

# Compal Confidential

## NELA5 Schematics Document

AMD Danube

Champlain Processor with RS880M/SB820M/Park VGA

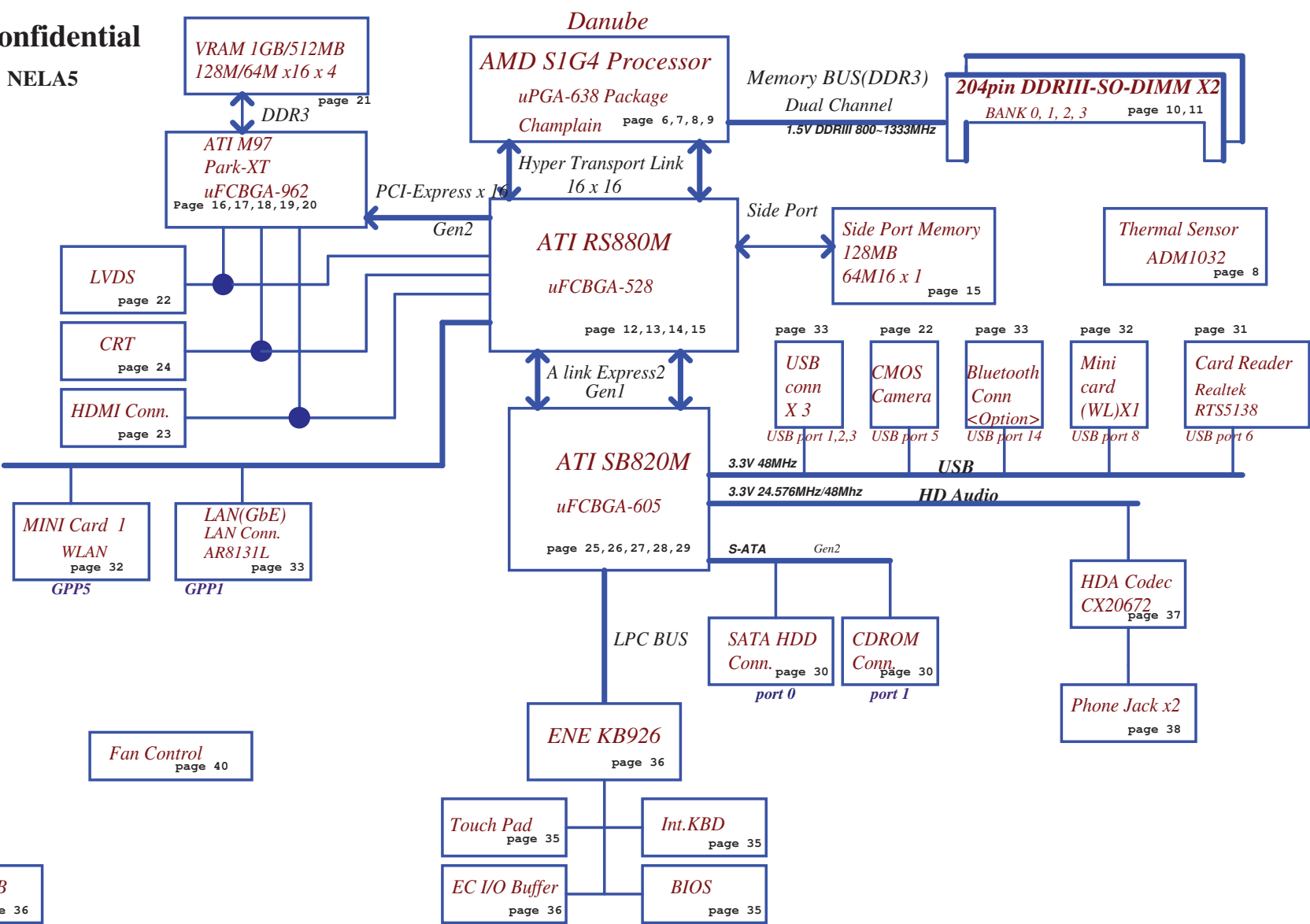
2010-04-15

LA6141P REV: 1.0

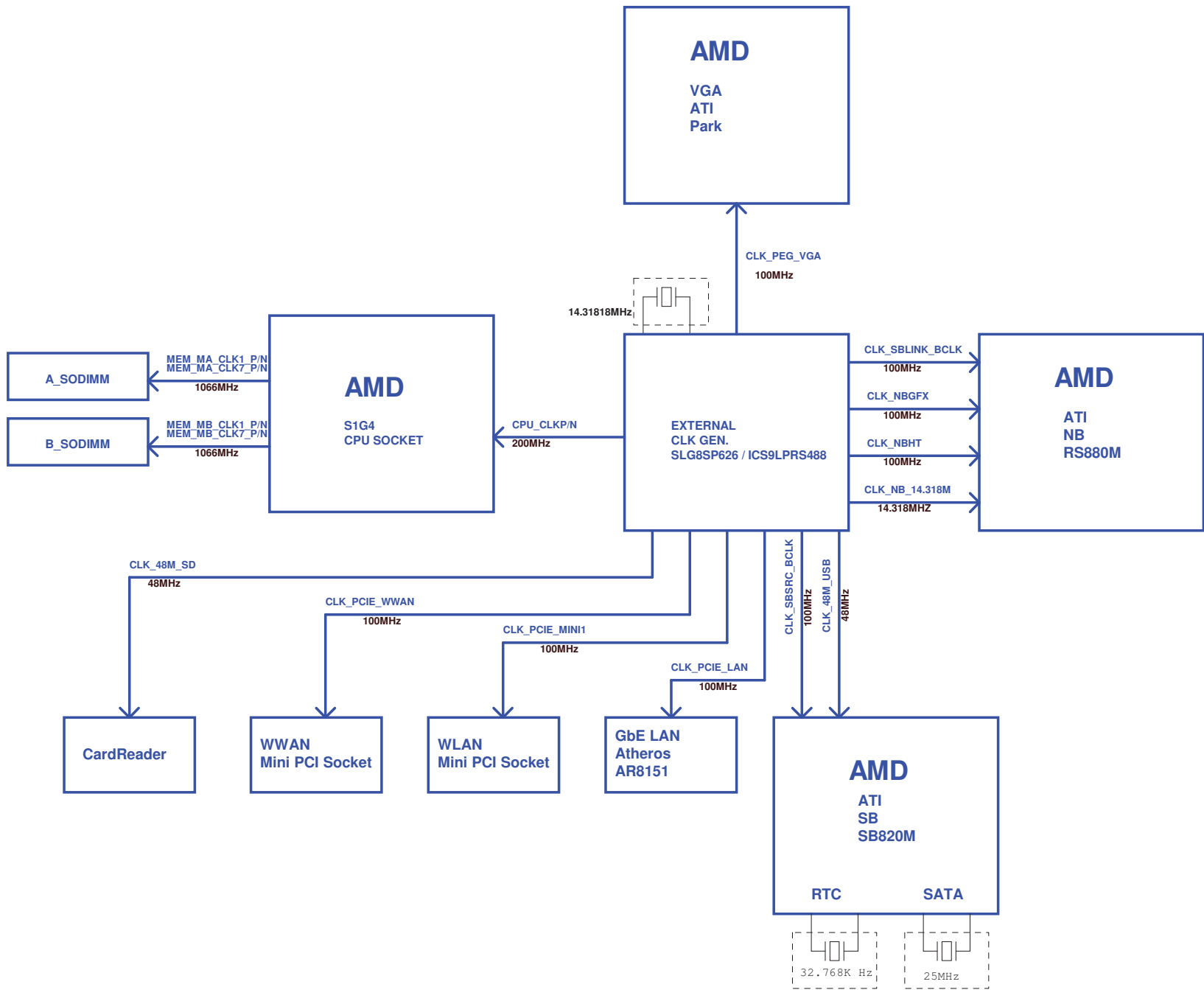
Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	Title	Cover Page
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FIRST DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				NELA5 LA-6141P	1.0
				Date: Wednesday, April 21, 2010	Sheet 1 of 54

Compal Confidential

Model Name : NELA5



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2008/10/06	Deciphered Date	2009/10/06	Title	Block Diagrams	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Page Number	Document Number	Rev
				8	NELA5 LA-6141P	1.0
				Date	Wednesday, April 21, 2010	Sheet 2 of 54



Security Classification		Compal Secret Data			Title	
Issued Date	2005/10/10	Deciphered Date	2010/03/12		Size	Document Number
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					Custom	NELA5 LA-6141P
					Date:	Wednesday, April 21, 2010
					Sheet	3 of 54
					Rev	0.1

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_0	Core voltage for CPU (0.7-1.2V)	ON	OFF	OFF
+CPU_CORE_1	Core voltage for CPU (0.7-1.2V)	ON	OFF	OFF
+CPU_CORE_NB	Voltage for On-die Northbridge of CPU(0.8-1.1V)	ON	OFF	OFF
+0.9V	0.9V switched power rail for DDR terminator	ON	ON	OFF
+1.1VS	1.1V switched power rail for NB VDDC & VGA	ON	OFF	OFF
+1.2V_HT	1.2V switched power rail	ON	OFF	OFF
+VGA_CORE	0.95-1.2V switched power rail	ON	OFF	OFF
+1.5VS	1.5V power rail for PCIE Card	ON	OFF	OFF
+1.8V	1.8V power rail for CPU VDDIO and DDR	ON	ON	OFF
+1.8VS	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

## External PCI Devices

EC SM Bus1 address                      EC SM Bus2 address

**SB820**

**SM Bus 0 address**

**SB820**

**SM Bus 1 address**

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

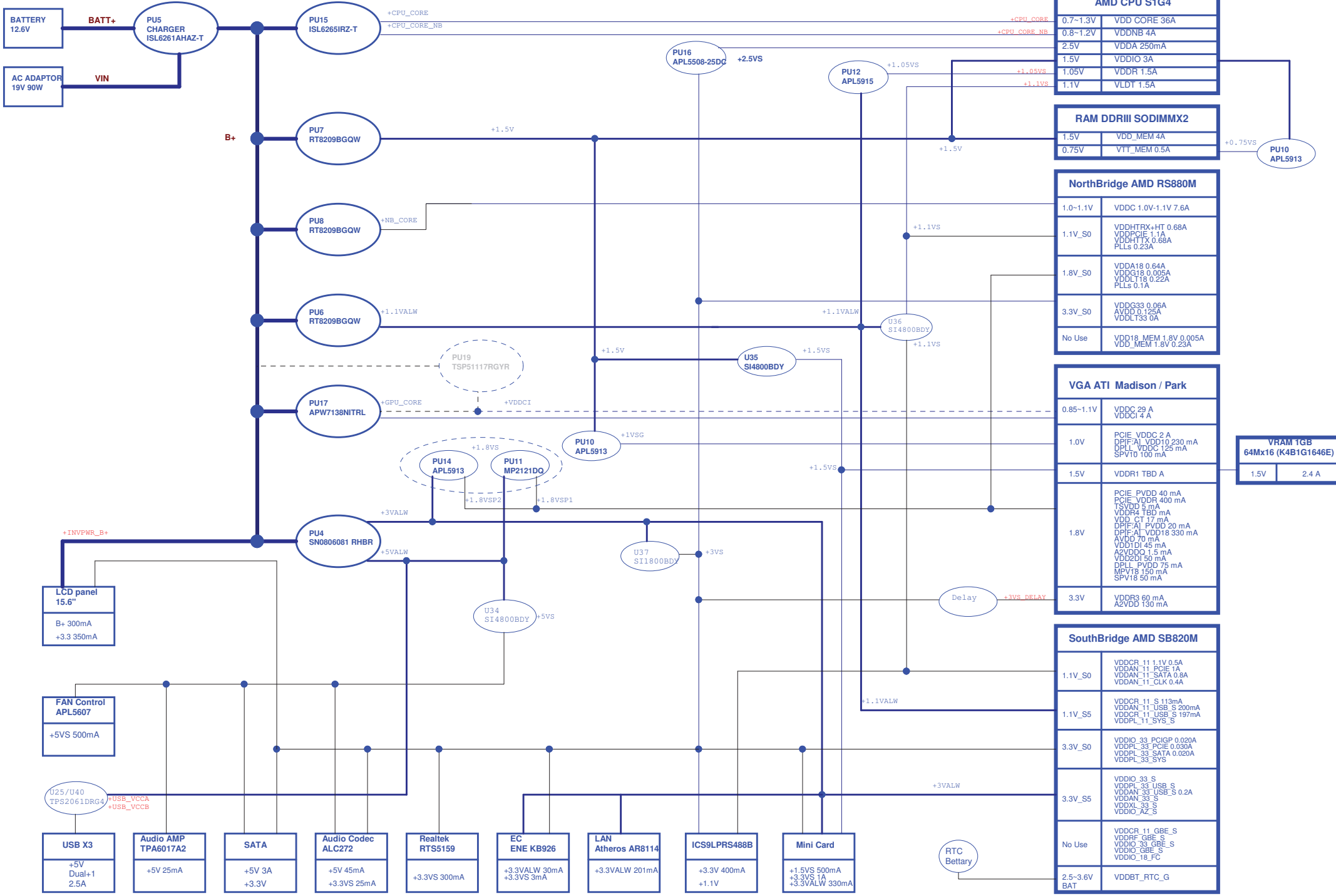
Vcc	3.3V +/- 5%			
Ra/Rc/Re	100K +/- 5%			
Board ID	Rb / Rd / Rf	VAD_BID min	VAD_BID typ	VAD_BID max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759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

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

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

PowerXpress (MUX): VGA@/PARK@/MUX@/BT@/SP@/VB@  
UMA : VB@/UMALVDS@/UMA HDMI@/UMACRT@/UMA@/SP@/BT@  
PowerXpress(Muxless):VB@/UMALVDS@/UMA HDMI@/UMACRT@/SP@/BT@/VGA@/MUXLESS@/PARK@

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	Notes List	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FIRST DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				NELA5 LA-6141P	0.1
Date	Wednesday, April 21, 2010		Sheet	4	of 54



AMD CPU S1G4	
0.7~1.3V	VDD CORE 36A
0.8~1.2V	VDDNB 4A
2.5V	VDDA 250mA
1.5V	VDDIO 3A
1.05V	VDDR 1.5A
1.1V	VLDI 1.5A

RAM DDRIII SODIMMX2	
1.5V	VDD_MEM 4A
0.75V	VTT_MEM 0.5A

NorthBridge AMD RS880M	
1.0~1.1V	VDDC 1.0V-1.1V 7.6A
1.1V_S0	VDDHTRX+HT 0.68A VDDPCIE 1.1A VDDHTTX 0.68A PLLs 0.23A
1.8V_S0	VDDA18 0.64A VDDG18 0.005A VDDL18 0.22A PLLs 0.1A
3.3V_S0	VDDG33 0.08A AVDD 0.125A VDDL33 0A
No Use	VDD18_MEM 1.8V 0.005A VDD_MEM 1.8V 0.23A

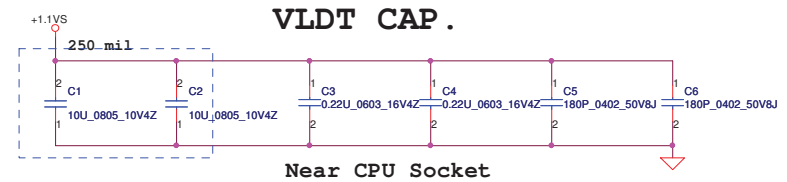
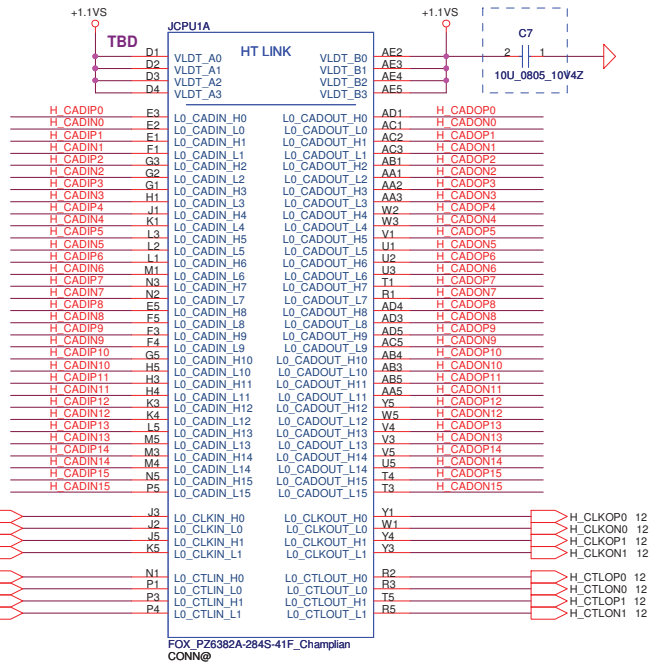
VGA ATI Madison / Park	
0.85~1.1V	VDDC 29 A VDDCI 4 A
1.0V	PCIE_VDDC 2 A DPF(A) VDD10 230 mA DPLL_VDDC 125 mA SPV10 100 mA
1.5V	VDDR1 TBD A
1.8V	PCIE_PVDD 40 mA PCIE_VDDR 400 mA TSVDD 5 mA VDDR4 TBD mA VDD_CT 17 mA DPF(A) PVDD 20 mA DPF(A) VDD18 330 mA AVDD 70 mA VDD1DI 45 mA AVDDQ 1.5 mA VDD2DI 50 mA DPLL_PVDD 75 mA MPV18 150 mA SPV18 50 mA
3.3V	VDDR3 60 mA A2VDD 130 mA

VRAM 1GB 64Mx16 (K4B1G1646E) * 8	
1.5V	2.4 A

SouthBridge AMD SB820M	
1.1V_S0	VDDCR_11 1.1V 0.5A VDDAN_11 PCIE 1A VDDAN_11 SATA 0.8A VDDAN_11_CLK 0.4A
1.1V_S5	VDDCR_11 S 113mA VDDAN_11 USB_S 200mA VDDCR_11 USB_S 197mA VDDL_11 SYS_S
3.3V_S0	VDDIO_33 PCIGP 0.020A VDDL_33 PCIE 0.030A VDDL_33 SATA 0.020A VDDL_33 SYS
3.3V_S5	VDDIO_33 S VDDL_33 USB S VDDAN_33 USB_S 0.2A VDDXL_33 S VDDIO_AZ_S
No Use	VDDCR_11 GBE_S VDDRF_GBE_S VDDIO_33 GBE_S VDDIO_GBE_S VDDIO_18_FC
2.5~3.6V BAT	VDDBT_RTC_G

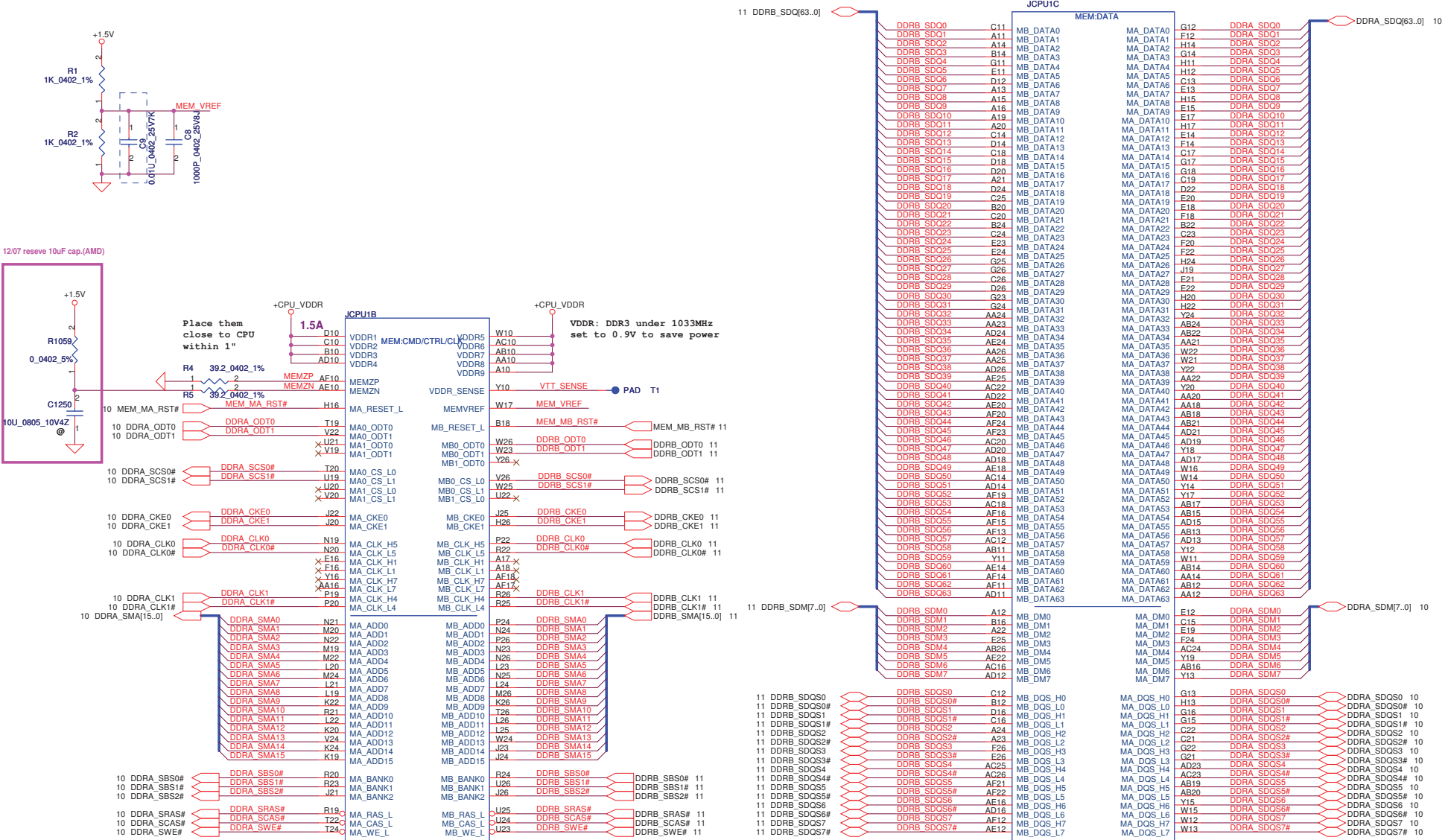
12 H\_CADIP[0..15] H\_CADIP[0..15]  
12 H\_CADIN[0..15] H\_CADIN[0..15]

H\_CADOP[0..15] H\_CADOP[0..15] 12  
H\_CADON[0..15] H\_CADON[0..15] 12



Security Classification		Compal Secret Data				Compal Electronics, Inc.									
Issued Date		2008/10/06		Deciphered Date		2010/03/12		Title							
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FIRST DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.								AMD CPU S1G3 HT I/F							
								Part Number		Document Number				Rev	
								Custom		NELA5 LA-6141P				0.1	
								Date		Wednesday, April 21, 2010		Sheet		6 of 54	

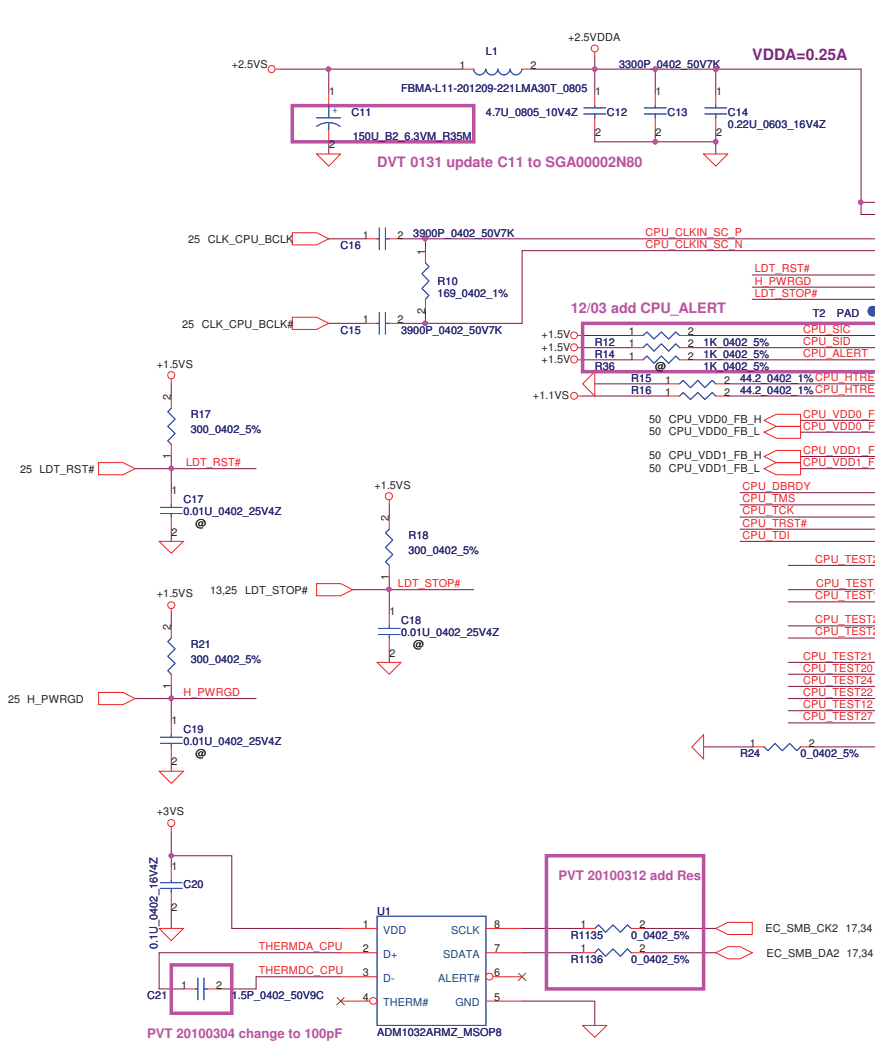
# Processor DDR3 Memory Interface



FOX P26382A-284S-41F\_Champion  
CONN@

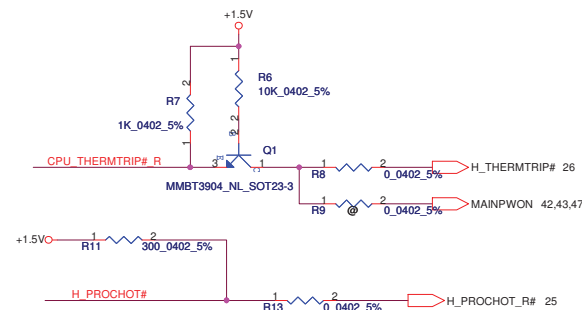
FOX P26382A-284S-41F\_Champion  
CONN@

Security Classification				Compal Secret Data				Compal Electronics, Inc.			
Issued Date				2008/10/06				Title			
Deciphered Date				2010/03/12				AMD CPU S1G3 DDRII I/F			
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 ANY OF THE COMPARTMENT DIVISIONS OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Revision				NELA5 LA-6141P			
Date				Wednesday, April 21, 2010				Sheet 7 of 54			

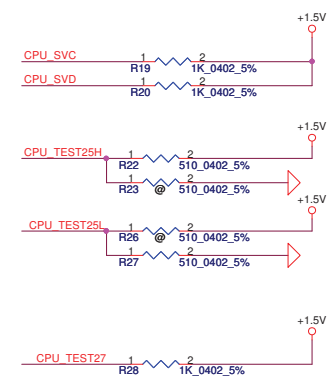


Champlain: C1E  
C1E: LDT\_REQ# no connect  
CLMC: LDT\_REQ# connect to NB

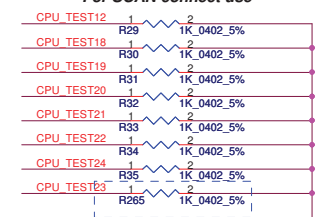
LDT\_RES# / MEMHOT#  
no support in S1g4



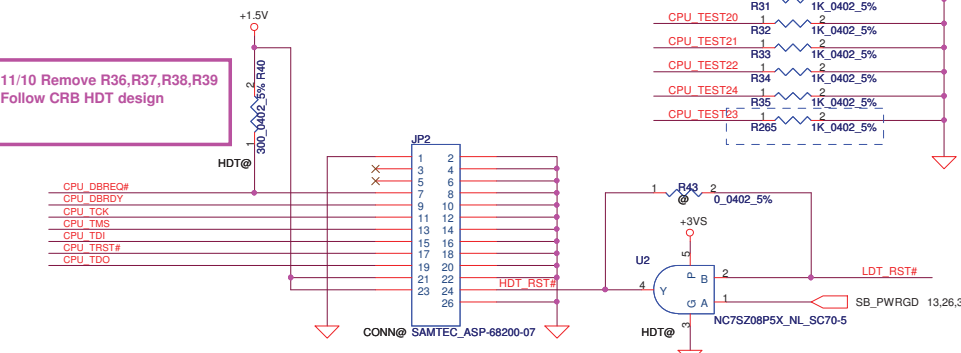
**PROCHOT:**  
Input: For HTC Function  
Output: Over Temperature Condition



For SCAN connect use



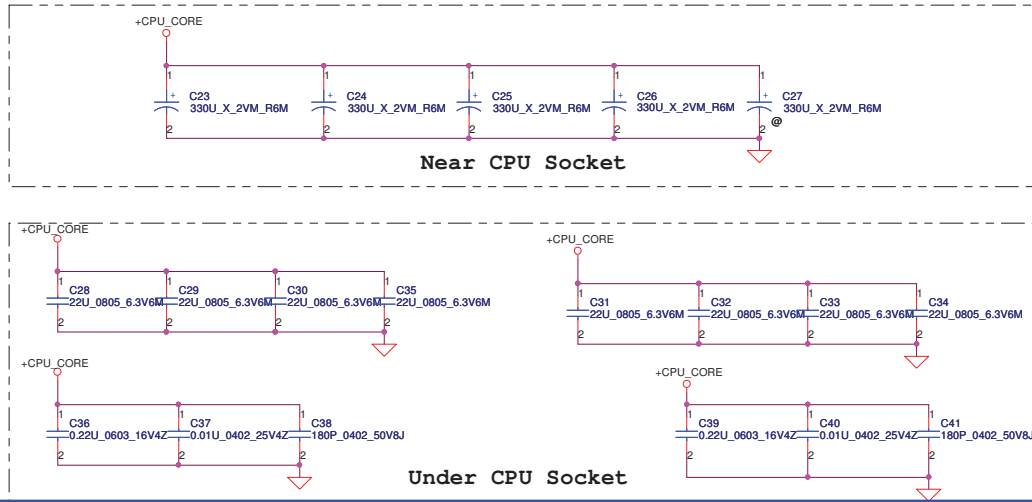
11/10 Remove R36, R37, R38, R39  
Follow CRB HDT design



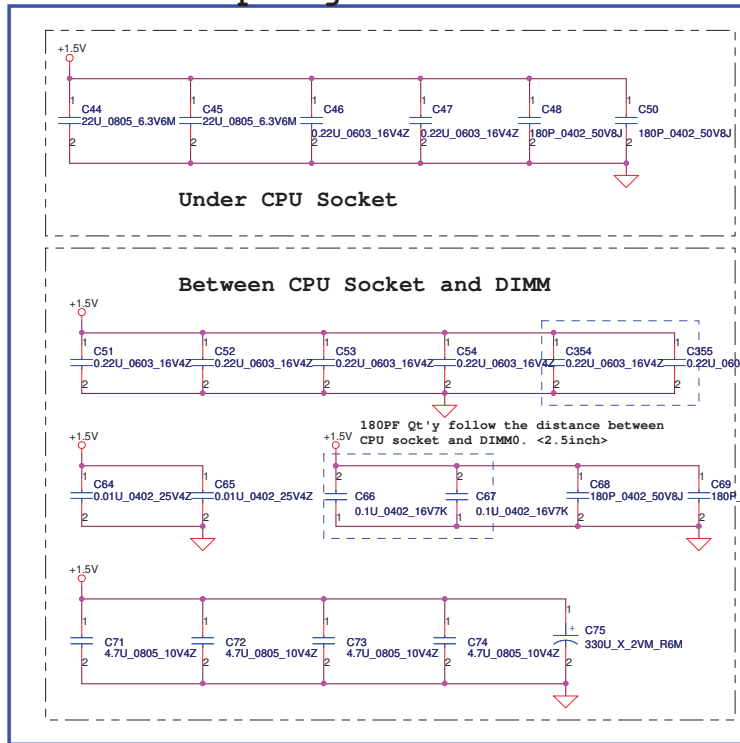
Security Classification				Compal Secret Data				Title			
Issued Date				2008/10/06				Deciphered Date			
								2010/03/12			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				AMD CPU S1G3 CTRL				NELA5 LA-6141P			
Date				Wednesday, April 21, 2010				Sheet 8 of 54			

PVT 20100304 Add CPU Int. Thermal sensor circuit  
Pre MP unstuff CPU Int. Thermal sensor circuit

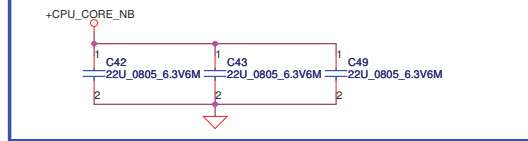
## VDD (+CPU\_CORE) decoupling.



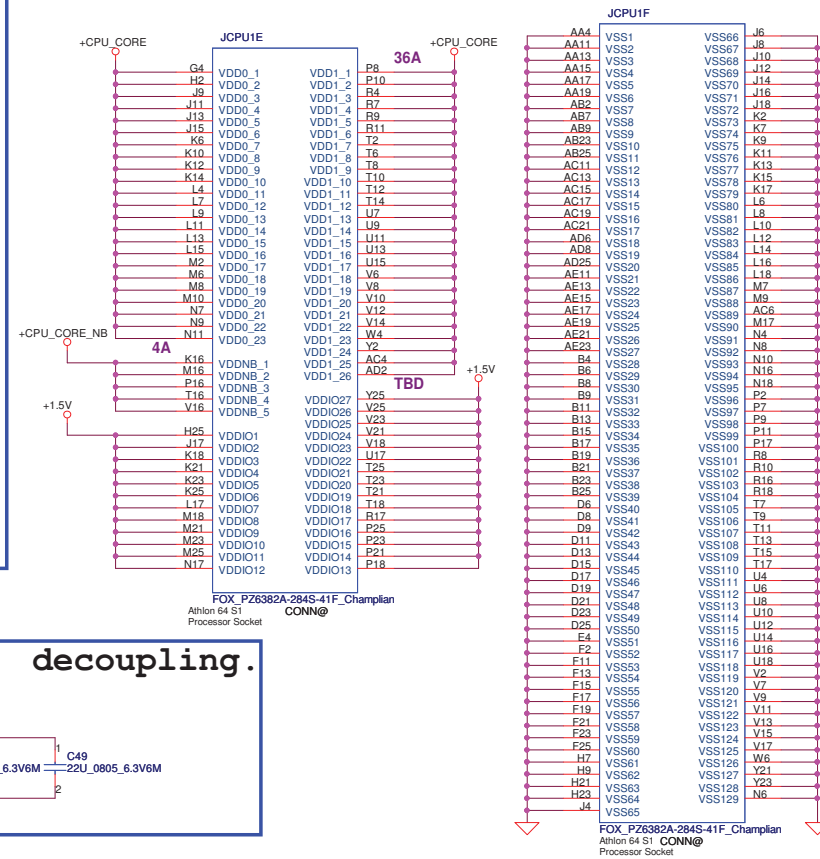
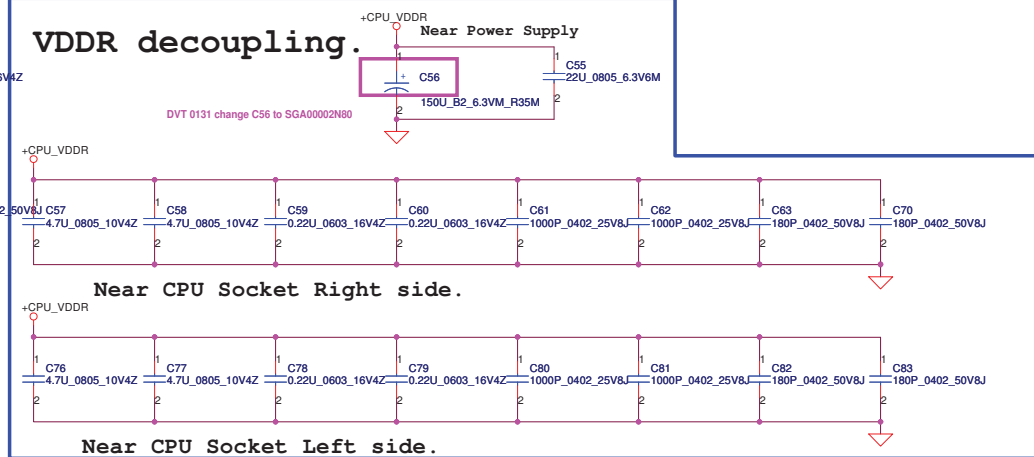
## VDDIO decoupling.



## +CPU\_CORE\_NB decoupling.

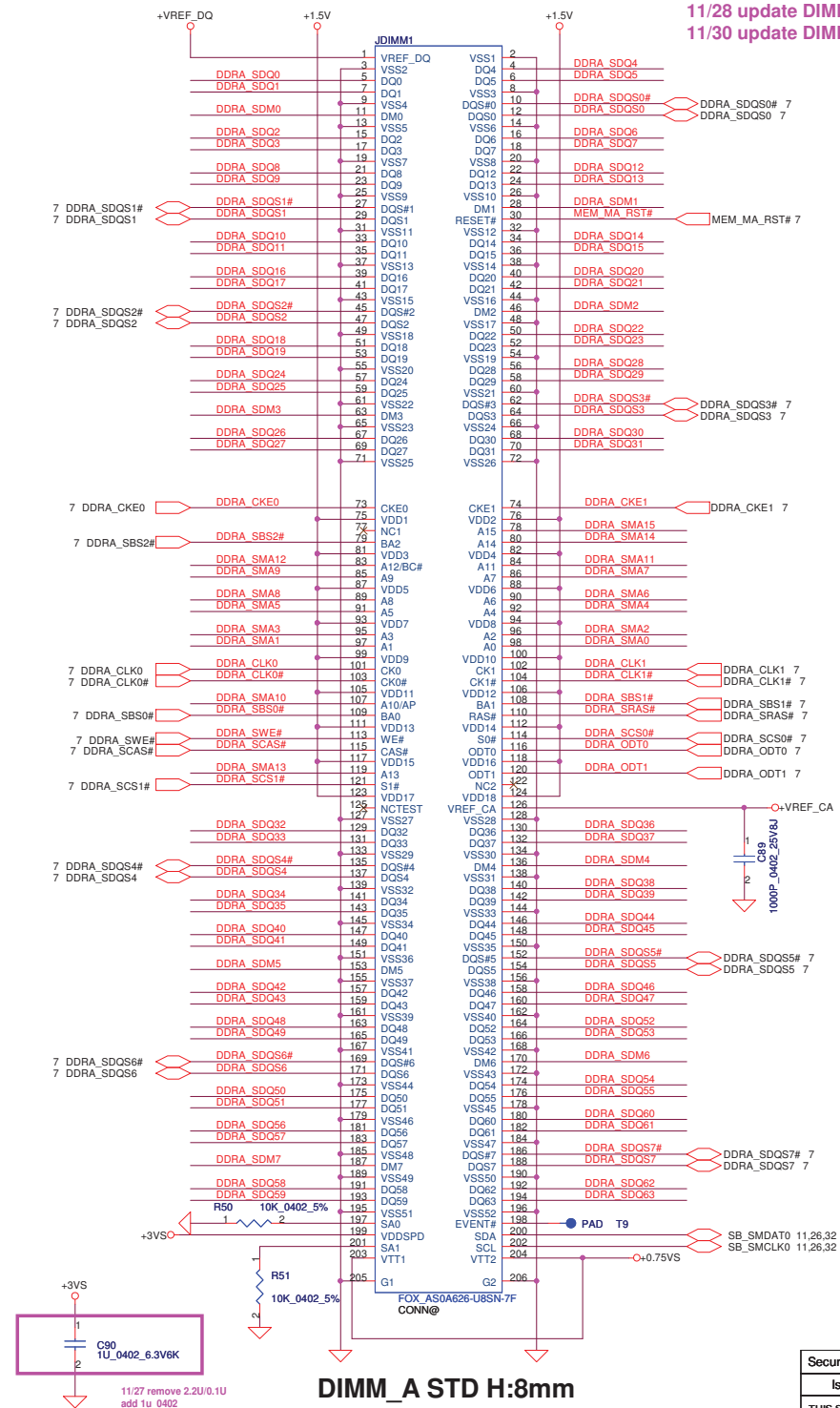


## VDDR decoupling.

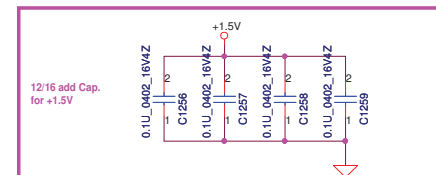
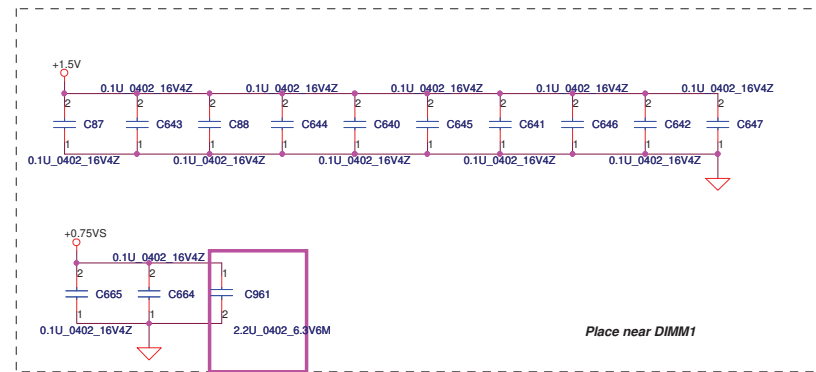
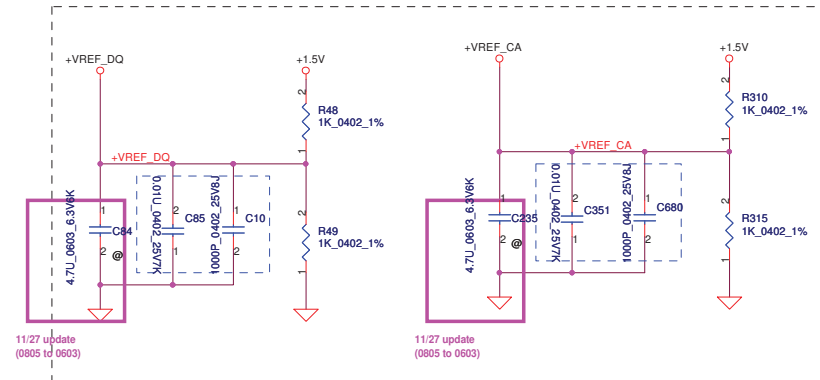


Security Classification	Compal Secret Data			Title	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	AMD CPU S1G3 PWR & GND	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FACTORY AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Rev	0.1
				Document Number	NELA5 LA-6141P
				Date	Wednesday, April 21, 2010
				Sheet	9 of 54

11/28 update DIMM conn (same as NEW70)  
11/30 update DIMM conn(same as NEW75)



**DIMM\_A STD H:8mm**  
<Address: 00>



Security Classification		Compal Secret Data				Compal Electronics, Inc.									
Issued Date		2008/10/06		Deciphered Date		2010/03/12		Title		DDRII SO-DIMM 1					
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.										Customer		Document Number		Rev	
												NELA5 LA-6141P		0.1	
						Date: Wednesday, April 21, 2010		Sheet 10 of 54							

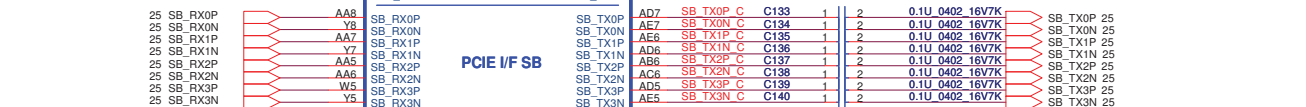
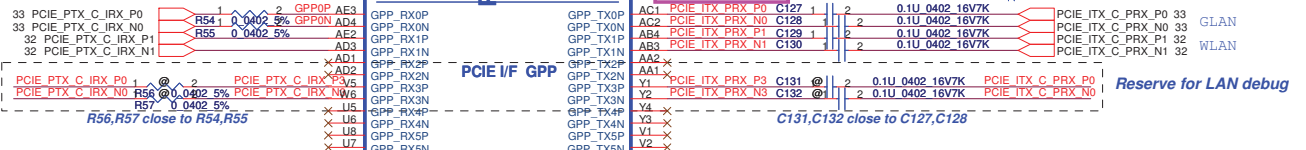
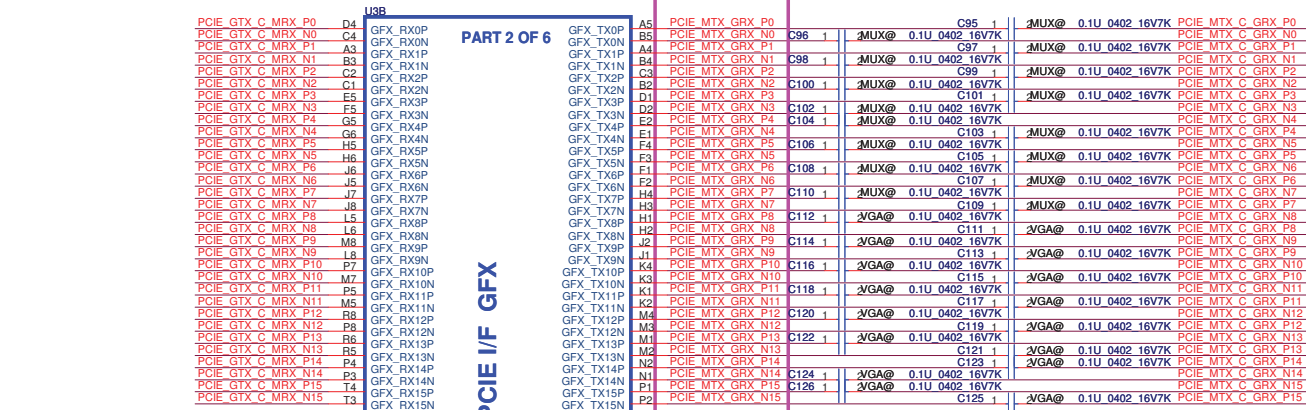


16 PCIE GTX\_C\_MRX\_P[0..15] PCIE GTX\_C\_MRX\_P[0..15]  
16 PCIE GTX\_C\_MRX\_N[0..15] PCIE GTX\_C\_MRX\_N[0..15]

11/30  
exchange net name  
from PCIE\_MTX\_GRX\_N[4-13,15]  
to PCIE\_MTX\_GRX\_P[4-13,15]

PCIE\_MTX\_C\_GRX\_P[0..15] PCIE\_MTX\_C\_GRX\_P[0..15] 16  
PCIE\_MTX\_C\_GRX\_N[0..15] PCIE\_MTX\_C\_GRX\_N[0..15] 16

PCIE\_MTX\_GRX\_P[0..3] PCIE\_MTX\_GRX\_P[0..3] 23  
PCIE\_MTX\_GRX\_N[0..3] PCIE\_MTX\_GRX\_N[0..3] 23  
11/06 for UMA HDMI signal



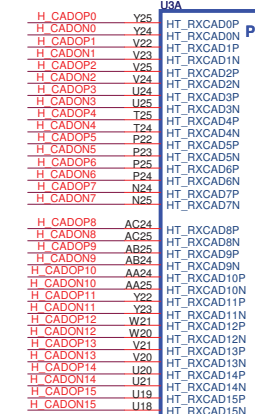
PCE\_CALR(PCE\_BCALRP)  
PCE\_CALRN(PCE\_BCALRN)

RS780M\_FCBGA528

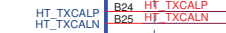
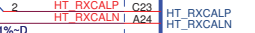
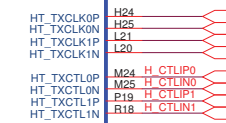
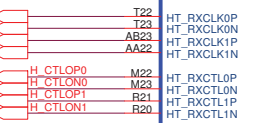
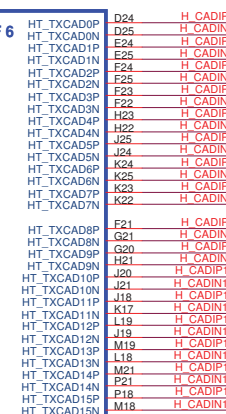
RS880 A11(SA000032710)

6 H\_CADOP[0..15] H\_CADOP[0..15]  
6 H\_CADON[0..15] H\_CADON[0..15]

H\_CADIP[0..15] H\_CADIP[0..15]  
H\_CADIN[0..15] H\_CADIN[0..15]



HYPER TRANSPORT CPU I/F



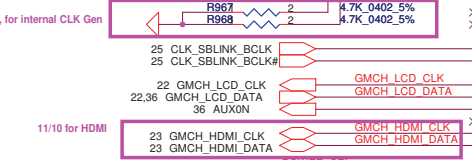
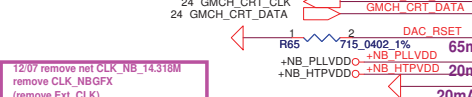
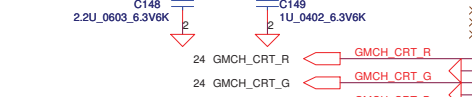
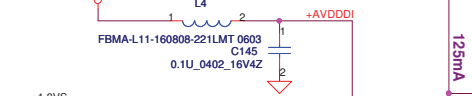
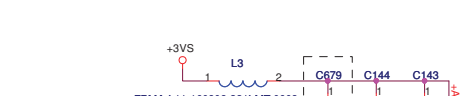
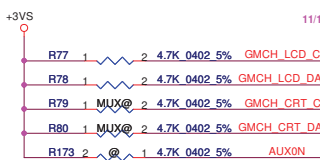
0718 Place within 1"  
layout 1:2

RS780M\_FCBGA528

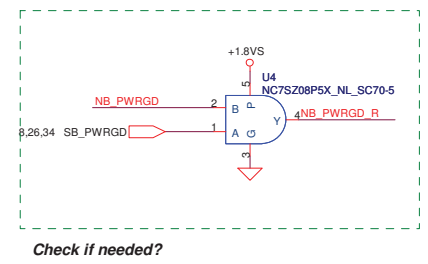
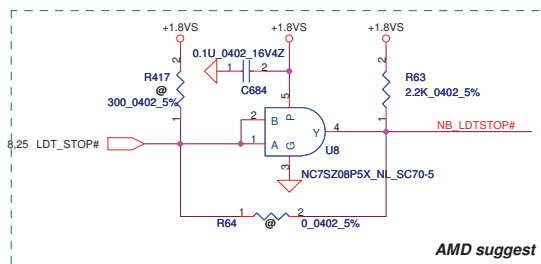
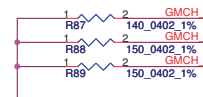
RS880 A11(SA000032710)

0718 Place within 1"  
layout 1:2

Security Classification	Compal Secret Data			Title	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	RS880-HT/PCIE	
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 RS880 A11(SA000032710) DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					Rev 0.1
Date	Wednesday, April 21, 2010	E	Sheet	12	of 54



RS880	POWER_SEL
HIGH	0.95V
LOW	1.1V



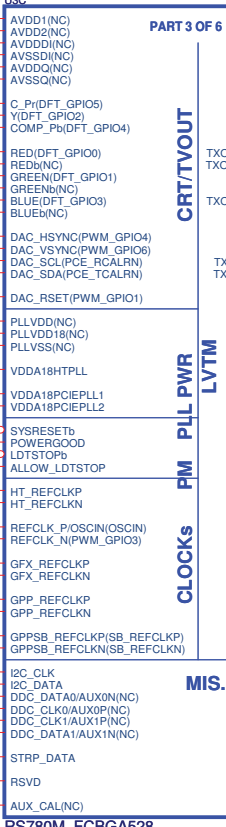
### PART 3 OF 6

#### CRT/TVOUT

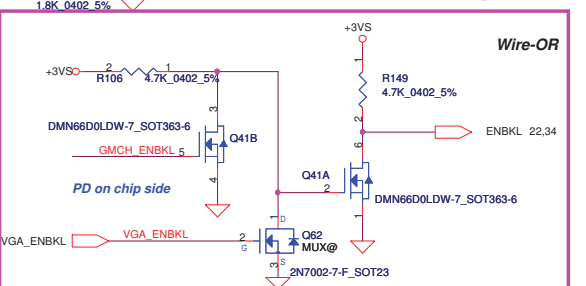
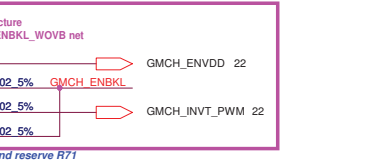
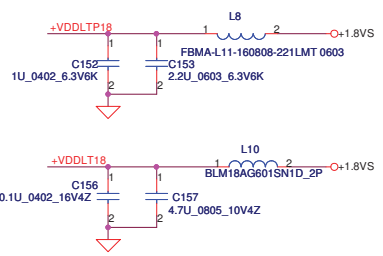
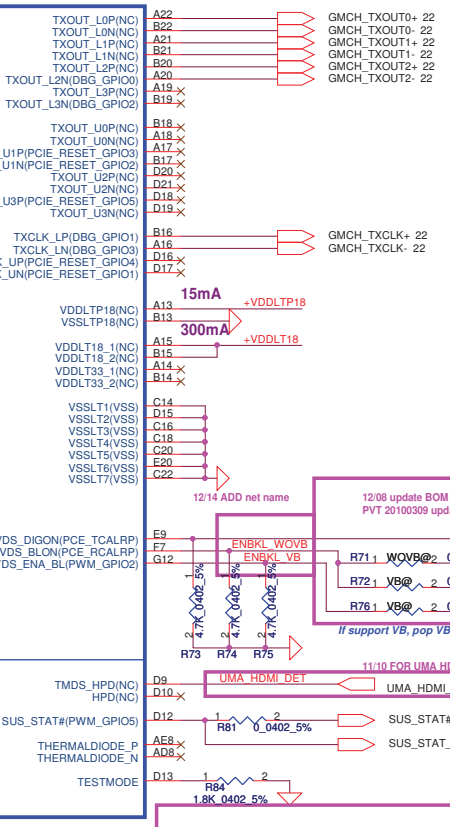
#### PM PWR

#### CLOCKS

#### MIS.



RS780M\_FCBGA528  
RS880 A11(SA000032710)

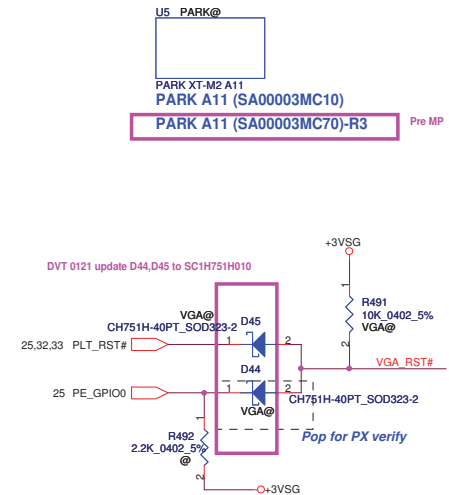
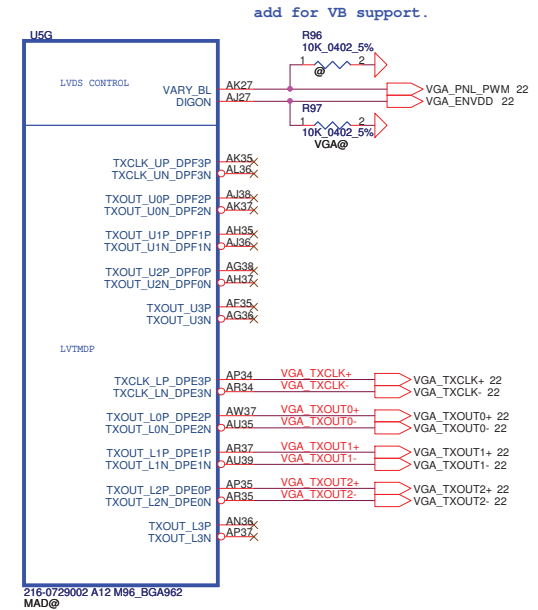


Security Classification	Compal Secret Data	Document Number	Title	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	RS880 VEDIO/CLK GEN
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				
NELA5 LA-6141P				
Date: Wednesday, April 21, 2010 E Sheet 13 of 54				





## GFX PCIE LANE REVERSAL



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2009/7/14	Deciphered Date	2010/03/12	Title	M96 PCIE / LVDS
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FIRST DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				Customer	0.1
Date:				Wednesday, April 21, 2010	Sheet 16 of 54

Strap Name		Pin Straps description <all internal PD>	Setting
VIP_DEVICE_EN	V2SYNC	VIP Device Strap Enable indicates to the software driver 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	VGA Disable determines 0: VGA Controller capacity enabled 1: The device will not be recognized as the system's VGA controller	0
TX_PWRS_ENB	GPIO0	Transmitter Power Saving Enable 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)	1
TX_DEEMPH_EN	GPIO1	PCI Express Transmitter De-emphasis Enable 0: Tx de-emphasis disabled for mobile mode 1: Tx de-emphasis enabled (Default setting for desktop)	1
CONFIG[2] CONFIG[1] CONFIG[0]	GPIO13 GPIO12 GPIO11	GPIO13,12,11 (config 2,1,0) : a) If BIOS_ROM_EN = 1, then Config[2:0] defines the ROM type. b) If BIOS_ROM_EN = 0, then Config[2:0] defines the primary memory aperture size.  memory apertures CONFIG[2:0] 128 MB 000 256 MB 001 64 MB 010	001
BIOS_ROM_EN	GPIO22	Enable external BIOS ROM device 0: Disable, 1: Enable	0
AUD[1] AUD[0]	HSYNC VSYNC	00: No audio function; 10: Audio for DisplayPort only; 01: Audio for DisplayPort and HDMI if adapter is detected; 11: Audio for both DisplayPort and HDMI	11
BIF_GEN2_EN	GPIO2	Advertises the PCIe device as 2.5 GT/s capable at power-on Advertises the PCIe device as 5.0 GT/s capable at power-on 5.0 GT/s capability will be controlled by software	0
RESERVED	H2SYNC GPIO8 GPIO21	Internal use only. THIS PAD HAS AN INTERNAL PULL-DOWN AND MUST BE 0 V AT RESET. The pad may be left unconnected	

DVT 0125 unstuff R117,R10,D2,R1096

12/23 change Res to 10K Ohm

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

12/17 add ACIN net

NC on Park

NC on Park

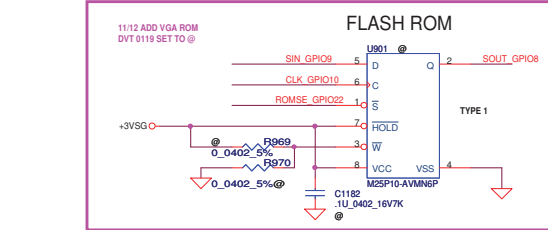
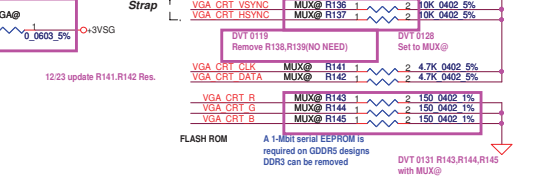
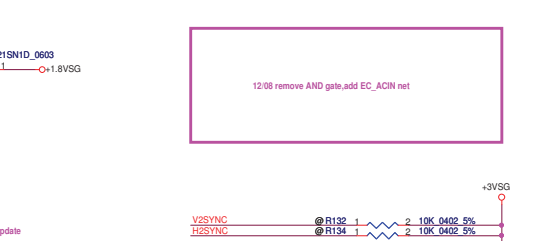
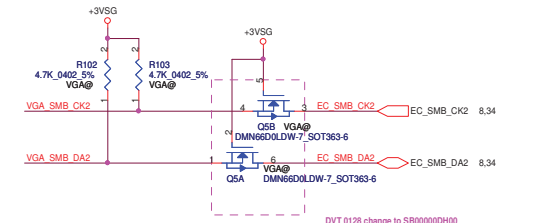
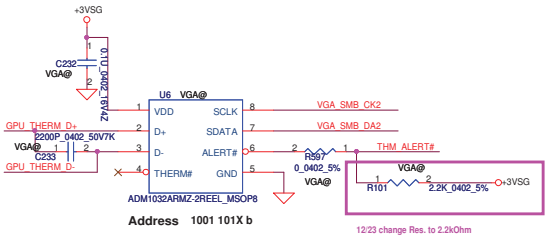
NC on Park

Not share via for other GND

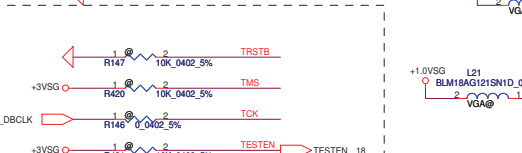
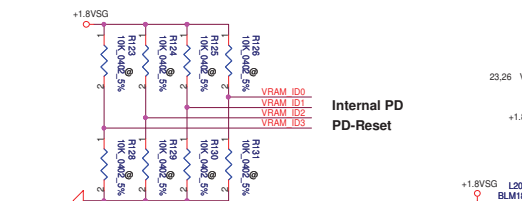
NC on Park

NC on Park

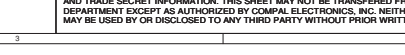
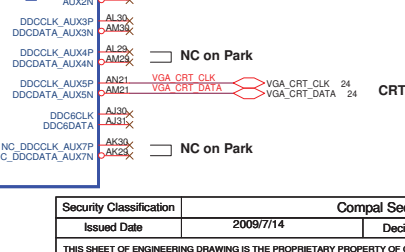
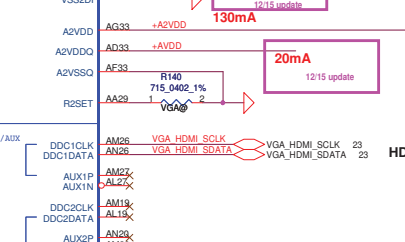
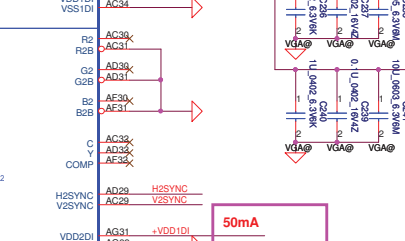
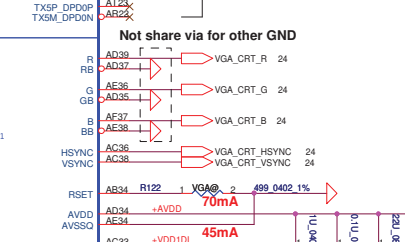
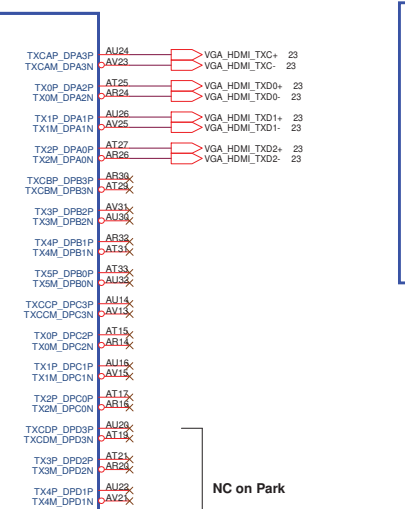
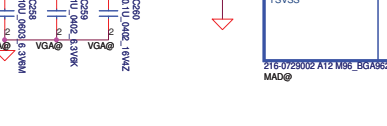
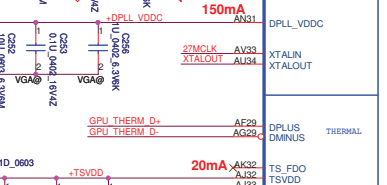
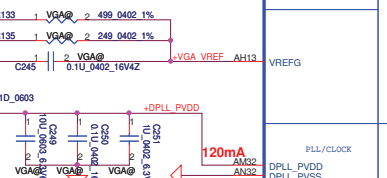
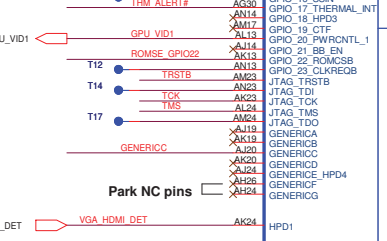
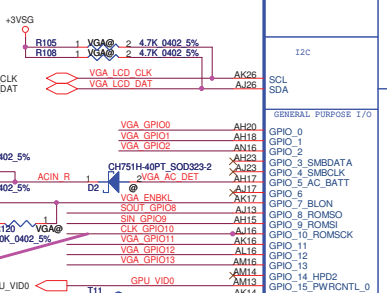
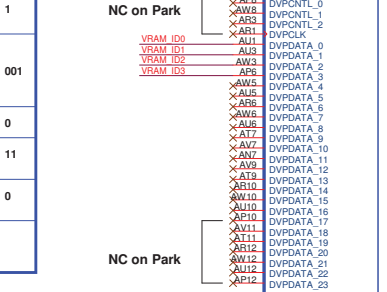
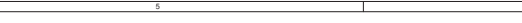
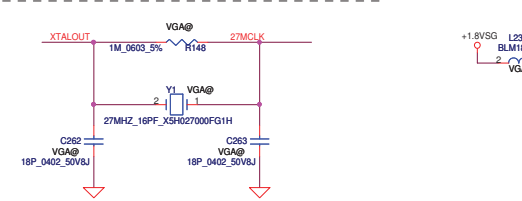
## External VGA Thermal Sensor



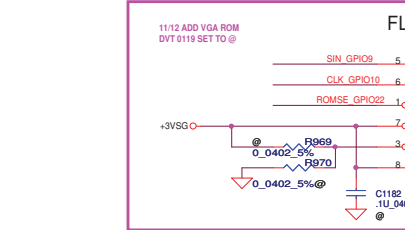
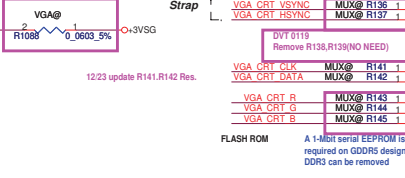
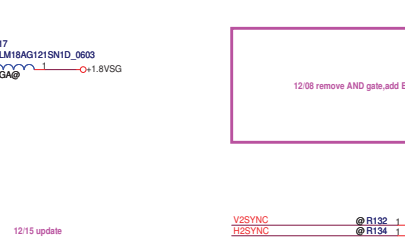
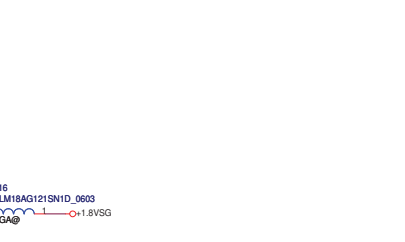
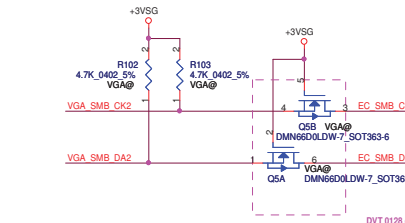
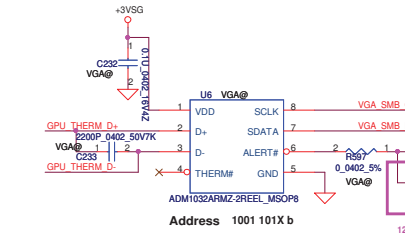
Location	VRAM_ID3	VRAM_ID2	VRAM_ID1	VRAM_ID0
Samsung (SA000035720/K4W1G1646E-HC12)	0	1	0	0
Hynix (SA000032420/H5TQ1G63BFR-12C)	1	1	0	0
Samsung (SA00003MQ00/K4W2G1646B-HC12)	1	1	1	0
Hynix (SA00003V500/H5TQ2G63BFR-12C)	1	1	1	1



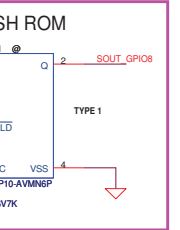
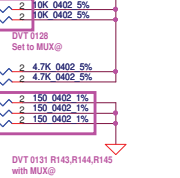
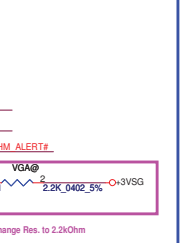
For VGA boot unstable issue



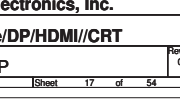
## External VGA Thermal Sensor



## External VGA Thermal Sensor



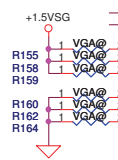
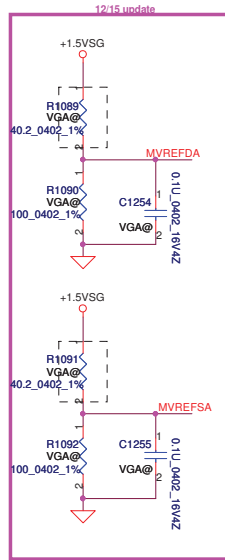
## External VGA Thermal Sensor



Security Classification	Compal Secret Data		
Issued Date	2009/7/14	Deciphered Date	2010/03/12
This sheet of engineering drawings is the PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			
Title		M96 Strape/DP/HDMI//CRT	
Size	C	Document Number	NELA5-LA-6141P
Date	Wednesday, April 21, 2010	Sheet	17 of 54

# Park only support single channel memory (channel B only)

11/04 delete channel A



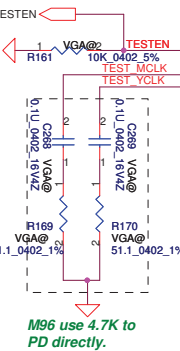
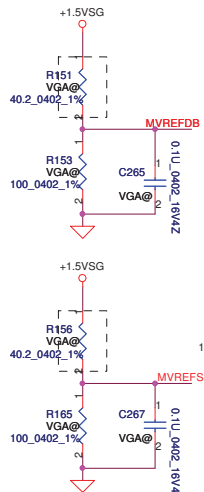
If use M96 upper resistor will  
change to 100ohm for  
MVREFDA/B and MVREFSA/B  
Mahatten upper resistor use 40.2ohm

In M97, Madison and Park, AF28 is  
FB\_VDDC, AG28 is FB\_VDDCI, AH29 is  
FB\_GND. GCORE\_SEN and FB\_GND  
should route as differential pair Same  
as VDDCI\_SEN and FB\_GND

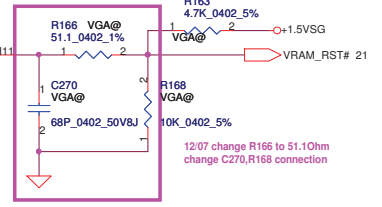
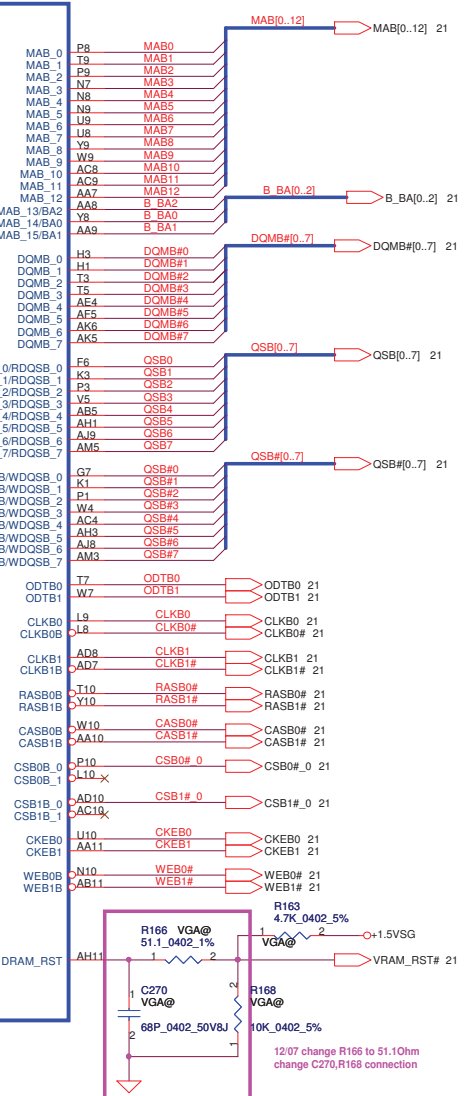
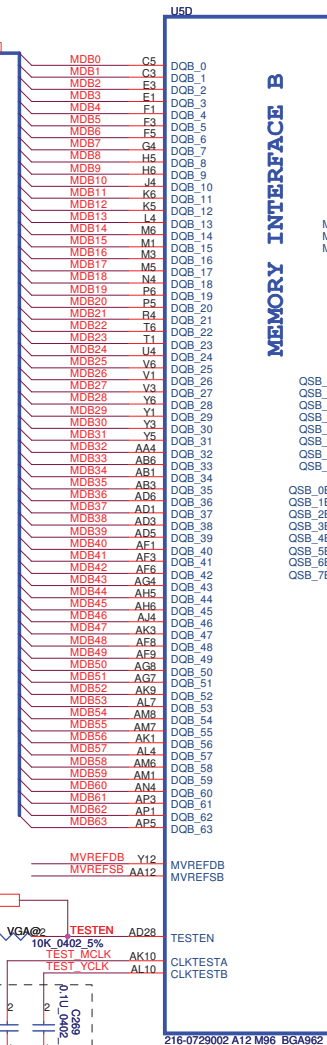


M96 no support

If use M96 upper resistor will  
change to 100ohm for  
MVREFDA/B and MVREFSA/B  
Mahatten upper resistor use  
40.2ohm



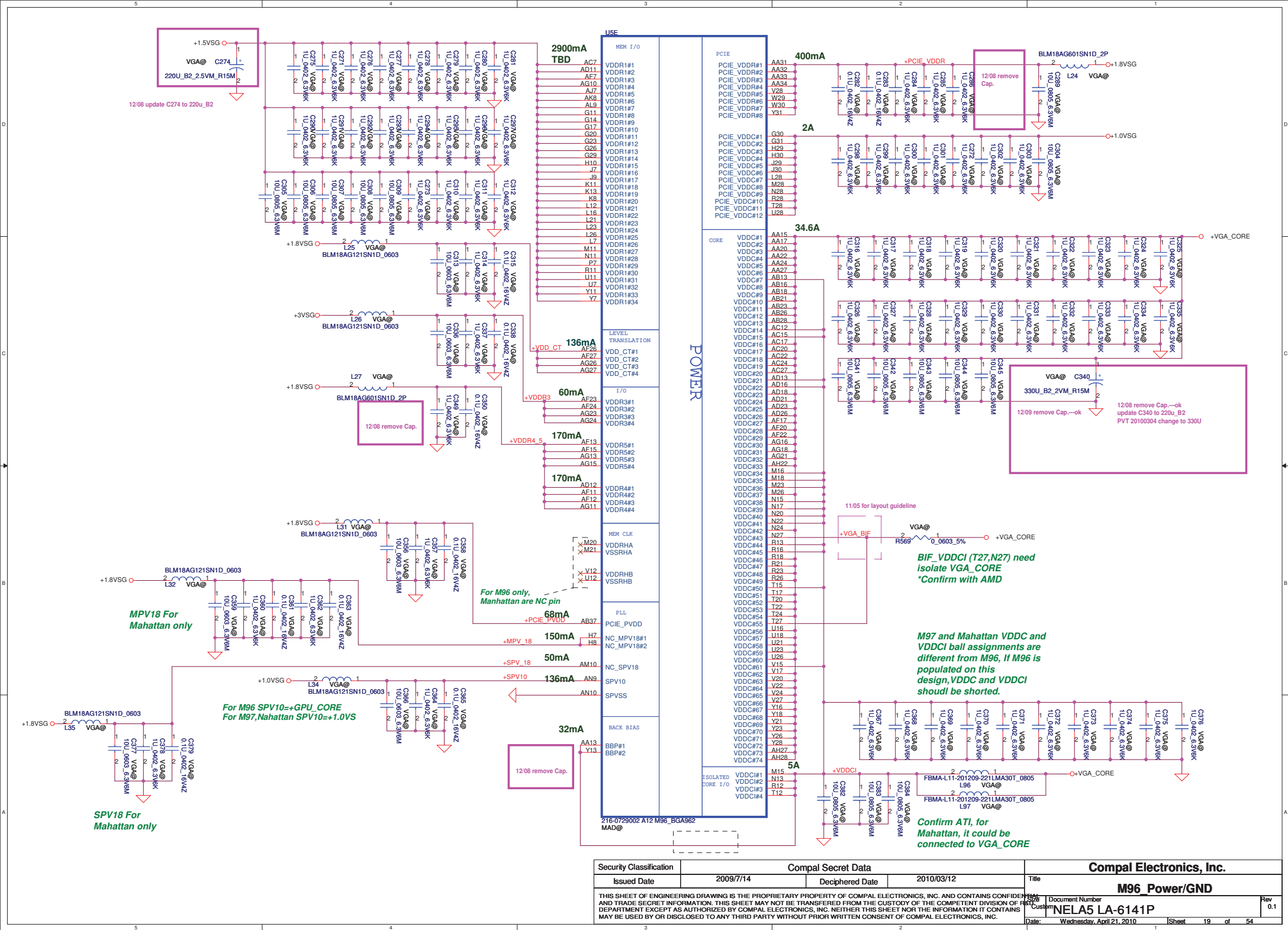
M96 use 4.7K to  
PD directly.



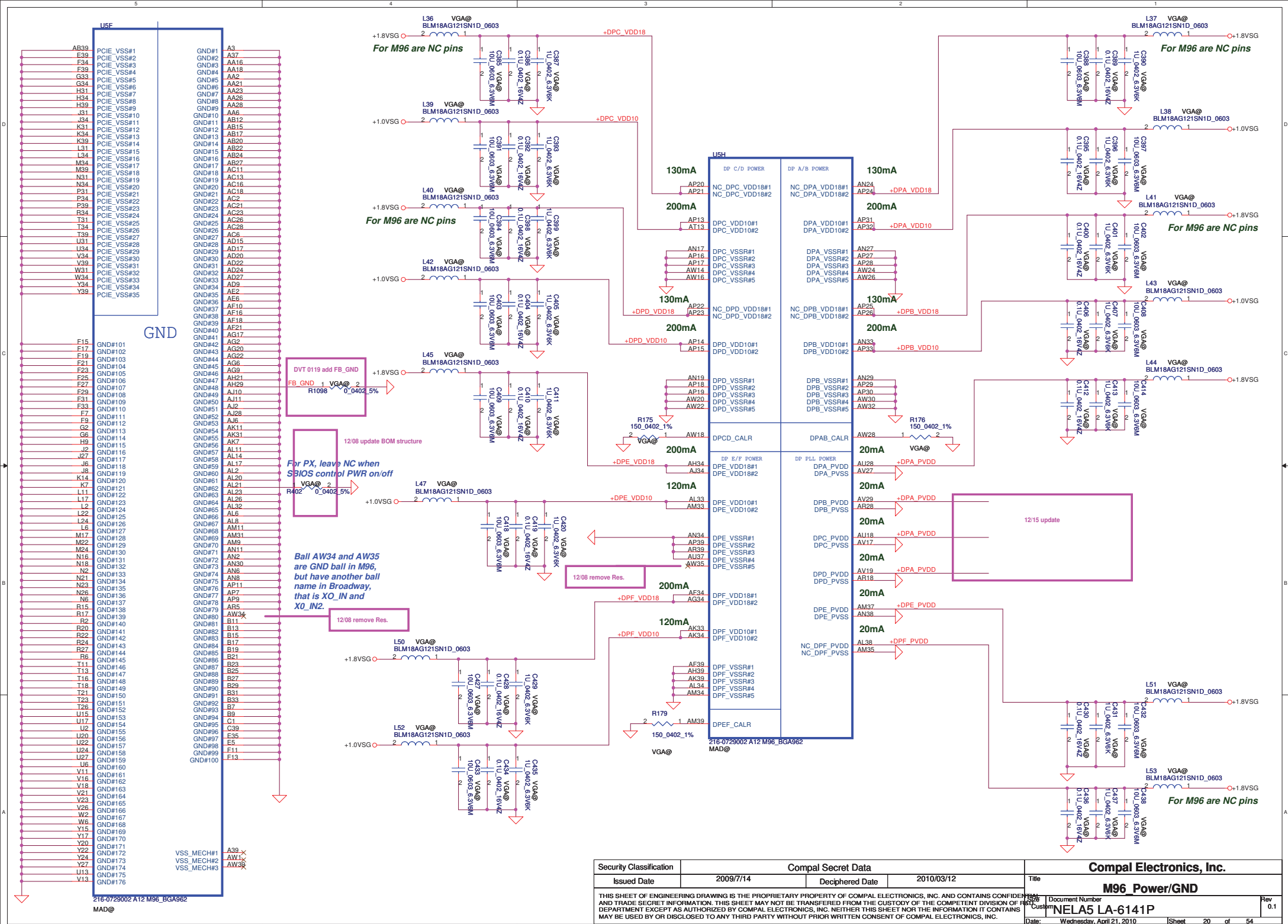
	M96	Broadway
R168	4.7k Ohm SD028470180	10k Ohm SD028100280
R166	0 Ohm SD028000080	680 Ohm SD028680080
R163	4.7k Ohm SD028470180	DNI
C270	1000 pF SD071602K80	68 pF SD071602K80

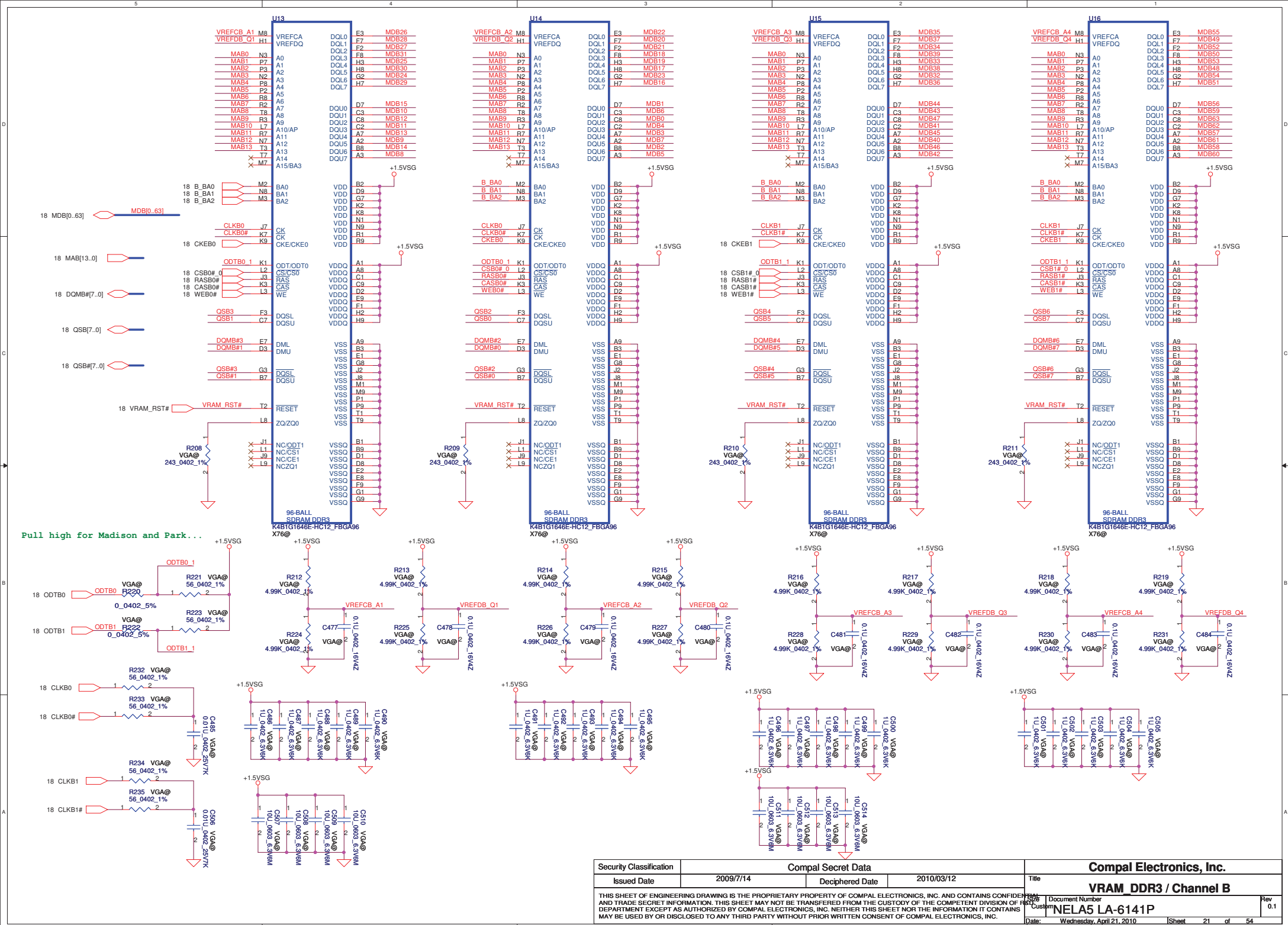
Compal Electronics, Inc.	
Memory	
Document Number	INELA5 LA-6141P
Date: Wednesday, April 21, 2010	Sheet 18 of 54

Security Classification	Compal Secret Data
Issued Date	2009/7/14
Deciphered Date	2010/03/12
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 FACTORY 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.	

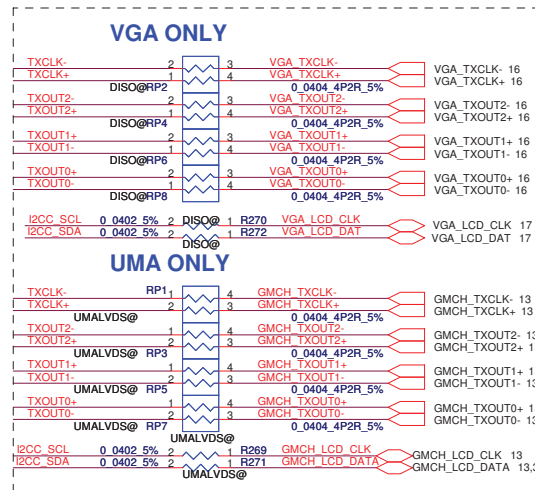
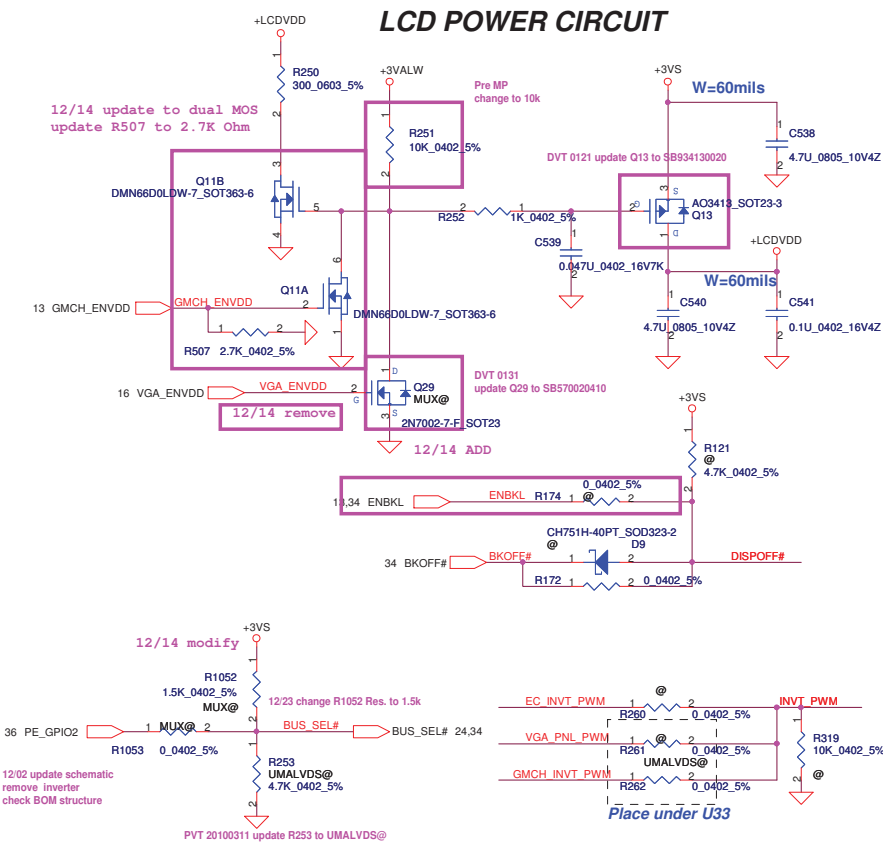


Security Classification		Compal Secret Data		Compal Electronics, Inc.			
Issued Date		2009/7/14		Deciphered Date		2010/03/12	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXERCISED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Title			
				M96 Power/GND			
				Part Number		Rev	
				Customer		0.1	
				NELA5 LA-6141P			
				Date: Wednesday, April 21, 2010		Sheet 19 of 54	

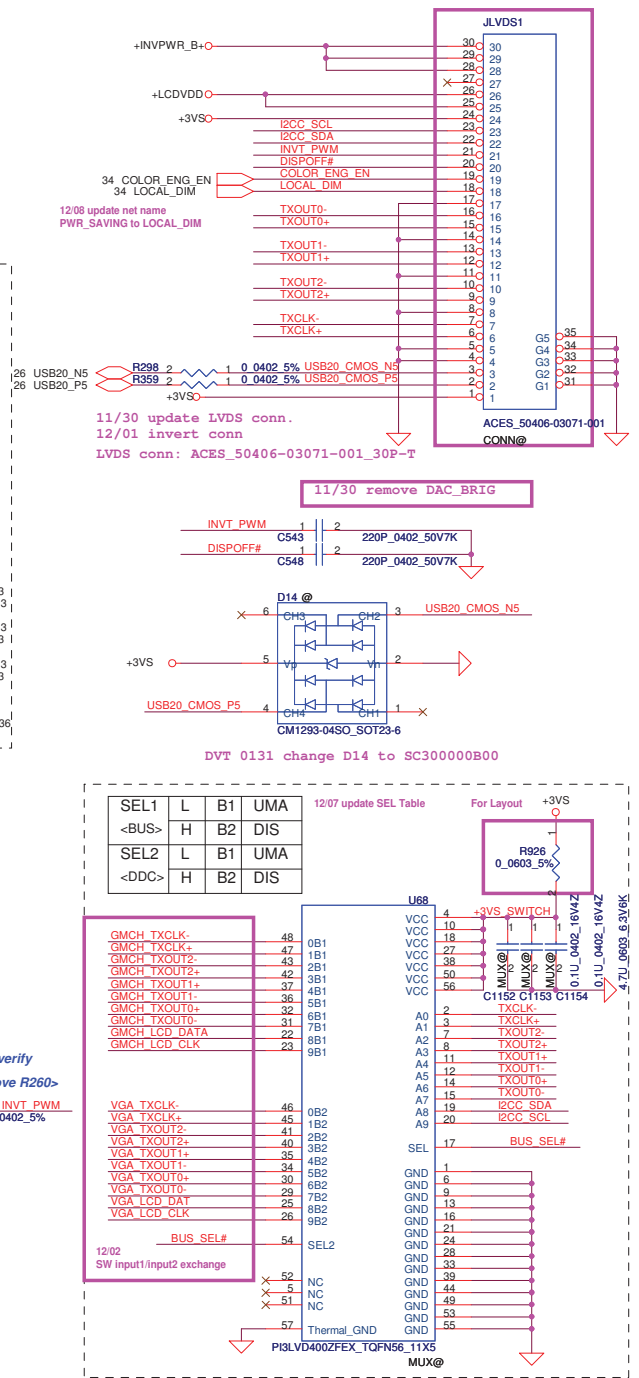




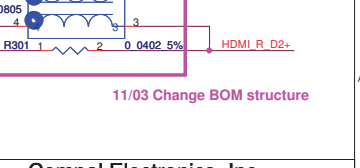
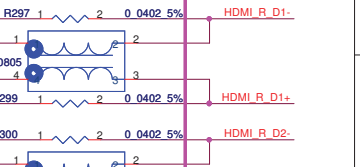
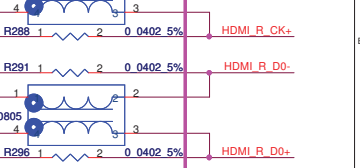
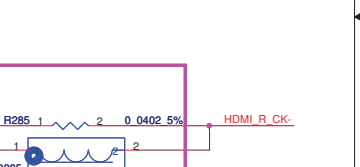
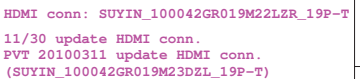
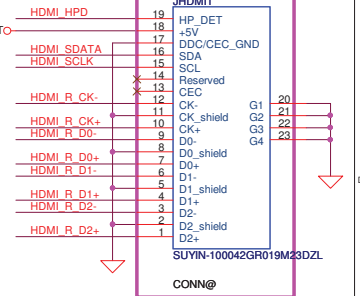
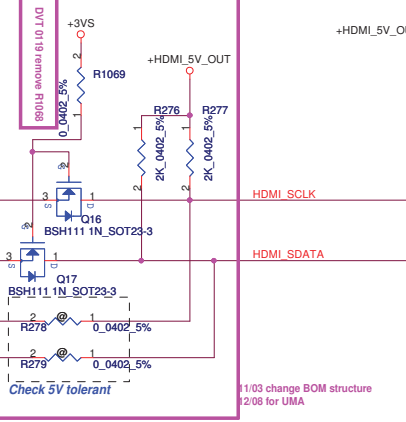
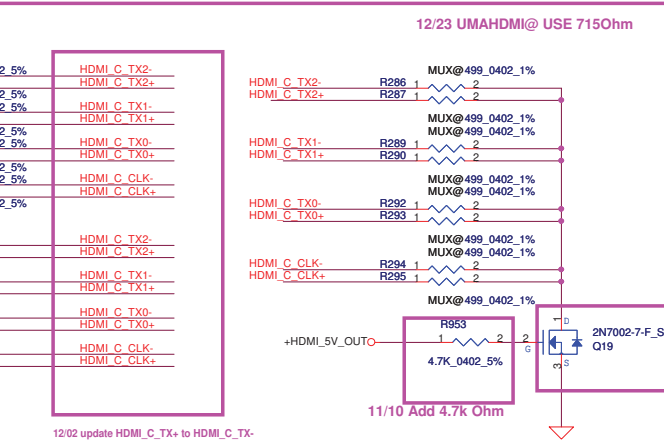
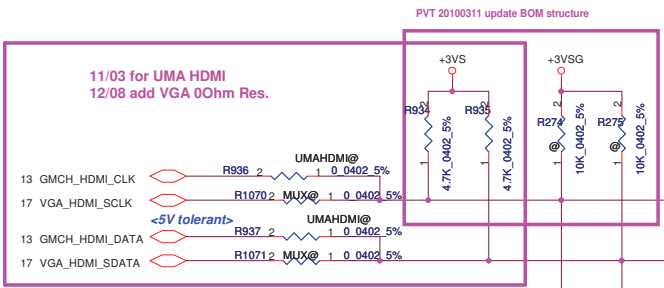
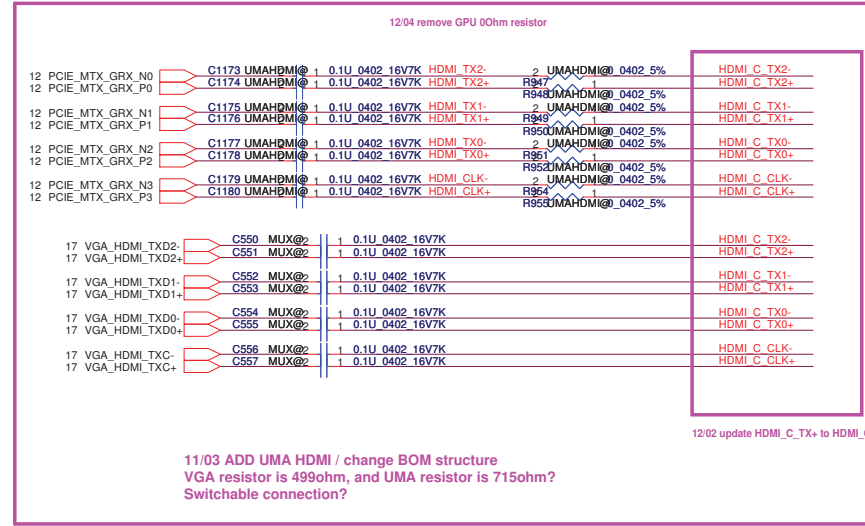
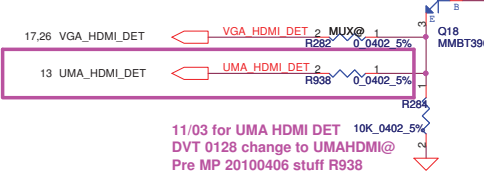
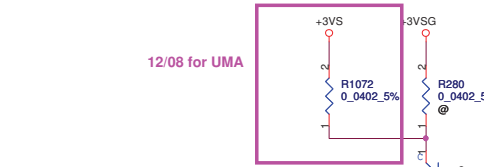
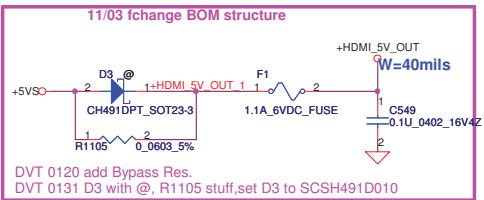
# LCD POWER CIRCUIT



# LCD/LED PANEL Conn.



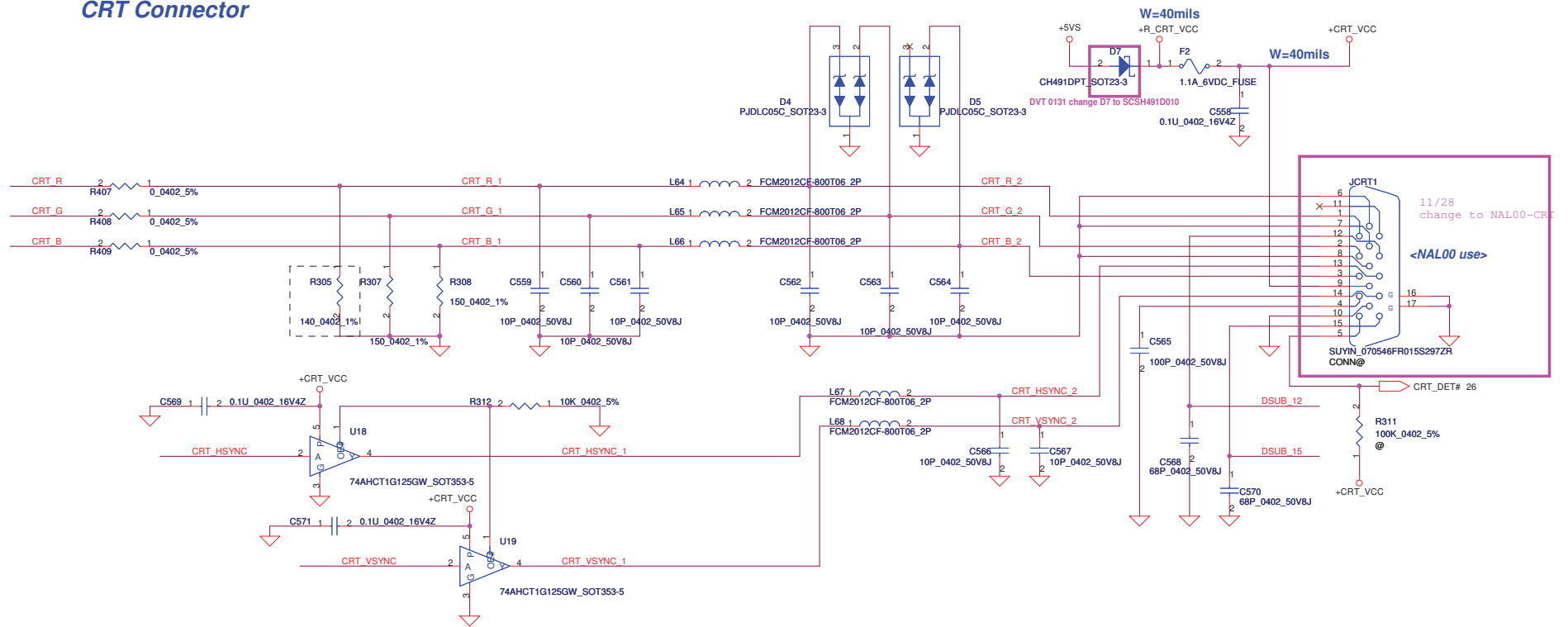
Security Classification	Compal Secret Data			Title	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	LVDS Connector	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Rev	0.1
				NELA5 LA-6141P	
				Date	Wednesday, April 21, 2010
				Sheet	22 of 54



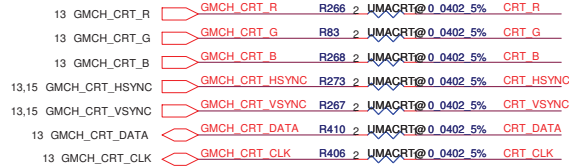
Place closed to JHDMI1

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	HDMI Connector	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Rev 0.1	Wednesday, April 21, 2010
				32	54

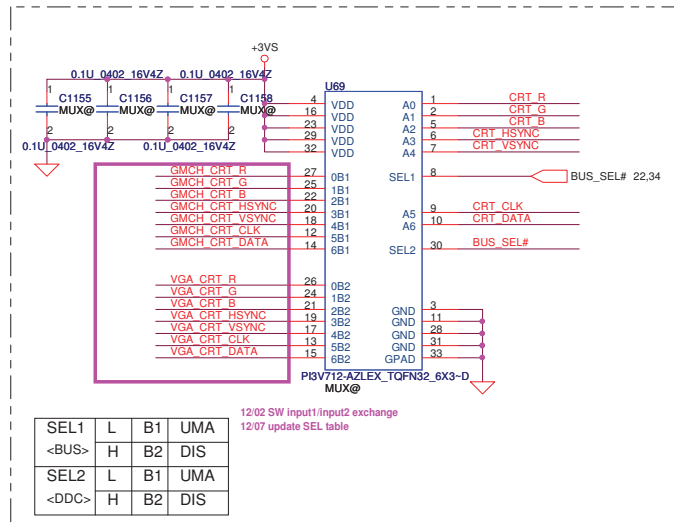
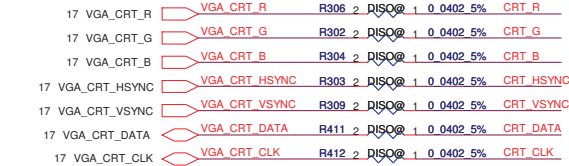
# CRT Connector



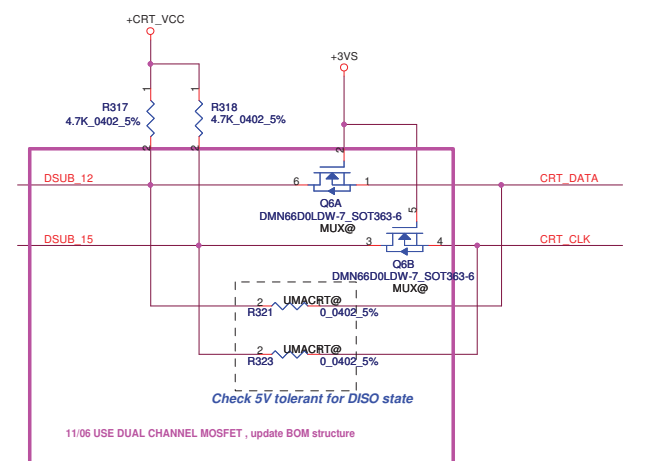
## For UMA Only



## For VGA Only

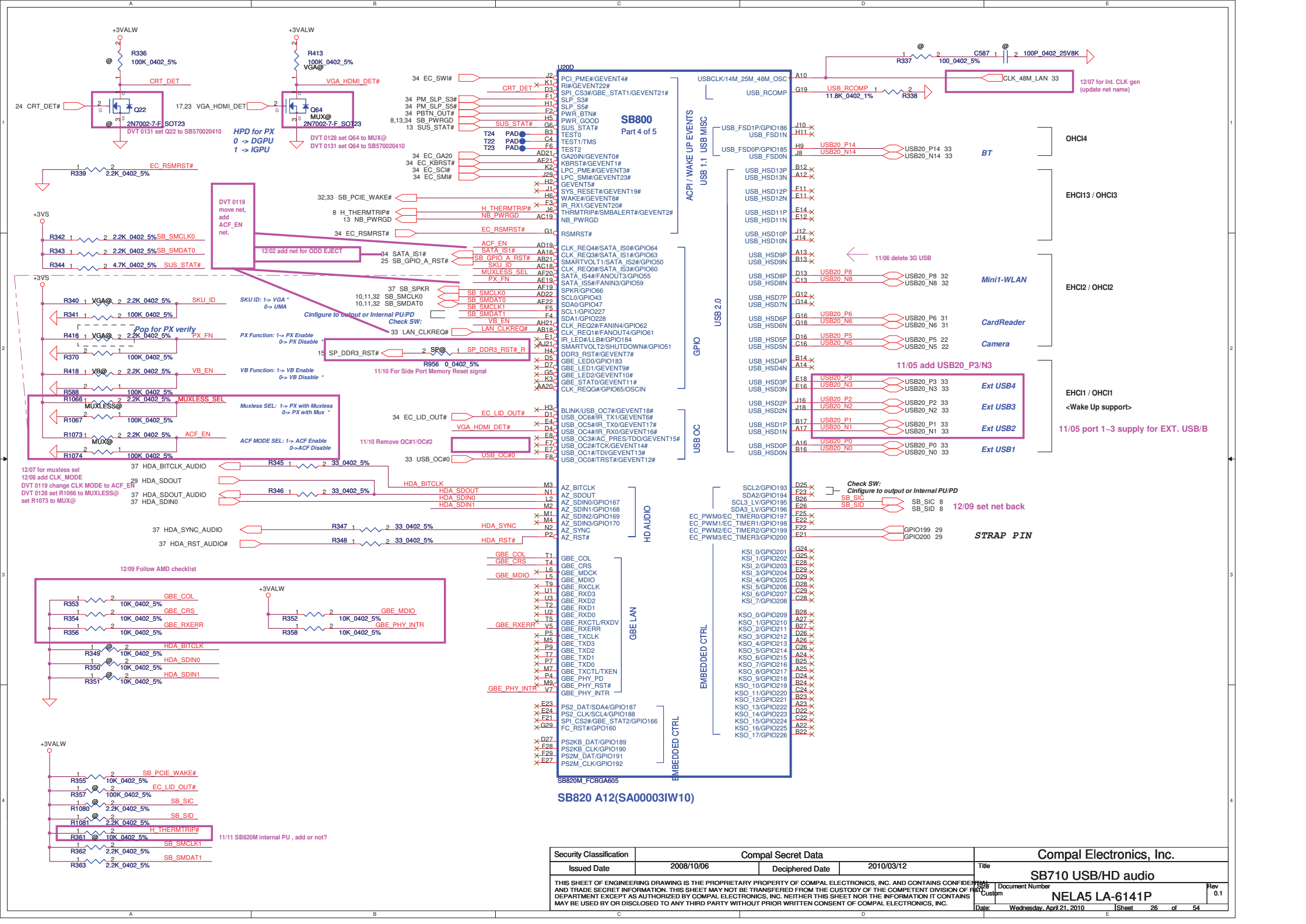


## Close to Conn side



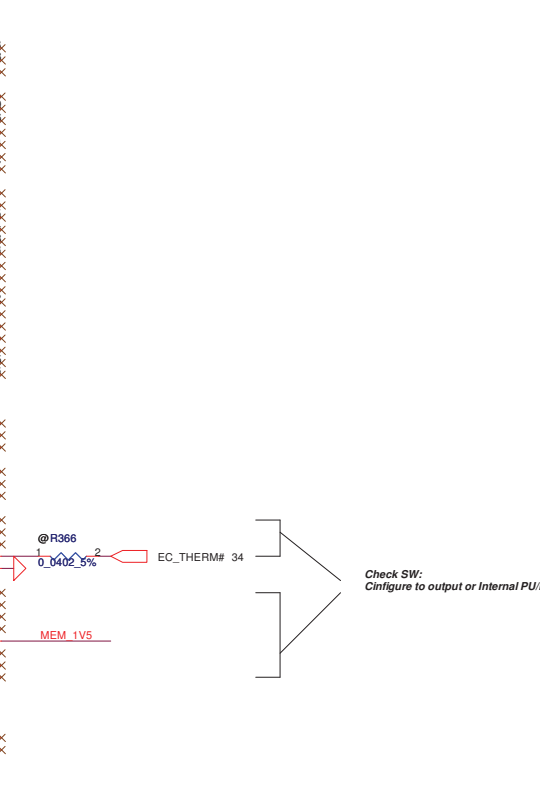
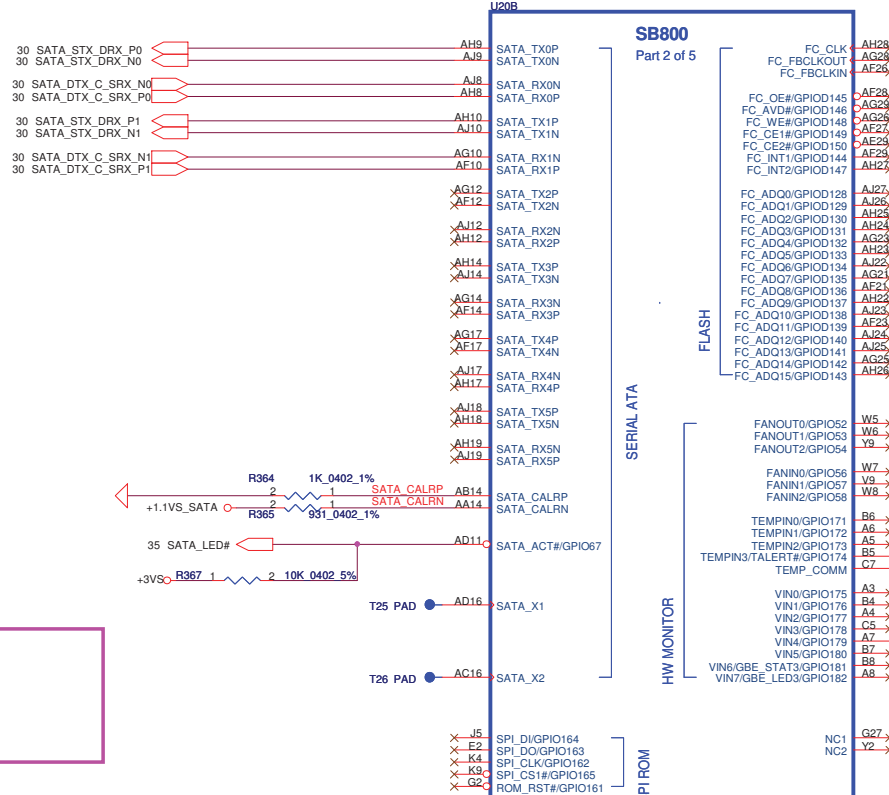
Security Classification		Compal Secret Data		Title	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	CRT Connector	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Doc Number	Rev
				NELA5 LA-6141P	0.1
				Date: Wednesday, April 21, 2010	Sheet 24 of 54

Security Classification		Compal Secret Data		Compal Electronics, Inc.			
Issued Date	2008/10/06	Deciphered Date	2010/03/12	Title	SB710-PCIE/PCI/ACPI/LPC/RTC		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Part	Document Number	Rev	
				Custom	NELA5 LA-6141P	0.1	
				Date	Wednesday, April 14, 2010	Sheet	25 of 54

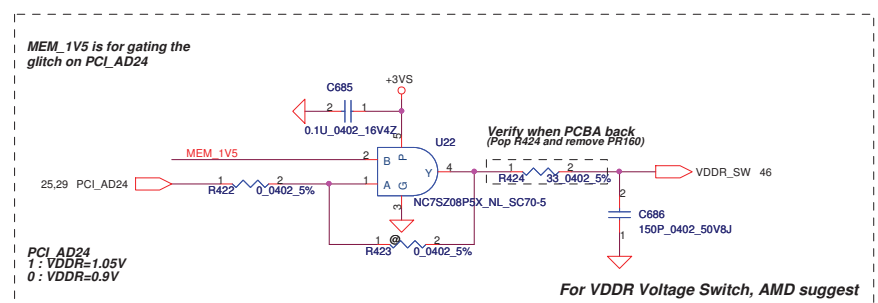


HDD

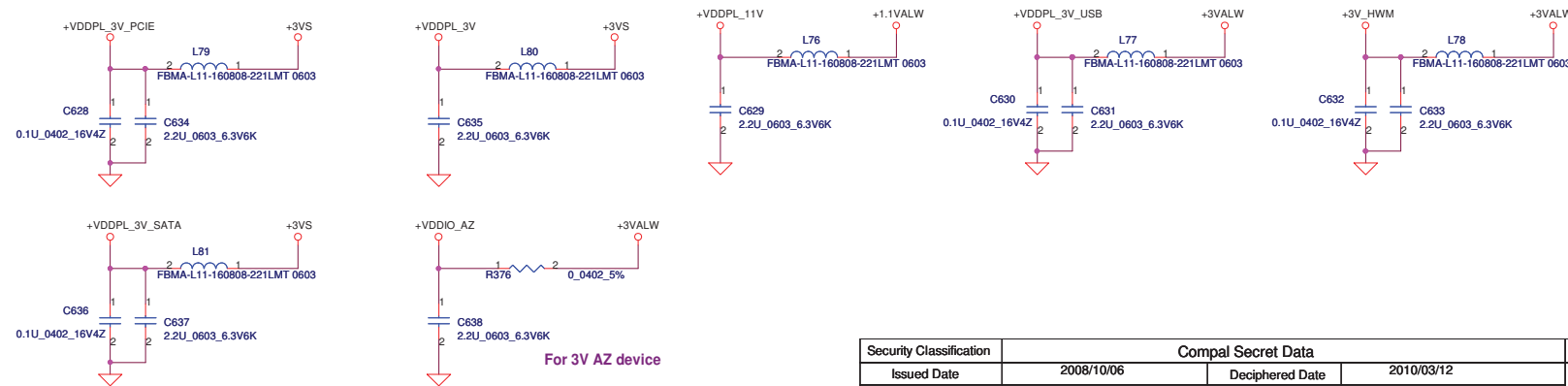
ODD



Check SW:  
Configure to output or Internal PUPD



Security Classification		Compal Secret Data				Compal Electronics, Inc.							
Issued Date		2008/10/06		Deciphered Date		2010/03/12		Title					
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FACTORY 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.								SB710 SATA/IDE/SPI					
								Revision		Document Number		Rev	
										NELA5 LA-6141P		0.1	
						Date		Wednesday, April 21, 2010		Sheet 27 of 54			

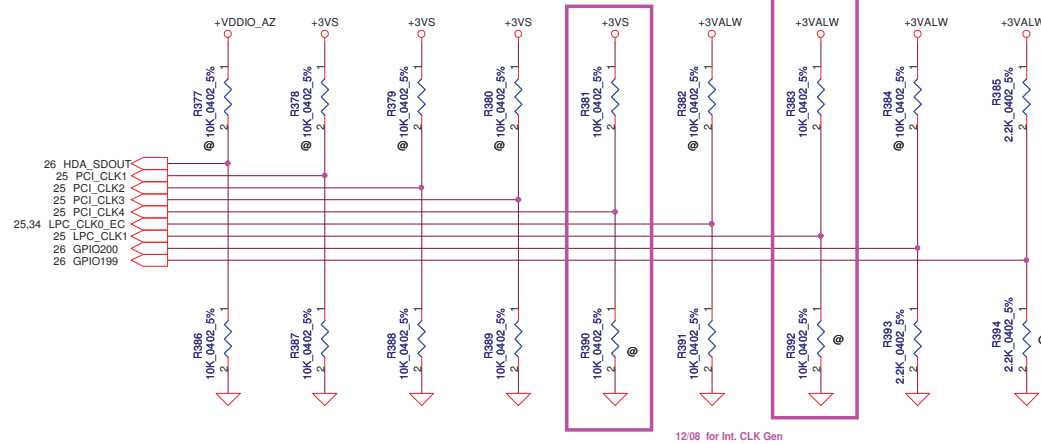


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	Title	SB710 power/GND
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FIRST DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Doc. Number	NELA5 LA-6141P
				Rev	0.1
Date: Wednesday, April 21, 2010				Sheet	28 of 54

# REQUIRED STRAPS

Check Internal PU/PD

	AZ_SDOUT	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LCP_CLK1	GPIO200	GPIO199
PULL HIGH	LOW POWER MODE	ALLOW PCIE GEN2	WATCHDOG TIMER ENABLE	USE DEBUG STRAP	Inter CLK Gen Mode Enable DEFAULT	EC ENABLE	CLOCKGEN ENABLE DEFAULT	H,H = Reserved H,L = SPI ROM L,H = LPC ROM (Default L,NC) L,L = FWH ROM	
PULL LOW	Performance MODE DEFAULT	FORCE PCIE GEN1 DEFAULT	WATCHDOG TIMER DISABLE DEFAULT	IGNORE DEBUG STRAP DEFAULT	Inter CLK Gen Mode Disable	EC DISABLE DEFAULT	CLOCKGEN DISABLE		



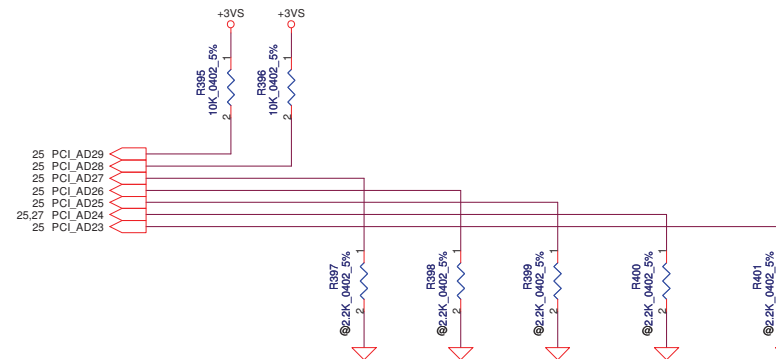
## DEBUG STRAPS

SB800 HAS 15K INTERNAL PU FOR PCI\_AD[27:23]

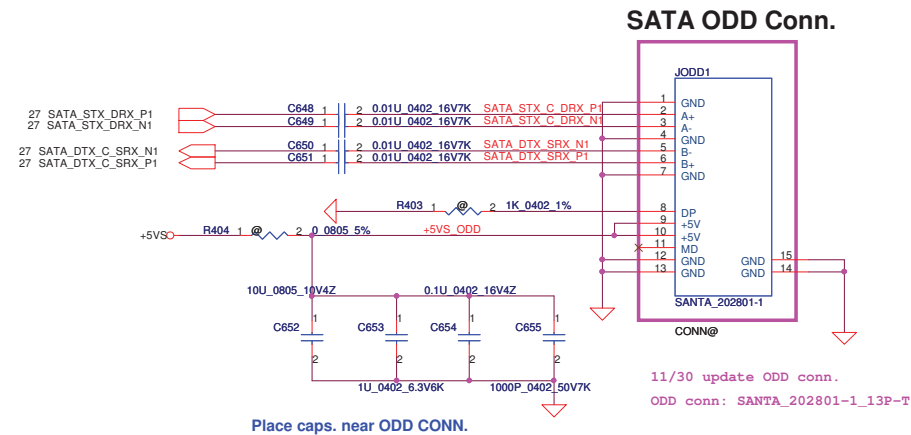
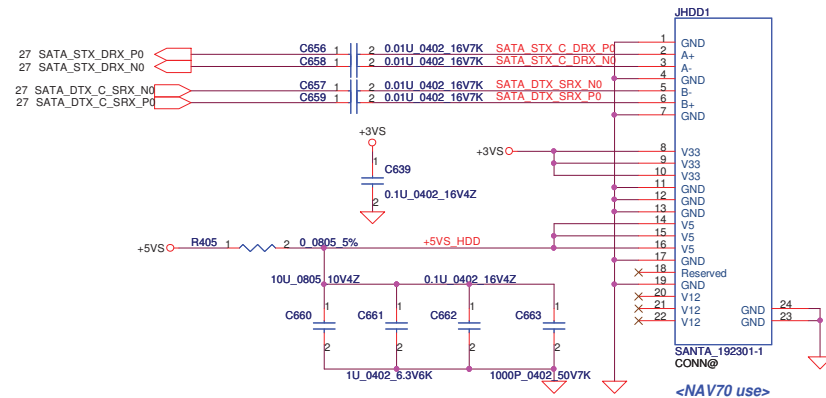
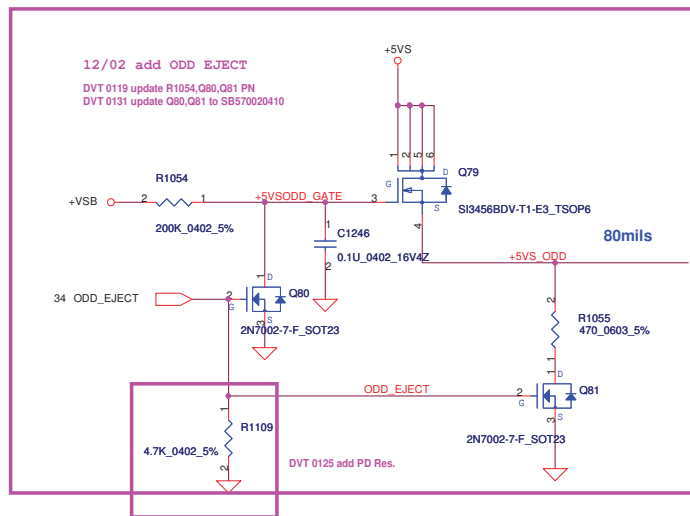
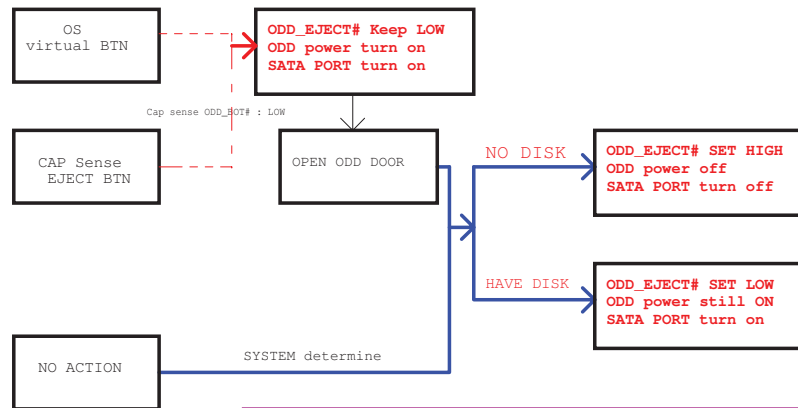
	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE FC PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	DISABLE PCI MEM BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM BOOT

Check AD29,AD28 strap function

check default



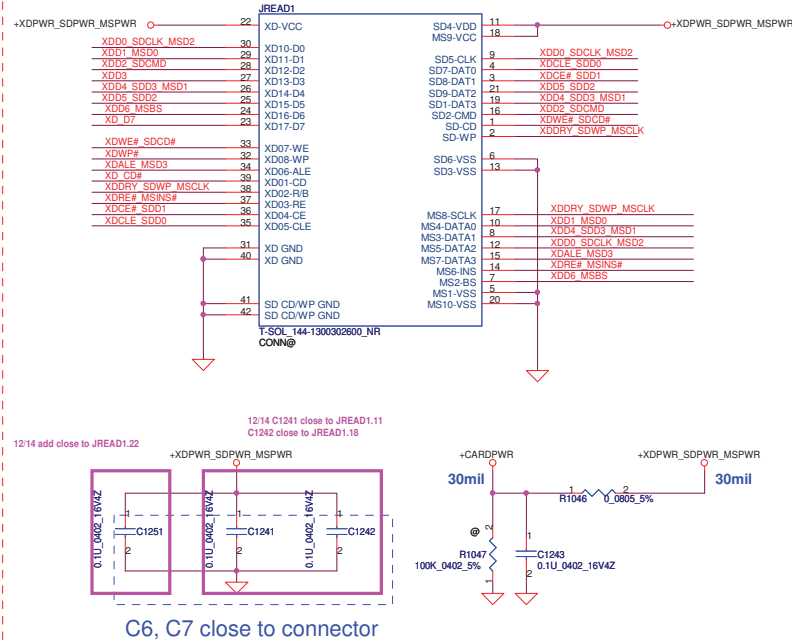
Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FACTORY CUSTOMER DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				NELA5 LA-6141P	0.1
				Date: Wednesday, April 21, 2010	Sheet 29 of 54



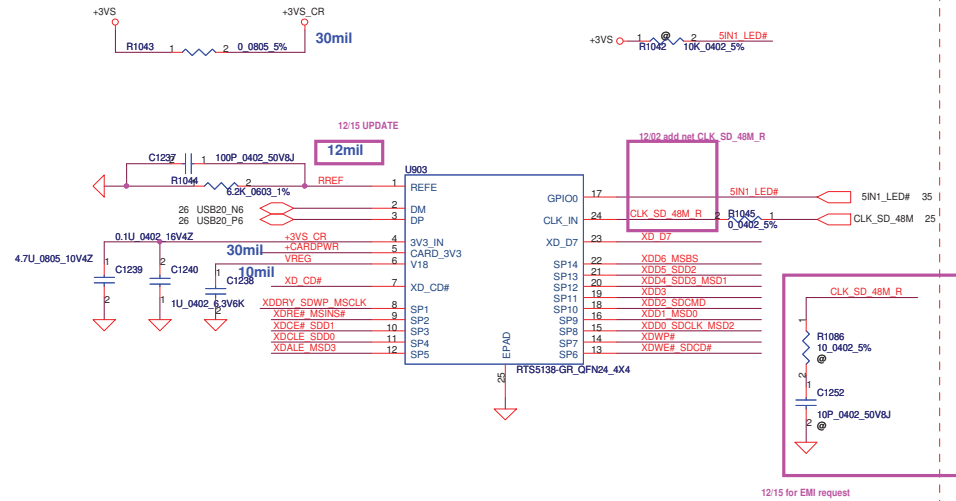
Security Classification		Compal Secret Data				Compal Electronics, Inc.							
Issued Date		2008/10/06		Deciphered Date		2010/03/12		Title		HDD & ODD Connector			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT 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		NELA5 LA-6141P		Rev 0.1	
								Date: Wednesday, April 21, 2010		Sheet 30 of 54			

# Card Reader Connector

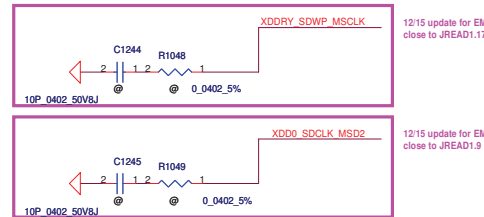
## Card Reader Connector



# RTS5138



# EMI reserve

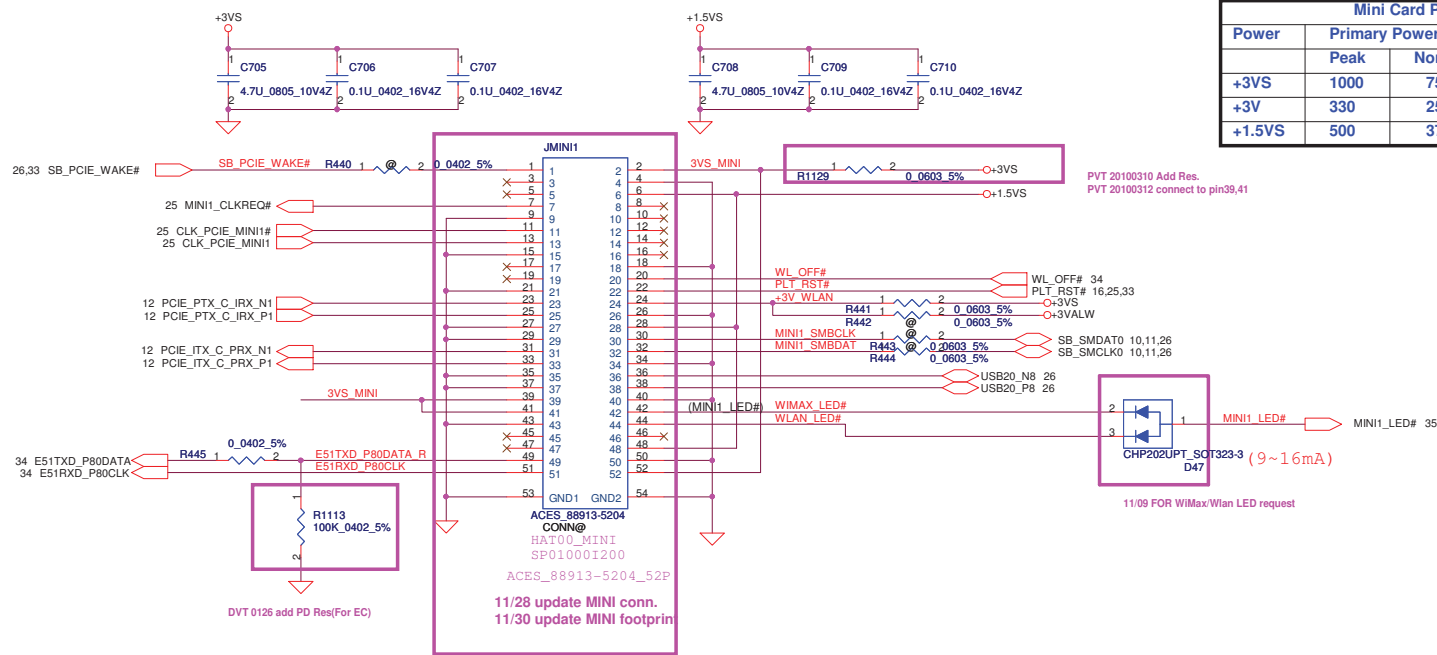


# Share Pin

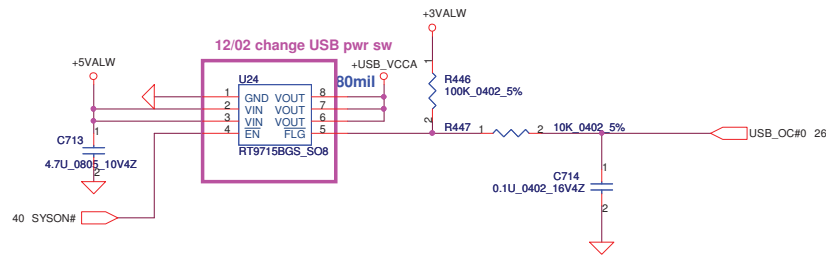
	XD	SD	MS
SP1	XD_CD#	SD_WP	MS_CLK
SP2	XD_CD#	SD_WP	MS_INS#
SP3	XD_CD#	SD_D1	
SP4	XD_CD#	SD_D0	
SP5	XD_ALE	MS_D3	
SP6	XD_WE#	SD_CD#	
SP7	XD_WP	SD_CLK	MS_D2
SP8	XD_D0	SD_CLK	MS_D2
SP9	XD_D1	SD_CLK	MS_D0
SP10	XD_D2	SD_CMD	
SP11	XD_D3	SD_D3	MS_D1
SP12	XD_D4	SD_D3	MS_D1
SP13	XD_D5	SD_D2	MS_SS
SP14	XD_D6		
SP15	XD_D7		

Security Classification		Compal Secret Data		<b>Compal Electronics, Inc.</b>		
Issued Date		2007/08/28	Deciphered Date	2006/10/06	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.					<b>USB CardReader&amp;CONN</b>	
					Size Custom	Document Number
Date:					Wednesday, April 21, 2010	
Sheet					31 of 54	

Mini-Express Card for WLAN

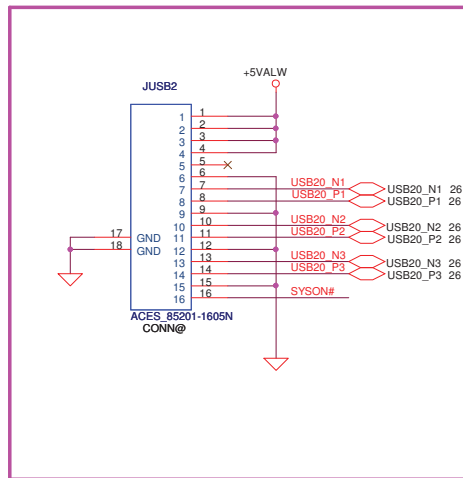


Mini Card Power Rating			
Power	Primary Power (mA)		Auxiliary Power (mA)
	Peak	Normal	Normal
+3VS	1000	750	
+3V	330	250	250 (wake enable)
+1.5VS	500	375	5 (Not wake enable)



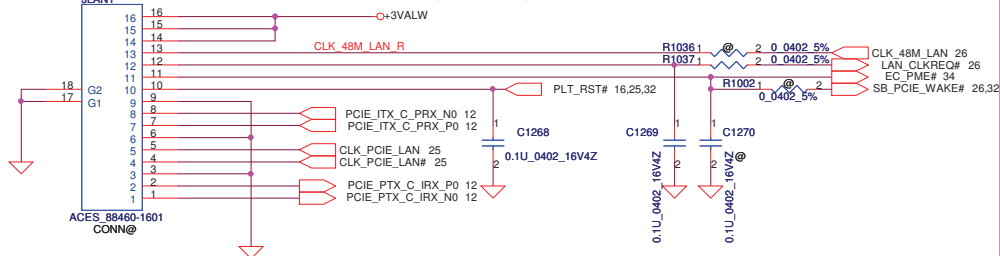
## To USB/B Connector

11/05 remove Card Reader/B,3G/B,3G power, JUSB2 power switch(it will be build on JUSB2/B), change JUSB2 conn. for NELA1, add SB USB20\_P/N3 for External USB port

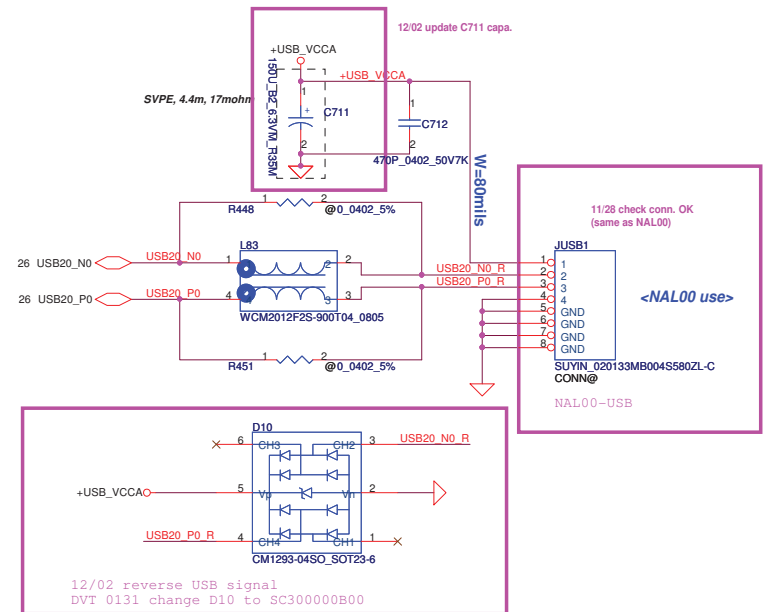


## LAN CONN.

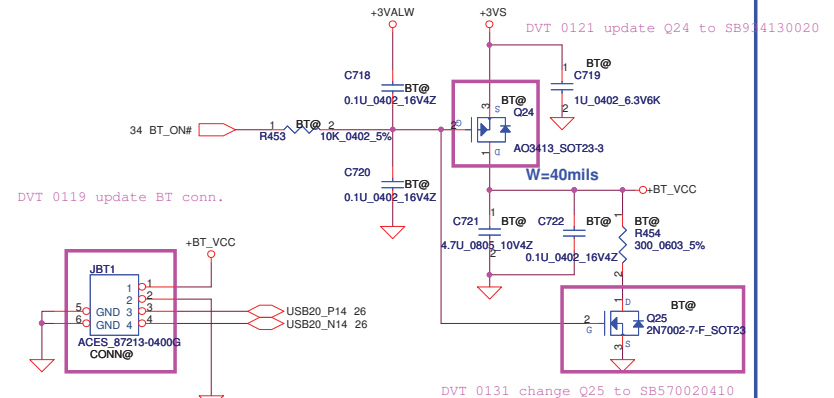
11/12 add Lan conn. 11/20 update pin Def.  
12/01 update conn. footprint  
12/02 add net name on JLAN1.13 (CLK\_48M\_LAN\_R)  
12/15 swap net  
PVT 20100310 add Cap. for EMI request



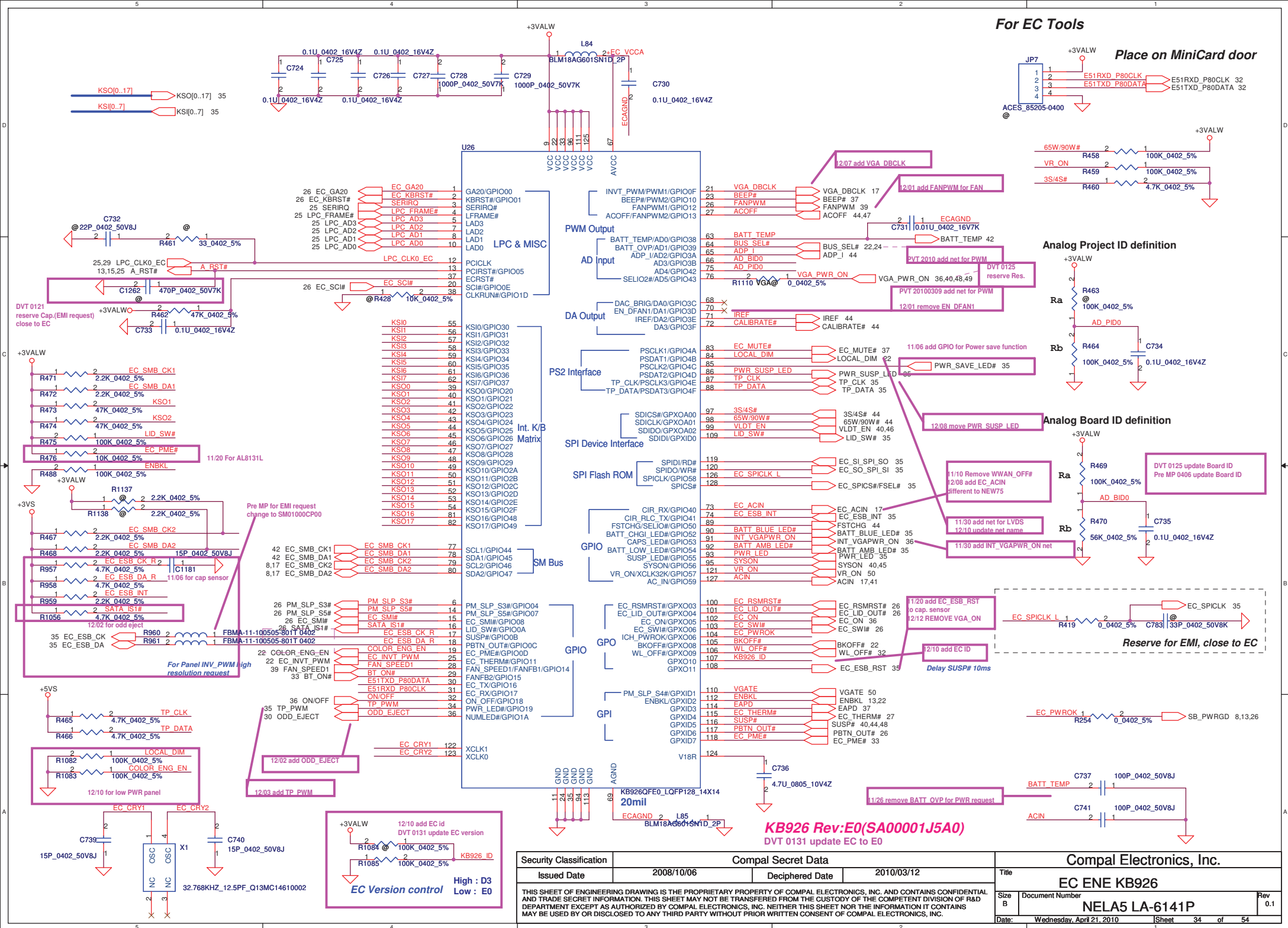
CONFIRM LAN CON.



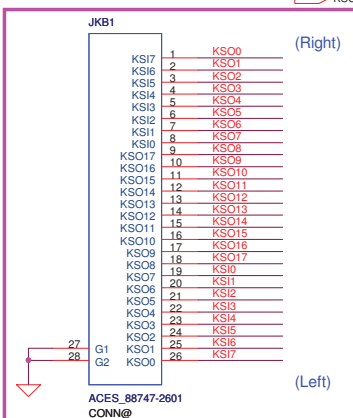
## Bluetooth Conn.



Security Classification				Compal Secret Data				Compal Electronics, Inc.			
Issued Date				Deciphered Date				Title			
2008/10/06				2010/03/12				BlueTooth / Int USB x2 /eSATA			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Date				Wednesday, April 21, 2010			
Page 1 of 1				Document Number				NELA5 LA-6141P			
				Rev				0.1			
				Sheet				33 of 54			

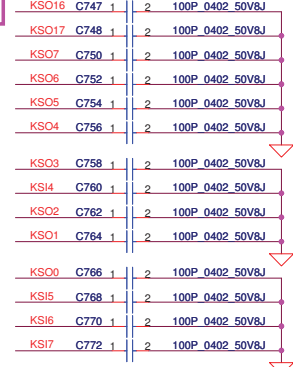


12/07 invert KB pin

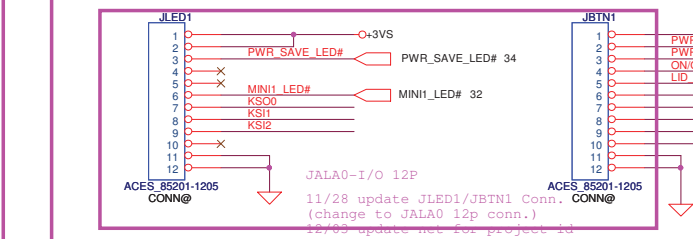


KSI0..7] 34  
KSO0[0..17] 34

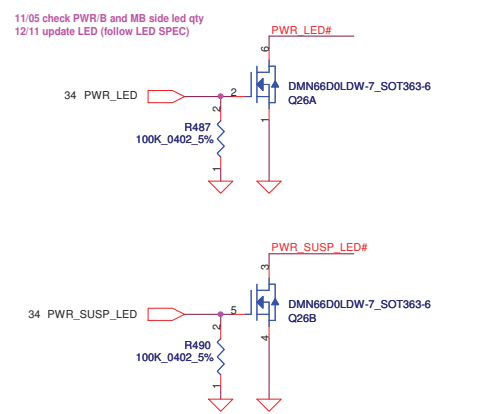
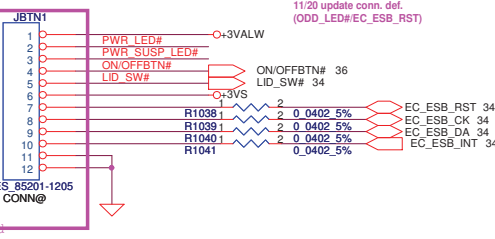
(Left)



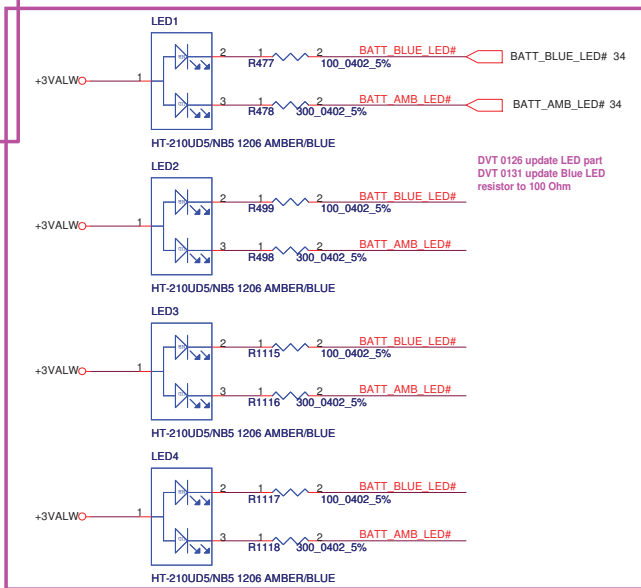
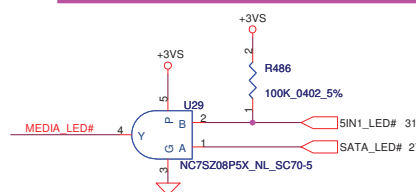
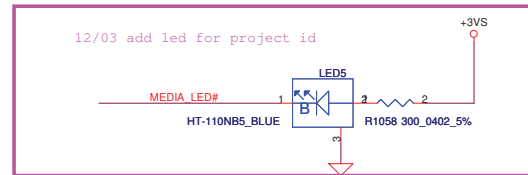
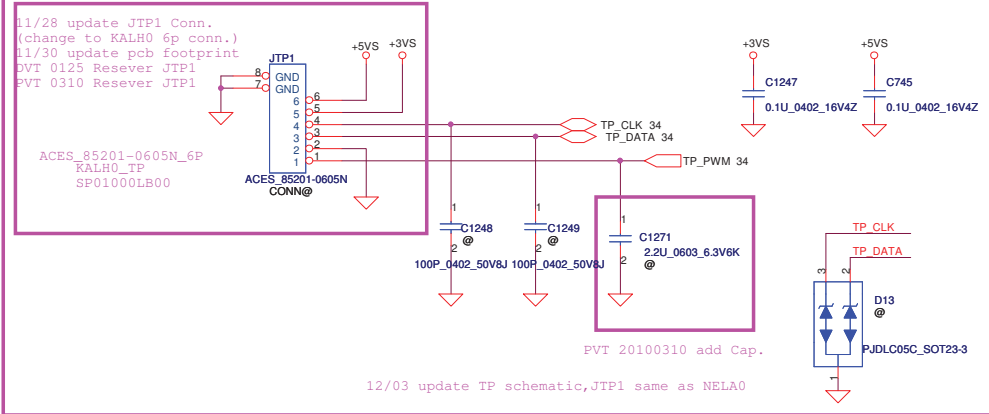
## LED/B LEFT



## PWR/B RIGHT

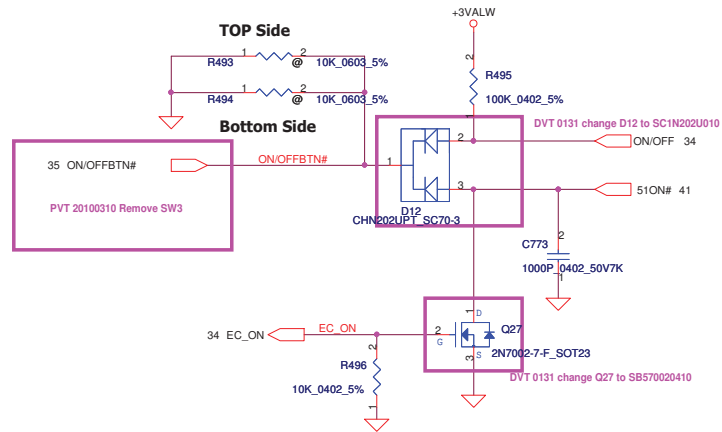


KSO0	
KSI1	PWR SAVE BTN
KSI2	WLAN BTN
KSI3	
KSI4	

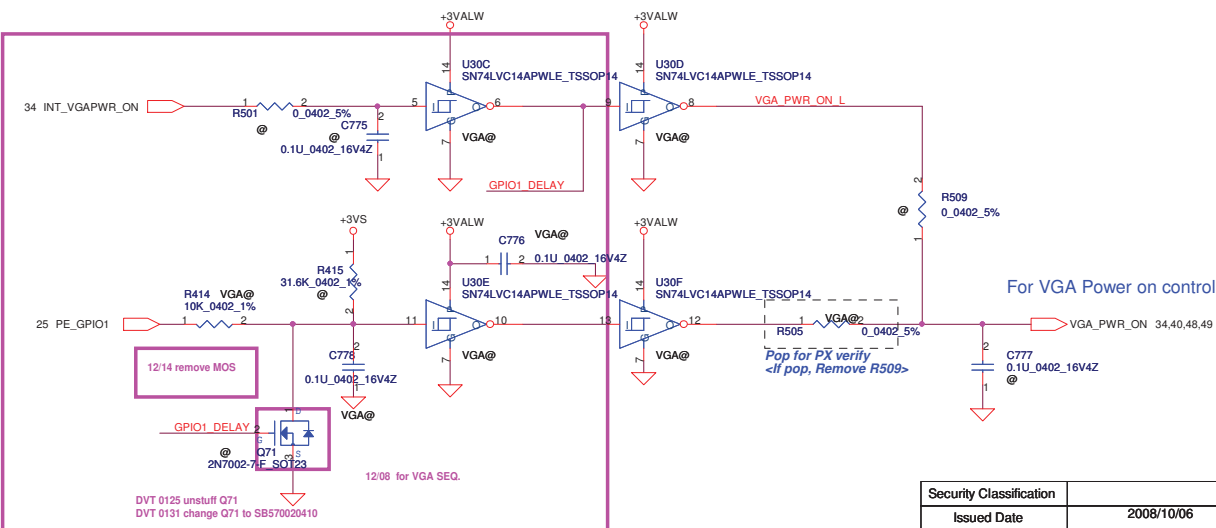
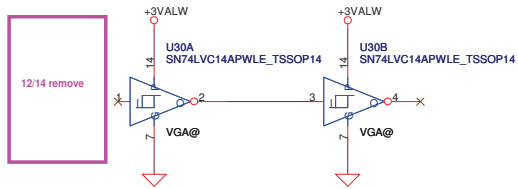


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	BIOS, I/O Port & K/B Connector	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. 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
				NELA5 LA-6141P	0.1
				Date: Wednesday, April 21, 2010	Sheet 35 of 54

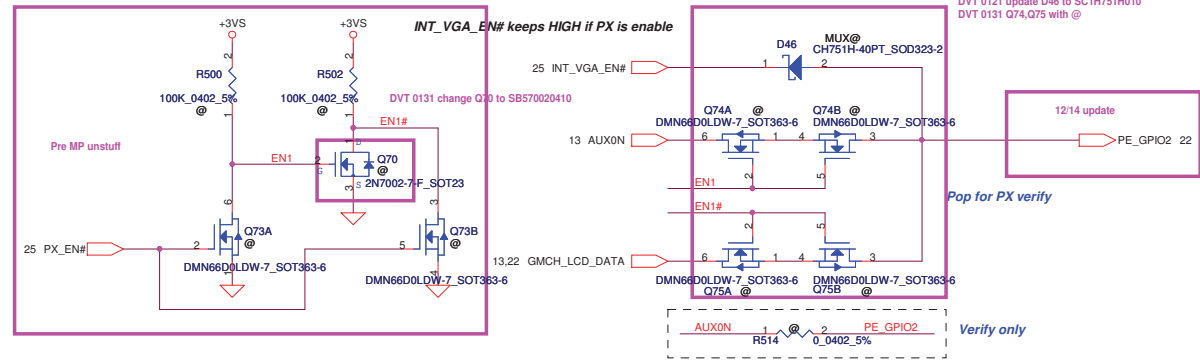
## ON/OFF switch **Power Button**



## VGA Power ON Circuit

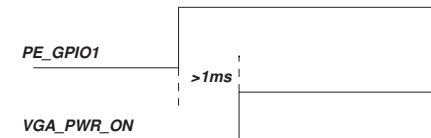


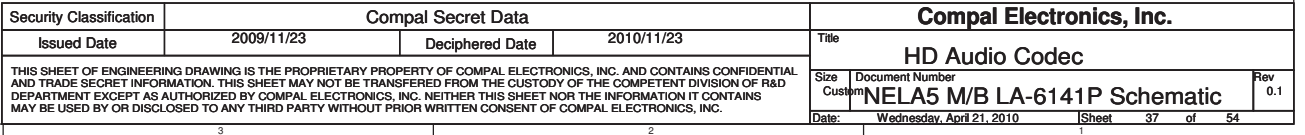
## PX MODE SELECT CONTROL <AMD Suggestion>



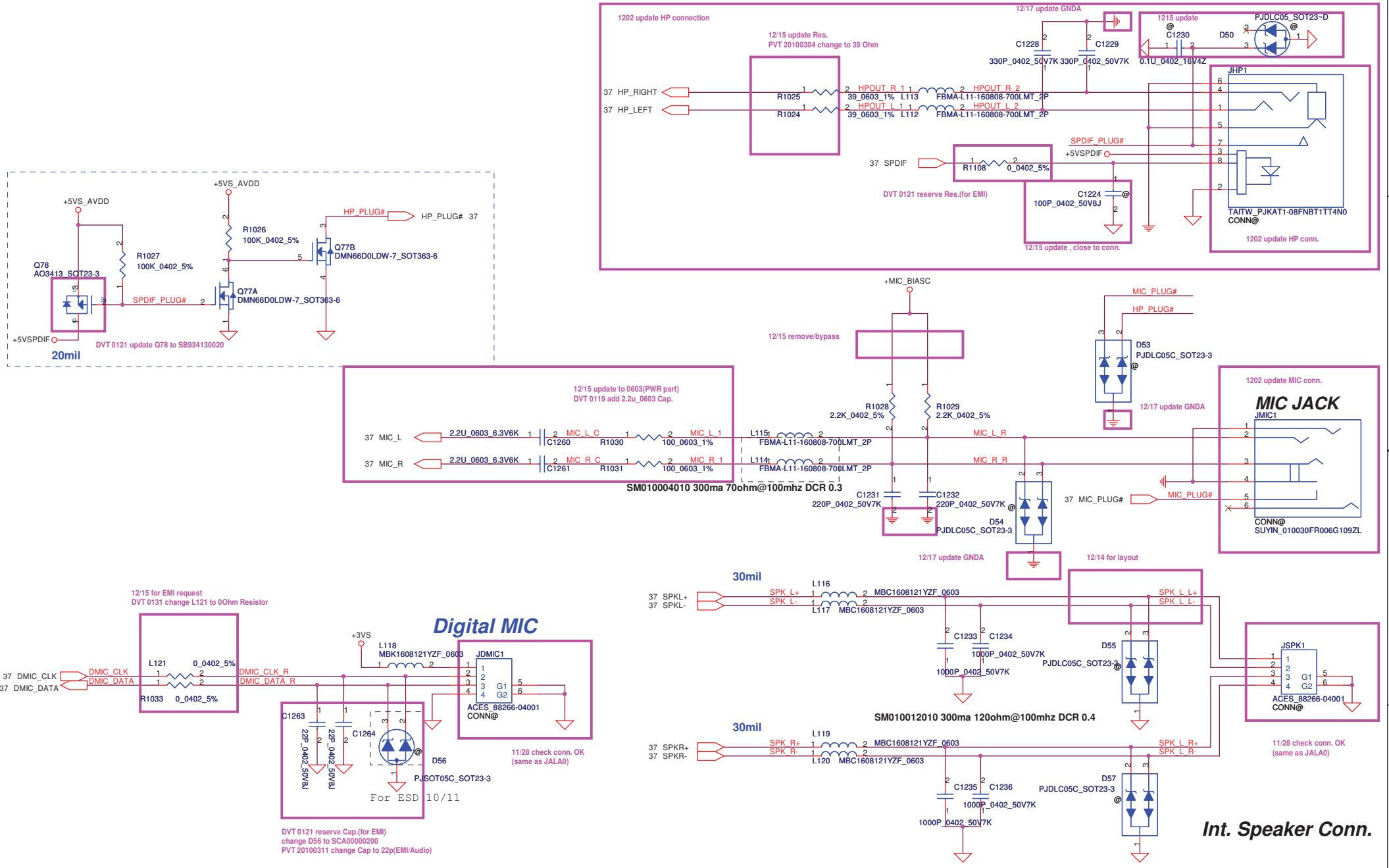
	PX_EN#	AUX0N EDP_DISABLED	I2C_DATA EDP_ENABLED	INT_VGA_EN#	DISPLAY OUTPUT
IGP only mode	1	X	X	0	IGP( LVDS,EDP,VGA,DP)
VGA only mode	1	X	X	1	VGA( LVDS,EDP,CRT,DP)
PX (MUXED)	0	0/1	0/1	1	VGA/IGP(CRT, LVDS, EDP); MXM(DP)
PX (MUXLESS)	0	X	X	0	IGP( LVDS,EDP,CRT,DP)

For PX sequence, >1ms delay is required between PE\_GPIO1 and VGA\_PWR\_ON





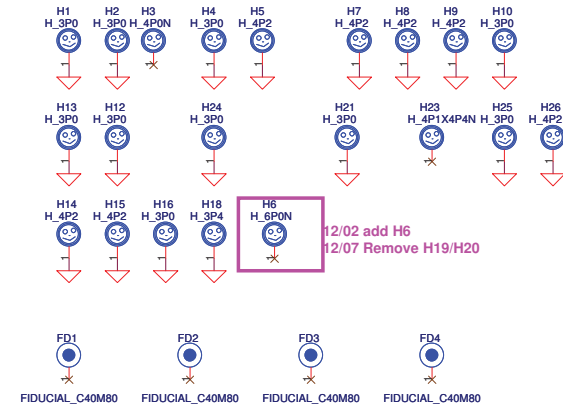
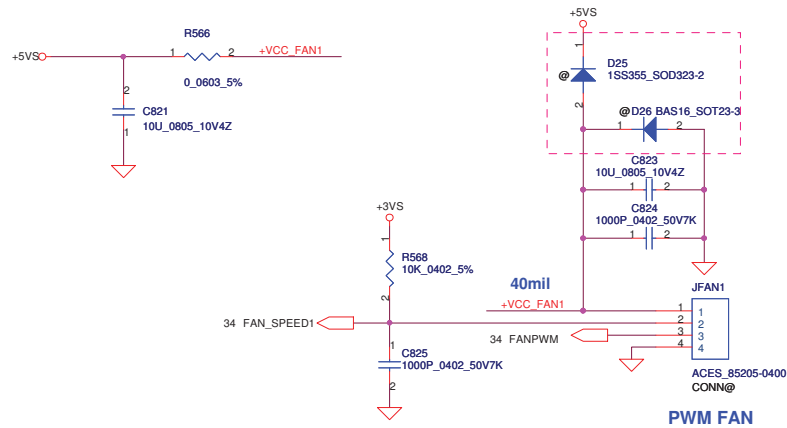
# S/PDIF Out JACK Headphone Out



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2009/11/23	Deciphered Date	2010/11/23	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.				Amplifier & Audio Jack	
Size	Document Number	Customer		Rev	
Date	Wednesday, April 21, 2010	Sheet		38 of 54	

## FAN1 Conn

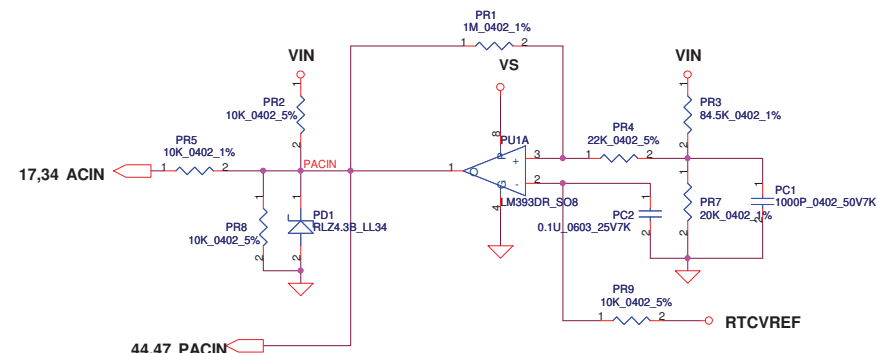
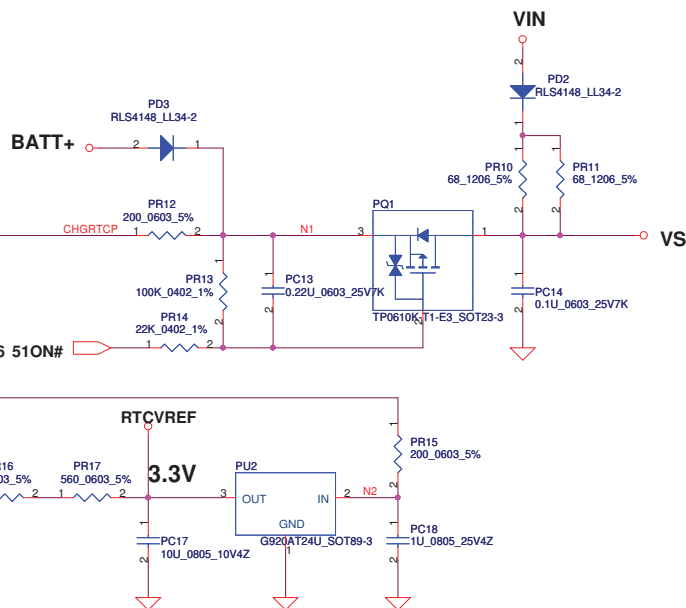
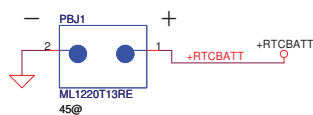
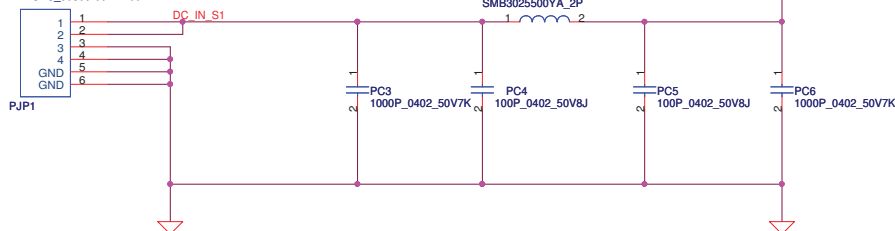
12/01 update FAN conn.



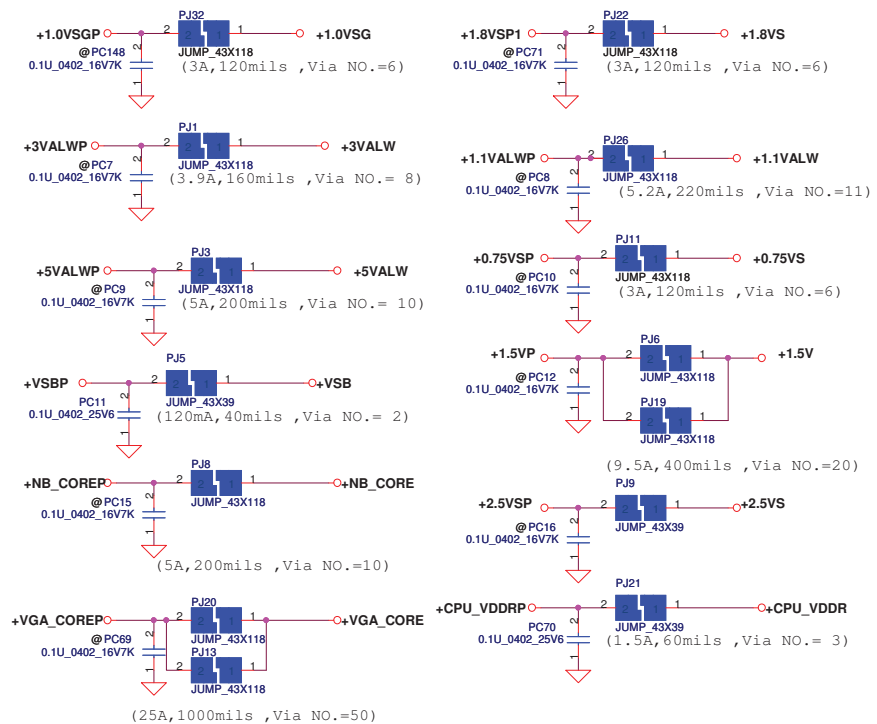
Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	Title	FAN & Screw Hole
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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	NELA5 LA-6141P
				Rev	0.1
				Date:	Wednesday, April 21, 2010
				Sheet	39 of 54



SP02000GC00  
ACES\_50305-00441-001



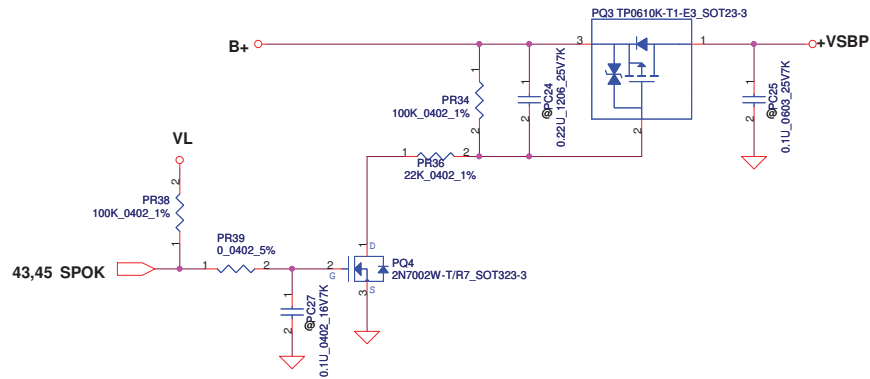
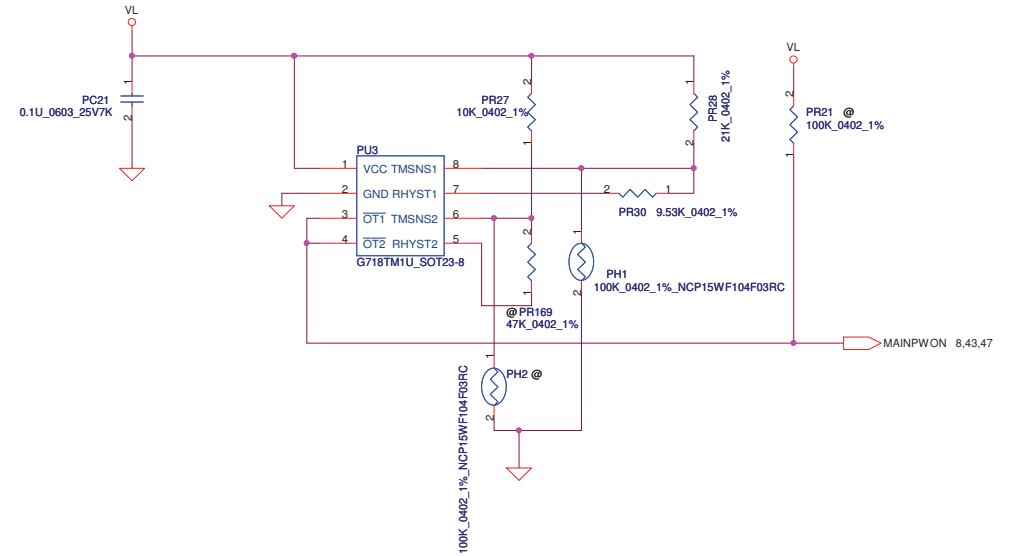
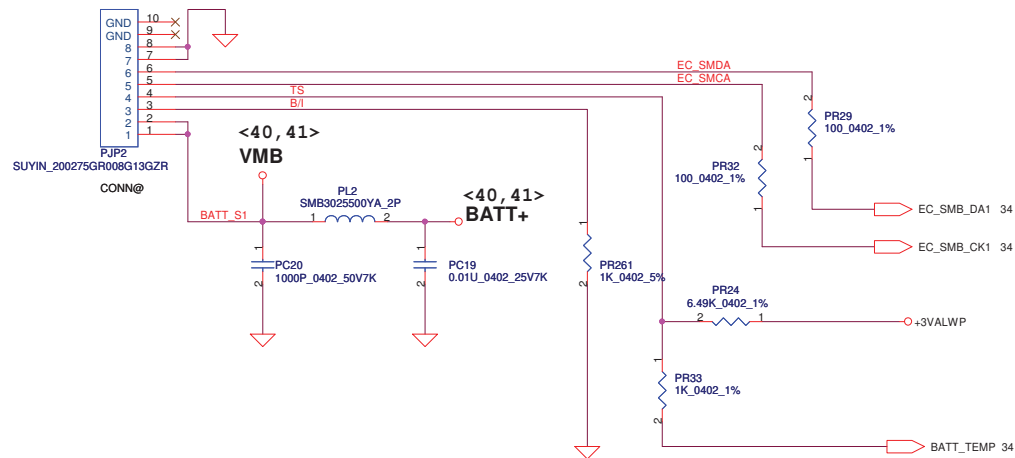
	Min.	Typ	Max.
H-->L	16.976V	17.525V	17.728V
L-->H	17.430V	17.901V	18.384V



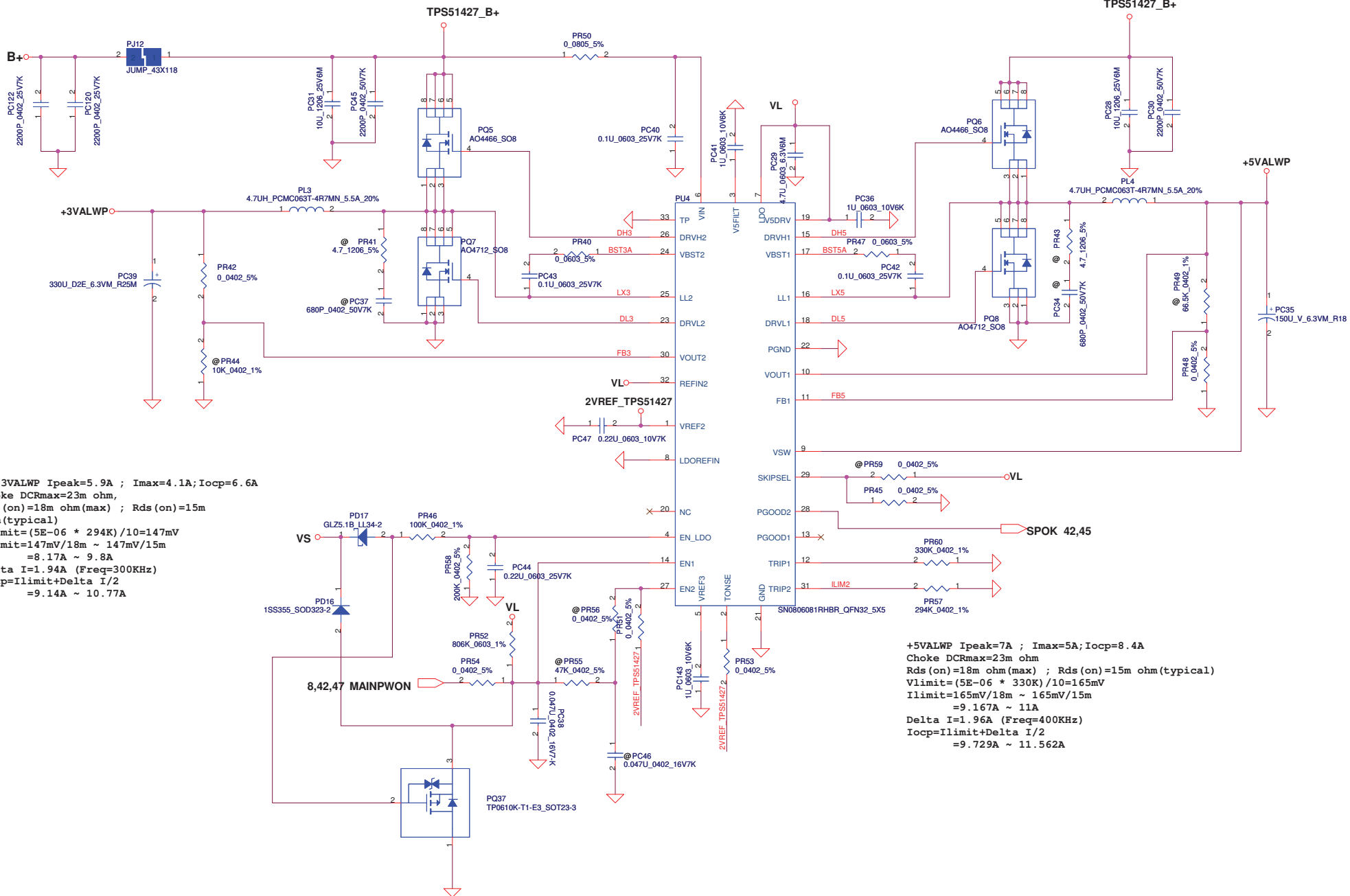
PH1 under CPU botten side :

CPU thermal protection at 92 degree C

Recovery at 56 degree C



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2010/03/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				Custom	NELA5
				Date:	Wednesday, April 21, 2010
				Sheet	42 of 54
				Rev	0.1



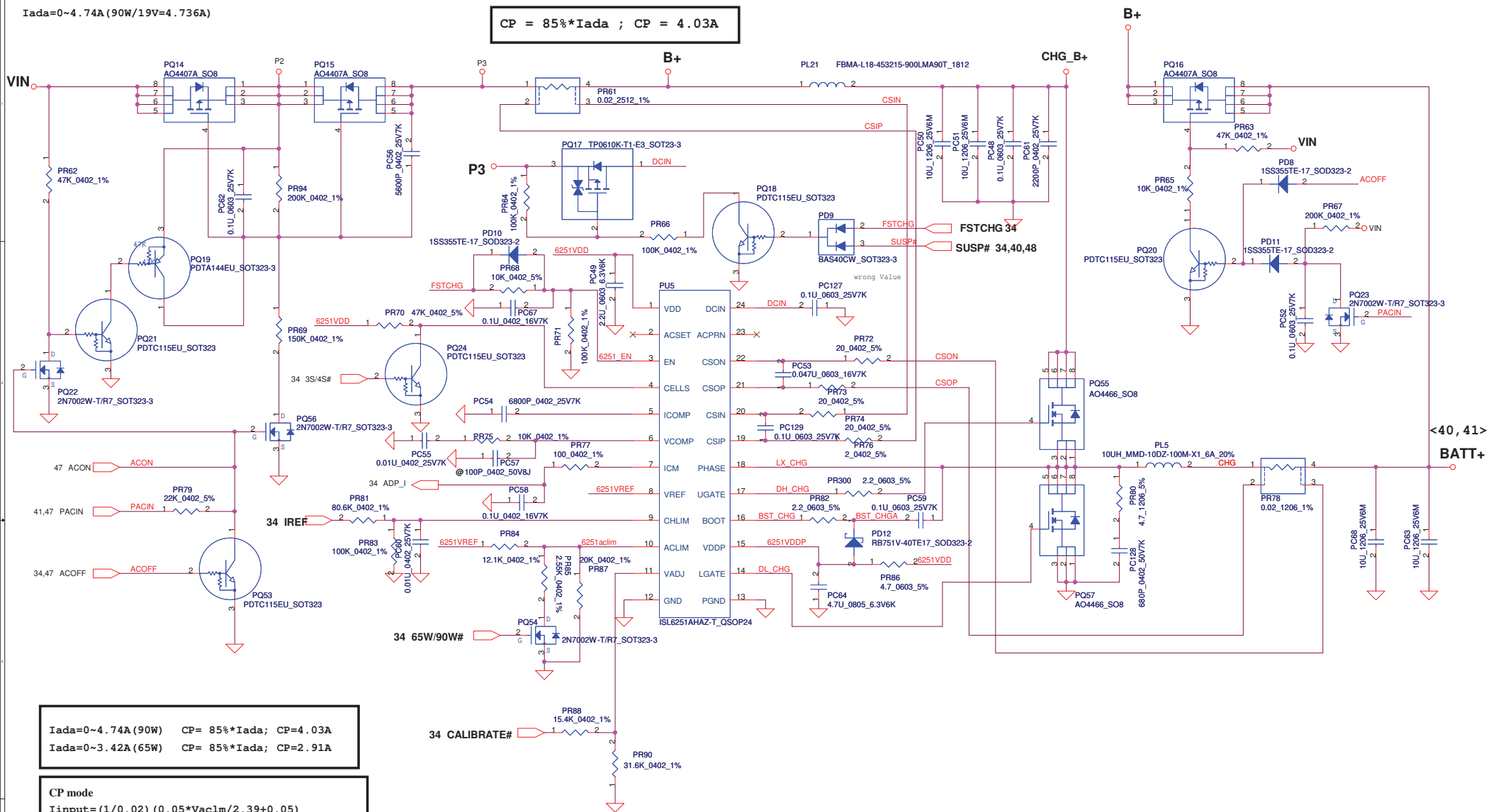
+3.3VALWP Ipeak=5.9A ; Imax=4.1A;Iocp=6.6A  
 Choke DCRmax=23m ohm,  
 Rds(on)=18m ohm(max) ; Rds(on)=15m  
 ohm(typical)  
 $V_{limit} = (5E-06 * 294K) / 10 = 147mV$   
 $I_{limit} = 147mV / 18m \sim 147mV / 15m$   
 $= 8.17A \sim 9.8A$   
 $\Delta I = 1.94A$  (Freq=300KHz)  
 $I_{ocp} = I_{limit} + \Delta I / 2$   
 $= 9.14A \sim 10.77A$

+5VALWP Ipeak=7A ; Imax=5A;Iocp=8.4A  
 Choke DCRmax=23m ohm  
 Rds(on)=18m ohm(max) ; Rds(on)=15m ohm(typical)  
 $V_{limit} = (5E-06 * 330K) / 10 = 165mV$   
 $I_{limit} = 165mV / 18m \sim 165mV / 15m$   
 $= 9.167A \sim 11A$   
 $\Delta I = 1.96A$  (Freq=400KHz)  
 $I_{ocp} = I_{limit} + \Delta I / 2$   
 $= 9.729A \sim 11.562A$

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2010/03/12	Title	+5VALWP/+3VALWP
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 Custom	Document Number NELA5
				Date	Wednesday, April 21, 2010
				Sheet	43 of 54
				Rev	0.1

I<sub>ada</sub>=0~4.74A (90W/19V=4.736A)

CP = 85%\*I<sub>ada</sub> ; CP = 4.03A



I<sub>ada</sub>=0~4.74A (90W) CP= 85%\*I<sub>ada</sub>; CP=4.03A  
I<sub>ada</sub>=0~3.42A (65W) CP= 85%\*I<sub>ada</sub>; CP=2.91A

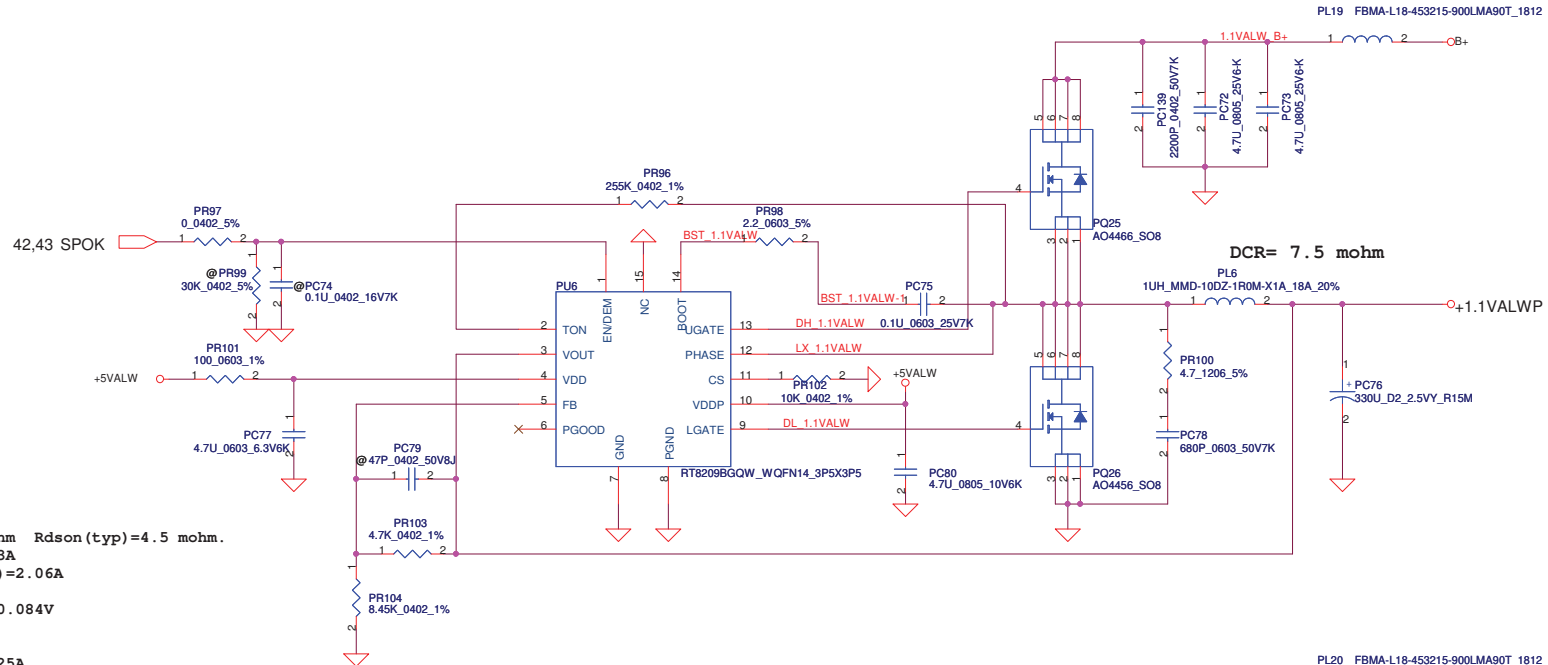
CP mode  
I<sub>input</sub>=(1/0.02) (0.05\*V<sub>acim</sub>/2.39+0.05)  
where V<sub>acim</sub>=1.464V (90W), I<sub>input</sub>=4.03A  
PR84=12.1K; PR87=20K  
where V<sub>acim</sub>=0.391 (65W), I<sub>input</sub>=2.91A  
PR84=12.1K; PR85=2.55K  
IREF=0.7224\*I<sub>charge</sub>

ADP\_I = 19.9\*3.42\*0.95\*0.02=1.29V

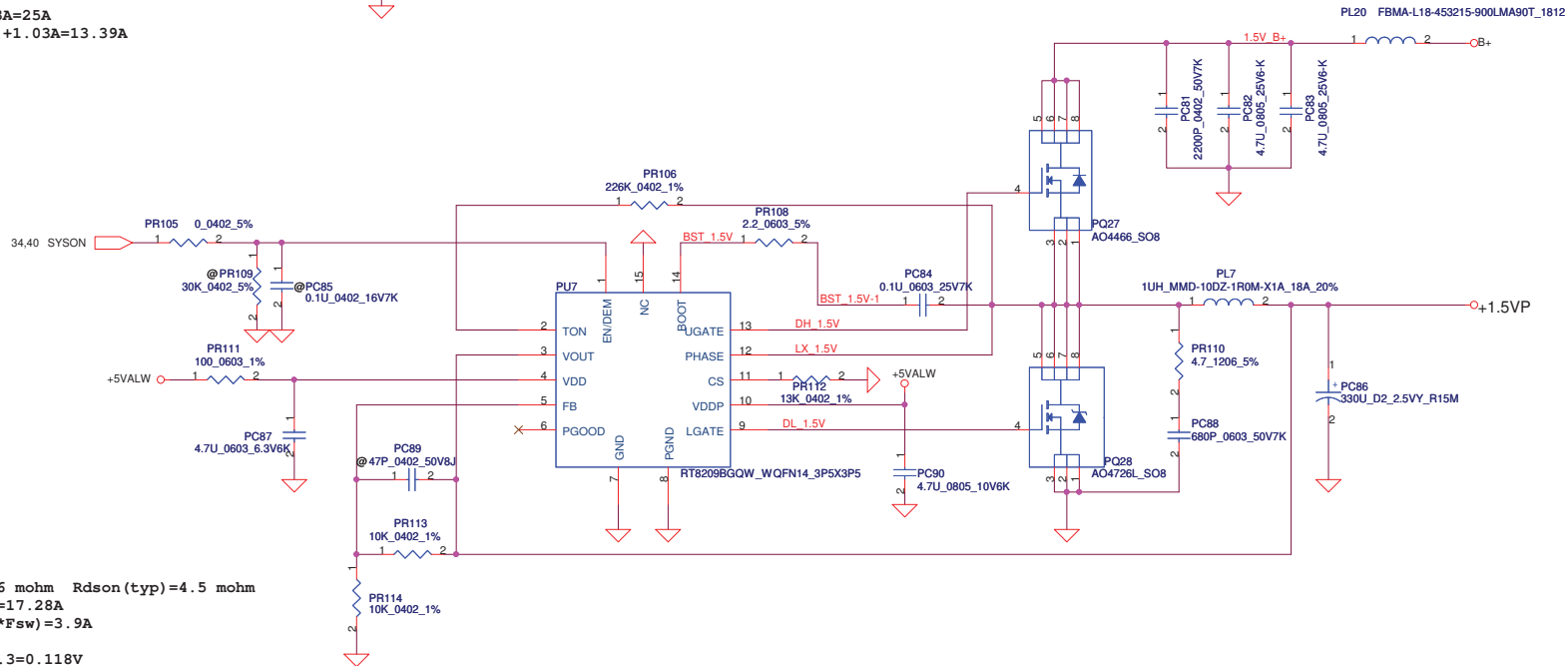
BATT Type	Charging Voltage (0x15)	CV mode
Normal 3S LI-ON Cells	12600mV	12.60V

Security Classification				Compal Secret Data				Compal Electronics, Inc.			
Issued Date				2007/09/20				Title			
Deciphered Date				2010/03/12				CHARGER			
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				NELA5			
Date: Wednesday, April 21, 2010				Sheet				44 of 54			
				Rev				0.1			

$V_o=1.1V$     $V_{FB}=0.75V$   
 $V=0.75*(1+4.7K/10K)=1.1V$   
 $F_{sw}=280KHz$   
 $C_{out} ESR=15m \text{ ohm}$     $R_{dson(max)}=5.6 \text{ mohm}$     $R_{dson(typ)}=4.5 \text{ mohm}$   
 $I_{peak}=9.61A$ ,    $I_{max}=6.73A$ ,    $I_{ocp}=11.53A$   
 $\Delta I=((19-1.1)*(1.1/19))/(L*F_{sw})=2.06A$   
 $\Rightarrow 1/2\Delta I=1.03A$   
 $V_{tripmax}=I_{ocp}*R_{dson}=11.53*5.6*1.3=0.084V$   
 $R_{cs}=V_{trip}/9uA=0.084V/9uA=9.3K$   
 choose  $R_{cs}=10K$   
 $I_{ocpmax}=(10K*11uA)/(0.0045)+1.03A=25A$   
 $I_{ocpmin}=(10K*9uA)/(0.0056*1.3)+1.03A=13.39A$   
 $I_{ocp}=13.39A\sim 25A$

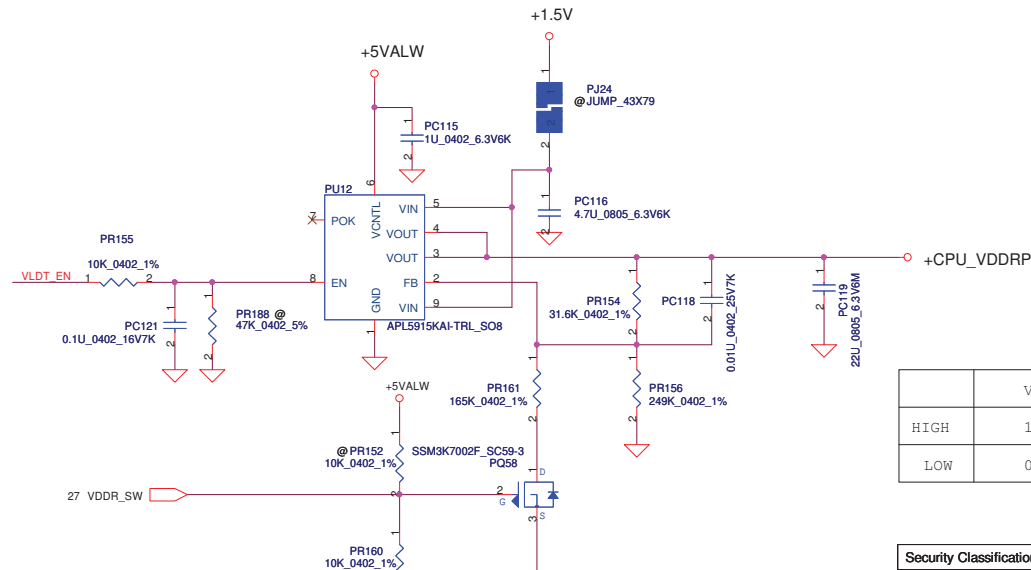
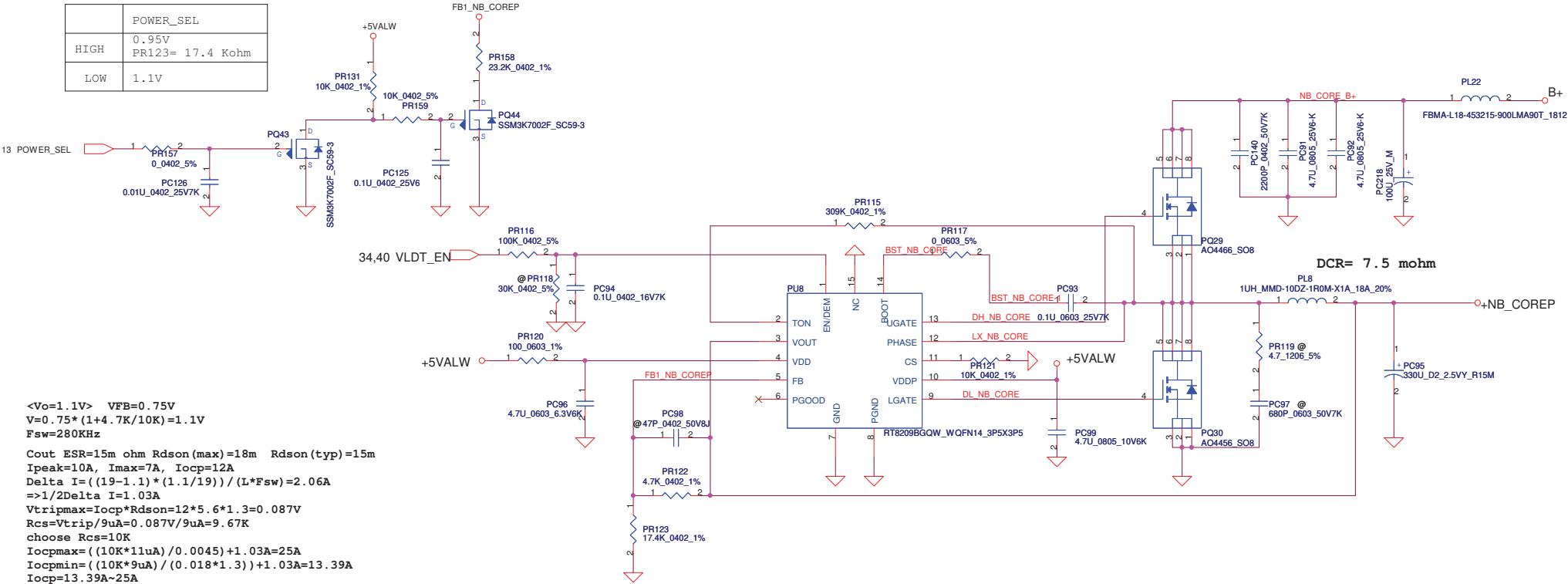


$V_o=1.5V$     $V_{FB}=0.75V$   
 $V=0.75*(1+10K/10K)=1.5V$   
 $F_{sw}=280KHz$   
 $C_{out} ESR=17 \text{ mohm}$     $R_{dson(max)}=5.6 \text{ mohm}$     $R_{dson(typ)}=4.5 \text{ mohm}$   
 $I_{peak}=14.4A$ ,    $I_{max}=10.08A$ ,    $I_{ocp}=17.28A$   
 $\Delta I=((19-1.5)*(1.5/19))/(L*F_{sw})=3.9A$   
 $\Rightarrow 1/2\Delta I=1.95A$   
 $V_{tripmax}=I_{ocp}*R_{dson}=16.2*5.6*1.3=0.118V$   
 $R_{cs}=V_{trip}/9uA=0.118V/9uA=13.1K$   
 choose  $R_{cs}=13K$   
 $I_{ocpmax}=(13K*11uA)/(0.0045)+1.95A=32A$   
 $I_{ocpmin}=(13K*9uA)/(0.0056*1.3)+1.95A=18A$   
 $I_{ocp}=18A\sim 32A$



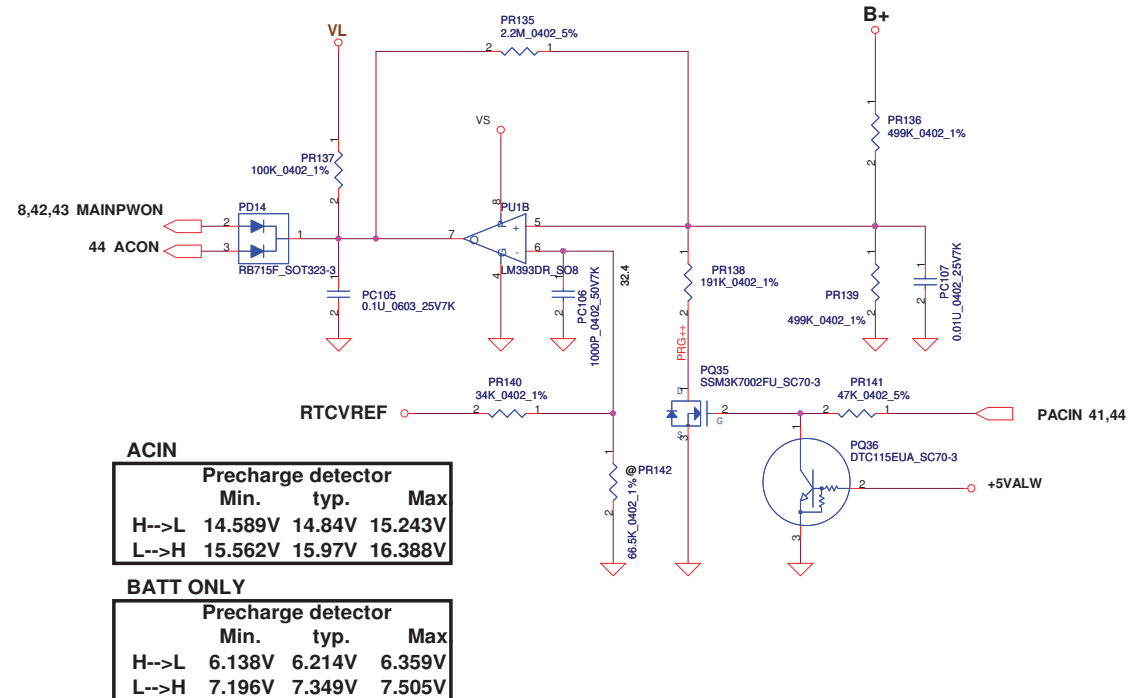
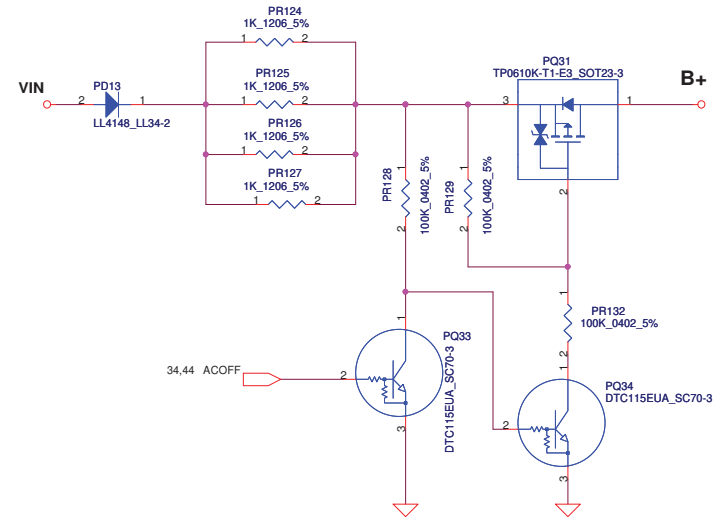
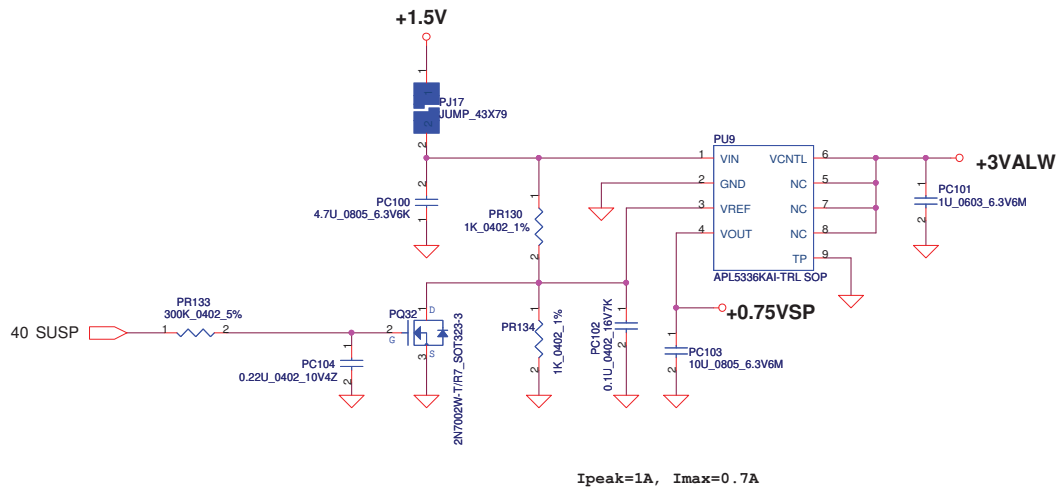
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2010/03/12	Title	1.5VP / 1.1VALWP
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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	0.1
				Document Number	NELA5
				Date:	Wednesday, April 21, 2010
				Sheet	45 of 54

	POWER_SEL
HIGH	0.95V PR123= 17.4 Kohm
LOW	1.1V

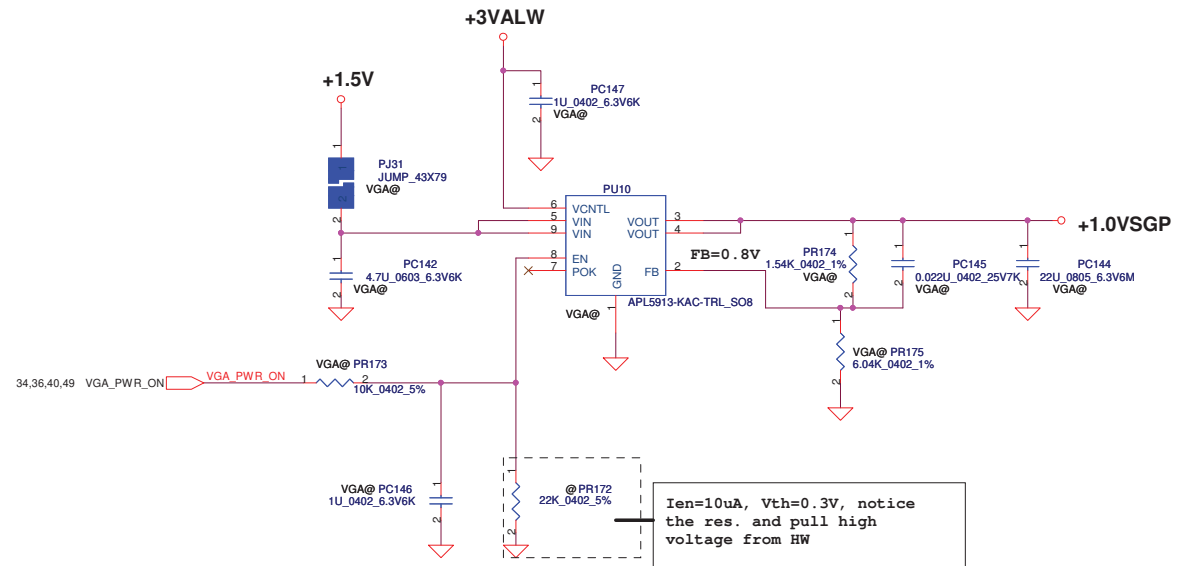
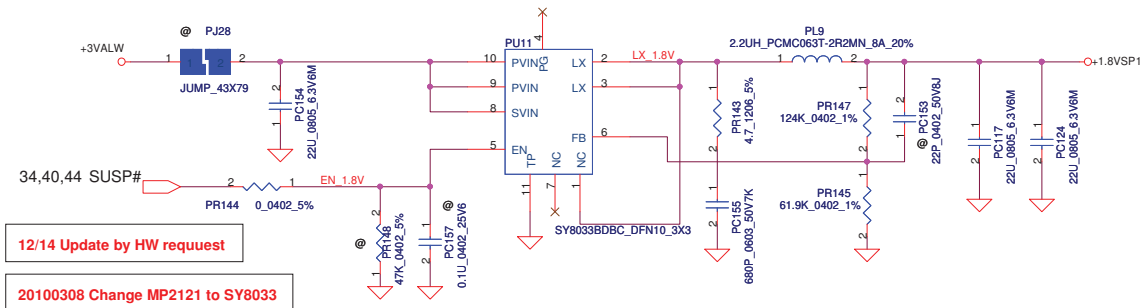


	VDDR_SW
HIGH	1.05V
LOW	0.9V

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2010/03/12	Title	+NB_COREP/+2.5VS/+CPU_VDDRP
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 Custom
					Document Number
					NELA5
					Rev 0.1
					Date: Wednesday, April 21, 2010
					Sheet 46 of 54



Security Classification		Compal Secret Data				Compal Electronics, Inc.			
Issued Date		2007/09/20		Deciphered Date		2010/03/12		Title	
								Percharge/+0.75VSP	
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	NELA5	Rev
						Custom			0.1
						Date: Wednesday, April 21, 2010		ISheet 47 of 54	



Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/08/10	Deciphered Date	2010/03/12	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				+1.8VSP/+1.0VSGP
Size	Document Number	NELA5		Rev
Custom		Date: Wednesday, April 21, 2010		Sheet 48 of 54



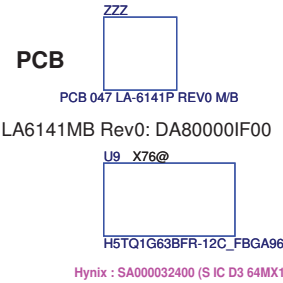
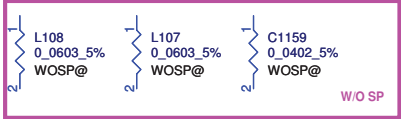


## Version change list (P.I.R. List)

Page 1 of 1  
for PWR

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1	Combine the 2N7002 main source to TOSHIBA	Combine the 2N7002 main source to TOSHIBA	0.1	49	Change PQ35 to P/N SB000009610	2010/02/01	EVT_NELA5
2	Combine the PDC115EU main source to Philip	Combine the PDC115EU main source to Philip	0.1	49	Change PQ33,PQ34,PQ36 to P/N SB301150200	2010/02/01	EVT_NELA5
3	Combine the 1SS355 main source to PANJIT	Combine the 1SS355 main source to PANJIT	0.1	45	Change PD16 to P/N SC100001K00	2010/02/01	EVT_NELA5
4	Combine the 4148 main source to PANJIT	Combine the 4148 main source to PANJIT	0.1	49	Change PD13 to P/N SC100001Y80	2010/02/01	EVT_NELA5
5	Combine the BAS40CW main source to PANJIT	Combine the BAS40CW main source to PANJIT	0.1	49	Change PD14 to P/N SCS00001200	2010/02/01	EVT_NELA5
6	Change PR78 to meet the spec. 200PPM/C==>75PPM/C	Change PR78 to meet the spec. 200PPM/C==>75PPM/C	0.1	46	Change PR78 to SD00000S110	2010/02/01	EVT_NELA5
7	Meet ACER timeline efficiency spec	Decrease the CISS of L/S MOSFET change the value from 6430 to 3940 pF	0.1	47	Change PQ28,PQ39,PQ40 to SB00000IP00(AO4726L)	2010/02/01	EVT_NELA5
8	Meet ACER timeline efficiency spec	Change the Choke from wire type to molding type to improve the light load efficiency	0.1	47	Change PL6,PL8,PL14 to SH00000CN00(1.0uH)	2010/02/01	EVT_NELA5
9	Change PC169 cap. to 470uF	Prevent the output OVP when system change from F/L==>N/L	0.1	51	Change PC169 to SGA20471D20	2010/02/01	EVT_NELA5
10	Change PJ23 to 90ohm Bead Add PR80 PC128 snubber Add resistor for H/L MOSFET Driver Change boost resistor to 2.2ohm	Charger EMI solution	0.2	46	Change PJ23 to 90ohm Bead Add PR80 PC128 snubber Add resistor for H/L MOSFET Driver Change boost resistor to 2.2ohm	2010/03/15	DVT_NELA5
11	Change PJ14 to 90ohm Bead Add PR100 PC78 snubber Change boost resistor to 2.2ohm	1.1VALW EMI solution	0.2	47	Change PJ14 to 90ohm Bead Add PR100 PC78 snubber Change boost resistor to 2.2ohm	2010/03/15	DVT_NELA5
12	Change PJ15 to 90ohm Bead Add PR110 PC88 snubber Change boost resistor to 2.2ohm	1.5VP EMI solution	0.2	47	Change PJ15 to 90ohm Bead Add PR110 PC88 snubber Change boost resistor to 2.2ohm	2010/03/15	DVT_NELA5
13	ADD PC1001.PC1002 to CPU_B+ plane for noise bypass	CPU_CORE EMI solution	0.2	52	ADD PC1001.PC1002 to CPU_B+ plane for noise bypass	2010/03/15	DVT_NELA5
14	Change 1.8VP solution from MP2121 to SY8033	Prevent the MP2121 ESD shutdown issue	0.2	50	Change 1.8VP solution from MP2121 to SY8033	2010/03/15	DVT_NELA5

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	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.				PIR (PWR)	
Size Custom				Document Number	Rev
Date: Wednesday, April 21, 2010				NELA5	0.1
Sheet				51	of 54



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/10/06	Deciphered Date	2010/03/12	Title	HW PIR
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 B	Document Number
				Date:	Wednesday, April 21, 2010
				Sheet	52 of 54
				Rev	0.1
				Document Number	NELA5



