

MODEL NAME : QLM00  
PCB NO : LA-7841P ( DA\*\*\*\*\* )  
BOM P/N : TBD

# Dell/Compal Confidential

## Schematic Document

### Phantom(Chief River)

### Ivy Bridge ULV(BGA1023) + Panther Point

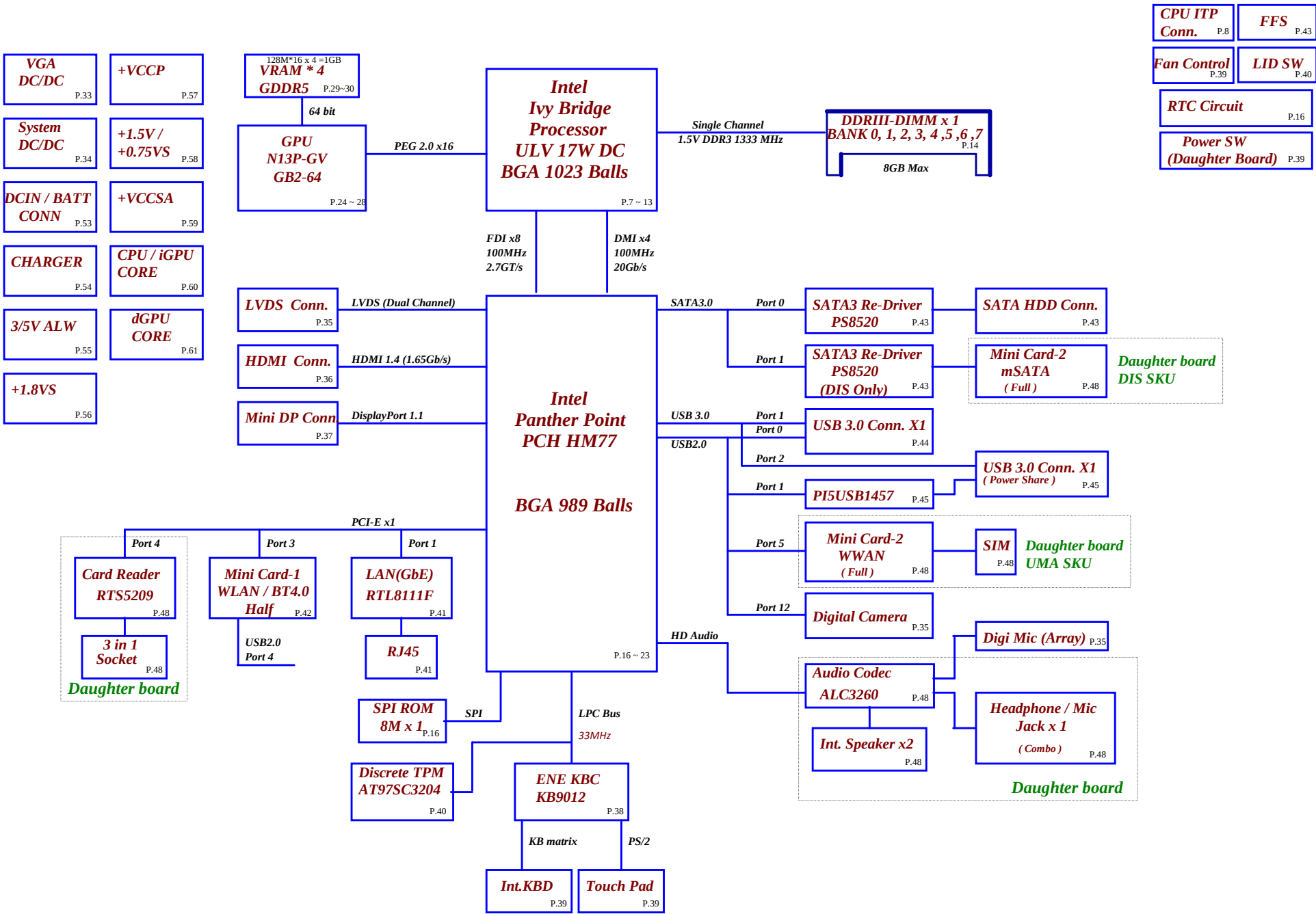
### DISCRETE VGA N13P-GV(optimus)

2012-01-19

Rev: 1.0 (X04)

@ : Nopop Component  
CONN@ : Connector Component  
DIS@ : pop when DIS configuration  
UMA@ : pop when UMA configuration

|                  |             |       |
|------------------|-------------|-------|
| MB Type          | BOM P/N     |       |
| TPM              | 4319EJ31L01 |       |
| TCM              | 4319EJ31L02 | 2@ 4@ |
| TPM DIS/ TCM DIS |             | 2@ 3@ |



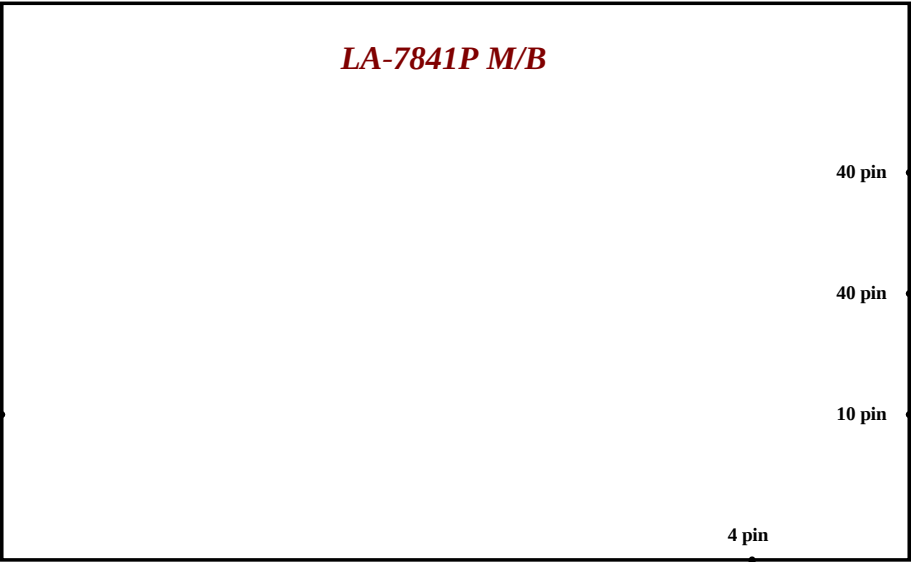
Compal Confidential

Project Code : QLM00  
File Name : LA-7841P

LS-7841P POWER BUTTON BOARD  
LS-7842P LED INDICATE BOARD  
LS-7843P BATTERY INDICATED BOARD  
LS-7844P I/O BOARD



Wire  
6 pin



40 pin

Wire



40 pin

FFC



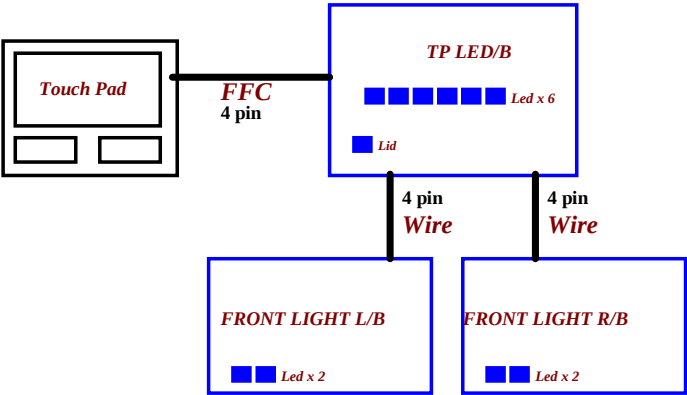
10 pin

Wire



4 pin

FFC



FFC  
4 pin

4 pin  
Wire

4 pin  
Wire



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                            |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|----------------------------|---------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                            |               |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15         | Deciphered Date | 2012/07/15 | Title                    | Block Diagram              |               |
| 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          | Rev                        | 0.3           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date                     | Tuesday, February 07, 2012 | Sheet 3 of 65 |

Board ID Table for AD channel

|          |             |             |             |             |           |
|----------|-------------|-------------|-------------|-------------|-----------|
| Vcc      | 3.3V +/- 5% |             |             |             |           |
| Ra       | 100K +/- 5% |             |             |             |           |
| Board ID | Rb          | VAD_BID min | VAD_BID typ | VAD_BID max | EC_AD3    |
| 0        | 0           | 0 V         | 0 V         | 0.155 V     | 0x00-0x0C |
| 1        | 8.2K +/- 5% | 0.168 V     | 0.250 V     | 0.362 V     | 0x0D-0x1C |
| 2        | 18K +/- 5%  | 0.375 V     | 0.503 V     | 0.621 V     | 0x1D-0x30 |
| 3        | 33K +/- 5%  | 0.634 V     | 0.819 V     | 0.945 V     | 0x31-0x49 |
| 4        | 56K +/- 5%  | 0.958 V     | 1.185 V     | 1.359 V     | 0x4A-0x69 |
| 5        | 100K +/- 5% | 1.372 V     | 1.650 V     | 1.838 V     | 0x6A-0x8E |
| 6        | 200K +/- 5% | 1.851 V     | 2.200 V     | 2.420 V     | 0x8F-0xBB |
| 7        | NC          | 2.433 V     | 3.300 V     | 3.300 V     | 0xBC-0xFF |

BOARD ID Table

|          |              |
|----------|--------------|
| Board ID | PCB Revision |
| 0        | 0.1          |
| 1        | 0.2          |
| 2        | 0.3          |
| 3        | 0.4          |
| 4        | 1.0          |
| 5        |              |
| 6        |              |
| 7        |              |

SMBUS Control Table

|                             | SOURCE | MINI1 | MINI2 | BATT | SODIMM | Thermal Sensor 1 | Thermal Sensor 2 | FFS | VGA Thermal Sensor | VGA | DMC | XDP | Charger |
|-----------------------------|--------|-------|-------|------|--------|------------------|------------------|-----|--------------------|-----|-----|-----|---------|
| EC_SMB_CK1<br>EC_SMB_DA1    | KB930  |       |       | V    |        |                  |                  |     |                    |     |     |     |         |
| EC_SMB_CK2<br>EC_SMB_DA2    | KB930  |       |       |      |        | V                | V                |     | V                  |     |     |     |         |
| PCH_SML0CLK<br>PCH_SML0DATA | PCH    |       |       |      |        |                  |                  |     |                    |     |     |     |         |
| PCH_SML1CLK<br>PCH_SML1DATA | PCH    |       |       |      |        |                  |                  |     |                    |     |     |     | V       |
| MEM_SMBCLK<br>MEM_SMBDATA   | PCH    | V     | V     |      | V      |                  |                  | V   |                    | V   | V   | V   |         |

Link

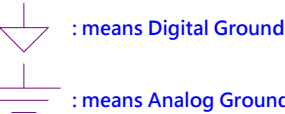
| CLKOUT | DESTINATION  |
|--------|--------------|
| PCI0   | PCH_LOOPBACK |
| PCI1   | EC LPC       |
| PCI2   | None         |
| PCI3   | None         |
| PCI4   | None         |

| SATA  | DESTINATION |
|-------|-------------|
| SATA0 | HDD         |
| SATA1 | None        |
| SATA2 | ODD         |
| SATA3 | None        |
| SATA4 | None        |
| SATA5 | None        |

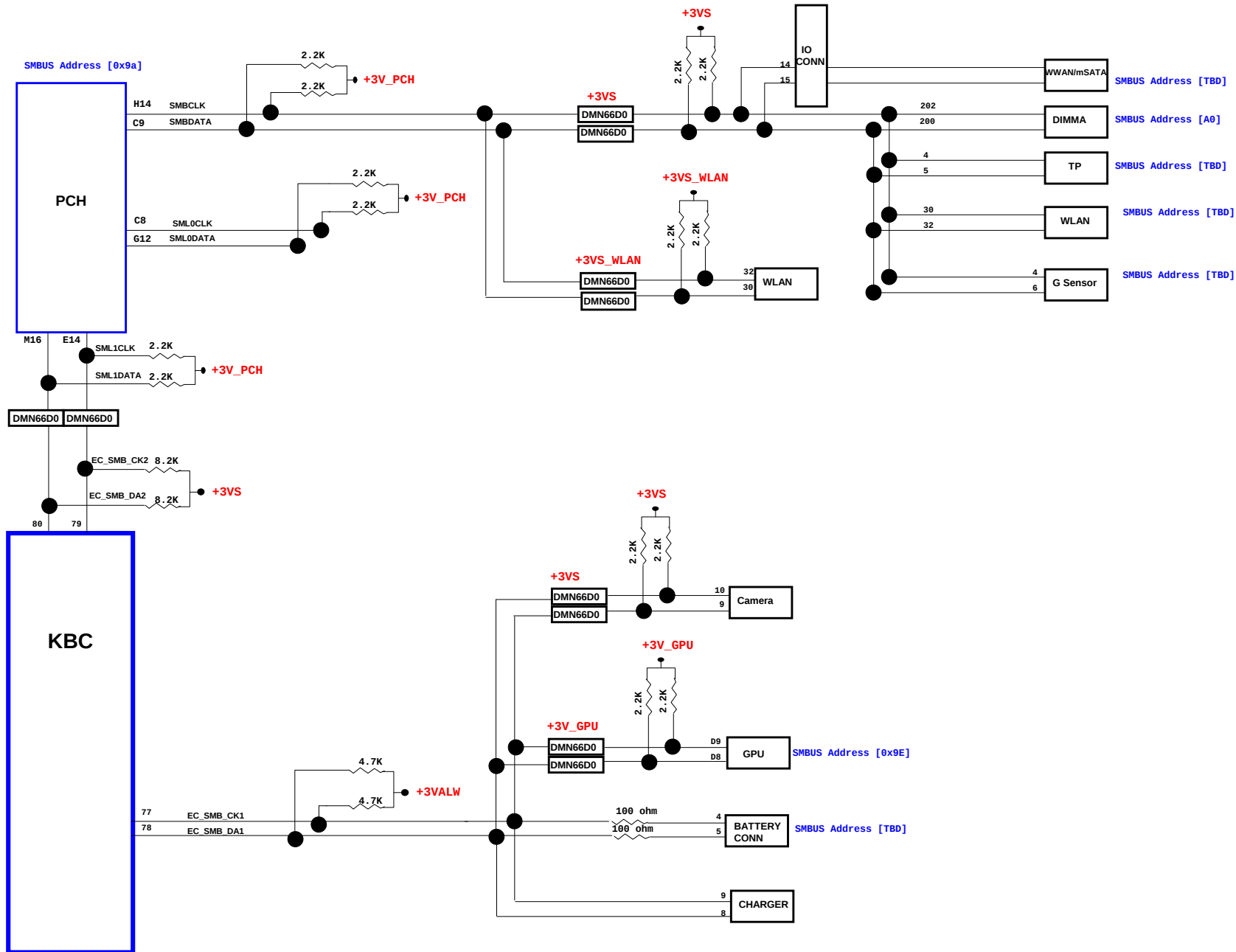
| PCI EXPRESS | DESTINATION          |
|-------------|----------------------|
| Lane 1      | 10/100/1G LAN        |
| Lane 2      | MINI CARD-2 WWAN/DMC |
| Lane 3      | MINI CARD-1 WLAN     |
| Lane 4      | CARD READER          |
| Lane 5      | None                 |
| Lane 6      | USB 3.0              |
| Lane 7      | None                 |
| Lane 8      | None                 |

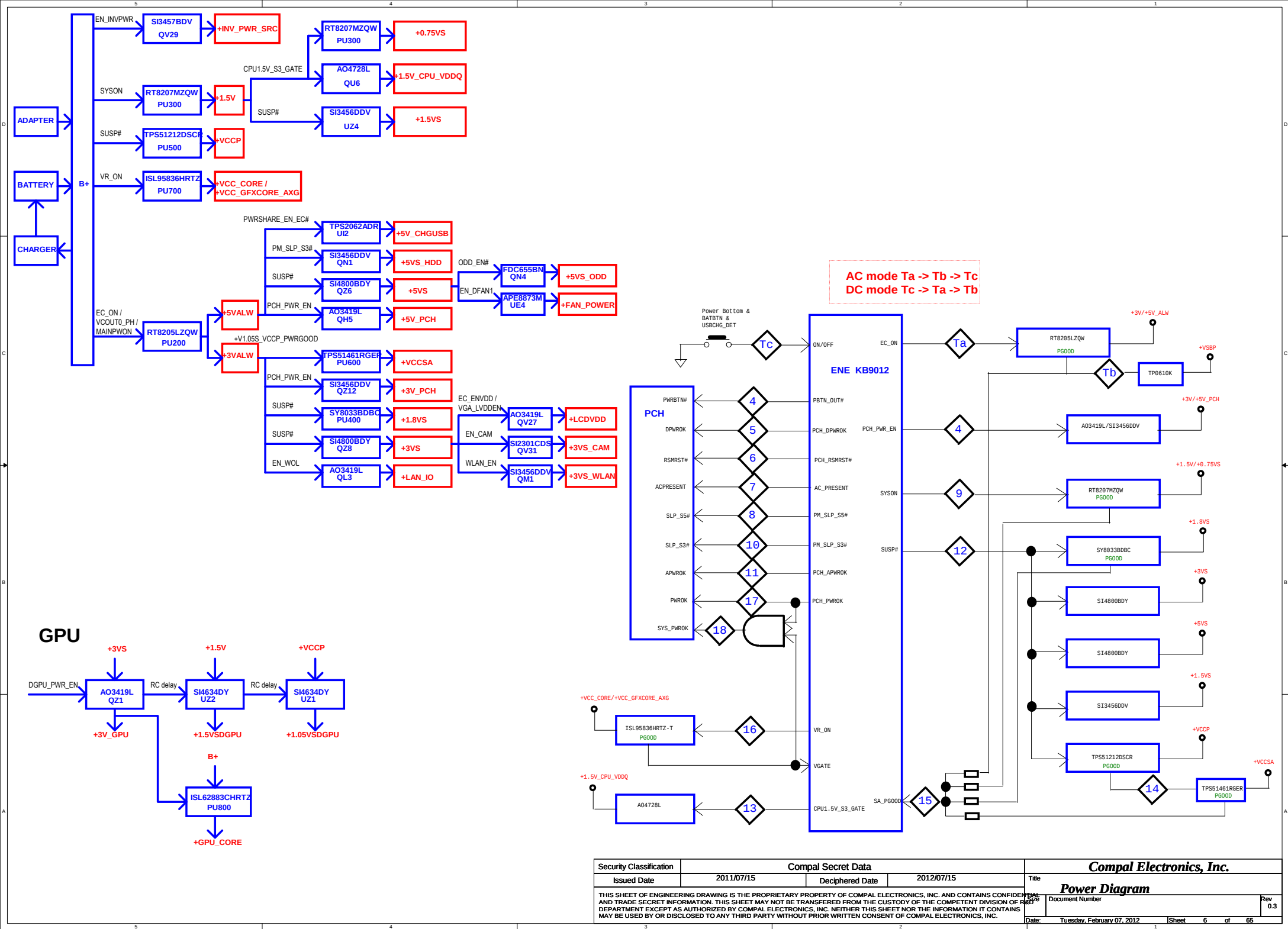
| CLK | DIFFERENTIAL | DESTINATION      | FLEX CLOCKS | DESTINATION |
|-----|--------------|------------------|-------------|-------------|
|     | CLKOUT_PCIE0 | None             | CLKOUTFLEX0 | None        |
|     | CLKOUT_PCIE1 | 10/100/1G LAN    | CLKOUTFLEX1 | None        |
|     | CLKOUT_PCIE2 | MINI CARD-2 WWAN | CLKOUTFLEX2 | None        |
|     | CLKOUT_PCIE3 | MINI CARD-1 WLAN | CLKOUTFLEX3 | None        |
|     | CLKOUT_PCIE4 | CARD READER      |             |             |
|     | CLKOUT_PCIE5 | None             |             |             |
|     | CLKOUT_PCIE6 | USB 3.0          |             |             |
|     | CLKOUT_PCIE7 | None             |             |             |
|     | CLKOUT_PEG_B | None             |             |             |

Symbol Note :



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                            |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|----------------------------|---------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                            |               |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15         | Deciphered Date | 2012/07/15 | Title                    | Notes List                 |               |
| 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-7841P                   | Rev 0.3       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date                     | Tuesday, February 07, 2012 | Sheet 4 of 65 |

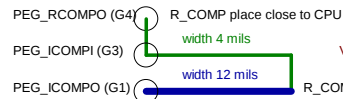




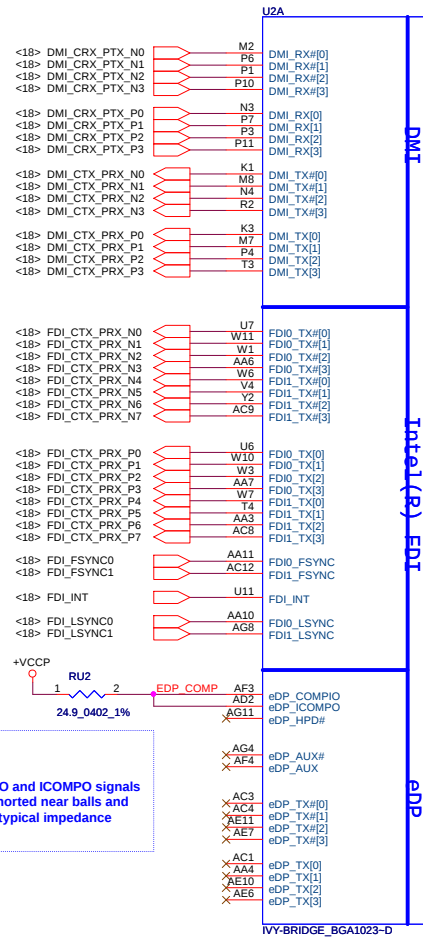
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------|-------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Compal Electronics, Inc. |       |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15         | Deciphered Date | 2012/07/15               | 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          | Rev   |
| Date: Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 | Sheet 6 of 65            | 0.3   |



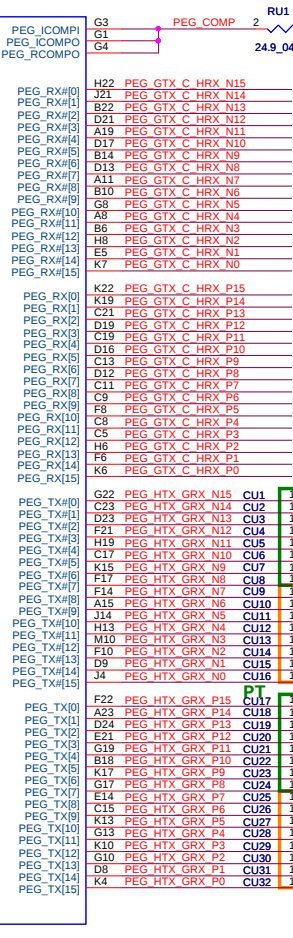
Trace length  
Max is 500 mils



PEG\_ICOMPI and RCOMP signals should be shorted and routed with  
max length = 500 mils  
- typical impedance = 43 mohms  
PEG\_ICOMPO signals should be routed with  
max length = 500 mils  
- typical impedance = 14.5 mohms



PCI EXPRESS -- GRAPHICS



PT

CPU Option

Sandy Bridge 1.6G



Ivy Bridge 1.5G



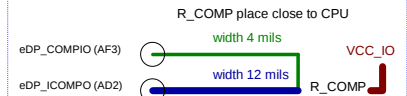
Ivy Bridge 1.7G



eDP\_COMPIO and ICOMPO signals should be shorted near balls and routed with typical impedance <25 mohms



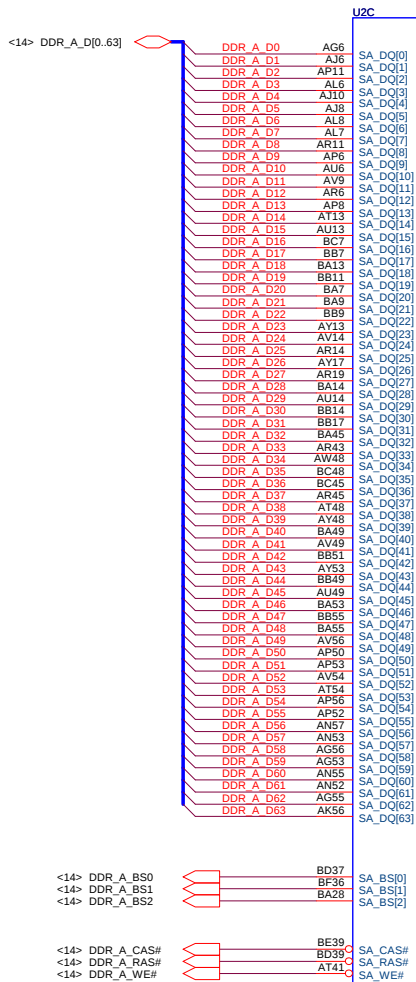
Trace length Max is 500 mils



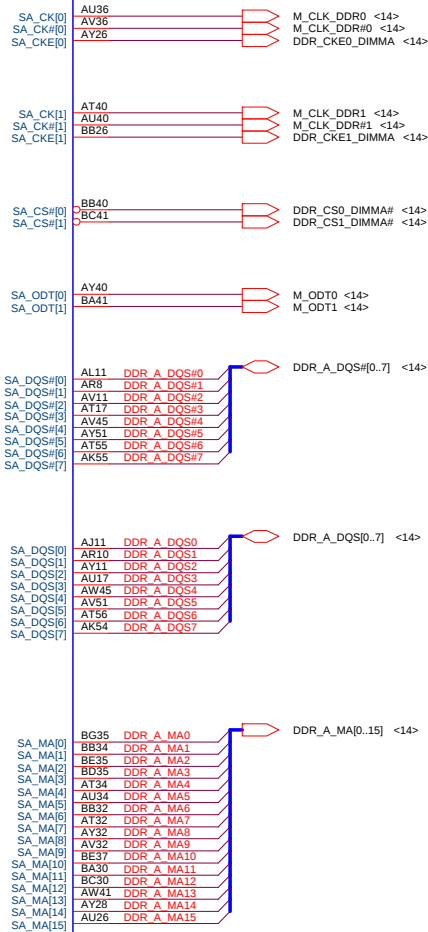
Typ- suggest 220nF. The change in AC capacitor value from 100nF to 220nF is to enable compatibility with future platforms having PCIe Gen3 (8GT/s)

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | Compal Secret Data |            | Title                      |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|----------------------------|---------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2011/07/15 | Deciphered Date    | 2012/07/15 | 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. |            |                    |            | PROCESSOR(1/7) DMI,FDI,PEG |         |
| Date: Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                    |            | Sheet                      | 7 of 65 |

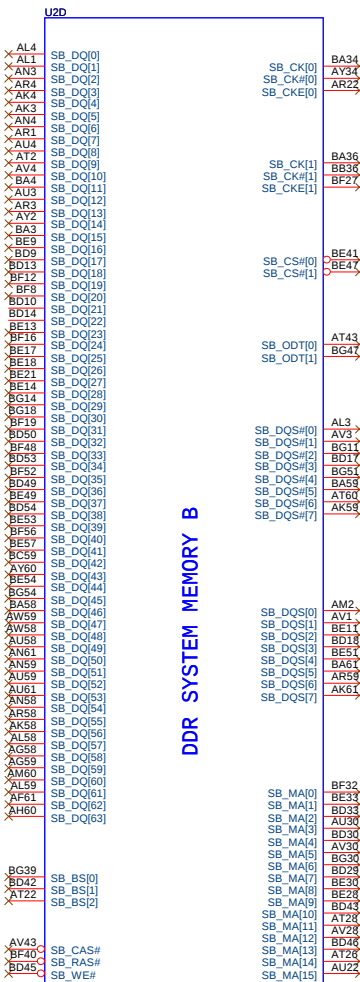




DDR SYSTEM MEMORY A

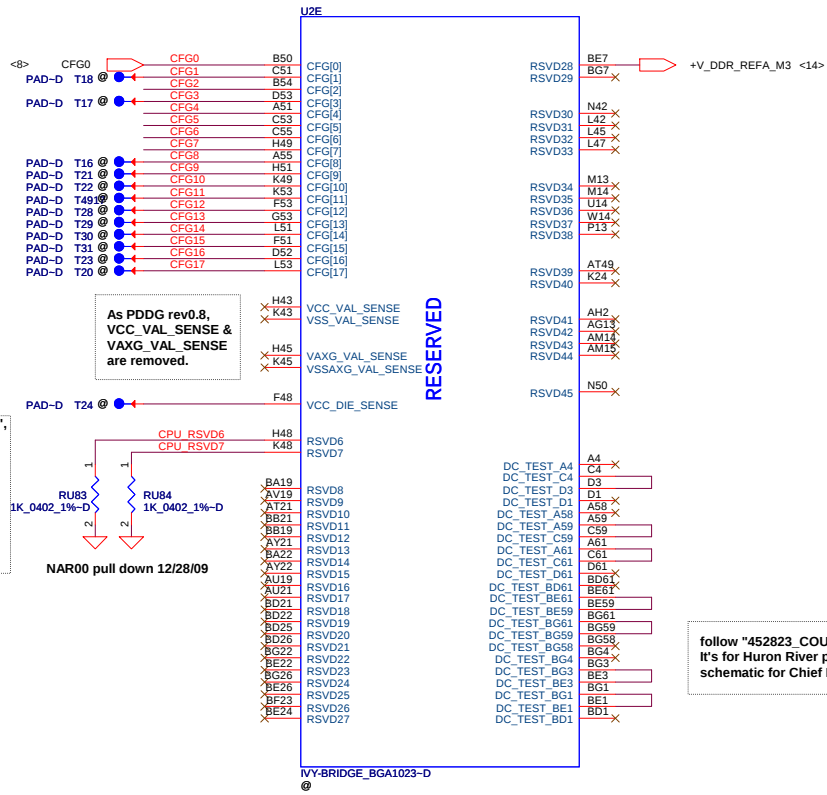


IVY-BRIDGE\_BGA1023-D

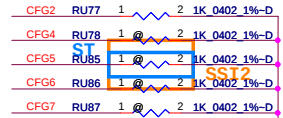


DDR SYSTEM MEMORY B

IVY-BRIDGE\_BGA1023-D



#### CFG Straps for Processor



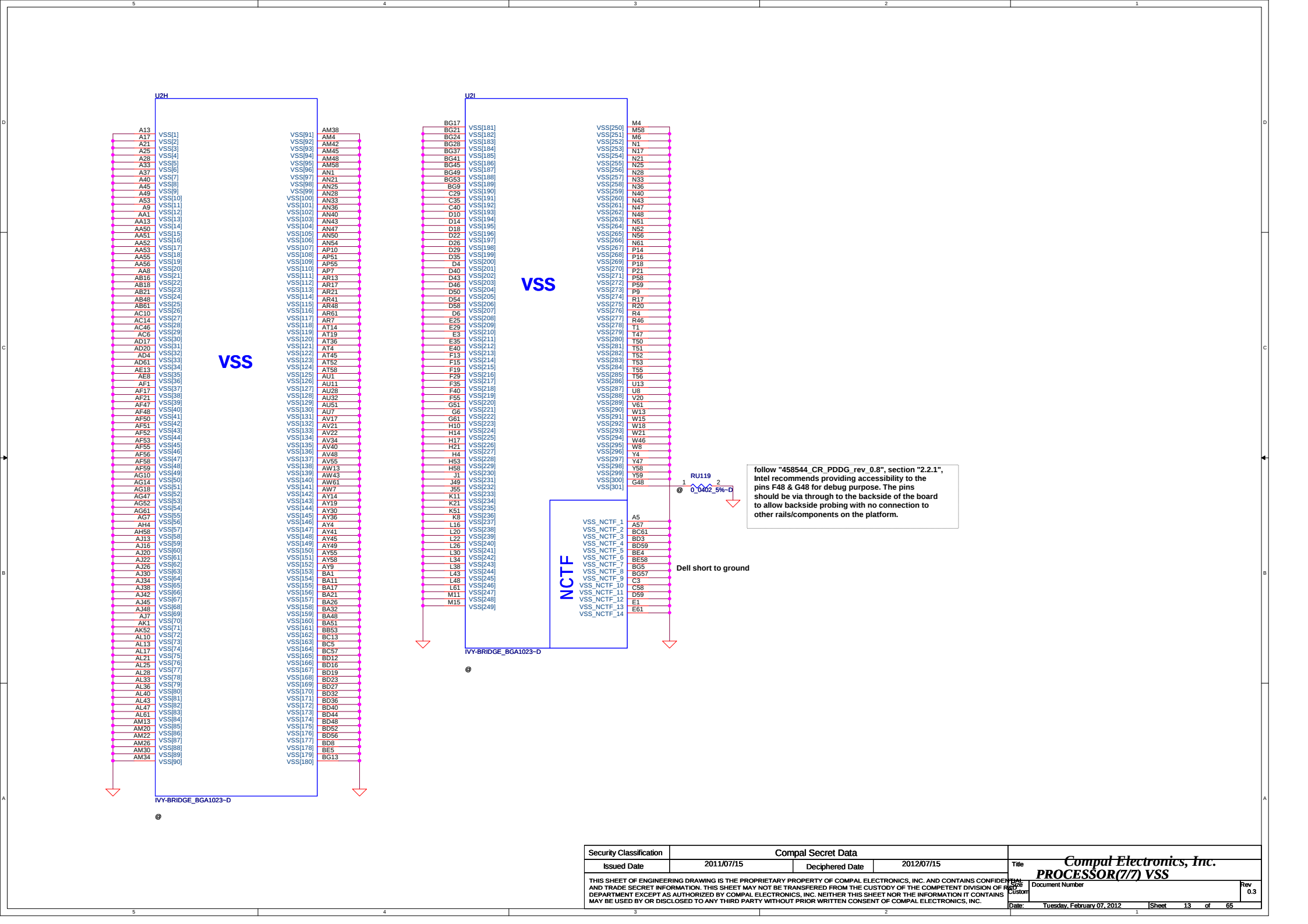
|                                                 |      | 1 (Default value)                                   | 0                              |
|-------------------------------------------------|------|-----------------------------------------------------|--------------------------------|
| PCI Express* Static x16 Lane Numbering Reversal | CFG2 | Normal operation (match socket pin map)             | Lane numbers reversed          |
| PCI Express* Static x4 Lane Numbering Reversal  | CFG3 | Normal operation (match socket pin map)             | Lane numbers reversed          |
| eDP enable                                      | CFG4 | Disable                                             | Enable                         |
| PEG DEFER TRAINING                              | CFG7 | PEG Train immediately following RESETB de-assertion | PEG Wait for BIOS for training |

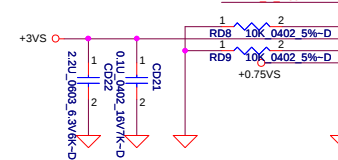
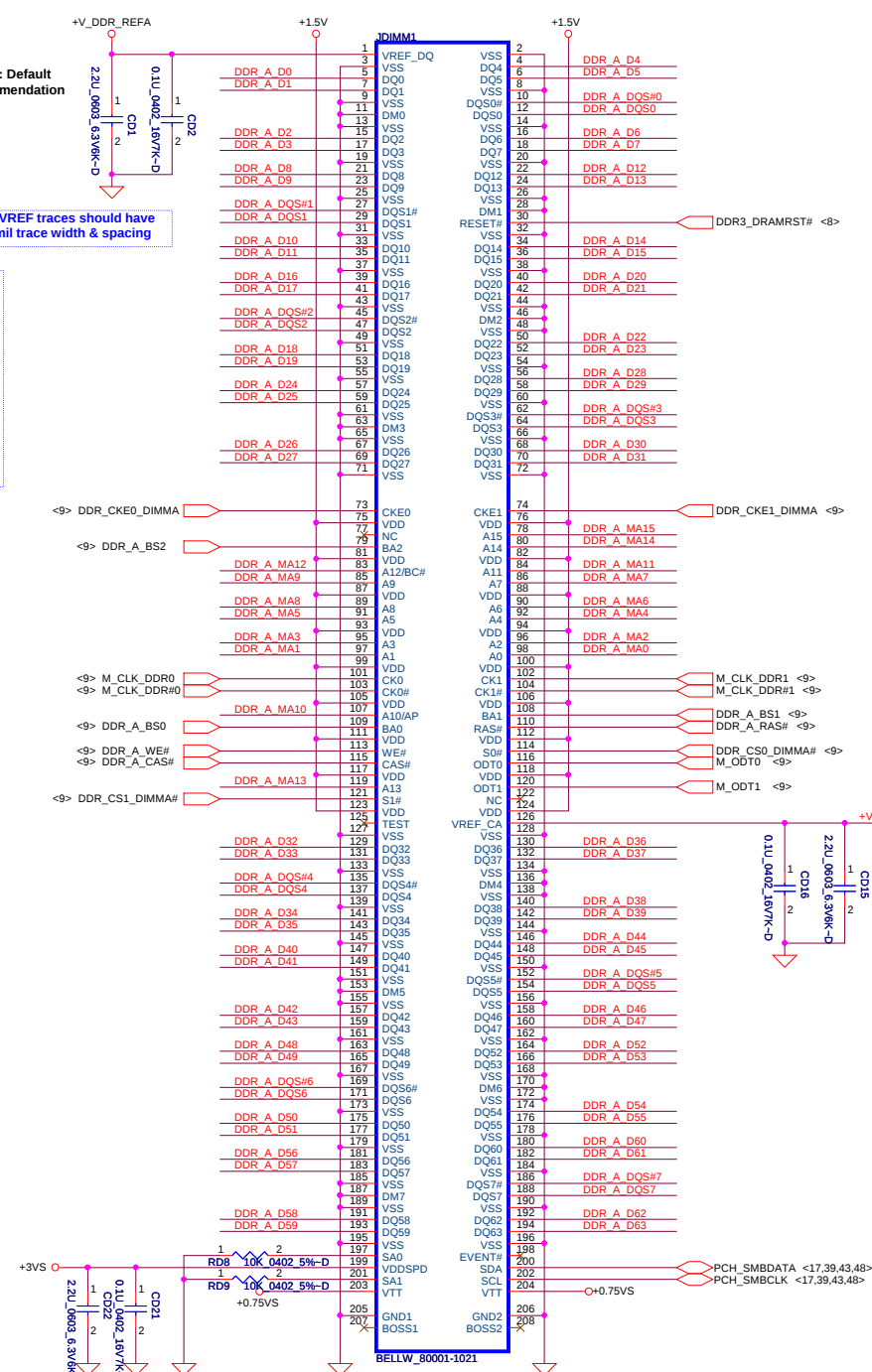
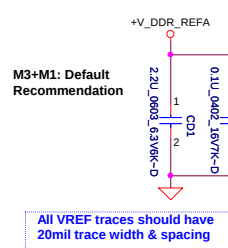
| PCI Express Bifurcation (x16 Lane) | CFG[6:5] | 11 | 1 x16 PCI Express (Default value) |
|------------------------------------|----------|----|-----------------------------------|
|                                    |          | 10 | 2 x8 PCI Express                  |
|                                    |          | 01 | reserved                          |
|                                    |          | 00 | 1 x8, 2 x4 PCI Express            |

follow "452823\_COUGAR\_CANYON(BGA1023)\_Customer\_Ready\_Schematic". It's for Huron River platform, since can't find CPU Ivy bridge BGA1023 schematic for Chief River at this moment.





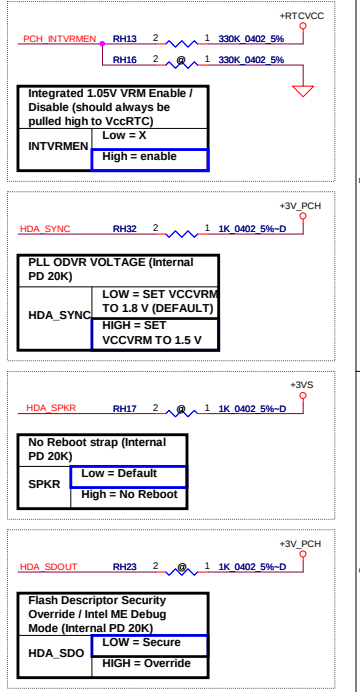
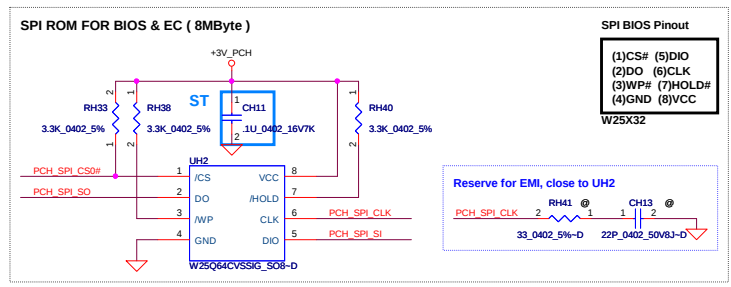
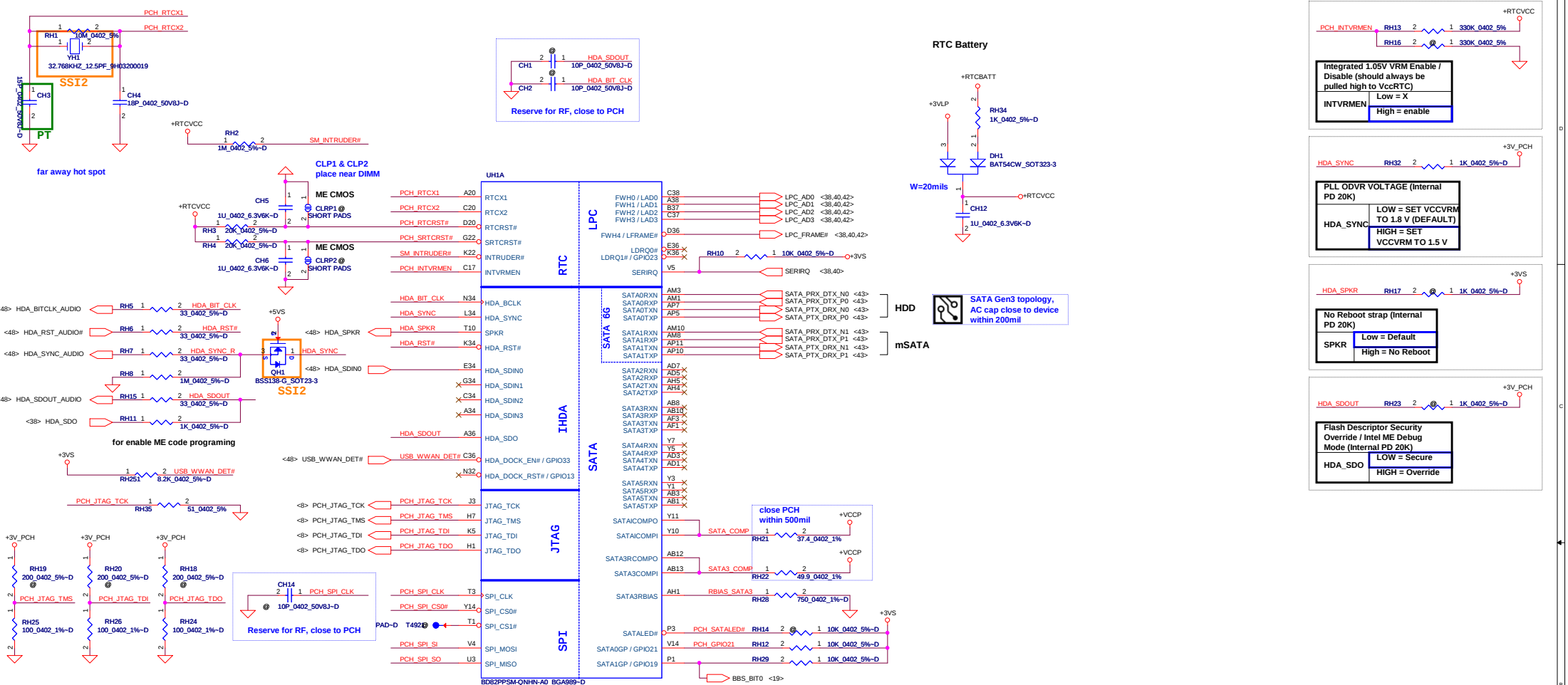




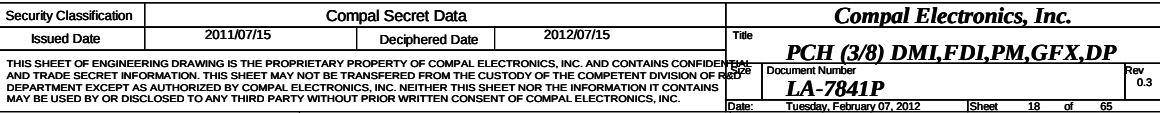
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |            |                          |              |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|--------------|-------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compal Secret Data |                 |            | Compal Electronics, Inc. |              |       |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2011/07/15         | Deciphered Date | 2012/07/15 | Title                    | DDRIII DIMMA |       |
| 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 FIRST 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. |                    |                 |            | Docu-ment Number         | Rev          | 0.3   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |            | LA-7841P                 |              |       |
| Date: Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |            | Sheet                    | 14           | of 65 |

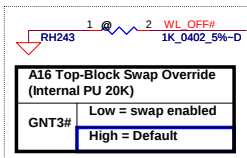
intent to blank

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|--------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |              |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15 | Deciphered Date    | 2012/07/15 | Title                    | DDRIII DIMMB |
| 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          | Rev          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | LA-7841P                 | 0.3          |
| Date: Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                    |            | Sheet                    | 15 of 65     |

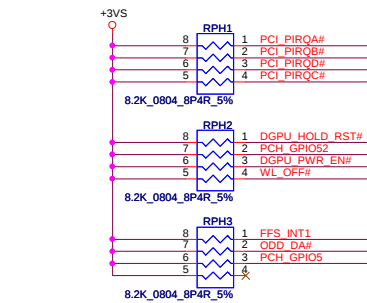




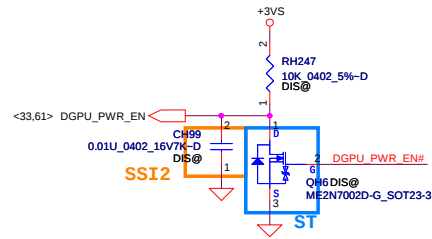




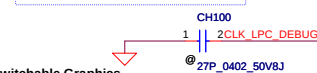
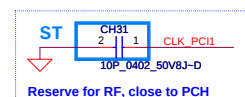
| BIT 1 | BIT 0   | Boot BIOS Location |
|-------|---------|--------------------|
| GNT1# | SATA1GP |                    |
| 0     | 0       | LPC                |
| 0     | 1       | Reserved           |
| 1     | 0       | PCI(non-mobile)    |
| 1     | 1       | SPI                |



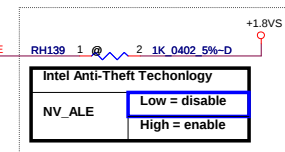
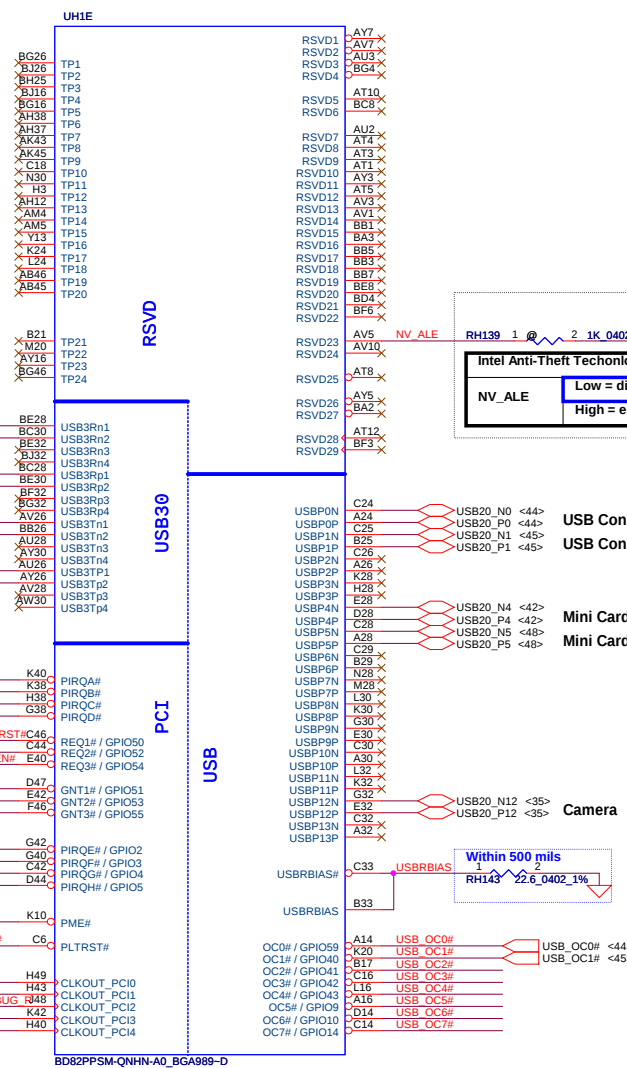
USB Conn 1  
USB Conn 2 (Power Share)



REQ[1:3]# &  
GNT[1:3]# are used  
as GPIO on Mobile  
GNT[1:3]# have internal  
weak PU, and disable  
after PLTRST# deassert



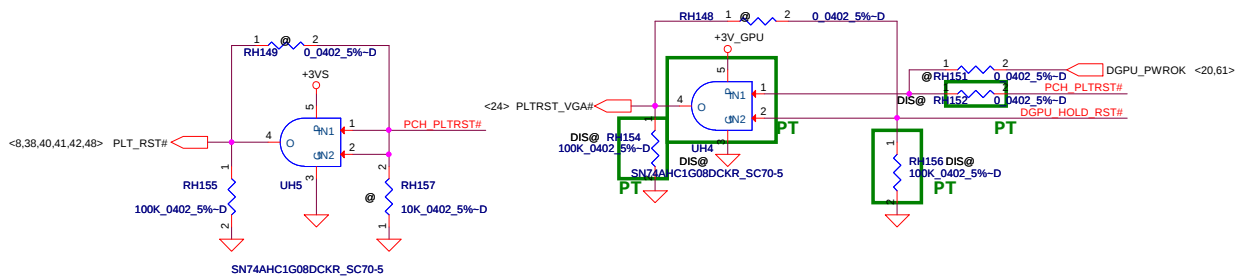
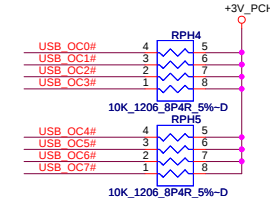
| Signal         | GPIO   | Type   | DuringReset | After Reset | Usage     | Description                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|--------|--------|-------------|-------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DGPU_PWR_EN#   | GPIO54 | Output | High        | High        | Must have | Driven by Switchable Graphics Driver to turn on/off the discrete graphics power.<br>0 = dGPU power switch turned on<br>1 = Power switch turned off                                                                                                                                                                                                                                   |
| DGPU_PWROK     | GPIO17 | Input  | -           | -           | Must have | Driven by dGPU VR to indicate the power status to PCH. Used to enable clocks to dGPU.<br>0 = dGPU power is not stable. Keep clock disabled & reset asserted.<br>1 = dGPU power is stable. Clock can be enabled; reset can be deasserted<br>If DGPU_PRST# is 1, in-order to get regular discrete GFX cards working, program DGPU_PWROK as GPO and assert a high value (1) on the pin. |
| DGPU_HOLD_RST# | GPIO50 | Output | Low         | Low         | Must have | Discrete Graphics Enable signal. Controlled by Switchable Graphics Driver and driven by PCH GPIO. Used to gate with Platform Reset to enable the Reset for dGPU.<br>0 = Keep dGPU in reset.<br>1 = Reset is released. This action taken 100 ms after DGPU_PWROK to ensure clock is stable.                                                                                           |



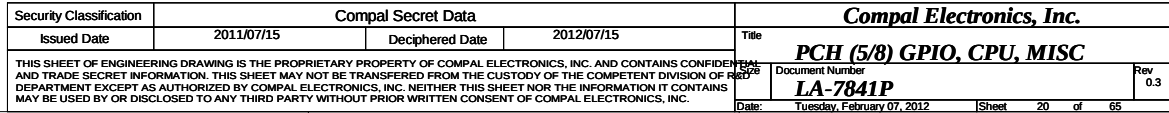
USB Conn 1  
USB Conn 2 (Power Share)

Mini Card(WLAN)  
Mini Card(WWAN)

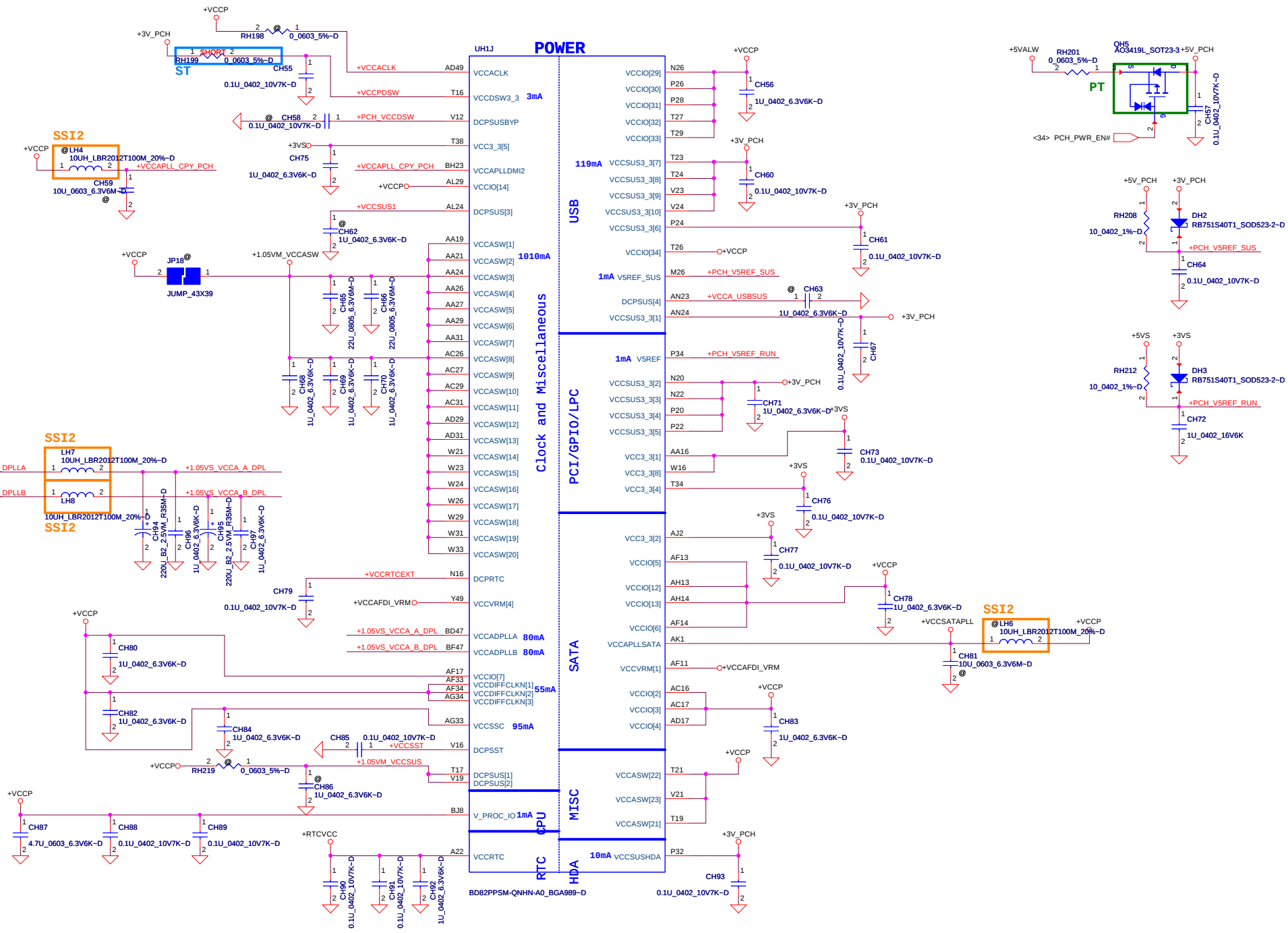
Camera

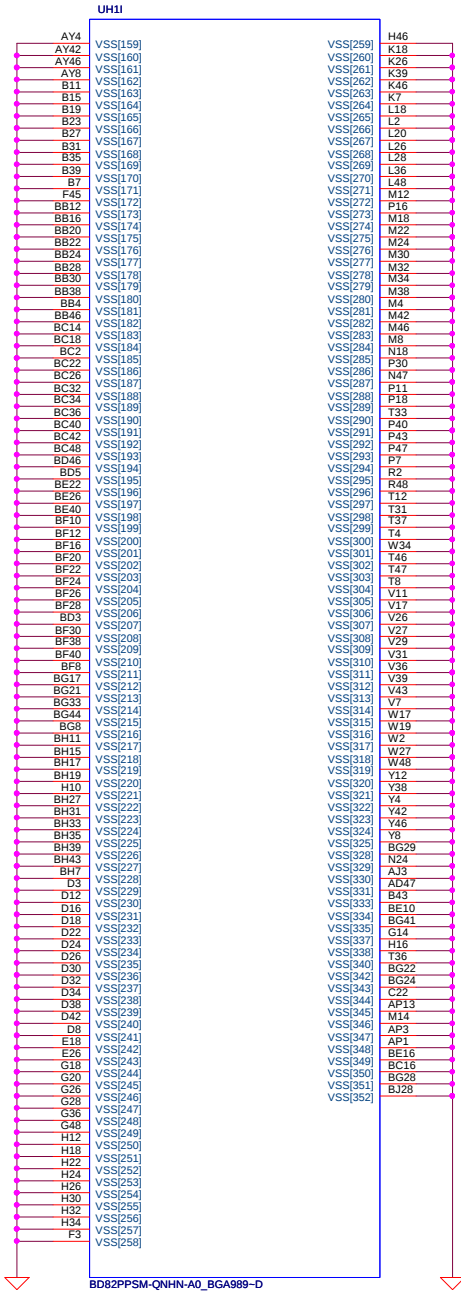
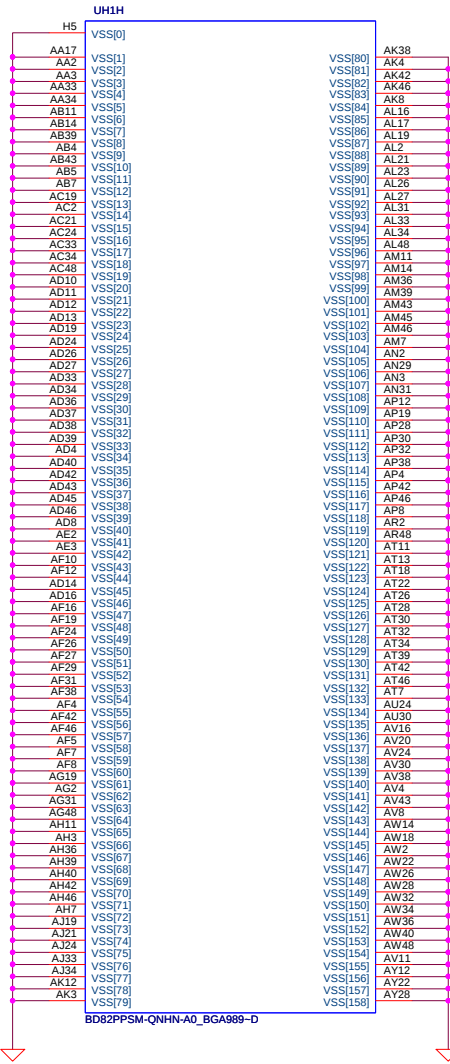


|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |            |                          |                           |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|---------------------------|-------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compal Secret Data |                 |            | Compal Electronics, Inc. |                           |       |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2011/07/15         | Deciphered Date | 2012/07/15 | Title                    | PCH (4/8) PCL, USB, NVRAM |       |
| 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 FIRST 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. |                    |                 |            | Docu- ment Number        | Rev                       | 0.3   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                 |            | LA-7841P                 |                           |       |
| Date: Tuesday, July 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |                 |            | Sheet                    | 19                        | of 65 |

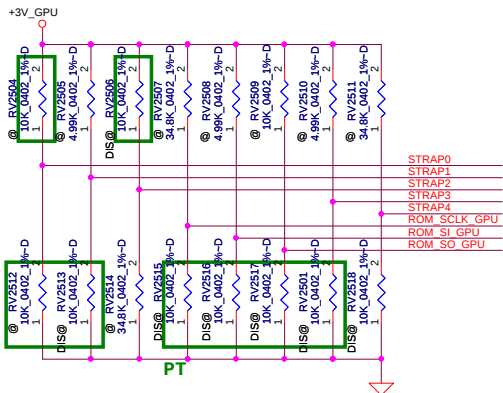






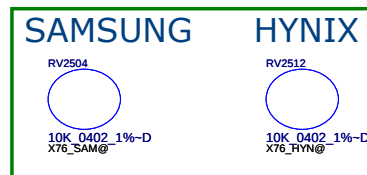






|                               |                |
|-------------------------------|----------------|
| Vendor                        | STRAP[3:0]     |
| Samsung 128MX16 (SA000048E0L) | <b>0 1 0 1</b> |
| Hynix 128MX16 (SA00004GD0L)   | <b>0 1 0 0</b> |

PT



## GPU BIOS Device ID

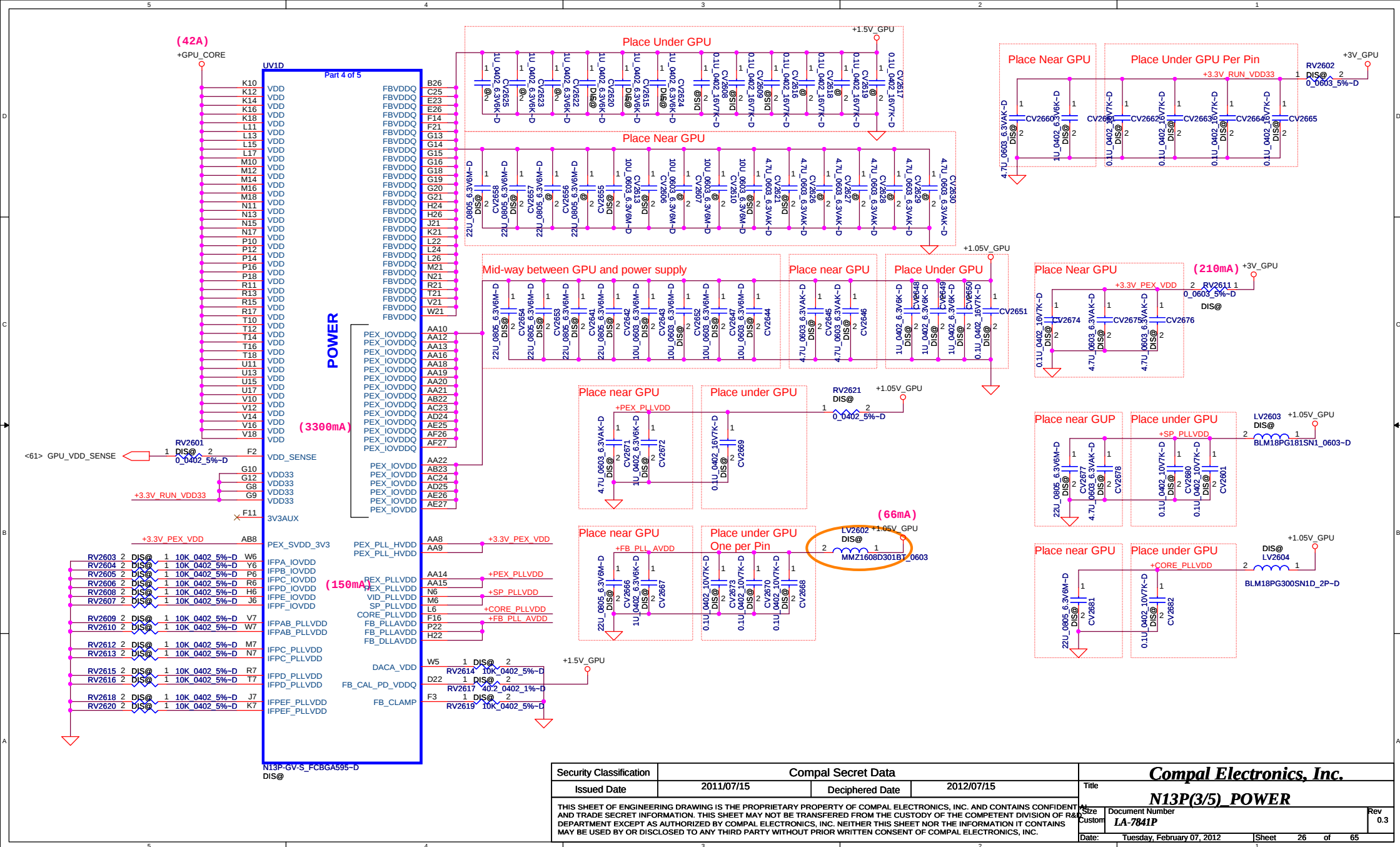
|              |        |
|--------------|--------|
| N13P-GV-S-A2 | 0x1140 |
|--------------|--------|

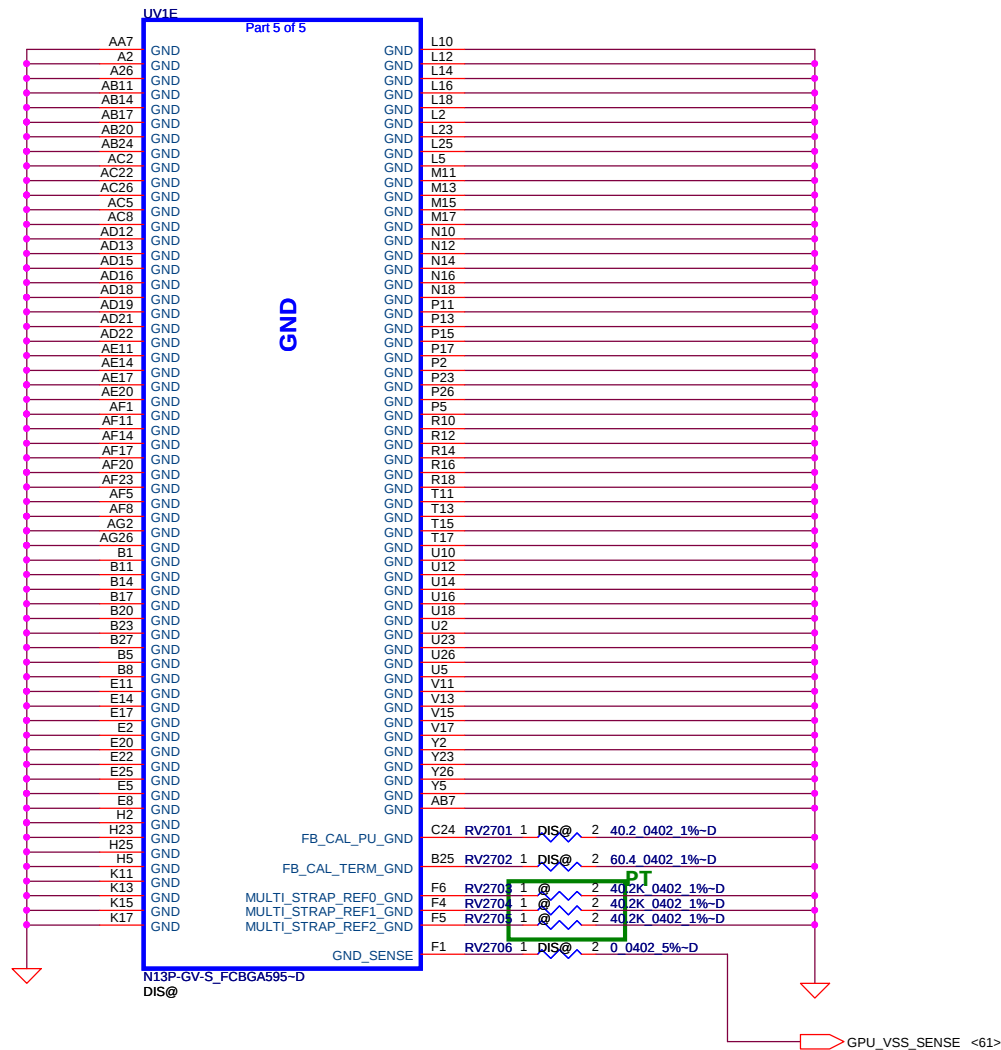
PT

## Binary Mode Straps

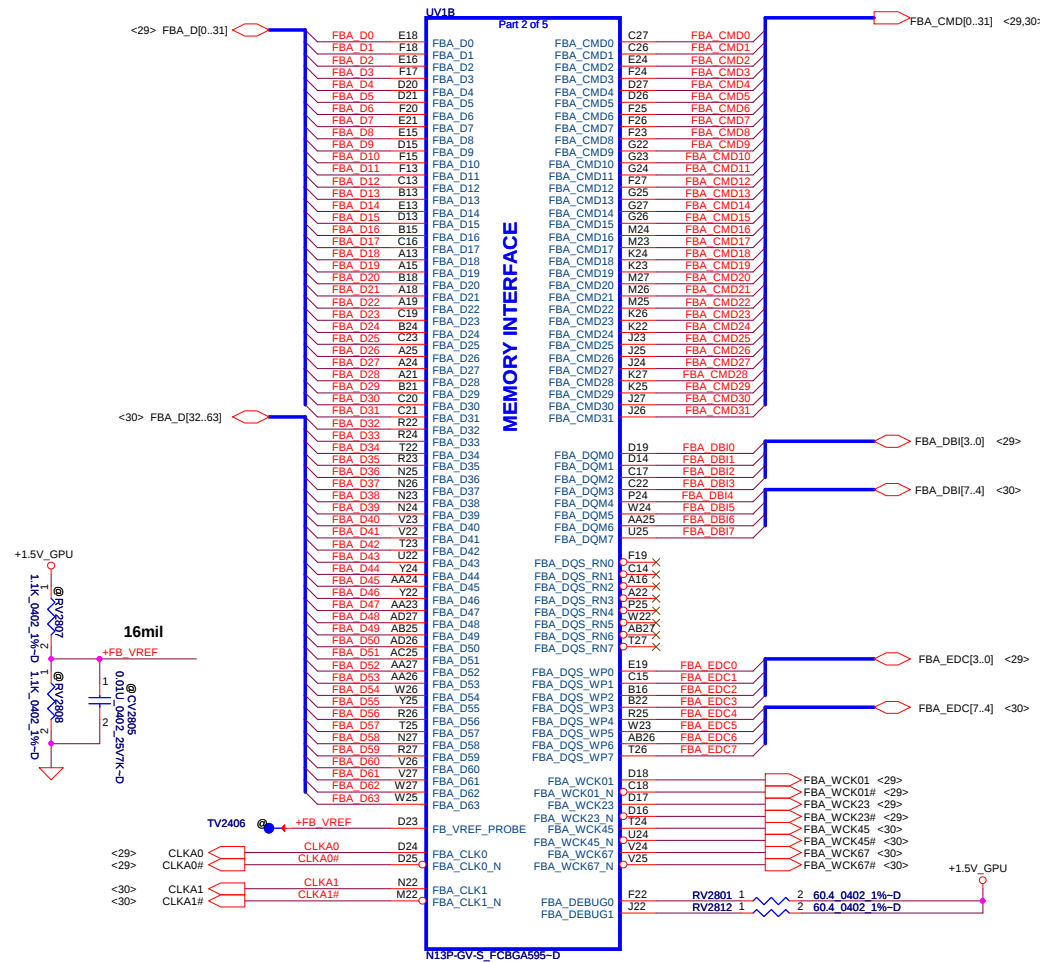
| STRAP Pin Name | STRAP Mapping  | Resistance | Polarity                                                              |
|----------------|----------------|------------|-----------------------------------------------------------------------|
| STRAP0         | RAM_CFG[0]     | 10K Ohm    | For Hynix Pull-down 10K ohm to GND, Samsung pull-high 10K ohm to 3.3V |
| STRAP1         | RAM_CFG[1]     | 10K Ohm    | Pull-down 10K ohm to GND                                              |
| STRAP2         | RAM_CFG[2]     | 10K Ohm    | Pull-up 10K ohm to +3V_GPU                                            |
| STRAP3         | RAM_CFG[3]     | 10K Ohm    | Pull-down 10K ohm to GND                                              |
| STRAP4         | PCIE_MAX_SPEED | 10K Ohm    | Pull-down 10K ohm to GND                                              |
| ROM_SCLK       | SMB_ALT_ADDR   | 10K Ohm    | Pull-down 10K ohm to GND                                              |
| ROM_SI         | SUB_VENDOR     | 10K Ohm    | Pull-down 10K ohm to GND                                              |
| ROM_SO         | VGA_DEVICE     | 10K Ohm    | Pull-down 10K ohm to GND                                              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            |                                            |       |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------------------------|-------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | Compal Secret Data |            | <b>Compal Electronics, Inc.</b>            |       |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2011/07/15 | Deciphered Date    | 2012/07/15 | Title<br><b>N13P(2/5) LVDS/HDMI/DP/STP</b> |       |          |
| 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. |            |                    |            | Doc Number                                 | Rev   |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | LA-7841P                                   | 0.3   |          |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                    |            | Tuesday, February 07, 2012                 | Sheet | 25 of 65 |





|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                            |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15 | Deciphered Date    | 2012/07/15 | Title                    | N13P(4/5)_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 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-7841P                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Tuesday, February 07, 2012 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 27 of 65                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.3                        |

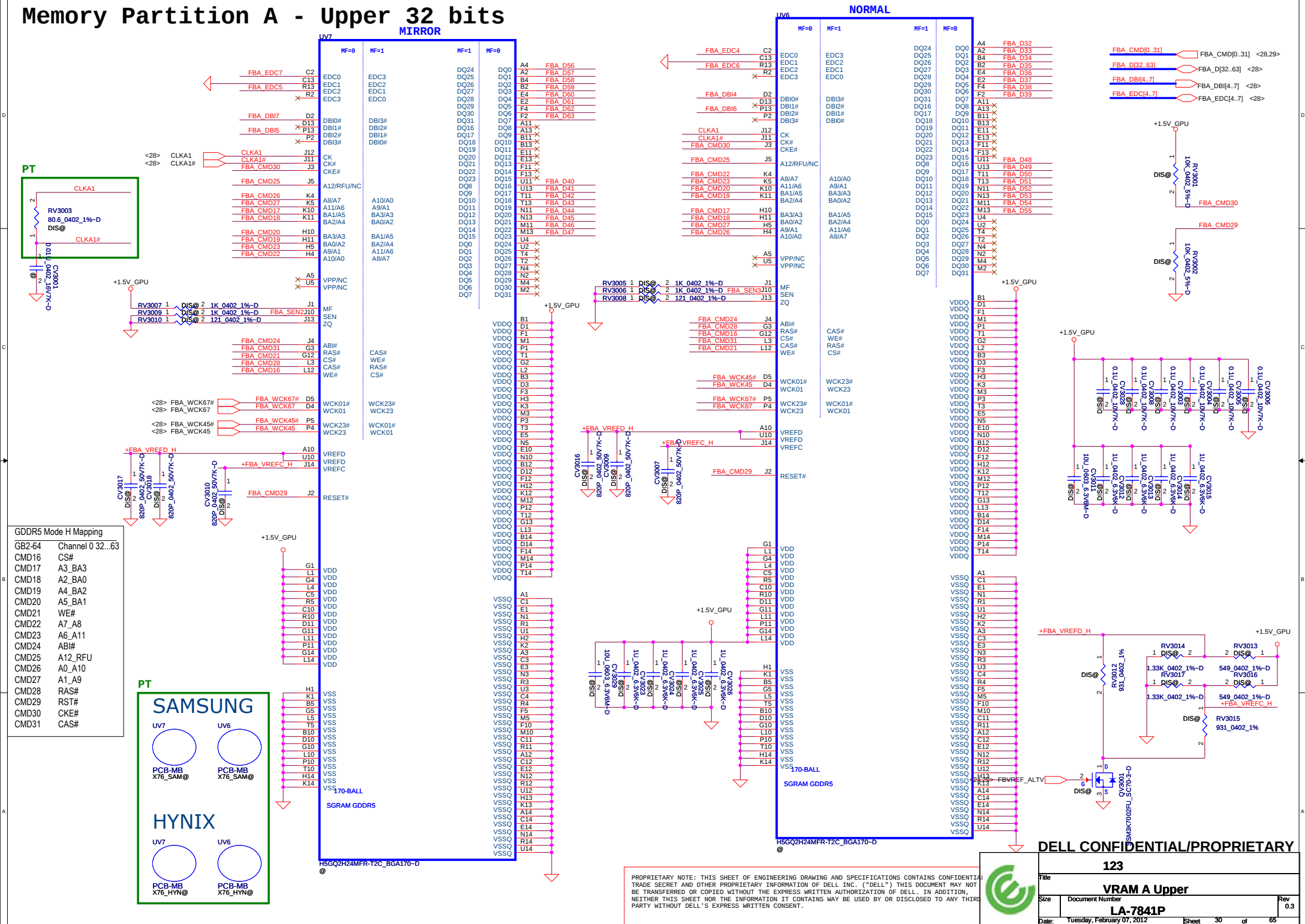


## Mode H - Command Mapping

| DATA Bus |         |         |
|----------|---------|---------|
| Address  | 0..31   | 32..63  |
| CMD0     | CS*     |         |
| CMD1     | A3_BA3  |         |
| CMD2     | A2_BA0  |         |
| CMD3     | A4_BA2  |         |
| CMD4     | A5_BA1  |         |
| CMD5     | WE*     |         |
| CMD6     | A7_A8   |         |
| CMD7     | A6_A11  |         |
| CMD8     | ABT*    |         |
| CMD9     | A12_RFU |         |
| CMD10    | A0_A10  |         |
| CMD11    | A1_A9   |         |
| CMD12    | RAS*    |         |
| CMD13    | RST*    |         |
| CMD14    | CKE*    |         |
| CMD15    | CAS#    |         |
| CMD16    |         | CS*     |
| CMD17    |         | A3_BA3  |
| CMD18    |         | A2_BA0  |
| CMD19    |         | A4_BA2  |
| CMD20    |         | A5_BA1  |
| CMD21    |         | WE*     |
| CMD22    |         | A7_A8   |
| CMD23    |         | A6_A11  |
| CMD24    |         | ABT*    |
| CMD25    |         | A12_RFU |
| CMD26    |         | A0_A10  |
| CMD27    |         | A1_A9   |
| CMD28    |         | RAS*    |
| CMD29    |         | RST*    |
| CMD30    |         | CKE*    |
| CMD31    |         | CAS*    |



## Memory Partition A - Upper 32 bits



intent to blank

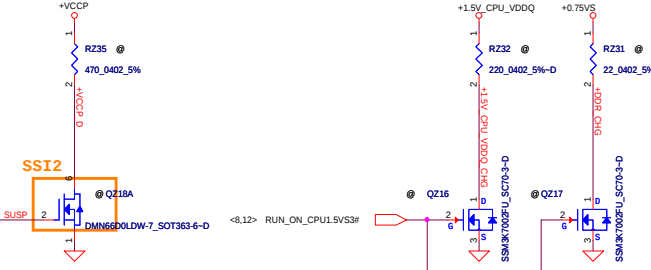
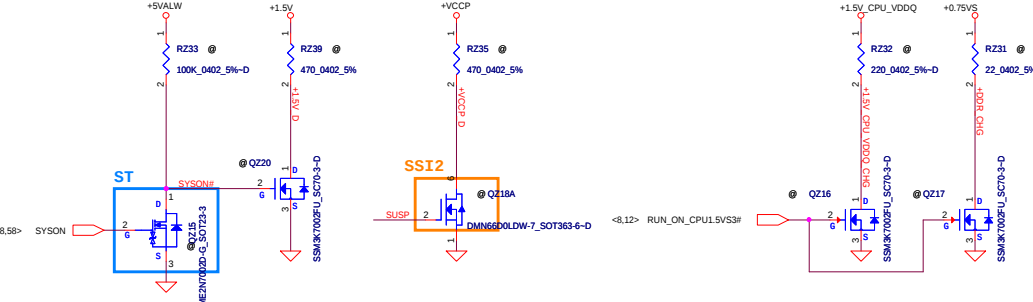
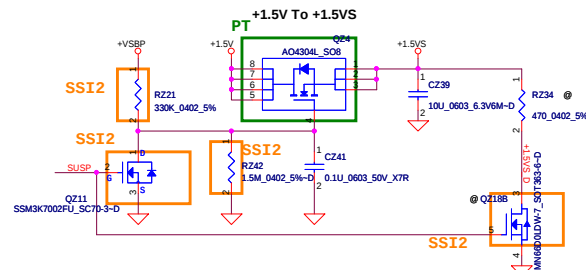
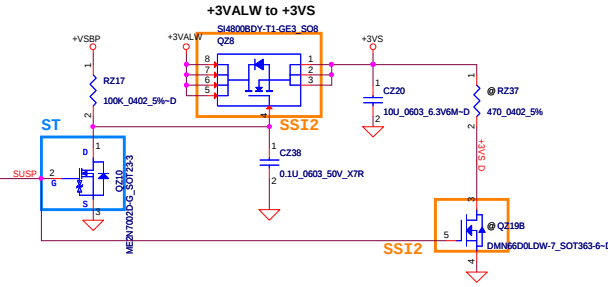
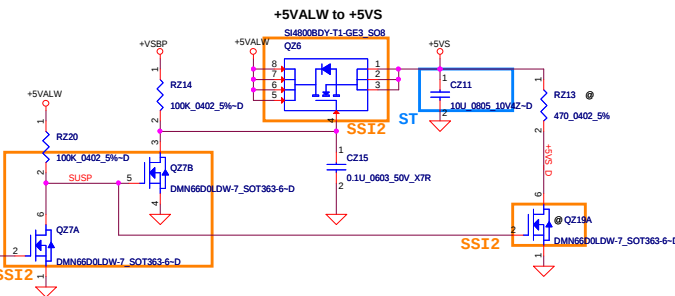
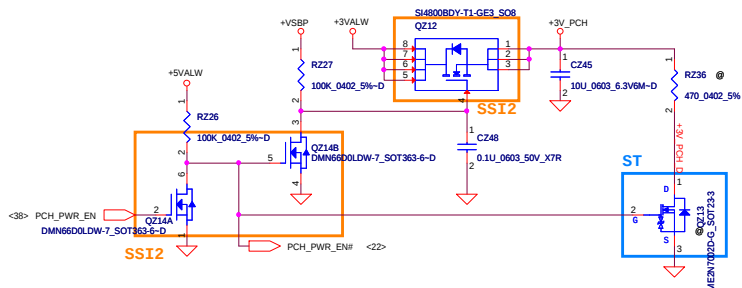
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                                  |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|----------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.         |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15 | Deciphered Date    | 2012/07/15 | Title                            | Block Diagram  |
| 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                  | Rev 0.3        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date: Tuesday, February 07, 2012 | Sheet 31 of 65 |

intent to blank

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                                  |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|----------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.         |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15 | Deciphered Date    | 2012/07/15 | Title                            | Block Diagram  |
| 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                  | Rev 0.3        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date: Tuesday, February 07, 2012 | Sheet 32 of 65 |

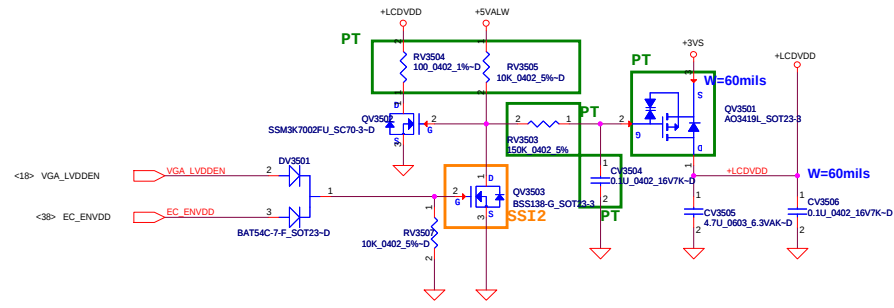


# +3VALW to +3V\_PCH

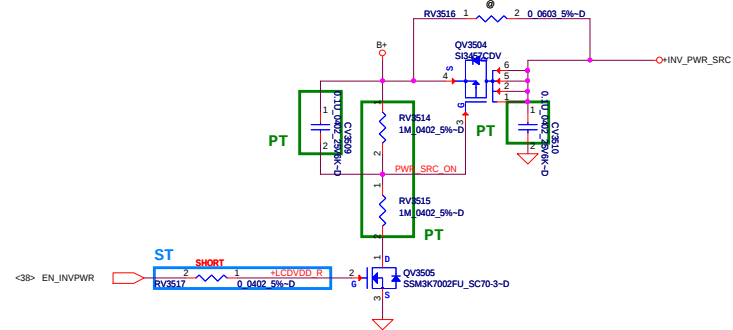


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------|----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Compal Electronics, Inc. |                            |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15         | Deciphered Date | 2012/07/15               | 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/DC Interface            |
| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                 |                          | LA-7841P                   |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                          | Tuesday, February 07, 2012 |
| Sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |                          | 34 of 65                   |

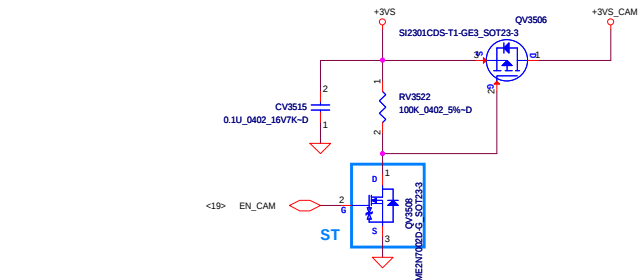
## LCD PWR CTRL



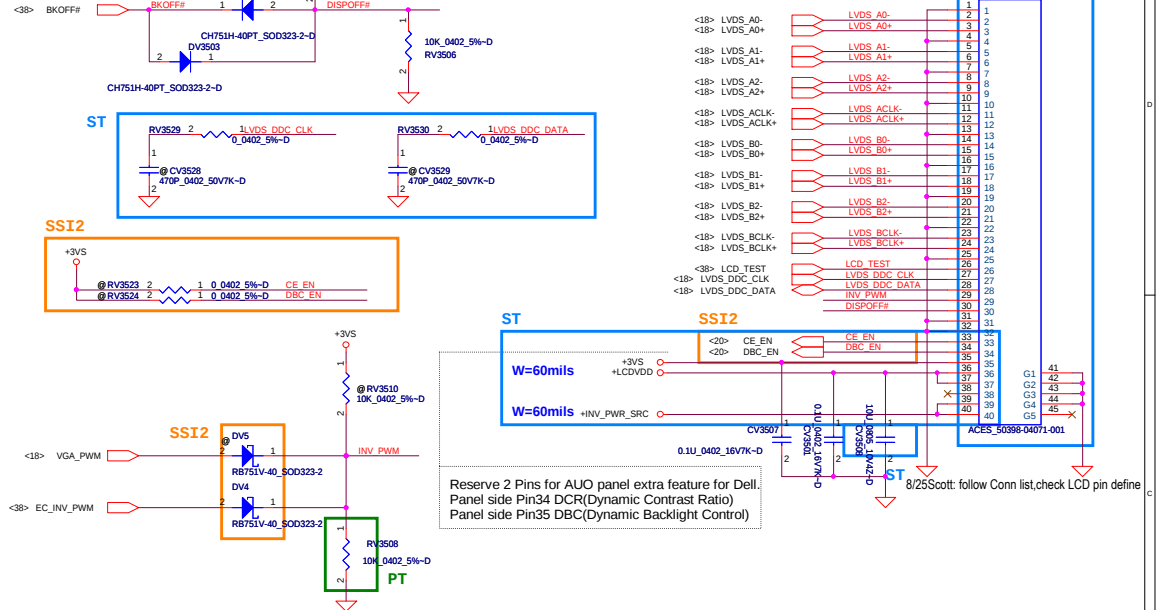
## LCD backlight PWR CTRL



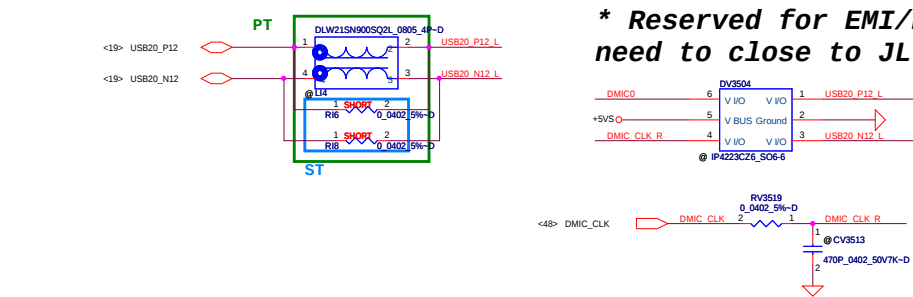
## Webcam PWR CTRL



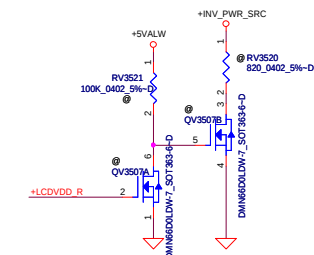
## LVDS Conn.



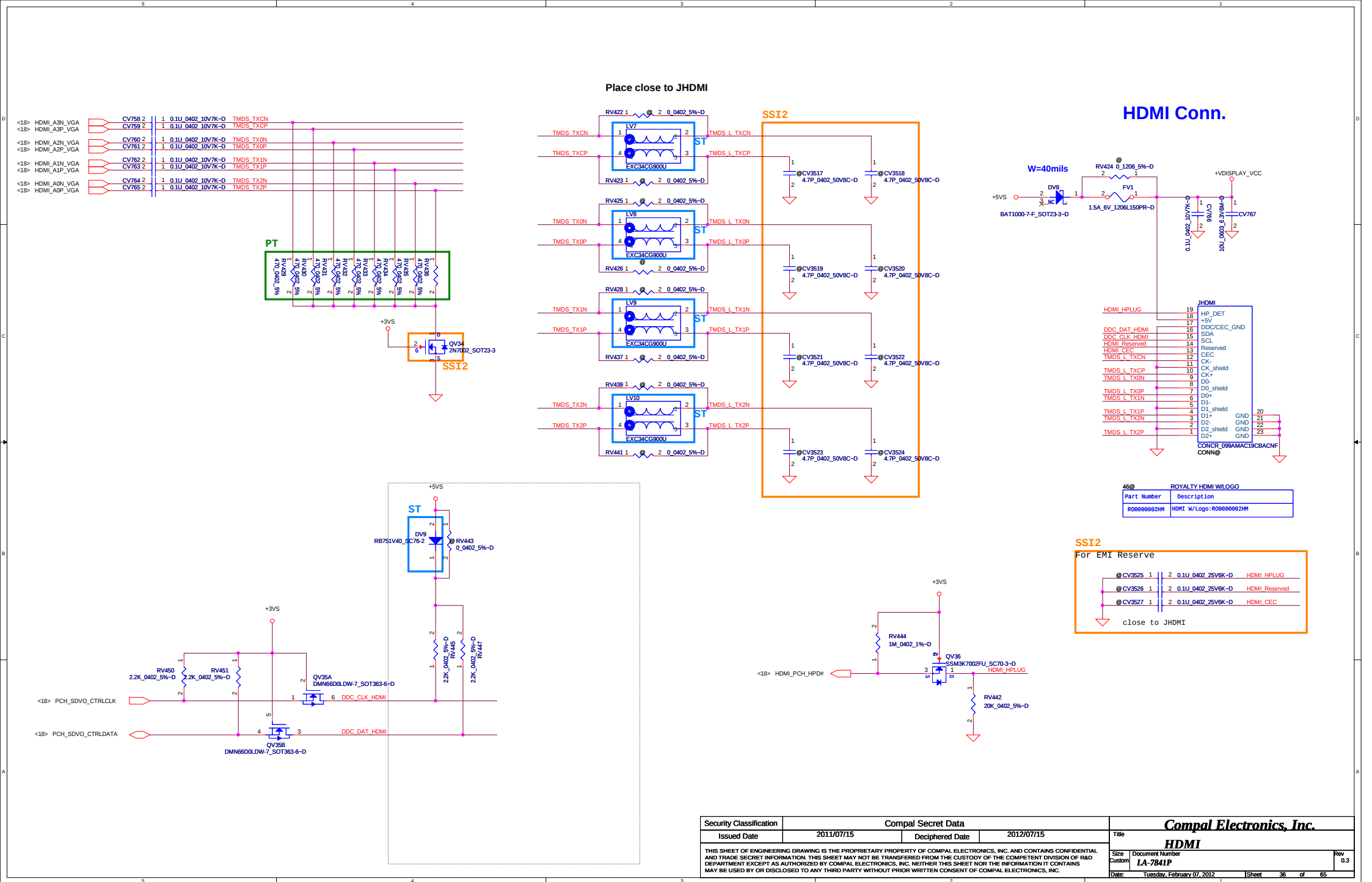
**\* Reserved for EMI/ESD/RF need to close to JLVDS**

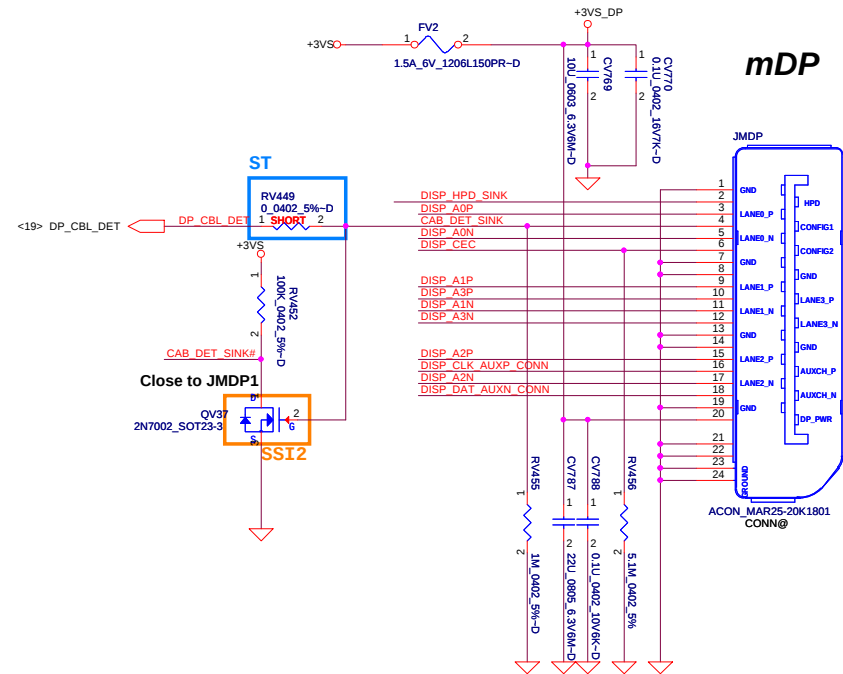
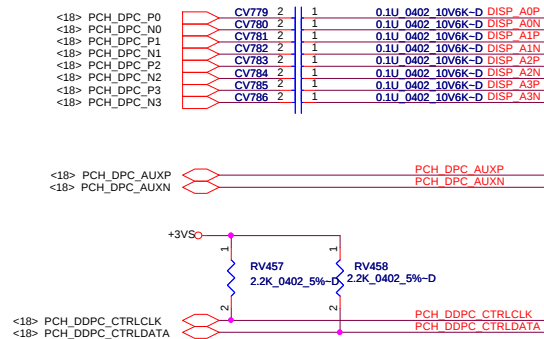


**\* Reserved for LCD sequence tuning**

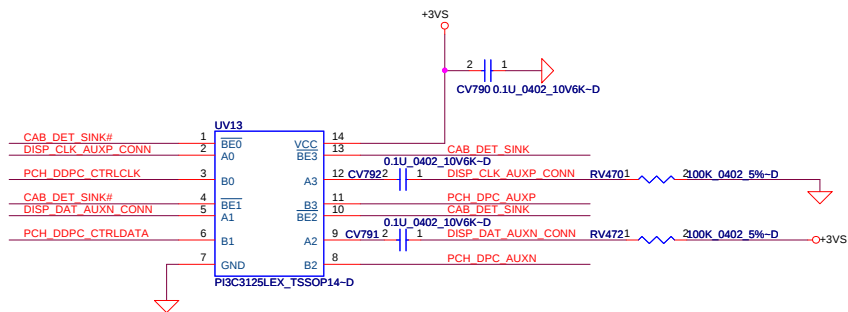


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|-----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Title      |                 |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15         | Deciphered Date | 2012/07/15 | 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 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. |                    |                 |            | Rev 0.3         |
| Date: Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                 |            | Sheet 35 of 65  |

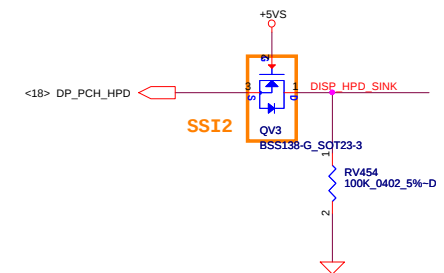




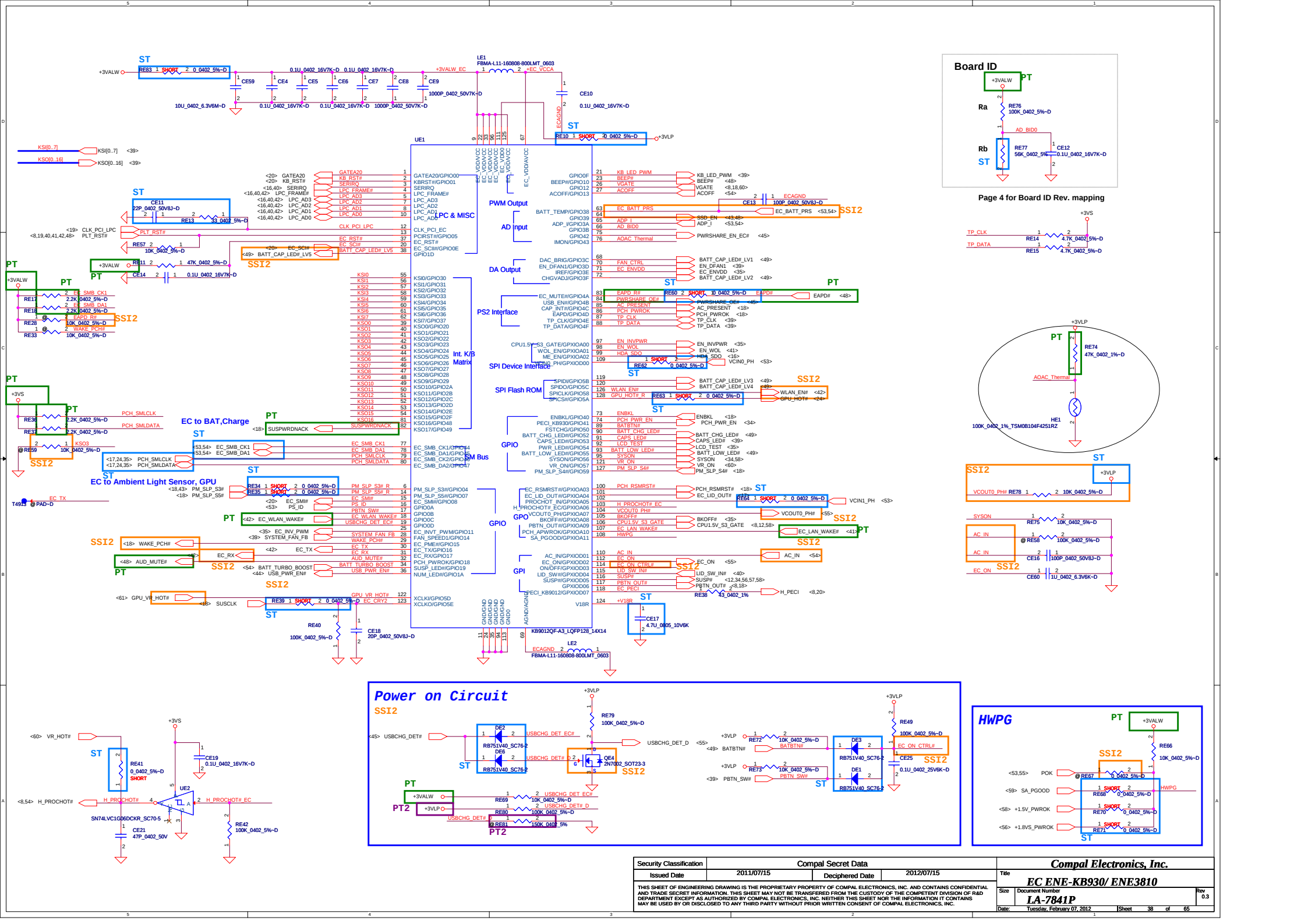
## DDC Dongle SW for DP



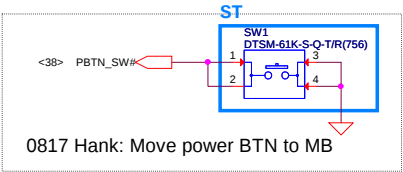
## DP HPD to PCH (iGPU)



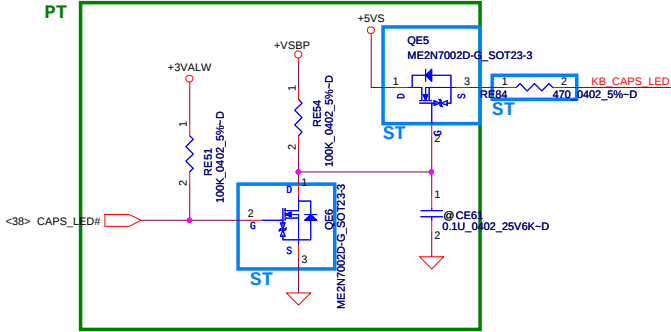
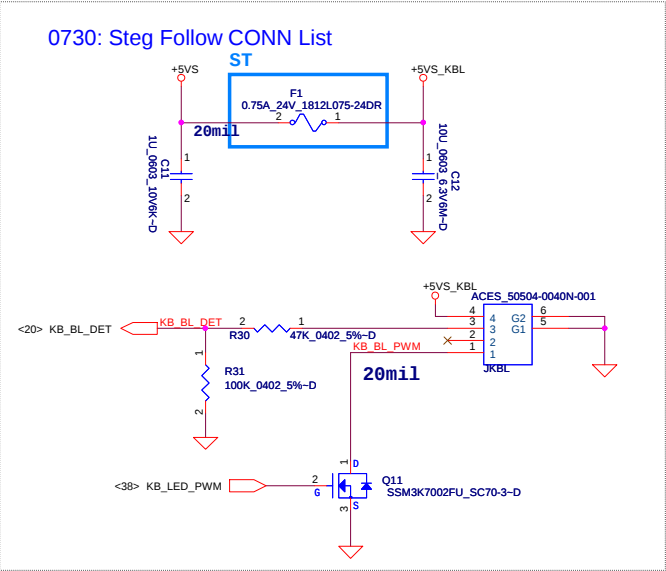
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Compal Secret Data |                 | Title      |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|----------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2011/07/15         | Deciphered Date | 2012/07/15 | 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 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. |                    |                 |            | 0.3            |
| Compal Electronics, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                 |            | LA-7841P       |
| Date: Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                 |            | Sheet 37 of 65 |



Power ON Circuit - PWR/Button Board

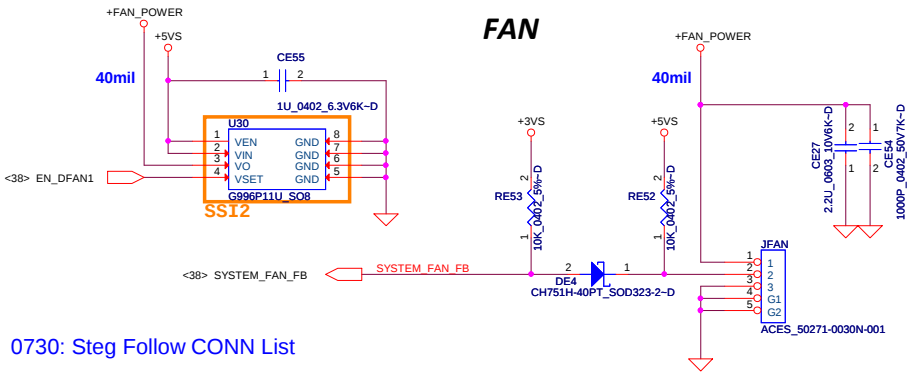


Keyboard back light

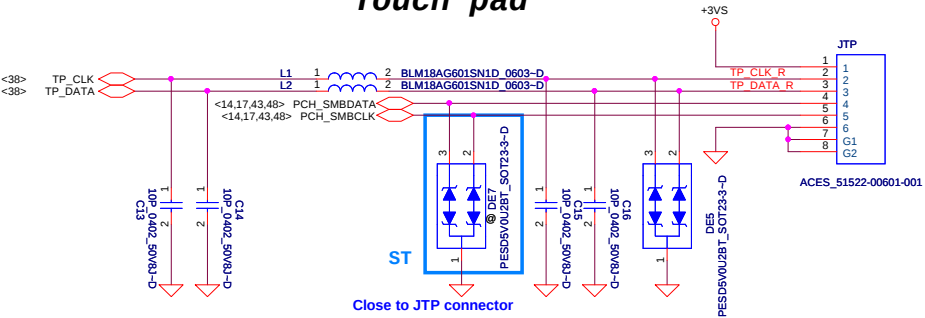


FAN Control circuit

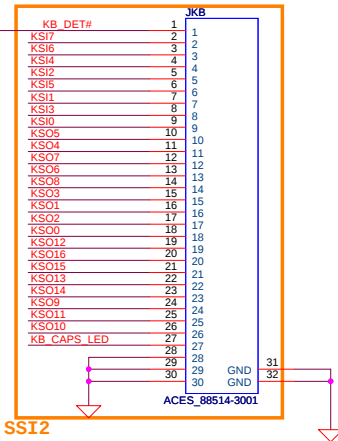
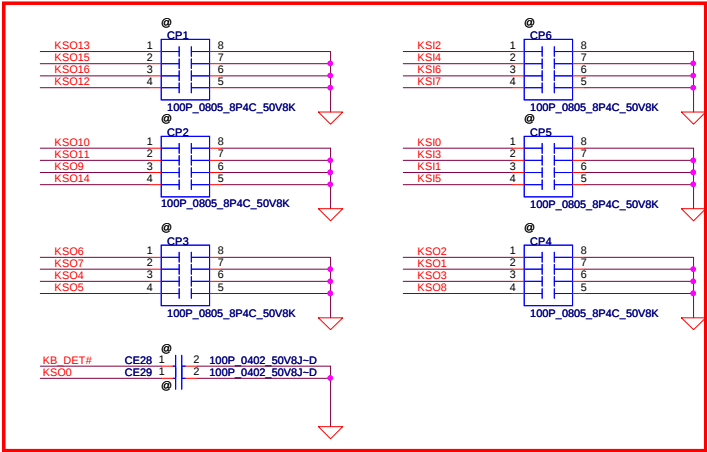
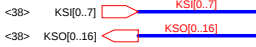
FAN



Touch pad

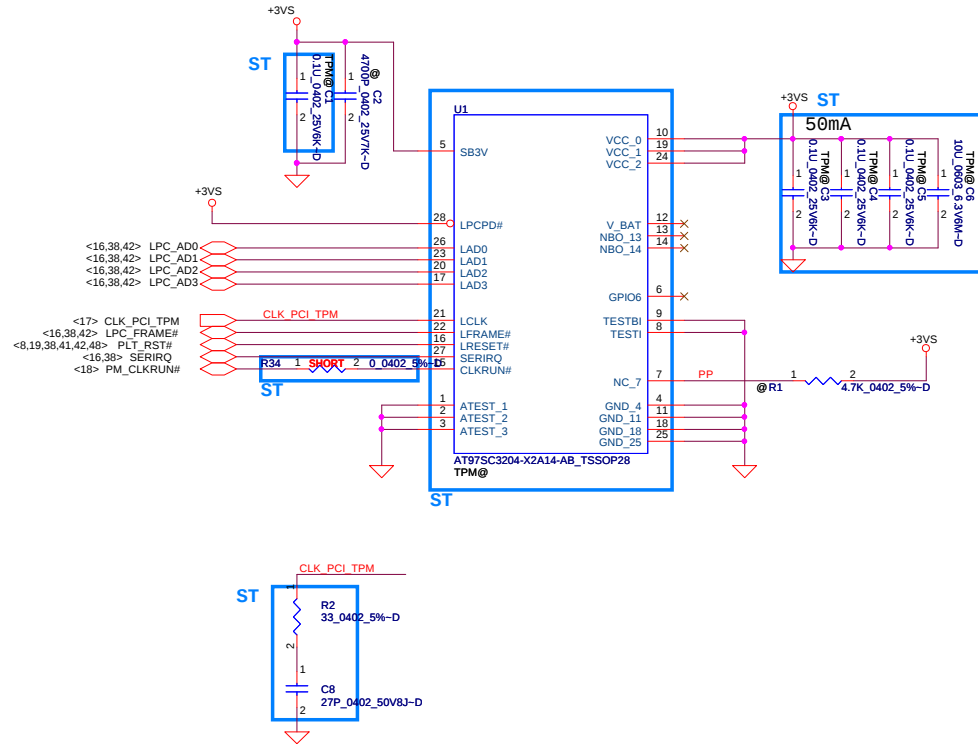


INT\_KBD Conn.

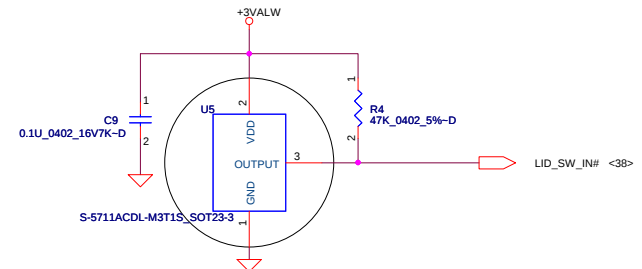


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Compal Secret Data |  | Title                            |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|----------------------------------|--|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Deciphered Date    |  | 2012/07/15                       |  |
| 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    |  | Rev                              |  |
| LA-7841P                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | 0.3                |  | Date: Tuesday, February 07, 2012 |  |
| Sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 39                 |  | of 65                            |  |

## ATMEL TPM for XPS

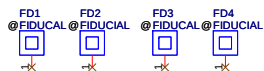
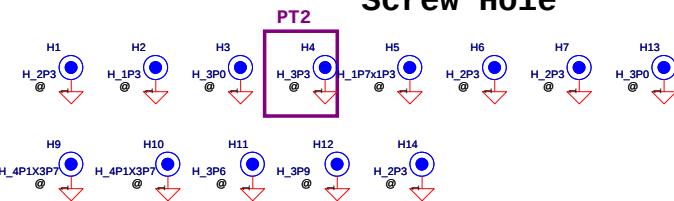


## Lid Switch



No CIS Symbol, Change PN to SA00003GI00 as ME recommend.

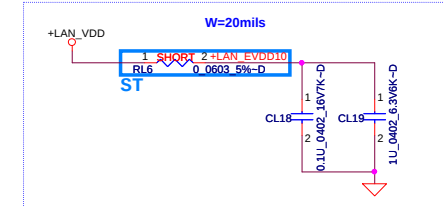
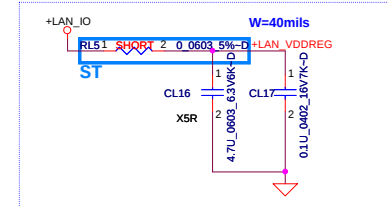
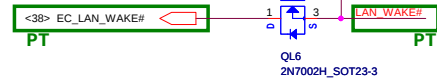
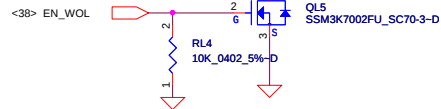
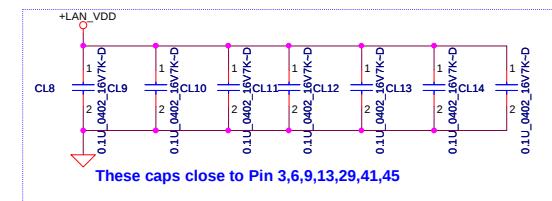
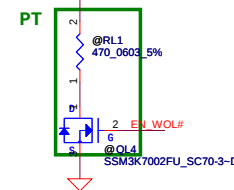
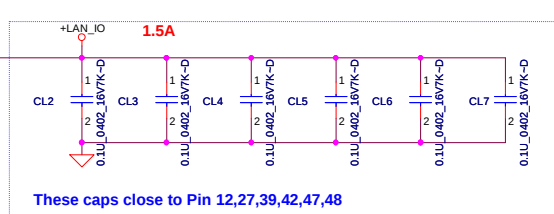
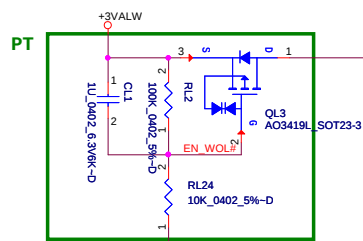
## Screw Hole



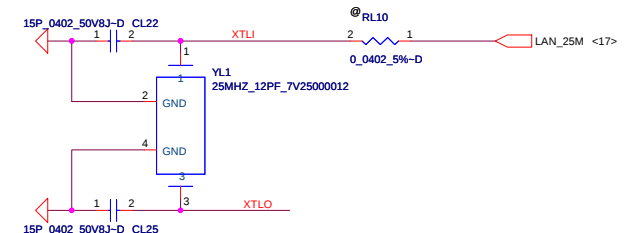
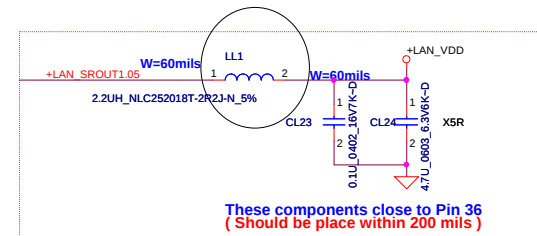
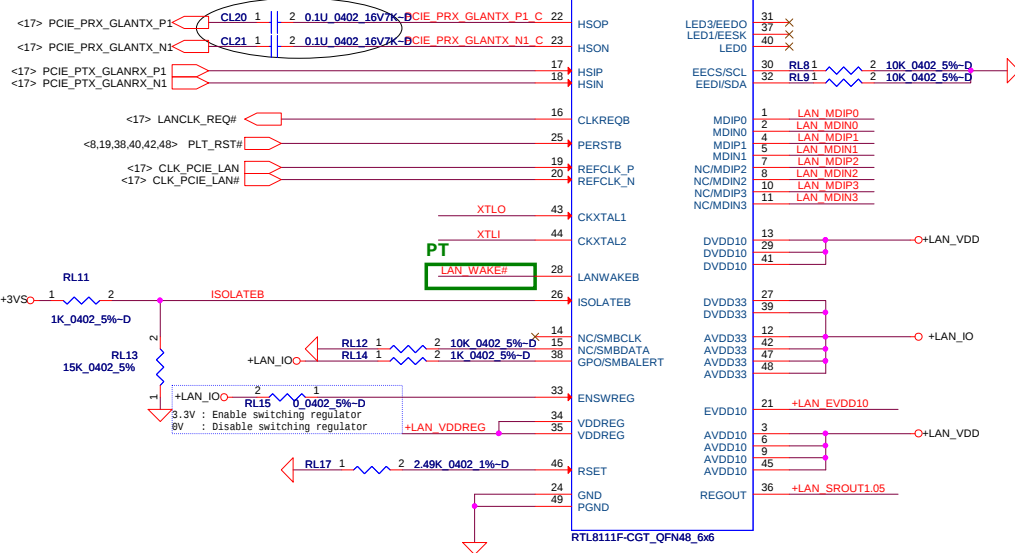
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                                  |  |                |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|----------------------------------|--|----------------|--|--|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                                  |  |                |  |  |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2011/07/15         |  | Deciphered Date |  | 2012/07/15               |  | Title                            |  | CONN & LID     |  |  |  |
| 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                  |  | Rev            |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | LA-7841P                         |  | 0.3            |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Date: Tuesday, February 07, 2012 |  | Sheet 40 of 65 |  |  |  |

W=60mils

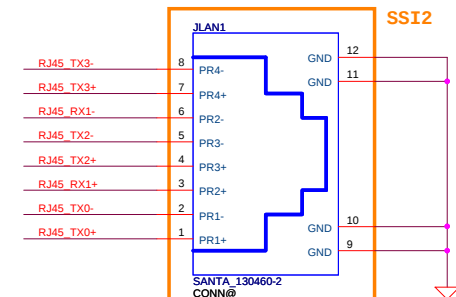
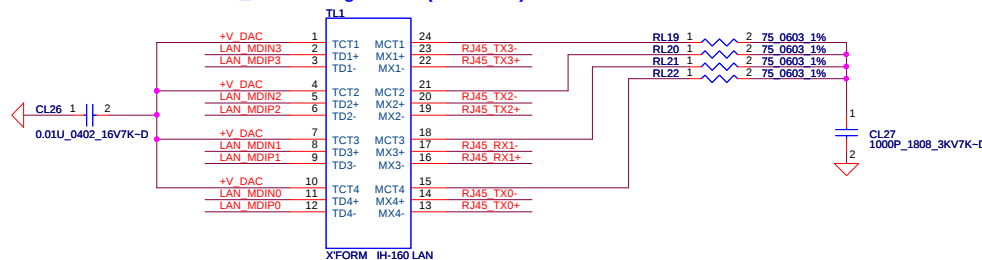
W=60mils



CL20 &amp; CL21 close to chip side



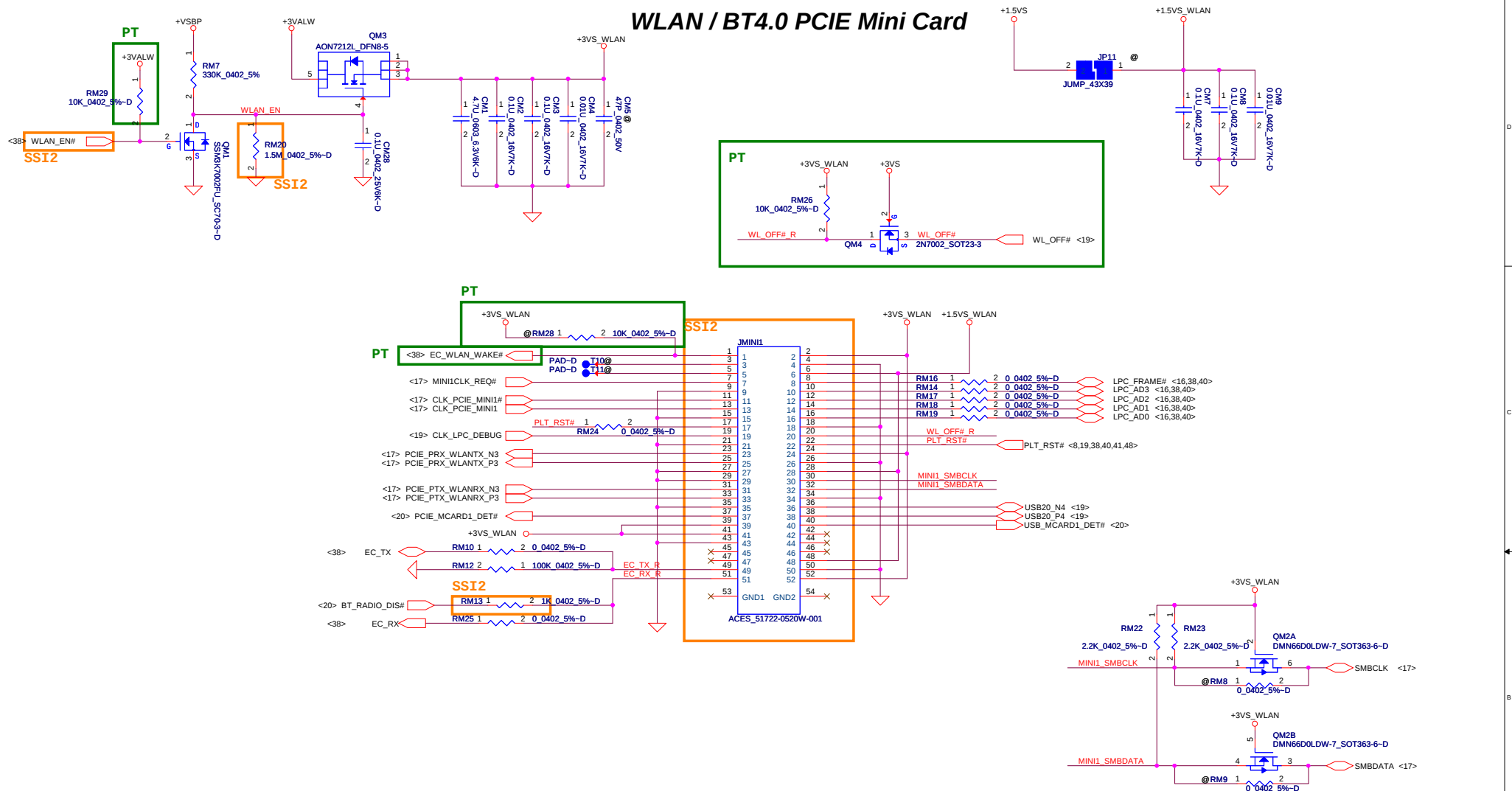
LAN\_IO Rising time (10%~90%) must &gt;1ms and &lt;100ms



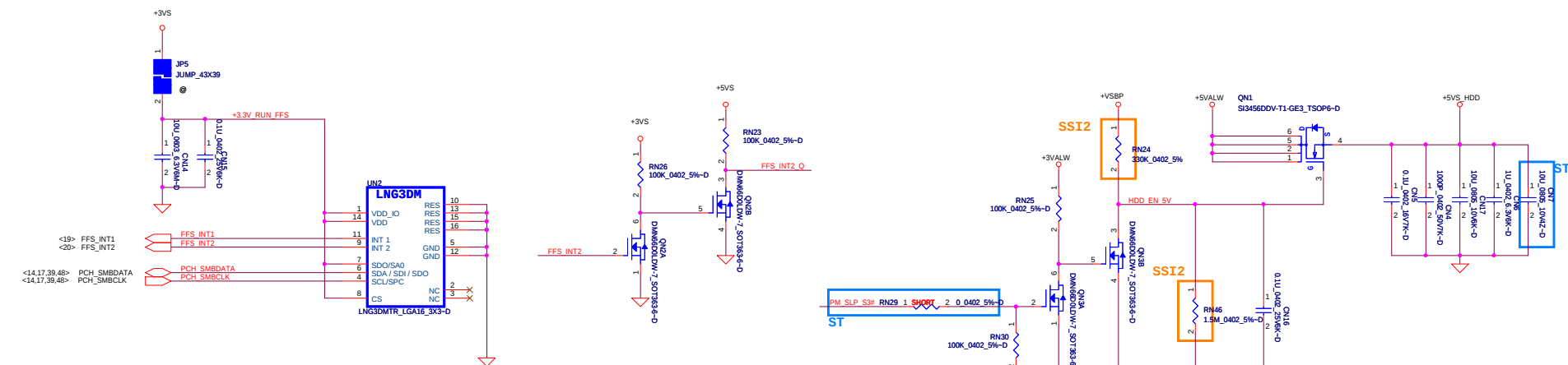
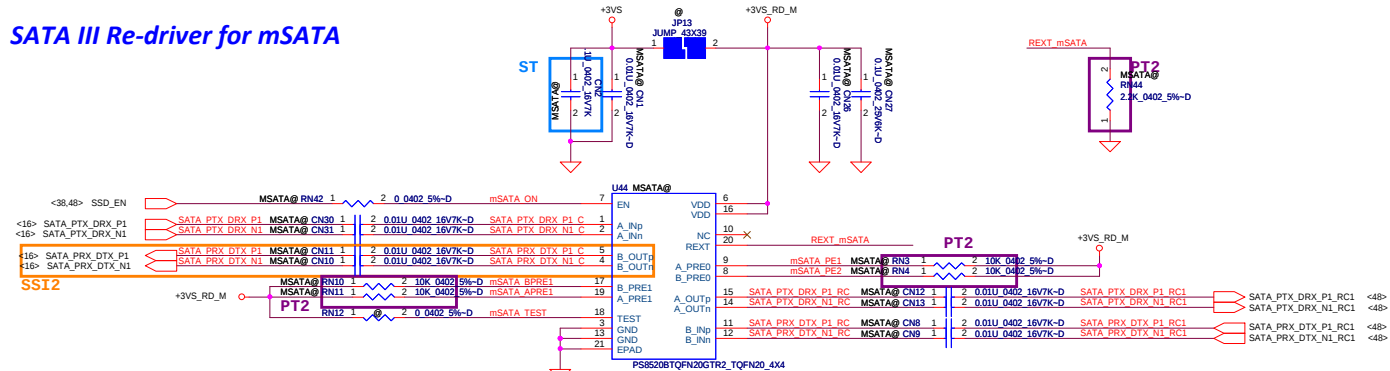
0817 Hank: Change to temp part

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | Compal Secret Data |            | Title                    |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|---------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2011/07/15 | Deciphered Date    | 2012/07/15 | 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 RESEARCH AND 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. |            |                    |            | P25-LAN RTL8111E         |         |
| Date: Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                    |            | Sheet 41 of 65           | Rev 0.3 |

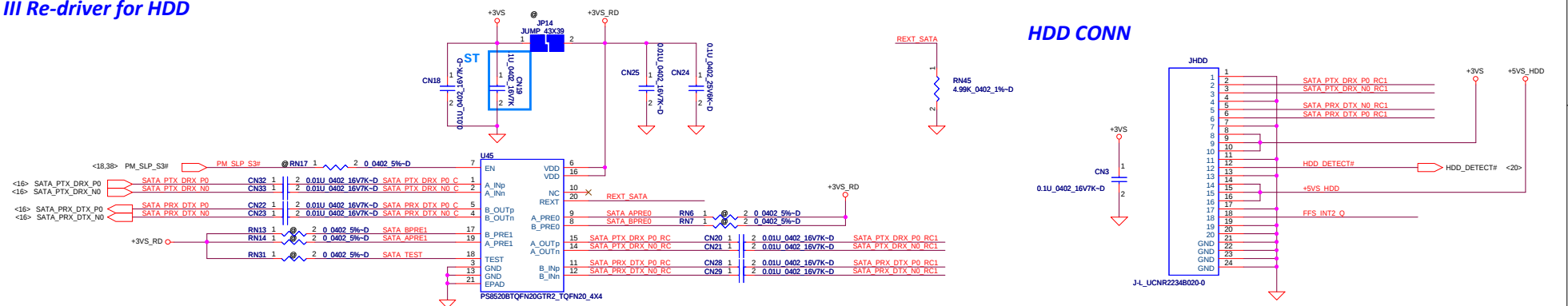
# WLAN / BT4.0 PCIE Mini Card



## SATA III Re-driver for mSATA

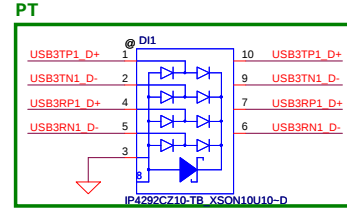
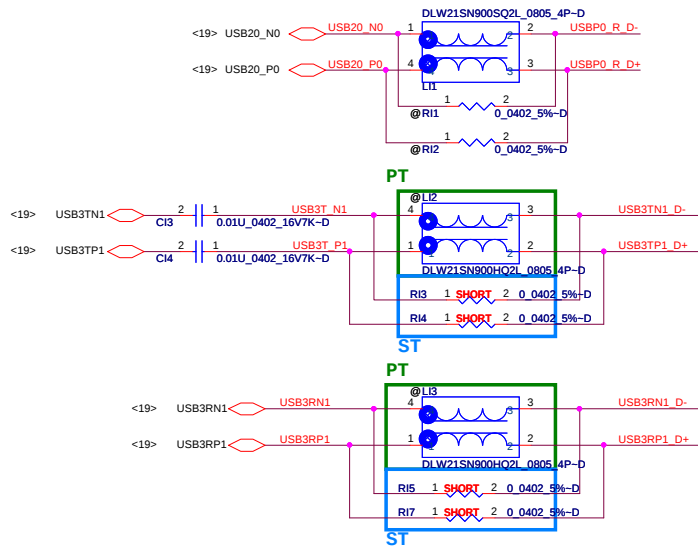


### SATA III Re-driver for HDD

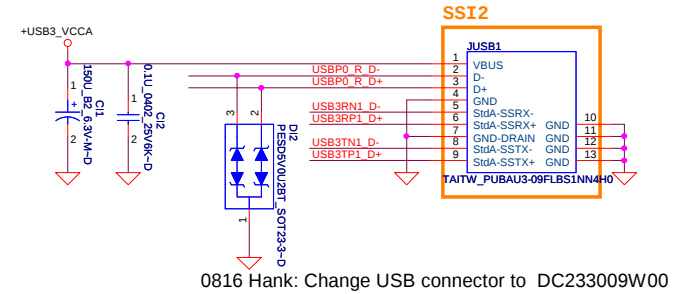


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                                                     |                            |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|-----------------------------------------------------|----------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | <b>Compal Electronics, Inc.</b><br><b>HDD / FFS</b> |                            |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15         | Deciphered Date | 2012/07/15 | 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                                                | Document Number            | Rev            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | C                                                   | LA-7841P                   | D.3            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                                               | Tuesday, February 07, 2012 | Sheet 43 of 65 |

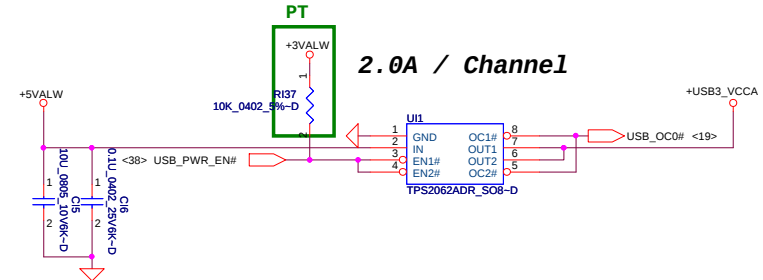
# USB3.0 / USB2.0



Place close to JUSB1



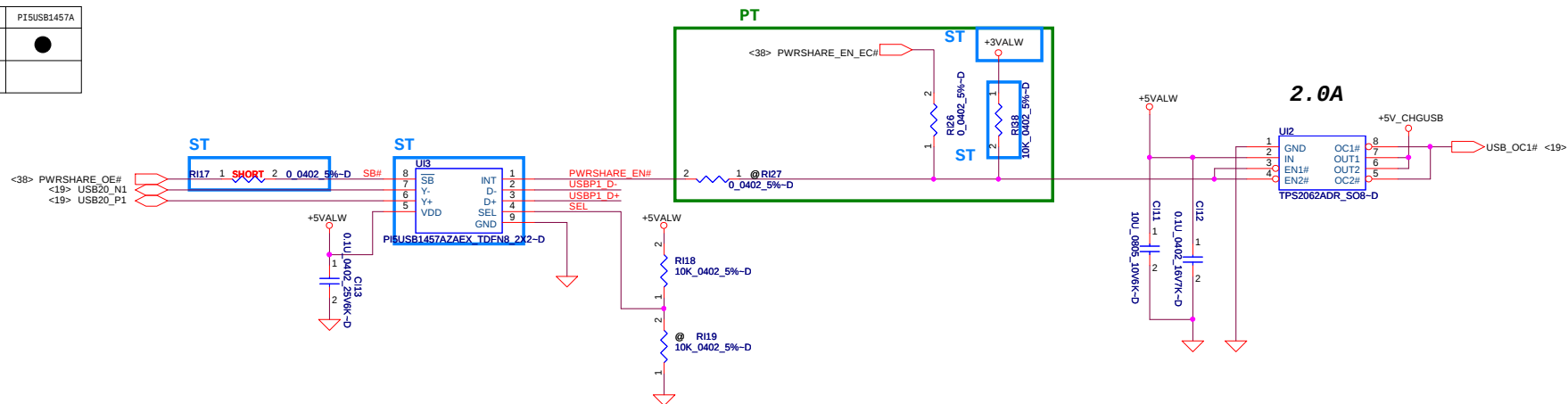
2.0A / Channel



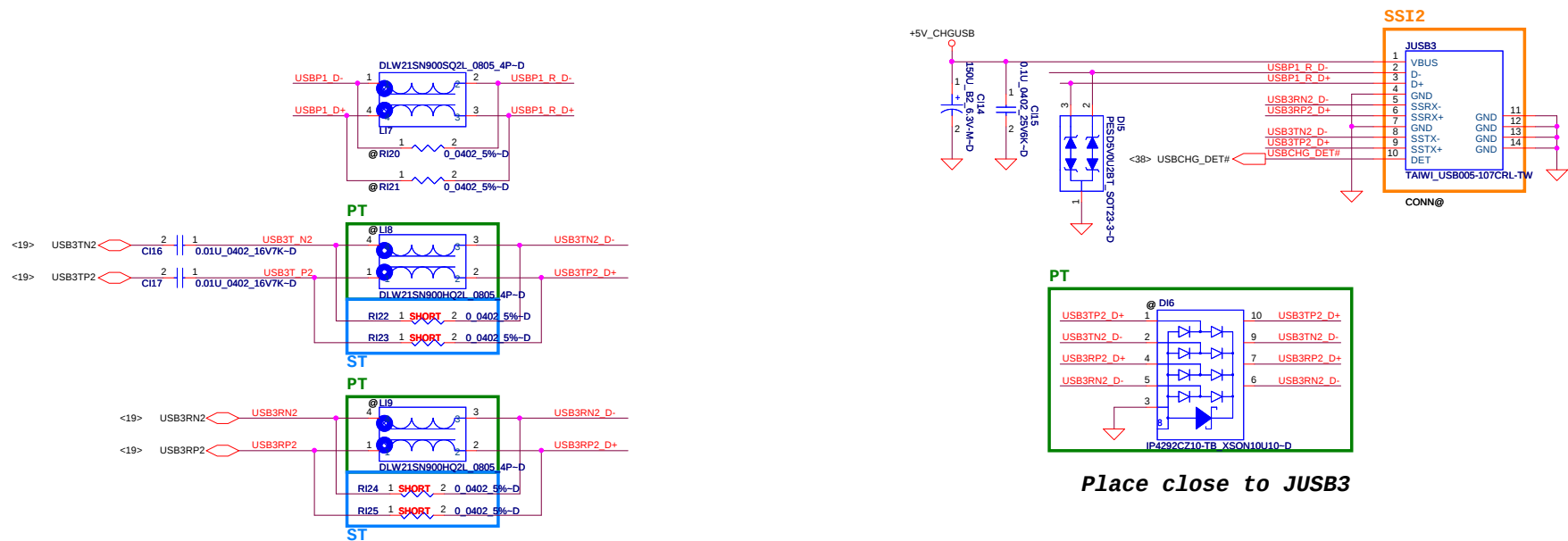
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                            |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/15 | Deciphered Date    | 2012/07/15 | Title                    | USB 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. |            |                    |            | Document Number          | LA-7841P                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Tuesday, February 07, 2012 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 44 of 65                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | 0.3                        |

# USB Powershare

|     | PI5USB1457 | PI5USB1457A |
|-----|------------|-------------|
| INT |            | ●           |
| INT | ●          |             |



# USB3.0 / USB2.0



Place close to JUSB3

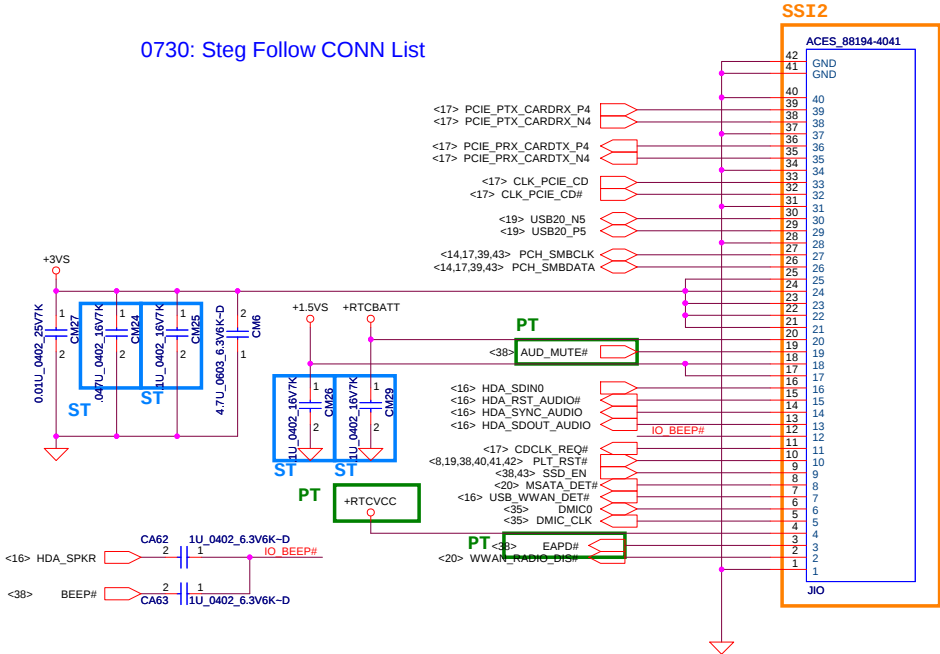
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  | Compal Secret Data |  |  |  | Compal Electronics, Inc.         |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--------------------|--|--|--|----------------------------------|--|--|--|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  | 2011/07/15         |  |  |  | Deciphered Date                  |  |  |  |
| 2012/07/15                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  | Title              |  |  |  | USB 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. |  |  |  | Document Number    |  |  |  | Rev                              |  |  |  |
| LA-7841P                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  | 0.3                |  |  |  | Date: Tuesday, February 07, 2012 |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |  |  | Sheet              |  |  |  | 45 of 65                         |  |  |  |

|                                                                                                                                                                                                                                                                                                                                                                                |            |                    |            |                                                                      |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|----------------------------------------------------------------------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                        |            | Compal Secret Data |            | <b>Compal Electronics, Inc.</b><br><b>HD Audio ALC275/Audio Jack</b> |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                    | 2011/07/15 | Deciphered Date    | 2012/07/15 | 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. TO ANY OTHER DEPARTMENT OR PERSON WITHOUT THE WRITTEN CONSENT OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. |            |                    |            | Docu                                                                 | Rev      |
|                                                                                                                                                                                                                                                                                                                                                                                |            |                    |            | Document Number                                                      |          |
| Date: <b>Tuesday, February 07, 2012</b>                                                                                                                                                                                                                                                                                                                                        |            |                    |            | Sheet                                                                | 46 of 65 |

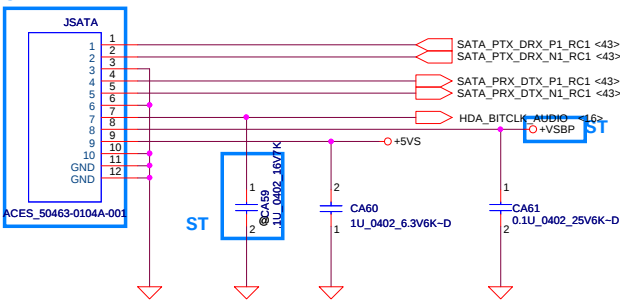
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                    |            |             |  |                          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|-------------|--|--------------------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            | Compal Secret Data |            | Title       |  | Compal Electronics, Inc. |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2011/07/15 | Deciphered Date    | 2012/07/15 | Part Number |  | Speaker/Audio Jack       |  |
| 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. |            |                    |            | Revision    |  | Rev 0.3                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                    |            | Customer    |  | LA-7841P                 |  |
| Date: Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                    |            | Sheet 47    |  | of 65                    |  |

IO BOARD Connector

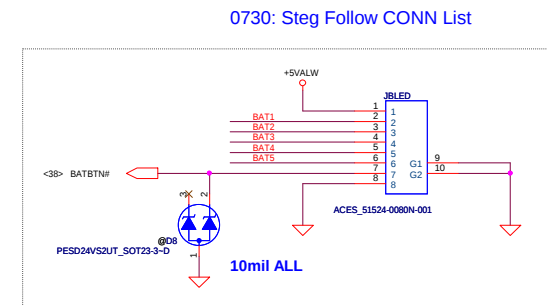
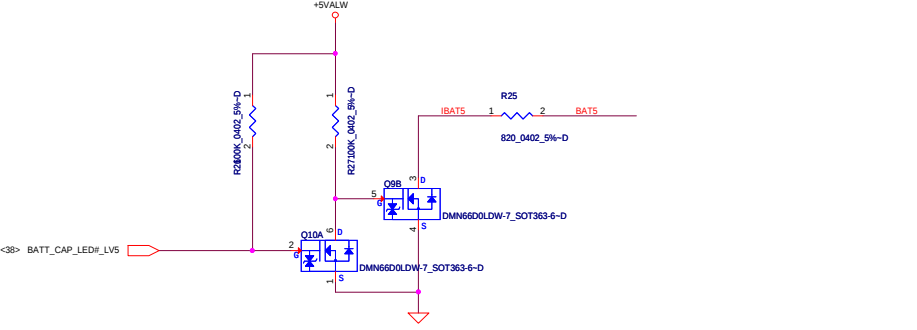
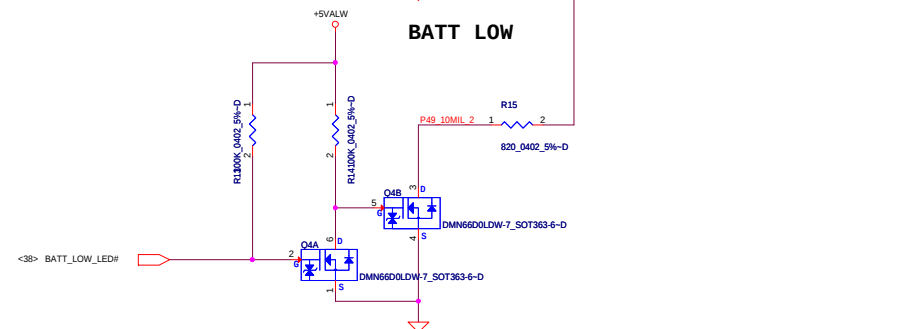
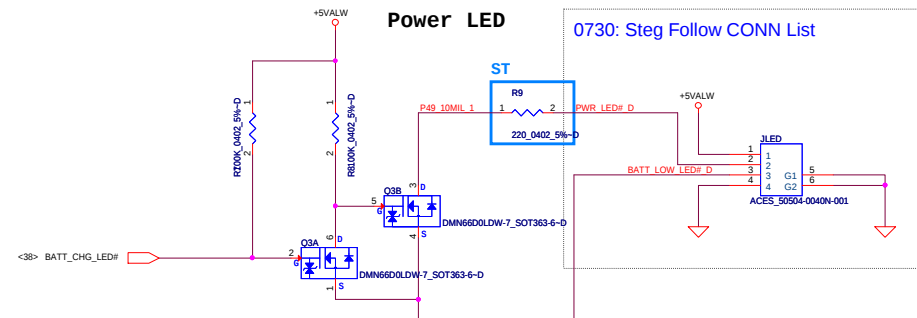
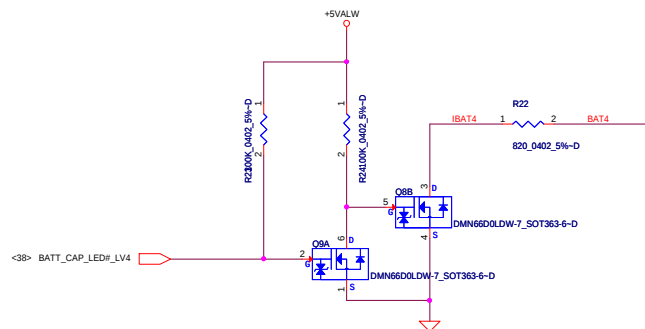
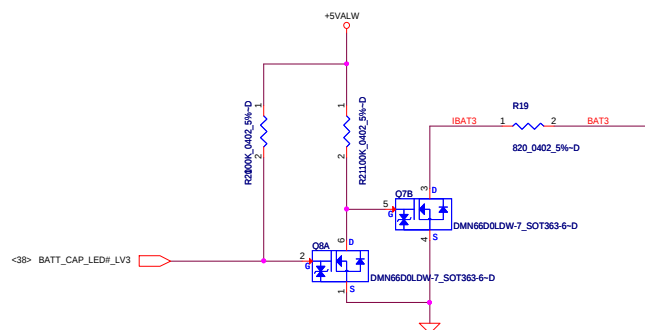
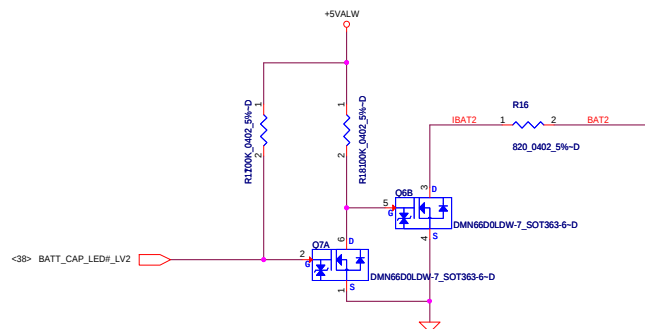
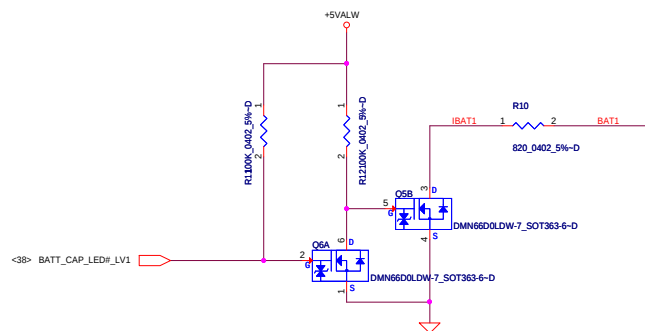
0730: Steg Follow CONN List



0805: Steg follow CIS Symbol



0816 Hank: P/N Correct, footprint Correct, but not CIS.

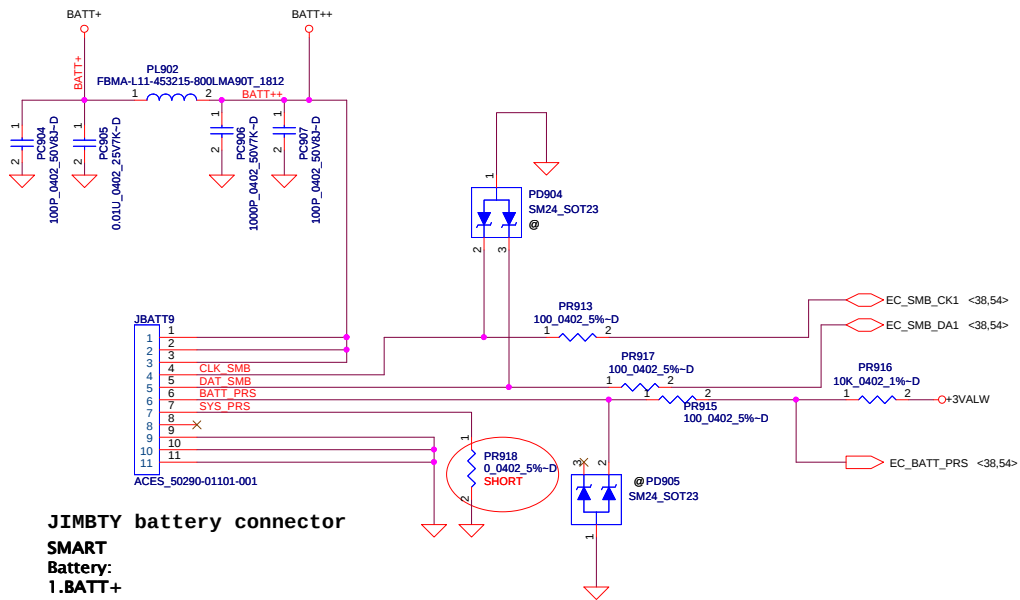


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |                 |                          |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------|--------------------------|--------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data         |                 | Compal Electronics, Inc. |                    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2811/07/15                 | Deciphered Date | 2812/07/15               | 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. |                            |                 |                          | Speaker/Audio Jack |
| Size                                                                                                                                                                                                                                                                                                                                                                                                                                                          | C                          | Document Number | LA-7841P                 | Rev 0.3            |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Tuesday, February 07, 2012 | Sheet           | 49                       | of 65              |

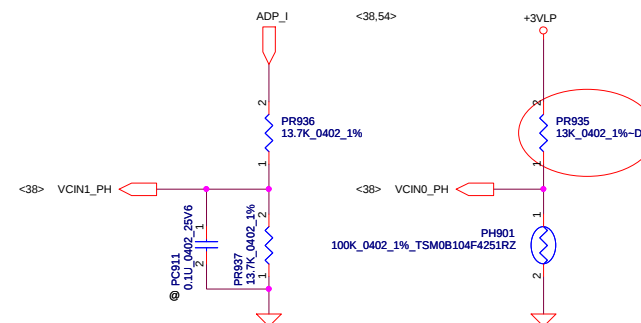
| Item | Reason for change | PG#        | Modify List                         | Date | Phase |
|------|-------------------|------------|-------------------------------------|------|-------|
| 1    | GRST delay to 2ms | P04-USB3.0 | DEL POK to GRST , ADD RC , R62,C154 |      |       |
| 2    |                   |            |                                     |      |       |
| 3    |                   |            |                                     |      |       |
| 4    |                   |            |                                     |      |       |
| 5    |                   |            |                                     |      |       |
| 6    |                   |            |                                     |      |       |
| 7    |                   |            |                                     |      |       |
| 8    |                   |            |                                     |      |       |
| 9    |                   |            |                                     |      |       |
| 10   |                   |            |                                     |      |       |
| 11   |                   |            |                                     |      |       |
| 12   |                   |            |                                     |      |       |
| 13   |                   |            |                                     |      |       |
| 14   |                   |            |                                     |      |       |
| 15   |                   |            |                                     |      |       |
|      |                   |            |                                     |      |       |
|      |                   |            |                                     |      |       |
|      |                   |            |                                     |      |       |
|      |                   |            |                                     |      |       |
|      |                   |            |                                     |      |       |
|      |                   |            |                                     |      |       |
|      |                   |            |                                     |      |       |
|      |                   |            |                                     |      |       |





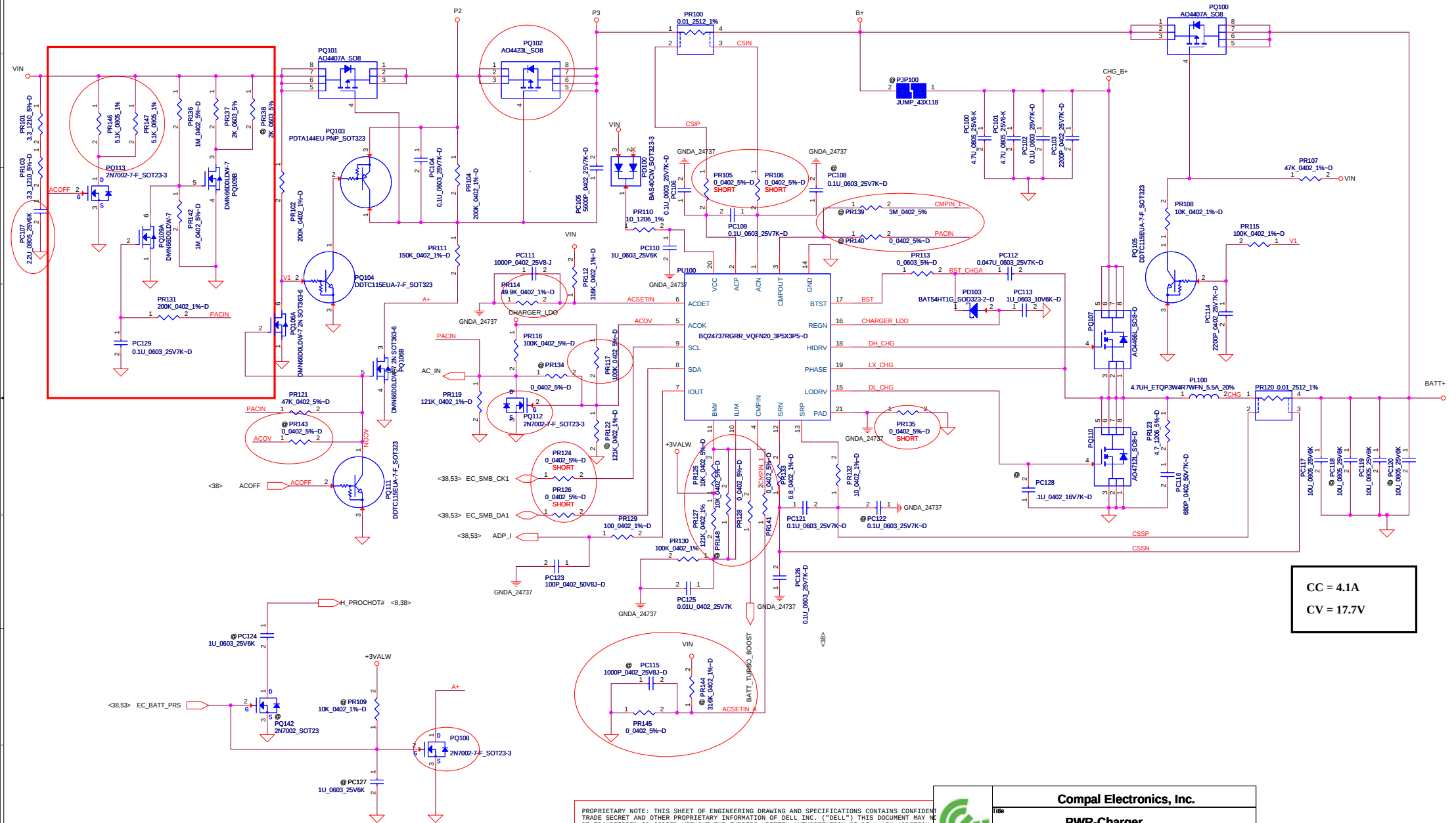


- 1.BATT+  
2.BATT+  
3.BATT+  
4.CLK\_SMB  
5.DAT\_SMB  
6.BATT\_PRS  
7.SYS\_PRES  
8.BAT\_ALERT  
9.GND  
10.GND  
11.GND



Iada=0-3.34A(65W)

ADP\_I = 19.9\*Iadapter\*Rsense



PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL, TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL"). THIS DOCUMENT MAY NOT BE REPRODUCED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.



| Compal Electronics, Inc. |  |                              |                |
|--------------------------|--|------------------------------|----------------|
| Title                    |  | PWR-Charger                  |                |
| Size                     |  | Document Number              | Rev            |
|                          |  | XPS14                        | 0.1            |
| Date:                    |  | 1/25/2012, February 07, 2012 | Sheet 54 of 65 |

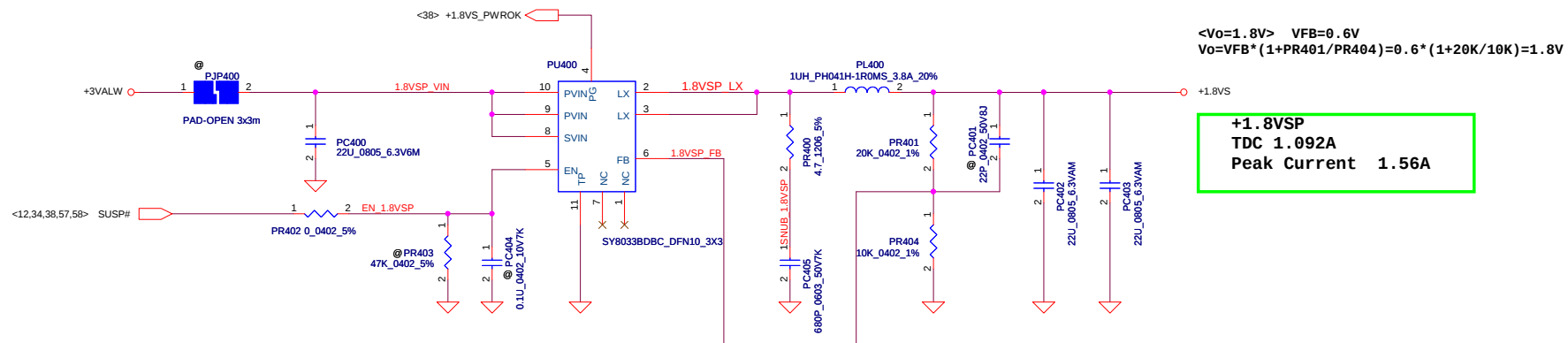
**3.3VALWP**  
**TDC 7.64A**  
**Peak Current 10.7A**  
**OCP current 12.84A**  
 TYP MAX  
 H/S Rds(on) :27mohm , 34mohm  
 L/S Rds(on) :11mohm , 14mohm

**5VALWP**  
**TDC 4.54A**  
**Peak Current 6.49A**  
**OCP current 7.788A**  
 TYP MAX  
 H/S Rds(on) :27mohm , 34mohm  
 L/S Rds(on) :11mohm , 14mohm

PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL"). THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.



| Compal Electronics, Inc. |                            |       |          |
|--------------------------|----------------------------|-------|----------|
| Title                    |                            |       |          |
| PWR-3VALWP/5VALWP        |                            |       |          |
| Size                     | Document Number            | Rev   |          |
|                          |                            | XPS14 |          |
| Date:                    | Tuesday, February 07, 2012 | Sheet | 55 of 65 |

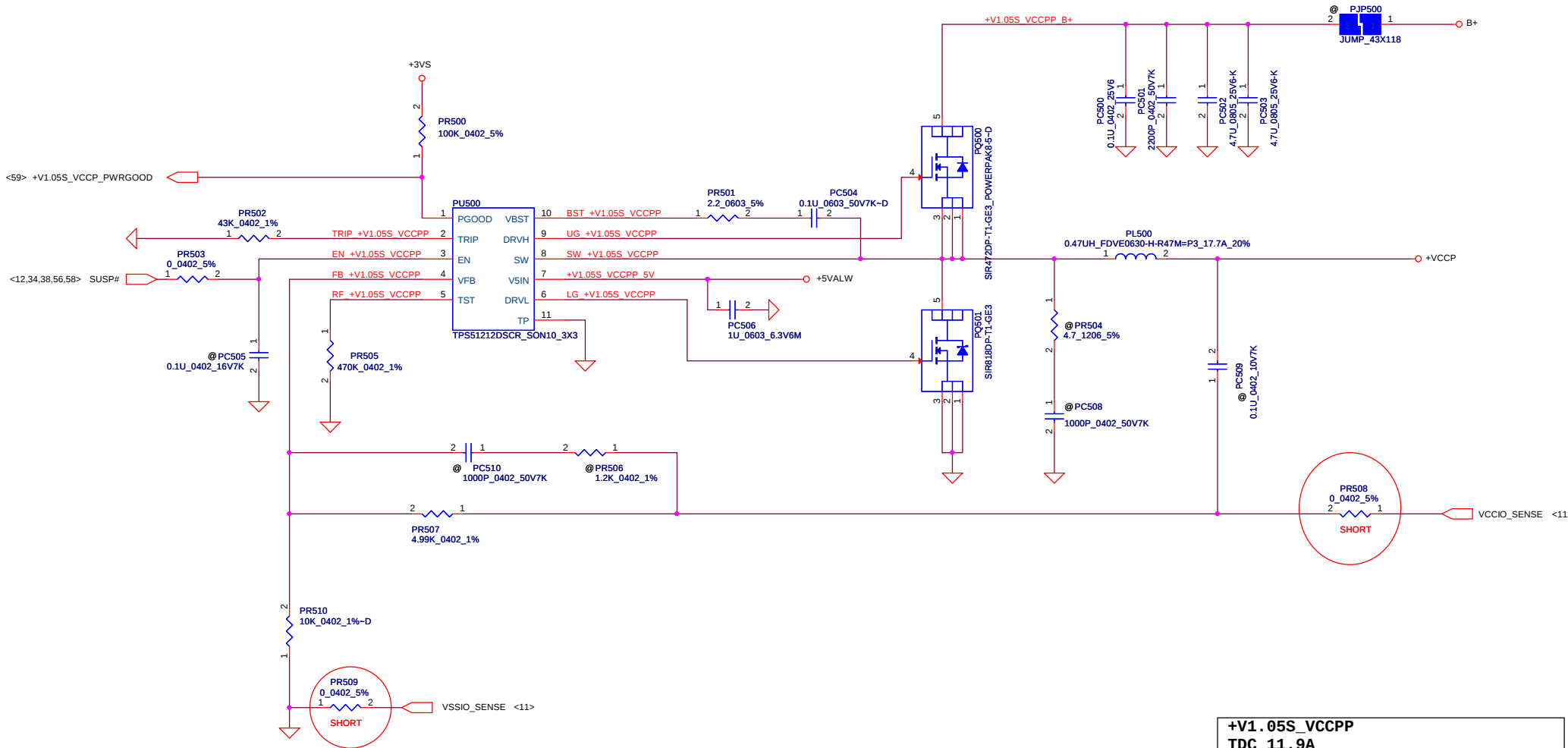


PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL AND TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL"). THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.



Compal Electronics, Inc.

|       |                            |       |            |
|-------|----------------------------|-------|------------|
| Title |                            |       | PWR-1.8VSP |
| Size  | Document Number            |       | Rev        |
|       | XPS14                      |       | 0.1        |
| Date: | Tuesday, February 07, 2012 | Sheet | 56 of 65   |



|                          |            |            |
|--------------------------|------------|------------|
| <b>+V1.05S_VCCPP</b>     |            |            |
| <b>TDC 11.9A</b>         |            |            |
| <b>Peak Current 17A</b>  |            |            |
| <b>OCF current 20.4A</b> |            |            |
|                          | <b>TYP</b> | <b>MAX</b> |
| H/S Rds(on) :            | 10mohm ,   | 14.5mohm   |
| L/S Rds(on) :            | 3mohm ,    | 3.6mohm    |

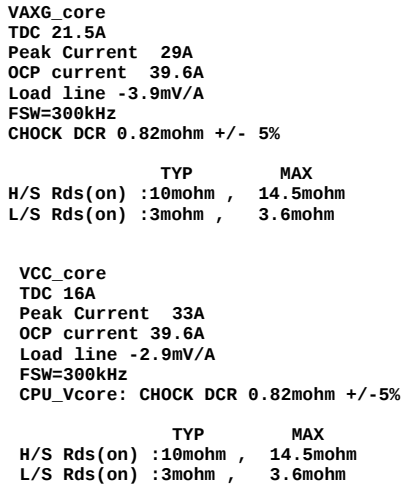
PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.

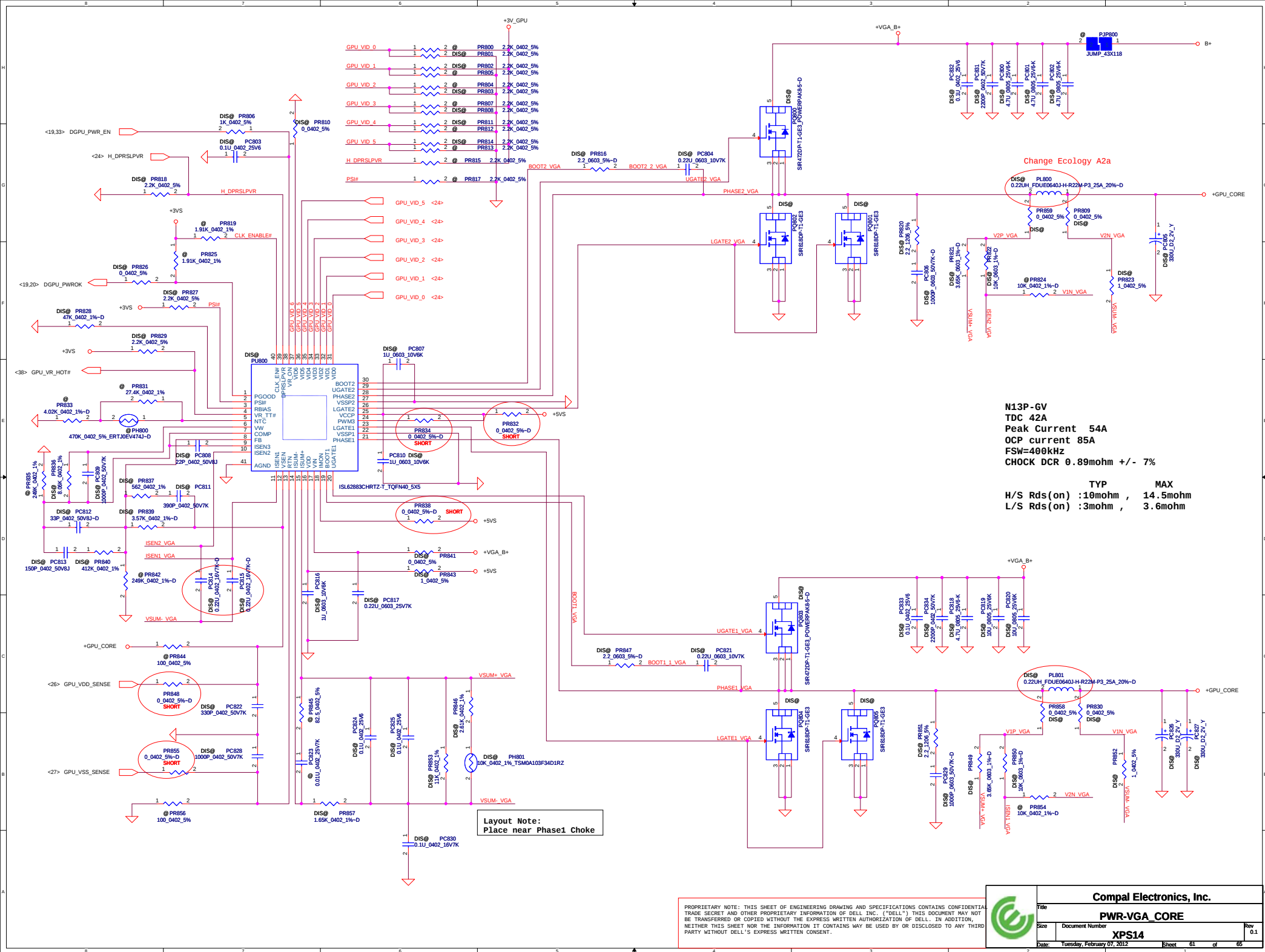


|                                 |                            |                |
|---------------------------------|----------------------------|----------------|
| <b>Compal Electronics, Inc.</b> |                            |                |
| Title                           |                            |                |
| <b>PWR-V1.05S_VCCPP</b>         |                            |                |
| Size                            | Document Number            | Rev            |
|                                 | <b>XPS14</b>               | 0.1            |
| Date:                           | Tuesday, February 07, 2012 | Sheet 57 of 65 |









Change Ecology A2a

N13P-6V  
TDC 42A  
Peak Current 54A  
OCP current 85A  
FSW=400kHz  
CHOCK DCR 0.89mohm +/- 7%

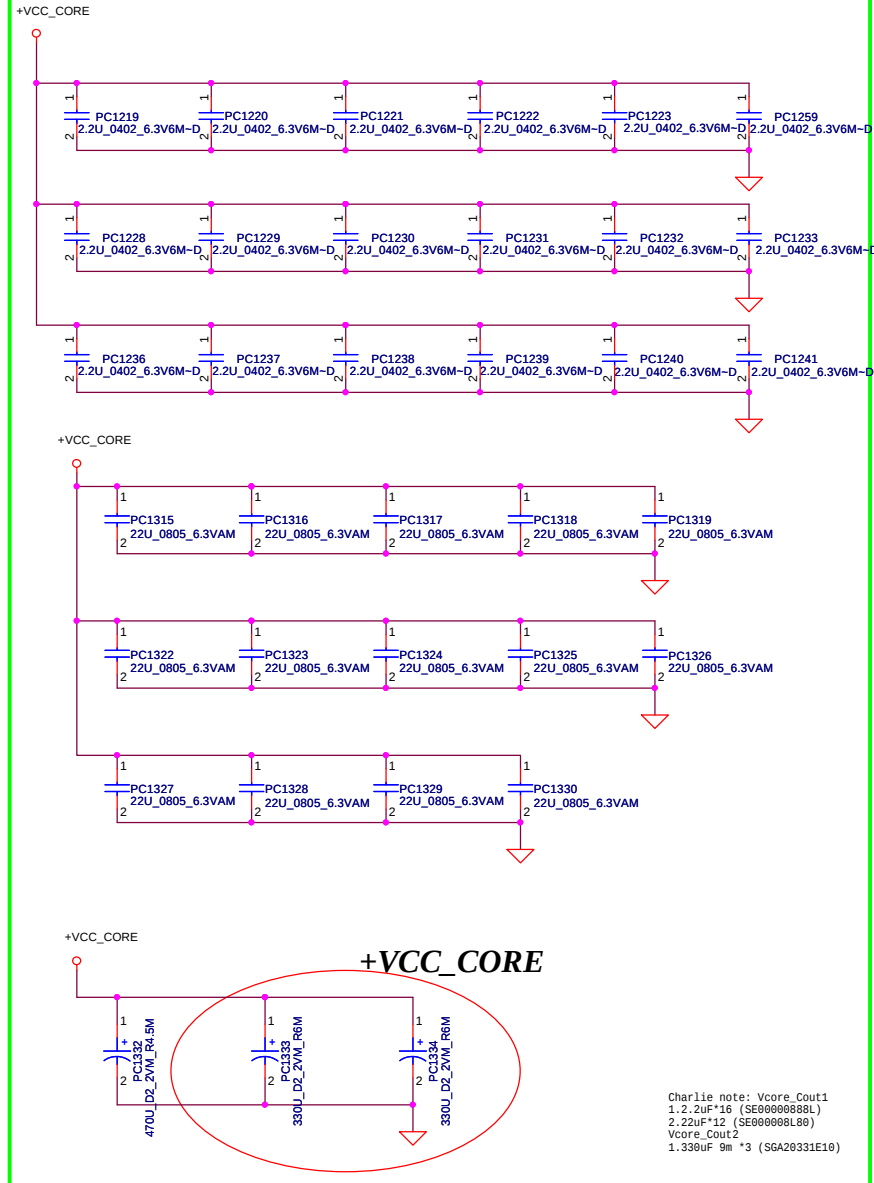
TYP MAX  
H/S Rds(on) :10mohm , 14.5mohm  
L/S Rds(on) :3mohm , 3.6mohm

Layout Note:  
Place near Phase1 Choke

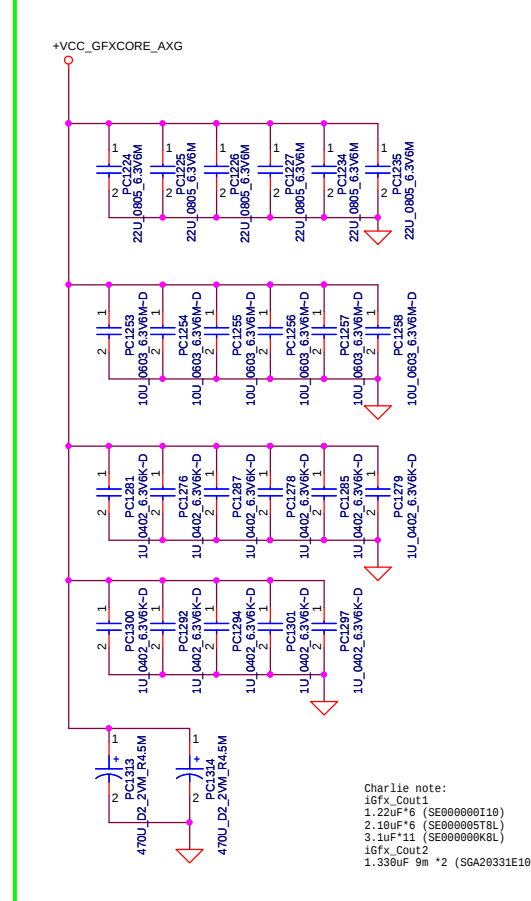
PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL"). THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.

|                                                                                       |  |                            |                |
|---------------------------------------------------------------------------------------|--|----------------------------|----------------|
|  |  | Compal Electronics, Inc.   |                |
| Title                                                                                 |  | PWR-VGA_CORE               |                |
| Size                                                                                  |  | Document Number            | XPS14          |
| Date                                                                                  |  | Tuesday, February 07, 2012 | Sheet 61 of 65 |

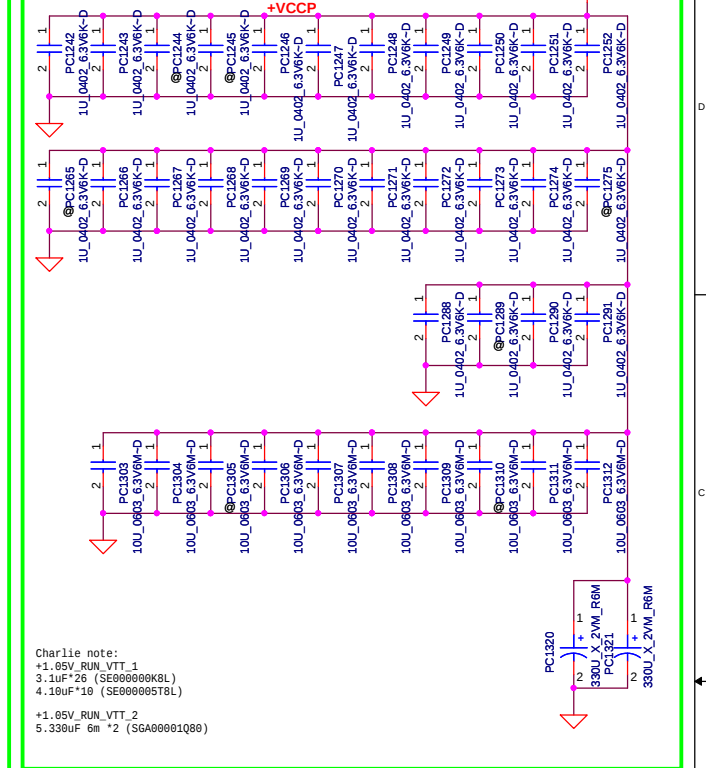
## +VCC\_CORE



## +VCC\_GFXCORE\_AXG



## +VCCP





## Page 1

D

3



|  |       |
|--|-------|
|  | Title |
|--|-------|

Size

|                 |
|-----------------|
| Document Number |
|-----------------|

Rev

Date: Tuesday, February 07, 2012

Sheet 64 of 65

---

1

|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      | 5                  |       | 4               |         | 3                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2               |                                                                                                                                                                                                                                                                            | 1 |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|-------|-----------------|---------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--|-------------------------|--|--------------------|--|-------|--|--------------------------|--|-------------|--|------------|--|-----------------|--|------------|--|-------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|------|-----------------|-----|--|--|--|--|--|--|--|--|----------|-----|-------|--|--|--|--|--|--|----------------------------|--|----------------|
| Model                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Item | Page               | Date  | ECN Number      | Item Id | Rev.                     | Issue Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 | Solution Description                                                                                                                                                                                                                                                       |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
| QLM00                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1    | 38                 | 01/12 |                 |         | 1.0                      | PCB REV change to 1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | Change RE77 to 56K                                                                                                                                                                                                                                                         |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2    | 24                 | 01/12 |                 |         | 1.0                      | Change EC_SMB_CK2_PX/EC_SMB_DA2_PX pull up resistor as design guide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | Change RV2420,RV2421 to 2.2K                                                                                                                                                                                                                                               |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3    | 39                 | 01/12 |                 |         | 1.0                      | Adjust CAPS_LED brightness                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Change RE84 to 470ohm                                                                                                                                                                                                                                                      |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4    | 45                 | 01/12 |                 |         | 1.0                      | Sync up with XPS 15" for pull up power rail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | RI38 pull up from +5VALW to +3VALW                                                                                                                                                                                                                                         |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5    | 17,24,35           | 01/12 |                 |         | 1.0                      | Solve adaptor detect issue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Depop QH3; change GPU SMBus/Ambient Light Sensor connect to PCH_SMLDATA and PCH_SMLCLK                                                                                                                                                                                     |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6    | 45                 | 01/12 |                 |         | 1.0                      | Purchase recommend                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | Change UI3 to high active parts                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 7    | 40                 | 01/12 |                 |         | 1.0                      | BOM structure control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | ADD TPM@ for TPM circuit                                                                                                                                                                                                                                                   |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 8    | 38                 | 01/12 |                 |         | 1.0                      | For USBCHG_DET_D can't turn on 3V/5V issue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Change RE78 pull up to +3VLP                                                                                                                                                                                                                                               |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 9    | 45                 | 01/12 |                 |         | 1.0                      | Vendor recommend                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | UI2 EN pin pull up resistor RI38 change to 10K                                                                                                                                                                                                                             |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10   | 35                 | 01/12 |                 |         | 1.0                      | Change JLVDS connector PN and footprint as assembly issue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | Change JLVDS connector PN to SP01001BT00, footprint to ACES_59003-04006-001_40P                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 11   | 39                 | 01/12 |                 |         | 1.0                      | ME change                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | SW1 PN change to SN100005100                                                                                                                                                                                                                                               |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12   | 33                 | 01/16 |                 |         | 1.0                      | Solve 1.5V voltage drop issue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | Change QV2803 to SB00000SJ0L to lower Rds on                                                                                                                                                                                                                               |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 13   |                    | 01/16 |                 |         | 1.0                      | Remove 0 ohm to short pad for MP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | RI22,RI23,RI24,RI25,RI17,RI3,RI4,RI5,RI7,RN29,RM10,RM25,RL25,RL6,R34,RE83, RE10,RE34,RE35,RE39, RE68,RE70,RE71,RE60,RE62,RE63,RE64,RV449, RV3519,RV3517,RI6,RI8,RV3525,RH199,RH105,RH106,RH108,RH110,RH112,RH101, RH103,RH107,RH44,RU125,RU122,RU123,RU116,RU131,RU75,RU62 |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 14   | 10                 | 01/17 |                 |         | 1.0                      | Change setting for Ivy Bridge support 1x16 PCI Epress and Sandy Bridge only UMA Config                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 | Depop RU85                                                                                                                                                                                                                                                                 |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 15   | 49                 | 01/17 |                 |         | 1.0                      | ME requirement for LED brightness tuning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 | R9 Change to 220ohm for Power LED(White)                                                                                                                                                                                                                                   |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 16   | 39                 | 01/18 |                 |         | 1.0                      | EMI requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | Add DE7 on TP SMBus                                                                                                                                                                                                                                                        |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 17   | 38,35,39           | 01/19 |                 |         | 1.0                      | Thailand flood disaster, original material shortage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | Change DE1,DE2,DE3,DE6 PN to SCS00002G00; QE5,QE6,QV3508,QZ10,QZ13,QZ15 to SB00000M700; DV9 to SCS00002G00                                                                                                                                                                 |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 18   | 35                 | 01/19 |                 |         | 1.0                      | JLVDS pin define change for opertion risk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | JLVDS Pin38 NC and up shift to Pin33                                                                                                                                                                                                                                       |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 19   | 33                 | 01/20 |                 |         | 1.0                      | Change HF part                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 | Change RZ10,RZ11,RZ40,RZ41 PN to SD028220A8L                                                                                                                                                                                                                               |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 20   | 48                 | 01/20 |                 |         | 1.0                      | Manufacture highlight change                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 | Change JSATA footprint to ACES_50463-0104A-001_10P-T                                                                                                                                                                                                                       |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 21   | 17,19,40           | 01/20 |                 |         | 1.0                      | EMI requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | Populate PCI CLK reserved parts RH65,CH26,CH31,R2,C8                                                                                                                                                                                                                       |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 22   | 36                 | 01/20 |                 |         | 1.0                      | EMI requirement for LVDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 | Change LV7,LV8,LV9,LV10 to SM070002S00                                                                                                                                                                                                                                     |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 23   | 39                 | 01/30 |                 |         | 1.0                      | Change HF part                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 | Change F1 to SP040003200                                                                                                                                                                                                                                                   |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 24   | 48,53              | 01/30 |                 |         | 1.0                      | Solve audio power consumption issue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | Change PQ903 PN to SB93457001L, JSATA pin8 B+ change to +VSBP                                                                                                                                                                                                              |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 25   | 17,38              | 01/30 |                 |         | 1.0                      | EMI requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | Populate CH98,CE11,RE13                                                                                                                                                                                                                                                    |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 26   | 14                 | 02/01 |                 |         | 1.0                      | 1.5V power rail reach up to 1.614V, change for derating concern                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | CD7 capacitor change from 2V to 2.5V                                                                                                                                                                                                                                       |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 27   | 15                 | 02/02 |                 |         | 1.0                      | EMI requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | Add RV3529,RV3530,CV3528,CV3529                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 28   |                    | 02/02 |                 |         | 1.0                      | Customer concern Y5V MLCC performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | Change CA59 to SE076104K80; CE17 to SE064475KL0;CN2,CH11,CN19,CM25,CM26, CM29,CU33,CU34,CU35,CU36,CU97,CU155 to SE076104K80; CM24,CU39 change to SE076473K80; CN7,CZ11,CV3508 change to SE064106M8L                                                                        |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 29   |                    |       |                 |         |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 30   |                    |       |                 |         |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 31   |                    |       |                 |         |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 32   |                    |       |                 |         |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |                    |       |                 |         |                          | <table><tr><td colspan="2">Security Classification</td><td colspan="2">Compal Secret Data</td><td colspan="2">Title</td><td colspan="2">Compal Electronics, Inc.</td></tr><tr><td colspan="2">Issued Date</td><td colspan="2">2011/07/15</td><td colspan="2">Deciphered Date</td><td colspan="2">2012/07/15</td><td colspan="2">Change List</td></tr><tr><td colspan="7">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 TRANSFERED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&amp;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.</td><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td colspan="7"></td><td></td><td>LA-7841P</td><td>0.3</td></tr><tr><td colspan="7">Date:</td><td colspan="2">Tuesday, February 07, 2012</td><td>Sheet 65 of 65</td></tr></table> |                 |                                                                                                                                                                                                                                                                            |   |  | Security Classification |  | Compal Secret Data |  | Title |  | Compal Electronics, Inc. |  | Issued Date |  | 2011/07/15 |  | Deciphered Date |  | 2012/07/15 |  | Change List |  | 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 TRANSFERED 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-7841P | 0.3 | Date: |  |  |  |  |  |  | Tuesday, February 07, 2012 |  | Sheet 65 of 65 |
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                      |      | Compal Secret Data |       | Title           |         | Compal Electronics, Inc. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      | 2011/07/15         |       | Deciphered Date |         | 2012/07/15               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Change List     |                                                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
| 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 TRANSFERED 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-7841P        | 0.3                                                                                                                                                                                                                                                                        |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      |                    |       |                 |         |                          | Tuesday, February 07, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Sheet 65 of 65                                                                                                                                                                                                                                                             |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      | 4                  |       | 3               |         | 2                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1               |                                                                                                                                                                                                                                                                            |   |  |                         |  |                    |  |       |  |                          |  |             |  |            |  |                 |  |            |  |             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |      |                 |     |  |  |  |  |  |  |  |  |          |     |       |  |  |  |  |  |  |                            |  |                |

[www.s-manuals.com](http://www.s-manuals.com)