



Part Number = X76264BOL81
SEYSAM1G@



Part Number = X76264BOL82
SEYHYN1G@



Part Number = X76264BOL55
WHISAM1G@



Part Number = X76264BOL60
WHIHYN1G@



Part Number = X76264BOL61
SAM2G@



Part Number = X76264BOL62
HYN2G@

Compal Confidential

P7YE5/S5 Schematics Document

AMD Sabine

APU Llano / Hudson M2 / Vancouver Whistler_Seymour

DIS only / UMA only / PX Muxless with BACO



Part Number = DA80000N100

2011-02-18

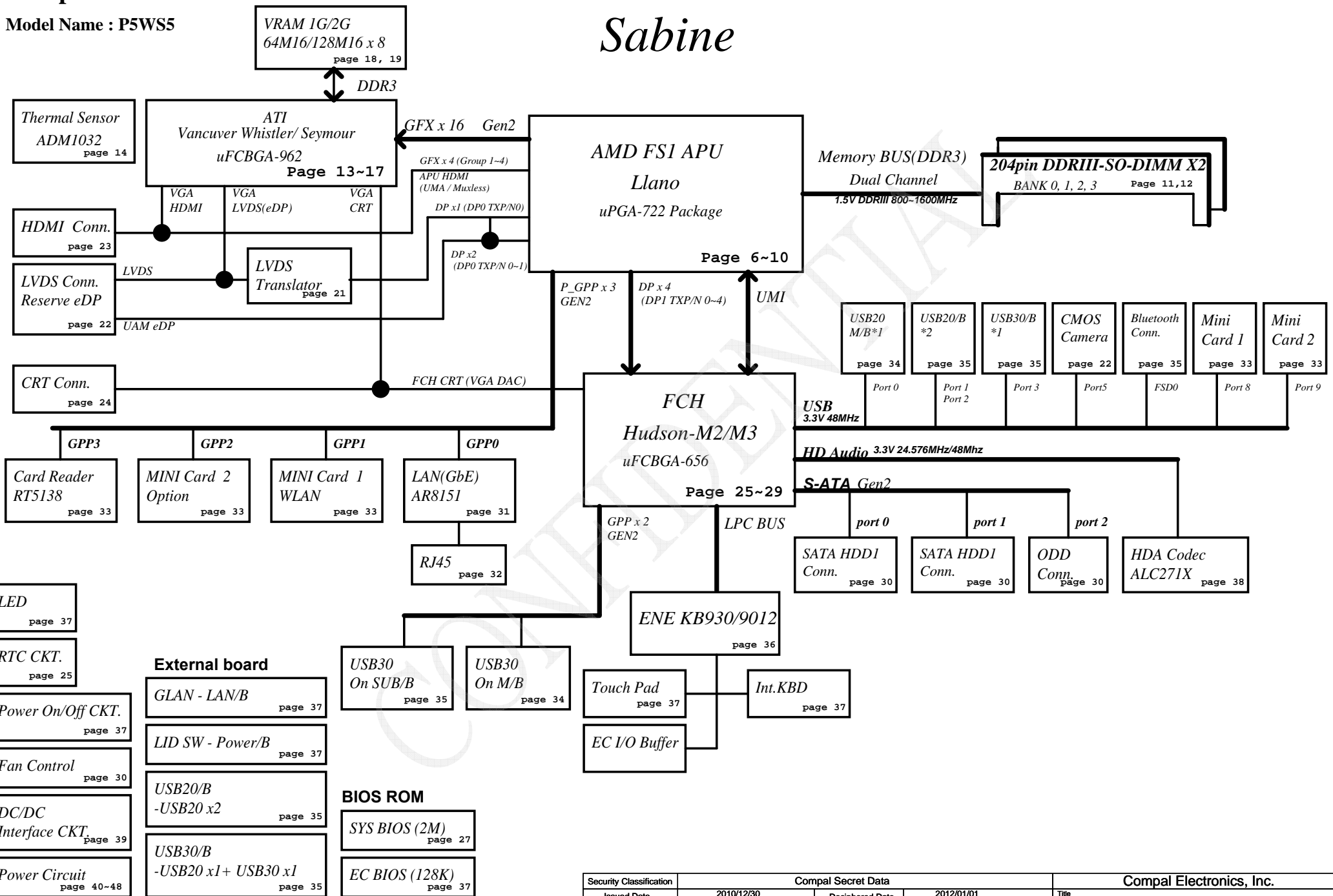
LA-6991P REV: 0.2

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/12/30	Deciphered Date	2012/01/01	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	
				4019BN	
Date: Thursday, February 24, 2011				Rev A	
Sheet 1 of 50					

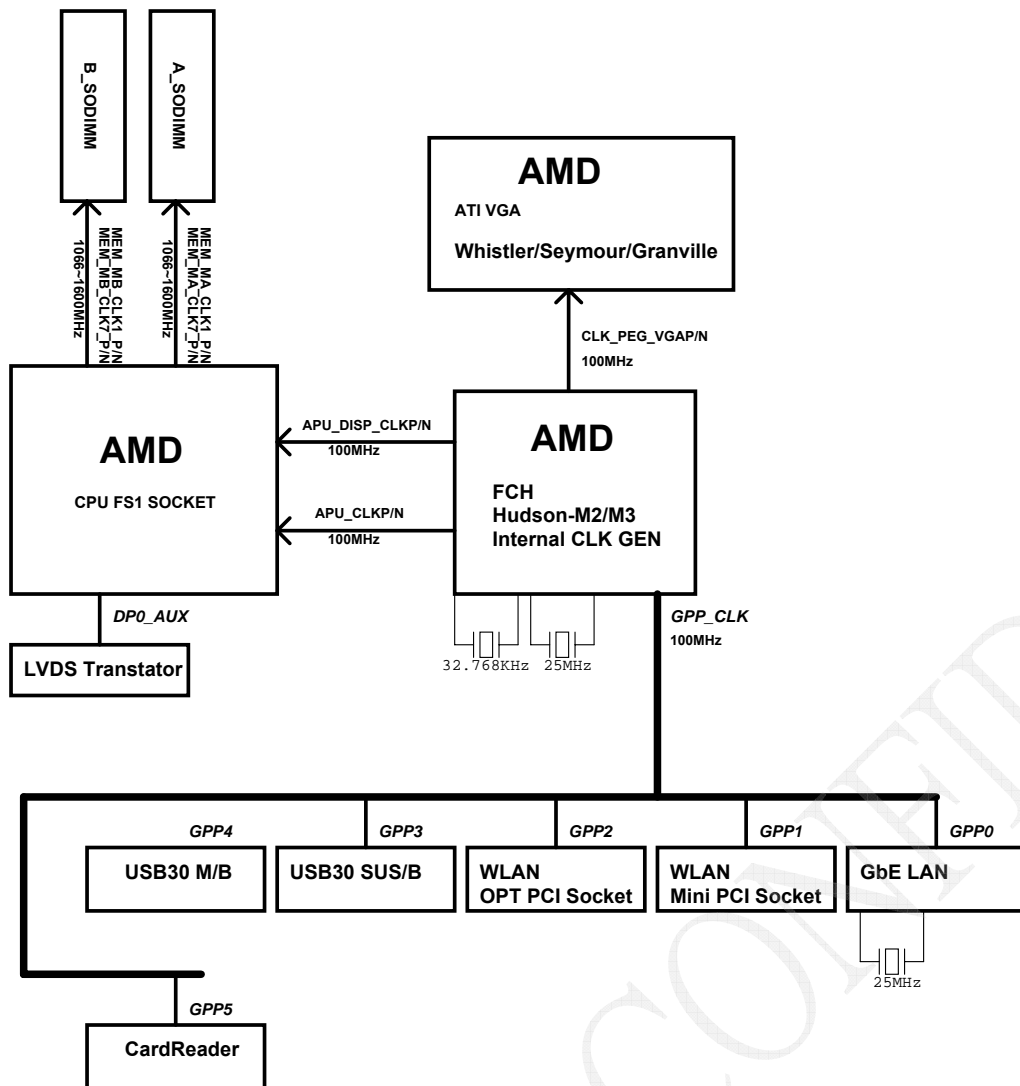
Compal Confidential

Model Name : P5WS5

Sabine



CLOCK DISTRIBUTION

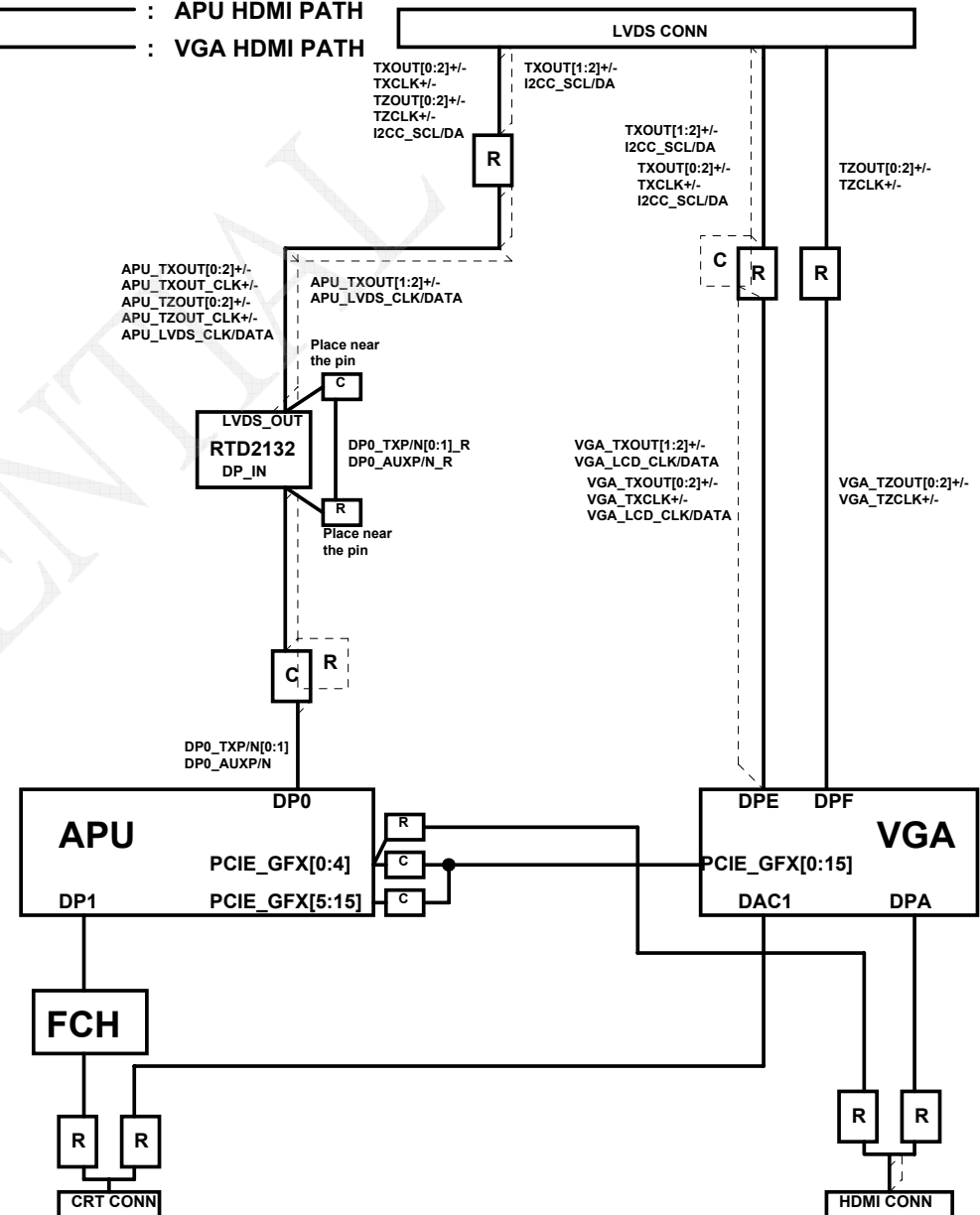


DISPLAY DISTRIBUTION

- ```

_____ : LVDS PATH
_____, --- : eDP PATH
_____ : APU HDMI PATH
_____ : VGA HDMI PATH

```



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                             |                             |  |       |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|-----------------------------|-----------------------------|--|-------|------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Title<br>SCHEMATIC MB A6991 |                             |  |       |            |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2010/12/30         |  | Deciphered Date |  |                             |                             |  |       | 2012/01/01 |
| 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   |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                             | 4019BN                      |  | A     |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Date:                       | Thursday, February 24, 2011 |  | Sheet | 3 of 50    |

Voltage Rails

| Power Plane  | Description                                  | S1  | S3  | S5  |
|--------------|----------------------------------------------|-----|-----|-----|
| VIN          | Adapter power supply (19V)                   | N/A | N/A | N/A |
| B+           | AC or battery power rail for power circuit.  | N/A | N/A | N/A |
| +CPU_CORE    | Core voltage for CPU                         | ON  | OFF | OFF |
| +CPU_CORE_1  | Core voltage for CPU (0.7-1.2V)              | ON  | OFF | OFF |
| +CPU_CORE_NB | Voltage for On-die VGA of APU                | ON  | OFF | OFF |
| +VGA_CORE    | 0.95-1.2V switched power rail                | ON  | OFF | OFF |
| +0.75VS      | 0.75V switched power rail for DDR terminator | ON  | ON  | OFF |
| +1.0VSG      | 1.0V switched power rail for VGA             | ON  | OFF | OFF |
| +1.1ALW      | 1.1V switched power rail for FCH             | ON  | ON  | ON* |
| +1.1VS       | 1.1V switched power rail for FCH             | ON  | OFF | OFF |
| +1.2VS       | 1.2V switched power rail for APU             | ON  | OFF | OFF |
| +1.5V        | 1.5V power rail for CPU VDDIO and DDR        | ON  | ON  | OFF |
| +1.5VS       | 1.5V switched power rail                     | ON  | OFF | OFF |
| +1.8VSG      | 1.8V switched power rail                     | ON  | OFF | OFF |
| +2.5VS       | 2.5V for CPU_VDDA                            | ON  | OFF | OFF |
| +3VALW       | 3.3V always on power rail                    | ON  | ON  | ON* |
| +3V_LAN      | 3.3V power rail for LAN                      | ON  | ON  | ON  |
| +3VS         | 3.3V switched power rail                     | ON  | OFF | OFF |
| +5VALW       | 5V always on power rail                      | ON  | ON  | ON* |
| +5VS         | 5V switched power rail                       | ON  | OFF | OFF |
| +VSB         | VSB always on power rail                     | ON  | ON  | ON* |
| +RTCVCC      | RTC power                                    | ON  | ON  | ON  |

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

External PCI Devices

| Device | IDSEL# | REQ#/GNT# | Interrupts |
|--------|--------|-----------|------------|
|        |        |           |            |
|        |        |           |            |
|        |        |           |            |
|        |        |           |            |
|        |        |           |            |
|        |        |           |            |

EC SM Bus1 address

EC SM Bus2 address

| Device        | Address     | HEX | Device                | Address     | HEX |
|---------------|-------------|-----|-----------------------|-------------|-----|
| Smart Battery | 0001 011X b | 16H | SB-TSI                | 1001 100X b | 98H |
|               |             |     | GMT G781-1 (GPU)      | 1001 101X b | 9AH |
|               |             |     | CAT24C64WJ (RTD2136S) | 1010 100X b | A8H |
|               |             |     | VGA-TSI               | 1000 001X b | 82H |
|               |             |     |                       |             |     |

FCH SM Bus 0 address

FCH SM Bus 1 address

| Device    | Address    | HEX | Device | Address | HEX |
|-----------|------------|-----|--------|---------|-----|
| DDR DIMM1 | 1001 000Xb | 90  |        |         |     |
| DDR DIMM2 | 1001 010Xb | 94  |        |         |     |
|           |            |     |        |         |     |
|           |            |     |        |         |     |
|           |            |     |        |         |     |

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

Board ID / SKU ID Table for AD channel

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

BTO Option Table

| BOM Structure | BTO Item                                    |
|---------------|---------------------------------------------|
| UMA@          | Display from UMA (PX4.0 or UMA only)        |
| VGA@          | Have VGA chip (Discrete only or PX4.0)      |
| DISO@         | Display from VGA (Discrete only)            |
| SEYM@         | Use Seymour (Discrete only and PX4.0)       |
| WHI@          | Use Whistler (Discrete only and PX4.0)      |
| GRAN@         | Use Granville (Discrete only and PX4.0)     |
| VAN@          | Use Vancouver VGA (Discrete only and PX4.0) |
| RT@           | Use translator RTD2136S                     |
| ANX@          | Use translator ANX3110                      |
| M2@           | Use Hudson-M2                               |
| M3@           | Use Hudson-M3                               |
| 930@          | Use KB930                                   |
| 9012@         | Use KB9012                                  |
| 128@          | Use VRAM channel A                          |
| PX@           | PX4.0                                       |
| BACO@         | Use BACO                                    |
| NOBACO@       | No use BACO                                 |
| APULVDS@      | UMA LVDS path                               |
| APUEDP@       | UMA eDP path                                |
| VGALVDS@      | VGA LVDS path                               |
| VGAEDP@       | VGA eDP path                                |
| EDP@          | eDP path                                    |
| JE@           | ACER                                        |
| SJV@          | PB and GW                                   |
| NOGRAN@       | No Use Granville                            |
|               |                                             |
|               |                                             |
|               |                                             |
|               |                                             |
|               |                                             |
|               |                                             |

BOM Config

EVT

UMA only:

UMA@, RT@, ANX@, M3@, 930@, APULVDS@, JE@

DISO only:

VGA@, DISO@, VGALVDS@, SEYM@ or WHI@, VAN@, 128@(With WHI@), NOGRAN@, NOBACO@, M3@, 930@, JE@

PX

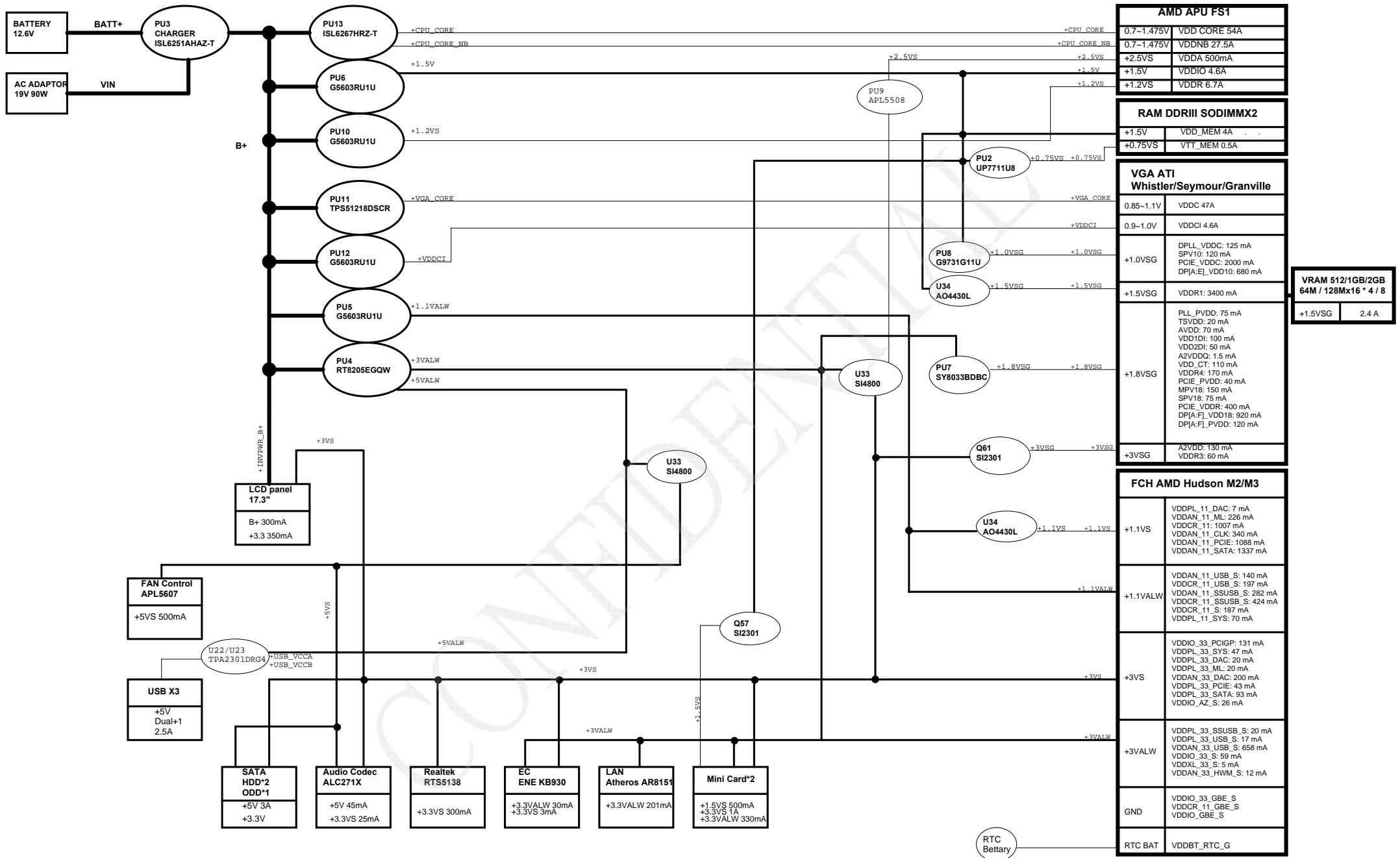
UMA@, VGA@, PX@, SEYM@ or WHI@, VAN@, 128@(With WHI@), NOGRAN@, RT@, ANX@, APULVDS@, BACO@, M3@, 930@, JE@

PROJECT ID Table

| Board ID | PCB Revision |
|----------|--------------|
| 0        |              |
| 1        |              |
| 2        |              |
| 3        |              |
| 4        |              |
| 5        |              |
| 6        |              |
| 7        |              |

BOARD ID Table

| Board ID | PCB Revision |
|----------|--------------|
| 0        |              |
| 1        | 0.1(EVT)     |
| 2        | 0.2(DVT)     |
| 3        |              |
| 4        |              |
| 5        |              |
| 6        |              |
| 7        |              |



<13> PCIE\_GTX\_C\_FRX\_P[0..15] <13>  
<13> PCIE\_GTX\_C\_FRX\_N[0..15] <13>

PCIE\_FTX\_C\_GRX\_P[0..15] <13>  
PCIE\_FTX\_C\_GRX\_N[0..15] <13>

## APU To HDMI

PCIE\_FTX\_GRX\_P[12..15] <24>  
PCIE\_FTX\_GRX\_N[12..15] <24>

| JCPU1A             |     | CONN@       |     |
|--------------------|-----|-------------|-----|
| PCI EXPRESS        |     |             |     |
| PCIE_GTX_C_FRX_P0  | AA8 | P_GFX_RXP0  | AA2 |
| PCIE_GTX_C_FRX_N0  | AA9 | P_GFX_RXN0  | AA3 |
| PCIE_GTX_C_FRX_P1  | Y7  | P_GFX_RXP1  | Y2  |
| PCIE_GTX_C_FRX_N1  | Y8  | P_GFX_RXN1  | Y1  |
| PCIE_GTX_C_FRX_P2  | W5  | P_GFX_RXP2  | Y4  |
| PCIE_GTX_C_FRX_N2  | W6  | P_GFX_RXN2  | Y5  |
| PCIE_GTX_C_FRX_P3  | W8  | P_GFX_RXP3  | W2  |
| PCIE_GTX_C_FRX_N3  | W9  | P_GFX_RXN3  | W3  |
| PCIE_GTX_C_FRX_P4  | V7  | P_GFX_RXP4  | V2  |
| PCIE_GTX_C_FRX_N4  | V8  | P_GFX_RXN4  | V1  |
| PCIE_GTX_C_FRX_P5  | U5  | P_GFX_RXP5  | V4  |
| PCIE_GTX_C_FRX_N5  | U6  | P_GFX_RXN5  | V5  |
| PCIE_GTX_C_FRX_P6  | U8  | P_GFX_RXP6  | U2  |
| PCIE_GTX_C_FRX_N6  | U9  | P_GFX_RXN6  | U3  |
| PCIE_GTX_C_FRX_P7  | T7  | P_GFX_RXP7  | T2  |
| PCIE_GTX_C_FRX_N7  | T8  | P_GFX_RXN7  | T1  |
| PCIE_GTX_C_FRX_P8  | R5  | P_GFX_RXP8  | T4  |
| PCIE_GTX_C_FRX_N8  | R6  | P_GFX_RXN8  | T5  |
| PCIE_GTX_C_FRX_P9  | R8  | P_GFX_RXP9  | R2  |
| PCIE_GTX_C_FRX_N9  | R9  | P_GFX_RXN9  | R3  |
| PCIE_GTX_C_FRX_P10 | P7  | P_GFX_RXP10 | P2  |
| PCIE_GTX_C_FRX_N10 | P8  | P_GFX_RXN10 | P1  |
| PCIE_GTX_C_FRX_P11 | N5  | P_GFX_RXP11 | P4  |
| PCIE_GTX_C_FRX_N11 | N6  | P_GFX_RXN11 | P5  |
| PCIE_GTX_C_FRX_P12 | N8  | P_GFX_RXP12 | N2  |
| PCIE_GTX_C_FRX_N12 | N9  | P_GFX_RXN12 | N3  |
| PCIE_GTX_C_FRX_P13 | M7  | P_GFX_RXP13 | M2  |
| PCIE_GTX_C_FRX_N13 | M8  | P_GFX_RXN13 | M1  |
| PCIE_GTX_C_FRX_P14 | L5  | P_GFX_RXP14 | M4  |
| PCIE_GTX_C_FRX_N14 | L6  | P_GFX_RXN14 | M5  |
| PCIE_GTX_C_FRX_P15 | L8  | P_GFX_RXP15 | L2  |
| PCIE_GTX_C_FRX_N15 | L9  | P_GFX_RXN15 | L3  |

To VGA

2  
1  
0  
To HDMI  
CLK

|                        |     |            |            |
|------------------------|-----|------------|------------|
| <34> PCIE_DTX_C_FRX_P0 | AC5 | P_GPP_RXP0 | P_GPP_TXP0 |
| <34> PCIE_DTX_C_FRX_N0 | AC6 | P_GPP_RXN0 | P_GPP_TXN0 |
| <33> PCIE_DTX_C_FRX_P1 | AC8 | P_GPP_RXP1 | P_GPP_TXP1 |
| <33> PCIE_DTX_C_FRX_N1 | AC9 | P_GPP_RXN1 | P_GPP_TXN1 |
| <33> PCIE_DTX_C_FRX_P2 | AB7 | P_GPP_RXP2 | P_GPP_TXP2 |
| <33> PCIE_DTX_C_FRX_N2 | AB8 | P_GPP_RXN2 | P_GPP_TXN2 |
|                        | AA5 | P_GPP_RXP3 | P_GPP_TXP3 |
|                        | AA6 | P_GPP_RXN3 | P_GPP_TXN3 |

|                       |     |            |            |
|-----------------------|-----|------------|------------|
| <26> UMI_MTX_C_FRX_P0 | AF8 | P_UMI_RXP0 | P_UMI_TXP0 |
| <26> UMI_MTX_C_FRX_N0 | AE7 | P_UMI_RXN0 | P_UMI_TXN0 |
| <26> UMI_MTX_C_FRX_P1 | AE6 | P_UMI_RXP1 | P_UMI_TXP1 |
| <26> UMI_MTX_C_FRX_N1 | AE5 | P_UMI_RXN1 | P_UMI_TXN1 |
| <26> UMI_MTX_C_FRX_P2 | AE9 | P_UMI_RXP2 | P_UMI_TXP2 |
| <26> UMI_MTX_C_FRX_N2 | AE8 | P_UMI_RXN2 | P_UMI_TXN2 |
| <26> UMI_MTX_C_FRX_P3 | AD8 | P_UMI_RXP3 | P_UMI_TXP3 |
| <26> UMI_MTX_C_FRX_N3 | AD7 | P_UMI_RXN3 | P_UMI_TXN3 |

+1.2VS O R539 1 2 P\_ZVDDP K5  
196\_0402\_1%

P\_ZVSS K4 P\_ZVSS R540 1 2 196\_0402\_1%

AMD\_TOPEDO\_FS-1

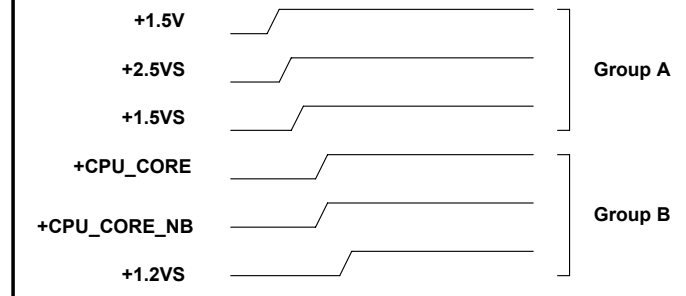
|     |                 |      |   |   |                 |                   |      |
|-----|-----------------|------|---|---|-----------------|-------------------|------|
| AD4 | PCIE_FTX_DRX_P0 | C950 | 1 | 2 | 0.1U_0402_16V7K | PCIE_FTX_C_DRX_P0 | <34> |
| AD5 | PCIE_FTX_DRX_N0 | C951 | 1 | 2 | 0.1U_0402_16V7K | PCIE_FTX_C_DRX_N0 | <34> |
| AC2 | PCIE_FTX_DRX_P1 | C952 | 1 | 2 | 0.1U_0402_16V7K | PCIE_FTX_C_DRX_P1 | <33> |
| AC3 | PCIE_FTX_DRX_N1 | C953 | 1 | 2 | 0.1U_0402_16V7K | PCIE_FTX_C_DRX_N1 | <33> |
| AB2 | PCIE_FTX_DRX_P2 | C954 | 1 | 2 | 0.1U_0402_16V7K | PCIE_FTX_C_DRX_P2 | <33> |
| AB1 | PCIE_FTX_DRX_N2 | C955 | 1 | 2 | 0.1U_0402_16V7K | PCIE_FTX_C_DRX_N2 | <33> |
| AB4 |                 |      |   |   |                 |                   |      |
| AB5 |                 |      |   |   |                 |                   |      |
| AF1 | UMI_FTX_MRX_P0  | C956 | 1 | 2 | 0.1U_0402_16V7K | UMI_FTX_C_MRX_P0  | <26> |
| AF2 | UMI_FTX_MRX_N0  | C957 | 1 | 2 | 0.1U_0402_16V7K | UMI_FTX_C_MRX_N0  | <26> |
| AE5 | UMI_FTX_MRX_P1  | C958 | 1 | 2 | 0.1U_0402_16V7K | UMI_FTX_C_MRX_P1  | <26> |
| AF4 | UMI_FTX_MRX_N1  | C959 | 1 | 2 | 0.1U_0402_16V7K | UMI_FTX_C_MRX_N1  | <26> |
| AE3 | UMI_FTX_MRX_P2  | C960 | 1 | 2 | 0.1U_0402_16V7K | UMI_FTX_C_MRX_P2  | <26> |
| AE2 | UMI_FTX_MRX_N2  | C961 | 1 | 2 | 0.1U_0402_16V7K | UMI_FTX_C_MRX_N2  | <26> |
| AD1 | UMI_FTX_MRX_P3  | C962 | 1 | 2 | 0.1U_0402_16V7K | UMI_FTX_C_MRX_P3  | <26> |
| AD2 | UMI_FTX_MRX_N3  | C963 | 1 | 2 | 0.1U_0402_16V7K | UMI_FTX_C_MRX_N3  | <26> |

GLAN

WLAN

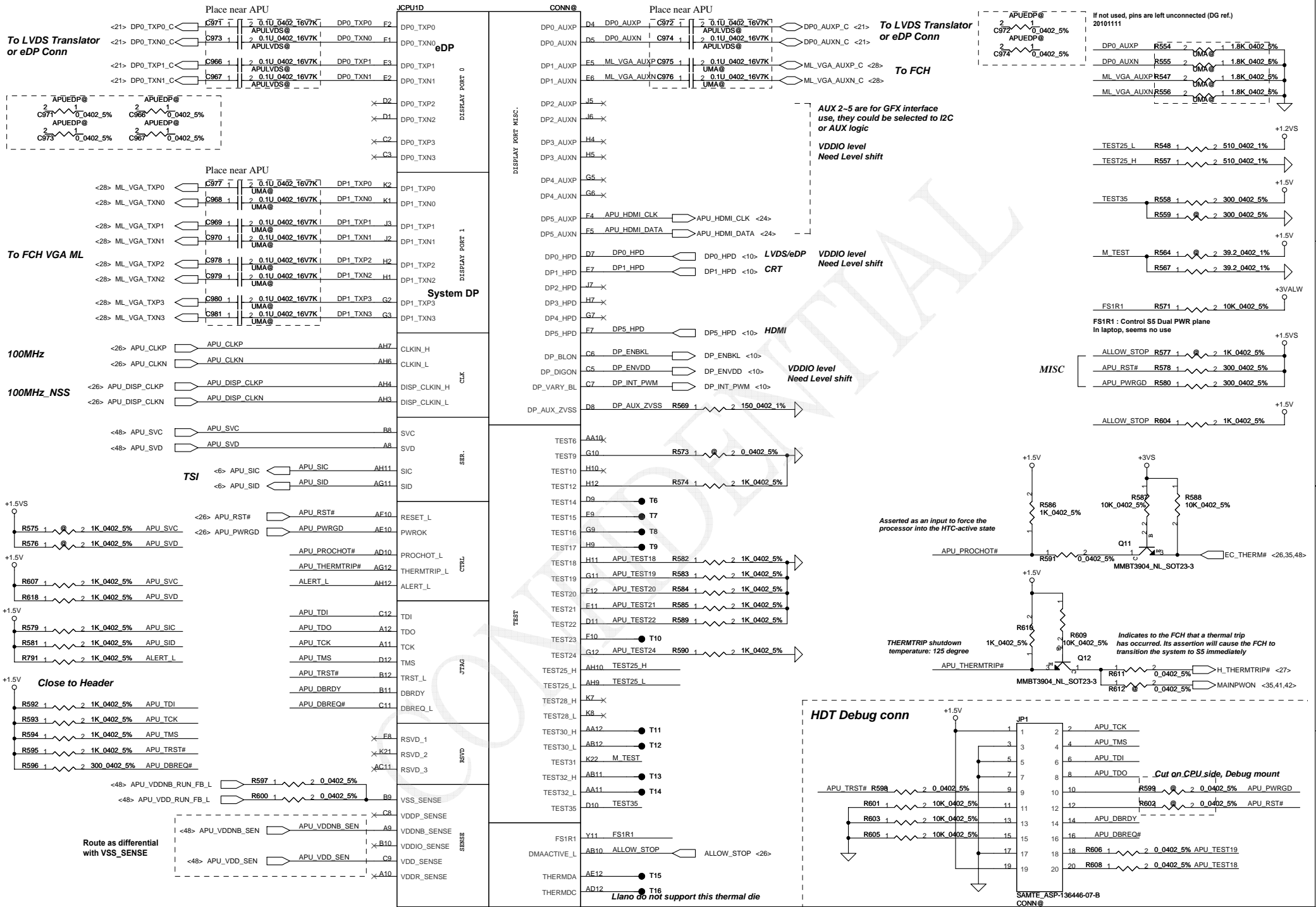
Option Mini2

## Power Sequence of APU



| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2012/01/01 | Title                    | SCHEMATIC MB A6991          |
| 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                      | A                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Document Number          | 4019BN                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 6 of 50                     |





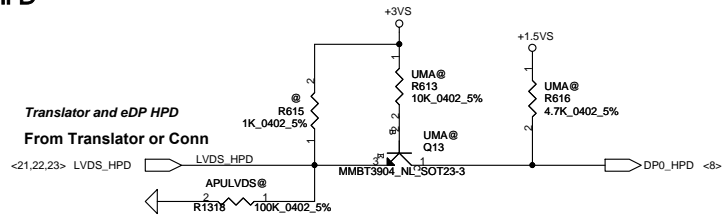




# HPD

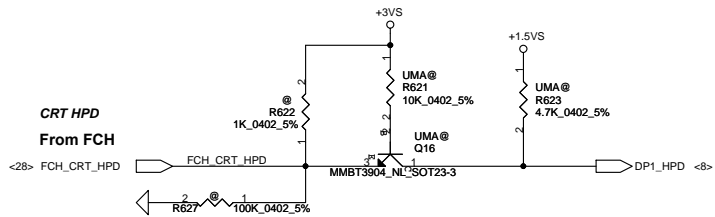
## Translator and eDP HPD

### From Translator or Conn



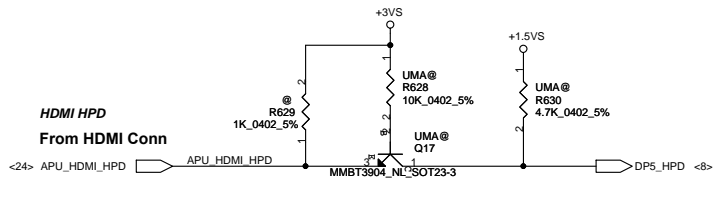
## CRT HPD

### From FCH

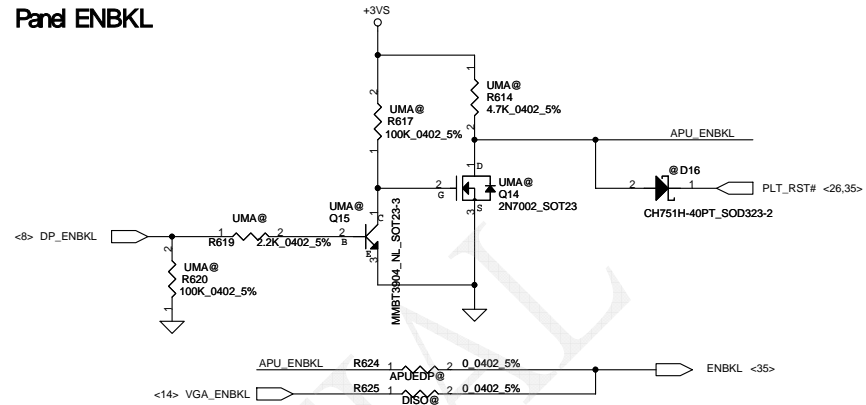


## HDMI HPD

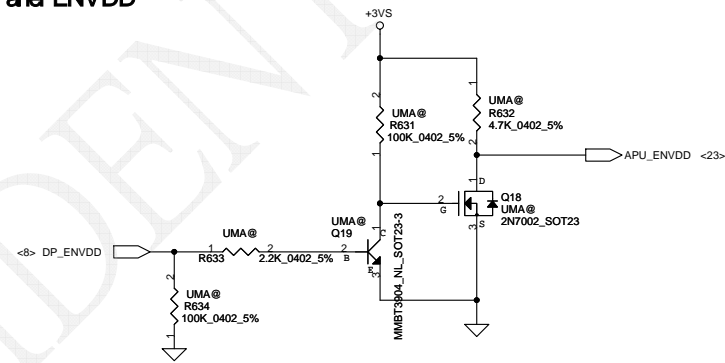
### From HDMI Conn



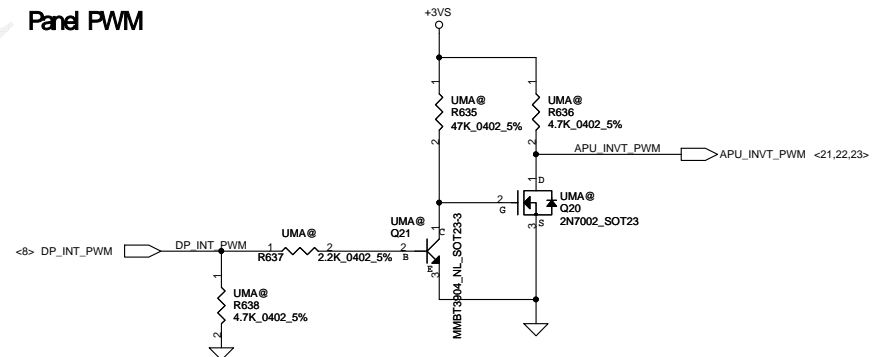
# Panel ENBKL



# Panel ENVDD

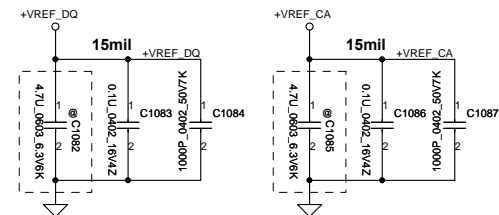
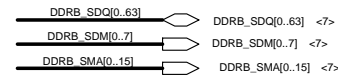


# Panel PWM

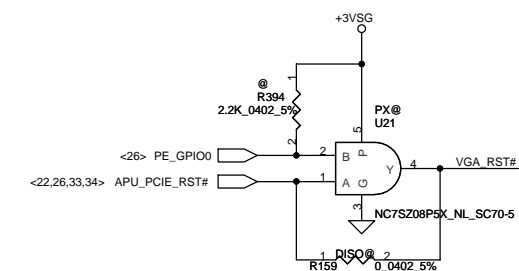


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Title |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|-------|-----------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30         | Deciphered Date | 2012/01/01 | Rev   | 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   | 4019BN                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date  | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Sheet | 10 of 50                    |





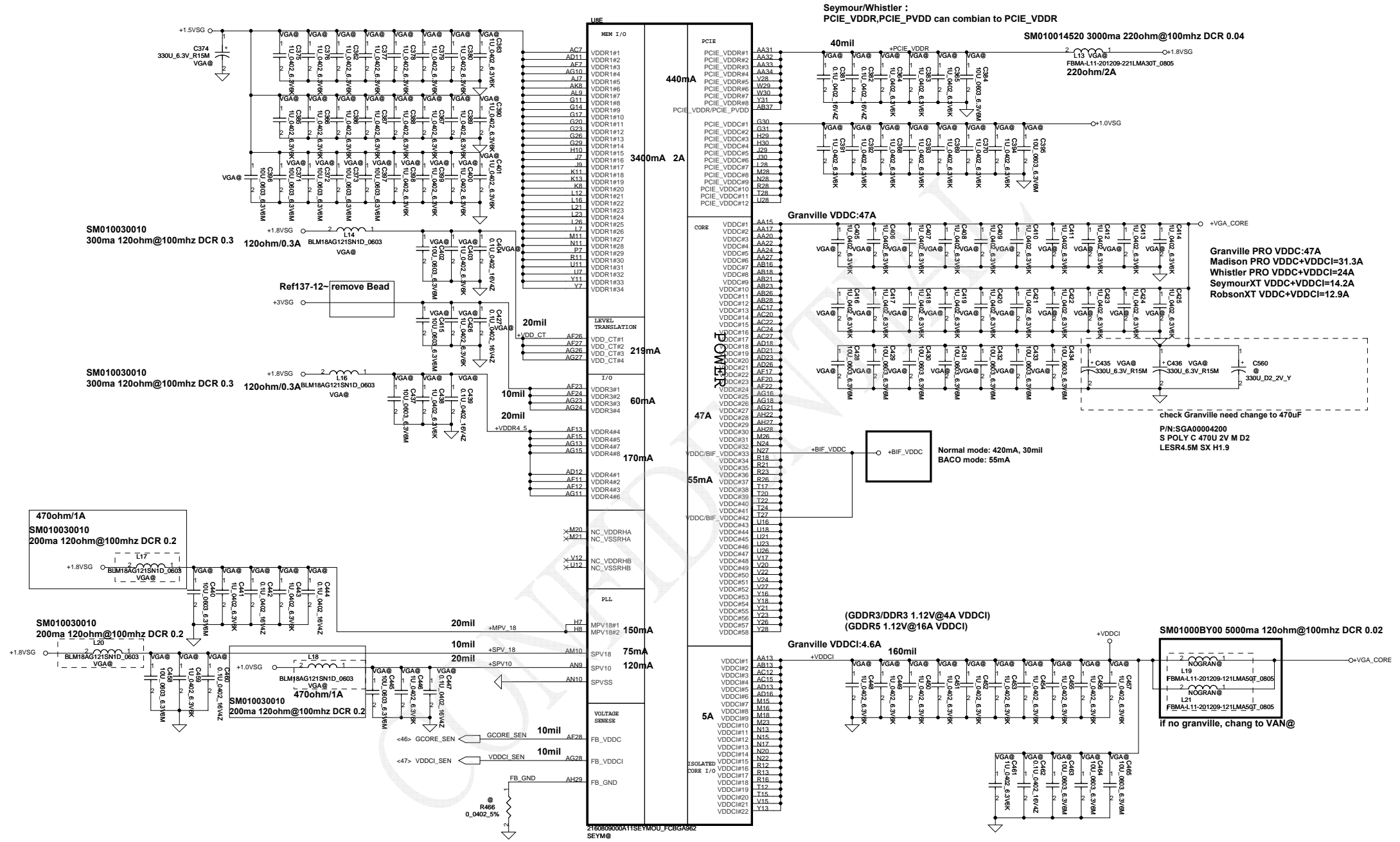
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                             |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|-----------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                             |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30         | Deciphered Date | 2012/01/01 | Title                    | SCHEMATIC MB A6991          |                |
| 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. |                    |                 |            | Docu-<br>ment Number     | 4019BN                      | Rev<br>A       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Thursday, February 24, 2011 | Sheet 12 of 50 |

[illegible]

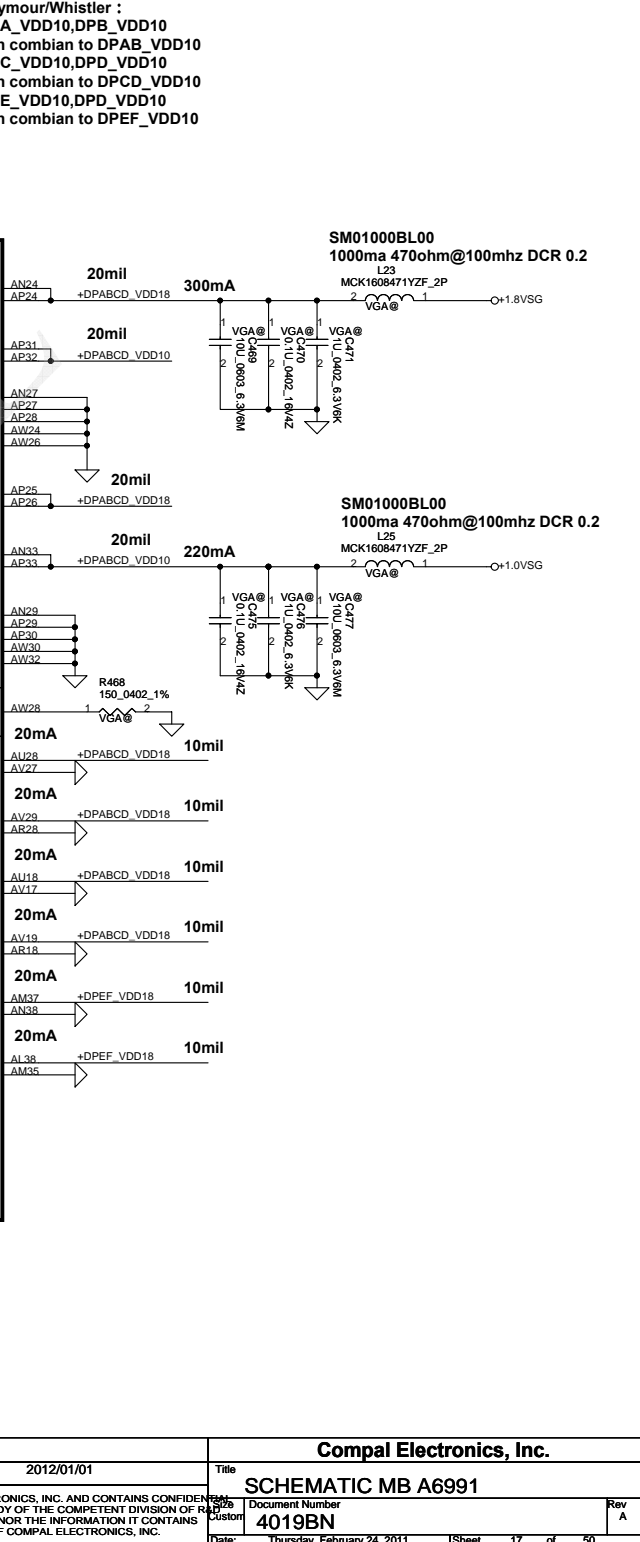
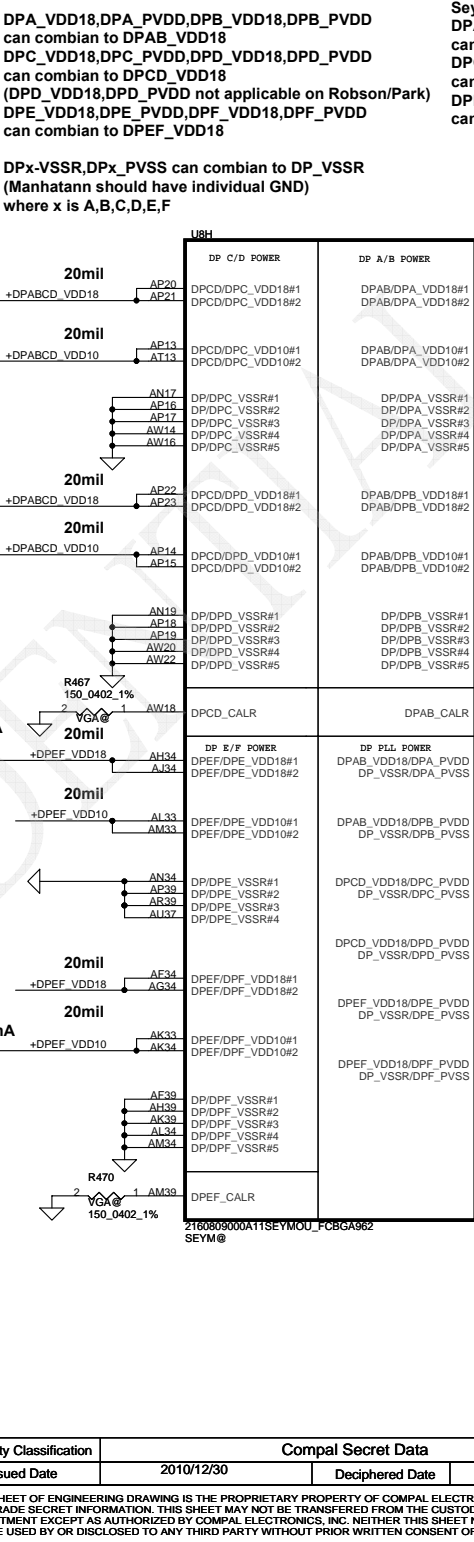
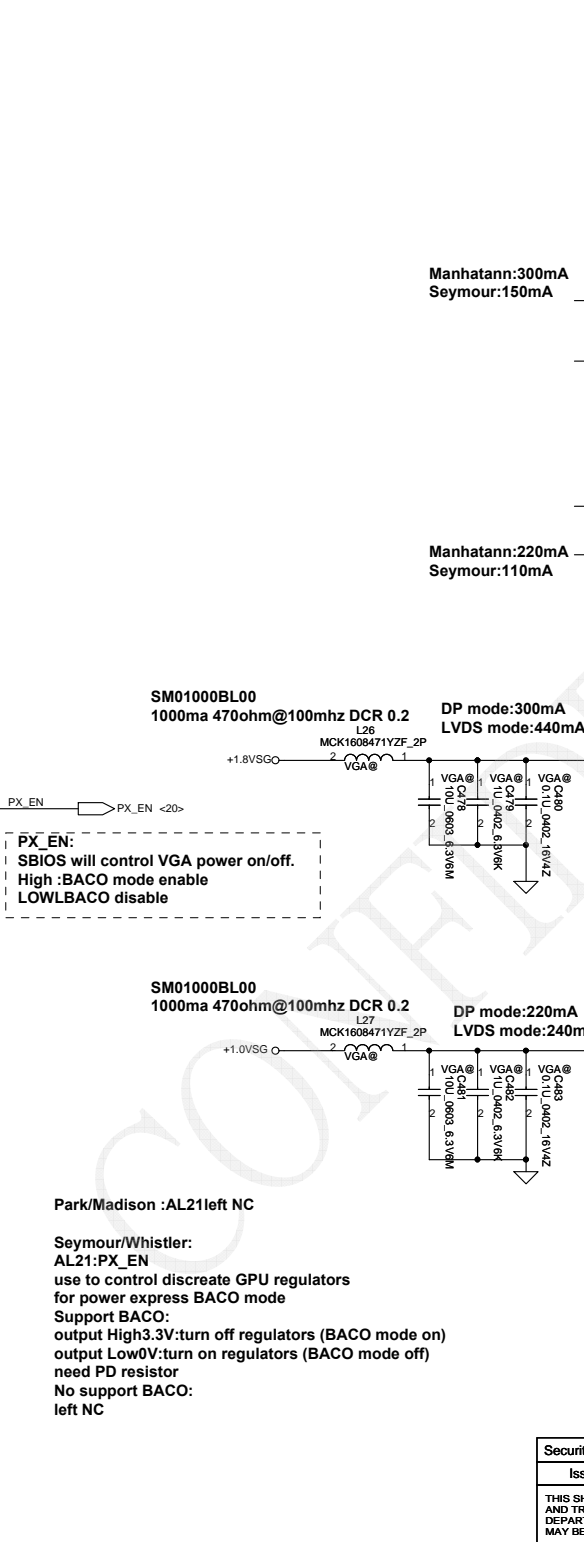
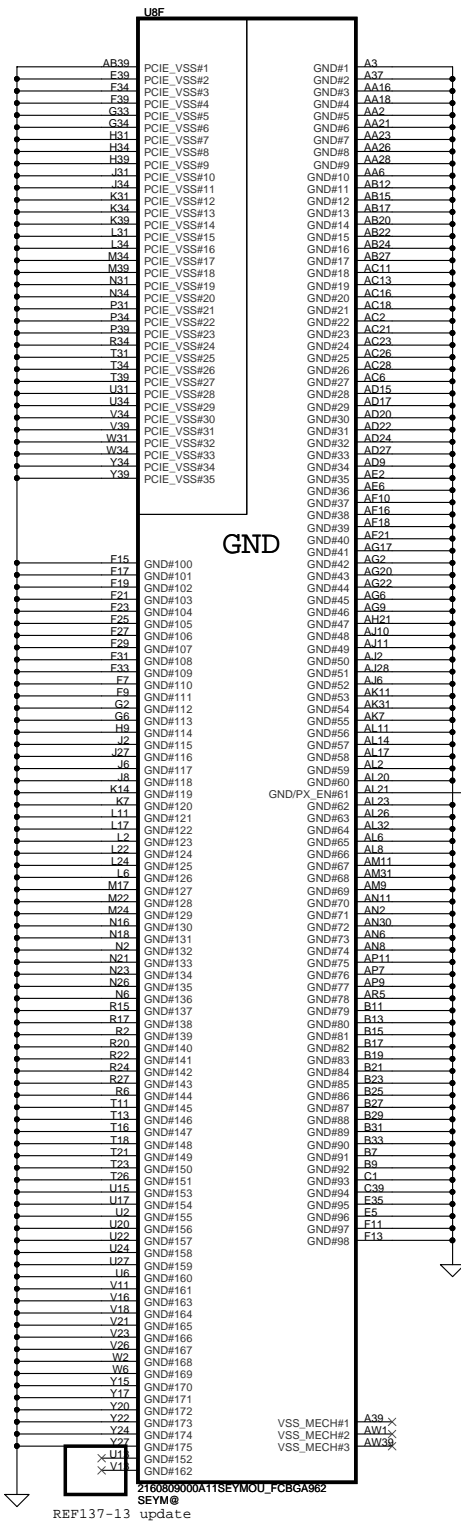
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                             |       |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----------------------------|-------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |       |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2012/01/01 | Title                    | SCHEMATIC MB A6991          |       |          |
| 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   |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                   | 4019BN                      | A     |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Thursday, February 24, 2011 | Sheet | 13 of 50 |





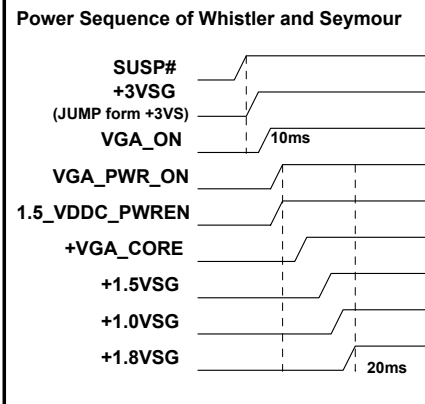
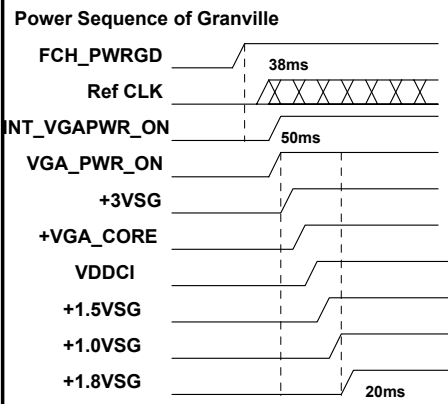




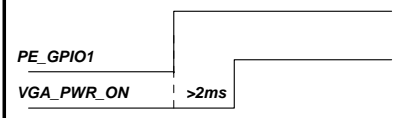








For PX sequence, >2mS delay is required between PE\_GPIO1 and VGA\_PWR\_ON

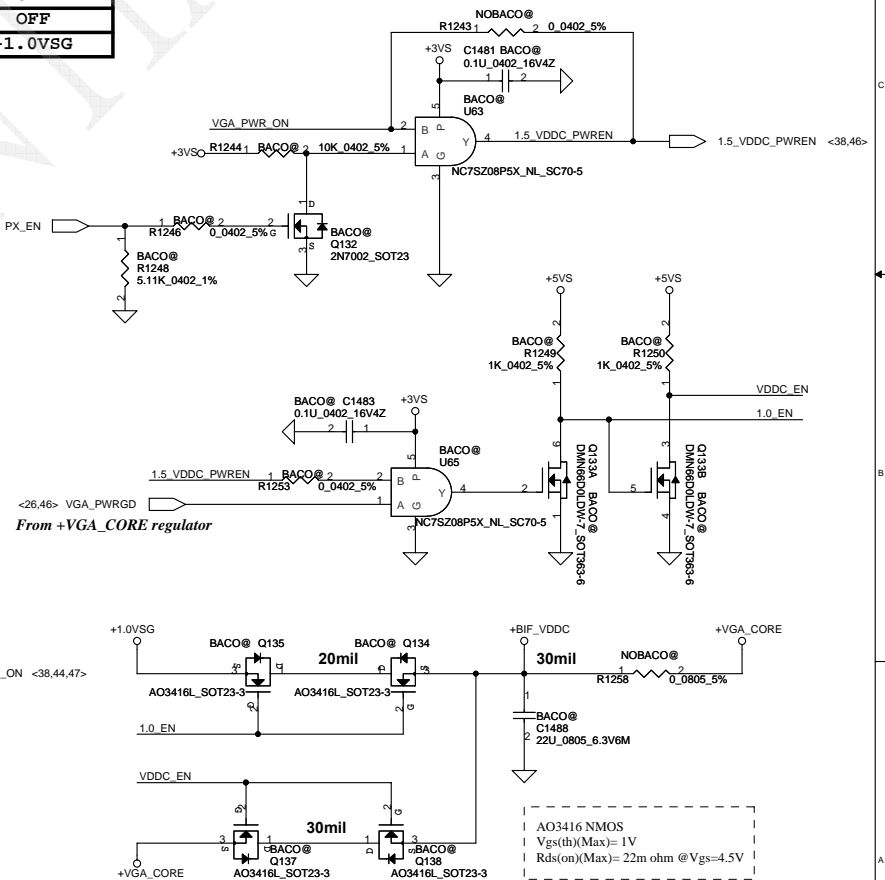
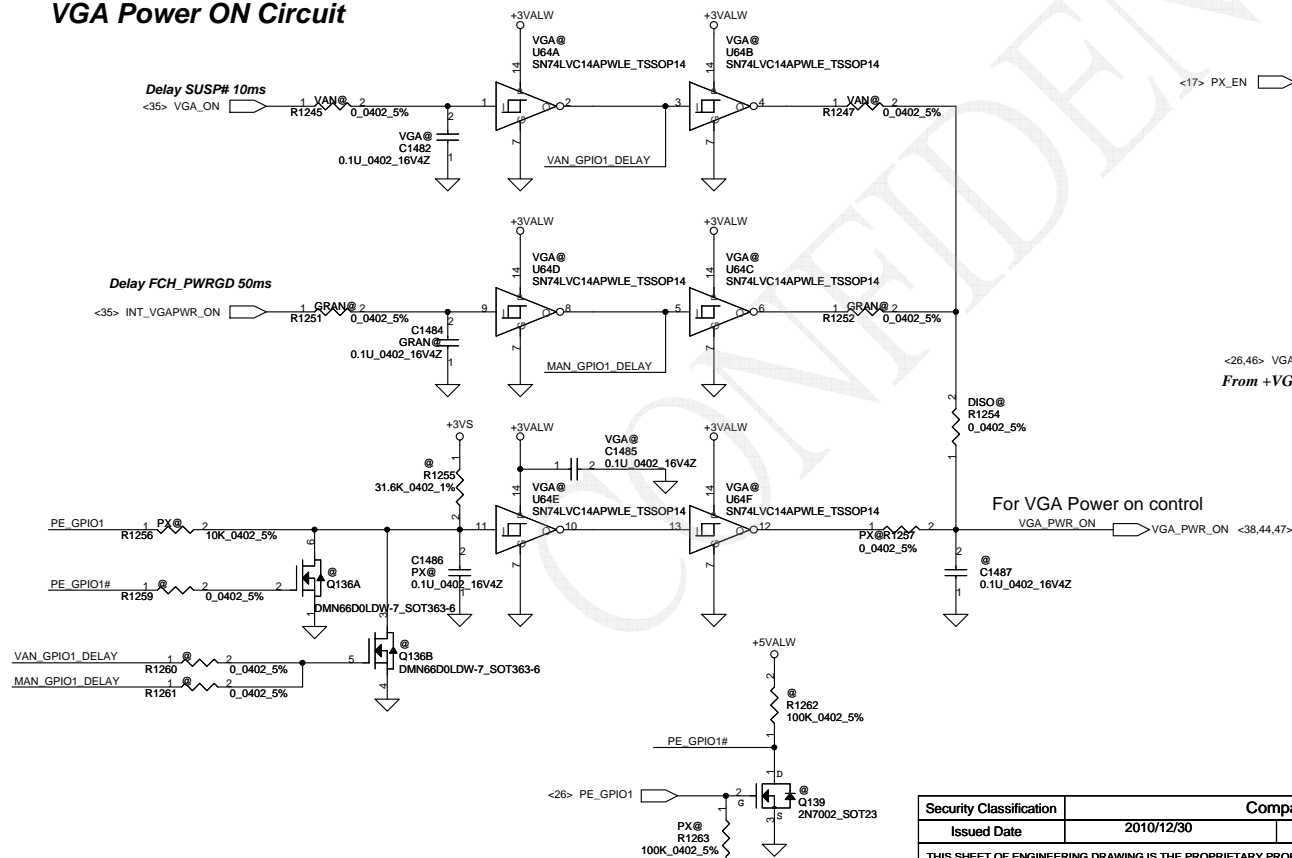


| VGA Muxless and Dis only Status Mapping table |           |                              |                          |
|-----------------------------------------------|-----------|------------------------------|--------------------------|
|                                               | Dis only  | Muxless High performance GPU | Muxless Power-saving GPU |
| VGA_PWR_ON                                    | 1         | 1                            | 0                        |
| 1.5_VDDC_PWREN                                | 1         | 1                            | 0                        |
| +3.3VSG                                       | ON        | ON                           | OFF                      |
| +1.8VSG                                       | ON        | ON                           | OFF                      |
| +1.0VSG                                       | ON        | ON                           | OFF                      |
| +VGA_CORE                                     | ON        | ON                           | OFF                      |
| +1.5VSG                                       | ON        | ON                           | OFF                      |
| +BIF_VDDC                                     | +VGA_CORE | +VGA_CORE                    | OFF                      |

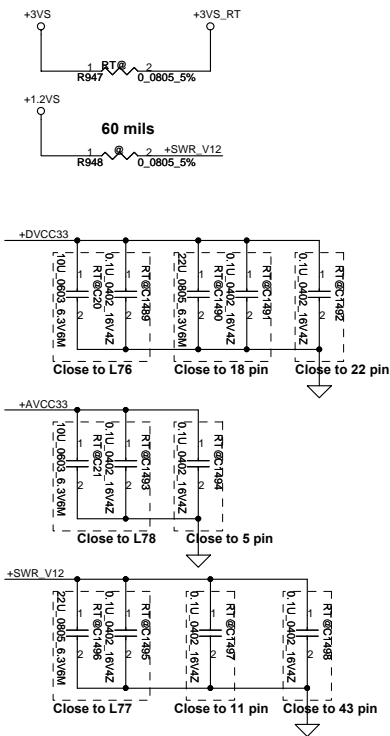
| VGA Muxless with BACO Status Mapping table |             |           |
|--------------------------------------------|-------------|-----------|
|                                            | Normal mode | BACO mode |
| PX_EN                                      | 0           | 1         |
| 1.5_VDDC_PWREN                             | 1           | 0         |
| VDDC_EN                                    | 1           | 0         |
| 1.0_EN                                     | 0           | 1         |
| +3.3VSG                                    | ON          | ON        |
| +1.8VSG                                    | ON          | ON        |
| +1.0VSG                                    | ON          | ON        |
| +VGA_CORE                                  | ON          | OFF       |
| +1.5VSG                                    | ON          | OFF       |
| +BIF_VDDC                                  | +VGA_CORE   | +1.0VSG   |

| VGA Power Enable Signal Mapping table |               |                        |
|---------------------------------------|---------------|------------------------|
|                                       | Graville      | Whistler and Seymour   |
| VGA_PWR_ON source signal              | INT_VGAPWR_ON | VGA_ON                 |
| +3.3VSG                               | VGA_PWR_ON    | SUSP#                  |
| +1.8VSG                               | VGA_PWR_ON    | VGA_PWR_ON             |
| +1.0VSG                               | VGA_PWR_ON    | VGA_PWR_ON             |
| +VDDCI                                | VGA_PWR_ON    | Combine with +VGA_CORE |
| +VGA_CORE                             | VGA_PWR_ON    | 1.5_VDDC_PWREN         |
| +1.5VSG                               | VGA_PWR_ON    | 1.5_VDDC_PWREN         |

## VGA Power ON Circuit

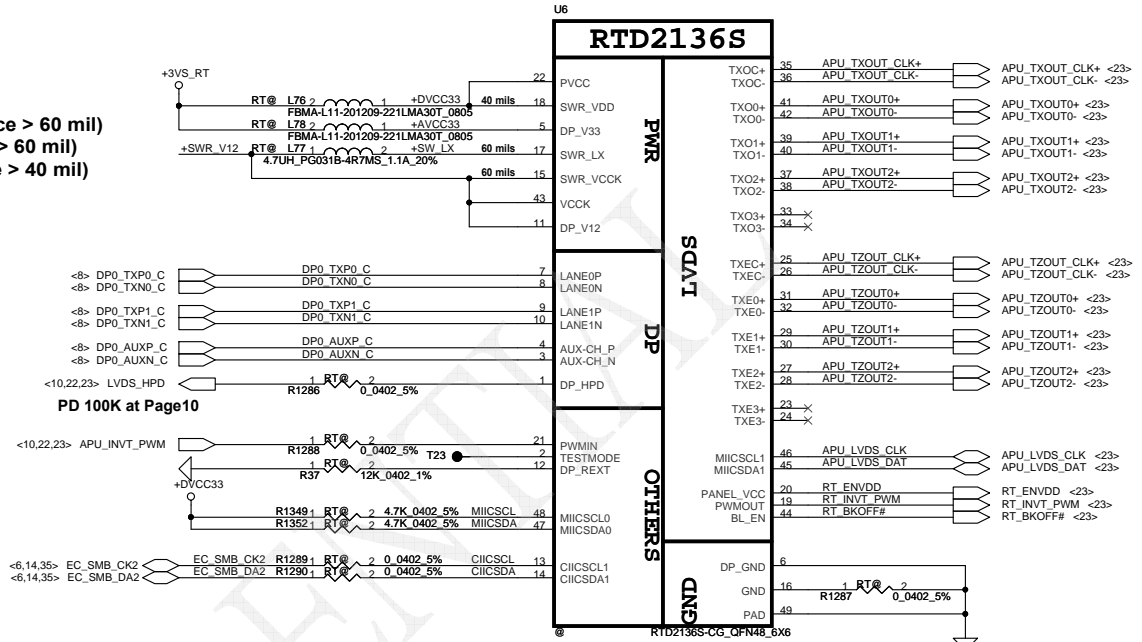
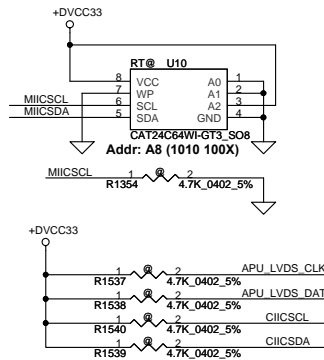


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                 |            | Compal Secret Data |                    | Compal Electronics, Inc. |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|------------|--------------------|--------------------|--------------------------|-----------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date | 2012/01/01 | Title              | SCHEMATIC MB A6991 | Rev                      | A                           |
| 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. |            |                 |            | Customer           | 4019BN             | Date                     | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |            | Sheet              | 20                 | of                       | 50                          |



## Power Consumption:

- Pin5 (DPV33) < 20mA
- Pin 11 (DPV12) < 100mA
- Pin 15 (SWR\_VCKK) < 100mA (layout trace > 60 mil)
- Pin 17 (SWR\_LX) < 600mA (layout trace > 60 mil)
- Pin 18 (SWR\_VDD) < 200mA (layout trace > 40 mil)
- Pin 22 (PVCC) < 50 mA
- Pin 43 (VCKK) < 50mA



## To Travis (place these resistors near PS8615's pins)

Use common via

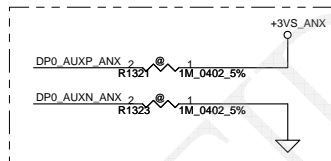
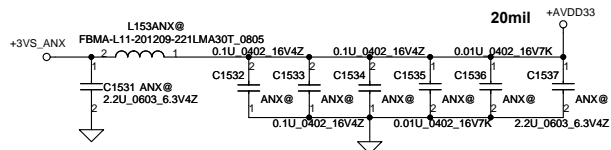
|            |       |   |   |         |           |                   |
|------------|-------|---|---|---------|-----------|-------------------|
| DP0 TXP0 C | R1274 | 1 | 2 | APUEDP@ | 0.0402 5% | DP0 TXP0 R        |
| DP0 TXN0 C | R1275 | 1 | 2 | APUEDP@ | 0.0402 5% | DP0 TXN0 R        |
| DP0 TXP1 C | R1276 | 1 | 2 | APUEDP@ | 0.0402 5% | DP0 TXP1 R        |
| DP0 TXN1 C | R1277 | 1 | 2 | APUEDP@ | 0.0402 5% | DP0 TXN1 R        |
| DP0 AUXP C | R1278 | 1 | 2 | APUEDP@ | 0.0402 5% | DP0 AUXP R        |
| DP0 AUXN C | R1279 | 1 | 2 | APUEDP@ | 0.0402 5% | DP0 AUXN R        |
| DP0 AUXN C | R1280 | 1 | 2 | ANX@    | 0.0402 5% | DP0 AUXN_ANX <22> |
| DP0 AUXP C | R1281 | 1 | 2 | ANX@    | 0.0402 5% | DP0 AUXP_ANX <22> |
| DP0 TXP0 C | R1282 | 1 | 2 | ANX@    | 0.0402 5% | DP0 TXP0_ANX <22> |
| DP0 TXN0 C | R1283 | 1 | 2 | ANX@    | 0.0402 5% | DP0 TXN0_ANX <22> |
| DP0 TXP1 C | R1284 | 1 | 2 | ANX@    | 0.0402 5% | DP0 TXP1_ANX <22> |
| DP0 TXN1 C | R1285 | 1 | 2 | ANX@    | 0.0402 5% | DP0 TXN1_ANX <22> |

Use common via

|            |           |   |   |               |              |
|------------|-----------|---|---|---------------|--------------|
| DP0 TXP0 R | 0.0402 5% | 2 | 1 | R1316 APUEDP@ | APU TXOUT2+  |
| DP0 TXN0 R | 0.0402 5% | 2 | 1 | R1320 APUEDP@ | APU TXOUT2-  |
| DP0 TXP1 R | 0.0402 5% | 2 | 1 | R1322 APUEDP@ | APU TXOUT1+  |
| DP0 TXN1 R | 0.0402 5% | 2 | 1 | R1416 APUEDP@ | APU TXOUT1-  |
| DP0 AUXP R | 0.0402 5% | 2 | 1 | R1535 APUEDP@ | APU LVDS_CLK |
| DP0 AUXN R | 0.0402 5% | 2 | 1 | R1536 APUEDP@ | APU LVDS_DAT |

|                     |           |   |   |            |                |
|---------------------|-----------|---|---|------------|----------------|
| <22> ANX_LVDS_CLK   | 0.0402 5% | 2 | 1 | R1294 ANX@ | APU LVDS_CLK   |
| <22> ANX_LVDS_DAT   | 0.0402 5% | 2 | 1 | R1295 ANX@ | APU LVDS_DAT   |
| <22> ANX_TXOUT2+    | 0.0402 5% | 2 | 1 | R1296 ANX@ | APU TXOUT2+    |
| <22> ANX_TXOUT2-    | 0.0402 5% | 2 | 1 | R1297 ANX@ | APU TXOUT2-    |
| <22> ANX_TXOUT1+    | 0.0402 5% | 2 | 1 | R1298 ANX@ | APU TXOUT1+    |
| <22> ANX_TXOUT1-    | 0.0402 5% | 2 | 1 | R1299 ANX@ | APU TXOUT1-    |
| <22> ANX_TXOUT0+    | 0.0402 5% | 2 | 1 | R1300 ANX@ | APU TXOUT0+    |
| <22> ANX_TXOUT0-    | 0.0402 5% | 2 | 1 | R1301 ANX@ | APU TXOUT0-    |
| <22> ANX_TXOUT_CLK+ | 0.0402 5% | 2 | 1 | R1302 ANX@ | APU TXOUT_CLK+ |
| <22> ANX_TXOUT_CLK- | 0.0402 5% | 2 | 1 | R1303 ANX@ | APU TXOUT_CLK- |
| <22> ANX_TZOUT0+    | 0.0402 5% | 2 | 1 | R1304 ANX@ | APU TZOUT0+    |
| <22> ANX_TZOUT0-    | 0.0402 5% | 2 | 1 | R1305 ANX@ | APU TZOUT0-    |
| <22> ANX_TZOUT1+    | 0.0402 5% | 2 | 1 | R1306 ANX@ | APU TZOUT1+    |
| <22> ANX_TZOUT1-    | 0.0402 5% | 2 | 1 | R1307 ANX@ | APU TZOUT1-    |
| <22> ANX_TZOUT2+    | 0.0402 5% | 2 | 1 | R1308 ANX@ | APU TZOUT2+    |
| <22> ANX_TZOUT2-    | 0.0402 5% | 2 | 1 | R1309 ANX@ | APU TZOUT2-    |
| <22> ANX_TZOUT_CLK+ | 0.0402 5% | 2 | 1 | R1310 ANX@ | APU TZOUT_CLK+ |
| <22> ANX_TZOUT_CLK- | 0.0402 5% | 2 | 1 | R1311 ANX@ | APU TZOUT_CLK- |

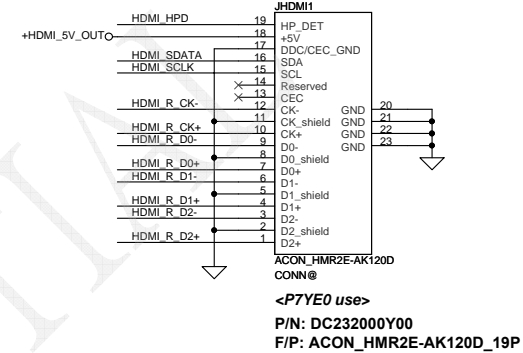
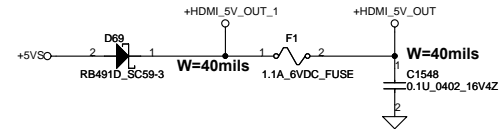
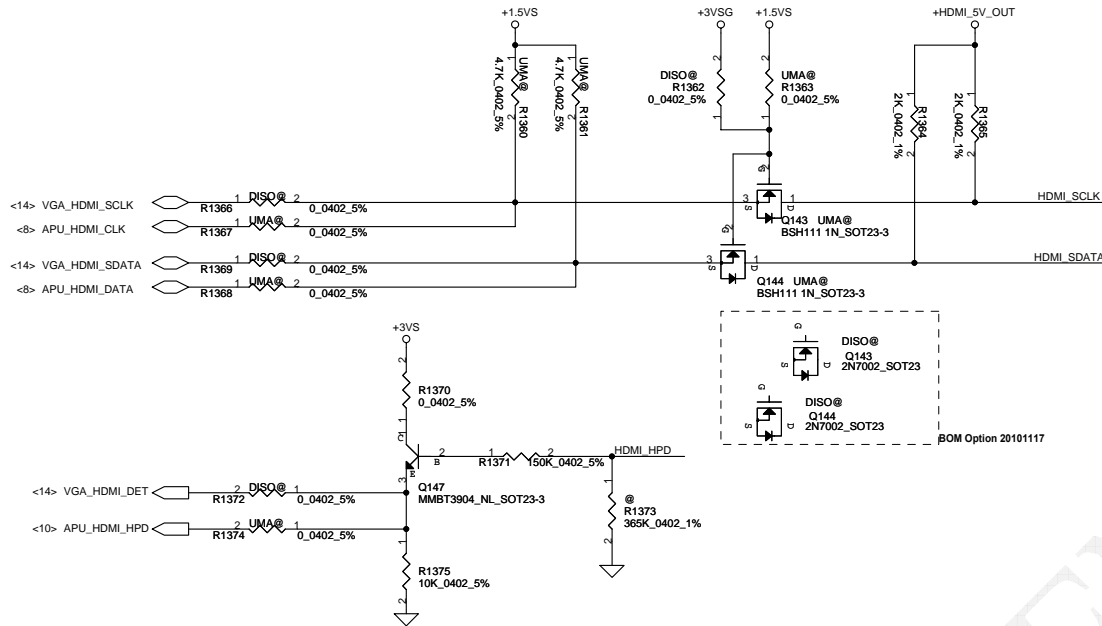
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|-----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Title           |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30         | Deciphered Date | 2012/01/01 | 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. |                    |                 |            | 4019BN          |
| Date: Thursday, February 24, 2011                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |            | Sheet 21 of 50  |



Place via on each trace bus and let resistor very close the via.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |            |                             |                    |          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|-----------------------------|--------------------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Compal Secret Data |                 |            | Compal Electronics, Inc.    |                    |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2010/12/30         | Deciphered Date | 2012/01/01 | Title                       | SCHEMATIC MB A6991 |          |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |                    |                 |            | Doc. Number                 | Rev                |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                 |            | 4019BN                      | A                  |          |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |            | Thursday, February 24, 2011 | Sheet              | 22 of 50 |





Place near C917~C924 and use common via

From VGA

|                     |             |             |               |
|---------------------|-------------|-------------|---------------|
| <14> VGA_HDMI_TXD2- | DISO@ R1378 | 2 0.0402_5% | HDMI C TX2- R |
| <14> VGA_HDMI_TXD2+ | DISO@ R1379 | 2 0.0402_5% | HDMI C TX2+ R |
| <14> VGA_HDMI_TXD1- | DISO@ R1380 | 2 0.0402_5% | HDMI C TX1- R |
| <14> VGA_HDMI_TXD1+ | DISO@ R1381 | 2 0.0402_5% | HDMI C TX1+ R |
| <14> VGA_HDMI_TXD0- | DISO@ R1382 | 2 0.0402_5% | HDMI C TX0- R |
| <14> VGA_HDMI_TXD0+ | DISO@ R1383 | 2 0.0402_5% | HDMI C TX0+ R |
| <14> VGA_HDMI_TXC-  | DISO@ R1384 | 2 0.0402_5% | HDMI C CLK- R |
| <14> VGA_HDMI_TXC+  | DISO@ R1385 | 2 0.0402_5% | HDMI C CLK+ R |
| <14> VGA_HDMI_TXC+  | DISO@ R1386 | 2 0.0402_5% | HDMI C CLK+ R |

From APU

|                      |            |             |               |
|----------------------|------------|-------------|---------------|
| <6> PCIE_FTX_GRX_N12 | UMA@ R1388 | 2 0.0402_5% | HDMI C TX2- R |
| <6> PCIE_FTX_GRX_P12 | UMA@ R1389 | 2 0.0402_5% | HDMI C TX2+ R |
| <6> PCIE_FTX_GRX_N13 | UMA@ R1390 | 2 0.0402_5% | HDMI C TX1- R |
| <6> PCIE_FTX_GRX_P13 | UMA@ R1391 | 2 0.0402_5% | HDMI C TX1+ R |
| <6> PCIE_FTX_GRX_N14 | UMA@ R1392 | 2 0.0402_5% | HDMI C TX0- R |
| <6> PCIE_FTX_GRX_P14 | UMA@ R1393 | 2 0.0402_5% | HDMI C TX0+ R |
| <6> PCIE_FTX_GRX_N15 | UMA@ R1394 | 2 0.0402_5% | HDMI C CLK- R |
| <6> PCIE_FTX_GRX_P15 | UMA@ R1395 | 2 0.0402_5% | HDMI C CLK+ R |
| <6> PCIE_FTX_GRX_P16 | UMA@ R1396 | 2 0.0402_5% | HDMI C CLK+ R |

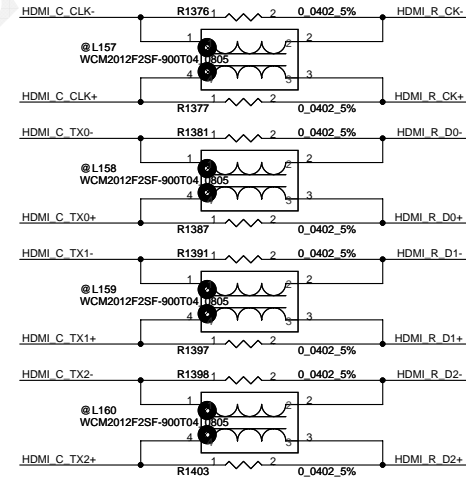
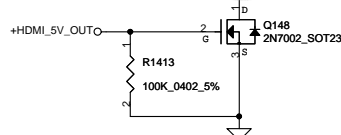
Near the connector

|               |         |                   |               |         |                    |
|---------------|---------|-------------------|---------------|---------|--------------------|
| HDMI C TX2- R | C1549 2 | 1 0.1U_0402_16V7K | HDMI C TX2- R | R1399 1 | 2 DISO@499_0402_1% |
| HDMI C TX2+ R | C1550 2 | 1 0.1U_0402_16V7K | HDMI C TX2+ R | R1400 1 | 2 DISO@499_0402_1% |
| HDMI C TX1- R | C1551 2 | 1 0.1U_0402_16V7K | HDMI C TX1- R | R1401 1 | 2 DISO@499_0402_1% |
| HDMI C TX1+ R | C1552 2 | 1 0.1U_0402_16V7K | HDMI C TX1+ R | R1402 1 | 2 DISO@499_0402_1% |
| HDMI C TX0- R | C1553 2 | 1 0.1U_0402_16V7K | HDMI C TX0- R | R1404 1 | 2 DISO@499_0402_1% |
| HDMI C TX0+ R | C1554 2 | 1 0.1U_0402_16V7K | HDMI C TX0+ R | R1405 1 | 2 DISO@499_0402_1% |
| HDMI C CLK- R | C1555 2 | 1 0.1U_0402_16V7K | HDMI C CLK- R | R1406 1 | 2 DISO@499_0402_1% |
| HDMI C CLK+ R | C1556 2 | 1 0.1U_0402_16V7K | HDMI C CLK+ R | R1408 1 | 2 DISO@499_0402_1% |

UMA use 604 ohm  
VGA use 499 ohm

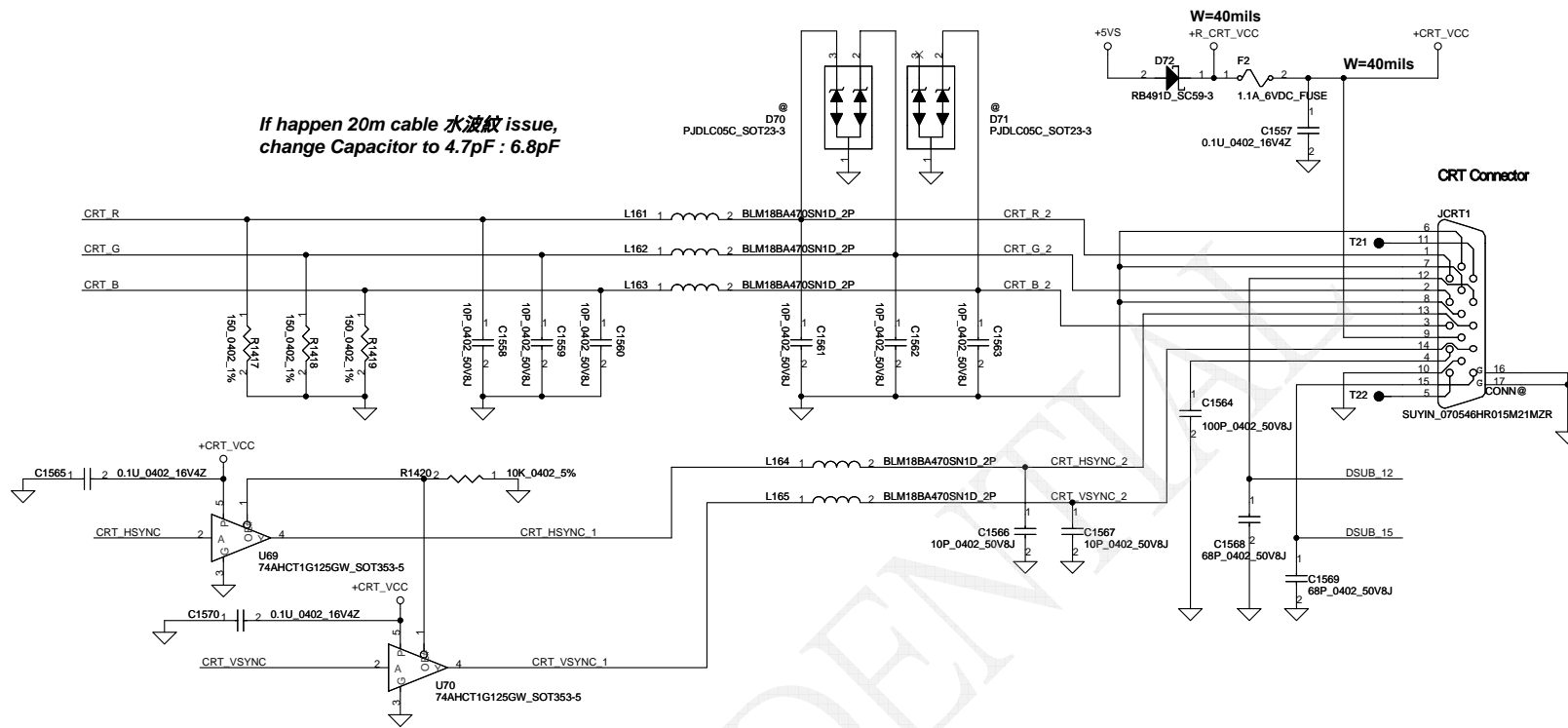
For UMA HDMI  
termination BOM option

|         |                   |
|---------|-------------------|
| R1399 2 | UMA@1 604_0402_1% |
| R1400 2 | UMA@1 604_0402_1% |
| R1401 2 | UMA@1 604_0402_1% |
| R1402 2 | UMA@1 604_0402_1% |
| R1404 2 | UMA@1 604_0402_1% |
| R1405 2 | UMA@1 604_0402_1% |
| R1406 2 | UMA@1 604_0402_1% |
| R1408 2 | UMA@1 604_0402_1% |



| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2012/01/01 | Title                    | SCHEMATIC MB A6991          |
| 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                      | A                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Document Number          | 4019BN                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 24 of 50                    |





Use common via

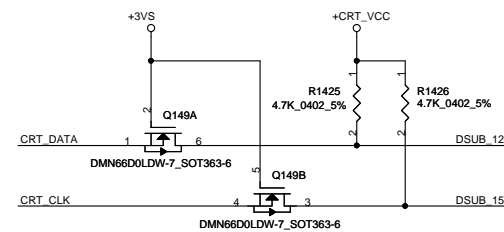
|                      |                 |       |     |   |           |           |
|----------------------|-----------------|-------|-----|---|-----------|-----------|
| <28> FCH_CRT_R       | FCH_CRT_R       | R1421 | UMA | 1 | 0.0402 5% | CRT_R     |
| <28> FCH_CRT_G       | FCH_CRT_G       | R1422 | UMA | 1 | 0.0402 5% | CRT_G     |
| <28> FCH_CRT_B       | FCH_CRT_B       | R1423 | UMA | 1 | 0.0402 5% | CRT_B     |
| <28> FCH_CRT_HSYNC   | FCH_CRT_HSYNC   | R1424 | UMA | 1 | 0.0402 5% | CRT_HSYNC |
| <28> FCH_CRT_VSYNC   | FCH_CRT_VSYNC   | R1427 | UMA | 1 | 0.0402 5% | CRT_VSYNC |
| <28> FCH_CRT_DDC_SDA | FCH_CRT_DDC_SDA | R1428 | UMA | 1 | 0.0402 5% | CRT_DATA  |
| <28> FCH_CRT_DDC_SCL | FCH_CRT_DDC_SCL | R1429 | UMA | 1 | 0.0402 5% | CRT_CLK   |

From FCH

|                    |               |       |      |   |           |           |
|--------------------|---------------|-------|------|---|-----------|-----------|
| <14> VGA_CRT_R     | VGA_CRT_R     | R1430 | DISO | 1 | 0.0402 5% | CRT_R     |
| <14> VGA_CRT_G     | VGA_CRT_G     | R1431 | DISO | 1 | 0.0402 5% | CRT_G     |
| <14> VGA_CRT_B     | VGA_CRT_B     | R1432 | DISO | 1 | 0.0402 5% | CRT_B     |
| <14> VGA_CRT_HSYNC | VGA_CRT_HSYNC | R1433 | DISO | 1 | 0.0402 5% | CRT_HSYNC |
| <14> VGA_CRT_VSYNC | VGA_CRT_VSYNC | R1434 | DISO | 1 | 0.0402 5% | CRT_VSYNC |
| <14> VGA_CRT_DATA  | VGA_CRT_DATA  | R1435 | DISO | 1 | 0.0402 5% | CRT_DATA  |
| <14> VGA_CRT_CLK   | VGA_CRT_CLK   | R1436 | DISO | 1 | 0.0402 5% | CRT_CLK   |

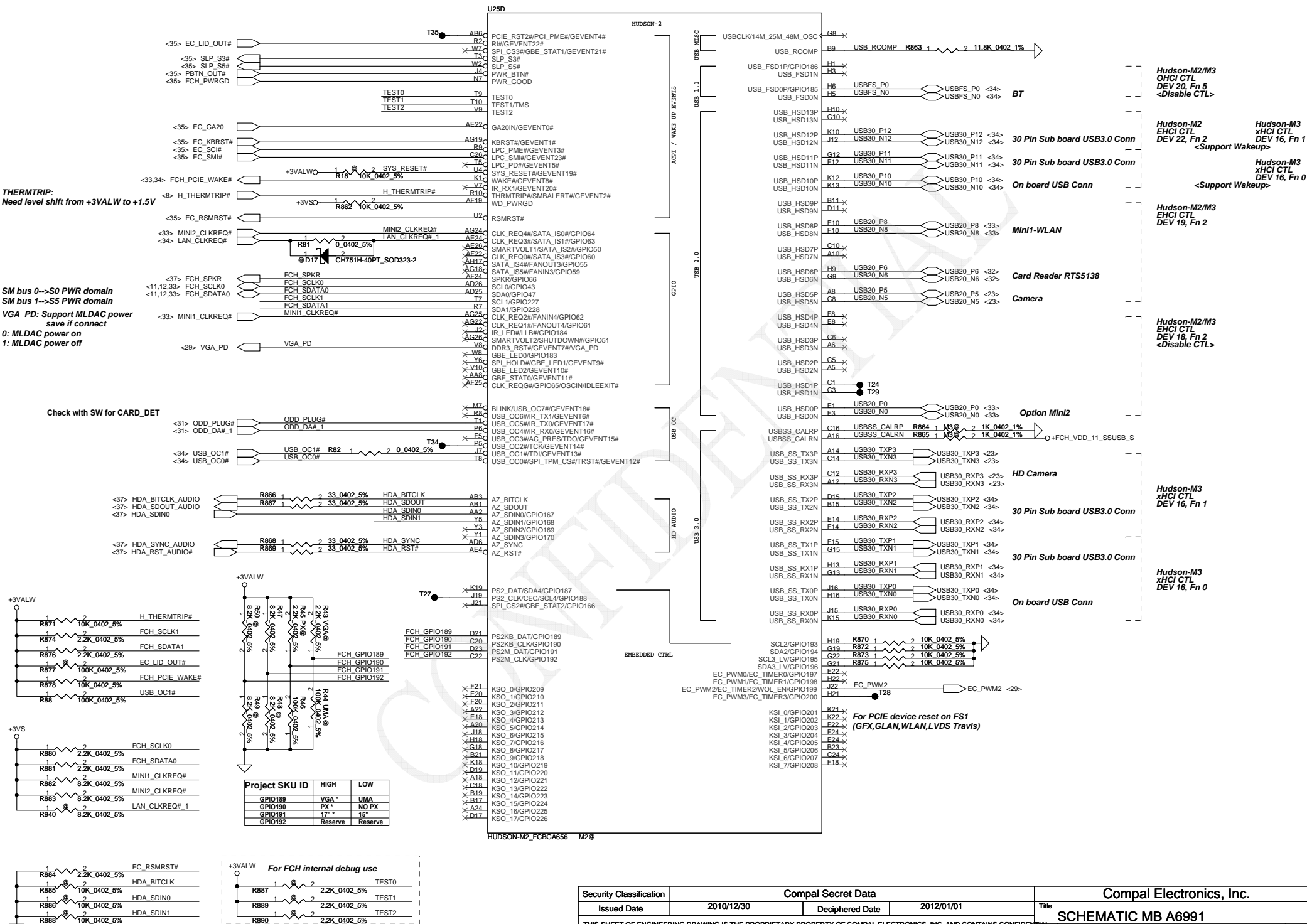
From VGA

Close to Conn side

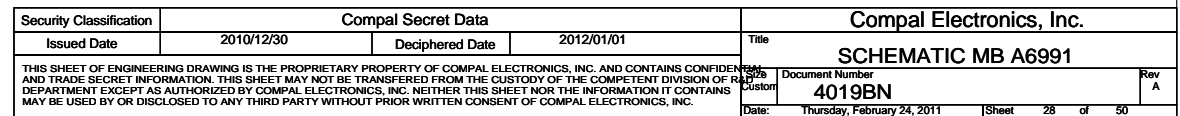


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2012/01/01 | Title                    | SCHEMATIC MB A6991          |
| 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          | 4019BN                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 25 of 50                    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                    |            |                          |                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2010/12/30 | Deciphered Date    | 2012/01/01 | Title                    | SCHEMATIC MB A6991          |
| <p>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&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.</p> |            |                    |            | Doc No                   | 4019B                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                    |            | Customer                 |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                    |            | Date                     | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                    |            | Sheet                    | 26 of 50                    |

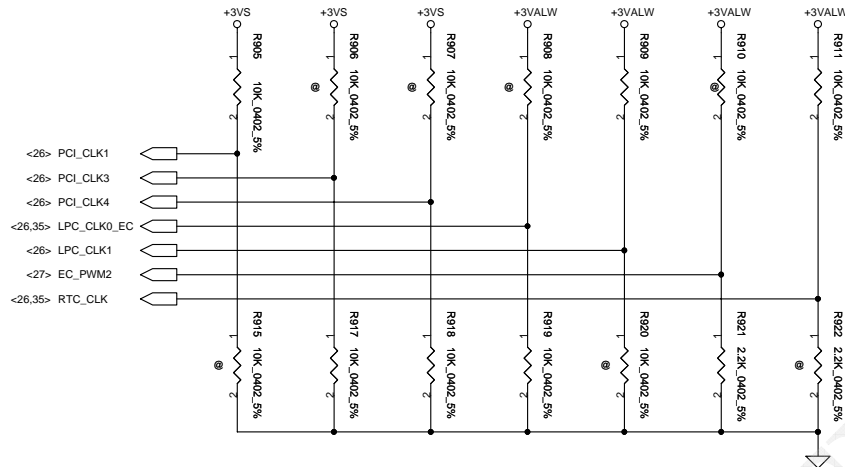


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|--------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2012/01/01 | Title                    | SCHEMATIC MB A6991 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |            |                    |            | Document Number          | Rev A              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 4019BN                   |                    |
| Thursday, February 24, 2011                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | Sheet 27 of 50     |            |                          |                    |



## STRAP PINS

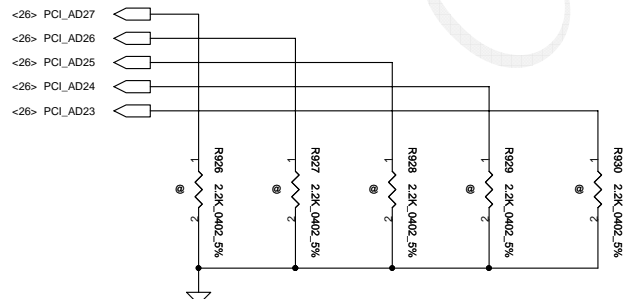
|           | PCI_CLK1                      | PCI_CLK3                            | PCI_CLK4                           | LPC_CLK0                  | LPC_CLK1                     | EC_PWM2            | RTC_CLK                                |
|-----------|-------------------------------|-------------------------------------|------------------------------------|---------------------------|------------------------------|--------------------|----------------------------------------|
| PULL HIGH | ALLOW<br>PCIE GEN2<br>DEFAULT | USE<br>DEBUG<br>STRAPS              | NON_FUSION<br>CLOCK MODE           | EC<br>ENABLED             | CLKGEN<br>ENABLED<br>DEFAULT | LPC ROM            | S5 PLUS<br>MODE<br>DISABLED<br>DEFAULT |
| PULL LOW  | FORCE<br>PCIE GEN1            | IGNORE<br>DEBUG<br>STRAP<br>DEFAULT | FUSION<br>CLOCK<br>MODE<br>DEFAULT | EC<br>DISABLED<br>DEFAULT | CLKGEN<br>DISABLE            | SPI ROM<br>DEFAULT | S5 PLUS<br>MODE<br>ENABLED             |



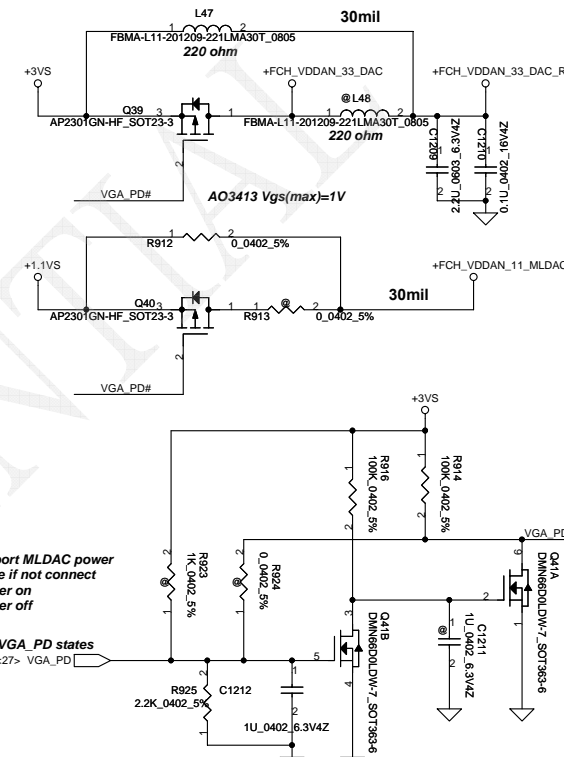
## DEBUG STRAPS

FCH HAS 15K INTERNAL PU FOR PCI\_AD[27:23]

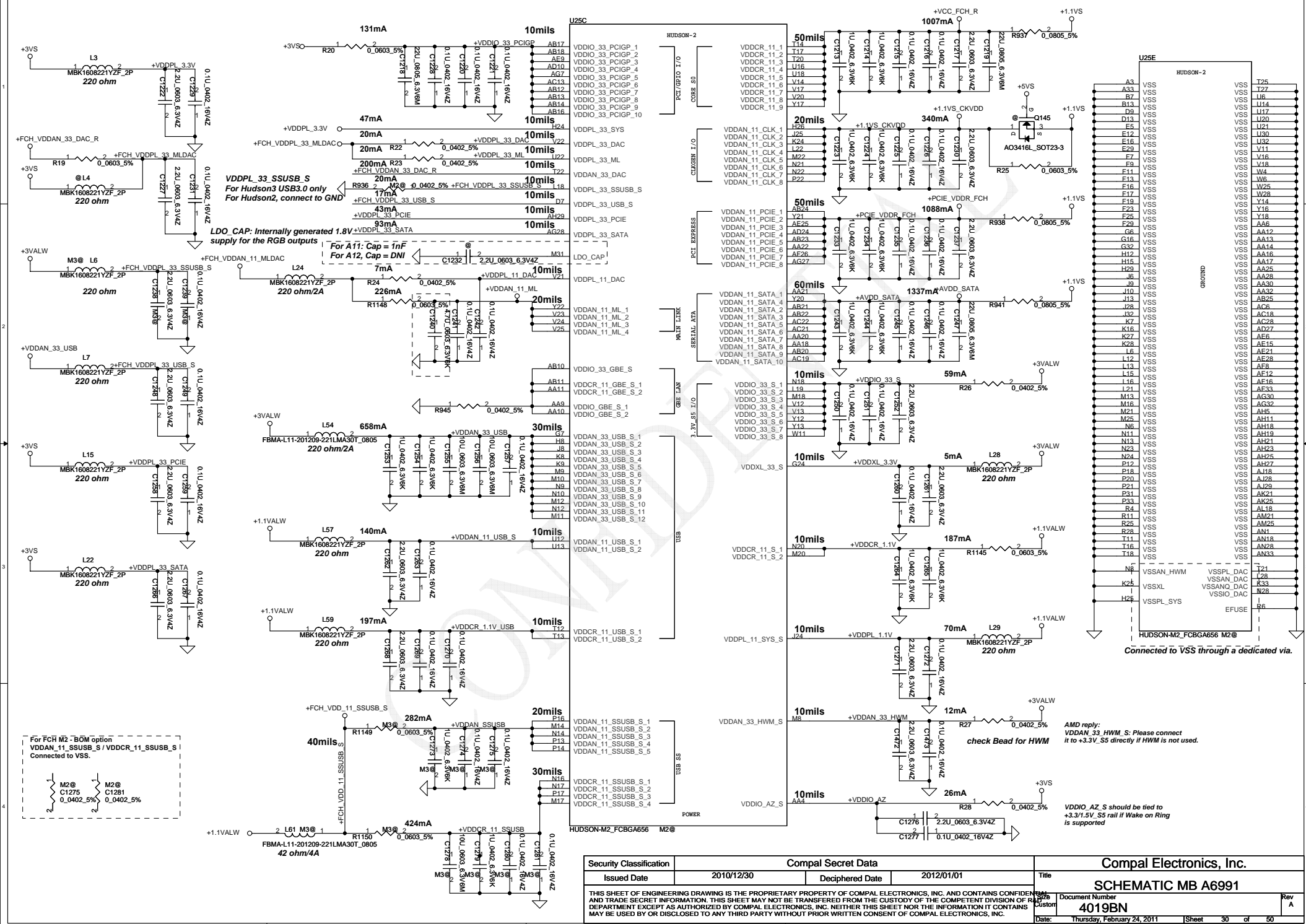
| PCI_AD26  | PCI_AD27                  |                                      | PCI_AD25                 | PCI_AD24                              | PCI_AD23                           |
|-----------|---------------------------|--------------------------------------|--------------------------|---------------------------------------|------------------------------------|
| PULL HIGH | USE PCI<br>PLL<br>DEFAULT | DISABLE<br>ILA<br>AUTORUN<br>DEFAULT | USE FC<br>PLL<br>DEFAULT | USE DEFAULT<br>PCIE STRAPS<br>DEFAULT | DISABLE PCI<br>MEM BOOT<br>DEFAULT |
| PULL LOW  | BYPASS<br>PCI PLL         | ENABLE<br>ILA<br>AUTORUN             | BYPASS<br>FC PLL         | USE EEPROM<br>PCIE STRAPS             | ENABLE PCI<br>MEM BOOT             |



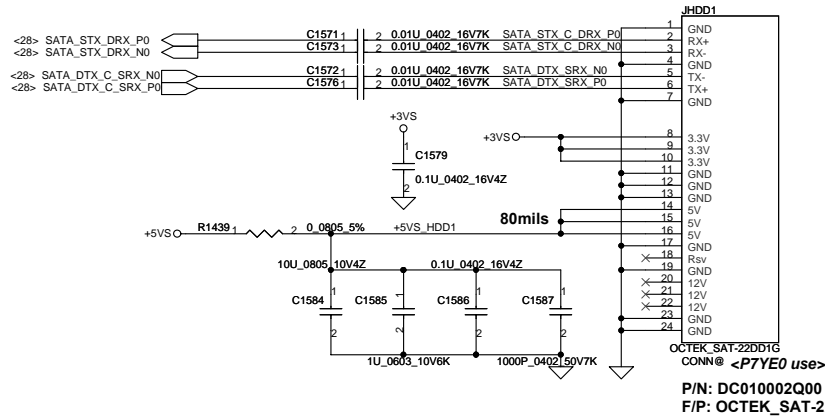
If support ML DAC power down when no VGA plug



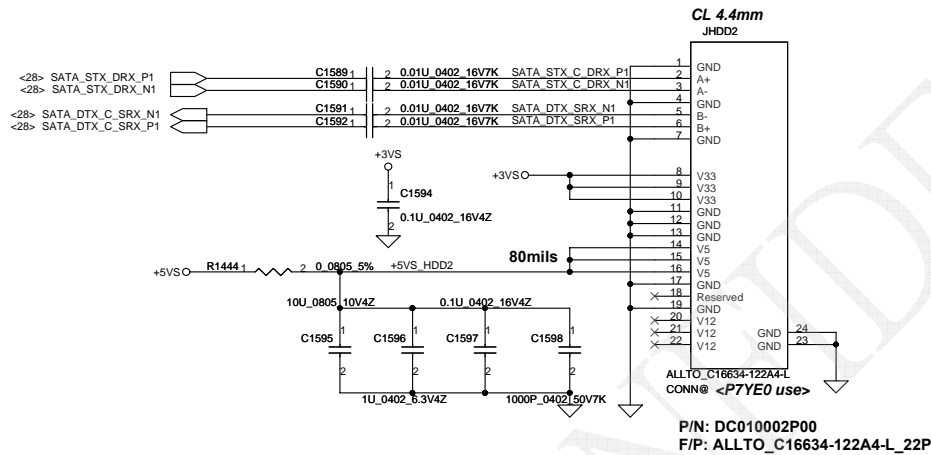
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                             |  |                |  |       |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|-----------------------------|--|----------------|--|-------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                             |  |                |  |       |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2010/12/30         |  | Deciphered Date |  | 2012/01/01               |  | 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. |  |                    |  |                 |  |                          |  | SCHEMATIC MB A6991          |  |                |  |       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Document Number             |  |                |  | Rev A |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | 4019BN                      |  |                |  |       |  |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                    |  |                 |  |                          |  | Thursday, February 24, 2011 |  | Sheet 29 of 50 |  |       |  |



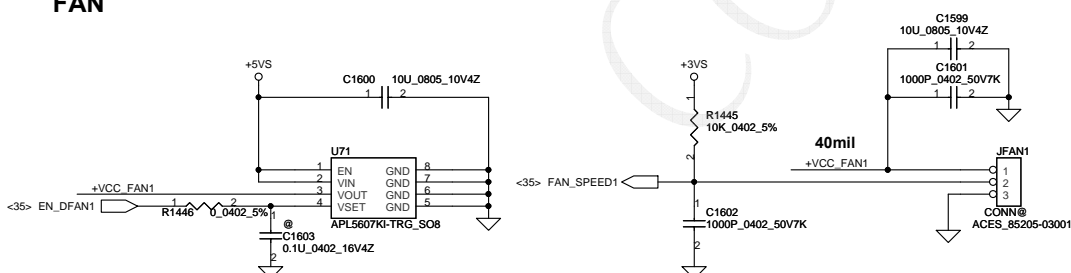
**SATA HDD1 Conn.**



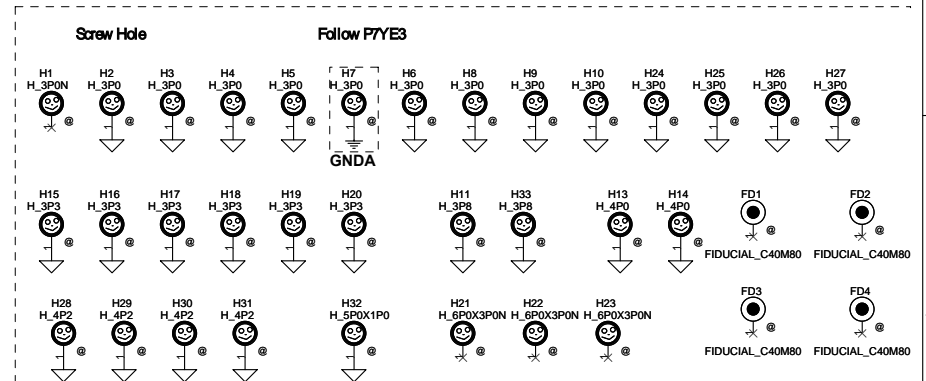
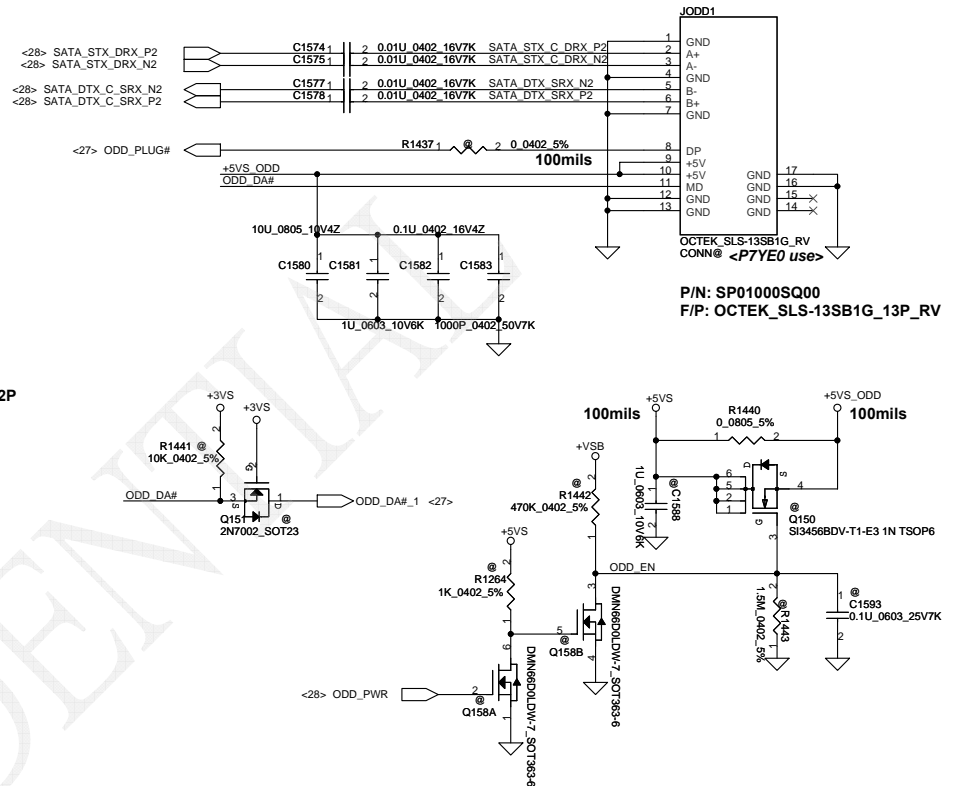
**SATA HDD2 Conn.**



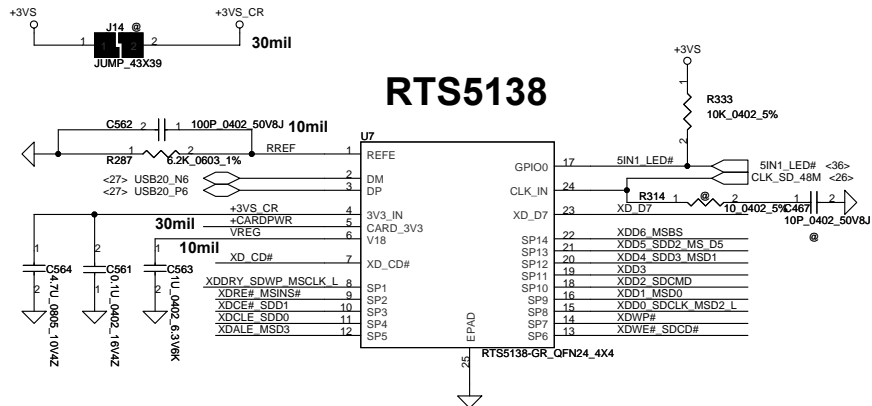
**FAN**



**SATA ODD Conn.**

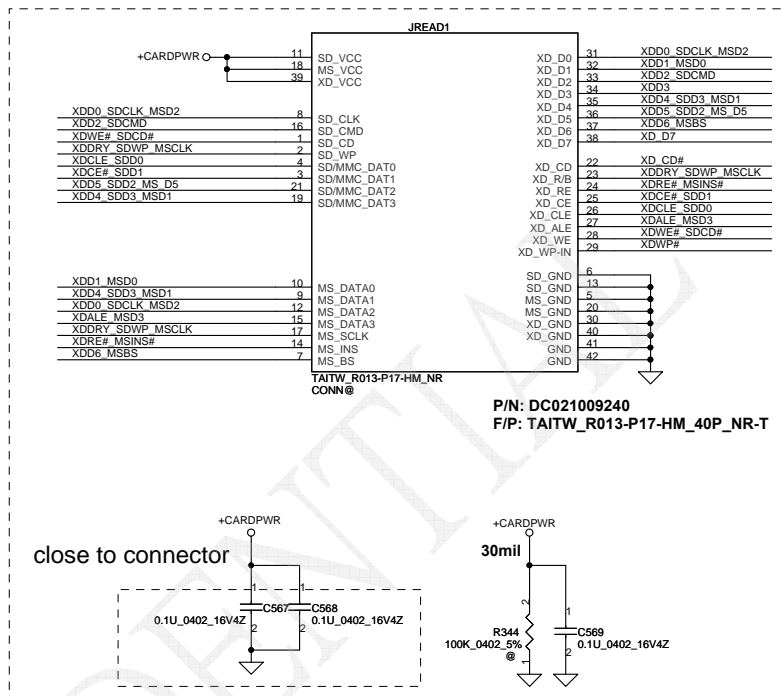
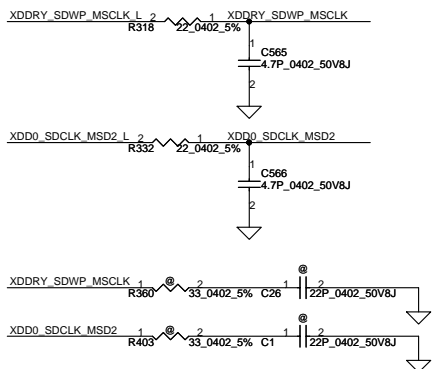


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             |                    |            |                          |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------|------------|--------------------------|--------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             | Compal Secret Data |            | Compal Electronics, Inc. |                    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30                  | Deciphered Date    | 2012/01/01 | Title                    | SCHEMATIC MB A6991 |
| 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 A              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             |                    |            | 4019BN                   |                    |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Thursday, February 24, 2011 |                    | Sheet      | 31                       | of 50              |



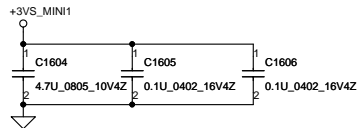
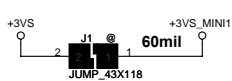
| SD           | MS     |
|--------------|--------|
| SP1 XD_RDY#  | SD_WP  |
| SP2 XD_RE#   | SD_CLK |
| SP3 XD_CLE   | SD_D0  |
| SP4 XD_CLE   | SD_D1  |
| SP5 XD_CLE   | SD_D2  |
| SP6 XD_CLE   | SD_D3  |
| SP7 XD_CLE   | SD_D4  |
| SP8 XD_CLE   | SD_D5  |
| SP9 XD_CLE   | SD_D6  |
| SP10 XD_CLE  | SD_D7  |
| SP11 XD_CLE  | SD_CMD |
| SP12 XD_CLE  | SD_D0  |
| SP13 XD_CLE  | SD_D1  |
| SP14 XD_CLE  | SD_D2  |
| SP15 XD_CLE  | SD_D3  |
| SP16 XD_CLE  | SD_D4  |
| SP17 XD_CLE  | SD_D5  |
| SP18 XD_CLE  | SD_D6  |
| SP19 XD_CLE  | SD_D7  |
| SP20 XD_CLE  | SD_CMD |
| SP21 XD_CLE  | SD_D0  |
| SP22 XD_CLE  | SD_D1  |
| SP23 XD_CLE  | SD_D2  |
| SP24 XD_CLE  | SD_D3  |
| SP25 XD_CLE  | SD_D4  |
| SP26 XD_CLE  | SD_D5  |
| SP27 XD_CLE  | SD_D6  |
| SP28 XD_CLE  | SD_D7  |
| SP29 XD_CLE  | SD_CMD |
| SP30 XD_CLE  | SD_D0  |
| SP31 XD_CLE  | SD_D1  |
| SP32 XD_CLE  | SD_D2  |
| SP33 XD_CLE  | SD_D3  |
| SP34 XD_CLE  | SD_D4  |
| SP35 XD_CLE  | SD_D5  |
| SP36 XD_CLE  | SD_D6  |
| SP37 XD_CLE  | SD_D7  |
| SP38 XD_CLE  | SD_CMD |
| SP39 XD_CLE  | SD_D0  |
| SP40 XD_CLE  | SD_D1  |
| SP41 XD_CLE  | SD_D2  |
| SP42 XD_CLE  | SD_D3  |
| SP43 XD_CLE  | SD_D4  |
| SP44 XD_CLE  | SD_D5  |
| SP45 XD_CLE  | SD_D6  |
| SP46 XD_CLE  | SD_D7  |
| SP47 XD_CLE  | SD_CMD |
| SP48 XD_CLE  | SD_D0  |
| SP49 XD_CLE  | SD_D1  |
| SP50 XD_CLE  | SD_D2  |
| SP51 XD_CLE  | SD_D3  |
| SP52 XD_CLE  | SD_D4  |
| SP53 XD_CLE  | SD_D5  |
| SP54 XD_CLE  | SD_D6  |
| SP55 XD_CLE  | SD_D7  |
| SP56 XD_CLE  | SD_CMD |
| SP57 XD_CLE  | SD_D0  |
| SP58 XD_CLE  | SD_D1  |
| SP59 XD_CLE  | SD_D2  |
| SP60 XD_CLE  | SD_D3  |
| SP61 XD_CLE  | SD_D4  |
| SP62 XD_CLE  | SD_D5  |
| SP63 XD_CLE  | SD_D6  |
| SP64 XD_CLE  | SD_D7  |
| SP65 XD_CLE  | SD_CMD |
| SP66 XD_CLE  | SD_D0  |
| SP67 XD_CLE  | SD_D1  |
| SP68 XD_CLE  | SD_D2  |
| SP69 XD_CLE  | SD_D3  |
| SP70 XD_CLE  | SD_D4  |
| SP71 XD_CLE  | SD_D5  |
| SP72 XD_CLE  | SD_D6  |
| SP73 XD_CLE  | SD_D7  |
| SP74 XD_CLE  | SD_CMD |
| SP75 XD_CLE  | SD_D0  |
| SP76 XD_CLE  | SD_D1  |
| SP77 XD_CLE  | SD_D2  |
| SP78 XD_CLE  | SD_D3  |
| SP79 XD_CLE  | SD_D4  |
| SP80 XD_CLE  | SD_D5  |
| SP81 XD_CLE  | SD_D6  |
| SP82 XD_CLE  | SD_D7  |
| SP83 XD_CLE  | SD_CMD |
| SP84 XD_CLE  | SD_D0  |
| SP85 XD_CLE  | SD_D1  |
| SP86 XD_CLE  | SD_D2  |
| SP87 XD_CLE  | SD_D3  |
| SP88 XD_CLE  | SD_D4  |
| SP89 XD_CLE  | SD_D5  |
| SP90 XD_CLE  | SD_D6  |
| SP91 XD_CLE  | SD_D7  |
| SP92 XD_CLE  | SD_CMD |
| SP93 XD_CLE  | SD_D0  |
| SP94 XD_CLE  | SD_D1  |
| SP95 XD_CLE  | SD_D2  |
| SP96 XD_CLE  | SD_D3  |
| SP97 XD_CLE  | SD_D4  |
| SP98 XD_CLE  | SD_D5  |
| SP99 XD_CLE  | SD_D6  |
| SP100 XD_CLE | SD_D7  |

Share Pin

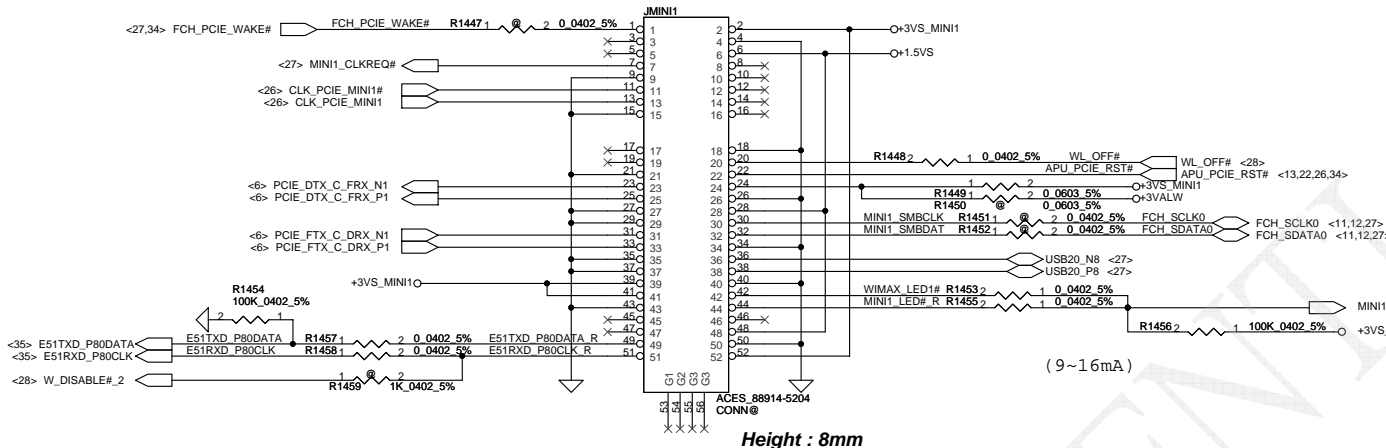




# Mini-Express Card for WLAN

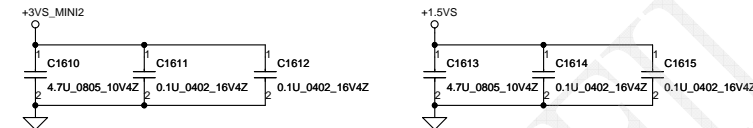
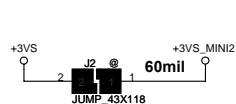


P/N: SP01000P700  
F/P: ACES\_88914-5204\_52P

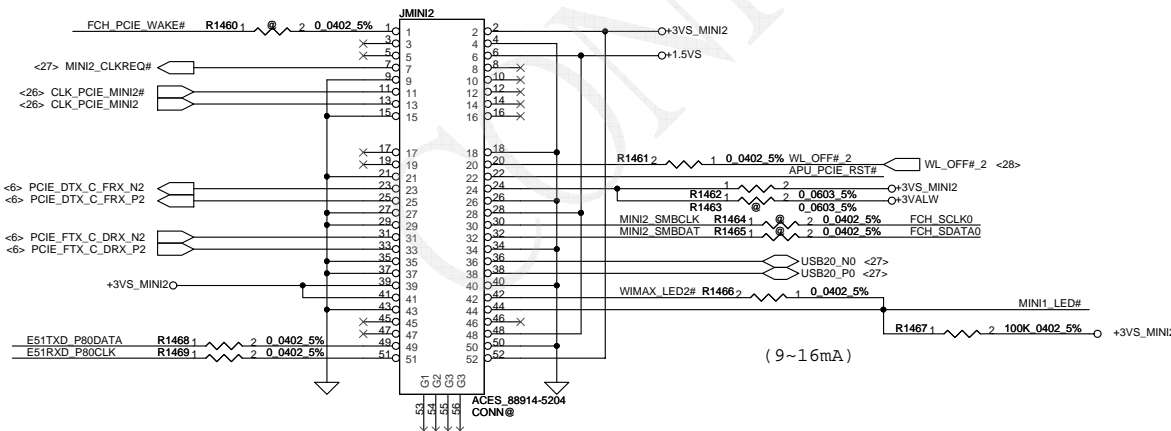


Height : 8mm

<P7WE0 use>



P/N: SP01000P700  
F/P: ACES\_88914-5204\_52P



Height : 8mm

<P7WE0 use>

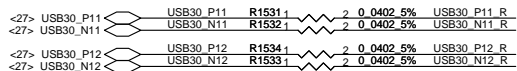
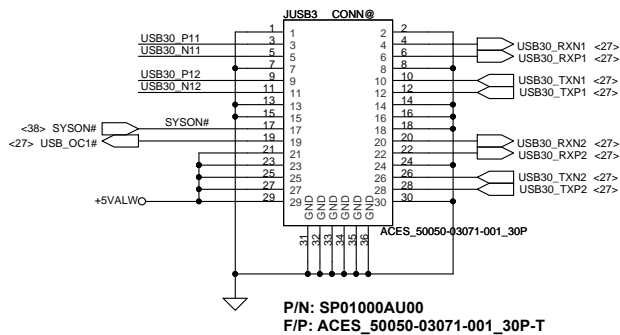
| Mini Card Power Rating |                    |        |                      |
|------------------------|--------------------|--------|----------------------|
| Power                  | Primary Power (mA) |        | Auxiliary Power (mA) |
|                        | Peak               | Normal | Normal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

Note:

1. FCH\_SCLK0 and FCH\_SDAT0 route as daisy chain.  
From FCH->JMINI2->DDR SOCKET->JMINI1
2. E51RXD\_P80CLK and E51TXD\_P80DATA route as daisy chain.  
From EC->JMINI2->JMINI1

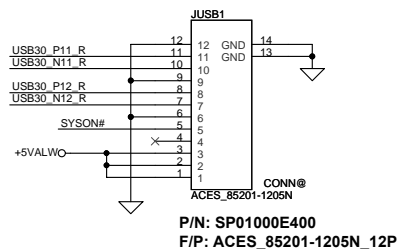
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2012/01/01 | Title                    | SCHEMATIC MB A6991          |
| 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          | 4019BN                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 33 of 50                    |

## 30 Pin USB/B Conn.

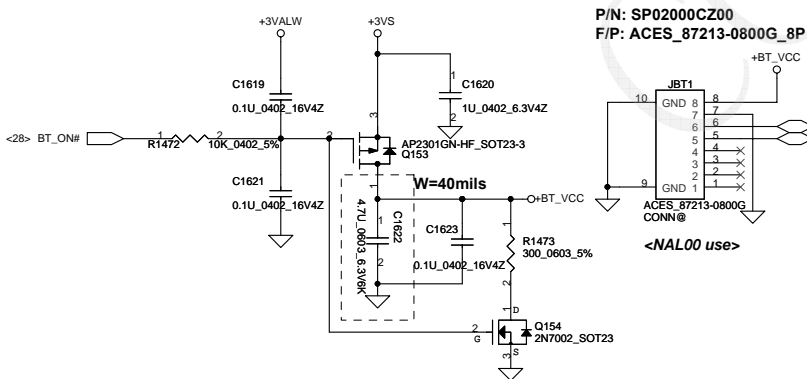


When use FPC, these four resistors not pop.

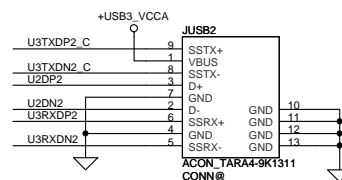
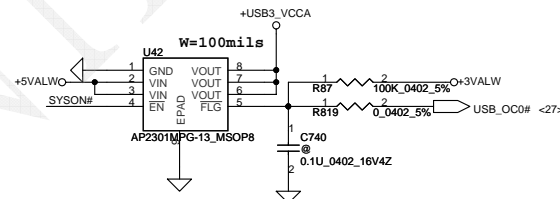
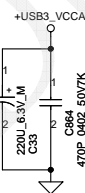
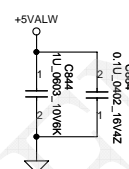
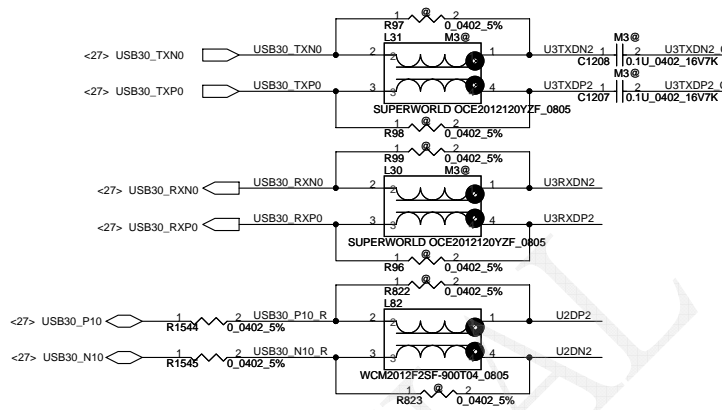
## 12 Pin USB/B Conn.



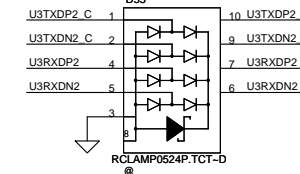
## Bluetooth Conn.



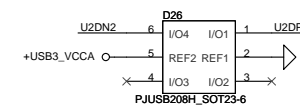
## On Board USB3.0 Conn.



### For USB3.0 ESD diode

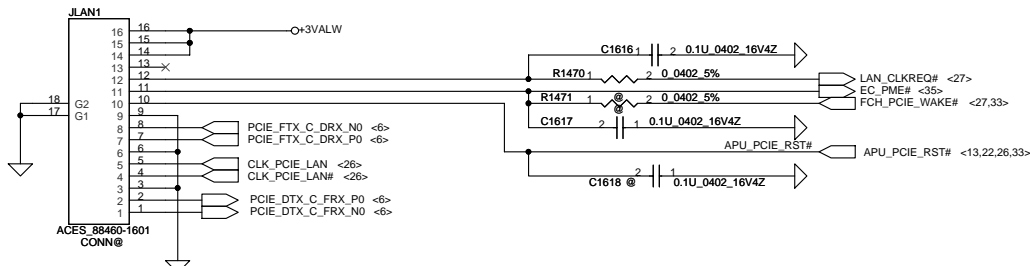


### For USB2.0 ESD diode



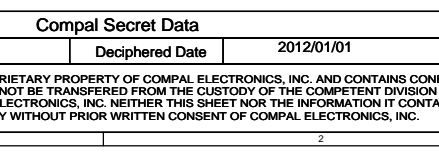
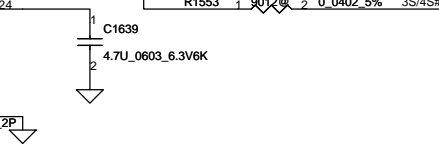
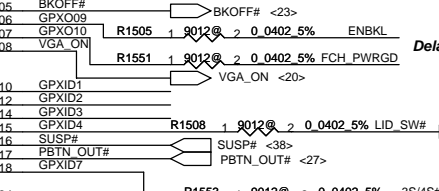
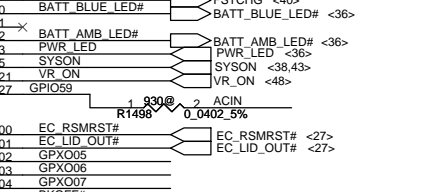
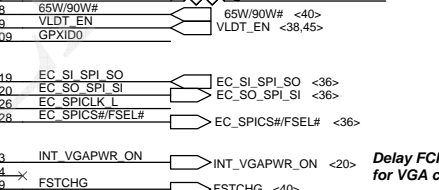
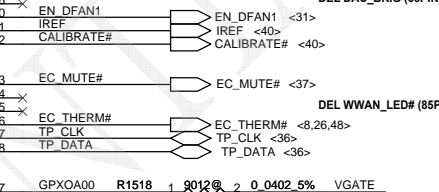
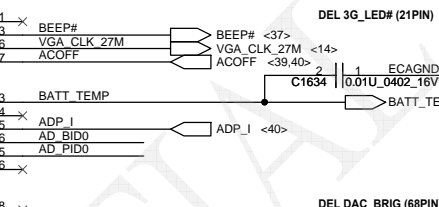
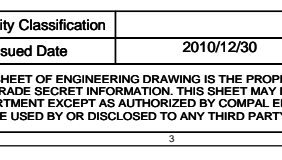
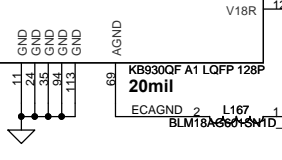
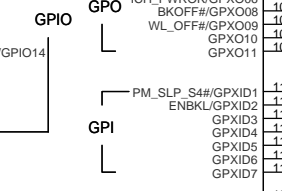
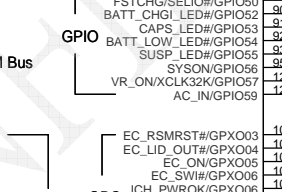
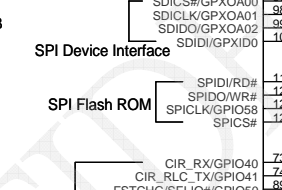
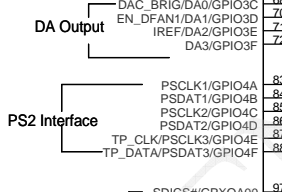
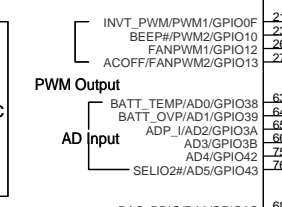
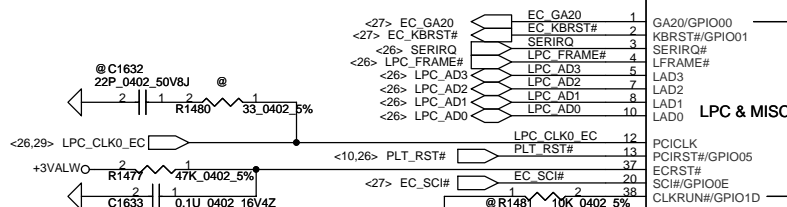
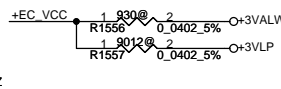
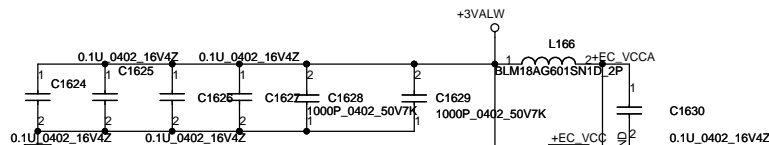
## LAN/B Conn.

P/N: DC020911300  
F/P: ACES\_88460-1601\_16P-T

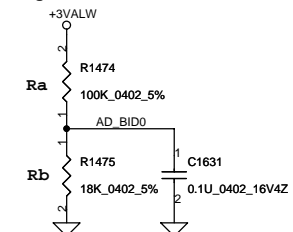


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|-----------------------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                             |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2010/12/30         |  | Deciphered Date |  | 2012/01/01               |  | Title                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | SCHEMATIC MB A6991          |  |
| 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                         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | 4019BN                   |  | A                           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Date:                    |  | Thursday, February 24, 2011 |  |

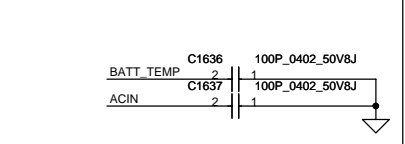
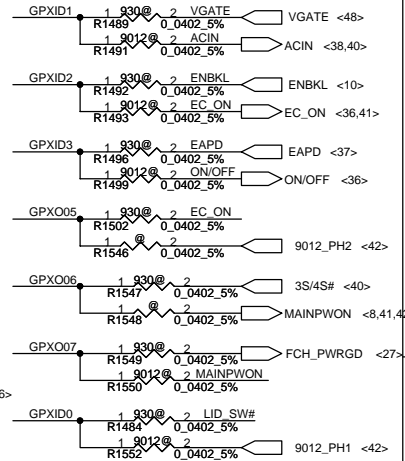
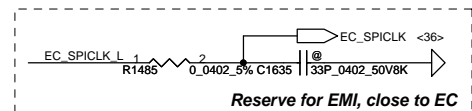
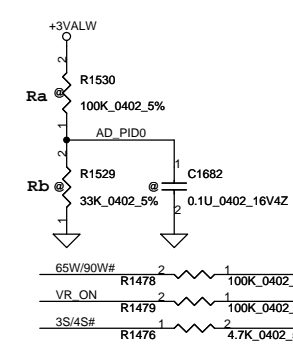
9012@ U72  
KBC9012  
Part Number = SA000040B00



### Analog Board ID definition

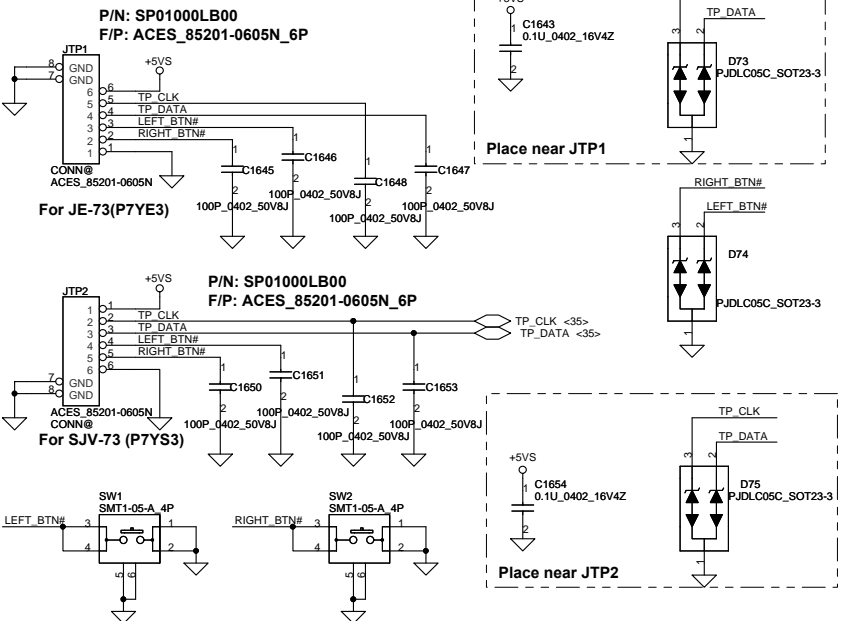


### Analog Project ID definition

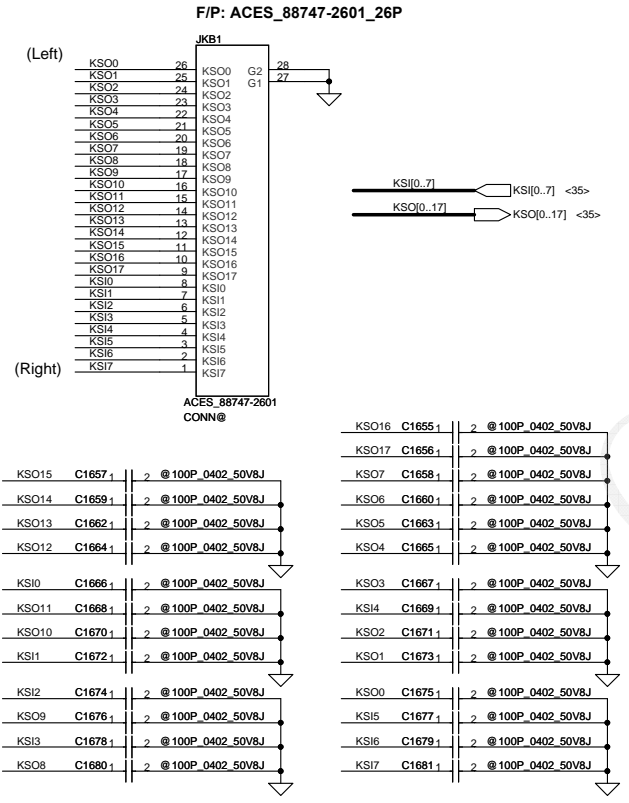


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title              |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------|--------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2012/01/01 | SCHEMATIC MB A6991 |        |
| 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 A              | 4019BN |
| Date: Thursday, February 24, 2011                                                                                                                                                                                                                                                                                                                                                                                                                             |            | Sheet 35 of 50     |            |                    |        |

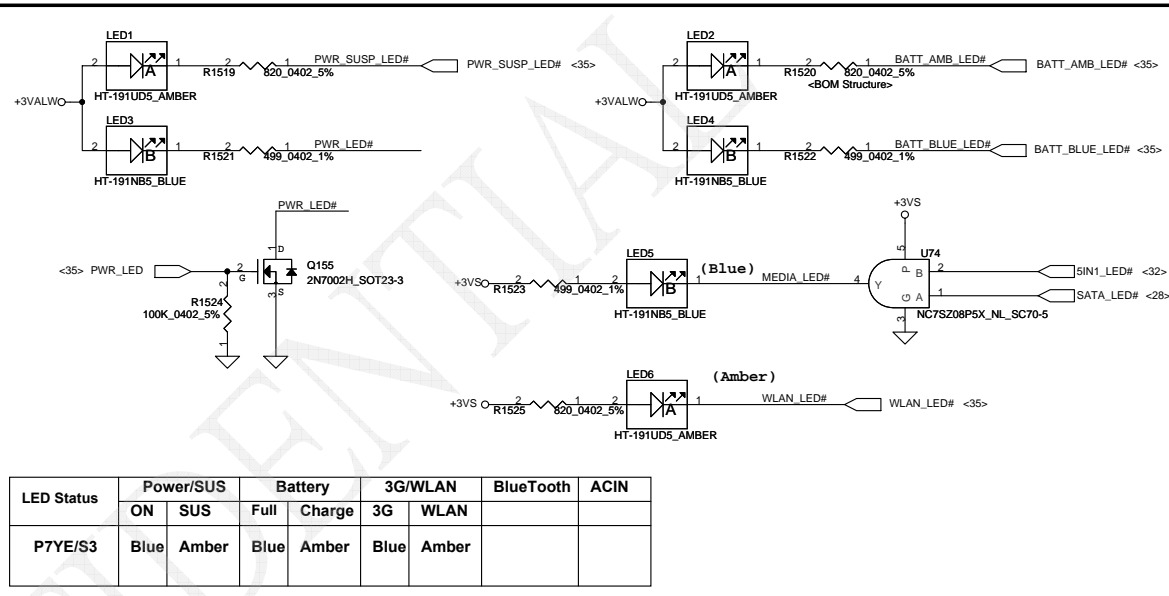
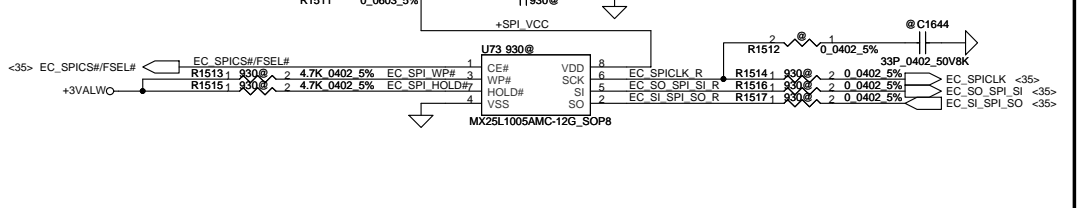
TP Conn.



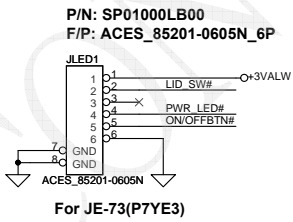
KB Conn.



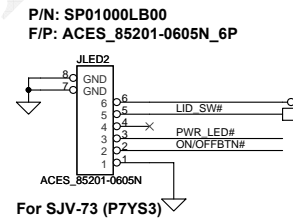
BIOS ROM



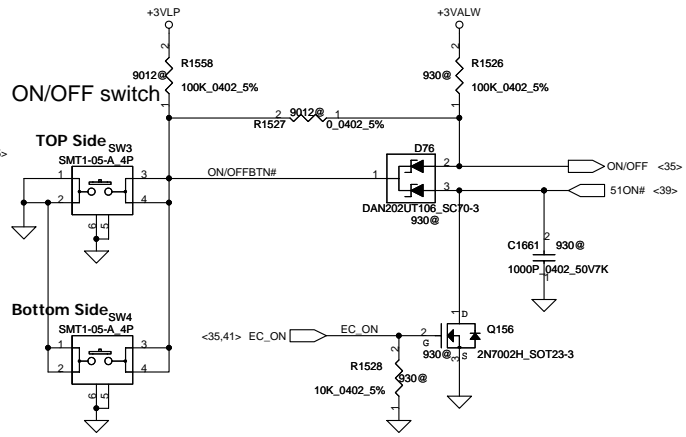
LS-6913P



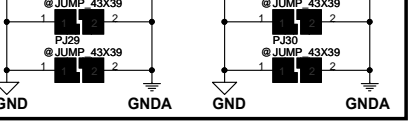
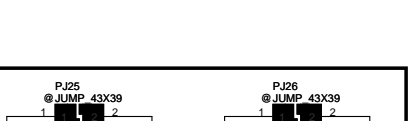
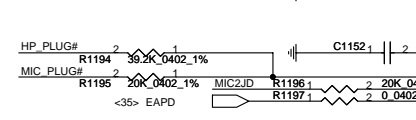
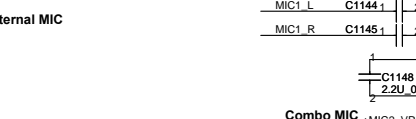
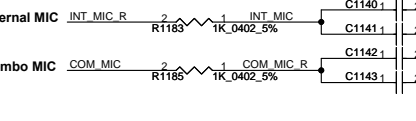
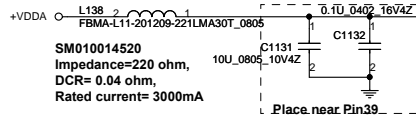
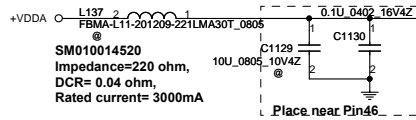
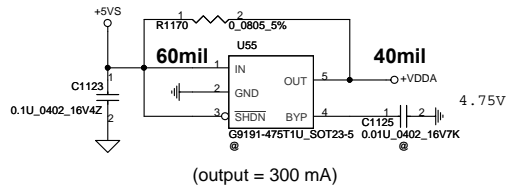
LS-6913P



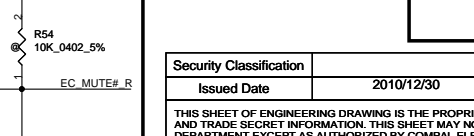
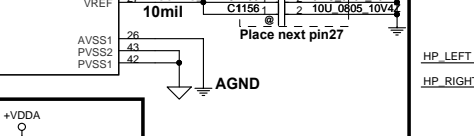
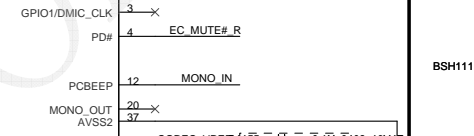
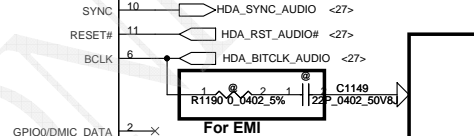
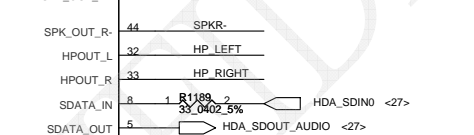
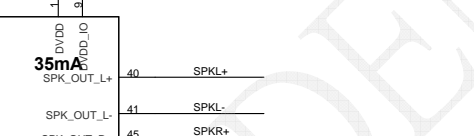
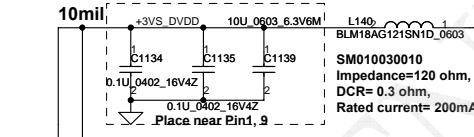
Power Button



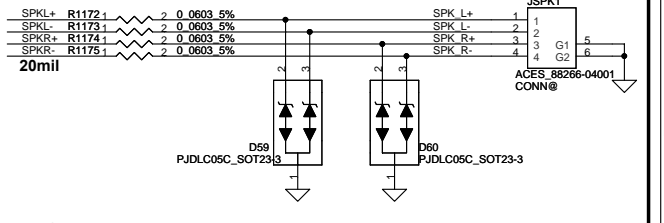
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |            |  |                          |                             |        |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--|--------------------------|-----------------------------|--------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                     | Compal Secret Data |                 |            |  | Compal Electronics, Inc. |                             |        |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2010/12/30         | Deciphered Date | 2012/01/01 |  | Title                    | SCHEMATIC MB A6991          |        |          |
| 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 RADEPARTMENT 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                      | Document Number             | 4019BN |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                 |            |  | Date                     | Thursday, February 24, 2011 | Sheet  | 36 of 50 |



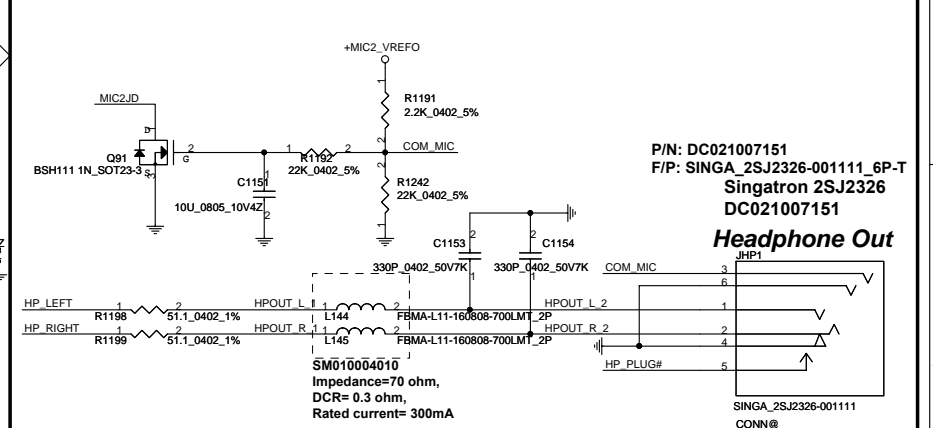
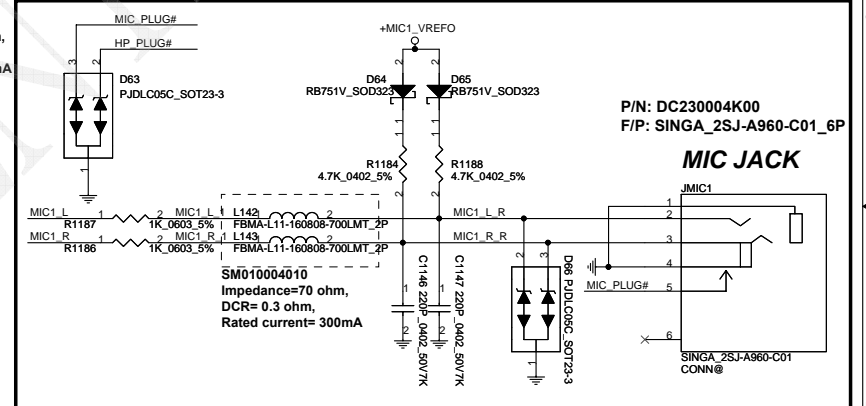
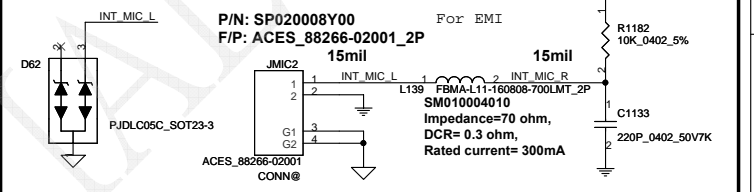
## HD Audio Codec



## Int. Speaker Conn.

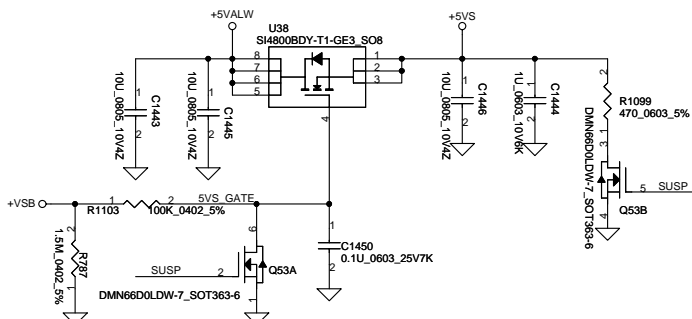


## Int. MIC Conn.

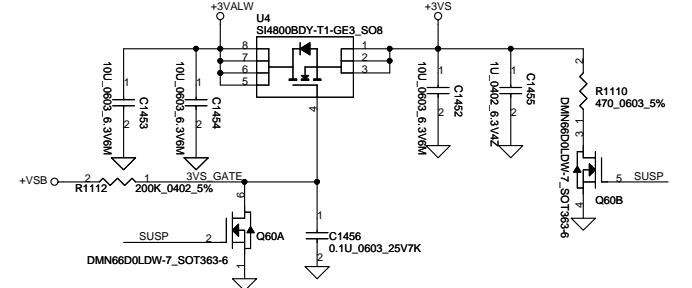


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title                    |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2010/08/04 | Compal Electronics, Inc. |       |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |            |                    |            | SCHEMATIC MB A6991       |       |
| Date: Thursday, February 24, 2011                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                    |            | Sheet 37 of 50           | Rev A |

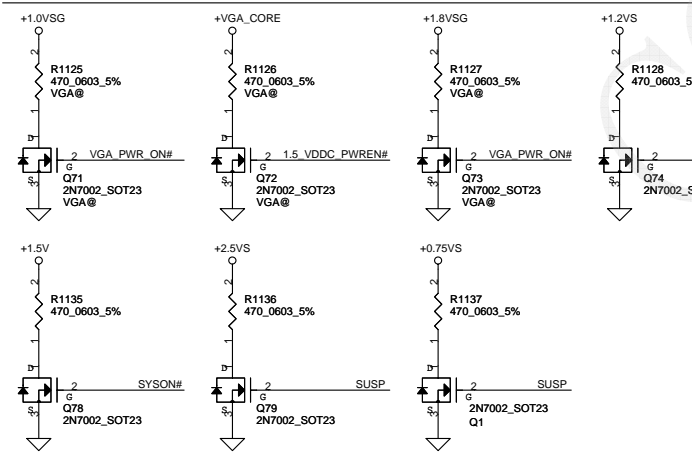
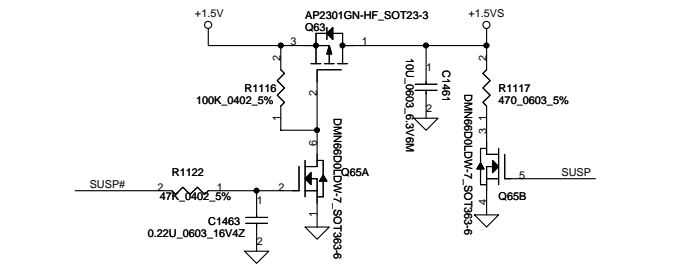
**+5VALW TO +5VS**



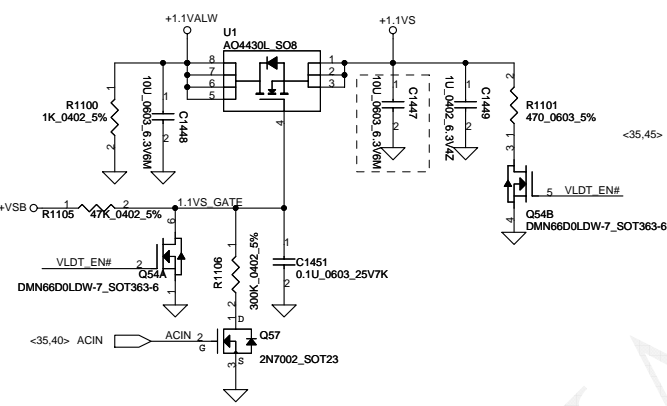
**+3VALW TO +3VS**



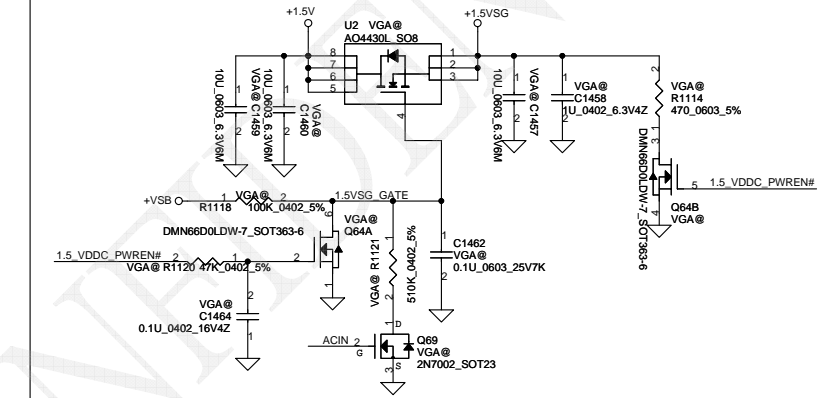
**+1.5V TO +1.5VS**



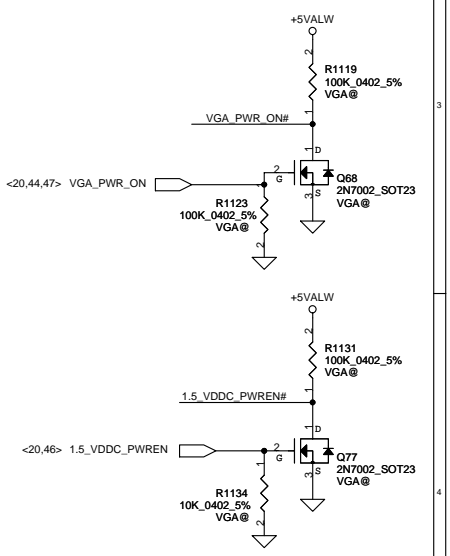
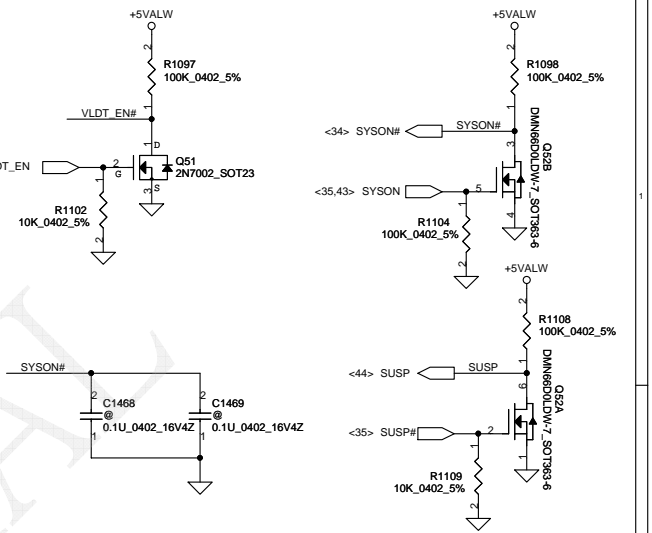
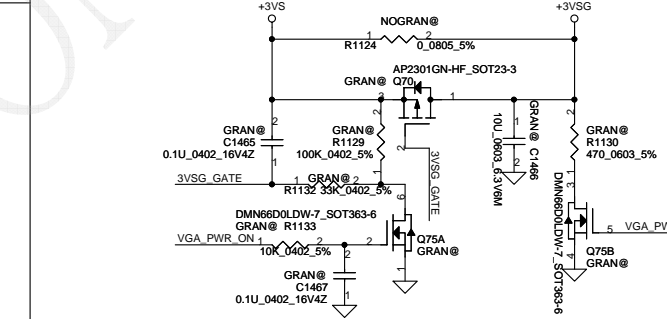
**+1.1VALW TO +1.1VS**



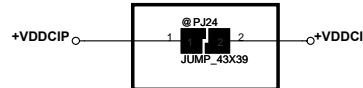
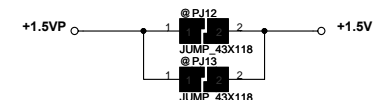
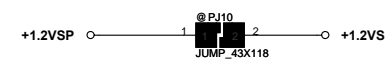
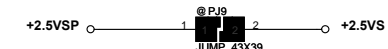
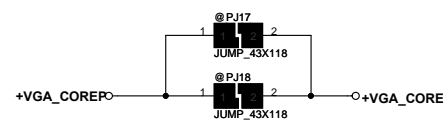
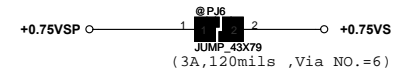
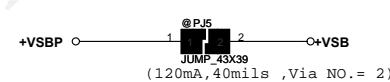
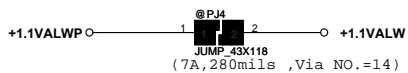
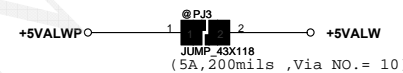
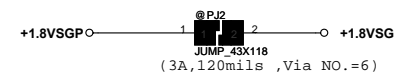
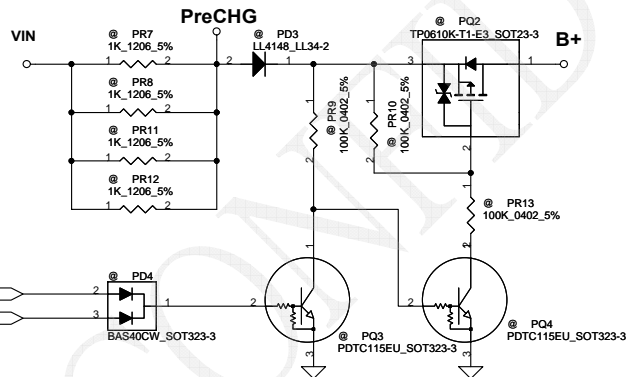
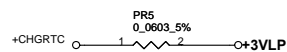
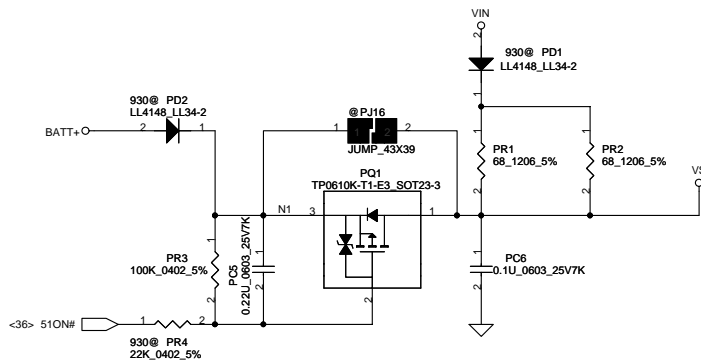
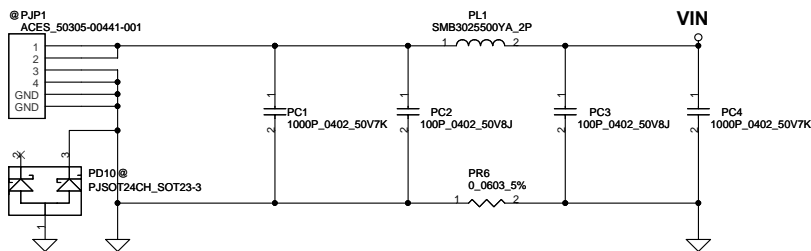
**VGA Power  
+1.5V to +1.5VSG**



**+3VS to +3VSG**



| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  | Compal Secret Data |  |  |  | Compal Electronics, Inc.    |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--------------------|--|--|--|-----------------------------|--|--|--|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  | 2010/12/30         |  |  |  | Deciphered Date             |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  | 2012/01/01         |  |  |  |                             |  |  |  |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |  |  |  | Title              |  |  |  | SCHEMATIC MB A6991          |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  | Rev                |  |  |  | A                           |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  | Date               |  |  |  | Thursday, February 24, 2011 |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  | Sheet              |  |  |  | 38 of 50                    |  |  |  |



When use Granville, short PJ24

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                                   |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|-----------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Title                             |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2011/07/13 | Compal Electronics, Inc.          |                |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |            |                    |            | Document Number                   | Rev            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 4019BN                            | A              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date: Thursday, February 24, 2011 | Sheet 39 of 50 |

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

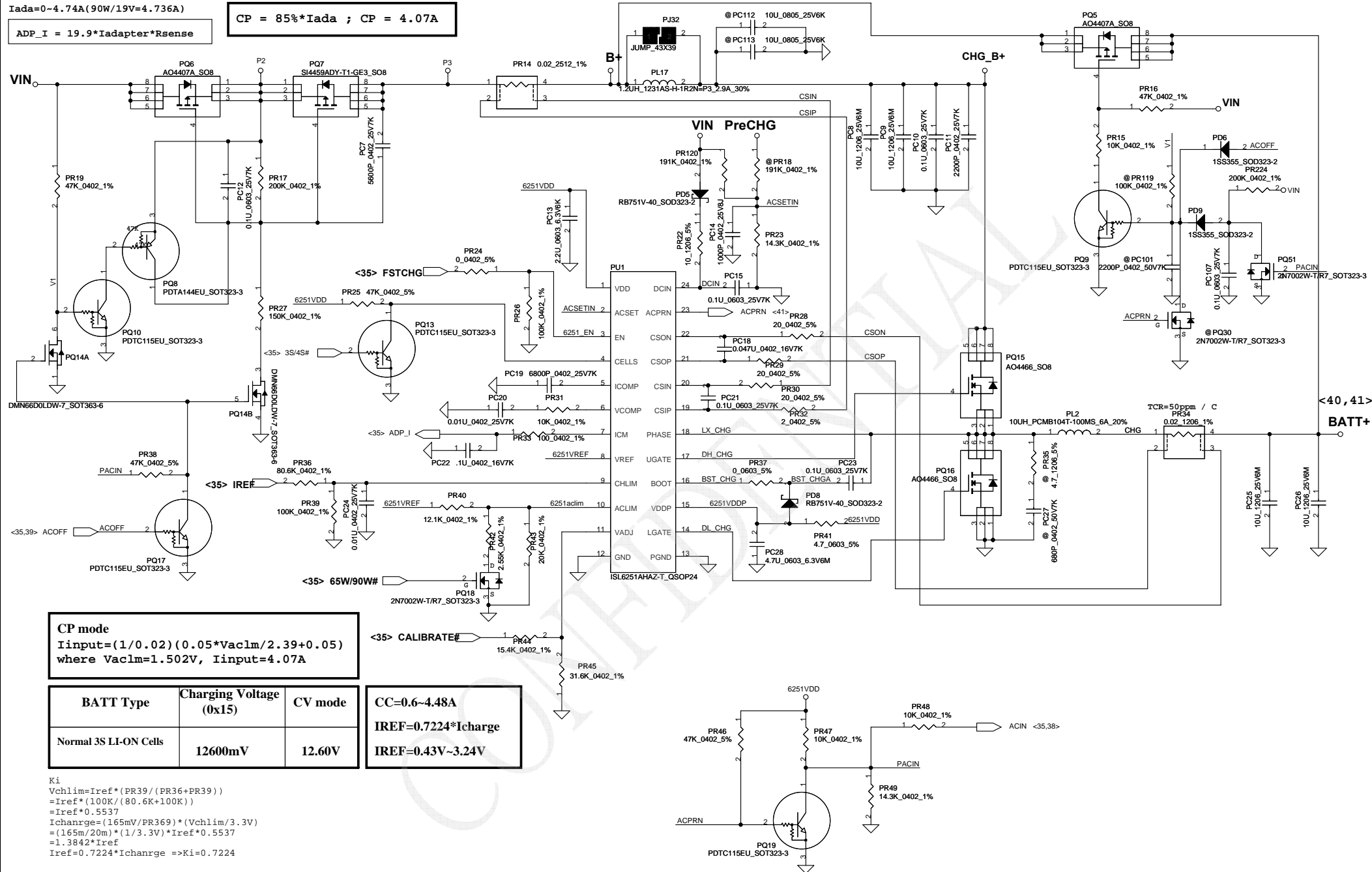
**CP mode**  
 $I_{input} = (1/0.02)(0.05 \cdot V_{aclm}/2.39 + 0.05)$   
 where  $V_{aclm} = 1.502V$ ,  $I_{input} = 4.07A$

| BATT Type             | Charging Voltage<br>(0x15) | CV mode |
|-----------------------|----------------------------|---------|
| Normal 3S LI-ON Cells | 12600mV                    | 12.60V  |

CC=0.6~4.48A  
IREF=0.7224\*Icharge  
IREF=0.43V~3.24V

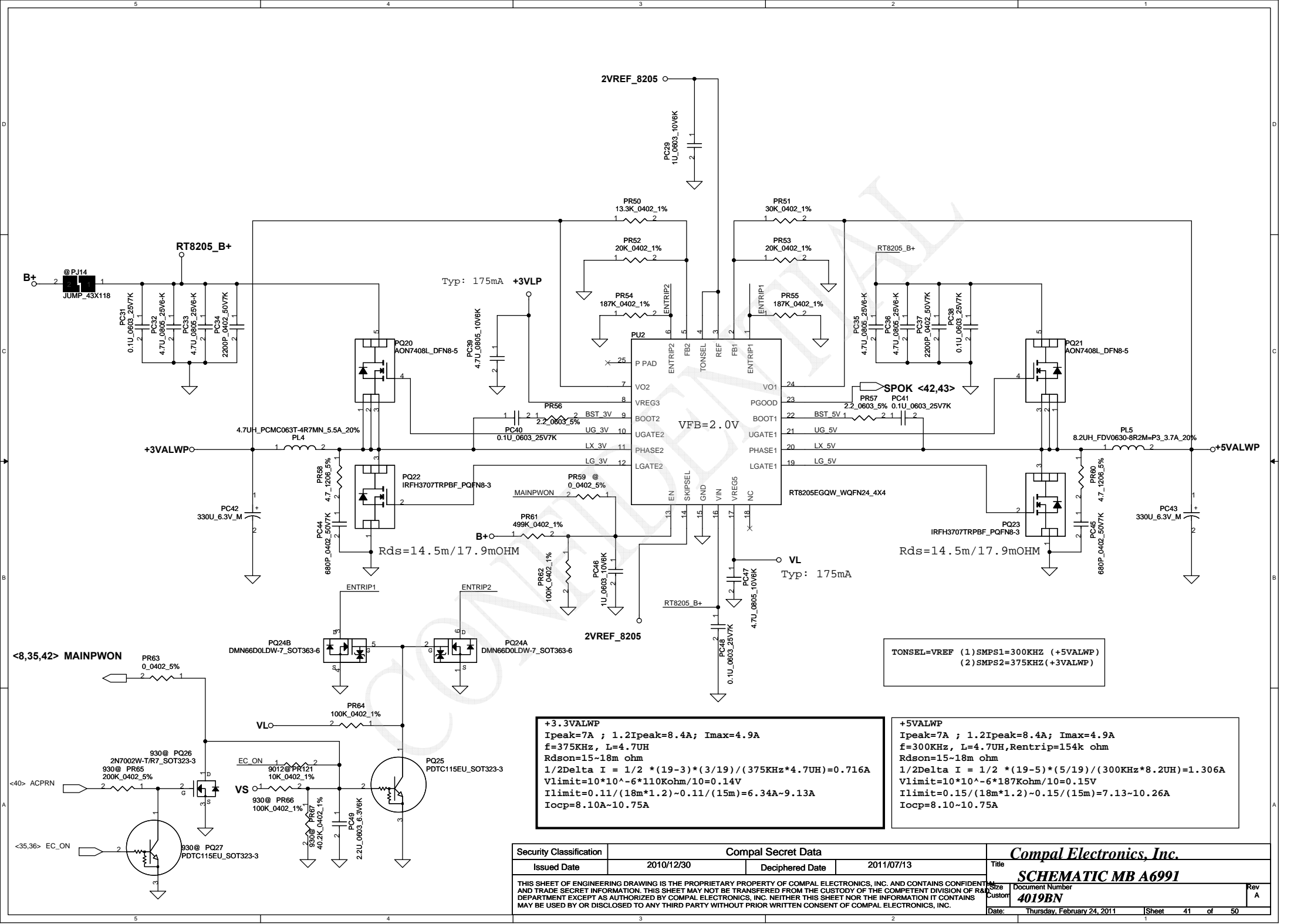
```
Ki
Vchlim=Iref*(PR39/(PR36+PR39))
=Iref*(100K/(80.6K+100K))
=Iref*0.5537
Ichnrg=(165mV/PR369)*(Vchlim/3.3V)
=(165m/20m)*(1/3.3V)*Iref*0.5537
=1.3842*Iref
Iref=0.7224*Ichnrg =>Ki=0.7224
```

```
Kv
Internal c=514K Rec=3K R1=PR44=15.4K R2=PR45=31.6K
R=514K//31.6K//(15.4K+3K)=1.372K
r=514K//514K//31.6K=28.14K
Vcell=0.175*Vadj+3.99V
4.2V=0.175*Vadj+3.99V =>Vadj=1.2V
Vadj=Vref*(R/(R+514K))+CALIBRATE*(x/(r=514K))
4.183=CALIBRATE*0.6046 =>CALIBRATE=6.899
1.899=(4.2*(Vcell+0.175))*Kv*(4.2-(4.2+0.175))*Kv
A=Vref*(R/(R+514K))=0.052
Kv=9.451
```



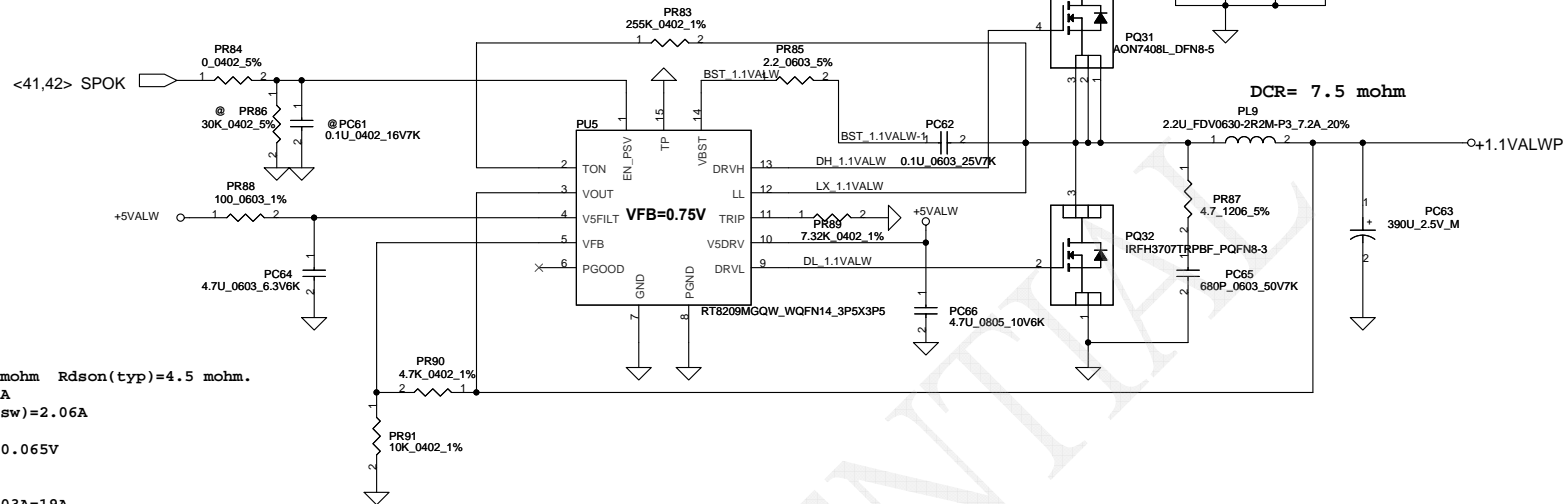
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                                                              |                 |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------------------------------------------|-----------------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | <i>Compal Electronics, Inc.</i><br><b>SCHEMATIC MB A6991</b> |                 |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30         | Deciphered Date | 2011/07/13 | 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 OUR 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                                                          | Document Number |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | 4019BN                                                       | Rev A           |          |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |            | Thursday, February 24, 2011                                  | Sheet           | 40 of 50 |





|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2011/07/13 | Title                    | SCHEMATIC MB A6991          |
| 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             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                   | 4019BN                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 41 of 50                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | A                           |

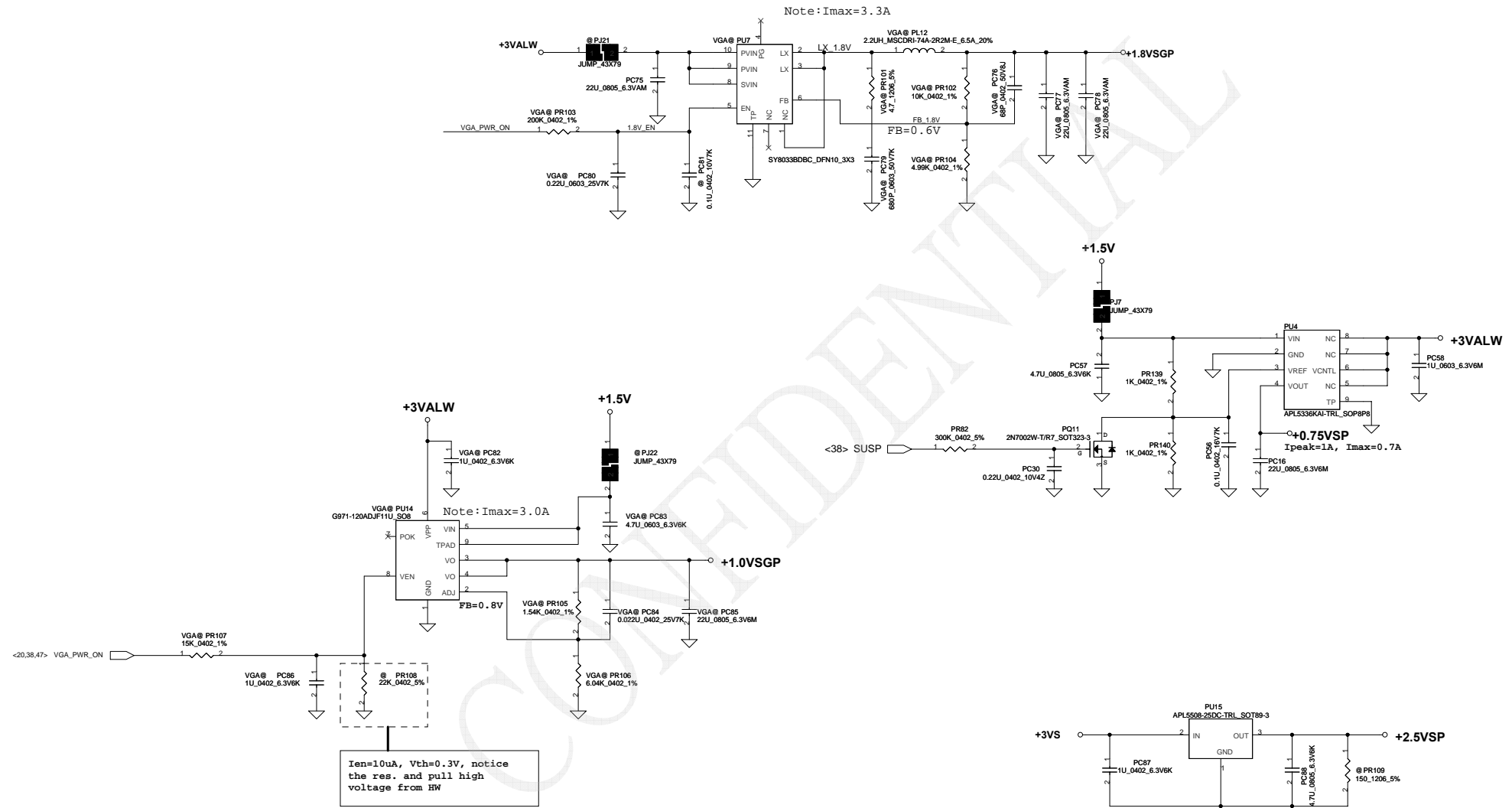


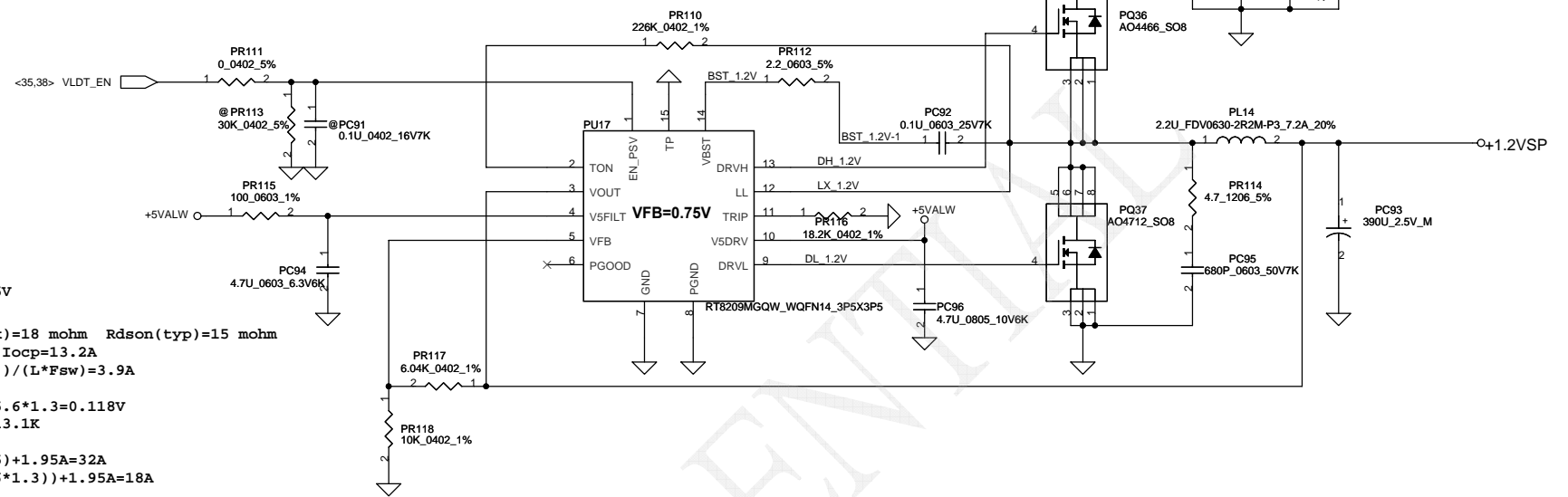


<Vo=1.1V> VFB=0.75V  
 $V=0.75 \times (1 + 4.7K/10K) = 1.1V$   
 $Fsw = 280KHz$   
 $Cout ESR = 15m \text{ ohm}$   $Rdson(max) = 5.6 \text{ mohm}$   $Rdson(typ) = 4.5 \text{ mohm}$   
 $Ipeak = 5.5A$ ,  $Imax = 3.85A$ ,  $Iocp = 8.9A$   
 $\Delta I = ((19 - 1.1) \times (1.1/19)) / (L \times Fsw) = 2.06A$   
 $\Rightarrow 1/2 \Delta I = 1.03A$   
 $Vtripmax = Iocp \times Rdson = 8.9 \times 5.6 \times 1.3 = 0.065V$   
 $Rcs = Vtrip / 9uA = 0.065V / 9uA = 7.2K$   
choose  $Rcs = 7.32K$   
 $Iocpmax = ((7.32K \times 11uA) / 0.0045) + 1.03A = 19A$   
 $Iocpmin = ((7.32K \times 9uA) / 0.0056 \times 1.3) + 1.03A = 10A$   
 $Iocp = 10A - 19A$

<Vo=1.5V> VFB=0.75V  
 $Vo = 0.75 \times (1 + 5.9K/5.76K) = 1.5V$   
 $Fsw = 335KHz$   
 $Cout ESR = 17 \text{ mohm}$   $Rdson(max) = 18 \text{ mohm}$   $Rdson(typ) = 15 \text{ mohm}$   
 $Ipeak = 27.7A$ ,  $Imax = 19.39A$ ,  $Iocp = 13.2A$   
 $\Delta I = ((19 - 1.5) \times (1.5/19)) / (L \times Fsw) = 3.9A$   
 $\Rightarrow 1/2 \Delta I = 1.95A$   
 $Vtripmax = Iocp \times Rdson = 16.2 \times 5.6 \times 1.3 = 0.118V$   
 $Rcs = Vtrip / 9uA = 0.118V / 9uA = 13.1K$   
choose  $Rcs = 13K$   
 $Iocpmax = ((13K \times 11uA) / 0.0045) + 1.95A = 32A$   
 $Iocpmin = ((13K \times 9uA) / (0.0056 \times 1.3)) + 1.95A = 18A$   
 $Iocp = 9.94A - 13.2A$

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-----------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2010/10/12 | Title                    | SCHMATIC MB A6991           |
| 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          | 4019BN                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev                      | A                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 43 of 50                    |





<Vo=1.5V> VFB=0.75V  
 $Vo = 0.75 * (1 + 5.9K / 5.76K) = 1.5V$   
 $Fsw = 335KHz$   
 $Cout ESR = 17 \text{ mohm}$   $Rdson(max) = 18 \text{ mohm}$   $Rdson(typ) = 15 \text{ mohm}$   
 $Ipeak = 27.7A$ ,  $I_{max} = 19.39A$ ,  $I_{ocp} = 13.2A$   
 $\Delta I = ((19 - 1.5) * (1.5 / 19)) / (L * Fsw) = 3.9A$   
 $\Rightarrow 1/2 \Delta I = 1.95A$   
 $V_{tripmax} = I_{ocp} * Rdson = 16.2 * 5.6 * 1.3 = 0.118V$   
 $Rcs = V_{trip} / 9uA = 0.118V / 9uA = 13.1K$   
 choose  $Rcs = 13K$   
 $I_{ocpmax} = ((13K * 11uA) / 0.0045) + 1.95A = 32A$   
 $I_{ocpmin} = ((13K * 9uA) / (0.0056 * 1.3)) + 1.95A = 18A$   
 $I_{ocp} = 9.94A \sim 13.2A$

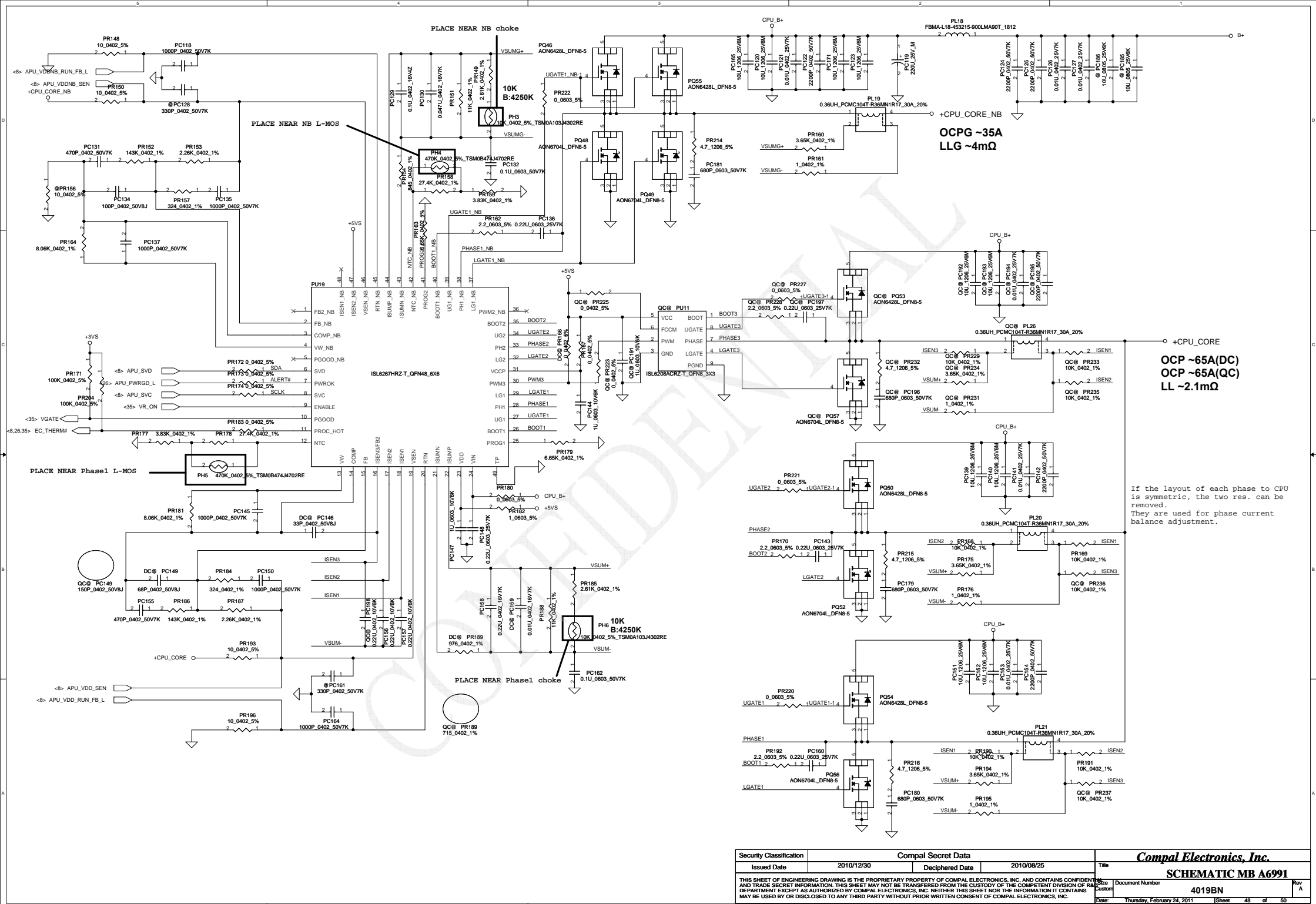
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          |                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------|-----------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Compal Electronics, Inc. |                                   |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30         | Deciphered Date | 2010/10/12               | 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. |                    |                 |                          | SCHEMATIC MB A6991                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | 4019BN                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Rev A                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Date: Thursday, February 24, 2011 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Sheet 45 of 50                    |



| GPIO 20  | GPIO 15  | Granville                | Whistler                 | Seymour                  |
|----------|----------|--------------------------|--------------------------|--------------------------|
| GPU_VID1 | GPU_VID0 | Core Voltage Level       | Core Voltage Level       | Core Voltage Level       |
| 1        | 1        | 0.90V(0.901V)            | 0.90V(0.901V)            | 0.90V(0.901V)            |
| 1        | 0        | 0.95V(0.950V)            | 0.95V(0.950V)            | 1.00V(1.001V)            |
| 0        | 1        | 1.00V(1.002V)            | 1.00V(1.002V)            | 1.05V(1.052V)            |
| 0        | 0        | 1.05V(1.051V)<br>Default | 1.05V(1.051V)<br>Default | 1.15V(1.152V)<br>Default |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                                     |                 |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|-------------------------------------|-----------------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | <div>Compal Electronics, Inc.</div> |                 |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2011/07/13 | 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. |            |                    |            | SCHEMATIC MB A6991                  |                 |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Size                                | Document Number | Rev      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Custom                              | 4019BN          | A        |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Thursday, February 24, 2011         | Sheet           | 46 of 50 |





|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                                                              |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|--------------------------------------------------------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  | <i>Compal Electronics, Inc.</i><br><b>SCHEMATIC MB A6991</b> |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | Deciphered Date    |  | Title<br>Document Number                                     |  |
| 2010/12/30                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 2010/08/25         |  | 4019BN                                                       |  |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |  |                    |  | Date: Thursday, February 24, 2011 Sheet 48 of 50             |  |



| Item | Fixed Issue | Reason for change | Rev. | PG# | Modify List                       | Date          | Phase |
|------|-------------|-------------------|------|-----|-----------------------------------|---------------|-------|
| 1    |             | Prevent ESD       |      |     | Change SB000006800 to SB000009Q80 | 2011<br>02/09 | DVT   |
| 2    |             |                   |      |     |                                   |               |       |
| 3    |             |                   |      |     |                                   |               |       |
| 4    |             |                   |      |     |                                   |               |       |
| 5    |             |                   |      |     |                                   |               |       |
| 6    |             |                   |      |     |                                   |               |       |
| 7    |             |                   |      |     |                                   |               |       |
| 8    |             |                   |      |     |                                   |               |       |
| 9    |             |                   |      |     |                                   |               |       |
| 10   |             |                   |      |     |                                   |               |       |
| 11   |             |                   |      |     |                                   |               |       |
| 12   |             |                   |      |     |                                   |               |       |
| 13   |             |                   |      |     |                                   |               |       |
| 14   |             |                   |      |     |                                   |               |       |
| 15   |             |                   |      |     |                                   |               |       |
| 16   |             |                   |      |     |                                   |               |       |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2010/12/30 | Deciphered Date    | 2010/10/12 | 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          |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 4019BN                   |          |
| Date: Thursday, February 24, 2011                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                    |            | Sheet                    | 49 of 50 |

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

- 0.1~>0.2
1. R1244 change to BACO@; Q136, Q139, R1262, R1259, R1260, R1261 change to @.
  2. Change TEST35 to PU (pop R558; unpopR559).
  3. EC\_PME# PU (Pop R1503).
  4. Change U56 pin 42,43 to DGND.
  5. Change U6, R1537, R1538, R1539, R1540 to @.
  6. ALLOW\_STOP, APU\_SVC, APU\_SVD PU to +1.5V (add R604, R607, R618).
  7. Reserve +1.2VS to replace U6 SW power (add R948 pad).
  8. Unpop R25, add Q145.
  9. Add component for KBC930 and KBC9012 colay:  
R1518 (9012@), R1546 (@), R1547 (930@), R1548 (@), R1549 (930@), R1550 (9012@), R1551 (@), R1552 (9012@), R1553 (9012@), R1556 (930@), R1557 (9012@), R1558 (9012@).
  10. Add Net for KBC930 and KBC9012 colay:  
9012\_PH2, GPX006, GPX007, GPX010, 9012\_PH1, GPXID7, +EC\_VCC.
  11. Reserve R1554, R1555 for FFC USB/B.
  12. Delete RTS5209 PCIE port (del C1376, C1377, C158, C248); delete CLK req (del R55); delete Card det (del R144).
  13. For RTS5138, add USB port 6 and one 48MHz clock from FCH.
  14. Add R88 for USB/B oc pin.
  15. Change D33 to @.
  16. Change R1529, R1530, C1682 to @.
  17. For DVT board ID, change R1475 to 18K.
  18. Change R1526 to 930@.
  19. Change C1486 to PX@.
  20. Reserve R360, R403, C1 and C26 for EMI.
  21. Del R1554, R1555 for FFC USB/B.
  22. Change mini2 USB port from port 9 to port 0 (del R1542, R1543).
  23. Change R1289, R1290 to RT@.
  24. Add C1468, C1469 on SYSON# for ESD reserve.
  25. Change R417, R148 to DISO@.
  26. Add TP on JCRT1.5, JCRT1.11, USB port2.
  27. Add all EMI solution on TP Conn(include JE and SJV).
  28. Change U25 from A12 to A13 (unpop Q145, pop R25).
  29. Change U73, R1513, R1515, R1514, R1516, R1517, R1511, C1642 to 930@.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  | Compal Electronics, Inc.    |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2010/12/30         |  | Title                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Deciphered Date    |  | 2010/08/04                  |  |
| 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             |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | C                  |  | 4019BN                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Date:              |  | Thursday, February 24, 2011 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Sheet              |  | 50 of 50                    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  | Rev A                       |  |