

Compal Confidential

NCWGO/H0 Schematics Document

AMD S1g1 / RS780MN/ SB710

2009 / 06 / 24

LA-5481

Rev:1.0

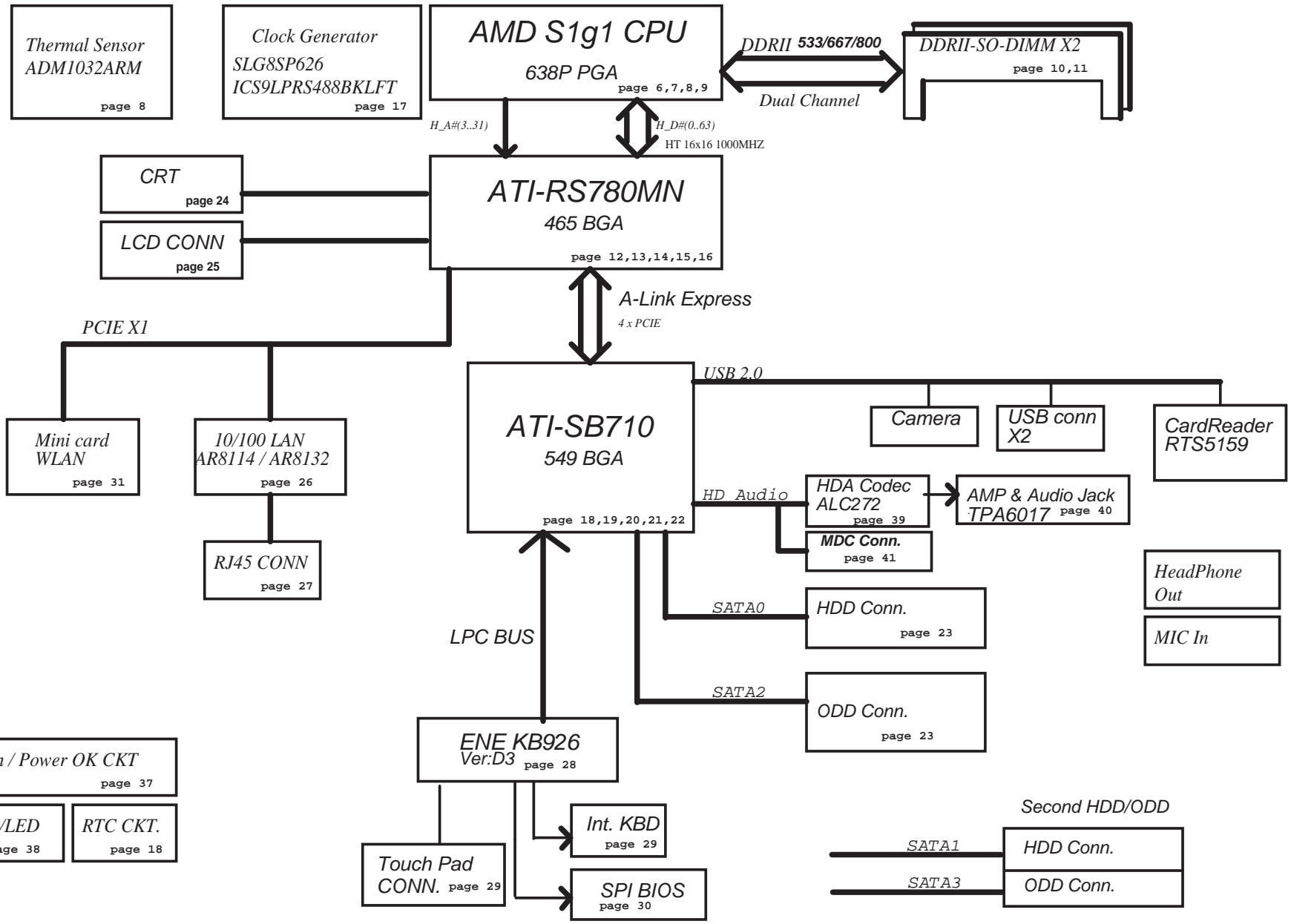
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title	SCHEMATIC, MB A5481	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET CAN NOT BE REPRODUCED FROM THE CUSTOMER OR ANY OTHER COMPANY, DIVISION, OR 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	401743	C
				Date:	Wednesday, June 24, 2009	Sheet 1 of 47

<http://laptop-motherboard-schematic.blogspot.com/>

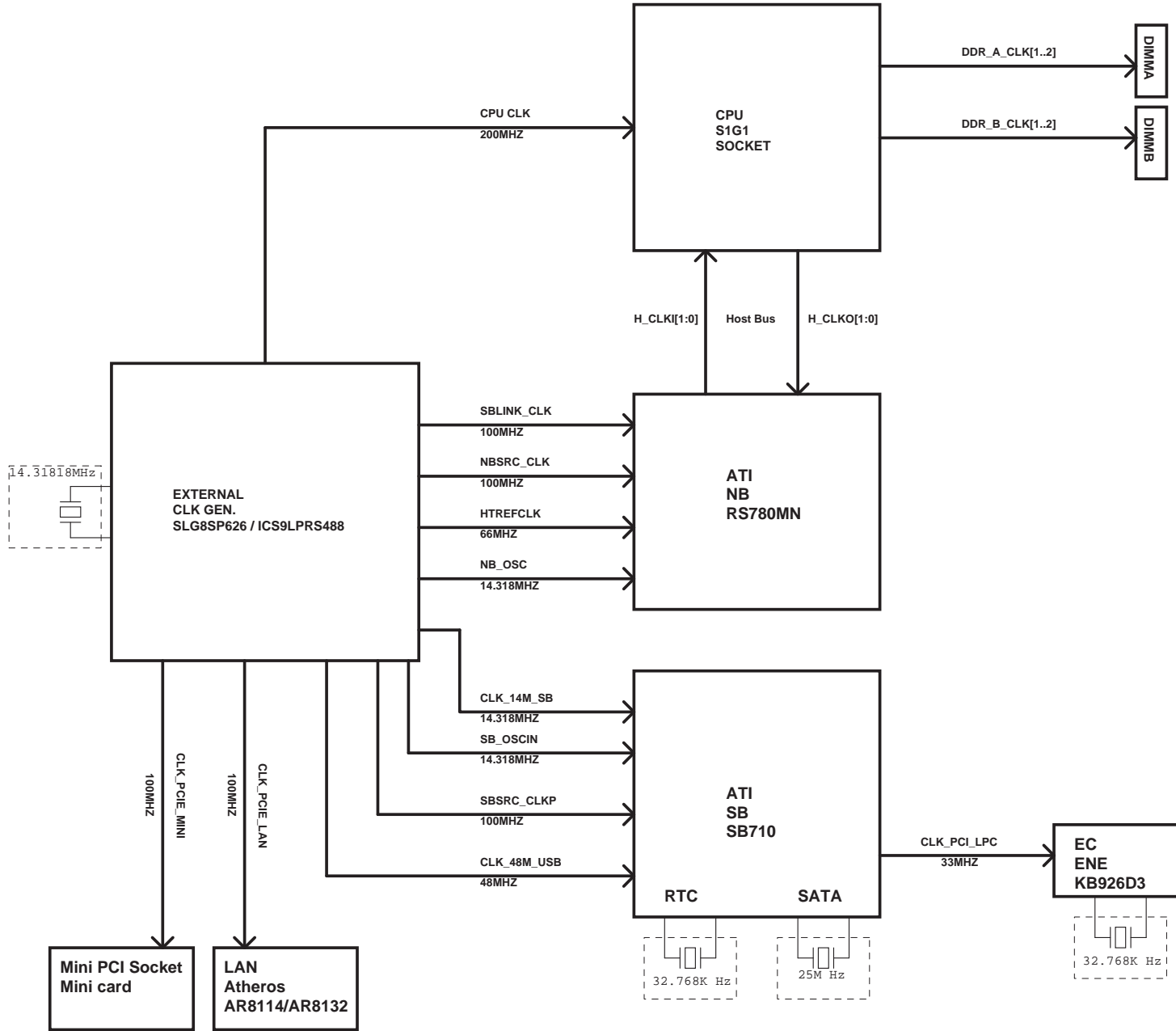
Compal confidential

Project Code: NCWG0/H0

File Name : LA-5481P

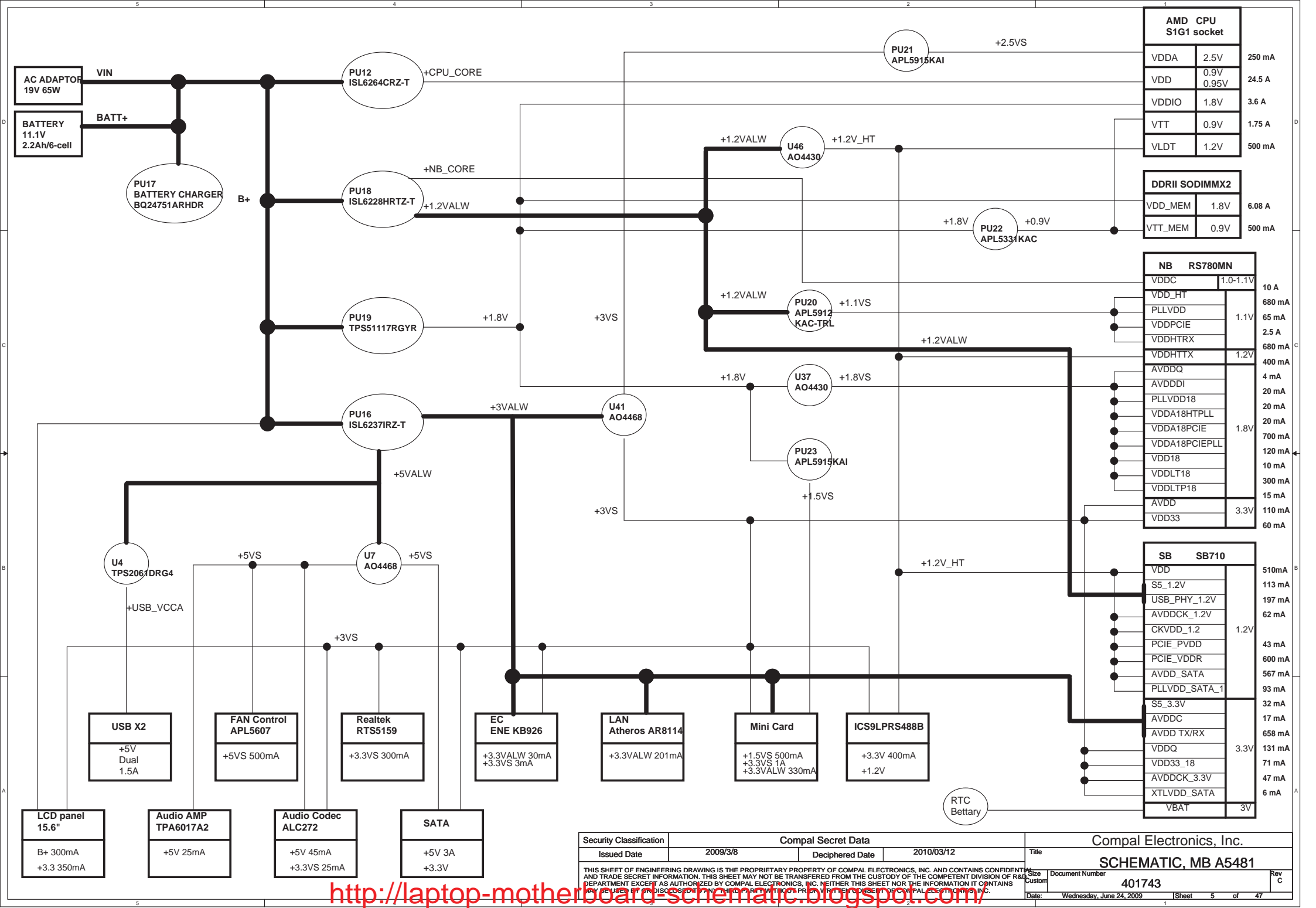


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2009/03/08	Deciphered Date	2010/03/12	Title	SCHMATIC, MB A5481
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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 THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.					
Size	Document Number	Rev	C		
	401743				
Date:	Wednesday, June 24, 2009	Sheet	2	of	47



Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/10/10	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 THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.				Document Number
				401743
				Rev C
Date: Wednesday, June 24, 2009				Sheet 4 of 47

<http://laptop-motherboard-schematic.blogspot.com/>



AMD CPU S1G1 socket		
VDDA	2.5V	250 mA
VDD	0.9V / 0.95V	24.5 A
VDDIO	1.8V	3.6 A
VTT	0.9V	1.75 A
VLDT	1.2V	500 mA

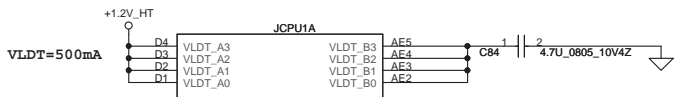
DDRII SODIMM2		
VDD_MEM	1.8V	6.08 A
VTT_MEM	0.9V	500 mA

NB RS780MN		
VDDC	1.0-1.1V	10 A
VDD_HT		680 mA
PLLVDD	1.1V	65 mA
VDDPCIE		2.5 A
VDDHTRX		680 mA
VDDHTTX	1.2V	400 mA
AVDDQ		4 mA
AVDDDI		20 mA
PLLVDD18	1.8V	20 mA
VDDA18HTPLL		20 mA
VDDA18PCIE		700 mA
VDDA18PCIEPLL		120 mA
VDD18		10 mA
VDDLTP18		300 mA
AVDD		15 mA
VDD33	3.3V	110 mA
		60 mA

SB SB710		
VDD		510mA
S5_1.2V		113 mA
USB_PHY_1.2V		197 mA
AVDDCK_1.2V	1.2V	62 mA
CKVDD_1.2		
PCIE_PVDD		43 mA
PCIE_VDDR		600 mA
AVDD_SATA		567 mA
PLLVDD_SATA_1		93 mA
S5_3.3V		32 mA
AVDDC		17 mA
AVDD TX/RX		658 mA
VDDQ	3.3V	131 mA
VDD33_18		71 mA
AVDDCK_3.3V		47 mA
XTLVDD_SATA		6 mA
VBAT	3V	

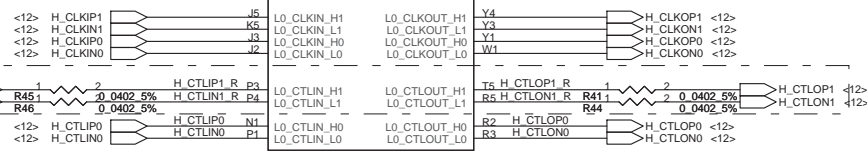
Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.	
Issued Date	2009/3/8	Deciphered Date	2010/03/12	Size	Document Number
				401743	Rev C
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. 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, REPRODUCED, COPIED, EITHER WHOLLY OR IN PART, NOR THE INFORMATION DISCLOSED TO ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.					
Date:	Wednesday, June 24, 2009	Sheet	5	of	47

<http://laptop-motherboard-schematic.blogspot.com/>



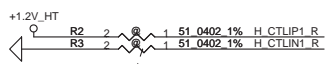
H_CADIP15 N5	L0_CADIN_H15	L0_CADOUT_H15	T4 H_CADOP15
H_CADIN15 P5	L0_CADIN_L15	L0_CADOUT_L15	T3 H_CADON15
H_CADIP14 M3	L0_CADIN_H14	L0_CADOUT_H14	V5 H_CADOP14
H_CADIN14 M4	L0_CADIN_L14	L0_CADOUT_L14	V6 H_CADON14
H_CADIP13 L5	L0_CADIN_H13	L0_CADOUT_H13	V3 H_CADOP13
H_CADIN13 M5	L0_CADIN_L13	L0_CADOUT_L13	V4 H_CADON13
H_CADIP12 K3	L0_CADIN_H12	L0_CADOUT_H12	Y5 H_CADOP12
H_CADIN12 K4	L0_CADIN_L12	L0_CADOUT_L12	Y6 H_CADON12
H_CADIP11 H3	L0_CADIN_H11	L0_CADOUT_H11	AB5 H_CADOP11
H_CADIN11 H4	L0_CADIN_L11	L0_CADOUT_L11	AB6 H_CADON11
H_CADIP10 G5	L0_CADIN_H10	L0_CADOUT_H10	AB4 H_CADOP10
H_CADIN10 H5	L0_CADIN_L10	L0_CADOUT_L10	AB3 H_CADON10
H_CADIP9 E3	L0_CADIN_H9	L0_CADOUT_H9	AD5 H_CADOP9
H_CADIN9 F4	L0_CADIN_L9	L0_CADOUT_L9	AD6 H_CADON9
H_CADIP8 E5	L0_CADIN_H8	L0_CADOUT_H8	AD4 H_CADOP8
H_CADIN8 F5	L0_CADIN_L8	L0_CADOUT_L8	AD3 H_CADON8
H_CADIP7 N3	L0_CADIN_H7	L0_CADOUT_H7	T1 H_CADOP7
H_CADIN7 N2	L0_CADIN_L7	L0_CADOUT_L7	R1 H_CADON7
H_CADIP6 L1	L0_CADIN_H6	L0_CADOUT_H6	IJ2 H_CADOP6
H_CADIN6 M1	L0_CADIN_L6	L0_CADOUT_L6	IJ3 H_CADON6
H_CADIP5 L2	L0_CADIN_H5	L0_CADOUT_H5	IJ1 H_CADOP5
H_CADIN5 L3	L0_CADIN_L5	L0_CADOUT_L5	IJ2 H_CADON5
H_CADIP4 J1	L0_CADIN_H4	L0_CADOUT_H4	W2 H_CADOP4
H_CADIN4 K1	L0_CADIN_L4	L0_CADOUT_L4	W3 H_CADON4
H_CADIP3 G1	L0_CADIN_H3	L0_CADOUT_H3	AB2 H_CADOP3
H_CADIN3 H1	L0_CADIN_L3	L0_CADOUT_L3	AB3 H_CADON3
H_CADIP2 G3	L0_CADIN_H2	L0_CADOUT_H2	AB1 H_CADOP2
H_CADIN2 G2	L0_CADIN_L2	L0_CADOUT_L2	AA1 H_CADON2
H_CADIP1 F1	L0_CADIN_H1	L0_CADOUT_H1	AC2 H_CADOP1
H_CADIN1 E1	L0_CADIN_L1	L0_CADOUT_L1	AC3 H_CADON1
H_CADIP0 E3	L0_CADIN_H0	L0_CADOUT_H0	AD1 H_CADOP0
H_CADIN0 E2	L0_CADIN_L0	L0_CADOUT_L0	AC1 H_CADON0

HIT Interface

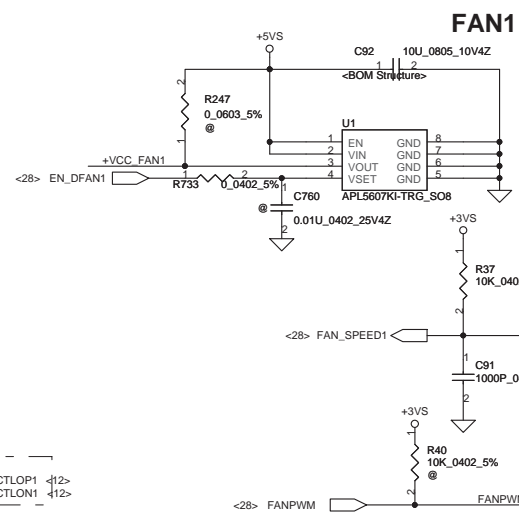
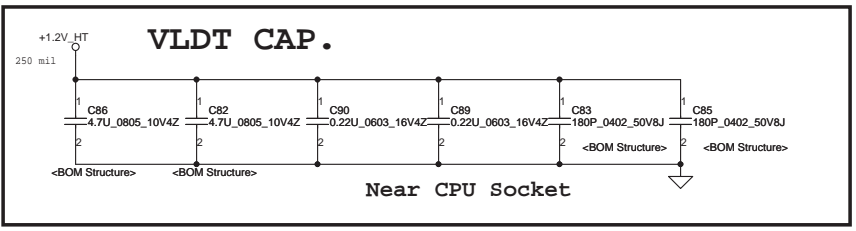


check AMD

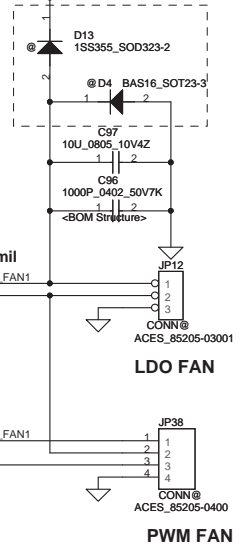
FOX_P263823-284S-41F
 CONN@
 Athlon 64 S1
 Processor Socket



AMD : 49.9 1%
 ATI : 51 1%



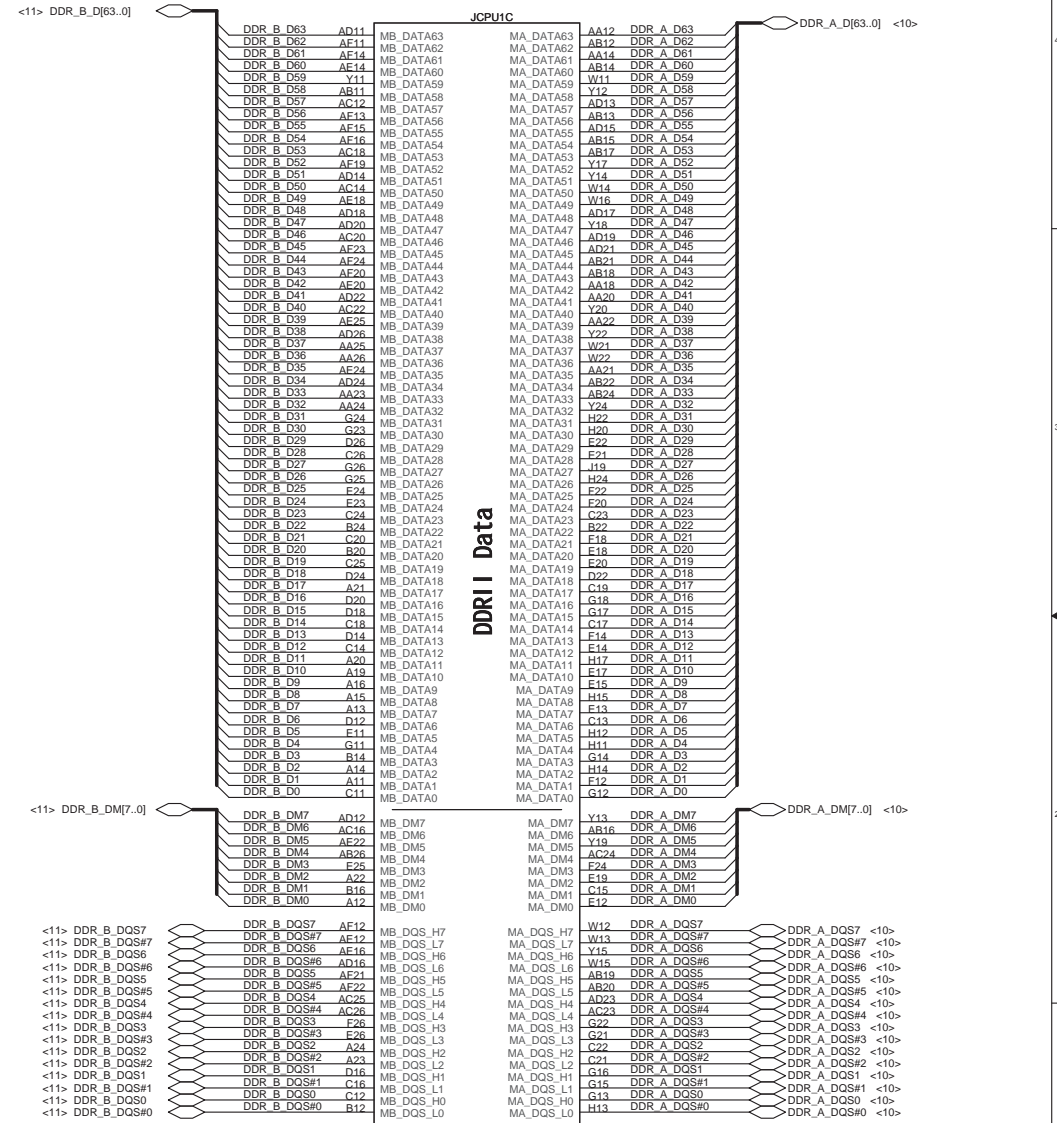
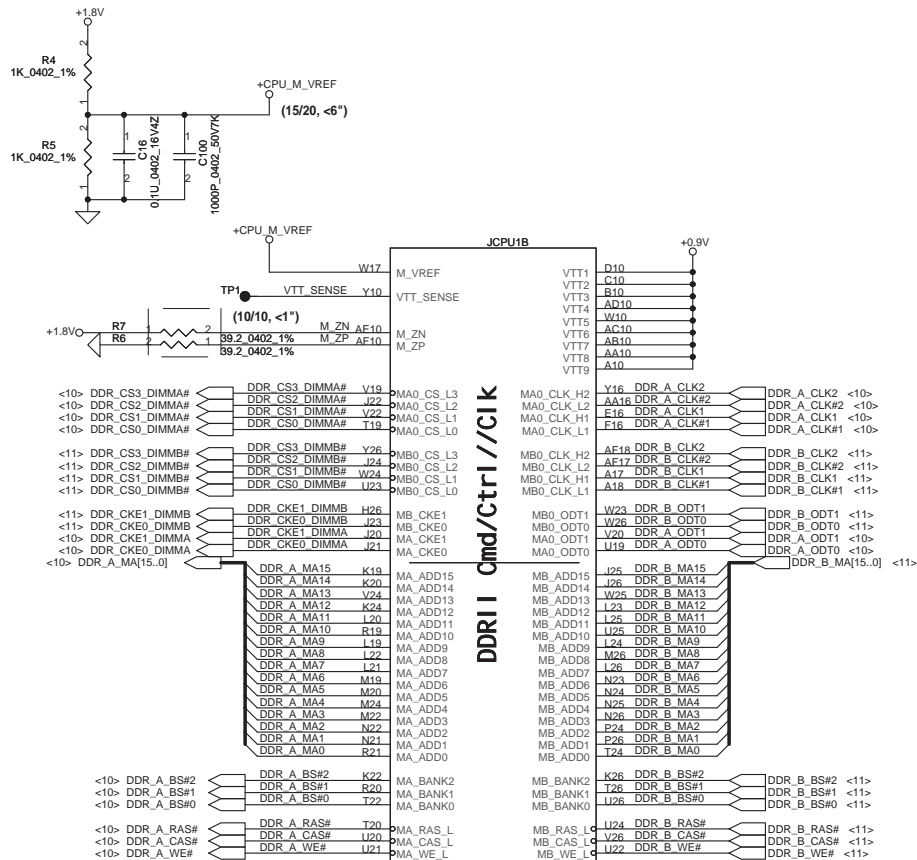
Reserve when PVT for cos down



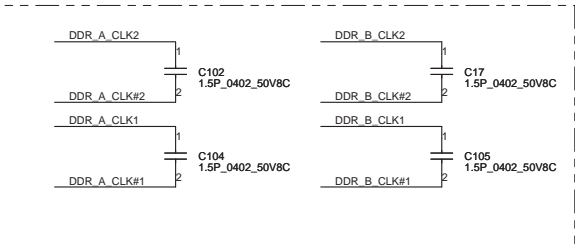
Security Classification	Compal Secret Data			Title		
Issued Date	2007/5/18	Deciphered Date	2010/03/12	SCHEMATIC, MB A5481		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. THIS SHEET IS TO BE CONTROLLED BY COMPAL ELECTRONICS, INC. ANY UNAUTHORIZED REPRODUCTION OR DISCLOSURE OF THIS SHEET TO ANY THIRD PARTY IS STRICTLY PROHIBITED.				Document Number	401743	Rev C
MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Date:	Wednesday, June 24, 2009	Sheet 6 of 46

<http://laptop-motherboards.com/>

Processor DDR2 Memory Interface

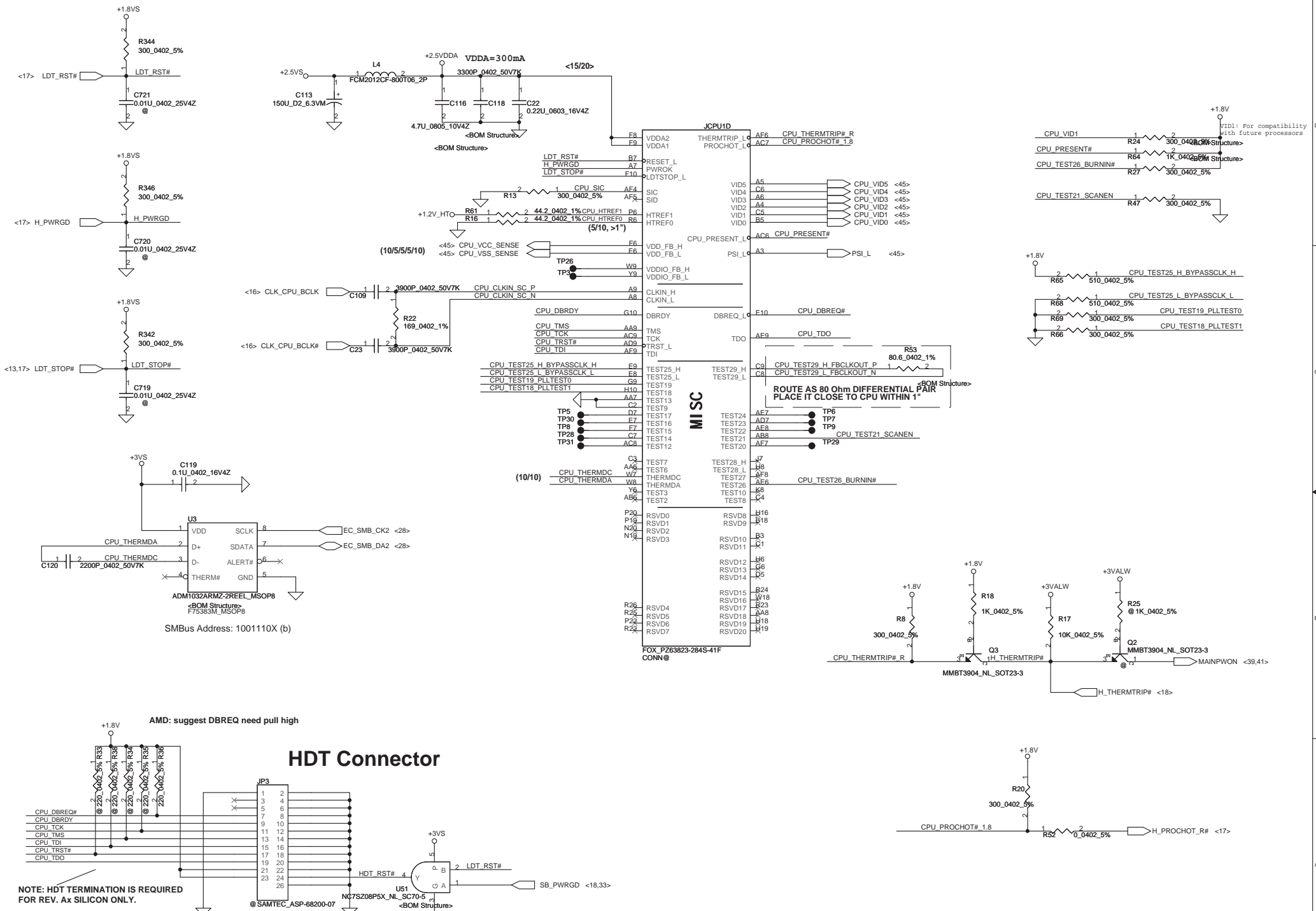


PLACE CLOSE TO PROCESSOR
WITHIN 1.5 INCH



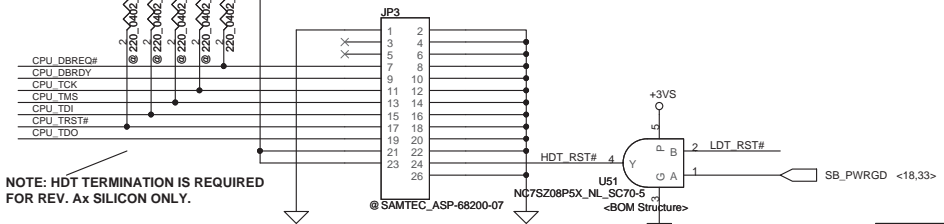
CONN@ FOX_P263823-284S-41F
Athlon 64 S1
Processor Socket

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2007/5/18	Deciphered Date	2010/03/12	Title	
				SCHEMATIC, MB A5481	
				Document Number	401743
				Date:	Wednesday, June 24, 2009
				Sheet	7 of 46



AMD: suggest DBREQ need pull high

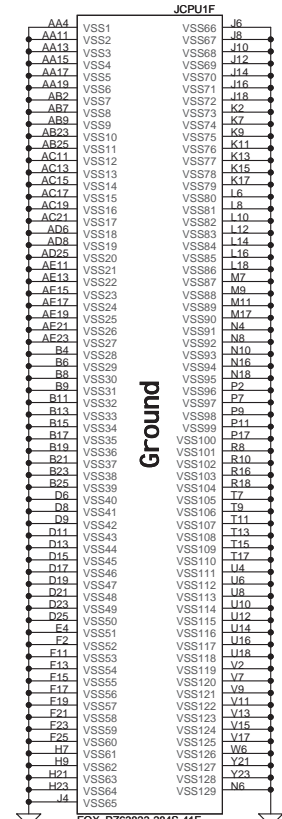
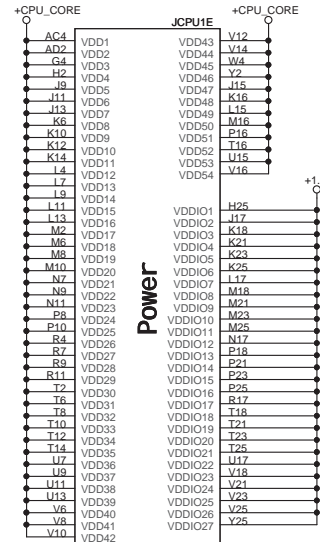
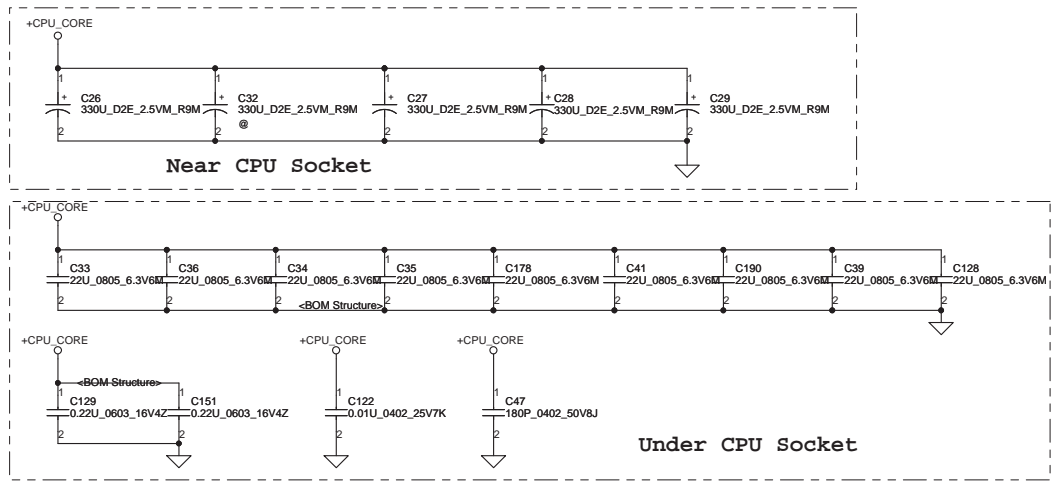
HDT Connector



Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.	
Issued Date	2007/5/18	Deciphered Date	2010/03/12	SCHEMATIC, MB A5481	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. IT IS TO BE USED ONLY FOR THE PURPOSES AUTHORIZED BY COMPAL ELECTRONICS, INC. IT IS NOT TO BE REPRODUCED, COPIED, OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Document Number	401743		Rev	C	
Date:	Wednesday, June 24, 2009		Sheet	8 of 46	

<http://laptop-motherboards.com/>

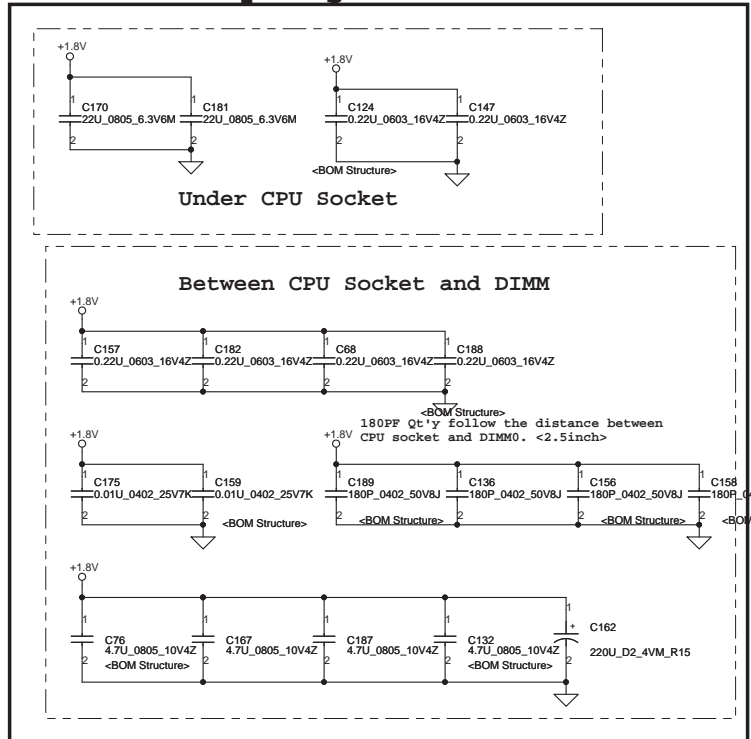
VDD(+CPU_CORE) decoupling.



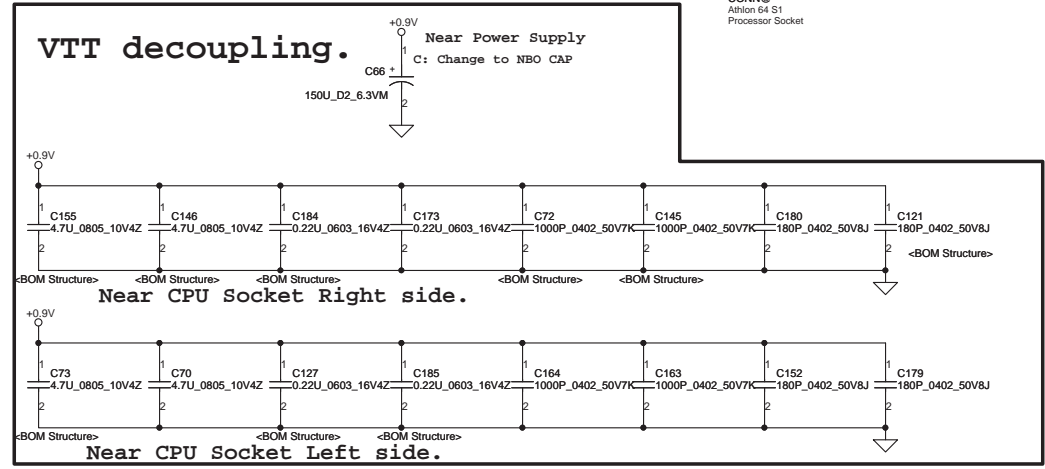
FOX_P263823-284S-41F
CONN@
Athlon 64 S1
Processor Socket

FOX_P263823-284S-41F
CONN@
Athlon 64 S1
Processor Socket

VDDIO decoupling.

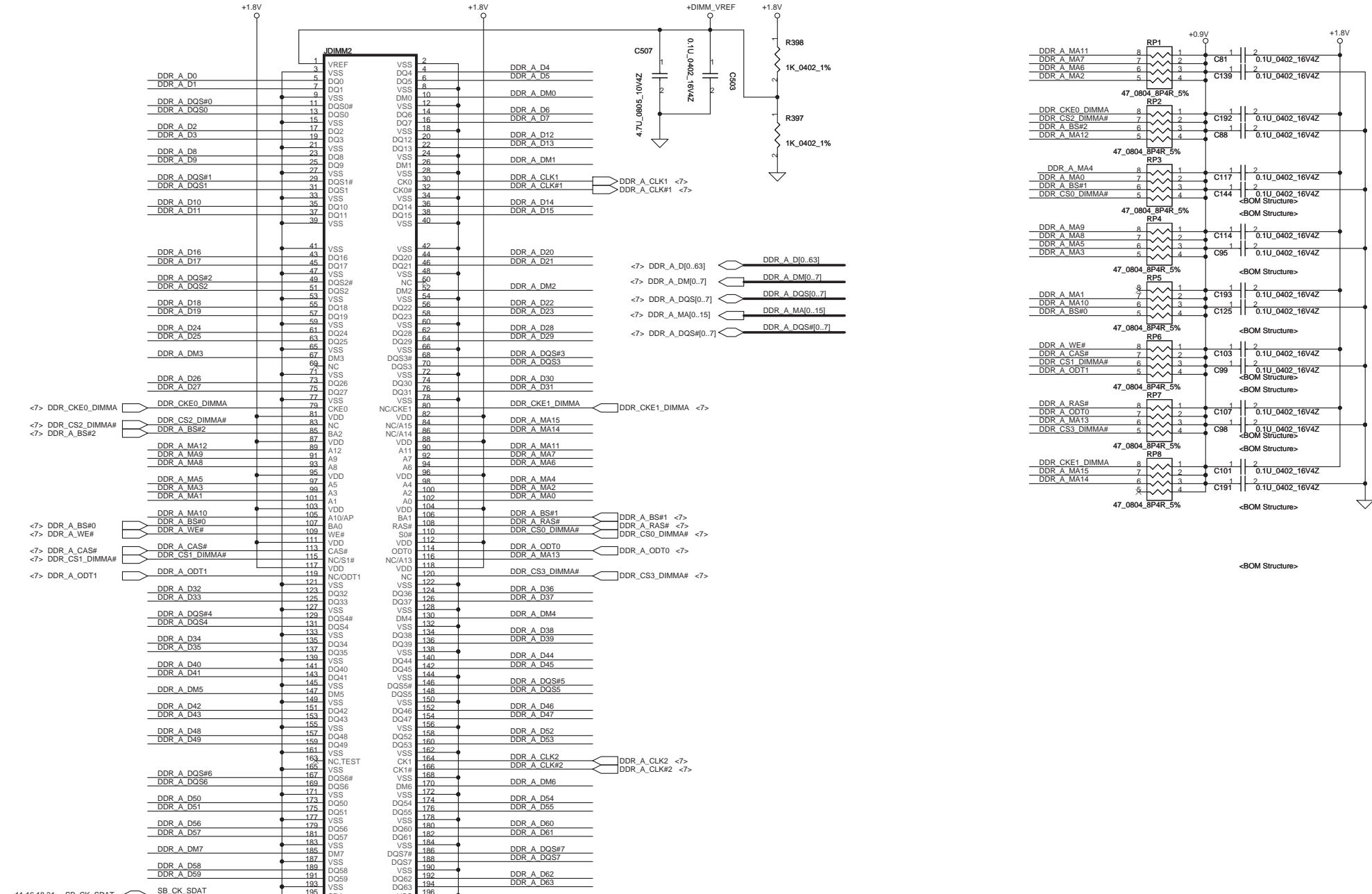


VTT decoupling.



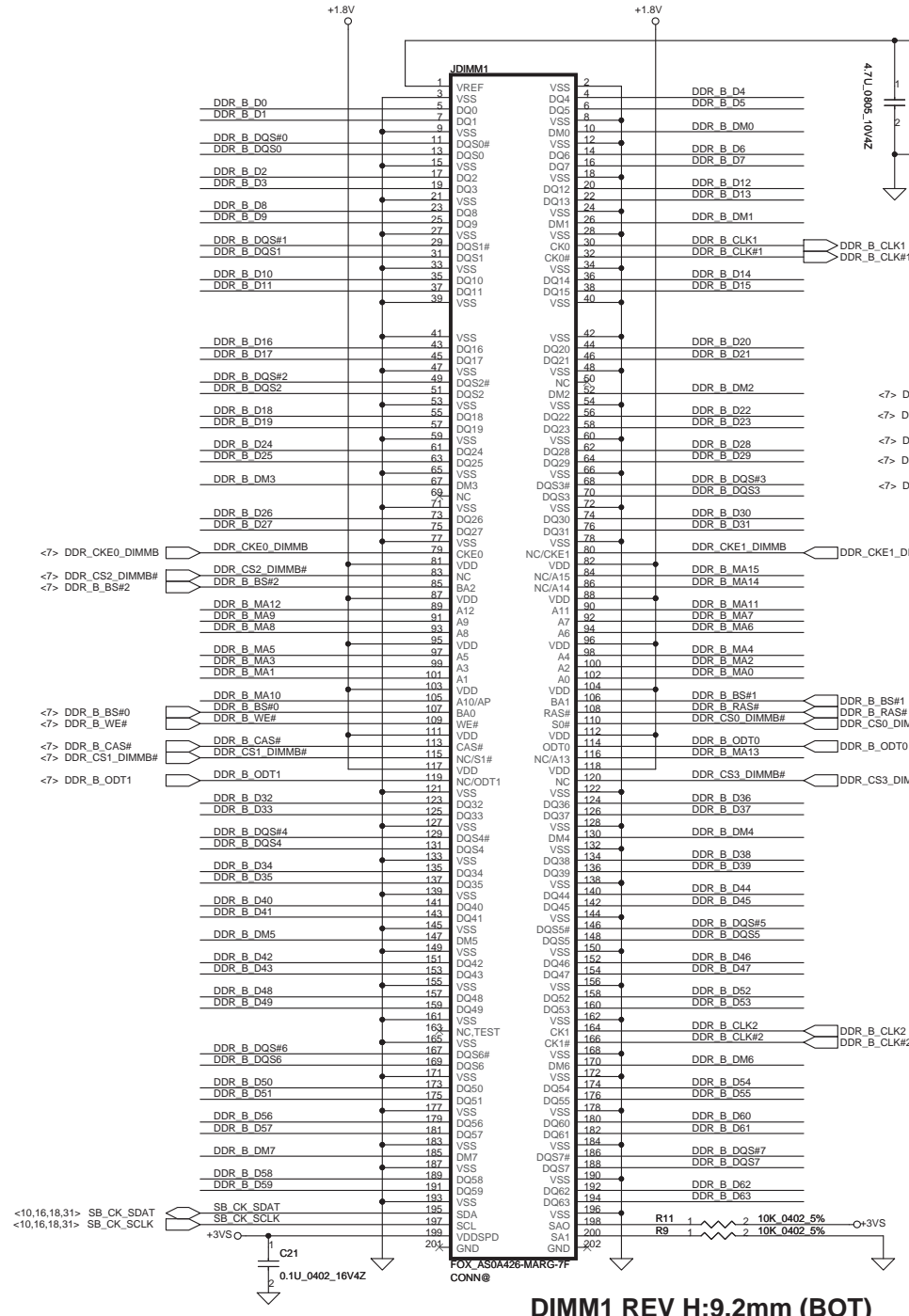
Security Classification	Compal Secret Data			Title	
Issued Date	2007/5/18	Deciphered Date	2010/03/12	SCHEMATIC, MB A5481	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. IT IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND IS NOT TO BE DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	401743
				Date:	Wednesday, June 24, 2009
				Sheet	9 of 46

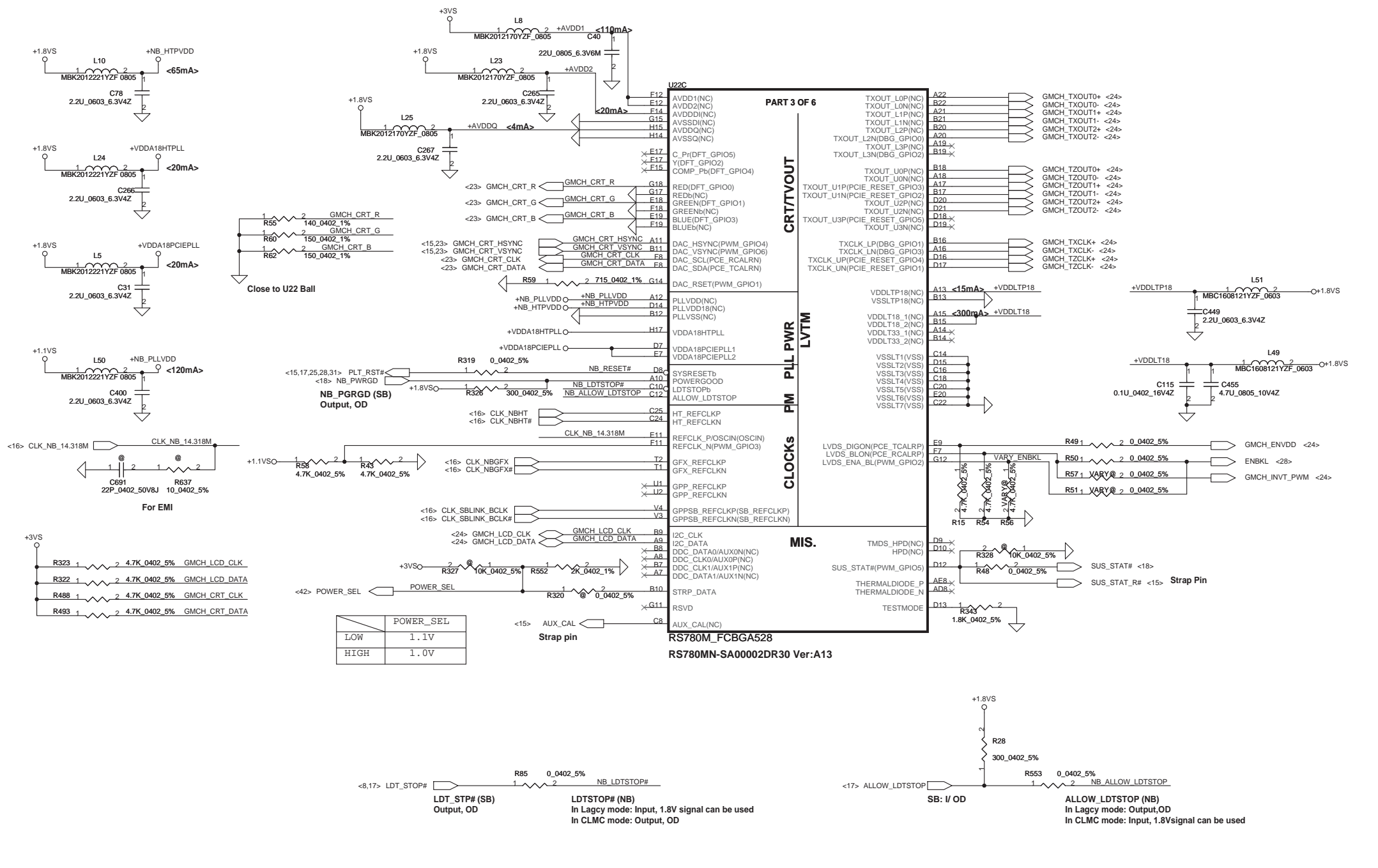
<http://laptop-motherboards.com/>



DIMM2 REV H:5.2mm (BOT)

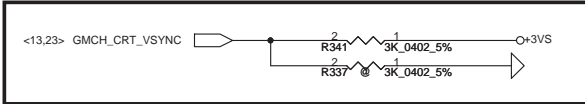
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/10/11	Deciphered Date	2010/03/12	Title	SCHEMATIC, MB A5481
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RAI DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</small>					
Customer	401743	Document Number	401743	Date	Wednesday, June 24, 2009
Sheet	10	of	46	Rev	C





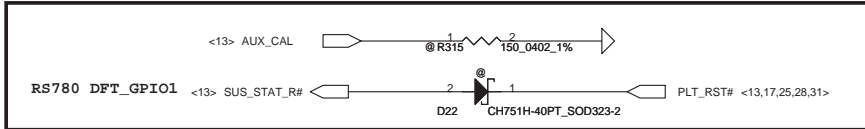
<http://laptop-motherboard-schematic.blogspot.com/>

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	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 REPRODUCED OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				401743	Rev C
Date:	Wednesday, June 24, 2009	Sheet	13	of 47	



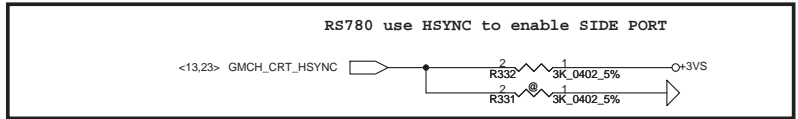
DFT_GPIO5:STRAP_DEBUG_BUS_GPIO_ENABLED

Enables the Test Debug Bus using GPIO. (VSYNC)
 1 : Disable (RS780)
 0 : Enable (Rs780)



DFT_GPIO1: LOAD_EEPROM_STRAPS

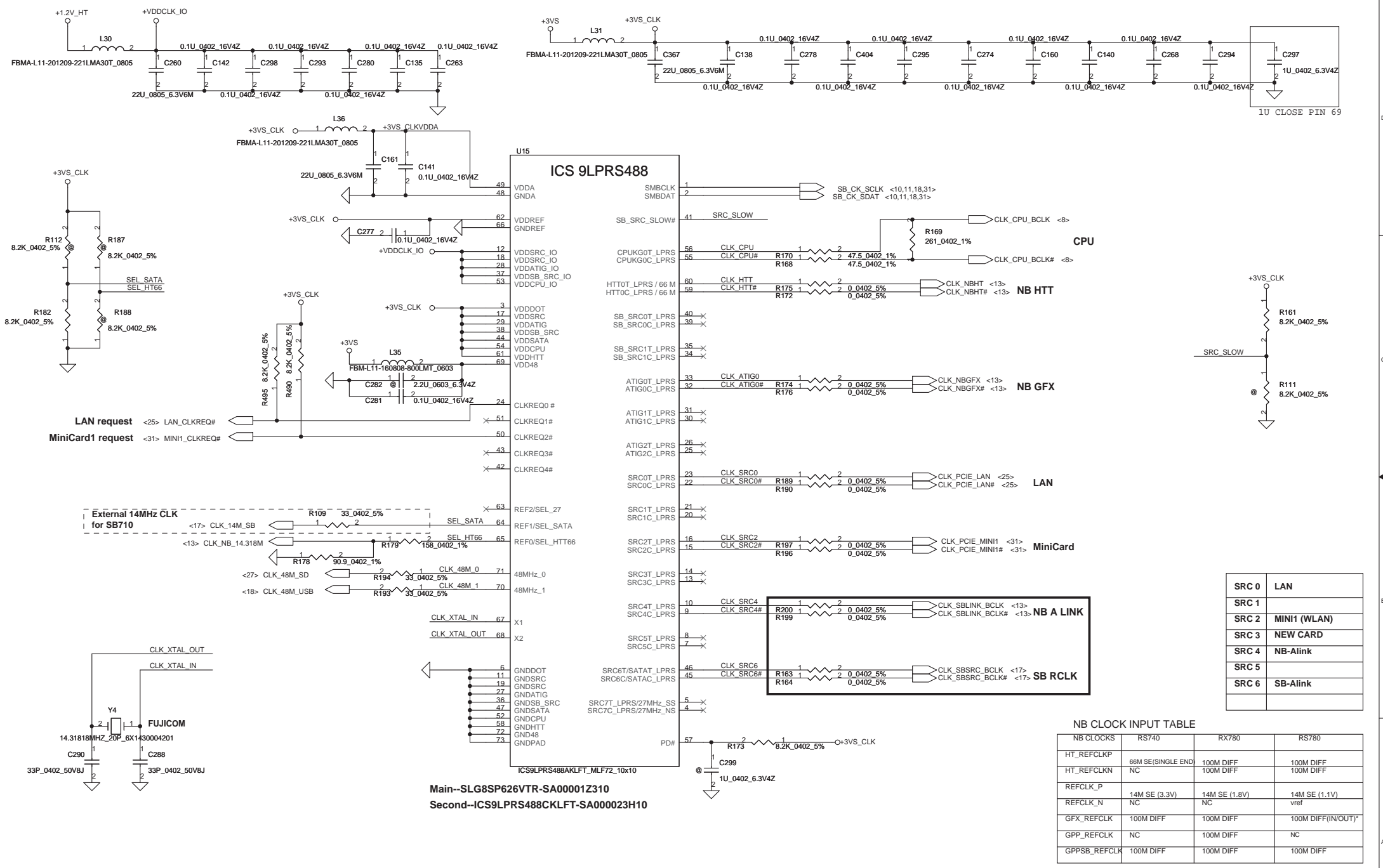
Selects Loading of STRAPS from EPROM
 1 : Bypass the loading of EEPROM straps and use Hardware Default Values
 0 : I2C Master can load strap values from EEPROM if connected, or use default values if not connected
 RS740/RX780: DFT_GPIO1 RS780:SUS_STAT



RS780 use HSYNC to enable SIDE PORT

RS740/RS780: Enables Side port memory (RS780 use HSYNC#)
 0. Enable (RS780)
 1 : Disable(RS780)

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/10/10	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 THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				Custom	401743
				Date:	Wednesday, June 24, 2009
				Sheet	15 of 47
				Rev	C



Main--SLG8SP626VTR-SA00001Z310
 Second--ICS9LPRS488CKLFT-SA000023H10

SRC 0	LAN
SRC 1	
SRC 2	MINI1 (WLAN)
SRC 3	NEW CARD
SRC 4	NB-Alink
SRC 5	
SRC 6	SB-Alink

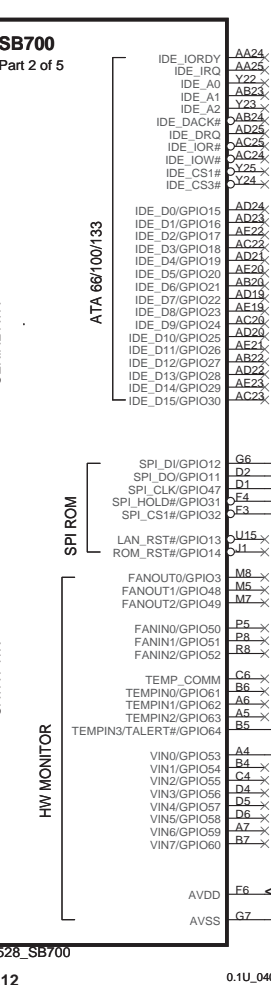
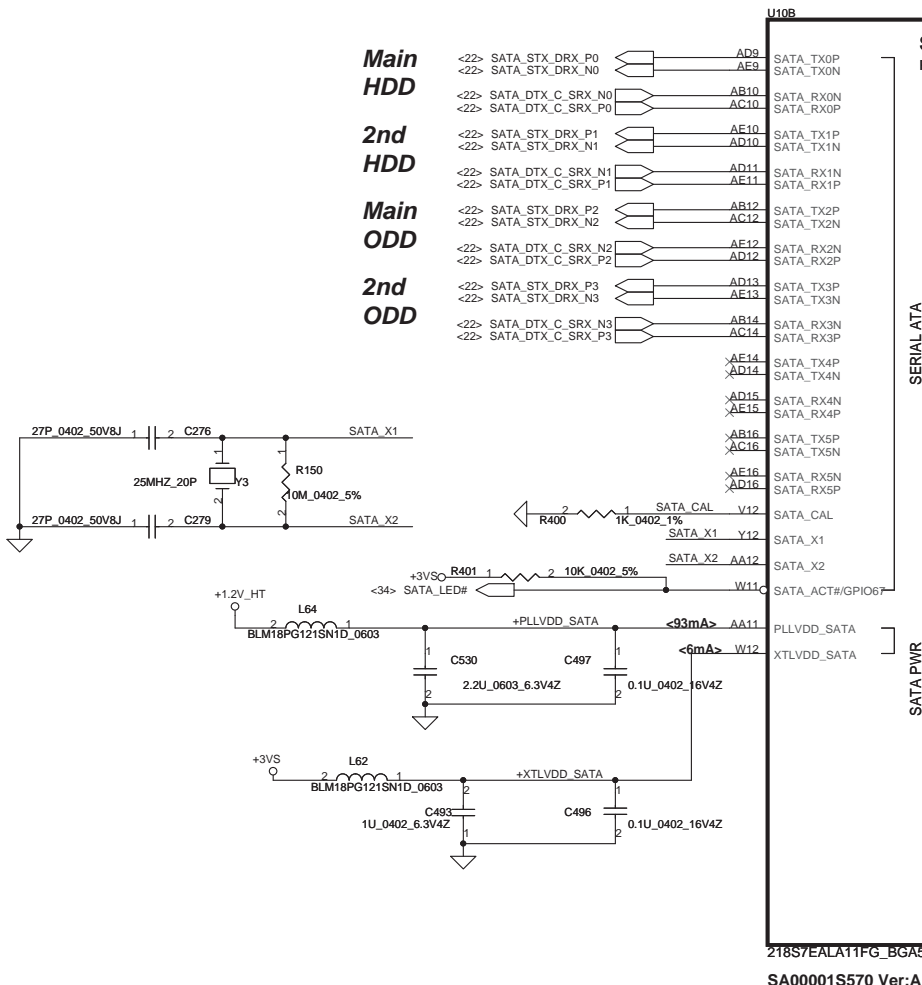
NB CLOCK INPUT TABLE

NB CLOCKS	RS740	RX780	RS780
HT_REFCLKP	66M SE(SINGLE END)	100M DIFF	100M DIFF
HT_REFCLKN	NC	100M DIFF	100M DIFF
REFCLK_P	14M SE (3.3V)	14M SE (1.8V)	14M SE (1.1V)
REFCLK_N	NC	NC	vref
GFX_REFCLK	100M DIFF	100M DIFF	100M DIFF(IN/OUT)
GPP_REFCLK	NC	100M DIFF	NC
GPPSB_REFCLK	100M DIFF	100M DIFF	100M DIFF

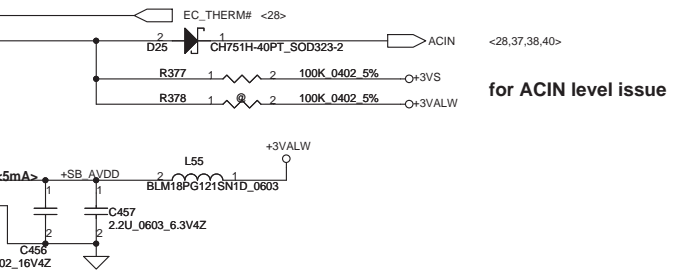
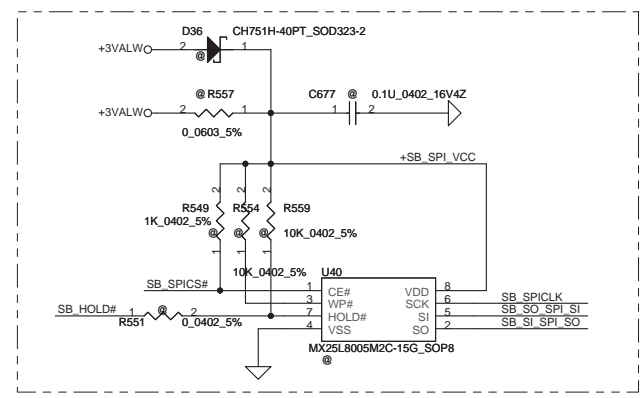
SEL_HTT66	1	configure as single-ended 66MHz output
	0*	configure as differential 100MHz output
SEL_SATA	1*	SS 100M SATA SRC6 output
	0	SS 100M SATA SRC6 output

SEL_27M	1	configure as 27M and 27M_SS output
No used	0	configure as SRC_7 output

Security Classification	Compal Secret Data		Title		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	SCHEMATIC, MB A5481		
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 THE PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.						
Size	Document Number	401743		Rev	C	
Date:	Wednesday, June 24, 2009	Sheet	16	of	47	



Port Number	Pri/SEC,Mas/Slave assignment	SATA drive controlled by
Port 0	Primary master	SATA controller
Port 1	Secondary master	SATA controller
Port 2	Primary slave	SATA controller
Port 3	Secondary slave	SATA controller
Port 4	Primary (Secondary) master	PATA controller
Port 5	Primary (Secondary) slave	PATA controller



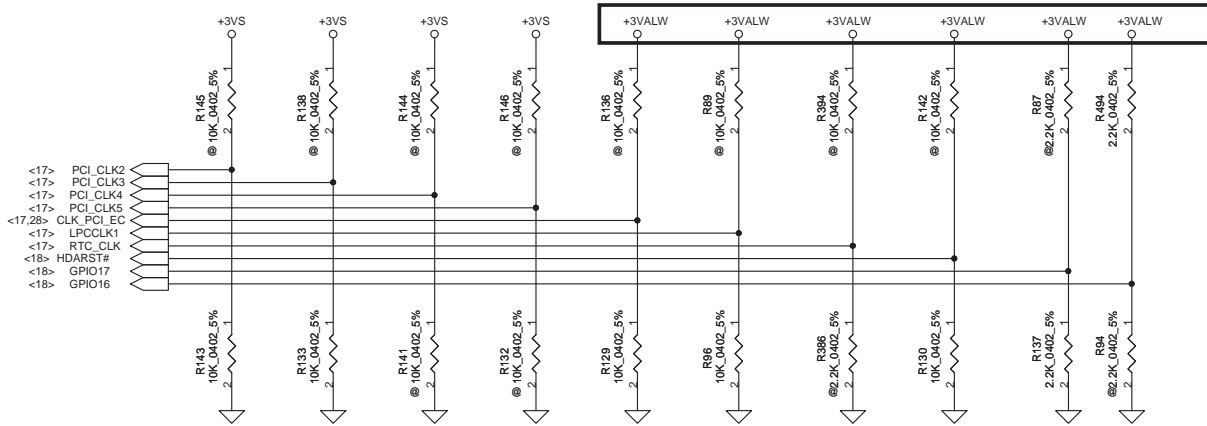
218S7EALA11FG_BGA528_SB700
SA00001S570 Ver:A12

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	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 THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.				Size
				Document Number
				401743
				Rev C
				Date: Wednesday, June 24, 2009
				Sheet 19 of 47

REQUIRED STRAPS

NOTE: SB700 HAS INTERNAL 15K PULL UP RESISTOR FOR RTC_CLK

	PCI_CLK2	PCI_CLK3	PCI_CLK4	PCI_CLK5	LPC_CLK0 CLK_PCI_EC	LPC_CLK1	RTC_CLK	AZ_RST_CD#	GP17	GP16
PULL HIGH	BOOTFAIL TIMER ENABLED	USE DEBUG STRAPS	RESERVED	RESERVED	ENABLE PCI MEM BOOT	CLKGEN ENABLED	INTERNAL RTC DEFAULT	EC ENABLED	Internal pull up H,H = Reserved H,L = SPI ROM	
PULL LOW	BOOTFAIL TIMER DISABLED DEFAULT	IGNORE DEBUG STRAPS DEFAULT			DISABLE PCI MEM BOOT DEFAULT	CLKGEN DISABLED DEFAULT	EXT. RTC (PD on X1, apply 32KHz to RTC_CLK)	EC DISABLED DEFAULT	L,H = LPC ROM (Default L,NC) L,L = FWH ROM	

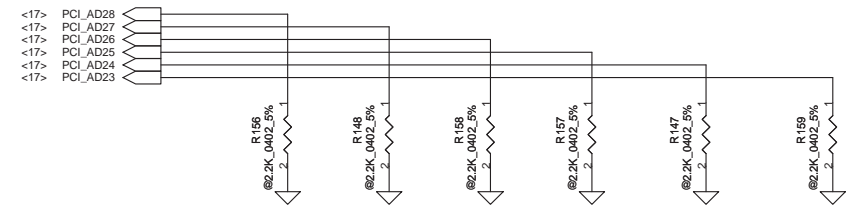


DEBUG STRAPS

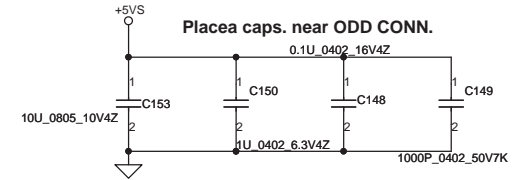
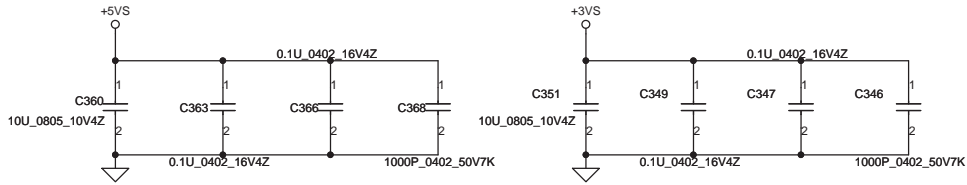
DEBUG STRAPS

SB700 HAS 15K INTERNAL PU FOR PCI_AD[28:23]

	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	RESERVED
PULL LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	

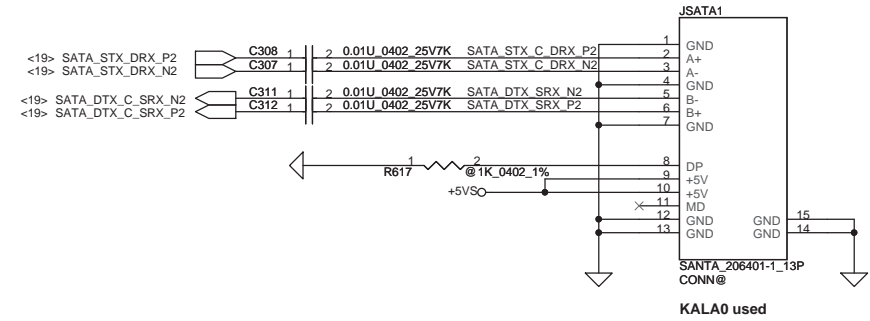
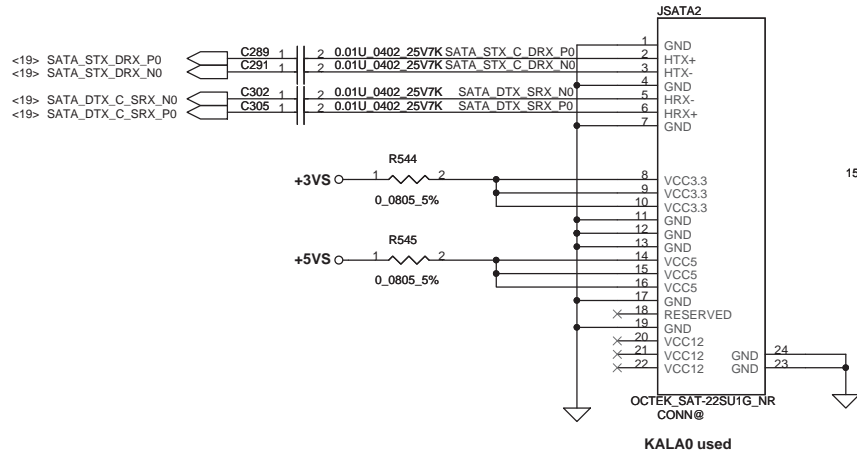


Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title	SCHEMATIC, MB A5481	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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	401743	C
				Date:	Wednesday, June 24, 2009	Sheet 21 of 47



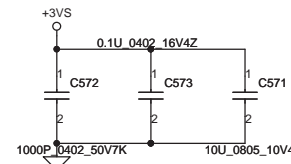
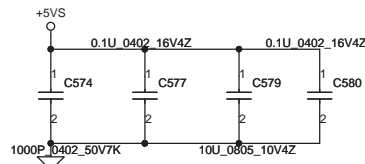
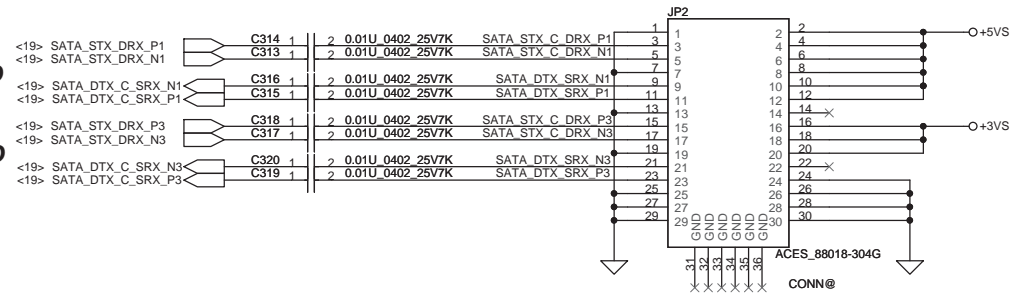
SATA HDD CONN

SATA ODD CONN



Second HDD

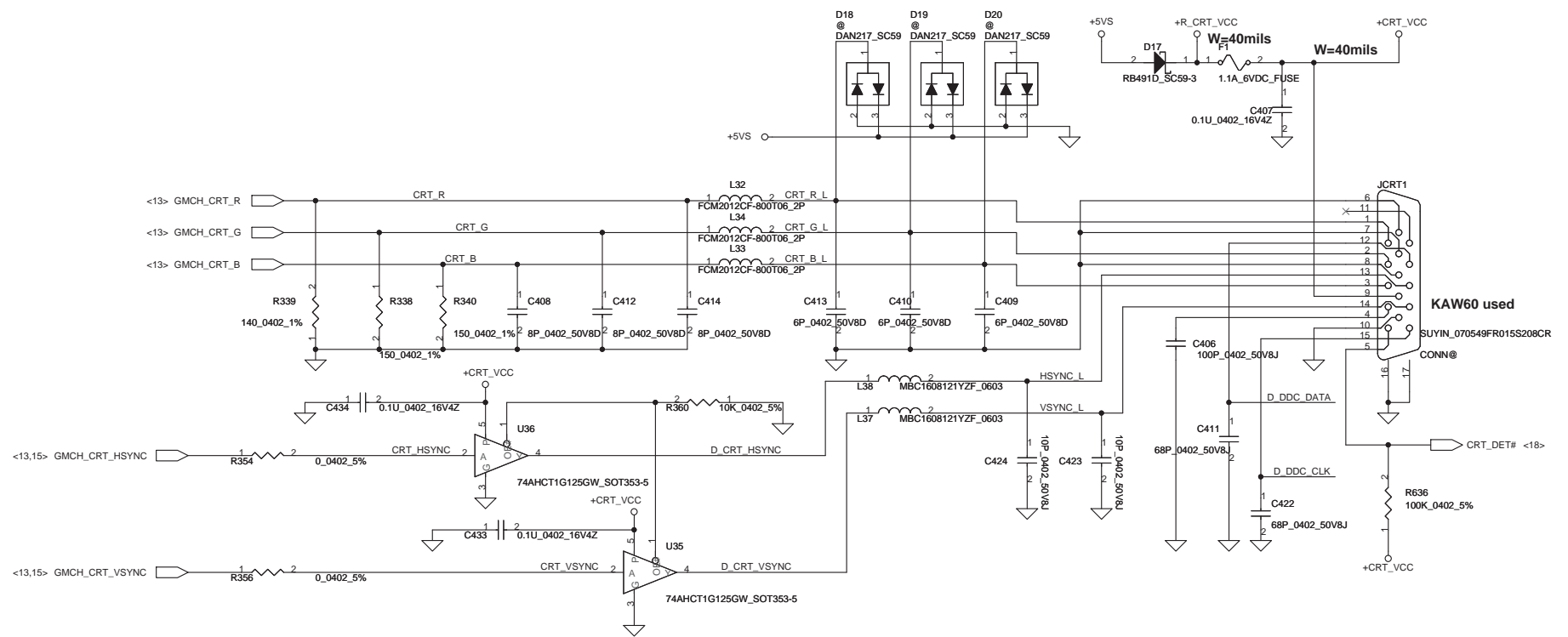
Second ODD



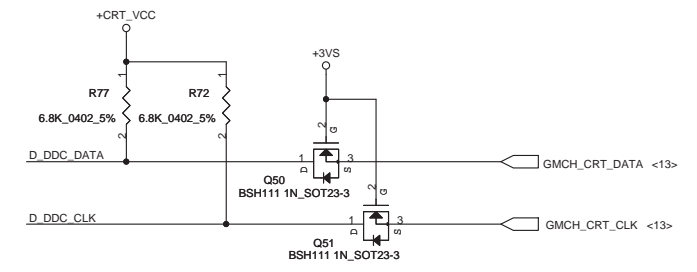
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. ANY REPRODUCTION OR DISSEMINATION OF THIS SHEET OF INFORMATION WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED. COMPAL ELECTRONICS, INC. ACCEPTS NO LIABILITY FOR ANY DAMAGES OR LOSSES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING FROM THE USE OF THIS SHEET OF INFORMATION. IT IS THE POLICY OF COMPAL ELECTRONICS, INC. TO PROVIDE THE INFORMATION CONTAINED HEREIN TO OUR CUSTOMERS AND SUPPLIERS. THE INFORMATION CONTAINED HEREIN IS FOR INTERNAL USE ONLY AND IS NOT TO BE DISCLOSED TO ANY OTHER PARTY WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				401743	Rev C
				Date:	Wednesday, June 24, 2009
				Sheet	22 of 47

<http://laptop-motherboard.com/schematic/401743.html>

CRT Connector



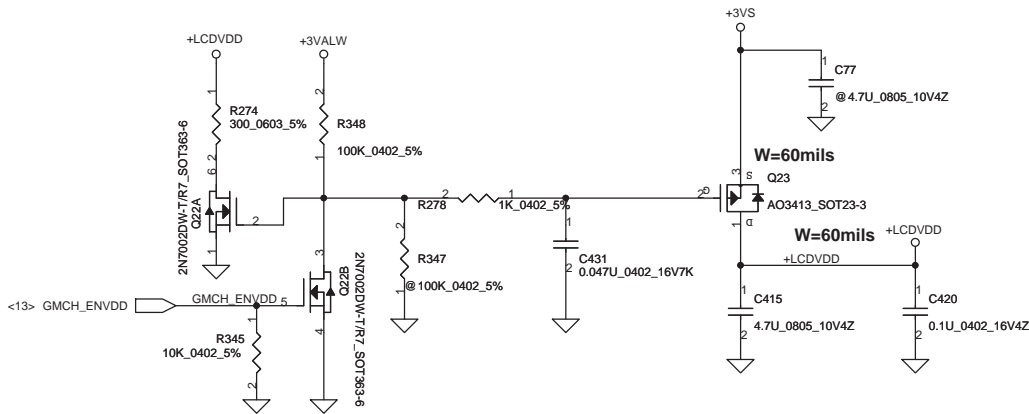
Close to Conn side



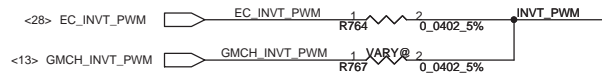
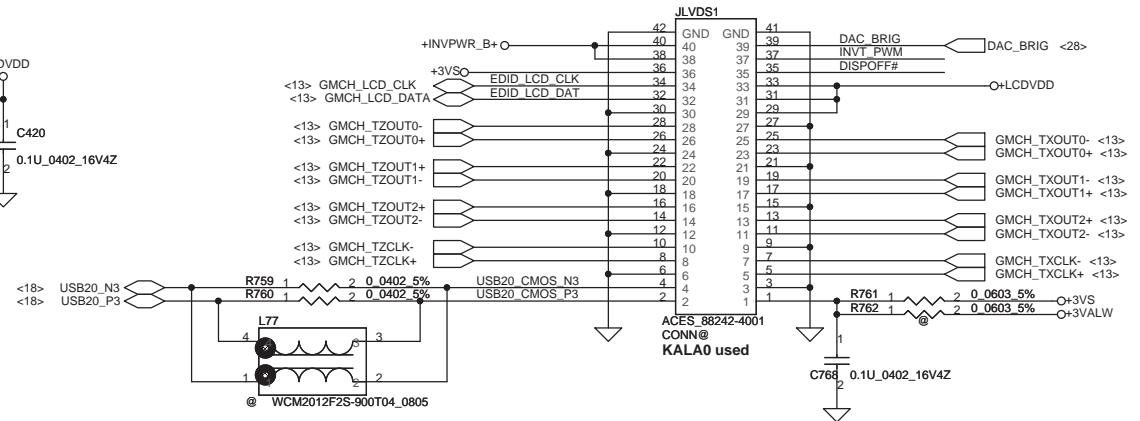
Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title
<small>THIS SHEET IS AN ENGINEERING DRAWING AND IS THE PROPERTY OF COMPAL ELECTRONICS, INC. IT CONTAINS DESIGN AND MANUFACTURING INFORMATION. THIS SHEET MAY NOT BE REPRODUCED 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.</small>				SCHEMATIC, MB A5481 Document Number 401743
Date: Wednesday, June 24, 2009				Sheet 23 of 47

<http://laptop-motherboard.schematic.laptop.com/>

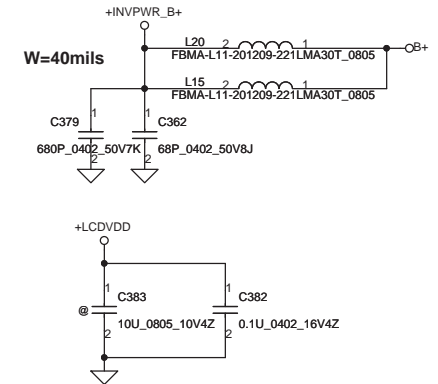
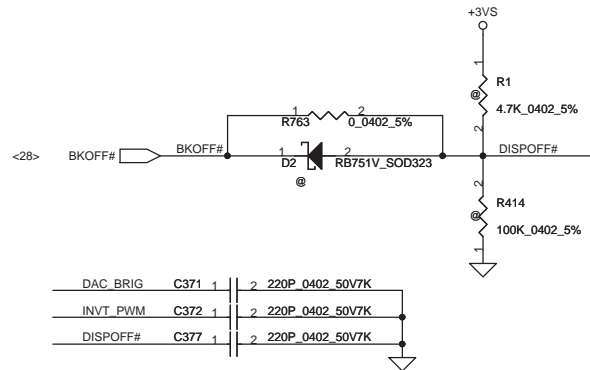
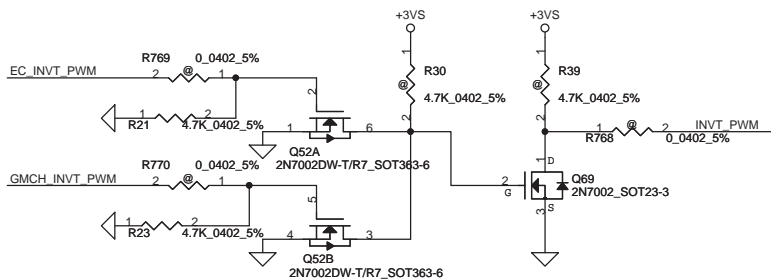
LCD POWER CIRCUIT



LCD/PANEL CONN.

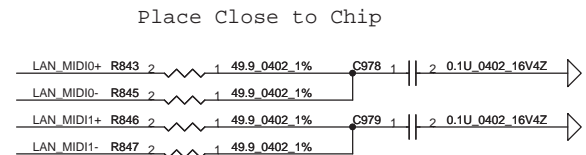
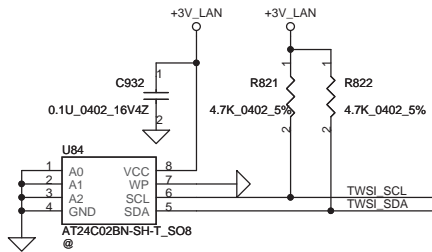
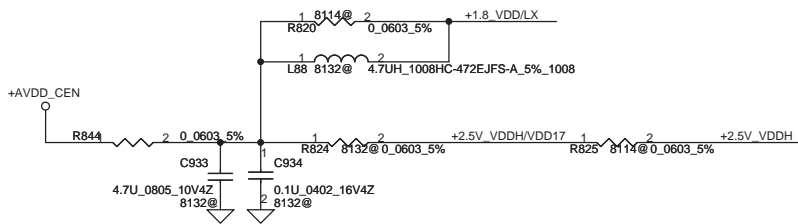


VARYBRIGHT FUNCTION

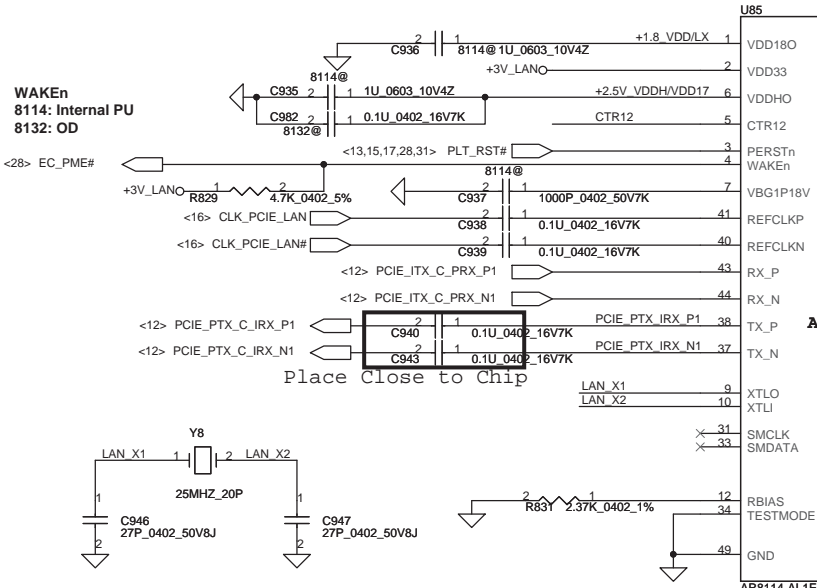


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET IS TO BE KEPT UNDER LOCK AND KEY AND NOT TO BE REPRODUCED, COPIED, OR DISCLOSED TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	
				401743	
				Date:	Wednesday, June 24, 2009
				Sheet	24 of 47

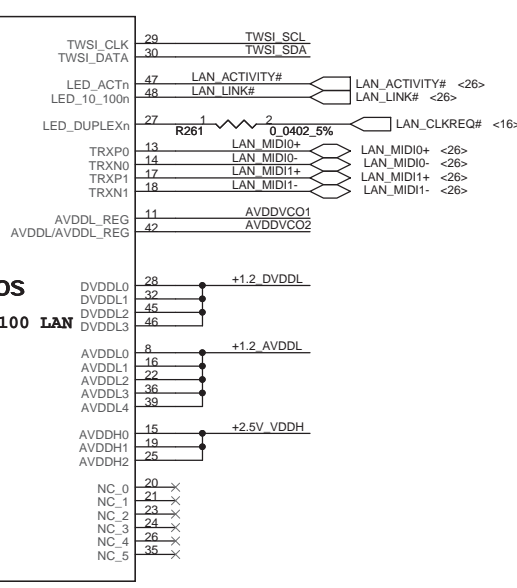
<http://laptop-motherboard.schematics.org/>



WAKEn
8114: Internal PU
8132: OD



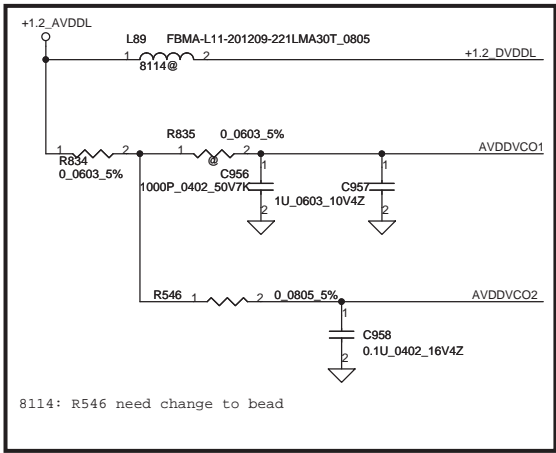
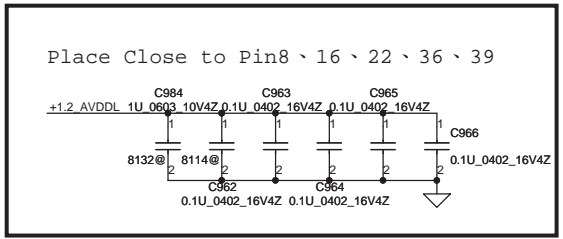
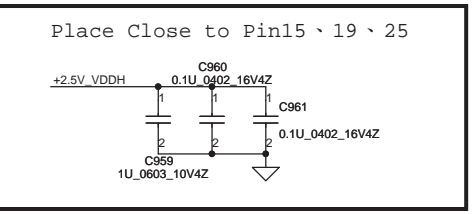
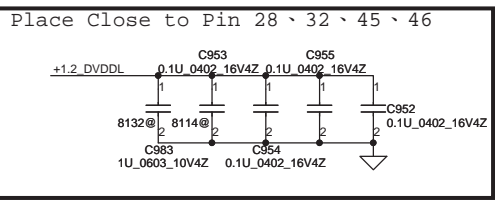
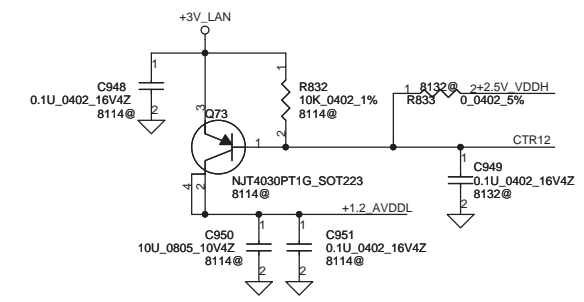
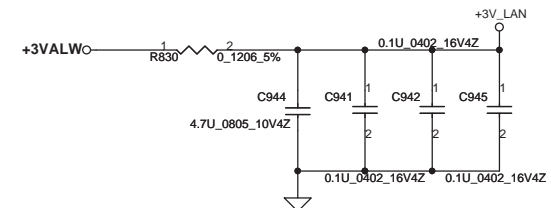
Atheros
AR8114A 10/100 LAN



change to AR8132L-AL1E

Place Close to Chip

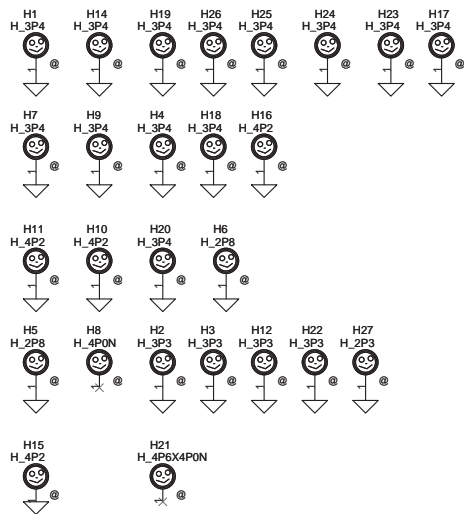
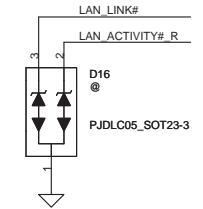
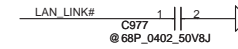
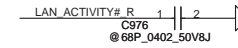
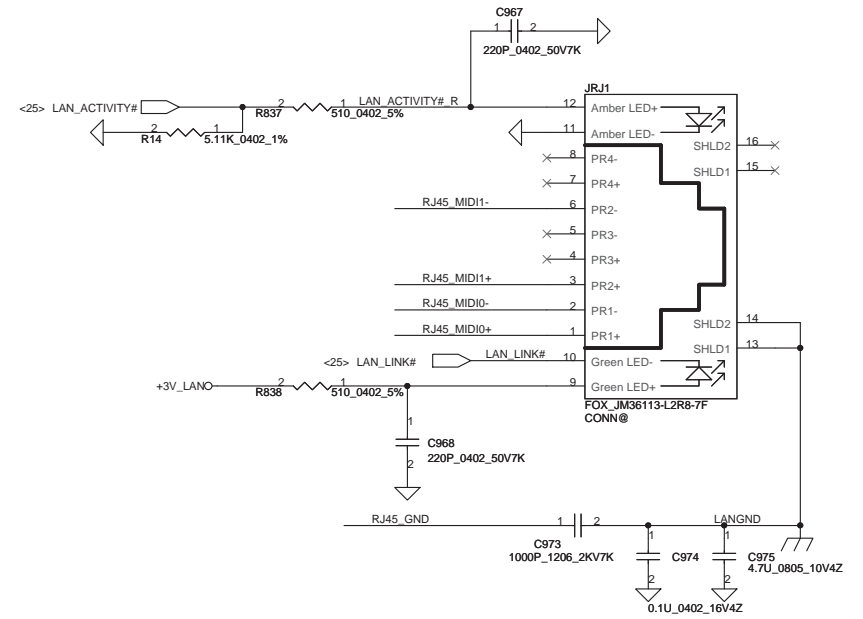
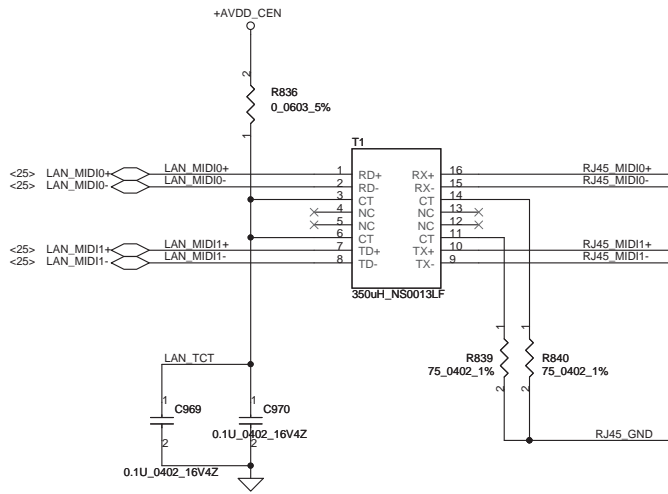
Layout Notice : Close to chip



8114: R546 need change to bead

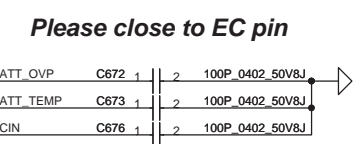
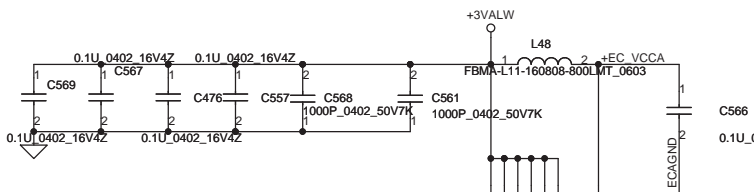
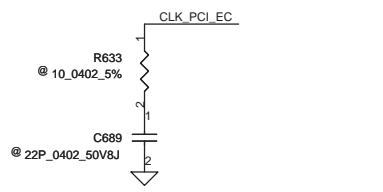
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/07/29	Deciphered Date	2010/03/12	Title	SCHMATIC, MB A5481
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. IT IS TO BE KEPT STRICTLY CONFIDENTIAL AND NOT TO BE REPRODUCED OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Document Number	401743		Rev	C	
Date	Wednesday, June 24, 2009	Sheet	25	of 47	

<http://laptop-model.com>

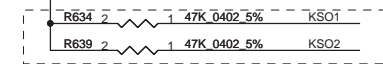
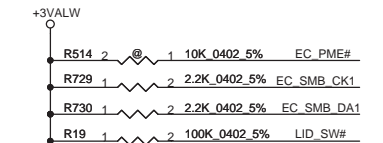
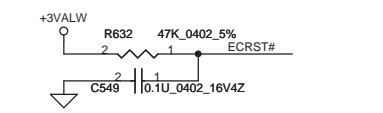
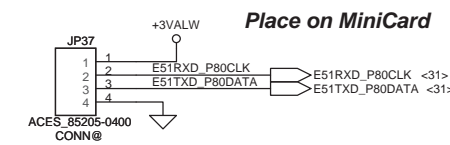


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title	SCHEMATIC, MB A5481
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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 REPRODUCED OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Custom
				Document Number	401743
				Date:	Wednesday, June 24, 2009
				Sheet	26 of 47
				Rev	C

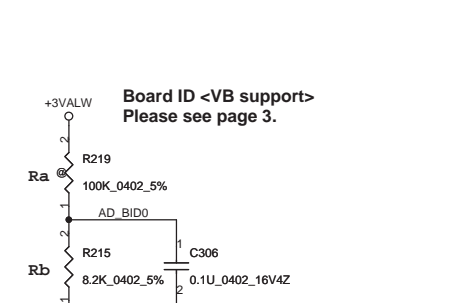
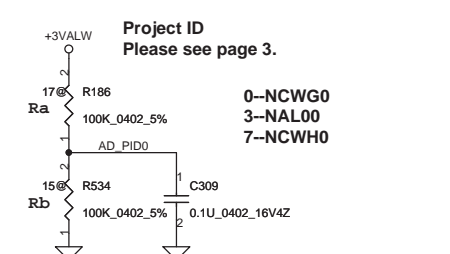
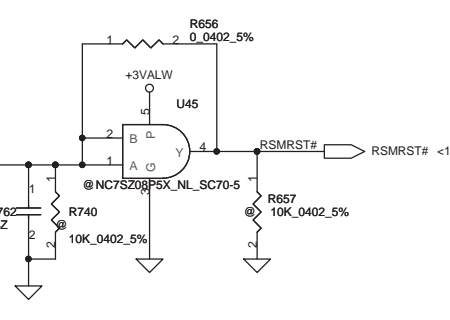
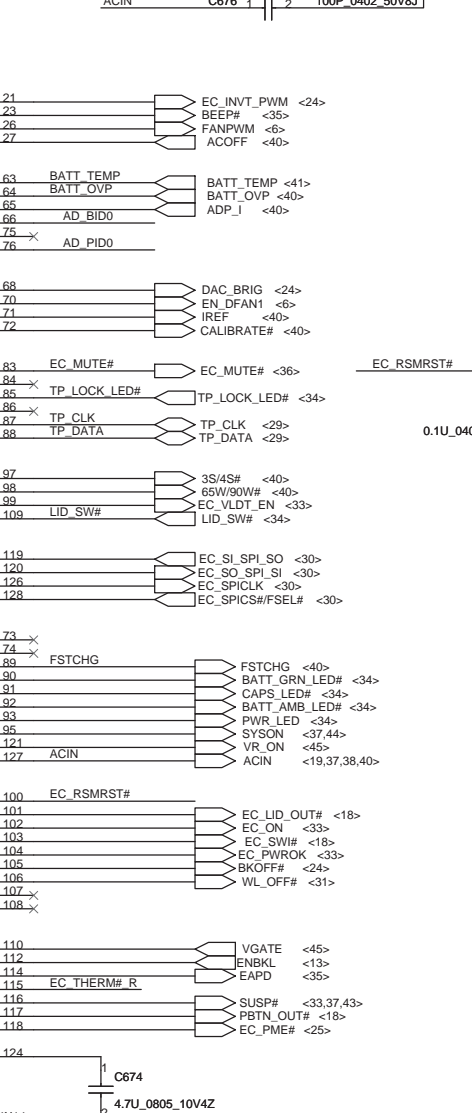
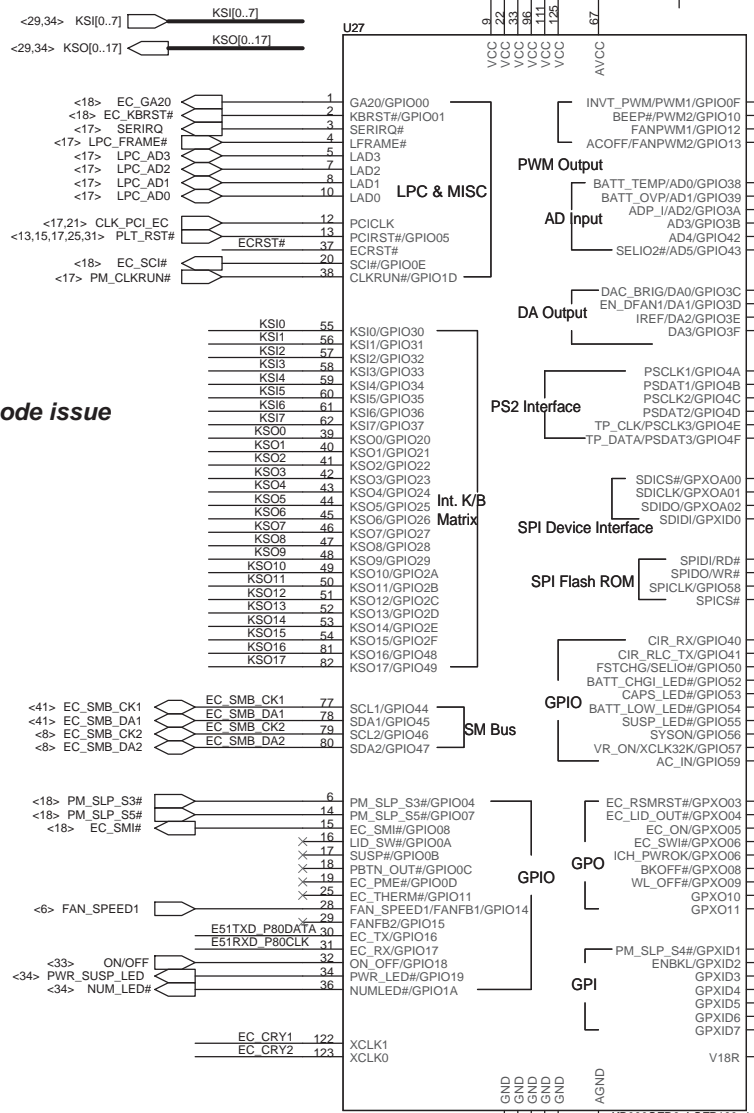
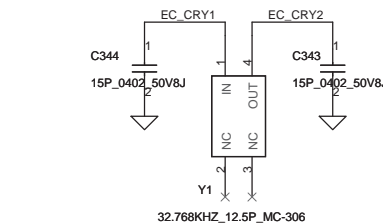
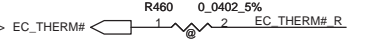
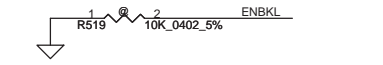
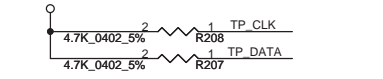
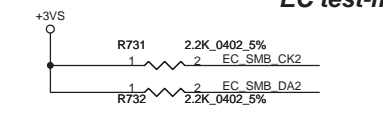
<http://laptop-motherboard-schematic.blogspot.com/>



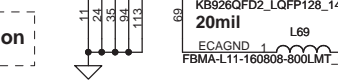
For EC Tools
Place on MiniCard



EC test-mode issue



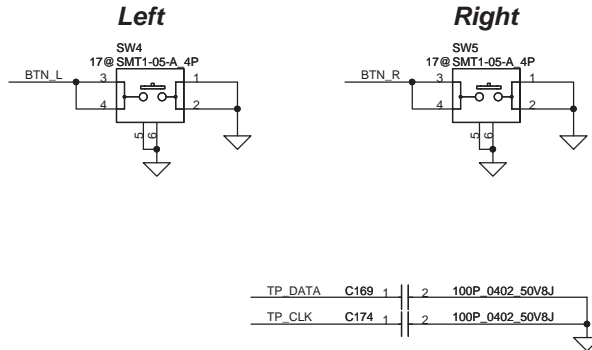
Chagne to D3 version



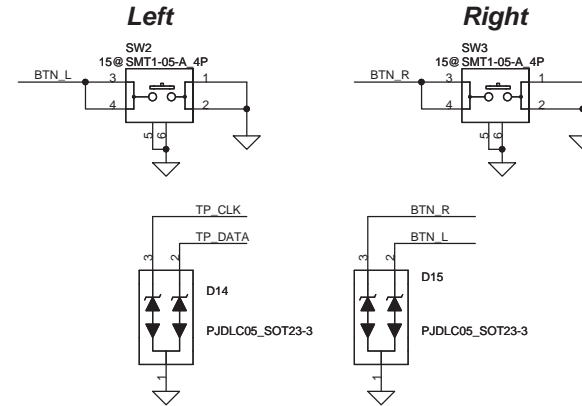
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/5/18	Deciphered Date	2010/03/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ANY REPRODUCTION OR DISSEMINATION OF THIS SHEET WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED. THIS SHEET IS TO BE USED ONLY FOR THE PROJECT AND NOT TO BE REPRODUCED OR DISSEMINATED TO OTHER DEPARTMENTS OR TO OTHER COMPANIES WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				401743	C
Date: Wednesday, June 24, 2009				Sheet	28 of 47

<http://laptop-models.com> <http://www.compalelectronics.com>

For 17"

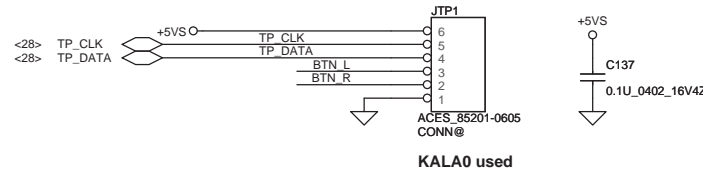


For 15"



To TP/B Conn.

Change to SCA00000200

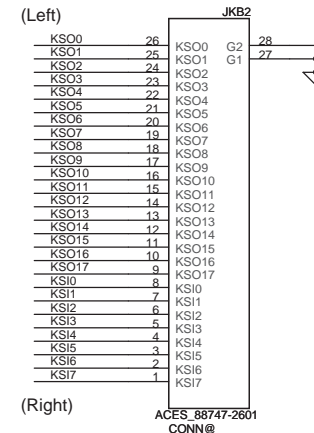
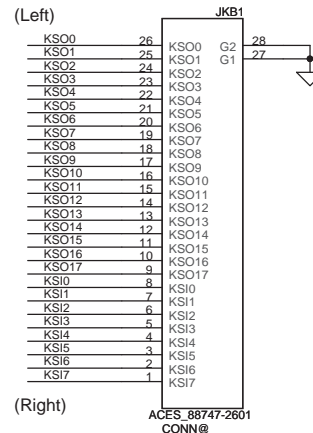
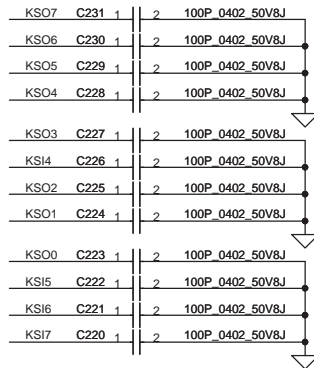
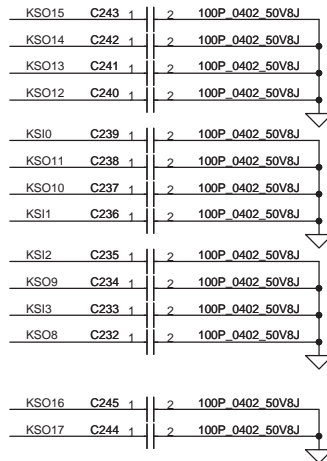


KALA0 used

INT_KBD Conn.

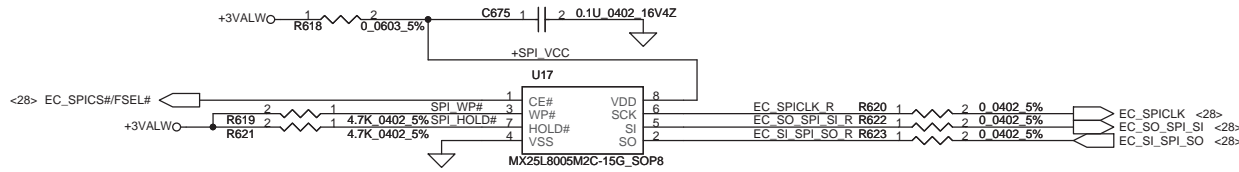


KB1 for 15"
KB2 for 17"



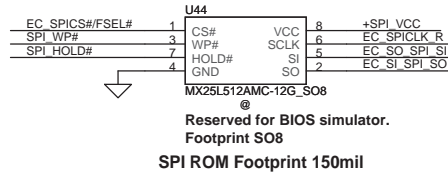
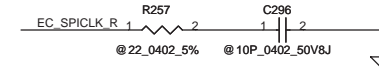
Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D.				SCHEMATIC, MB A5481
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.				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.				401743
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.				Rev C
Date: Wednesday, June 24, 2009		Sheet 29 of 47		

<http://laptop-motherboard.schematic.org/compal/>



SA00000XT00 : S IC FL 8M MX25L8005M2C-15G SOP 8P
 ENE suggestion SPI Frequency over 66MHz
 SST: 50MHz
 MXIC: 70MHz
 ST: 40MHz

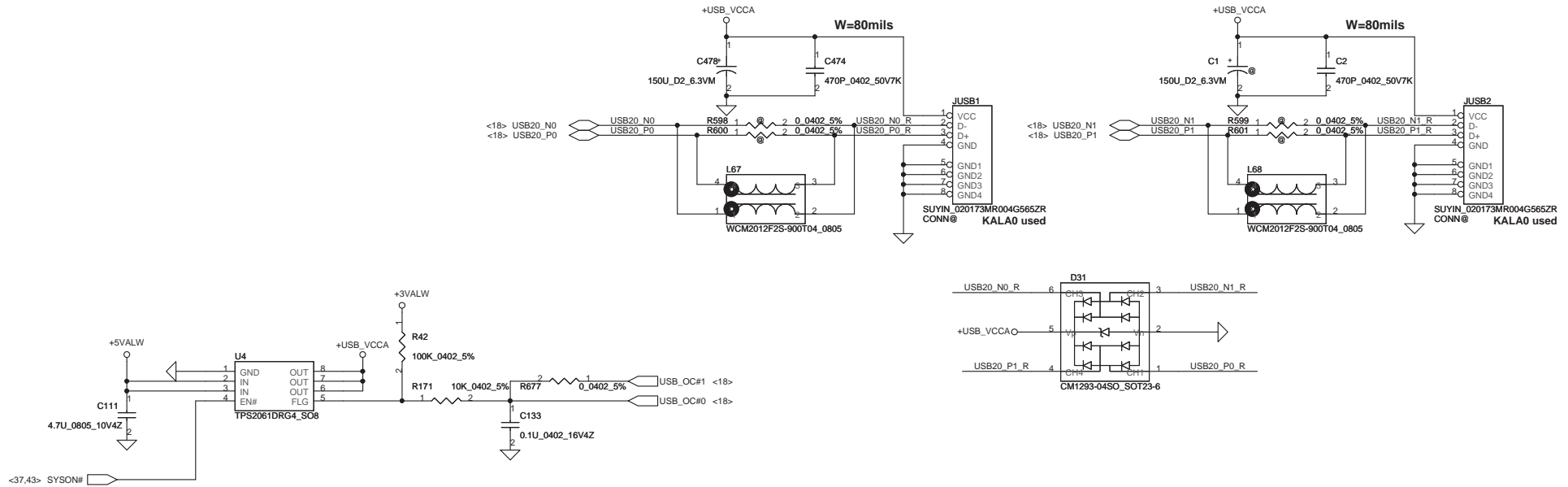
ONLY MXIC used in this project (66MHz)



<http://laptop-motherboard-schematic.blogspot.com/>

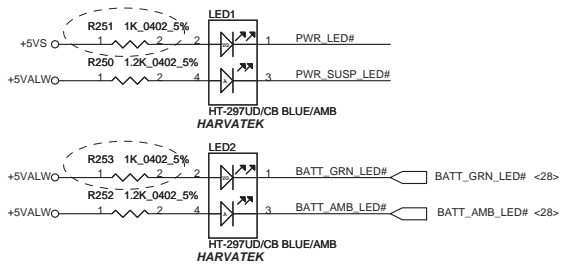
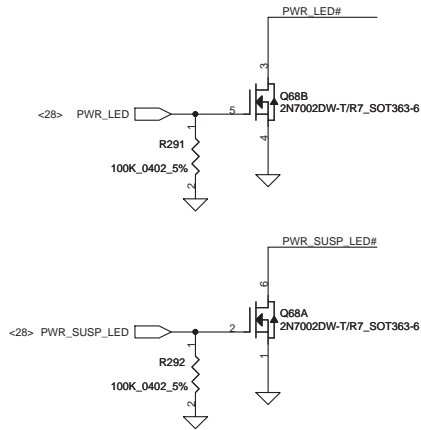
Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT WITHOUT THE AUTHORIZATION OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED FOR DISSEMINATION TO ANY THIRD PARTY WITHOUT WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number
				401743
				Rev C
Date:	Wednesday, June 24, 2009	Sheet	30	of 47

USB CONN. 1 & 2

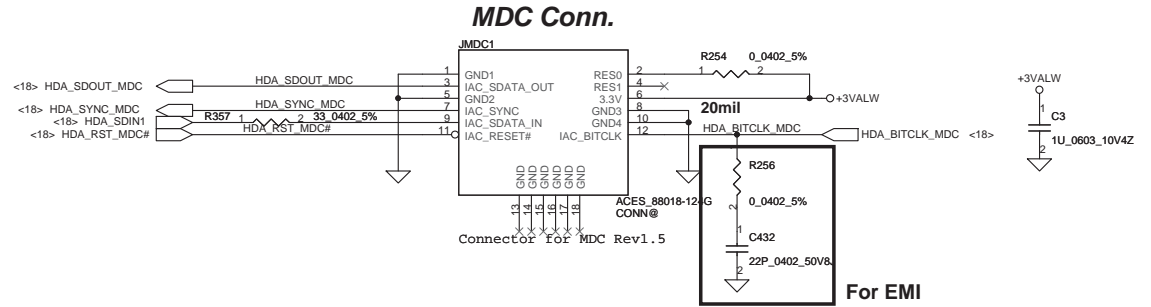


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/06/20	Deciphered Date	2010/03/12	Title	SCHMATIC, MB A5481
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ANY REPRODUCTION OR DISSEMINATION OF THIS SHEET OF ENGINEERING DRAWING WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED. THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE.				Document Number	401743
MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Date:	Wednesday, June 24, 2009
				Sheet	32 of 47

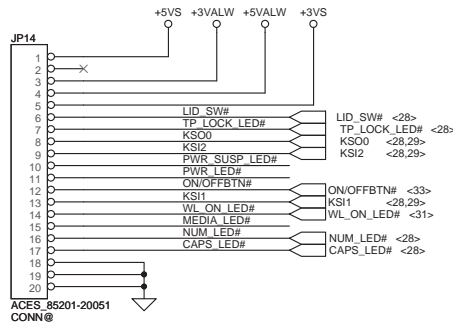
<http://laptop-motherboards.com/>



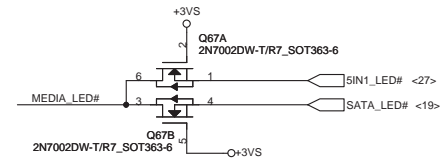
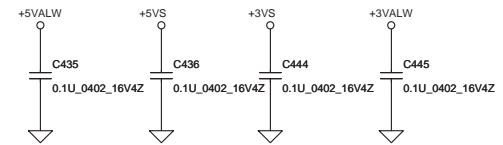
BLUE/AMB LED



To PWR LED/B

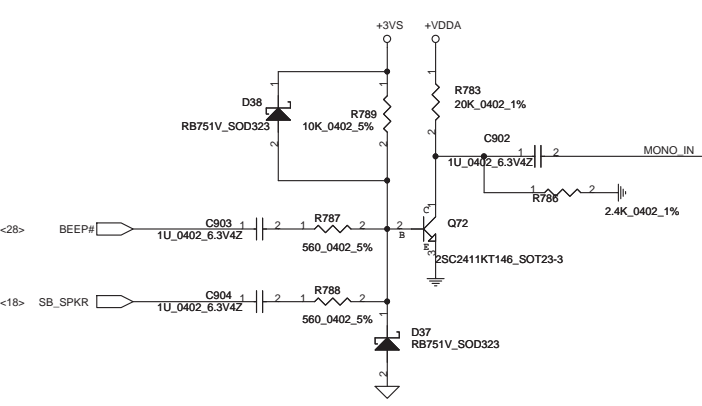


	KSO0
KSI1	WL_BTN#
KSI2	TP_LOCK_BTN#
KSI3	
KSI4	
KSI5	
KSI6	

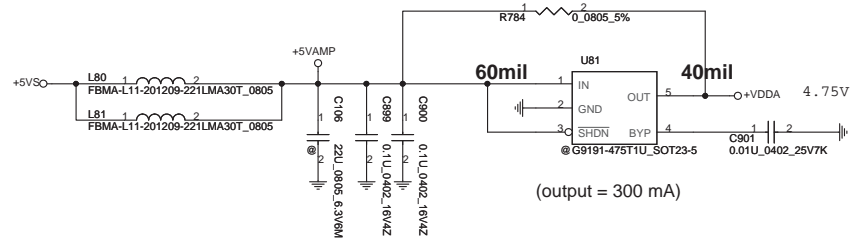


Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/06/20	Deciphered Date	2010/03/12	Title
				SCHMATIC, MB A5481
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D TO ANY OTHER DIVISION OF COMPAL ELECTRONICS, INC. WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.				Document Number
				401743
				Rev C
Date: Wednesday, June 24, 2009				Sheet 34 of 47

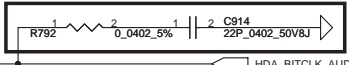
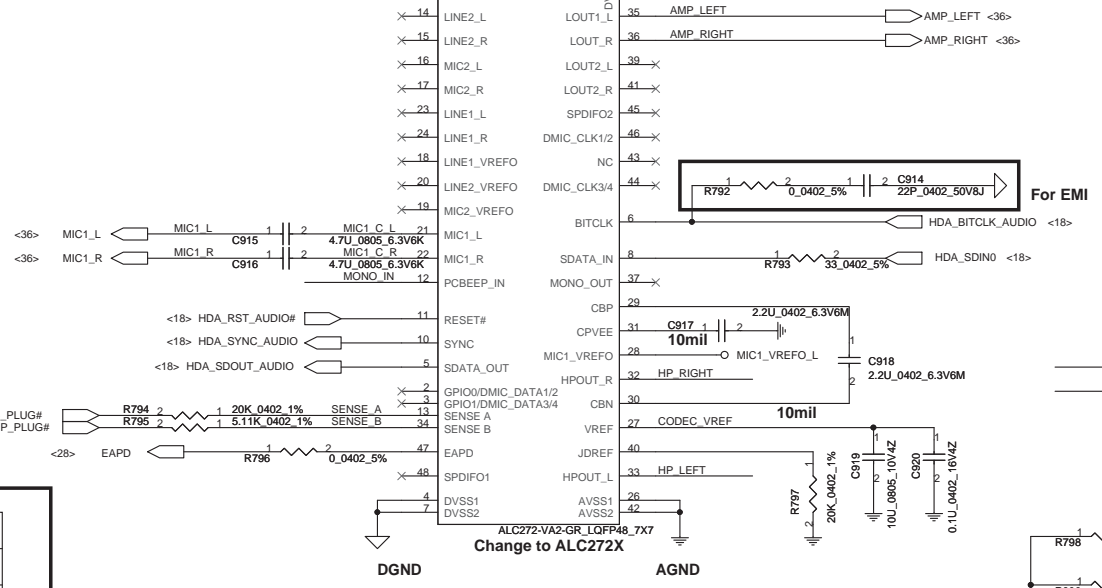
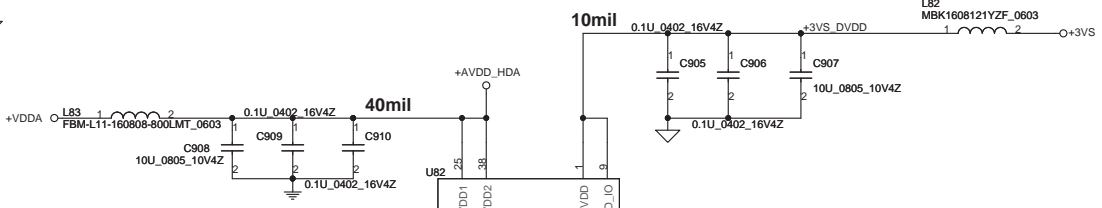
<http://laptop-motherboard.schematics.com/>



HD Audio Codec



(output = 300 mA)

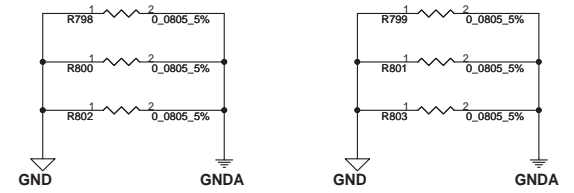


For EMI

update this table

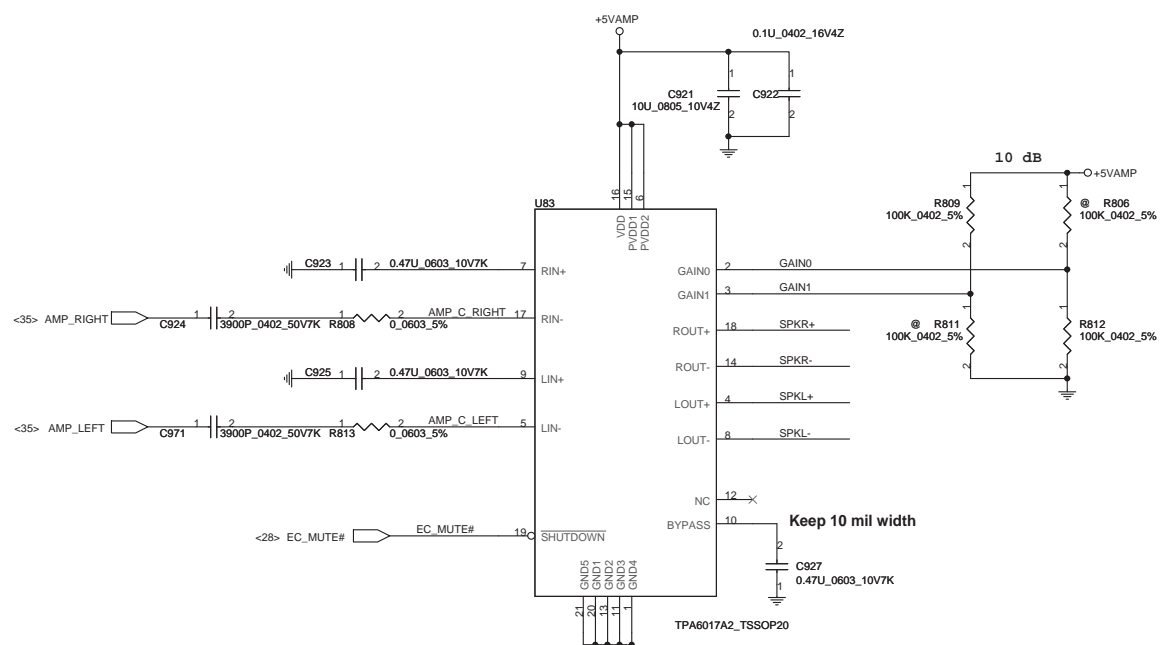
Sense Pin	Impedance	Codec Signals
SENSE A	39.2K	PORT-A (PIN 39, 41)
	20K	PORT-B (PIN 21, 22)
	10K	PORT-C (PIN 23, 24)
	5.1K	PORT-D (PIN 35, 36)
SENSE B	39.2K	PORT-E (PIN 14, 15)
	20K	PORT-F (PIN 16, 17)
	10K	PORT-G (PIN 43, 44)
	5.1K	PORT-H (PIN 45, 46)

Change to ALC272X

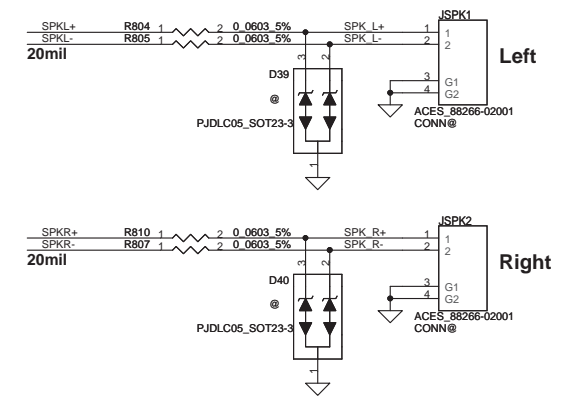


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2010/03/12	Title	
				SCHEMATIC, MB A5481	
				Document Number	Rev
				401743	C
				Date:	Wednesday, June 24, 2009
				Sheet	35 of 47

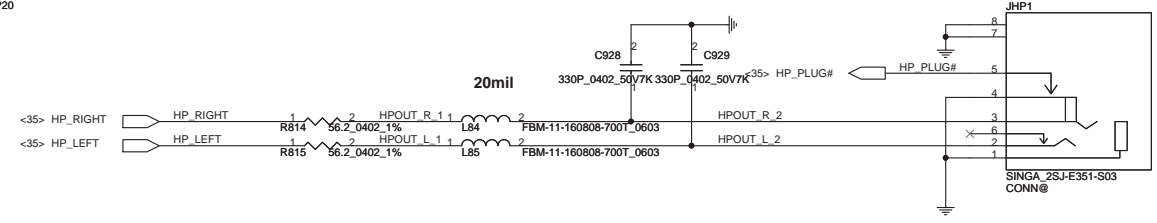
<http://laptop-motherboards.com>



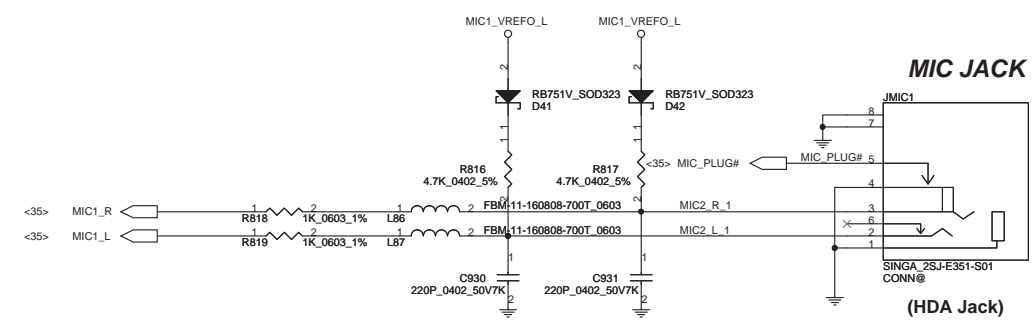
Int. Speaker Conn.



LINE Out/Headphone Out

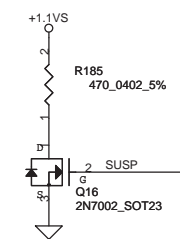
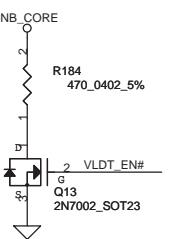
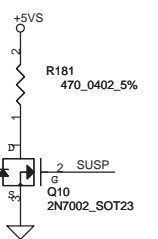
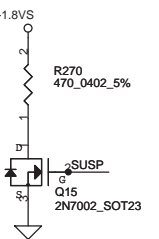
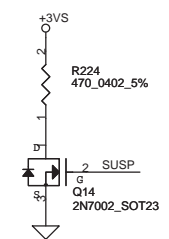
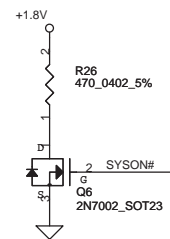
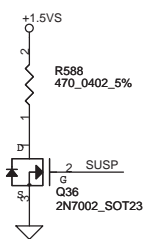
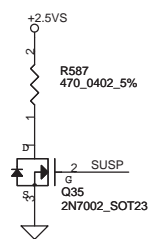
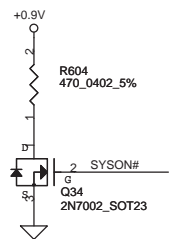
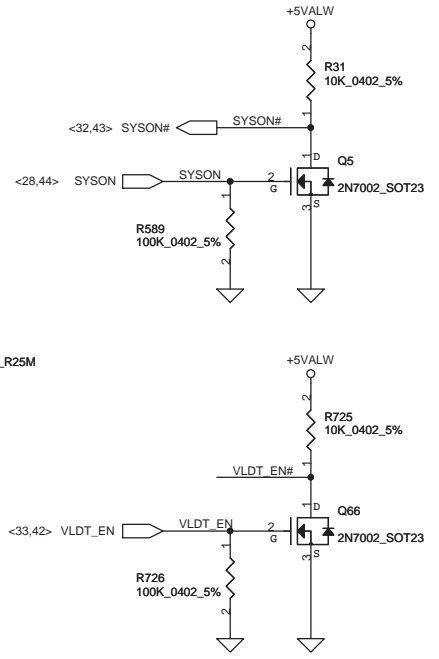
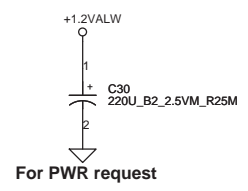
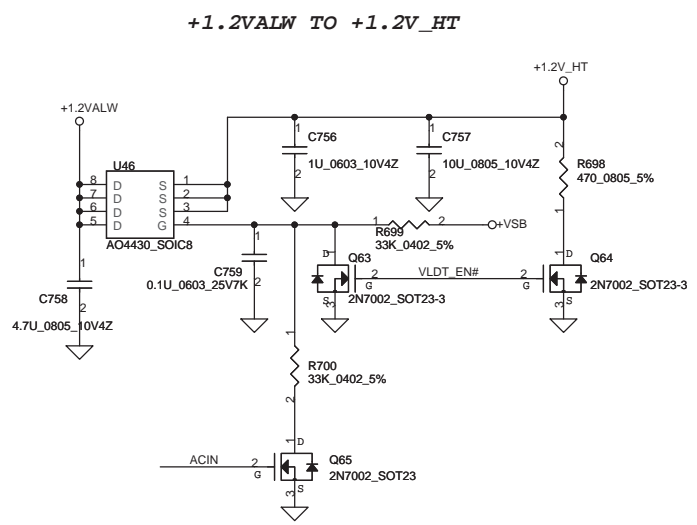
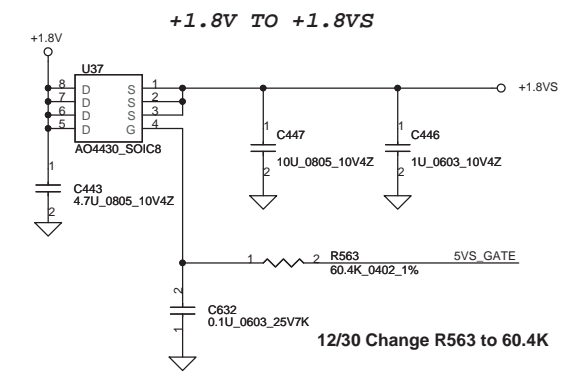
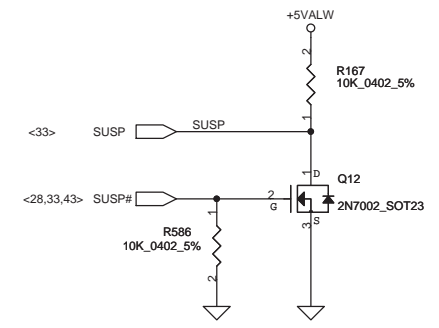
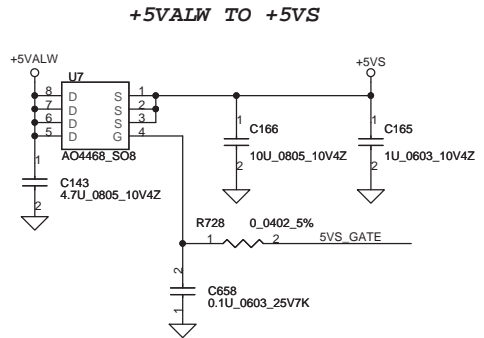
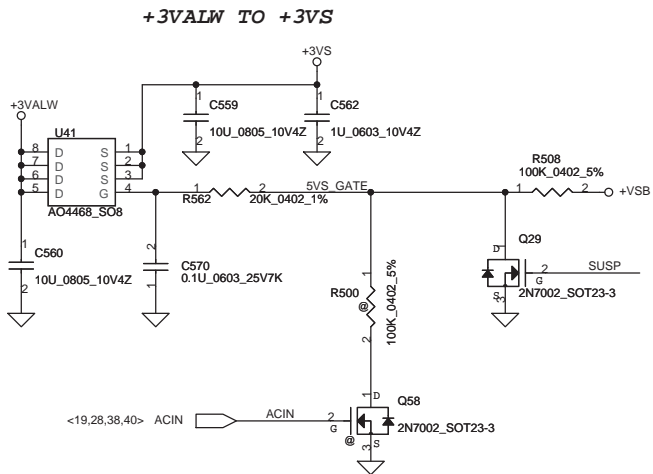


MIC JACK



Security Classification		Compal Secret Data		Title	
Issued Date	2007/09/20	Deciphered Date	2010/03/12	SCHEMATIC, MB A5481	
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. THE INFORMATION IS UNCLASSIFIED FROM THE CONTROL LISTING OF THE DEPARTMENT OF COMMERCE, EXPORT ADMINISTRATION, AND THE INFORMATION CONTAINS NO TECHNICAL DATA. THIS SHEET OF ENGINEERING DRAWING IS UNCLASSIFIED FROM THE CONTROL LISTING OF THE DEPARTMENT OF COMMERCE, EXPORT ADMINISTRATION, AND THE INFORMATION CONTAINS NO TECHNICAL DATA.</small>				Document Number	Rev
				401743	C
Date:				Wednesday, June 24, 2009	Sheet 36 of 47

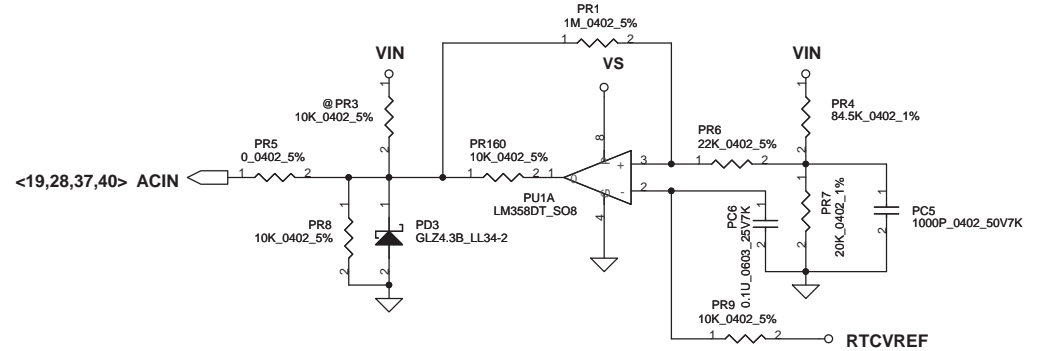
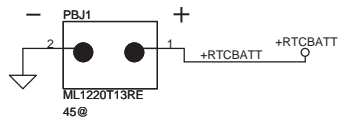
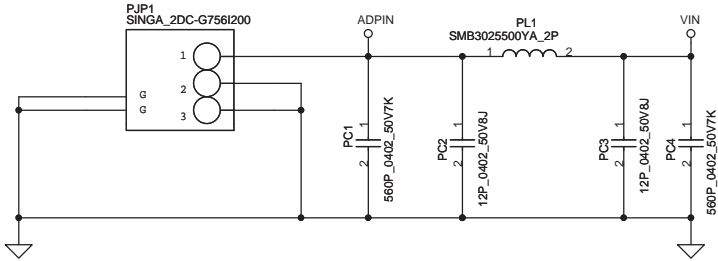
<http://laptop-motherboards.com/>



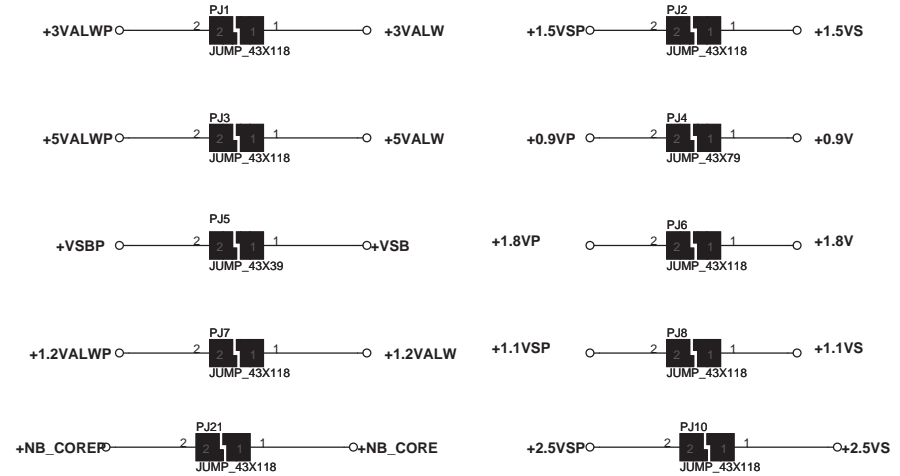
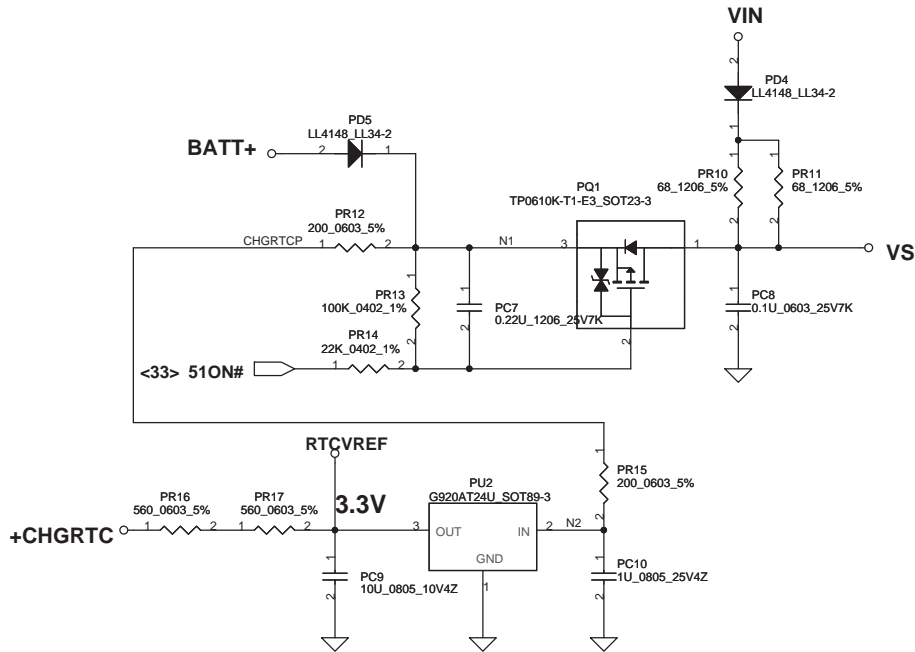
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ANY REPRODUCTION OR DISSEMINATION OF THIS SHEET WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED. THE INFORMATION CONTAINED HEREIN IS FOR INTERNAL USE ONLY AND IS NOT TO BE DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				SCHEMATIC, MB A5481	
Size	Document Number	401743		Rev C	
Date:	Wednesday, June 24, 2009	Sheet	37	of 47	

<http://laptop-motherboards.com>

DC231000500

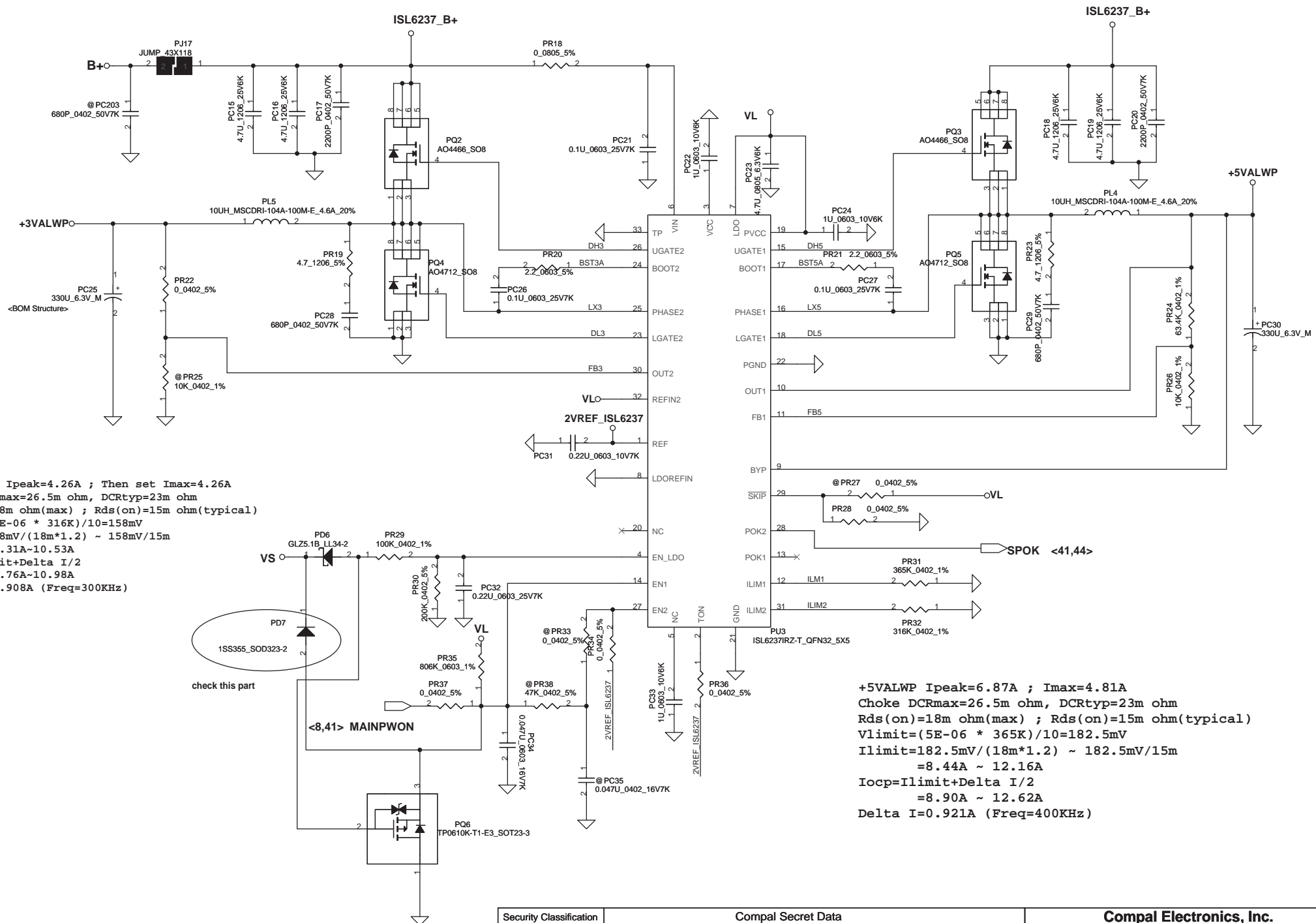


Vin Detector			
	Min.	Typ	Max.
H-->L	16.976V	17.525V	17.728V
L-->H	17.430V	17.901V	18.384V



<http://laptop-motherboards.com/>

Security Classification	Compal Secret Data			Compal Electronics, Inc.			
Issued Date	2008/06/11	Deciphered Date	2010/03/12	Title	SCHEMATIC, MB A5481		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. IT IS TO BE KEPT UNDER STRICT CONTROL AND NOT TO BE DISCLOSED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. ANY UNAUTHORIZED USE, REPRODUCTION, OR DISCLOSURE OF THIS INFORMATION TO ANY THIRD PARTY WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED.				Document Number	401743	Rev	C
Date:	Wednesday, June 24, 2009	Sheet	38	of	47		



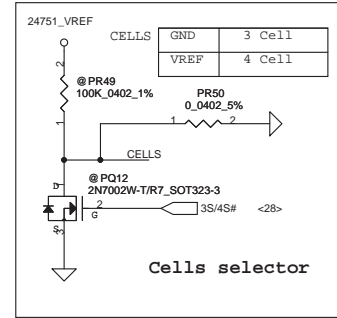
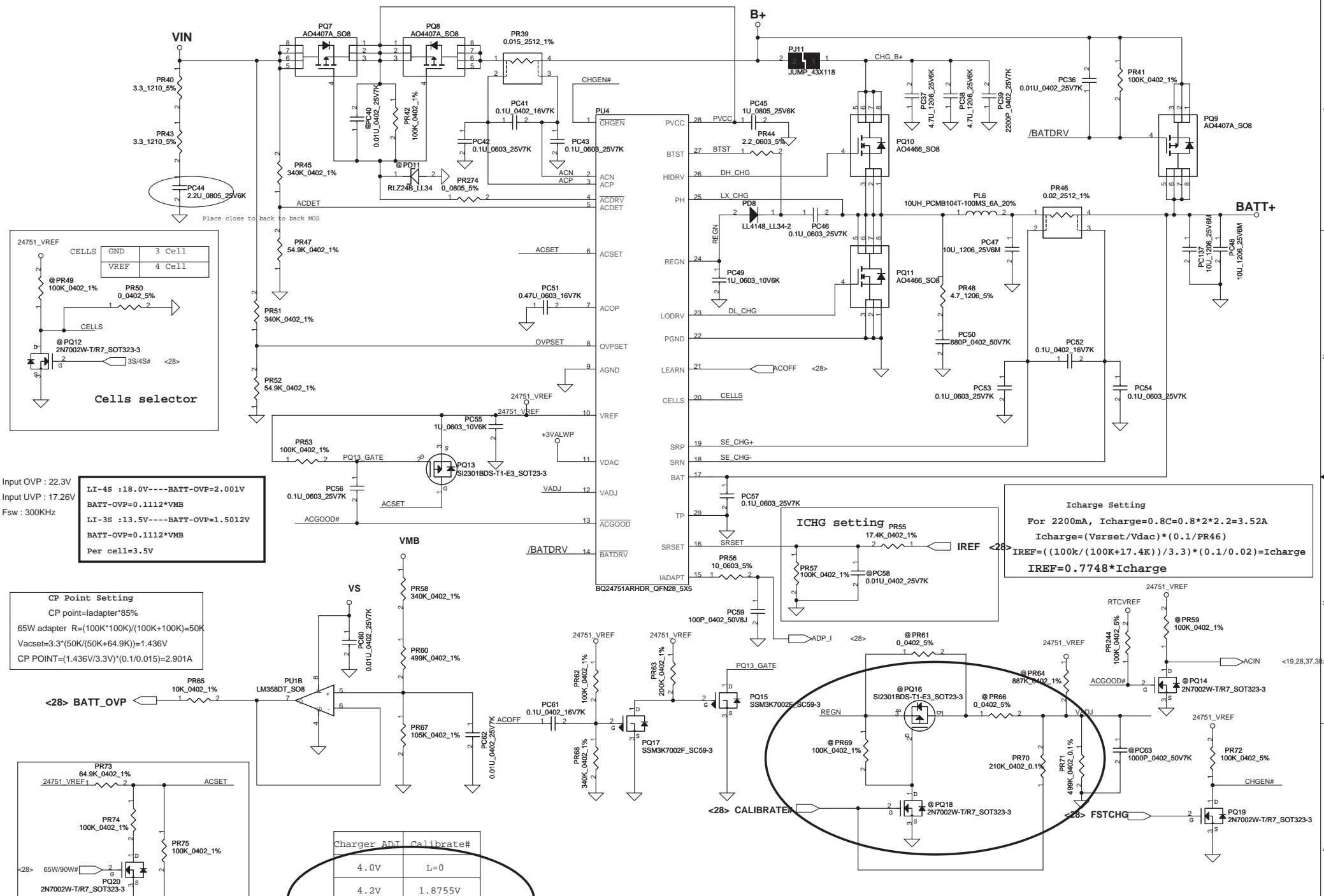
+3.3VALWP Ipeak=4.26A ; Then set I_{max}=4.26A
 Choke DCR_{max}=26.5m ohm, DCR_{typ}=23m ohm
 R_{ds(on)}=18m ohm(max) ; R_{ds(on)}=15m ohm(typical)
 V_{limit}=(5E-06 * 316K)/10=158mV
 I_{limit}=158mV/(18m*1.2) ~ 158mV/15m
 =7.31A~10.53A
 I_{ocp}=I_{limit}+Delta I/2
 =7.76A~10.98A
 Delta I=0.908A (Freq=300KHz)

+5VALWP Ipeak=6.87A ; I_{max}=4.81A
 Choke DCR_{max}=26.5m ohm, DCR_{typ}=23m ohm
 R_{ds(on)}=18m ohm(max) ; R_{ds(on)}=15m ohm(typical)
 V_{limit}=(5E-06 * 365K)/10=182.5mV
 I_{limit}=182.5mV/(18m*1.2) ~ 182.5mV/15m
 =8.44A ~ 12.16A
 I_{ocp}=I_{limit}+Delta I/2
 =8.90A ~ 12.62A
 Delta I=0.921A (Freq=400KHz)

check this part

<http://laptop-motherboards.com>

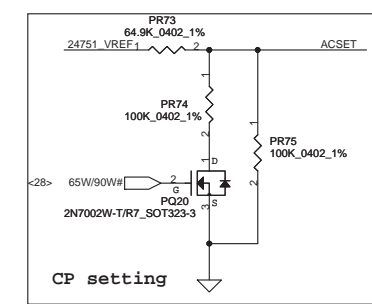
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/06/11	Deciphered Date	2010/03/12	Title	SCHMATIC, MB A5481
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ANY REPRODUCTION OR DISSEMINATION OF THIS SHEET OF ENGINEERING DRAWING WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED. THIS SHEET OF ENGINEERING DRAWING MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Document Number	401743	Rev	C	Date	Wednesday, June 24, 2009
Sheet	39	of	47		



Input OVP : 22.3V
 Input UVP : 17.26V
 Fsw : 300KHz

LI-4S : 18.0V----BATT-OVP=2.001V
 BATT-OVP=0.1112*VMB
 LI-3S : 13.5V----BATT-OVP=1.5012V
 BATT-OVP=0.1112*VMB
 Per cell=3.5V

CP Point Setting
 CP point=ladapter*85%
 65W adapter R=(100K*100K)/(100K+100K)=50K
 Vacset=3.3*(50K/(50K+64.9K))=1.436V
 CP POINT=(1.436V/3.3V)*(0.1/0.015)=2.901A

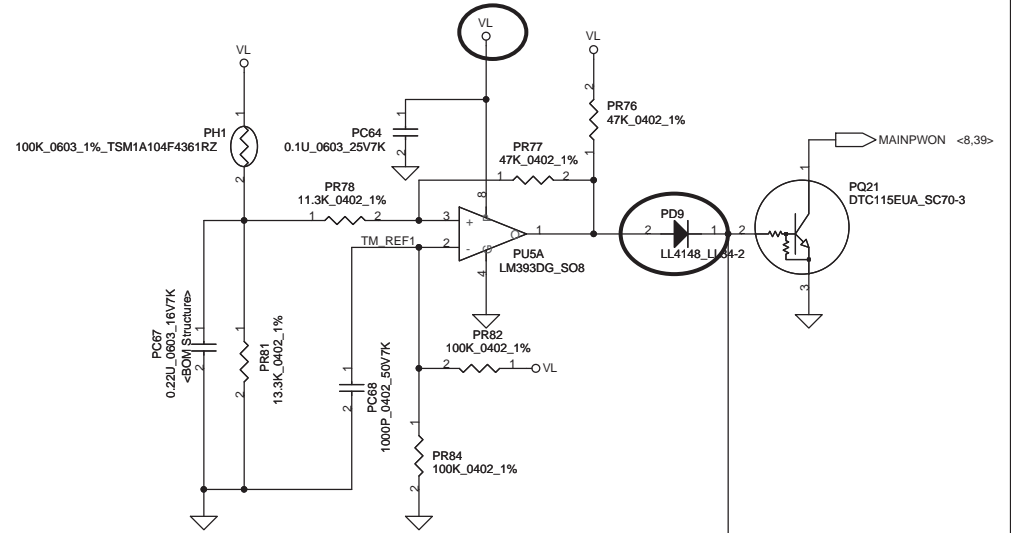


Charger ADI	Calibrate#
4.0V	L=0
4.2V	1.8755V
4.3V	2.8132V
4.35V	H=3.3V

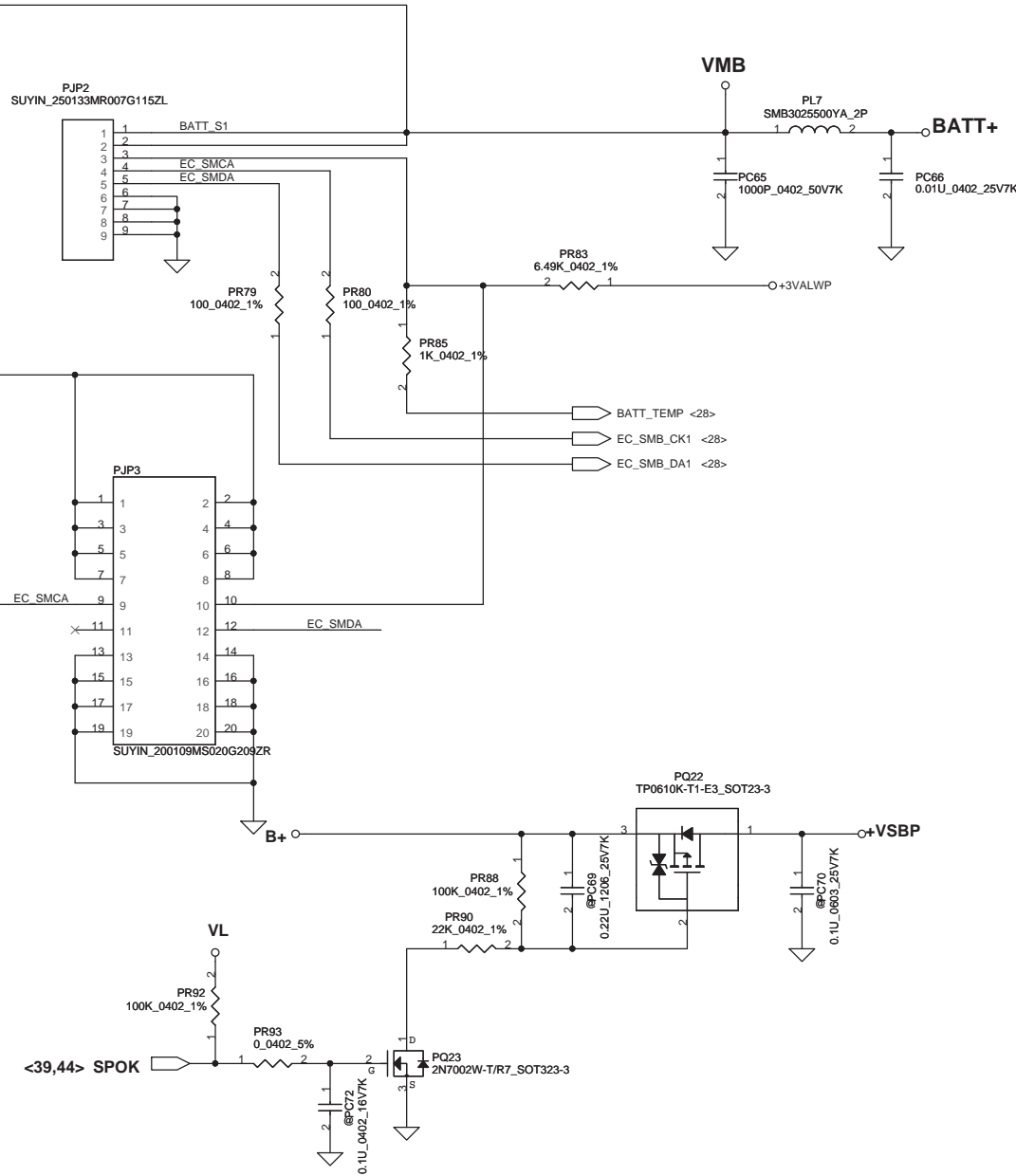
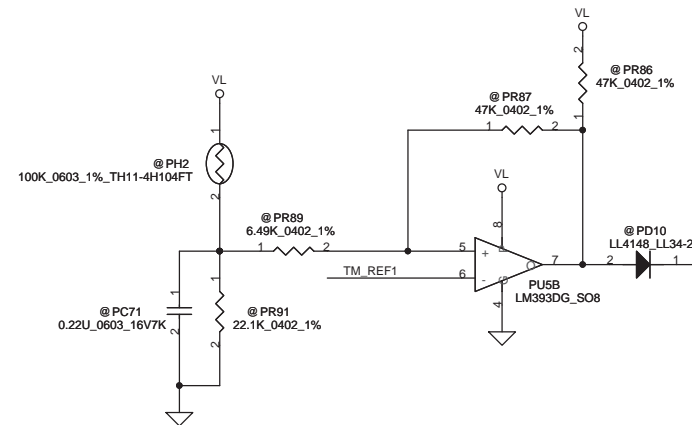
ICHG setting
 PR55 17.4K_0402_1%
 PR57 100K_0402_1%
 PR56 10_0603_5%
 PR58 499K_0402_1%
 PR59 100P_0402_50V8J
 PR60 499K_0402_1%
 PR61 0.0402_5%
 PR62 100K_0402_1%
 PR63 200K_0402_1%
 PR64 887K_0402_1%
 PR65 10K_0402_1%
 PR66 0.0402_5%
 PR67 105K_0402_1%
 PR68 340K_0402_1%
 PR69 100K_0402_1%
 PR70 210K_0402_0.1%
 PR71 499K_0402_0.1%
 PR72 100K_0402_5%
 PR73 64.9K_0402_1%
 PR74 100K_0402_1%
 PR75 100K_0402_1%

Icharge Setting
 For 2200mA, Icharge=0.8C=0.8*2*2.2=3.52A
 Icharge=(Vsrset/Vdac)*(0.1/PR46)
 IREF=((100k/(100K+17.4K))/3.3)*(0.1/0.02)=Icharge
 IREF=0.7748*Icharge

PH1 under CPU bottom side :
CPU thermal protection at 92 degree C

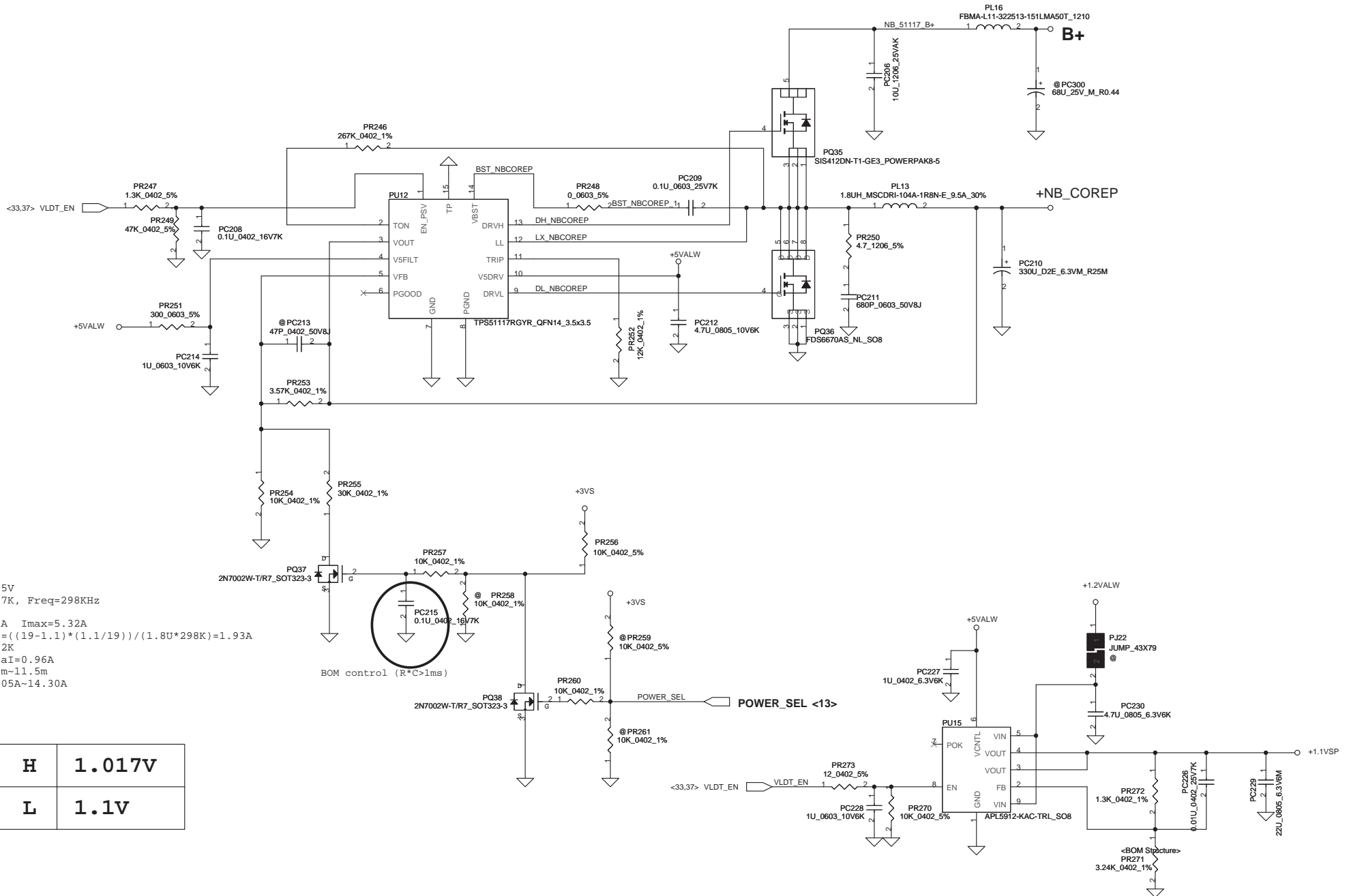


PH2 near main Battery CONN :
BAT. thermal protection at 75 degree C



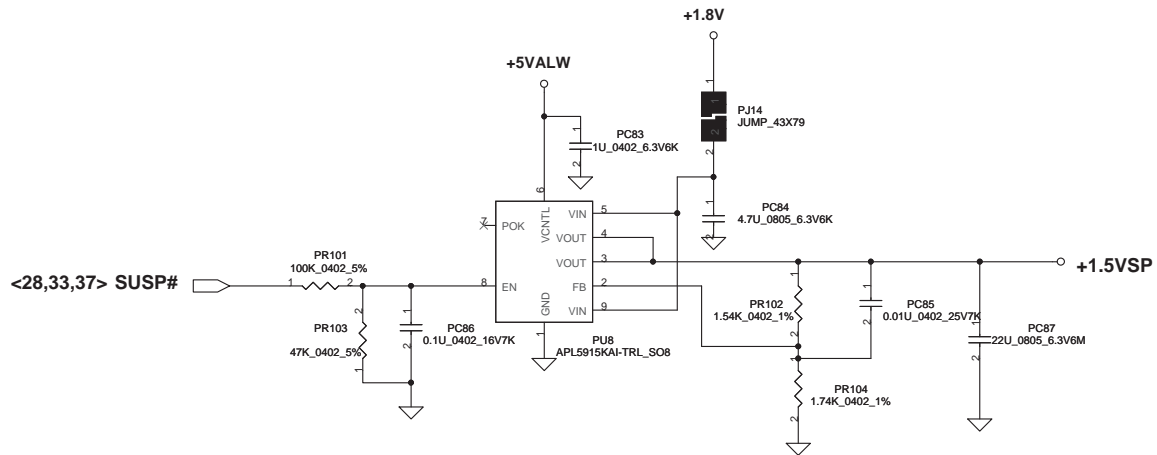
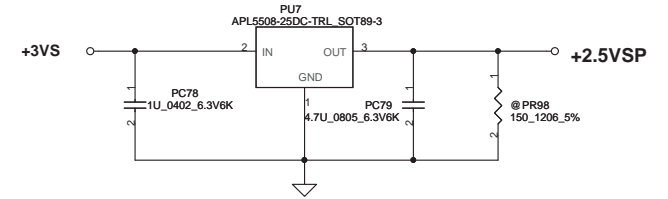
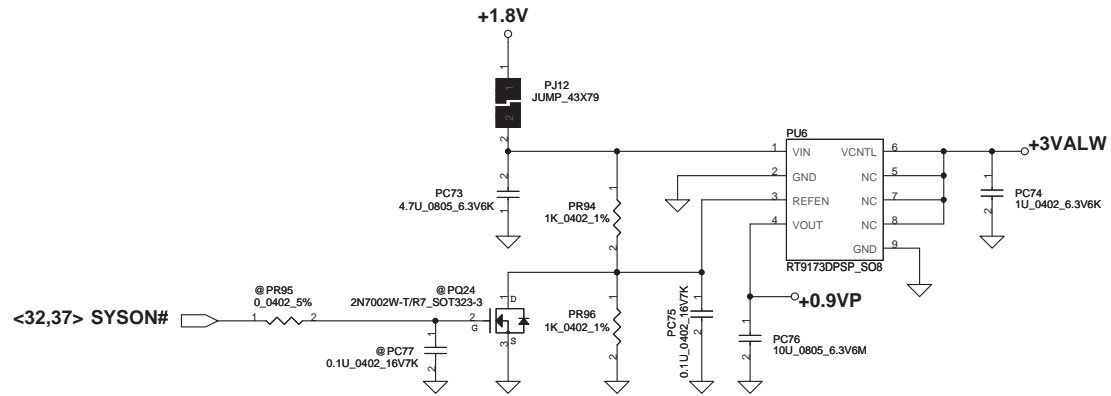
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/06/11	Deciphered Date	2010/03/12	Title	SCHEMATIC, MB A5481
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. ANY REPRODUCTION OR DISSEMINATION OF THIS SHEET WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED. ANY USE OF THIS SHEET FOR ANY OTHER PURPOSE THAN THAT FOR WHICH IT WAS DESIGNED IS PROHIBITED. ANY REPRODUCTION OR DISSEMINATION OF THIS SHEET WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED.				Document Number	401743
Date:	Wednesday, June 24, 2009	Sheet	41	of	47

<http://laptop-motherboard.com/>



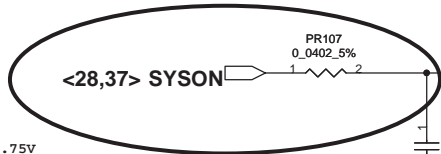
<http://laptop-motherboard.schematiclibrary.com/>

Security Classification	Compal Secret Data		Title	
Issued Date	2008/11/03	Deciphered Date	2010/03/12	SCHEMATIC, MB A5481
<small>THIS SHEET IS AN UNCLASSIFIED ENGINEERING DRAWING. IT IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS INFORMATION THAT IS UNCLASSIFIED EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</small>				Document Number 401743
Date: Wednesday, June 24, 2009				Sheet 42 of 47 Rev C



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/06/11	Deciphered Date	2010/03/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONIC, INC. AND CONTAINS CONFIDENTIAL INFORMATION. IT IS TO BE KEPT AS A SECRET AND NOT TO BE DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	
				401743	
				Date	Wednesday, June 24, 2009
				Sheet	43 of 47

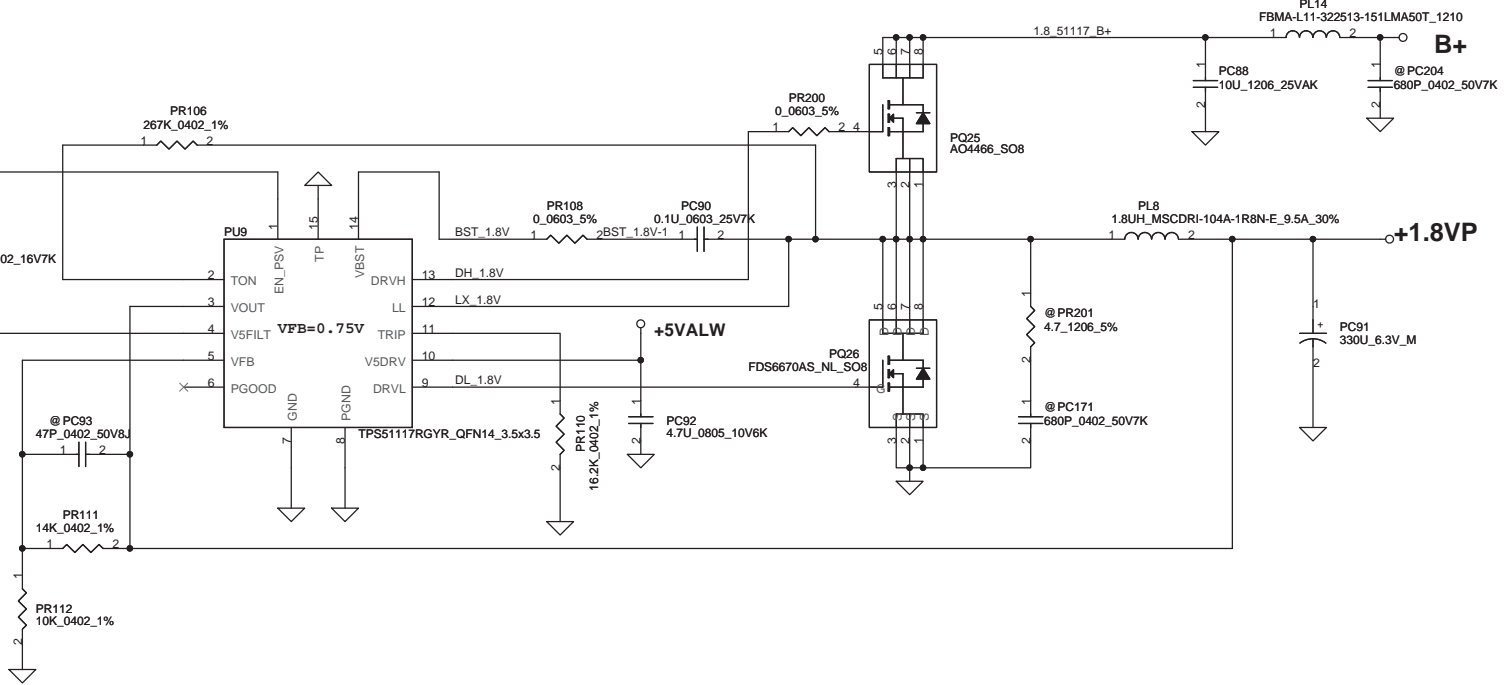
<http://laptop-motherboard.com>



VFB=0.75V
 $V_o = VFB * (1 + PR111 / PR112) = 0.75 * (1 + 14K / 10K) = 1.8V$
 $R_{ton} = 267K \Rightarrow F_{sw} = 297KHz$

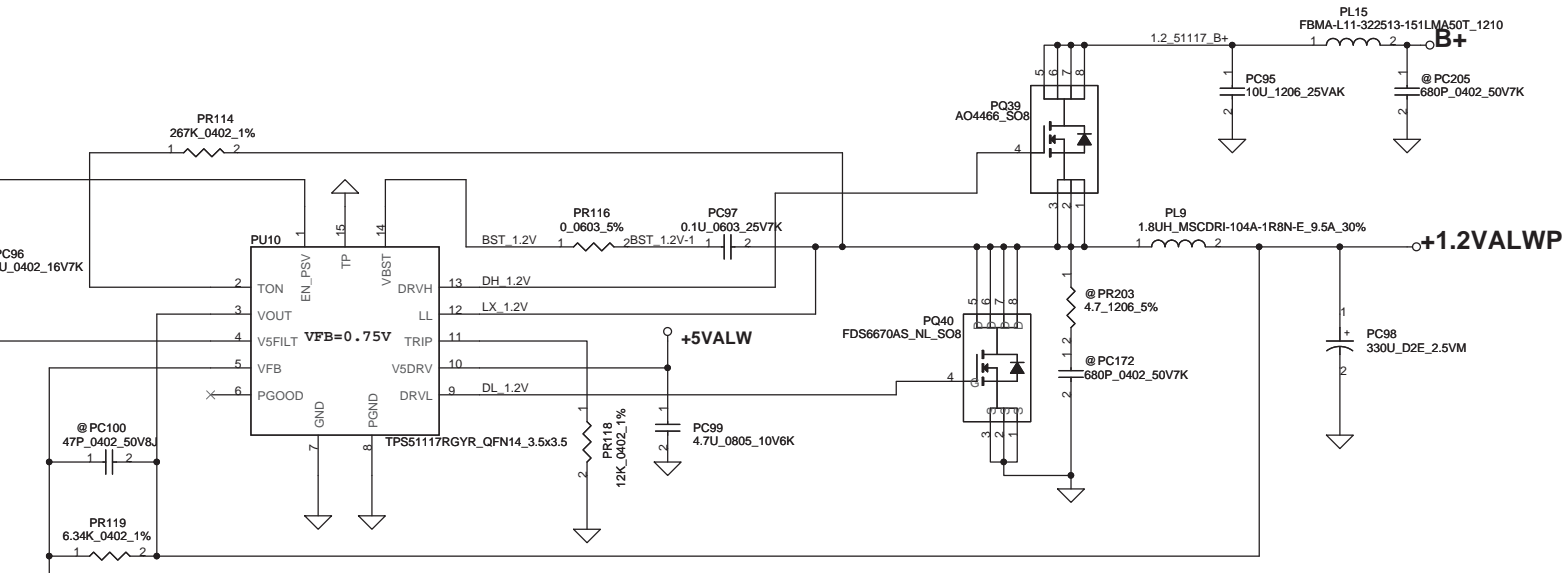
$C_{out} ESR = 15m\ \Omega$
 $I_{peak} = 11.96A, I_{max} = 8.372A$
 $\Delta I = ((19-1.8) * (1.8/19)) / (L * F_{sw})$
 $((19-1.8) * (1.8/19)) / (1.8u * 297000) = 3.048A$
 $\Rightarrow 1/2 \Delta I = 1.524A$

$R_{trip} = 16.2K$
 $I_{ocp} = 12.39A \sim 20.69A$



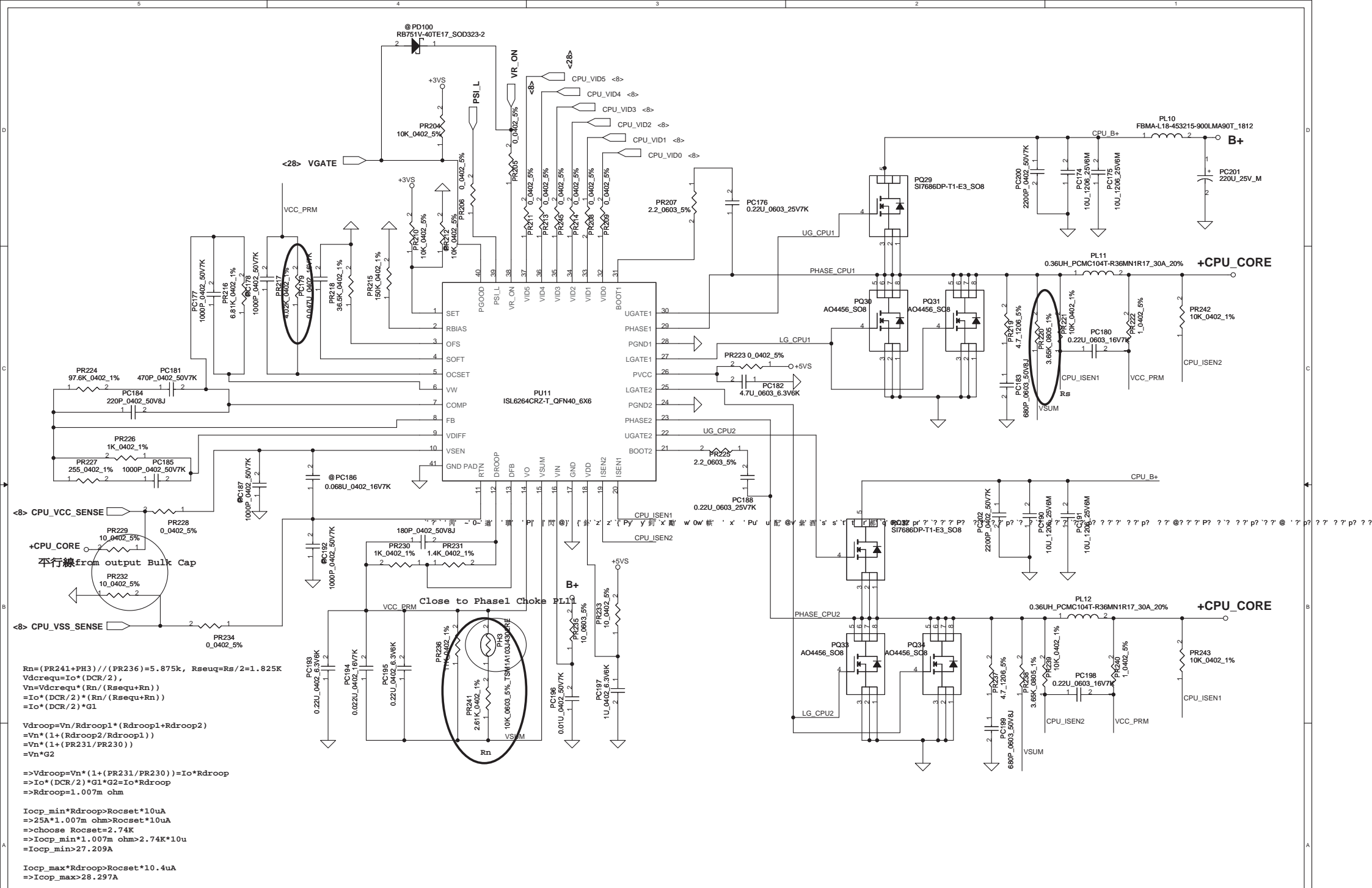
VFB=0.75V
 $V_o = VFB * (1 + PR119 / PR120) = 0.75 * (1 + 6.04K / 10K) = 1.203V$
 $R_{ton} = 267K \Rightarrow F_{sw} = 298KHz$

1.2VP $I_{peak} = 7.4A ; I_{max} = 5.180A$
 $\Delta I = ((19-1.2) * (1.2/19)) / (L * F_{sw})$
 $((19-1.2) * (1.2/19)) / (1.8u * 298000) = 2.10A$
 $\Rightarrow 1/2 \Delta I = 1.05A$
 $R_{dson} = 11.5m\ \Omega / 9m\ \Omega$
 $set\ R_{trip} = 12K$
 $I_{ocp_min} = 9.11A$
 $I_{ocp_max} = 14.38A$



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/06/11	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. NO REPRODUCTION OR DISSEMINATION OF THIS INFORMATION IS PERMITTED WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	
				401743	
				Date:	Wednesday, June 24, 2009
				Sheet	44 of 47

<http://laptop-motherboard.schematics.org/>



<http://laptop-motherboard.com/forum/showthread.php?p=1000000>

Security Classification	Compal Secret Data		Title	
Issued Date	2008/06/11	Deciphered Date	2010/03/12	SCHEMATIC, MB A5481
<small>THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF COMPAL ELECTRONICS, INC. AND CONTAINS TRADE SECRETS AND CONFIDENTIAL INFORMATION. IT IS THE PROPERTY OF COMPAL ELECTRONICS, INC. AND IS TO BE USED ONLY FOR THE PURPOSES AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</small>			Document Number	Rev
			401743	C
			Date: Wednesday, June 24, 2009	Sheet 45 of 47

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

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1	HW required to adjust from 1.14V to 1.12V	HW required to adjust from 1.14V to 1.12V	0.1	42	Change PR271 from SD034300180 (S RES 1/16W 3K +-1% 0402) to SD034324180 (S RES 1/16W 3.24K 0402 1%)	09, 05/07	to PVT
2	Power sequense adjust.	HW required to adjust power sequense.	0.1	42	Add PC208 SE076104K80 (S CER CAP .1U 16V K X7R 0402)	09, 05/07	to PVT
3	Power sequense adjust.	HW required to adjust power sequense.	0.1	42	Change PR247 from SD028000080 (S RES 1/16W 0 +-5% 0402) to SD028130180 (S RES 1/16W 1.3K 0402 5%)	09, 05/07	to PVT
4	NB_COREP working frequency has issue.	Because NB_COREP working frequency will be gitter while system at heavy loading. Change to larger ESR Cap will be solve.	0.1	42	Change PC210 from SGA19331D00 (S POLY C 330U 2.5V M D2 TPE LESR15M H1.8) to SGA00002B00 (S POLY C 330U 6.3V M D2E ESR25M TPE H1.8)	09, 05/07	to PVT
5	BOM error	BOM error	0.1	42	Add PR270 SD28100280(S RES 1/16W 10K 0402 5%)	09, 05/07	to PVT
6	BOM error	BOM error	0.1	42	Change PR103 from SD028470280(S RES 1/16W 47K 0402 5%) to SD028100280(S RES 1/16W 10K 0402 5%)	09, 05/07	to PVT
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							

<http://laptop.com> <http://www.compal.com>

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/06/11	Deciphered Date	2010/03/12	Title	SCHMATIC, MB A5481
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS INFORMATION IS TO BE KEPT FROM THE CUSTOMER, THE CUSTOMER'S EMPLOYEES, AND ANY OTHER PERSONS UNLESS AUTHORIZED BY COMPAL ELECTRONICS, INC. IN WRITING. THIS SHEET IS NOT TO BE REPRODUCED, COPIED, OR MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	401743
				Date:	Wednesday, June 24, 2009
				Sheet	46 of 46

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

Item	Reason for change	Modify List	PG#	Date	Item	Reason for change	Modify List	Rev.	PG#
1	PWR update circuit			4/9	26				
2	BOM change	R118 reserve	P.18	4/9	27				
3	BOM change	Change R178, R179 to 90.9/158 ohm	P.16	4/9	28				
4	BOM change	R30, R39 reserve	P.24	4/9	29				
5	BOM change	Add C30	P.38	4/9	30				
6	BOM change	Add R634, R639	P.28	4/9	31				
7	BOM change	C383 Reserve	P.24	4/9	32				
8		Pop R419	P.20	4/10	33				
9	PWR update circuit			5/15					
10	For Panel flash issue	R1,D2 Reserve, pop R763	P.24	5/18					
11	For Panel flash issue	Add R414 and non-pop	P.24	5/18					
12	Lid_SW intial issue	Add R19	P.28	5/18					
13	HPET timer issue	Change C288,C290 to 33P	P.16	5/18					
14	BOM change	change C276,C279 10P to 27P	P.19	5/19					
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

<http://laptop-motherboard.schematic-blog.com/>

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2005/03/08	Deciphered Date	2010/03/12	Title	SCHEMATIC, MB A5481
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, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Custom
				Document Number	401743
				Date	Wednesday, June 24, 2009
				Sheet	47 of 47
				Rev	C