

Compal Confidential

NAV51 Schematics Document

Intel Pineview Processor with Tigerpoint + DDRII

2010-03-31

REV: 1.0

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2006/08/18	Deciphered Date	2007/8/18	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 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 NAV51 LA-6311P
				Date: Tuesday, April 13, 2010	Rev 1.0
				Sheet 1 of 33	

Compal Confidential

Model Name : NAV51
File Name : LA-6311P

zzz
PCB
DA60000H810

Clock Generator
CK505
page 8

Thermal Sensor
EMC1402
page 5

CRT Conn
page 10

LCD Conn.
page 9

Pineview
FCBGA 559
22x22mm
page 4, 5, 6

DDRII-SO-DIMM
page 7

DMI
X2 mode
GEN1

Tigerpoint
PCBGA360
17x17mm
page 11, 12, 13, 14

MINI Card x1
WLAN
page 20

10/100 Ethernet
AR8132L
page 20

Transfermer
RJ45

HDD
page 16

Azalia Codec
ALC272
page 20

AMP & INT
Speaker

INT MIC

HeadPhone &
MIC Jack

USB Port X2
page 20

BlueTooth
page 15

CMOS CAM
page 9

Card Reader
ENE UB6252
page 20
SD/MMC
CONN

I/O Board

ENE KBC
KB926
page 17

Int.KBD
page 19

Touch Pad
page 19

SPI ROM
page 17

Power ON/OFF
page 18

DC/DC Interface
page 25

DC IN
page 23

3VALW/5VALW
page 26

BATT IN
page 24

0.89VP/1.5VP
0.9VSP/2.5VSP
page 28

CHARGER
page 25

1.8V/VCCP
page 27

CPU_CORE
page 29

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2006/08/18	Deciphered Date	2007/8/18	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 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	Rev 1.0
				Date:	Tuesday, April 13, 2010	Sheet 2 of 33

Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	ON	ON	ON
B+	AC or battery power rail for power circuit.	ON	ON	ON
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+0.9VS	0.9V switched power rail for DDR terminator	ON	OFF	OFF
+VCCP	VCCP switched power rail	ON	OFF	OFF
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8V	1.8V power rail for DDR	ON	ON	OFF
+0.89V	Graphic core power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5VS	5V switched power rail	ON	OFF	OFF
+VSB	VSB always on power rail	ON	ON	ON*
+RTCVCC	RTC power	ON	ON	ON

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

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

BOARD ID Table(Page 17)

Vcc	3.3V +/- 5%			
Ra/Rc/Re	100K +/- 5%			
Board ID	Rb / Rd / Rf	VAD_BID min	VAD_BID typ	VAD_BID max
0 (EVT)	0	0 V	0 V	0 V
1 (DVT)	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2 (PVT)	18K +/- 5%	0.436 V	0.503 V	0.538 V
3 (MP)	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 Table

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

External PCI Devices

DEVICE	IDSEL #	REQ/GNT #	PIRQ
--------	---------	-----------	------

No PCI Device

EC SM Bus1 address

Device	Address	Device	Address
Smart Battery	0001 011X b	EMC1402	100_1100

EC SM Bus2 address

Tiger Point SM Bus address

Device	Address
Clock Generator (SLG8SP556VTR)	1101 001Xb
DDR DIMMA	1010 000Xb

USB table

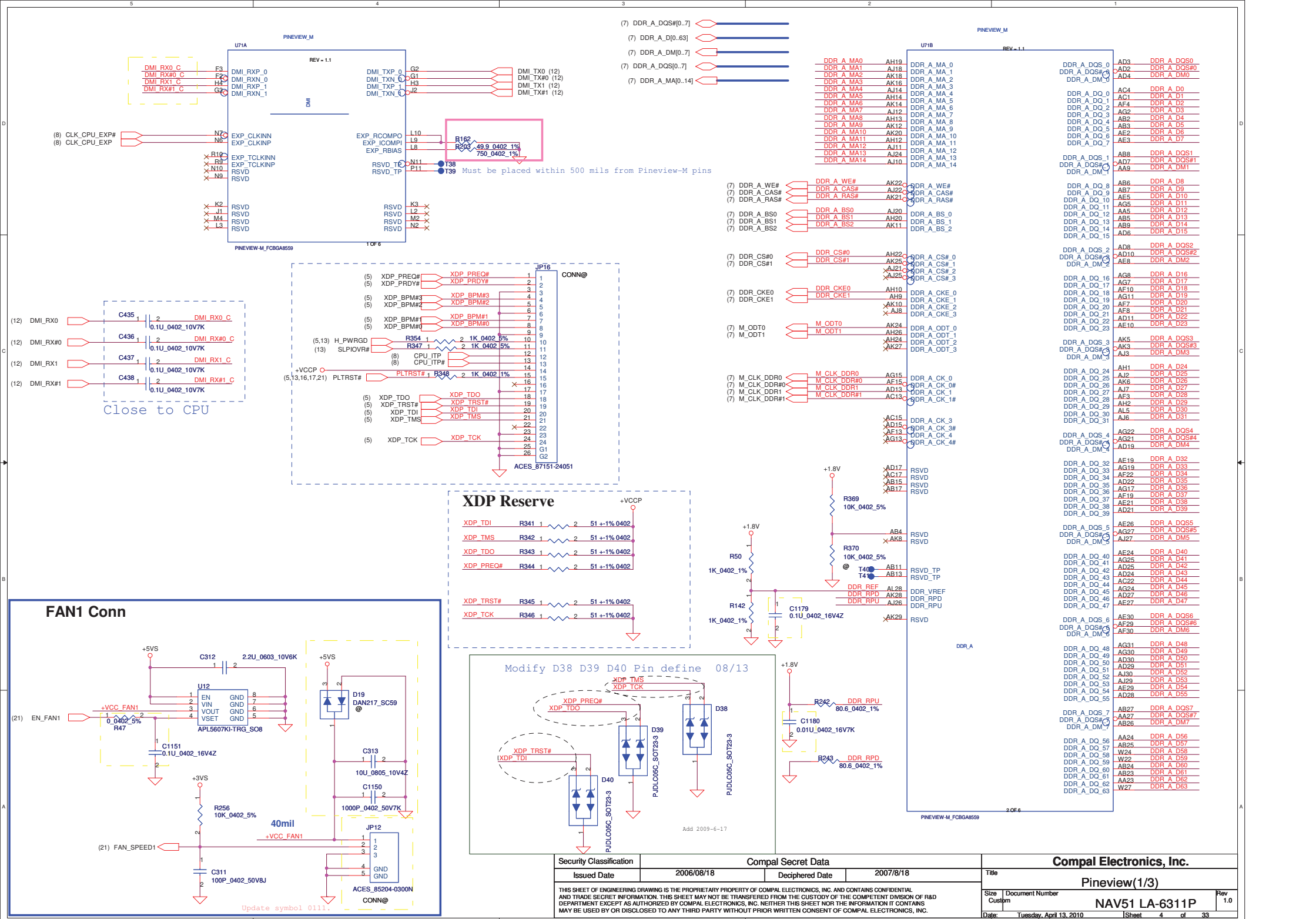
EHCI1	UHCI1	Port0	MB USB Conn1.
		Port1	MB USB Conn2.
	UHCI2	Port2	
		Port3	CMOS
EHCI2	UHCI3	Port4	Card Reader
		Port5	
	UHCI4	Port6	BT
		Port7	WLAN
	UHCI5	Port8	
		Port9	
	UHCI6	Port10	
		Port11	

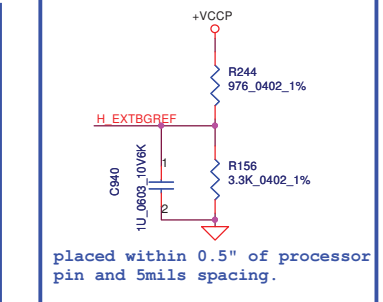
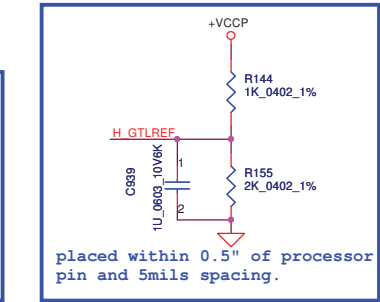
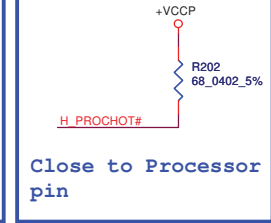
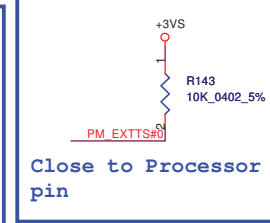
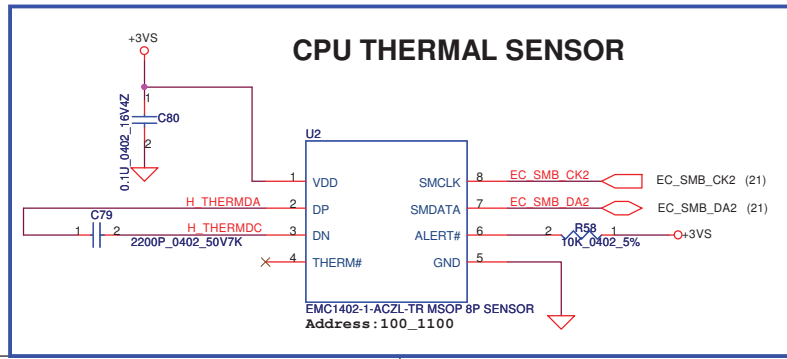
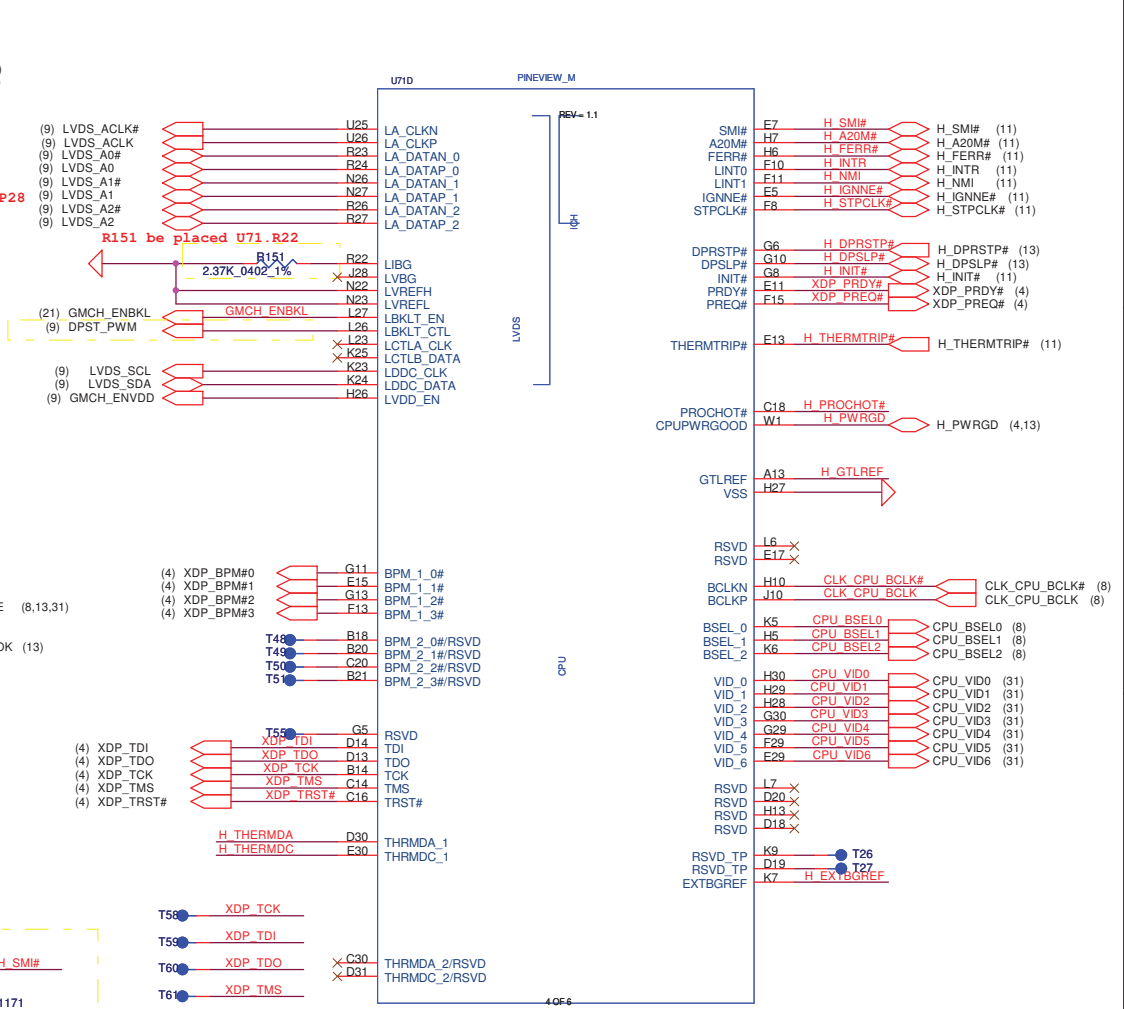
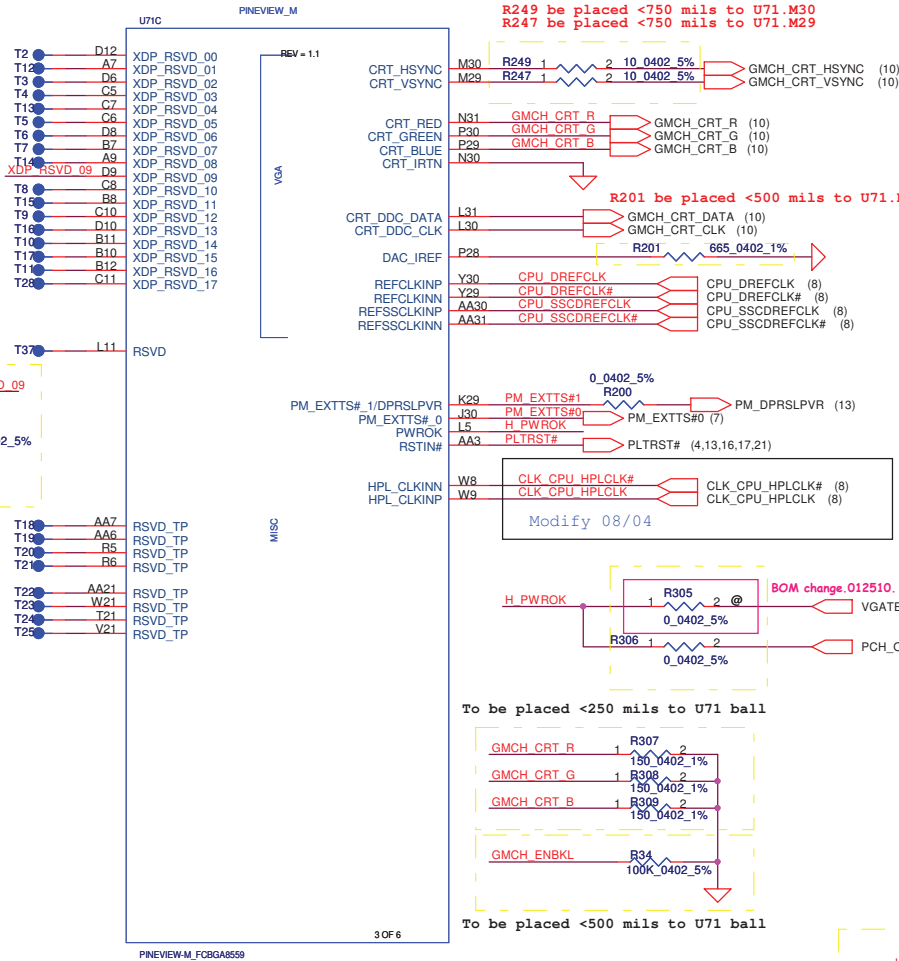
PCIE table

PCIE port1	LAN
PCIE port2	Wireless Card
PCIE port3	
PCIE port4	
PCIE port5	
PCIE port6	

SATA table

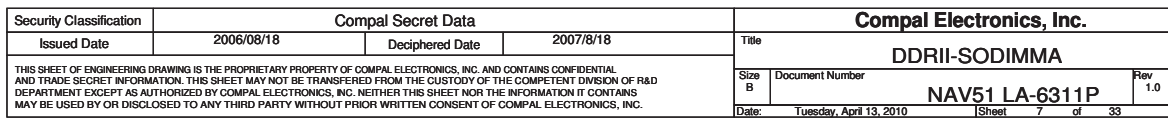
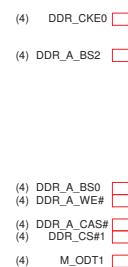
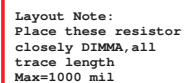
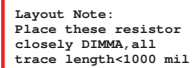
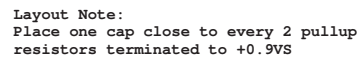
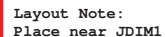
SATA port0	HDD
SATA port1	
SATA port2	
SATA port3	
SATA port4	
SATA port5	



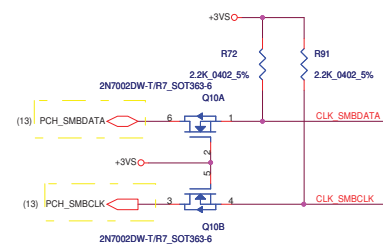
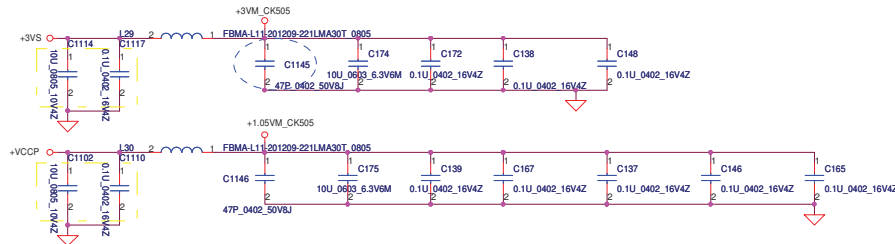


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2006/08/18	Deciphered Date	2007/8/18	Pineview(2/3)	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE 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
				NAV51 LA-6311P	
				Date: Tuesday, April 13, 2010	Rev 1.0
				Sheet 5 of 33	

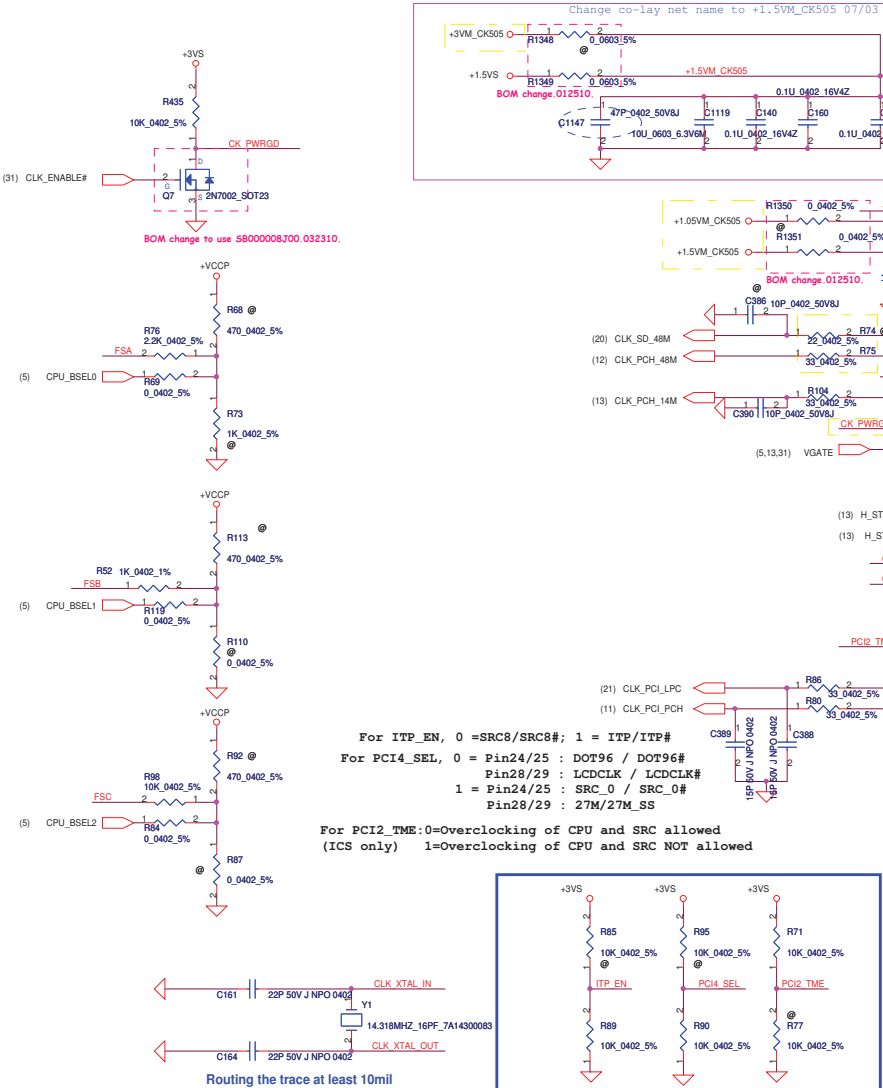
Security Classification		Compal Secret Data		Compal Electronics, Inc.			
Issued Date		2006/08/18	Deciphered Date	2007/8/18	Title		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT USED AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE REPRODUCED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					Pineview(3/3)		
					Size	Document Number	Rev 1.0
					Custom	NAV51 LA-6311P	
					Date:	Tuesday, April 13, 2010	
					Sheet	6 of 33	



FSC CLKSEL2	FSB CLKSEL1	FSA CLKSEL0	CPU MHz	SRC MHz	PCI MHz	REF MHz	DOT_96 MHz	USB MHz
0	0	0	266	100	33.3	14.318	96.0	48.0
0	0	1	133	100	33.3	14.318	96.0	48.0
0	1	0	200	100	33.3	14.318	96.0	48.0
0	1	1	166	100	33.3	14.318	96.0	48.0
1	0	0	333	100	33.3	14.318	96.0	48.0
1	0	1	100	100	33.3	14.318	96.0	48.0
1	1	0	400	100	33.3	14.318	96.0	48.0
1	1	1	Reserved					



SA00003H730 (Realtek :RTM890N-397-VC-GRT)



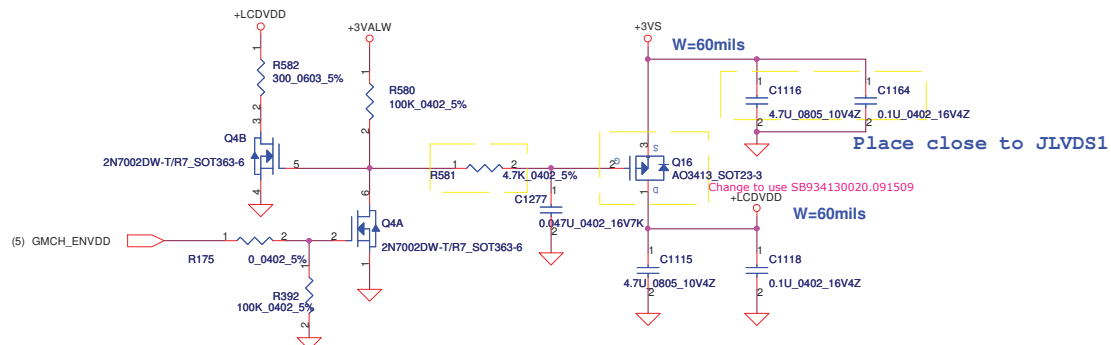
SRC PORT LIST

PORT	DEVICE
SRC1	CPU_SSCDREFCLK
SRC2	
SRC3	
SRC4	PCIE_WLAN
SRC6	PCIE_SATA
SRC7	PCIE_PCH
SRC8	CPU_ITP
SRC9	CLK_CPU_EXP
SRC10	PCIE_LAN
SRC11	

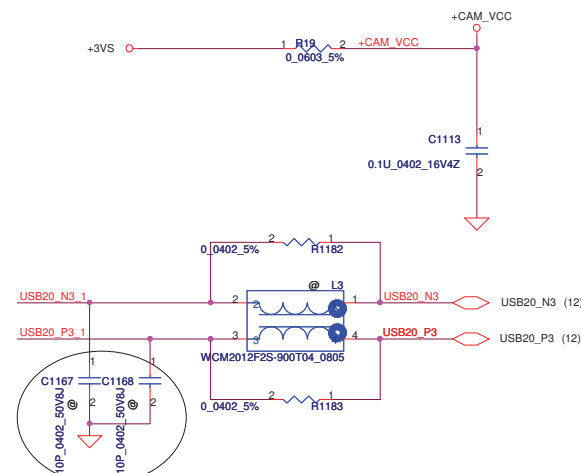
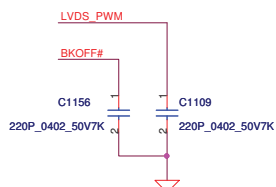
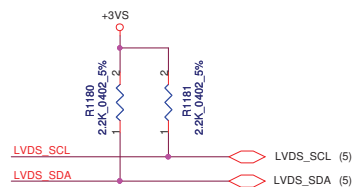
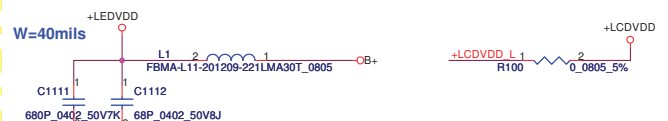
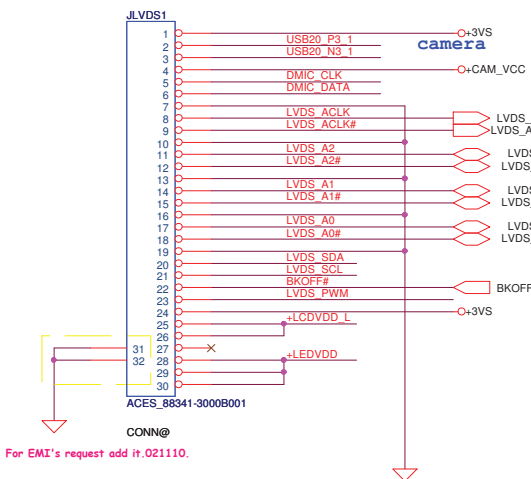
REQ PORT LIST

PORT	DEVICE
REQ_3#	
REQ_4#	PCIE_WLAN
REQ_6#	
REQ_7#	
REQ_9#	
REQ_10#	PCIE_LAN
REQ_11#	
REQ_A#	

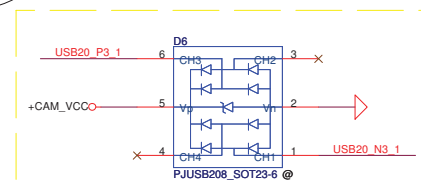
LCD POWER CIRCUIT



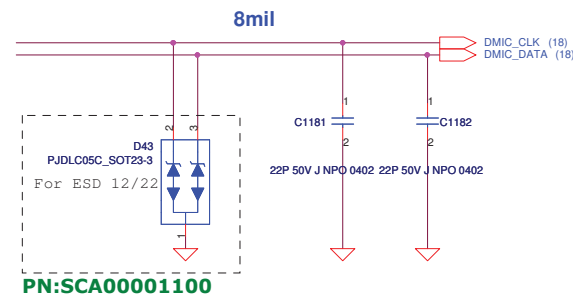
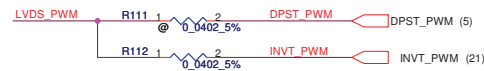
CMOS & LCD/PANEL BD. Conn.



Add for RF 07/02

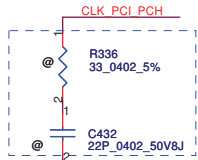


Reserve D6 for ESD.011310.
Swap D6 .011510.

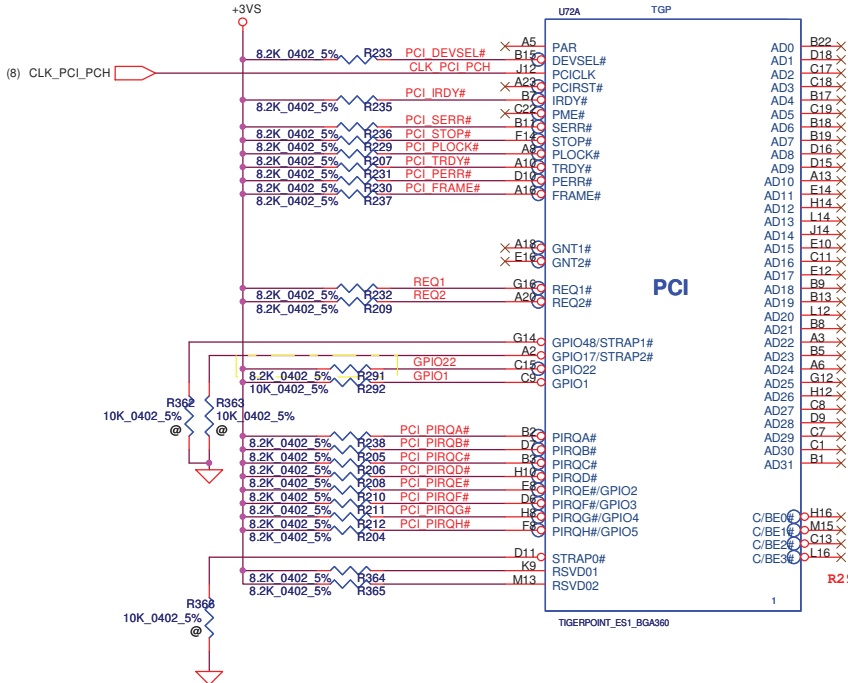


PN:SCA00001100

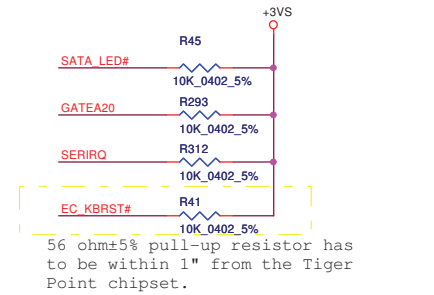
Security Classification				Compal Secret Data				Compal Electronics, Inc.			
Issued Date				2006/08/18				Title			
Deciphered Date				2007/8/18				LVDS /INVERTER			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Date				Tuesday, April 13, 2010			
Size B				Document Number				NAV51 LA-6311P			
Rev 1.0				Sheet 9 of 33							



For EMI, close to TigerPoint



R294 be placed <200 mils to U72.AD23

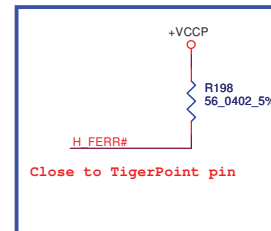


SATA

HOST

Placed within 500 mils of Tiger point chipset pin.

STRAP2# GPIO17	STRAP1# GPIO48	Boot BIOS
0	1	SPI
1	0	PCI
1	1	LPC



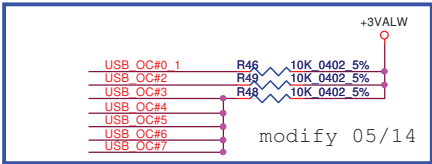
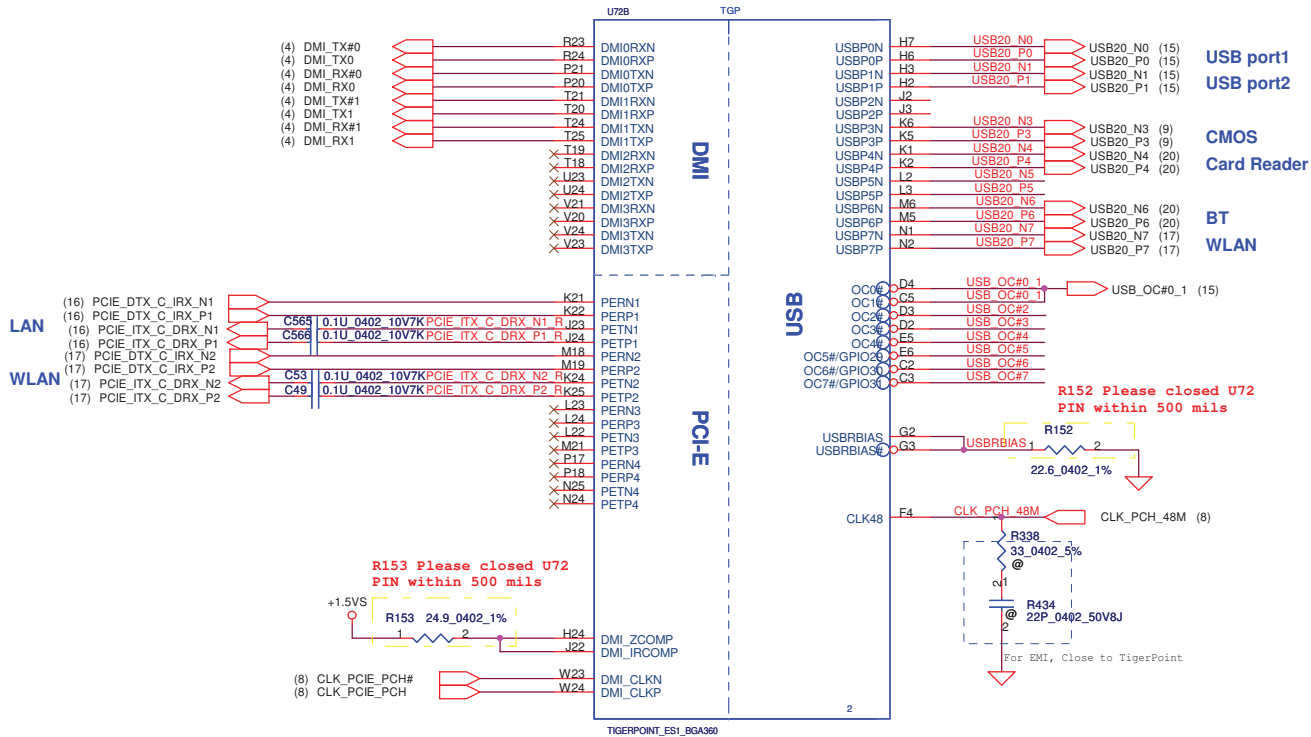
ESD request

H_A20M#	C450@	2	100P_0402_50V8J
H_IGNNE#	C451@	2	100P_0402_50V8J
H_INIT#	C452@	2	100P_0402_50V8J
H_INTR	C453@	2	100P_0402_50V8J
H_FERR#	C454@	2	100P_0402_50V8J
H_NMI	C455@	2	100P_0402_50V8J
H_SMI#	C456@	2	100P_0402_50V8J
H_STPCLK#	C457@	2	100P_0402_50V8J

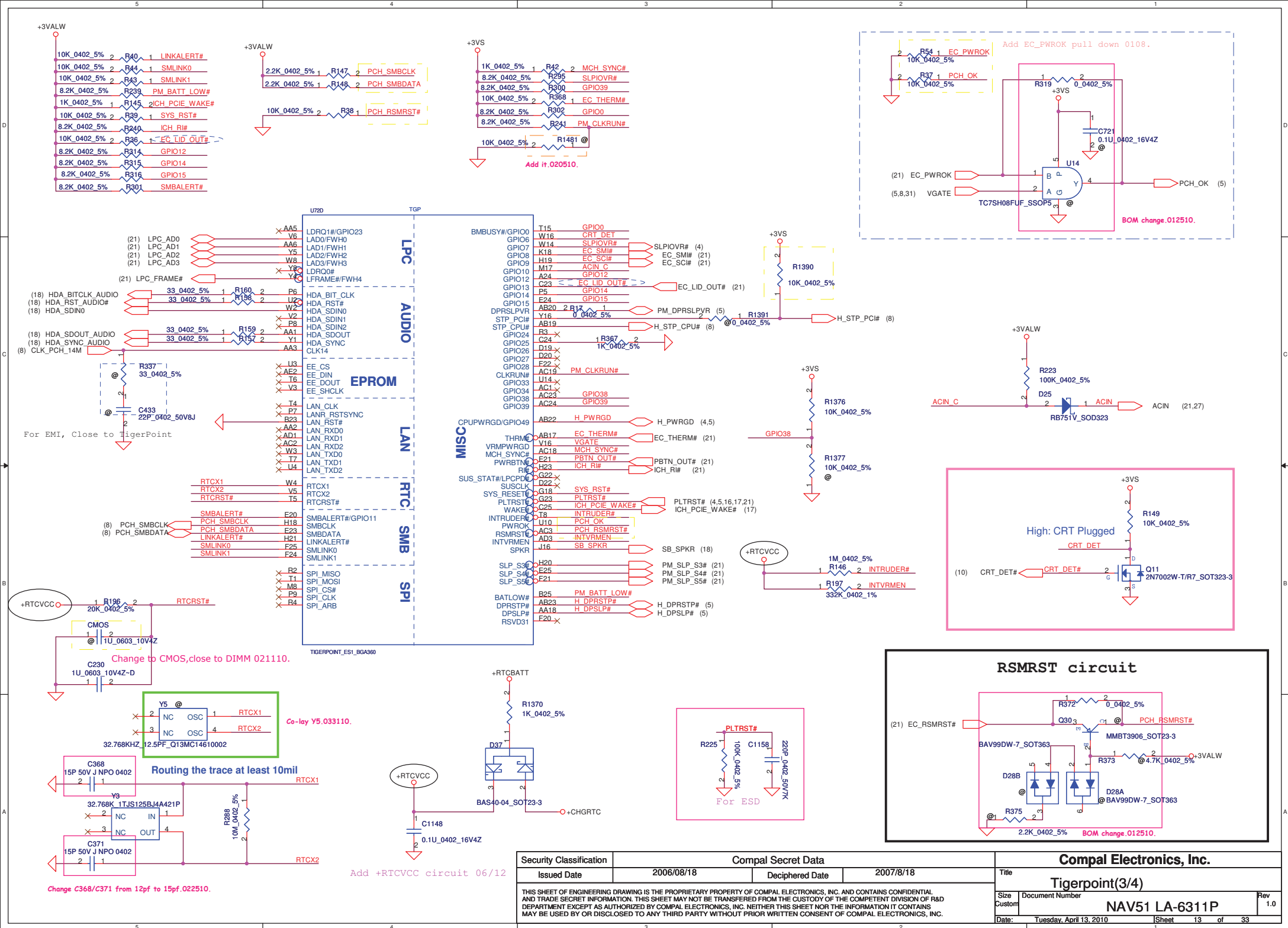
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2006/08/18	Deciphered Date	2007/8/18	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Tigerpoint(1/4)	
Size	Document Number	NAV51 LA-6311P		Rev	1.0
Date:	Tuesday, April 13, 2010	Sheet	11	of	33

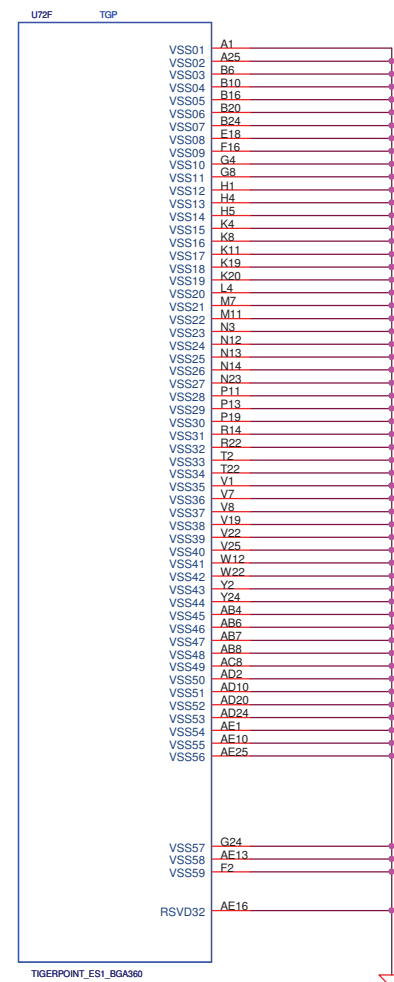
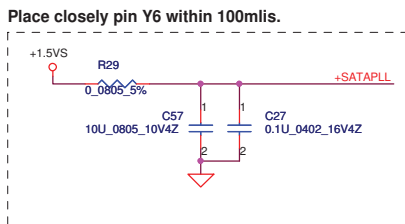
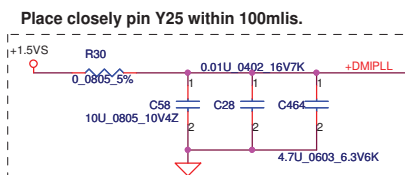
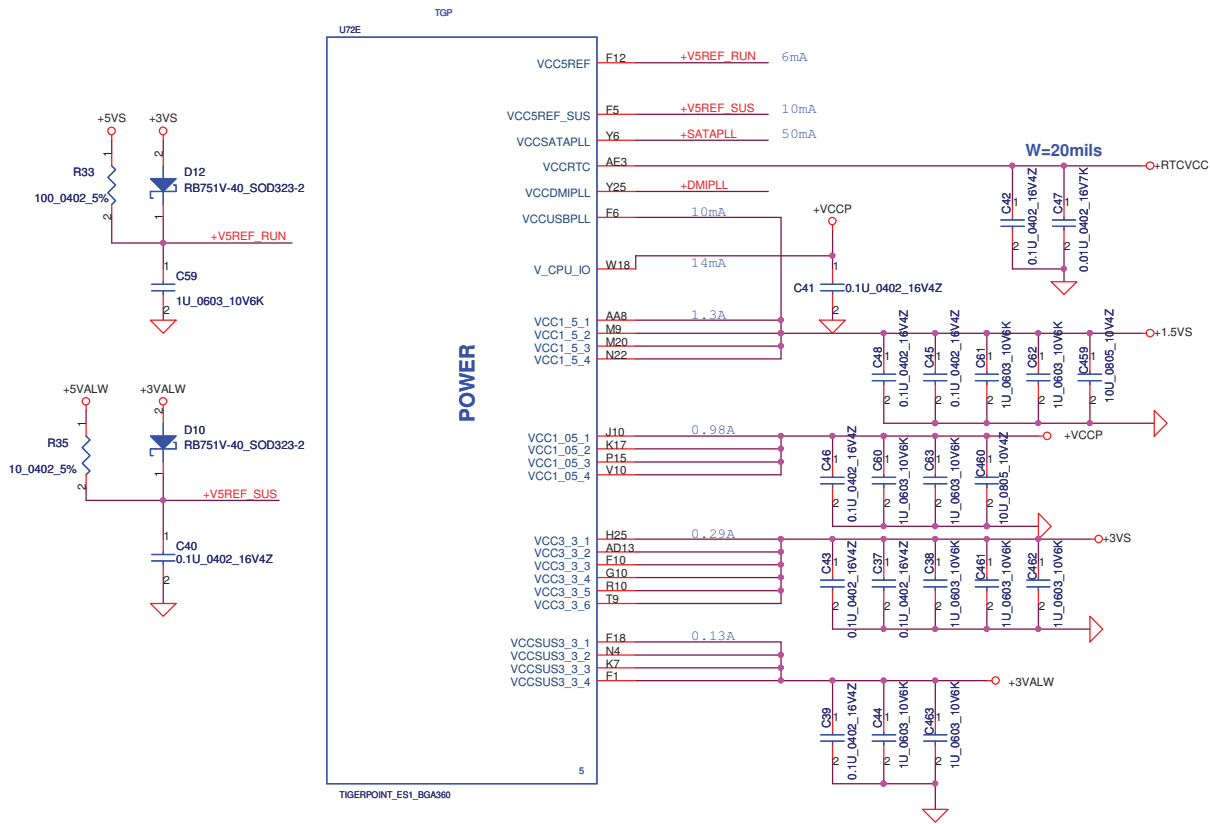
PCIe Port List	
1	LAN
2	WLAN
3	
4	

USB Port List	
0	USB Left1
1	USB Left2
2	
3	CMOS
4	CardReader
5	
6	BT
7	WLAN



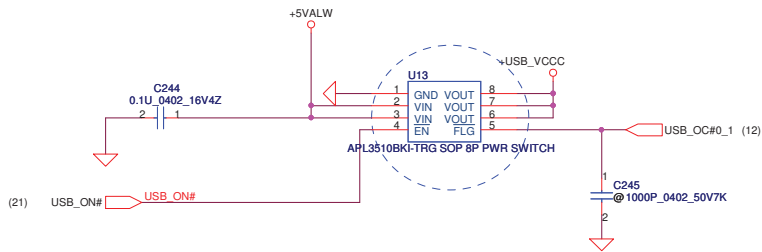
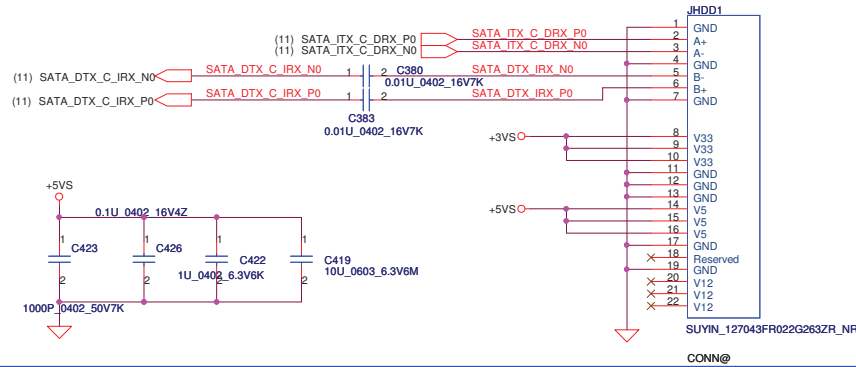
Security Classification				Compal Secret Data				Compal Electronics, Inc.			
Issued Date				2006/08/18				Deciphered Date			
2007/8/18				Title				Tigerpoint(2/4)			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. 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			
								NAV51 LA-6311P			
								Date: Tuesday, April 13, 2010			
								Sheet 12 of 33			
								Rev 1.0			



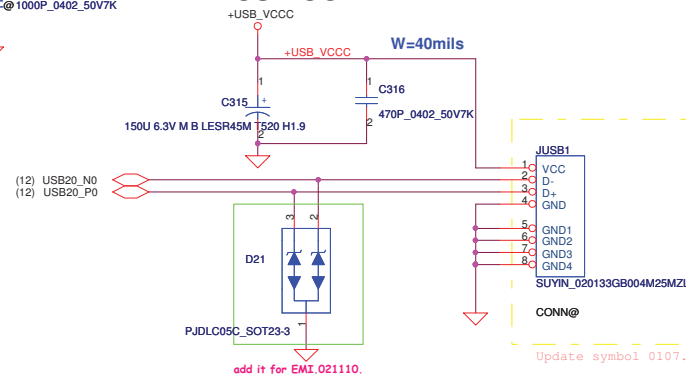


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2009/04/15	Deciphered Date	2010/04/15	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Tigerpoint(4/4)	
Size	Custom	Document Number	NAV51 LA-6311P	Rev	0.1
Date:	Tuesday, April 13, 2010	Sheet	14	of	33

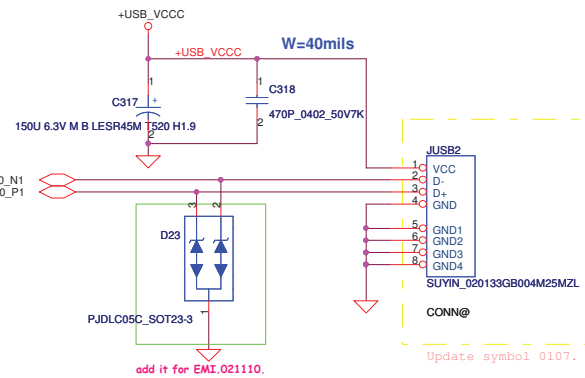
SATA HDD Conn.



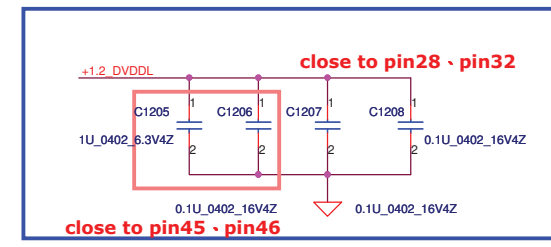
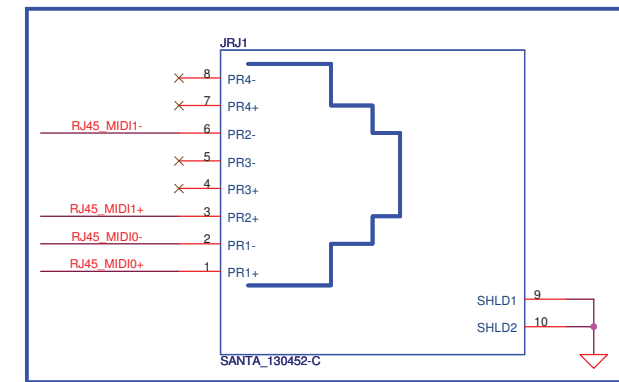
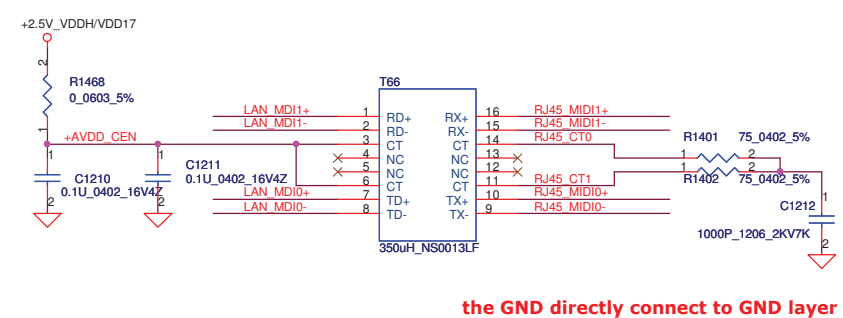
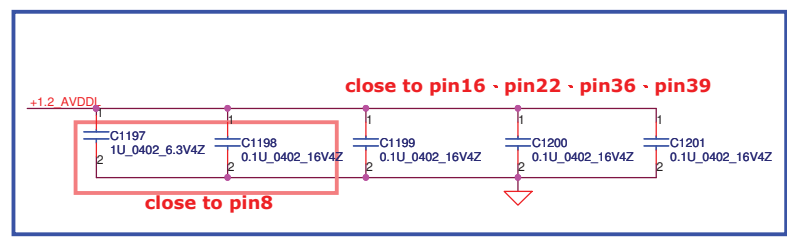
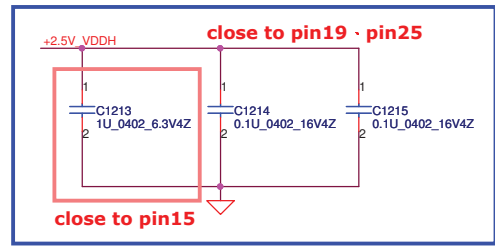
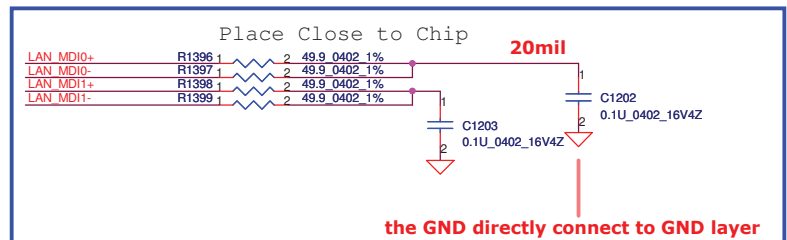
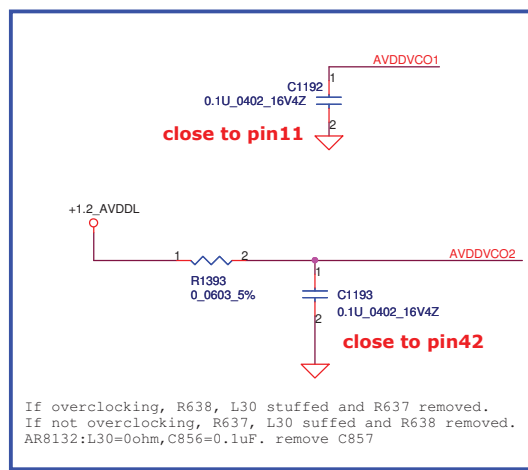
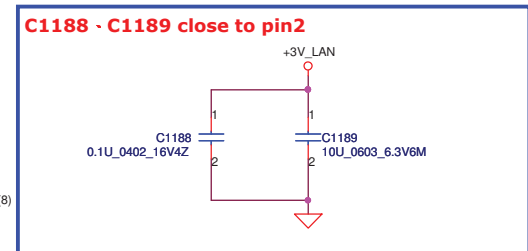
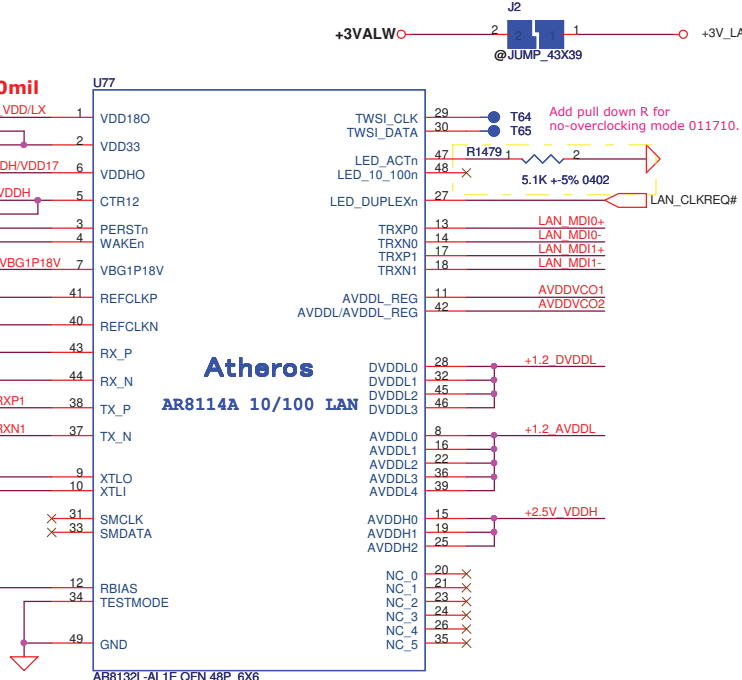
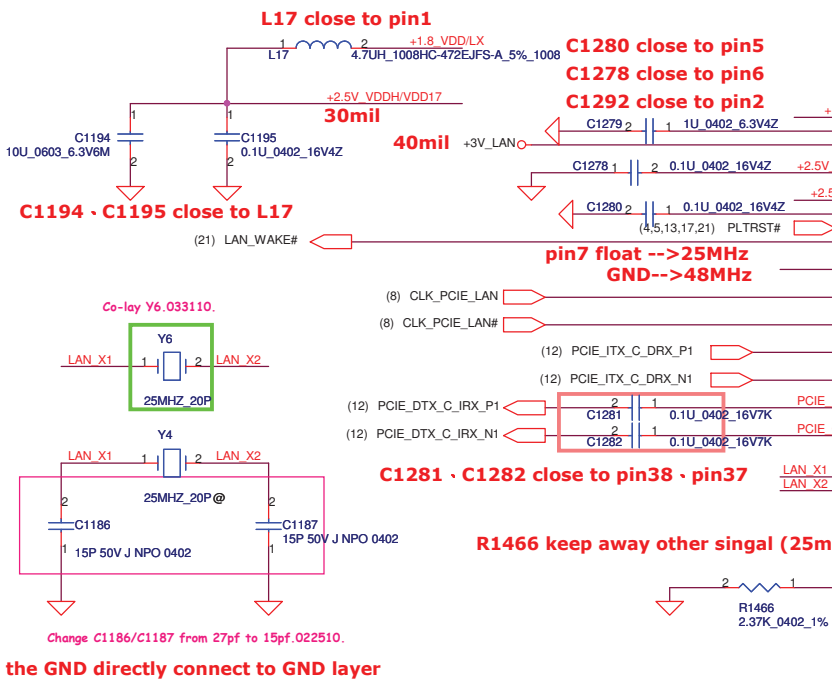
USB CONN.1



USB CONN.2

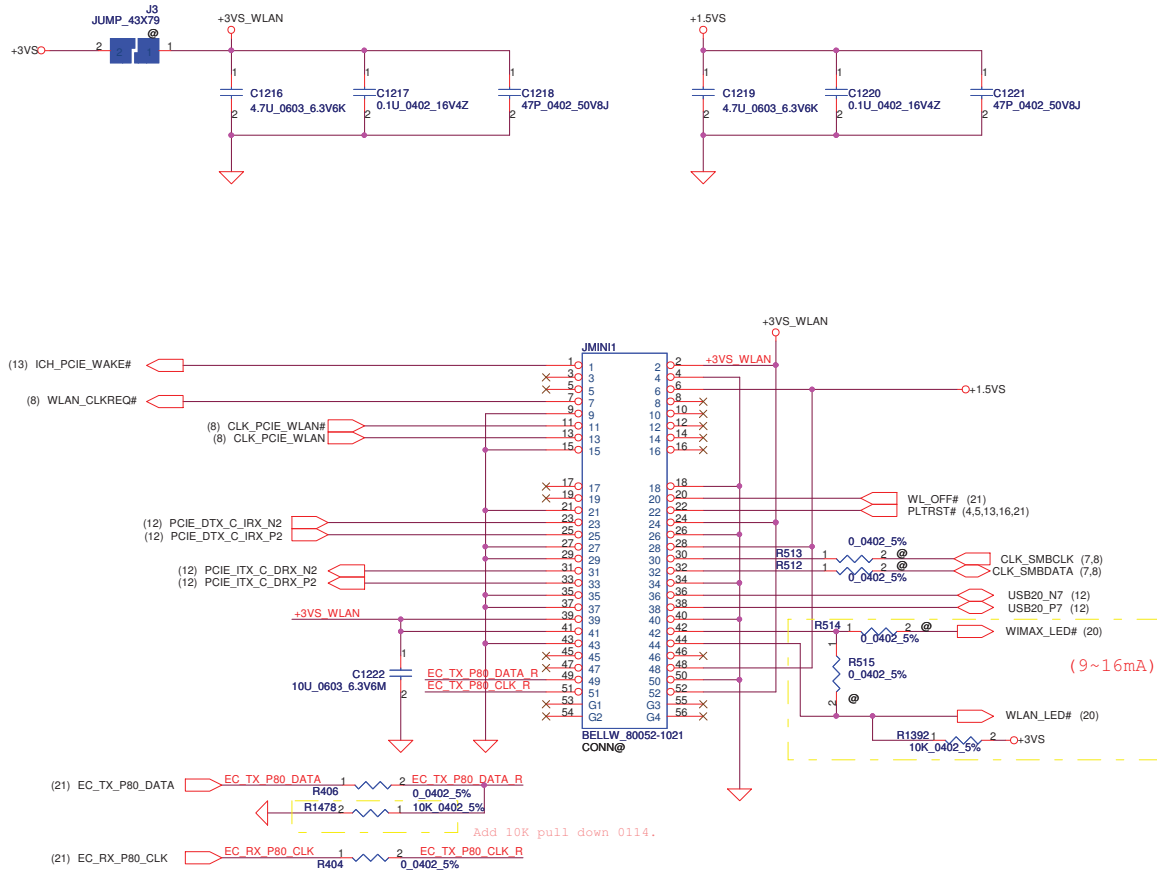


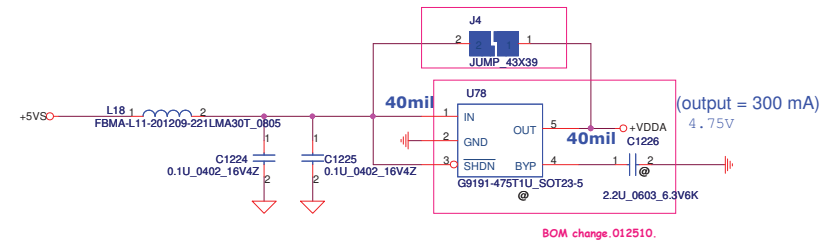
Security Classification		Compal Secret Data		Compal Electronics, Inc.					
Issued Date		2006/08/18		Deciphered Date		2007/8/18			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.						Title		SATA,CONN. / USB CONN.	
Size B		Document Number		NAV51 LA-6311P				Rev 0.2	
Date:		Tuesday, April 13, 2010		Sheet 15		of 33			



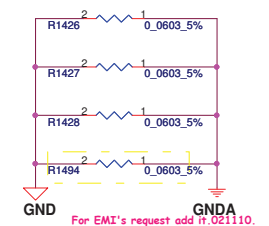
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2006/08/18	Deciphered Date	2007/8/18	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Atheros 8131	
Size	Custom	Document Number	NAV51 LA-6311P	Rev	1.0
Date:	Tuesday, April 13, 2010	Sheet	16	of	33

Mini-Express Card for WLAN



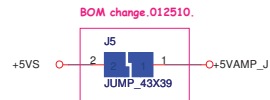


HD Audio Codec



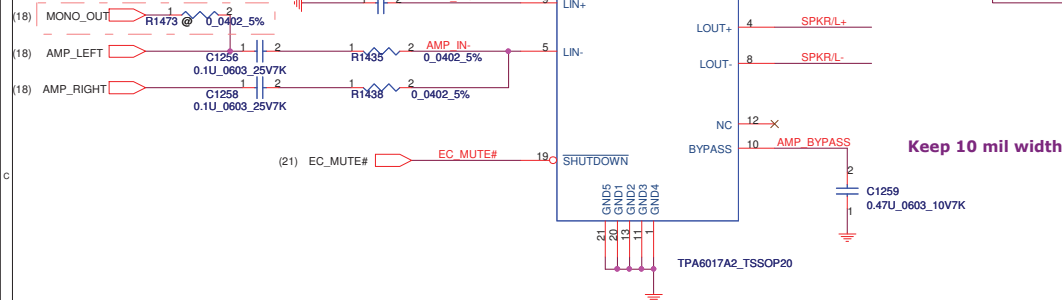
Change to SA00002CI20 ALC272-VA2-GR

Security Classification		Compal Secret Data		Compal Electronics, Inc.		
Issued Date	2006/08/18	Deciphered Date	2007/8/18	Title HD Audio Codec ALC272		
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 NAV51 LA-6311P	Rev 1.0
				Date: Tuesday, April 13, 2010		
				Sheet 18 of 33		



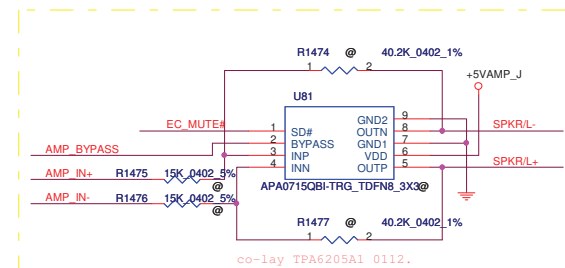
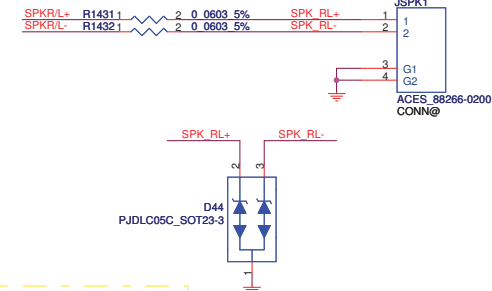
change C1255 - C1256 - C1257 - C1258 - C1283 from 0.47uF to 0.1uF 20100113

reserve the mono out 20100113

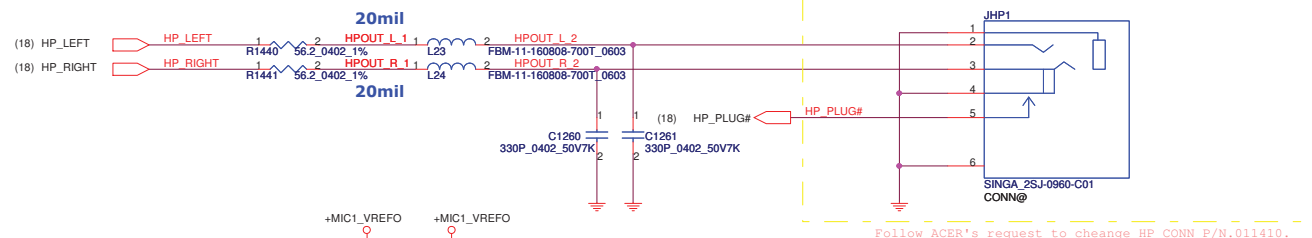


Int. Speaker Conn.

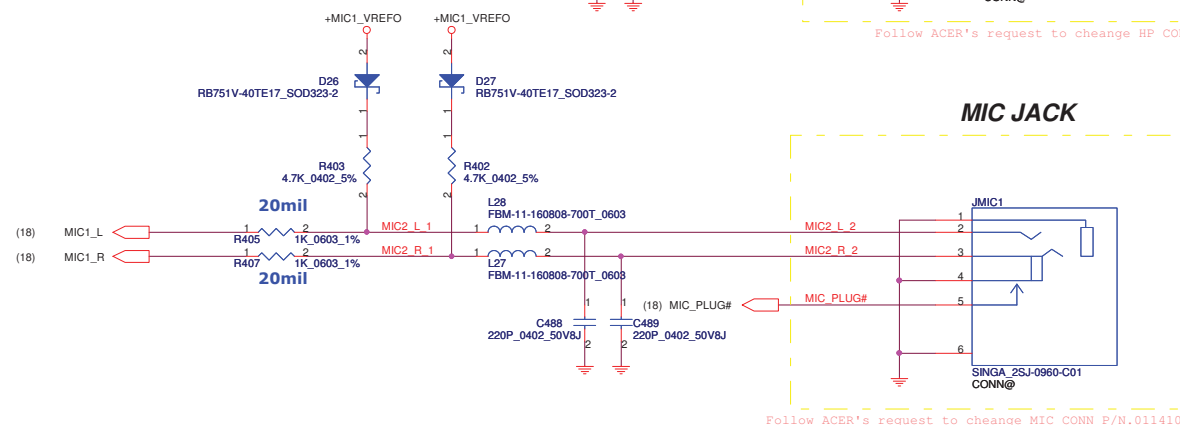
20mil



(Use NAL00 PCB Footprint) Headphone Out



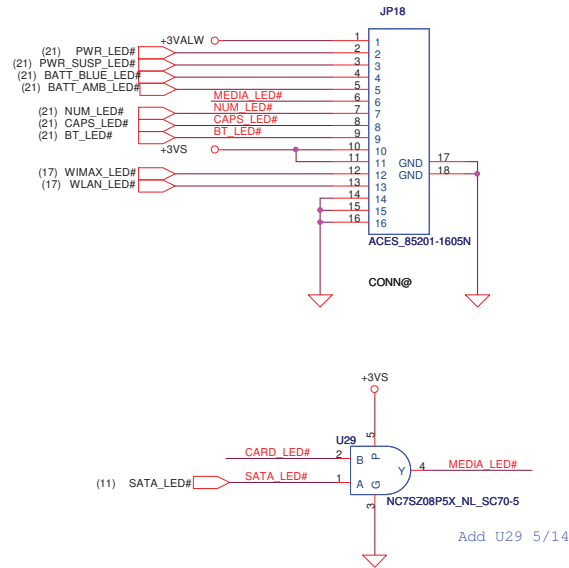
MIC JACK



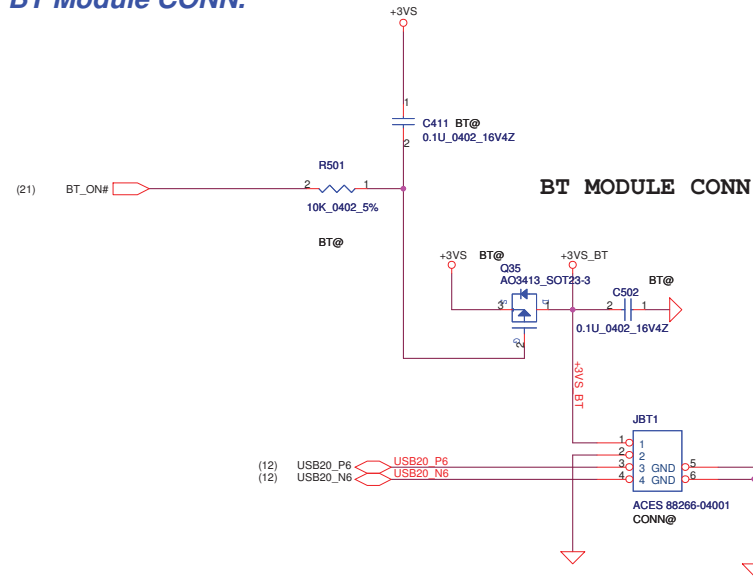
Compal Electronics, Inc.

Title: <Title> Amplifier & Audio Jack			
Size: Custom	Document Number: NAV51 LA-6311P	Rev: 0.1	
Date: Tuesday, April 13, 2010	Sheet: 19	of 33	

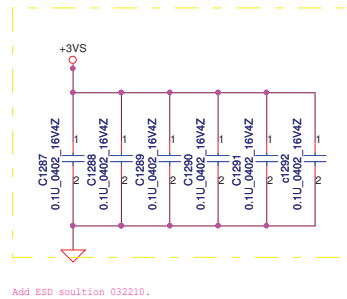
LED PCB CONN.



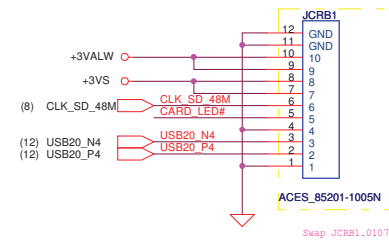
BT Module CONN.



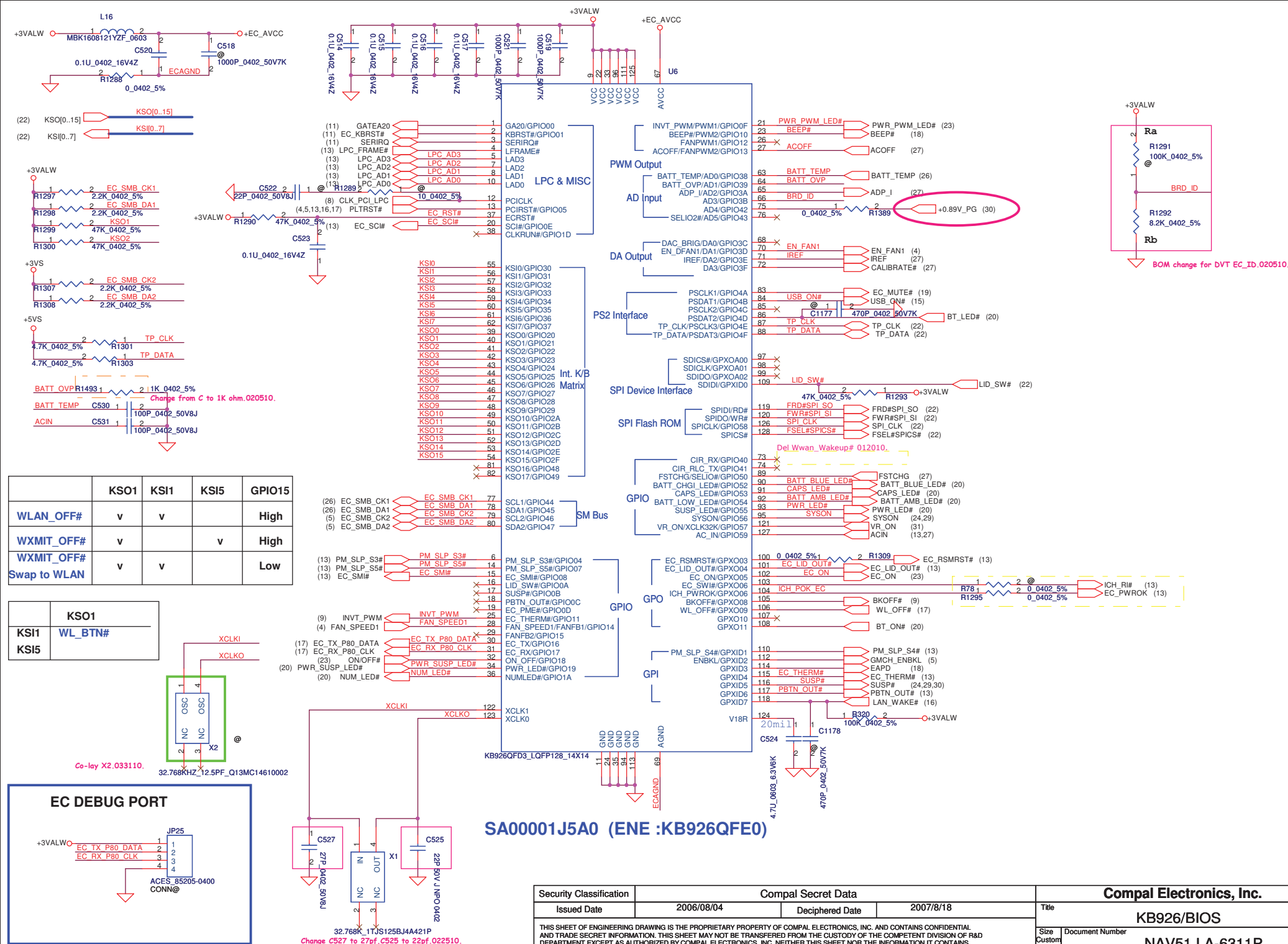
ESD



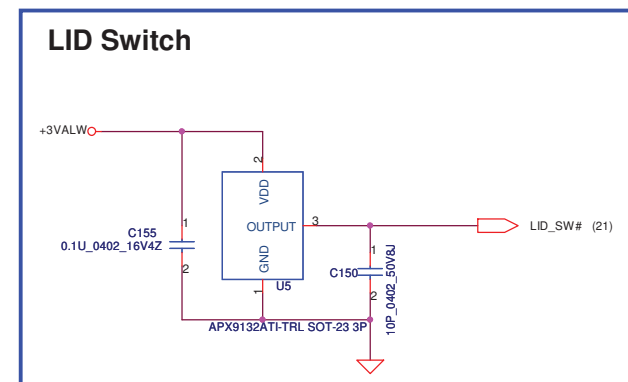
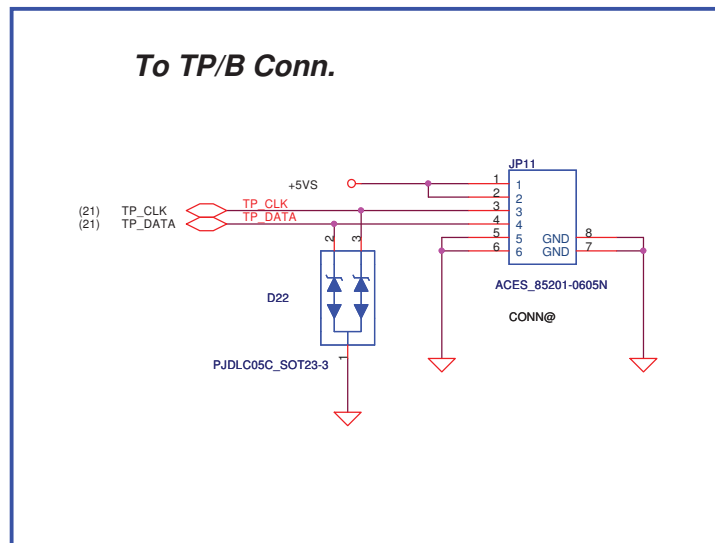
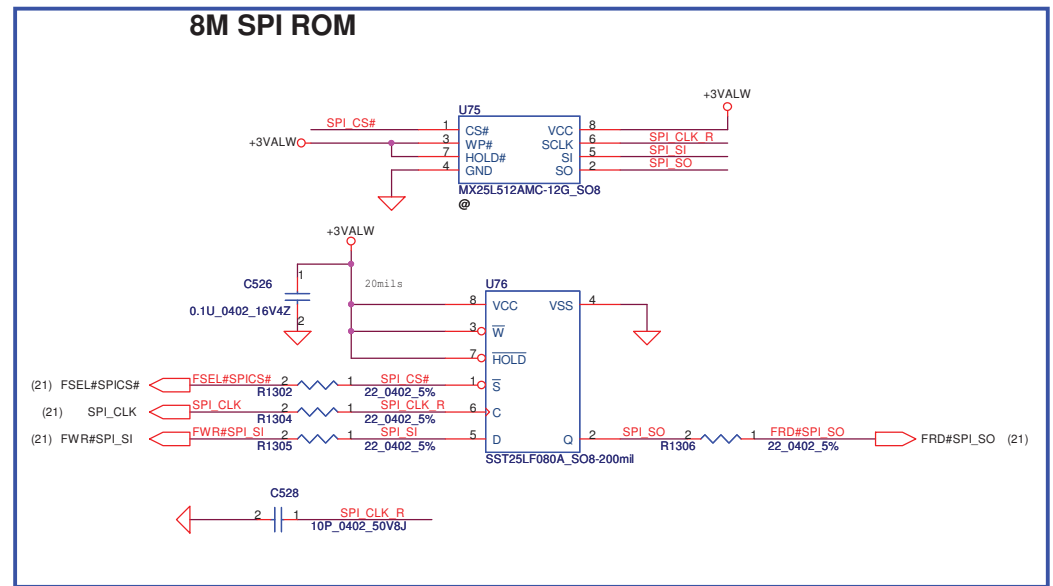
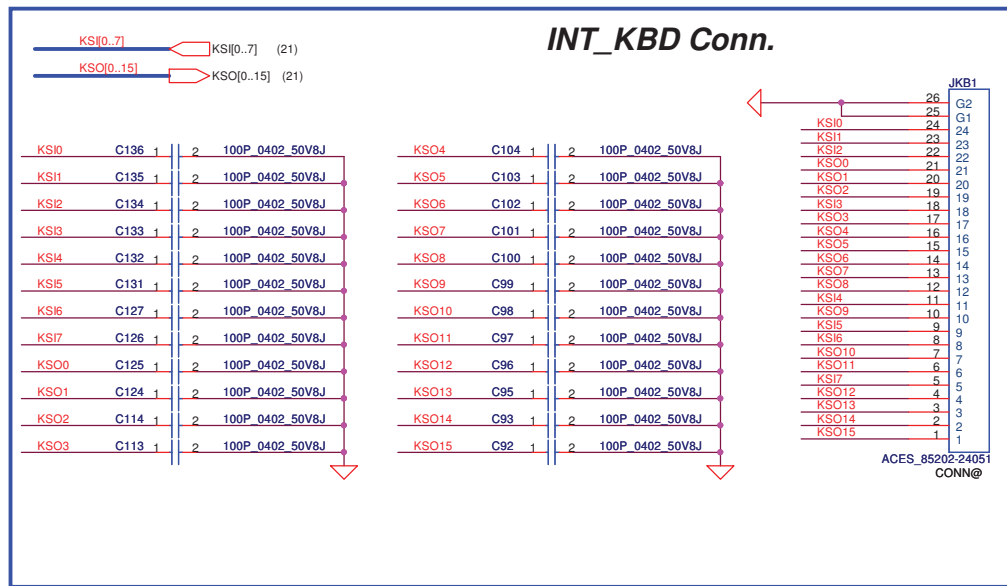
Card Reader CONN.



Security Classification		Compal Secret Data				Compal Electronics, Inc.							
Issued Date		2009/01/22		Deciphered Date		2009/11/20		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.						Card reader							
						Size		Document Number		NAV51 LA-6311P		Rev	
						Custom						0.1	
						Date:		Tuesday, April 13, 2010		Sheet		20 of 33	

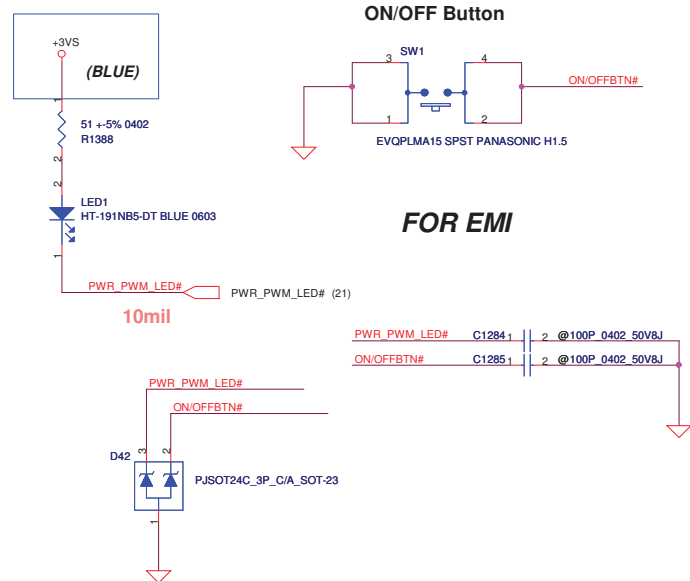


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2006/08/04	Deciphered Date	2007/8/18	Title	KB926/BIOS
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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	Rev
				Custom	1.0
				NAV51 LA-6311P	
Date:	Tuesday, April 13, 2010	Sheet	21	of	33

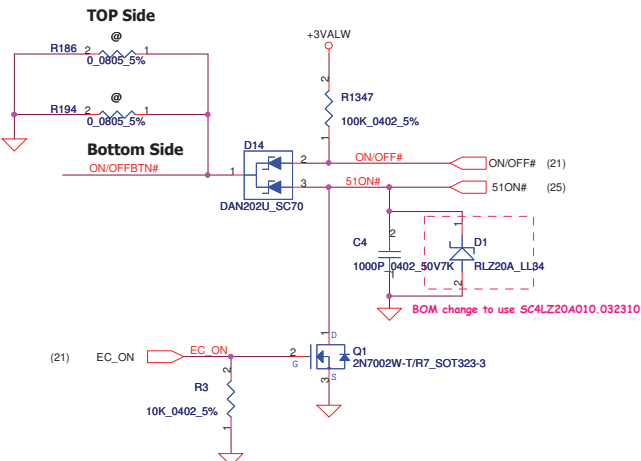


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2006/08/18	Deciphered Date	2007/8/18	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				B	NAV51 LA-6311P
				Date:	Tuesday, April 13, 2010
				Sheet	22 of 33
				Rev	0.2

Add For NAV50 07/06
09/03 Change +5VS to +3VS



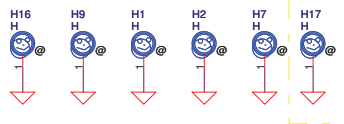
Power Button Logic



H_3P2X3P7N



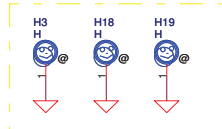
H_2P6



H_3P0



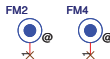
H_3P3



H_3P3N

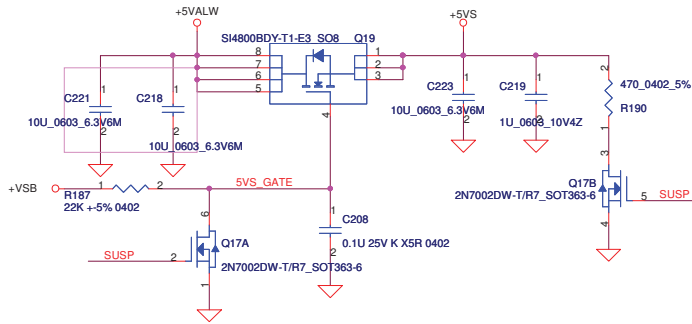


H_3P4X3P2N

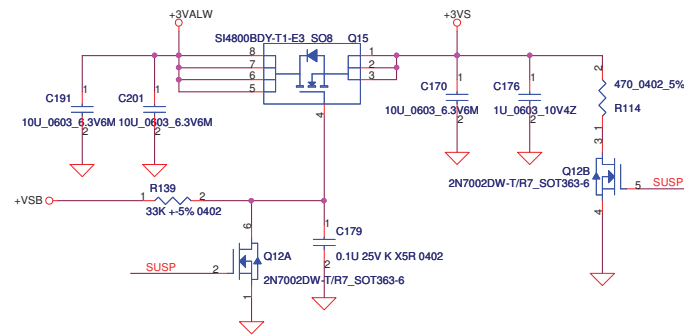


Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2006/08/18	Deciphered Date	2007/8/18	Title ON/OFF / LID SW		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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 NAV51 LA-6311P	Rev 0.2
				Date: Tuesday, April 13, 2010	Sheet 23 of 33	

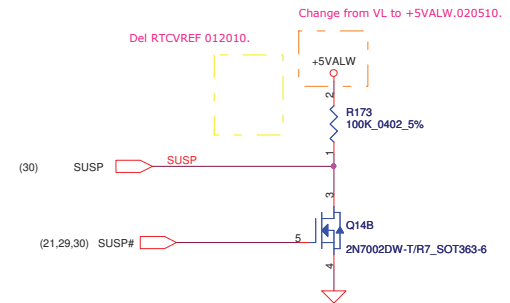
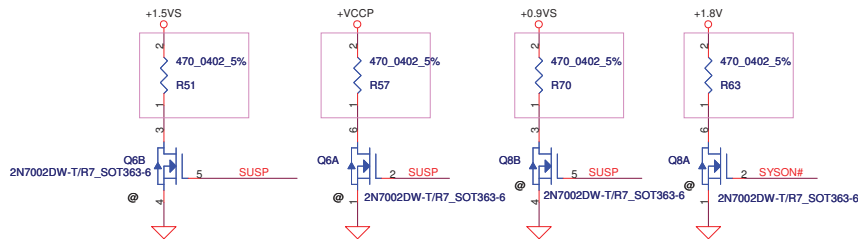
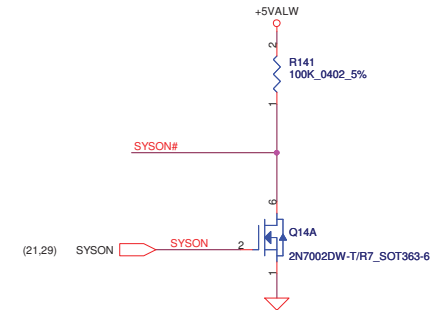
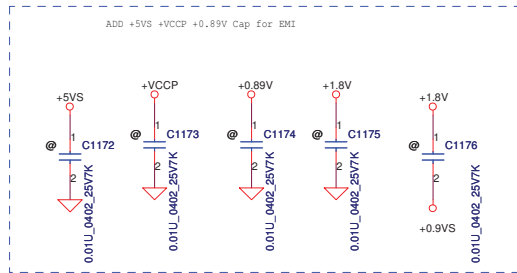
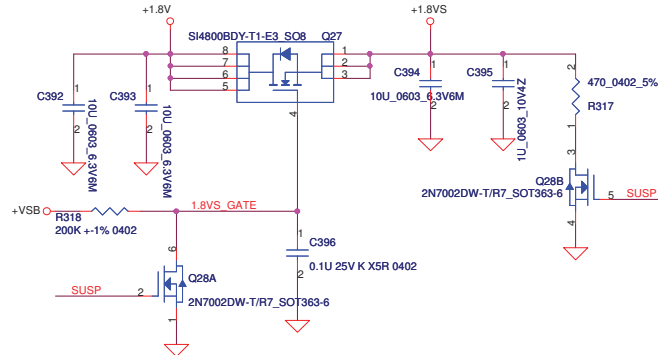
+5VALW TO +5VS



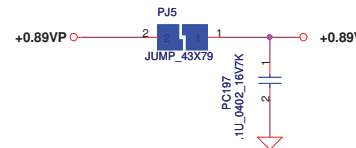
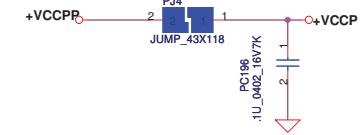
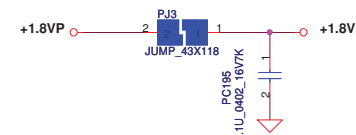
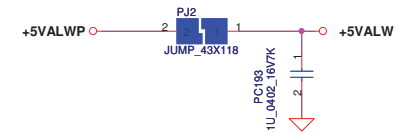
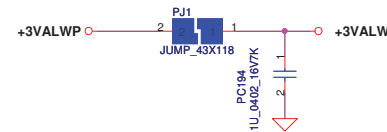
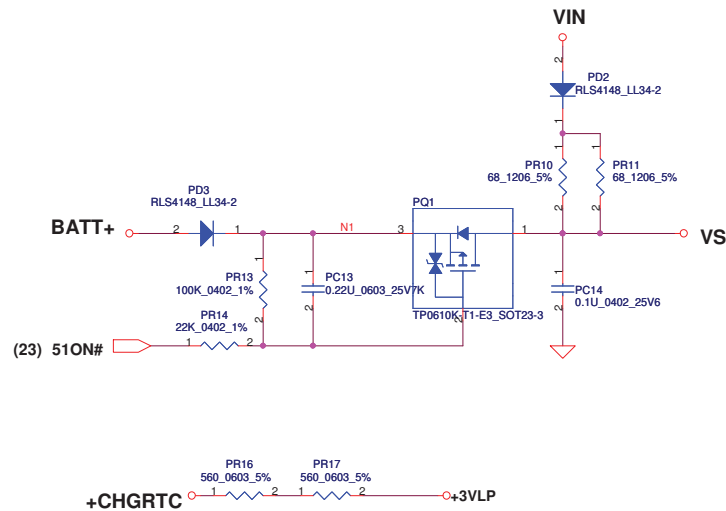
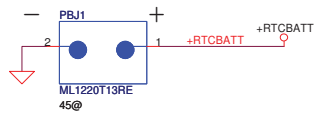
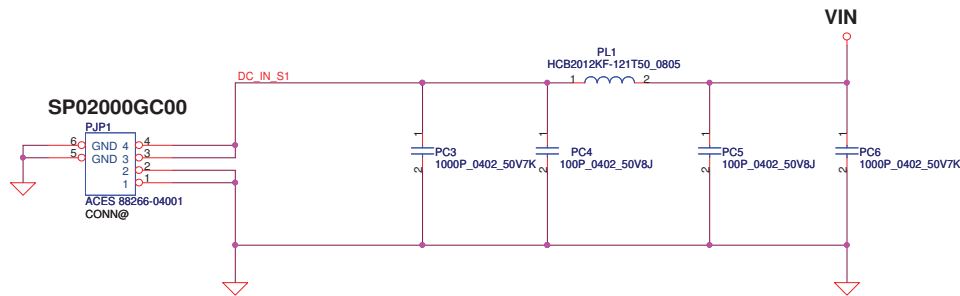
+3VALW TO +3VS



+1.8V to +1.8VS

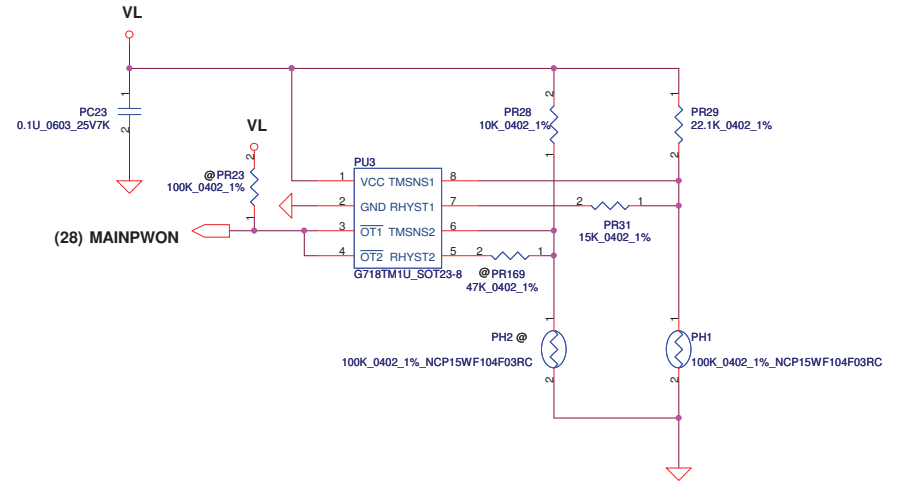
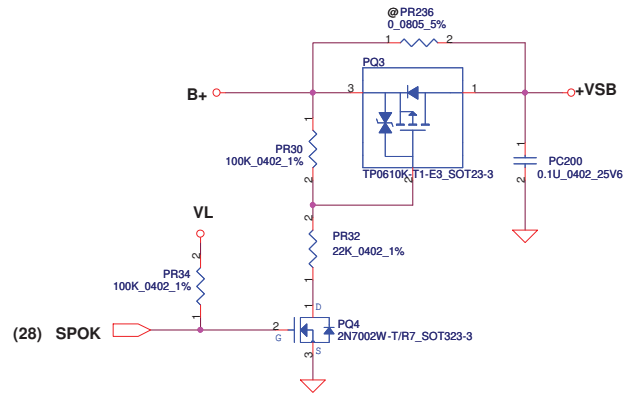
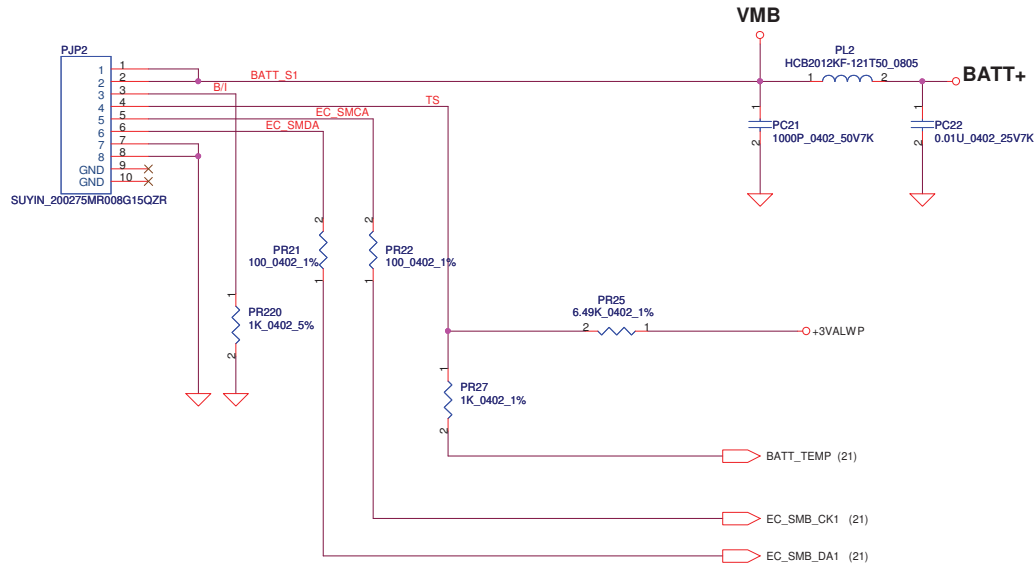


Security Classification		Compal Secret Data				Compal Electronics, Inc.							
Issued Date		2006/08/18		Deciphered Date		2007/8/18		Title					
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.						DC INTERFACE							
						Size B		Document Number		NAV51 LA-6311P		Rev 0.2	
						Date		Tuesday, April 13, 2010		Sheet 24 of 33			

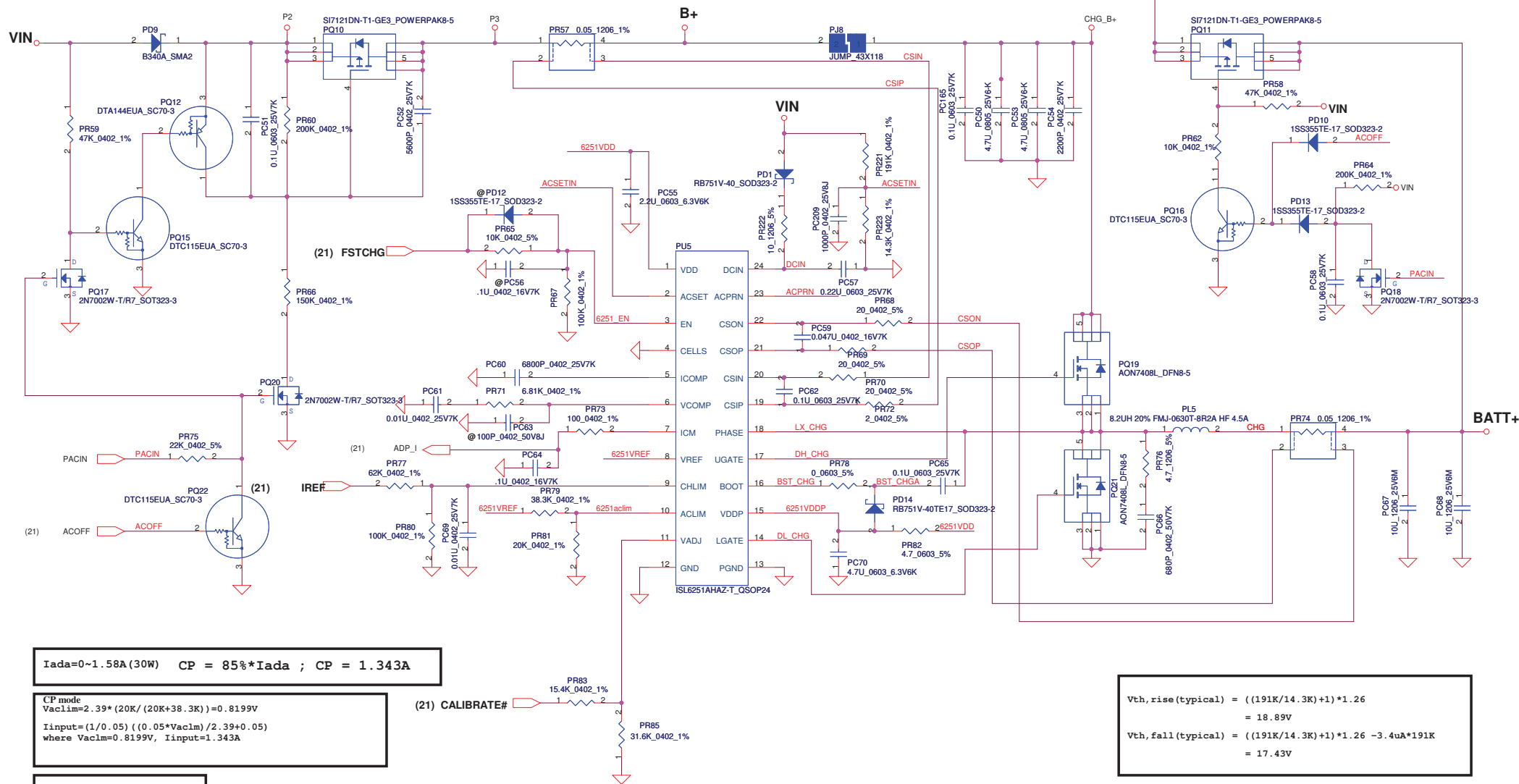


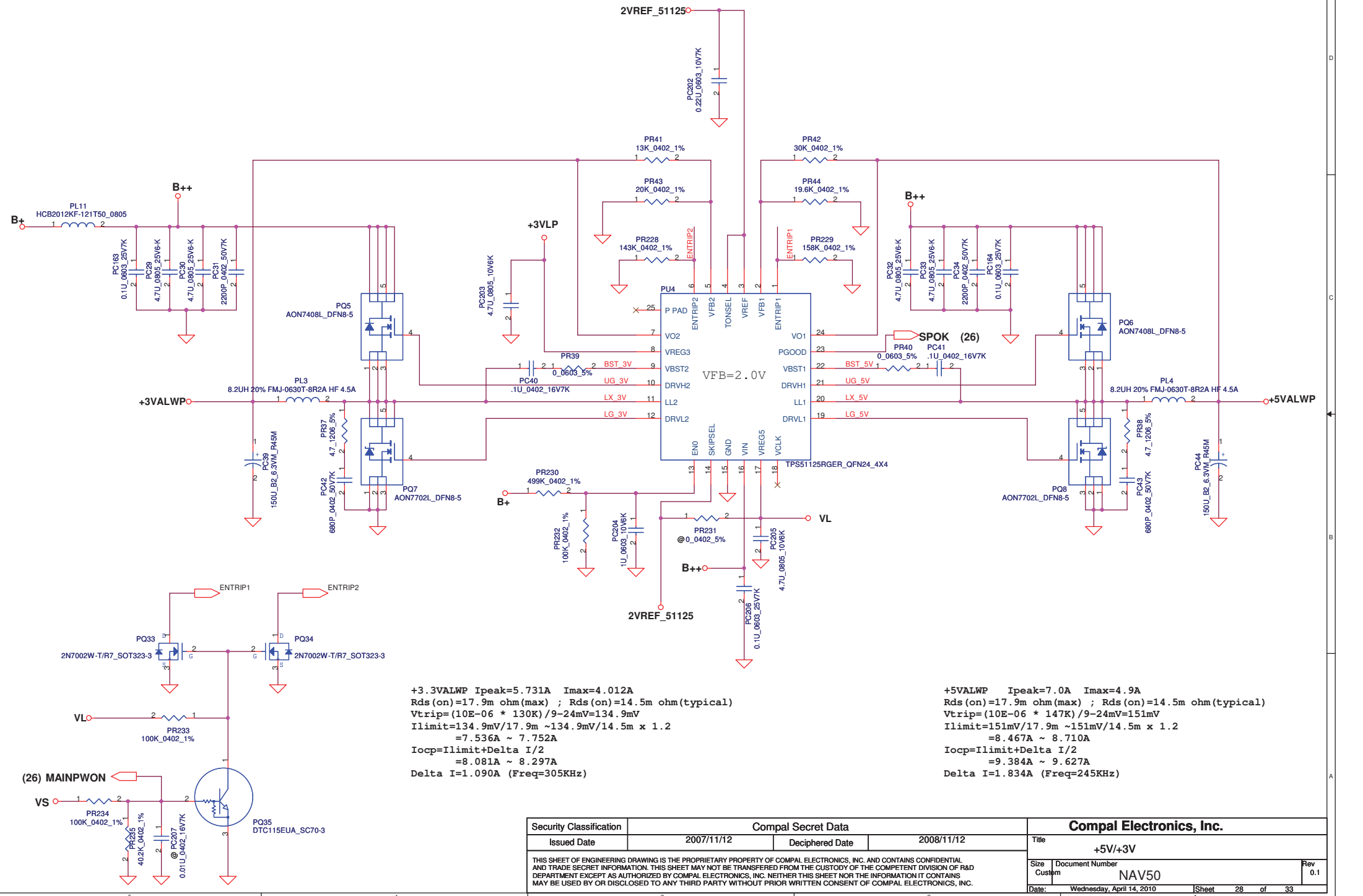
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				DCIN & DETECTOR	
Size	Document Number	NAV51 LA-6311P		Rev	0.1
Date:	Wednesday, April 14, 2010	Sheet	25 of 32		

PH1 under CPU botten side :
CPU thermal protection at 92 degree C
Recovery at 72 degree C



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.				Size	Document Number
				Custom	NAV51 LA-6311P
				Date:	Wednesday, April 14, 2010
				Sheet	26 of 33
				Rev	0.1

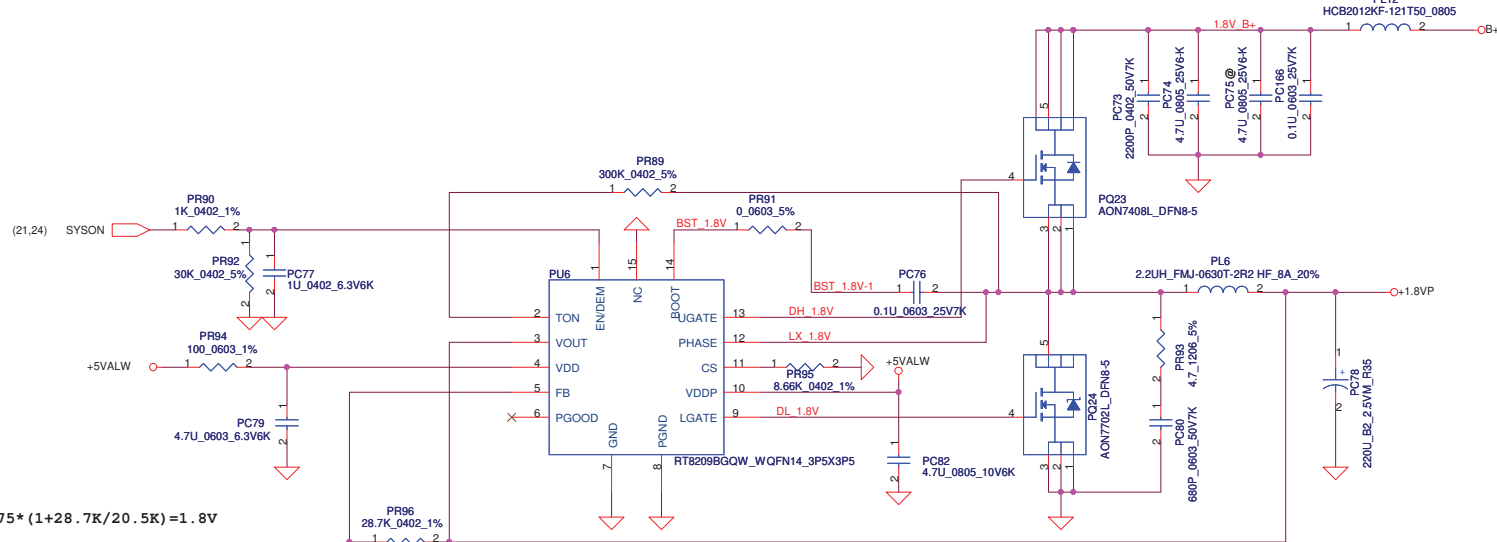




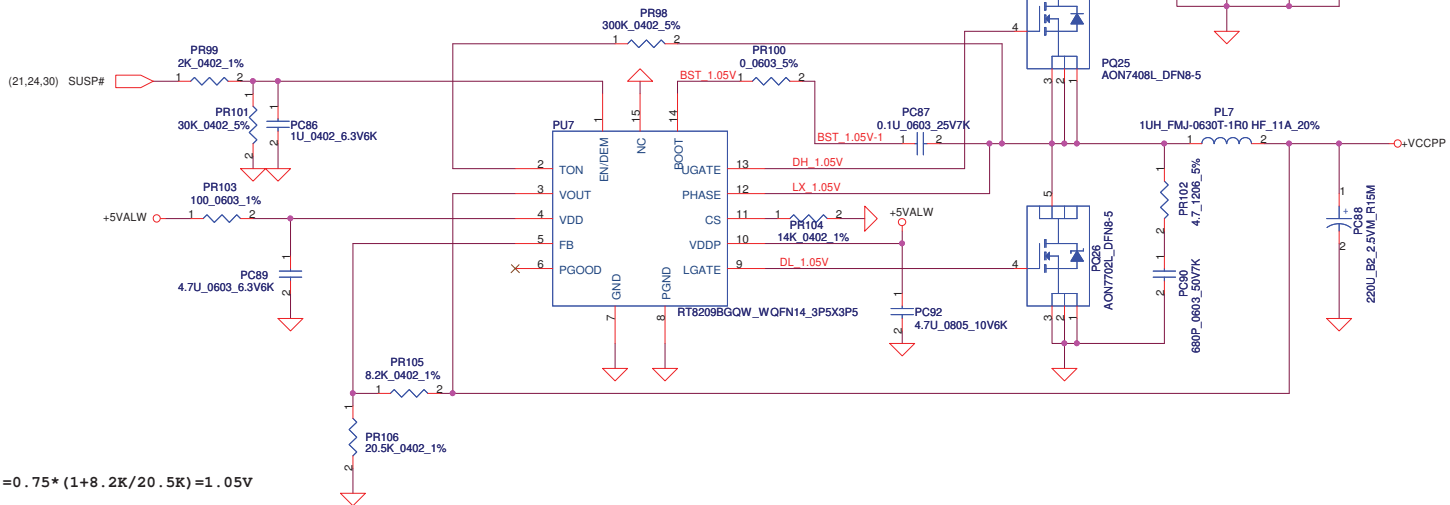
+3.3VALWP Ipeak=5.731A Imax=4.012A
Rds(on)=17.9m ohm(max) ; Rds(on)=14.5m ohm(typical)
Vtrip=(10E-06 * 130K)/9-24mV=134.9mV
Ilimit=134.9mV/17.9m ~134.9mV/14.5m x 1.2
=7.536A ~ 7.752A
Iocp=Ilimit+Delta I/2
=8.081A ~ 8.297A
Delta I=1.090A (Freq=305KHz)

+5VALWP Ipeak=7.0A Imax=4.9A
Rds(on)=17.9m ohm(max) ; Rds(on)=14.5m ohm(typical)
Vtrip=(10E-06 * 147K)/9-24mV=151mV
Ilimit=151mV/17.9m ~151mV/14.5m x 1.2
=8.467A ~ 8.710A
Iocp=Ilimit+Delta I/2
=9.384A ~ 9.627A
Delta I=1.834A (Freq=245KHz)

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/11/12	Deciphered Date	2008/11/12	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.				+5V/+3V	
Size	Custom	Document Number	NAV50	Rev	
Date:	Wednesday, April 14, 2010	Sheet	28	of 33	

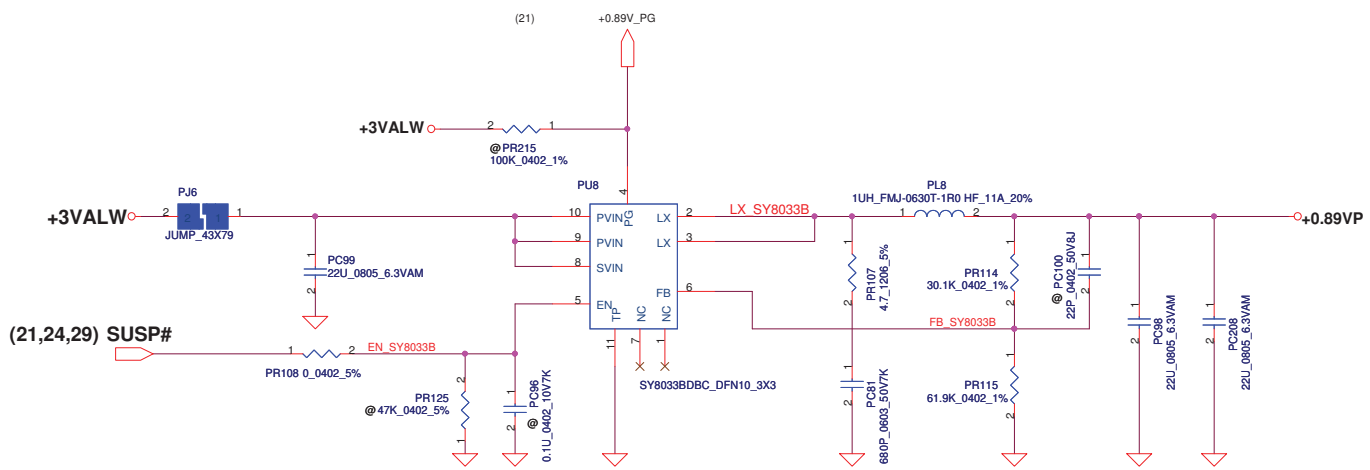


$V_o = 1.8V$ $V_{FB} = 0.75V$
 $V_o = V_{FB} * (1 + PR96/PR97) = 0.75 * (1 + 28.7K/20.5K) = 1.8V$
 $f_{sw} = 328KHz$
 $C_{out} ESR = 15m\ ohm$ $R_{dson(max)} = 17.9m$ $R_{dson(typical)} = 14.5m$
 $I_{peak} = 4.97A$, $I_{max} = 3.479A$, $I_{ocp} = 5.964A$
 $\Delta I = ((19 - 1.8) * (1.8/19)) / (2.2u * 328K) = 2.259A$
 $\Rightarrow 1/2 \Delta I = 1.129A$
 $V_{trip} = R_{trip} * I_{ocp} = 8.66K * 10uA = 0.0866V$
 $I_{ocpmin} = V_{trip} / (R_{dsonmax}) + 1.129$
 $= 0.0866 / (0.0179) + 1.129 = 5.967A$
 $I_{ocpmax} = (0.0866 / (0.0145 * 1.2)) + 1.129A = 6.106A$
 $I_{ocp} = 5.967A \sim 6.106A$

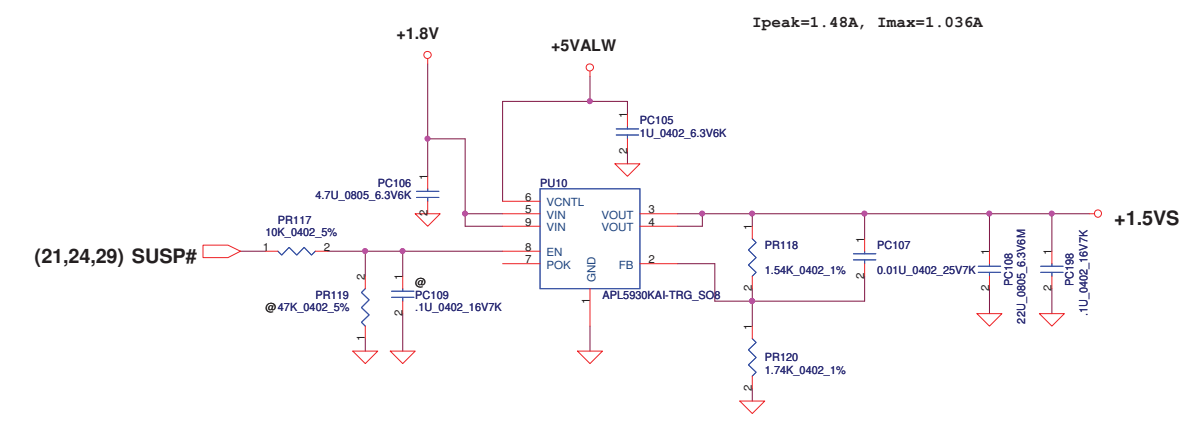


$V_o = 1.05V$ $V_{FB} = 0.75V$
 $V_o = V_{FB} * (1 + PR105/PR106) = 0.75 * (1 + 8.2K/20.5K) = 1.05V$
 $f_{sw} = 280KHz$
 $C_{out} ESR = 15m\ ohm$ $R_{dson(max)} = 17.9m$ $R_{dson(typical)} = 14.5m$
 $I_{peak} = 3.124A$, $I_{max} = 2.187A$, $I_{ocp} = 3.749A$
 $\Delta I = ((19 - 1.05) * (1.05/19)) / (1.5u * 280K) = 3.549A$
 $\Rightarrow 1/2 \Delta I = 1.774A$
 $V_{trip} = R_{trip} * I_{ocp} = 14K * 10uA = 0.14V$
 $I_{ocpmin} = V_{trip} / (R_{dsonmax}) + 1.774$
 $= 0.14 / (0.0179) + 1.774 = 9.596A$
 $I_{ocpmax} = (0.14 / (0.0145 * 1.2)) + 1.774A = 9.820A$
 $I_{ocp} = 9.596A \sim 9.820A$

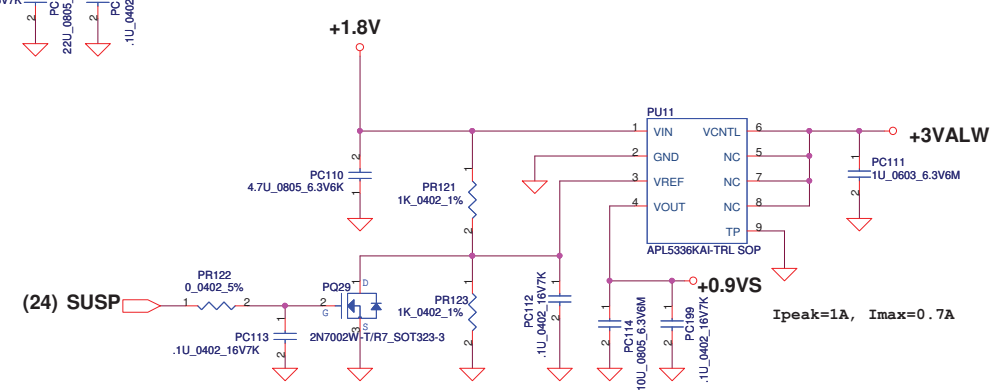
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				1.8VP / +VCCPP	
Size	Custom	Document Number	NAV51 LA-6311P	Rev	0.1
Date:	Wednesday, April 14, 2010	Sheet	29	of	33



$V_o = 0.89V$ $V_{FB} = 0.6V$
 $V_o = V_{FB} * (1 + PR114 / PR115) = 0.6 * (1 + 30.1K / 61.9) = 0.89V$
 $I_{peak} = 2.64A$, $I_{max} = 1.848A$



$I_{peak} = 1.48A$, $I_{max} = 1.036A$



$I_{peak} = 1A$, $I_{max} = 0.7A$

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.				+0.89VP/+1.5VS/+0.9VSP
				Size Custom Document Number NAV51 LA-6311P Rev 0.1
Date:	Wednesday, April 14, 2010	Sheet	30	of 33

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1						2010.1.8	EVT
2						2010.1.11	EVT
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Security Classification		Compal Secret Data		Compal Electronics, Inc.							
Issued Date		2006/08/04		Deciphered Date		2007/8/18					
Title		PIR_HW		Size Custom		Document Number		NAV51 LA-6311P		Rev 1.0	
Date:		Wednesday, April 14, 2010		Sheet		32		of		33	

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.

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1	PU8 Vin change to +3VALW	modify for HW layout request	0.1	30		2010.1.8	EVT
2	PU4 Pin25 change to no connect	modify for 3/5V load balance(TI FAE request)	0.1	28		2010.1.11	EVT
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							