

Prescott & Springdale Schematic with Capture CIS and Function field

uFCPGA Prescott

2003-07-23

REV: X02-D

Cature library ball out check document

Prescott : Prescott processor Electrial,Mechanical and
Thermal Specification Rev0.5 [Check by HW:Henry,Steve]

Springdale (GMCH): Springdale GMCH External Design
Specification (EDS) REV1.0 [Check by HW: Henry,Rita]

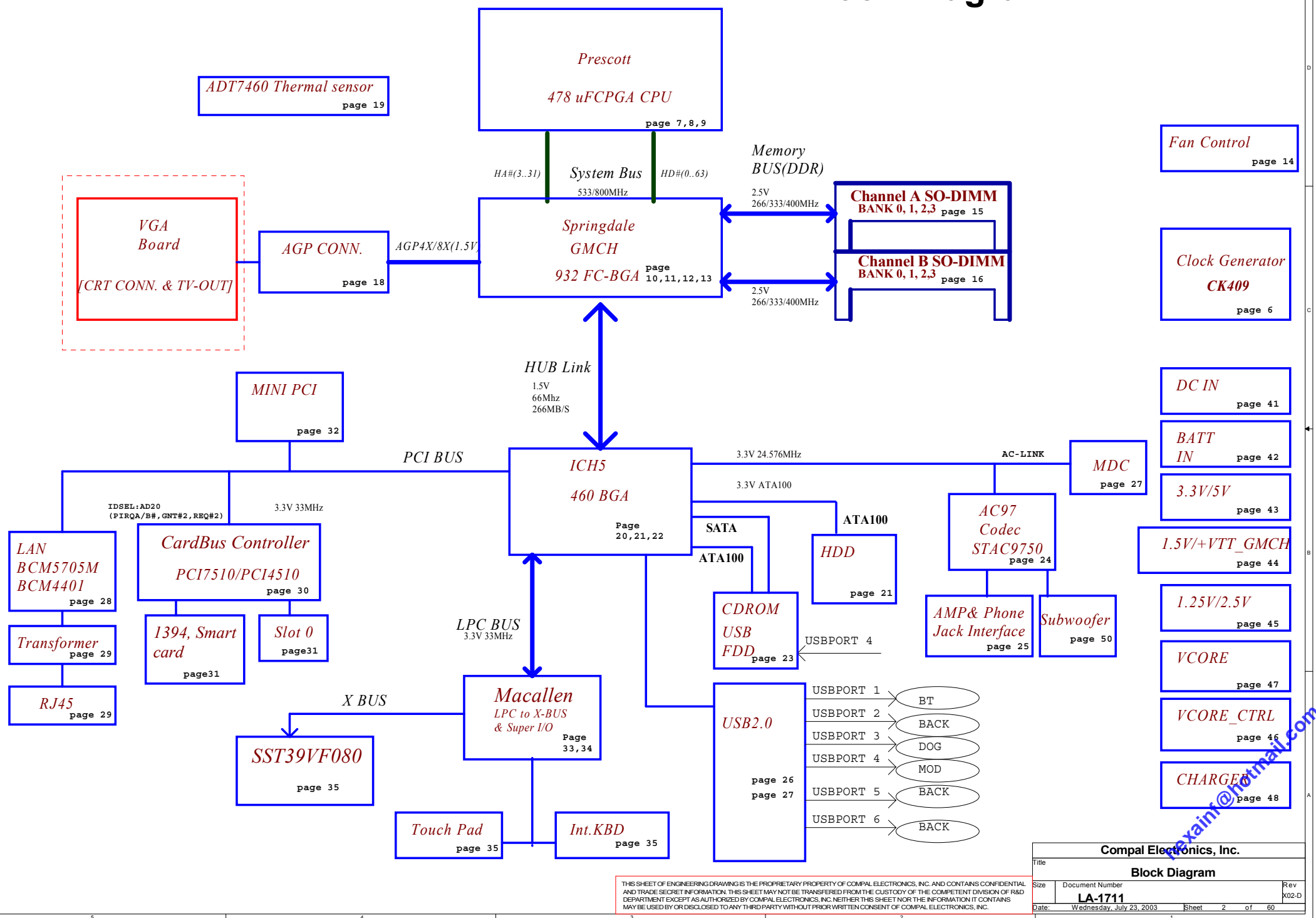
ICH5: N/A

@ : Depop Component
1@ : Depop on Nimitz (Inspiron)
2@ : Depop on Beijing (Precision)

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.

| | | | |
|--------------------------|--------------------------|-------|---------|
| Compal Electronics, Inc. | | | |
| Title | | | |
| Cover Sheet | | | |
| Size | Document Number | | Rev |
| | LA-1711 | | X02-D |
| Date: | Wednesday, July 23, 2003 | Sheet | 1 of 60 |

Block Diagram



PM TABLE

| <div>power plane</div> <div>State</div> | <div>+3VALW</div> <div>+5VALW</div> | <div>+3VSUS</div> <div>+5VSUS</div> <div>+2.5V_MEM</div> <div>+3.3VRTC</div> <div>+RTC_PWR</div> | <div>+3VRUN</div> <div>+5VRUN</div> <div>+1.5VRUN</div> <div>+VCC_CORE</div> <div>+12V</div> <div>+VCCVID</div> <div>V_1P25V_DDR_VTT</div> |
|---|-------------------------------------|--|--|
| S0 | ON | ON | ON |
| S1 | ON | ON | ON |
| S3 | ON | ON | OFF |
| S5 S4/AC | ON | OFF | OFF |
| S5 S4/AC don't exist | OFF | OFF | OFF |

PCI TABLE

| PCI DEVICE | IDSEL | REQ#/GNT# | PIRQ |
|------------|-------|-----------|-----------|
| CARD BUS | AD17 | 1 | D, C |
| LAN | AD16 | 4 | C |
| MINI PCI | AD19 | 3 | D, B (NP) |
| VGA | | | A, B (NP) |
| | | | |

USB TABLE

| USB PORT# | DESTINATION |
|-----------|-------------|
| 0 | Reserved |
| 1 | BT |
| 2 | BACK |
| 3 | DOG |
| 4 | MOD |
| 5 | BACK |
| 6 | BACK |
| 7 | Reserved |

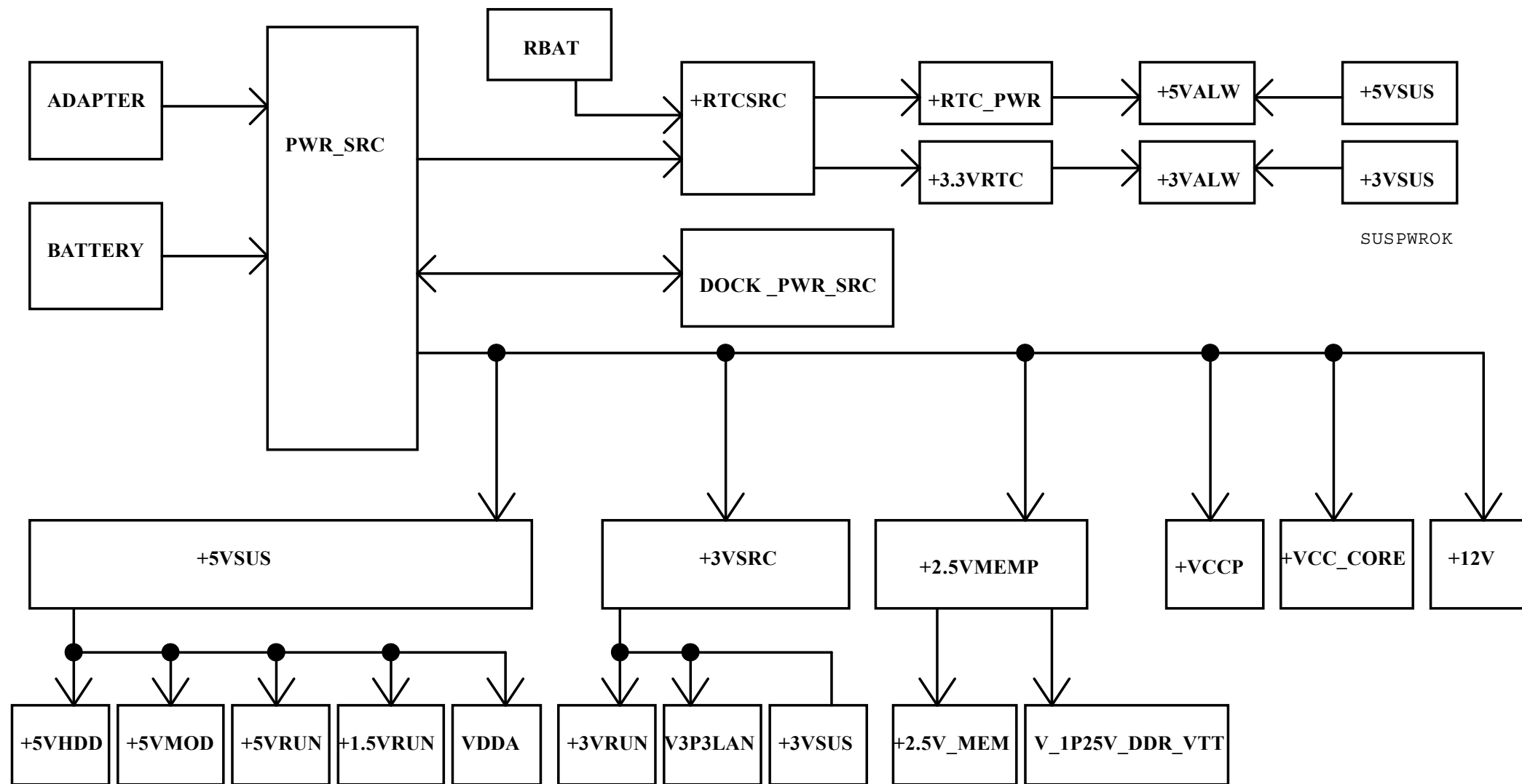
| <div>Model</div> <div>Function</div> | Nimitz | Beijing |
|--------------------------------------|------------------|-----------------|
| Smart Card | No | YES |
| LAN | 10/100 (4401) | 1000 (5705M) |
| Dog House | YES | YES |

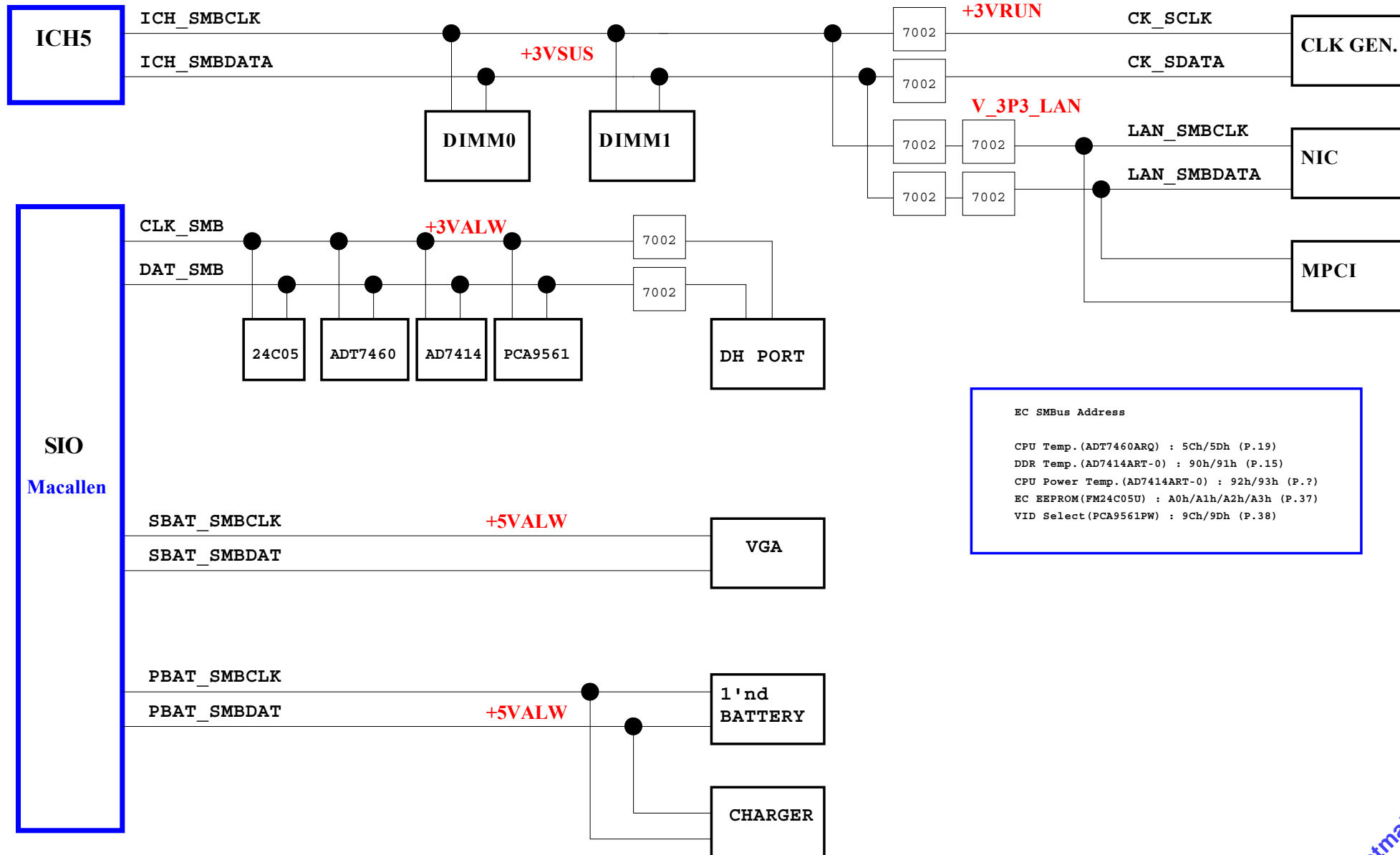
Note : "@" means all model depop
"1@" means Nimitz depoped only
"2@" means Beijing depoped only

| | MCH Rev. | ICH5 Rev. |
|-------------|-------------------------|--------------------------|
| Bring up | RG828SDGES A1 (QE18) | FW82801EB A1 (QE16ES) |
| SST-Build | RG828SDGP A2 (QE45) | FW82801EB A3 (QE51ES) |
| PT-Build | | |
| ST-Build | | |
| QT-Build | | |
| Pilot-Build | | |

Configuration List

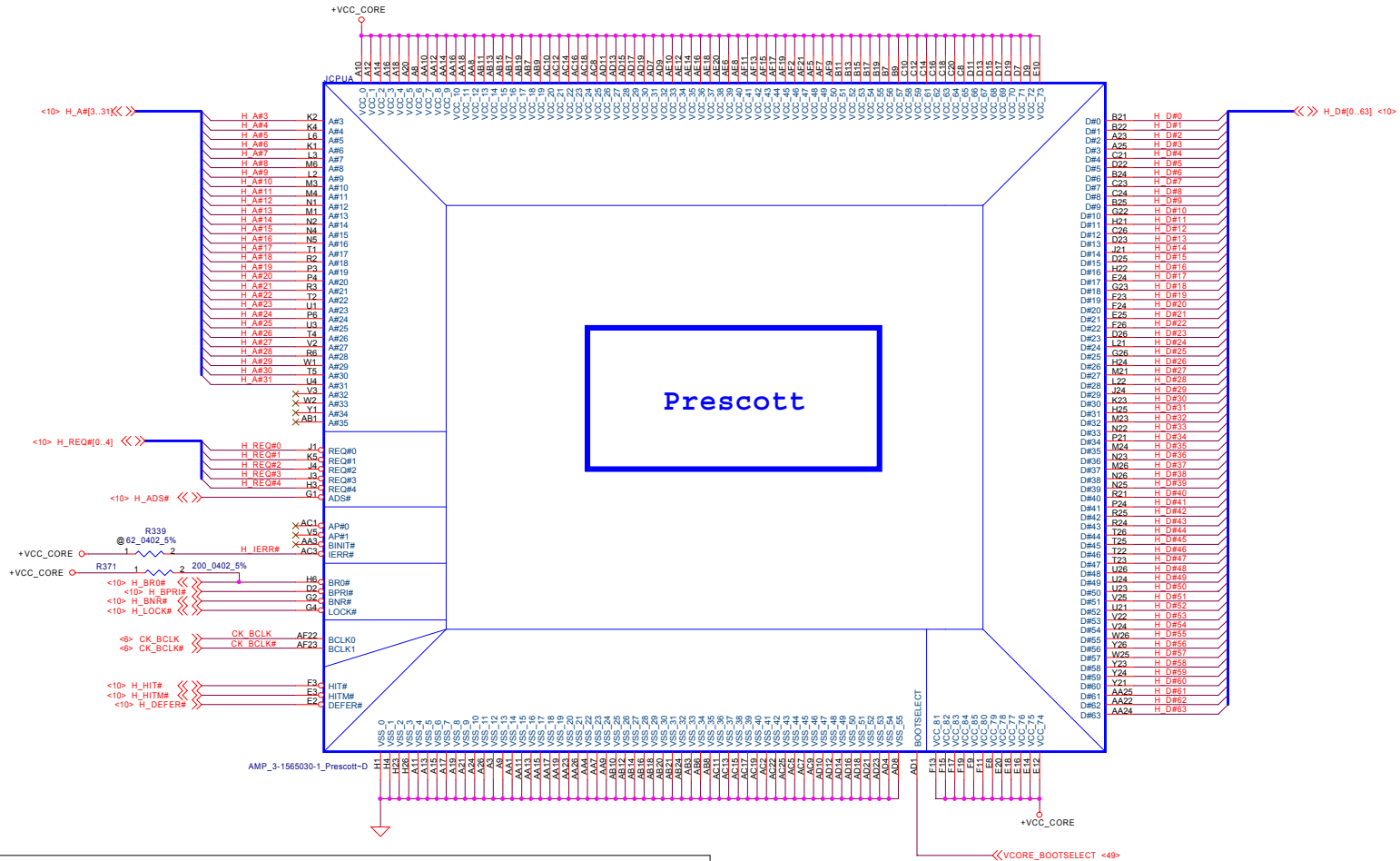
| BOM Structure | | |
|---------------|--|--|
| Function | | |
| | | |
| | | |
| | | |





EC SMBus Address

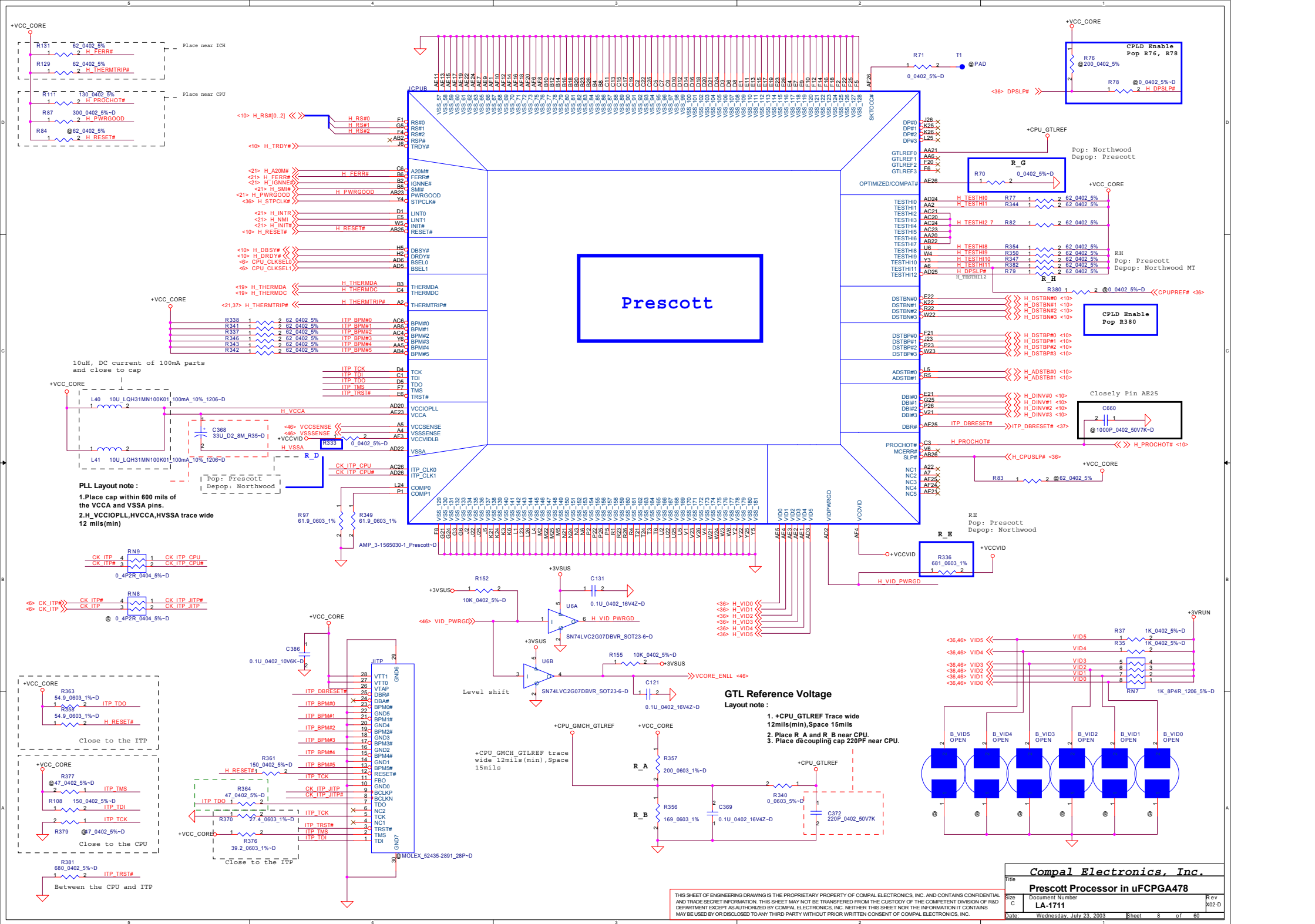
CPU Temp. (ADT7460ARQ) : 5Ch/5Dh (P.19)
DDR Temp. (AD7414ART-0) : 90h/91h (P.15)
CPU Power Temp. (AD7414ART-0) : 92h/93h (P.?)
EC EEPROM (FM24C05U) : A0h/A1h/A2h/A3h (P.37)
VID Select (PCA9561PW) : 9Ch/9Dh (P.38)

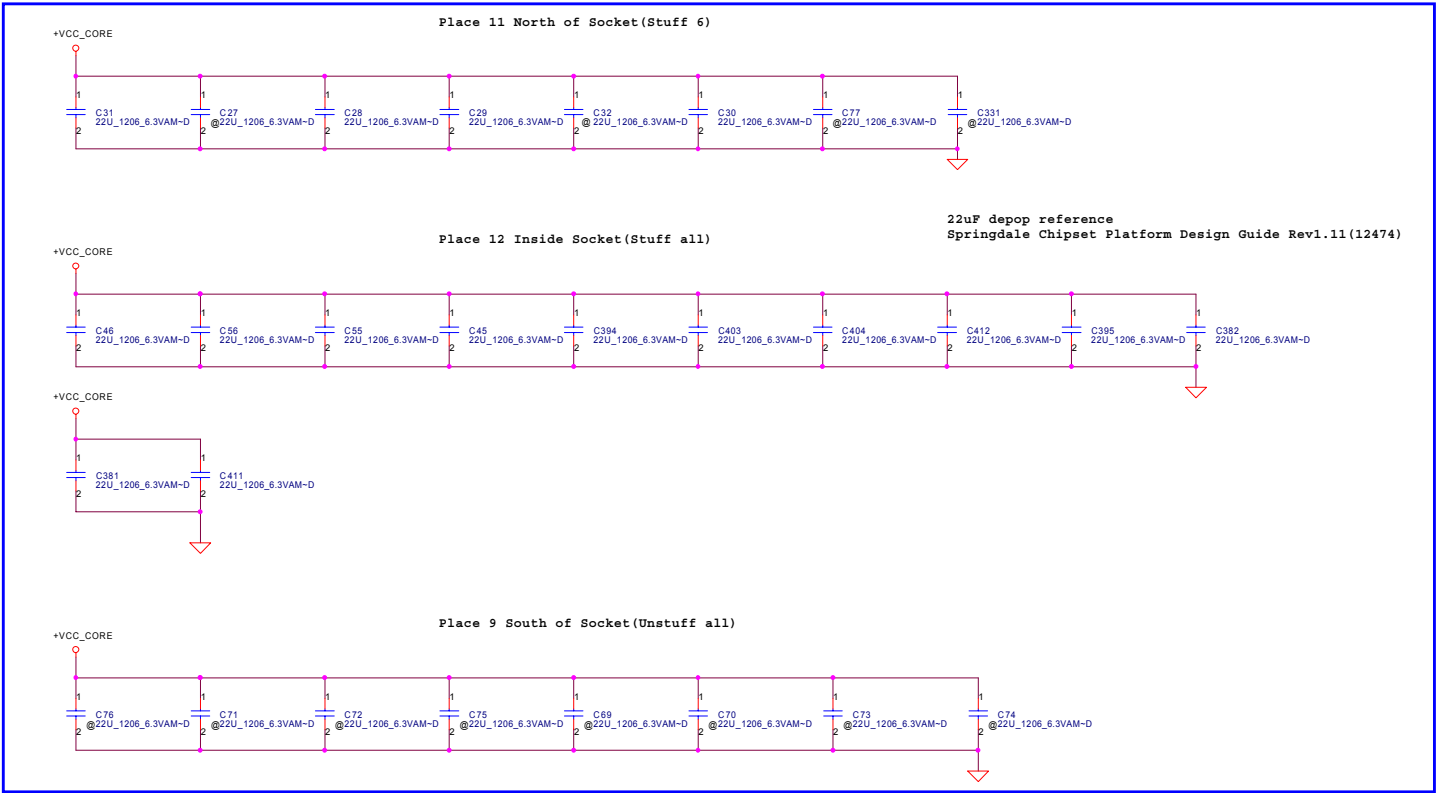


| Reference Intel document | | | | | | | | | |
|--|--------------------|-----------------------------|-------------------|--|-----------------------|--------------------------------------|-----------|----------|--------------|
| Desktop P4 Spec.: 10988 P4 0.13u 512KB L2 EMTS Rev.2.0 | | | | | | | | | |
| Desktop Prescott Spec.: 11910 Prescott EMTS Rev.0.5 | | | | | | | | | |
| Pin number | Northwood Pin name | Comment | Prescott Pin name | Comment | Northwood MT Pin name | Comment | Northwood | Prescott | Northwood MT |
| A6 | TESTHI11 | Pull-up 200ohm to +VCC_CORE | TESTHI11 | Pull-up 62ohm to +VCC_CORE | GHI | Connect to PLD CPU/PB/F through 0ohm | Pop | Pop | Pop |
| B6 | FERR# | Pull-up 62ohm to +VCC_CORE | FERR#/PBR# | Pull-up 62ohm to +VCC_CORE | FERR# | Pull-up 62ohm to +VCC_CORE | Pop | Pop | Pop |
| AA20 | ITPCLKOUT0 | Pull-up 56ohm to +VCC_CORE | TESTHI6 | Pull-up 62ohm to +VCC_CORE | ITPCLKOUT0 | Pull-up 56ohm to +VCC_CORE | Pop | Pop | Pop |
| AB22 | ITPCLKOUT1 | Pull-up 56ohm to +VCC_CORE | TESTHI7 | Pull-up 62ohm to +VCC_CORE | ITPCLKOUT1 | Pull-up 56ohm to +VCC_CORE | Pop | Pop | Pop |
| AD2 | NC | float | VIDPWRGD | Pull-up 2.43K ohm to +VCCVID | NC | float | Depop | Pop | Depop |
| AD3 | NC | float | VID5 | Pull-up 1Kohm to +3VRUN & connect to PWRIC | NC | float | Depop | Pop | Depop |
| AF3 | NC | float | VCCVIDLB | Connect to +VCCVID | NC | float | Depop | Pop | Depop |
| AD20 | VCCA | Connect to CPU Filter | VCCIOPLL | Connect to CPU Filter | VCCA | Connect to CPU Filter | | | |
| AF23 | VCCIOPLL | Connect to CPU Filter | VCCA | Connect to CPU Filter | VCCIOPLL | Connect to CPU Filter | | | |
| AE26 | VSS | Connect to GND | OPTIMIZED/COMPAT# | float | VSS | Connect to GND | Pop | Depop | Pop |
| AD25 | TESTHI12 | Pull-up 200ohm to +VCC_CORE | TESTHI12 | Pull-up 62ohm to +VCC_CORE | DPSLP | Connect to PLD through 0ohm | Pop | Pop | Pop |

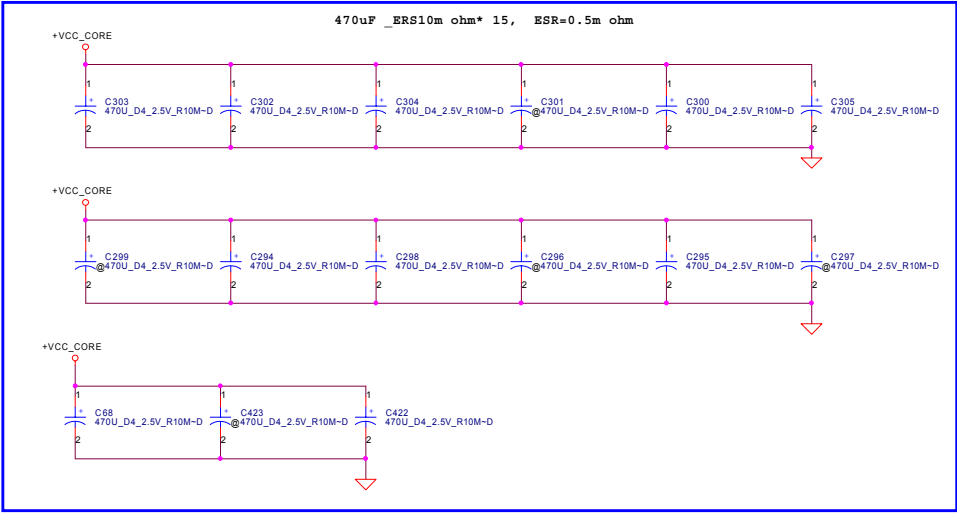
Note: AD2,AD3 pop(bring up)

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.



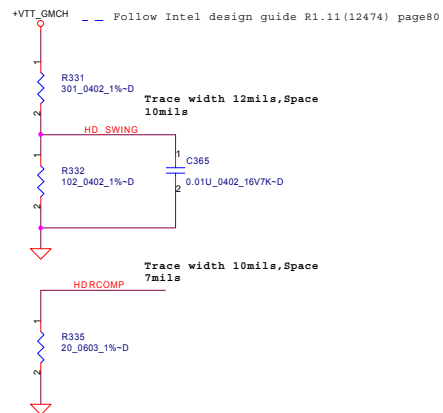


Note: For PT-phase
22uF depop reference
Springdale Chipset Platform Design Guide Rev1.2 (12837)
Inside the socket cavity 12 pcs (all stuffed)
North side 12pcs (4 sites stuffed)
Delete south side

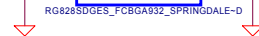


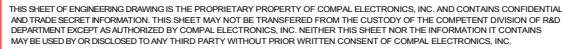
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

| | | |
|--------------------------|--------------------------|---------------|
| Compal Electronics, Inc. | | |
| CPU Decoupling | | |
| Size C | Document Number LA-1711 | Rev K02-D |
| Date: | Wednesday, July 23, 2003 | Sheet 9 of 60 |

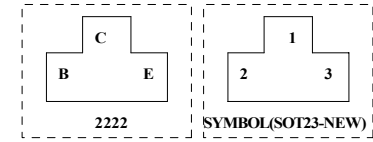
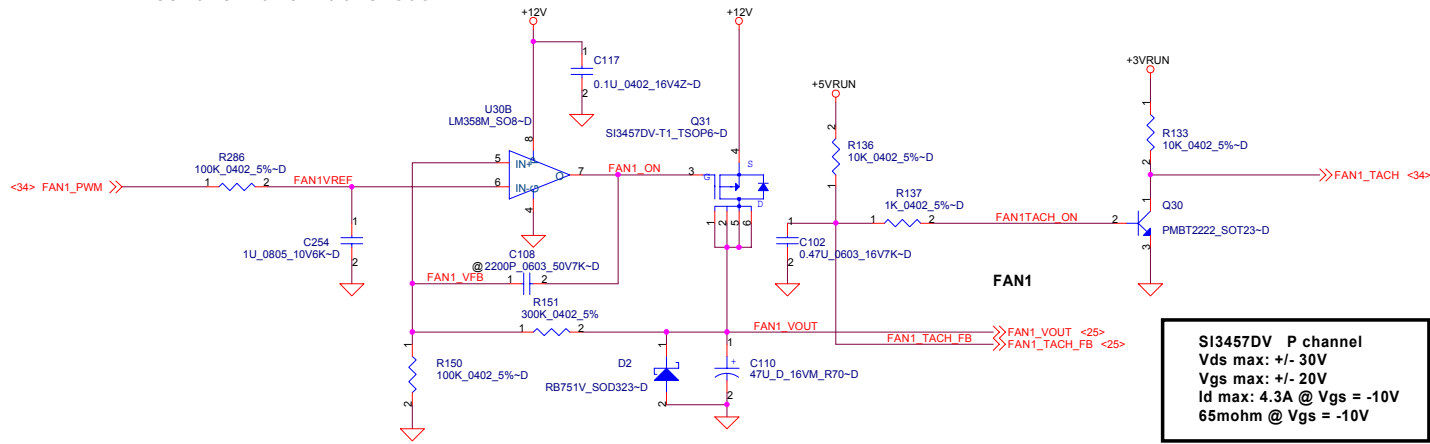


1. +GMCH_GTLREF Trace wide
12mils(min),Space 15mils.
2. Place decoupling cap 220PF near GMCH.

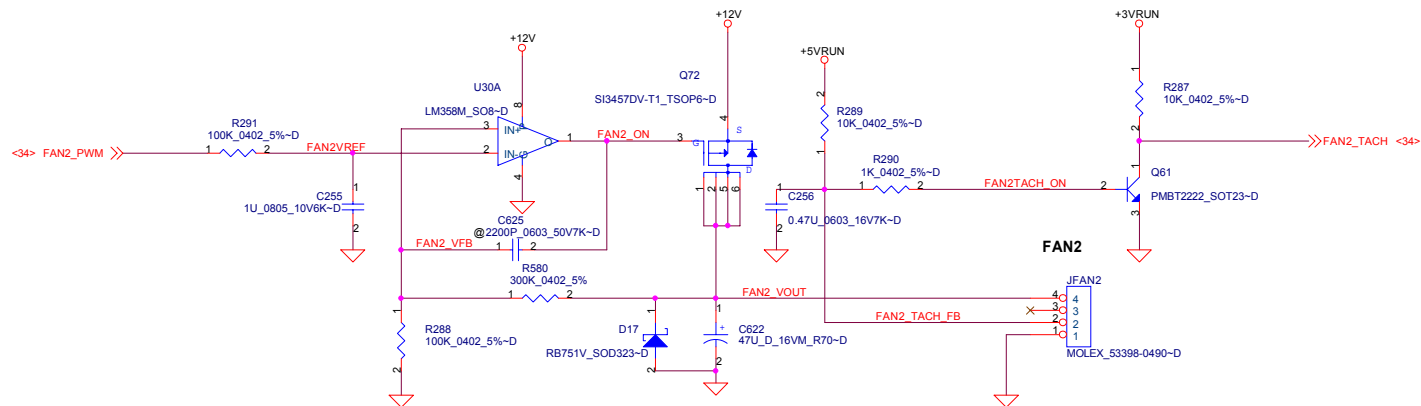




FAN1 Control and Tachometer

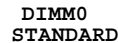


FAN2 Control and Tachometer



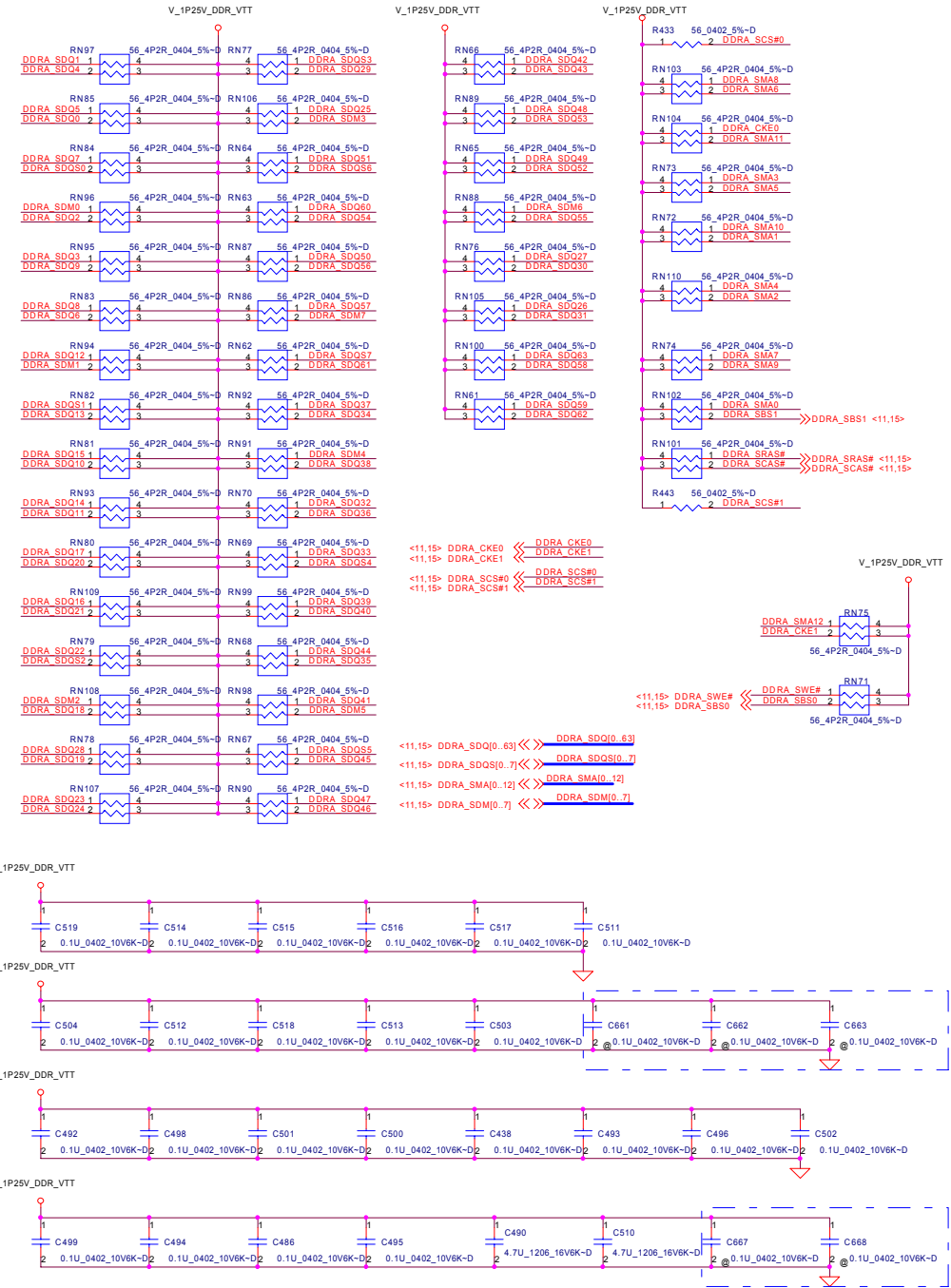
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|-------|----------|
| Title | | | |
| FAN CONTROL | | | |
| Size | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Wednesday, July 23, 2003 | Sheet | 14 of 60 |

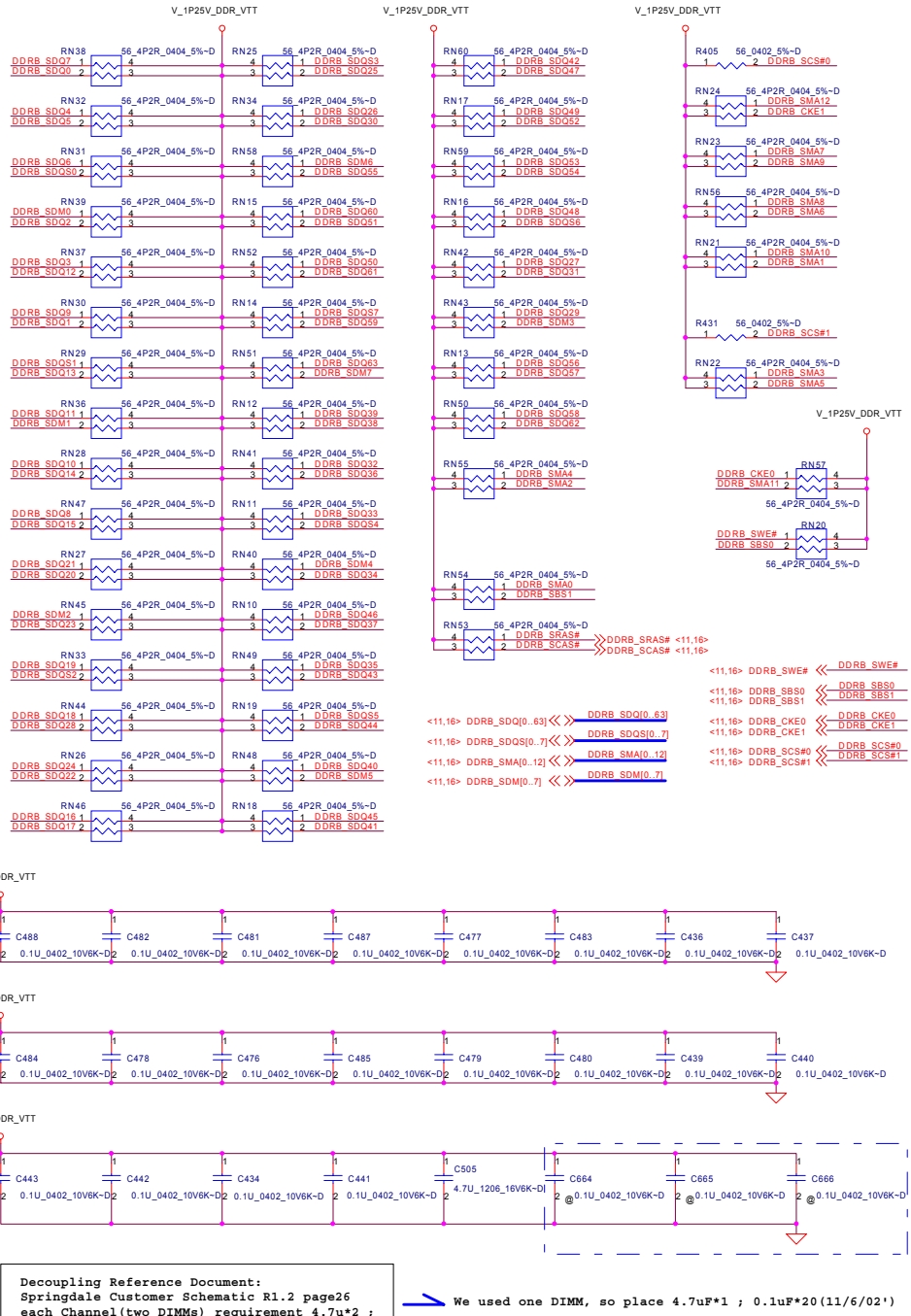


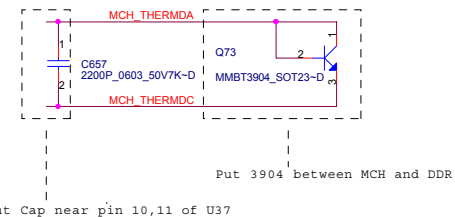
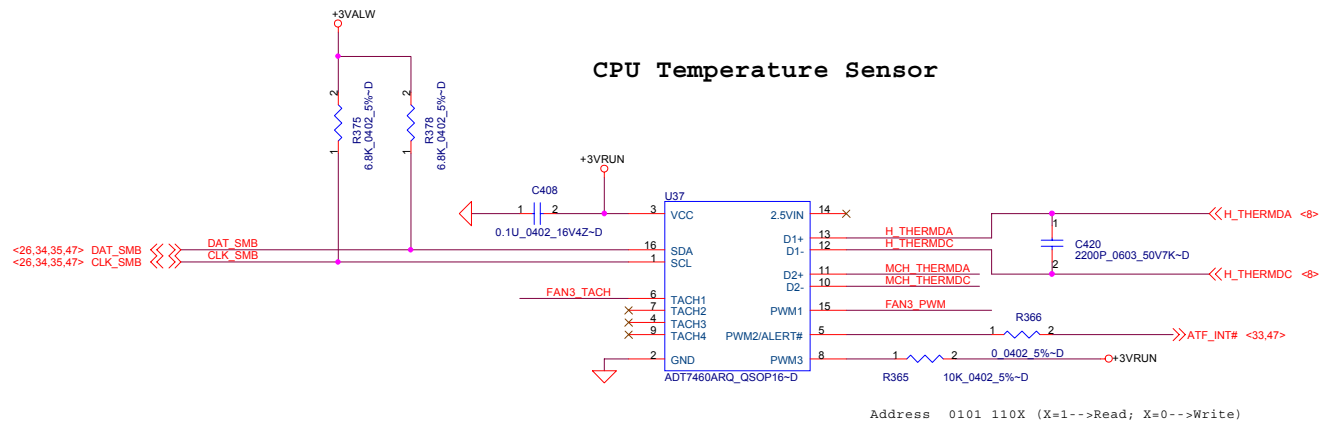
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

Channel A(DIMM0) Termination
resistors & Decoupling caps

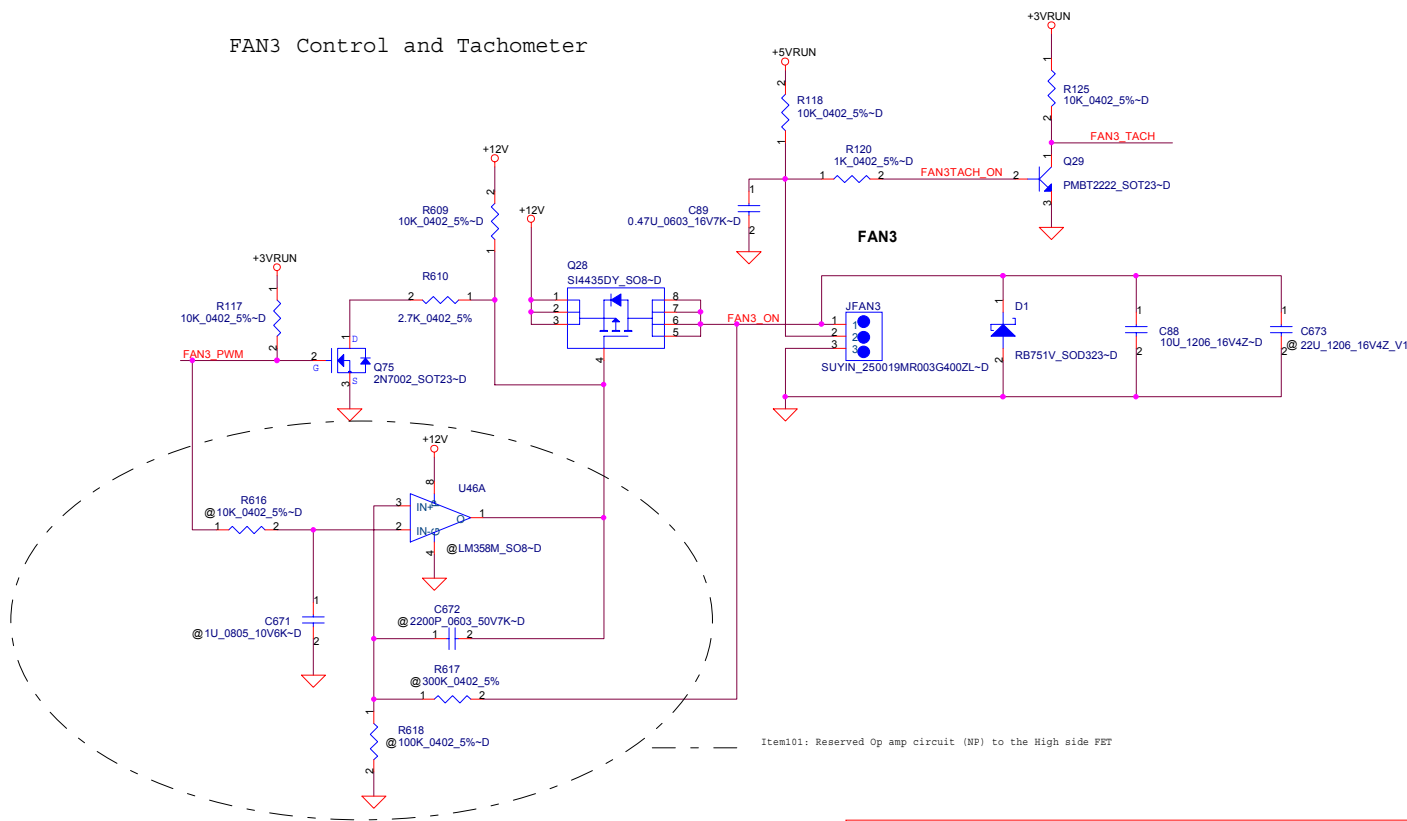


Channel B(DIMM1) Termination
resistors & Decoupling caps



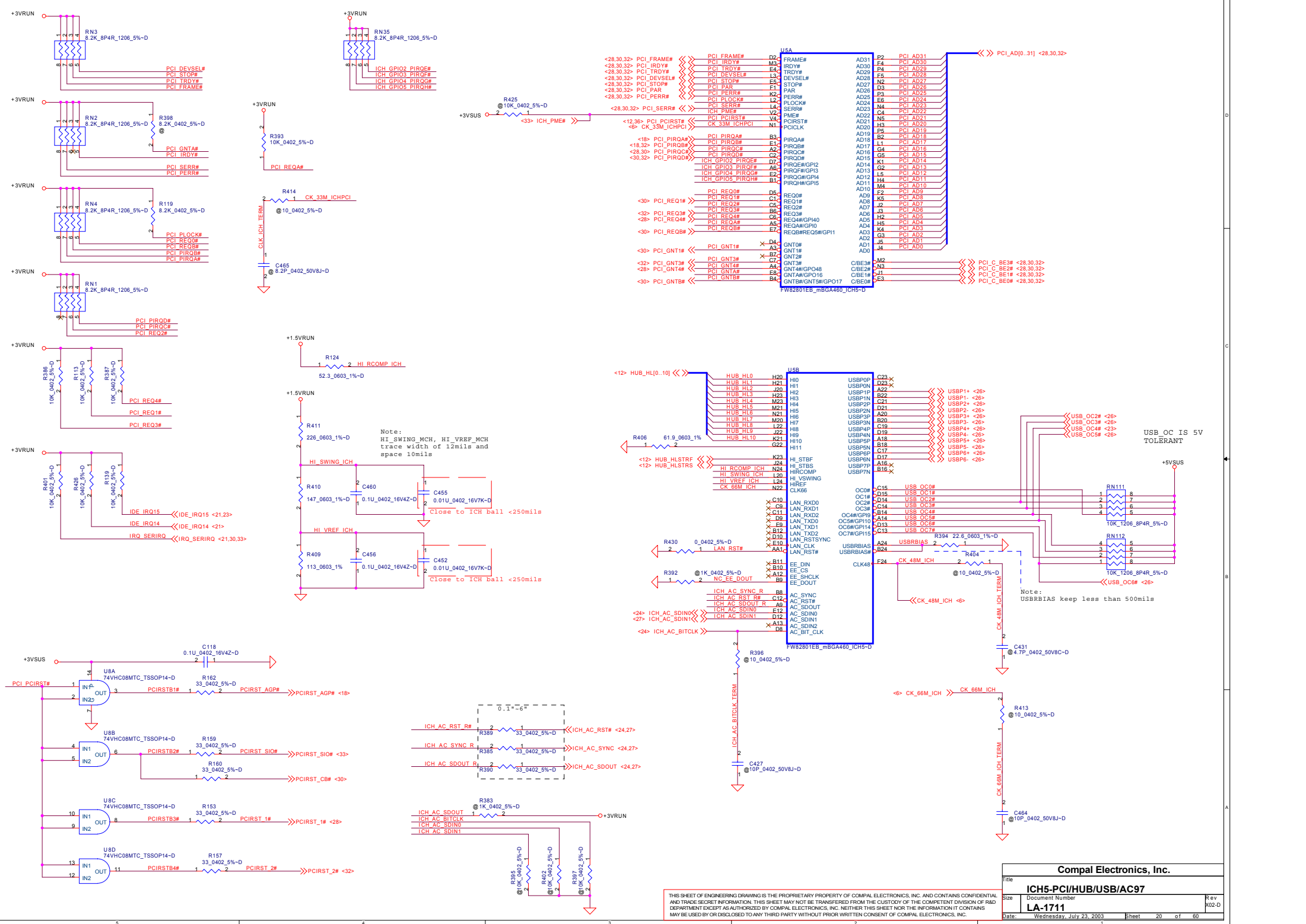


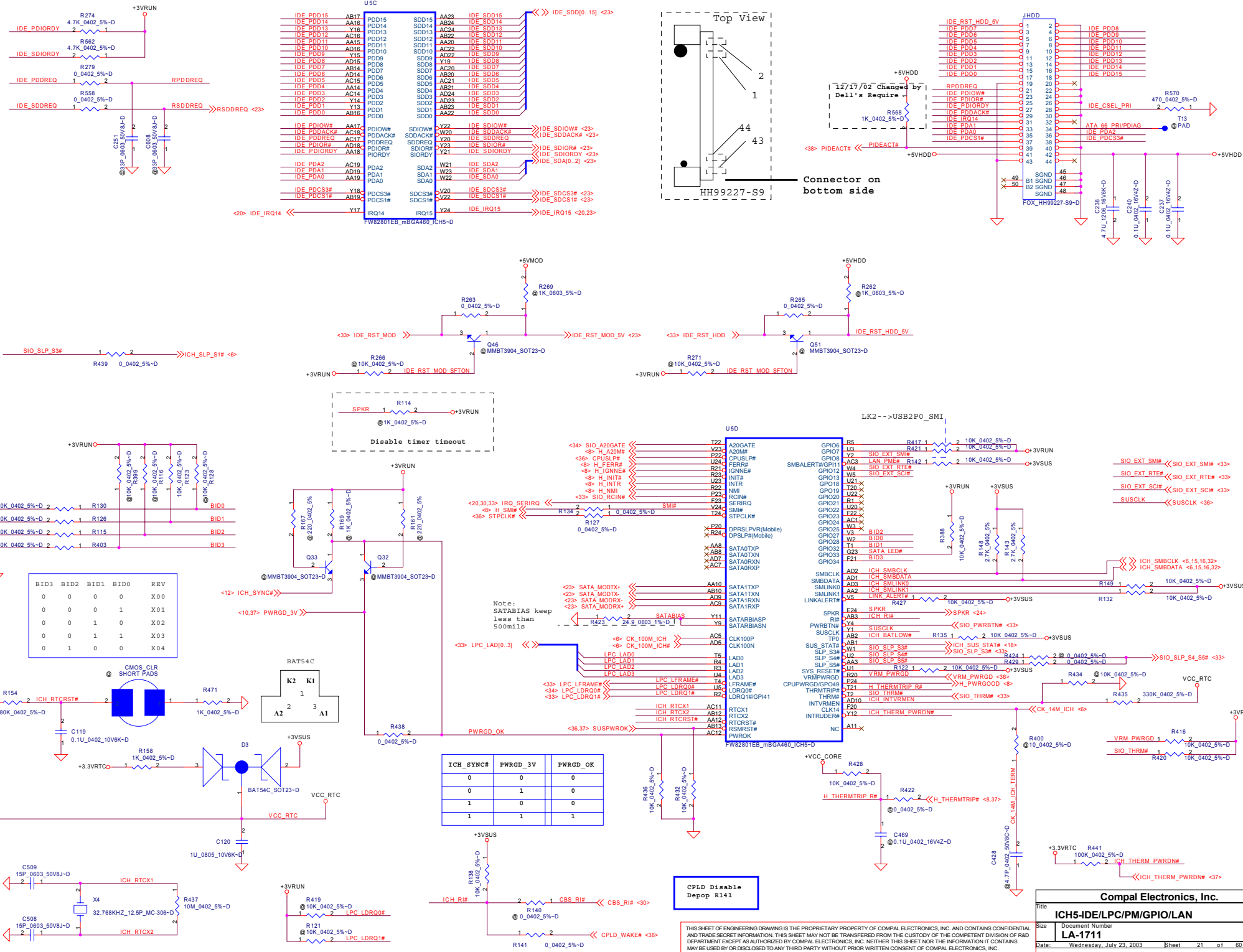
FAN3 Control and Tachometer

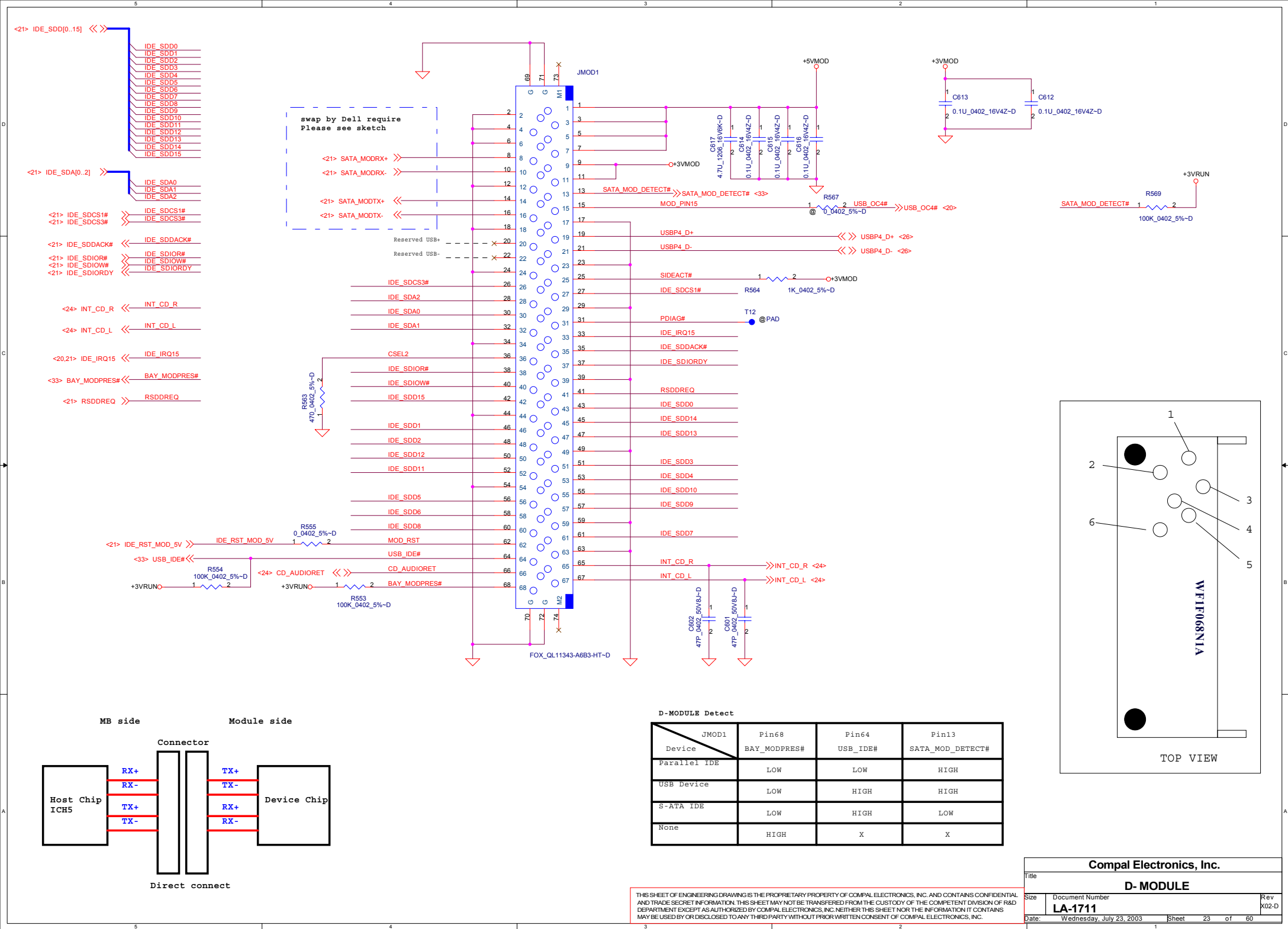


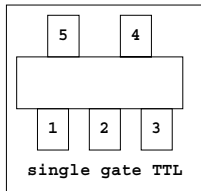
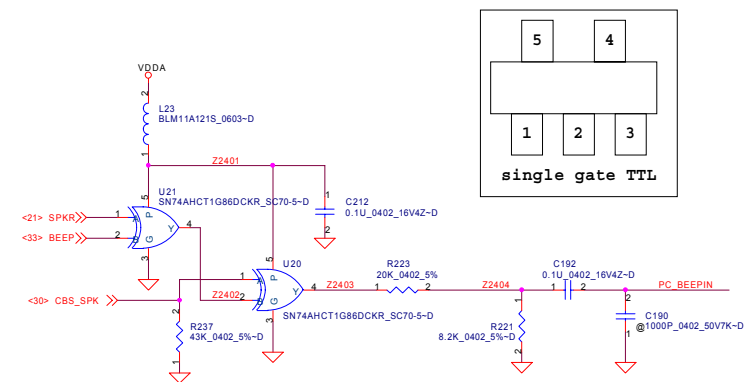
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

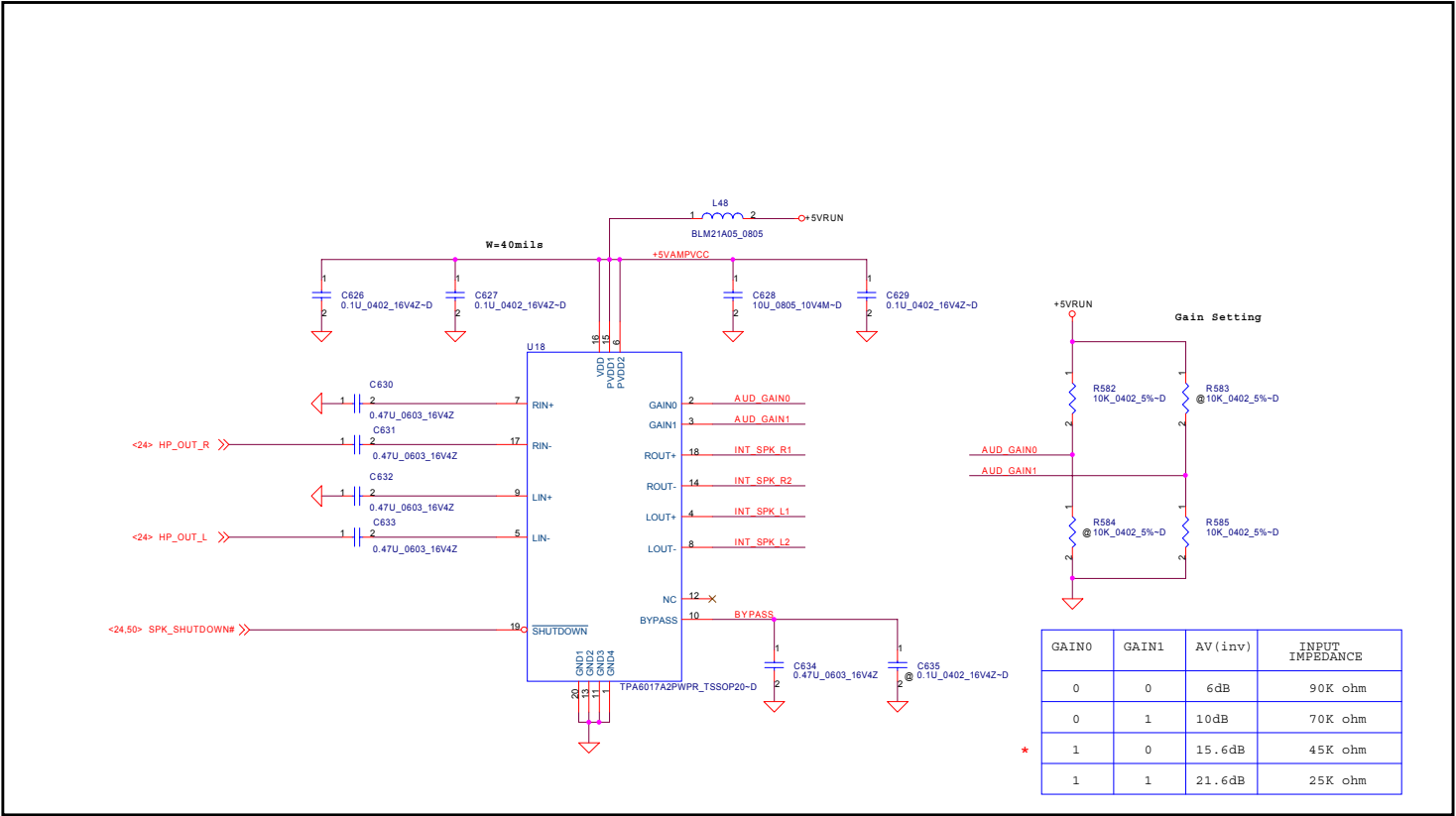
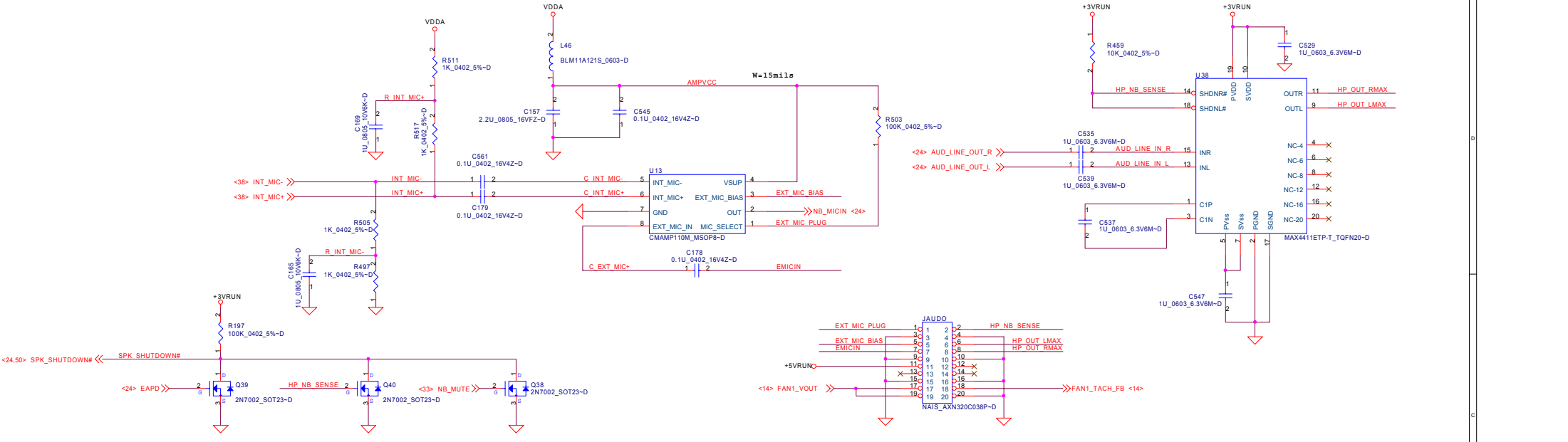
| Compal Electronics, Inc. | | | |
|--------------------------|----------------------------------|-------|----------|
| Title | CPU Thermal Sensor & FAN Control | | |
| Size | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Thursday, July 24, 2003 | Sheet | 19 of 60 |



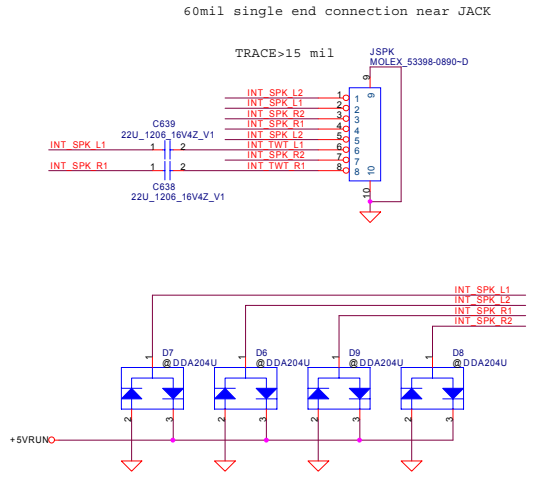


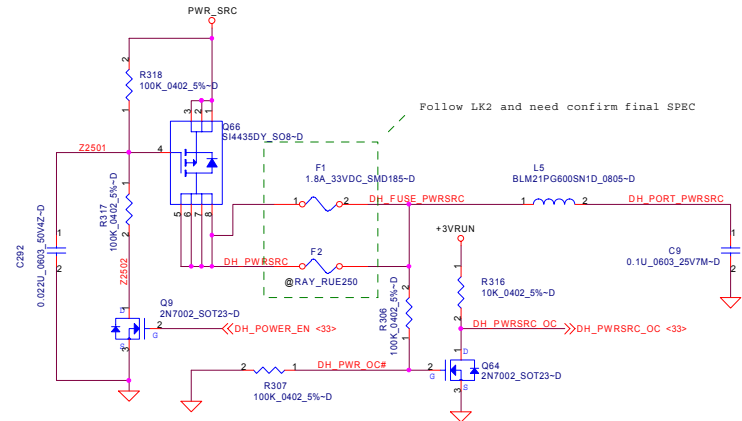
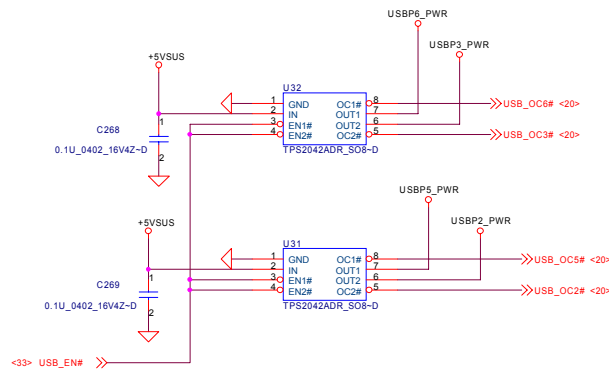
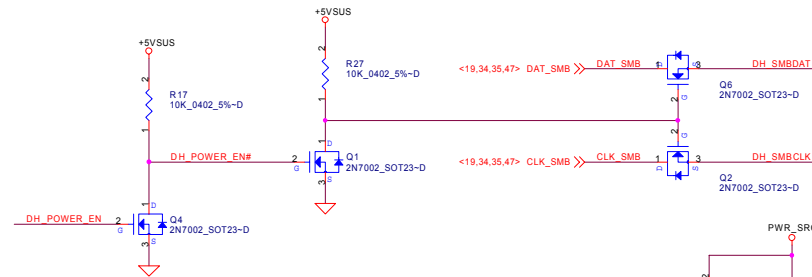
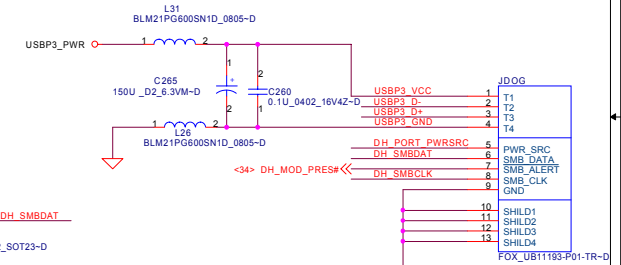
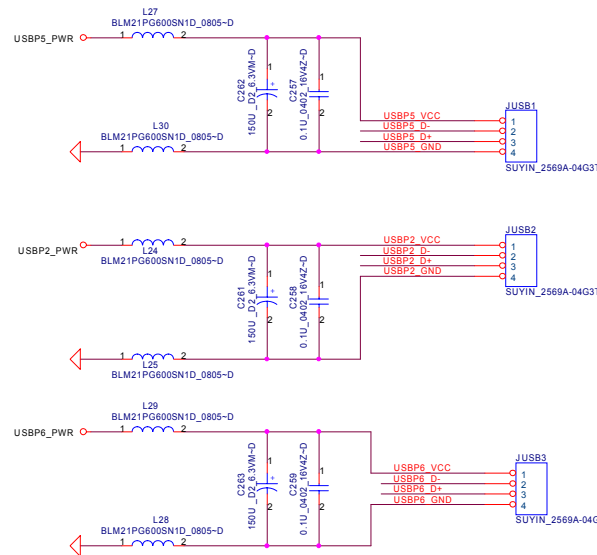
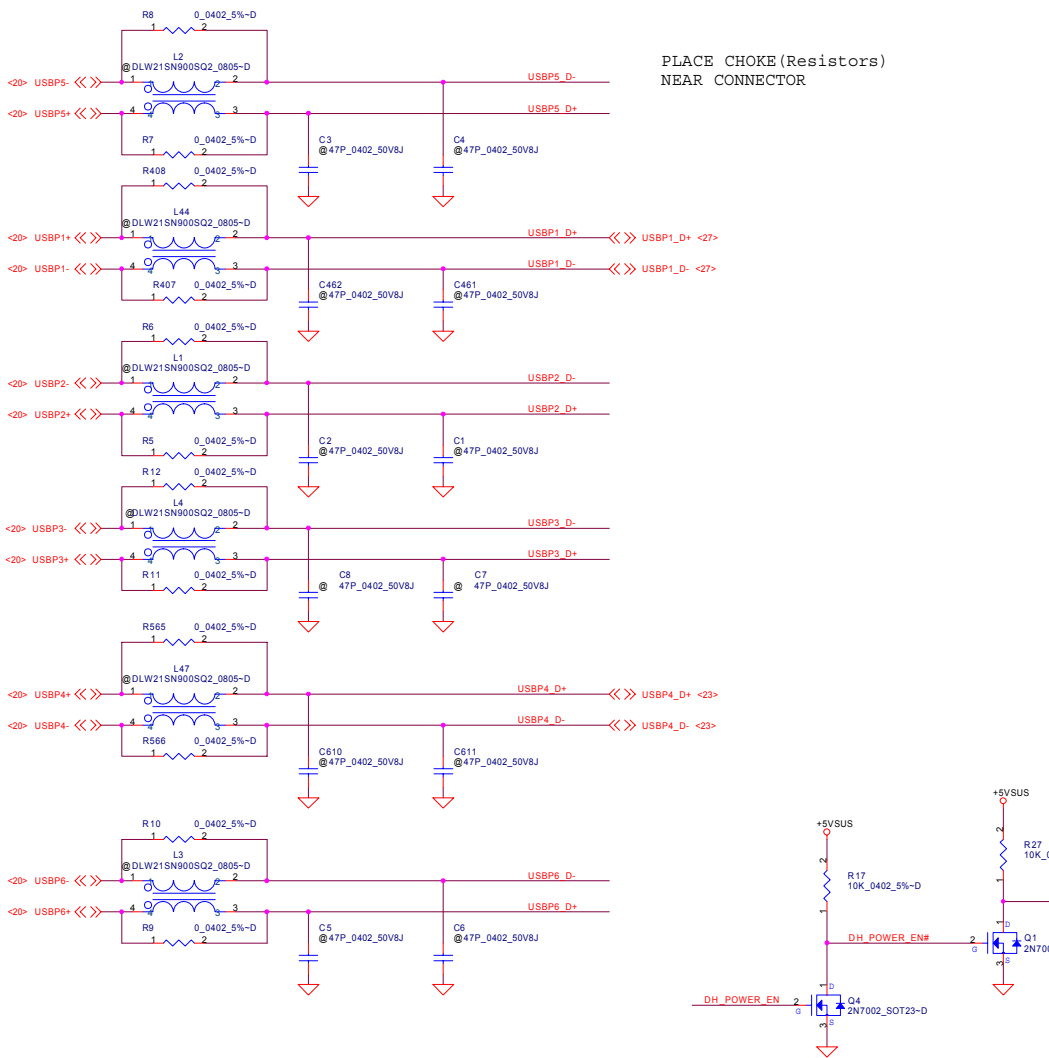






| GAIN0 | GAIN1 | AV (inv) | INPUT IMPEDANCE |
|-------|-------|----------|-----------------|
| 0 | 0 | 6dB | 90K ohm |
| 0 | 1 | 10dB | 70K ohm |
| 1 | 0 | 15.6dB | 45K ohm |
| 1 | 1 | 21.6dB | 25K ohm |





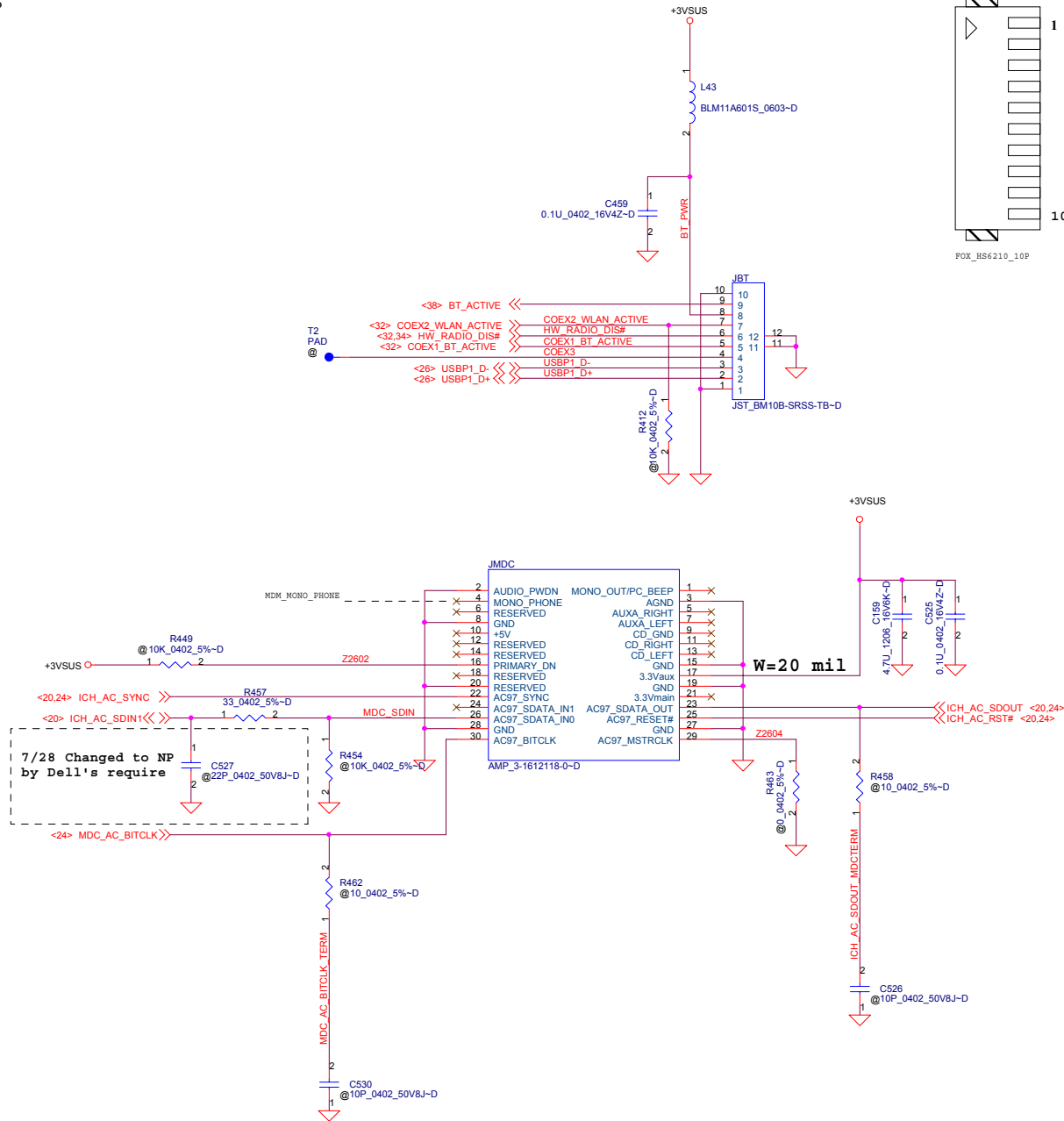
| USB PORT# | DESTINATION |
|-----------|-------------|
| 0 | Reserved |
| 1 | BT |
| 2 | BACK |
| 3 | DOG |
| 4 | MOD |
| 5 | BACK |
| 6 | BACK |
| 7 | Reserved |

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.

| Compal Electronics, Inc. | | |
|--------------------------|--------------------------|----------------|
| USB(2.0) Connector | | |
| Size | Document Number | Rev |
| LA-1711 | | K02-D |
| Date: | Wednesday, July 23, 2003 | Sheet 26 of 60 |

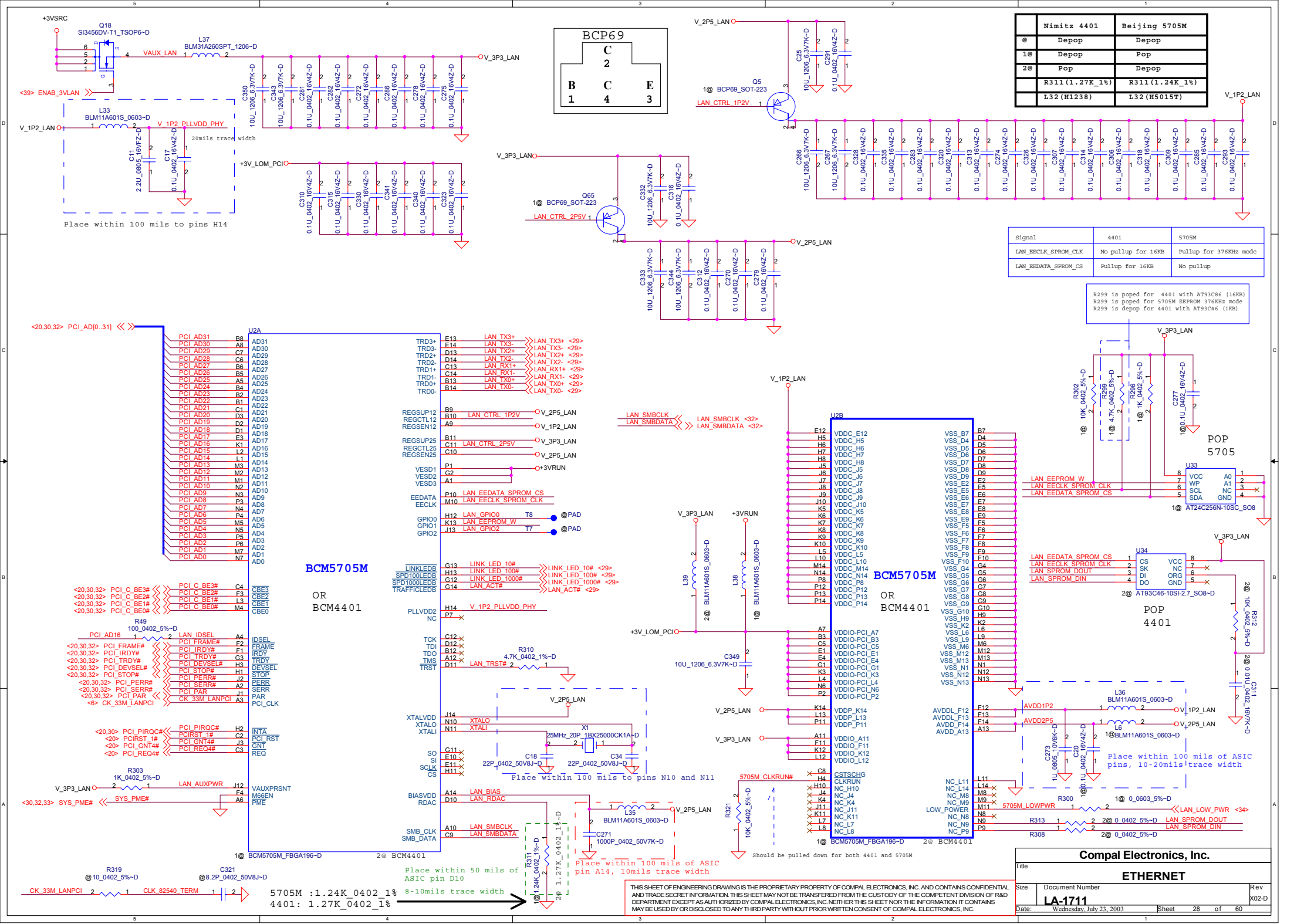
MDC cable wire clip

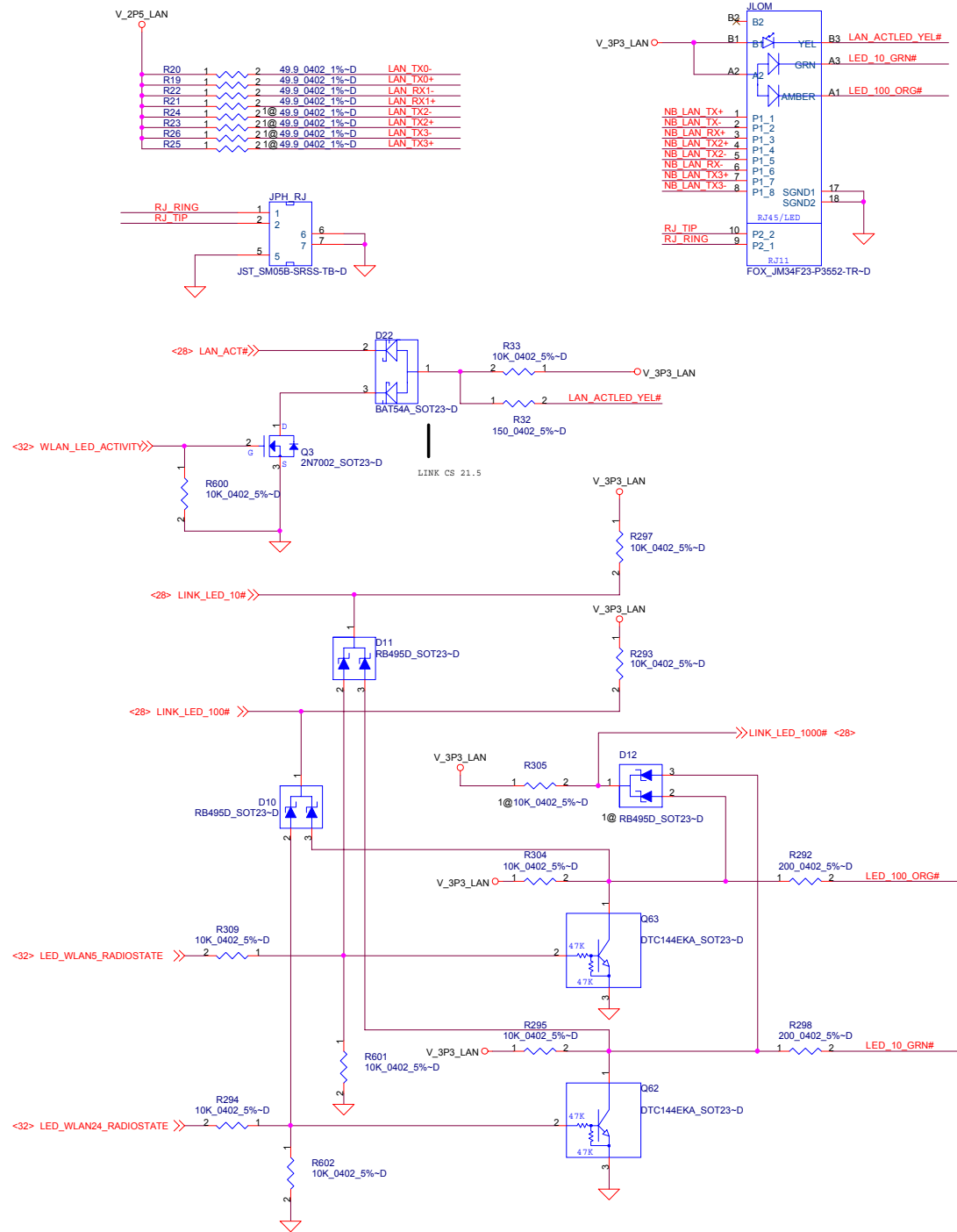
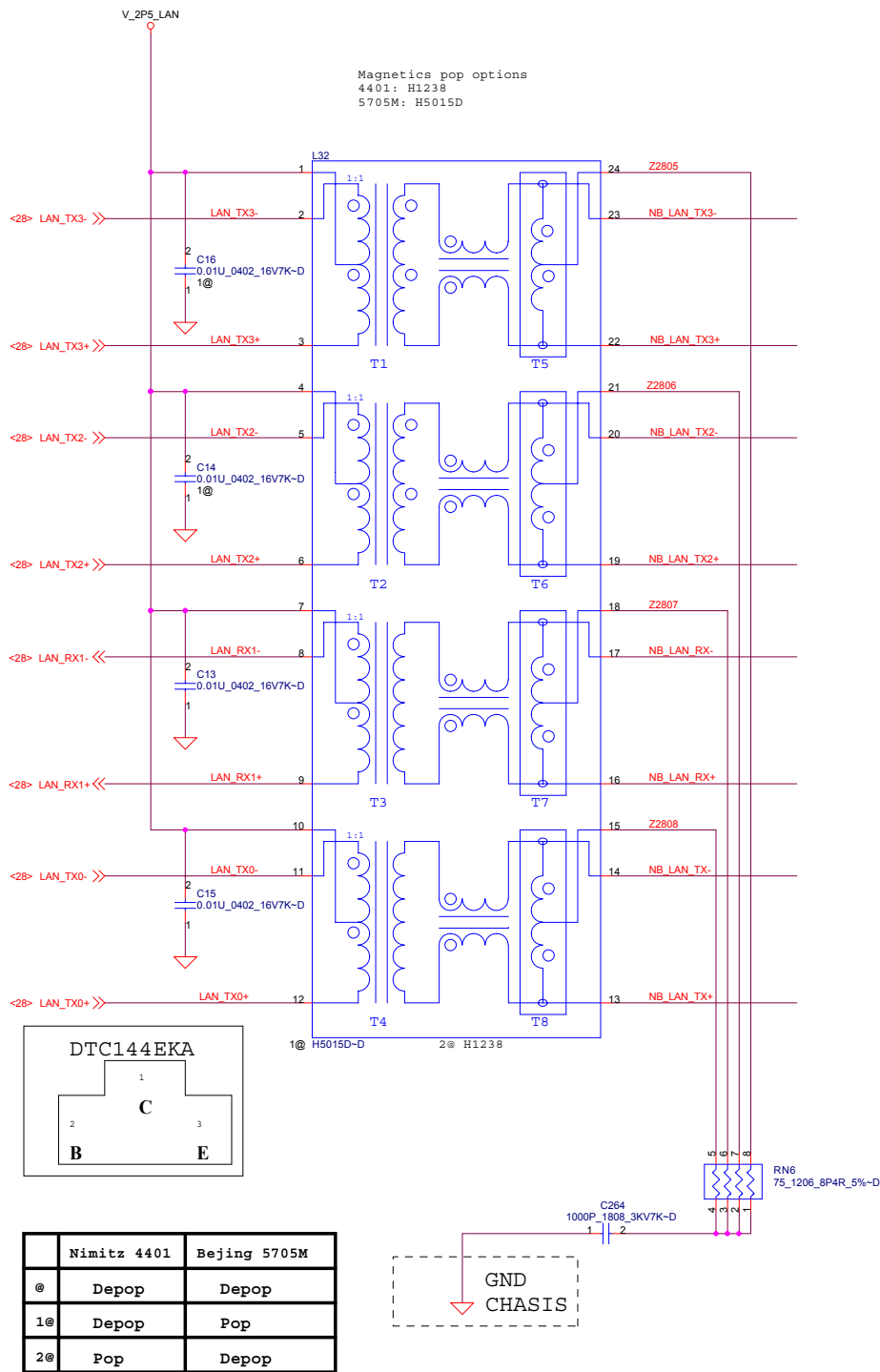
PAD2
MDC_CLIP
PAD3
MDC_CLIP



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.

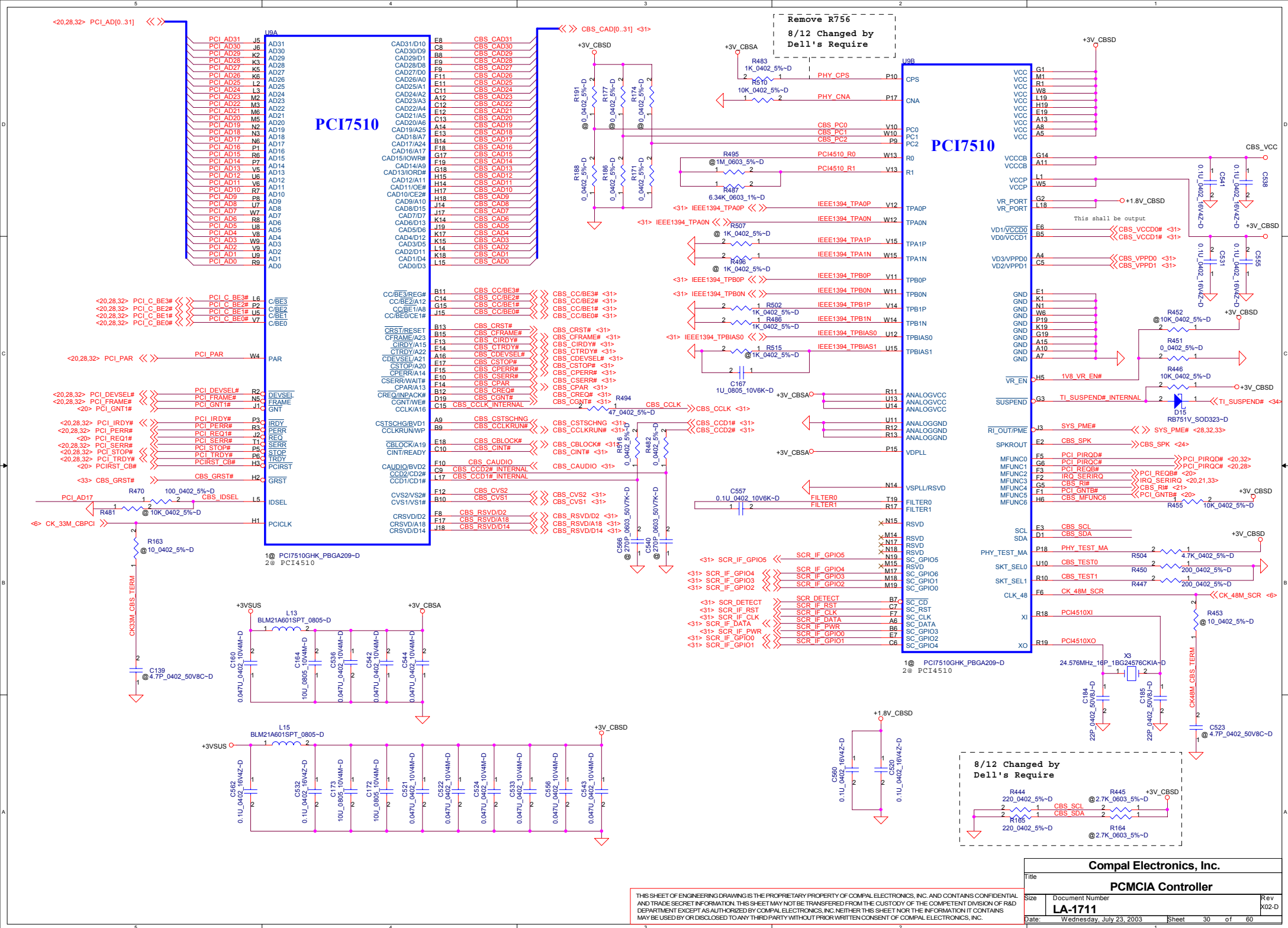
| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|-------|----------|
| Title | | | |
| BT PORT and MDC | | | |
| Size | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Wednesday, July 30, 2003 | Sheet | 27 of 60 |



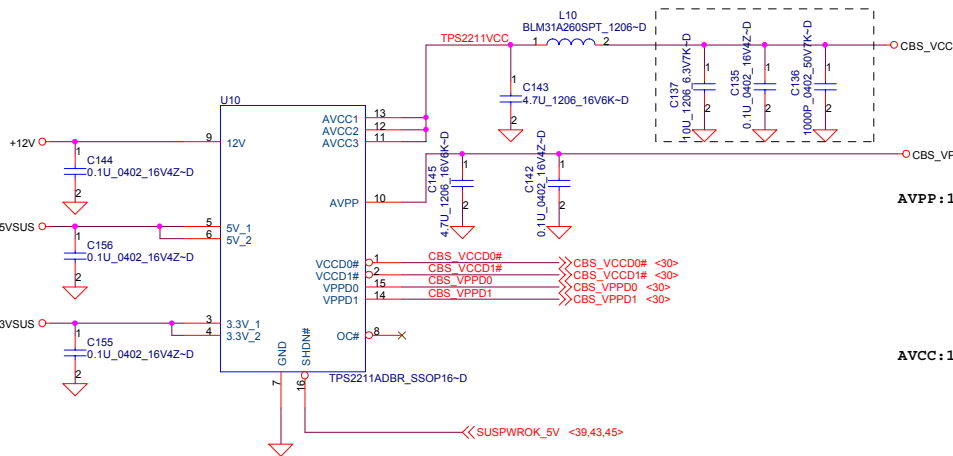
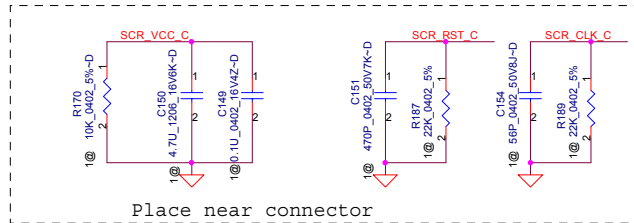
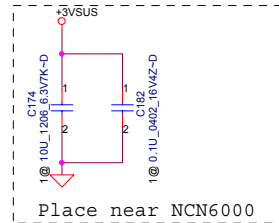
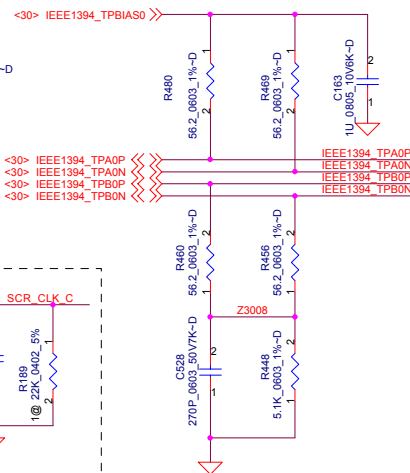
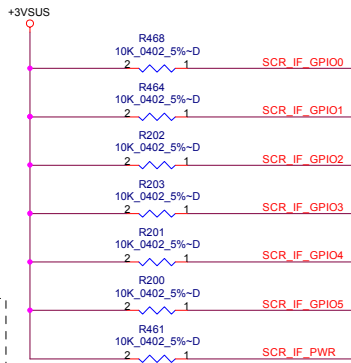
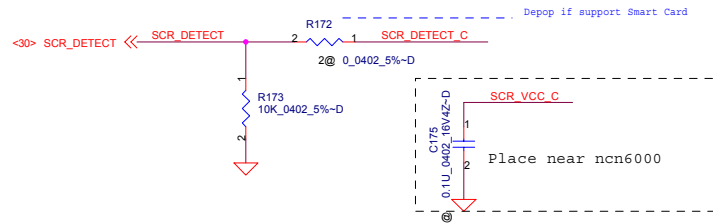
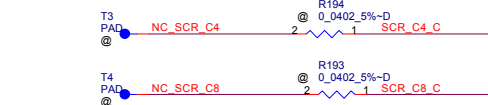


THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|-------|----------|
| Title LAN TRANSFOMER | | | |
| Size | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Wednesday, July 23, 2003 | Sheet | 29 of 60 |

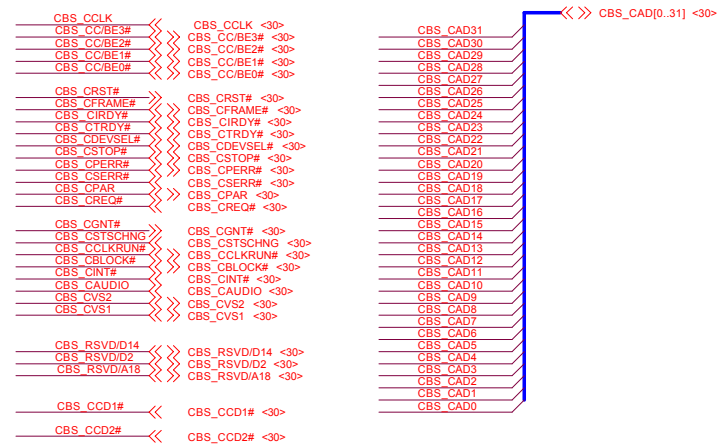
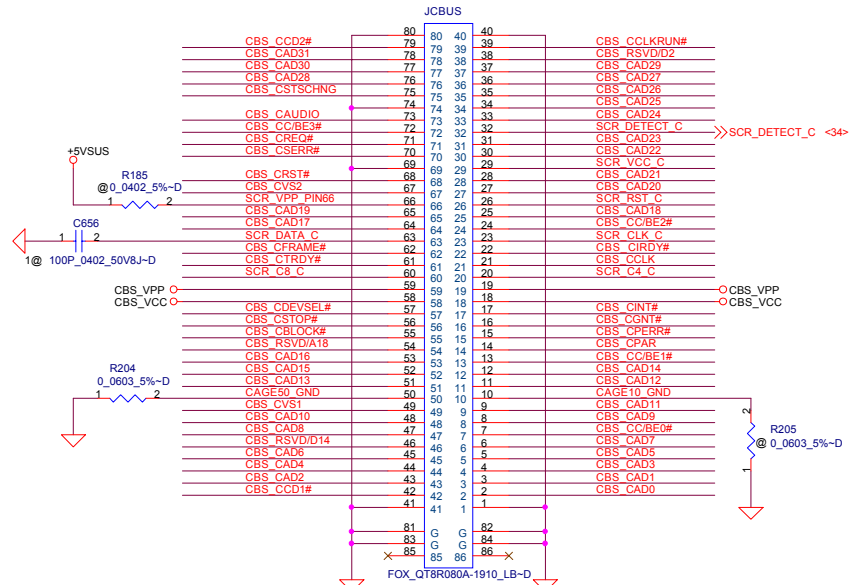


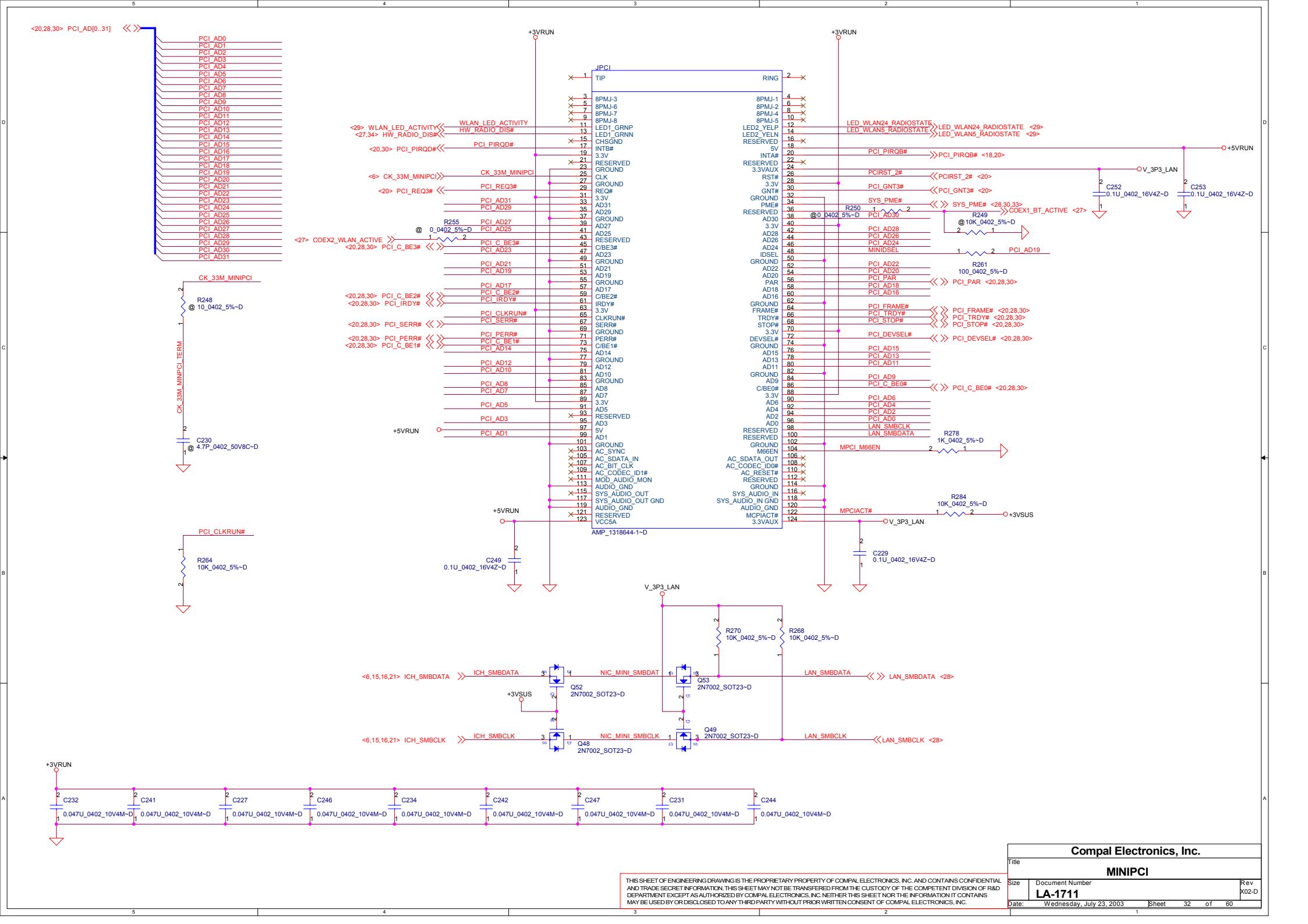
| | | |
|----|----------------|-----------------|
| | Nimitz PCI4510 | Beijing PCI7510 |
| @ | Depop | Depop |
| 1@ | Depop | Pop |
| 2@ | Pop | Depop |

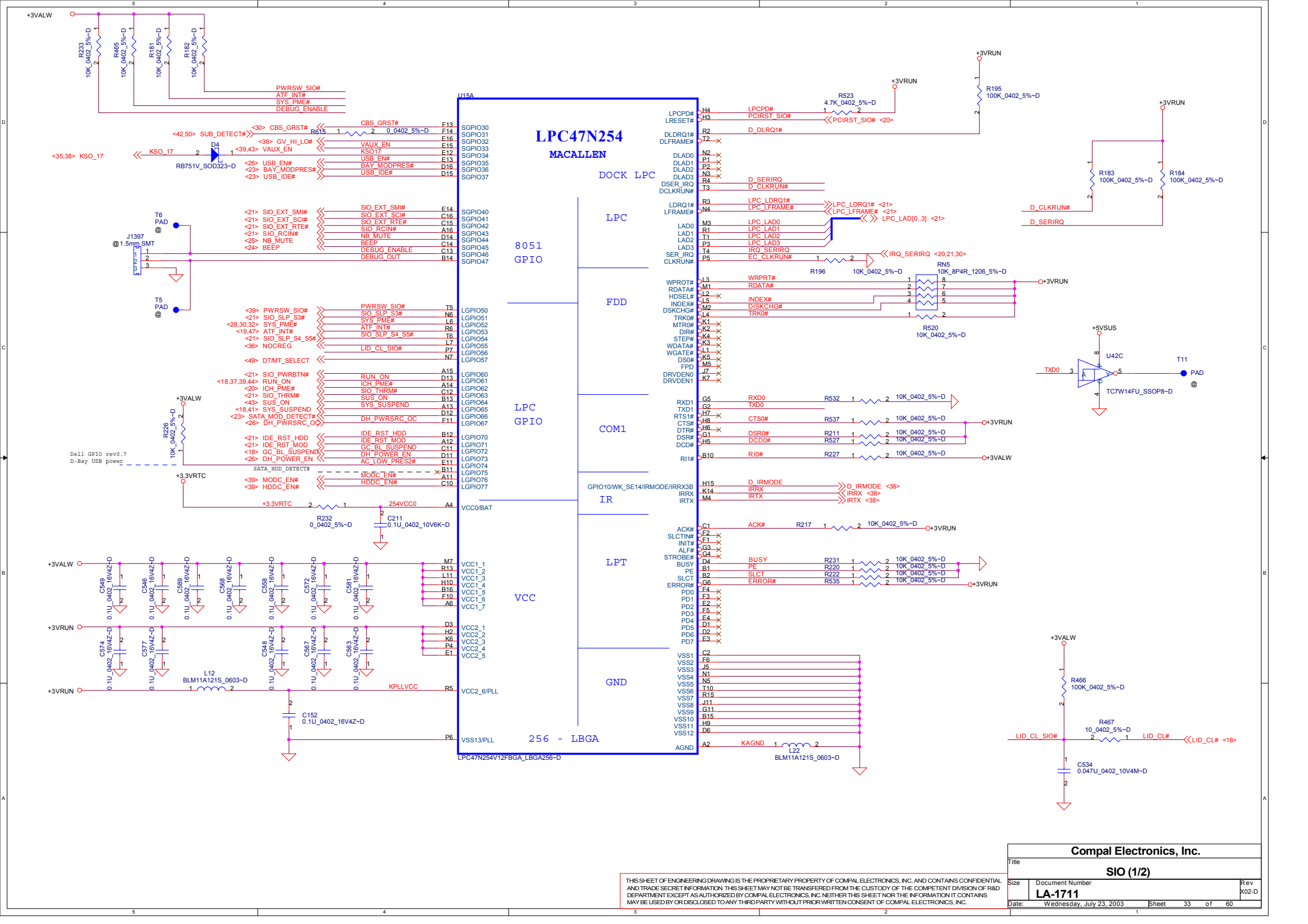


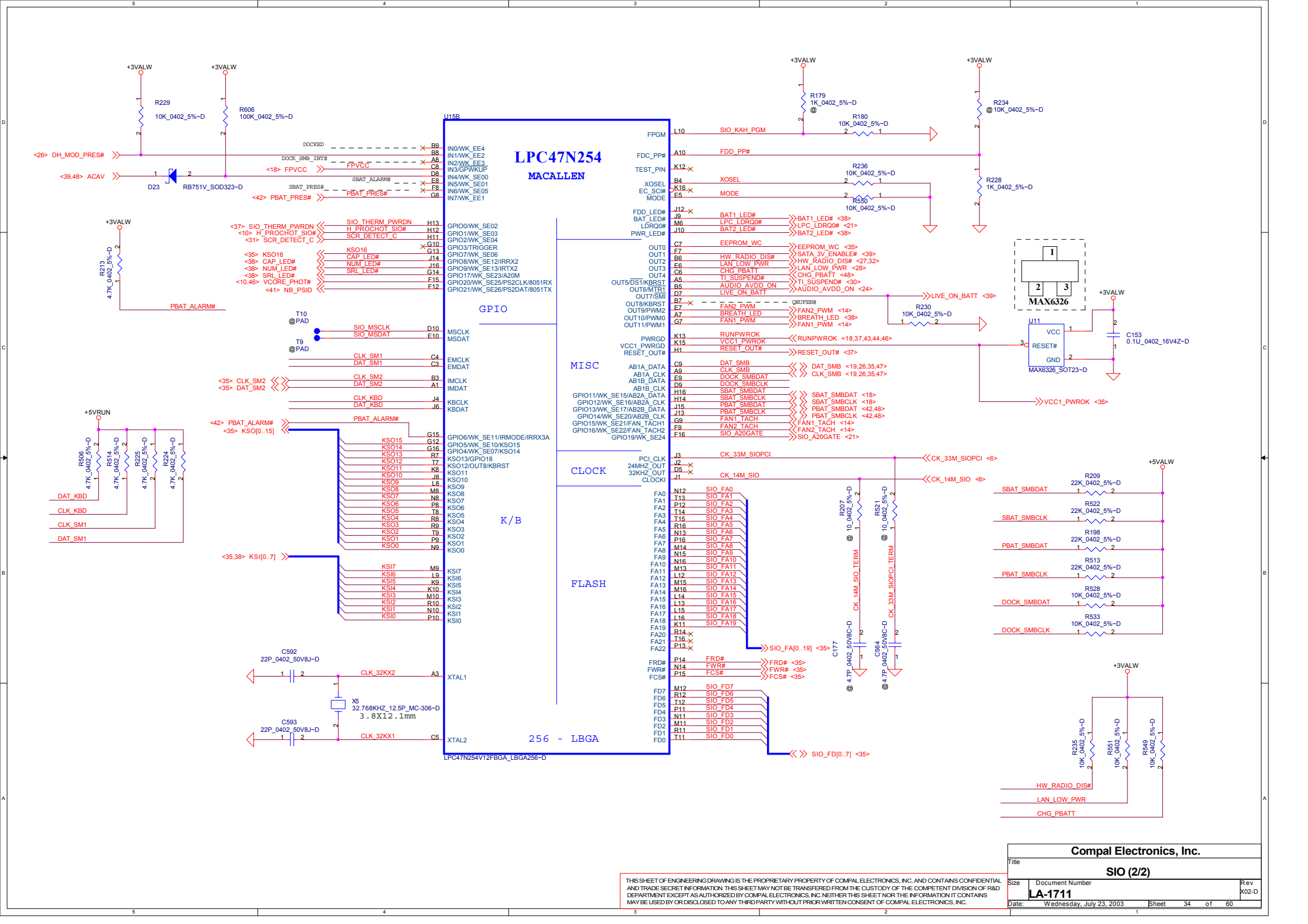
| SHDN# | VPPD1 | VPPD0 | CBS_VPP |
|-------|-------|-------|---------|
| 1 | 0 | 0 | |
| 1 | 0 | 1 | |
| 1 | 1 | 0 | |
| 1 | 1 | 1 | |
| 0 | X | X | |

| SHDN# | VCCD1# | VCCD0# | CBS_VCC |
|-------|--------|--------|---------|
| 1 | 0 | 0 | |
| 1 | 0 | 1 | |
| 1 | 1 | 0 | |
| 1 | 1 | 1 | |
| 0 | X | X | |

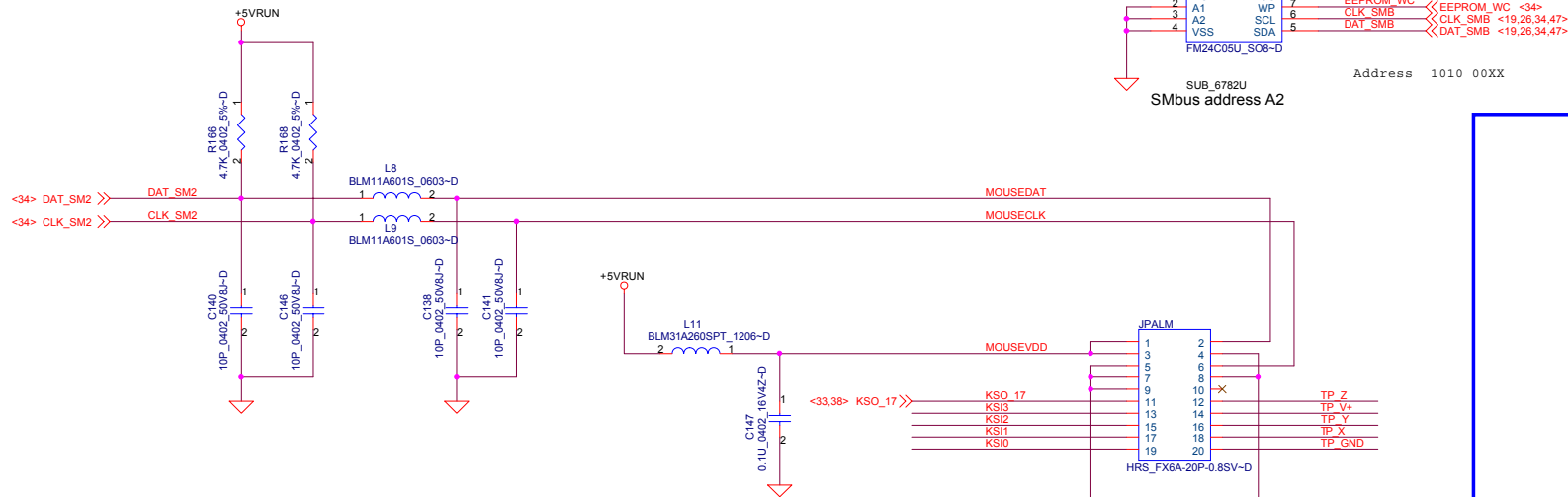




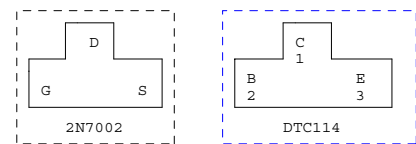
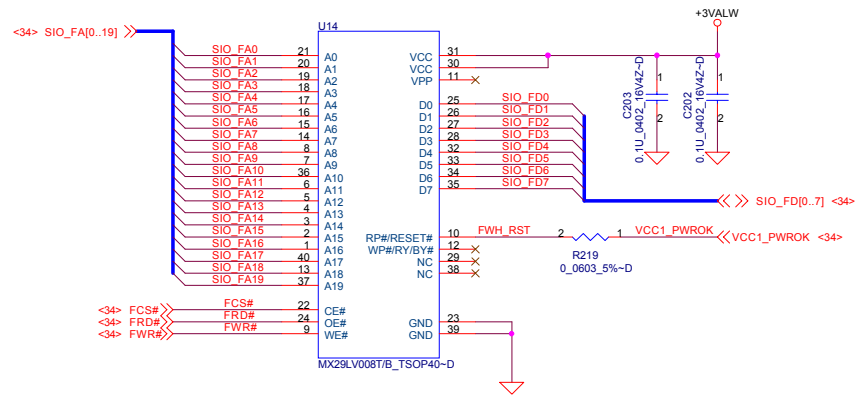
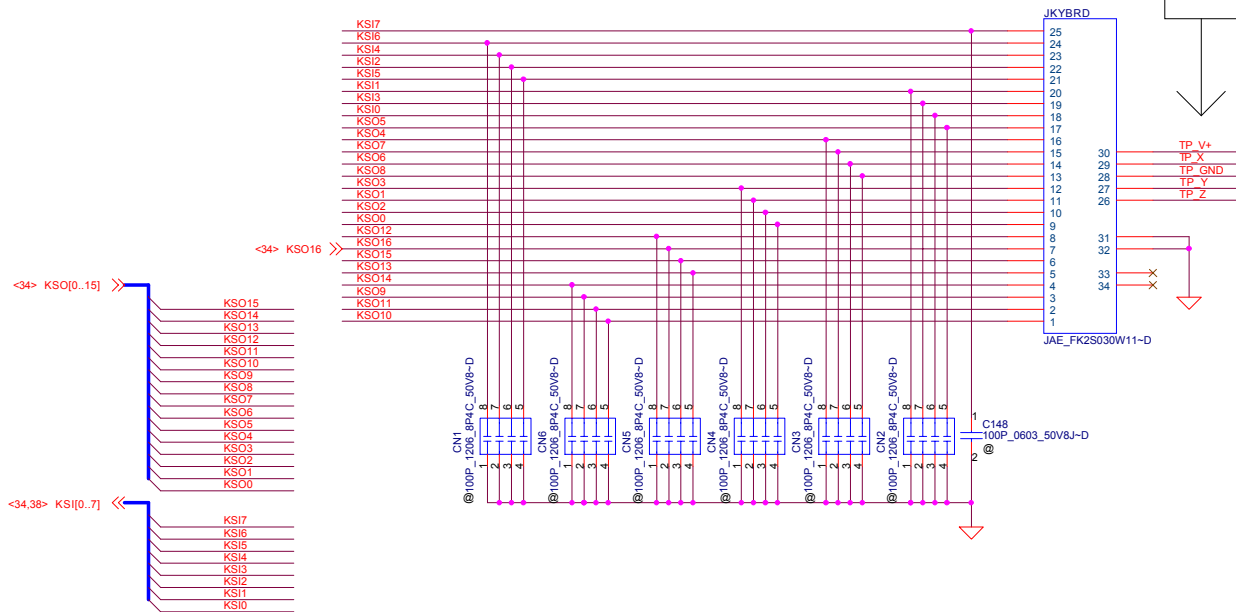
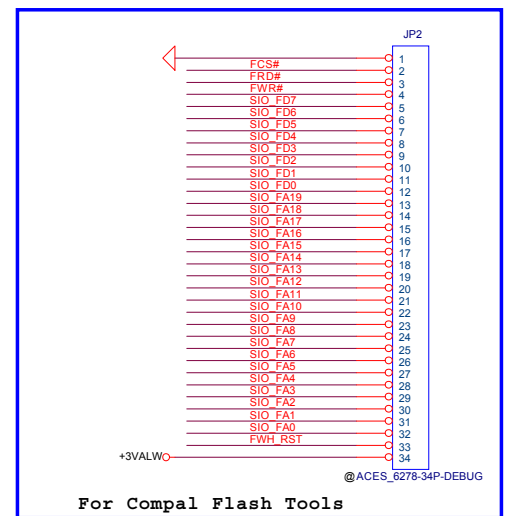




THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.



Keep no nosie coupled,
Especially the TP_GND

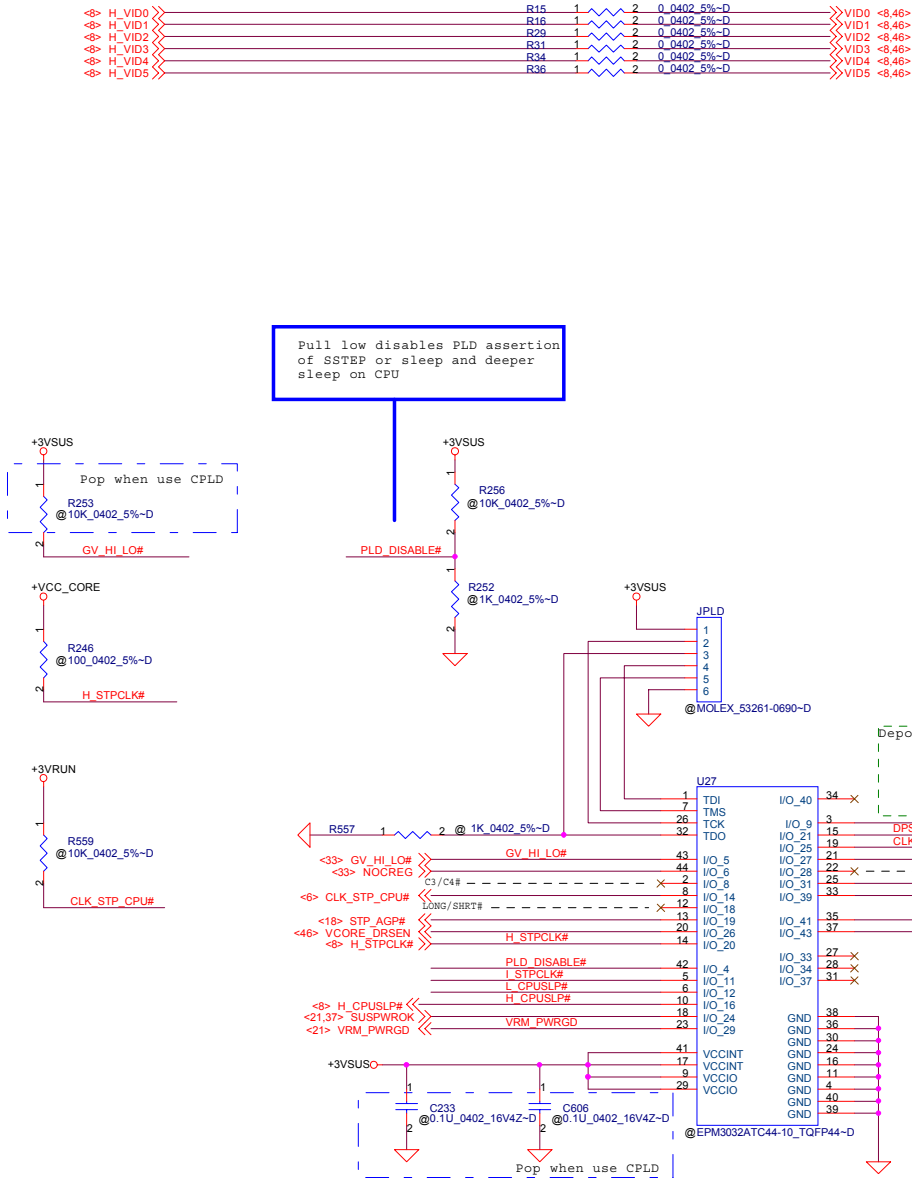


| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|-------|----------|
| INT KB & ROM | | | |
| Title | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date | Wednesday, July 23, 2003 | Sheet | 35 of 60 |

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.

CPLD Function options Table

| No. | Function | Speedstep enable | Speedstep disable |
|-----|-----------------------------------|-----------------------------|------------------------------------|
| 1 | CPLD (U27) | Pop U27, C233, C606, R557, | Depop U27, JPLD, C233, C606, R557, |
| 2 | STPCLK# (From ICH to CPU) | Pop Q42, R254, Depop R259 | Depop Q42, R254, Pop R259 |
| 3 | CPUSLP# (From ICH to CPU) | Pop Q43, R561, Depop R251 | Depop Q43, R561, Pop R251 |
| 4 | VRMPWRGD (From Reset to ICH) | Depop R243 | Pop R243 |
| 5 | STP_AGP# (PLD to AGP) | Depop R96, Pop R98 (P.18) | Pop R96, Depop R98 (P.18) |
| 6 | CPUPREF# (From PLD to CPU) | Pop R380(P.8) | Depop R380 (P.8) |
| 7 | STPCPU_VR (From PLD to CPU Power) | Pop PR94, Depop PR95 (P.46) | Depop PR94, Pop PR95 (P.46) |
| 8 | DPRSLPVR (From PLD to CPU power) | Pop PR93, Depop PR92 (P.46) | Depop PR93, Pop PR92 (P.46) |
| 9 | PLD_WAKE# (From PLD to ICH) | Pop R141 (P.21) | Depop R141 (P.21) |
| 10 | PLD_DISABLE# | Pop R256, Depop R252 | Depop R256, Pop R252 |
| 11 | DPSLP# | Pop R76, R78(P.8) | Depop R76, R78(P.8) |
| 12 | PCI_PCIRST#(From ICH to PLD) | Pop R245 | Depop R245 |
| 13 | GV_HI_LO# | Pop R253 | Depop R253 |

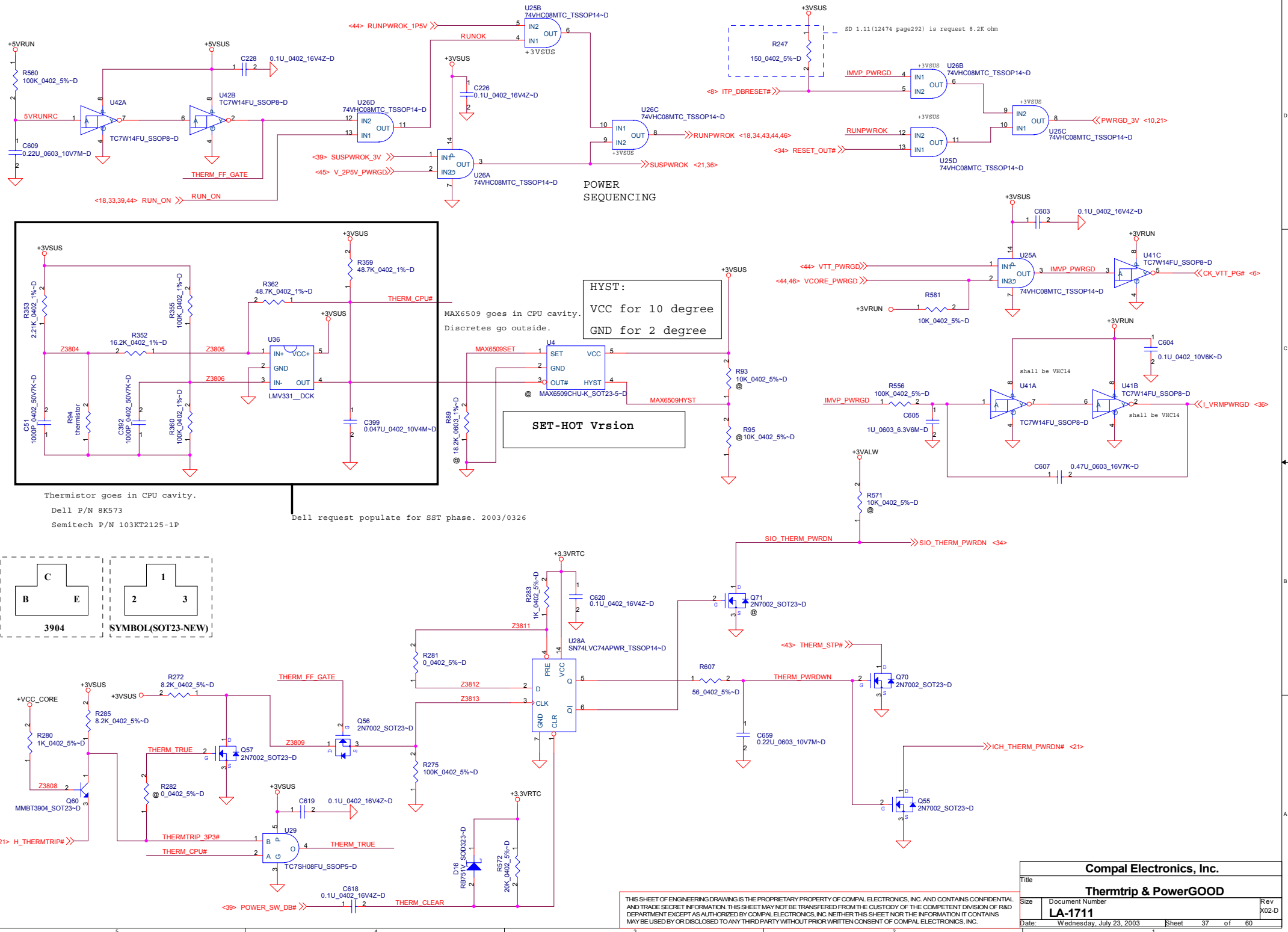


C
1
B 2 3 E

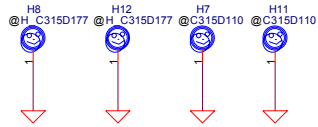
DTC114TKA

| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|-------|----------|
| PLD | | | |
| Title | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Wednesday, July 23, 2003 | Sheet | 36 of 60 |

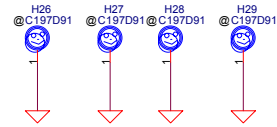
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.



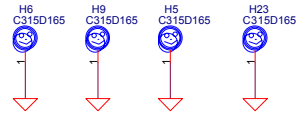
CPU screw hole



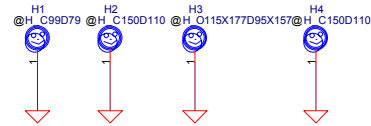
PCMCIA Slot screw hole



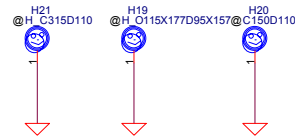
MCH screw hole



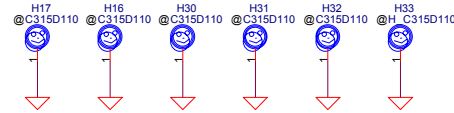
Others screw hole



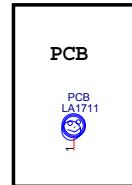
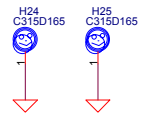
VGA Conn. screw hole



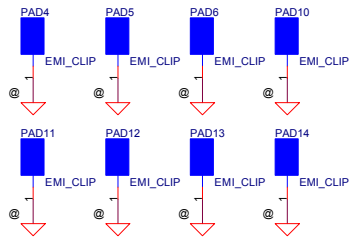
MDC



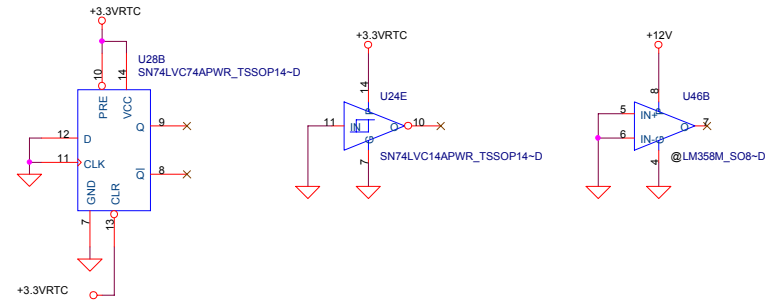
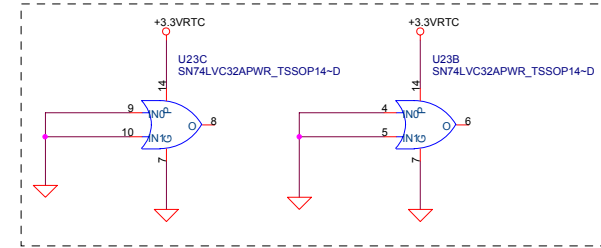
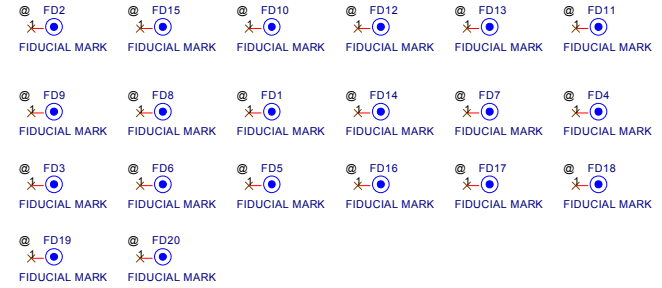
FAN Conn. screw hole

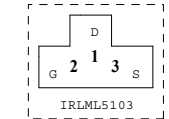
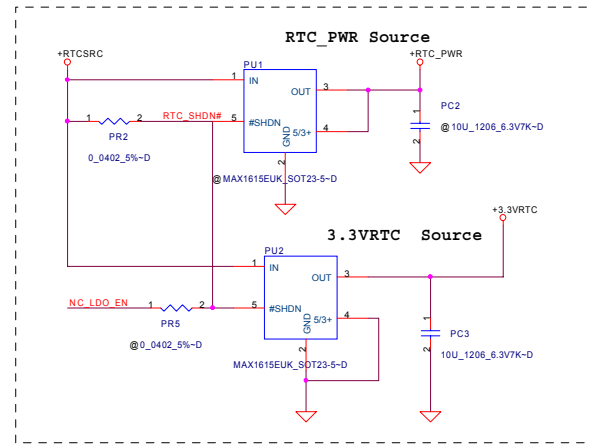
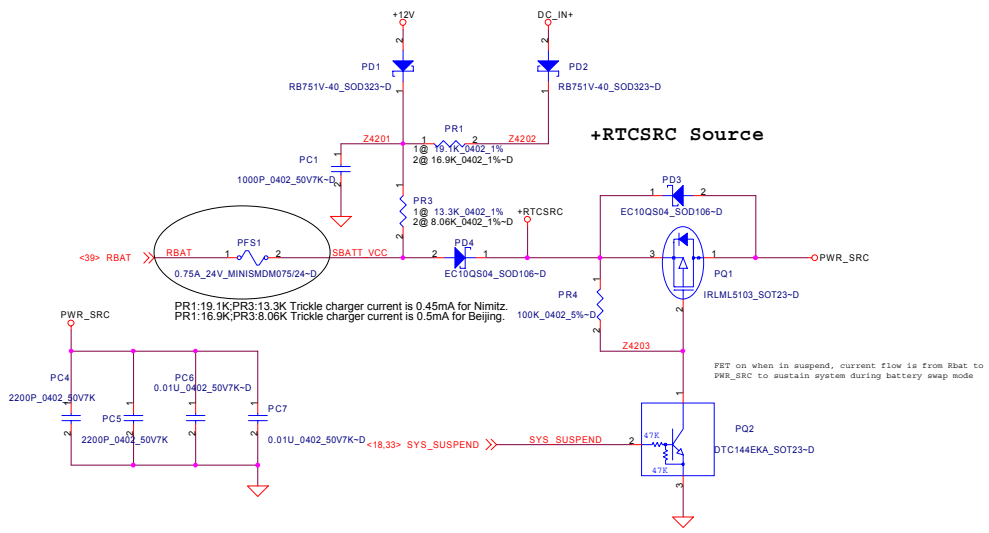


EMI Cilps

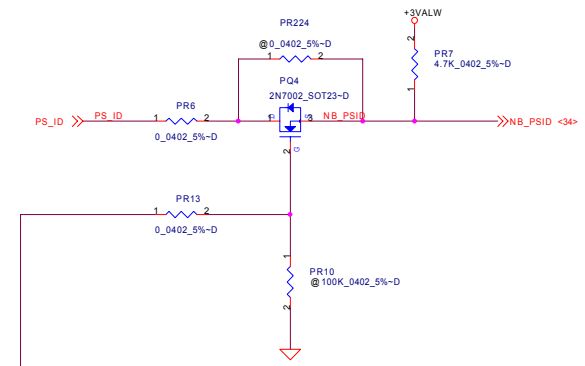
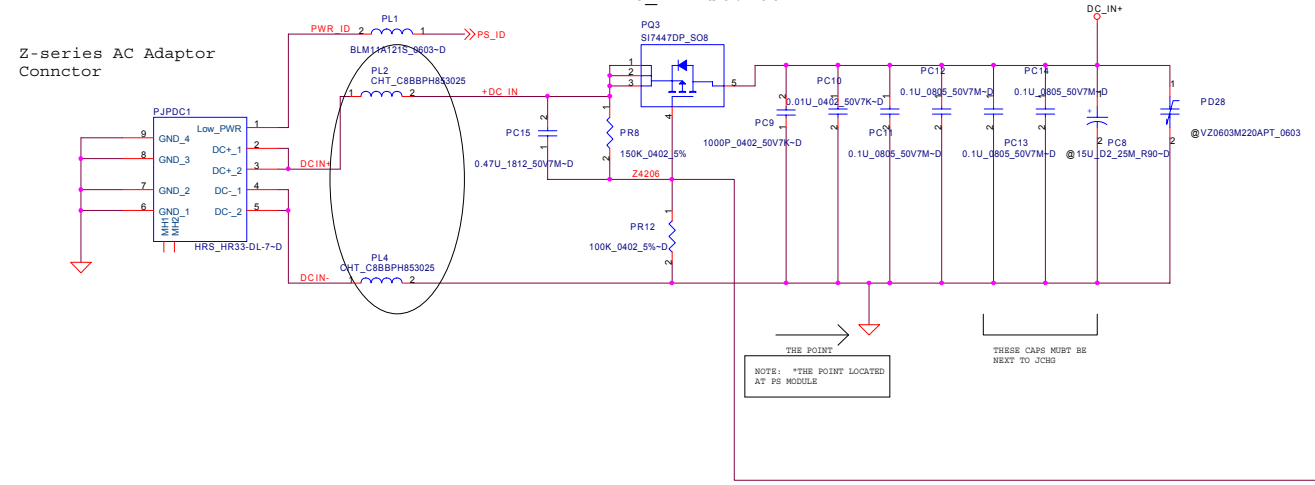


Fiducial Mark



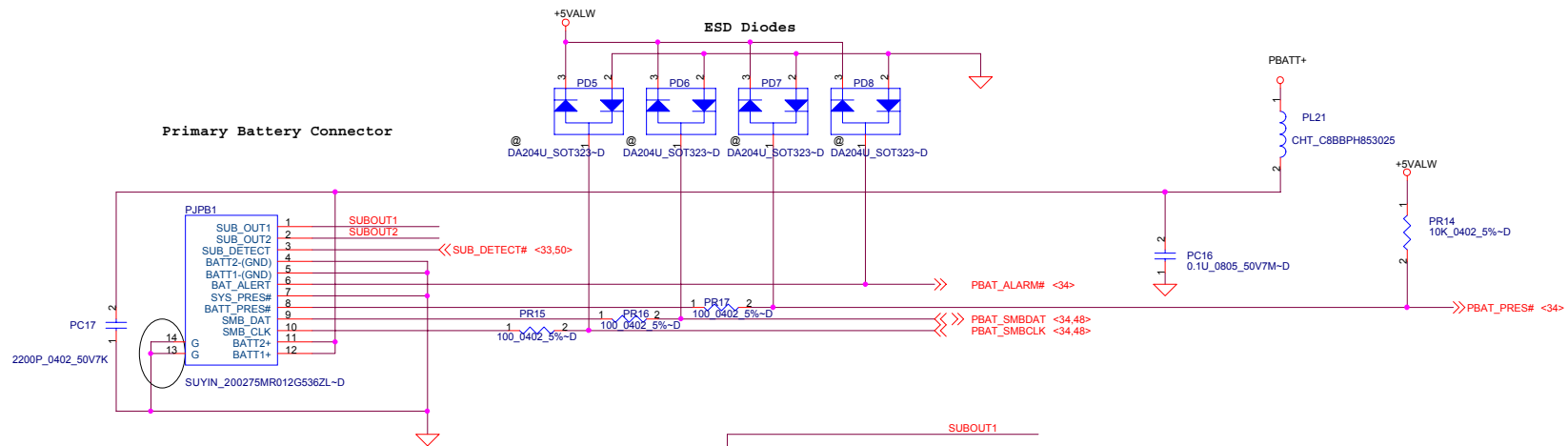


Z-series AC Adaptor Connector

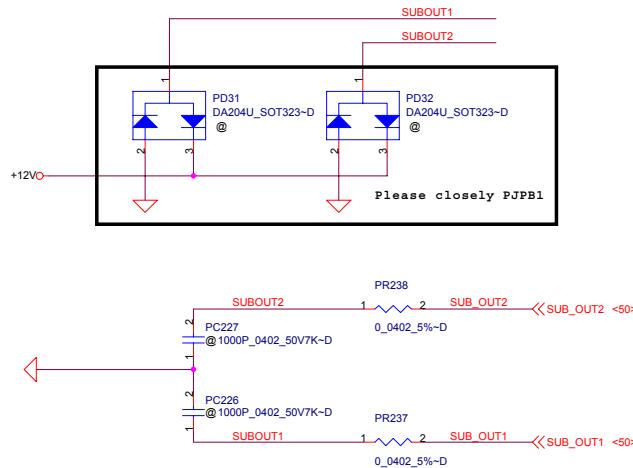
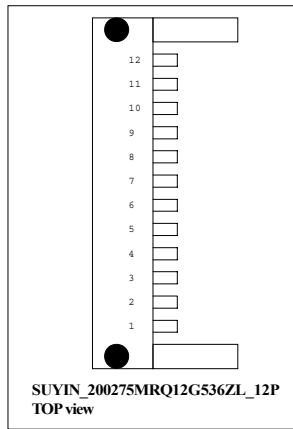


| Compal Electronics, Inc. | | | |
|--------------------------|-----------------|-------|--------------------------|
| Title | | DC-IN | |
| Size | Document Number | Rev | X02-D |
| LA-1711 | | Date | Wednesday, July 23, 2003 |
| Sheet | | 41 | of 60 |

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.

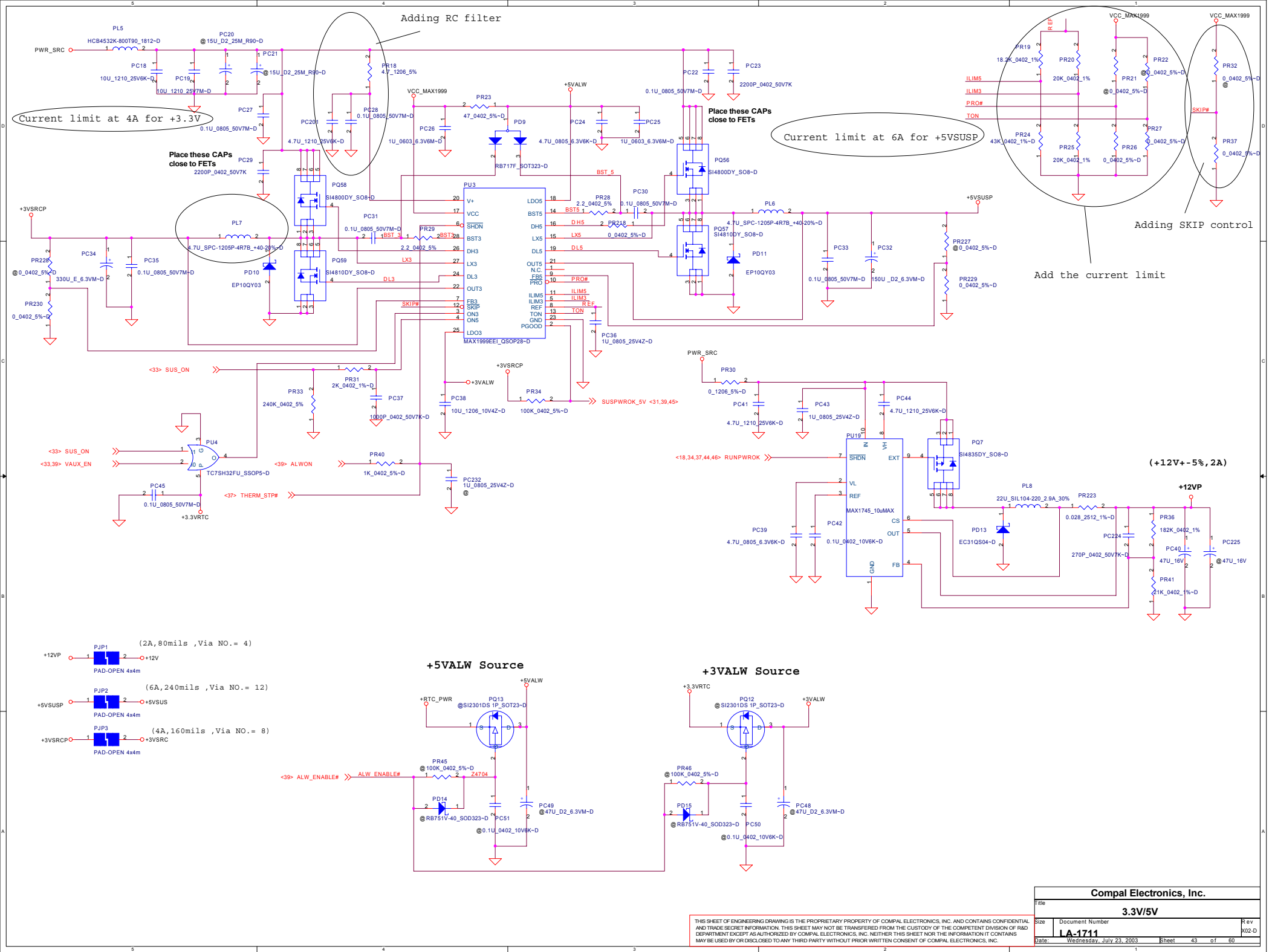


TRACE →
THE POINT →

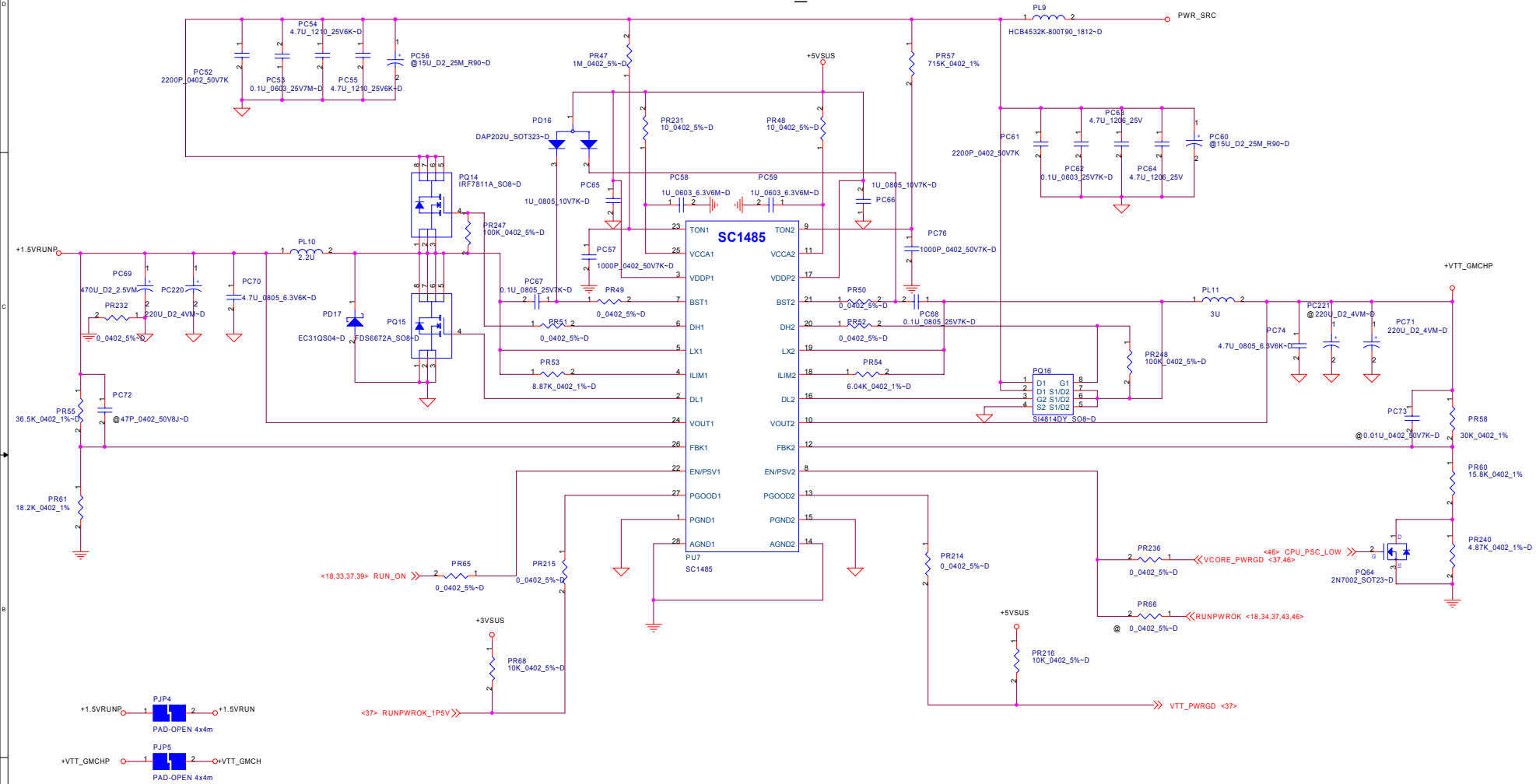


THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|-------|----------|
| Title | | | |
| Battery CONN. | | | |
| Size | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Wednesday, July 23, 2003 | Sheet | 42 of 60 |



+1.5VRUNP/+VTT_GMCHP

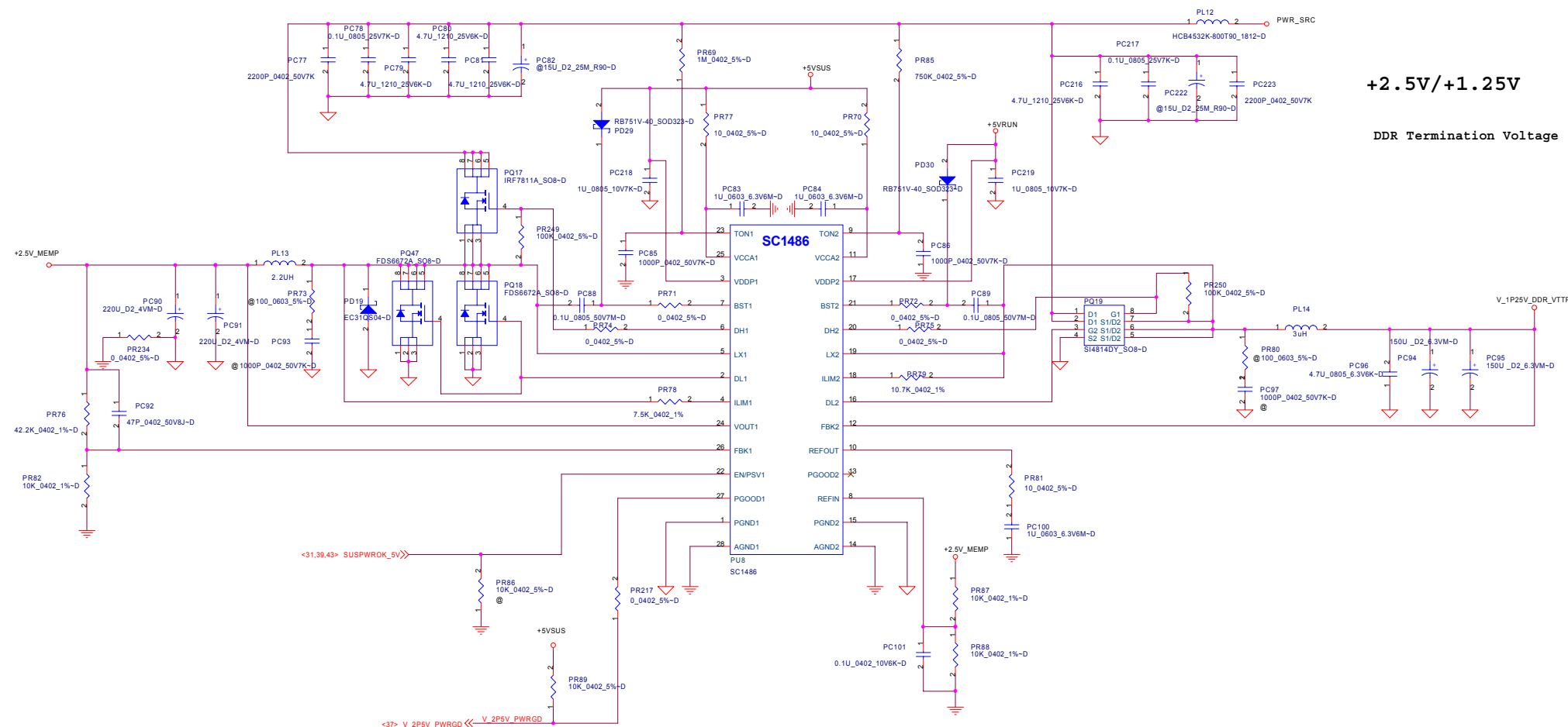


Dell-Compal Confidential

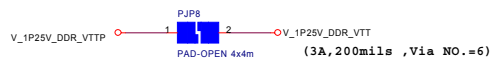
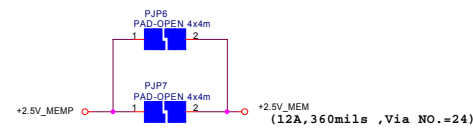
Compal Electronics, Inc.

| | | | |
|-------|------------------------|--------------------------------|--------------|
| Title | +1.5VRUNP & +VTT_GMCHP | | |
| | Size B | Document Number | Rev X02-D |
| | | LA-1711 | |
| | | Date: Wednesday, July 23, 2003 | |
| | Sheet | 44 | of 60 |

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 THE 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.

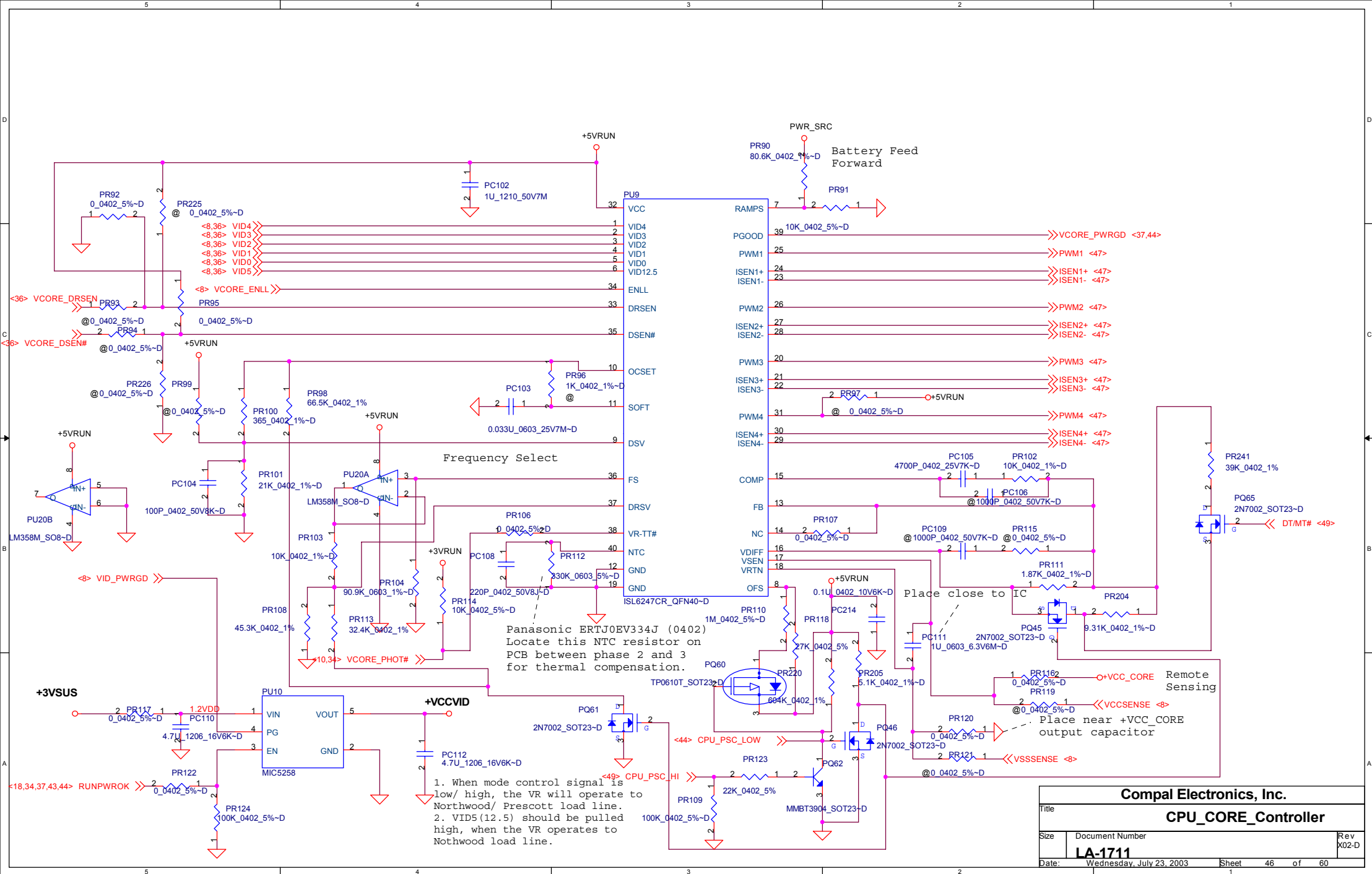


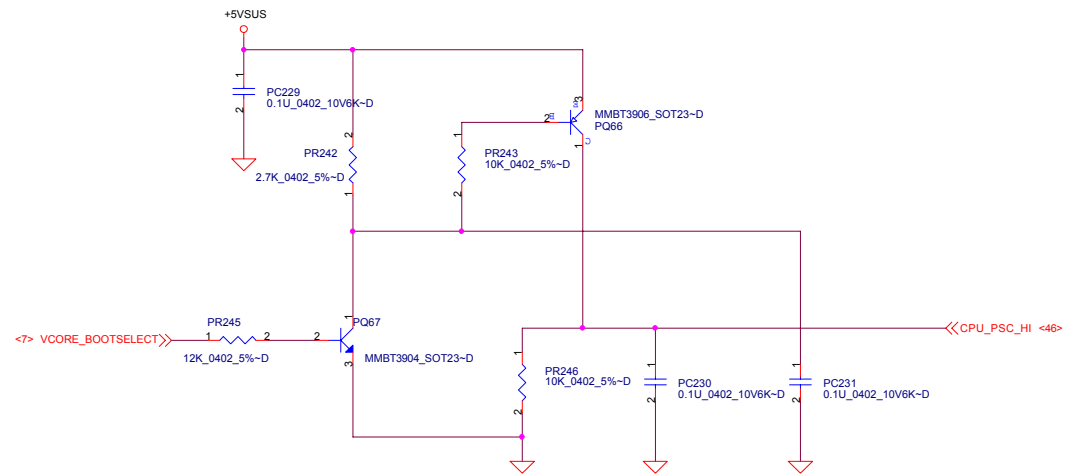
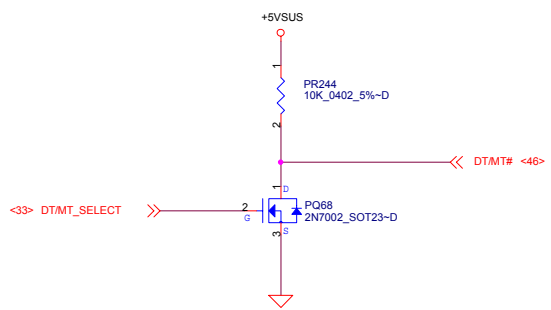
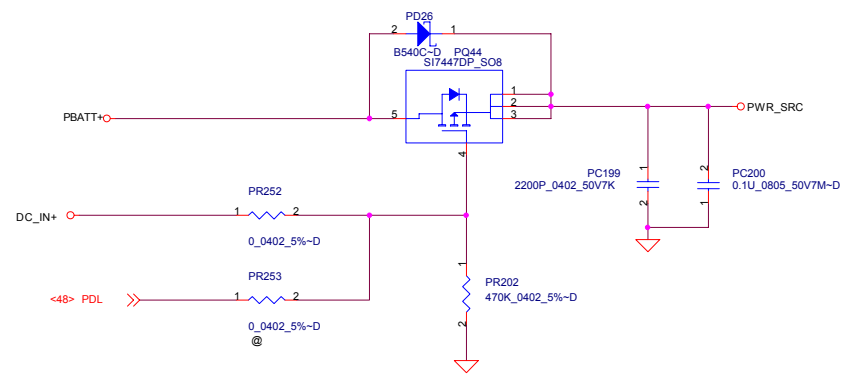
+2.5V/+1.25V
DDR Termination Voltage



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.

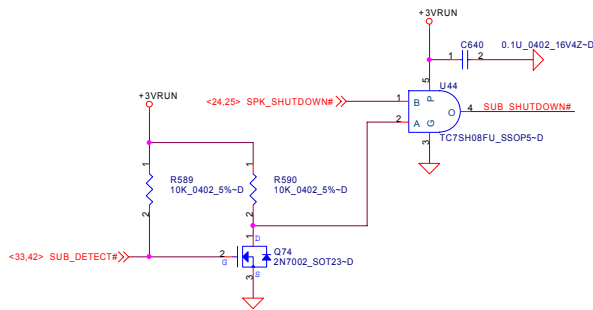
| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|------------|----------|
| Title | | 1.25V/2.5V | |
| Size | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Wednesday, July 23, 2003 | Sheet | 45 of 60 |



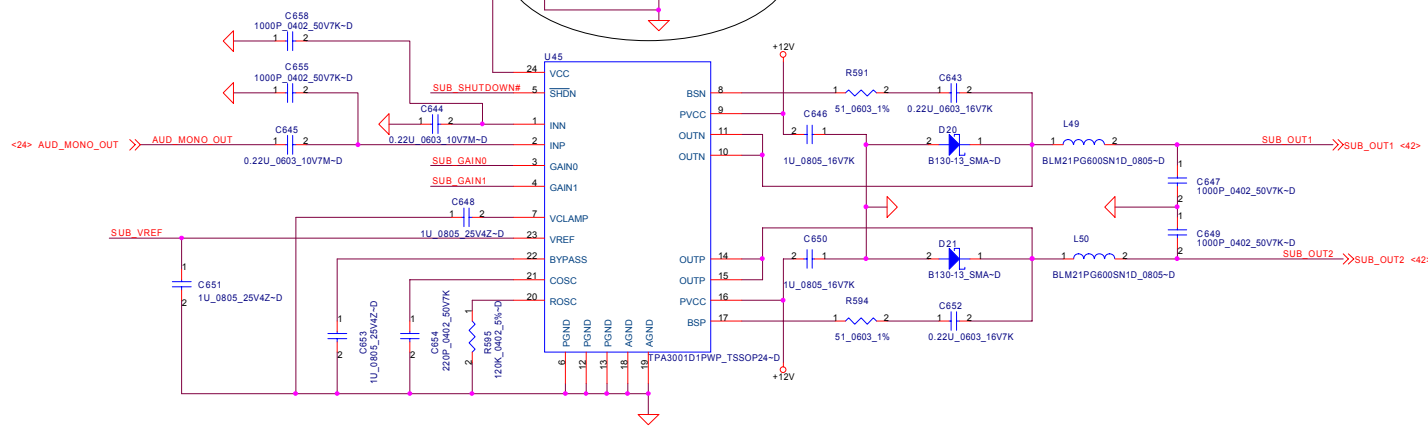
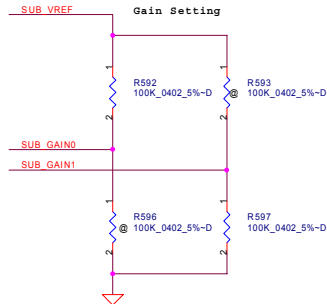
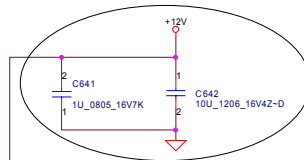


THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|-------|----------|
| Title | | | |
| Battery Discharge | | | |
| Size | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Wednesday, July 23, 2003 | Sheet | 49 of 60 |



Need to FILTER!!!



| Compal Electronics, Inc. | | | |
|--------------------------|--------------------------|-----------|----------|
| Title | | Subwoofer | |
| Size | Document Number | Rev | |
| | LA-1711 | X02-D | |
| Date: | Wednesday, July 23, 2003 | Sheet | 50 of 60 |

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.