

Compal Confidential

Q5WV8 Schematics Document

AMD "Comal" Platform

AMD Trinity APU / Hudson M3 FCH / ATI Thames XT

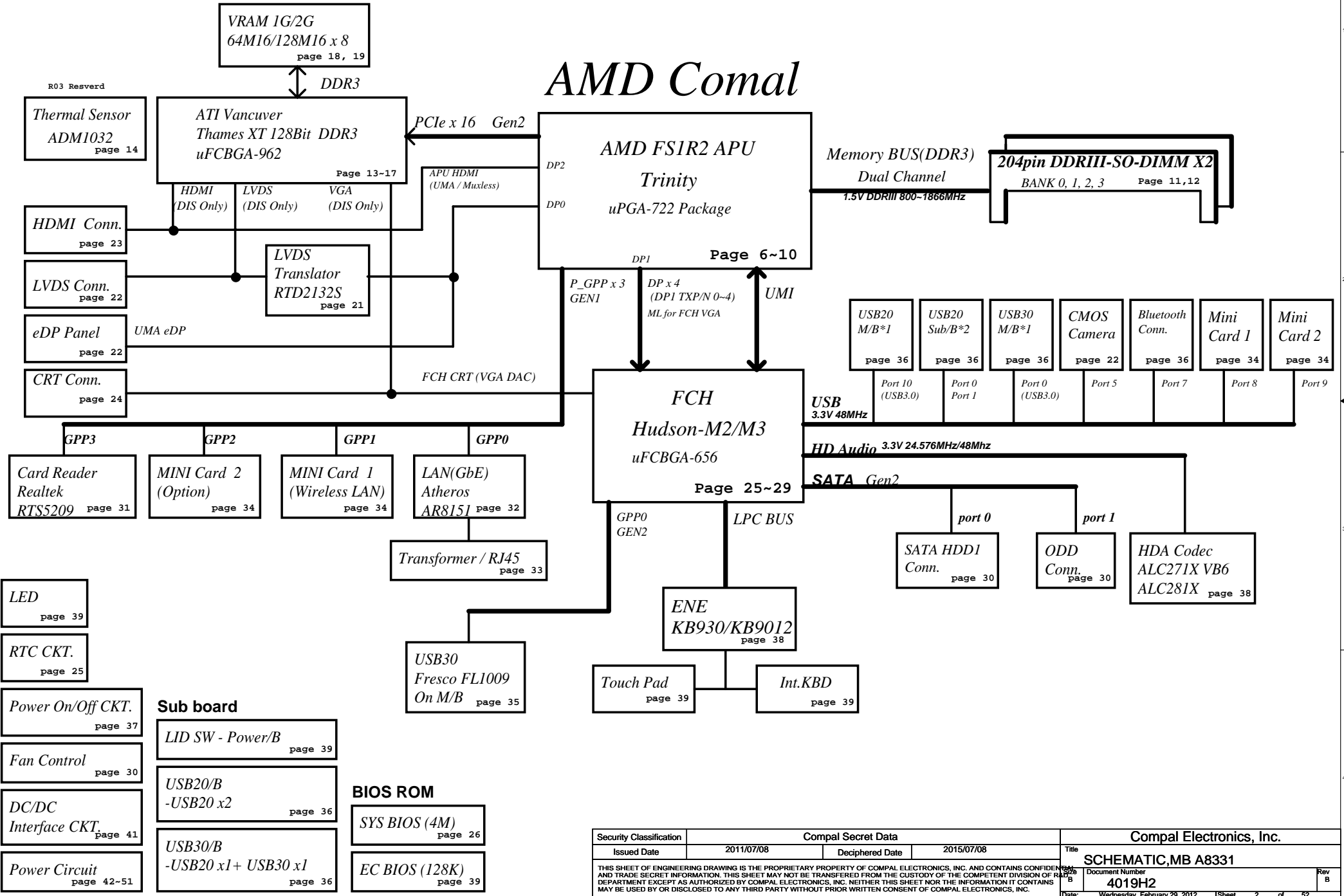
2012-01-05A

LA-8331P REV: 0.4

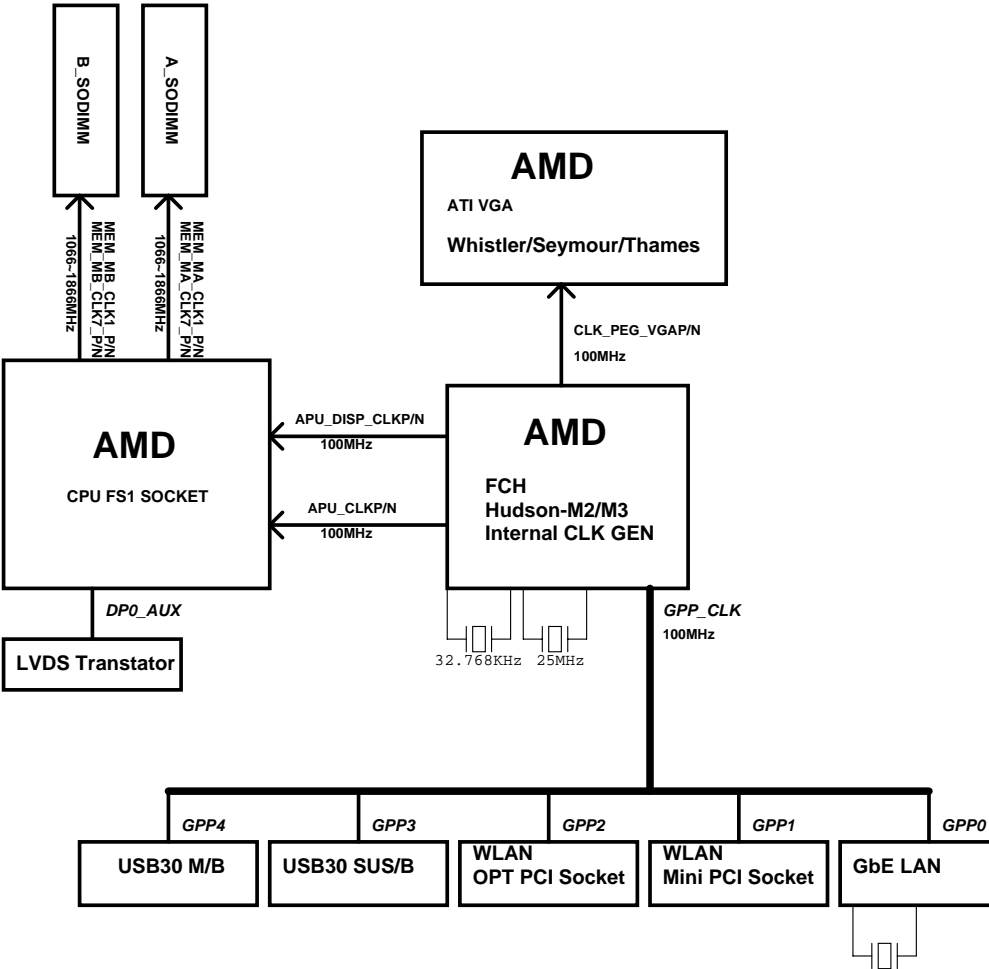
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/07/08	Deciphered Date	2015/07/08	Title	SCHEMATIC,MB A8331
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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 B	Rev B
				Document Number	4019H2
				Date:	Wednesday, February 29, 2012
				Sheet	1 of 52

Compal Confidential

Model Name : Q5WV8



CLOCK DISTRIBUTION

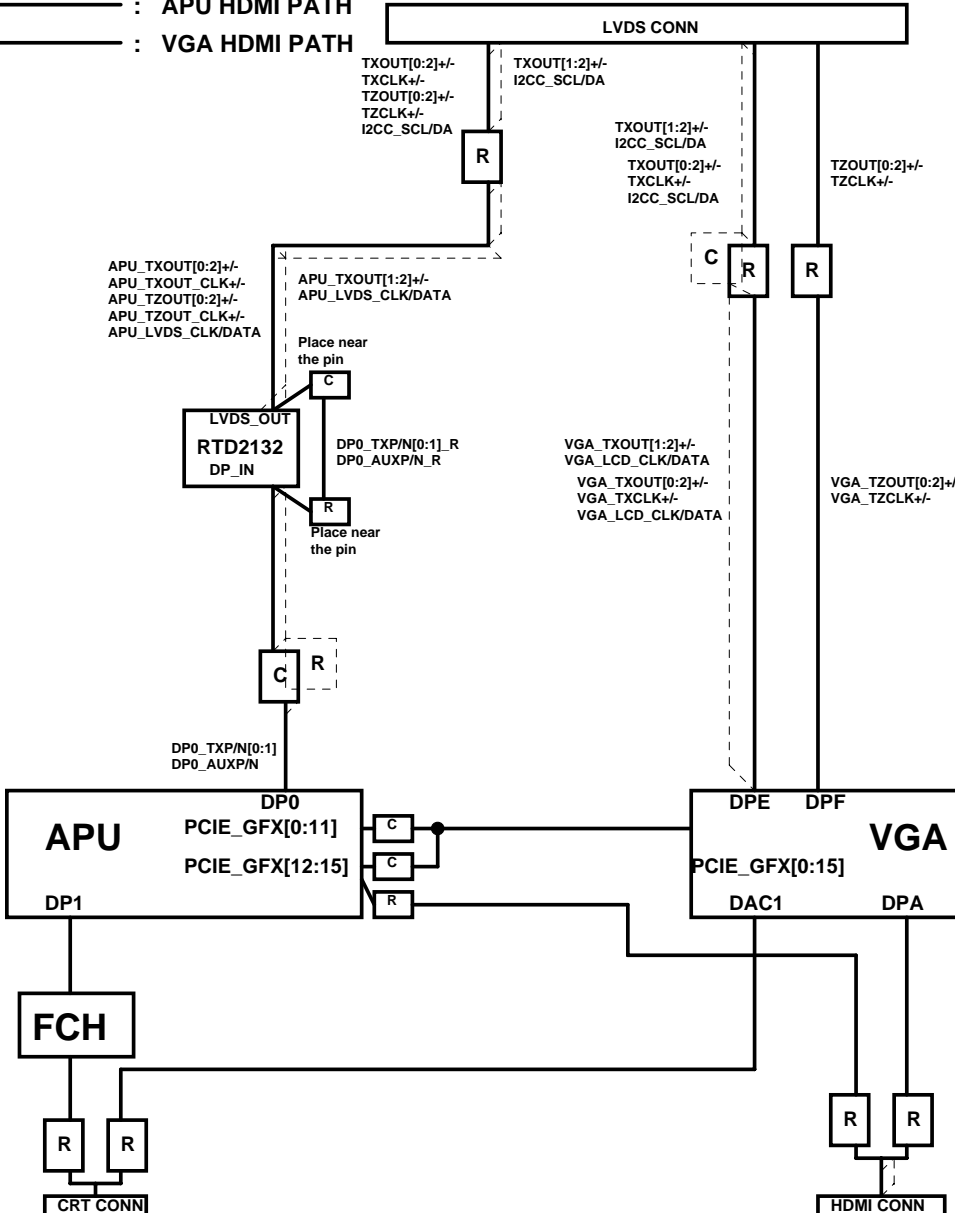


DISPLAY DISTRIBUTION

- ```

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

```



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                    |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|--------------------|-----|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                    |     |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08 | Title                    | SCHEMATIC,MB A8331 |     |
| 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                   | 4019H2             | B   |

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_NB | Voltage for On-die VGA of APU                | ON  | OFF | OFF |
| +VGA_CORE    | 0.95-1.2V switched power rail                | ON  | OFF | OFF |
| +VDDCI       | 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.

x = 1 is read cmd, x= 0 is write cmd.

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 | ADI ADM1032 (VGA)    | 1001 101X b | 9AH |
|               |             |     | SB-TSI (APU)         | 1001 100X b | 98H |
|               |             |     | LVDS TR( RTD-2132S)  | 1010 100X b | A8H |
|               |             |     | VGA Internal Thermal | 1000 001X b | 82H |
|               |             |     |                      |             |     |

FCH SM Bus 0 address

FCH SM Bus 1 address

| Device    | Address     | HEX | Device | Address | HEX |
|-----------|-------------|-----|--------|---------|-----|
| DDR DIMM1 | 1101 000X b | 90  |        |         |     |
| DDR DIMM2 | 1101 001X b | 94  |        |         |     |
|           |             |     |        |         |     |
|           |             |     |        |         |     |

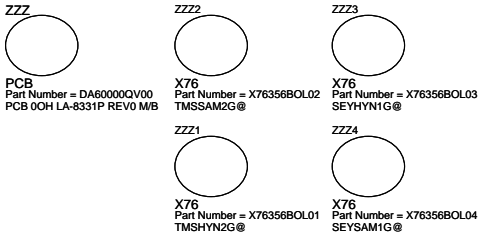
| STATE                | SIGNAL | SLP_S1# | SLP_S3# | SLP_S4# | SLP_S5# | +VALW | +V  | +VS | Clock |
|----------------------|--------|---------|---------|---------|---------|-------|-----|-----|-------|
| Full ON              |        | HIGH    | HIGH    | HIGH    | HIGH    | ON    | ON  | ON  | ON    |
| 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     |

BOM Option Table

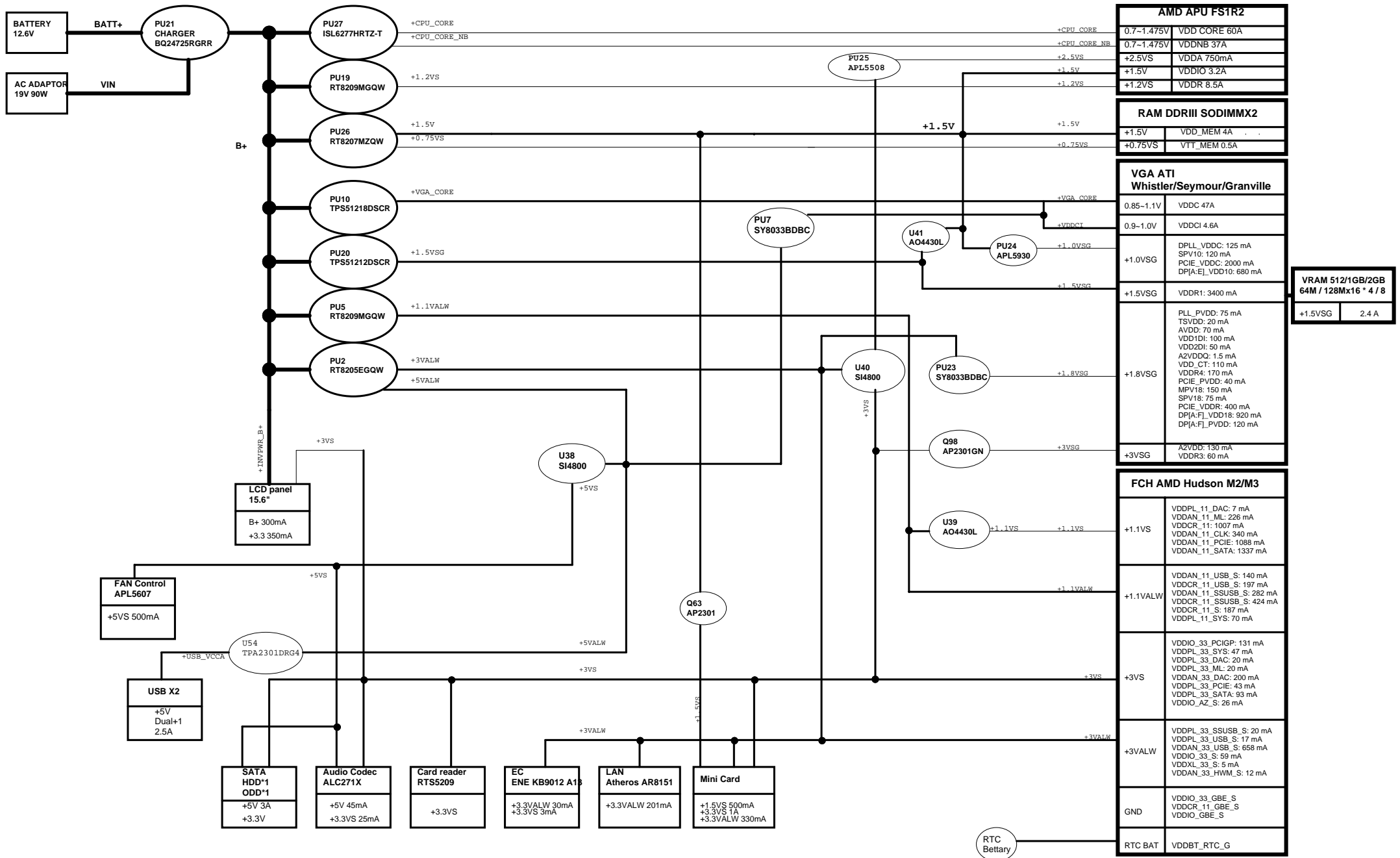
| BOM Structure | Description                              | UMA | Thames | EVT2 UMA | DVT UMA-LVDS | DVT UMA-eDP | DVT PX5 1G-LVDS | DVT PX5 1G-eDP | DVT PX5 2G-LVDS |  |
|---------------|------------------------------------------|-----|--------|----------|--------------|-------------|-----------------|----------------|-----------------|--|
| M2@           | Use Hudson-M2                            |     |        | V        |              |             |                 |                |                 |  |
| M3@           | Use Hudson-M3                            | V   | V      |          | V            | V           | V               | V              | V               |  |
| 930@          | Use EC 930                               | V   | V      |          |              |             |                 |                |                 |  |
| 9012@         | Use EC 9012                              |     |        | V        | V            | V           | V               | V              | V               |  |
| UMA@          | Display output from APU (UMA only or PX) | V   | V      | V        | V            | V           | V               | V              | V               |  |
| DISO@         | Display output from VGA (DIS only)       |     |        |          |              |             |                 |                |                 |  |
| VGALVDS@      | VGA output LVDS (DIS only)               |     |        |          |              |             |                 |                |                 |  |
|               |                                          |     |        |          |              |             |                 |                |                 |  |
| VGA@          | Use VGA (PX or DIS only)                 |     | V      |          |              |             | V               | V              | V               |  |
| THA@          | VGA: Thames                              |     | V      |          |              |             | V               | V              | V               |  |
| SEY@          | VGA: Seymour                             |     |        |          |              |             |                 |                |                 |  |
| 128@          | Use VRAM channel A&B                     |     | V      |          |              |             | V               | V              | V               |  |
| PX@           | PX function                              |     | V      |          |              |             | V               | V              | V               |  |
| BACO@         | BACO function (PX4.0)                    |     | V      |          |              |             |                 |                |                 |  |
| NOBACO@       | Without BACO function (DISO and PX5.0)   |     |        |          |              |             | V               | V              | V               |  |
|               |                                          |     |        |          |              |             |                 |                |                 |  |
| TL@           | LVDS Translator (for LVDS)               | V   | V      | V        | V            |             | V               |                | V               |  |
| EDP@          | Use eDP Panel                            |     |        |          |              | V           |                 | V              |                 |  |
| APUEDP@       | APU output eDP                           |     |        |          |              | V           |                 | V              |                 |  |
| VGAEDP@       | VGA output eDP (DIS only)                |     |        |          |              |             |                 |                |                 |  |
| 271@          | Realtek ALC271x VB6                      | V   | V      | V        | V            | V           | V               | V              | V               |  |
| 281@          | Realtek ALC281x                          |     |        |          |              |             |                 |                |                 |  |
| ZERO@         | ZERO Power ODD function                  |     |        |          |              |             |                 |                |                 |  |
| FL@           | Fresco FL1009 USB3.0 Controller          |     |        | V        |              |             |                 |                |                 |  |
| 8151@         | LAN Atheros AR8151 10/100/1000M LAN      |     |        | V        | V            | V           | V               | V              | V               |  |
| 8152@         | LAN Atheros AR8152 10/100M LAN           |     |        |          |              |             |                 |                |                 |  |
| X76@          | VRAM ID Table (Load By X76J)             |     |        |          |              |             |                 |                |                 |  |
| CONN@         | Connector (Control by ME)                |     |        |          |              |             |                 |                |                 |  |



BOARD ID Table

| Board ID | PCB Revision |
|----------|--------------|
| 0        | EVT          |
| 1        | EVT2         |
| 2        | DVT          |
| 3        |              |
| 4        |              |
| 5        |              |
| 6        |              |
| 7        |              |

| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                              |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|------------------------------|---------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08 | Title                    | SCHEMATIC,MB A8331           |               |
| 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 B                    | Document Number 4019H2       | Rev B         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Wednesday, February 29, 2012 | Sheet 4 of 52 |



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

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

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

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

JCPU1A

PCI EXPRESS

PCIE\_GTX\_C\_FRX\_P0 AB8  
PCIE\_GTX\_C\_FRX\_N0 AB7  
PCIE\_GTX\_C\_FRX\_P1 AA9  
PCIE\_GTX\_C\_FRX\_N1 AA8  
PCIE\_GTX\_C\_FRX\_P2 AA5  
PCIE\_GTX\_C\_FRX\_N2 AA6  
PCIE\_GTX\_C\_FRX\_P3 Y8  
PCIE\_GTX\_C\_FRX\_N3 Y7  
PCIE\_GTX\_C\_FRX\_P4 W9  
PCIE\_GTX\_C\_FRX\_N4 W8  
PCIE\_GTX\_C\_FRX\_P5 W5  
PCIE\_GTX\_C\_FRX\_N5 W6  
PCIE\_GTX\_C\_FRX\_P6 V8  
PCIE\_GTX\_C\_FRX\_N6 V7  
PCIE\_GTX\_C\_FRX\_P7 U9  
PCIE\_GTX\_C\_FRX\_N7 U8  
PCIE\_GTX\_C\_FRX\_P8 U5  
PCIE\_GTX\_C\_FRX\_N8 U6  
PCIE\_GTX\_C\_FRX\_P9 T8  
PCIE\_GTX\_C\_FRX\_N9 T7  
PCIE\_GTX\_C\_FRX\_P10 R9  
PCIE\_GTX\_C\_FRX\_N10 R8  
PCIE\_GTX\_C\_FRX\_P11 R6  
PCIE\_GTX\_C\_FRX\_N11 R6  
PCIE\_GTX\_C\_FRX\_P12 P8  
PCIE\_GTX\_C\_FRX\_N12 P7  
PCIE\_GTX\_C\_FRX\_P13 N9  
PCIE\_GTX\_C\_FRX\_N13 N8  
PCIE\_GTX\_C\_FRX\_P14 N5  
PCIE\_GTX\_C\_FRX\_N14 N6  
PCIE\_GTX\_C\_FRX\_P15 M8  
PCIE\_GTX\_C\_FRX\_N15 M7

P\_GFX\_RXP0  
P\_GFX\_RXN0  
P\_GFX\_RXP1  
P\_GFX\_RXN1  
P\_GFX\_RXP2  
P\_GFX\_RXN2  
P\_GFX\_RXP3  
P\_GFX\_RXN3  
P\_GFX\_RXP4  
P\_GFX\_RXN4  
P\_GFX\_RXP5  
P\_GFX\_RXN5  
P\_GFX\_RXP6  
P\_GFX\_RXN6  
P\_GFX\_RXP7  
P\_GFX\_RXN7  
P\_GFX\_RXP8  
P\_GFX\_RXN8  
P\_GFX\_RXP9  
P\_GFX\_RXN9  
P\_GFX\_RXP10  
P\_GFX\_RXN10  
P\_GFX\_RXP11  
P\_GFX\_RXN11  
P\_GFX\_RXP12  
P\_GFX\_RXN12  
P\_GFX\_RXP13  
P\_GFX\_RXN13  
P\_GFX\_RXP14  
P\_GFX\_RXN14  
P\_GFX\_RXP15  
P\_GFX\_RXN15

AB2 PCIE\_FTX\_GRX\_P0 C917 VGA@ 1  
AB1 PCIE\_FTX\_GRX\_N0 C918 VGA@ 1  
AA3 PCIE\_FTX\_GRX\_P1 C919 VGA@ 1  
AA2 PCIE\_FTX\_GRX\_N1 C920 VGA@ 1  
Y5 PCIE\_FTX\_GRX\_P2 C921 VGA@ 1  
Y4 PCIE\_FTX\_GRX\_N2 C922 VGA@ 1  
Y2 PCIE\_FTX\_GRX\_P3 C923 VGA@ 1  
Y1 PCIE\_FTX\_GRX\_N3 C924 VGA@ 1  
W3 PCIE\_FTX\_GRX\_P4 C925 VGA@ 1  
W2 PCIE\_FTX\_GRX\_N4 C926 VGA@ 1  
V5 PCIE\_FTX\_GRX\_P5 C927 VGA@ 1  
V4 PCIE\_FTX\_GRX\_N5 C928 VGA@ 1  
V2 PCIE\_FTX\_GRX\_P6 C929 VGA@ 1  
V1 PCIE\_FTX\_GRX\_N6 C930 VGA@ 1  
U3 PCIE\_FTX\_GRX\_P7 C931 VGA@ 1  
U2 PCIE\_FTX\_GRX\_N7 C932 VGA@ 1  
T5 PCIE\_FTX\_GRX\_P8 C933 VGA@ 1  
T4 PCIE\_FTX\_GRX\_N8 C934 VGA@ 1  
T2 PCIE\_FTX\_GRX\_P9 C935 VGA@ 1  
T1 PCIE\_FTX\_GRX\_N9 C937 VGA@ 1  
R3 PCIE\_FTX\_GRX\_P10 C938 VGA@ 1  
R2 PCIE\_FTX\_GRX\_N10 C939 VGA@ 1  
P5 PCIE\_FTX\_GRX\_P11 C940 VGA@ 1  
P4 PCIE\_FTX\_GRX\_N11 C941 VGA@ 1  
P2 PCIE\_FTX\_GRX\_P12 C942 VGA@ 1  
P1 PCIE\_FTX\_GRX\_N12 C943 VGA@ 1  
N3 PCIE\_FTX\_GRX\_P13 C944 VGA@ 1  
N2 PCIE\_FTX\_GRX\_N13 C945 VGA@ 1  
M5 PCIE\_FTX\_GRX\_P14 C946 VGA@ 1  
M4 PCIE\_FTX\_GRX\_N14 C947 VGA@ 1  
M2 PCIE\_FTX\_GRX\_P15 C948 VGA@ 1  
M1 PCIE\_FTX\_GRX\_N15 C949 VGA@ 1

2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P0  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N0  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P1  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N1  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P2  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N2  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P3  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N3  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P4  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N4  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P5  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N5  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P6  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N6  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P7  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N7  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P8  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N8  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P9  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N9  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P10  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N10  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P11  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N11  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P12  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N12  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P13  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N13  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P14  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N14  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_P15  
2 .1U\_0402\_16V7K PCIE\_FTX\_C\_GRX\_N15

<32> PCIE\_DTX\_C\_FRX\_P0  
<32> PCIE\_DTX\_C\_FRX\_N0  
<34> PCIE\_DTX\_C\_FRX\_P1  
<34> PCIE\_DTX\_C\_FRX\_N1  
<34> PCIE\_DTX\_C\_FRX\_P2  
<34> PCIE\_DTX\_C\_FRX\_N2  
<31> PCIE\_DTX\_C\_FRX\_P3  
<31> PCIE\_DTX\_C\_FRX\_N3

AE5  
AE6  
AD8  
AD7  
AC9  
AC8  
AC5  
AC6

P\_GPP\_RXP0  
P\_GPP\_RXN0  
P\_GPP\_RXP1  
P\_GPP\_RXN1  
P\_GPP\_RXP2  
P\_GPP\_RXN2  
P\_GPP\_RXP3  
P\_GPP\_RXN3

AD5 PCIE\_FTX\_DRX\_P0 C950 1  
AD4 PCIE\_FTX\_DRX\_N0 C951 1  
AD2 PCIE\_FTX\_DRX\_P1 C952 1  
AD1 PCIE\_FTX\_DRX\_N1 C953 1  
AC3 PCIE\_FTX\_DRX\_P2 C954 1  
AC2 PCIE\_FTX\_DRX\_N2 C955 1  
AB5 PCIE\_FTX\_DRX\_P3 C1014 1  
AB4 PCIE\_FTX\_DRX\_N3 C1011 1

2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K

PCIE\_FTX\_C\_DRX\_P0  
PCIE\_FTX\_C\_DRX\_N0  
PCIE\_FTX\_C\_DRX\_P1  
PCIE\_FTX\_C\_DRX\_N1  
PCIE\_FTX\_C\_DRX\_P2  
PCIE\_FTX\_C\_DRX\_N2  
PCIE\_FTX\_C\_DRX\_P3  
PCIE\_FTX\_C\_DRX\_N3

GLAN

WLAN

Option Mini (R03 modify Reserved)

Card Reader

<25> UMI\_MTX\_C\_FRX\_P0  
<25> UMI\_MTX\_C\_FRX\_N0  
<25> UMI\_MTX\_C\_FRX\_P1  
<25> UMI\_MTX\_C\_FRX\_N1  
<25> UMI\_MTX\_C\_FRX\_P2  
<25> UMI\_MTX\_C\_FRX\_N2  
<25> UMI\_MTX\_C\_FRX\_P3  
<25> UMI\_MTX\_C\_FRX\_N3

AG8  
AG9  
AG6  
AG5  
AE7  
AE8  
AE9

P\_UMI\_TXP0  
P\_UMI\_RXN0  
P\_UMI\_RXP1  
P\_UMI\_RXN1  
P\_UMI\_TXP2  
P\_UMI\_RXN2  
P\_UMI\_TXP3  
P\_UMI\_RXN3

AG2 UMI\_FTX\_MRX\_P0 C956 1  
AG3 UMI\_FTX\_MRX\_N0 C957 1  
AF4 UMI\_FTX\_MRX\_P1 C958 1  
AF5 UMI\_FTX\_MRX\_N1 C959 1  
AE1 UMI\_FTX\_MRX\_P2 C960 1  
AE2 UMI\_FTX\_MRX\_N2 C961 1  
AE2 UMI\_FTX\_MRX\_P3 C962 1  
AE3 UMI\_FTX\_MRX\_N3 C963 1

2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K  
2 .1U\_0402\_16V7K

UMI\_FTX\_C\_MRX\_P0  
UMI\_FTX\_C\_MRX\_N0  
UMI\_FTX\_C\_MRX\_P1  
UMI\_FTX\_C\_MRX\_N1  
UMI\_FTX\_C\_MRX\_P2  
UMI\_FTX\_C\_MRX\_N2  
UMI\_FTX\_C\_MRX\_P3  
UMI\_FTX\_C\_MRX\_N3

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

<25>

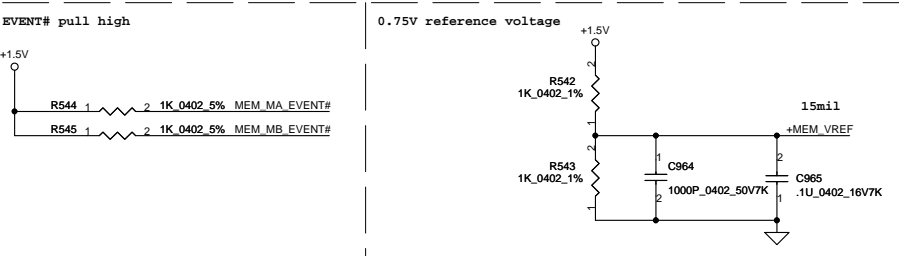
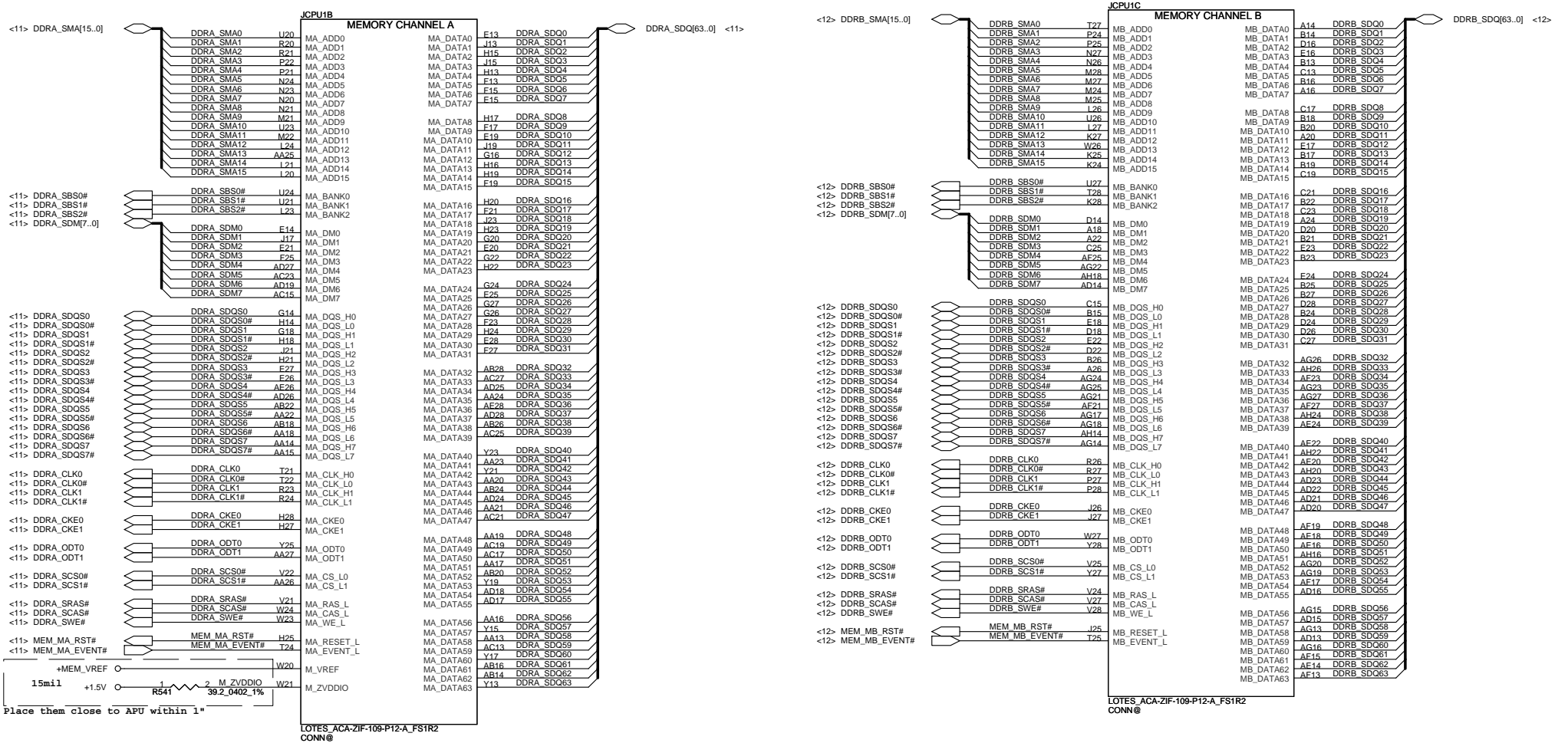
+1.2VS 1 R539 2 P\_ZVDDP AG11 196\_0402\_1%

P\_ZVDDP P\_ZVSS

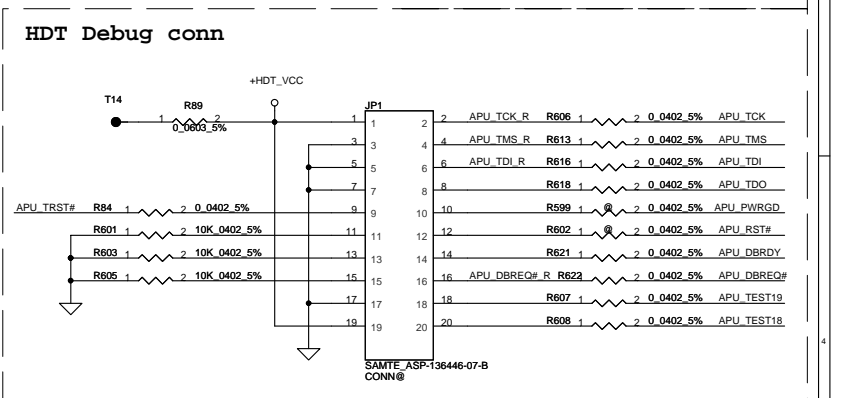
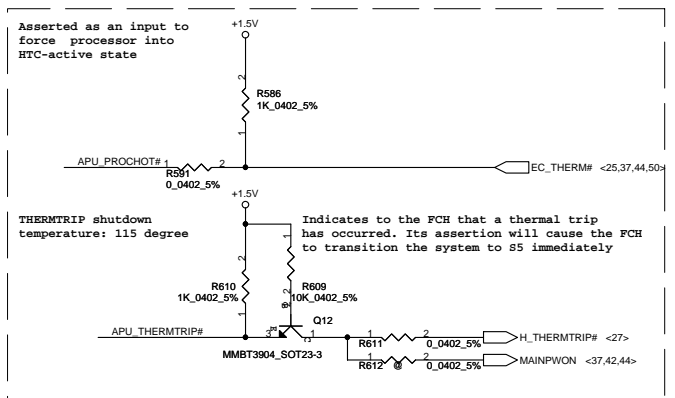
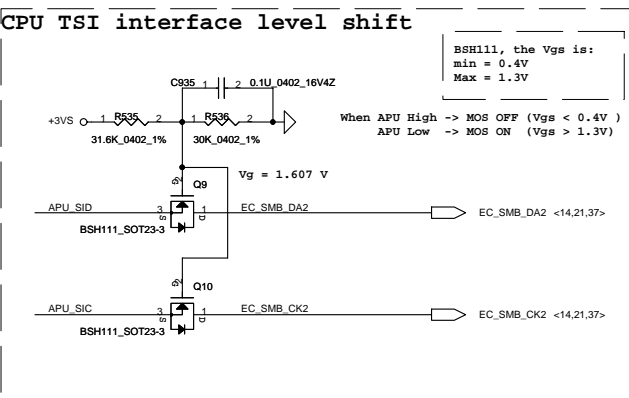
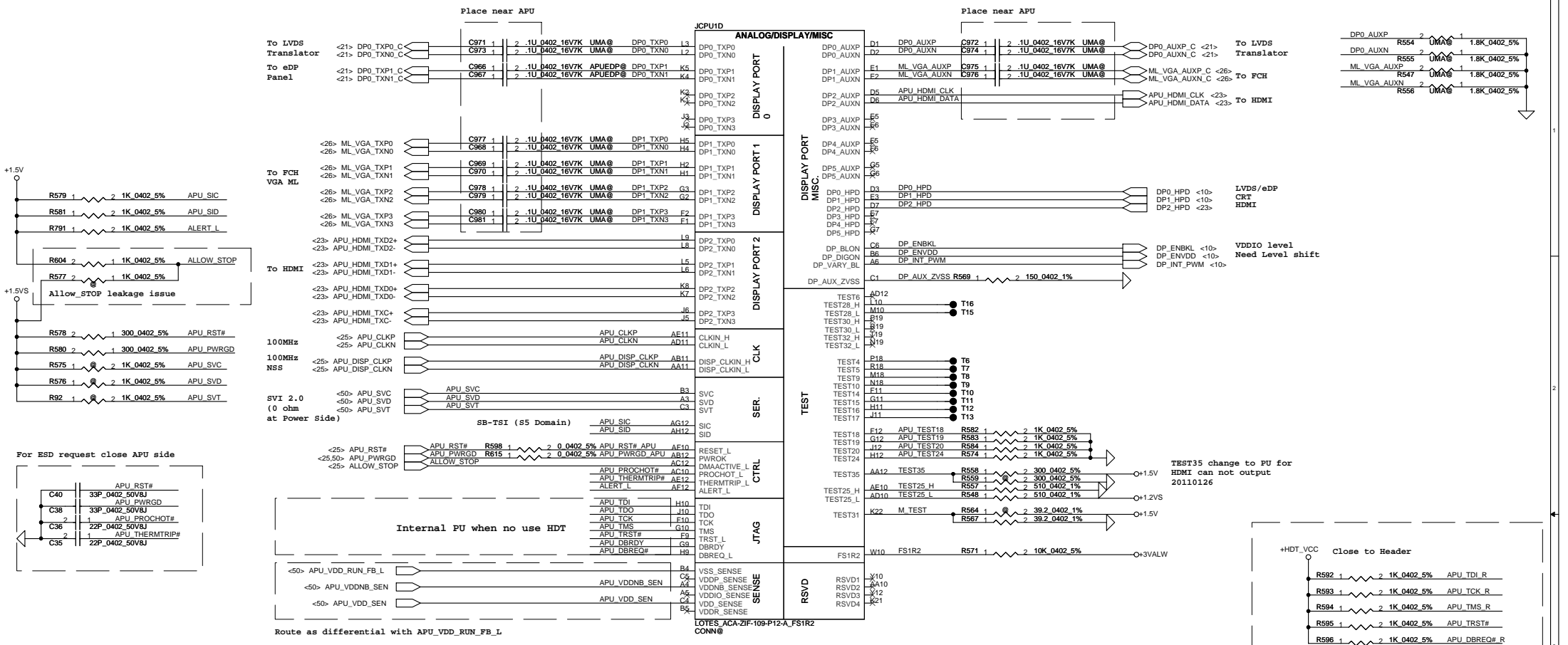
AH11 1 P\_ZVSS 2 R540 196\_0402\_1%

LOTES\_ACA-ZIF-109-P12-A\_FS1R2  
CONN@

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08 | Deciphered Date    | 2015/07/08 | Title                    | SCHMATIC,MB A8331            |
| 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          | 4019H2                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 29, 2012 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 6 of 52                      |



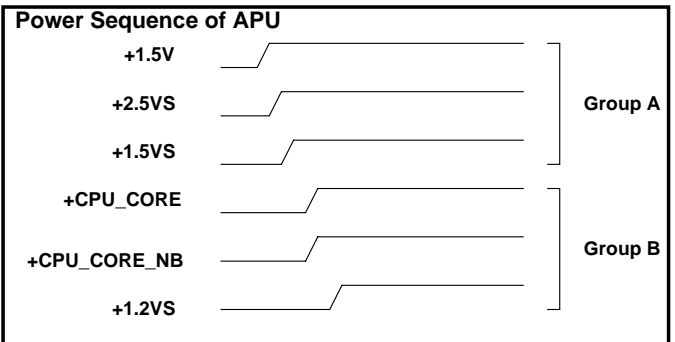
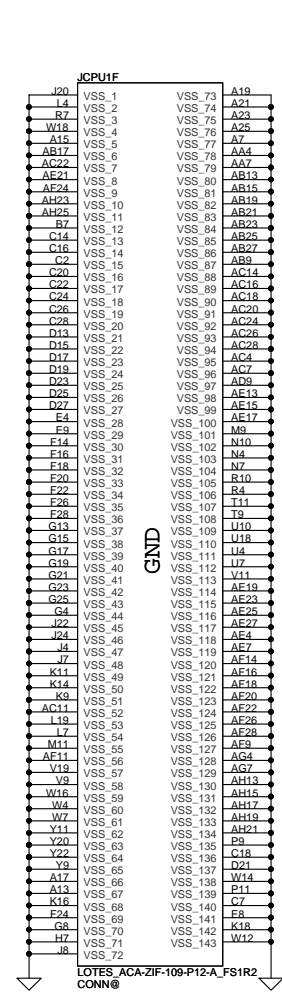
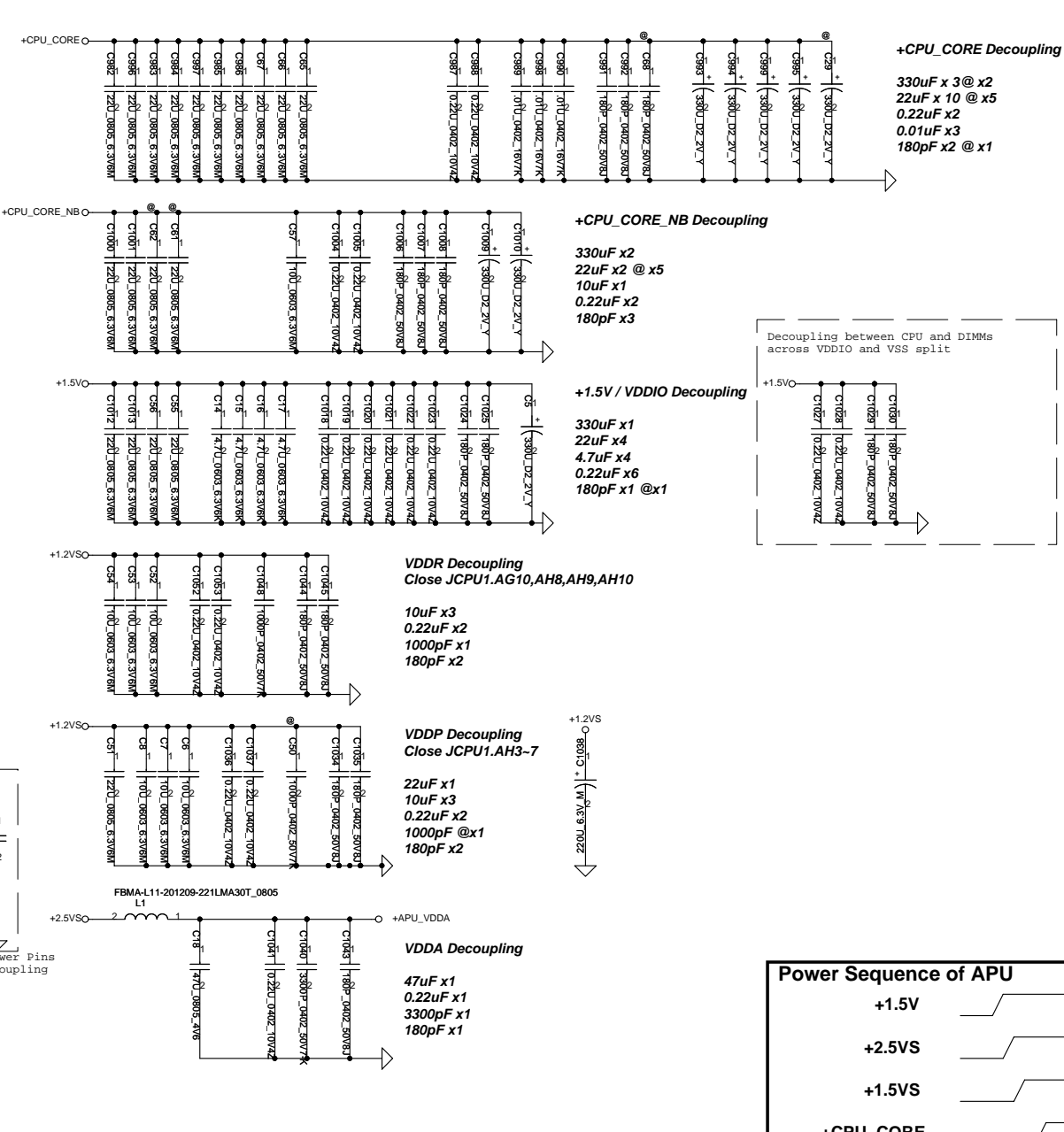
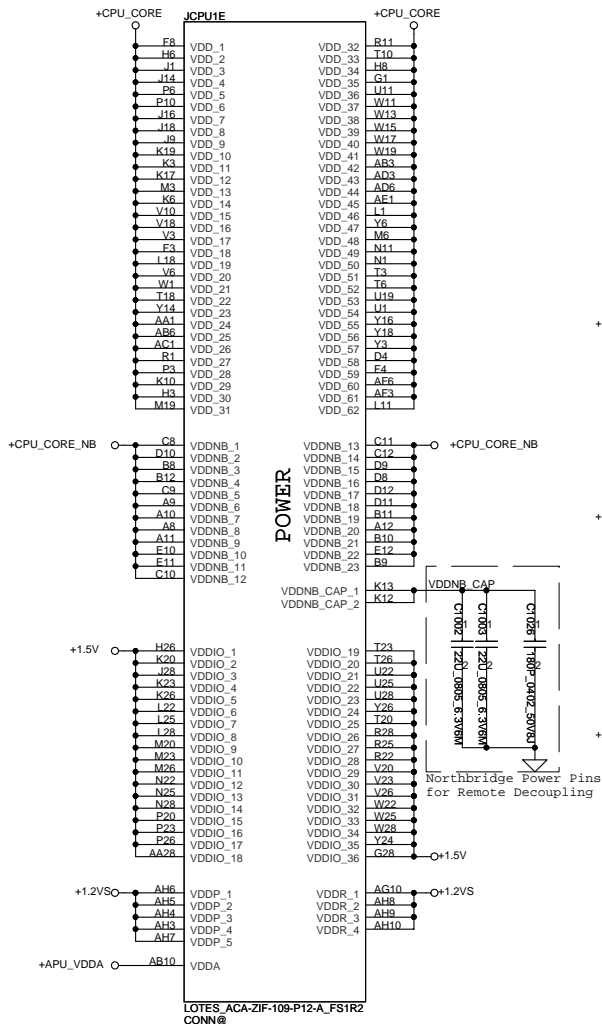
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                                    |  |                    |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|------------------------------------|--|--------------------|---------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                                    |  |                    |               |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2011/07/08         |  | Deciphered Date |  | 2015/07/08               |  | Title                              |  | SCHEMATIC,MB A8331 |               |
| 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<br>B           |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | 4019H2                             |  |                    |               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Date: Wednesday, February 29, 2012 |  |                    | Sheet 7 of 52 |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          |                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------|----------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Compal Electronics, Inc. |                                  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08               | 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<br><b>4019H2</b> |
| Date: Wednesday, February 29, 2012                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                 |                          | Rev B                            |

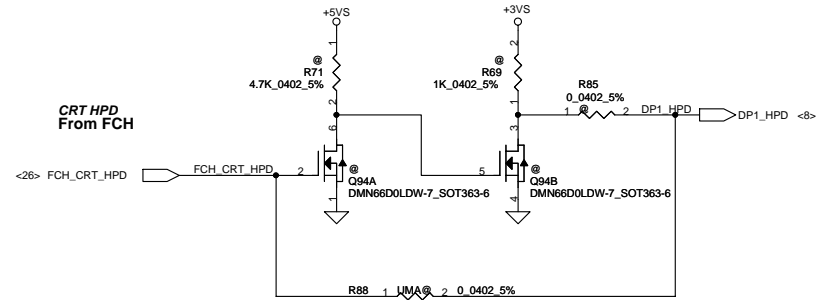
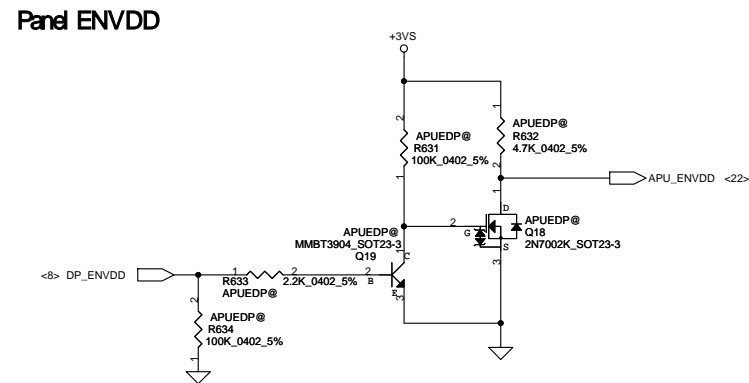


| Power Name            | Consumption |
|-----------------------|-------------|
| VDD<br>+CPU_CORE      | 60A         |
| VDDNB<br>+CPU_CORE_NB | 37A         |
| VDDIO                 | 3.2A        |
| VDDP / VDDR<br>+1.2VS | 5A / 3.5A   |
| VDDA<br>+2.5VS        | 0.75A       |



| Decoupling Caps. |       |       |       |       |      |       |        |        |        |
|------------------|-------|-------|-------|-------|------|-------|--------|--------|--------|
| Pop / @          | 330uF | 220uF | 47uF  | 22uF  | 10uF | 4.7uF | 0.22uF | 0.01uF | 3300pF |
| Pumori 2.0       |       | 0     | 19/11 | 7     | 5    | 17    | 3      | 1      | 1 / 1  |
| Comal            | 7 / 2 | 1     | 1     | 19/11 | 7    | 4     | 17     | 3      | 1 / 1  |
| P5WS5            | 7 / 2 | 1     | 1     | 13    | 3    | 8     | 19     | 3      | 1      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                    |  |                              |  |               |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|--------------------|--|------------------------------|--|---------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                    |  |                              |  |               |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2011/07/08         |  | Deciphered Date |  | 2015/07/08               |  | 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 A8331 |  |                              |  |               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Customer           |  | Document Number              |  | Rev B         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Date:              |  | Wednesday, February 29, 2012 |  | Sheet 9 of 52 |  |

[illegible]

### Panel PWM

Panel PWM

3VS

UMA@ R635 47K\_0402\_5%

UMA@ R636 4.7K\_0402\_5%

APU\_INV\_T\_PWM <21.22>

UMA@ R637 2.2K\_0402\_5%

UMA@ R638 4.7K\_0402\_5%

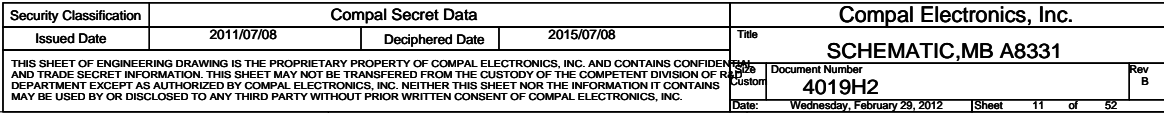
MMBT3904\_SOT23-3

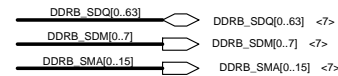
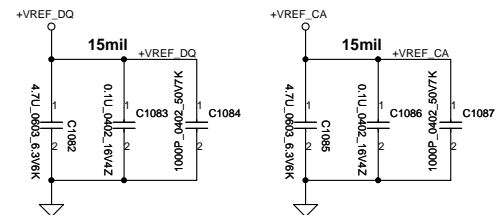
Q21 UMA@

Q20 2N7002K\_SOT23-3

DP\_INT\_PWM

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |       |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|-------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |       |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/06 | Deciphered Date    | 2015/07/08 | Title                    | SCHEMATIC, MB A8331          |       |          |
| 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. |            |                    |            | Docuement Number         | 4019H2                       |       | Rev B    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |       |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 29, 2012 | Sheet | 10 of 52 |



[illegible]

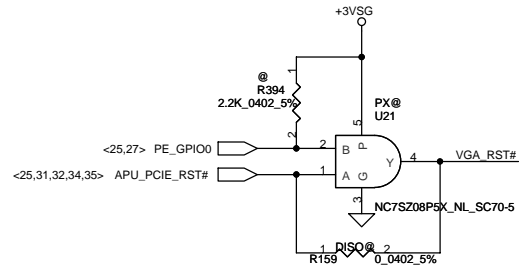
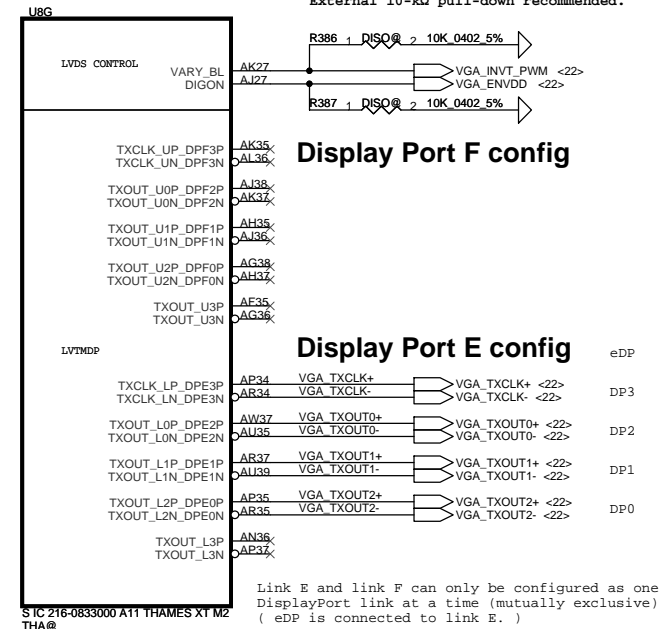
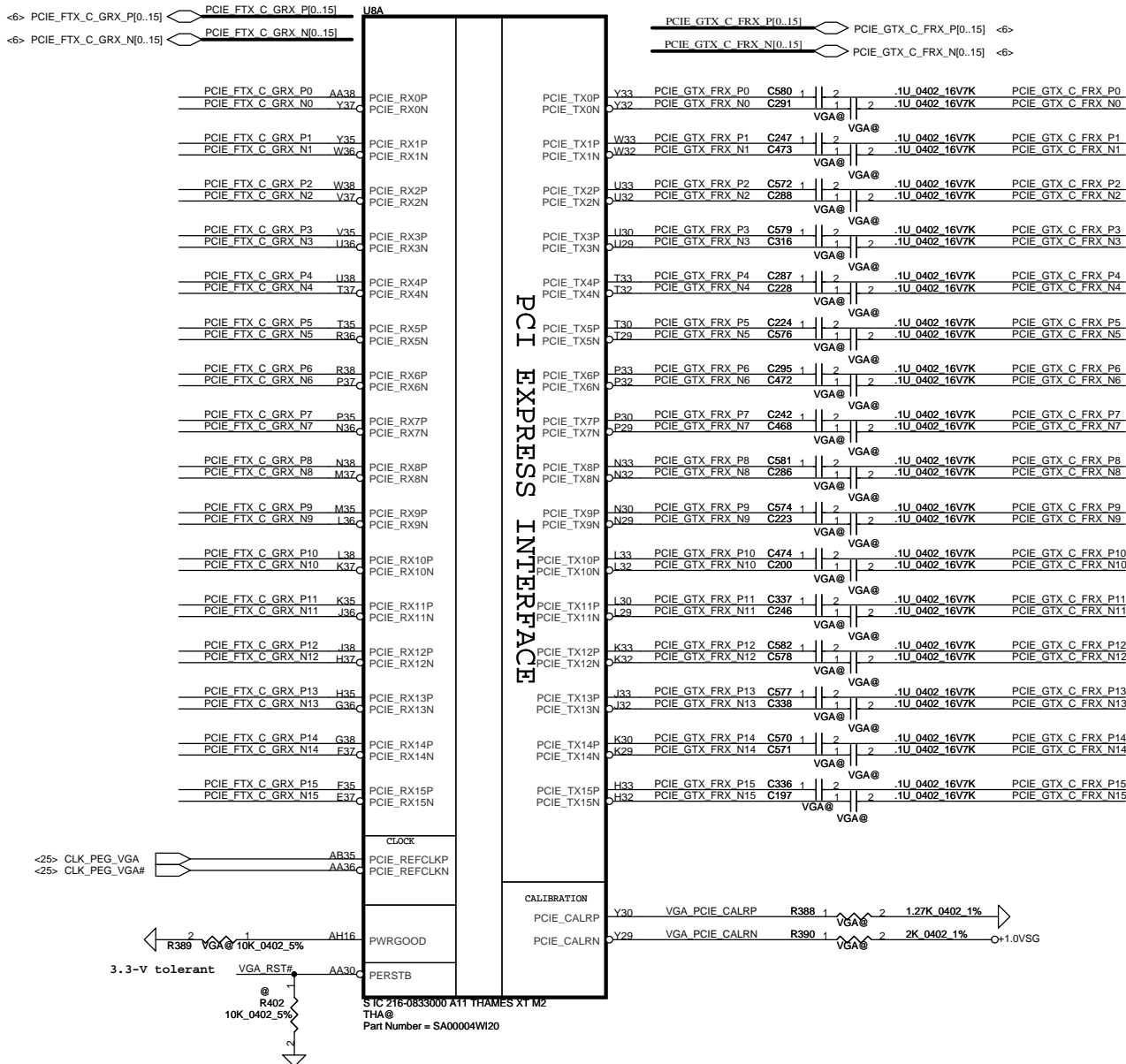
<Address: 01>

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  |                    |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|--|--------------------|-------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc. |  |                    |       |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2011/07/08         |  | Deciphered Date |  | 2015/07/08               |  | 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 A8331 |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | Doc Number         | Rev B |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                          |  | 4019H2             |       |
| Date: Wednesday, February 29, 2012                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                    |  | Sheet           |  | 12 of 52                 |  |                    |       |

# GFX PCIE LANE REVERSAL

<DIGON>  
Controls panel digital power on/off.  
Active High  
External 10-kΩ pull-down recommended.

<VARY\_BL>  
LCD PWM (pulse width modulated)  
output to adjust LCD brightness  
Active High  
External 10-kΩ pull-down recommended.

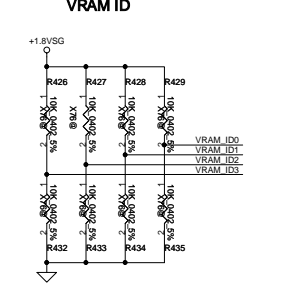
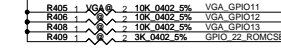
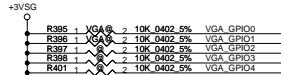


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  | Compal Secret Data |  |                              |  | Compal Electronics, Inc. |  |          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--------------------|--|------------------------------|--|--------------------------|--|----------|--|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  | 2011/07/08         |  | Deciphered Date              |  | 2015/07/08               |  | Title    |  |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |  |  |  | Size               |  | Document Number              |  | Rev                      |  | B        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  | Date               |  | Wednesday, February 29, 2012 |  | Sheet                    |  | 13 of 52 |  |

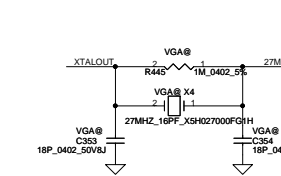
SCHEMATIC,MB A8331

4019H2

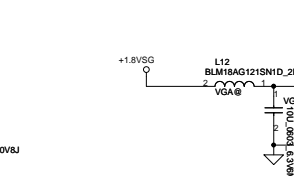
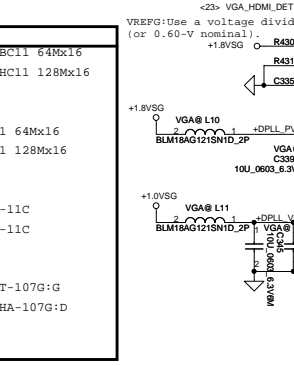
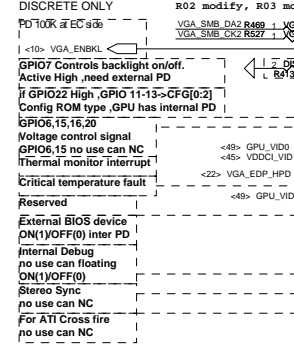
| Strap Name    | Pin Straps description <all internal PD>                                                                                                                                                                                  | Setting |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| VIP_DEVICE_EN | V2SYNCK (GENLK_VSYNCK)<br>VIP Device Strap Enable indicates to the software driver (Internal PD) 0: Driver would ignore the value sampled on VHAD_0 during reset 1: VHAD_0 to determine whether or not a VIP slave device | 0       |
| VGA_DIS       | GPIO9<br>VGA Disable determines (Internal PD) 0: VGA Controller capacity enabled 1: The device will not be recognized as the system's VGA controller                                                                      | 0       |
| TX_PWRS_ENB   | GPIO10<br>Transmitter Power Saving Enable (Internal PD) 0: 50% Tx output swing 1: full Tx output swing                                                                                                                    | 1       |
| TX_DEEMPH_EN  | GPIO11<br>PCI Express Transmitter De-emphasis Enable (Internal PD) 0: Tx de-emphasis disabled 1: Tx de-emphasis enabled                                                                                                   | 1       |
| CONFIG[2]     | GPIO13                                                                                                                                                                                                                    | 001     |
| CONFIG[1]     | GPIO12                                                                                                                                                                                                                    |         |
| CONFIG[0]     | GPIO11                                                                                                                                                                                                                    |         |
| BIOS_ROM_EN   | GPIO22<br>Enable external BIOS ROM device (Internal PD) 0: Disable, 1: Enable                                                                                                                                             | 0       |
| AUD[1]        | HSYNC                                                                                                                                                                                                                     | 11      |
| AUD[0]        | VSYNCK                                                                                                                                                                                                                    |         |
| BIF_GEN2_EN   | GPIO2<br>Advertises the PCI-E device as 5.0 GT/s capable at power-on 1= Advertises the PCI-E device as 5.0 GT/s capable at power-on 5.0 GT/s capability will be controlled by software                                    | 0       |
| RESERVED      | H2SYNCK<br>GPIO8<br>GPIO21                                                                                                                                                                                                | DNI     |



| DVPDATA | ID3ID2ID1ID0 | Van SPD Name                    |
|---------|--------------|---------------------------------|
| 00h     | 0 0 0 0      | SAM 933 K4W1G1646G-BC11 64Mx16  |
| 01h     | 0 0 0 1      | SAM 933 K4W2G1646C-BC11 128Mx16 |
| 02h     | 0 0 0 1      |                                 |
| 03h     | 0 0 1 1      |                                 |
| 04h     | 0 1 0 0      | AMD 900 23EY2387MB11 64Mx16     |
| 05h     | 0 1 0 1      | AMD 900 23EY4187MA11 128Mx16    |
| 06h     | 0 1 1 0      |                                 |
| 07h     | 0 1 1 1      |                                 |
| 08h     | 1 0 0 0      | HYN 900 H5TQ1G63DFR-11C         |
| 09h     | 1 0 0 1      | HYN 900 H5TQ2G63BFR-11C         |
| 0Ah     | 1 0 1 0      |                                 |
| 0Bh     | 1 0 1 1      |                                 |
| 0Ch     | 1 1 0 0      | MIC 900 MT41J64M16JT-107G:G     |
| 0Dh     | 1 1 0 1      | MIC 900 MT41J128M16HA-107G:D    |
| 0Eh     | 1 1 1 0      |                                 |
| 0Fh     | 1 1 1 1      |                                 |

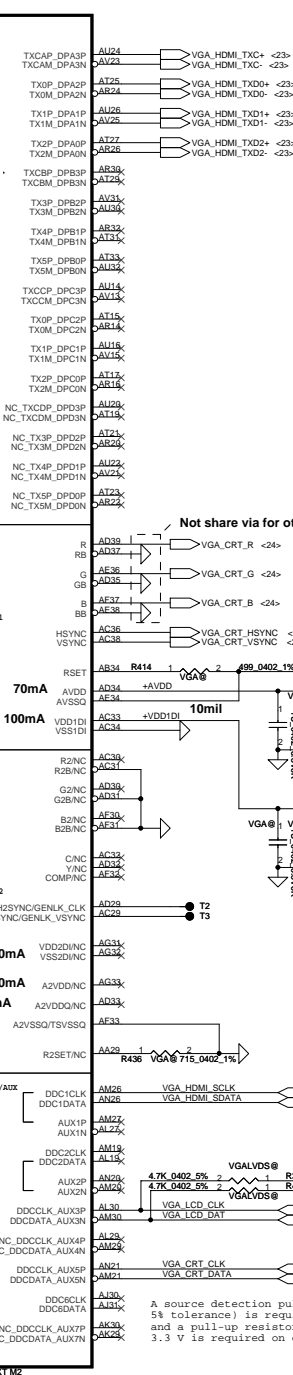
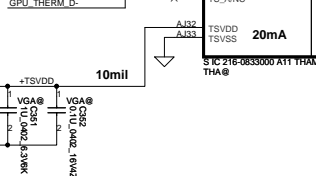
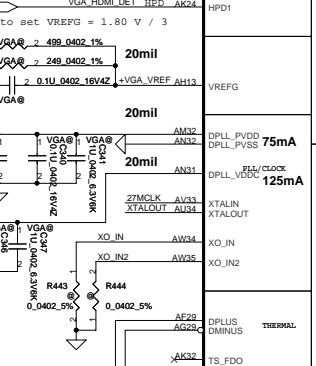
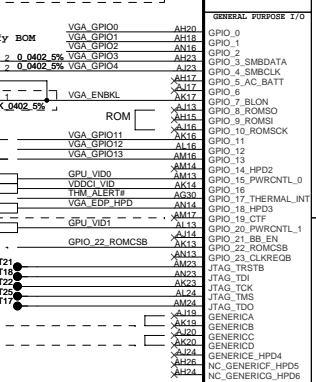


GPIO5 fast-power reduction:  
HW control will cause display disturb  
should use SW method control  
GPIO6 voltage control signal, No use can NC

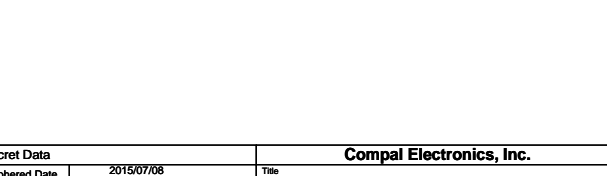
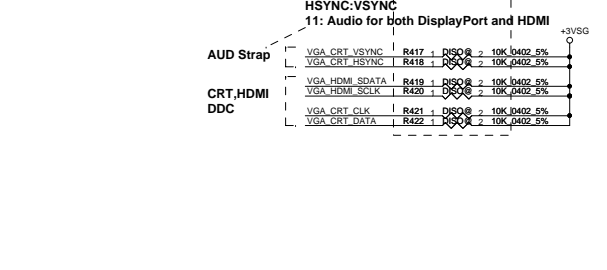
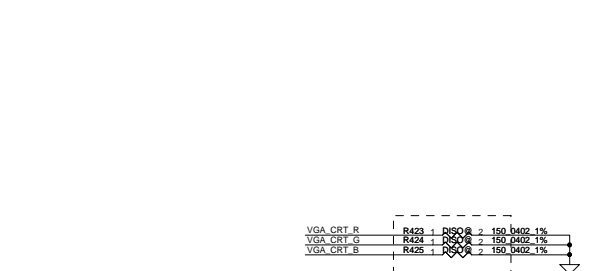
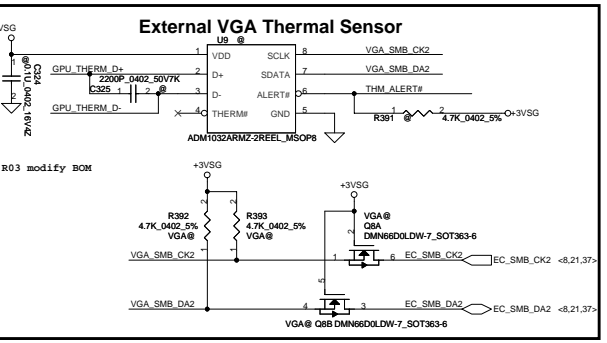
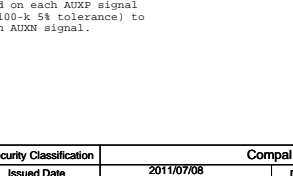
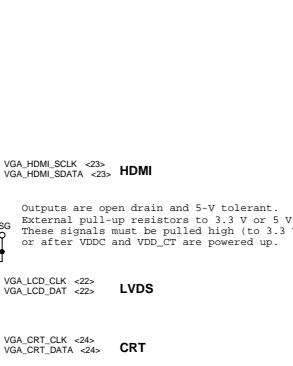
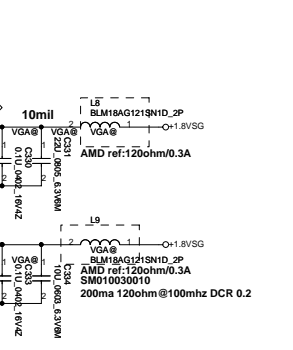


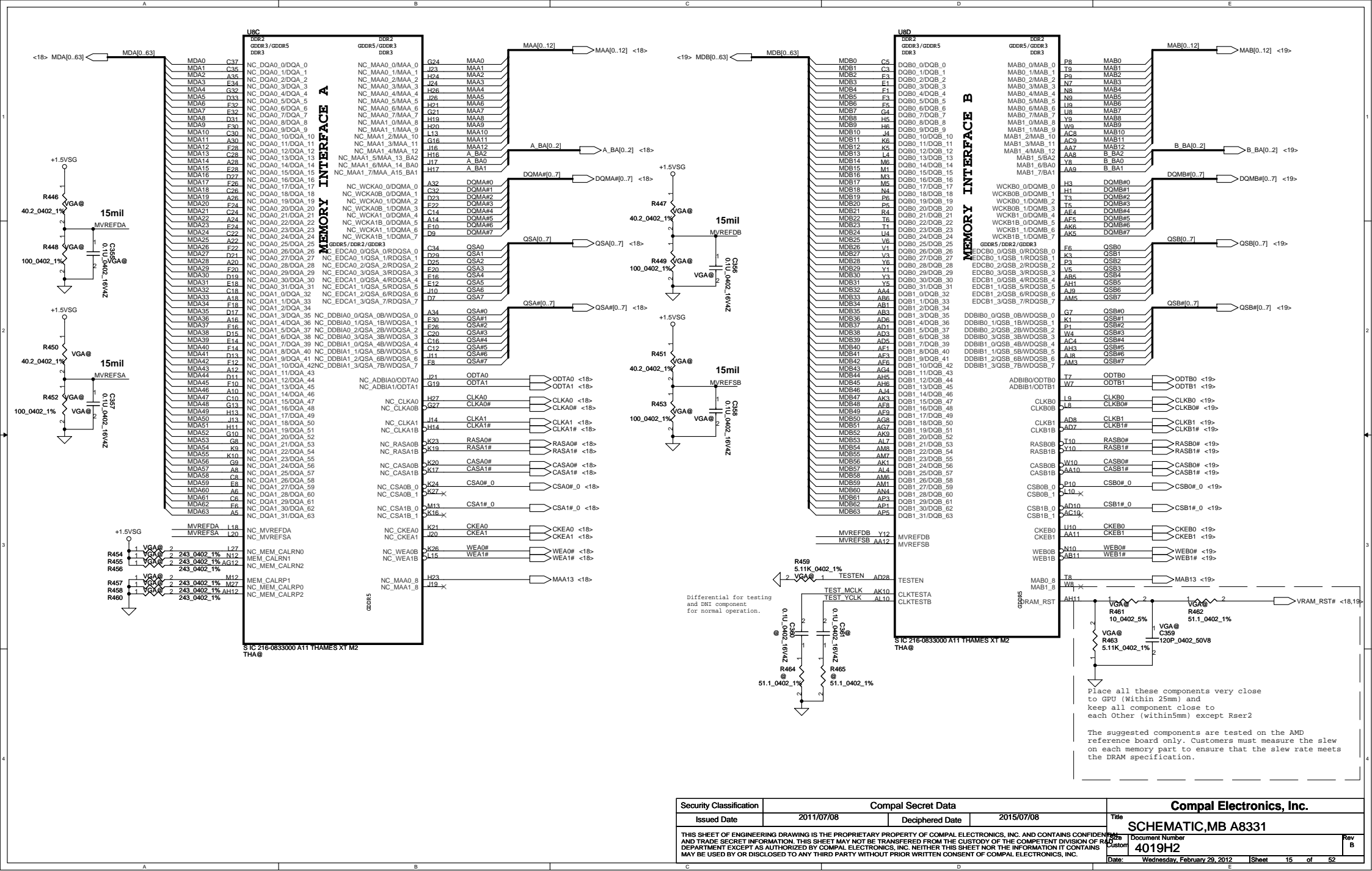
Global Swap Lock on Multiple GPUs

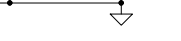
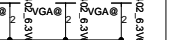
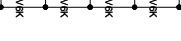
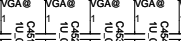
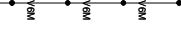
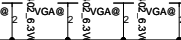
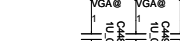
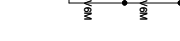
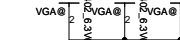
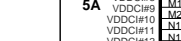
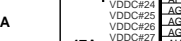
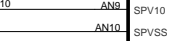
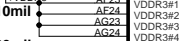
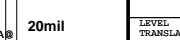
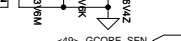
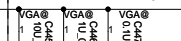
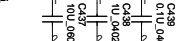
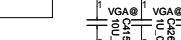
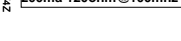
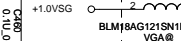
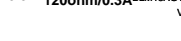
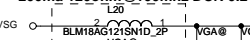
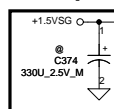
Move to DDCCLK\_AUX3P,DDCCLK\_AUX3N



Not share via for other GND

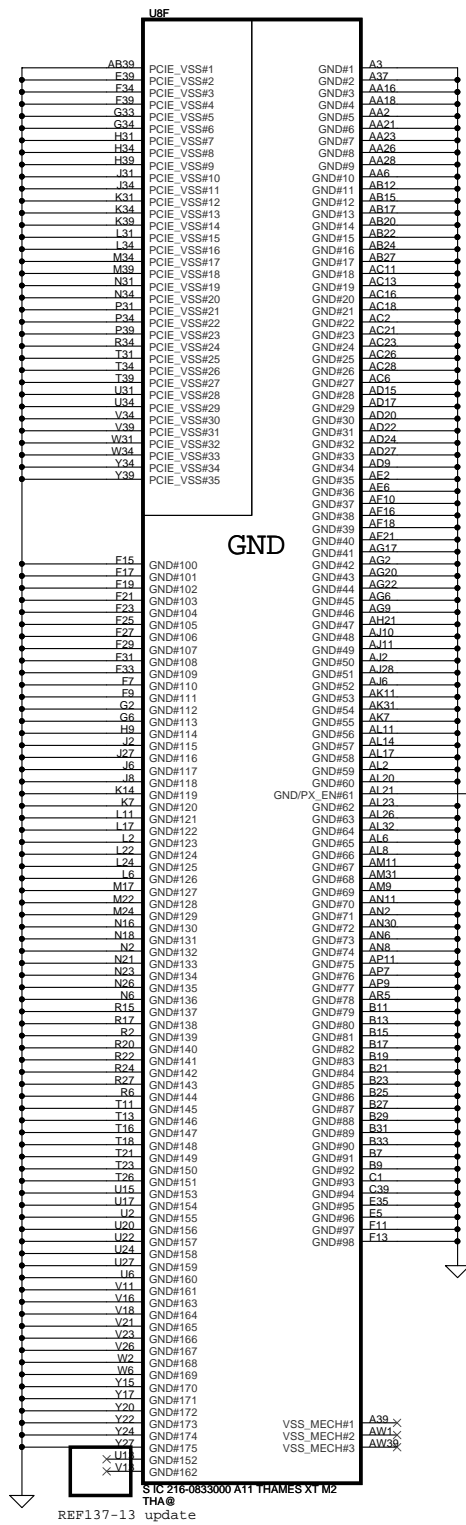






|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                              |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                              |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08 | Title                    | SCHEMATIC, MB A8331          |                |
| 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                   | 4019H2                       | B              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date:                    | Wednesday, February 29, 2012 | Sheet 16 of 52 |





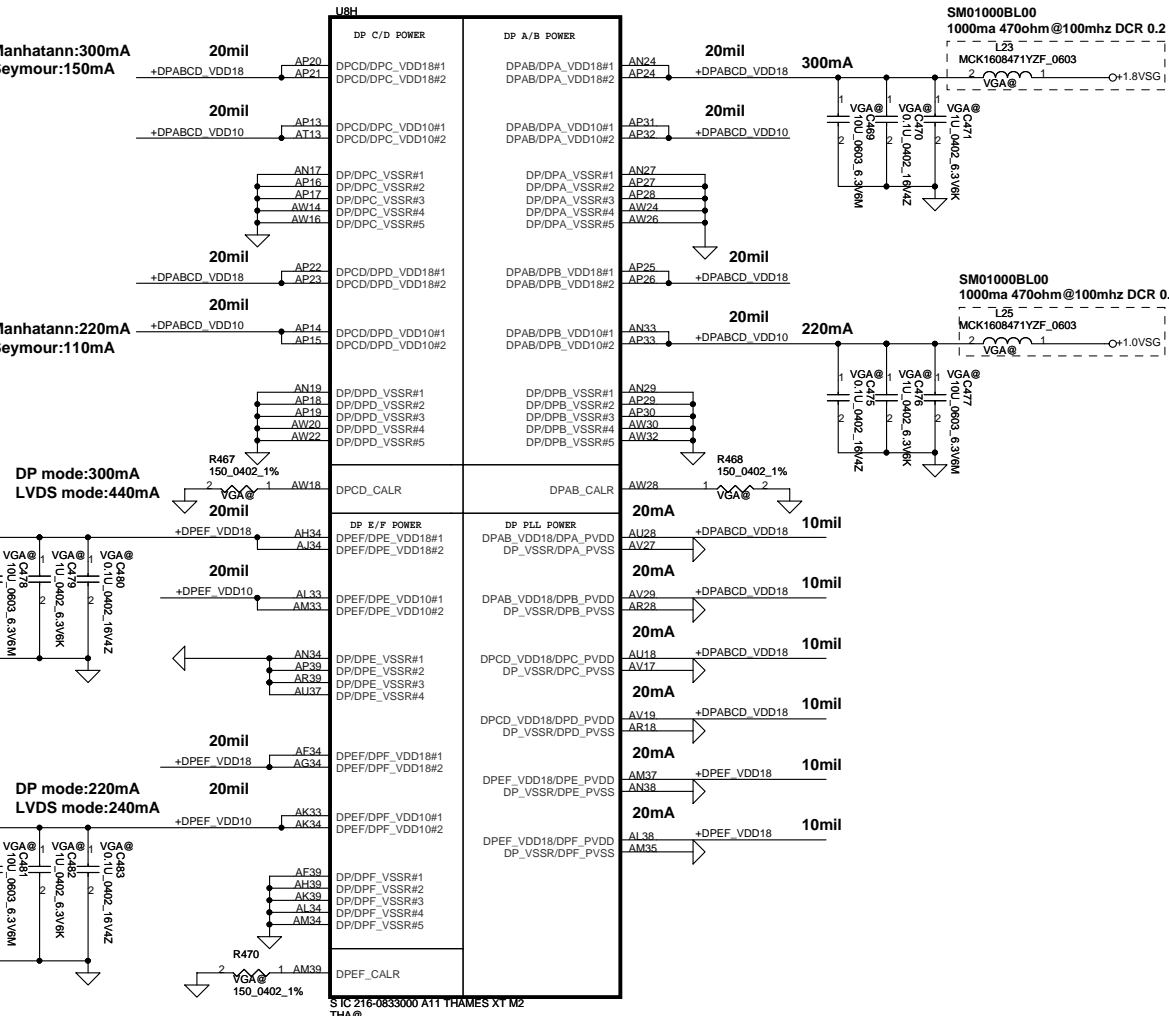
DPA\_VDD18,DPA\_PVDD,DPB\_VDD18,DPB\_PVDD  
can combian to DPAB\_VDD18  
DPC\_VDD18,DPC\_PVDD,DPD\_VDD18,DPD\_PVDD  
can combian to DPCD\_VDD18  
(DPD\_VDD18,DPD\_PVDD not applicable on Robson/Park)  
DPE\_VDD18,DPE\_PVDD,DPF\_VDD18,DPF\_PVDD  
can combian to DPEF\_VDD18

DPx-VSSR,DPx\_PVSS can combian to DP\_VSSR  
(Manhattan should have individual GND)  
where x is A,B,C,D,E,F

Seymour/Whistler :  
DPA\_VDD10,DPB\_VDD10  
can combian to DPAB\_VDD10  
DPC\_VDD10,DPD\_VDD10  
can combian to DPCD\_VDD10  
DPE\_VDD10,DPD\_VDD10  
can combian to DPEF\_VDD10

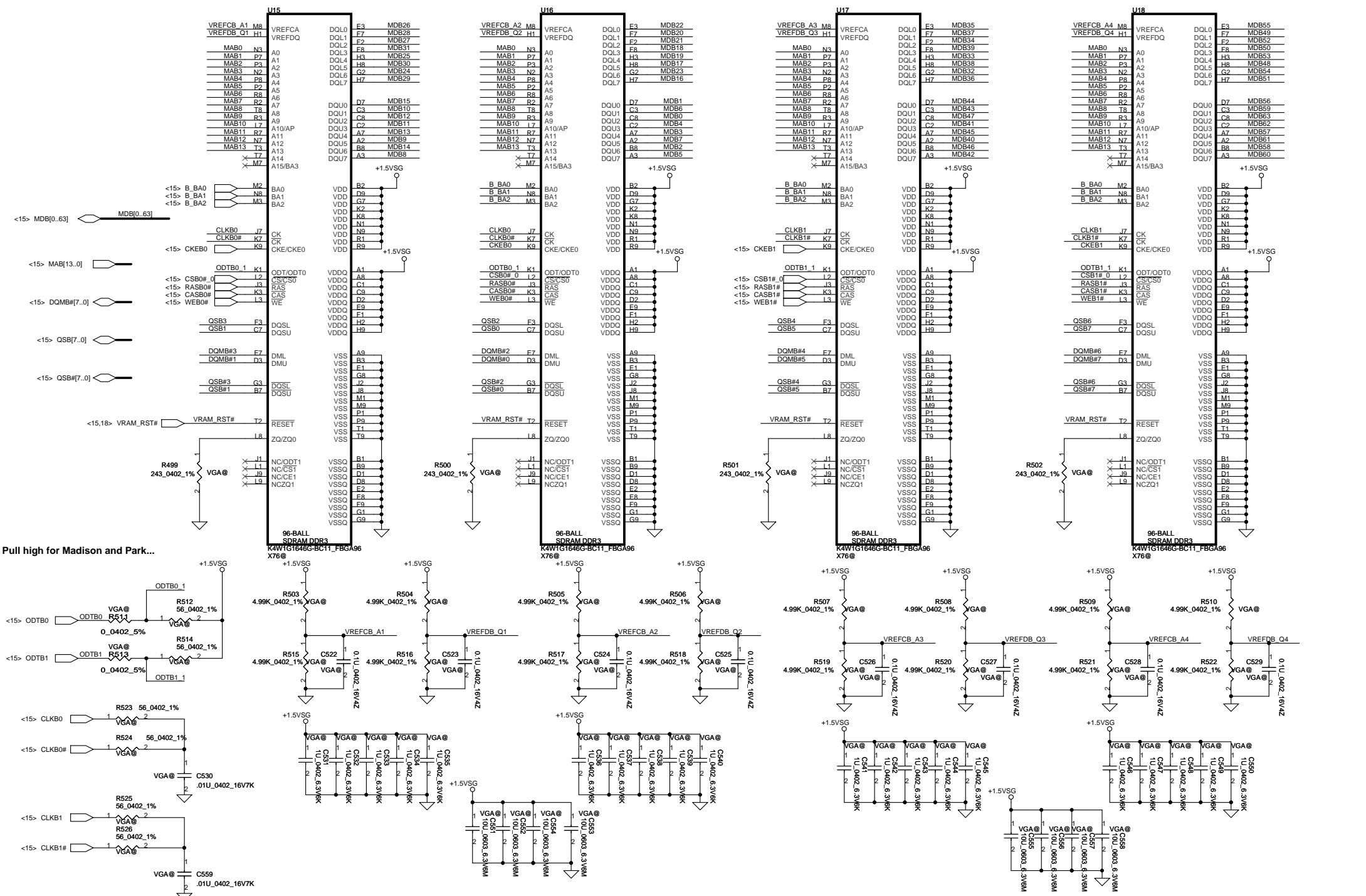
Park/Madison :AL21:left NC

Seymour/Whistler:  
AL21:PX\_EN  
use to control discreate GPU regulators  
for power express BACO mode  
Support BACO:  
output High3.3V:turn off regulators (BACO mode on)  
output Low0V:turn on regulators (BACO mode off)  
need PD resistor  
No support BACO:  
left NC

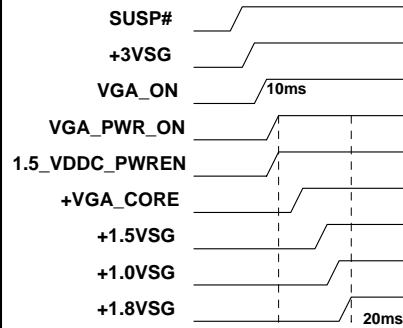


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2011/07/08 | Deciphered Date    | 2015/07/08 | Title                    | SCHEMATIC,MB A8331           |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RESEARCH AND DEVELOPMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |            |                    |            | Document Number          | 4019H2                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Date:                    | Wednesday, February 29, 2012 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Sheet                    | 17 of 52                     |

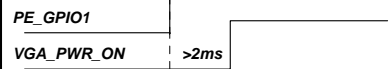




## Power Sequence of Thames



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

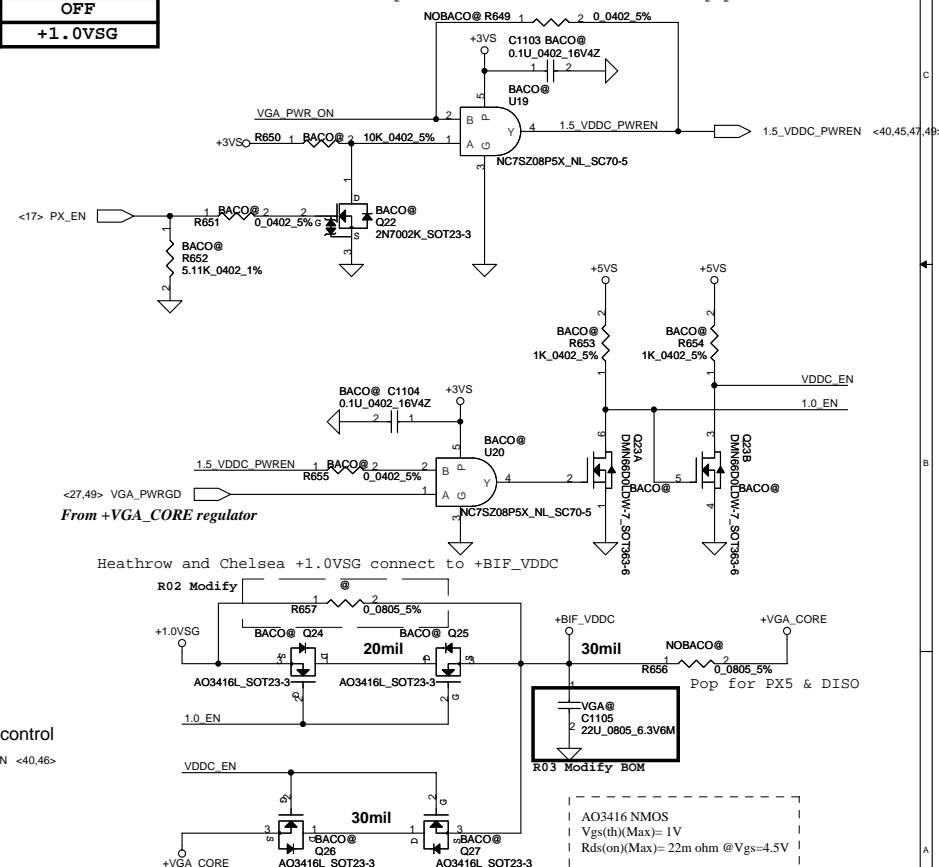


| VGA Muxless and Dis only Status Mapping table |           |                              |                          |
|-----------------------------------------------|-----------|------------------------------|--------------------------|
|                                               | Dis only  | 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                      |

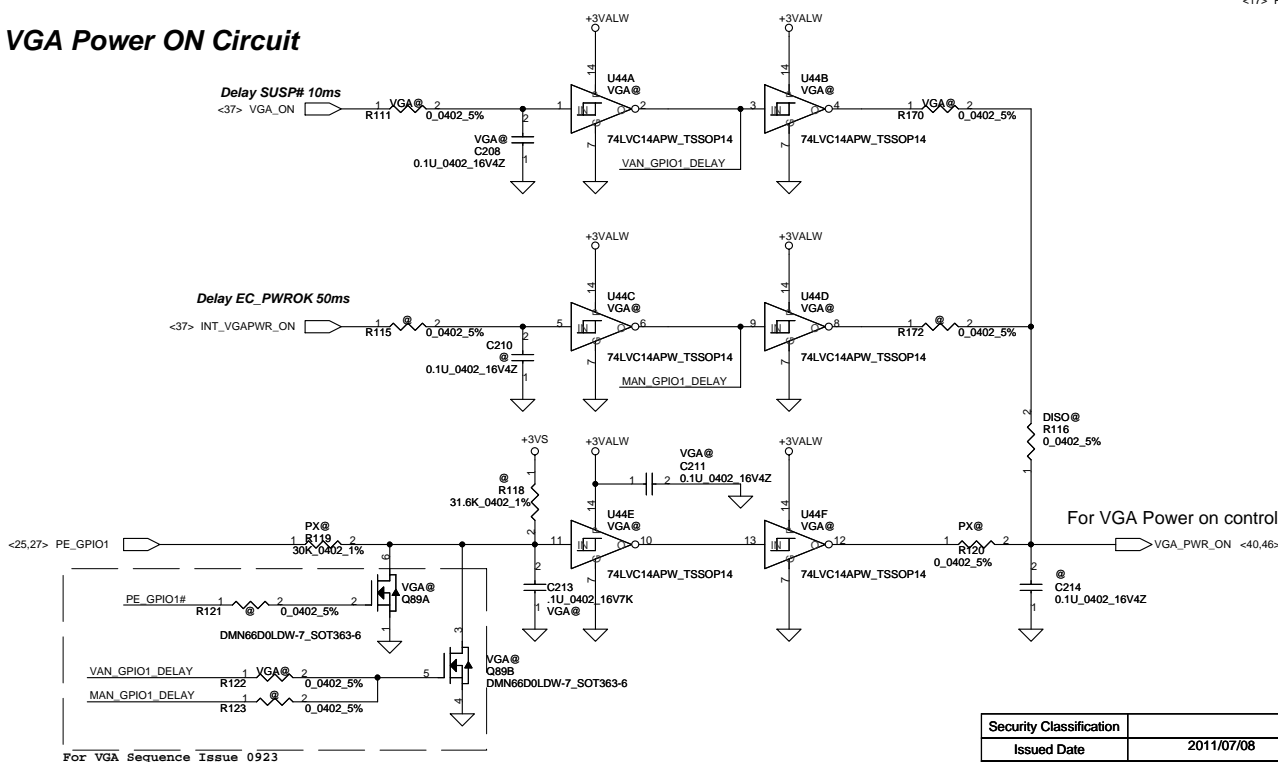
| VGA Muxless with BACO Status Mapping table |             |           |
|--------------------------------------------|-------------|-----------|
|                                            | Normal mode | BACO mode |
| PX_EN                                      | 0           | 1         |
| 1.5_VDDC_PWREN                             | 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         |

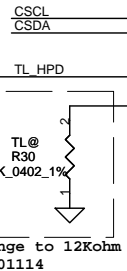
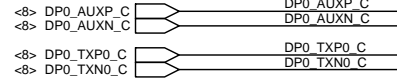
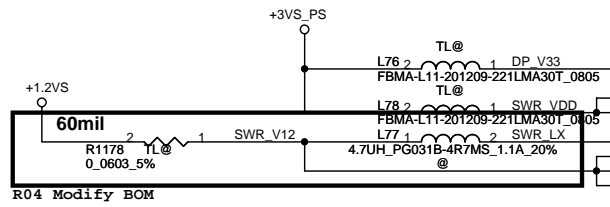
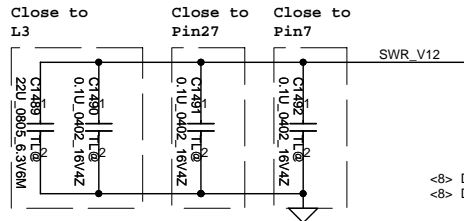
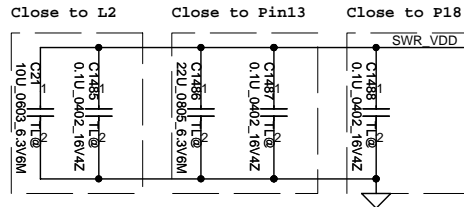
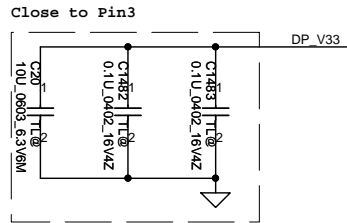
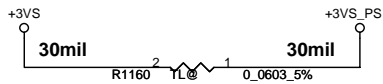
Pop for matreial reduce <DISO need pop>



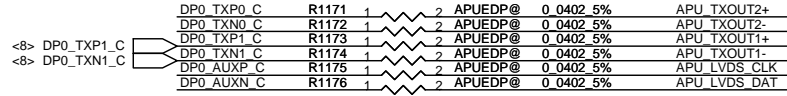
## VGA Power ON Circuit



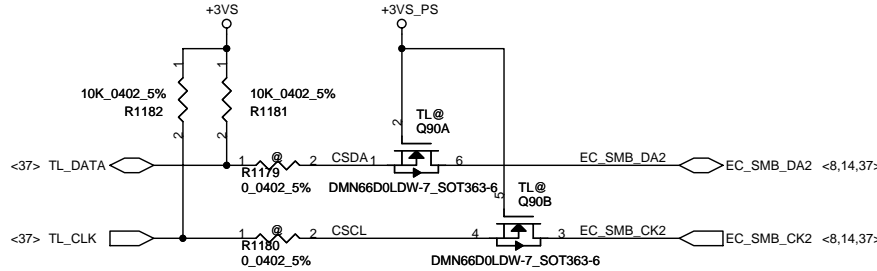
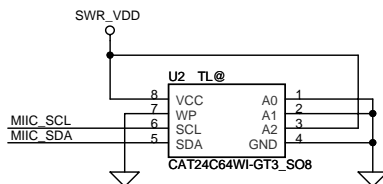
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                 |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08 | Deciphered Date | 2015/07/08 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |            |                 |            |
| Compal Electronics, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                 |            |
| SCHEMATIC, MB A8331                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                 |            |
| Document Number                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |            |
| 4019H2                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |                 |            |
| Date: Wednesday, February 29, 2012                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                 |            |
| Sheet 20 of 52                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                 |            |



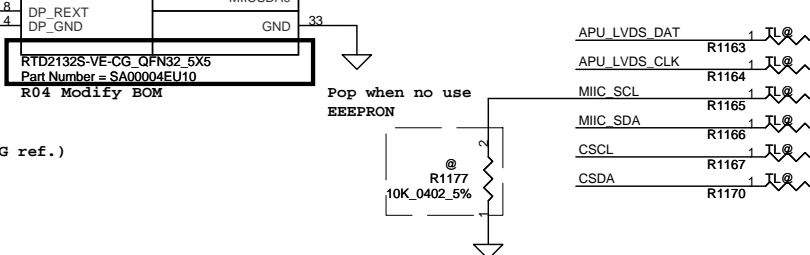
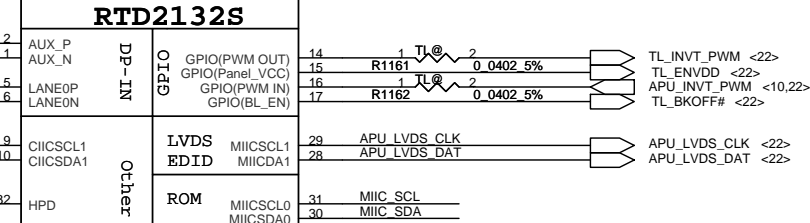
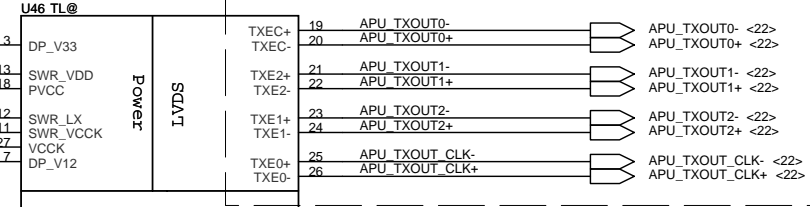
### APU Co-lay eDP function



### EEROM



### Swap for Meet 40 pin LVDS define (FW Support)



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                              |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08 | Title                    | SCHEMATIC,MB A8331           |
| 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          | 4019H2                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date                     | Wednesday, February 29, 2012 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Sheet                    | 21 of 52                     |

### Panel LCDVDD Control

The diagram illustrates the Panel LCDVDD Control circuit. It features a +LCDVDD input connected to a network of resistors (R707, R708, R709, R710, R711, R712, R713) and capacitors (C1152, C1153, C1154, C1149). The circuit includes two capacitors, DMN66D0LDW-7 and AP2301GN-HF, which are connected to the +3VALW and +3VS inputs. The output of the circuit is connected to the LCDVDD signal, which is also connected to the AP2301GN-HF capacitor. The diagram also shows the connection of the LCDVDD signal to the AP2301GN-HF capacitor.

### UMA/DIS LVDS/eDP Mapping table

| UMA            |                | DIS                      |                      | Panel              |
|----------------|----------------|--------------------------|----------------------|--------------------|
| LVDS           | eDP            | LVDS                     | eDP                  | Conn.              |
| APU_TXOUT0+    | APU_TXOUT0-    | VGA_TXOUT0+              | VGA_TXOUT0-          | TXOUT0+<br>TXOUT0- |
| APU_TXOUT1+    | APU_TXOUT1-    | DP0_TXP1_R<br>DP0_TXN1_L | eDP_TX1P<br>eDP_TX1N | TXOUT1+<br>TXOUT1- |
| APU_TXOUT2+    | APU_TXOUT2-    | DP0_TXP0_R<br>DP0_TXN0_L | eDP_TX0P<br>eDP_TX0N | TXOUT2+<br>TXOUT2- |
| APU_TXOUT_CLK+ | APU_TXOUT_CLK- | VGA_TXCLK+               | VGA_TXCLK-           | TXCLK+<br>TXCLK-   |
| APU_TZOUT0+    | APU_TZOUT0-    | VGA_TZOUT0+              | VGA_TZOUT0-          | TZOUT0+<br>TZOUT0- |
| APU_TZOUT1+    | APU_TZOUT1-    | VGA_TZOUT1+              | VGA_TZOUT1-          | TZOUT1+<br>TZOUT1- |
| APU_TZOUT2+    | APU_TZOUT2-    | VGA_TZOUT2+              | VGA_TZOUT2-          | TZOUT2+<br>TZOUT2- |

[illegible]

**Panel PWM Control**

EC\_INVT\_PWM

VGA\_INVT\_PWM

APU\_INVT\_PWM

TL\_INVT\_PWM

DISOFF#

INVT\_PWM

R716 0.0402\_5%

R717 0.0402\_5%

R720 0.0402\_5%

R721 0.0402\_5%

R719 100K\_0402\_5%

L36 40mils

FBMA-L11-201209-221LMA307\_0805

C1163 680P\_0402\_50V7K

C1164 68P\_0402\_50V8J

220P\_0402\_50V7K

[illegible]

**VGA**  
**LVDS Output**

**VGA Co-lay eDP function**

**Signal Connections:**

- VGA:**
  - TX0T0-: VGA\_TXOUT0- (Pin 31)
  - TX0T0+: VGA\_TXOUT0+ (Pin 32)
  - TX0T1-: VGA\_TXOUT1- (Pin 33)
  - TX0T1+: VGA\_TXOUT1+ (Pin 34)
  - TX0T2-: VGA\_TXOUT2- (Pin 35)
  - TX0T2+: VGA\_TXOUT2+ (Pin 36)
  - TXCLK-: VGA\_TXCLK- (Pin 37)
  - TXCLK+: VGA\_TXCLK+ (Pin 38)
- LVDS:**
  - TX0T0-: VGA\_TXOUT0- (Pin 31)
  - TX0T0+: VGA\_TXOUT0+ (Pin 32)
  - TX0T1-: VGA\_TXOUT1- (Pin 33)
  - TX0T1+: VGA\_TXOUT1+ (Pin 34)
  - TX0T2-: VGA\_TXOUT2- (Pin 35)
  - TX0T2+: VGA\_TXOUT2+ (Pin 36)
  - TXCLK-: VGA\_TXCLK- (Pin 37)
  - TXCLK+: VGA\_TXCLK+ (Pin 38)
- eDP:**
  - AUXP: eDP\_AUXP (Pin 39)
  - AUXN: eDP\_AUXN (Pin 40)
  - SDA: I2CC\_SDA (Pin 31)
  - SCL: I2CC\_SCL (Pin 32)

**Pin Definitions:**

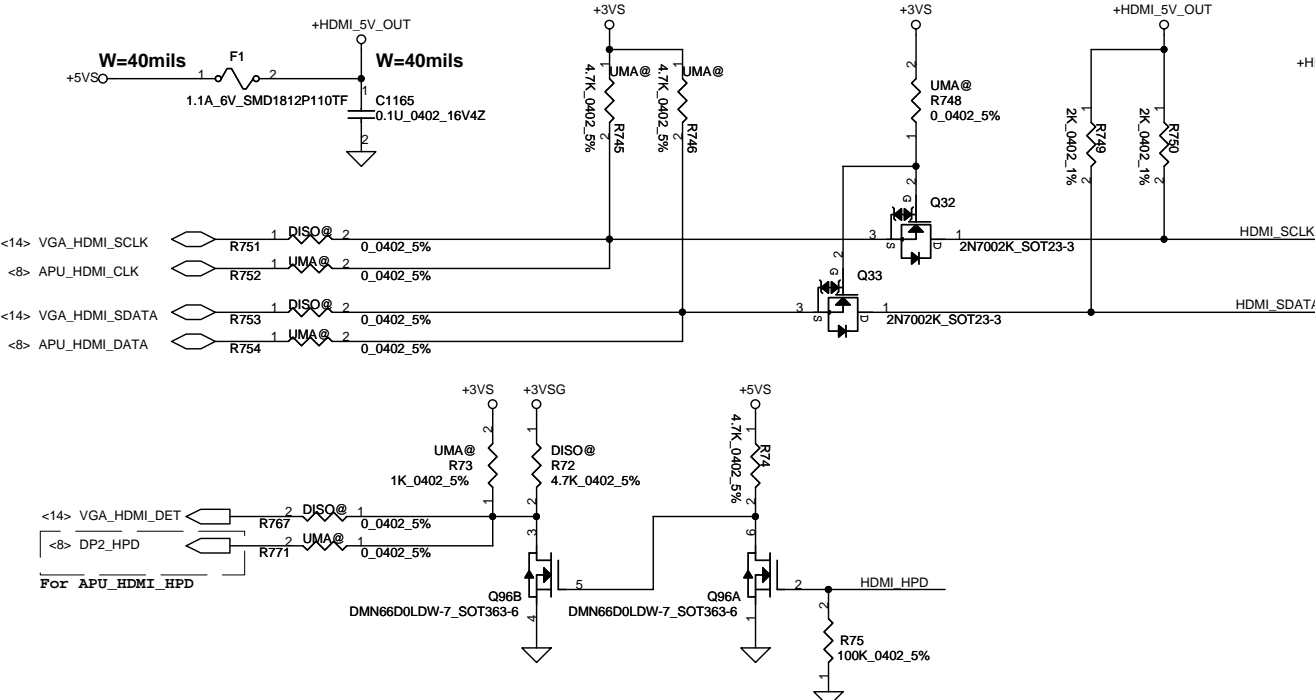
- Pin 31: I2CC\_SDA
- Pin 32: I2CC\_SCL
- Pin 33: EDP\_AUXP
- Pin 34: EDP\_AUXN
- Pin 35: EDP\_HP
- Pin 36: EDP\_HP
- Pin 37: USB20\_N5\_R
- Pin 38: USB20\_P5\_R
- Pin 39: EDP\_AUXP
- Pin 40: EDP\_AUXN

**Part Information:**

- Part Number: SP100106810
- PCB Footprint: I-PEX\_20143-040E-20F\_40P

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                    |            |                          |                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|-------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | Compal Secret Data |            | Compal Electronics, Inc. |                   |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2011/07/08 | Deciphered Date    | 2015/07/08 | Title                    | SCHMATIC,MB A8331 |
| 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 RAJAPALACE 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               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                    |            | 4019H2                   | B                 |
| Date: Wednesday, February 29, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                    |            | Sheet                    | 22 of 52          |

|   |   |   |   |   |
|---|---|---|---|---|
| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|



From VGA

From APU

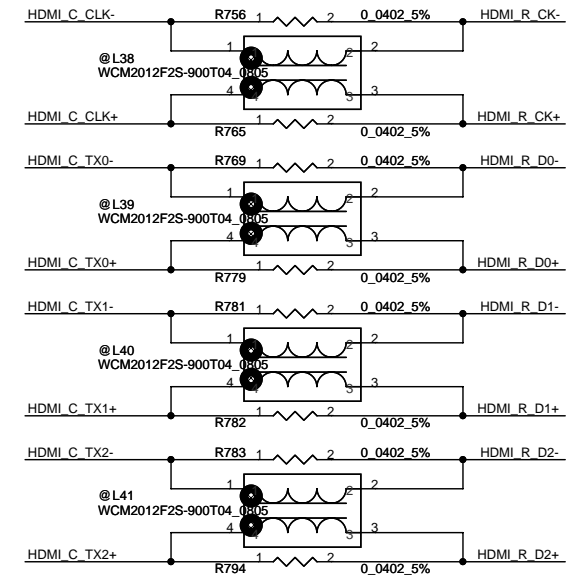
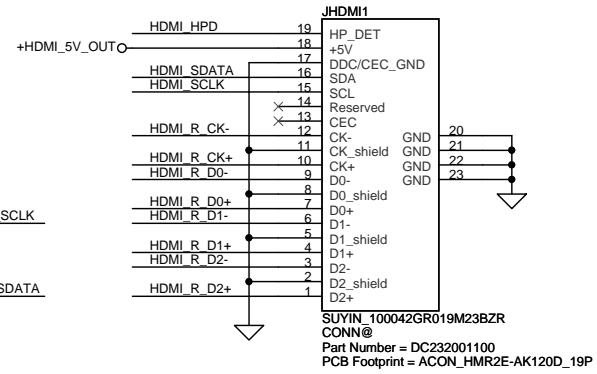
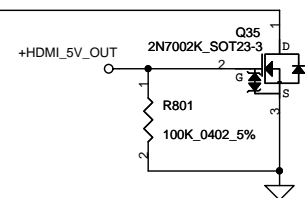
Near the connector

|               |       |   |     |          |                 |      |   |   |     |         |
|---------------|-------|---|-----|----------|-----------------|------|---|---|-----|---------|
| HDMI C TX2- R | C1166 | 1 | .1U | 0402 16V | HDMI C TX2-DISO | R784 | 1 | 2 | 499 | 0402 1% |
| HDMI C TX2+ R | C1167 | 2 | .1U | 0402 16V | HDMI C TX2-DISO | R786 | 1 | 2 | 499 | 0402 1% |
| HDMI C TX1- R | C1168 | 1 | .1U | 0402 16V | HDMI C TX1-DISO | R788 | 1 | 2 | 499 | 0402 1% |
| HDMI C TX1+ R | C1169 | 2 | .1U | 0402 16V | HDMI C TX1-DISO | R790 | 1 | 2 | 499 | 0402 1% |
| HDMI C TX0- R | C1170 | 1 | .1U | 0402 16V | HDMI C TX0-DISO | R792 | 1 | 2 | 499 | 0402 1% |
| HDMI C TX0+ R | C1171 | 2 | .1U | 0402 16V | HDMI C TX0-DISO | R795 | 1 | 2 | 499 | 0402 1% |
| HDMI C CLK- R | C1172 | 1 | .1U | 0402 16V | HDMI C CLK-DISO | R797 | 1 | 2 | 499 | 0402 1% |
| HDMI C CLK+ R | C1173 | 2 | .1U | 0402 16V | HDMI C CLK-DISO | R799 | 1 | 2 | 499 | 0402 1% |

UMA use 604 ohm SCL v1.01  
VGA use 499 ohm

For UMA HDMI  
termination BOM option

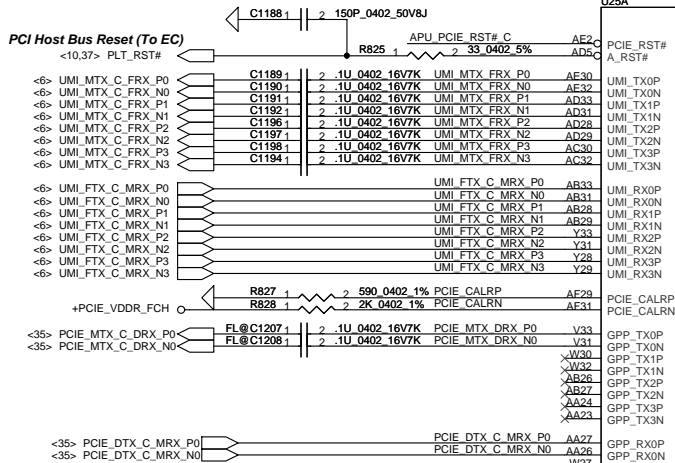
- R784 2 UMA@1 604\_0402\_1%
- R786 2 UMA@1 604\_0402\_1%
- R788 2 UMA@1 604\_0402\_1%
- R790 2 UMA@1 604\_0402\_1%
- R792 2 UMA@1 604\_0402\_1%
- R795 2 UMA@1 604\_0402\_1%
- R797 2 UMA@1 604\_0402\_1%
- R799 2 UMA@1 604\_0402\_1%



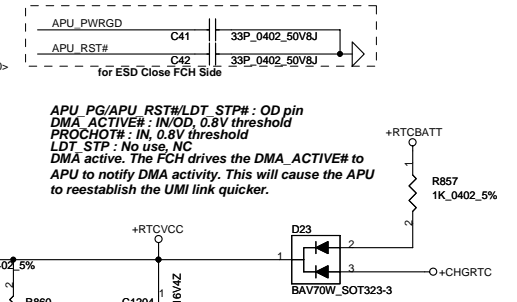
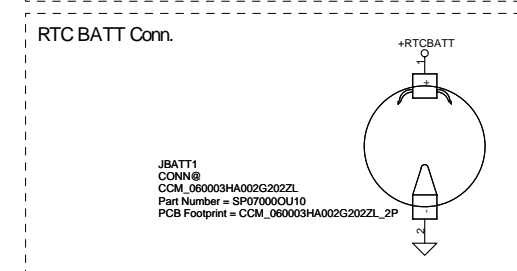
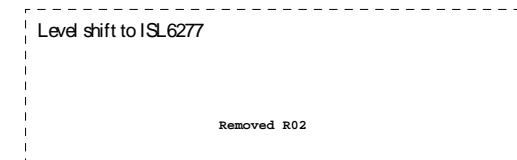
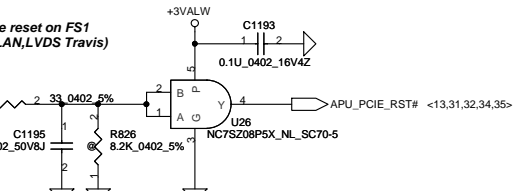
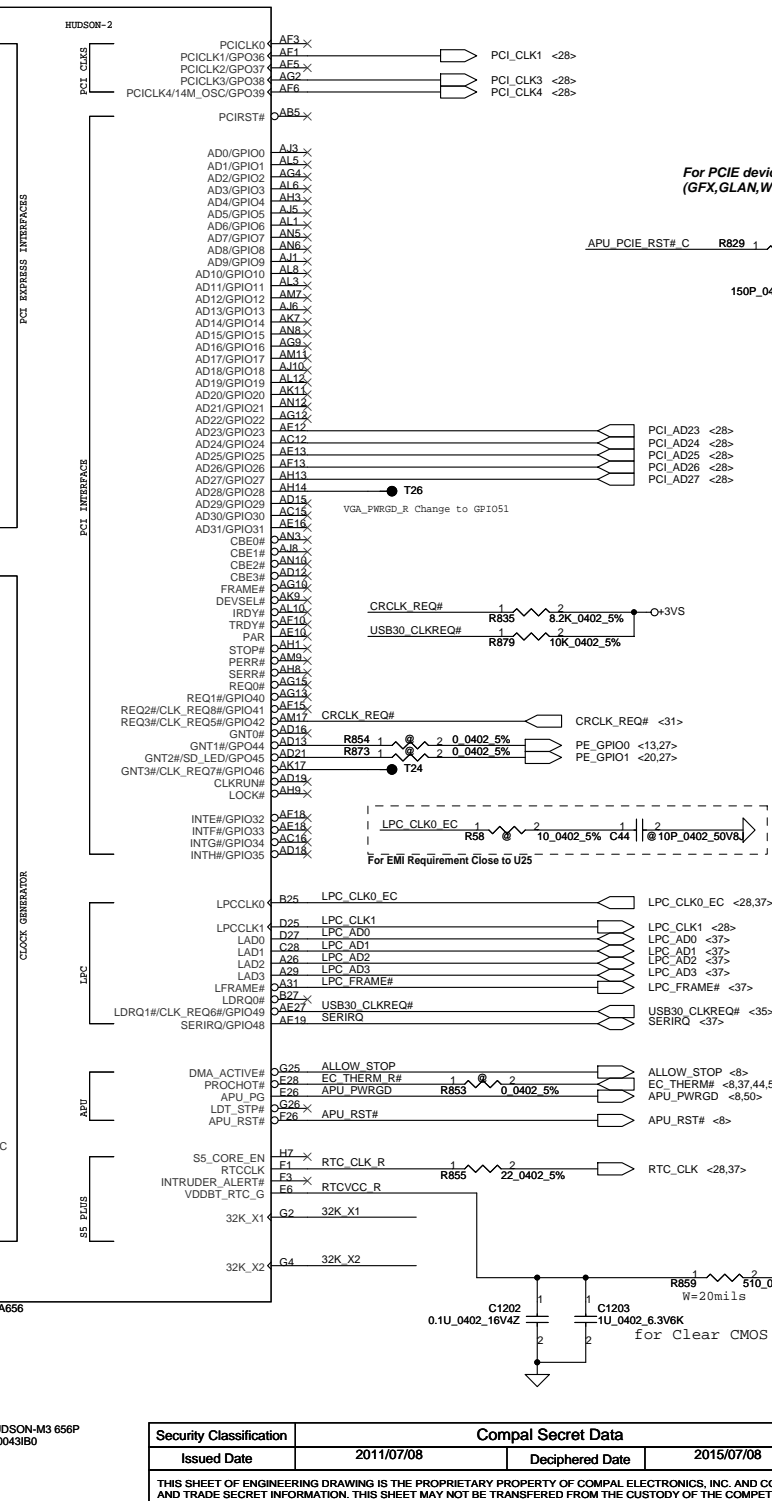
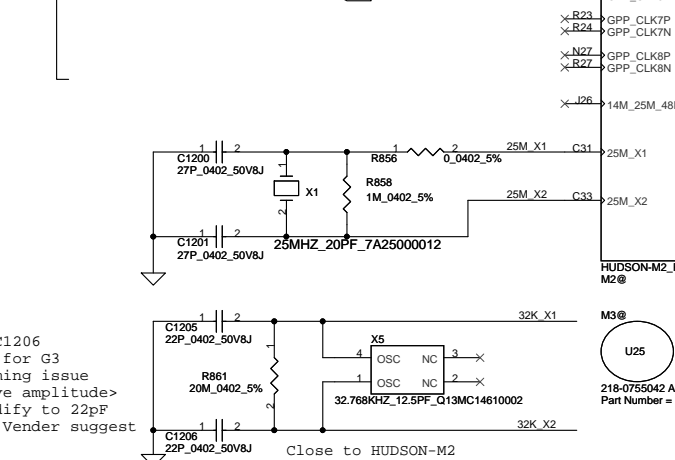
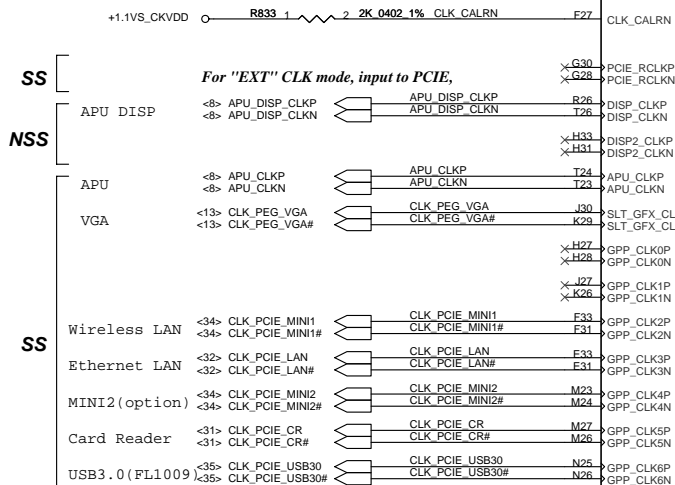
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|--------------------------|------------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc. |                                    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08 | Title                    | SCHMATIC,MB A8331                  |
| 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                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          | 4019H2                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          | Date: Wednesday, February 29, 2012 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                          | Sheet 23 of 52                     |







GPP Port For USB30 on SUSB  
GPP Port For USB30 on M/B 20101103



C1205, C1206  
Change for G3  
RTC timing issue  
<improve amplitude>  
R03 Modify to 22pF  
follow Vender suggest

Close to HUDSON-M2  
M2@  
M3@  
U25

218-0755042 A13 HUDSON-M3 656P  
Part Number = SA000043180

SECURITY CLASSIFICATION: Compal Secret Data  
ISSUED DATE: 2011/07/08  
DECIPHERED DATE: 2015/07/08  
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.

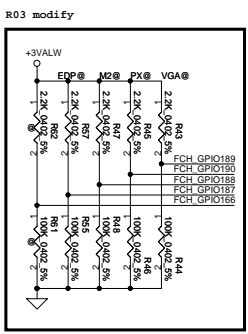
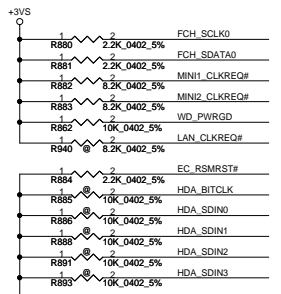
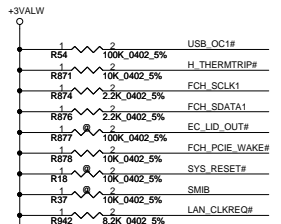
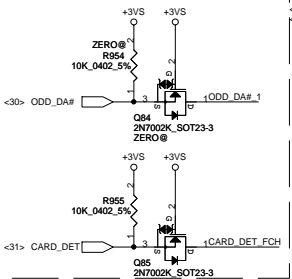
Compal Electronics, Inc.  
SCHEMATIC, MB A8331  
Document Number  
4019H2  
Date: Wednesday, February 29, 2012  
Sheet 25 of 52



**THERMTRIP:**  
Need level shift from +3VALW to +1.5V  
Note: Ensure FCH internal pull-up resistor to +3.3V S5 is disabled to prevent leakage when APU is powered down.

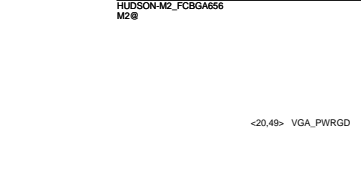
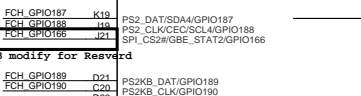
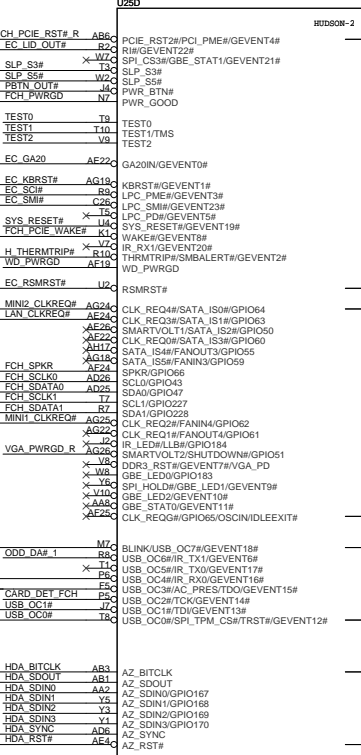
SM bus 0->S0 PWR domain  
SM bus 1->S5 PWR domain

FCH GEVENT (S5 domain)  
with isolation circuit to avoid leakage

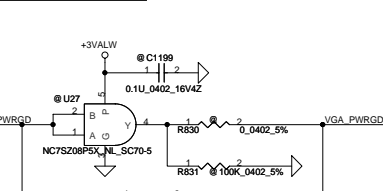
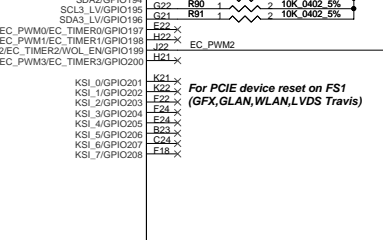
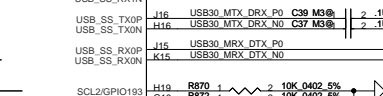
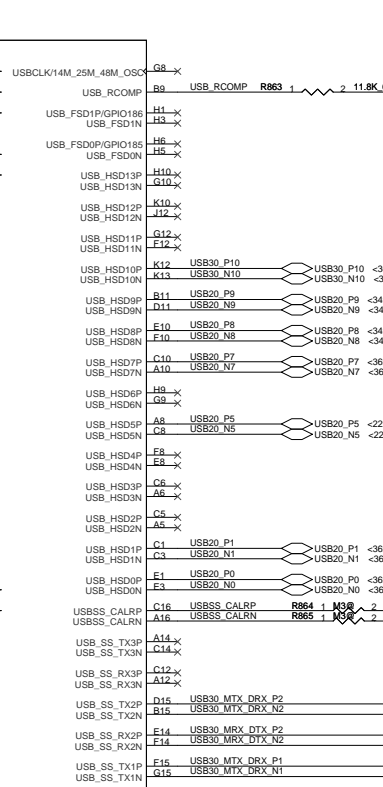


| Project SKU ID     | Value                 |
|--------------------|-----------------------|
| GPIO189 (use VGA)  | Low (UMA) High (VGA)  |
| GPIO190 (use PX)   | Low (noPX) High (PX)  |
| GPIO188 (USB2/3)   | High (Z.0) Low (3.0)  |
| GPIO187 (LVDS/noP) | Low (LVDS) High (noP) |
| GPIO166 (Reservd)  |                       |

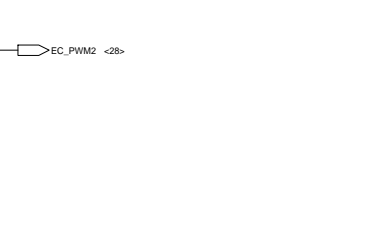
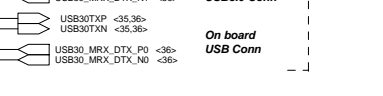
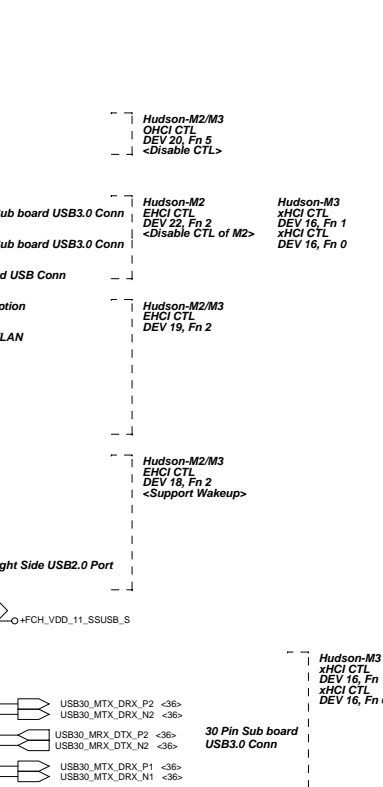
### R03 modify



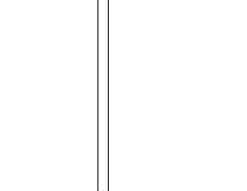
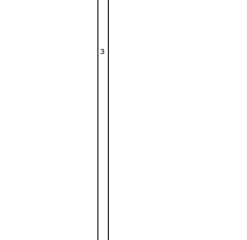
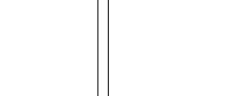
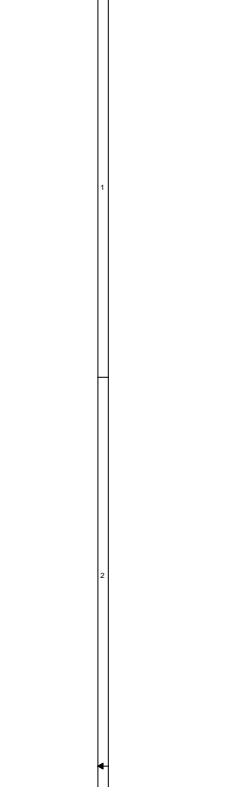
| Project SKU ID     | Value                 |
|--------------------|-----------------------|
| GPIO189 (use VGA)  | Low (UMA) High (VGA)  |
| GPIO190 (use PX)   | Low (noPX) High (PX)  |
| GPIO188 (USB2/3)   | High (Z.0) Low (3.0)  |
| GPIO187 (LVDS/noP) | Low (LVDS) High (noP) |
| GPIO166 (Reservd)  |                       |



| Project SKU ID     | Value                 |
|--------------------|-----------------------|
| GPIO189 (use VGA)  | Low (UMA) High (VGA)  |
| GPIO190 (use PX)   | Low (noPX) High (PX)  |
| GPIO188 (USB2/3)   | High (Z.0) Low (3.0)  |
| GPIO187 (LVDS/noP) | Low (LVDS) High (noP) |
| GPIO166 (Reservd)  |                       |



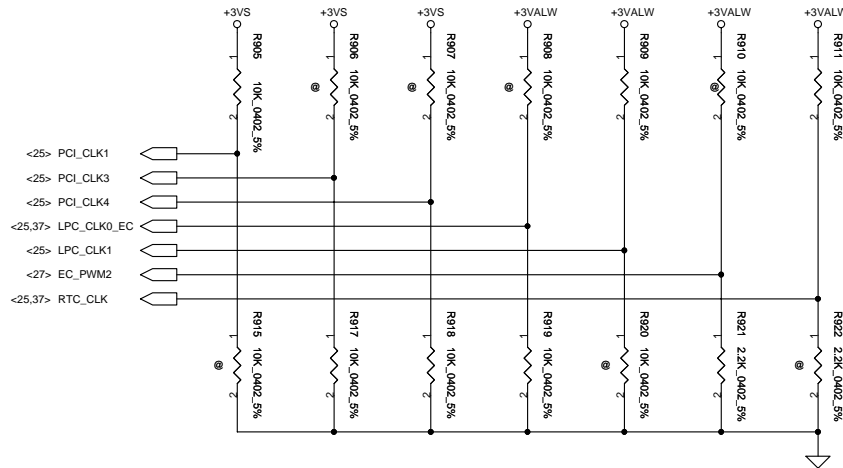
| Project SKU ID     | Value                 |
|--------------------|-----------------------|
| GPIO189 (use VGA)  | Low (UMA) High (VGA)  |
| GPIO190 (use PX)   | Low (noPX) High (PX)  |
| GPIO188 (USB2/3)   | High (Z.0) Low (3.0)  |
| GPIO187 (LVDS/noP) | Low (LVDS) High (noP) |
| GPIO166 (Reservd)  |                       |



| Project SKU ID     | Value                 |
|--------------------|-----------------------|
| GPIO189 (use VGA)  | Low (UMA) High (VGA)  |
| GPIO190 (use PX)   | Low (noPX) High (PX)  |
| GPIO188 (USB2/3)   | High (Z.0) Low (3.0)  |
| GPIO187 (LVDS/noP) | Low (LVDS) High (noP) |
| GPIO166 (Reservd)  |                       |

## STRAP PINS

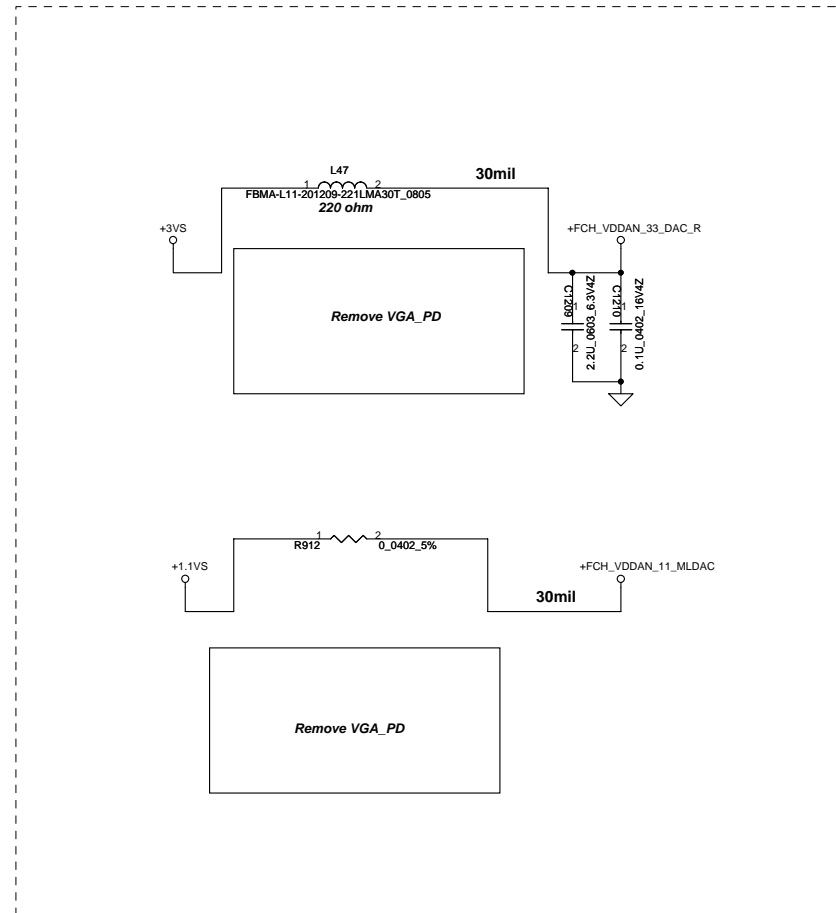
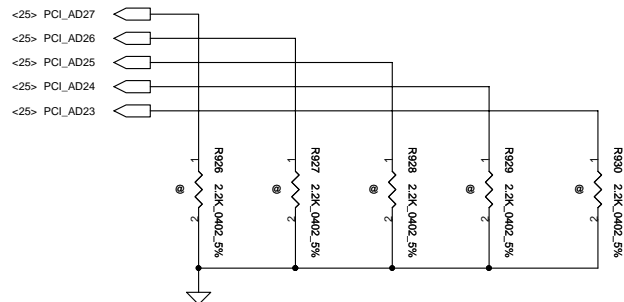
|           | PCI_CLK1                   | PCI_CLK3                      | PCI_CLK4                           | LPC_CLK0       | LPC_CLK1          | EC_PWM2            | RTC_CLK                                |
|-----------|----------------------------|-------------------------------|------------------------------------|----------------|-------------------|-----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



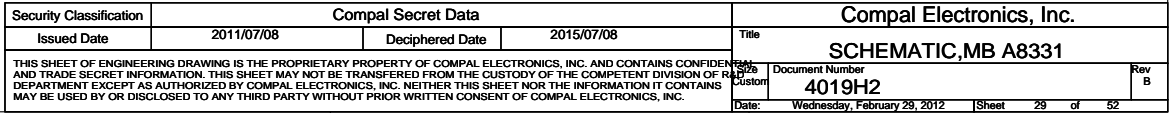
## DEBUG STRAPS

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

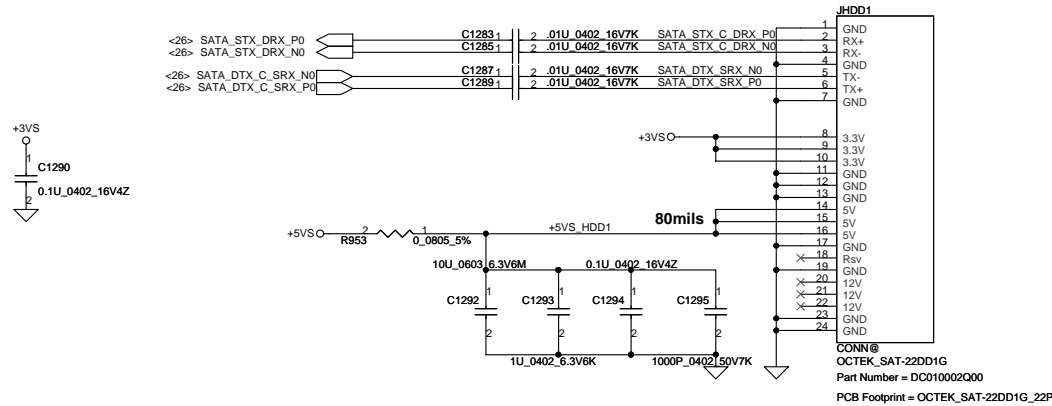
| PCI_AD26  | PCI_AD27               |                                   | PCI_AD25              | PCI_AD24                           | PCI_AD23                        |
|-----------|------------------------|-----------------------------------|-----------------------|------------------------------------|---------------------------------|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



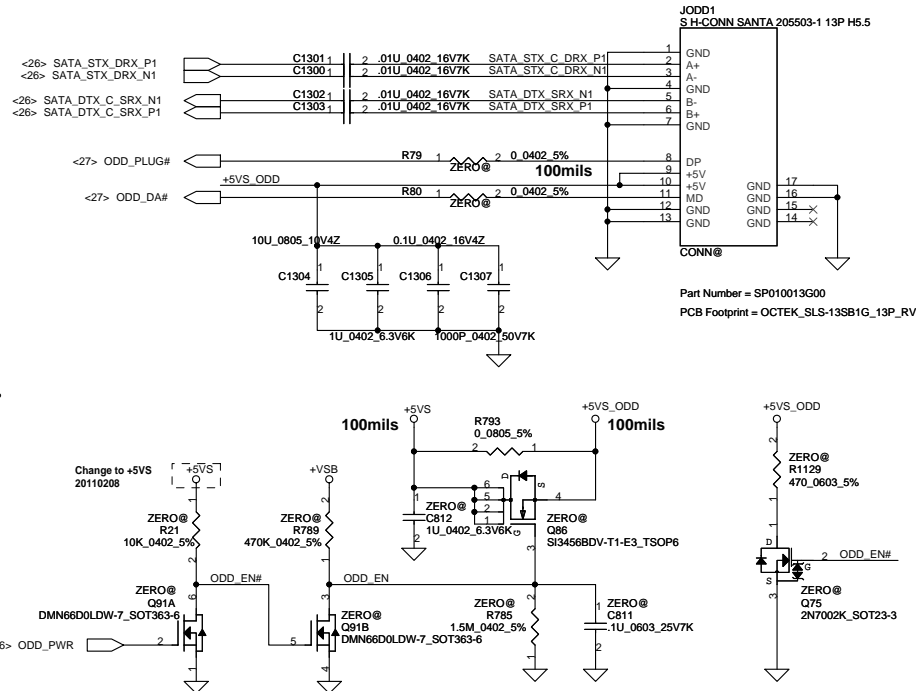
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                 |            | Compal Secret Data |                              | Compal Electronics, Inc. |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|------------|--------------------|------------------------------|--------------------------|----------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08 | Deciphered Date | 2015/07/08 | Title              | Document Number              | Rev                      | B        |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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. |            |                 |            | Remove VGA_PD      | 4019H2                       |                          |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                 |            | Date:              | Wednesday, February 29, 2012 | Sheet                    | 28 of 52 |



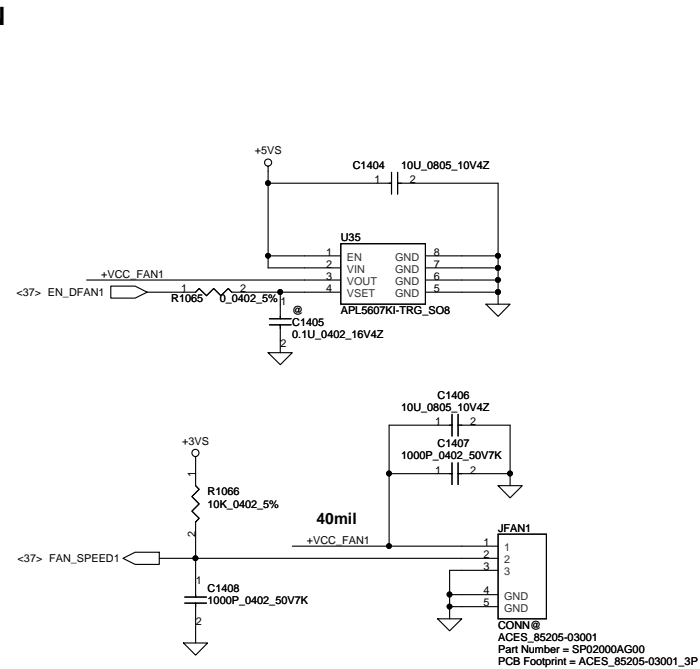
## SATA HDD1 Conn.



## SATA ODD Conn.

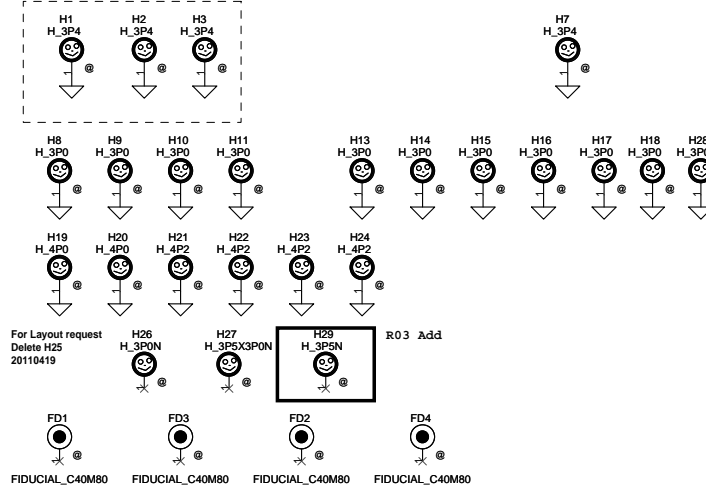


## FAN



## Screw Hole Follow P5WE0

### FAN Stand-Off

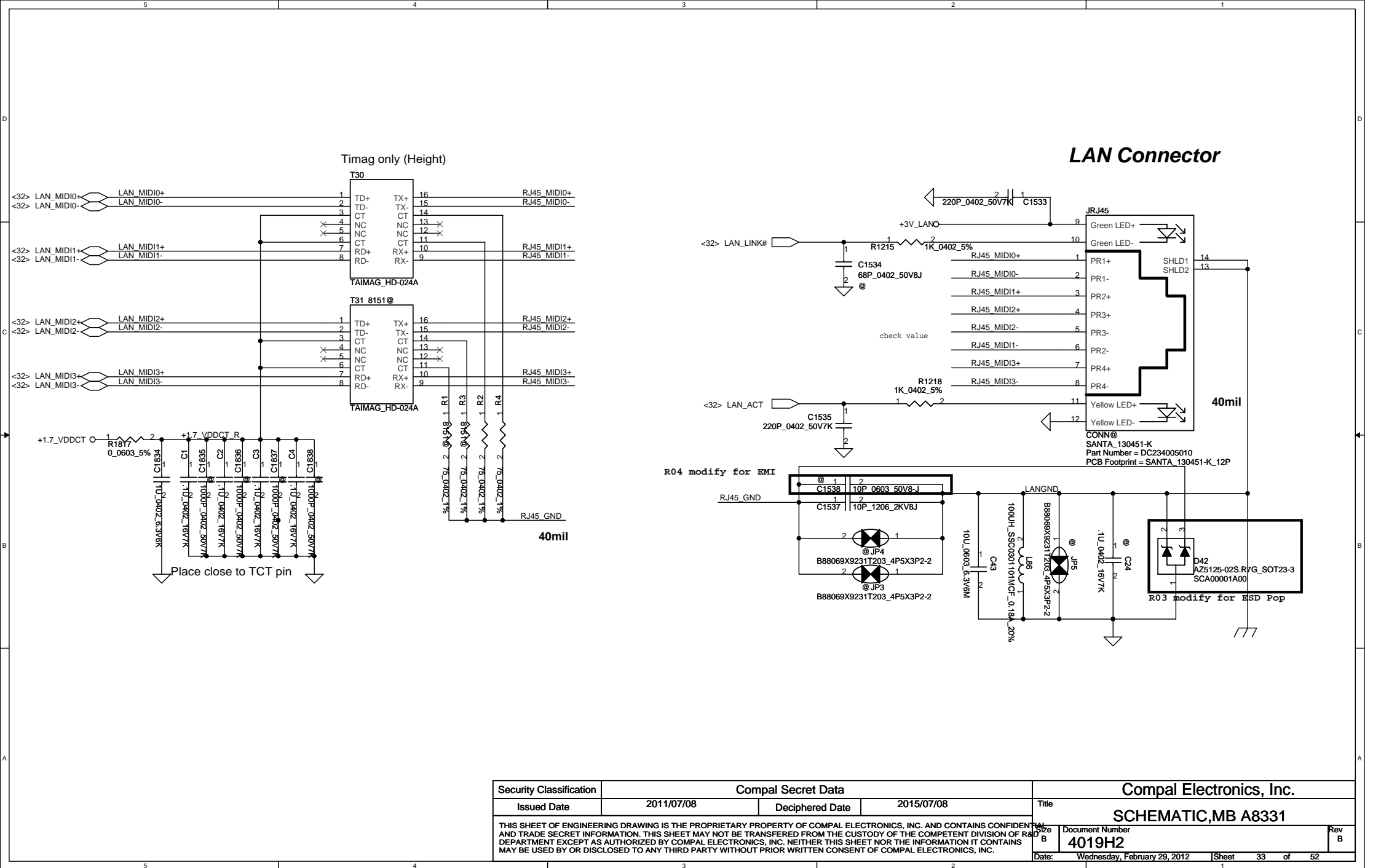


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                                    |  |       |  |                |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------|--|-----------------|--|------------------------------------|--|-------|--|----------------|--|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Compal Secret Data |  |                 |  | Compal Electronics, Inc.           |  |       |  |                |  |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2011/07/08         |  | Deciphered Date |  | 2015/07/08                         |  | 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 A8331                 |  |       |  |                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Document Number                    |  |       |  | Rev B          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | 4019H2                             |  |       |  |                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  | Date: Wednesday, February 29, 2012 |  |       |  | Sheet 30 of 52 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                                    |  |       |  |                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                                    |  |       |  |                |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                    |  |                 |  |                                    |  |       |  |                |  |



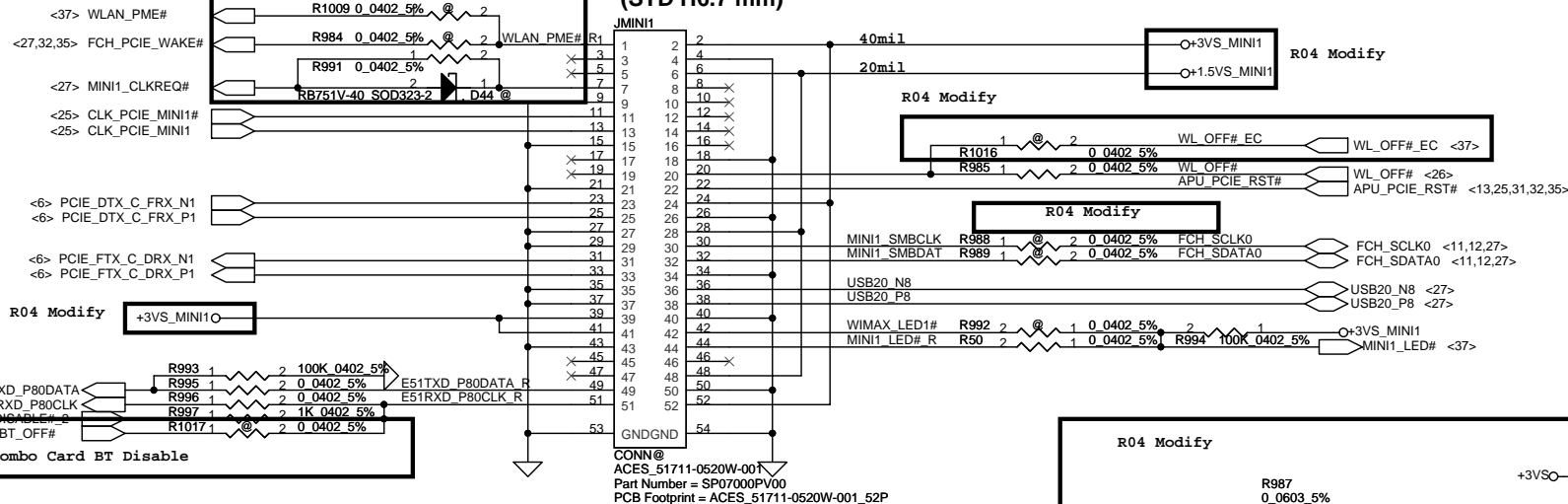
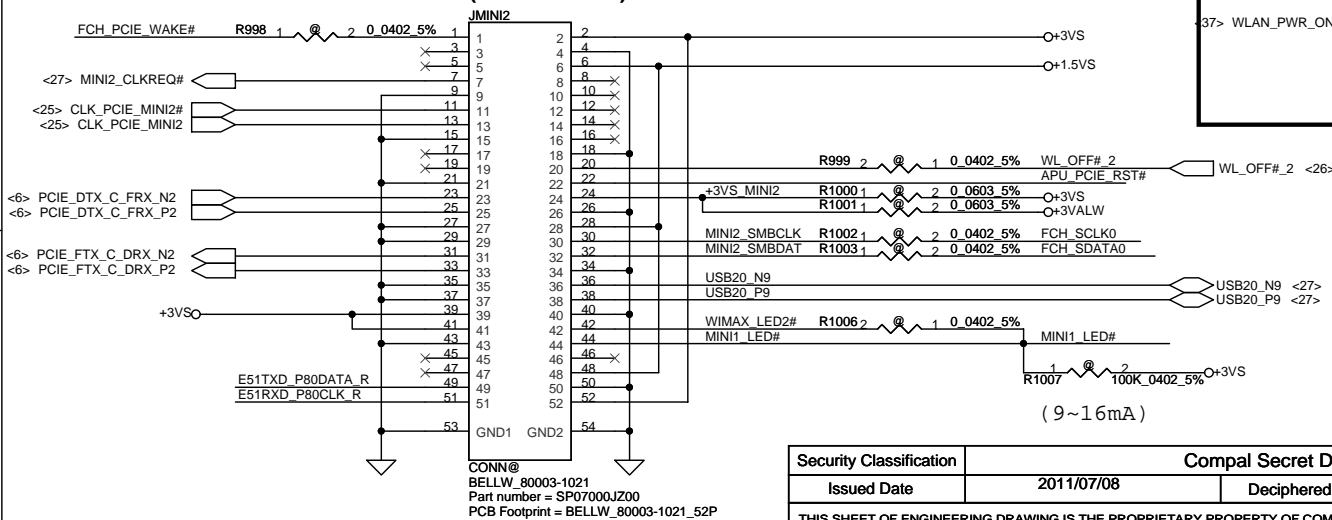
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                              |                    |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|------------------------------|--------------------|----------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc.     |                    |          |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08 | Title                        | SCHEMATIC,MB A8331 |          |
| 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      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | 5                            | 4019H2             | B        |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                 |            | Wednesday, February 29, 2012 | Sheet              | 32 of 52 |



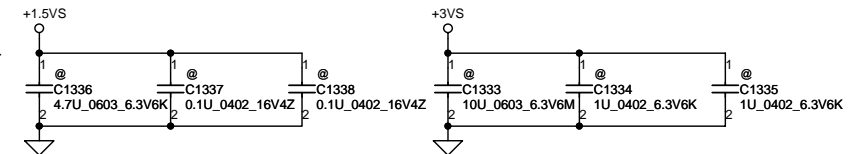
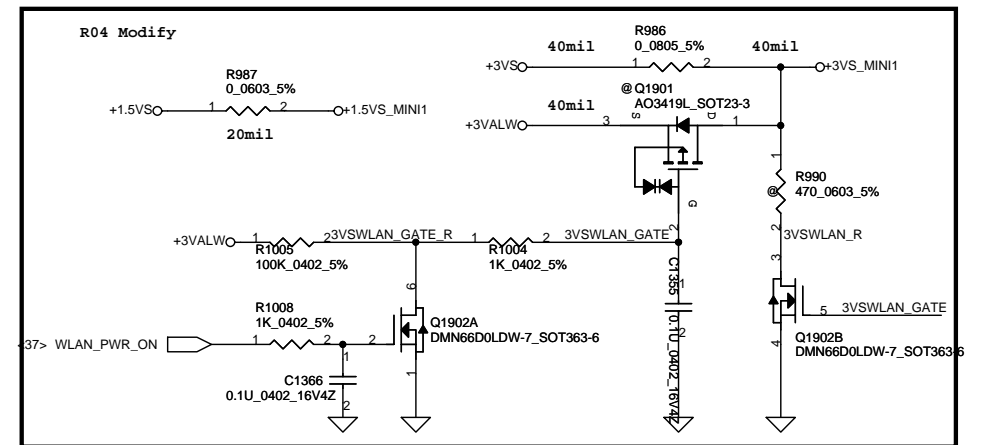
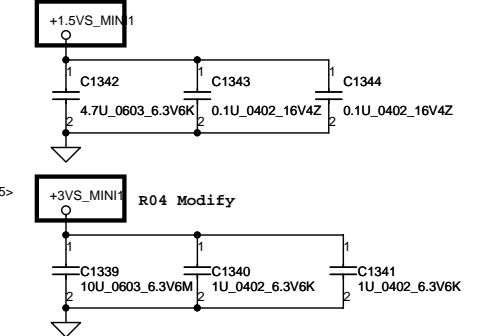


|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            |                                    |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|------------|------------------------------------|----------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 |            | Compal Electronics, Inc.           |                |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08 | Title                              |                |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. |                    |                 |            | Document Number                    | Rev            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | 4019H2                             | B              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |            | Date: Wednesday, February 29, 2012 | Sheet 33 of 52 |

## R04 Modify

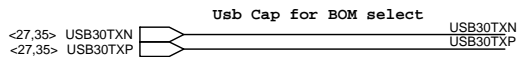
TOP View - Right (Wireless LAN)  
(STD H6.7 mm)TOP View - Left (Option)  
(STD H5.7mm)

## R04 Modify

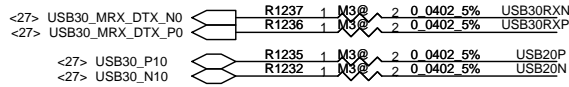


| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.           |                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|------------------------------------|----------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08 | Deciphered Date    | 2015/07/08 | 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 A8331                |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Document Number                    | Rev            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | 4019H2                             | B              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date: Wednesday, February 29, 2012 | Sheet 34 of 52 |

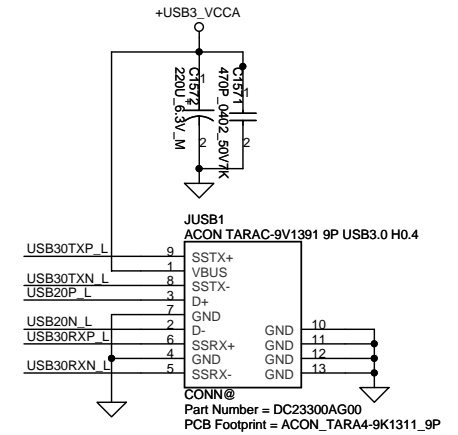
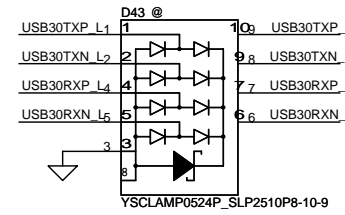
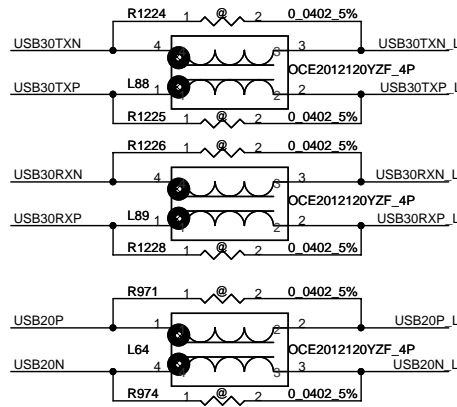
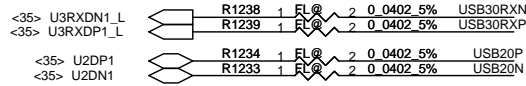




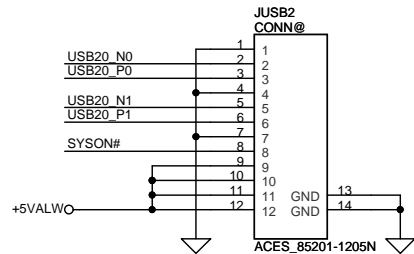
## From FCH



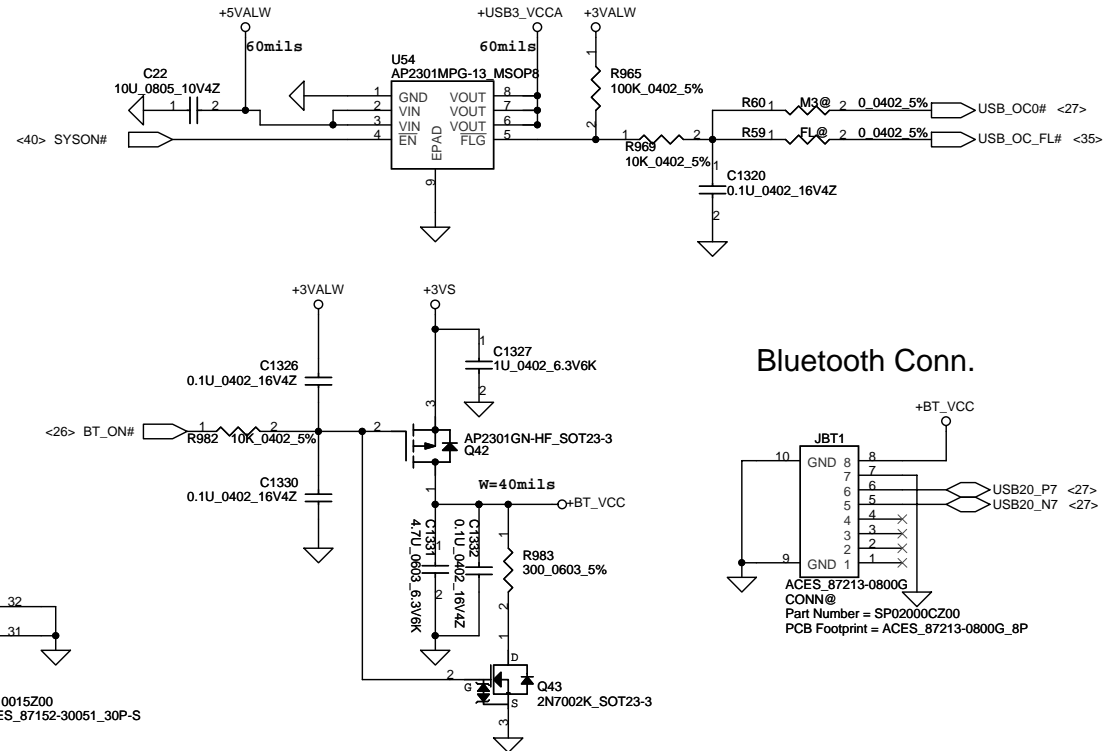
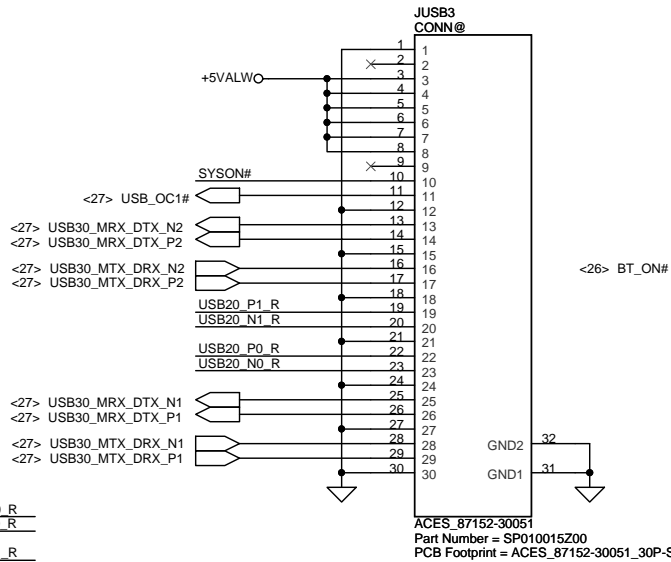
## From Fresco



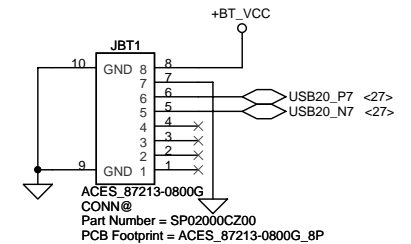
## 12 Pin USB20/B Conn



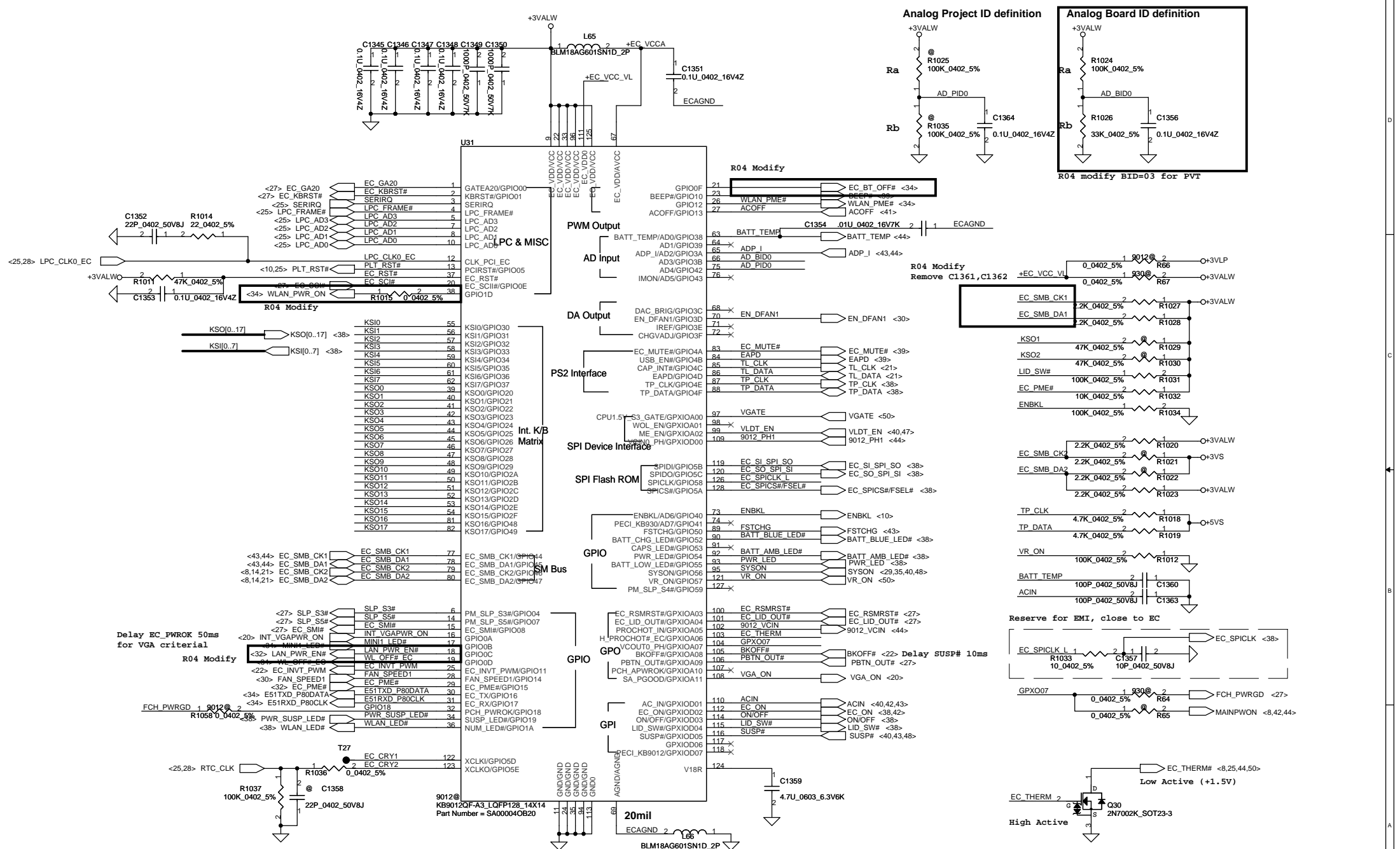
## 30 Pin USB30/B Zif Conn.



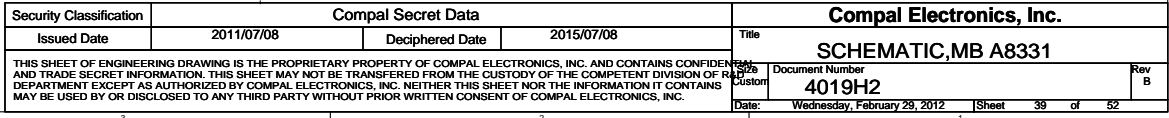
## Bluetooth Conn.



| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08 | Deciphered Date    | 2015/07/08 | Title                    | SCHEMATIC,MB A8331           |
| 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          | 4019H2                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date                     | Wednesday, February 29, 2012 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 36 of 52                     |

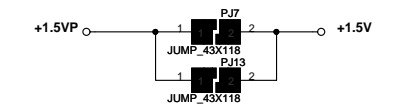
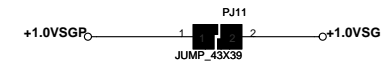
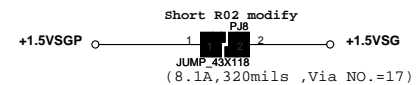
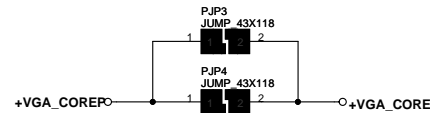
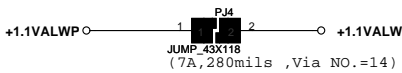
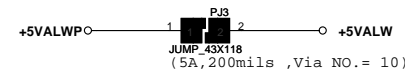
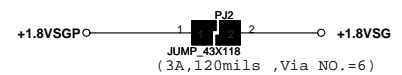
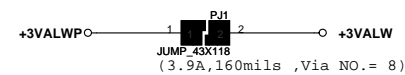
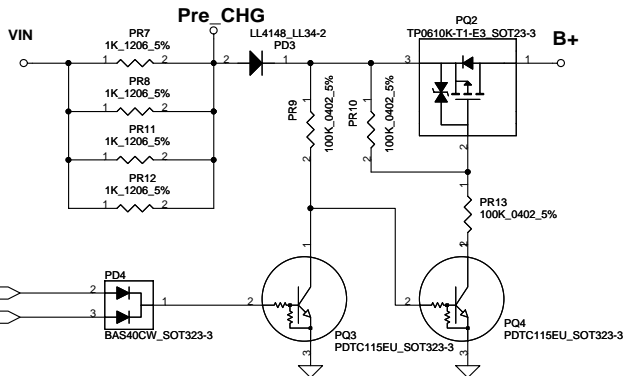
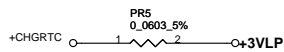
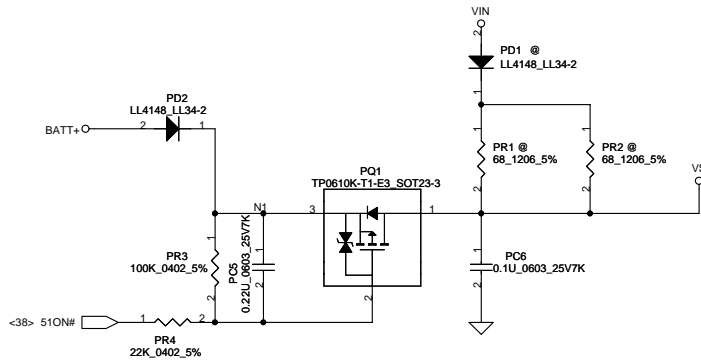
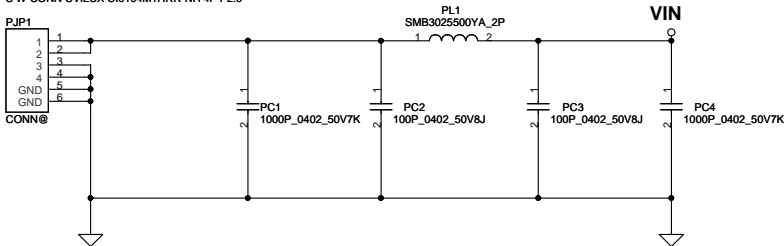


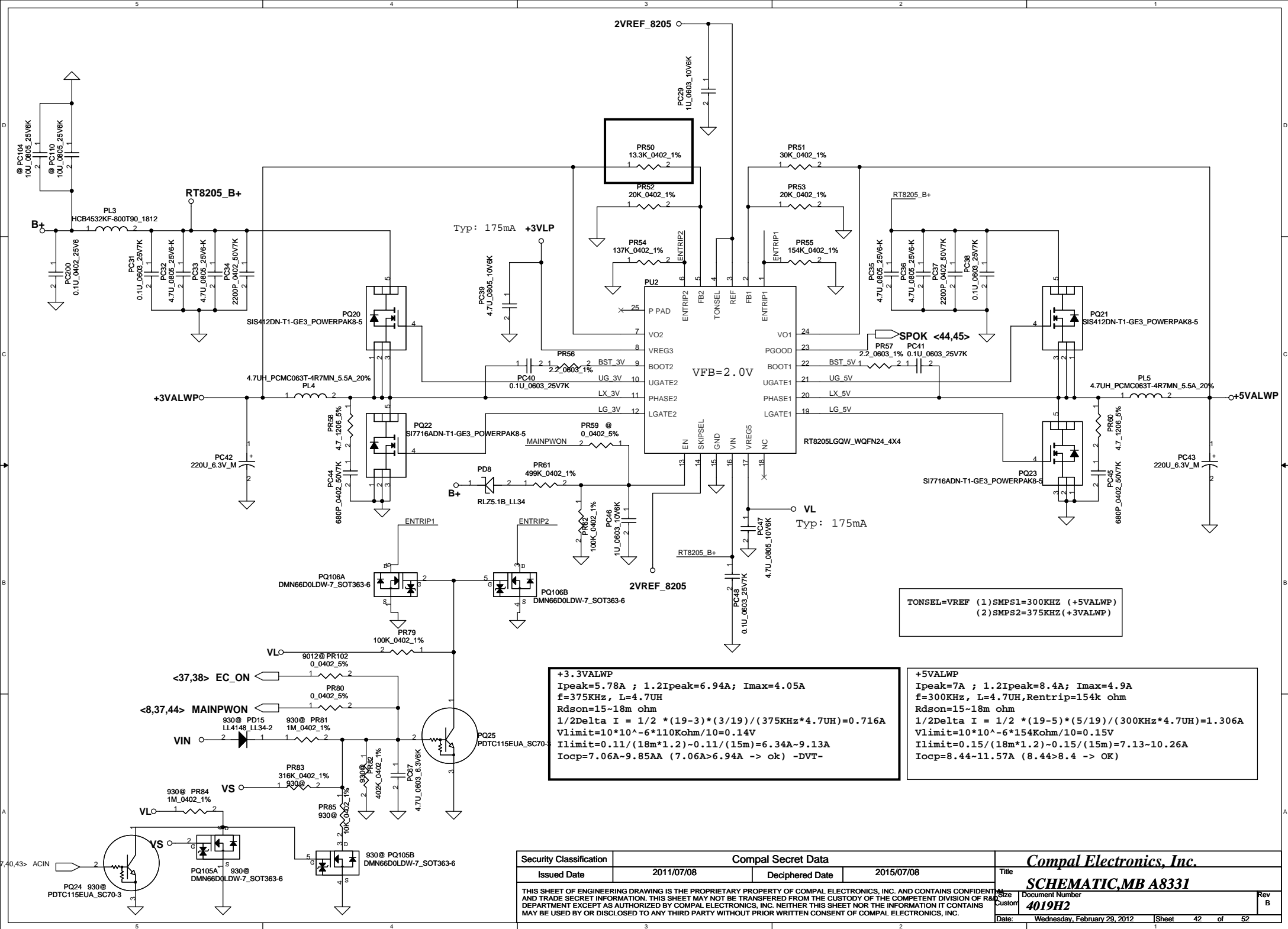


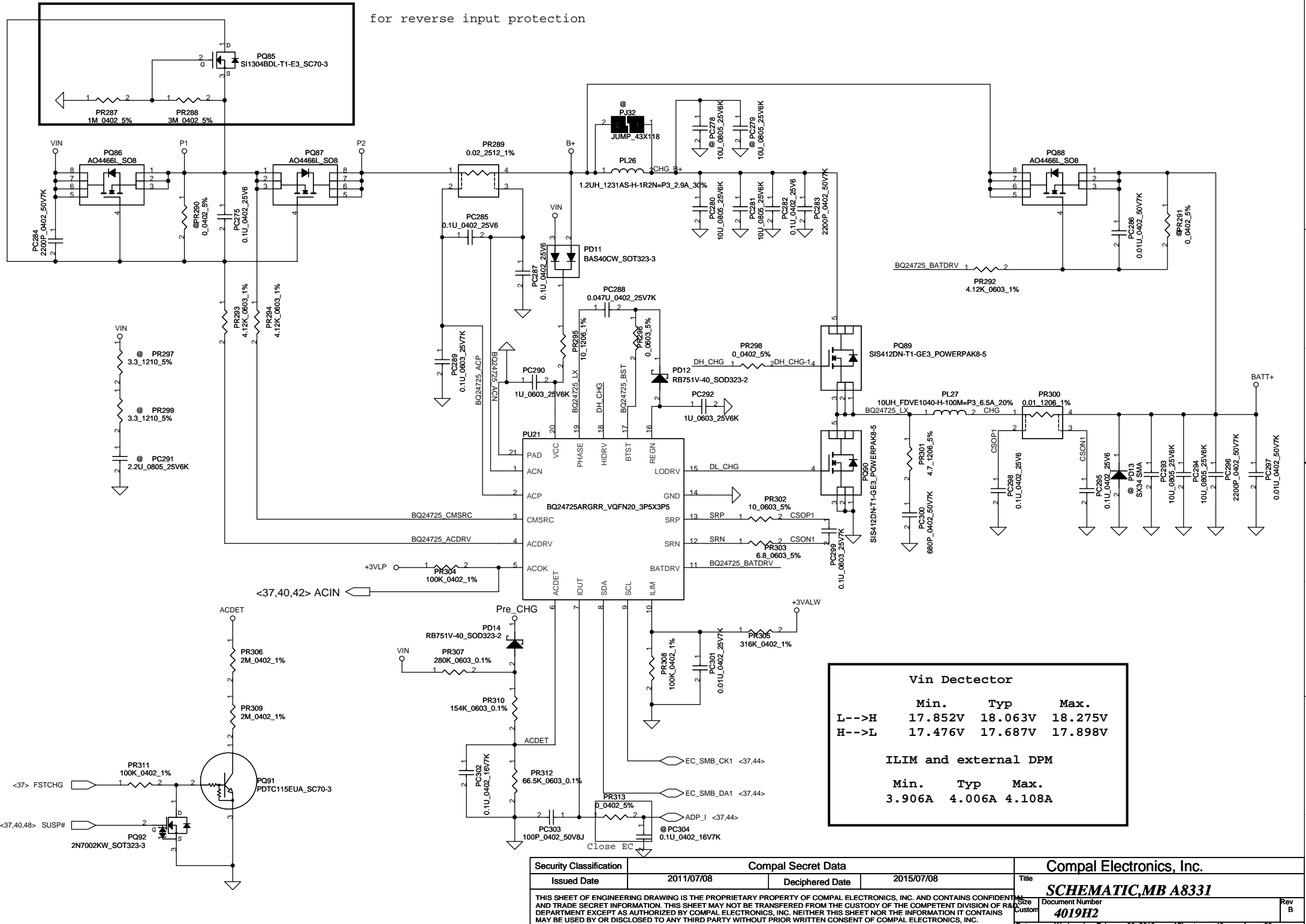










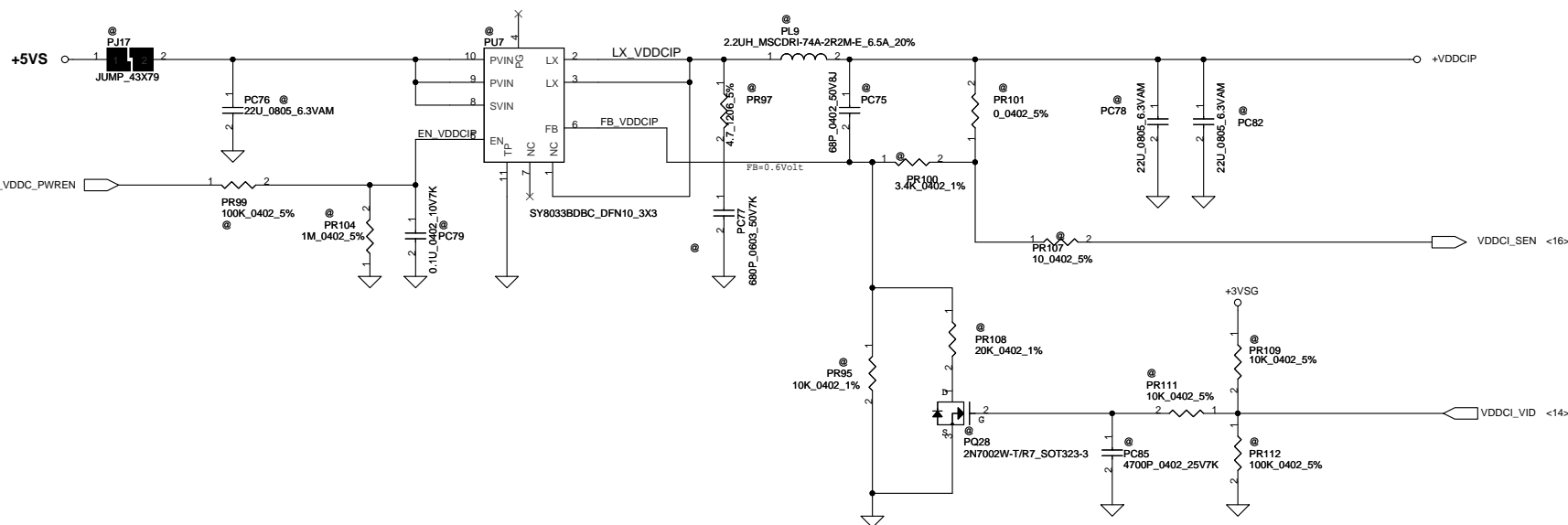


for reverse input protection

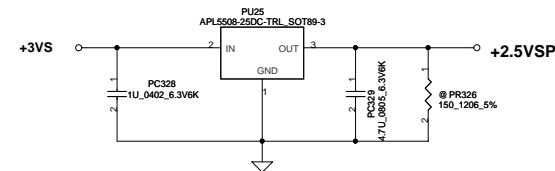
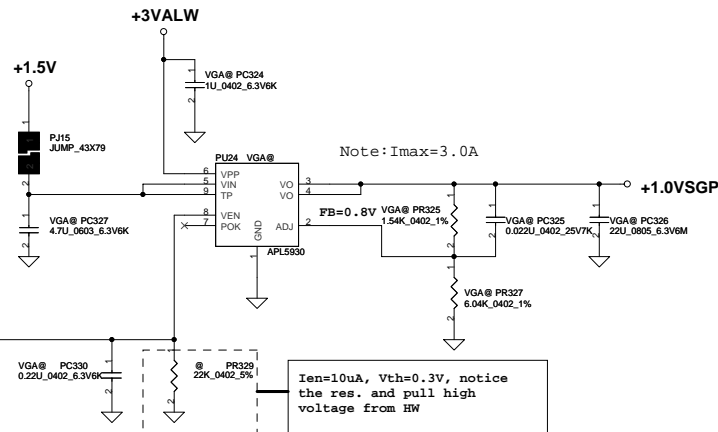
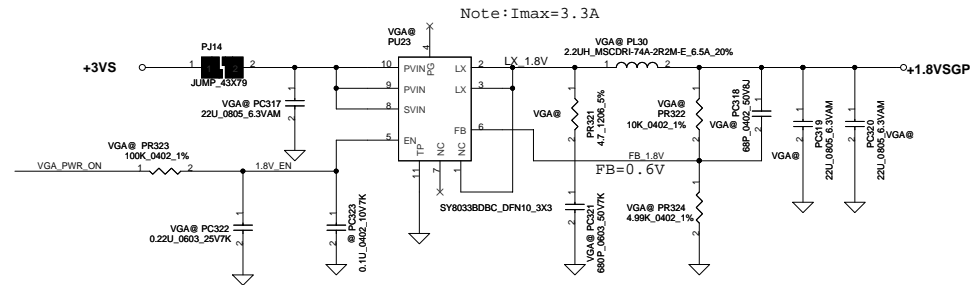
| Vin Dectector         |         |         |         |
|-----------------------|---------|---------|---------|
|                       | Min.    | Typ     | Max.    |
| L-->H                 | 17.852V | 18.063V | 18.275V |
| H-->L                 | 17.476V | 17.687V | 17.898V |
| ILIM and external DPM |         |         |         |
|                       | Min.    | Typ     | Max.    |
|                       | 3.906A  | 4.006A  | 4.108A  |



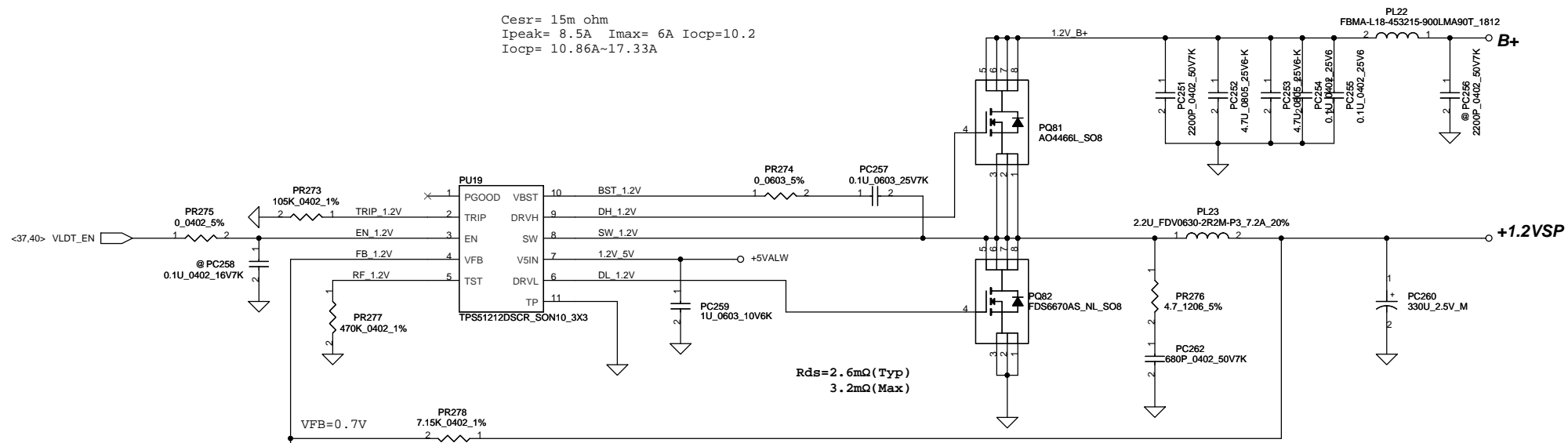
Cesr= 15m ohm  
Ipeak= 5.21A Imax= 3.65A Iocp=6.25A  
Iocp= 7.7A~11.84A



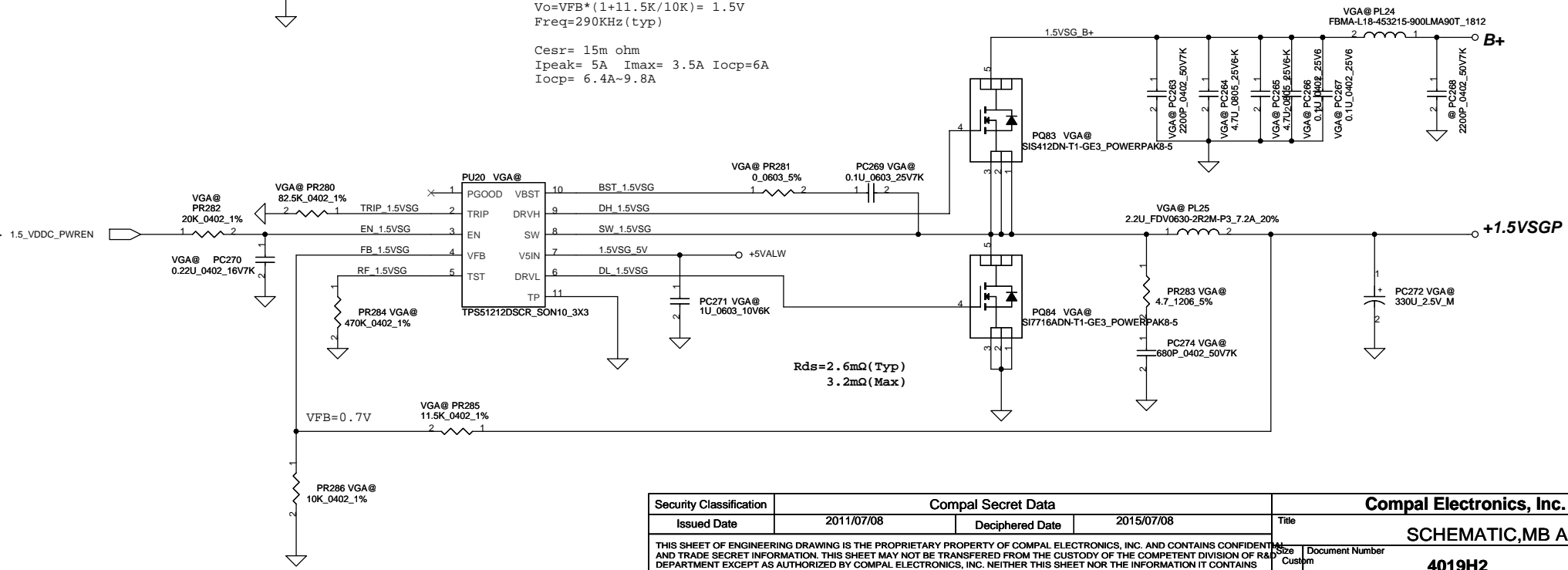
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, 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.



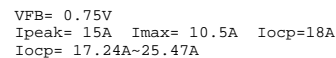
$V_{FB} = 0.7V$   
 $V_o = V_{FB} * (1 + 7.15K/10K) = 1.2V$   
 $Freq = 266 \sim 314KHz, 290KHz (typ)$   
 $C_{esr} = 15m\ ohm$   
 $I_{peak} = 8.5A$   $I_{max} = 6A$   $I_{ocp} = 10.2$   
 $I_{ocp} = 10.86A \sim 17.33A$



$V_{FB} = 0.704V$   
 $V_o = V_{FB} * (1 + 11.5K/10K) = 1.5V$   
 $Freq = 290KHz (typ)$   
 $C_{esr} = 15m\ ohm$   
 $I_{peak} = 5A$   $I_{max} = 3.5A$   $I_{ocp} = 6A$   
 $I_{ocp} = 6.4A \sim 9.8A$



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          |                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|--------------------------|---------------------------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compal Secret Data |                 | Compal Electronics, Inc. |                                                   |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08         | Deciphered Date | 2015/07/08               | 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 A8331                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | 4019H2                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Rev B                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |                 |                          | Date: Wednesday, February 29, 2012 Sheet 47 of 52 |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                              |                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|------------------------------|--------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc.     |                    |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08 | Deciphered Date    | 2015/07/08 | Title                        | SCHMATIC, MB A8331 |
| 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 A                        | Document Number    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Rev B                        | 4019H2             |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                    |            | Wednesday, February 29, 2012 | Sheet 48 of 52     |







| Item | Fixed Issue | Reason for change | Rev. | PG# | Modify List | Date | Phase |
|------|-------------|-------------------|------|-----|-------------|------|-------|
| 1    |             |                   |      |     |             |      |       |
| 2    |             |                   |      |     |             |      |       |
| 3    |             |                   |      |     |             |      |       |
| 4    |             |                   |      |     |             |      |       |
| 5    |             |                   |      |     |             |      |       |
| 6    |             |                   |      |     |             |      |       |
| 7    |             |                   |      |     |             |      |       |
| 8    |             |                   |      |     |             |      |       |
| 9    |             |                   |      |     |             |      |       |
| 10   |             |                   |      |     |             |      |       |
| 11   |             |                   |      |     |             |      |       |
| 12   |             |                   |      |     |             |      |       |
| 13   |             |                   |      |     |             |      |       |
| 14   |             |                   |      |     |             |      |       |
| 15   |             |                   |      |     |             |      |       |
| 16   |             |                   |      |     |             |      |       |

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

EVT Stage (0.1~0.2)

- 0817 Pop C1025 180p for VDDIO (SCL v1.02)  
Change D16,D17 to SCS00000Z00
- 0818 Change Q50 from BSH138 to BSH111  
Unpop R1100 for +1.1VALW  
Add D26 BOM Structure for 930@  
unpop D4 for USB issue
- 0903 1.Change Card Reader Controller to RTS5209  
2.Change LAN to Atheros AR8151  
3.Removed D17
- 0904 Add Mini2 Debug Port
- 0905 1.Add Fresco FL1009 USB3.0 Controller  
P20. BACO BIFVDDC update  
P25. remove Q25 APU power ok
- 0915 1.Remove EC X2
- 0916 1.Add C1361/C1362 10pF for EMI  
2.Change D27/D29 footprint to AZ5125  
3.Add R402 10k for reserved  
4.Add R469/R527 for VGA Internal Thermal Sensor
- 0926 1.Change D4 to SC300001G00 for ESD request  
2.Change D33/D34/D37/D40/D41 to SCA00001A00 for ESD request

DVT Stage (0.2~0.3)

- 1.Unpop C954, C955 for Mini2 reserved.  
2.Remove R587, R588, Q11 for no need level shift.  
3.Pop R469, R527  
Unpop U9, R391, C352, C324  
for VGA Internal Thermal Interface.  
4.Unpop C374 330uF for Use discrete +1.5VSG circuit.  
5.Add R1169 1k for RTS2132 Vender suggestion.  
6.Reserved R1177 for option EEPROM.  
7.Add R1178 for RTS2132 discrete +1.2VS power.  
8.Reserved SMBUS(TL\_CLK/TL\_DATA) to EC for EEPROM option.  
9.Reserved BACO circuit and pop C1105.  
10.Change D4, D6 to AZC099 for ESD reserved.  
11.Change D20, D21 to AZC199-02SPR7G for ESD reserved.  
12.Remove D44, D45 for no need.  
13.Change C1211, R837 BOM to TL@.  
14.Change JTP1 to 6P/8P co-lay footprint for WIN8.  
15.Add SMBUS(FCH\_SCLK1/FCH\_SDAT1) for JTP1.  
16.Reserved GPIO166 for future used.  
17.Add H29 for ME update.  
18.Add C1719, C1720 10pF for RTD5209 EMI request.  
19.Change L1801 footprint.  
20.Pop D42 and change to SCA00001A00 for ESD.  
21.Change C1537 to 10pF 2KV for EMI/ESD.  
22.Unpop C1336, C1337, C1338, C1333, C1334, C1335  
for MINI2 Reserved.  
23.Modify C1911 always pop for noise reduce.  
24.Modify R60 to M3@.  
25.Change Board ID to "02" for DVT.  
26.Add Q30 for EC\_THERM reverse for EC common code.  
27.Change 9012\_PH2 netname to 9012\_VGIN for VC function.  
28.Unpop R65 for External OTP.  
29.Change L68 +5VS to +VDDA.  
30.Chnage R1124 to 200k, R1130 to 10k for VGA Power Sequence.  
31.Pop R997 for W/L BT combo card BT ON/OFF  
32.Change U28 SPI ROM from MXIC to EON

PVT Stage

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            |                          |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|------------|--------------------------|------------------------------|
| Security Classification                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | Compal Secret Data |            | Compal Electronics, Inc. |                              |
| Issued Date                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2011/07/08 | Deciphered Date    | 2015/07/08 | Title                    | SCHEMATIC,MB A8331           |
| 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          | 4019H2                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Date:                    | Wednesday, February 29, 2012 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                    |            | Sheet                    | 52 of 52                     |