

Compal Confidential

Intel Haswell rPGA Processor with Lynx Point-H

Afterburn MXM

LA-9371P

2012-11-12

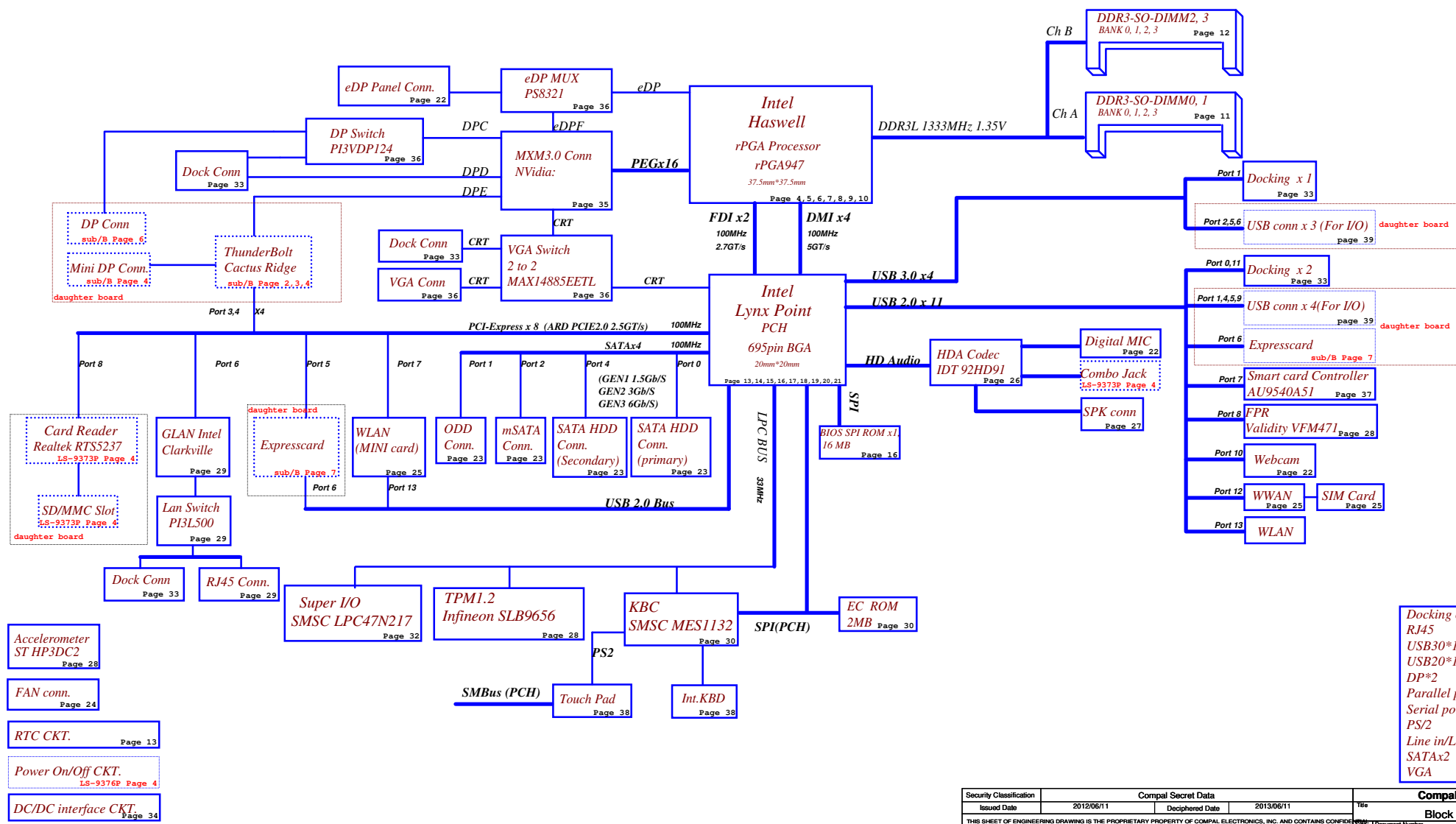
REV : 0.3

| | | | | | |
|---|--------------------|-----------------|------------|---------------------------------|---------------|
| Security Classification | Compal Secret Data | | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title | Cover Page |
| 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 PRODUCT DEVELOPMENT 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. | | | | Document Number | Rev |
| | | | | LA-9371P | 0.3 |
| | | | | Date: Monday, November 12, 2012 | Sheet 1 of 56 |

Compal Confidential

Model Name : Afterburn

File Name : LA-9371P



Docking connector:
 RJ45
 USB30*1
 USB20*1
 DP*2
 Parallel port
 Serial port
 PS/2
 Line in/Line out
 SATAx2
 VGA

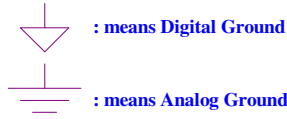
| | | | | |
|--|--------------------|-----------------|--------------------------|--|
| Security Classification | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. WITHOUT THE WRITTEN CONSENT OF 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. | | | | Document Number LA-9371P Rev 0.3 Date: Monday, November 12, 2012 Sheet 2 of 56 |

Voltage Rails

(O MEANS ON X MEANS OFF)

| power plane State | +RTCVCC | B+ | +5VDS +3VDS | +1.35V +0.675VS | +5VS +3VS +1.5VS +VCC_CORE +1.05VS +1.05VM |
|--------------------------------|---------|----|----------------|--------------------|---|
| S0 | O | O | O | O | O |
| S1 | O | O | O | O | O |
| S3 | O | O | O | O | X |
| S5 S4/AC | O | O | O | X | X |
| S5 S4/ Battery only | O | O | X | X | X |
| S5 S4/AC & Battery don't exist | O | X | X | X | X |

Symbol Note :



@ : means just reserve , no build

AMT@ : means just install for support iAMT

CONN@ : means ME part.

Layout Notes

07/24 update

: Question Area Mark.(Wait check)

Install below 45 level BOM structure for ver. 0.1

45@ : means just put it in the BOM of 45 level.

Install below 43 level BOM structure for ver. 0.1

DEBUG@ : means just build when PCIE port 80 CARD function enable. *Remove before MP*

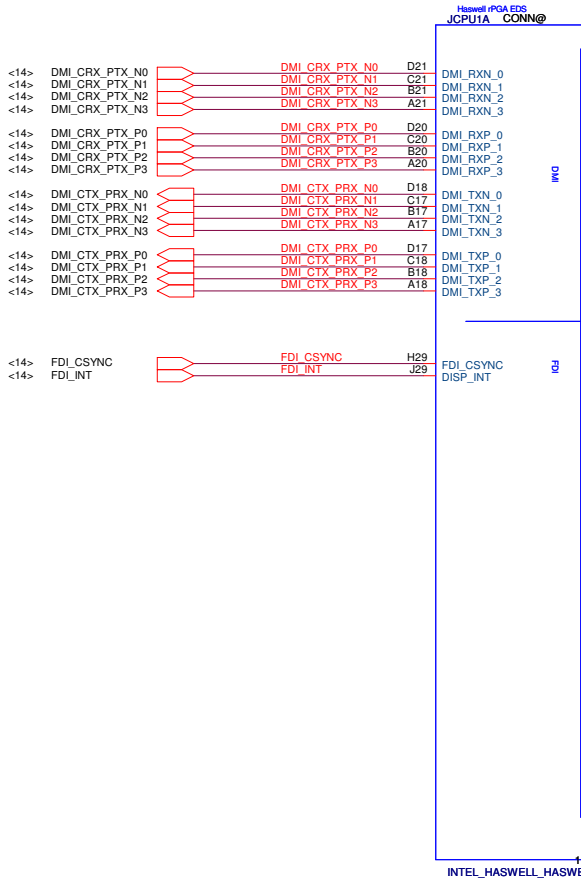
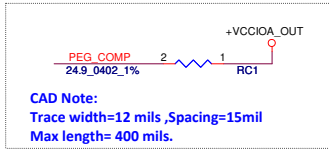
SMBUS Control Table

| | SOURCE | BATT | 2nd BATT | XDP | SODIMM | G-SENSOR | TP | NIC | NFC | EC | MXM |
|------------------------------|----------|------|----------|-----|--------|----------|----|-----|-----|----|-----|
| I2C_MAIN_CLK I2C_MAIN_DAT | SMSC1126 | V | X | X | X | X | X | X | X | X | X |
| I2C_BAY_CLK I2C_BAY_DAT | SMSC1126 | X | V | X | X | X | X | X | X | X | X |
| MEM_SMBCLK MEM_SMBDATA | Haswell | X | X | V | V | V | V | X | X | X | X |
| LAN_SMBCLK LAN_SMBDATA | Haswell | X | X | X | X | X | X | V | V | X | X |
| SML1_SMBCLK SML1_SMBDATA | Haswell | X | X | X | X | X | X | X | X | V | V |

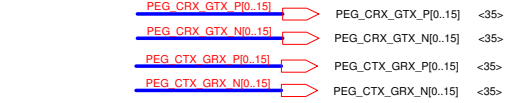
Stapping Options Flash

| GPIO 51 Bit 1 | GPIO 19 Bit 0 | Boot BIOS Destination |
|------------------|------------------|-----------------------|
| 0 | 0 | Reserved |
| 0 | 1 | RSVD |
| 1 | 0 | SPI |
| 1 | 1 | LPC |

| Security Classification | Compal Secret Data | | Compal Electronics, Inc. | |
|--|---------------------------|-----------------|--------------------------|------------|
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title |
| 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 PRODUCT CUSTOMER SERVICE 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. | | | | Notes List |
| Document Number | LA-9371P | Rev | 0.3 | Date |
| Date | Monday, November 12, 2012 | Sheet | 3 | of 56 |



| | | |
|------------|-----|-------------------|
| PEG_RCOMP | E23 | PEG_COMP |
| PEG_RXN_0 | M29 | PEG_CRX_GTX_N0 |
| PEG_RXN_1 | K28 | PEG_CRX_GTX_N1 |
| PEG_RXN_2 | M31 | PEG_CRX_GTX_N2 |
| PEG_RXN_3 | L30 | PEG_CRX_GTX_N3 |
| PEG_RXN_4 | M33 | PEG_CRX_GTX_N4 |
| PEG_RXN_5 | L32 | PEG_CRX_GTX_N5 |
| PEG_RXN_6 | M35 | PEG_CRX_GTX_N6 |
| PEG_RXN_7 | L34 | PEG_CRX_GTX_N7 |
| PEG_RXN_8 | E29 | PEG_CRX_GTX_N8 |
| PEG_RXN_9 | D28 | PEG_CRX_GTX_N9 |
| PEG_RXN_10 | E31 | PEG_CRX_GTX_N10 |
| PEG_RXN_11 | D30 | PEG_CRX_GTX_N11 |
| PEG_RXN_12 | E35 | PEG_CRX_GTX_N12 |
| PEG_RXN_13 | D34 | PEG_CRX_GTX_N13 |
| PEG_RXN_14 | E33 | PEG_CRX_GTX_N14 |
| PEG_RXN_15 | E32 | PEG_CRX_GTX_N15 |
| PEG_RXP_0 | L29 | PEG_CRX_GTX_P0 |
| PEG_RXP_1 | L28 | PEG_CRX_GTX_P1 |
| PEG_RXP_2 | L31 | PEG_CRX_GTX_P2 |
| PEG_RXP_3 | K30 | PEG_CRX_GTX_P3 |
| PEG_RXP_4 | L33 | PEG_CRX_GTX_P4 |
| PEG_RXP_5 | K32 | PEG_CRX_GTX_P5 |
| PEG_RXP_6 | L35 | PEG_CRX_GTX_P6 |
| PEG_RXP_7 | K34 | PEG_CRX_GTX_P7 |
| PEG_RXP_8 | F29 | PEG_CRX_GTX_P8 |
| PEG_RXP_9 | E28 | PEG_CRX_GTX_P9 |
| PEG_RXP_10 | F31 | PEG_CRX_GTX_P10 |
| PEG_RXP_11 | E30 | PEG_CRX_GTX_P11 |
| PEG_RXP_12 | F35 | PEG_CRX_GTX_P12 |
| PEG_RXP_13 | E34 | PEG_CRX_GTX_P13 |
| PEG_RXP_14 | F33 | PEG_CRX_GTX_P14 |
| PEG_RXP_15 | D32 | PEG_CRX_GTX_P15 |
| PEG_TXN_0 | H35 | PEG_CTX_GRX_C_N0 |
| PEG_TXN_1 | H34 | PEG_CTX_GRX_C_N1 |
| PEG_TXN_2 | J33 | PEG_CTX_GRX_C_N2 |
| PEG_TXN_3 | H32 | PEG_CTX_GRX_C_N3 |
| PEG_TXN_4 | J31 | PEG_CTX_GRX_C_N4 |
| PEG_TXN_5 | G30 | PEG_CTX_GRX_C_N5 |
| PEG_TXN_6 | C33 | PEG_CTX_GRX_C_N6 |
| PEG_TXN_7 | B32 | PEG_CTX_GRX_C_N7 |
| PEG_TXN_8 | B31 | PEG_CTX_GRX_C_N8 |
| PEG_TXN_9 | A30 | PEG_CTX_GRX_C_N9 |
| PEG_TXN_10 | B29 | PEG_CTX_GRX_C_N10 |
| PEG_TXN_11 | A28 | PEG_CTX_GRX_C_N11 |
| PEG_TXN_12 | B27 | PEG_CTX_GRX_C_N12 |
| PEG_TXN_13 | A26 | PEG_CTX_GRX_C_N13 |
| PEG_TXN_14 | B25 | PEG_CTX_GRX_C_N14 |
| PEG_TXN_15 | A24 | PEG_CTX_GRX_C_N15 |
| PEG_TXP_0 | J35 | PEG_CTX_GRX_C_P0 |
| PEG_TXP_1 | G34 | PEG_CTX_GRX_C_P1 |
| PEG_TXP_2 | H33 | PEG_CTX_GRX_C_P2 |
| PEG_TXP_3 | G32 | PEG_CTX_GRX_C_P3 |
| PEG_TXP_4 | H31 | PEG_CTX_GRX_C_P4 |
| PEG_TXP_5 | H30 | PEG_CTX_GRX_C_P5 |
| PEG_TXP_6 | B33 | PEG_CTX_GRX_C_P6 |
| PEG_TXP_7 | A32 | PEG_CTX_GRX_C_P7 |
| PEG_TXP_8 | C31 | PEG_CTX_GRX_C_P8 |
| PEG_TXP_9 | B30 | PEG_CTX_GRX_C_P9 |
| PEG_TXP_10 | C29 | PEG_CTX_GRX_C_P10 |
| PEG_TXP_11 | B28 | PEG_CTX_GRX_C_P11 |
| PEG_TXP_12 | C27 | PEG_CTX_GRX_C_P12 |
| PEG_TXP_13 | B26 | PEG_CTX_GRX_C_P13 |
| PEG_TXP_14 | C25 | PEG_CTX_GRX_C_P14 |
| PEG_TXP_15 | B24 | PEG_CTX_GRX_C_P15 |

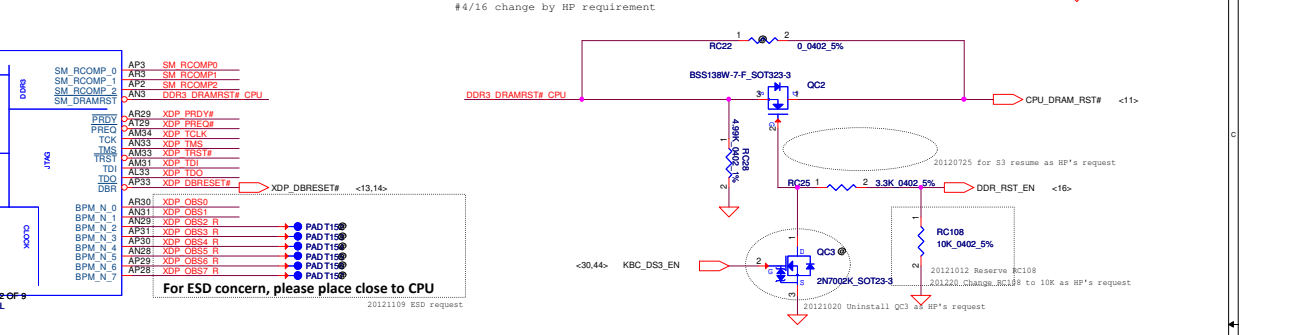
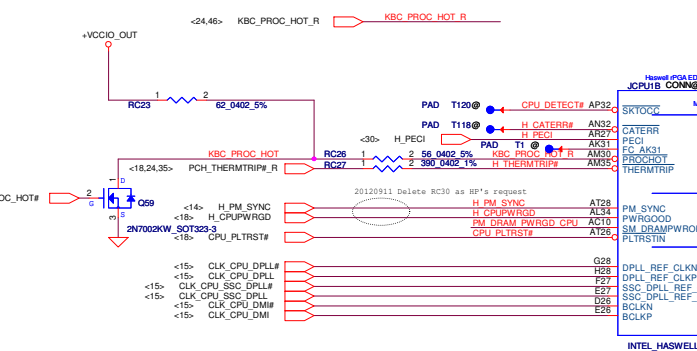
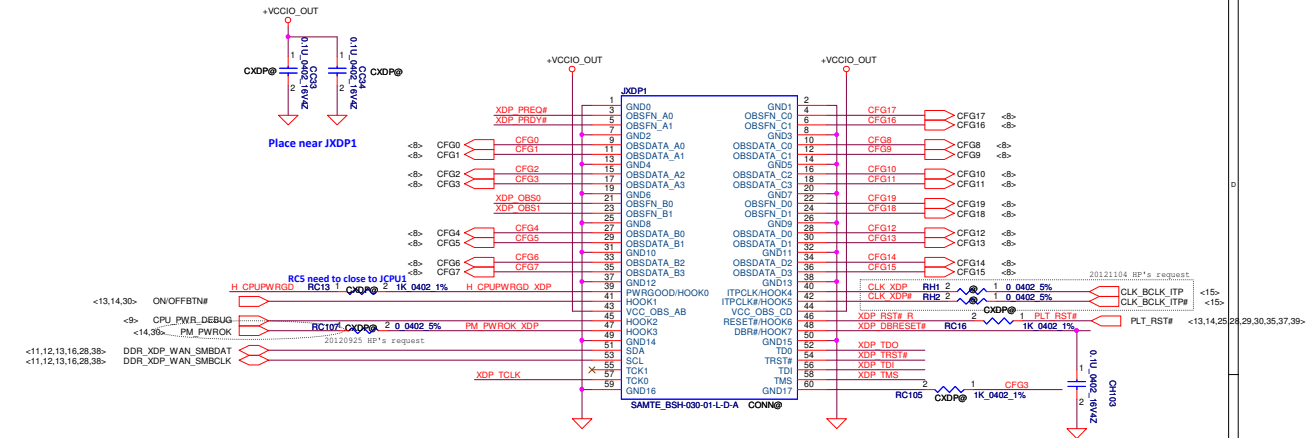
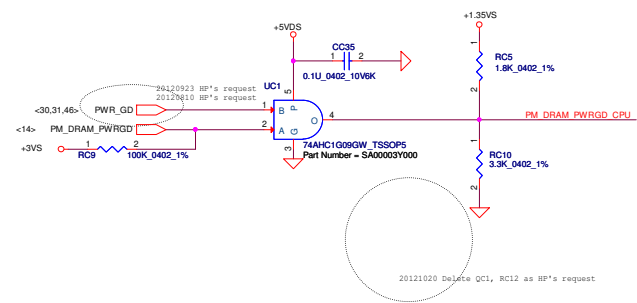


| | | | | | | | |
|-------------------|------|---|---|-------|------|--------|-----------------|
| PEG_CTX_GRX_C_P0 | CC1 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P0 |
| PEG_CTX_GRX_C_N0 | CC2 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N0 |
| PEG_CTX_GRX_C_P1 | CC3 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P1 |
| PEG_CTX_GRX_C_N1 | CC4 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N1 |
| PEG_CTX_GRX_C_P2 | CC5 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P2 |
| PEG_CTX_GRX_C_N2 | CC6 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N2 |
| PEG_CTX_GRX_C_P3 | CC7 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P3 |
| PEG_CTX_GRX_C_N3 | CC8 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N3 |
| PEG_CTX_GRX_C_P4 | CC9 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P4 |
| PEG_CTX_GRX_C_N4 | CC10 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N4 |
| PEG_CTX_GRX_C_P5 | CC11 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P5 |
| PEG_CTX_GRX_C_N5 | CC12 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N5 |
| PEG_CTX_GRX_C_P6 | CC13 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P6 |
| PEG_CTX_GRX_C_N6 | CC14 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N6 |
| PEG_CTX_GRX_C_P7 | CC15 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P7 |
| PEG_CTX_GRX_C_N7 | CC16 | 2 | 1 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N7 |
| PEG_CTX_GRX_C_P8 | CC17 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P8 |
| PEG_CTX_GRX_C_N8 | CC18 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N8 |
| PEG_CTX_GRX_C_P9 | CC19 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P9 |
| PEG_CTX_GRX_C_N9 | CC20 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N9 |
| PEG_CTX_GRX_C_P10 | CC21 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P10 |
| PEG_CTX_GRX_C_N10 | CC22 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N10 |
| PEG_CTX_GRX_C_P11 | CC23 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P11 |
| PEG_CTX_GRX_C_N11 | CC24 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N11 |
| PEG_CTX_GRX_C_P12 | CC25 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P12 |
| PEG_CTX_GRX_C_N12 | CC26 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N12 |
| PEG_CTX_GRX_C_P13 | CC27 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P13 |
| PEG_CTX_GRX_C_N13 | CC28 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N13 |
| PEG_CTX_GRX_C_P14 | CC29 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P14 |
| PEG_CTX_GRX_C_N14 | CC30 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N14 |
| PEG_CTX_GRX_C_P15 | CC31 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_P15 |
| PEG_CTX_GRX_C_N15 | CC32 | 1 | 2 | 0.22U | 0402 | 6.3V6K | PEG_CTX_GRX_N15 |

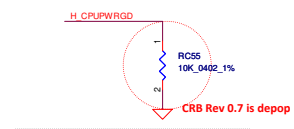
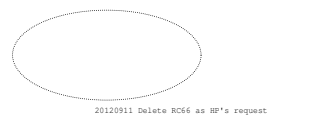
INTEL_HASWELL_HASWELL 1 OF 9

| | | | | | | | |
|--|------------|--------------------|------------|---------------------------------|--|--------------------------|--|
| Security Classification | | Compal Secret Data | | Title | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Document Number | | Rev | |
| 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 COMPAL ELECTRONICS, INC. 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. | | | | Date: Monday, November 12, 2012 | | Sheet 4 of 56 | |
| | | | | Custom | | 0.3 | |
| | | | | LA-9371P | | | |

SM_DRAMPWROK with DDR Power Gating Topology



SSC CLOCK TERMINATION, IF NOT USED, stuff RC20,RC21



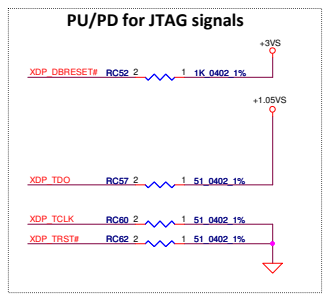
CAD Note: Avoid stub in the PWRGD path while placing resistors RC25 & RC130

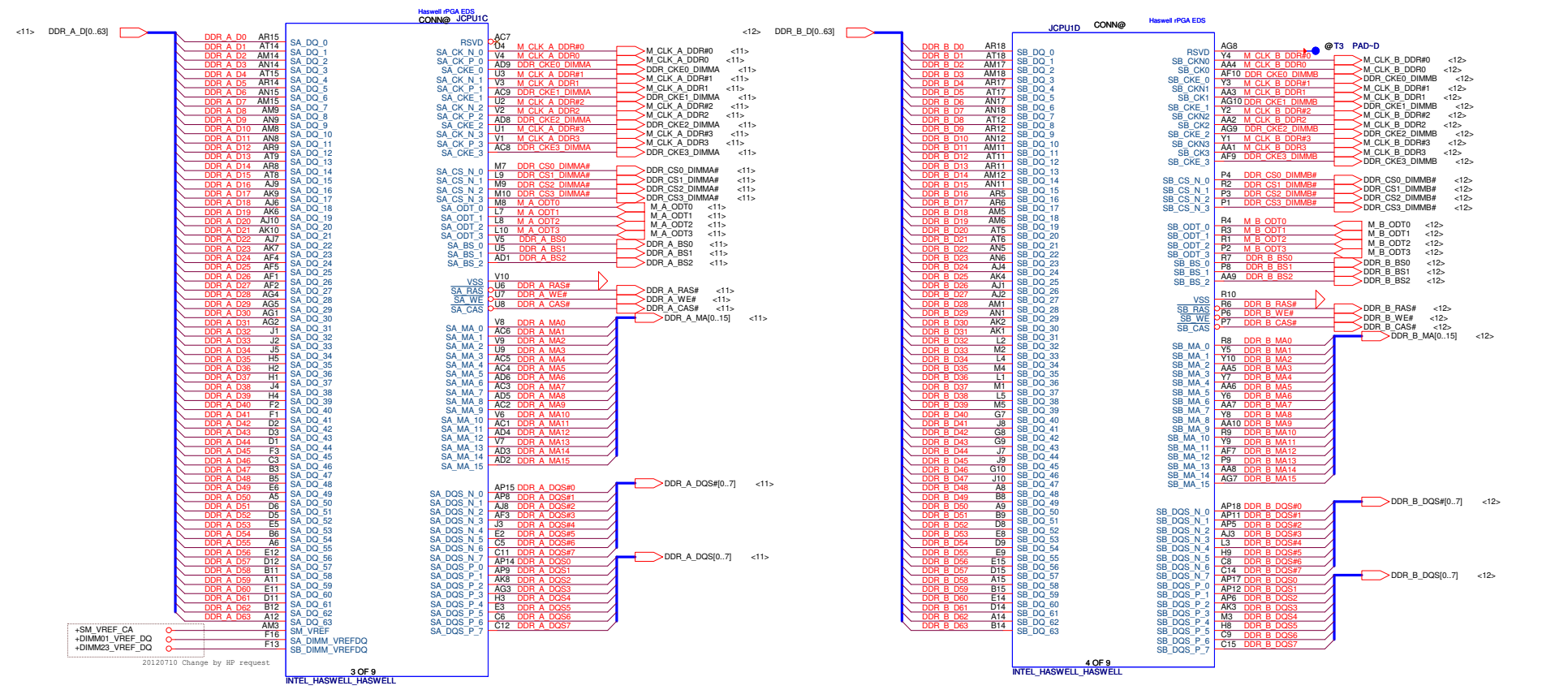
DDR3 COMPENSATION SIGNALS

- SM_RCMP0 RC59 1 2 100 0402 1%
- SM_RCMP1 RC61 1 2 75 0402 1%
- SM_RCMP2 RC65 1 2 100 0402 1%

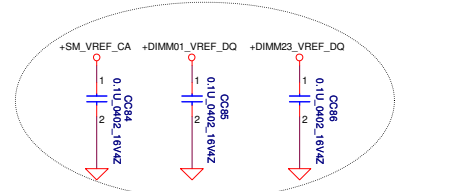
CAD Note: Trace width=12~15 mil, Spacing=20 mils
Max trace length= 500 mil

CR8 Rev 0.7 no pull up





-SM_VREF_CA
+DIMM0_VREF_DQ
-DIMM2_VREF_DQ



Layout Notes
Place CC84, CC85, CC86 close to JCPU10

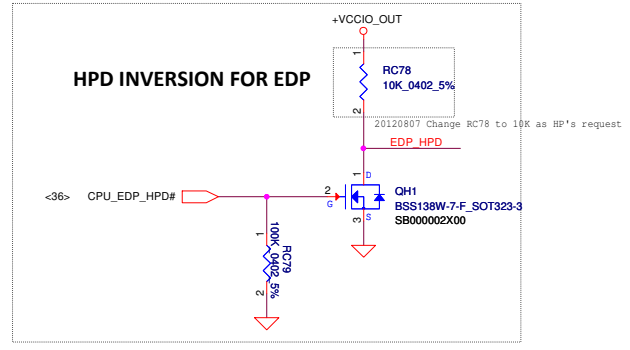
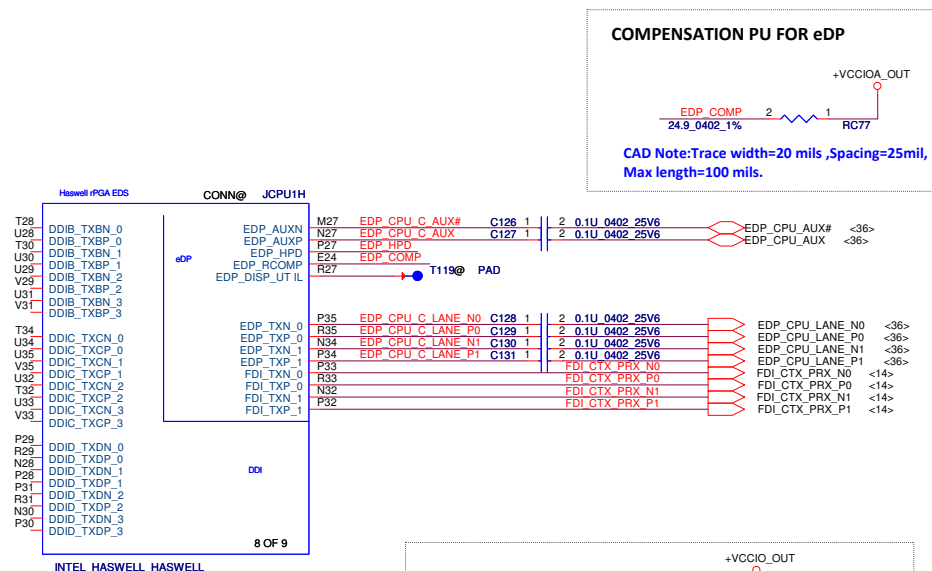
| | | |
|-------------------------|--------------------|-----------------|
| Security Classification | Compal Secret Data | |
| Issued Date | 2012/06/11 | Deciphered Date |
| | | 2013/06/11 |

Compal Electronics, Inc.
Title
DDRIII

This SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MUST BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RA... 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.

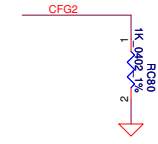
Document Number
LA-9371P
Rev
0.3

Date: Monday, November 12, 2012
Sheet 6 of 56

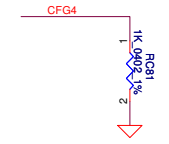


| | | | | | |
|--|------------|--------------------|------------|-----------------|---------|
| Security Classification | | Compal Secret Data | | Title | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | CPU-FDI,eDP,DDI | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY 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 CUSTOMER 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. | | | | Document Number | Rev |
| | | | | LA-9371P | 0.3 |
| Date: Monday, November 12, 2012 | | | | Sheet | 7 of 56 |

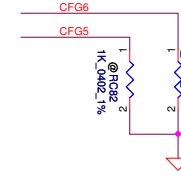
CFG STRAPS for CPU



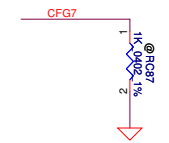
| | |
|---|--|
| PEG Static Lane Reversal - CFG2 is for the 16x | |
| CFG2 | 1: (Default) Normal Operation; Lane # definition matches socket pin map definition 0: Lane Reversed |



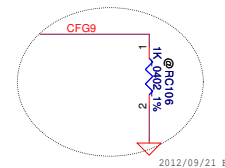
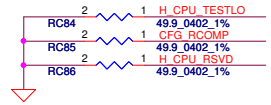
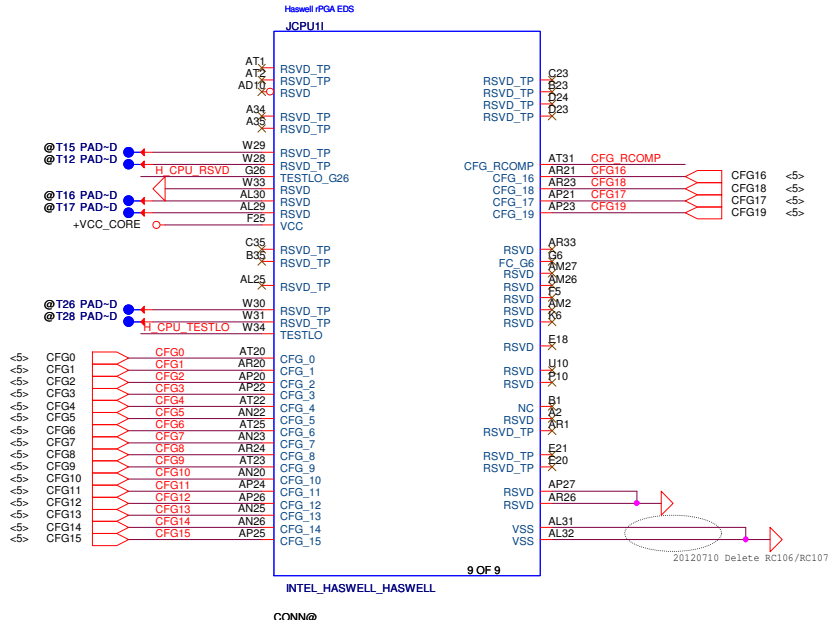
| | |
|------------------------------------|--|
| Display Port Presence Strap | |
| CFG4 | 1 : Disabled; No Physical Display Port attached to Embedded Display Port 0 : Enabled; An external Display Port device is connected to the Embedded Display Port |



| | |
|-------------------------------------|--|
| PCIe Port Bifurcation Straps | |
| CFG[6:5] | 11: (Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled |

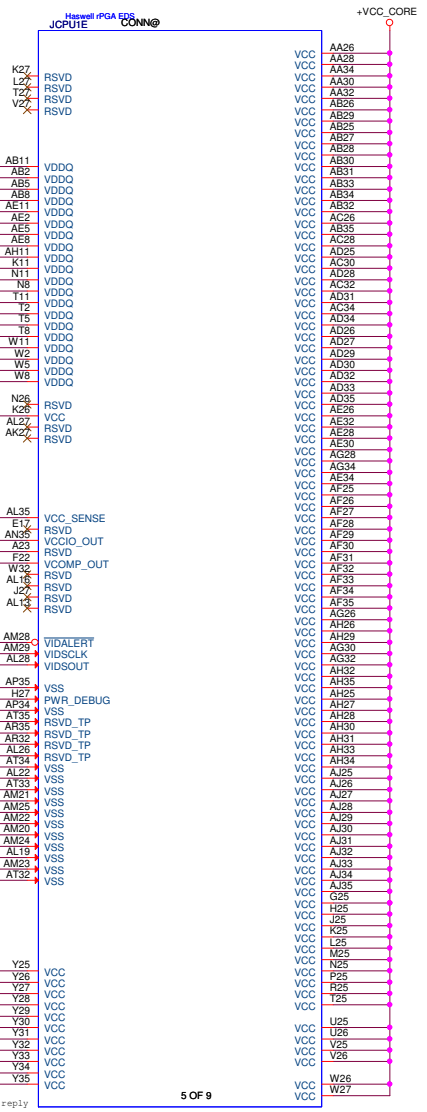
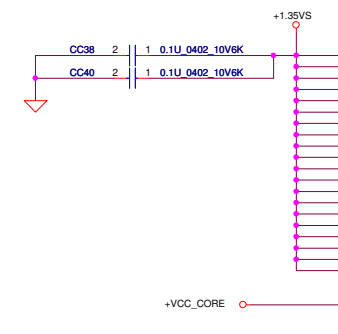
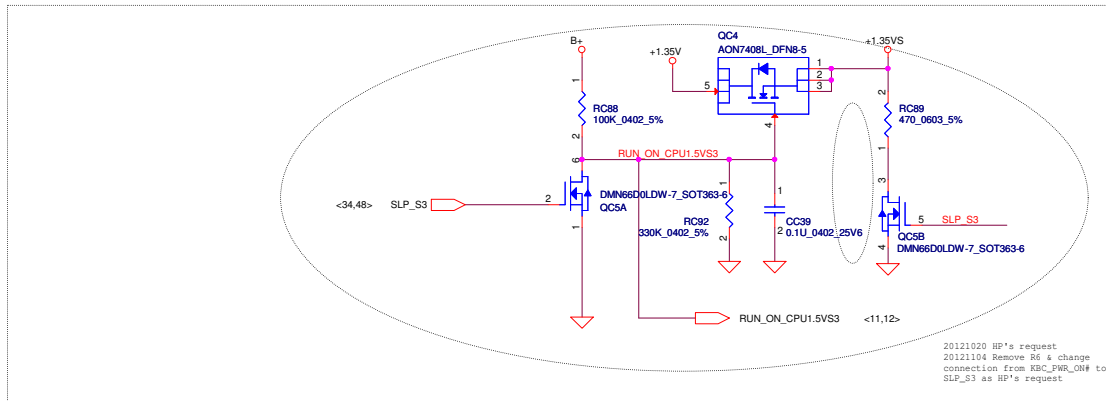


| | |
|---------------------------|---|
| PEG DEFER TRAINING | |
| CFG7 | 1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training |



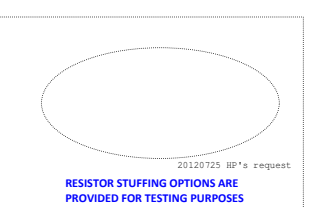
2012/09/21 For a Intel Sighting

+1.35VS Source



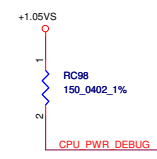
SVID ALERT

CAD Note: Place the PU resistors close to CPU
RC60 close to CPU 300 - 1500mils



SVID DATA

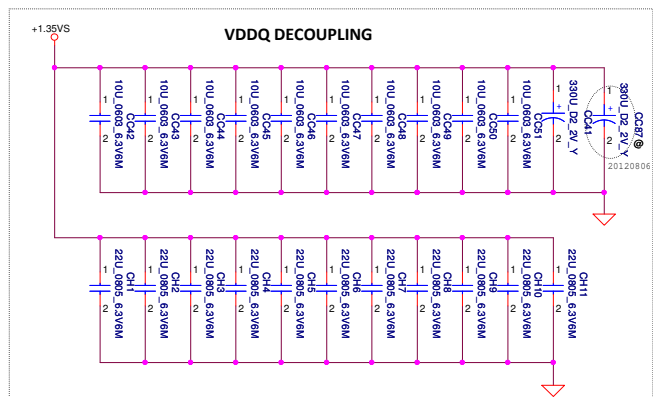
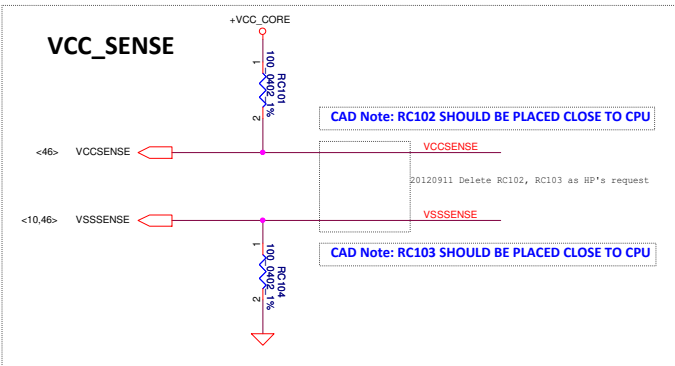
CAD Note: Place the PU resistors close to CPU
RC63 close to CPU 300 - 1500mils



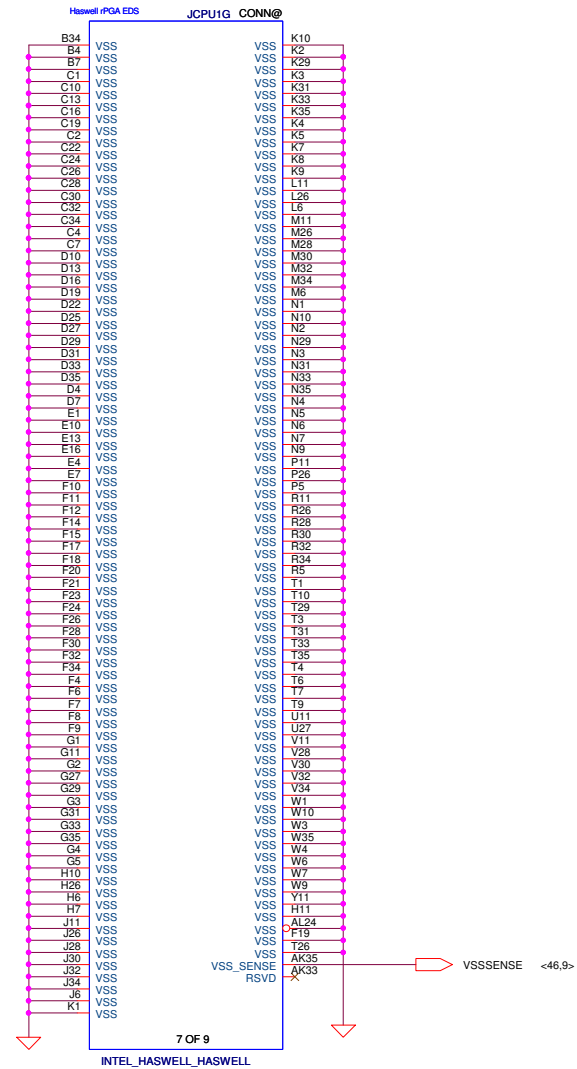
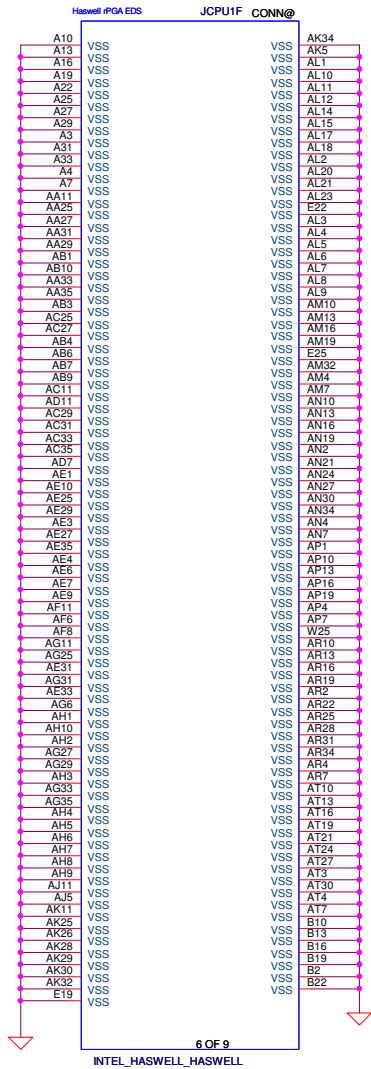
VCC_SENSE

CAD Note: RC102 SHOULD BE PLACED CLOSE TO CPU

CAD Note: RC103 SHOULD BE PLACED CLOSE TO CPU



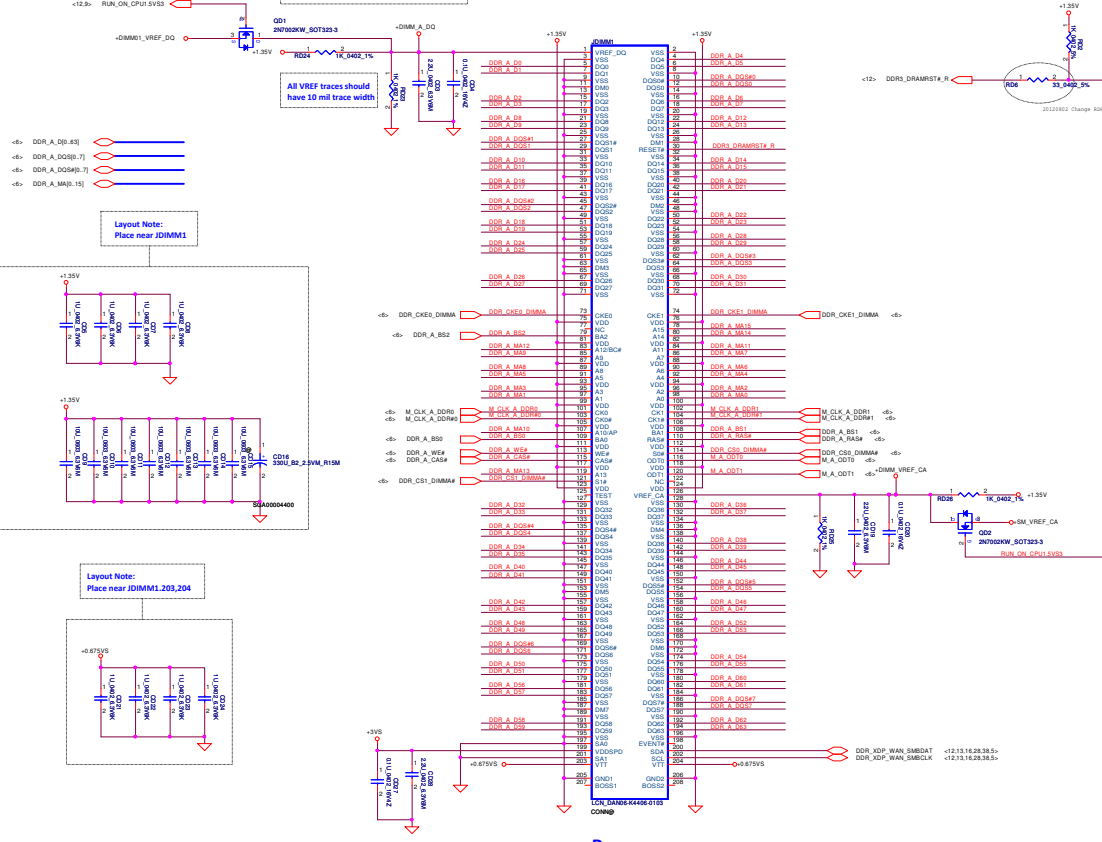
| | | | | |
|---|--------------------|-----------------|------------|---|
| Security Classification | Compal Secret Data | | Title | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Compal Electronics, Inc. |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, 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. | | | | Document Number LA-9371P Date: Monday, November 12, 2012 |
| | | | | Rev 0.3 |
| | | | | Sheet 9 of 56 |



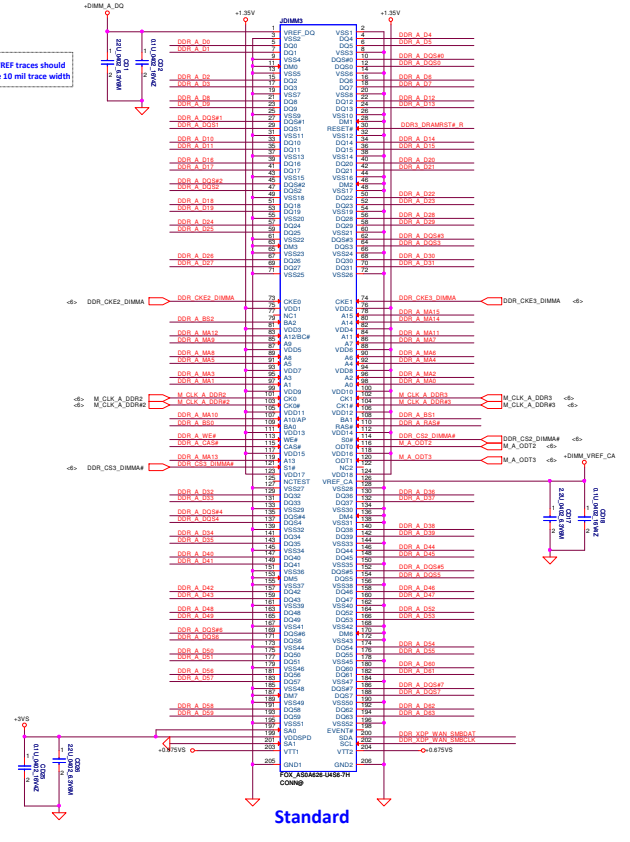
| | | | | |
|---|--------------------|-----------------|--------------------------|---------|
| Security Classification | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title |
| | | | | CPU-VSS |
| THIS SHEET OF ENGINEERING DRAWING IS 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 FRONTRON CUSTOMER 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. | | | | Rev 0.3 |
| Date: Monday, November 12, 2012 | | | Sheet 10 | of 56 |

Populate RD1, De-Populate RD7 for Intel DDR3
 VREFQ multiple methods M1
 Populate RD7, De-Populate RD1 for Intel DDR3
 VREFQ multiple methods M3

JDIMM1 H=5.2 mm TOP



JDIMM3 H=4.0mm BOT



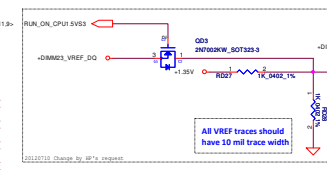
Reverse

Standard

| | | | | | |
|--|------------------------------|-----------------|-----------|--------------------------|----------|
| Security Classification | 201306/11 Compal Secret Data | | Rev | Compal Electronics, Inc. | |
| Issued Date | 201306/11 | Deciphered Date | 201306/11 | Document Number | LA-9371P |
| <small>THIS DOCUMENT CONTAINS UNCLASSIFIED INFORMATION. IT IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND IS CONFIDENTIAL. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. ANY UNAUTHORIZED REPRODUCTION OR DISSEMINATION OF THIS INFORMATION IS STRICTLY PROHIBITED. THIS DOCUMENT IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND IS CONFIDENTIAL. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. ANY UNAUTHORIZED REPRODUCTION OR DISSEMINATION OF THIS INFORMATION IS STRICTLY PROHIBITED.</small> | | | | | |
| Date | Monday, November 13, 2012 | Issue | 11 | of | 16 |

Populate RD4, De-Populate RD8 for Intel DDR3 VREFDQ multiple methods M1
 Populate RD8, De-Populate RD4 for Intel DDR3 VREFDQ multiple methods M3

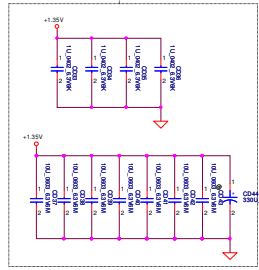
JDIMM2 H=9.2mm TOP



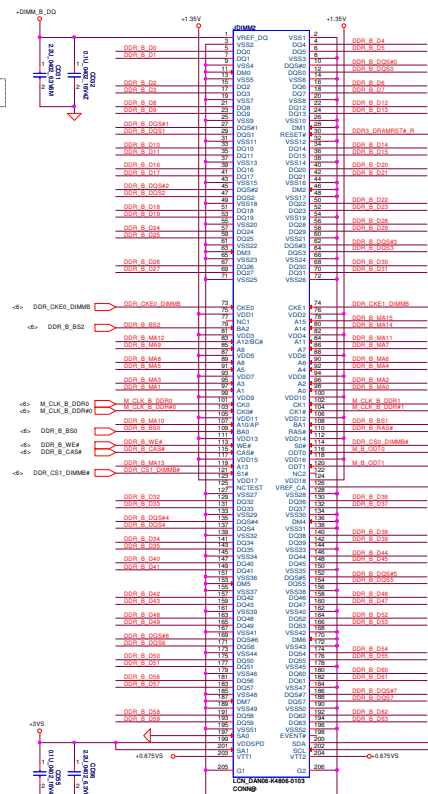
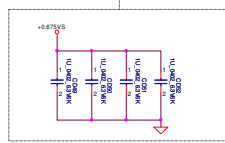
JDIMM4 H=4.0mm BOT

- <-> DDR_B_DQ[43]
- <-> DDR_B_DQS[6:7]
- <-> DDR_B_DQS[8:11]
- <-> DDR_B_MAR[15]

Layout Note:
Place near JDIMM2



Layout Note:
Place near JDIMM2.203.204



DDR_DRAMSTRB_R <-> DDR_DRAMSTRB_R <->

DDR_CKE1_DIMM <-> DDR_CKE1_DIMM <->

M_CLK_B_DDR1 <-> M_CLK_B_DDR1 <->

DDR_CS1_DIMM <-> DDR_CS1_DIMM <->

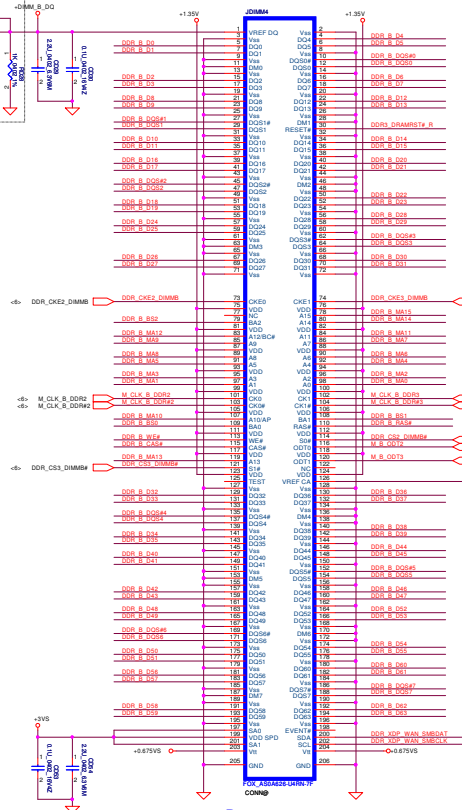
DDR_CKE2_DIMM <-> DDR_CKE2_DIMM <->

DDR_CKE3_DIMM <-> DDR_CKE3_DIMM <->

DDR_CKE4_DIMM <-> DDR_CKE4_DIMM <->

DDR_CKE5_DIMM <-> DDR_CKE5_DIMM <->

Reverse



DDR_DRAMSTRB_R <-> DDR_DRAMSTRB_R <->

DDR_CKE1_DIMM <-> DDR_CKE1_DIMM <->

M_CLK_B_DDR1 <-> M_CLK_B_DDR1 <->

DDR_CS1_DIMM <-> DDR_CS1_DIMM <->

DDR_CKE2_DIMM <-> DDR_CKE2_DIMM <->

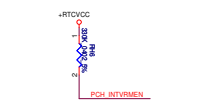
DDR_CKE3_DIMM <-> DDR_CKE3_DIMM <->

DDR_CKE4_DIMM <-> DDR_CKE4_DIMM <->

DDR_CKE5_DIMM <-> DDR_CKE5_DIMM <->

Reverse

| Security Classification | | Compal Secret Data | | Title | |
|--|------------|--------------------|------------|--------------------------|----------|
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Compal Electronics, Inc. | |
| <small>THIS SECURITY INFORMATION IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND IS CONFIDENTIAL. IT IS NOT TO BE DISCLOSED TO ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. ANY UNAUTHORIZED DISCLOSURE OR REPRODUCTION OF THIS INFORMATION IS STRICTLY PROHIBITED. THE QUALITY OF THE COPY IS THE RESPONSIBILITY OF THE USER. THIS INFORMATION IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.</small> | | | | Doc# | LA-9371P |
| Rev# | 1.0 | Rev# | 1.0 | Rev# | 1.0 |
| Rev# | 1.0 | Rev# | 1.0 | Rev# | 1.0 |



INTVTRMEN - INTEGRATED SUS 1.05V VRM ENABLE
High - Enable Internal VRs
Low - Enable External VRs



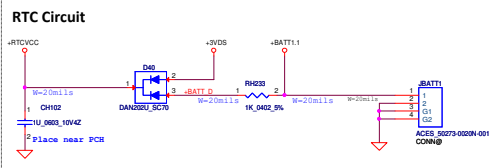
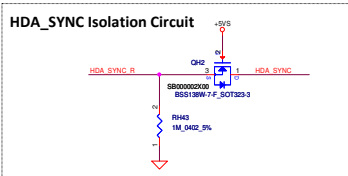
NO REBOOT STRAP
DISABLED WHEN LOW (DEFAULT)
ENABLED WHEN HIGH



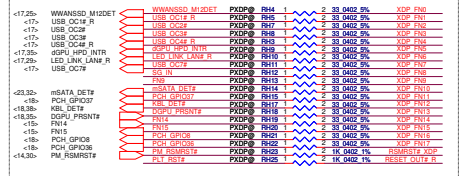
FLASH DESCRIPTOR SECURITY OVERRIDE
LOW = DISABLED (DEFAULT)
HIGH = ENABLED

| CMOS_CLR1 | CMOS setting |
|-----------|--------------|
| Shunt | Clear CMOS |
| Open | Keep CMOS |

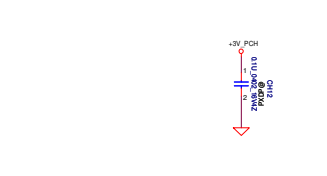
| ME_CLR1 | TPM setting |
|---------|------------------------|
| Shunt | Clear ME RTC Registers |
| Open | Keep ME RTC Registers |



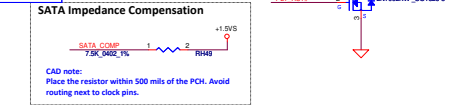
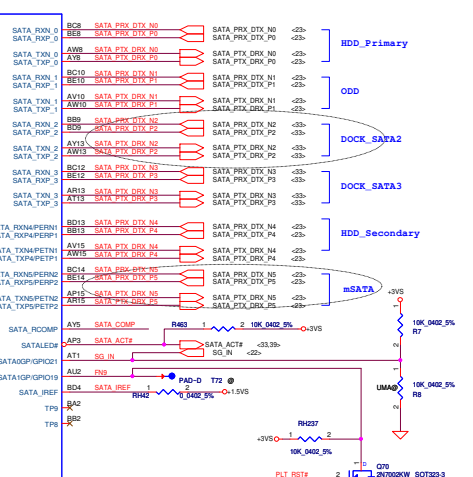
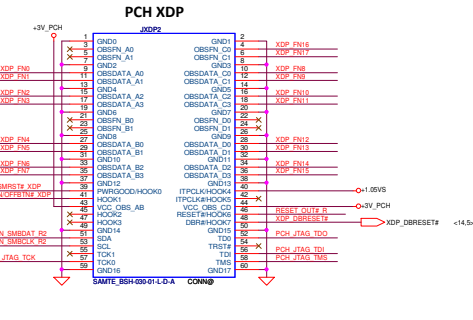
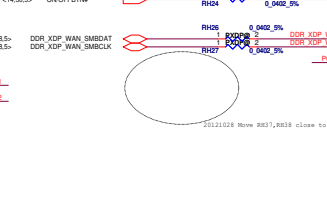
Place near PCH



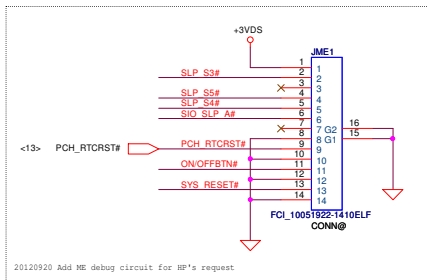
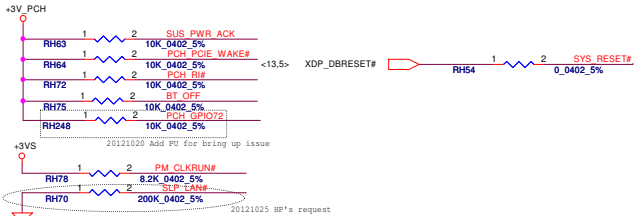
#4718 change by HP requirement



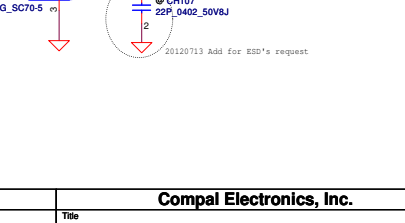
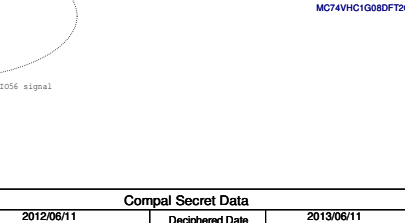
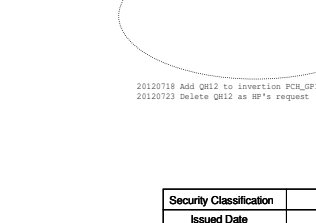
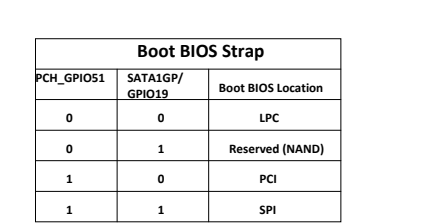
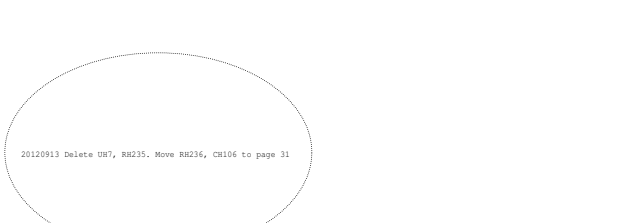
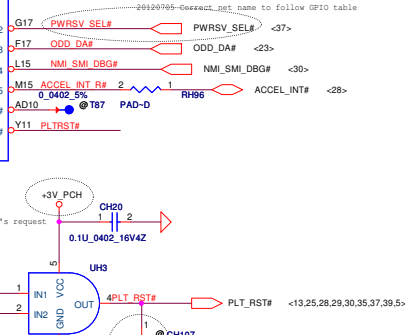
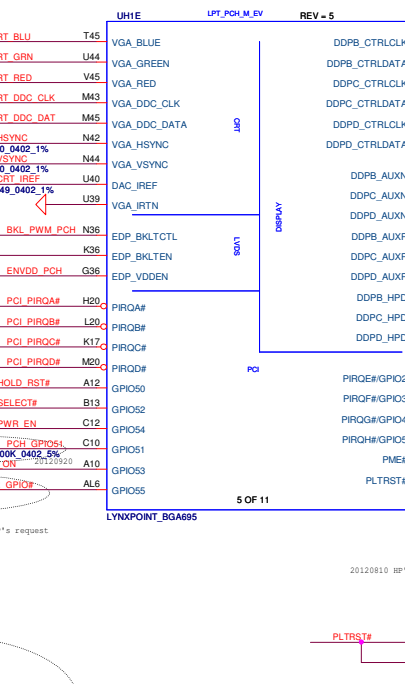
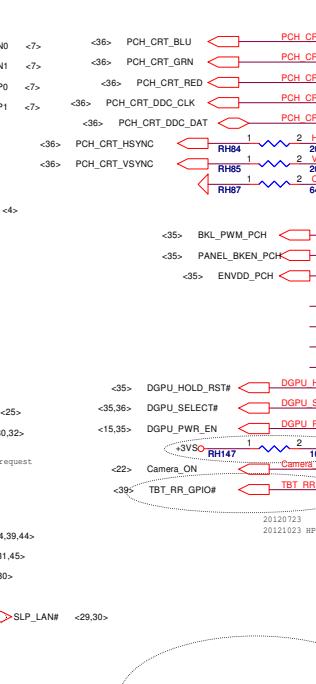
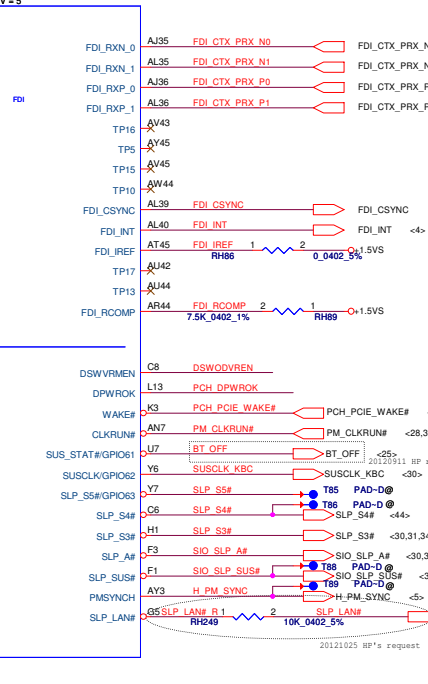
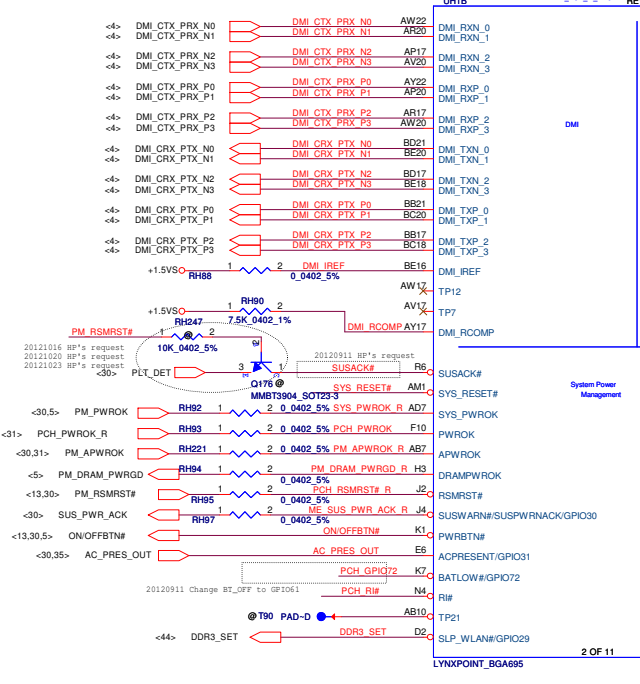
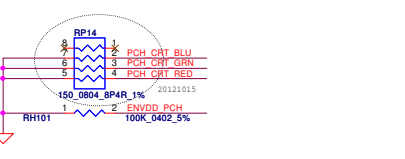
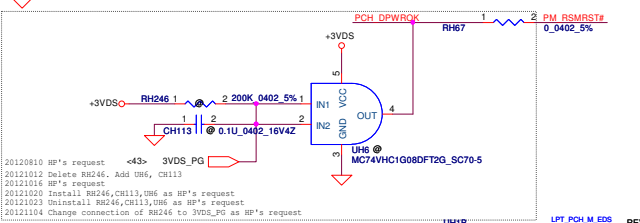
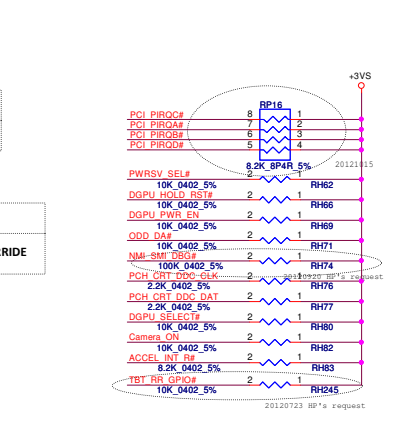
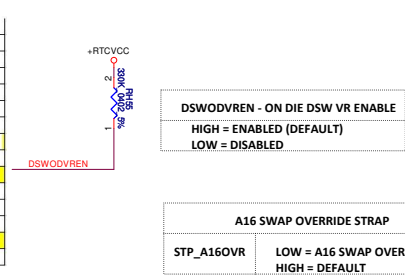
#4718 change by HP requirement



CAD note: Place the resistor within 500 mils of the PCH. Avoid routing next to clock pins.

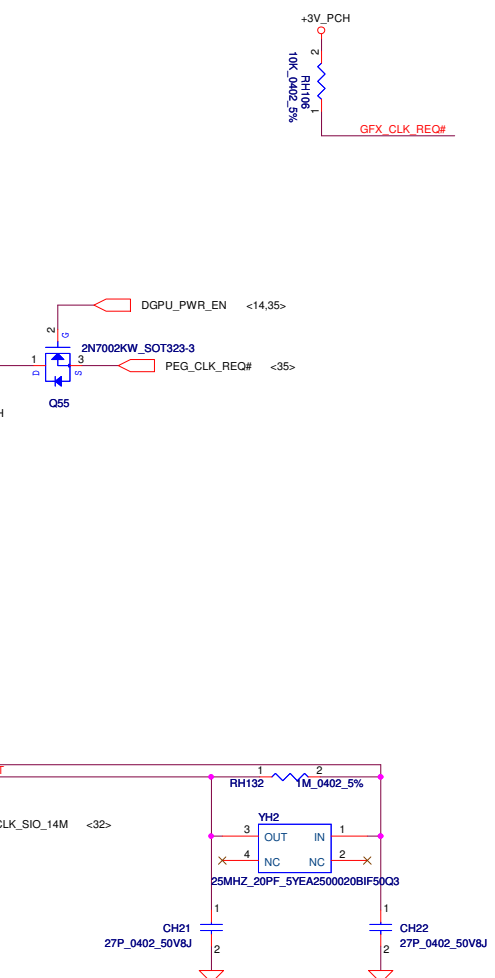
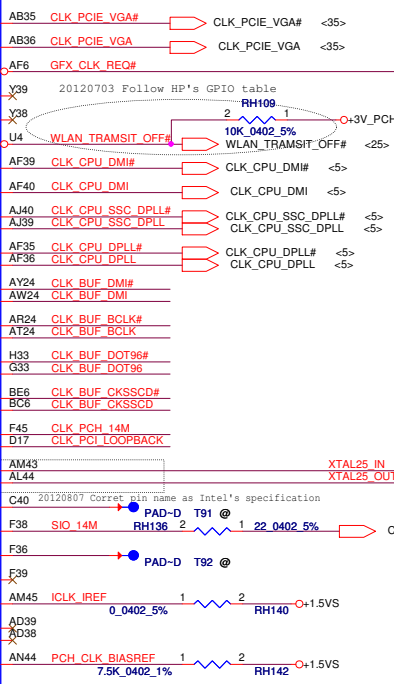
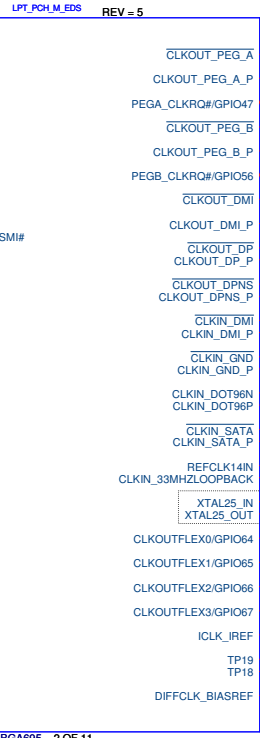
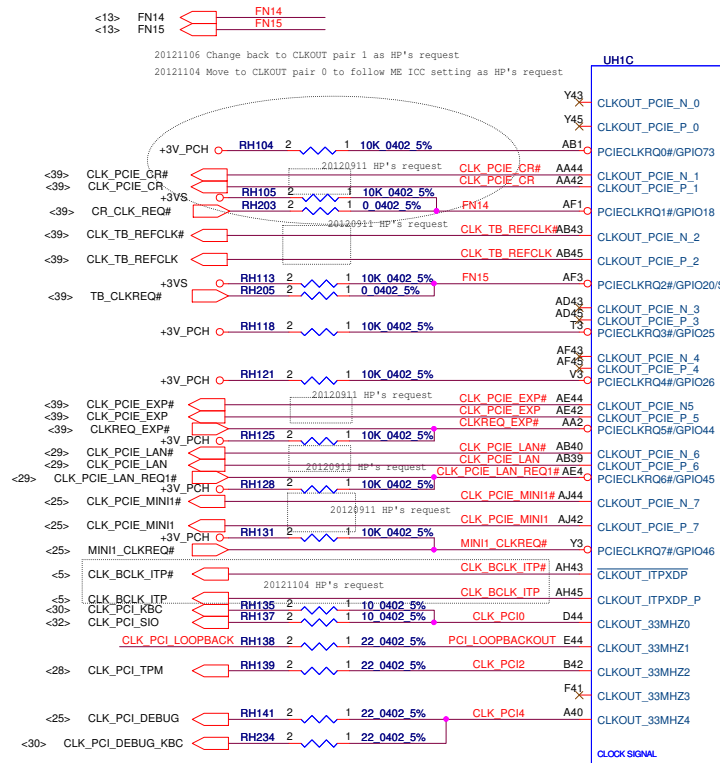


| Pin | Intel Signal Name | HP name |
|-----|-------------------|------------|
| 1 | VccSUS3_3 | +3VDS |
| 2 | SLP_S3# | SLP_S3# |
| 3 | VccDSW3_3 | NC |
| 4 | SLP_S5# | SLP_S5# |
| 5 | SLP_S4# | SLP_S4# |
| 6 | SLP_A# | SLP_A# |
| 7 | 3.DDS | NC |
| 8 | GND | GND |
| 9 | RTCSRST# | RTCSRST# |
| 10 | GND | GND |
| 11 | PWRBTN# | ON/OFFBTN# |
| 12 | GND | GND |
| 13 | SYS_RESET# | SYS_RESET# |
| 14 | GND | GND |

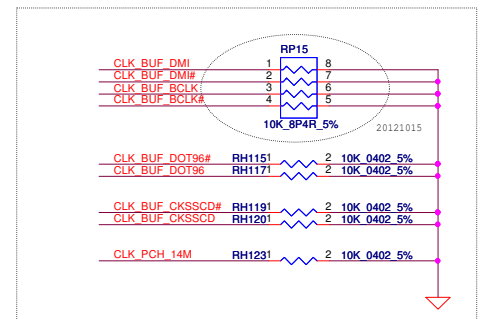


| PCH_GPIO1 | SATA1GP/GPIO19 | Boot BIOS Location |
|-----------|----------------|--------------------|
| 0 | 0 | LPC |
| 0 | 1 | Reserved (NAND) |
| 1 | 0 | PCI |
| 1 | 1 | SPI |

| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
|---|---------------------------|--------------------|------------|--------------------------|------------------------|
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title | PCH -DMI,FDI,PM,DP,CRT |
| 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 | Document Number | Rev | LA-9371P | | |
| Custom | | 0.3 | | | |
| Date: | Monday, November 12, 2012 | Sheet | 14 | of 56 | |

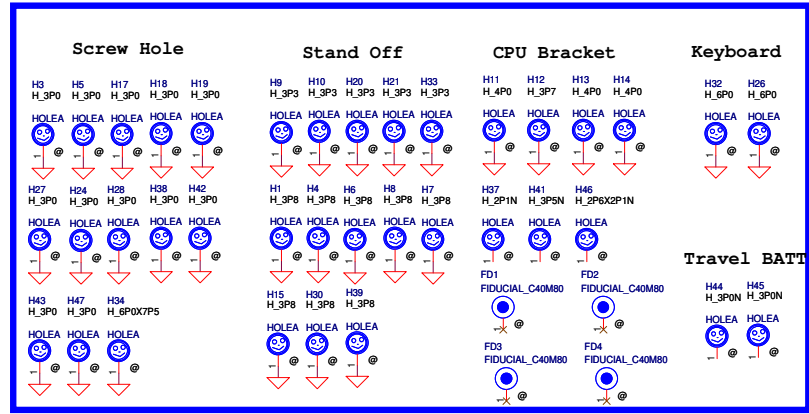
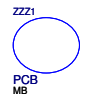
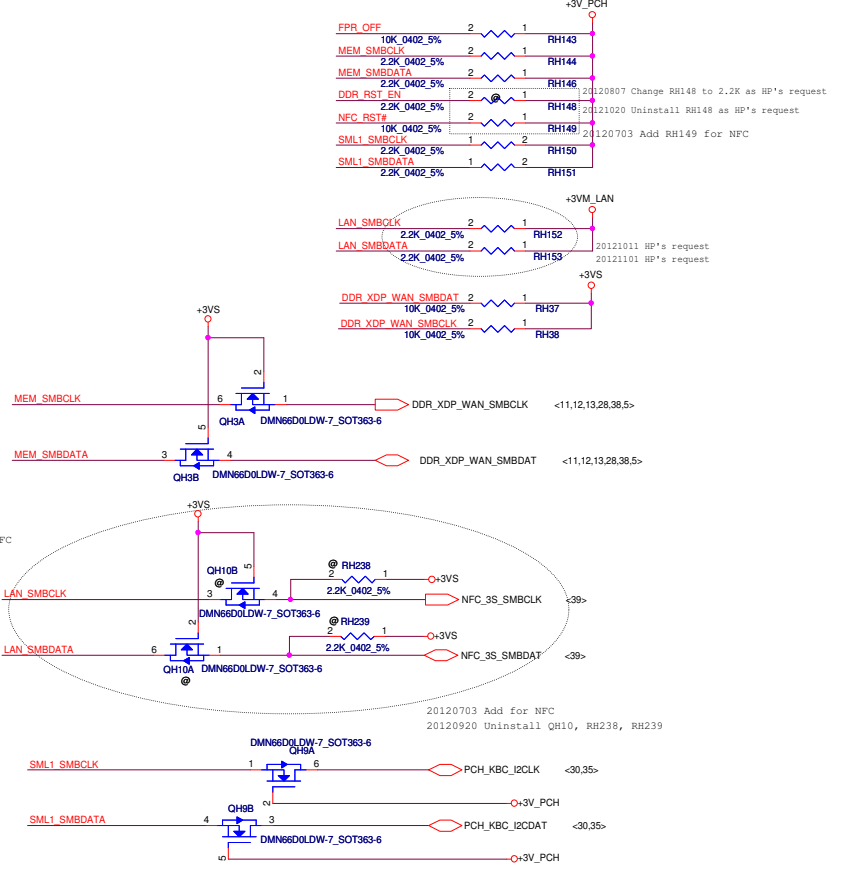
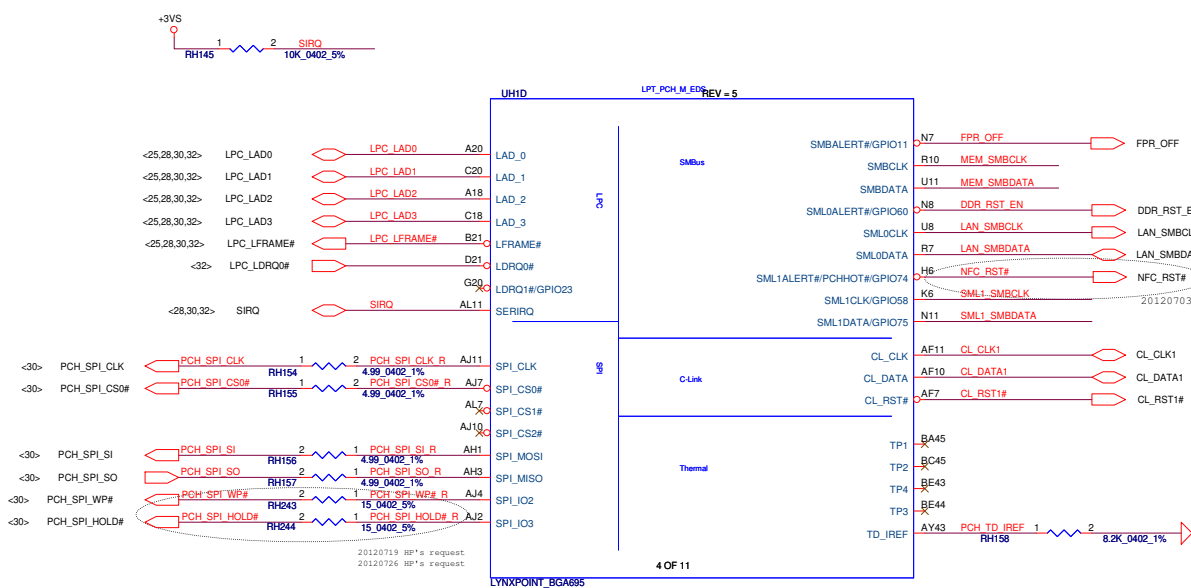


PCIECLK REQ Pull UP Power Rail:
 SUS Rail : 0 3 4 5 6 7
 Core Rail: 1 2



CLOCK TERMINATION for FCIM and need close to PCH

| | | | | | | |
|--|--------------------|-----------------|------------|----------|---------------------------|----------------|
| Security Classification | Compal Secret Data | | Title | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | PCH- CLK | | |
| 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 COMPAL ELECTRONICS, INC. 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. | | | | Rev | 0.3 | |
| | | | | Date: | Monday, November 12, 2012 | Sheet 15 of 56 |



| | | | | |
|---|--------------------|-----------------|--------------------------|-----------------------------------|
| Security Classification | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title |
| 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. | | | | PCH - SPI, SMBUS, LPC LA-9371P |
| Date: Monday, November 12, 2012 | | | | Sheet 16 of 56 |

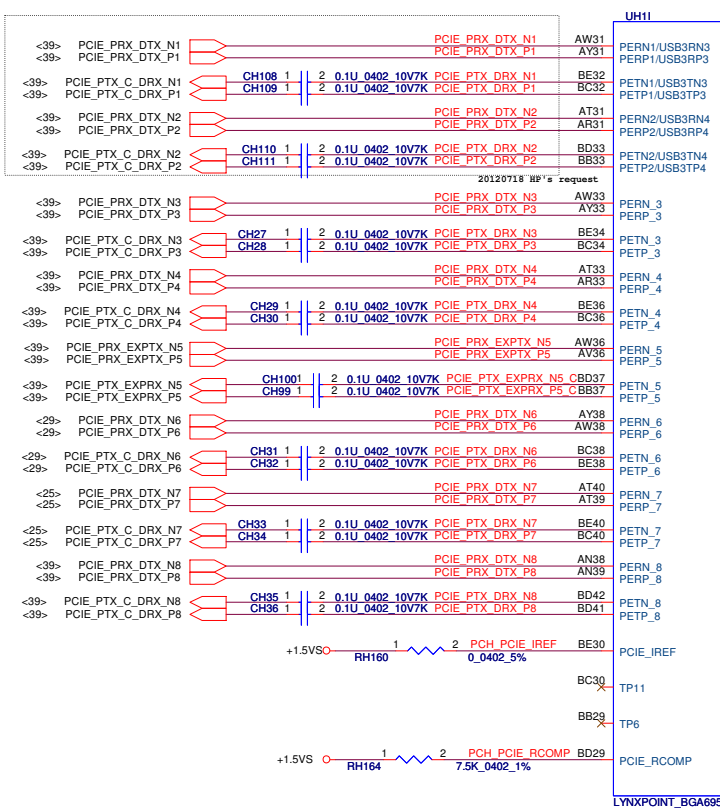
ThunderBolt

Express card slot

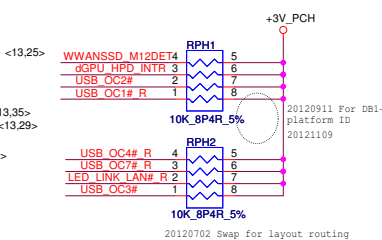
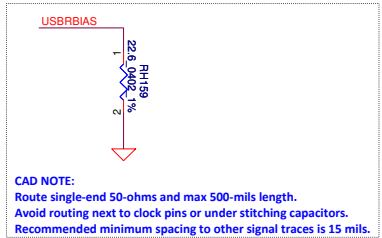
GIGA LAN

WLAN

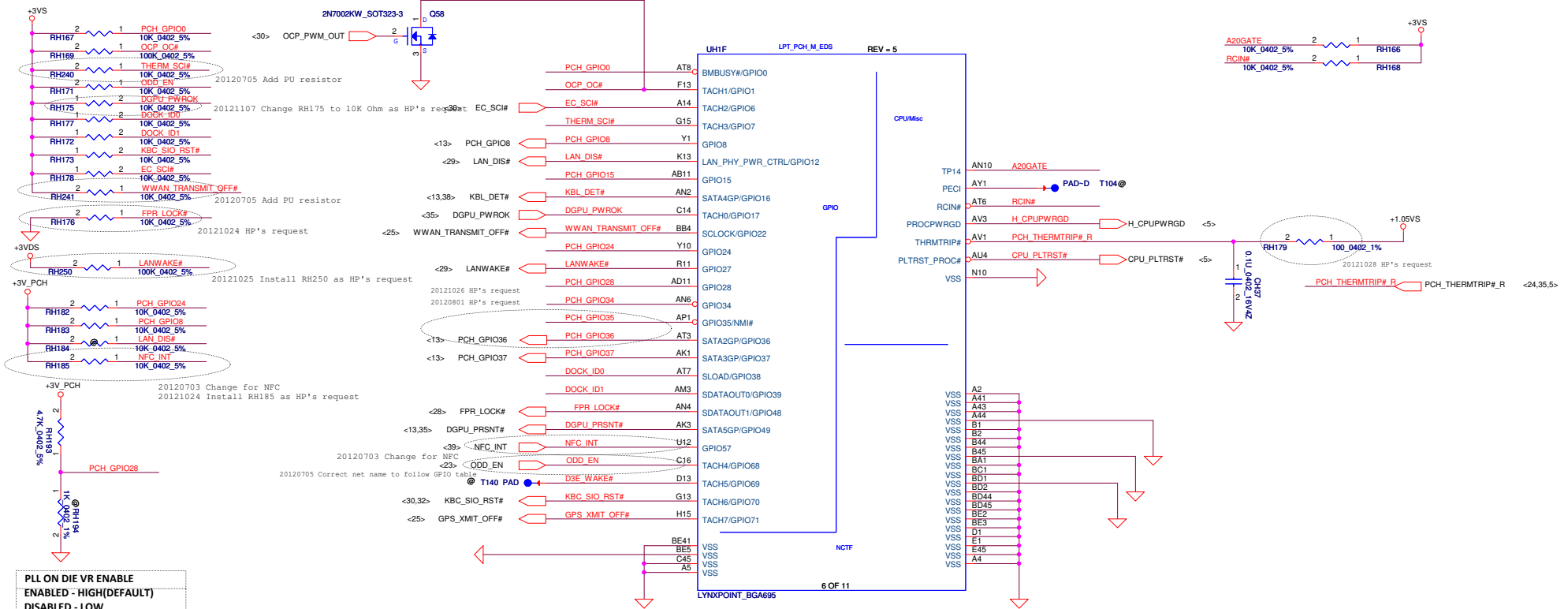
Card Reader



- >Docking USB 3.0
- >USB 3.0 Walkup port 1
- >NA
- >NA
- >USB 3.0 Walkup port 2
- >USB 3.0 Walkup port 3
- >Express card slot
- >Smart card reader
- >Finger Print Reader
- >Walkup USB 2.0/ USB Charging port
- >USB Camera
- >Docking USB 2.0 port
- >WWAN
- >BT/WLAN Combo



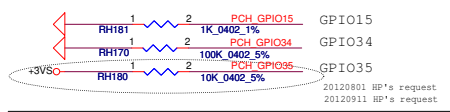
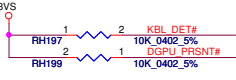
| | | | | | |
|---|------------|--------------------|------------|---------------------------------|----------------|
| Security Classification | | Compal Secret Data | | Title | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | PCH-PCIE,USB | |
| THIS SHEET OF ENGINEERING DRAWING IS THE 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 FREEDOM AND INFORMATION ACT 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. | | | | Document Number | Rev |
| | | | | LA-9371P | 0.3 |
| | | | | Date: Monday, November 12, 2012 | Sheet 17 of 56 |



PLL ON DIE VR ENABLE
 ENABLED - HIGH(DEFAULT)
 DISABLED - LOW

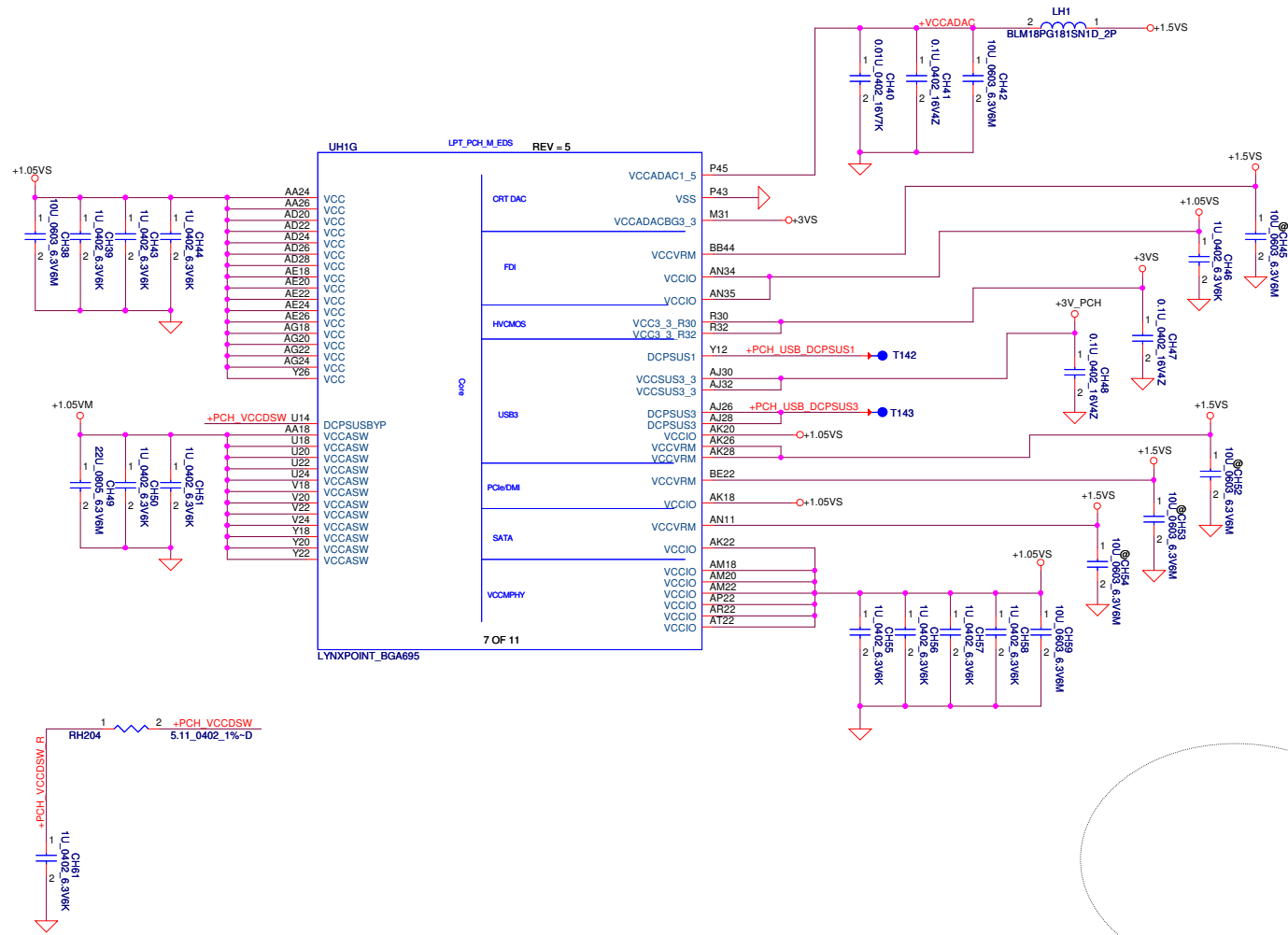
SATA2GP/GPIO36 , SATA3GP/GPIO37 SAMPLED AT RISING EDGE OF PWROK.
 WEAK INTERNAL PULL-DOWN.(WEAK INTERNAL PULL-DOWN IS DISABLED AFTER
 PLRST_N DE-ASSERTS).
 NOTE: THIS SIGNAL SHOULD NOT BE PULLED HIGH WHEN STRAP IS SAMPLED.

| Config | GPIO16,49 |
|----------------------|-----------|
| USB X4,PCIEX8,SATAX6 | 11 |
| USB X6,PCIEX8,SATAX4 | 01 |



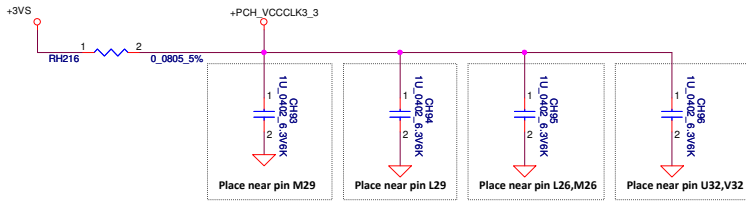
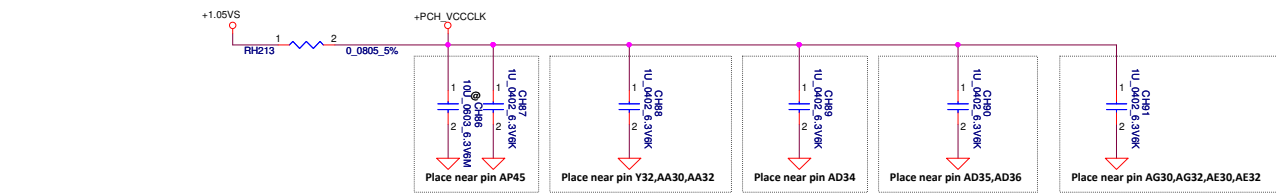
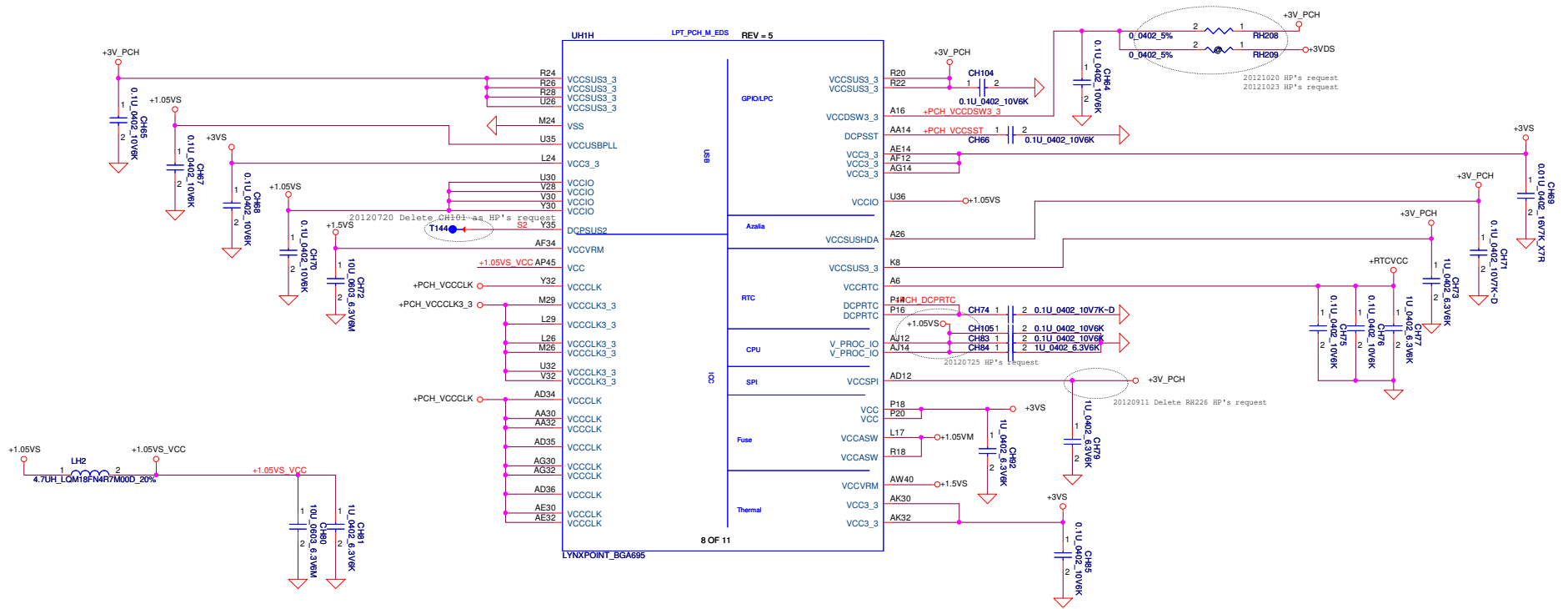
| Fixed Signals | | | | Mixed Signals | | Fixed Signals | | | | | | Mixed Signals | | Fixed Signals | | | | | |
|---------------|--------|--------|--------|---------------|--------|---------------|--------|--------|--------|--------|--------|---------------|--------|---------------|--------|--------|--------|--------|--------|
| USB3 1 | USB3 2 | USB3 5 | USB3 6 | PCIE 1 | PCIE 2 | PCIE 3 | PCIE 4 | PCIE 5 | PCIE 6 | PCIE 7 | PCIE 8 | SATA 4 | SATA 5 | SATA 0 | SATA 1 | SATA 2 | SATA 3 | PCIE 1 | PCIE 2 |
| | | | | (00) | (00) | | | | | | | (00) | (00) | | | | | (01) | (01) |
| | | | | USB3 3 | USB3 4 | | | | | | | | | | | | | | |

| Board ID | BRD_ID1 GPIO15 | BRD_ID2 GPIO34 | BRD_ID3 GPIO35 | BRD_ID4 GPIO40 |
|----------|-------------------|-------------------|-------------------|-------------------|
| DB0 | 0 | 0 | 0 | 0 |
| DB1 | 0 | 0 | 0 | 1 |
| DB2 | 0 | 0 | 1 | 0 |
| SI1 | 0 | 1 | 0 | 0 |
| SI1B | 0 | 1 | 0 | 1 |
| SI2 | 0 | 1 | 1 | 0 |
| PV1 | 1 | 0 | 0 | 0 |
| MV | 1 | 1 | 0 | 0 |

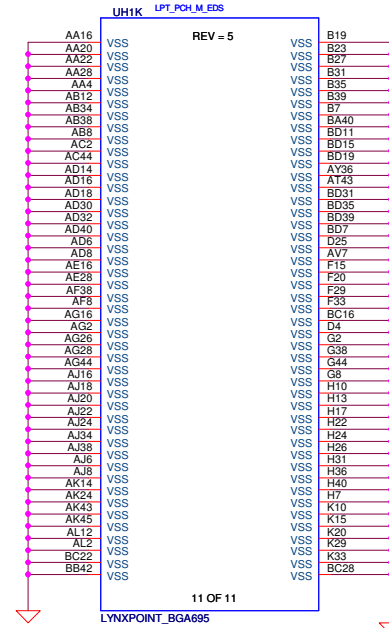
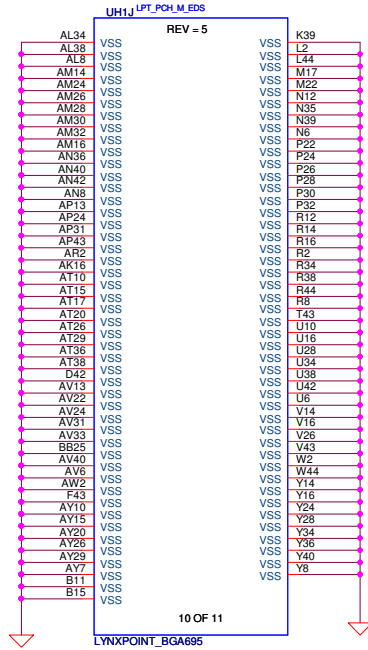


20120720 Delete CH60, CH62, CH63 as HP's request

| | | | | | |
|---|------------|--------------------|------------|--------------------------|---------------------------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title | |
| | | | | PCH- Power | |
| 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 HEADQUARTERS CUSTOMER SUPPORT 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. | | | | Rev | 0.3 |
| | | | | Date: | Monday, November 12, 2012 |
| | | | | Sheet | 19 of 56 |

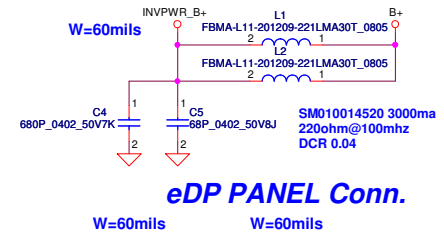
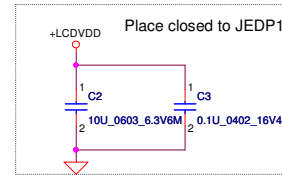
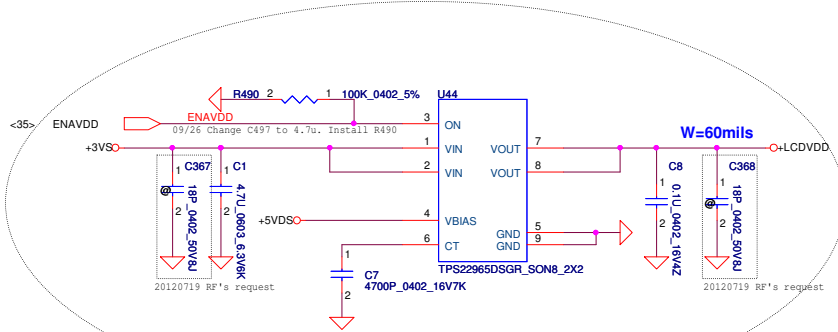


| | | | | | |
|---|--------------------|---------------------------|--------------------------|----------|----|
| Security Classification | Compal Secret Data | | Compal Electronics, Inc. | | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title | |
| THIS SHEET OF ENGINEERING DRAWING IS 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. | | | Document Number | LA-9371P | |
| Date | | Monday, November 12, 2012 | Rev | 0.3 | |
| | | Sheet | 20 | of | 56 |

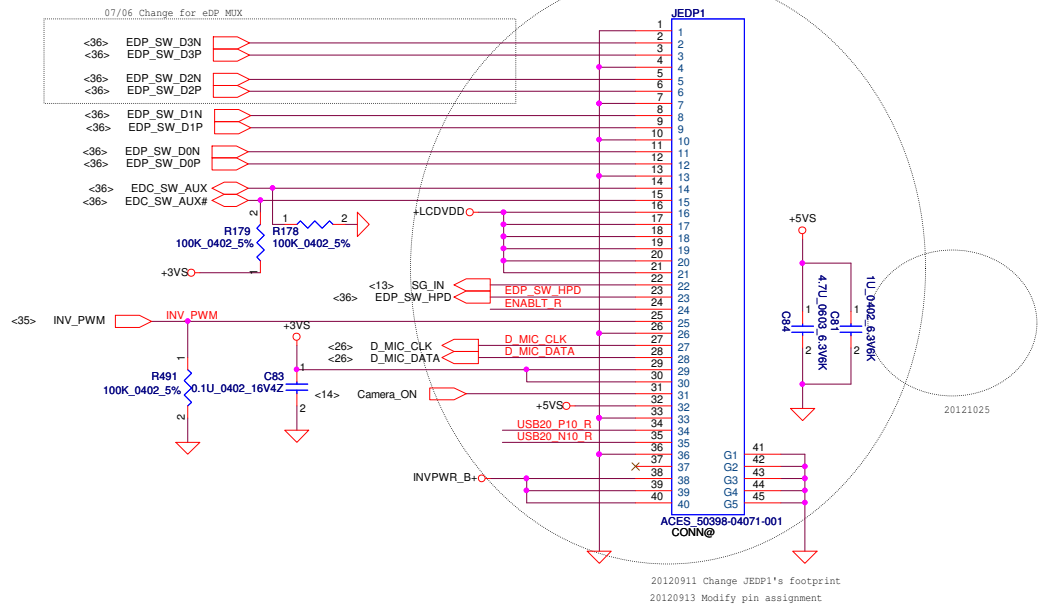
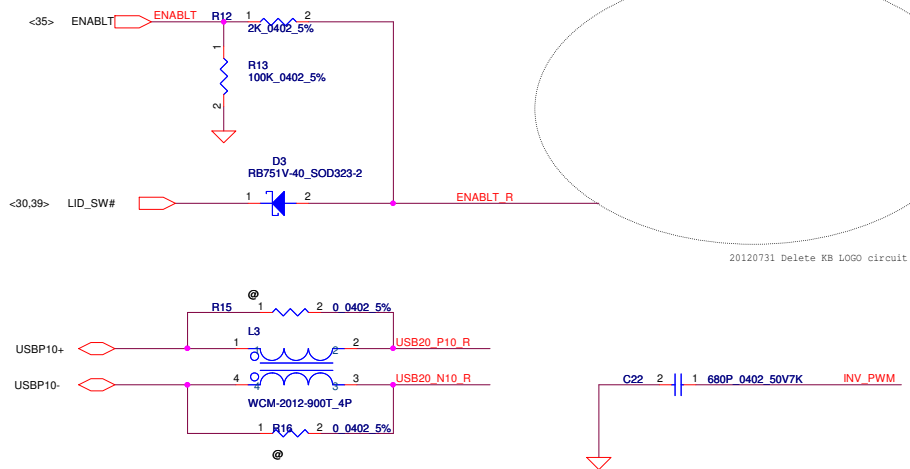


| | | | | | | |
|---|--------------------|-----------------|------------|--------------------------|-----------------------------|-----------------------------------|
| Security Classification | Compal Secret Data | | | Compal Electronics, Inc. | | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title PCH - GND | | |
| 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 FRONTRON CUSTOMER 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. | | | | Revision 0.3 | Document Number LA-9371P | Date Monday, November 12, 2012 |
| | | | | Sheet 21 | of 56 | |

LCD POWER CIRCUIT

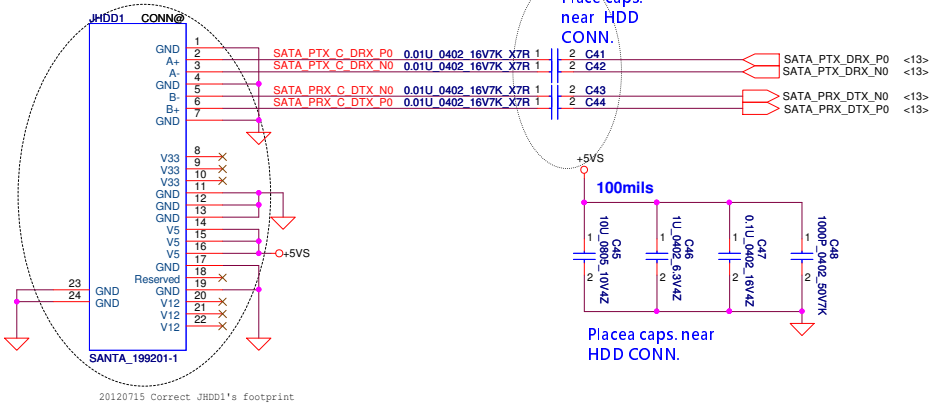


20121026 Change LCDVDD power rail solution.
Delete R9,R10,R11,C6,Q12,Q20

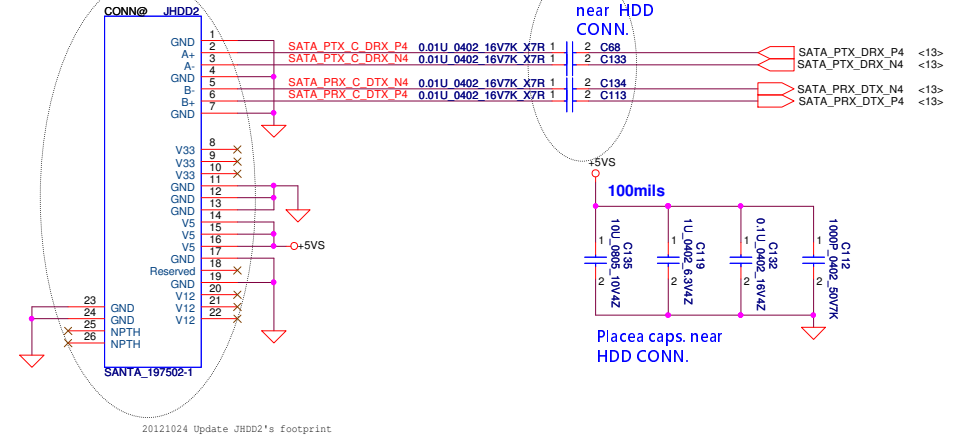


| | | | | |
|--|--------------------|-----------------|--------------------------|--|
| Security Classification | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. 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. | | | | Document Number LA-9371P |
| | | | | Rev 0.3 |
| | | | | Date: Monday, November 12, 2012 Sheet 22 of 56 |

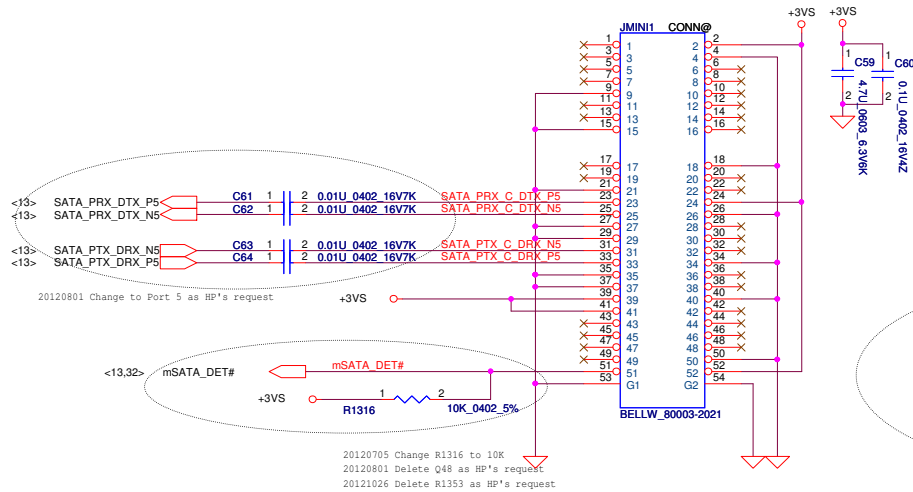
SATA Primary HDD CONN.



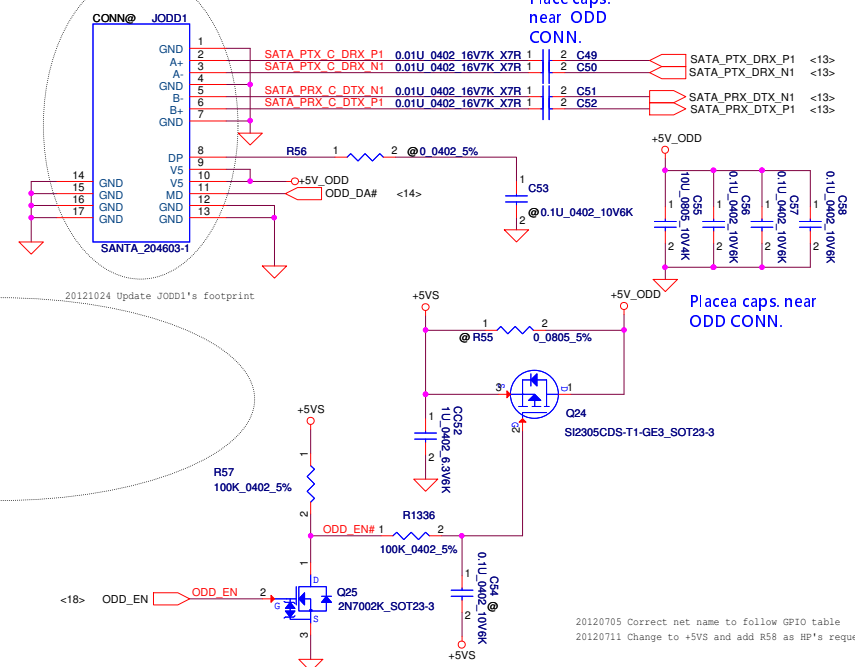
SATA Second HDD CONN.



mSATA Conn.

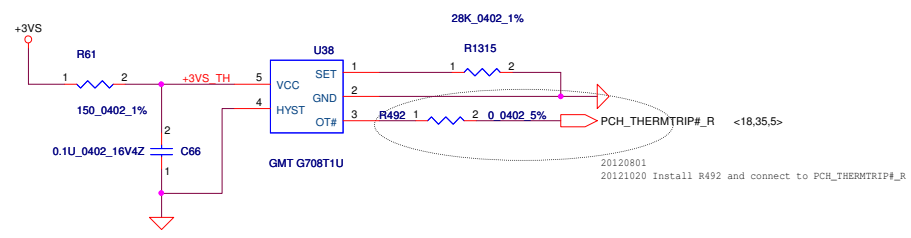
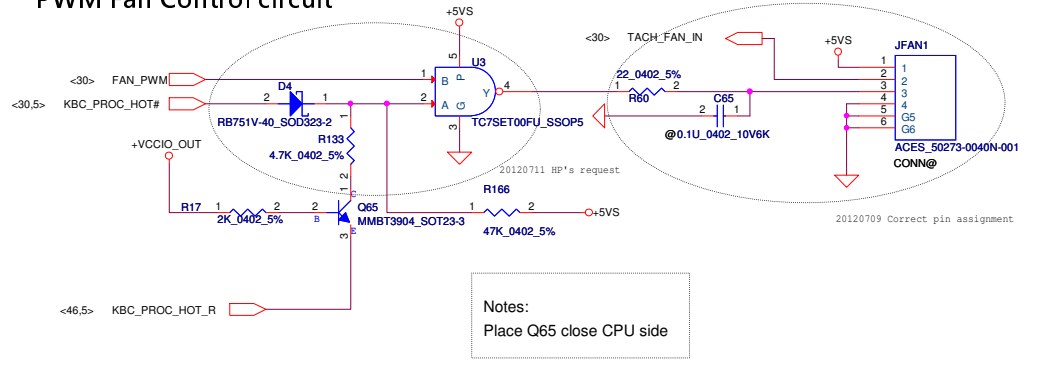


SATA ODD CONN.



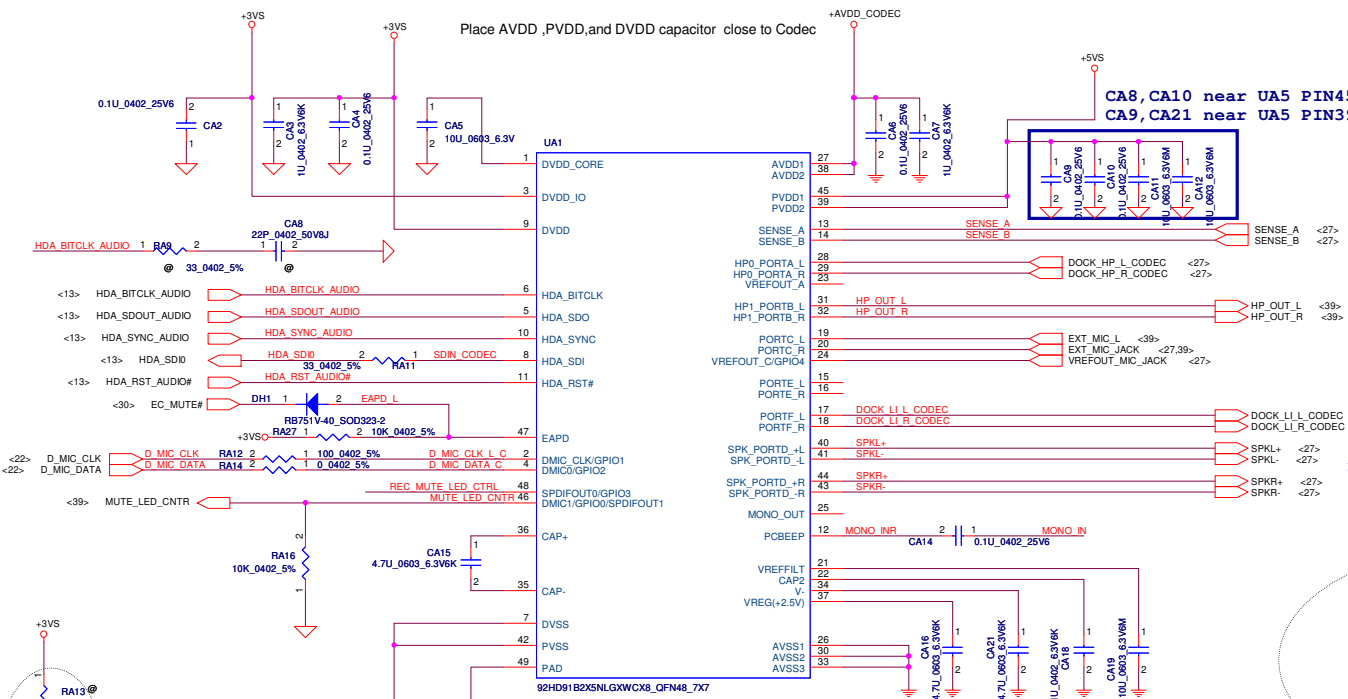
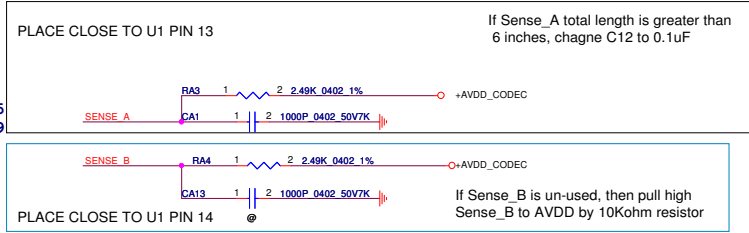
| Security Classification | | Compal Secret Data | | Title | |
|--|------------|--------------------|------------|---------------------------------|----------------|
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Compal Electronics, Inc. | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY 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 COMPAL ELECTRONICS, INC. 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. | | | | Part Number | Rev |
| | | | | Document Number | 0.3 |
| | | | | LA-9371P | |
| | | | | Date: Monday, November 12, 2012 | Sheet 23 of 56 |

PWM Fan Control circuit



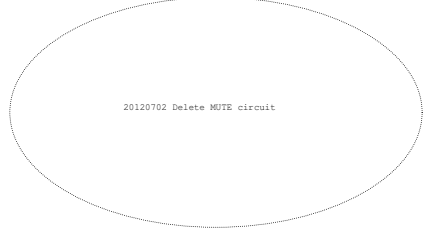
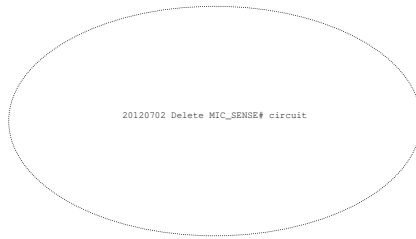
| | | | | | | |
|--|--------------------|-----------------|------------|--------------------------|---------------------------|----------------|
| Security Classification | Compal Secret Data | | | Title | | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Compal Electronics, Inc. | | |
| 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 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. | | | | Rev | 0.3 | |
| | | | | Document Number | LA-9371P | |
| | | | | Date: | Monday, November 12, 2012 | Sheet 24 of 56 |

Notes:
 Keep PVDD supply and speaker traces routed on the DGND plane.
 Keep away from AGND and other analog signals

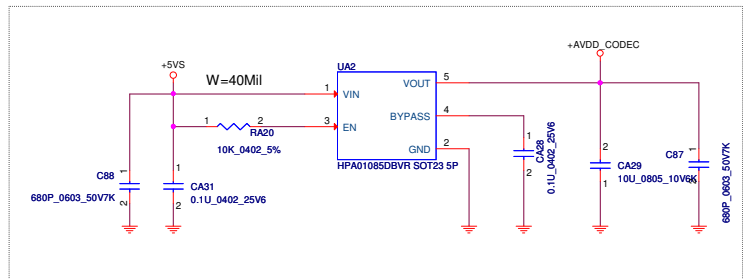
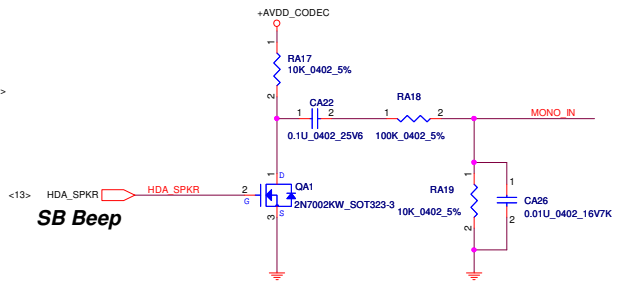
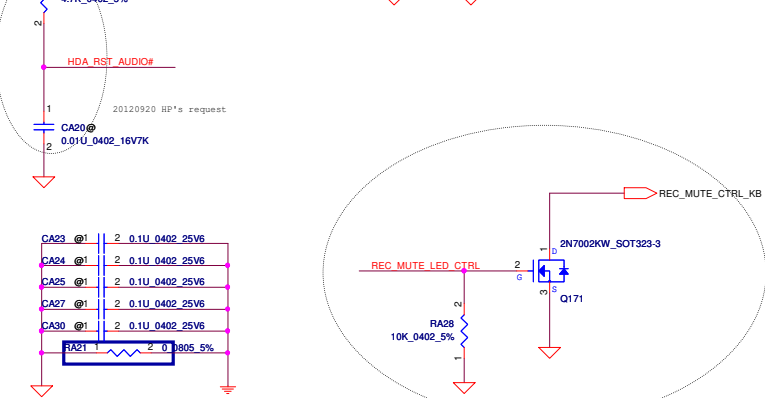


External MIC
 Combo Jack
 Headphone

Internal SPKR (front stereo speaker)



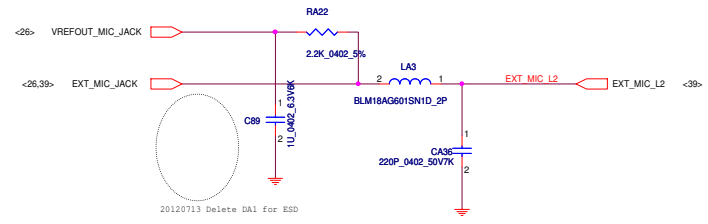
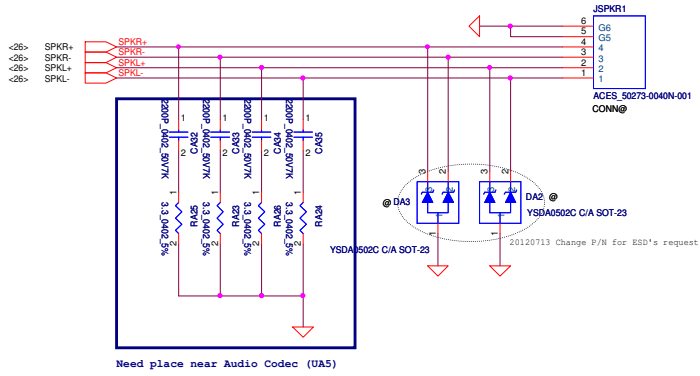
Place C209,C210,CA87,CA89 close to Codec



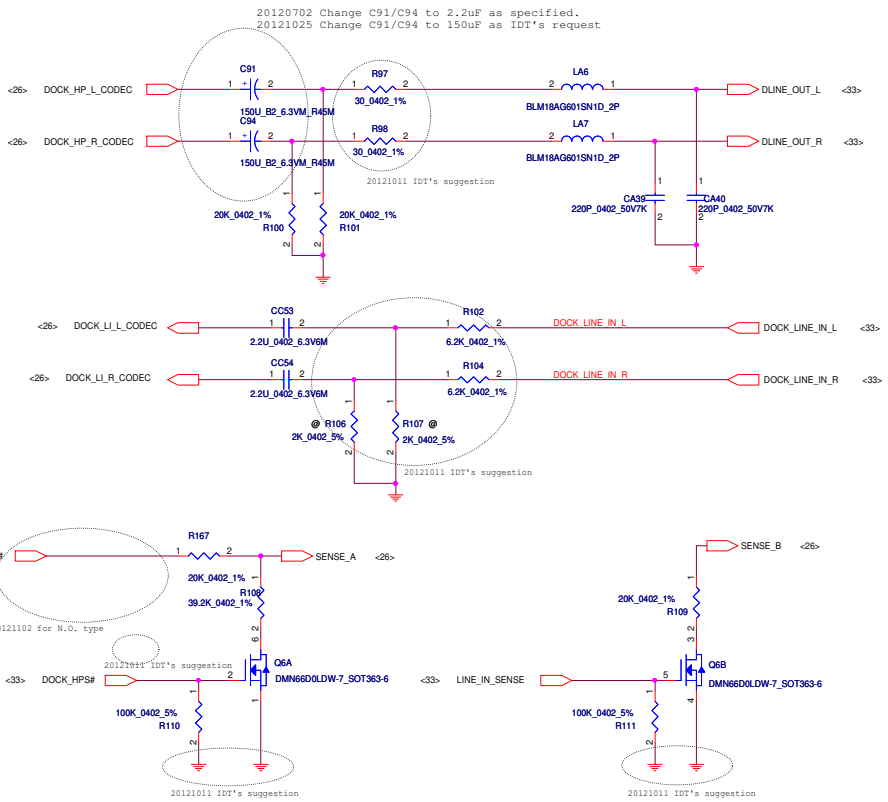
GND
 RA53 need under or near UA1

| | | | | | |
|---|---------------------------|--------------------|------------|--------------------------|-----|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title | |
| 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 | Document Number | LA-XXXXP | | 0.3 | |
| Date: | Monday, November 12, 2012 | Sheet | 26 | of 56 | |

Speaker Connector

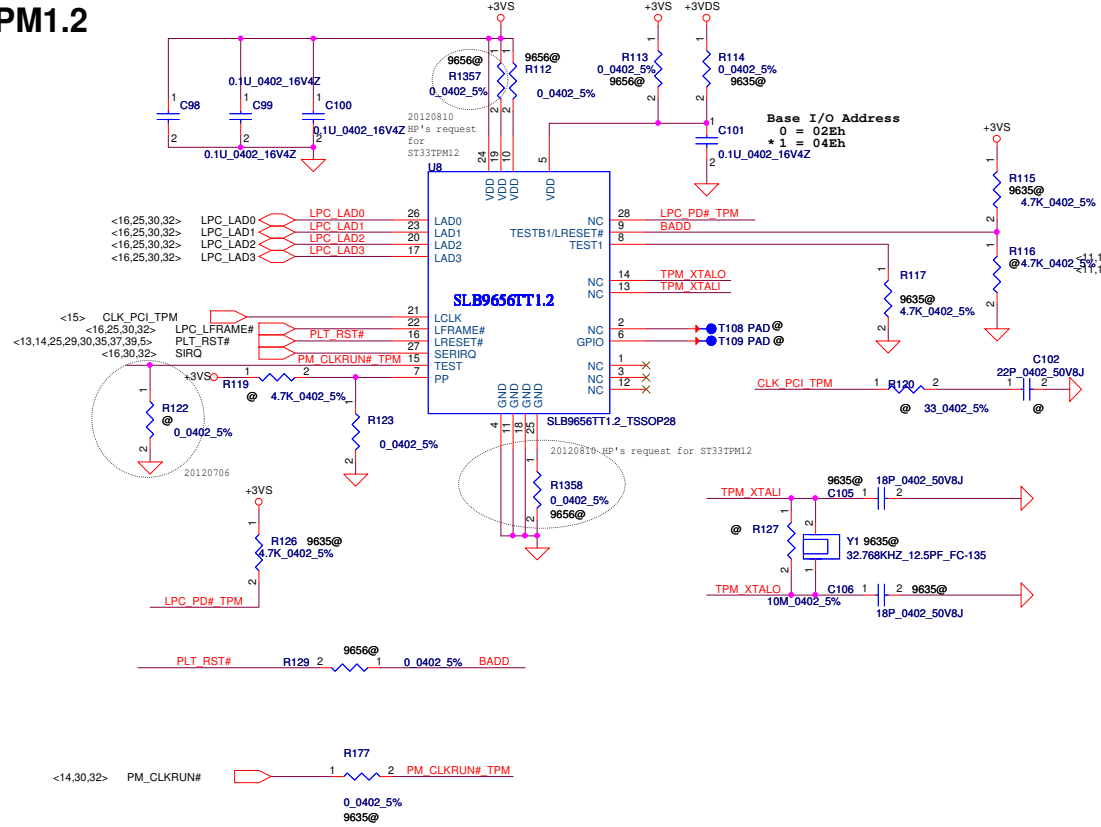


DOCK Audio



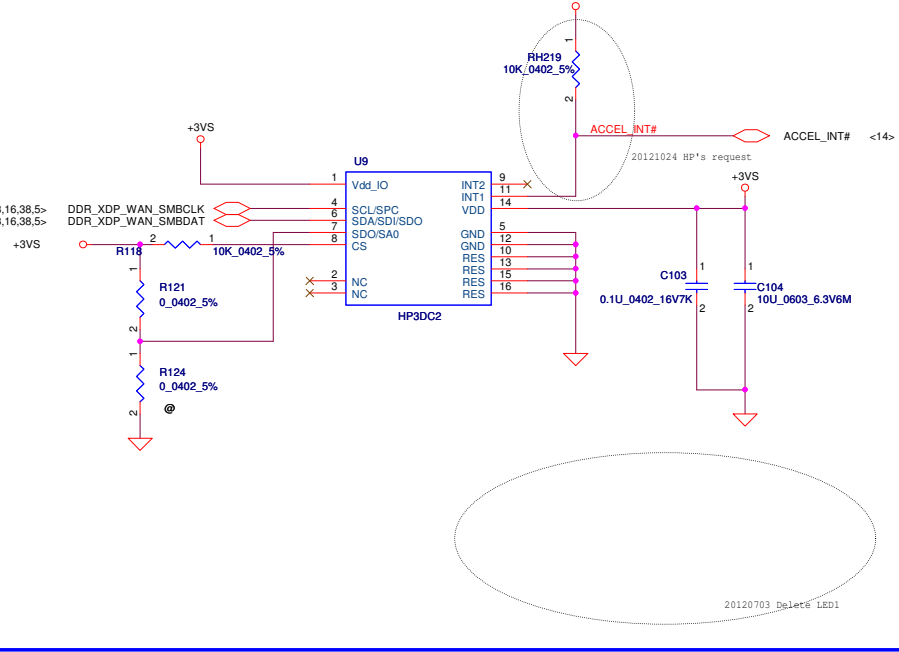
| | | | | |
|---|---------------------------|-----------------|--------------------------|-------------------------|
| Security Classification | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title |
| THIS SHEET OF ENGINEERING DRAWING 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. | | | | Audio SPK Conn/Jack/MIC |
| Size | C | Document Number | LA-9371P | Rev |
| Date | Monday, November 12, 2012 | Sheet | 27 | of 56 |

TPM1.2

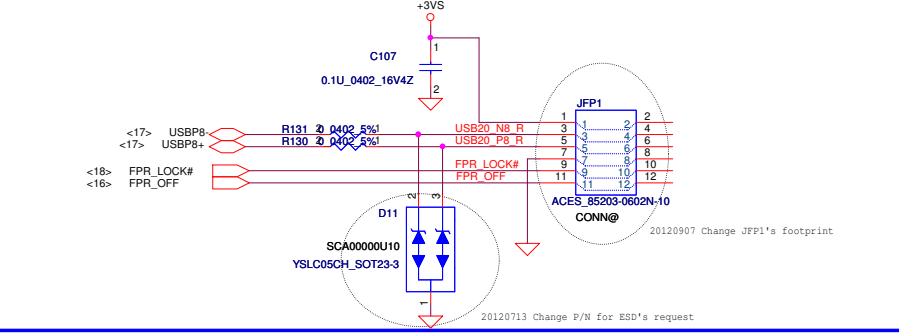


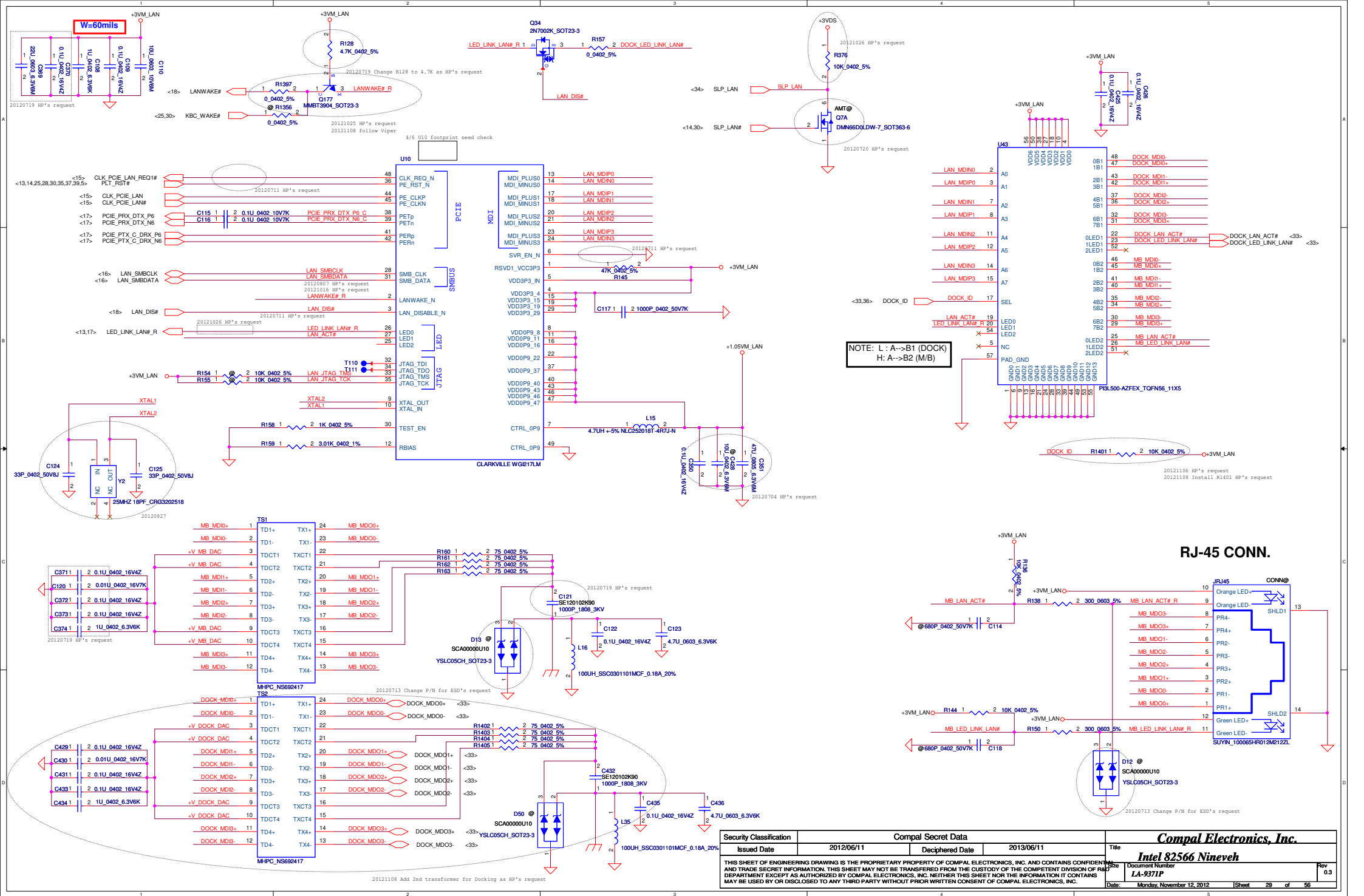
| TPM | BOM Option (Not Install) |
|-----------|--|
| SLB9635 | R112, R113, R129 |
| SLB9656 | R114, R115, R117, R126, R177, C105, C106, Y1 |
| ST33TPM12 | R113, R129, R114, R115, R117, R126, R177, R1357, R1358, R127, R122, R116, R120, C102, C101, C105, C106, Y1 |

ACCELEROMETER



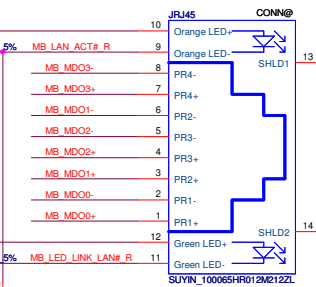
Finger printer



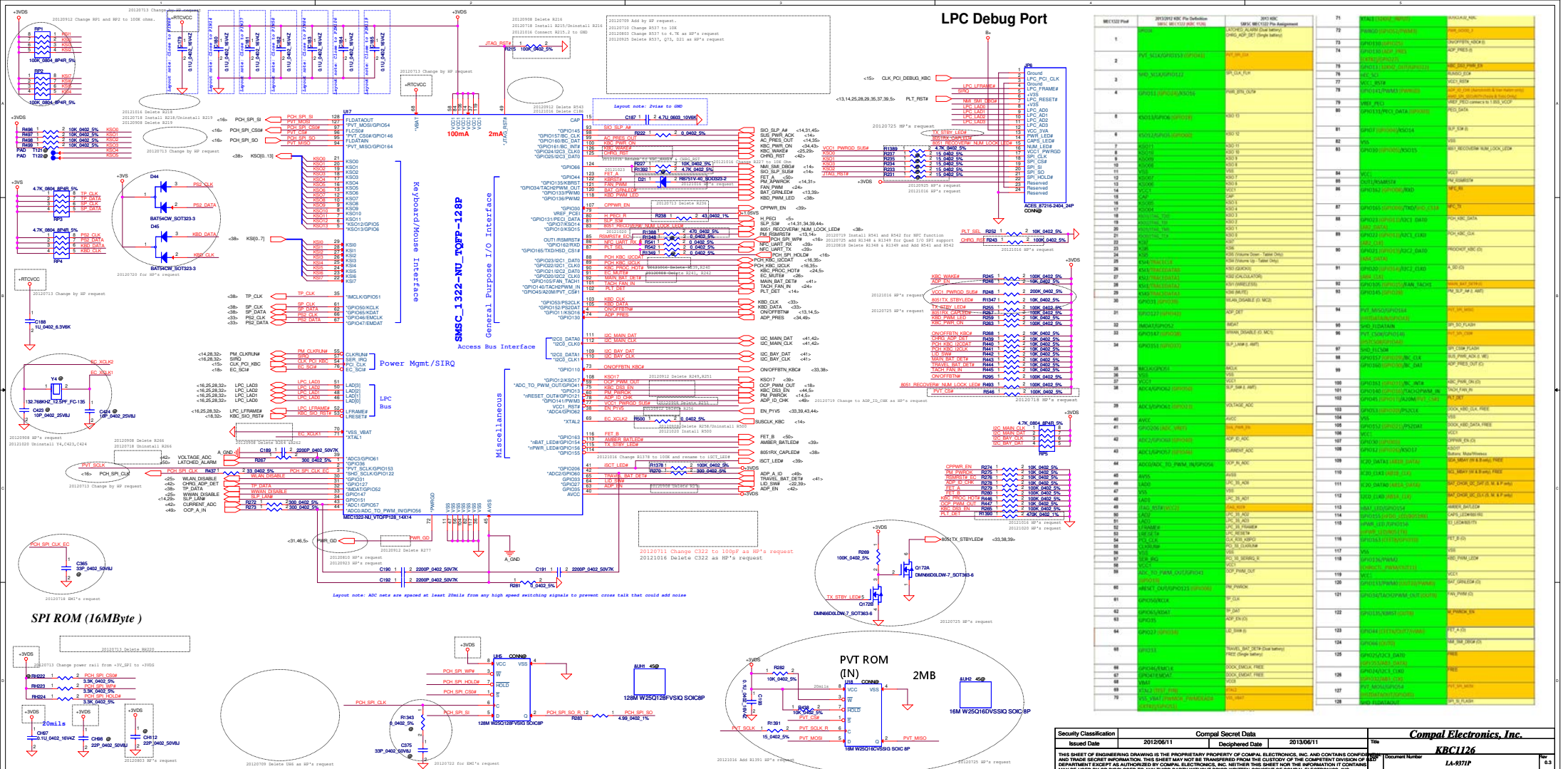


NOTE: L : A->B1 (DOCK)
H : A->B2 (M/B)

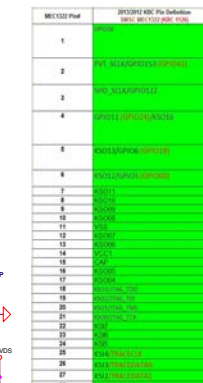
RJ-45 CONN.



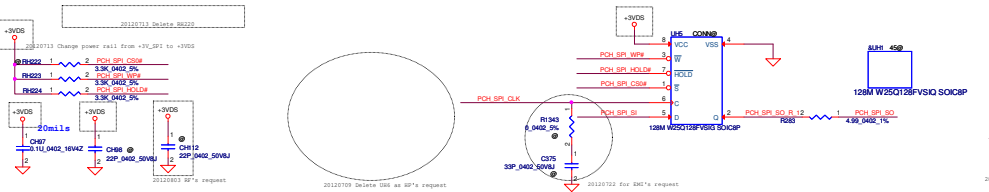
| Security Classification | | Compal Secret Data | | Title | |
|--|---------------------------|--------------------|------------|--------------------------|--|
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Compal Electronics, Inc. | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY 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 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. | | | | Doc# LA-9371P | |
| Date: | Monday, November 12, 2012 | Sheet: | 29 | of 56 | |



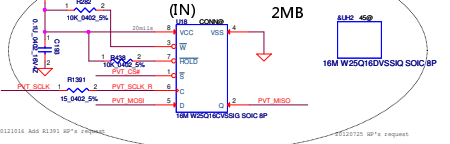
LPC Debug Port



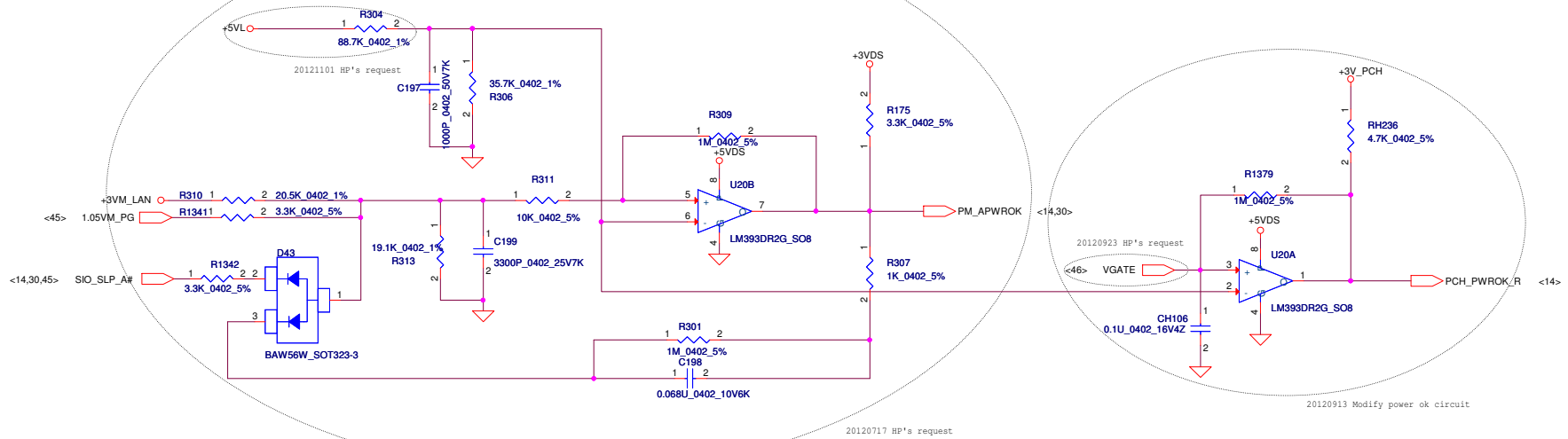
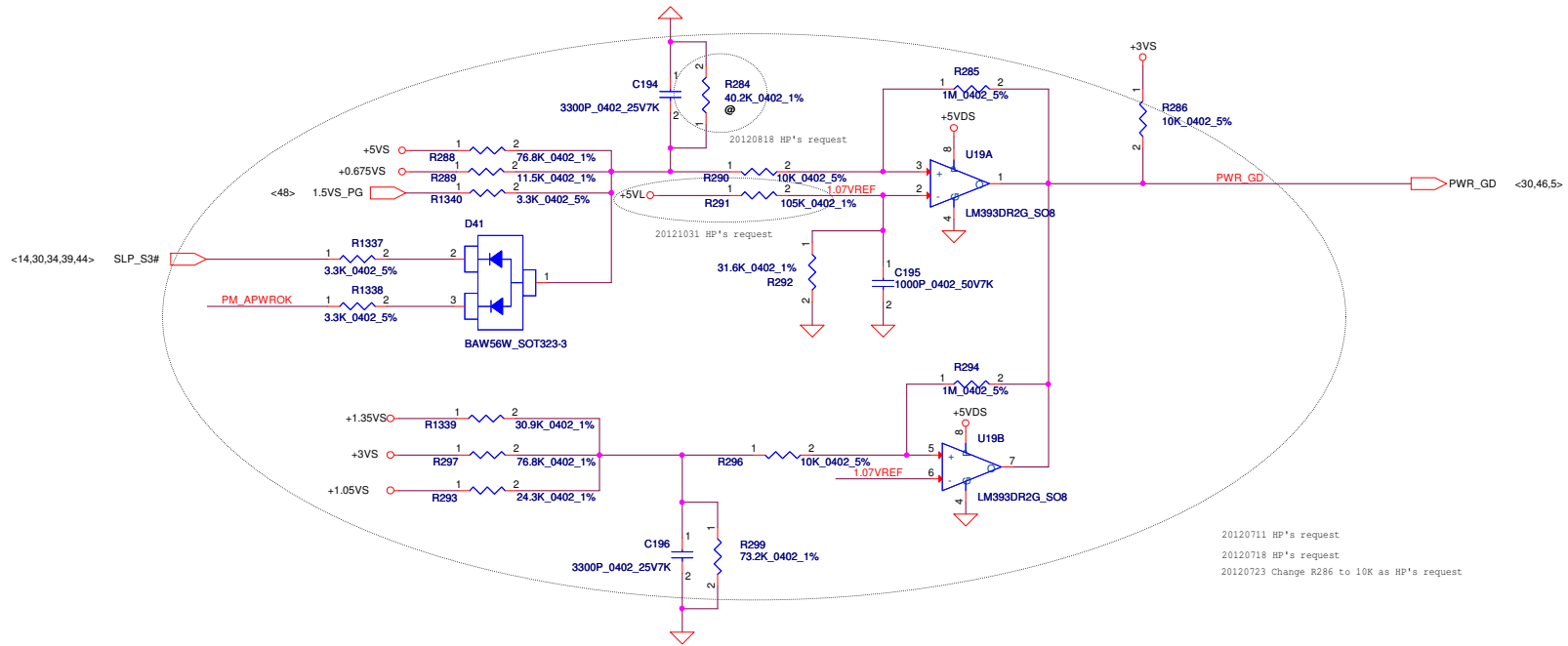
SPI ROM (16MByte)



PVT ROM (IN)



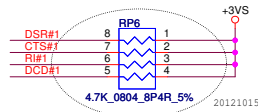
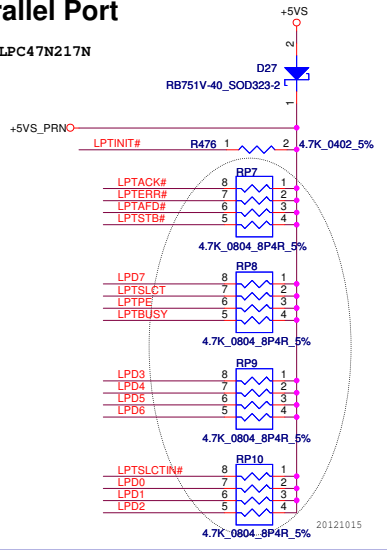
| Pin | Pin Def | Pin Def | Pin Def |
|-----|---------|---------|---------|
| 1 | AVDD1 | AVDD1 | AVDD1 |
| 2 | AVDD2 | AVDD2 | AVDD2 |
| 3 | AVDD3 | AVDD3 | AVDD3 |
| 4 | AVDD4 | AVDD4 | AVDD4 |
| 5 | AVDD5 | AVDD5 | AVDD5 |
| 6 | AVDD6 | AVDD6 | AVDD6 |
| 7 | AVDD7 | AVDD7 | AVDD7 |
| 8 | AVDD8 | AVDD8 | AVDD8 |
| 9 | AVDD9 | AVDD9 | AVDD9 |
| 10 | AVDD10 | AVDD10 | AVDD10 |
| 11 | AVDD11 | AVDD11 | AVDD11 |
| 12 | AVDD12 | AVDD12 | AVDD12 |
| 13 | AVDD13 | AVDD13 | AVDD13 |
| 14 | AVDD14 | AVDD14 | AVDD14 |
| 15 | AVDD15 | AVDD15 | AVDD15 |
| 16 | AVDD16 | AVDD16 | AVDD16 |
| 17 | AVDD17 | AVDD17 | AVDD17 |
| 18 | AVDD18 | AVDD18 | AVDD18 |
| 19 | AVDD19 | AVDD19 | AVDD19 |
| 20 | AVDD20 | AVDD20 | AVDD20 |
| 21 | AVDD21 | AVDD21 | AVDD21 |
| 22 | AVDD22 | AVDD22 | AVDD22 |
| 23 | AVDD23 | AVDD23 | AVDD23 |
| 24 | AVDD24 | AVDD24 | AVDD24 |
| 25 | AVDD25 | AVDD25 | AVDD25 |
| 26 | AVDD26 | AVDD26 | AVDD26 |
| 27 | AVDD27 | AVDD27 | AVDD27 |
| 28 | AVDD28 | AVDD28 | AVDD28 |
| 29 | AVDD29 | AVDD29 | AVDD29 |
| 30 | AVDD30 | AVDD30 | AVDD30 |
| 31 | AVDD31 | AVDD31 | AVDD31 |
| 32 | AVDD32 | AVDD32 | AVDD32 |
| 33 | AVDD33 | AVDD33 | AVDD33 |
| 34 | AVDD34 | AVDD34 | AVDD34 |
| 35 | AVDD35 | AVDD35 | AVDD35 |
| 36 | AVDD36 | AVDD36 | AVDD36 |
| 37 | AVDD37 | AVDD37 | AVDD37 |
| 38 | AVDD38 | AVDD38 | AVDD38 |
| 39 | AVDD39 | AVDD39 | AVDD39 |
| 40 | AVDD40 | AVDD40 | AVDD40 |
| 41 | AVDD41 | AVDD41 | AVDD41 |
| 42 | AVDD42 | AVDD42 | AVDD42 |
| 43 | AVDD43 | AVDD43 | AVDD43 |
| 44 | AVDD44 | AVDD44 | AVDD44 |
| 45 | AVDD45 | AVDD45 | AVDD45 |
| 46 | AVDD46 | AVDD46 | AVDD46 |
| 47 | AVDD47 | AVDD47 | AVDD47 |
| 48 | AVDD48 | AVDD48 | AVDD48 |
| 49 | AVDD49 | AVDD49 | AVDD49 |
| 50 | AVDD50 | AVDD50 | AVDD50 |
| 51 | AVDD51 | AVDD51 | AVDD51 |
| 52 | AVDD52 | AVDD52 | AVDD52 |
| 53 | AVDD53 | AVDD53 | AVDD53 |
| 54 | AVDD54 | AVDD54 | AVDD54 |
| 55 | AVDD55 | AVDD55 | AVDD55 |
| 56 | AVDD56 | AVDD56 | AVDD56 |
| 57 | AVDD57 | AVDD57 | AVDD57 |
| 58 | AVDD58 | AVDD58 | AVDD58 |
| 59 | AVDD59 | AVDD59 | AVDD59 |
| 60 | AVDD60 | AVDD60 | AVDD60 |
| 61 | AVDD61 | AVDD61 | AVDD61 |
| 62 | AVDD62 | AVDD62 | AVDD62 |
| 63 | AVDD63 | AVDD63 | AVDD63 |
| 64 | AVDD64 | AVDD64 | AVDD64 |
| 65 | AVDD65 | AVDD65 | AVDD65 |
| 66 | AVDD66 | AVDD66 | AVDD66 |
| 67 | AVDD67 | AVDD67 | AVDD67 |
| 68 | AVDD68 | AVDD68 | AVDD68 |
| 69 | AVDD69 | AVDD69 | AVDD69 |
| 70 | AVDD70 | AVDD70 | AVDD70 |
| 71 | AVDD71 | AVDD71 | AVDD71 |
| 72 | AVDD72 | AVDD72 | AVDD72 |
| 73 | AVDD73 | AVDD73 | AVDD73 |
| 74 | AVDD74 | AVDD74 | AVDD74 |
| 75 | AVDD75 | AVDD75 | AVDD75 |
| 76 | AVDD76 | AVDD76 | AVDD76 |
| 77 | AVDD77 | AVDD77 | AVDD77 |
| 78 | AVDD78 | AVDD78 | AVDD78 |
| 79 | AVDD79 | AVDD79 | AVDD79 |
| 80 | AVDD80 | AVDD80 | AVDD80 |
| 81 | AVDD81 | AVDD81 | AVDD81 |
| 82 | AVDD82 | AVDD82 | AVDD82 |
| 83 | AVDD83 | AVDD83 | AVDD83 |
| 84 | AVDD84 | AVDD84 | AVDD84 |
| 85 | AVDD85 | AVDD85 | AVDD85 |
| 86 | AVDD86 | AVDD86 | AVDD86 |
| 87 | AVDD87 | AVDD87 | AVDD87 |
| 88 | AVDD88 | AVDD88 | AVDD88 |
| 89 | AVDD89 | AVDD89 | AVDD89 |
| 90 | AVDD90 | AVDD90 | AVDD90 |
| 91 | AVDD91 | AVDD91 | AVDD91 |
| 92 | AVDD92 | AVDD92 | AVDD92 |
| 93 | AVDD93 | AVDD93 | AVDD93 |
| 94 | AVDD94 | AVDD94 | AVDD94 |
| 95 | AVDD95 | AVDD95 | AVDD95 |
| 96 | AVDD96 | AVDD96 | AVDD96 |
| 97 | AVDD97 | AVDD97 | AVDD97 |
| 98 | AVDD98 | AVDD98 | AVDD98 |
| 99 | AVDD99 | AVDD99 | AVDD99 |
| 100 | AVDD100 | AVDD100 | AVDD100 |



| | | | | |
|---|--------------------|-----------------|------------|------------------------------------|
| Security Classification | Compal Secret Data | | Title | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Compal Electronics, Inc. |
| 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. | | | | Document Number LA-937IP |
| Date: Monday, November 12, 2012 | | | | Rev 0.3 |
| Sheet 31 of 56 | | | | |

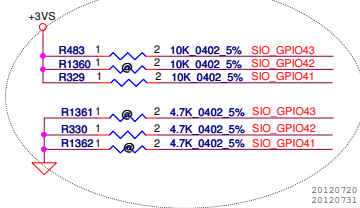
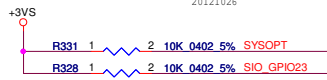
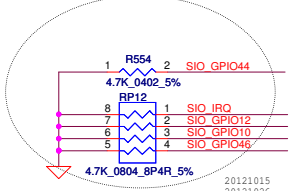
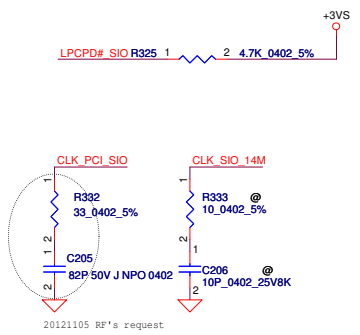
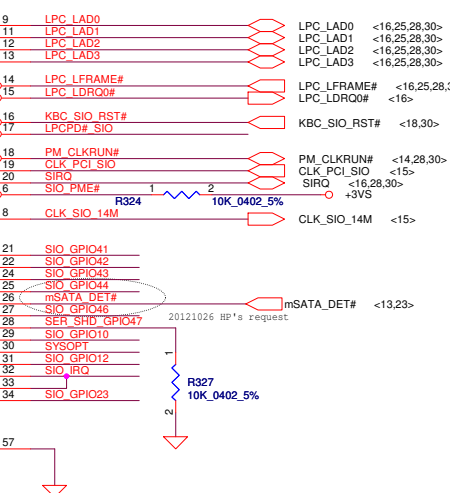
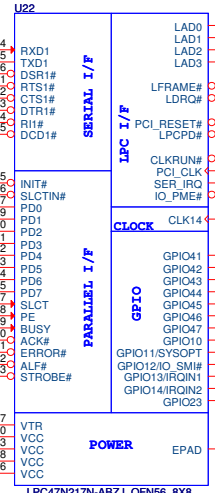
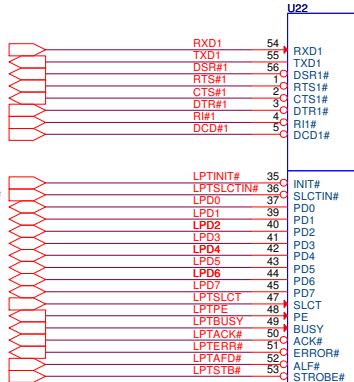
Parallel Port

TO LPC47N217N



- <-3> RXD1
- <-3> TXD1
- <-3> DSR#1
- <-3> RTS#1
- <-3> CTS#1
- <-3> DTR#1
- <-3> RI#1
- <-3> DCD#1

- <-3> LPTINIT#
- <-3> LPTSCLTIN#
- <-3> LPD0
- <-3> LPD1
- <-3> LPD2
- <-3> LPD3
- <-3> LPD4
- <-3> LPD5
- <-3> LPD6
- <-3> LPD7
- <-3> LPTSCLT
- <-3> LPTPE
- <-3> LPTBUSY
- <-3> LPTACK#
- <-3> LPTERR#
- <-3> LPTAFD#
- <-3> LPTSTB#



20120720 System ID for HP's request
 20120731 System ID for HP's request
 20120821 Add R for 2019M & 4D19M option

Platform IDs (Super I/O GPIOs)

| PLT_ID1 | PLT_ID2 | PLT_ID3 | SYSTEM ID | Series | CPU | Dock | COMMON BIOS |
|---------|---------|---------|------------------------|--------|---------|--------|-------------|
| GPIO43 | GPIO42 | GPIO41 | Afterburner 17" 4 DIMM | W | Haswell | Common | 8 |
| 1 | 0 | 1 | Afterburner 17" 2 DIMM | W | Haswell | Common | 8 |
| 1 | 1 | 1 | Afterburner 17" 2 DIMM | W | Haswell | Common | 8 |

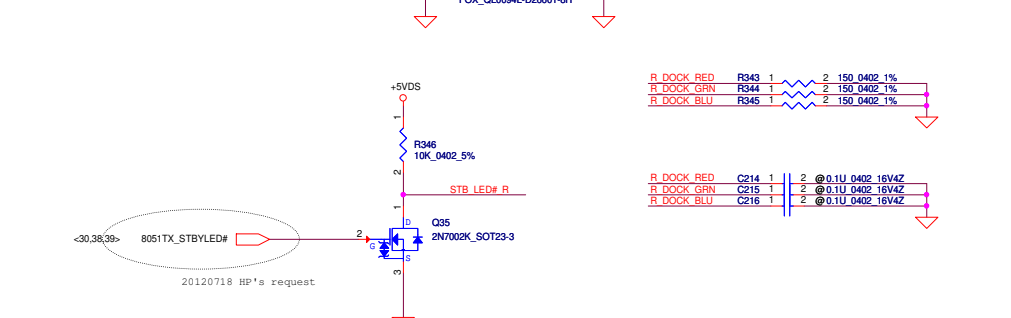
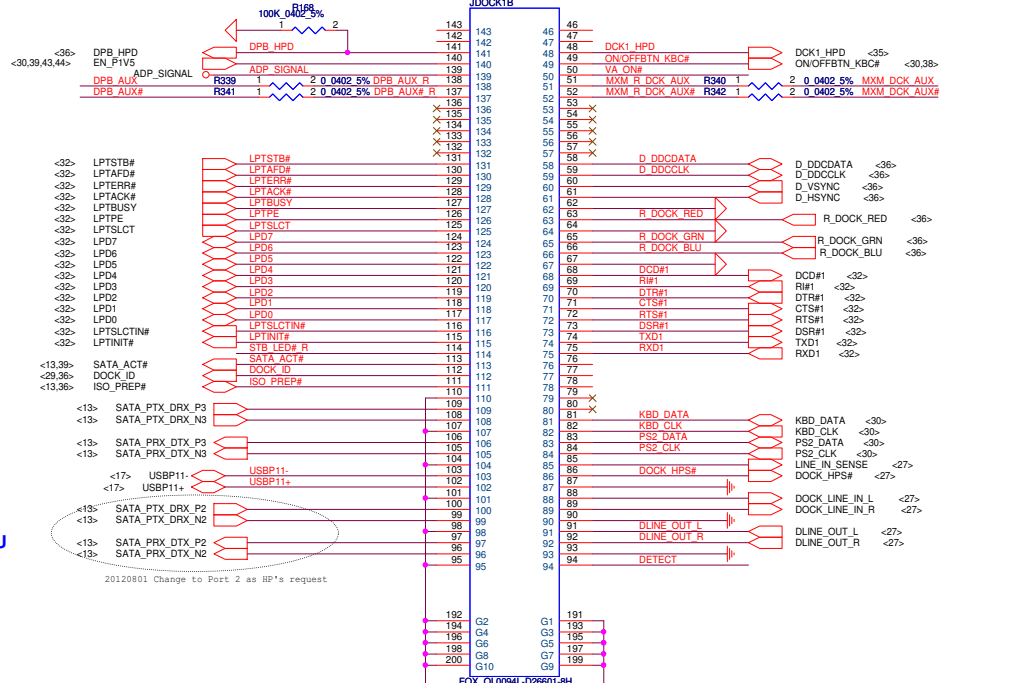
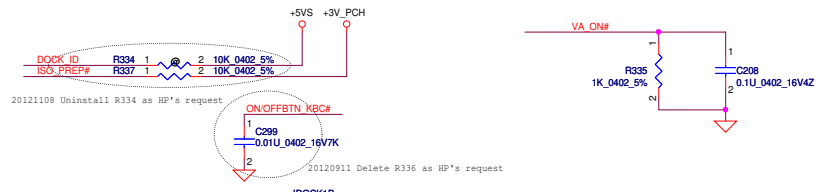
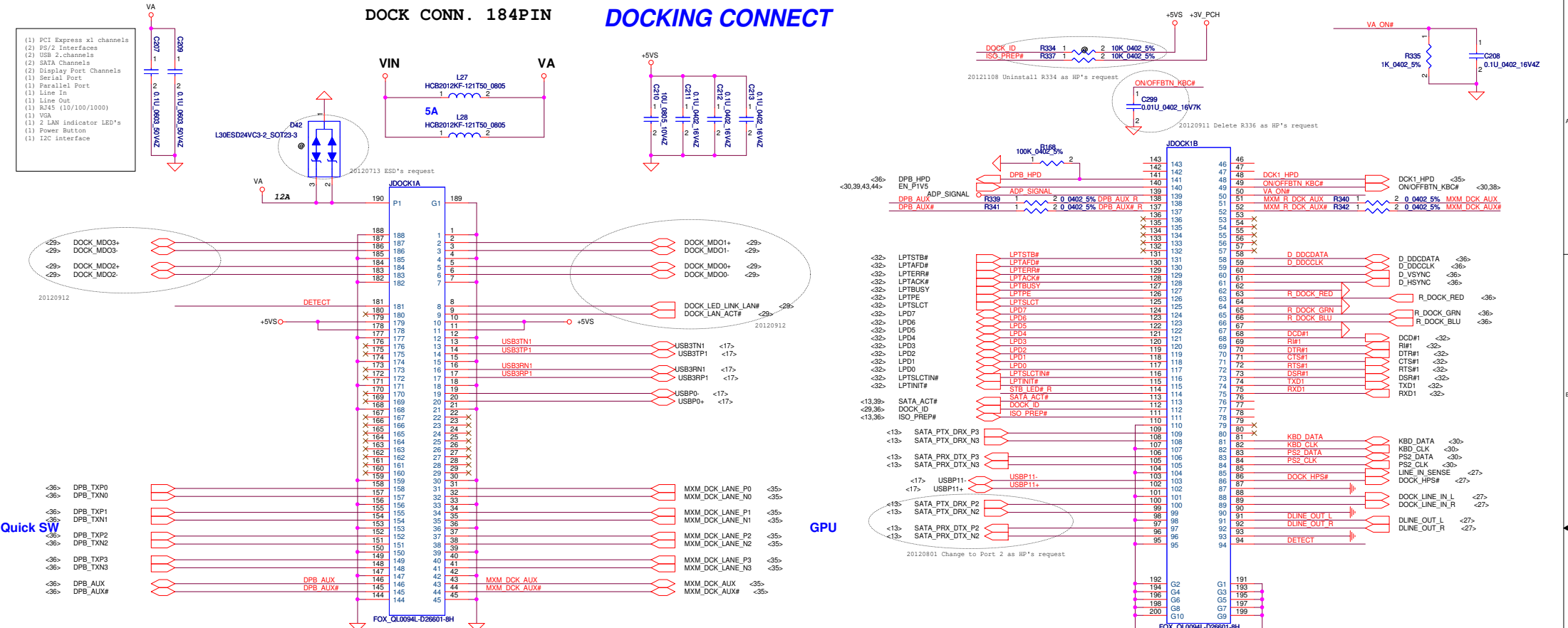
| | | | | |
|--|---------------------------|-----------------|------------|-----------------|
| Security Classification | Compal Secret Data | | Title | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Document Number |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. 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. | | | | Rev 0.3 |
| Date: | Monday, November 12, 2012 | Sheet | 32 | of 56 |

Compal Electronics, Inc.
SUPER I/O LPC47N217N-ABZJ
 LA-9371P

DOCK CONN. 184PIN

DOCKING CONNECT

- (1) PCI Express x1 channels
- (2) PS/2 Interfaces
- (2) USB 2.0 channels
- (2) SATA Channels
- (2) Display Port Channels
- (1) Serial Port
- (1) Parallel Port
- (1) Line In
- (1) Line Out
- (1) RJ45 (10/100/1000)
- (1) VGA
- (1) 2 LAN indicator LED's
- (1) Power Button
- (1) I2C interface

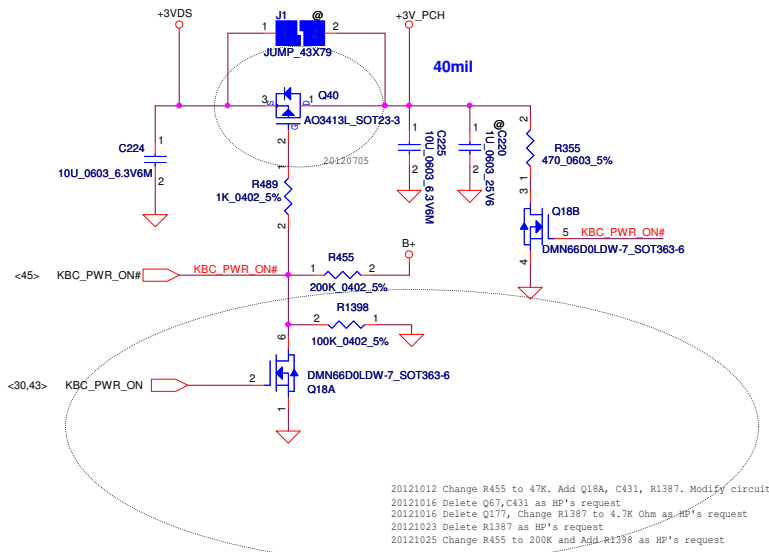


| | | |
|----|-----------|-----------|
| IN | NC<-->COM | NO<-->COM |
| L | ON | OFF |
| H | OFF | ON |

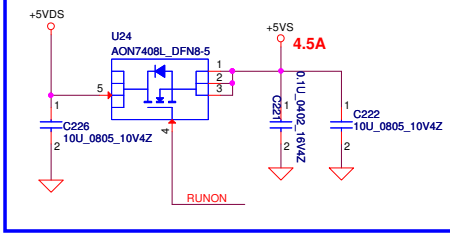
| | | | | | | | |
|--|------------|--------------------|------------|---------------------------|--|--------------------------|--|
| Security Classification | | Compal Secret Data | | Title | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | DOCK CONN | | | |
| 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 CONTENTS 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. | | Date | | Monday, November 12, 2012 | | Sheet 33 of 56 | |

+3VALW TO +3VALW(PCH AUX Power)

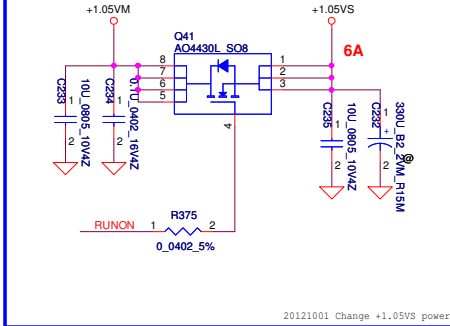
Short J1 for PCH VCCSUS3.3



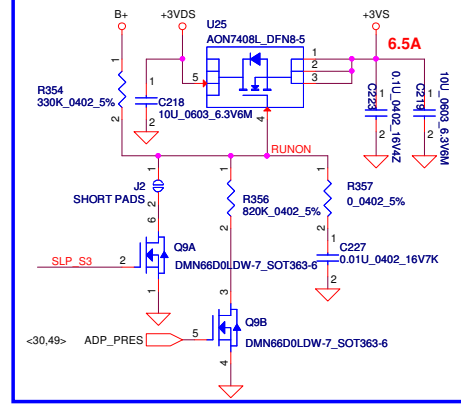
+5VALW to +5VS Transfer



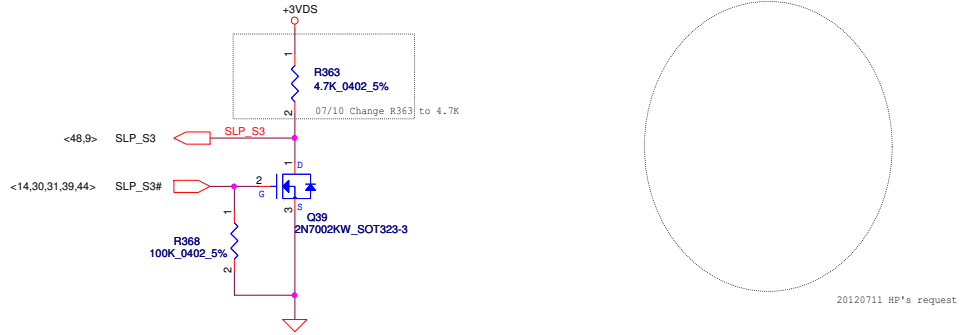
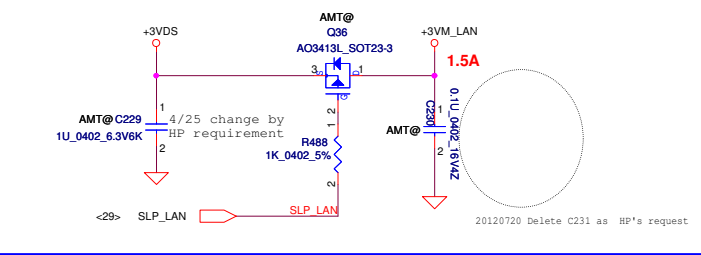
+1.05VM to +1.05VS Transfer



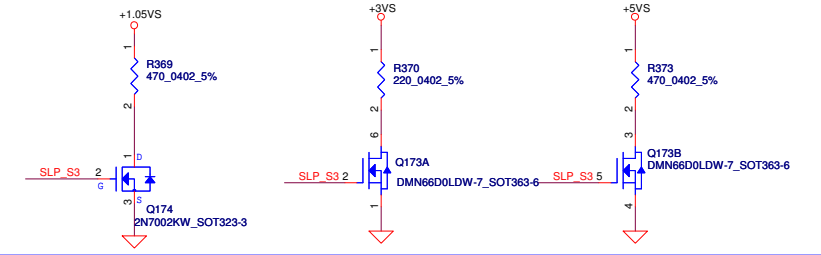
+3VALW to +3VS Transfer



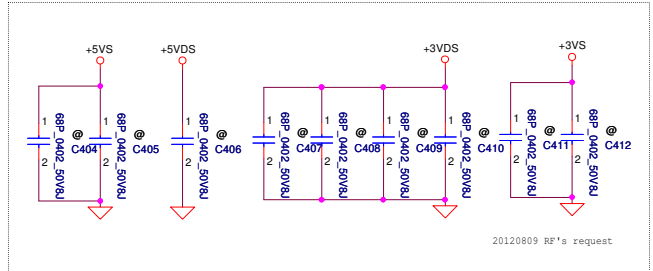
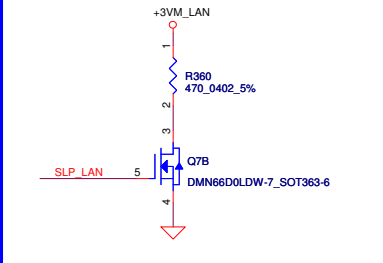
+3VALW to +3VM_LAN Transfer



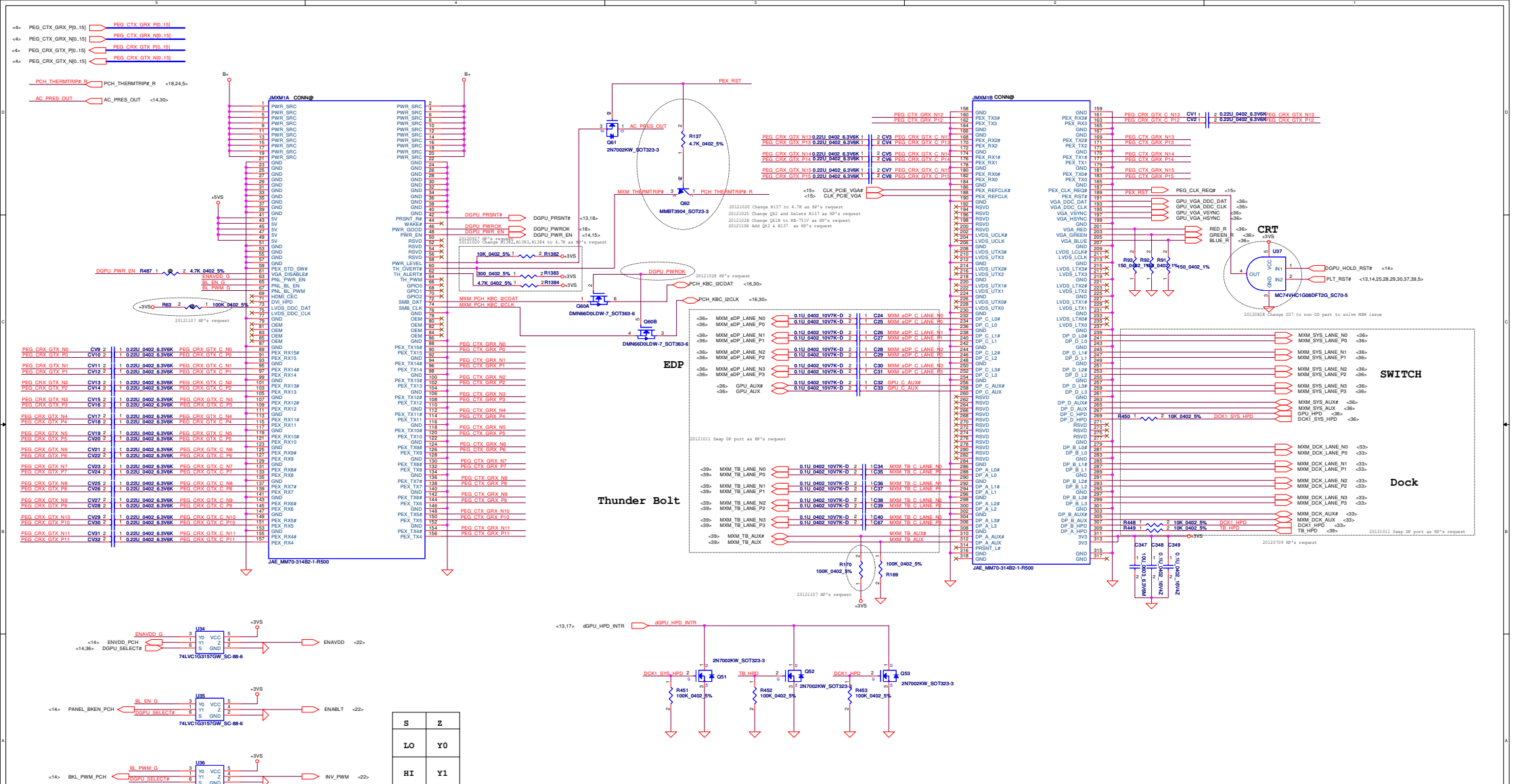
Discharge circuit-1



Discharge circuit-2 for V-M



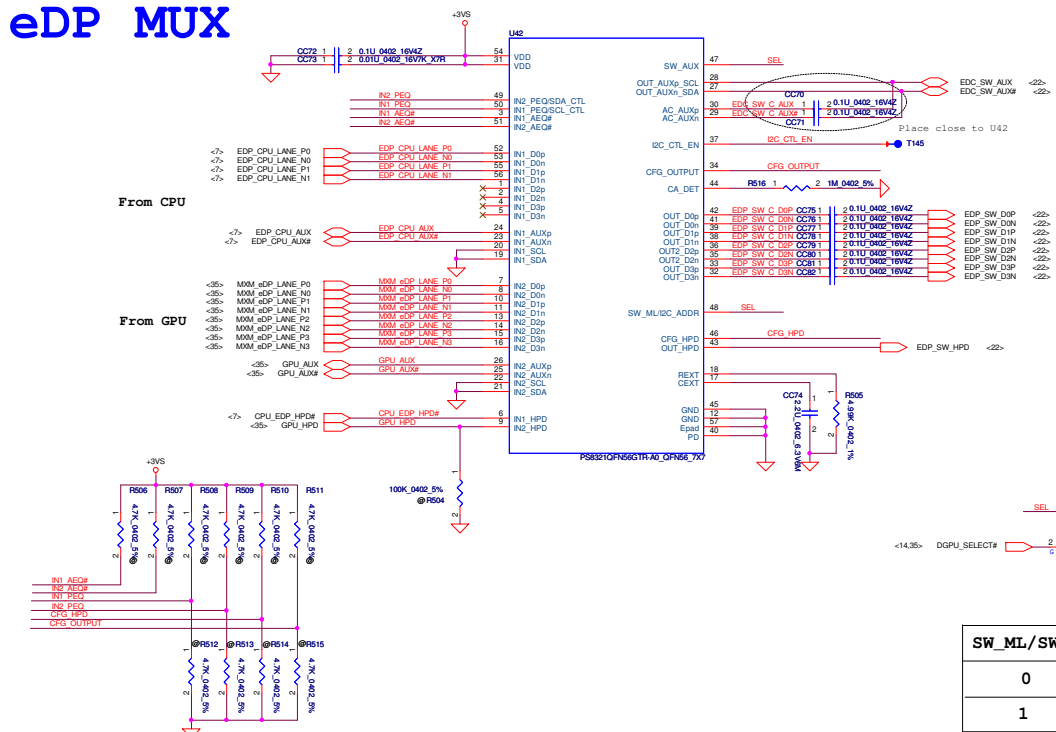
| | | | | | |
|---|--------------------|-----------------|-----------------|---------------------------------|----------------|
| Security Classification | Compal Secret Data | | Title | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | DC/DC Circuits | |
| THIS 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 RESEARCH AND DEVELOPMENT 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. | | | Document Number | LA-9371P | Rev 0.3 |
| | | | Date: | Monday, November 12, 2012 | Sheet 34 of 56 |



| | |
|----|----|
| S | Z |
| LO | YO |
| HI | YI |

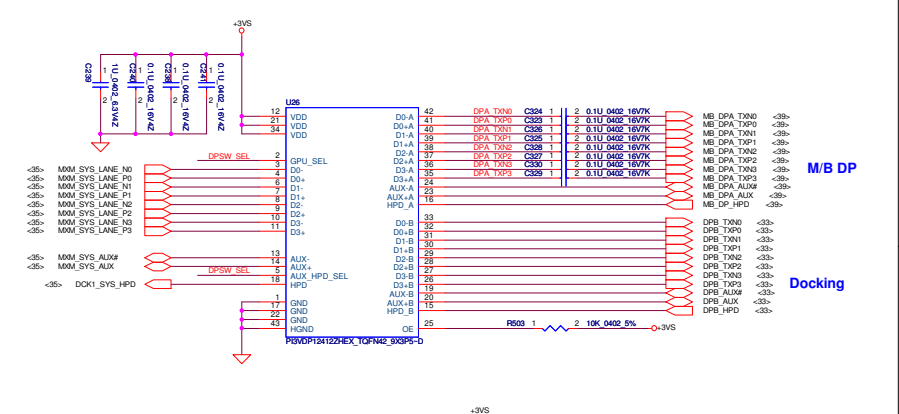
| | | |
|-------------------------|---------------------------|-----------------|
| Security Classification | Compal Secret Data | |
| Issued Date | 2012/06/11 | Deciphered Date |
| | | 2013/06/11 |
| Title | MXM | |
| Size | Document Number | Rev |
| | LA-931P | 0.9 |
| Date | Monday, November 12, 2012 | Sheet |
| | | 55 of 56 |

eDP MUX



| SW_ML/SW_AUX | |
|--------------|-----|
| 0 | GPU |
| 1 | CPU |

DP Switch

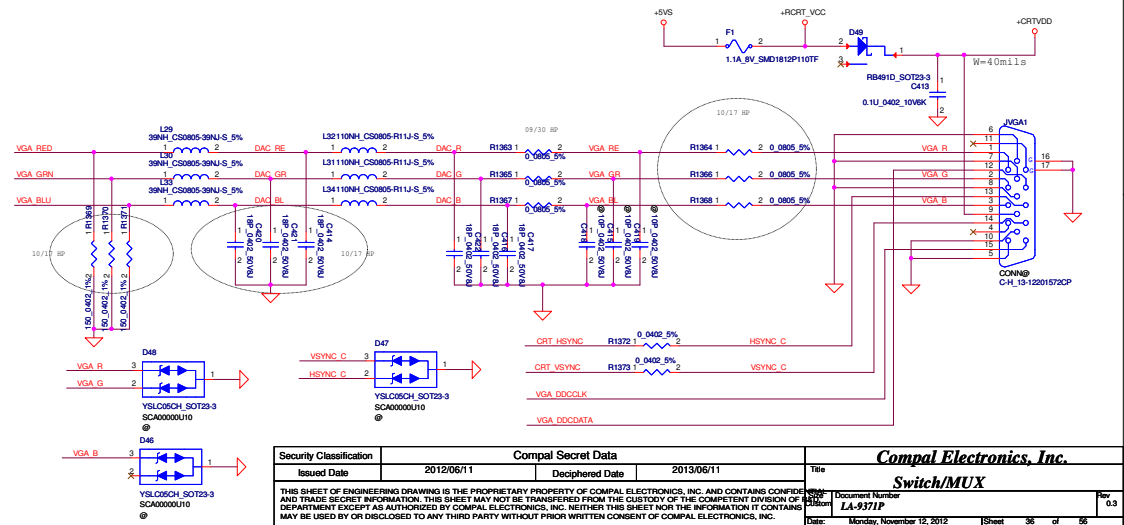
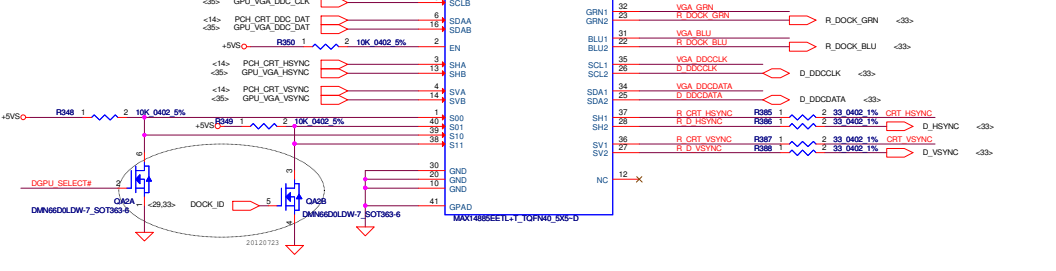


Truth Table for 42 pin package

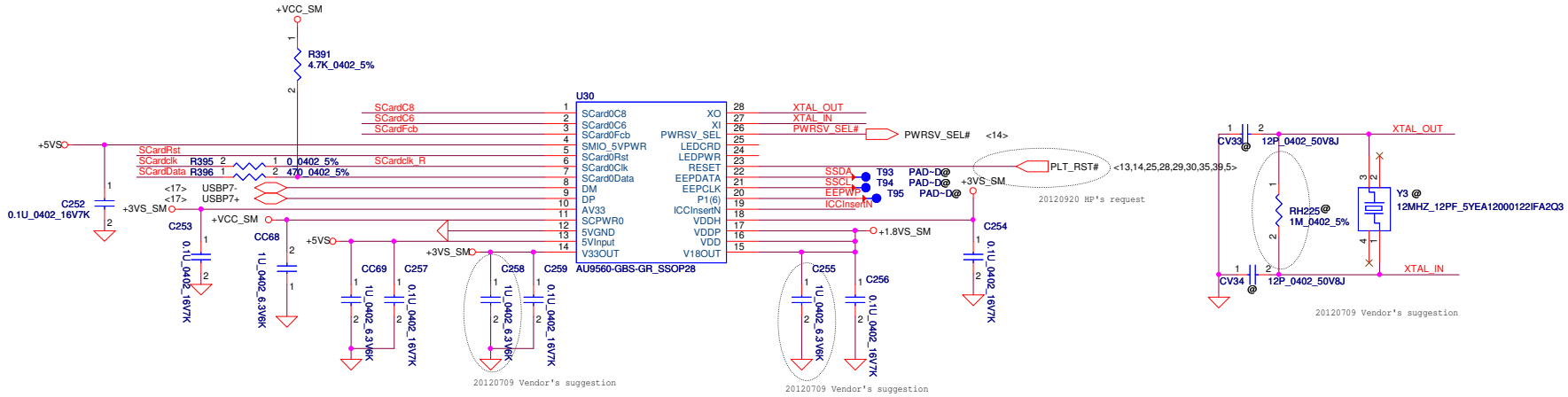
| OE | GPU SEL | AUX HPD SEL | Function |
|------|---------|-------------|---|
| High | Low | Low | Port A active for all channels |
| High | Low | High | Port A for HS, port B for HPD/AUX |
| High | High | Low | Port B for HS, port A for HPD/AUX |
| High | High | High | Port B active for all channels |
| Low | x | x | All I/O's are hi-z and IC is power down |

Table 1. DDC Truth Table

| EN | SEL | MODE | FUNCTION |
|----|-----|------|-------------------------------------|
| 0 | 0 | 0 | ALL SIGNALS IN HIGH IMPEDANCE STATE |
| 0 | 0 | 1 | SDA to SCL1 |
| 0 | 0 | 2 | SDA to SCL2 |
| 0 | 0 | 3 | SDA to SCL3 |
| 0 | 0 | 4 | SDA to SCL4 |
| 0 | 0 | 5 | SDA to SCL5 |
| 0 | 0 | 6 | SDA to SCL6 |
| 0 | 0 | 7 | SDA to SCL7 |
| 0 | 0 | 8 | SDA to SCL8 |
| 0 | 0 | 9 | SDA to SCL9 |
| 0 | 0 | 10 | SDA to SCL10 |
| 0 | 0 | 11 | SDA to SCL11 |
| 0 | 0 | 12 | SDA to SCL12 |
| 0 | 0 | 13 | SDA to SCL13 |
| 0 | 0 | 14 | SDA to SCL14 |
| 0 | 0 | 15 | SDA to SCL15 |
| 0 | 0 | 16 | SDA to SCL16 |
| 0 | 0 | 17 | SDA to SCL17 |
| 0 | 0 | 18 | SDA to SCL18 |
| 0 | 0 | 19 | SDA to SCL19 |
| 0 | 0 | 20 | SDA to SCL20 |
| 0 | 0 | 21 | SDA to SCL21 |
| 0 | 0 | 22 | SDA to SCL22 |
| 0 | 0 | 23 | SDA to SCL23 |
| 0 | 0 | 24 | SDA to SCL24 |
| 0 | 0 | 25 | SDA to SCL25 |
| 0 | 0 | 26 | SDA to SCL26 |
| 0 | 0 | 27 | SDA to SCL27 |
| 0 | 0 | 28 | SDA to SCL28 |
| 0 | 0 | 29 | SDA to SCL29 |
| 0 | 0 | 30 | SDA to SCL30 |
| 0 | 0 | 31 | SDA to SCL31 |
| 0 | 0 | 32 | SDA to SCL32 |
| 0 | 0 | 33 | SDA to SCL33 |
| 0 | 0 | 34 | SDA to SCL34 |
| 0 | 0 | 35 | SDA to SCL35 |
| 0 | 0 | 36 | SDA to SCL36 |
| 0 | 0 | 37 | SDA to SCL37 |
| 0 | 0 | 38 | SDA to SCL38 |
| 0 | 0 | 39 | SDA to SCL39 |
| 0 | 0 | 40 | SDA to SCL40 |
| 0 | 0 | 41 | SDA to SCL41 |
| 0 | 0 | 42 | SDA to SCL42 |
| 0 | 0 | 43 | SDA to SCL43 |
| 0 | 0 | 44 | SDA to SCL44 |
| 0 | 0 | 45 | SDA to SCL45 |
| 0 | 0 | 46 | SDA to SCL46 |
| 0 | 0 | 47 | SDA to SCL47 |
| 0 | 0 | 48 | SDA to SCL48 |
| 0 | 0 | 49 | SDA to SCL49 |
| 0 | 0 | 50 | SDA to SCL50 |
| 0 | 0 | 51 | SDA to SCL51 |
| 0 | 0 | 52 | SDA to SCL52 |
| 0 | 0 | 53 | SDA to SCL53 |
| 0 | 0 | 54 | SDA to SCL54 |
| 0 | 0 | 55 | SDA to SCL55 |
| 0 | 0 | 56 | SDA to SCL56 |
| 0 | 0 | 57 | SDA to SCL57 |
| 0 | 0 | 58 | SDA to SCL58 |
| 0 | 0 | 59 | SDA to SCL59 |
| 0 | 0 | 60 | SDA to SCL60 |
| 0 | 0 | 61 | SDA to SCL61 |
| 0 | 0 | 62 | SDA to SCL62 |
| 0 | 0 | 63 | SDA to SCL63 |
| 0 | 0 | 64 | SDA to SCL64 |
| 0 | 0 | 65 | SDA to SCL65 |
| 0 | 0 | 66 | SDA to SCL66 |
| 0 | 0 | 67 | SDA to SCL67 |
| 0 | 0 | 68 | SDA to SCL68 |
| 0 | 0 | 69 | SDA to SCL69 |
| 0 | 0 | 70 | SDA to SCL70 |
| 0 | 0 | 71 | SDA to SCL71 |
| 0 | 0 | 72 | SDA to SCL72 |
| 0 | 0 | 73 | SDA to SCL73 |
| 0 | 0 | 74 | SDA to SCL74 |
| 0 | 0 | 75 | SDA to SCL75 |
| 0 | 0 | 76 | SDA to SCL76 |
| 0 | 0 | 77 | SDA to SCL77 |
| 0 | 0 | 78 | SDA to SCL78 |
| 0 | 0 | 79 | SDA to SCL79 |
| 0 | 0 | 80 | SDA to SCL80 |
| 0 | 0 | 81 | SDA to SCL81 |
| 0 | 0 | 82 | SDA to SCL82 |
| 0 | 0 | 83 | SDA to SCL83 |
| 0 | 0 | 84 | SDA to SCL84 |
| 0 | 0 | 85 | SDA to SCL85 |
| 0 | 0 | 86 | SDA to SCL86 |
| 0 | 0 | 87 | SDA to SCL87 |
| 0 | 0 | 88 | SDA to SCL88 |
| 0 | 0 | 89 | SDA to SCL89 |
| 0 | 0 | 90 | SDA to SCL90 |
| 0 | 0 | 91 | SDA to SCL91 |
| 0 | 0 | 92 | SDA to SCL92 |
| 0 | 0 | 93 | SDA to SCL93 |
| 0 | 0 | 94 | SDA to SCL94 |
| 0 | 0 | 95 | SDA to SCL95 |
| 0 | 0 | 96 | SDA to SCL96 |
| 0 | 0 | 97 | SDA to SCL97 |
| 0 | 0 | 98 | SDA to SCL98 |
| 0 | 0 | 99 | SDA to SCL99 |
| 0 | 0 | 100 | SDA to SCL100 |



| Security Classification | | Compal Secret Data | | Title | |
|---|------------|--------------------|---------------------------|------------|----------|
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Switch/MUX | |
| 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 COMPAL ELECTRONICS, INC. WITHOUT THE WRITTEN PERMISSION OF 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. | | | | | |
| Document Number | LA-931P | Date | Monday, November 12, 2012 | Sheet | 36 of 56 |

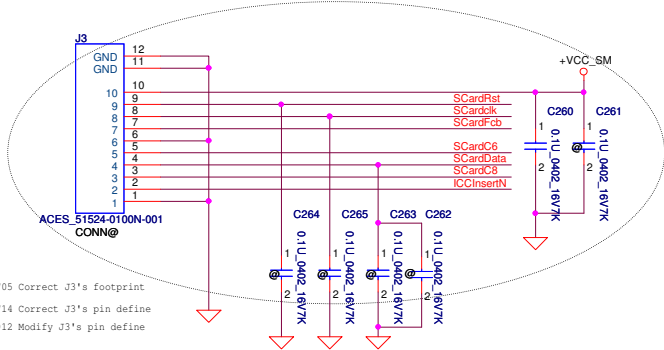


20120709 Vendor's suggestion

20120709 Vendor's suggestion

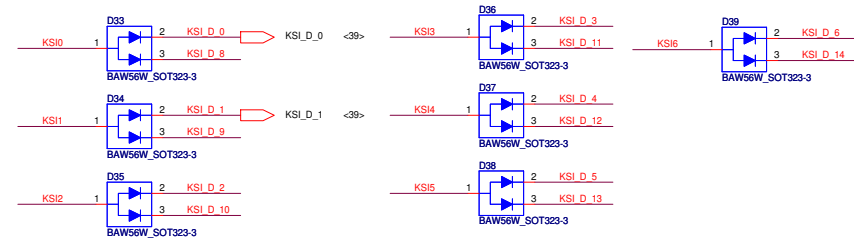
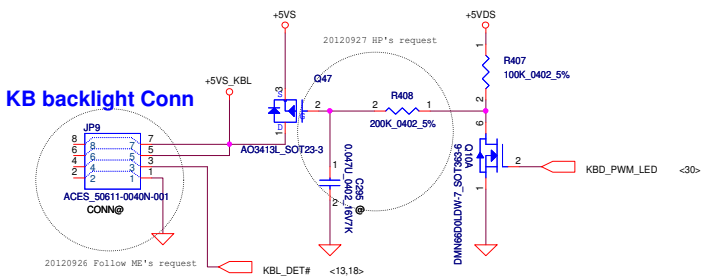
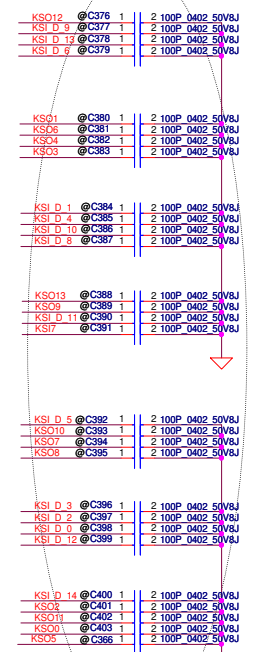
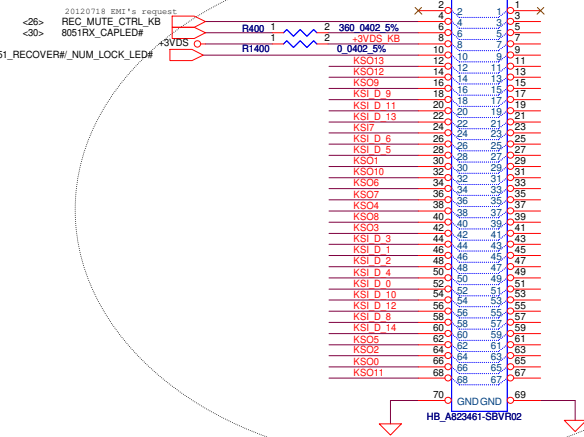
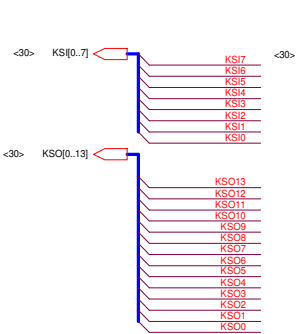
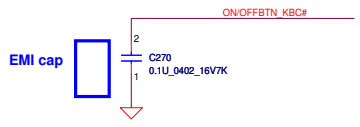
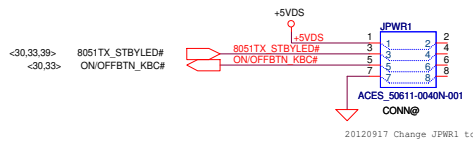
20120920 HP's request

20120709 Vendor's suggestion

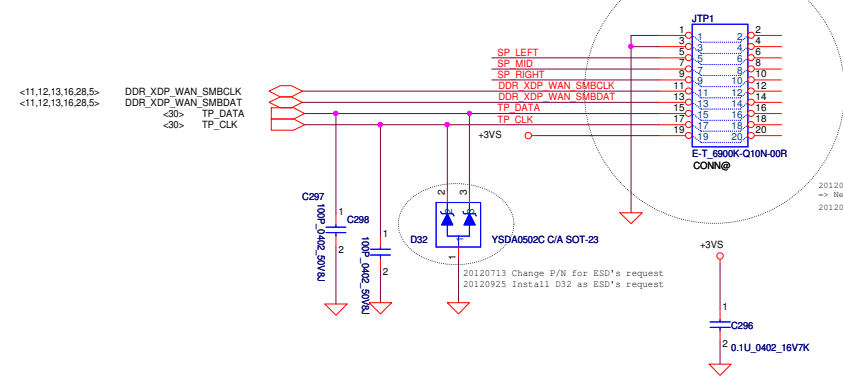


20120705 Correct J3's footprint
 20120714 Correct J3's pin define
 20120912 Modify J3's pin define

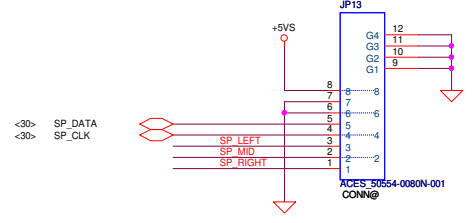
| | | | | | |
|--|------------|--------------------|------------|--------------------------|----------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Title | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY 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 FRUIT... | | | | Smart Card | |
| 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. | | | | Document Number | Rev |
| | | | | 03 | 0.3 |
| Date: Monday, November 12, 2012 | | | | Sheet | 37 of 56 |



TP/B TO M/B

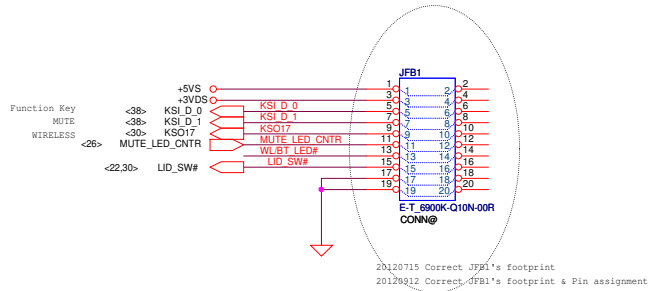


Stick Point CONN

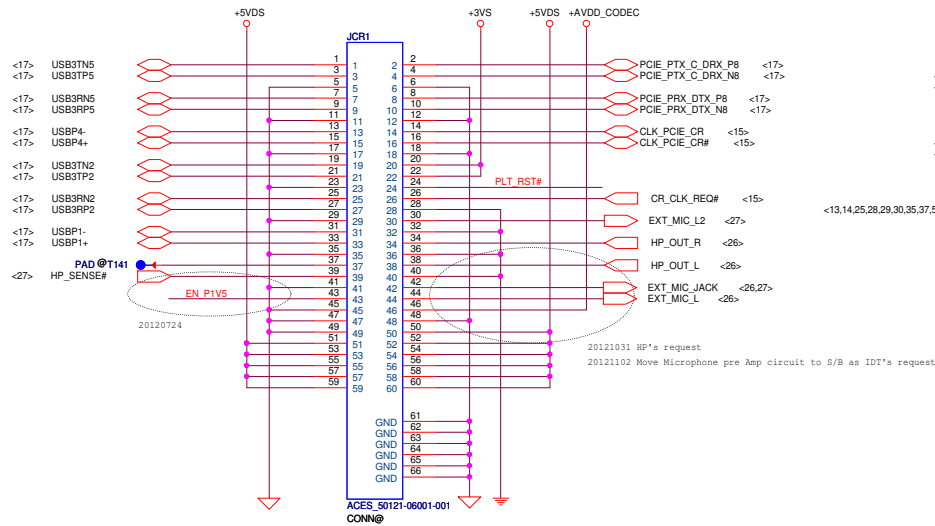


| | | | | | |
|---|--------------------|-----------------|------------|---------------------------|-------|
| Security Classification | Compal Secret Data | | Title | Compal Electronics, Inc. | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | KB/TP/PWR CONN | |
| THIS SHEET OF ENGINEERING 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 | Document Number | Rev |
| | | | Date | Monday, November 12, 2012 | 0.3 |
| | | | Sheet | 38 | of 56 |

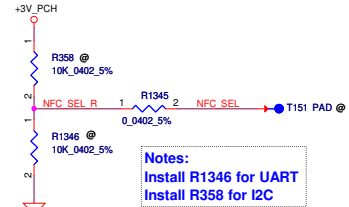
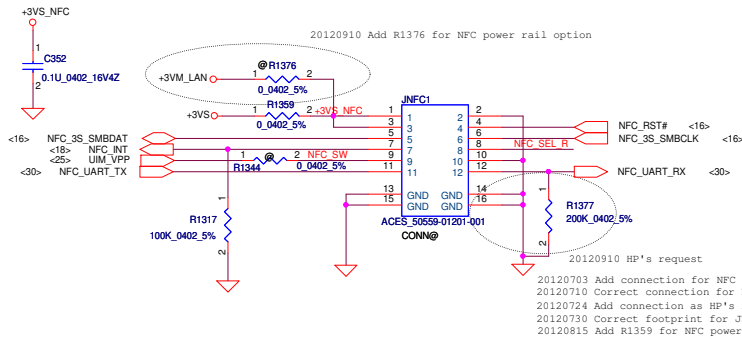
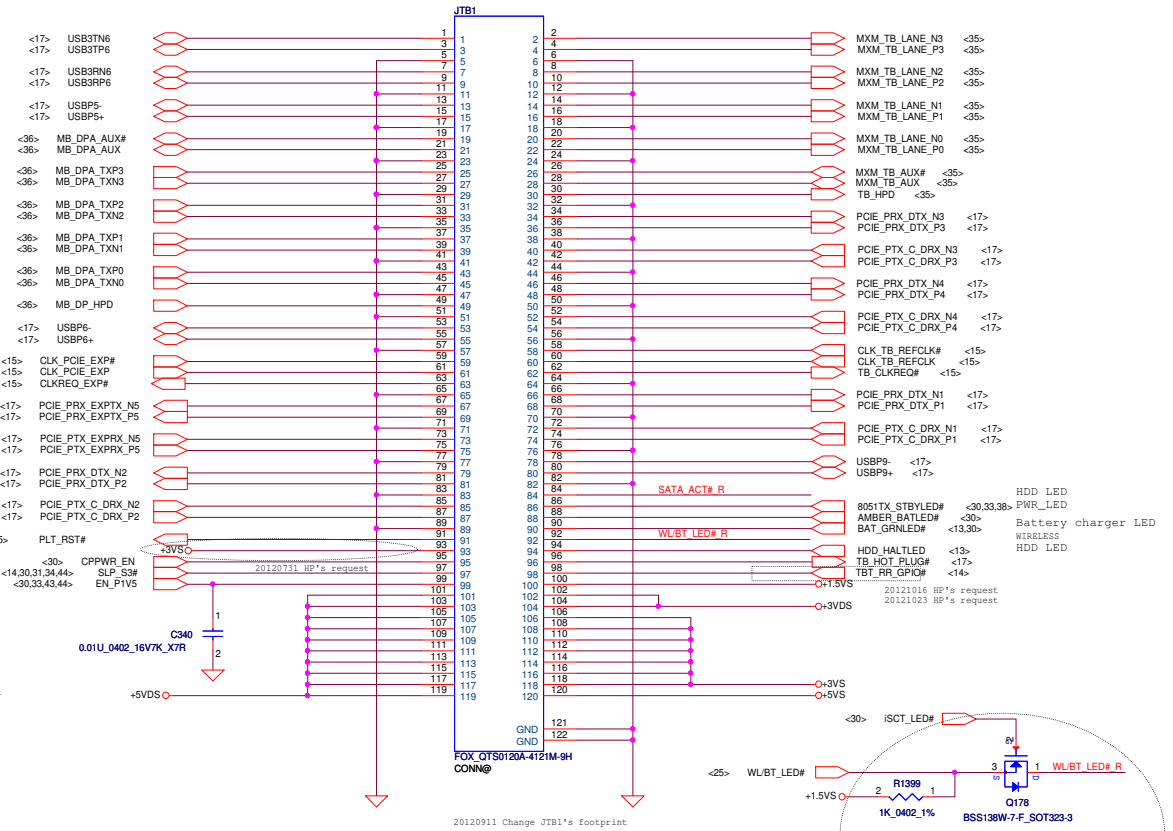
Function Board



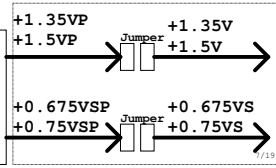
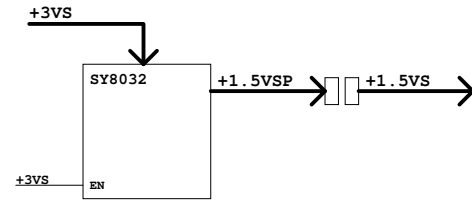
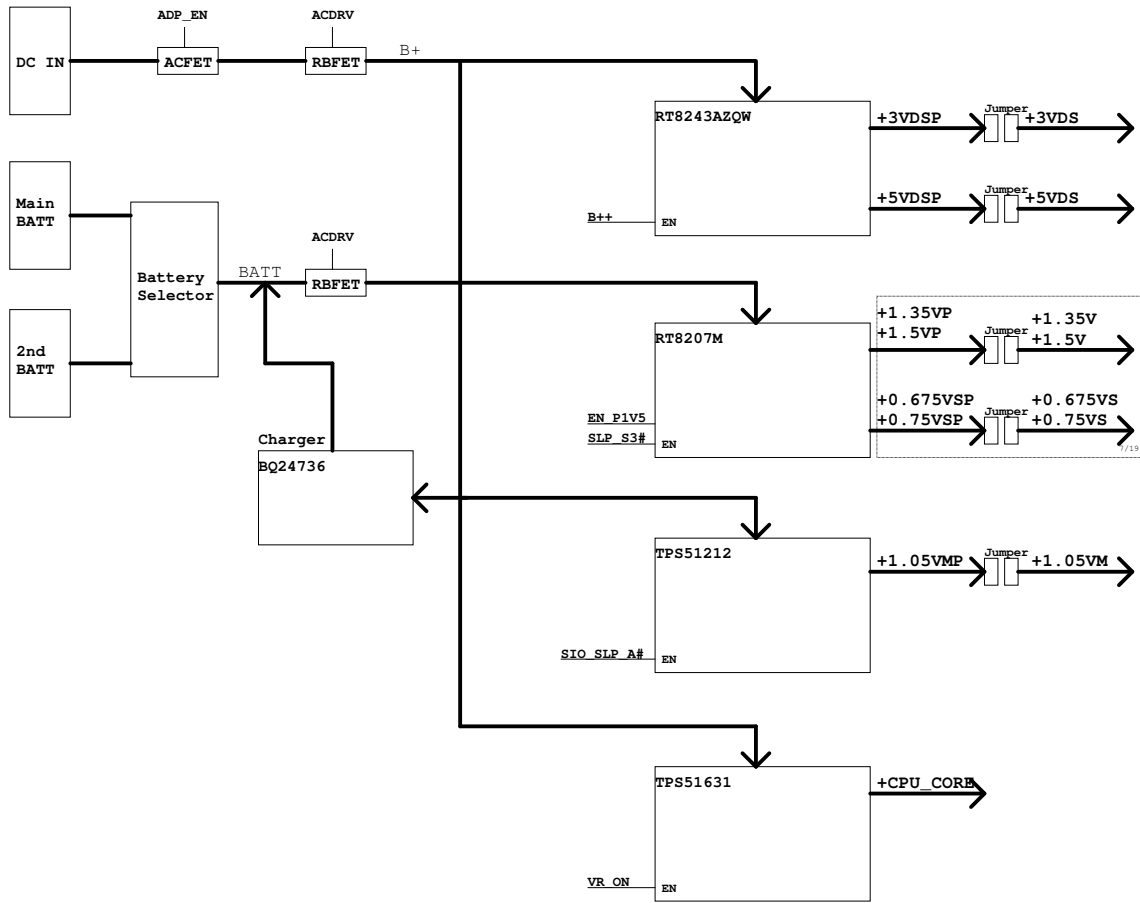
USB & Card Reader Board

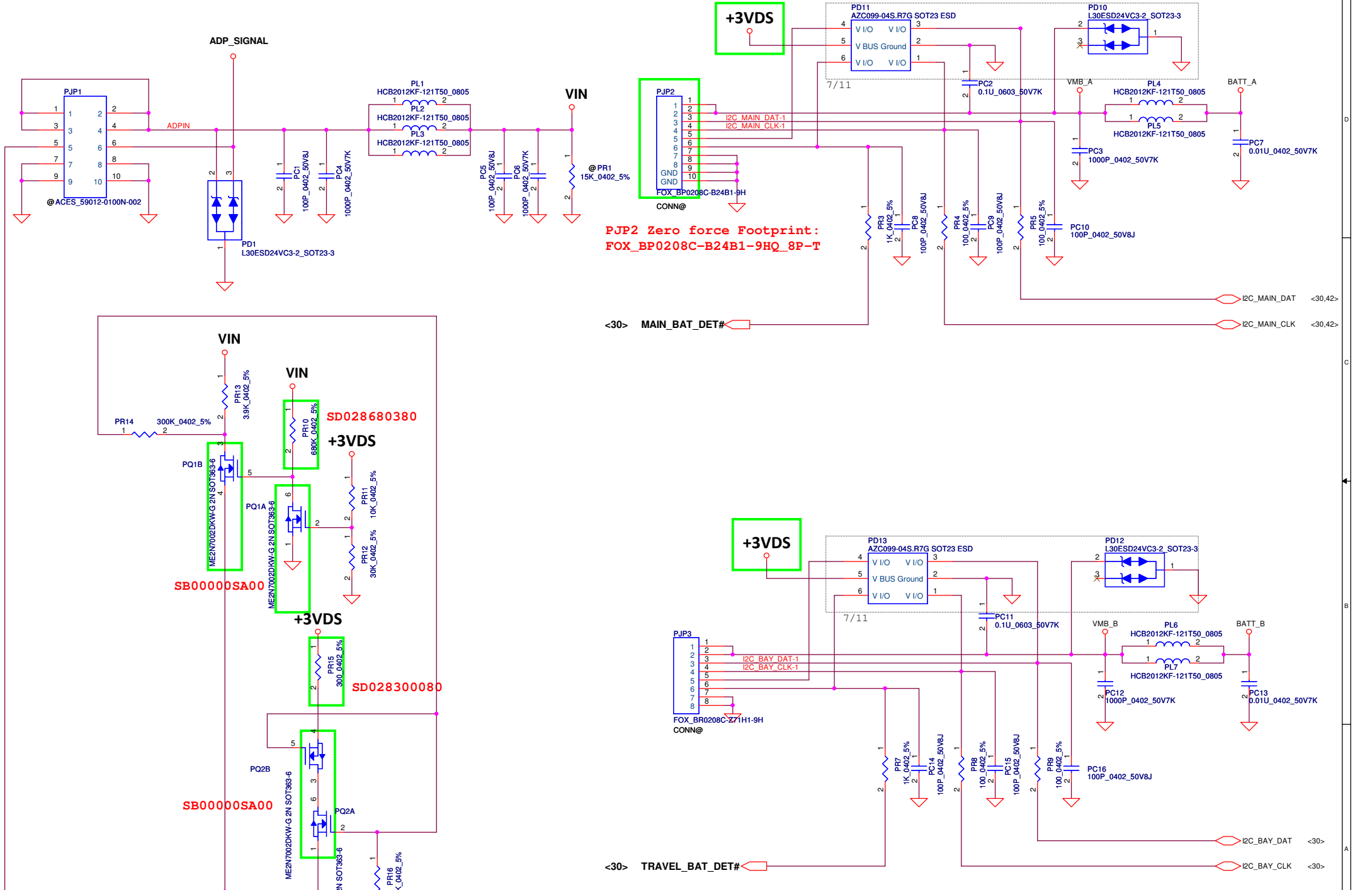


Thunderbolt

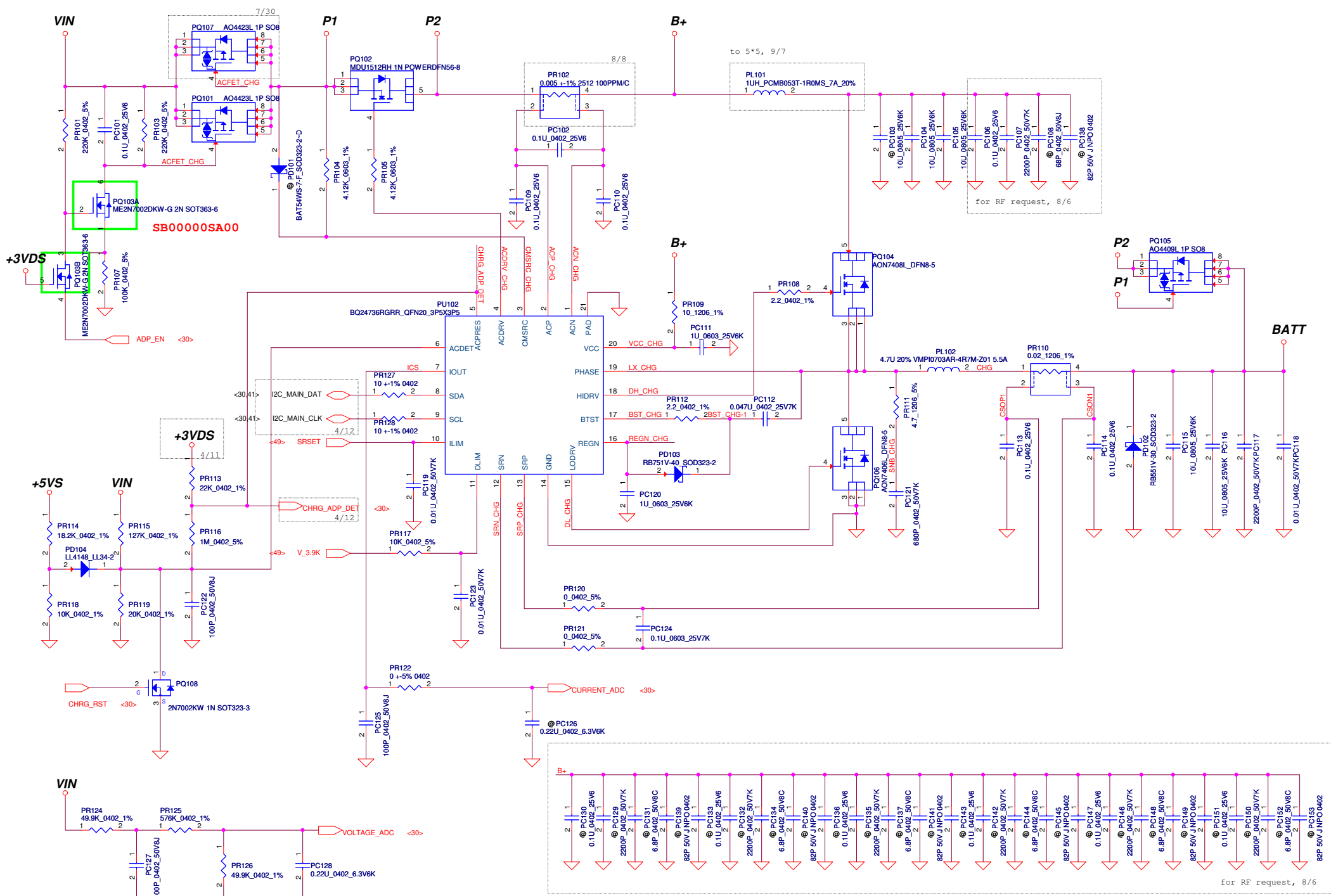


| | | | | |
|---|--------------------|-----------------|---------------------------|--------------------------|
| Security Classification | Compal Secret Data | | Title | |
| Issued Date | 2012/06/11 | Deciphered Date | 2013/06/11 | Compal Electronics, Inc. |
| THIS SHEET OF ENGINEERING DRAWING IS THE 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 | Document Number | Rev | Date | |
| | LA-9371P | 0.3 | Monday, November 12, 2012 | |
| | | | Sheet | 39 of 56 |

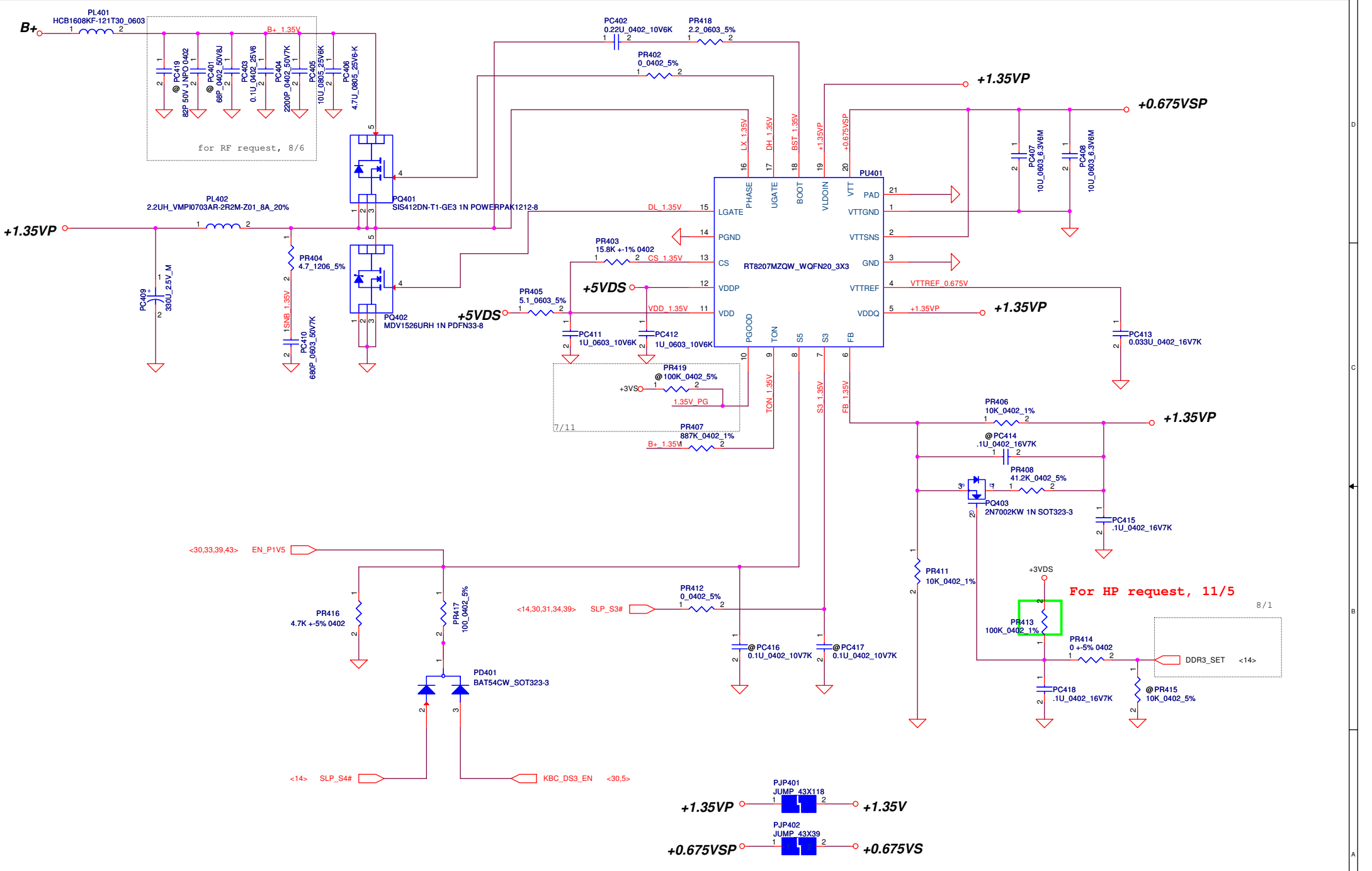




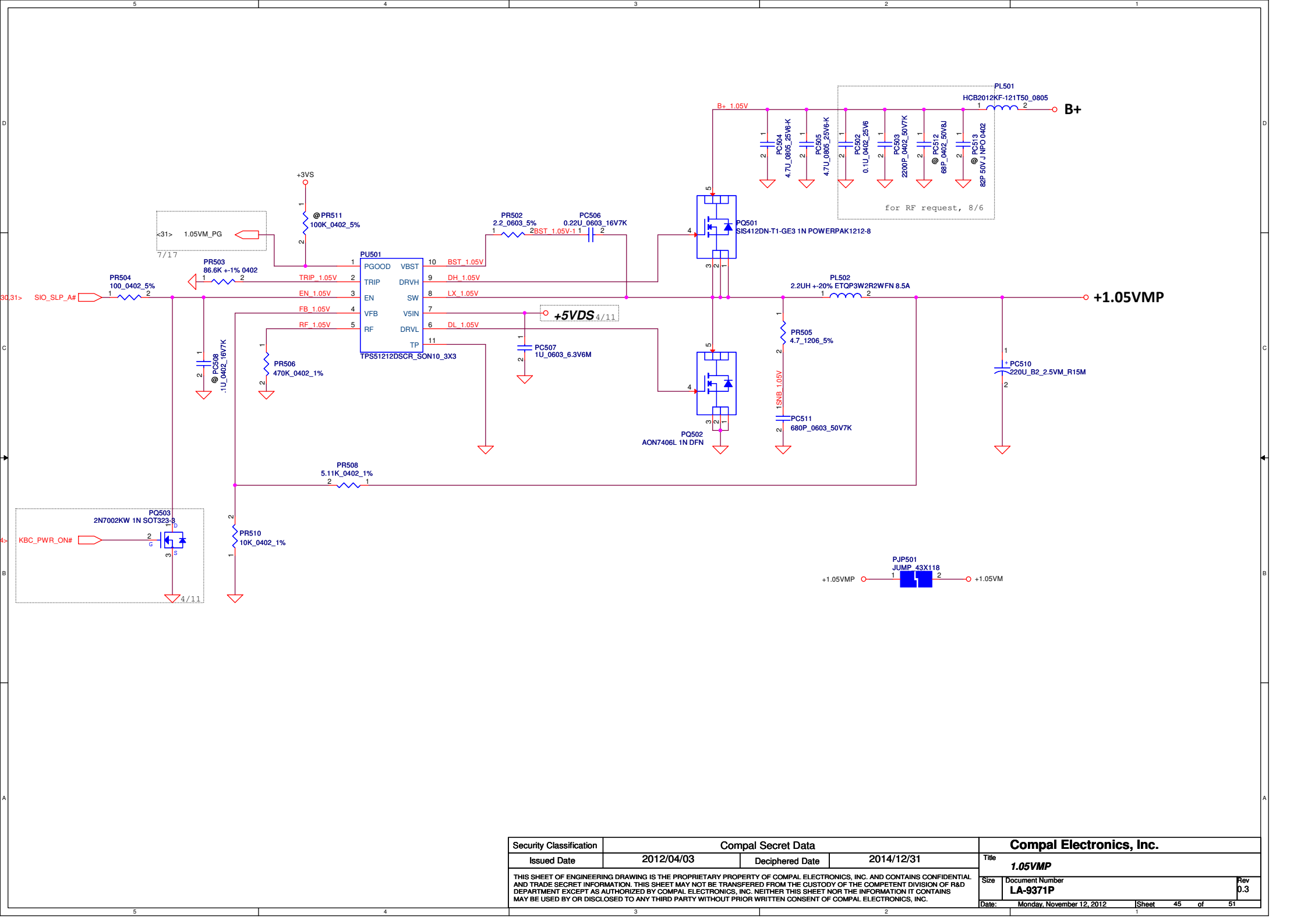
| | | | | | |
|---|-----------------|---------------------------|------------|--------------------------|-----|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | |
| THIS SHEET OF ENGINEERING DRAWING IS 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. | | | | DC Conn/BATT Conn | |
| Size | Document Number | Date | | Sheet | Rev |
| | LA-9371P | Monday, November 12, 2012 | | 41 | 0.3 |
| | | | | of | 51 |



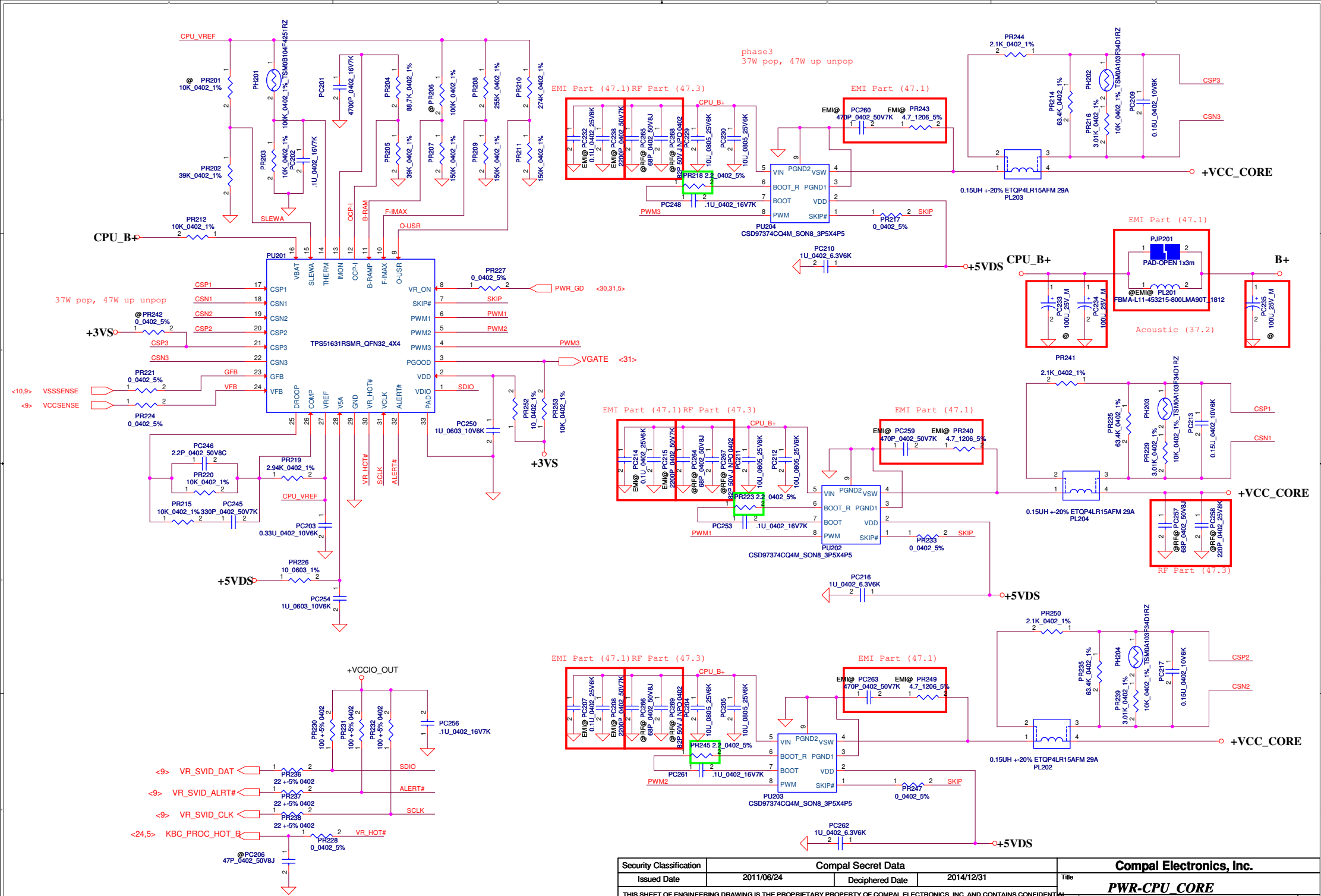
| | | | |
|---|------------------------------------|-----------------|--------------------------|
| Security Classification | Compal Secret Data | | Compal Electronics, Inc. |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF 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. | | | Title CHARGER |
| Size | Document Number LA-9371P | Sheet | Rev 0.3 |
| Date: | Monday, November 12, 2012 | Sheet | 42 of 51 |



| | | | | | |
|---|---------------------------|--------------------|------------|--------------------------|-----------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | DDR Power |
| 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 | Document Number | | | Rev | 0.3 |
| Date: | Monday, November 12, 2012 | Sheet | 44 | of | 51 |

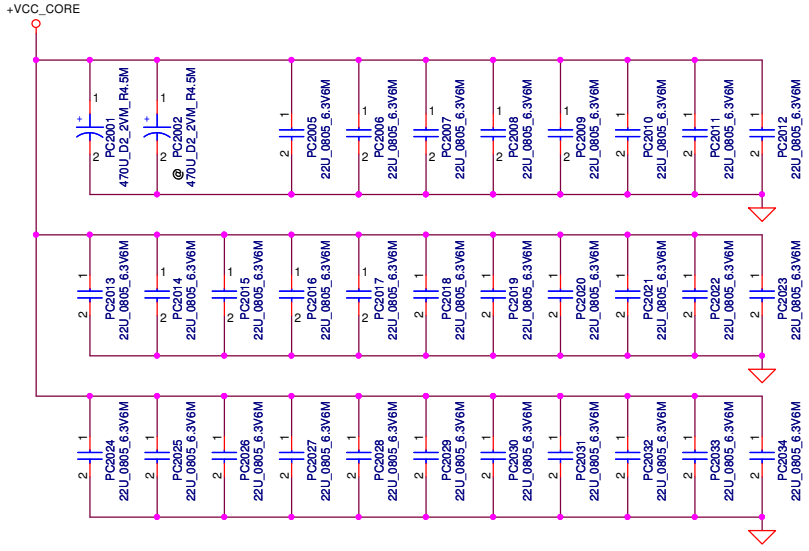


| | | | | | |
|---|---------------------------|--------------------|------------|--------------------------|-----------------------------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | 1.05VMP |
| 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 | Document Number LA-9371P |
| Date: | Monday, November 12, 2012 | Sheet | 45 | of | 51 |

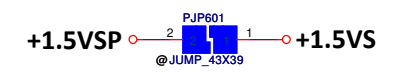
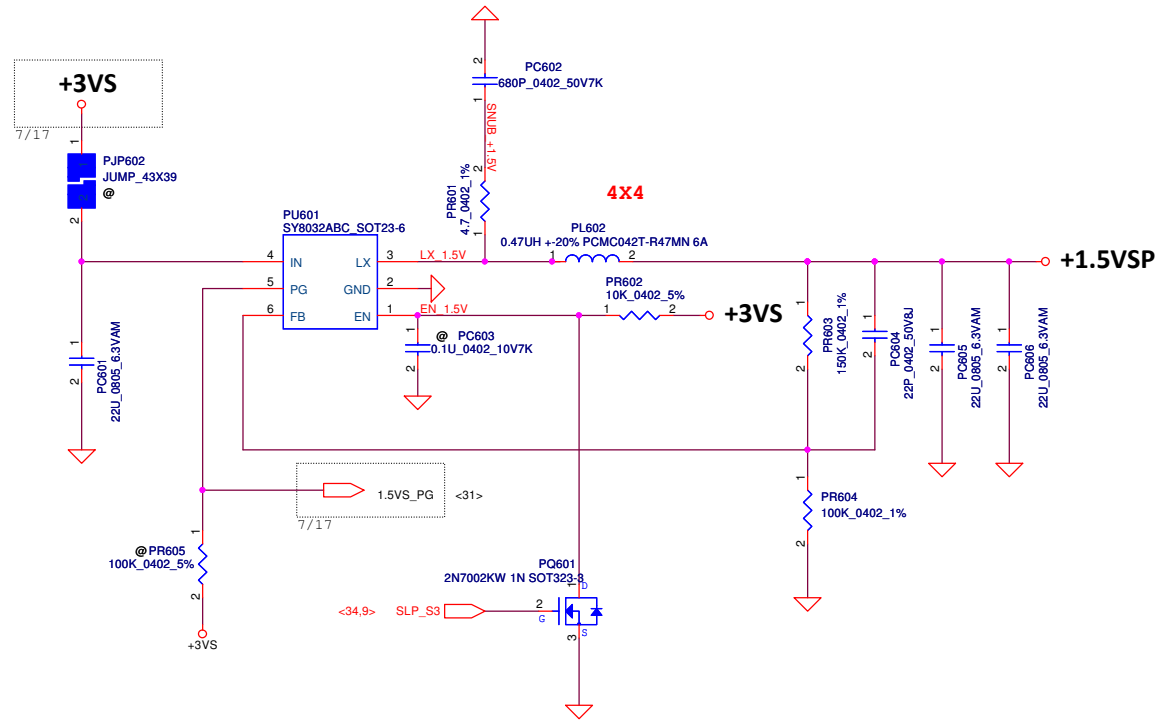


| | | | | | |
|---|------------|--------------------|------------|--------------------------|---------------------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2011/06/24 | Deciphered Date | 2014/12/31 | Title | PWR-CPU_CORE |
| THIS SHEET OF ENGINEERING 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. | | | | | |
| Date: | Customer | Document Number | Rev | 46 | 0.3 |

+VCC_CORE 2 X 470u/4m
30 X 22u/0805

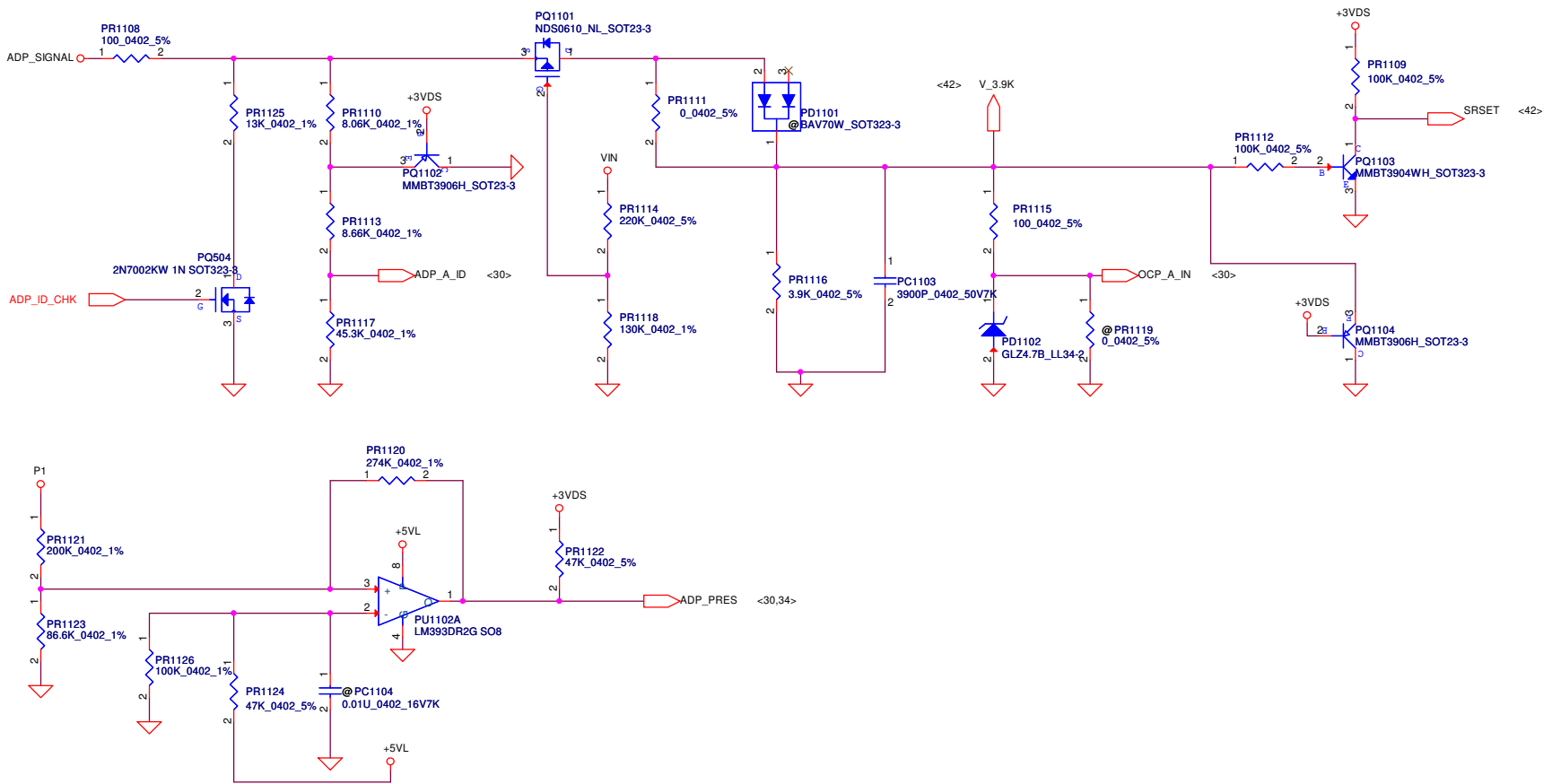


| | | | | | |
|---|---------------------------|--------------------|------------|--------------------------|-----------------------------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | PROCESSOR DECOUPLING |
| 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 | Document Number | | | | Rev |
| | LA-9371P | | | | 0.3 |
| Date: | Monday, November 12, 2012 | Sheet | 47 | of | 51 |

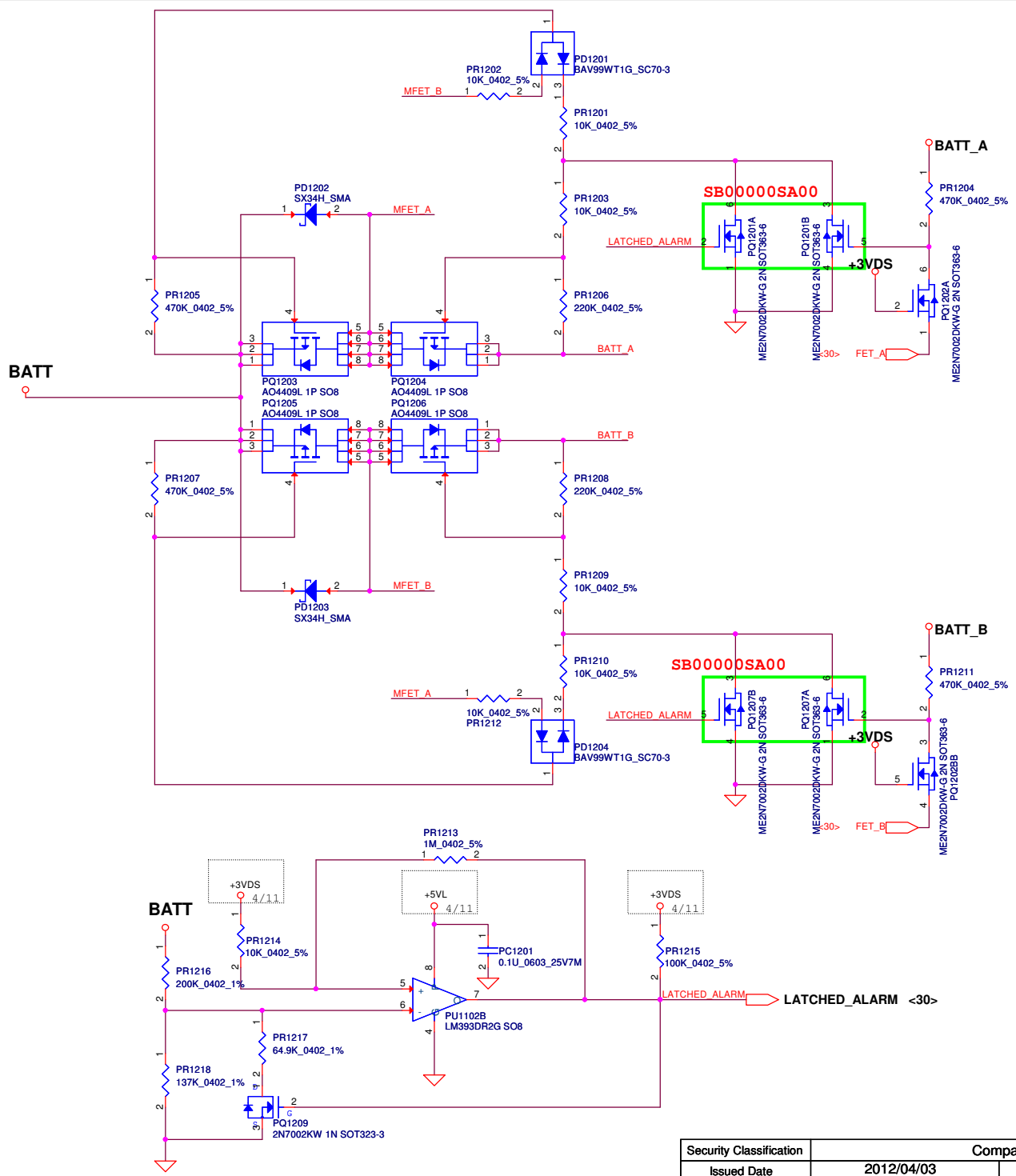


+1.5V_PCIEP
TDC=0.46A
Peak Current=0.66A

| | | | | | |
|---|------------|--------------------|------------|--------------------------|---------------------------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | 1.5VSP |
| 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 | Document Number |
| | | | | LA-9371P | Rev |
| | | | | Date: | Monday, November 12, 2012 |
| | | | | Sheet | 48 of 51 |
| | | | | Rev | 0.3 |



| | | | | | |
|---|---------------------------|--------------------|------------|--------------------------|---------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | ADP_OCP |
| 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 | Document Number | | | Rev | 0.3 |
| Date: | Monday, November 12, 2012 | Sheet | 49 | of | 51 |



| | | | | | |
|---|---------------------------|--------------------|------------|--------------------------|------------------|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | Battery selector |
| 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 | Document Number | Rev | | | 0.3 |
| Date: | Monday, November 12, 2012 | Sheet | 50 | of | 51 |

| Item | Page# | Title | Date | Request Owner | Issue Description | Solution Description | Rev. |
|------|-------|---|------------|---------------|--------------------------|----------------------|------|
| 1 | 42 | Reserve PC130,129,131,139,133,132,134,140,136,135,137,141,143,142,144,145,146,147,148,149,151,150,152,153,138 | 2012/08/06 | | RF solution | | |
| 2 | 43 | Reserve PC324,322,323,325326,327,328,329,330,331 | 2012/08/06 | | RF solution | | |
| 3 | 43 | Add PC305,304,308,309 | 2012/08/06 | | RF solution | | |
| 4 | 44 | Reserve PC419,401 | 2012/08/06 | | RF solution | | |
| 5 | 44 | Add PC403,404,405 | 2012/08/06 | | RF solution | | |
| 6 | 45 | Reserve PC512,513 | 2012/08/06 | | RF solution | | |
| 7 | 45 | Add PC502,503 | 2012/08/06 | | RF solution | | |
| 8 | 47 | Reserve PC264,267,266,269,265,268 | 2012/08/06 | | RF solution | | |
| 9 | 47 | Add PC214,215,207,203,232,236 | 2012/08/06 | | RF solution | | |
| 10 | 47 | Change PC233,234 from SF000001280 to SF000004M00 | 2012/08/09 | | Change the hieght to 6mm | | |
| 11 | 46 | Change PR234 from 19.1K to 62K | 2012/08/10 | | HP suggestion | | |
| 12 | 47 | Change FQ203,204,211 from SB00000K300 to SB00000U200 | 2012/09/11 | | Design change | | |
| 13 | 47 | Change FQ201,205,209 from SB00000SJ00 to SB00000W200 | 2012/09/13 | | Design change | | |
| 14 | 43 | Change FQ301,302 from SB00000JM00 to SB00000IA00 | 2012/09/17 | | Design change | | |
| 15 | 43 | Change FQ303 from SB00000CT00 to SB00000H700 | 2012/09/17 | | Design change | | |
| 16 | 43 | Change FQ304 from SB00000N800 to SB00000TZ00 | 2012/09/17 | | Design change | | |
| 17 | 44 | Change FQ401 from SB00000H800 to SB00000IA00 | 2012/09/17 | | Design change | | |
| 18 | 44 | Change FQ402 from SB00000N800 to SB00000TZ00 | 2012/09/17 | | Design change | | |
| 19 | 45 | Change FQ501 from SB00000H800 to SB00000IA00 | 2012/09/17 | | Design change | | |
| 20 | 45 | Change FQ502 from SB00000N800 to SB00000H700 | 2012/09/17 | | Design change | | |
| 21 | 50 | Reserve PR1101,1102,1103,1104,1105,1106,1107,PC1101,PD102,PD1101 | 2012/10/2 | | HP suggestion | | |
| 22 | 44 | Change PD401 from SC600000D00 to SCS00006400 | 2012/10/2 | | HP suggestion | | |
| 23 | 44 | Change PR416 from SD034100380 to SD028470180 | 2012/10/2 | | HP suggestion | | |
| 24 | 42 | Change PL101 from SH00000MR00 to SH00000NW00 | 2012/10/2 | | Design change | | |
| 25 | 47 | Change PR240,243,249 from SD001470B80 to SD000010280 | 2012/10/2 | | Design change | | |
| 26 | 47 | Change PC233 from SF000001280 to SF000004M00 | 2012/10/2 | | Design change | | |

| | | | | | |
|---|------------|--------------------|------------|--------------------------|----------|
| Security Classification | | Compal Secret Data | | Title | |
| Issued Date | 2011/10/03 | Deciphered Date | 2014/12/31 | Compal Electronics, Inc. | |
| 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 FACTS 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. | | | | Document Number | Rev |
| | | | | LA-937IP | 0.3 |
| Date: Monday, November 12, 2012 | | | | Sheet | 51 of 51 |

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

| Item | Page # | Title | Date | Request Owner | Issue Description | Solution Description | Rev. |
|------|--------|------------|-------|---------------|--|---|------|
| 1 | 30 | KBC | 08/18 | HP | The quad-mode does not require any GPIO from KBC | Delete R1348 & R1349 and Add R541 and R542 | 0.2 |
| 2 | 31 | PWR_OK | 08/18 | HP | Makes the power good circuit working. | Non-install R284 | 0.2 |
| 3 | 26 | MXM | 08/28 | Compal | MXM Card can't be recognized in OS. | Change U37 to MC74VHC1G08DFT2G (Non-OD type) | 0.2 |
| 4 | 36 | Switch/MUX | 09/07 | HP | Move D-Sub connector on M/B | Add VGA filter circuit and connector | 0.2 |
| 5 | 30 | KBC | 09/08 | HP | SUSCLK is off during DS3 condition | Add Y4, C423, C424 ; Delete R258, R264 | 0.2 |
| 6 | 30 | KBC | 09/08 | HP | Simplify the KBC solution for MEC1322 | Delete R262, R266, R219, R216, R241, R242, R271, R253 | 0.2 |
| 7 | 25 | NGFF | 09/08 | HP | | Add PU resistor for WWAN_FULL_PWR/WWAN_RSVD2 | 0.2 |
| 8 | 39 | NFC | 09/10 | HP | KBC detection of NFC module | Add 200K (R1377) PD resistor to NFC_VARI_RX | 0.2 |
| 9 | 39 | NFC | 09/10 | HP | Power rail option for NFC module | Add +3VM_LAN (R1376) for NFC module | 0.2 |
| 10 | 9 | CPU | 09/11 | HP | | Remove RC102 and RC103 | 0.2 |
| 11 | 20 | PCH | 09/11 | HP | Connect PCH's pin AD12 to +3V_PCH directly | Remove RH226 | 0.2 |
| 12 | 5 | CPU | 09/11 | HP | Connect CPU_AT26 pin to CPU_PLTRST# directly | Remove RC66 | 0.2 |
| 13 | 5 | CPU | 09/11 | HP | Connect CPU.AL34 pin to H_CPUPWARGD directly | Remove RC30 | 0.2 |
| 14 | 9 | CPU | 09/11 | HP | Connect SLP_S3# to QC5.5 direchly. | Remove RC93 | 0.2 |
| 15 | 33 | DOCKING | 09/11 | HP | Connect EN_P1V5 to JDOCK1.140 directly. | Remove R351 | 0.2 |
| 16 | 33 | DOCKING | 09/11 | HP | Connect ON/OFFBTN_KBC# to Docking directly. | Remove R336 | 0.2 |
| 17 | 15 | PCH | 09/11 | HP | Simplify PCH solution for PCIE CLK Group | Remove RH107, RH103, RH114, RH116, RH122 RH124, RH126, RH127, RH129, RH130 | 0.2 |
| 18 | 14 | PCH | 09/11 | HP | Reassignment GPIO for "BT_OFF" | Change it from GPIO72 to GPIO61 | 0.2 |
| 19 | 30 | KBC | 09/11 | HP | Reserve for SUSACK# signal | Uninstall R436 and add R1378 | 0.2 |
| 20 | 18 | PCH | 09/11 | HP | Reassigned BRD_ID4 to GPIO40 for CP support and update table for DB1-R | Connect RH180.1 to +3VS & RPH1.8 to GND | 0.2 |
| 21 | 30 | KBC | 09/12 | HP | Simplify the KBC solution for MEC1322 | Delete R249, R251, R256, R277 | 0.2 |
| 22 | 36 | Switch/MUX | 09/12 | HP | eDP trace length over Intel's specification | Change solution to PS8321 | 0.2 |

| | | | | |
|--|--------------------|-----------------|------------|--|
| Security Classification | Compal Secret Data | | Title | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Compal Electronics, Inc. |
| 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 HEADQUARTERS 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. | | | | Document Number |
| | | | | LA-9371P |
| | | | | Rev 0.3 |
| | | | | Date: Monday, November 12, 2012 Sheet 52 of 56 |

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

| Item | Page # | Title | Date | Request Owner | Issue Description | Solution Description | Rev. |
|------|---------------|--------------|-------|---------------|---|---|------|
| 23 | 29 | LAN | 09/12 | HP | Avoid IEEE failure with trace stub lines | Add Lan switch solution PI3L500-AZ,FEX (U43) | 0.2 |
| 24 | 39 | I/O CONN | 09/12 | HP | Move Hall sensor IC on Function board | Add +3VDS & LID_SW# pin to JFB1 | 0.2 |
| 25 | 22 | eDP | 09/13 | Compal | Avoid LVDS Burn out Risk | Rearrange pin assignment of JEDP1 | 0.2 |
| 26 | 31 | POK CKT | 09/13 | HP | Modify Power OK circuit | Delete UH7, RH235 ; Add R1379 | 0.2 |
| 27 | 39 | I/O CONN | 09/19 | HP | Prevent Card Reader can't be recognized issue | Add R1380 for PCH_PCIE_WAKE# | 0.2 |
| 28 | 13 | PCH | 09/19 | HP | Disable the unlock of ME descriptor | Change QH11 to P-MOSFET | 0.2 |
| 29 | 37 | Smart Card | 09/20 | HP | RC delay is NOT good as reset | Delete CC67,R393, then connect U30.23 to PLT_RST#. | 0.2 |
| 30 | 26 | CODEC | 09/20 | HP | | Uninstall RA13 and CA20 | 0.2 |
| 31 | 14 | PCH | 09/20 | HP | KBC appears drives high during S3, so the change to avoid the leakage without losing functionality. | Change RH74 from 10K to 100K Ohm | 0.2 |
| 32 | 31 | PWR OK | 09/23 | HP | Modify net name for easy read | Modify VR_ON to PWR_GD and PWR_GOOD_3 to VGATE | 0.2 |
| 33 | 5 | XDP | 09/25 | HP | | Connect PM_PWROK to JXDP1.47 via 0 Ohm (RC107) | 0.2 |
| 34 | 30 | KBC | 09/25 | HP | Resolve ME LAN failures | Delete R537, Q73, D21 | 0.2 |
| 35 | 35 | MXM | 09/27 | HP | There is yellow bang in device manager | Add pull high resistor (R1382,R1383 & R1384) to +3VS | 0.2 |
| 36 | 38 | KB Backlight | 09/27 | HP | | Change R408 to 200K Ohm, and uninstall C295 | 0.2 |
| 37 | 35 | MXM | 10/11 | HP | Certain ports have better drive strength than others when the system is in DC mode | DP port re-assignment | 0.3 |
| 38 | 26,27 | CODEC | 10/11 | IDT | | Change RA14 to 0Ohm, C95 to 0.47uF, R97,R98,R102,R104 to 1% | 0.3 |
| 39 | 5,14 30,34 | KBC | 10/12 | HP | To enable Intel Deep SX | Reserve RC108, UH6, CH113, R1388. Change U17.85 and R1388 connection netname to RSMRST#_EC. Change R455 to 47K, Add Q18A, C431, R1387. Modify +3V_PCH power circuit | 0.3 |
| 40 | 9 | CPU | 10/16 | HP | To enable Intel Deep SX | Add QC6 and connect to KBC_PWRON | 0.3 |
| 41 | 41 | CPU | 10/16 | HP | To enable Intel Deep SX | Add Q176 and add connection to PLT_DET | 0.3 |

| | | | | | | |
|--|--------------------|-----------------|------------|--------------------------|---------------------------|----------------|
| Security Classification | Compal Secret Data | | | Compal Electronics, Inc. | | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | HW Changed-List History-1 | |
| 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 FREDERICKS DOCUMENT NUMBER | | | | LA-937IP | Rev | 0.3 |
| MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. | | | | Date: | Monday, November 12, 2012 | Sheet 53 of 56 |

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

| Item | Page# | Title | Date | Request Owner | Issue Description | Solution Description | Rev. |
|------|---------------------------------------|-----------|-------|---------------|---------------------------|--|------|
| 42 | 25 | WLAN | 10/16 | HP | To enable Intel Deep SX | Delete R64, Install R1354 | 0.3 |
| 43 | 29 | LAN | 10/16 | HP | To enable Intel Deep SX | Change connection of R1359 to KBC_WAKE# | 0.3 |
| 44 | 30 | KBC | 10/16 | HP | To enable Intel Deep SX | Change R227 to 3.3K | 0.3 |
| 45 | 30 | KBC | 10/16 | HP | To enable Intel Deep SX | Connect R215.2 to GND, Delete C186 | 0.3 |
| 46 | 30 | KBC | 10/16 | HP | To enable Intel Deep SX | Remove current VCC1_PWRGD connection to JP6.16. Then add a 4.7 K resistor between JP6.16 and new signal VCC1_PWRGD_SUS#. | 0.3 |
| 47 | 30 | KBC | 10/16 | HP | To enable Intel Deep SX | Rename CHARGER_CLK & CHARGER_DAT to KBC_WAKE# & CHRGR_RST | 0.3 |
| 48 | 30,39 | KBC & I/O | 10/16 | HP | To enable Intel Deep SX | Change R1378 to 100K and rename U17.41 to iSCT_LED# Delete C322 Change JTB1.98 to iSCT_LED#. | 0.3 |
| 49 | 30 | KBC | 10/16 | HP | | add R1391 between U18.6 pin and signal PVT_SCLK | 0.3 |
| 50 | 30 | KBC | 10/16 | HP | Simplify the KBC circuit | Connect R215.2 to GND, Delete C186 Change R227 to 10K Delete R239, R240 and connect to KBC (U17) directly. Delete R218 and connect to KBC (U17) directly. | 0.3 |
| 51 | 30 | KBC | 10/16 | HP | Simplify the KBC circuit | Delete R1381 and connect JCR1.5 to +5VDS. | 0.3 |
| 52 | 5,9,14 16,20,24 25,30, 34,35 | KBC | 10/20 | HP | | Change R615 to 470K, R610 to 470Ohm and RH247 to 10K Change R1387,R137,R1382,R1383,R1384 to 4.7K, RC108 to 10K, Delete Q177, QC1, RC12, QC5B, QC6B, R461, Q2, RC90. Install RH209, R492, RC108, RH246, CH113 and VH6. Uninstall QC3, RH148, RH67, RH208. Change R492.2 connection to PCH_THERMTRIP#_R Connect RH247.1 to PM_RSMRST#. Modify +1.35VS power circuit | 0.3 |
| 53 | 14 | PCH | 10/20 | Compal | To solve bring up issue | Add PU resistor (RH248) for GPIO72 | 0.3 |
| 54 | 14,30,34 | PCH | 10/23 | Compal | HP Deep SX implementation | Delete R1387, Uninstall RH246, CH113, VH6, RH209, Q176, RH247 Install RH67, RH208 ; Add 4.7K (R1392) between KBC 124 pin and signal SIO_SLP_SUS#. | 0.3 |

| | | | | |
|--|--------------------|-----------------|------------|---|
| Security Classification | Compal Secret Data | | Title | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Compal Electronics, Inc. |
| <small>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.</small> | | | | Document Number LA-9371P Date: Monday, November 12, 2012 |
| | | | | Rev 0.3 Sheet 54 of 56 |

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

| Item | Page # | Title | Date | Request Owner | Issue Description | Solution Description | Rev. |
|------|--------|----------------|-------|---------------|--|---|------|
| 55 | 14,39 | PCH, I/O | 10/23 | HP | For Intel ThunderBolt REDWOOD | Change PCH.AL6 to TBT_RR_GPIO# Change RH245.2 to TBT_RR_GPIO# Change JT1.98 to TBT_RR_GPIO# | 0.3 |
| 56 | 39 | I/O | 10/23 | HP | For iSCT_LED# function | Add Q177 for control HDD & Wireless LED | 0.3 |
| 57 | 25 | Wireless LED | 10/24 | HP | Create about 1.36V with 47K PU when WL LED is off | Add PD 33K (R1393) for WL/BT_LED# | 0.3 |
| 58 | 28 | G-Sensor | 10/24 | HP | Current connection is incorrect | Connect ACCEL_INT# to U9 's pin11 and leave pin 9 as NC | 0.3 |
| 59 | 18 | PCH | 10/24 | HP | | Connect RH176.2 to GND (from +3VS) and install RH176 Install RH185 | 0.3 |
| 60 | 25 | WLAN | 10/24 | HP | | Add serial resistor R1394,R1395,R1396 for CLINK signals | 0.3 |
| 61 | 14 | PCH | 10/25 | HP | | Add RH249 for SLP_LAN# and change RH70 to 200K | 0.3 |
| 62 | 14,29 | PCH, LAN | 10/25 | HP | To provide isolation | Add PU RH250 for LANWAKE# and Q177 for isolation | 0.3 |
| 63 | 25 | WLAN | 10/25 | HP | | Delete R89 and R1393 | 0.3 |
| 64 | 39 | I/O | 10/25 | HP | For iSCT_LED# function | Change Q178 to BSS138 and Add R1393 | 0.3 |
| 65 | 35 | MXM | 10/25 | HP | For MXM GPIO8 issue | Combine Q61/Q62 to Dual 2N7002 (Q61) and Delete R137 | 0.3 |
| 66 | 34 | DC-DC | 10/25 | HP | S5 power consumption concern. | Change R455 to 200K and add PD 100K (R1398) | 0.3 |
| 67 | 29 | LAN | 10/26 | HP | +5VDS may disappear during Deep S4/S5 | Connect R376.1 to +3VDS and change R376 to 10K | 0.3 |
| 68 | 29 | LAN | 10/26 | HP | | Connect DOCK_LED_LINK_LAN# to Q34.1 and delete R153 | 0.3 |
| 69 | 18,32 | PCH, Super I/O | 10/26 | HP | | Reassign Super I/O GPIO45 as mSATA_DET# | 0.3 |
| 70 | 17 | PCH | 10/26 | HP | | Reassign GPIO59 as WWAN_DET#_PCH and connect to JMINI3 | 0.3 |
| 71 | 13 | PCH | 10/26 | HP | | Swap QH11A.2 and QH11B.5 connection | 0.3 |
| 72 | 35 | MXM | 10/28 | HP | For MXM GPIO8/GPIO9 issue | Change MOS to Diode RB-751(D5) and R1383 to 300 Ohm | 0.3 |
| 73 | 35 | MXM | 10/28 | HP | | Connect Q60 pin 2 & pin 5 to DGPU_PWROK | 0.3 |
| 74 | 31 | PWROK | 10/31 | HP | To ensuret +5VDS power off | Connect R291.1 to +5VL and change it to 105K Ohm | 0.3 |
| 75 | 39 | I/O | 10/31 | HP | | Change JCR1.48 & 50 from +3VDS to +3VS | 0.3 |
| 76 | 29 | LAN | 11/2 | HP | Avoid NIC internal PHY voltage drop | Reserve 10uF (C428) & change C351 to 47uF | 0.3 |
| 77 | 27 | Audio | 11/2 | Compal | OBS#894504- SWTP-DB1R_AB1.0: Can't record sound via audio jack with external headphone | Delete Q1AB & R174 then connect HP_SENSE# to R167 | 0.3 |
| 78 | 9 | CPU | 11/4 | Compal | | Change connection of QC5A.2 & QC5B.5 to SLP_S3 | 0.3 |

| | | | | | | |
|--|--------------------|-----------------|------------|--------------------------|---------------------------|----------------|
| Security Classification | Compal Secret Data | | | Compal Electronics, Inc. | | |
| Issued Date | 2012/04/03 | Deciphered Date | 2014/12/31 | Title | HW Changed-List History-1 | |
| 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 HEADQUARTERS 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. | | | | Document Number | LA-9371P | Rev |
| | | | | Date: | Monday, November 12, 2012 | Sheet 55 of 56 |

www.s-manuals.com