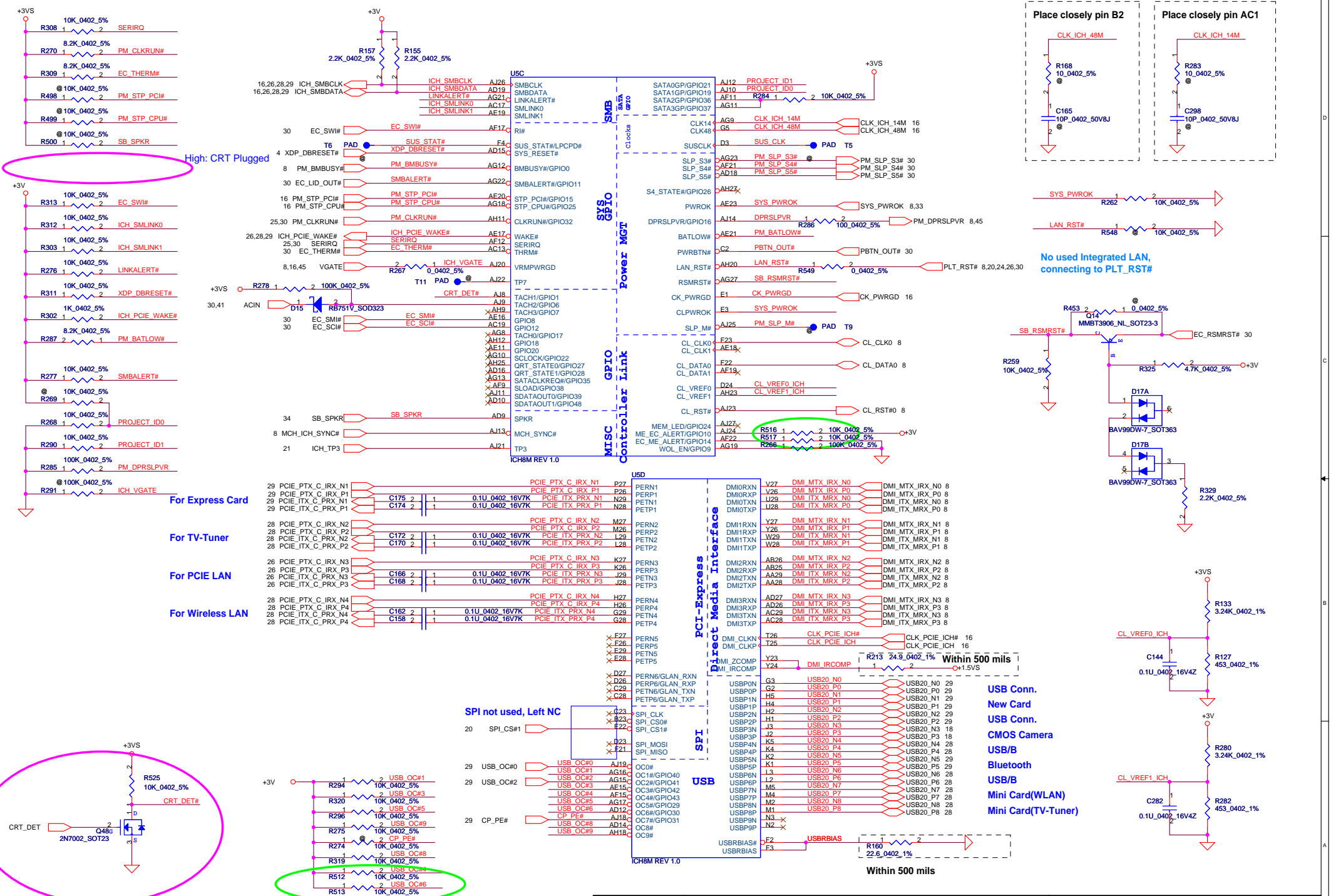
close to RAM door

close ICH8

| XOR Chain Entrance Strap | | |
|--------------------------|-----------|----------------------------|
| ICH_TP3 | HDA_SDOUT | Description |
| 0 | 0 | RSVD |
| 0 | 1 | Enter XOR Chain |
| 1 | 0 | Normal Operation |
| 1 | 1 | Set PCIE port config bit 1 |

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|-----------------------------------|----------------------------|-------|----------|
| Title ICH8M(2/4)-LAN, IDELPC, RTC | | | |
| Size B | Document Number | Rev | |
| Date: | Wednesday, August 15, 2007 | Sheet | 21 of 49 |

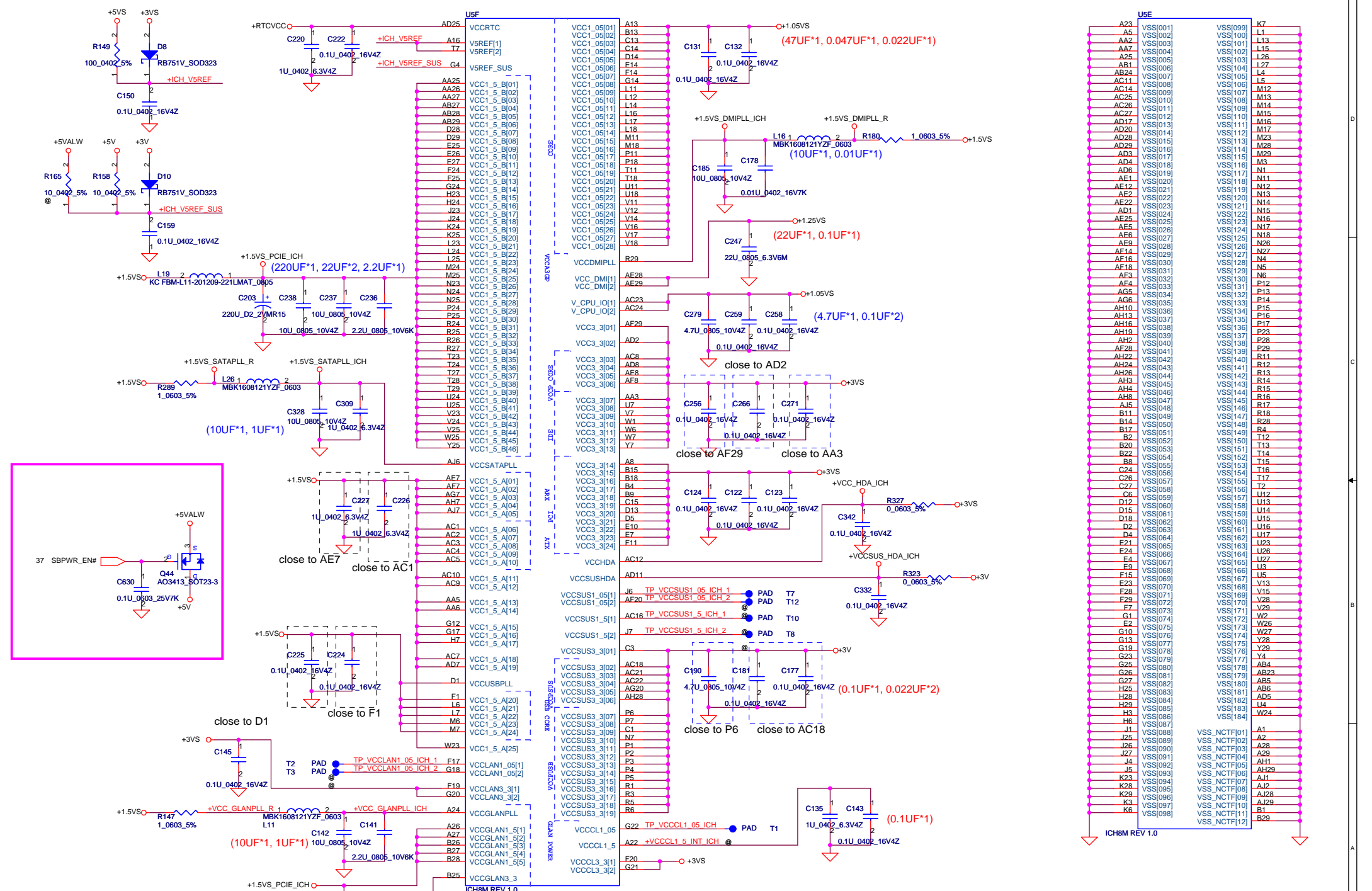


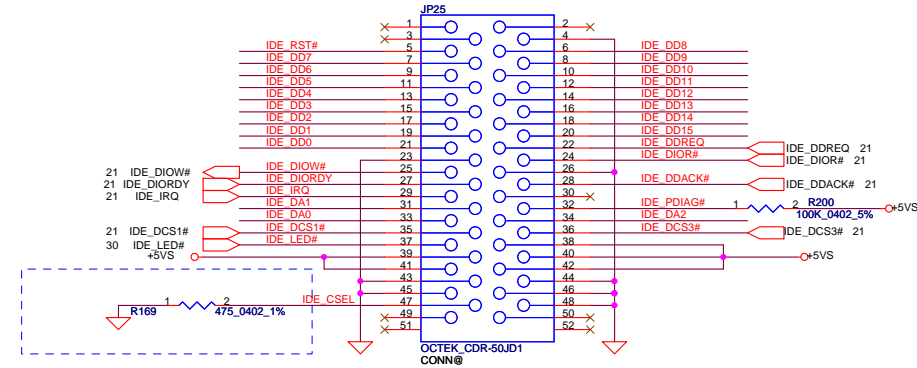
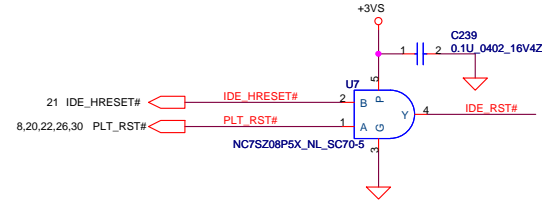
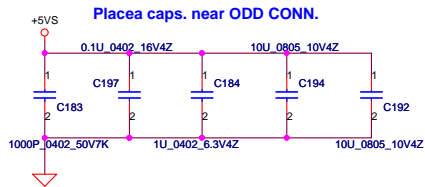
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 ICH8M(3/4)-USB,GPIO,PCIE

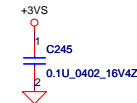
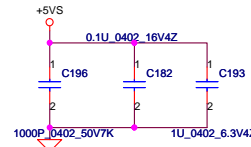
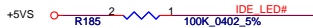
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Size: ICH8M
 Customer: ICL50/ICK70 M/B LA-3551P Schematic
 Date: Wednesday, August 15, 2007 | Sheet: 22 of 49

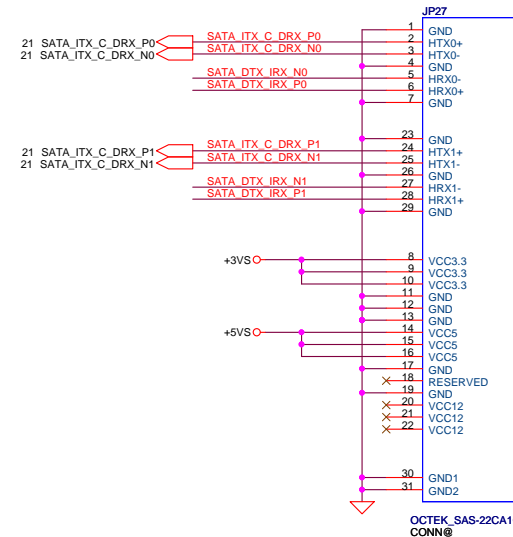
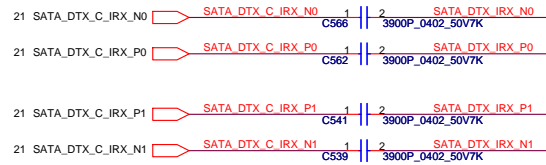




IDE_CSEL
Grounding for Master (When use SATA HDD)
Open or High for Slaver (Normal)



SATA HDD Conn.(SAS Connector)



First HDD for 15.4"

2nd HDD for 17"

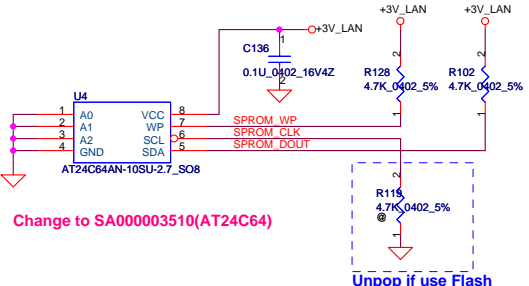
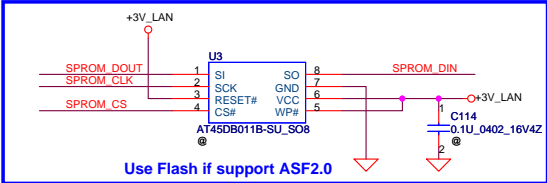
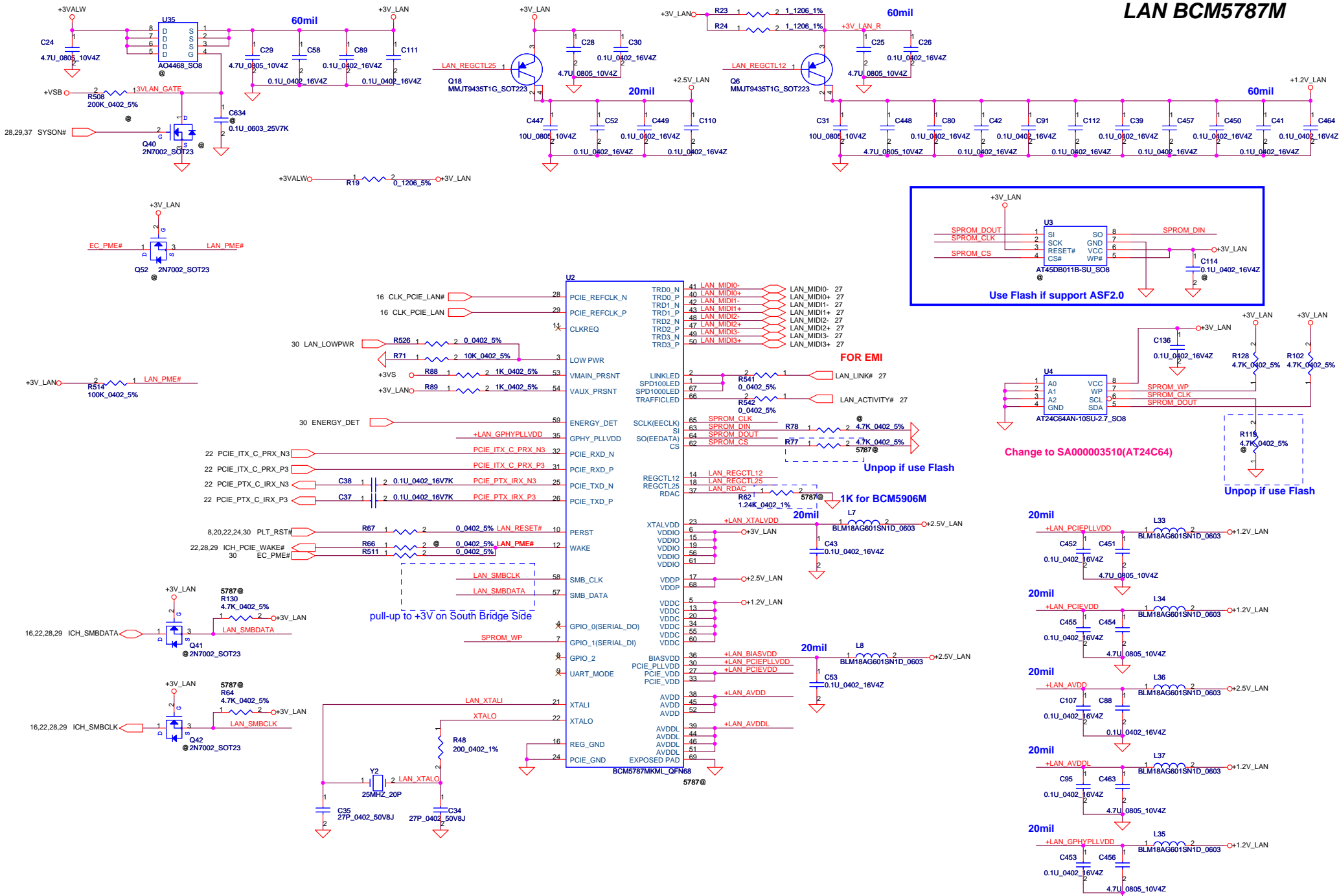
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| Security Classification | | Compal Secret Data | | Title | | |
| Issued Date | 2006/12/25 | Deciphered Date | 2007/12/25 | HDD & ODD Connector | | |
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| | | | | Date: Wednesday, August 15, 2007 | Sheet 24 | of 49 |

Compal Electronics, Inc.

HDD & ODD Connector

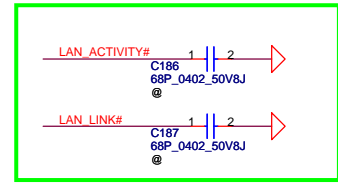
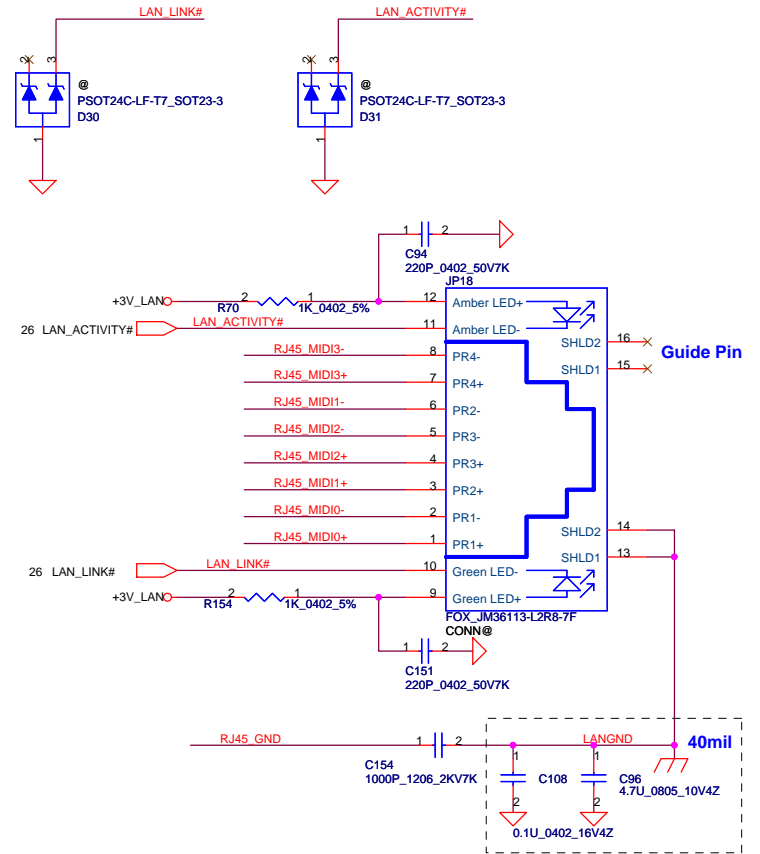
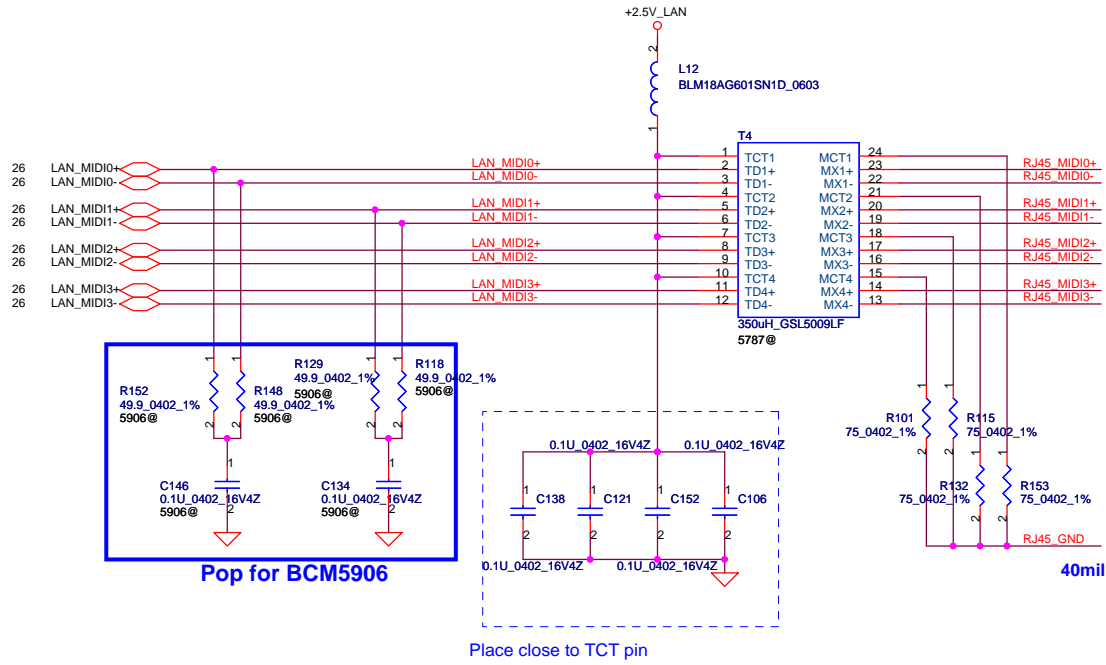
ICL50/ICK70 M/B LA-3551P Schematic

LAN BCM5787M



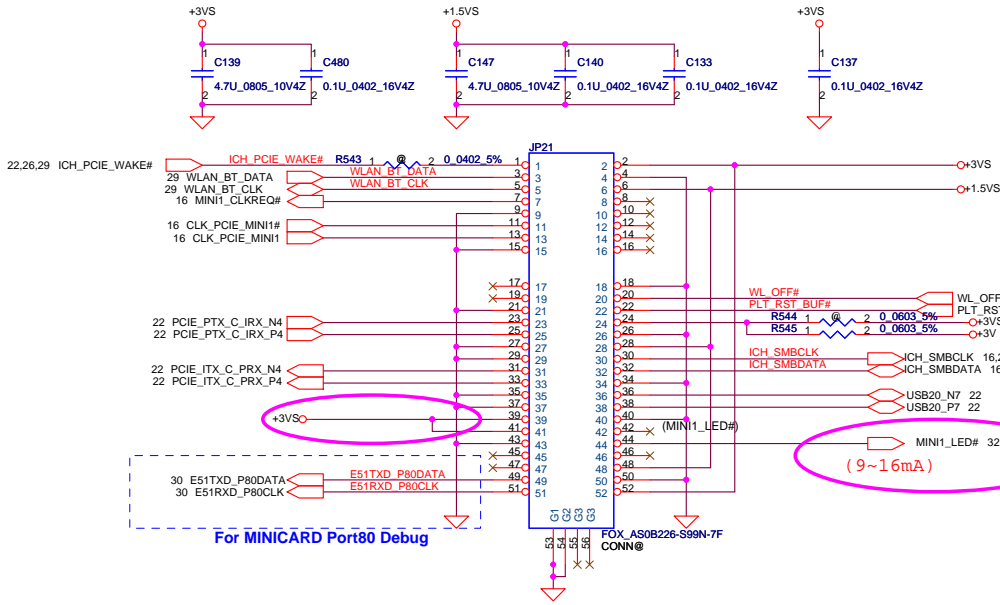
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| Issued Date | 2006/12/25 | Deciphered Date | 2007/12/25 | LAN BCM5787M |
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| Size | Document Number | Date: | | Rev |
| B | ICL50/ICK70 M/B LA-3551P Schematit | Wednesday, August 15, 2007 | | 26 of 49 |

LAN BCM5787M



| | | | | | |
|---|------------------------------------|----------------------------|------------|--------------------------|-----|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
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| Size | Document Number | Date | | Sheet | Rev |
| B | ICL50/ICK70 M/B LA-3551P Schematic | Wednesday, August 15, 2007 | | 27 | 49 |

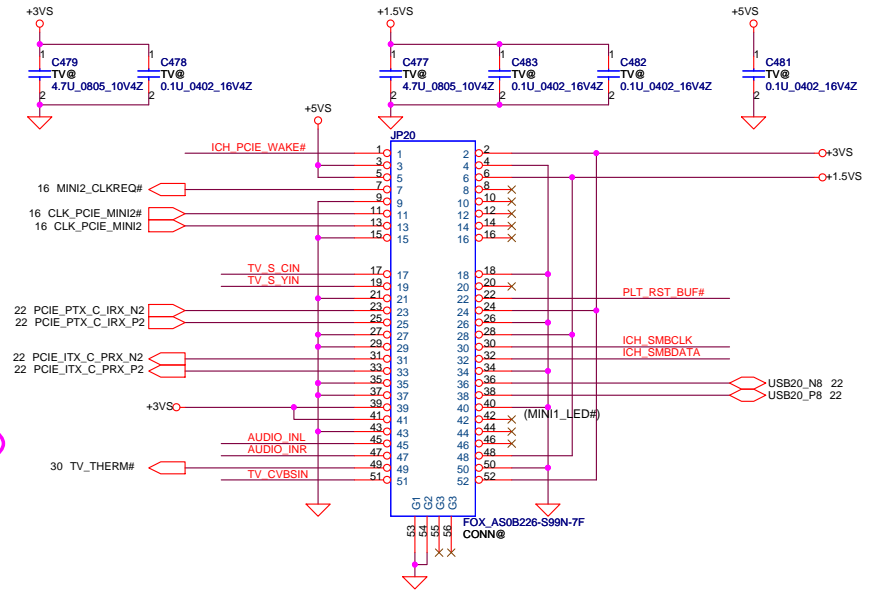
For Wireless LAN



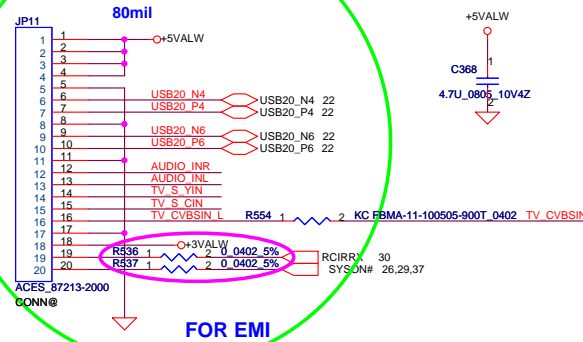
For MINICARD Port80 Debug

| 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 TV-Tuner/HW MPEG



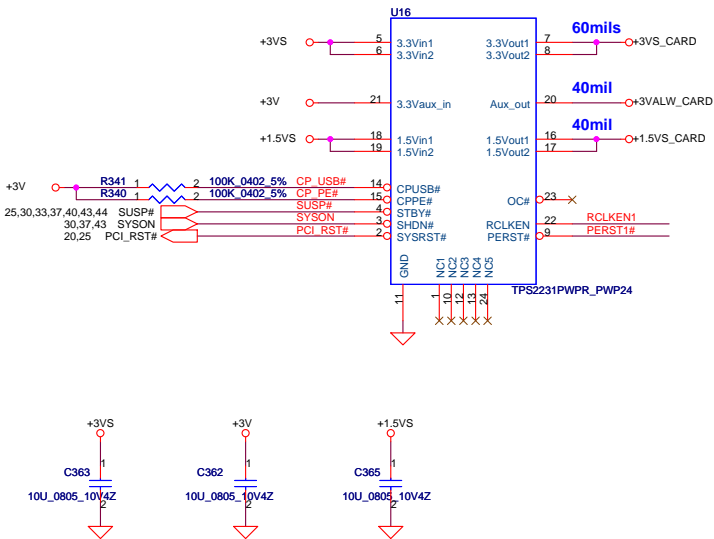
To USB/B Connector



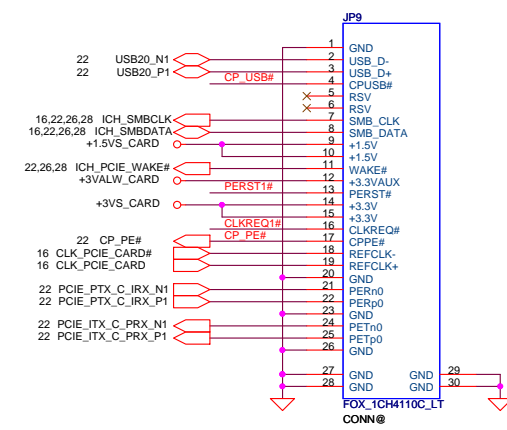
AV-IN Connector CIR

FOR EMI

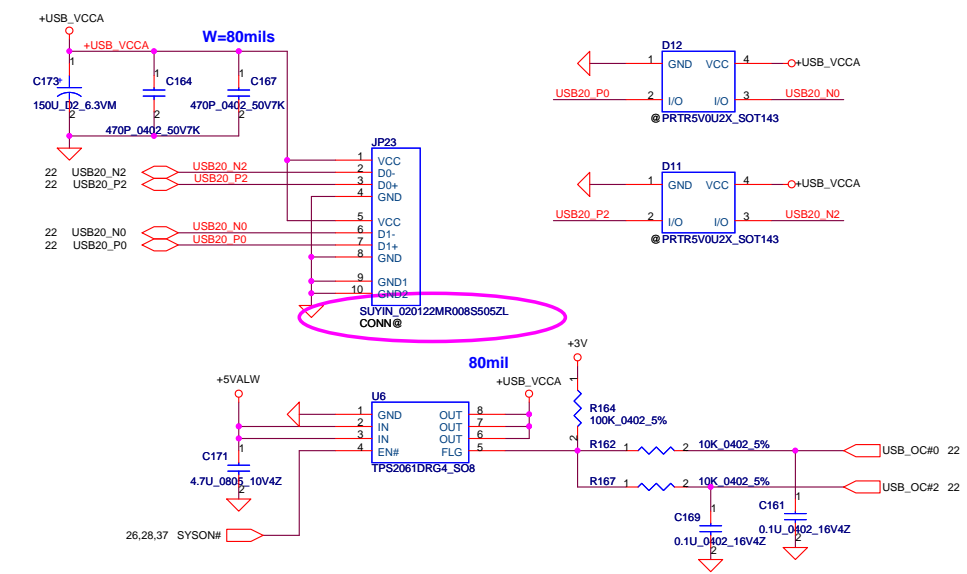
New Card Power Switch



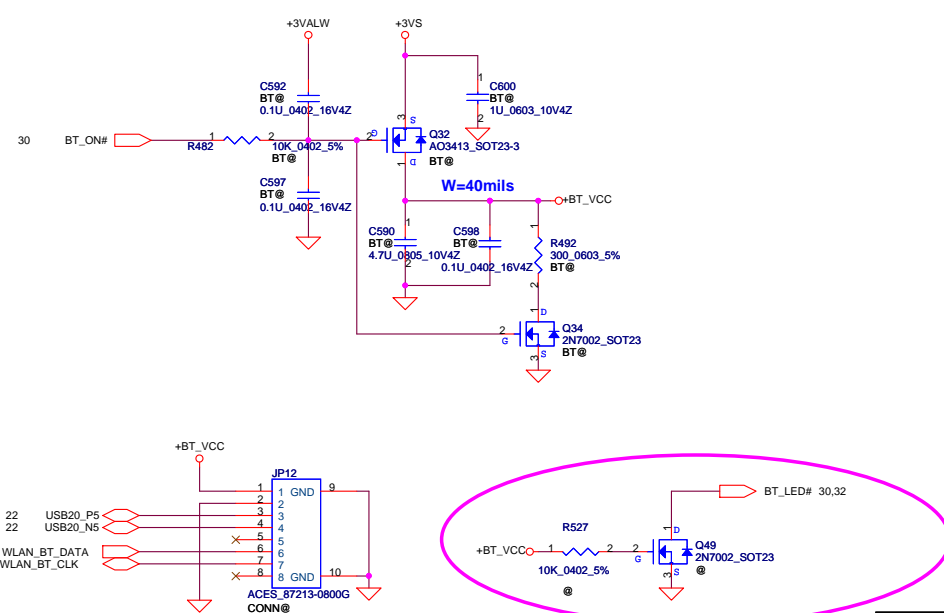
New Card Socket (Left/TOP)



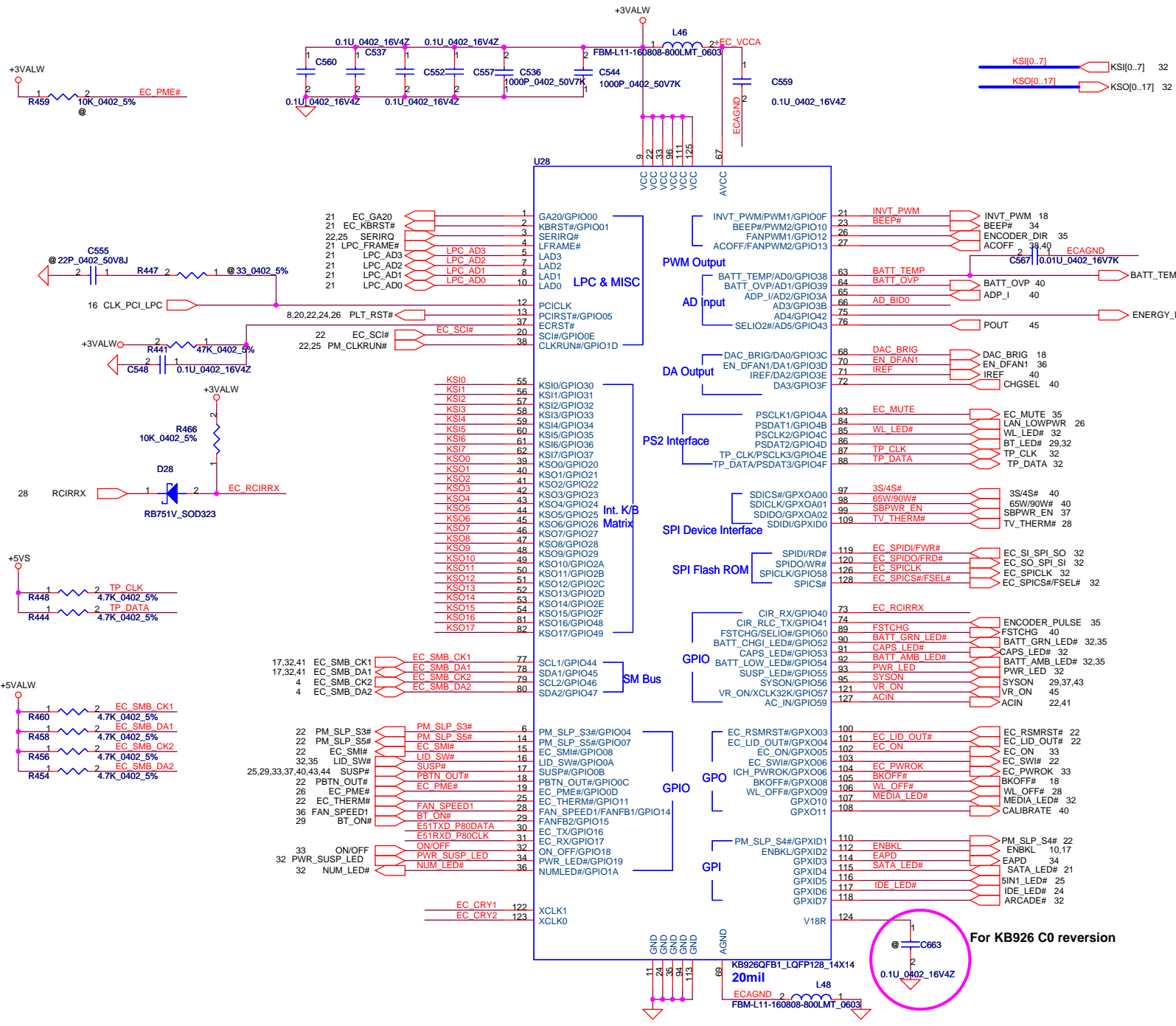
USB CONN. (Stack-up Type)



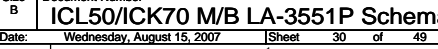
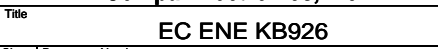
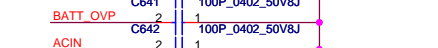
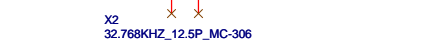
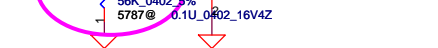
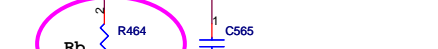
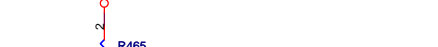
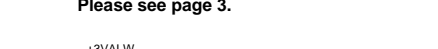
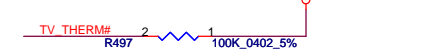
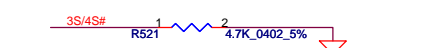
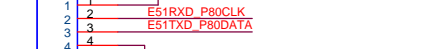
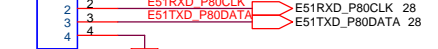
Bluetooth Conn.



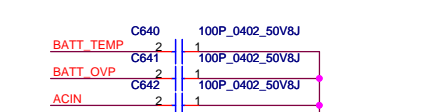
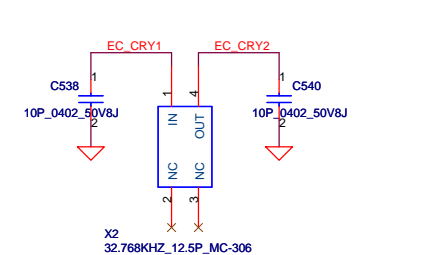
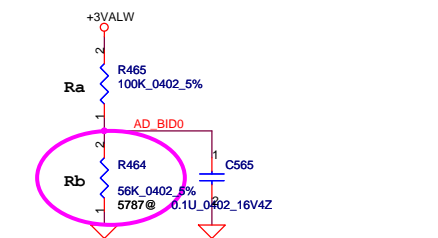
| Security Classification | Compal Secret Data | | Title |
|---|-----------------------------------|-----------------|------------|
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| Size | Document Number | Rev | |
| B | ICL50/ICK70 M/B LA-3551P Schemati | 6 | |
| Date: | Wednesday, August 15, 2007 | Sheet | 29 of 49 |



For EC Tools



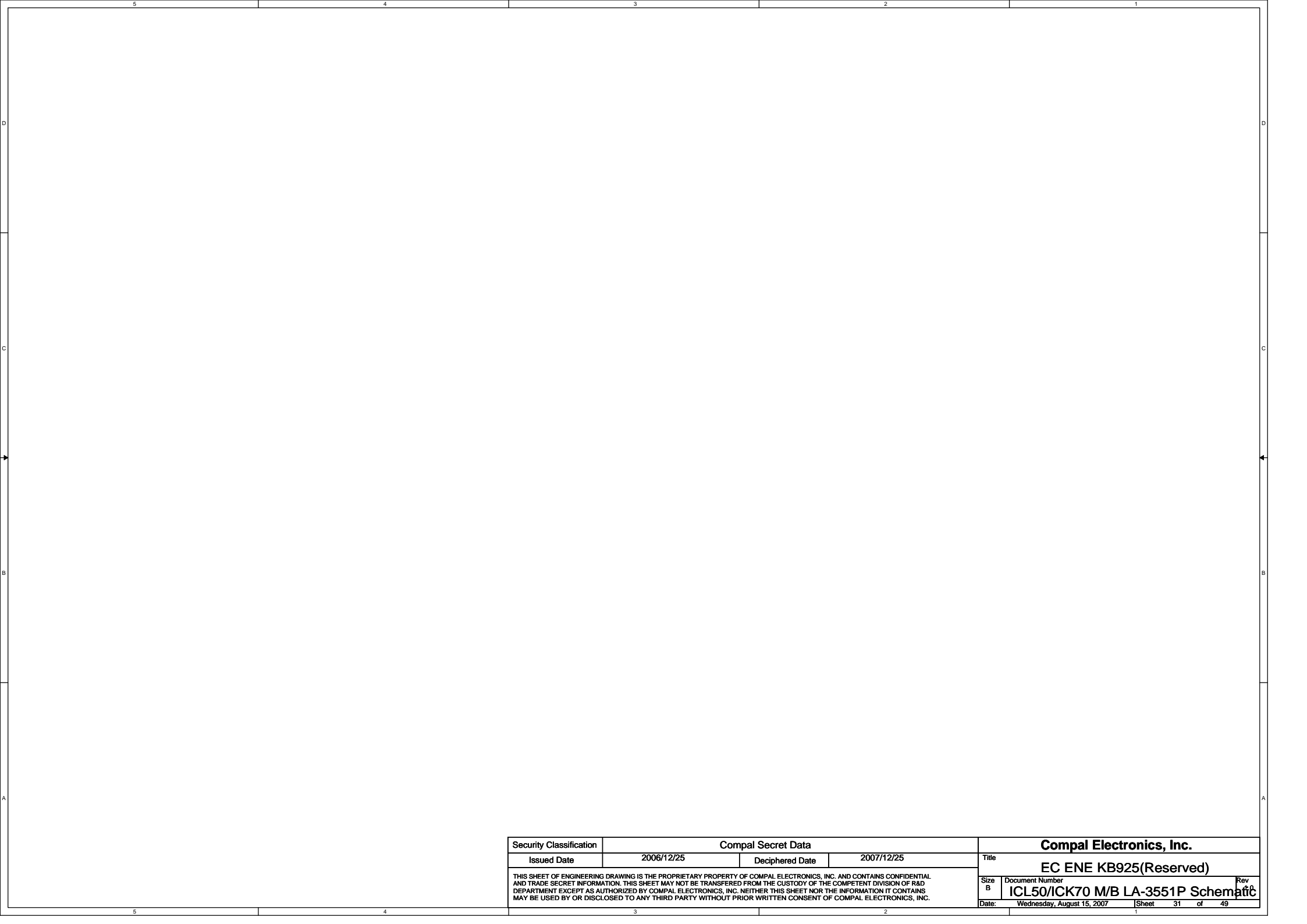
Analog Board ID definition, Please see page 3.



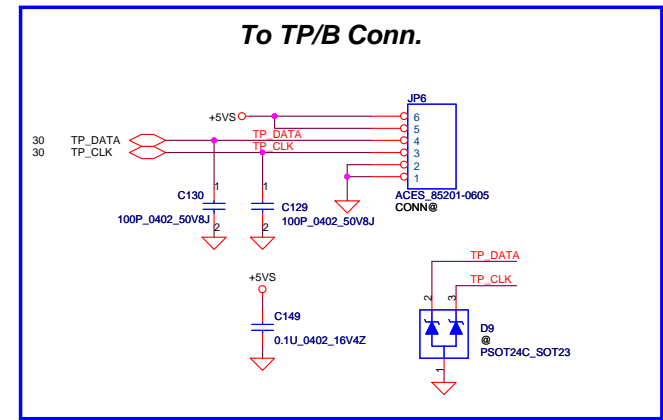
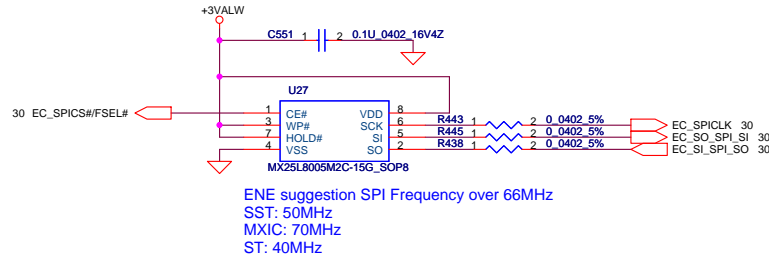
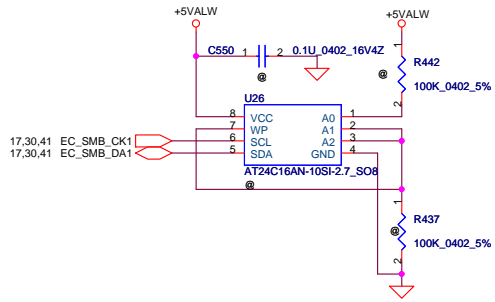
For KB926 C0 reversion



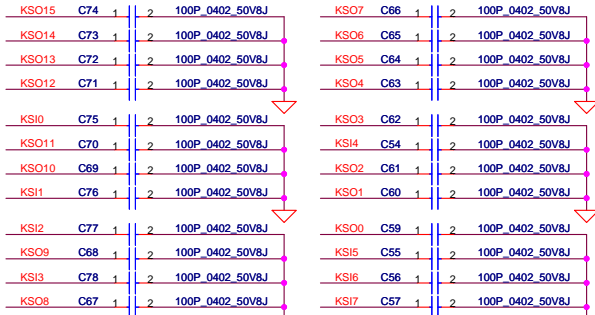
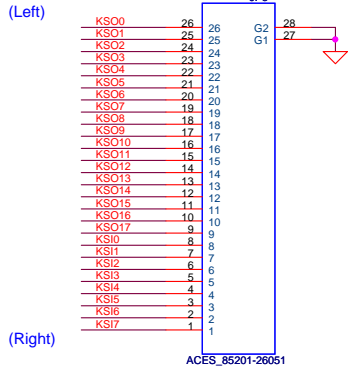
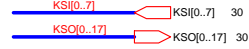
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
|---|-------------------------------------|----------------------------|------------|--------------------------|--|
| Issued Date | 2006/12/25 | Deciphered Date | 2007/12/25 | Title | |
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| Size | Document Number | Date | | Rev | |
| B | ICL50/ICK70 M/B LA-3551P Schematics | Wednesday, August 15, 2007 | | 30 of 49 | |
| Date | | Sheet | | of | |



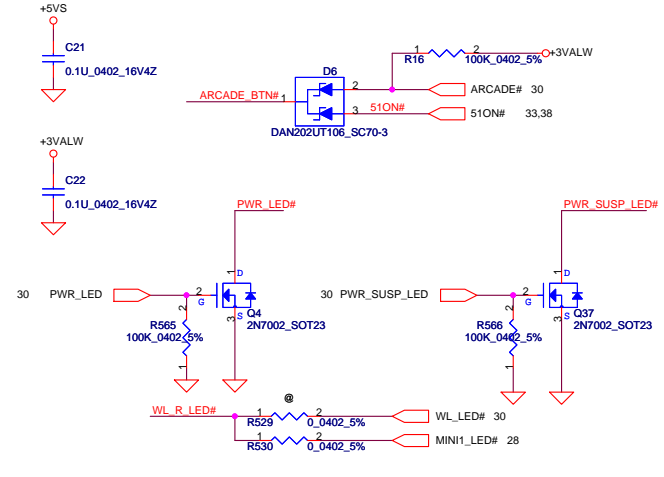
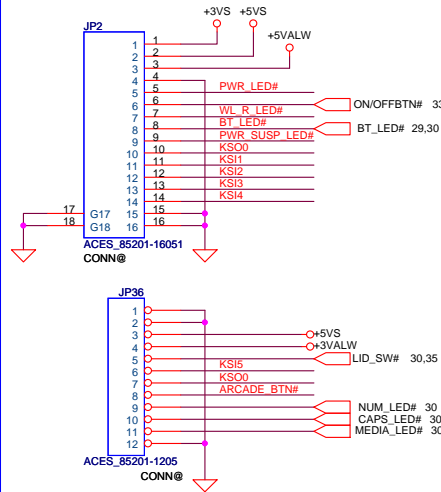
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| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | | | | |
| Issued Date | 2006/12/25 | Deciphered Date | 2007/12/25 | Title | | | | |
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| | | | | Size | Document Number | | | Rev |
| | | | | B | ICL50/ICK70 M/B LA-3551P Schematic | | | 4 |
| Date: | Wednesday, August 15, 2007 | | Sheet | 31 | of 49 | | | |



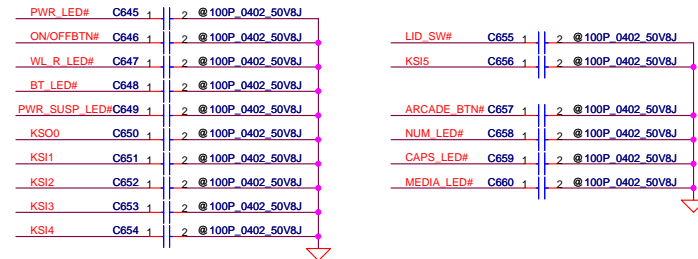
INT_KBD Conn.



To BTN/B Conn.



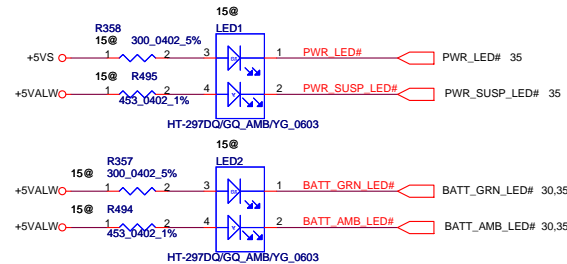
FOR EMI



Compal Footprint



15" ONLY

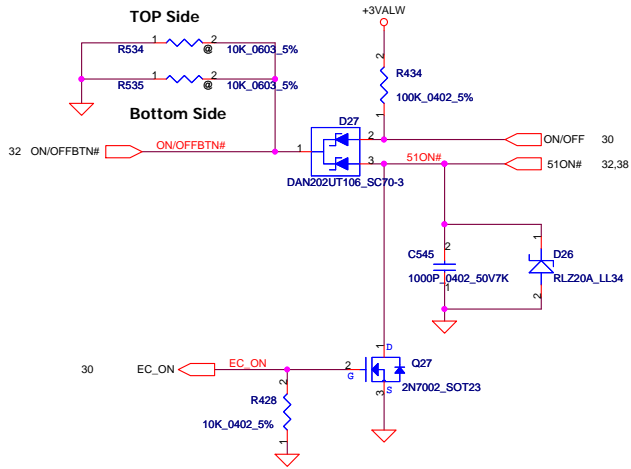


| | KSO0 | (Acadia 960) |
|------|------------|--------------|
| KSI1 | WL_BTN# | WL_BTN# |
| KSI2 | BT_BTN# | VOL_DOWN |
| KSI3 | EMAIL_BTN# | VOL_UP |
| KSI4 | IE_BTN# | N/A |
| KSI5 | E-KEY_BTN# | E-KEY_BTN# |

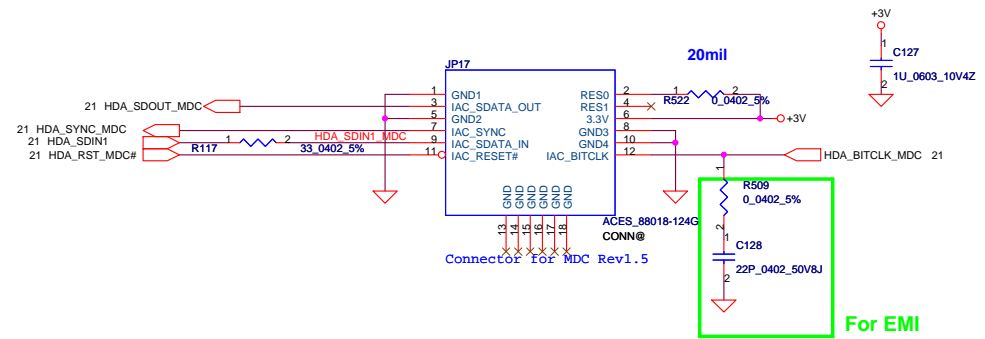
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
|---|------------|--------------------|------------|--------------------------|------------------------------------|
| Issued Date | 2006/12/25 | Deciphered Date | 2007/12/25 | Title | BIOS, I/O Port & K/B Connector |
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| | | | | B | ICL50/ICK70 M/B LA-3551P Schematic |
| | | | | Date: | Monday, August 20, 2007 |
| | | | | Sheet | 32 of 49 |

Power Button

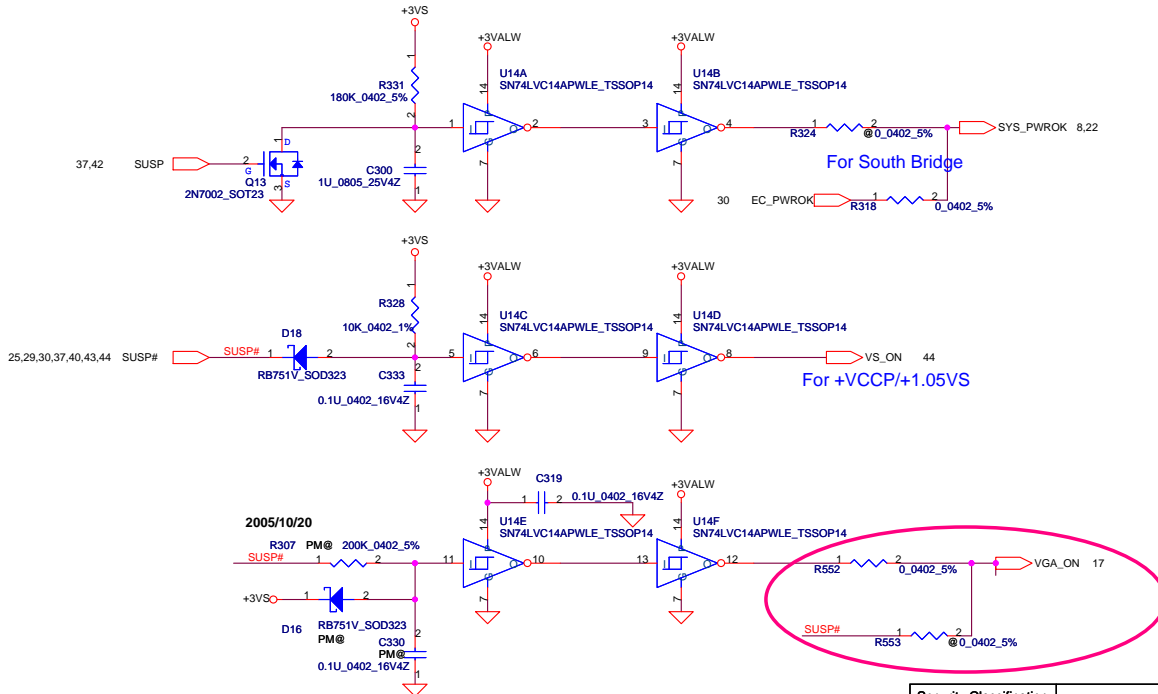
ON/OFF switch



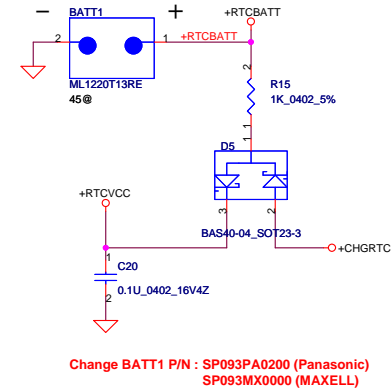
HDA MDC Conn.



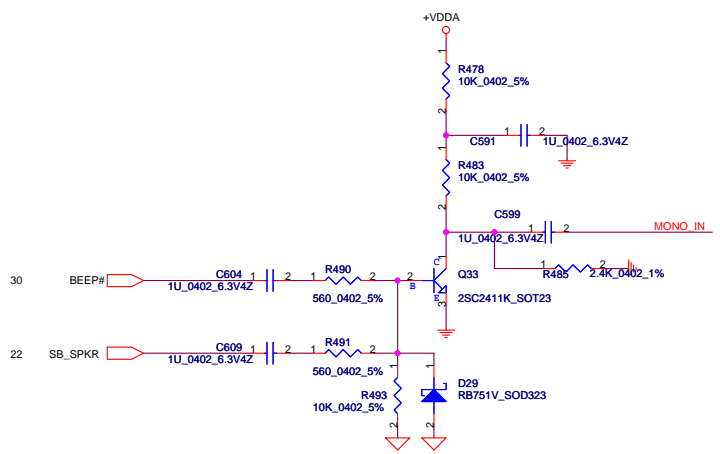
Power ON Circuit



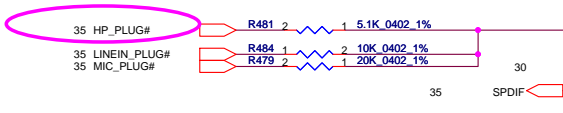
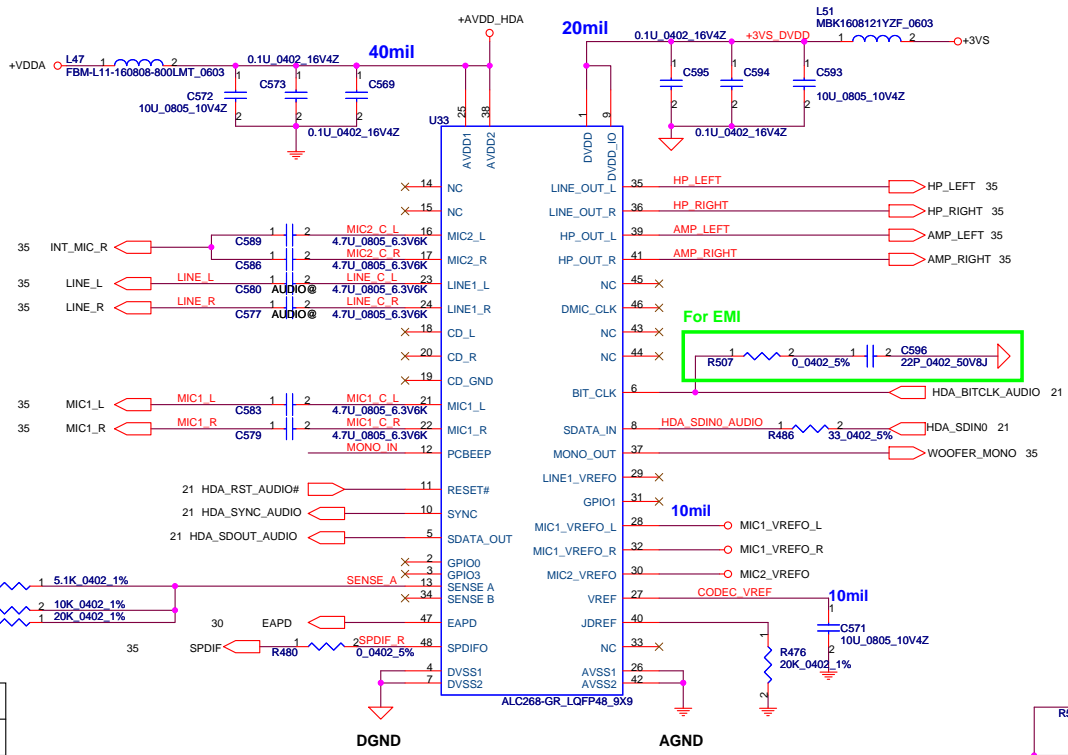
RTC Battery



| | | | | | |
|---|-----------------------------------|----------------------------|------------|-------------------------------------|----|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2006/12/25 | Deciphered Date | 2007/12/25 | Title | |
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| Size | Document Number | Date: | | Rev | |
| B | ICL50/ICK70 M/B LA-3551P Schemati | Wednesday, August 15, 2007 | | 33 | 49 |

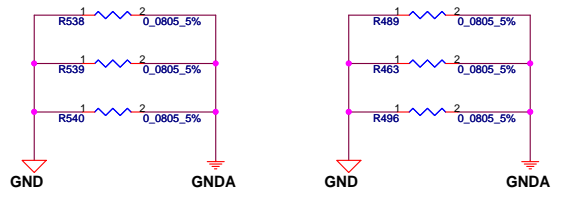
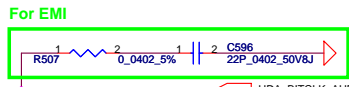
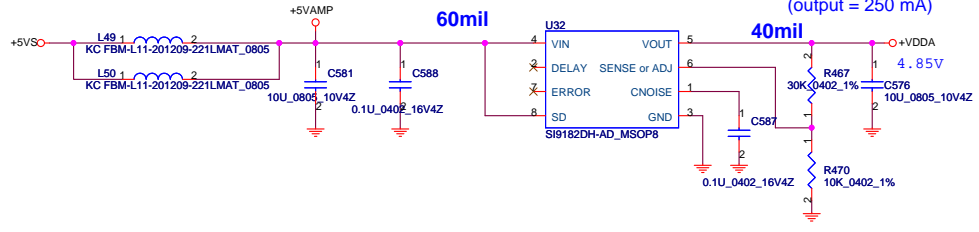


HD Audio Codec



| 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) |

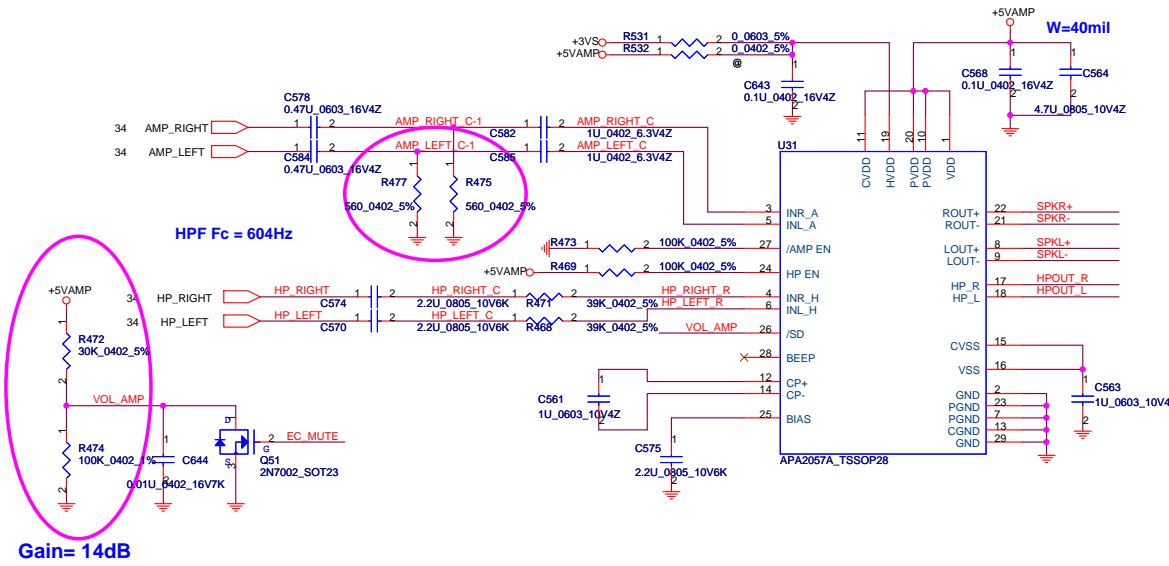
28.7K for Module Design (VDDA = 4.702)
(output = 250 mA)



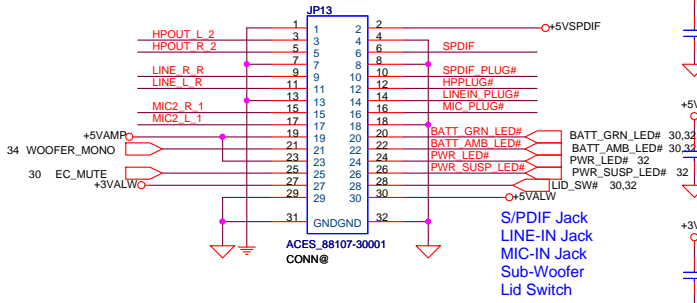
| Security Classification | Compal Secret Data | |
|-------------------------|--------------------|-----------------|
| Issued Date | 2006/12/25 | Deciphered Date |
| | | 2007/12/25 |

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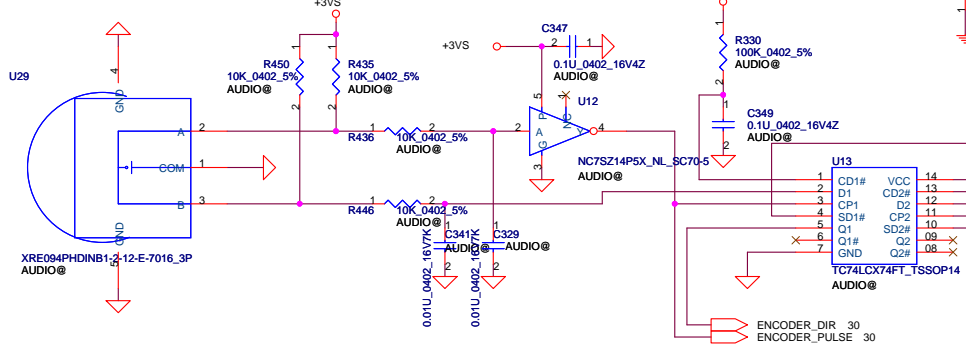
| Compal Electronics, Inc. | | |
|---------------------------------------|--|-------|
| Title HD Audio Codec ALC268 | | |
| Size B | Document Number ICL50/ICK70 M/B LA-3551P Schematié | Rev |
| Date: Wednesday, August 15, 2007 | Sheet 34 | of 49 |



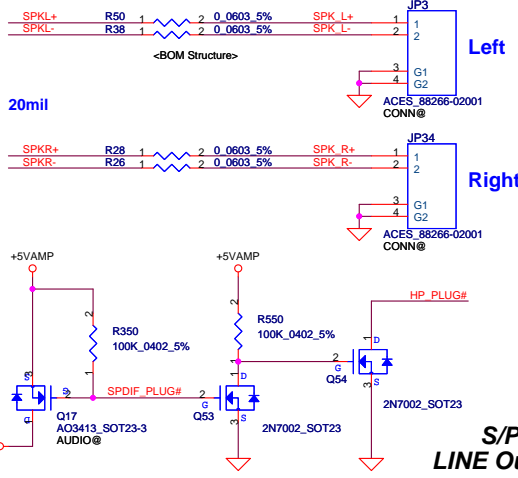
To AUDIO/B Connector
17" ONLY



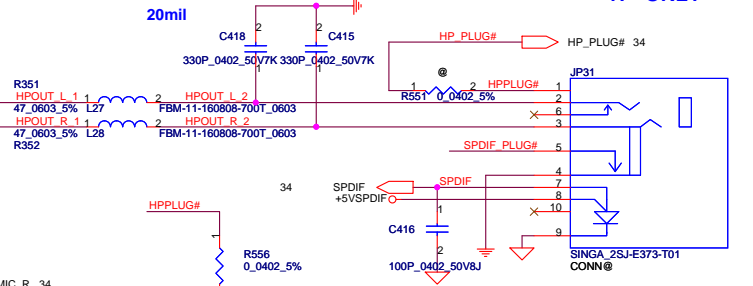
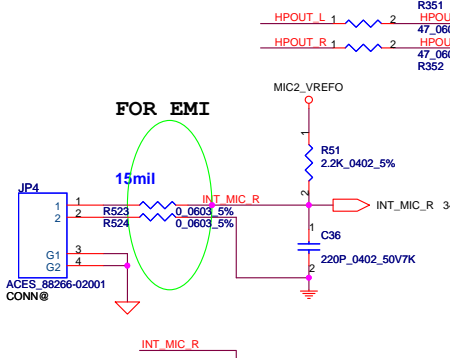
Volume Control Circuit



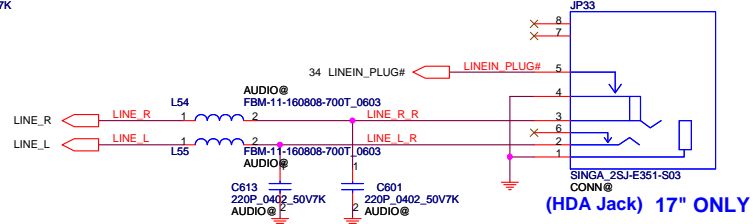
Int. Speaker Conn.



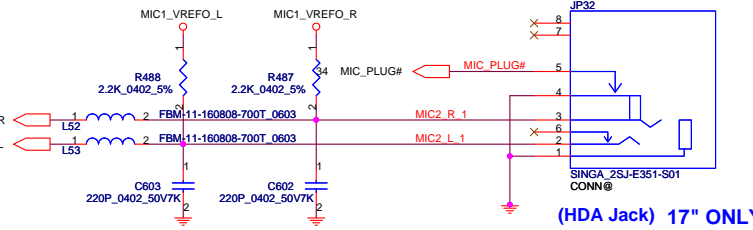
Int MIC Conn.



LINE-IN JACK

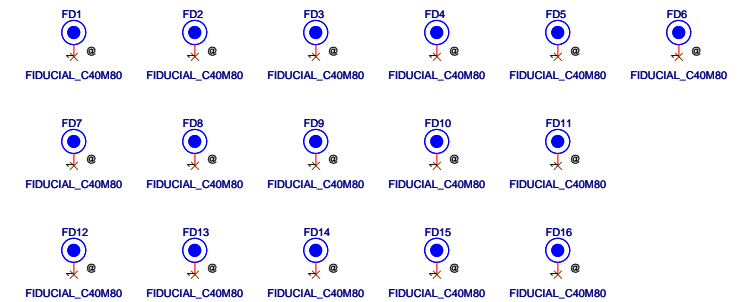
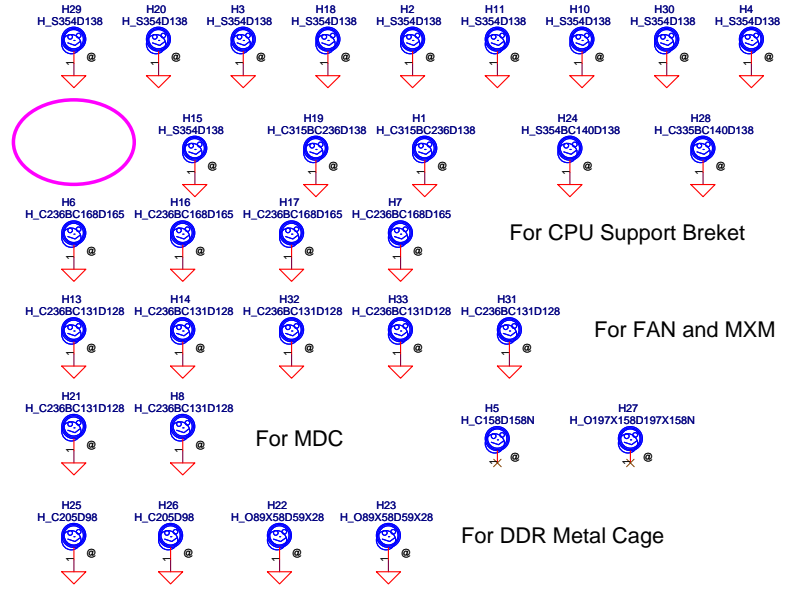
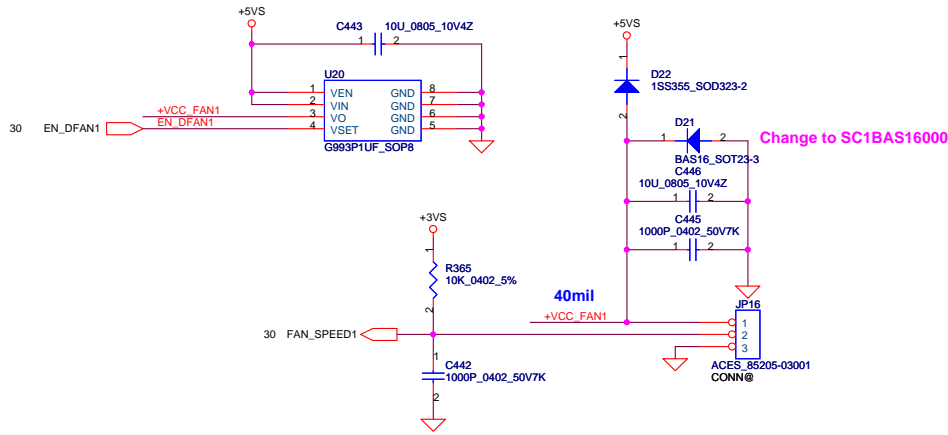


MIC JACK



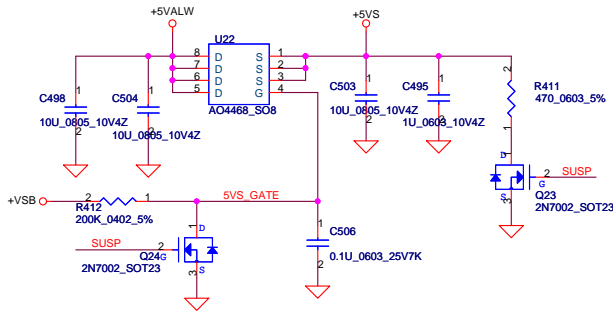
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| | | | | Amplifier & Audio Jack | |
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| | | | | B | 1 |
| | | | | ICL50/ICK70 M/B LA-3551P Schematic | |
| | | | | Date: | Wednesday, August 15, 2007 |
| | | | | Sheet | 35 of 49 |

FAN1 Conn

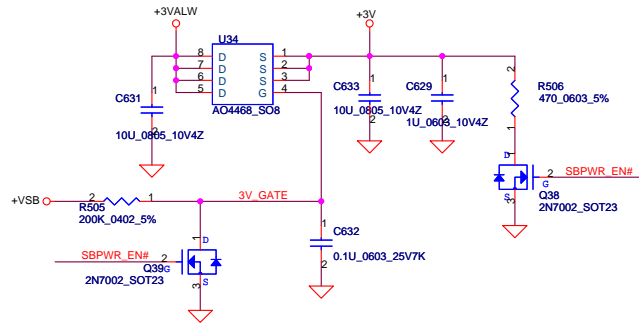


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| | | | | Rev Sheet 36 of 49 |

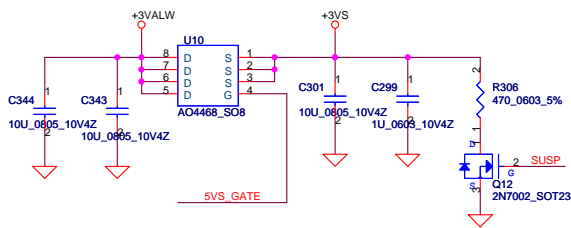
+5VALW TO +5VS



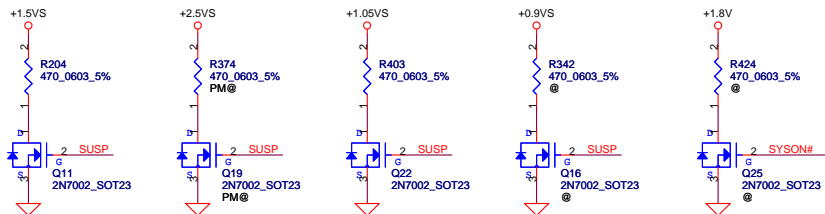
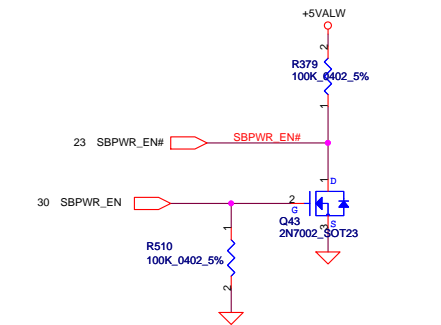
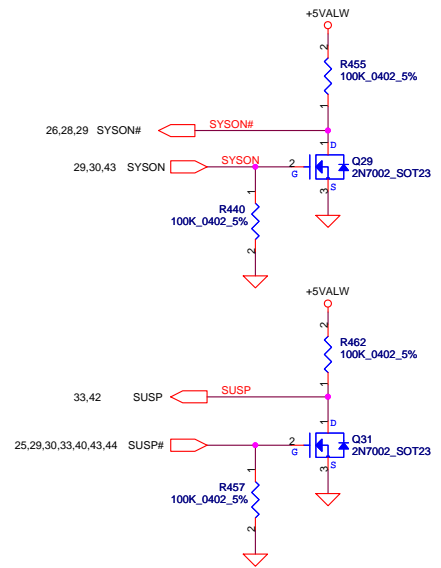
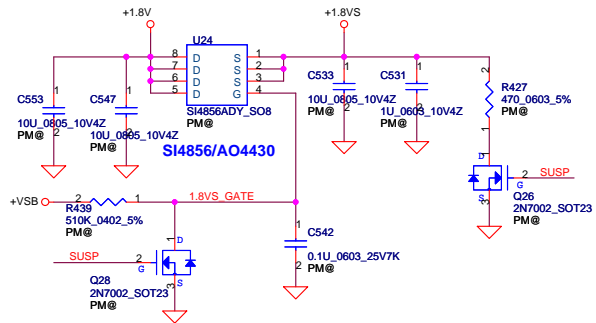
+3VALW TO +3V_SB(ICH8M AUX Power)



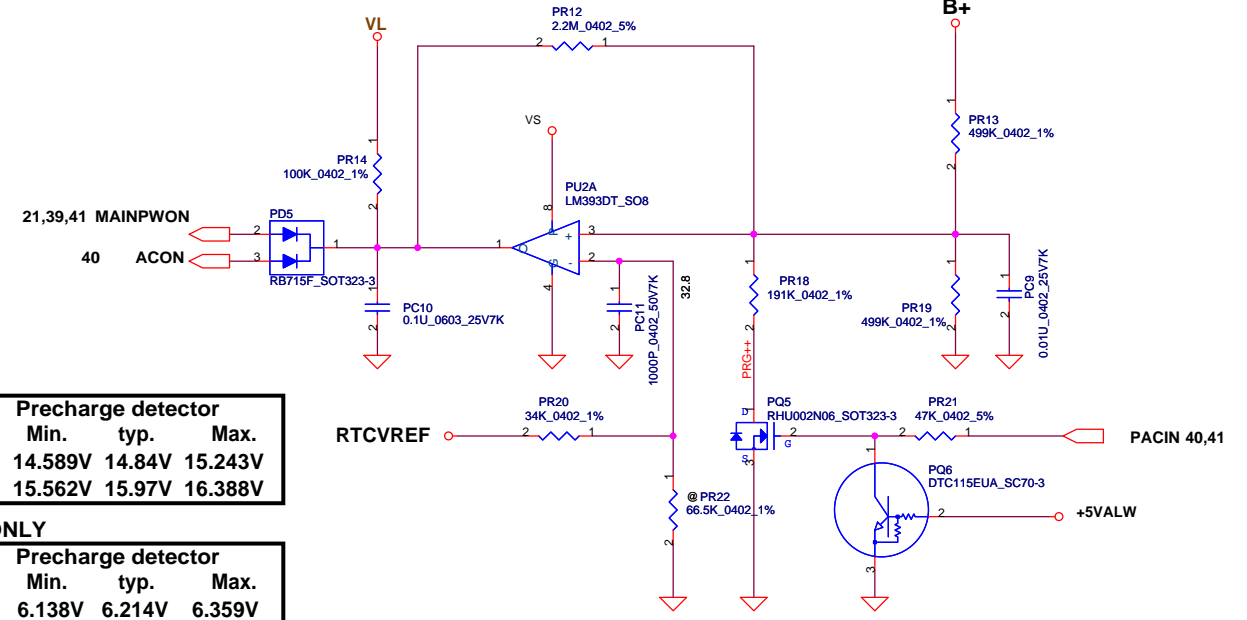
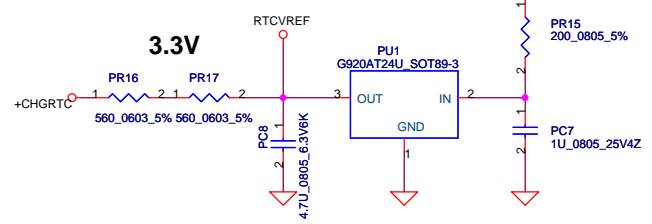
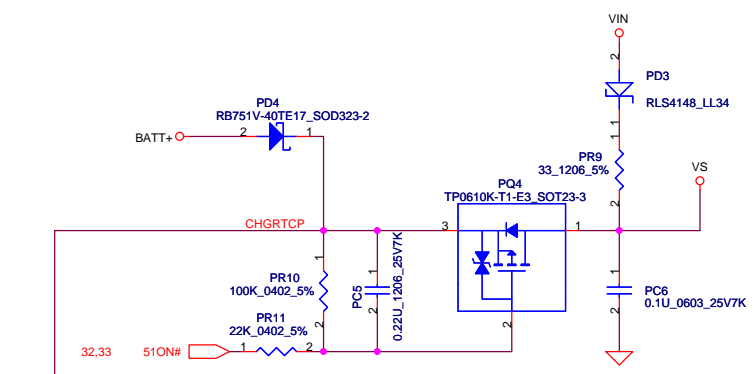
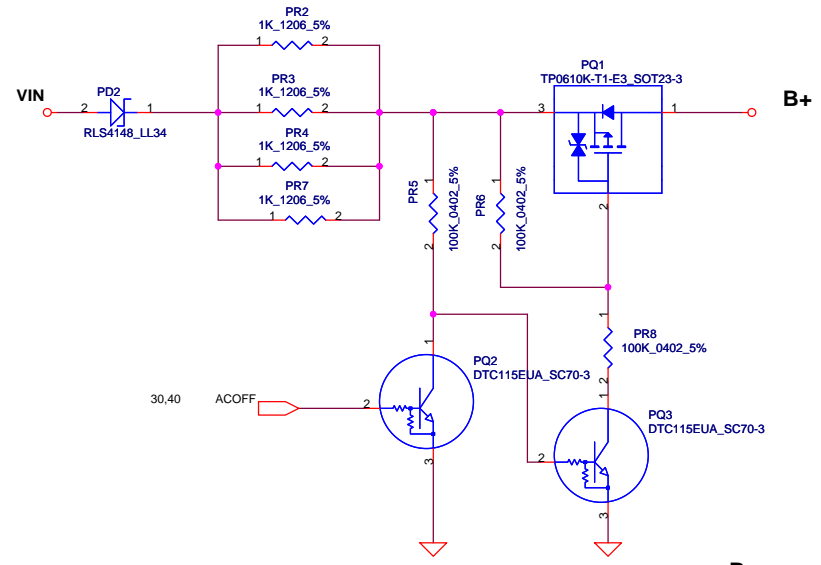
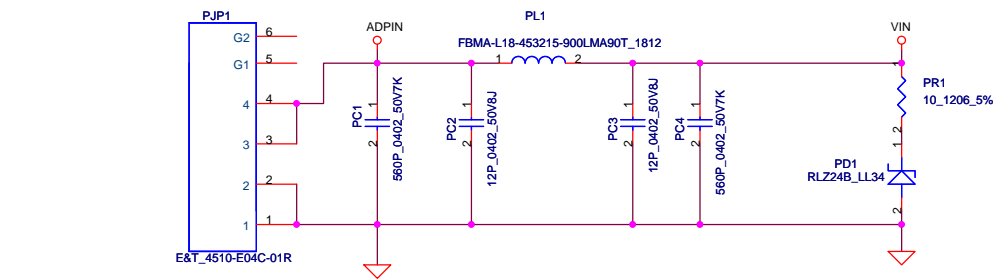
+3VALW TO +3VS



+1.8V to +1.8VS



| | | | | | |
|---|----------------------------|------------------------------------|------------|--------------------------|----|
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| | | | | DC Interface | |
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| Size B | Document Number | ICL50/ICK70 M/B LA-3551P Schematic | | Rev | |
| Date: | Wednesday, August 15, 2007 | Sheet | 37 | of | 49 |



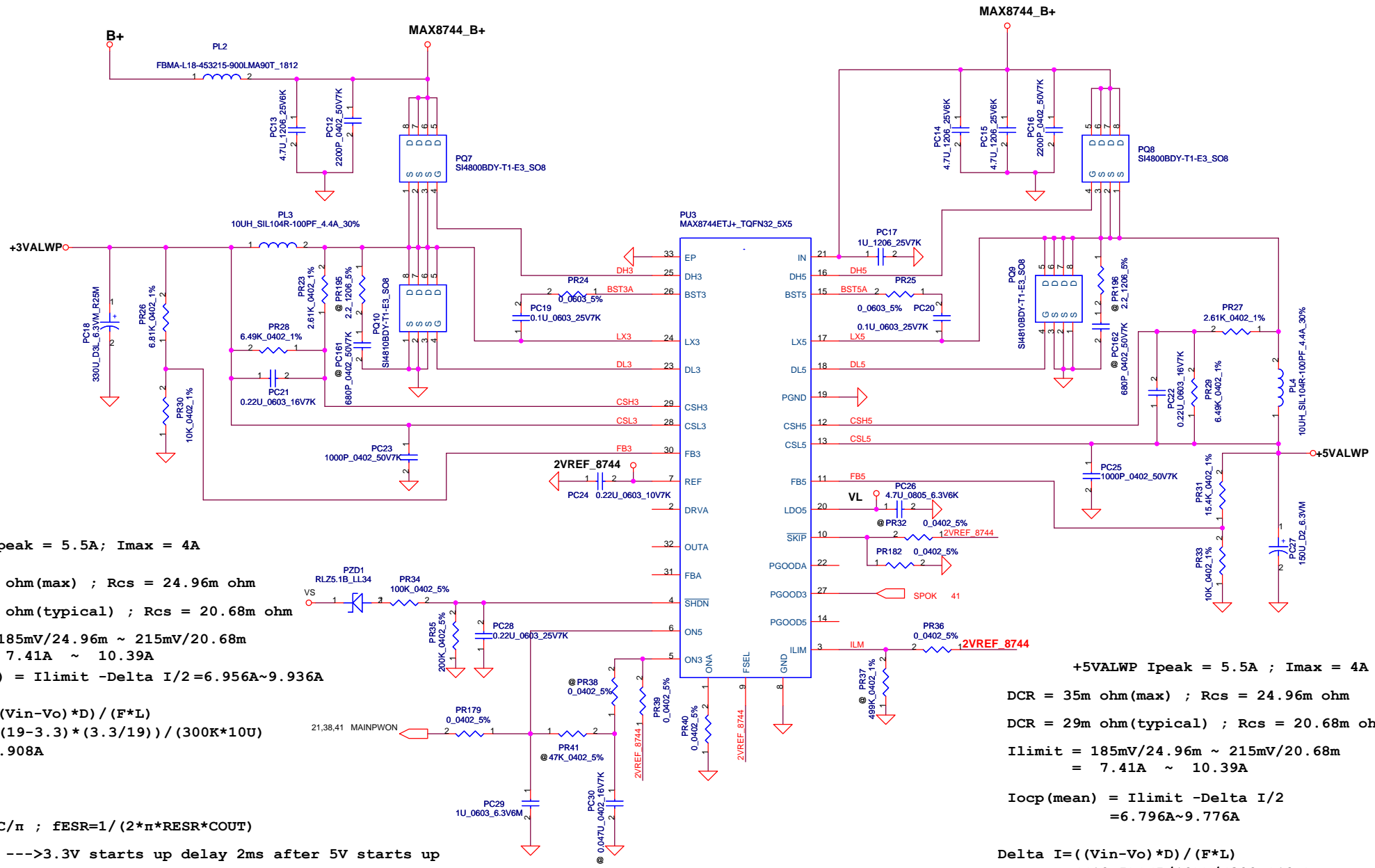
ACIN

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

BATT ONLY

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

| | | | | |
|---|--------------------|----------------------------------|-----------------------------|-------------|
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| Issued Date | 2006/08/22 | Deciphered Date | 2007/08/22 | Title |
| | | | | DCIN/DECTOR |
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| | | Date: Wednesday, August 15, 2007 | Sheet 38 | of 49 |



+3VALWP Ipeak = 5.5A; Imax = 4A
 DCR = 35m ohm(max) ; Rcs = 24.96m ohm
 DCR = 29m ohm(typical) ; Rcs = 20.68m ohm
 Ilimit = 185mV/24.96m ~ 215mV/20.68m
 = 7.41A ~ 10.39A
 Iocp(mean) = Ilimit -Delta I/2=6.956A~9.936A

Delta I=((Vin-Vo)*D)/(F*L)
 =((19-3.3)*(3.3/19))/(300K*10U)
 =0.908A

Notes :
 fESR<=fOSC/n ; fESR=1/(2*pi*RESR*COU)
 ON3 = REF --->3.3V starts up delay 2ms after 5V starts up

+5VALWP Ipeak = 5.5A ; Imax = 4A
 DCR = 35m ohm(max) ; Rcs = 24.96m ohm
 DCR = 29m ohm(typical) ; Rcs = 20.68m ohm
 Ilimit = 185mV/24.96m ~ 215mV/20.68m
 = 7.41A ~ 10.39A
 Iocp(mean) = Ilimit -Delta I/2
 =6.796A~9.776A

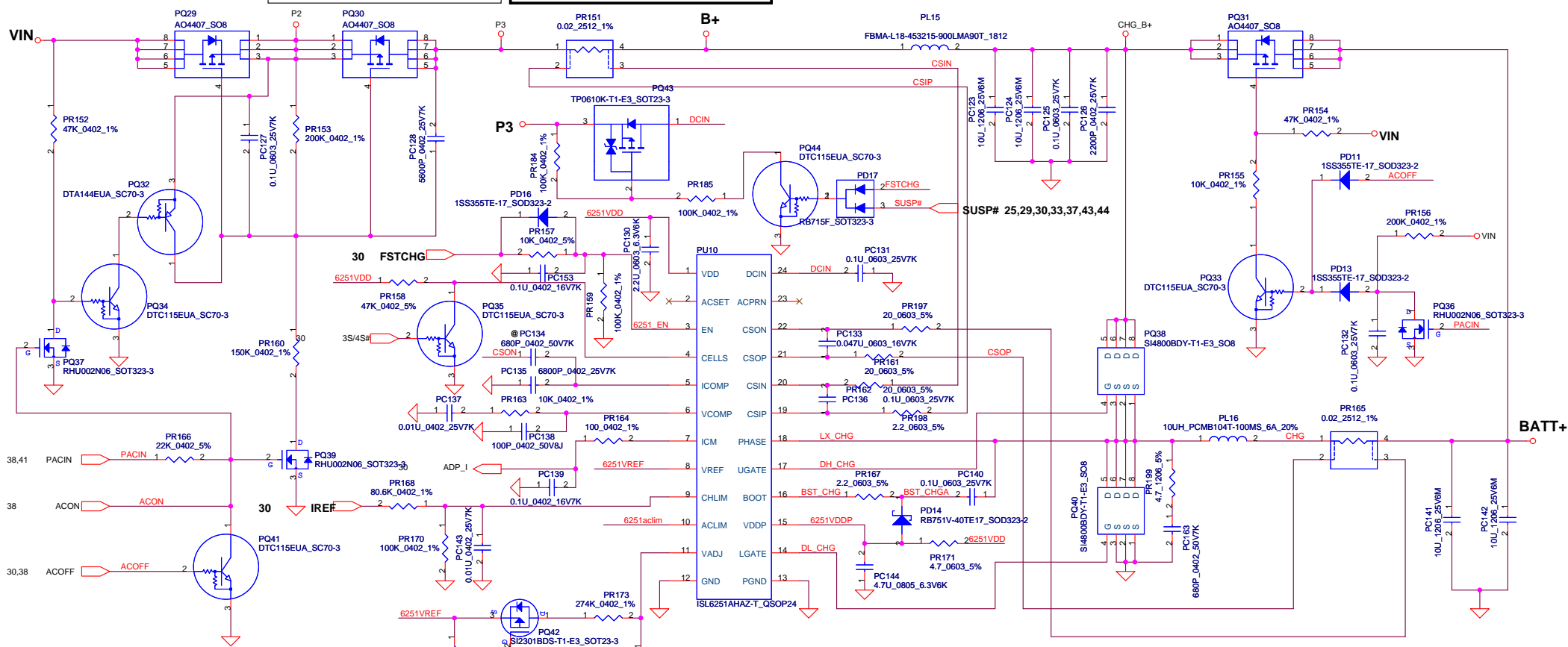
Delta I=((Vin-Vo)*D)/(F*L)
 =((19-5)*(5/19))/(300K*10U)
 1.228A

| | | | | | |
|---|------------|--------------------|------------|--------------------------|----------------------------|
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| Issued Date | 2006/08/22 | Deciphered Date | 2007/08/22 | Title | +5VALWP/+3VALWP |
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| | | | | Custom | ICL50/ICR70 |
| | | | | Date: | Wednesday, August 15, 2007 |
| | | | | Sheet | 39 of 49 |
| | | | | Rev | 1.0 |

Iada=0~4.74A (90W)

$ADP_I = 19.9 * I_{adapter} * R_{sense}$

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

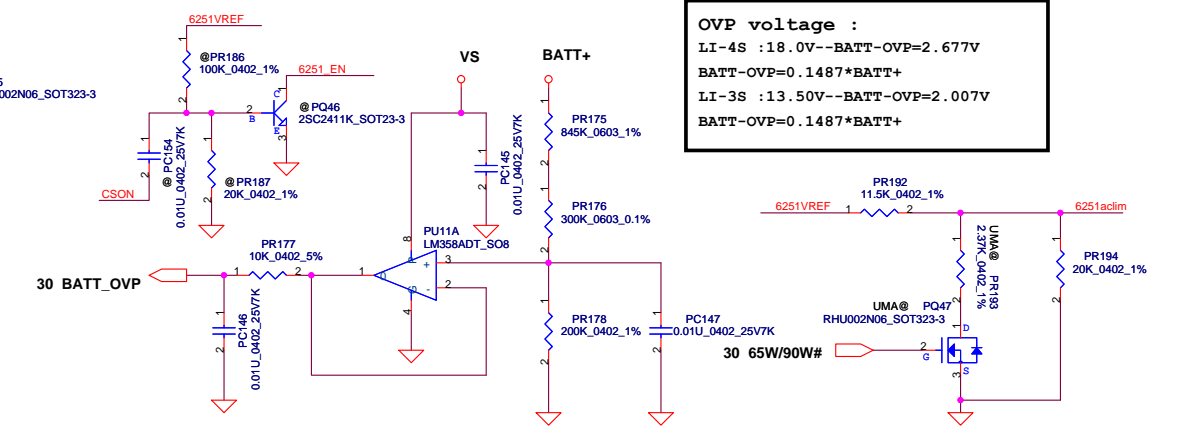
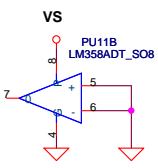


CP mode
 $I_{input} = (1/0.02) * ((0.05 * V_{aclim}) / 2.39 + 0.05)$
 where $V_{aclim} = 1.502V$, $I_{input} = 4.07A$
 $V_{aclim} = 2.39 * ((10K / 152K) + ((5.76K / 152K) + (10K / 152K)))$
 = 1.502V

CC=0.6~4.48A
 $I_{REF} = 0.7224 * I_{charge}$
 $I_{REF} = 0.43V \sim 3.24V$

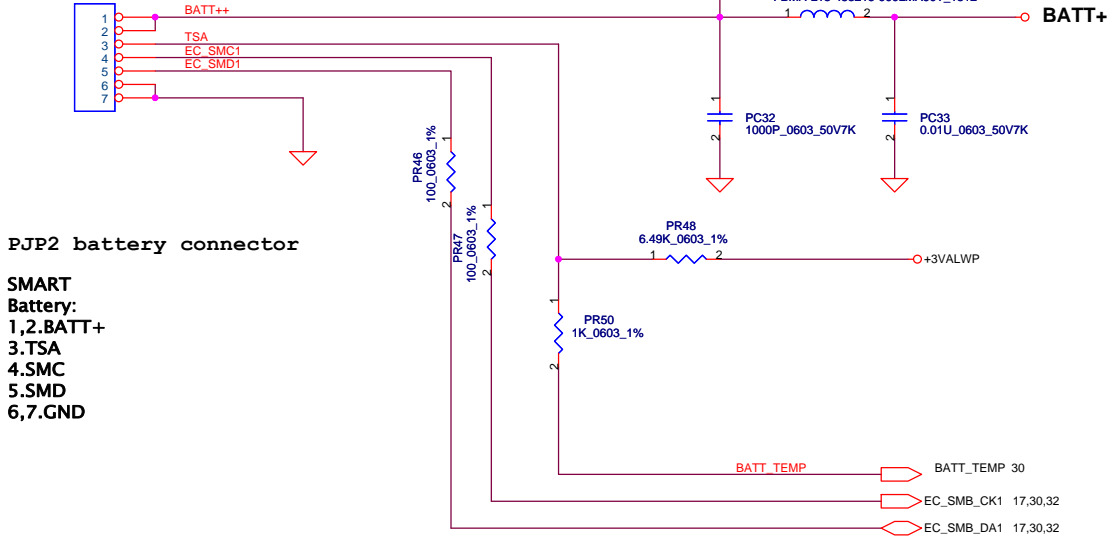
| BATT Type | Charging Voltage (0x15) | 3S/4S# | CHGSEL | CV mode |
|---------------------------------------|-------------------------|--------|--------|---------|
| 2800mAH 4S pack | 17400mV | LOW | LOW | 17.20V |
| 2800mAH 3S pack | 13050mV | HIGH | LOW | 12.90V |
| Normal 4S LI-ON Cells | 16800mV | LOW | HIGH | 16.80V |
| Normal 3S LI-ON Cells | 12600mV | HIGH | HIGH | 12.60V |
| Wake up charge while no communication | - | HIGH | HIGH | 12.60V |

OVP voltage :
 LI-4S : 18.0V -- BATT-OVP = 2.677V
 BATT-OVP = 0.1487 * BATT+
 LI-3S : 13.50V -- BATT-OVP = 2.007V
 BATT-OVP = 0.1487 * BATT+



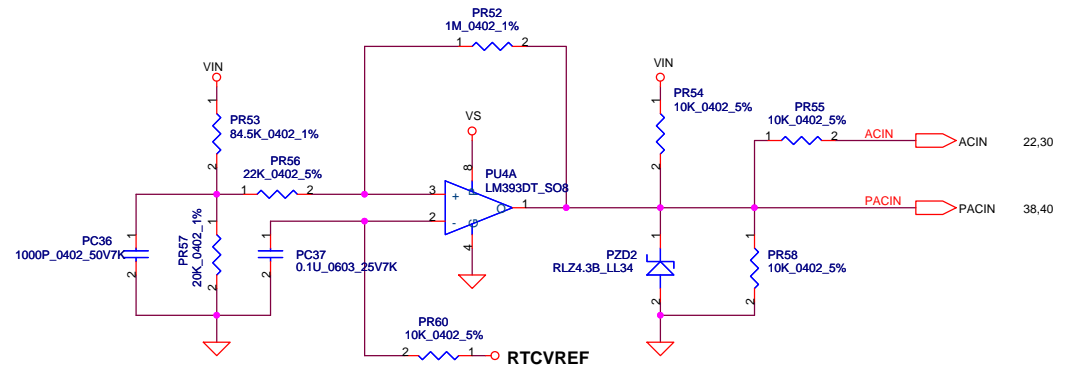
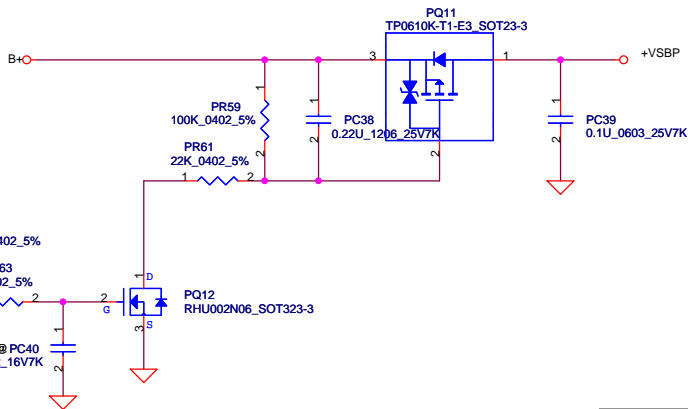
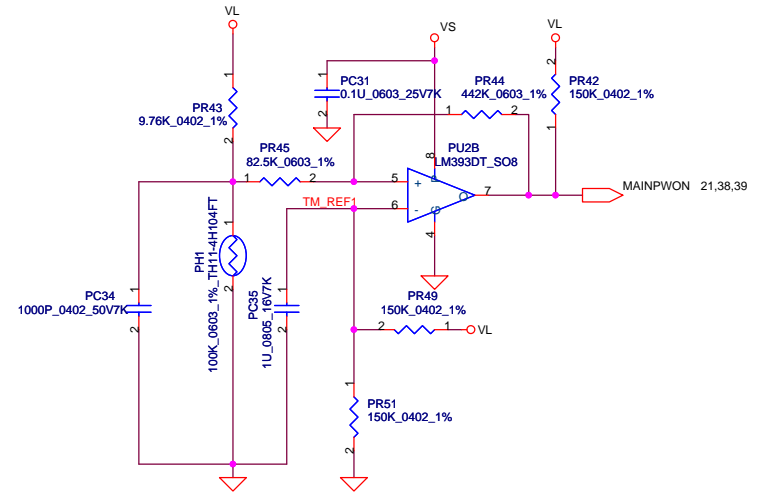
PH1 under CPU botten side :
 CPU thermal protection at 90 degree C
 Recovery at 70 degree C

SUYIN_200275MR007G161ZL
 PJP2



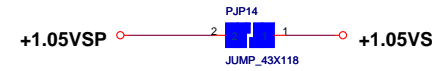
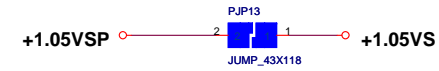
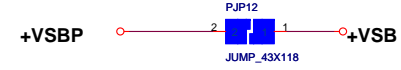
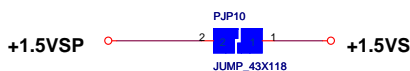
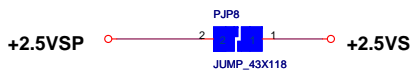
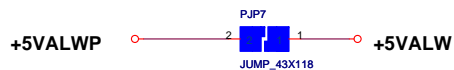
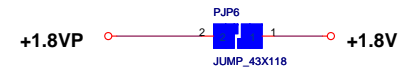
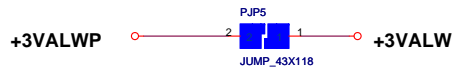
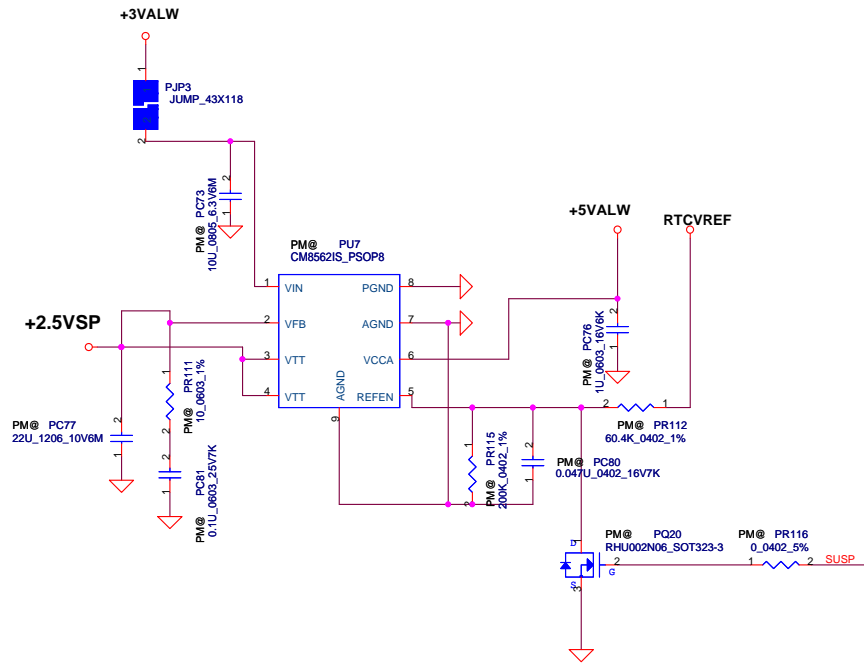
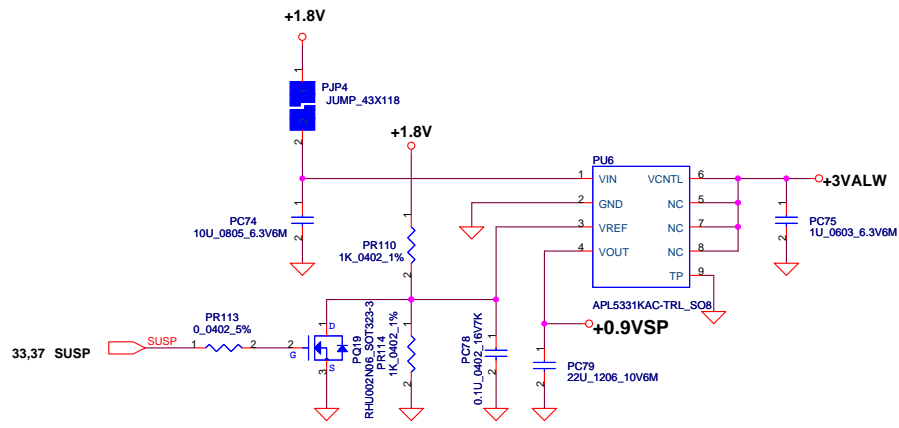
PJP2 battery connector

SMART
 Battery:
 1,2.BATT+
 3.TSA
 4.SMC
 5.SMD
 6,7.GND



| Vin Detector | | |
|---------------|---------|---------|
| Min. | typ. | Max. |
| H-->L 16.976V | 17.257V | 17.728V |
| L-->H 17.430V | 17.901V | 18.384V |

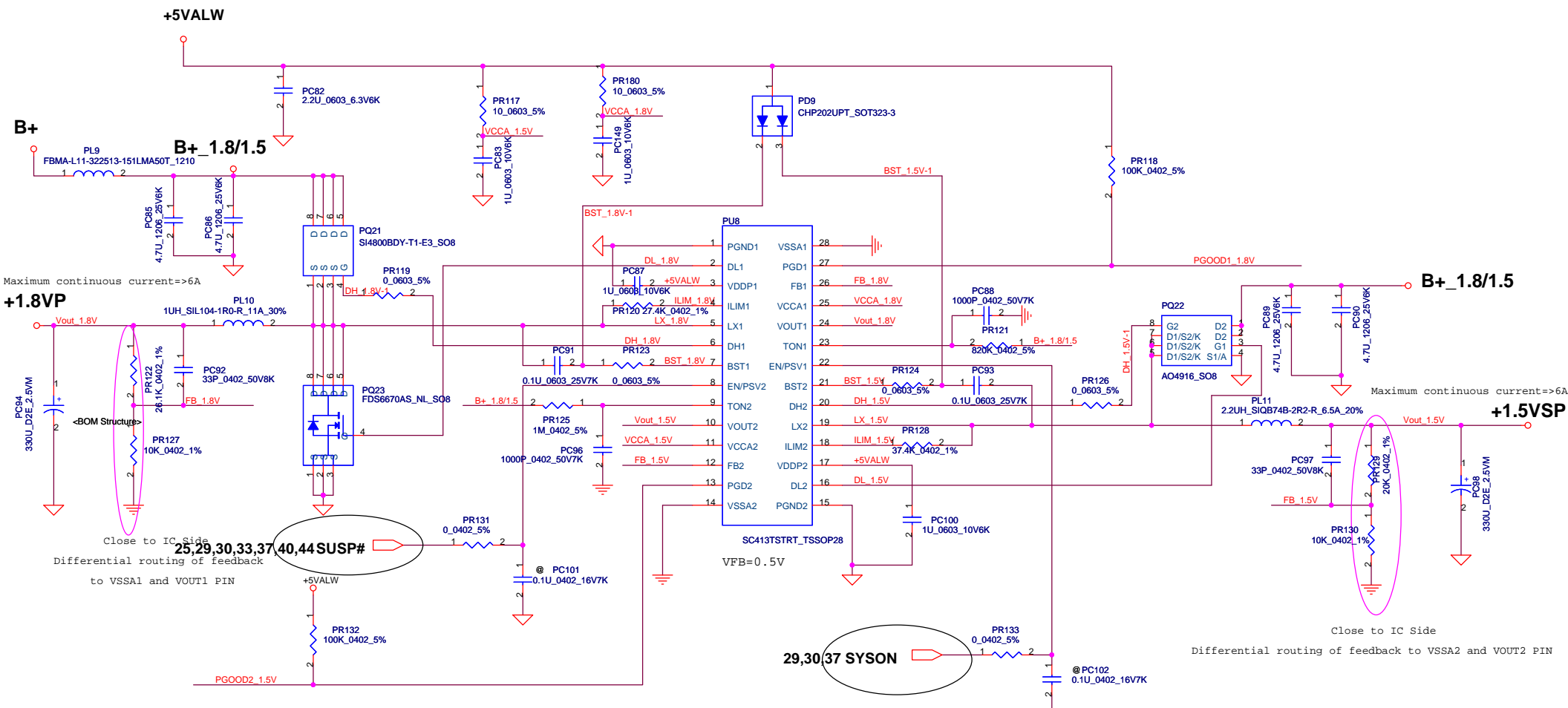
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| | | | | Date: Wednesday, August 15, 2007 | Sheet 41 of 49 |



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|---------------------------------|----------------------------|-------|----------|
| Compal Electronics, Inc. | | | |
| +0.9VSP/+2.5VSP | | | |
| Title | Document Number | Rev | |
| Custom | ICL50/ICK70 | 1.0 | |
| Date: | Wednesday, August 15, 2007 | Sheet | 42 of 49 |



Maximum continuous current=>6A

Maximum continuous current=>6A

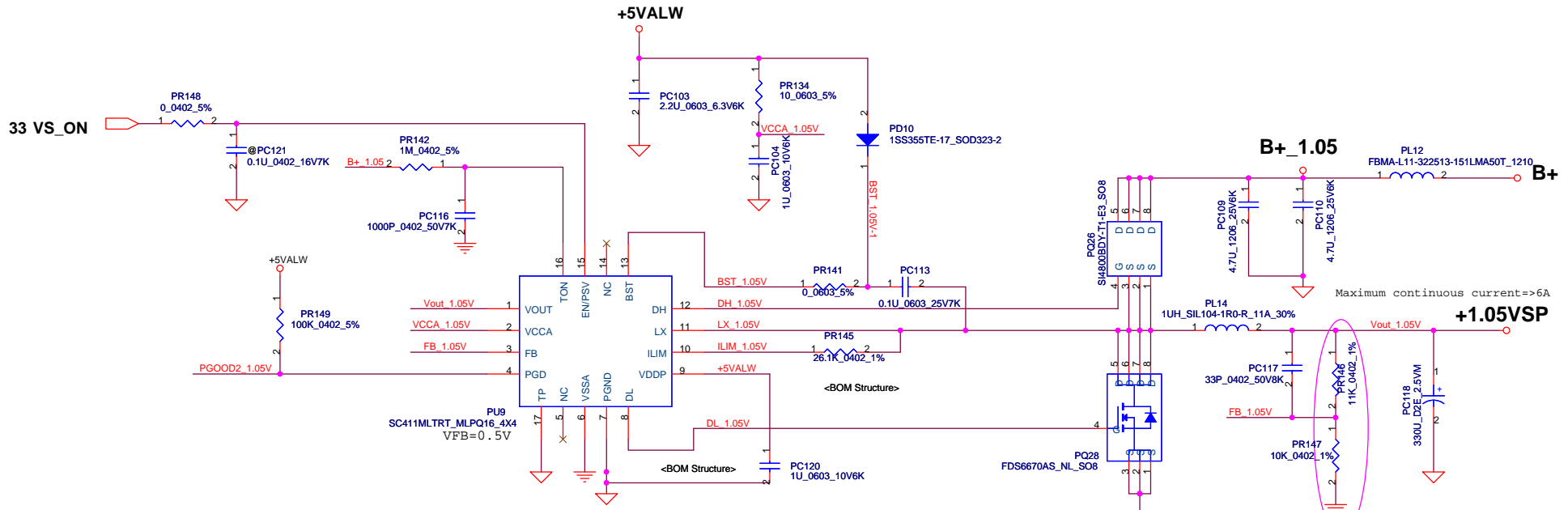
VFB=0.5V
 $V_o = VFB * (1 + PR122 / PR127) = 1.805V$
Ipeak=11.73A, Imax=8.211A
 $Ton = (3.3E-12 * (PR121 + 37K) * (Vout / VBat)) + 50ns$
 $= 3.3 * 10e-12 * (820K + 37K) * (1.8 / 19) + 50ns = 0.3179us$
 FDS6670AS:Rds(on) => Typ: 9 mOhm
 Max: 11.5 mOhm
 $Iocp = Ivalley + Iripple / 2$
 $Iripple = (vin - vout) * (Ton / L) = 5.467A, 1/2 Iripple = 2.734A$
 $Ivalleymin = 10E-6 * (PR120 / Rds(ON)max * 1.5)$
 $= 9 * 10e-6 * (27.4K / 0.0115 * 1.5) = 14.295A > 11.73 * 1.2 = 14.076A$
 $Ivalleymax = 10E-6 * (PR120 / Rds(ON)typ * 1.2)$
 $= 11 * 10e-6 * (27.4K / 0.009 * 1.2) = 27.907A$
 OCP ==> 17.029A ~ 30.641A

VFB=0.5V
 $V_o = VFB * (1 + PR129 / PR130) = 1.5V$
Ipeak=4.39A+2.91A=7.3A, Imax=7.3*0.7=5.11A
 $Ton = (3.3E-12 * (PR125 + 37K) * (Vout / VBat)) + 50ns$
 $= 0.3201us$
 AO4916 Rds(on) => Typ: 21 mOhm
 Max: 27 mOhm
 $Ivalleymin = 9 * E-6 * (37.4K / 0.027 * 1.4) = 8.904A > 7.3 * 1.2 = 8.76A$
 $Ivalleymax = 11 * E-6 * (37.4K / 0.021 * 1.1) = 17.809A$
 $Iripple = (vin - vout) * (Ton / L) = 2.546A, 1/2 Iripple = 1.273A$
 $Iocp = Ivalley + Iripple / 2$
 OCP ==> 10.177A ~ 19.082A



| | | | | | |
|---|-----------------|----------------------------|------------|----------------|----|
| Security Classification | | Compal Secret Data | | Title | |
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| Size | Document Number | Date | | Rev | |
| Custpm | ICL50/ICK70 | Wednesday, August 15, 2007 | | 1.0 | |
| Date | | | | Sheet | of |
| | | | | 43 | 49 |

Compal Electronics, Inc.



Close to IC Side
Differential routing of feedback to VSSA2 and VOUT2 PIN

VFB=0.5V, Ipeak=14.02A, Imax=9.814A

The current rating of +1.05VSP include +VCC_GFX current.

$V_o = VFB * (1 + PR146 / PR147) = 1.05V$

$Ton = (3.3E-12 * (PR142 + 37K) * (Vout / VBat)) + 50ns = 0.2391us$

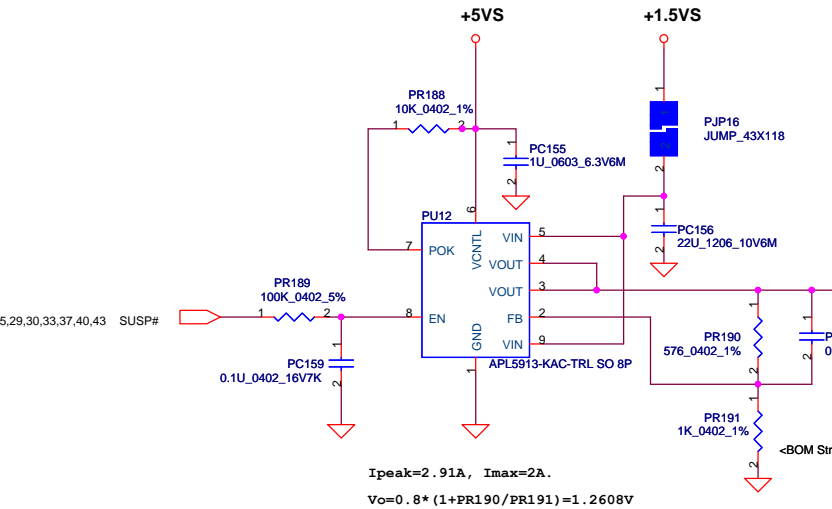
SI4810BDY:Rds(on) => Typ: 9mOhm
Max: 11.5 mOhm

$Ivalleymin = 9 * 10E-6 * (PR145 / Rds(ON)max * 1.5)$
 $= 9 * 10E-6 * (26.1K / (0.0115 * 1.5)) = 13.617A$

$Ivalleymax = 11 * 10E-6 * (PR145 / Rds(ON)min * 1.2)$
 $= 11 * 10E-6 * (26.1K / (0.009 * 1.3)) = 20.076A$

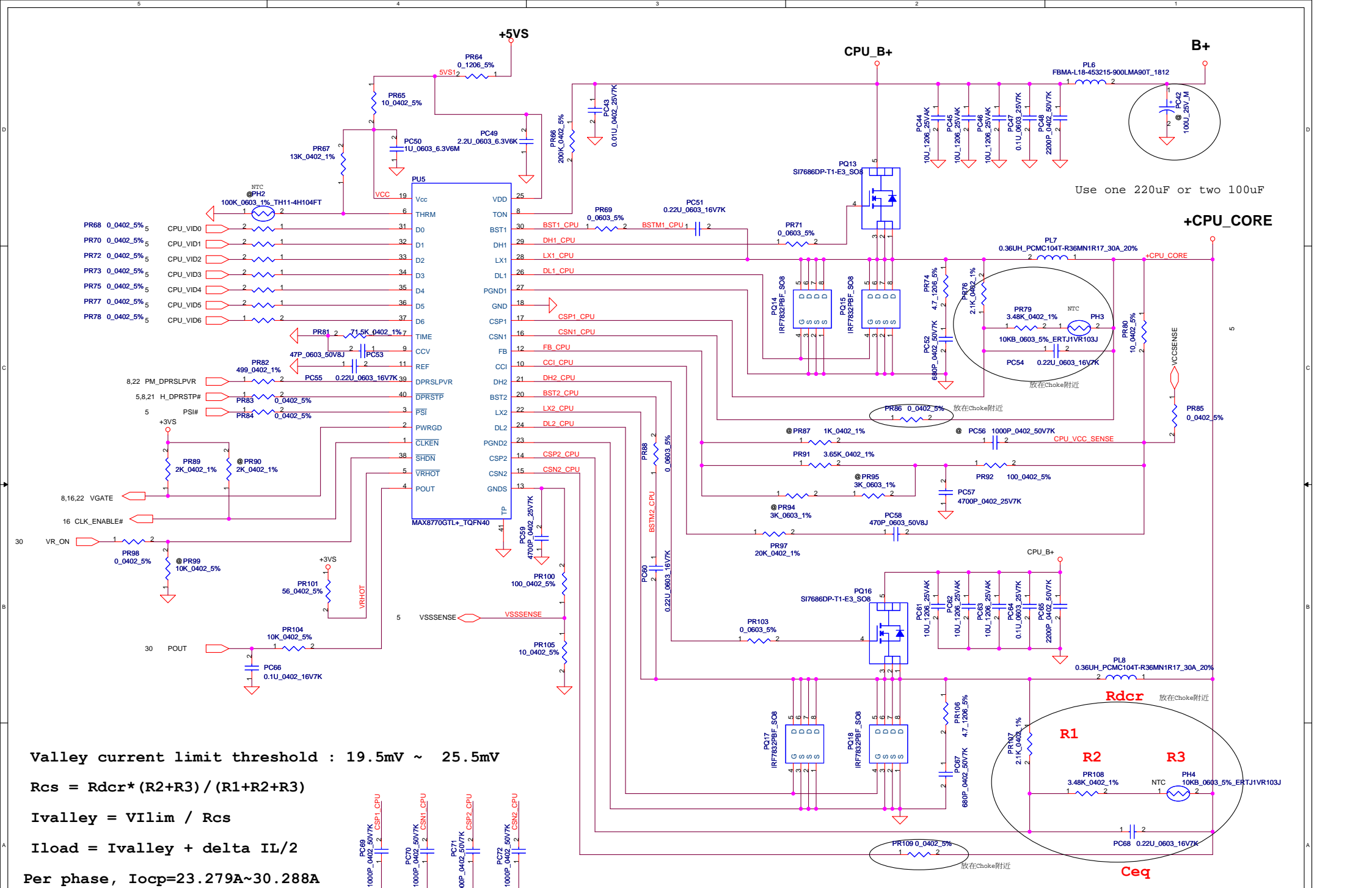
$Iripple = (vin - vout) * (Ton / L) = 4.292A, 1/2 Iripple = 2.146A$

$Iocp = Ivalley + Iripple / 2$
 $OCP ==> 15.763A \sim 22.222A$



Ipeak=2.91A, Imax=2A.
 $V_o = 0.8 * (1 + PR190 / PR191) = 1.2608V$

| | | | | | |
|---|------------|--------------------|------------|-------------------|----------------------------|
| Security Classification | | Compal Secret Data | | Title | |
| Issued Date | 2006/08/22 | Deciphered Date | 2007/08/22 | +1.25VSP/+1.05VSP | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. | | | | Size | Rev |
| | | | | Customer | 1.0 |
| | | | | Date: | Wednesday, August 15, 2007 |
| | | | | Sheet | 44 of 49 |



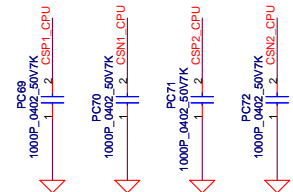
Valley current limit threshold : 19.5mV ~ 25.5mV

$$R_{cs} = R_{dcr} * (R2 + R3) / (R1 + R2 + R3)$$

$$I_{valley} = V_{lim} / R_{cs}$$

$$I_{load} = I_{valley} + \Delta I_L / 2$$

Per phase, $I_{ocp} = 23.279A \sim 30.288A$



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|---|----------------------------|-----------------|--------------------------|---|
| Security Classification | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2005/06/20 | Deciphered Date | 2006/06/20 | Title |
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| Date: | Wednesday, August 15, 2007 | Sheet | 45 | of 49 |

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

| Item | Fixed Issue | Reason for change | Rev. | PG# | Modify List | Date | Phase |
|------|--|---|------|-----|---|----------|-------|
| 1 | CPU_CORE high side MOS desine change | In order to prevent EOL of SI7840, change to SI7686. | 0.1 | 45 | Change Pq13 and Pq16 form SB578400080(S TR SI7840DP-T1-E3 1N SO8) to SB000008L80(S TR SI7686DP-T1-E3 1N SO8). | 10/30/06 | EVT |
| 2 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add Pq43 SB906100210(S TR TP0610K) | 12/21/06 | DVT |
| 3 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add Pq44 SB301150000(S TR DTC115EUA) | 12/21/06 | DVT |
| 4 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add PD16 SC1SS355010(S DIO 1SS355) Delete PD12 SC1SS355010(S DIO 1SS355) | 12/21/06 | DVT |
| 5 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add PD17 SCSB715F000(S DIO RB715F) | 12/21/06 | DVT |
| 6 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add PR184,PR185 SD034100380(S RES 1/16W 100K 0402 1%) | 12/21/06 | DVT |
| 7 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add PC153 SE076104K80(S CER CAP 0.1U 0402 16V K X7R) | 12/21/06 | DVT |
| 8 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add Pq45 SB502060000(S TR RHU002N06) | 12/21/06 | DVT |
| 9 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add Pq46 SB324110010(S TR 2SC411K) | 12/21/06 | DVT |
| 10 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add PR183 SD034274380(S RES 1/16W 274K 0402 1%) | 12/21/06 | DVT |
| 11 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add PR186 SD034100380(S RES 1/16W 100K 0402 1%) | 12/21/06 | DVT |
| 12 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add PR187 SD034200280(S RES 1/16W 20K 0402 1%) | 12/21/06 | DVT |
| 13 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Add PC154 and PC146 SE075103K80(S CER CAP 0.01U K 25V X7R 0402) | 12/21/06 | DVT |
| 14 | Noise issue in S3 mode and idle mode. | In order to prevent noise issue in S3 mode and idle mode. | 0.2 | 40 | Add PC42 SF22004M210(S CAP 220U_25V_M) | 12/21/06 | DVT |
| 15 | For energy star SPEC request. | In order to for energy star SPEC request. | 0.2 | 40 | Change PR157 from SD028000080(s res 1/16w 0 0402 5%) TO SD0281000280(S RES 1/16W 10K 0402 5%) | 12/21/06 | DVT |
| 16 | Improve pre-charge power sequence | Improve pre-charge power sequence | 0.2 | 39 | Change PR34 from SD028470280(S RES 1/16w 47K 0402 5%) to SD028100380(S RES 1/16W 100K 0402 5%) | 12/21/06 | DVT |
| 17 | Improve pre-charge power sequence | Improve pre-charge power sequence | 0.2 | 39 | Change PR35 SD028100380(S RES 1/16W 100K 0402 5%) to SD028200380(S RES 1/16W 200K 0402 5%) | 12/21/06 | DVT |
| 18 | Improve pre-charge power sequence | Improve pre-charge power sequence | 0.2 | 39 | Change PC28 from SE042104K80(S CER CAP 0.1U 25V K X7R 0603) to SE000005ZM8(S CER CAP 0.22U 25V K X7R 0603) | 12/21/06 | DVT |
| 19 | CPU MOSFET switching has interference. | Improve CPU switching interference. | 0.2 | 45 | Change PC69,PC70,PC71,PC72 from SE082221J80 to SE068102J80(S CER CAP 1000P 25V J NPO 0402) | 12/21/06 | DVT |
| 20 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PU7 SA085620080 from X63470BOL01. | 12/21/06 | DVT |
| 21 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete Pq20 SB502060000 from X63470BOL01. | 12/21/06 | DVT |
| 22 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PR111 SD014100A80 from X63470BOL01. | 12/21/06 | DVT |
| 23 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PR112 SD034604280 from X63470BOL01. | 12/21/06 | DVT |

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| Compal Electronics, Inc. | |
| Title PIR (PWR) | |
| Size | Document Number ICL50/ICK70M/B1A1351P Schematic |
| Date: | Wednesday, August 15, 2007 |
| Sheet | 46 of 49 |

| Item | Fixed Issue | Reason for change | Rev. | PG# | Modify List | Date | Phase |
|------|----------------------------------|--|------|-----|--|----------|-------|
| 1 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PR115 SD034200380 from X63470BOL01. | 10/30/06 | EVT |
| 2 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PR116 SD028000080 from X63470BOL01. | 12/21/06 | DVT |
| 3 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PC73 SE142475K80 from X63470BOL01. | 12/21/06 | DVT |
| 4 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PC76 SE135105K80 from X63470BOL01. | 12/21/06 | DVT |
| 5 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PC77 SE116226M80 from X63470BOL01. | 12/21/06 | DVT |
| 6 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PC80 SE076473K80 from X63470BOL01. | 12/21/06 | DVT |
| 7 | X63470BOL01 doesn't need +2.5VSP | Delete +2.5VSP from X63470BOL01. | 0.2 | 42 | Delete PC81 SE042104K80 from X63470BOL01. | 12/21/06 | DVT |
| 8 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PQ25 SB548000310(S TR SI4800BDY) . | 12/27/06 | DVT |
| 9 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PQ27 SB548100020(S TR 4810BDY) | 12/27/06 | DVT |
| 10 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Change PD10 from SC1P202U010 to SC1SS355010. | 12/27/06 | DVT |
| 11 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PR135 SD034100380. | 12/27/06 | DVT |
| 12 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PR140,SD013000080, PR150 SD028000080. | 12/27/06 | DVT |
| 13 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PR181 SD013100A80. | 12/27/06 | DVT |
| 14 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PR139 SD034150280. | 12/27/06 | DVT |
| 15 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PR144 SD034100280 | 12/27/06 | DVT |
| 16 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PR137 SD034105280. | 12/27/06 | DVT |
| 17 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PR138 SD028100480. | 12/27/06 | DVT |
| 18 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PC105,PC106 SE142475K80. | 12/27/06 | DVT |
| 19 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PC107,PC151 SE080105K80. | 12/27/06 | DVT |
| 20 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PC108 SE074102K80. | 12/27/06 | DVT |
| 21 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PC111 SE042104K80. | 12/27/06 | DVT |
| 22 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PC112 SE068330K80 | 12/27/06 | DVT |
| 24 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PL13 SH000008Y80. | 12/27/06 | DVT |

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| Compal Electronics, Inc. | |
| Title PIR (PWR) | |
| Size | Document Number ICL50/ICK70-M/B1-A1351P Schematic |
| Date: Wednesday, August 15, 2007 | Sheet 47 of 49 |

| Item | Fixed Issue | Reason for change | Rev. | PG# | Modify List | Date | Phase |
|------|------------------------------------|--|------|-----|---|----------|-------|
| 1 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Delete PC114 SGA20221D30 | 12/27/06 | DVT |
| 2 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Change PU9 from SA00001FD80 to SA00001FB80 | 12/27/06 | DVT |
| 3 | For SMT BOM convenient. | For SMT BOM convenient. | 0.3 | 40 | Change PD14 from SC1H751H010 to SC1B751V010. | 12/27/06 | DVT |
| 4 | Increase _1.5VSP OCP point | Increase _1.5VSP OCP point for +1.25VSP new solution.' | 0.3 | 43 | Change PR128 from SD034154280 to SD034374380. | 12/27/06 | DVT |
| 5 | Decrease +1.05VSP OCP point. | Decrease +1.05VSP OCP point. | 0.3 | 44 | Change PR145 from SD034324280 to SD034261280 | | DVT |
| 6 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PU12 SA000015410. | 12/27/06 | DVT |
| 7 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PR188 SD034100280. | 12/27/06 | DVT |
| 8 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PR189 SD034100380. | 12/27/06 | DVT |
| 9 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PR191 SD034100180. | 12/27/06 | DVT |
| 10 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PR190 SD034576080. | 12/27/06 | DVT |
| 11 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PC155 SE107105M80. | 12/27/06 | DVT |
| 12 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PC156, PC160 SE116226M80 | 12/27/06 | DVT |
| 13 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PC157 SE075103K80. | 12/27/06 | DVT |
| 14 | Cost issue. | For cost down, change +1.25VSP solution. | 0.3 | 44 | Add PC159 SE076104K80. | 12/27/06 | DVT |
| 15 | Increase +1.5VSP output capacitor. | Increase +1.5VSP output capacitor. | 0.3 | 43 | Change PC98 from SGA20221D30 to SGA19331D00 | 12/27/06 | DVT |
| 16 | Cost issue. | Cost issue. | 0.3 | 44 | Change PC118 from SGA20471D00 to SGA19331D00. | 12/30/06 | DVT |
| 17 | BOM issue. | BOM issue. | 0.3 | 45 | Change PH3, PH4 from SL210021F20 to SL200000200 | 12/30/06 | DVT |
| 18 | Assembly issue. | Due to assembly hard, delete PC42. | 0.3 | 45 | Delete PC42 SM22004M210. | 12/30/06 | DVT |
| 19 | Cost issue. | Cost issue. | 0.4 | 42 | Change PC73 from SE142475K80 to SE093106M80 | 01/04/06 | DVT |
| 20 | Cost issue. | Cost issue. | 0.4 | 42 | Change PC73 from SE153106K80 to SE093106M80 | 01/04/06 | DVT |
| 21 | Add pull high resistor for VAGTE. | Add pull high resistor for VAGTE. | 0.4 | 45 | Add PR89 SD034200180(S RES 1/16W 2K 0402 1%) | 01/04/06 | DVT |
| 22 | Delete PQ46 | PQ46 has potential risk to cause system battery OVP. | 0.4 | 40 | Delete PQ46 SB324110010(S TR 2SC411K) | 01/04/06 | DVT |
| 23 | Material shipping issue. | Material shipping issue. | 0.4 | 45 | Change PC69, PC70, PC71, PC72 from SE068102J80 to SE074102K80 | 01/04/06 | DVT |

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| Compal Electronics, Inc. | |
| Title PIR (PWR) | |
| Size | Document Number ICL50/ICK70-M/B1-A1351P Schematic |
| Date: Wednesday, August 15, 2007 | Sheet 48 of 49 |

| Item | Fixed Issue | Reason for change | Rev. | PG# | Modify List | Date | Phase |
|------|---------------------------|---------------------------|------|-----|---|----------|--------|
| 1 | Cost down | Cost down | 0.5 | 40 | Change PQ38 from SB548100020 to SB548000310. | 03/09/07 | FVT |
| 2 | Cost down | Cost down | 0.5 | 40 | Change PQ40 from SB548100020 to SB548000310. | 03/09/07 | FVT |
| 3 | For EMI board band issue. | For EMI board band issue. | 0.6 | 40 | Add PR199 SD001470B80(S RES 1/4W 4.7 1206 +-5%) | 04/01/07 | Pre-MP |
| 4 | For EMI board band issue. | For EMI board band issue. | 0.6 | 40 | Add PC163 SE074681K80 (S CER CAP 680P 50V K X7R) | 04/01/07 | Pre-MP |
| 5 | For battery life issue. | For battery life issue. | 0.6 | 42 | Add PR113 SD028000080. | | |
| 6 | For battery life issue. | For battery life issue. | 0.6 | 42 | Add PQ19 SB502060000. | | |
| 7 | PC28 change to LF PN. | PC28 change to LF PN. | 0.7 | 39 | Change PC28 from SE000005ZM8 to SE000005Z80. | 04/18/07 | MP |
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| Compal Electronics, Inc. | |
| Title PIR (PWR) | |
| Size | Document Number ICL50/ICK70-M/B1-A1351P Schematic |
| Date: Wednesday, August 15, 2007 | Sheet 49 of 49 |