



11/18
LA-7072P P/N from DA60000LA00 to DA60000LA10
LS-7072P P/N from DA40000Z300 to DA40000Z310
LS-7073P P/N from DA40000Z400 to DA40000Z410

11/22
LS-7073P P/N from DA40000Z410 to DA20000Z410

11/18 ZZZ2 for DAZ P/N:DAZ0IV00101

Compal Confidential

P0VE6 LA7072P Schematics Document

AMD Ontario Processor with DDRIII + Hudson M1

10.1" M/B

2010-11-18

Rev : 1.0

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	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 OR ANY OTHER DIVISION WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. NO PART OF THIS SHEET OR 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	P0VE6 Schematics
				Date	Monday, November 22, 2010
				Sheet	1 of 36
				Rev	1.0

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

File Name : LA-7072P

File Name : LA-7072P

AMD Ontario FT1 APU
BGA 413-Ball
19mm X 19mm
Page 4,5,6

Memory Bus (DDRIII)
Single Channel
1.5V DDRIII 800/1066
6.4G/8.5G
100M/133M

204 Pin DDRIII SO-DIMM x1
BANK 0, 1, 2, 3
Page 7

HDMI Conn.
Page 9

D-Sub Conn.
Page 10

LVDS Conn.
Page 8

Fan Circuit
PWM
Page 26

PCI-Express X3

AMD Hudson M1 FCH
BGA 605-Ball
23mm X 23mm
Page 11,12,13,14,15

UMI x4 Gen.1
2.5GT/s per Lane

USB Conn.x1
(Right Side)
Port 2
Page 24

USB Conn.x2
(Left Side)
Port 0, 1
Page 24

Camera
Port 5
Page 8

Bluetooth
Port 7
Page 19

Card Reader
ENE 6250 / 6252
Port 6
Page 18

USB
3.3V 48MHz

HD Audio
3.3V 24MHz

SATA
Gen1 1.5GT/S ,Gen2 3GT/S
100MHz

3G Card
Port 3
Page 19

WLAN
JMINI2
Wireless Card
Port 3
Page 20

LAN(10/100mbE)
AR8152
Port 2
Page 17

RJ-45
Page 17

Wwan
JMINI1
Media processor
Port 1
Page 19

HDD
(2.5")
Port 0
Page 21

HDA Codec+AMP
CX20584
Page 16

HP Jack x1
MIC Jack x1
Page 23

Small Board

LED/B
LS-7072P

TP BTN/B
LS-7073P

BIOS ROM
2MB
Page 26

ENE KB930
Page 25

LPC
33MHz

RTC Ckt.
Page 11

Power Button
Page 22

DC/DC Interface Ckt.
Page 27

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	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				Size	Document Number

Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	N/A	N/A	N/A
B+	AC or battery power rail for power circuit.	N/A	N/A	N/A
+APU_CORE	Core voltage for CPU (0.7-1.2V)	ON	OFF	OFF
+APU_CORE_NB	1.0V switched power rail	ON	OFF	OFF
+1.5V	1.5V power rail for CPU VDDIO and DDRIII	ON	ON	OFF
+0.75VS	0.75VS switched power rail for DDR terminator	ON	OFF	OFF
+1.05VS	1.05V switched power rail for NB VDDC & VGA	ON	OFF	OFF
+1.1VS	1.1VS switched power rail	ON	OFF	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+1.1VALW	1.1V always on power rail	ON	ON	ON*
+3VS	3.3V switched power rail	ON	OFF	OFF
+1.5VS	1.5VS 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*
+RTCBATT	RTC power	ON	ON	ON

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

EC SM Bus1 address

EC SM Bus2 address

Device	Address	HEX	Device	Address	HEX
Smart Battery	0001-011xb	16H	SB-TSI	1001-100xb	98H

SM Bus Controller 0

(FCH_SMB1 ~ FCH_SMB4, SMB_ALERT#)

Device	Address	HEX
APU SIC/SID (FCH_SMB3)		
H_THERMTRIP# (FCH_ALERT#)		

SM Bus Controller 1

(FCH_SMB0)

Device	Address	HEX
DDR DIMM1 (FCH_SMB0)	1001-000xb	90

BOM Structure

HDMI@ : HDMI function
BT@ : BT function
CONN@ : Conneters
45@ : 45 Level
3G@ : 3G function
3G_MP@: 3G & Media processor function
CHARGE@: Charge BATT
NONCHARGE@: nonCharge BATT

FCH Hudson-M1 USB Port List

USB1.1	
Port0	NC
Port1	NC
USB2.0	
Port0	Right USB2
Port1	Right USB3
Port2	Left USB1
Port3	WWAN
Port4	SIM
Port5	USB Camera
Port6	CardReader
Port7	BT
Port8	WiMax
Port9	NC
Port10	NC
Port11	NC
Port12	NC
Port13	NC

Brazos PCIE Port List

APU	PCIE0	NC
	PCIE1	
	PCIE2	
	PCIE3	
FCH	PCIE0	NC
	PCIE1	WWAN
	PCIE2	LAN
	PCIE3	WLAN

FCH Hudson-M1 SATA Port List

SATA0	HDD
SATA1	NC
SATA2	NC
SATA3	NC
SATA4	NC
SATA5	NC

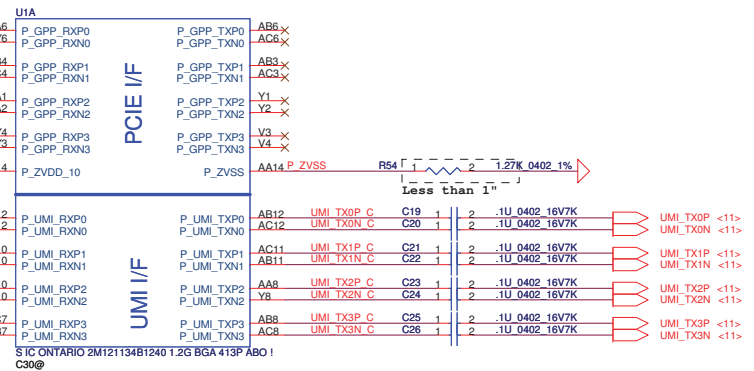
Board ID / SKU ID Table for AD channel

Vcc	+3VALW				
Ra	100K +/- 5%				
Board ID	Rb	VAD_BID min	VAD_BID typ	VAD_BID max	PCB Revision
0	0	0 V	0 V	0 V	0.1
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V	0.2
2	18K +/- 5%	0.436 V	0.503 V	0.538 V	
3	33K +/- 5%	0.712 V	0.819 V	0.875 V	
4	56K +/- 5%	1.036 V	1.185 V	1.264 V	
5	100K +/- 5%	1.453 V	1.650 V	1.759 V	
6	200K +/- 5%	1.935 V	2.200 V	2.341 V	
7	NC	2.500 V	3.300 V	3.300 V	

SMBUS Control Table

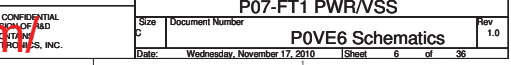
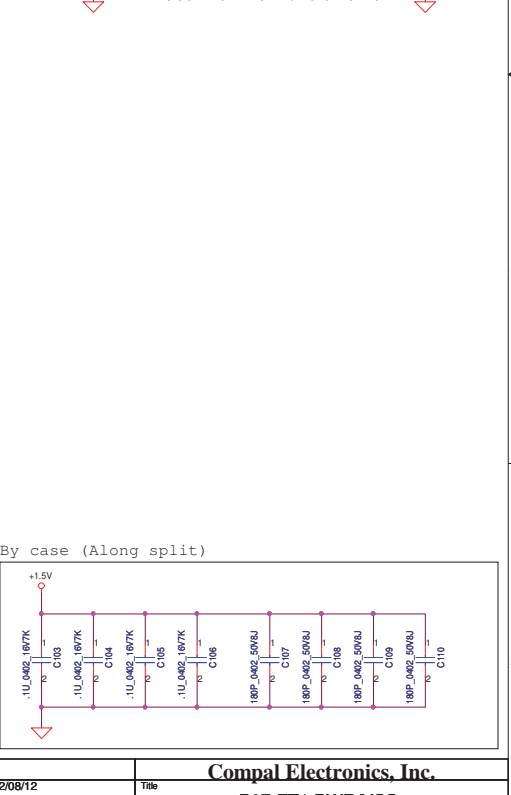
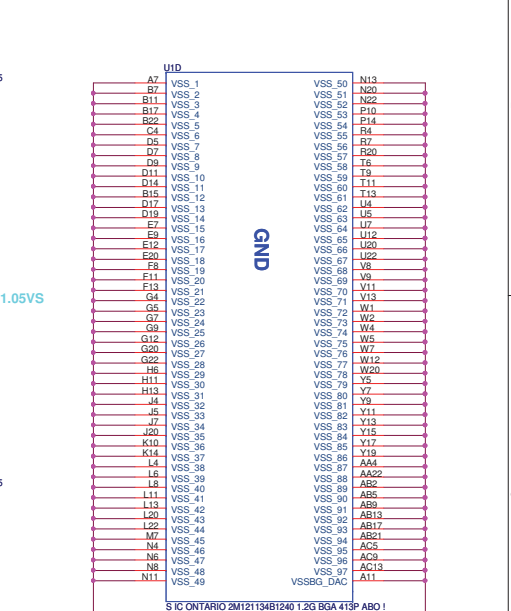
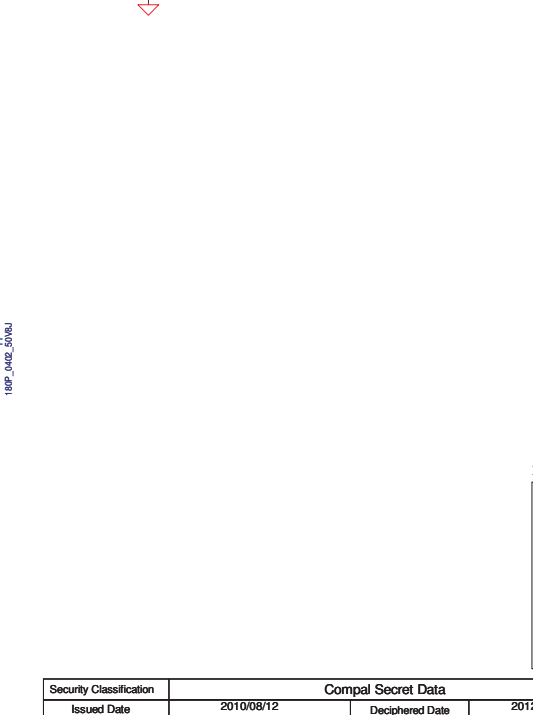
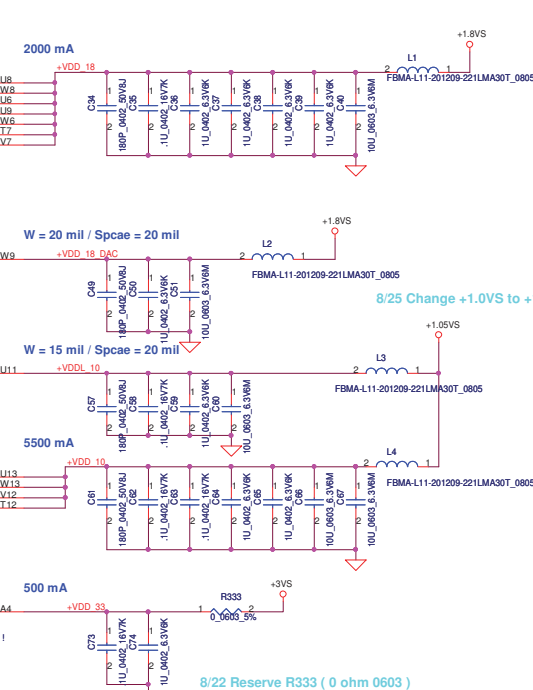
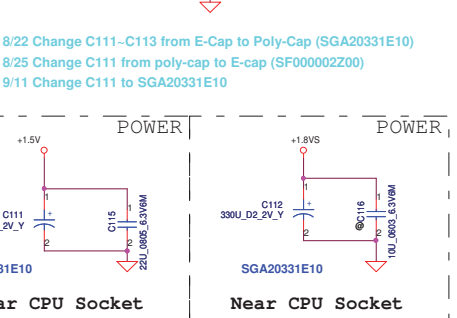
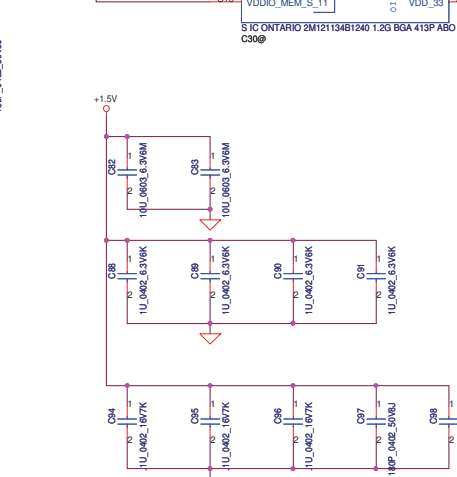
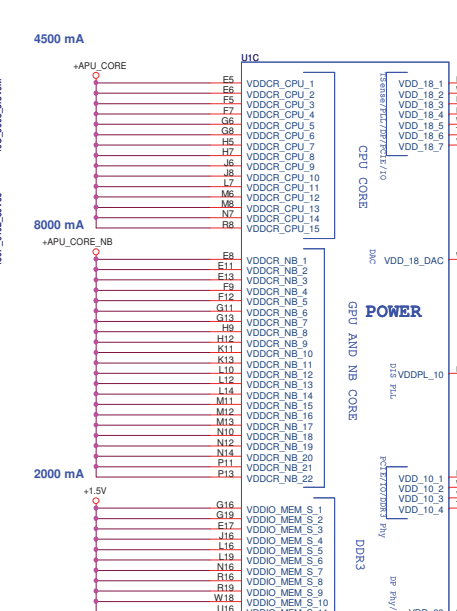
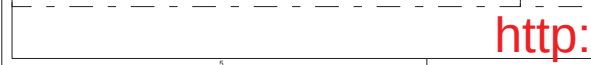
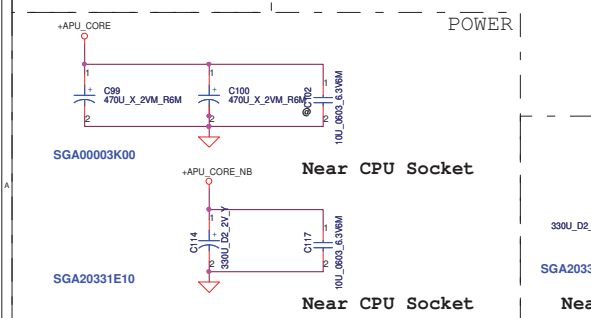
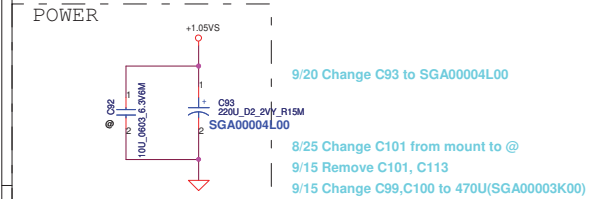
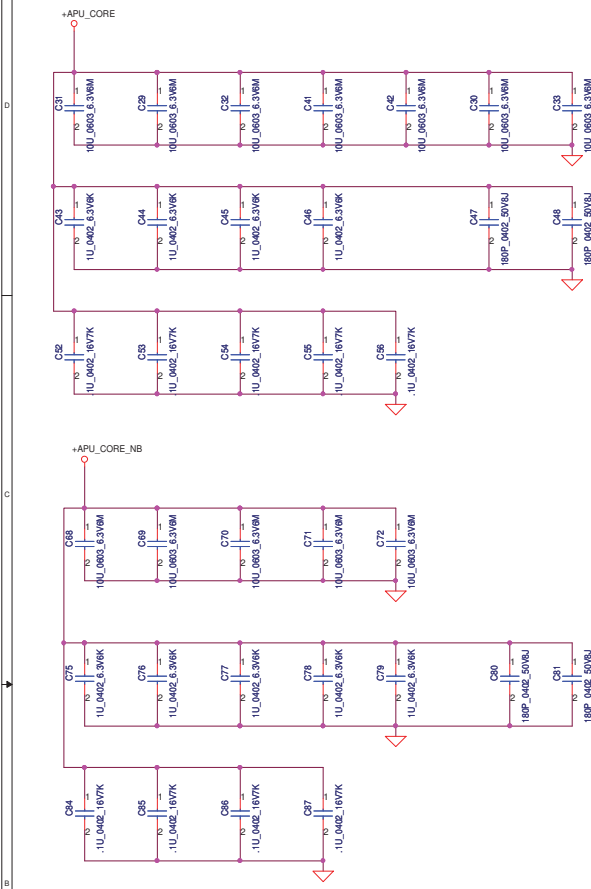
	Source	BATT	DIMM	MINI Card	LCD DDC ROM	HDMI DDC ROM	APU
EC_SMB_CK1 EC_SMB_DA1	KB930	V					
EC_SMB_CK2 EC_SMB_DA2	KB930						V
HDMI_DATA HDMI_CLK	APU FT1					V	
EDID_DATA EDID_CLK	APU FT1				V		
FCH_SMDAT0 FCH_SMCLK0	FCH M1		V	V			

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2010/08/12	Deciphered Date	2012/08/12	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 OR ANY OTHER DIVISION WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. NO PART OF THIS SHEET MAY 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 WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.				Notes List		
Size B	Document Number	POVE6 Schematics		Rev	1.0	
Date:	Monday, November 15, 2010	Sheet	3	of	36	



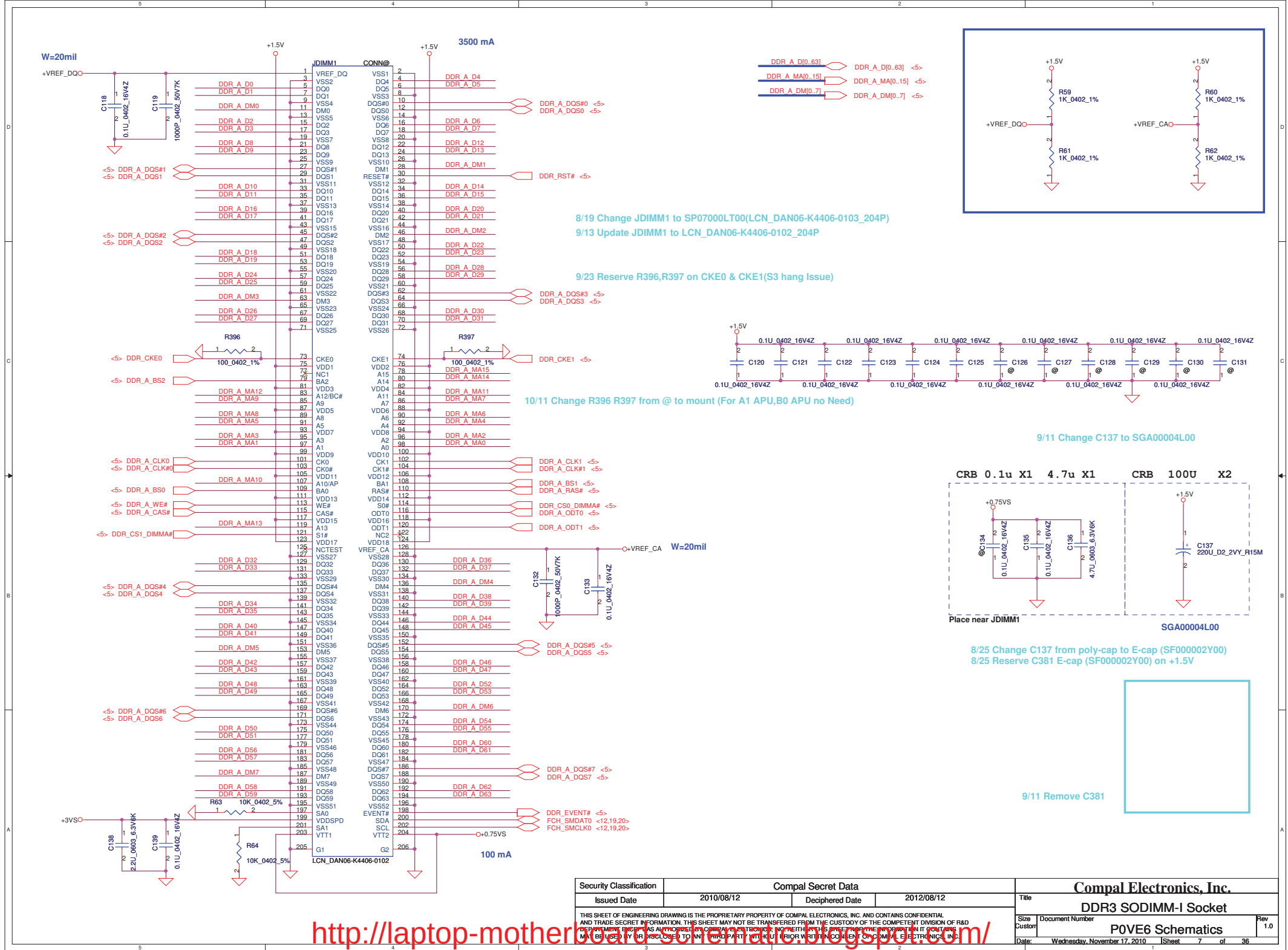
<http://laptop-motherboard-schematic.blogspot.com/>

Security Classification		Compal Secret Data		Compal Electronics, Inc. FT1 DDRIII/UMI/PCIE	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size Custom	Document Number P0VE6 Schematics
					Rev 1.0
Date: Wednesday, November 17, 2010				Sheet 5 of 36	



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

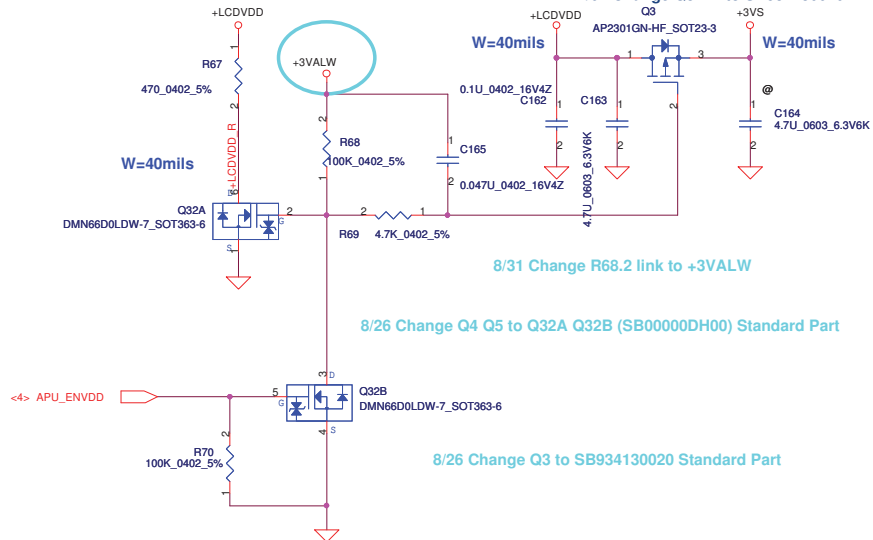
Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		P07-FT1 PWR/VSS	
2010/08/12		2012/08/12		P0VE6 Schematics	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.		Sheet		Rev	
1		6		1.0	
Date		Wednesday, November 17, 2010		Sheet	
1		6		of	
1		6		of	



LCD POWER CIRCUIT

9/24 Change Q3 to SB000007H10

11/02 Change Q3 PN to SB934130020

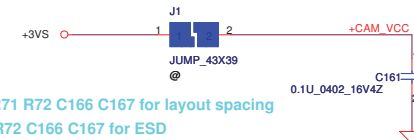


8/31 Change R68.2 link to +3VALW

8/26 Change Q4 Q5 to Q32A Q32B (SB00000DH00) Standard Part

8/26 Change Q3 to SB934130020 Standard Part

About Camera

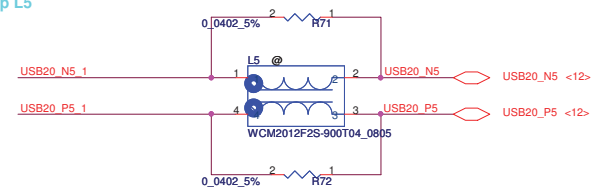


9/15 Remove D1 L5 R71 R72 C166 C167 for layout spacing

9/23 Add D1 L5 R71 R72 C166 C167 for ESD

9/23 Remove D1 C166 C167

9/24 Swap L5



CMOS & LCD/PANEL BD. Conn.

8/25 JLVDS1.5 change to INT_MIC0 JLVDS1.6 change to GNDA

8/31 Update JLVDS1 Pin definition Delete R74 R76

9/13 Update LVDS Pin definition, Add R74,R76

9/13 Add Net Name +3VS DMIC

9/9 Reserve 100k PD to GND on INVTPWM

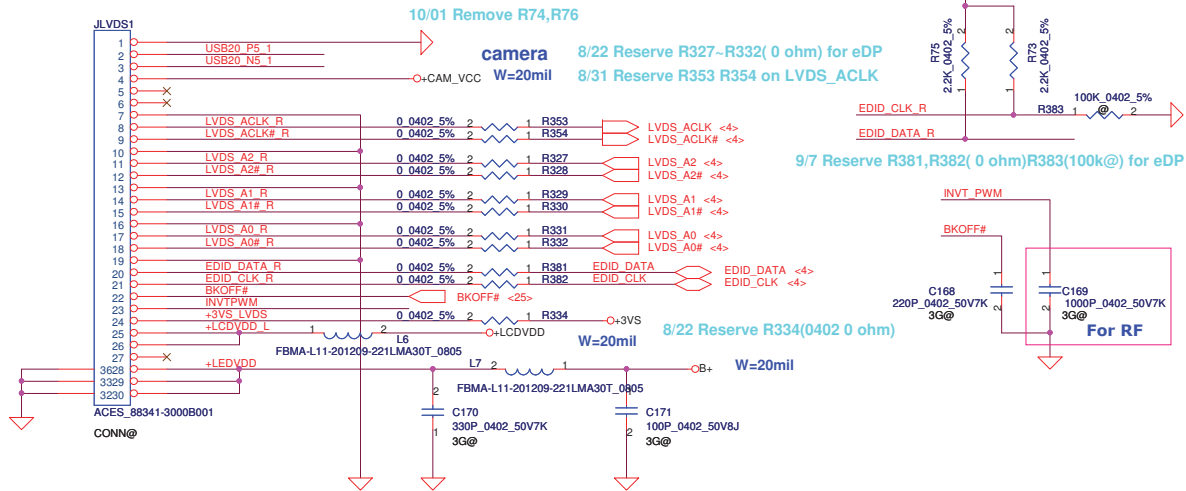
9/17 Change R387 from @ to mount

10/01 Remove R74,R76

camera

8/22 Reserve R327~R332(0 ohm) for eDP

8/31 Reserve R353 R354 on LVDS_ACLK



9/7 Reserve R381,R382(0 ohm)R383(100k@) for eDP

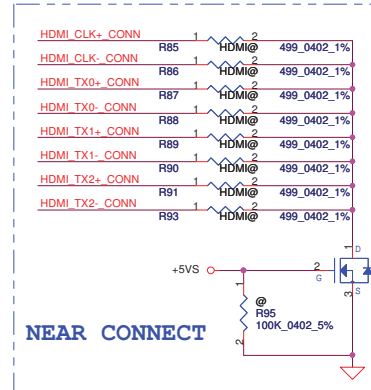
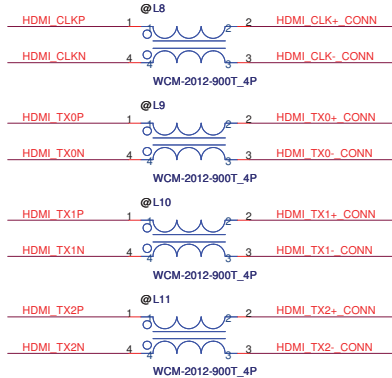
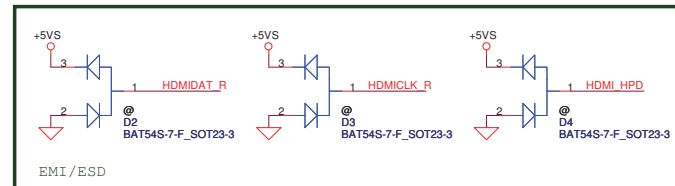
34(0402 0 ohm)

9/3 Pull-Down 10k(R377) to GND on BKOFF#

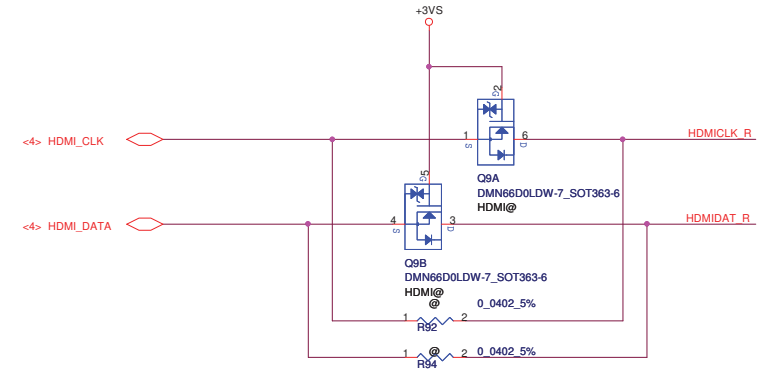
BKOFF# R377 1 10K_0402_5%

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	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 OR ANY OTHER EMPLOYEES OF COMPAL ELECTRONICS, INC. WITHOUT THE EXPRESS WRITTEN PERMISSION. IT CONTAINS NO INFORMATION OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE EXPRESS WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.				LVDS / Camera Size B Document Number Date: Wednesday, November 17, 2010
				P0VE6 Schematics Sheet 8 of 36 Rev 1.0

<4>	HDMI_CLKP	R77	1	HDMI@	2	0.0402_5%	HDMI_CLK+_CONN
<4>	HDMI_CLKN	R78	1	HDMI@	2	0.0402_5%	HDMI_CLK-_CONN
<4>	HDMI_TX0P	R79	1	HDMI@	2	0.0402_5%	HDMI_TX0+_CONN
<4>	HDMI_TX0N	R80	1	HDMI@	2	0.0402_5%	HDMI_TX0-_CONN
<4>	HDMI_TX1P	R81	1	HDMI@	2	0.0402_5%	HDMI_TX1+_CONN
<4>	HDMI_TX1N	R82	1	HDMI@	2	0.0402_5%	HDMI_TX1-_CONN
<4>	HDMI_TX2P	R83	1	HDMI@	2	0.0402_5%	HDMI_TX2+_CONN
<4>	HDMI_TX2N	R84	1	HDMI@	2	0.0402_5%	HDMI_TX2-_CONN



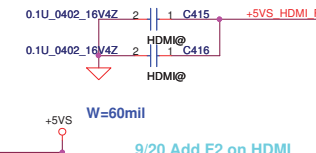
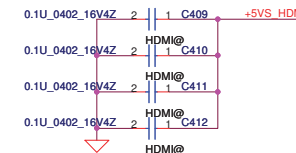
8/26 Change Q7 to SB000009610 Standard Part



8/19 Change Q9A Q9B to SB00000DH00 (S TR DMN66D0LDW-7 2N SOT363-6)

10/29 Add C409~C412(0.1U) on +5VS_HDMI

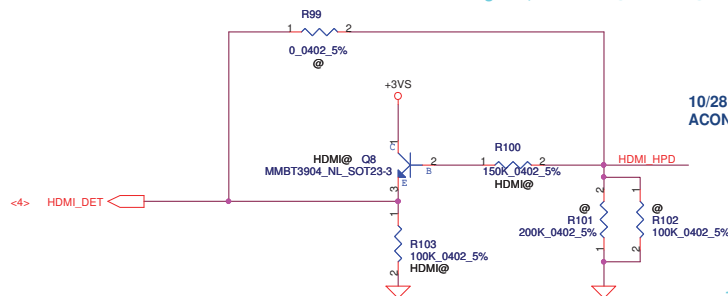
10/29 Add C415~C416(0.1U) on +5VS_HDMI_F



10/27 Change D5 P/N from SC1B491D000 to SCS00003H00

10/27 Change F2 P/N from SP04301P120 to SP040001B00

9/20 Change R99 from HDMI@ to @
9/20 Change Q8,R100 from @ to HDMI@



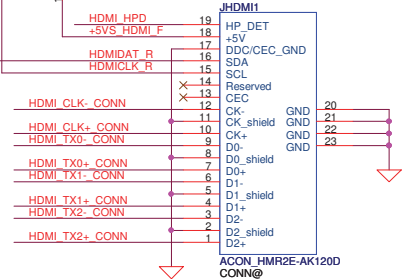
10/28 Change JHDMI1 footprint from ACON_HMR2E-AK120D_19P-T to ACON_HMR2E-AK120D_19P-S

10/07 Update JHDMI1 footprint from ACON_HMR2E-AK120D_19P to ACON_HMR2E-AK120D_19P-T

8/23 Update JHDMI1 Symbol (SUYIN_100042GR019S268ZR_19P-T)

8/23 Update JHDMI1 Symbol (SUYIN_100042GR019M23DZL_19P-T)

9/7 Update JHDMI1 Symbol (ACON_HMR2E-AK120D_19P)



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2010/08/12	Deciphered Date	2012/08/12	HDMI Connector		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT. NO PART OF THIS SHEET IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM COMPAL ELECTRONICS, INC.				Size	Document Number	Rev
				Custom	P0VE6 Schematics	1.0
				Date:	Wednesday, November 17, 2010	Sheet 9 of 36

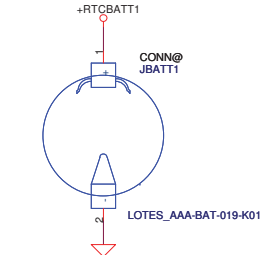
9/9 Add R384(@ 0 ohm) R385(0 ohm) on PCI-E RST
9/20 C183.2 link to R119.2 Follow CRB

10/08 Update U5 to SA000046H70 S IC 218-0792006 A13 HUDSON-M1 605P ABO!

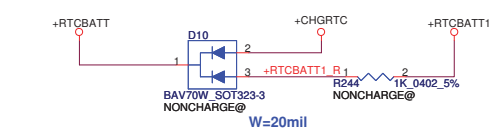
9/2 Change R120 from 0603 to 0402
9/16 Change U4,C182 from @ to mount,
R120, R115 from mount to @
9/27 Change R115 from @ to mount

9/6 Change PCI-E from FCH to APU
9/15 Change PCI-E from APU to FCH

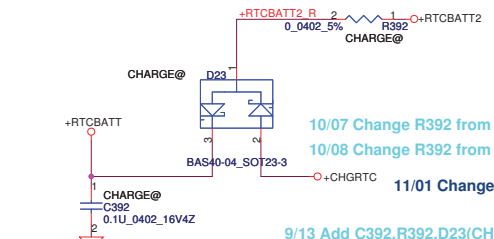
8/25 Update JBATT1 Symbol (LOTES_AAA-BAT-019-K01_2P)



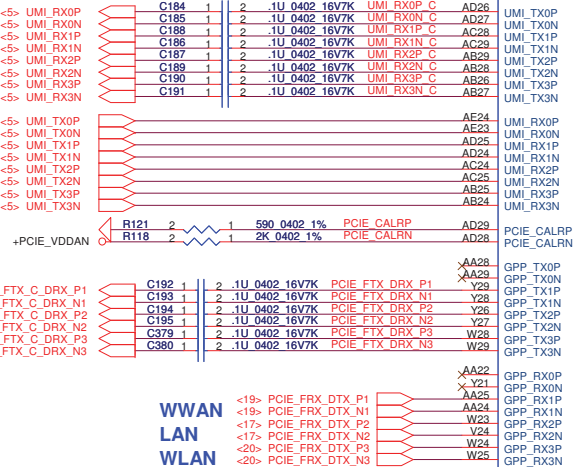
9/6 Change D10 to SC600000B00 Standard Part



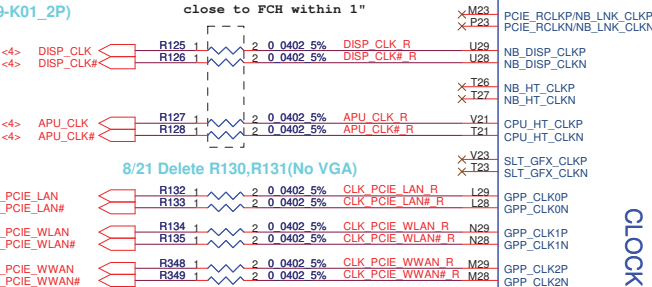
9/13 Add Net Name +RTCBATT1_RR
9/13 Change Net Name +RTCBATT1 to +RTCBATT2



9/13 Add C392,R392,D23(CHARGE@) for RTC Charge Circuit



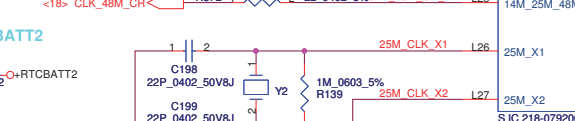
WWAN
LAN
WLAN



8/23 Add R348 R349 for WWAN PCIE

9/13 Add NONCHARGE@ for D10 R244

9/1 Add R372 on CLK_48M_CR
9/7 Change R372 to 22 ohm



10/07 Change R392 from 1k to 0 ohm

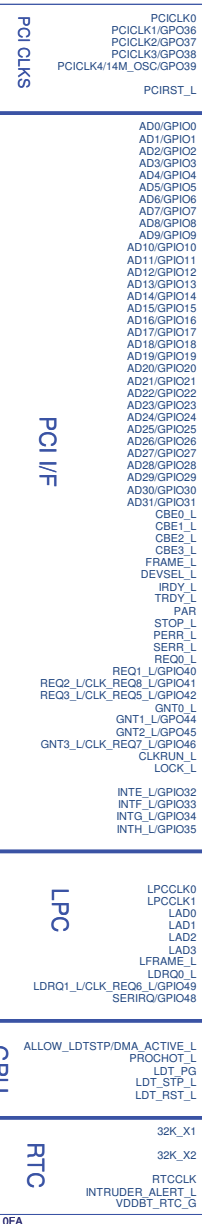
10/08 Change R392 from 0 ohm to 1k ohm

11/01 Change R392 from 1k to 0 ohm

SA000046HA0
8/25 Change FCH(U5) PN to SA000046H30

11/04 Change U5 PN to SA000046HA0 (S IC 218-0792006 A13 HUDSON-M1 FCBGA 0FA)

Security Classification		Compal Secret Data	
Issued Date	2010/08/12	Deciphered Date	2012/08/12
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT WITHOUT THE WRITTEN PERMISSION OF THE COMPETENT DIVISION OF R&D DEPARTMENT. ANY INFORMATION CONTAINED HEREIN IS UNCLASSIFIED AND IS NOT TO BE RELEASED TO ANY THIRD PARTY WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.			



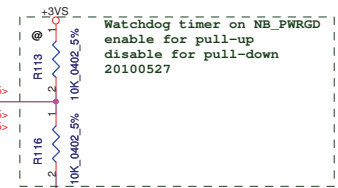
PCI EXPRESS I/F

CLOCK GENERATOR

LPC

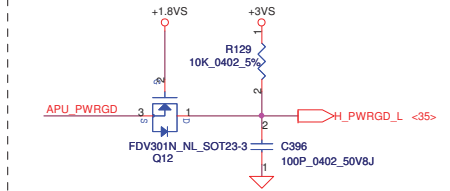
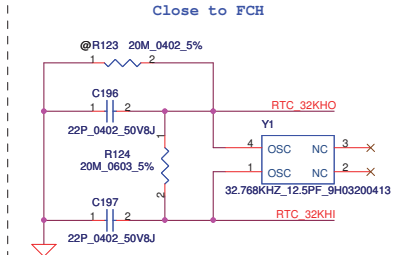
CPU

RTC



9/9 Change R117 R122 from mount to @
9/15 PU PE_GPI01 100k to +5VALW

10/11 Change Y1 from SJ100006600 to SJ132P7KW10



10/04 Add 100p(C396) on H_PWRGD_L

11/15 Delete net U5_G22

10/07 Change R140 from 560 to 1k ohm

11/01 Add Net U5_G22 on U5.G22

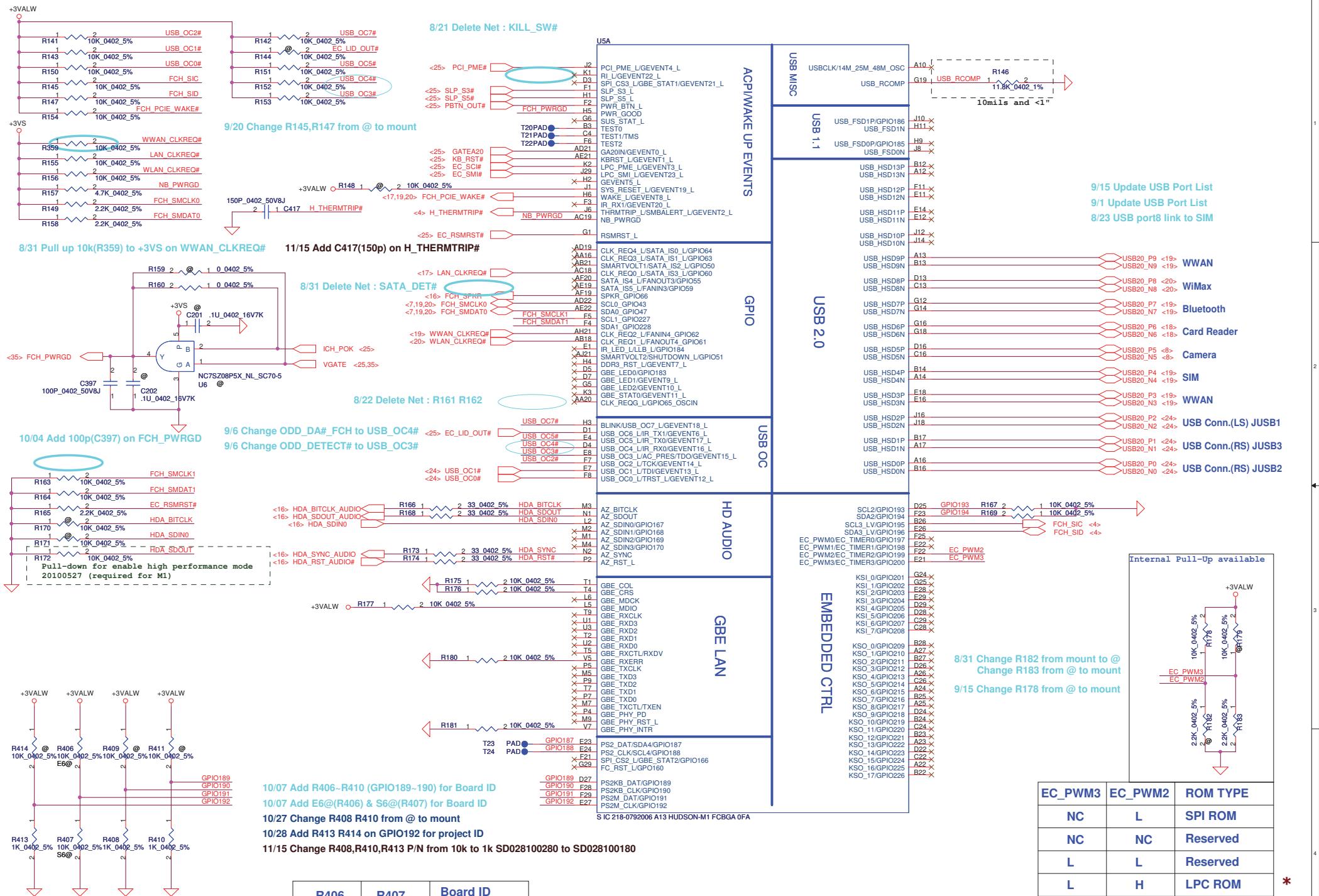


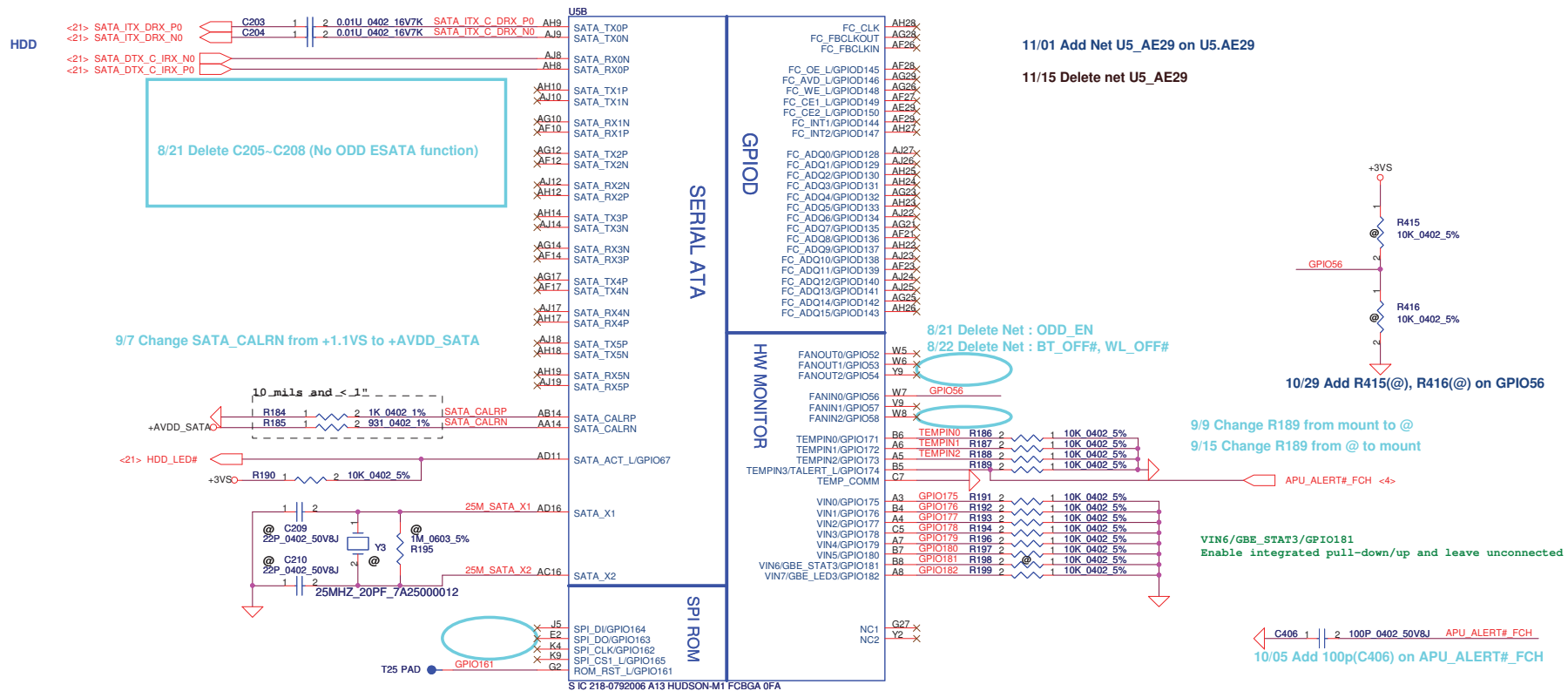
Compal Electronics, Inc.

FCH PCIE/PCI/ACPI/LPC/RTC

P0V6 Schematics

Wednesday, November 17, 2010 Sheet 11 of 36

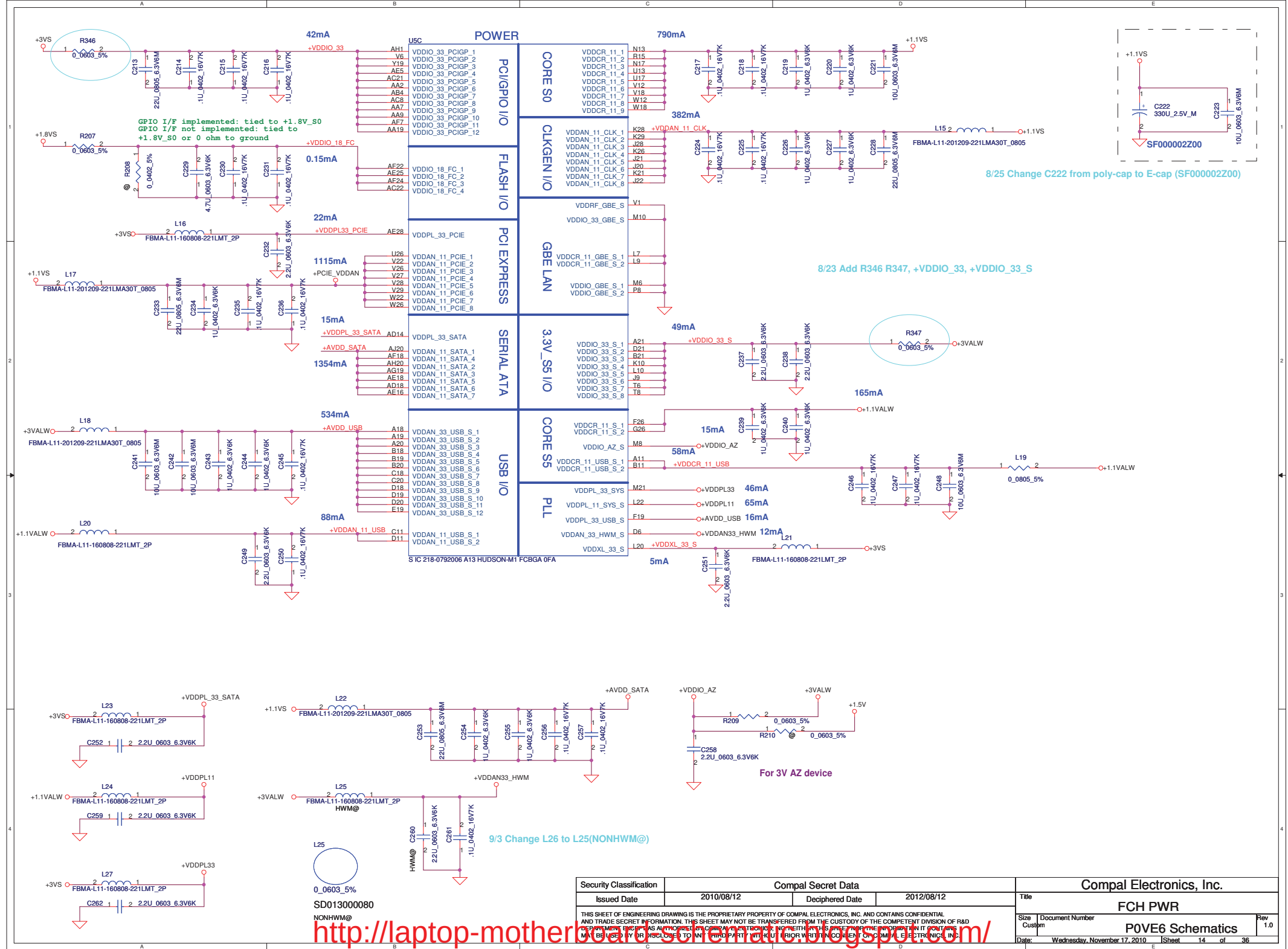




8/31 remove FCH SPI ROM

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	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 OR ANY OTHER DIVISION OF COMPAL ELECTRONICS, INC. WITHOUT THE WRITTEN PERMISSION OF THE COMPETENT DIVISION OF R&D. IT CONTAINS INFORMATION THAT IS UNCLASSIFIED AND NOT FOR DISCLOSURE TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN COMMENT ON COMPAL ELECTRONICS, INC.				Size	Document Number
				Custom	P0VE6 Schematics
				Date:	Wednesday, November 17, 2010
				Sheet	13 of 36
				Rev	1.0

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



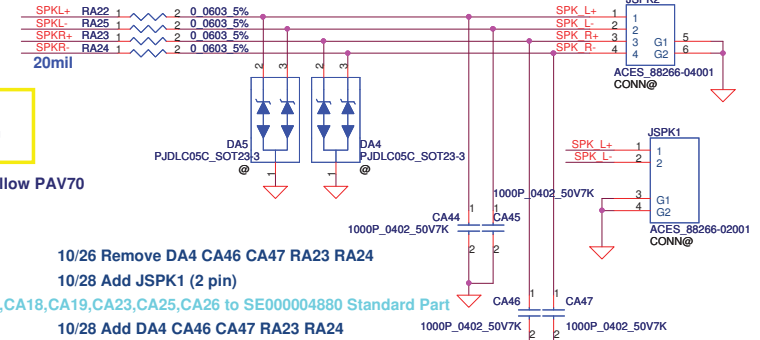
Port Configuration

Port A: Headphone jack (jack shared with S/PDIF)
 Port B: Internal MIC (mono or stereo)
 Port C: Microphone/LI/LO jack
 Port D: Line Out jack (Optional)
 Port E: Line In jack (Optional)
 Port F: Not used.
 Port G: Internal stereo speakers
 Port J: Internal stereo digital mic (Optional)
 Port H: S/PDIF (jack shared with headphone)

08/19 Follow NTUC0

11/04 Change RA19 RA20 from 47k to 10k

Int. Speaker Conn.



08/21 Follow PAV70

10/26 Remove DA4 CA46 CA47 RA23 RA24

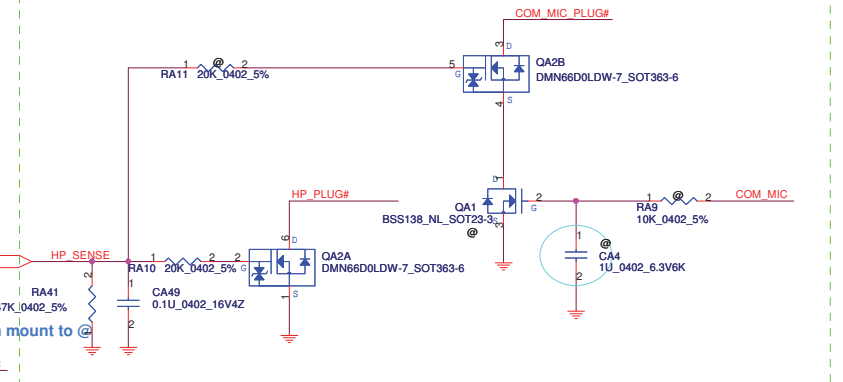
10/28 Add JSPK1 (2 pin)

10/28 Add DA4 CA46 CA47 RA23 RA24

08/25 Change CA5,CA8,CA11,CA13,CA17,CA18,CA19,CA23,CA25,CA26 to SE000004880 Standard Part

9/6 Update QA2 symbol
 Combo Jack

11/17 Change RA11, RA9, CA4, QA1 from mount to @

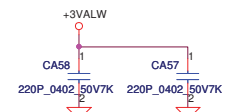


9/1 Add CA49 RA41 on HP_SENSE

10/28 Reserve CA57 CA58 for EMI

08/31 Reserve CA48(22P) on HDA_SDOOUT_AUDIO

11/01 Change CA57, CA58 from @ to mount



Layout Note: close to UA1

9/6 UA1 Pin 1 link to GND

9/7 Change UA1 Pin1 to GND

9/13 Add RA49 for DMIC

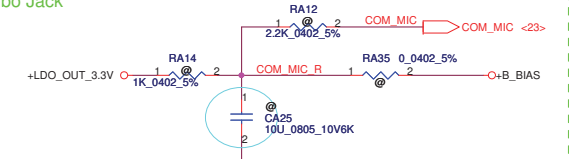
9/13 Add RA50-RA53 for DMIC

10/01 Remove RA50,R52

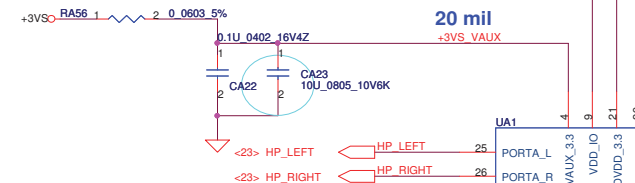
9/13 Remove Analog MIC circuit

11/17 Change RA12,RA14,CA25 from mount to @

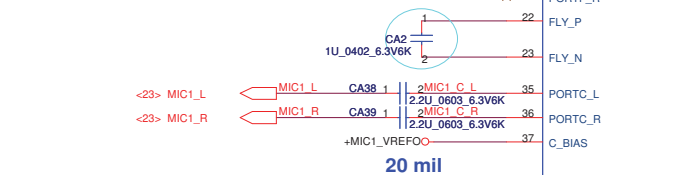
Combo Jack



9/3 Change CA38~ CA43 from 4.7U to 2.2U
 Change RA16 from 1k to 100 ohm

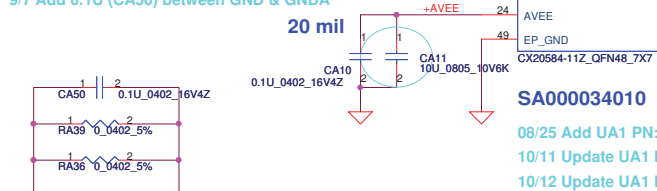


9/3 Change RA17 from 1k to 0 ohm



11/17 Change RA33 from mount to @

9/7 Add 0.1U (CA50) between GND & GND



SA000034010

08/25 Add UA1 PN:SA000034010

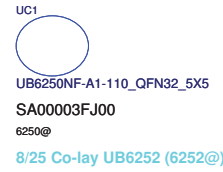
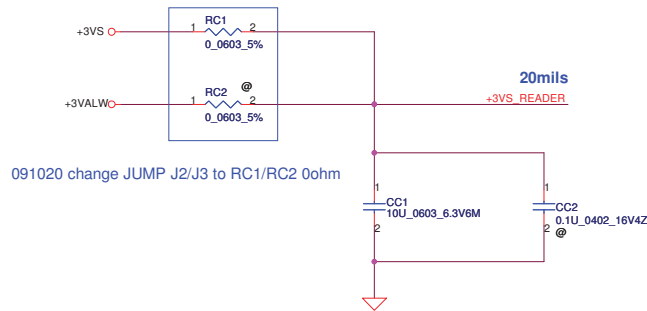
10/11 Update UA1 PN:SA000034020

10/12 Update UA1 PN:SA000034010

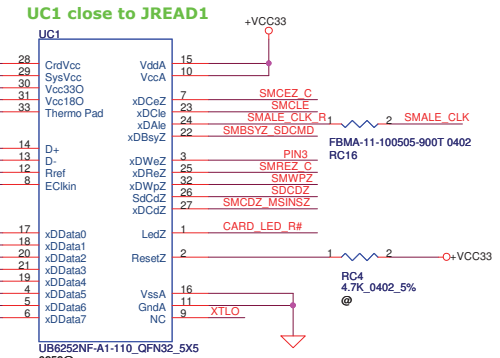
08/25 Change CA1,CA2,CA3,CA4 to SE00000K80 Standard Part

Security Classification		Compal Secret Data	
Issued Date	2010/08/12	Deciphered Date	2012/08/12
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. ANY REPRODUCTION OR DISCLOSURE OF THIS SHEET TO ANY THIRD PARTY WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED.			
Title		Compal Electronics, Inc.	
Size		Audio Codec CX20584	
Document Number		P0VE6 Schematics	
Date		Wednesday, November 17, 2010	
Sheet		16 of 36	

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



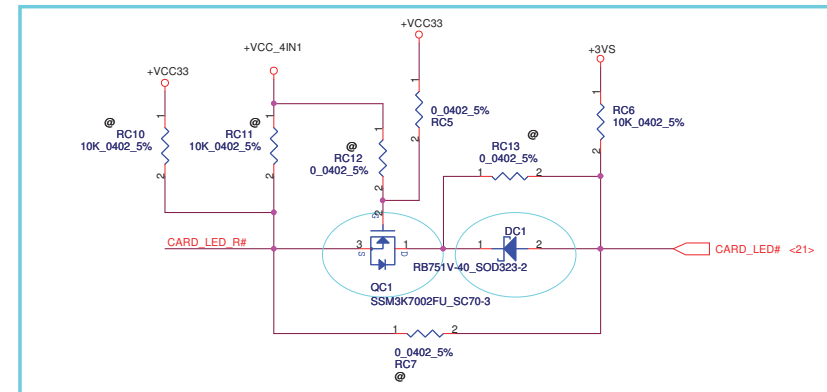
11/15 Change RC16 P/N from SD028000080 to SM010009E00



8/26 Change UC1 to UB6252 (SA00003K010)

If use external crystal (YC1), UC1 will change to UB6252

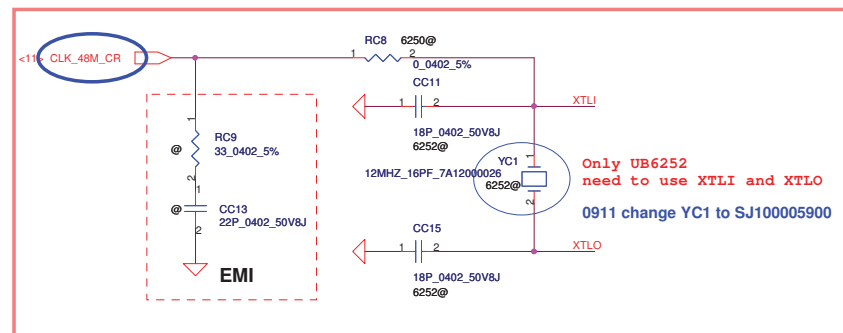
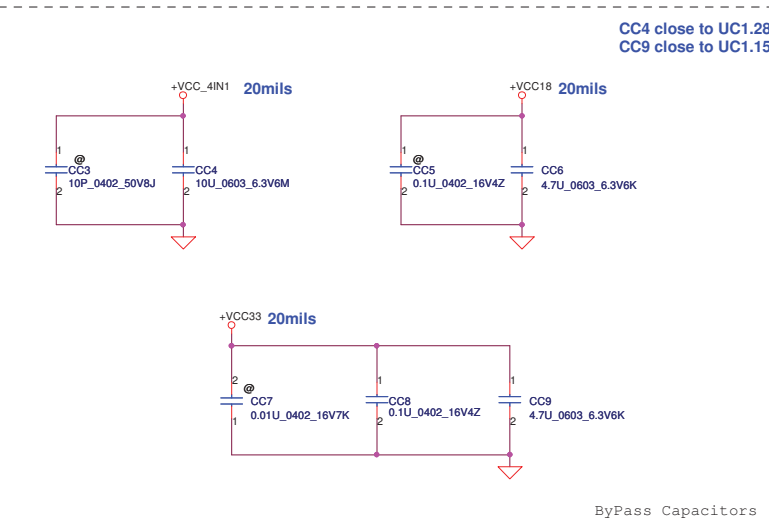
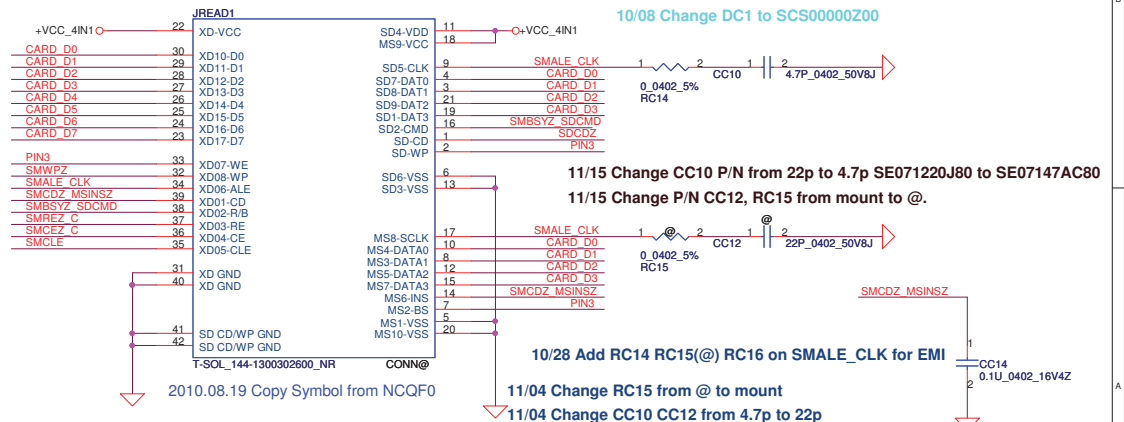
8/24 Card_LED# Follow PAV70



Card Reader Connector

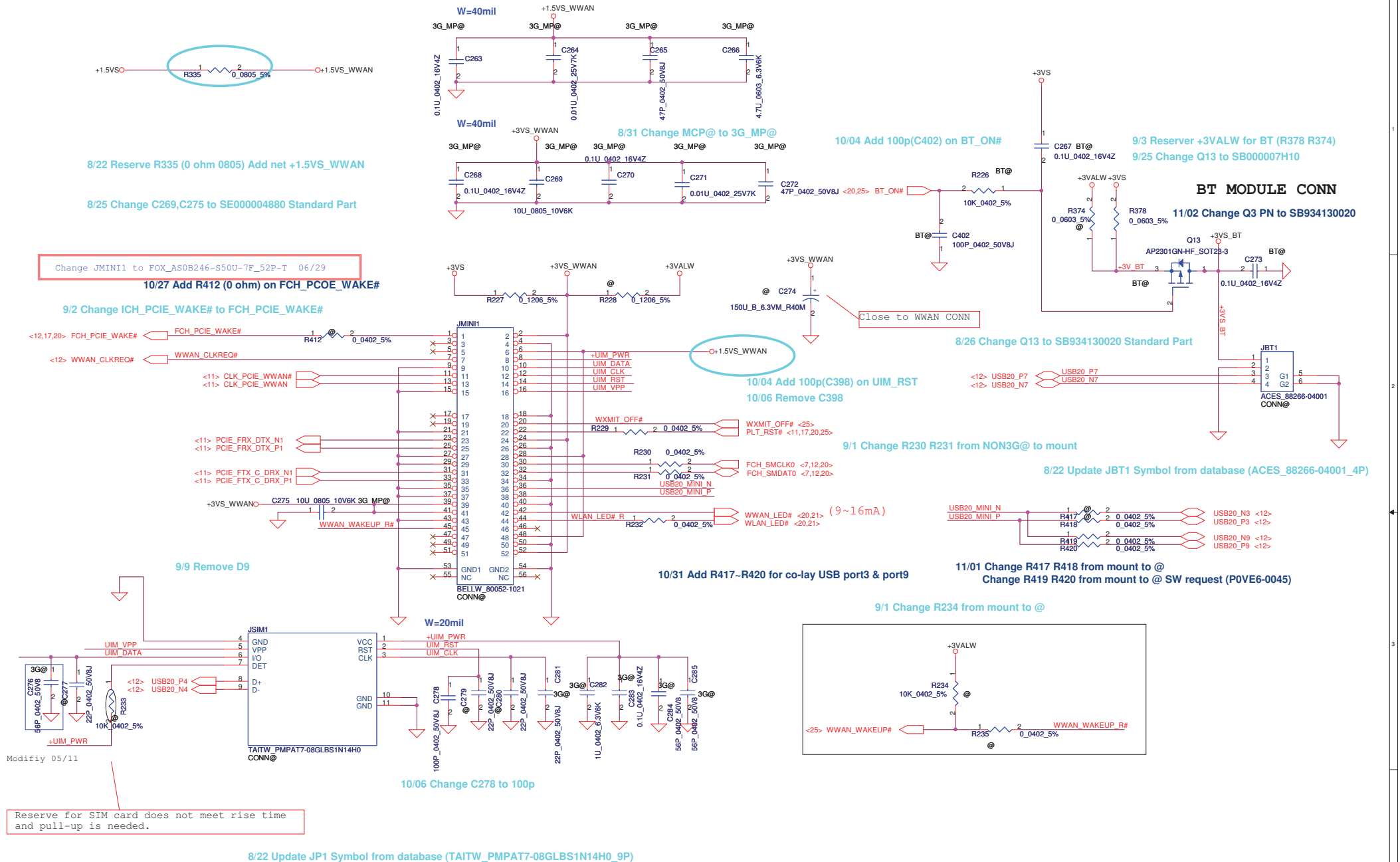
8/26 Change DC1 to SCS00002G00 Standard Part
8/26 Change QC1 to SB000009610 Standard Part

10/08 Change DC1 to SCS00000Z00



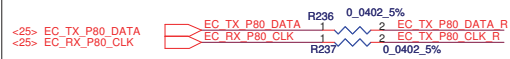
9/2 Change CC11 CC15 from 27P to 18P

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	CARD READER UB6250/6252	
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 SPECIFIC AUTHORIZATION BY COMPAL ELECTRONICS, INC. NO PART OF THIS SHEET OR ANY INFORMATION CONTAINED HEREIN MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				Custom	P0VE6 Schematics
				Date	Wednesday, November 17, 2010
				Sheet	18 of 36

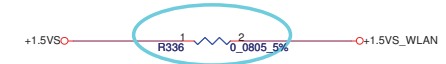
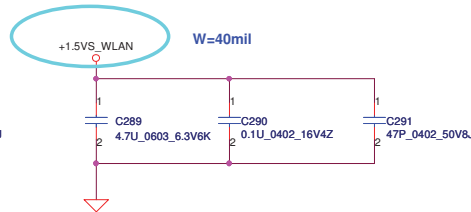
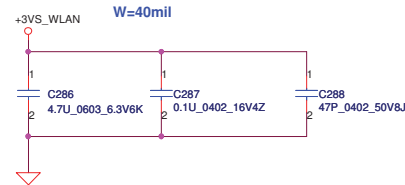


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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 PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Mini-Card/BT CONN	
Size	Document Number	P0VE6 Schematics		Rev 1.0	
Date:	Wednesday, November 17, 2010	Sheet	19	of 36	

Mini-Express Card for WWAN

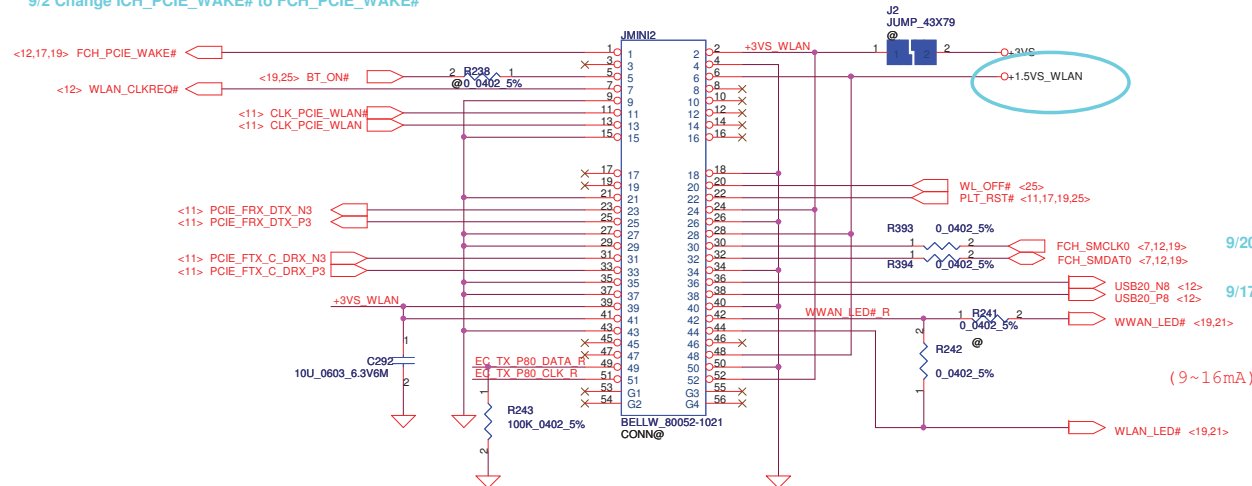


Mini-Express Card for WLAN



8/22 Reserve R336 (0 ohm 0805) Add net +1.5VS_WLAN

9/2 Change ICH_PCIE_WAKE# to FCH_PCIE_WAKE#



9/20 Add R393 R394 for SMBus

9/17 Remove R239,R240

5/12 Update WLAN connector(the same as KAV60)
6/1 Revised 37、39、41、42、43 to NC
6/12 Update connector to DC040006S00
6/26 Update JMINI1 footprint
7/01 update pin 23,25,31,33

W=40mil



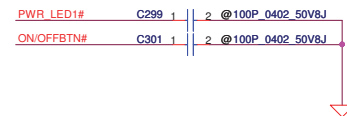
9/11 Remove LED portion



8/22 Reserve R337 R338 Add net +3VS HDD,+5VS HDD



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

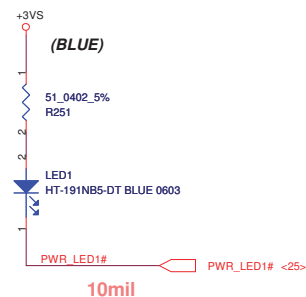


9/6 Change D13 from mount to @
10/05 Remove D13

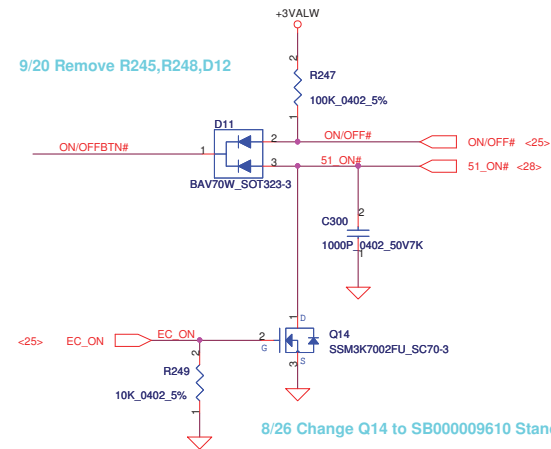
9/1 Remove LED2 LED3 circuit, Change 70@ to mount

9/20 Add LED2 LED3 Circuit

9/21 Remove LED2 LED3 Circuit

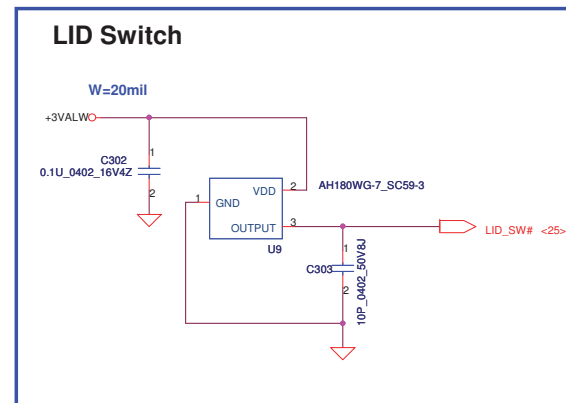


8/26 Change D11 to SC600000B00 Standard Part

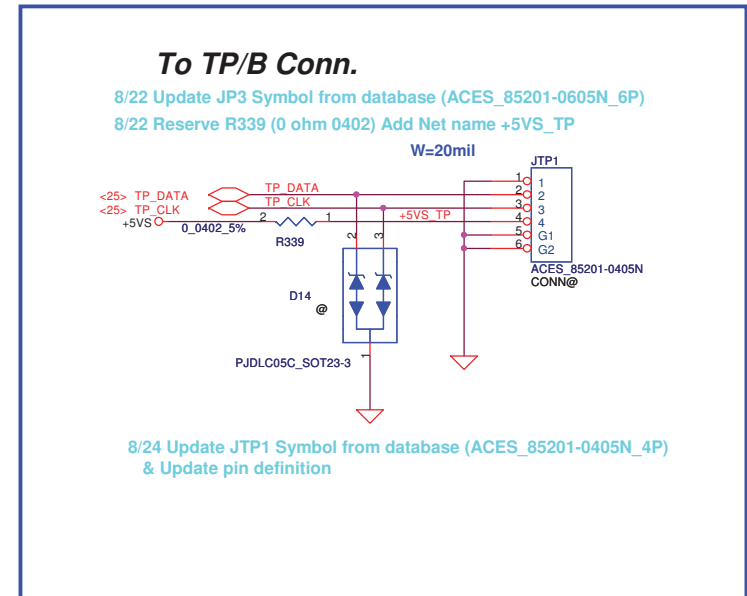
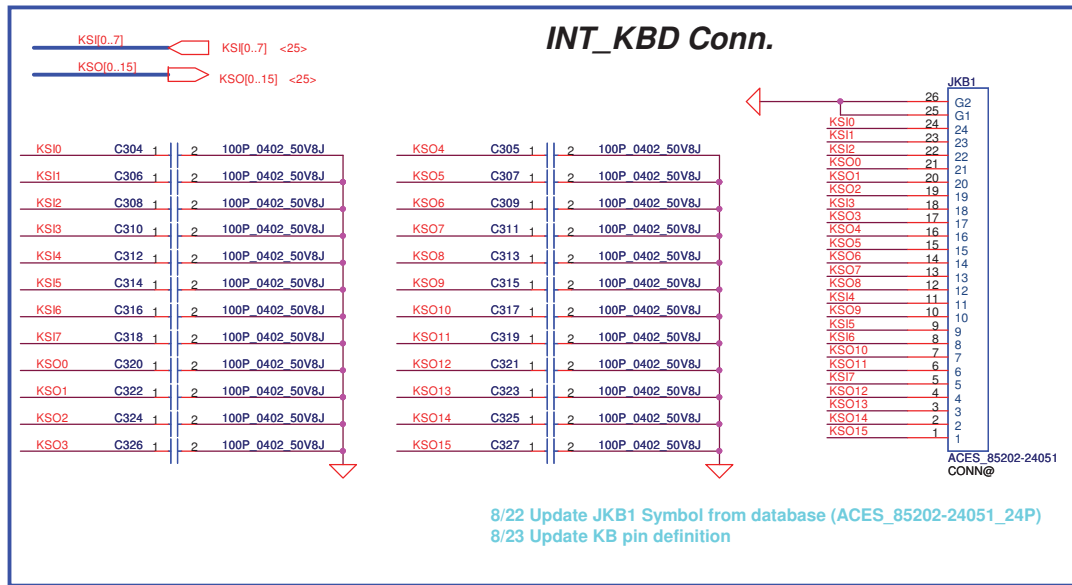


8/26 Change Q14 to SB000009610 Standard Part

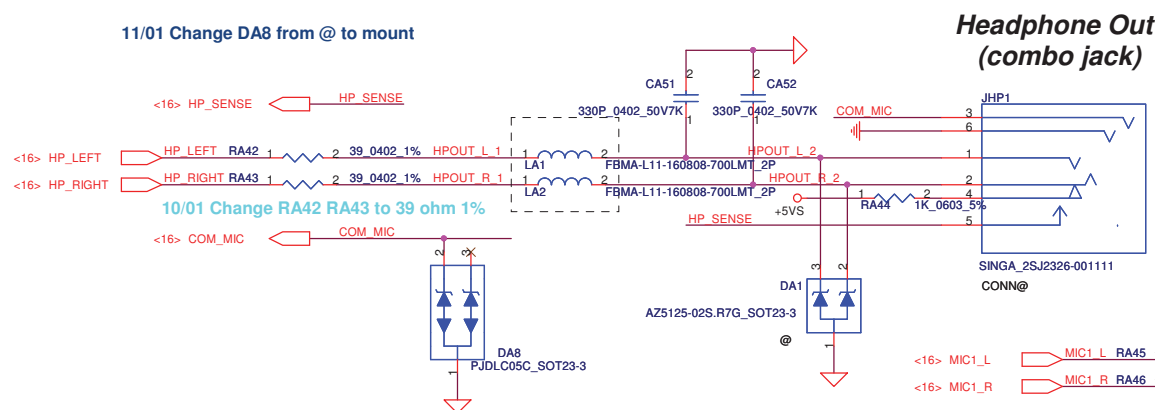
9/24 Change U9 to SA00001TC00



Security Classification		Compal Secret Data		Compal Electronics, Inc.		
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title ON/OFF / PWR SW/ 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 COPIED, REPRODUCED, OR DISCLOSED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size B	Document Number	Rev 1.0
				P0VE6 Schematics		
				Date:	Wednesday, November 17, 2010	Sheet 22 of 36



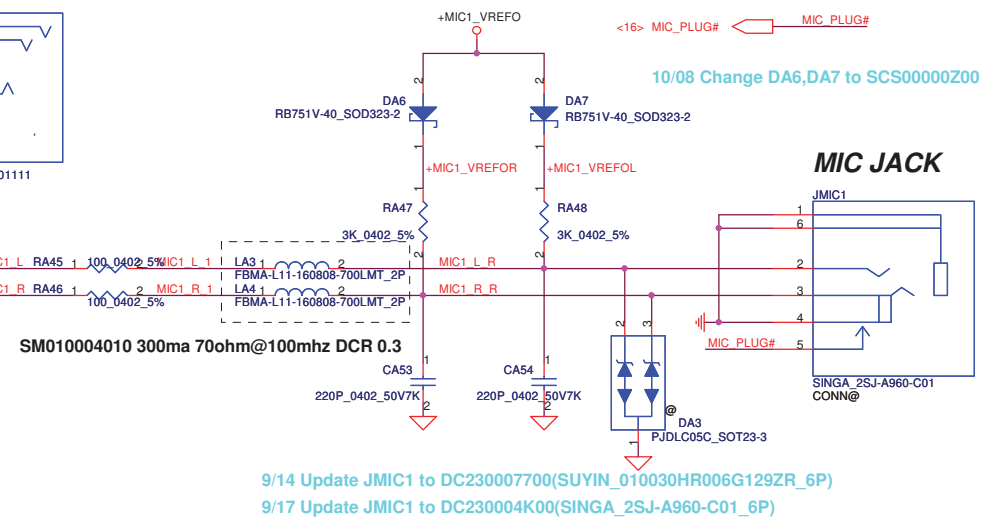
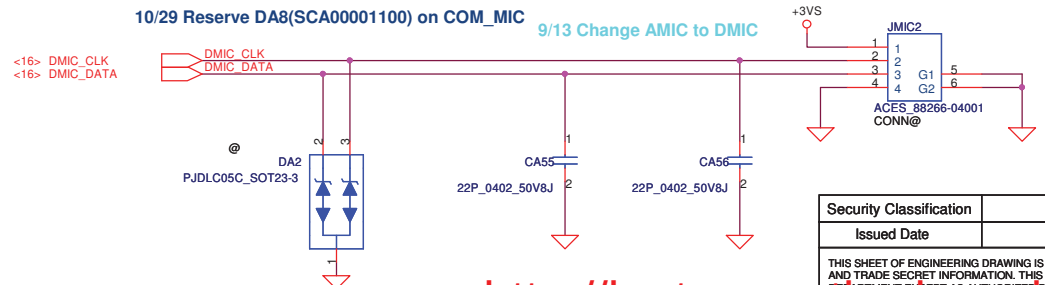
11/01 Change DA8 from @ to mount



10/06 Change Jacks GND to GNDA

9/28 Change Jacks AGND to GND

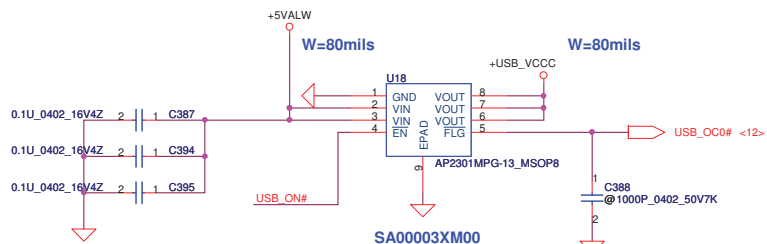
9/13 Combine LS-7071PR01_USB_0908.DSN Audio Jack Portion



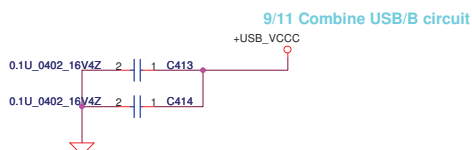
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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 PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				KB Conn/TP/CR Conn	
Size	Document Number	P0VE6 Schematics		Rev	
3	3	Date		Wednesday, November 17, 2010	
Sheet		23		of	
36		1		36	

9/1 Add R370 R371 for OC circuit

9/15 remove R370 R371 for OC circuit



9/29 Add C394,C395(0.1U) Close to U18

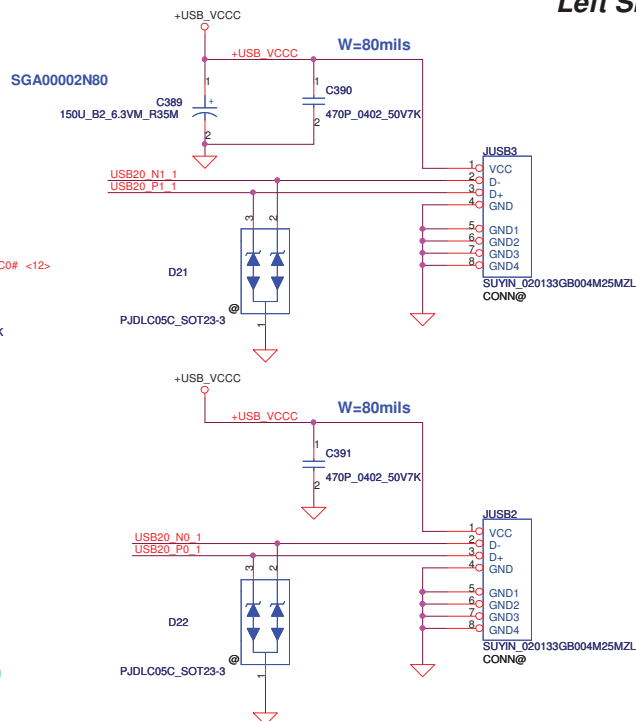


10/29 Add C413~C414(0.1U) on +USB_VCC

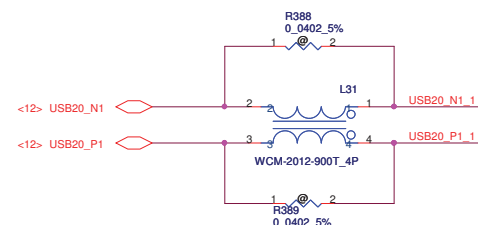
9/11 Change C340 C389 to SGA00002N80

9/24 Change U11,U18 to SA00003XM00

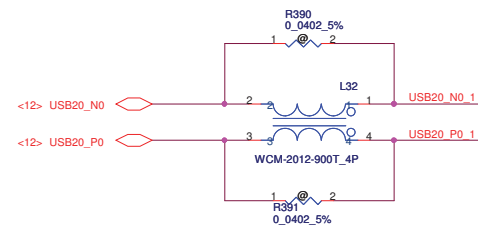
USB Charge Follow PAWGC
8/25 Remove Charge USB Circuit



Left Side USB CONN.



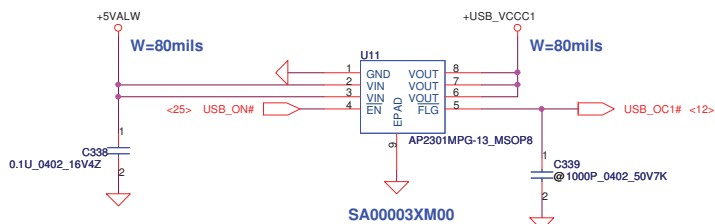
9/28 Swap L31 L32



10/28 Change R388,R389,R390,R391,R257,R258 from mount to un-mount

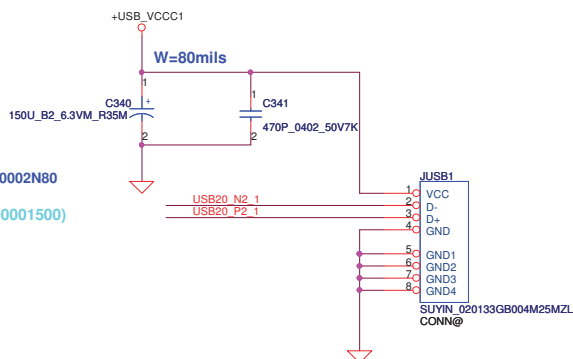
10/28 Change L28,L31,L32 (SM070000K00) from un-mount to mount

9/27 Change L28,L31,L32 to SM070000K00



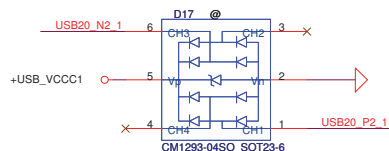
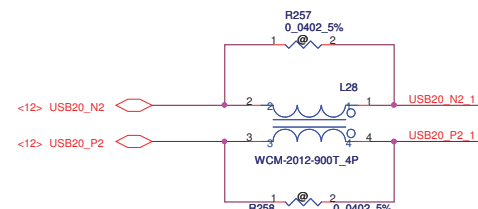
8/25 Change C340 from poly-cap to E-cap (SF000001500)

SGA00002N80



Right Side USB CONN.

9/28 Swap L28



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	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. ANY DISCLOSURE OF THIS INFORMATION TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. IS STRICTLY PROHIBITED. ANY VIOLATION OF THIS POLICY WILL BE TREATED AS A VIOLATION OF THE COMPANY'S POLICY ON CONFIDENTIALITY AND TRADE SECRET INFORMATION.				Size B	Document Number
				P0VE6 Schematics	
				Date: Wednesday, November 17, 2010	Rev 1.0
				Sheet 24 of 36	

11/15 Change L29,L30 P/N from SM010015410 to SM010004010

8/23 Pull up 10k (R345) to +3VALW on USB_ON#

8/31 Change EC_MUTE# Pull-up to +3VS(=)

8/21 Change R262 from 0 ohm 0805 to 0 ohm 0603

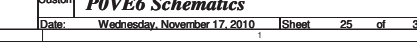
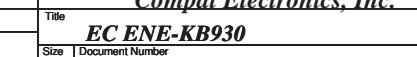
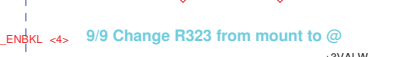
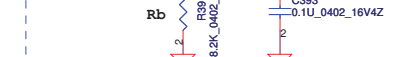
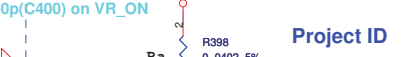
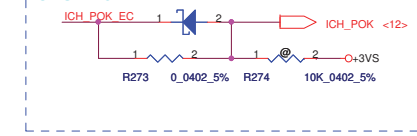
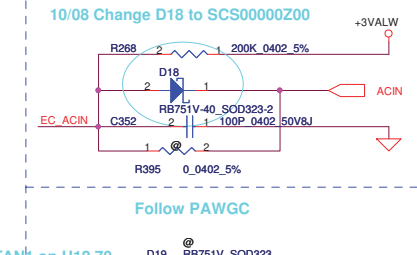
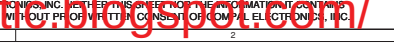
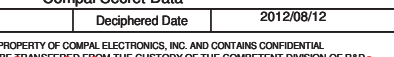
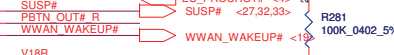
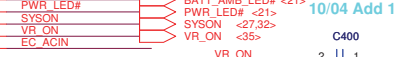
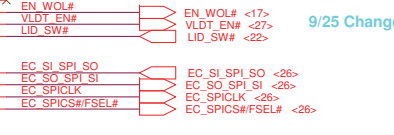
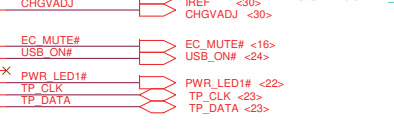
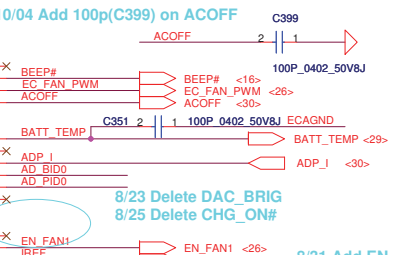
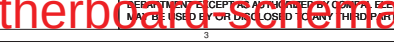
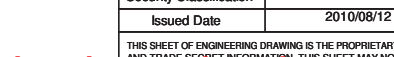
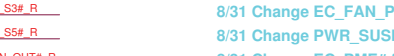
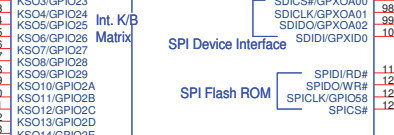
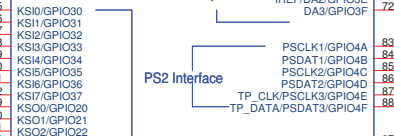
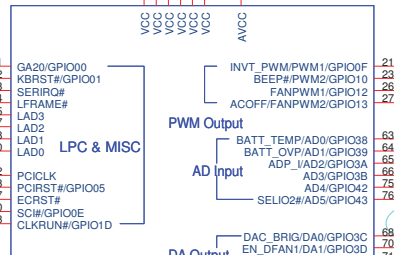
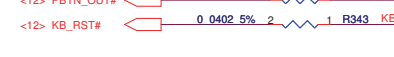
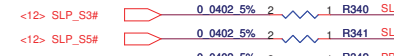
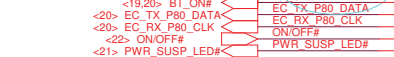
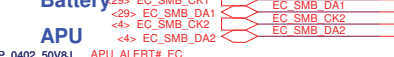
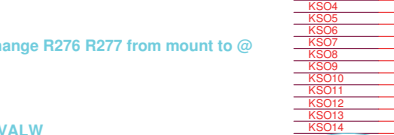
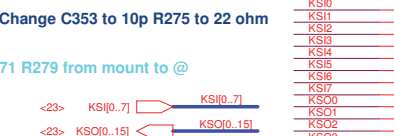
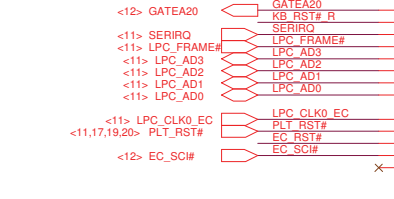
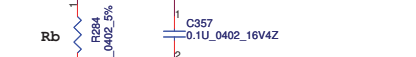
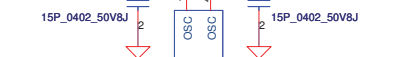
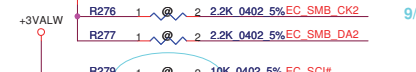
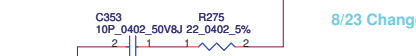
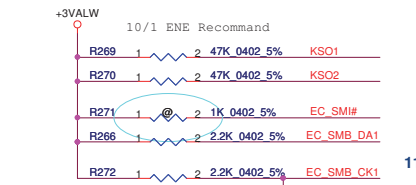
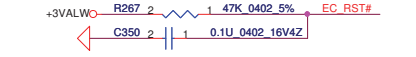
9/23 Update EC pin definition follow P5WE6

10/04 Add 100p(C399) on ACOFF

8/26 Change D18 to SCS00002G00 Standard Part

9/23 Reserve R395 on ACIN

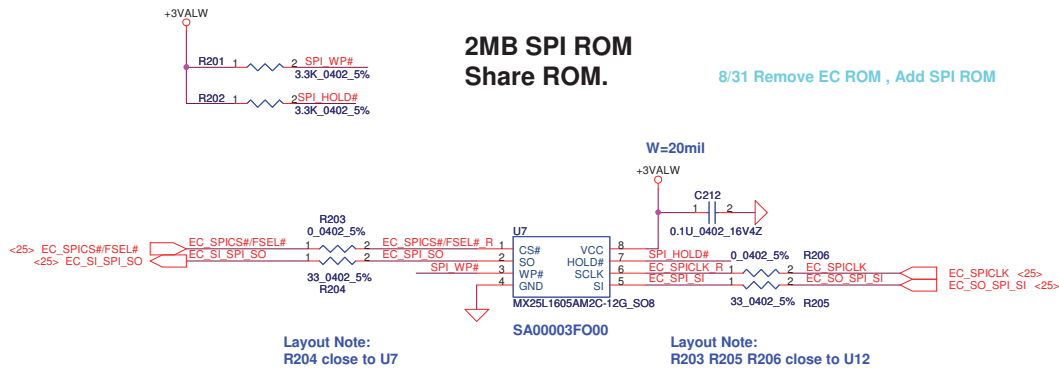
10/08 Change D18 to SCS00000200



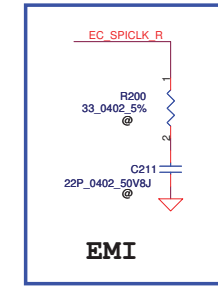
Security Classification		Compal Secret Data	
Issued Date	2010/08/12	Deciphered Date	2012/08/12
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMITTED, REPRODUCED, COPIED, OR USED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. ANY VIOLATION OF THIS POLICY WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.			

Compal Electronics, Inc.	
EC ENE-KB930	
Size	Document Number
Custom	P0VE6 Schematics
Date	Wednesday, November 17, 2010
Sheet	25 of 36

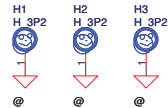
<http://laptop-motherboard-schematic.blogspot.com/>



9/2 Change EC_SPICLK to EC_SPICLK_R



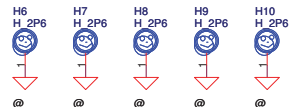
3P2 x 3 (APU)



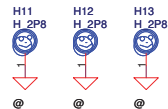
9/15 Update the Screw Hole

9/20 Add H20 (H_3P4X3P2N)

2P6 x 5



2P8 x 3



10/07 Change H13 from GND to LANGND

10/07 Change H13 from LANGND to GND

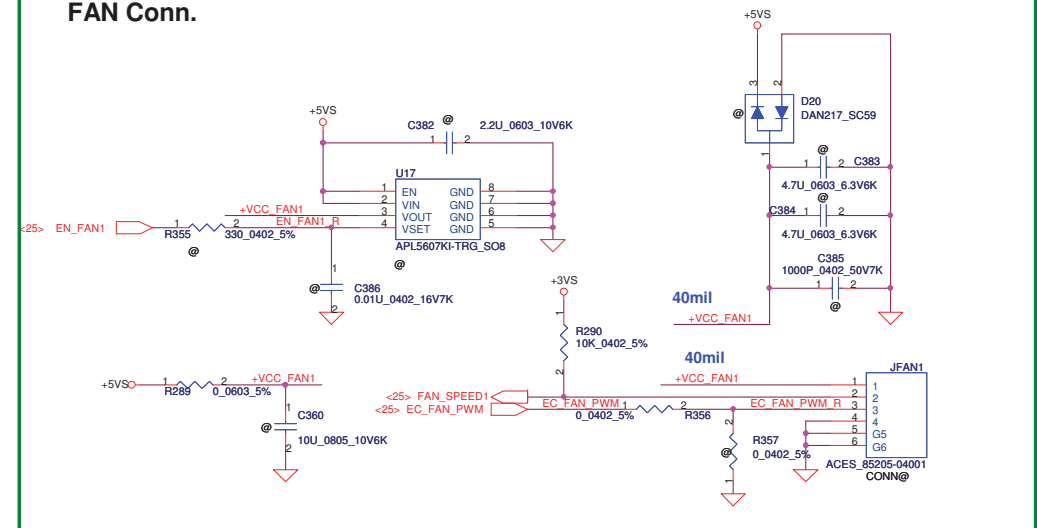
3P2N x 1



3P3N x 1



FAN Conn.



8/24 Update JFAN1 Symbol from database (ACES_85205-03001_3P) & Update pin definition

8/24 Delete R290

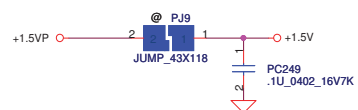
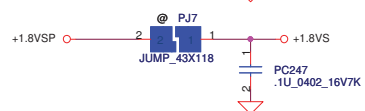
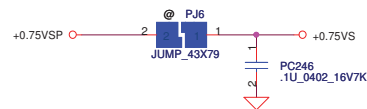
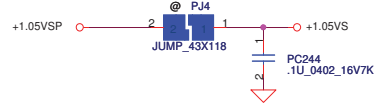
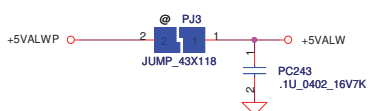
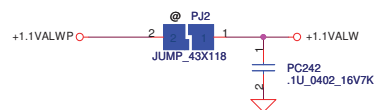
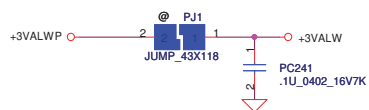
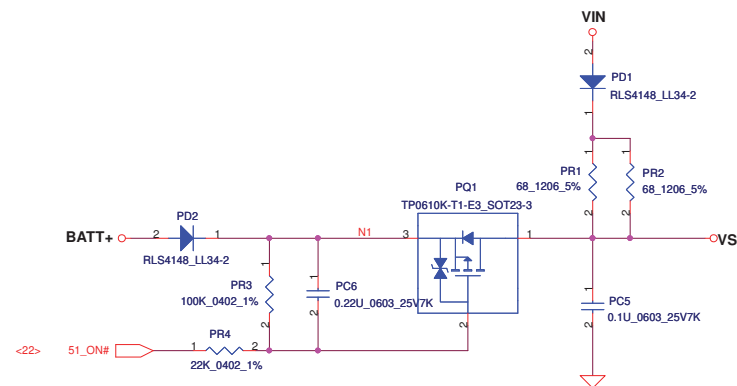
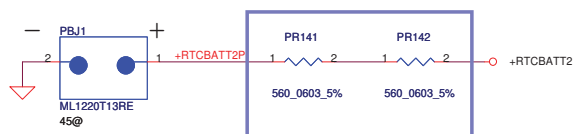
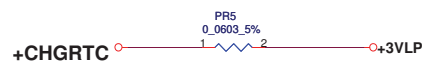
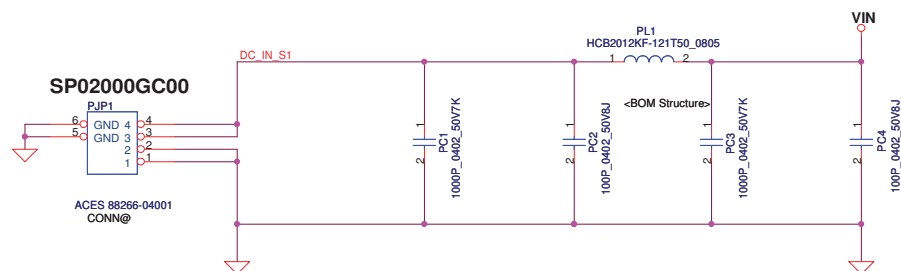
8/25 Update JFAN1 Symbol from database (ACES_85205-04001_4P) & Update pin definition

8/25 Add R290 10k pull-up tp +3VS

8/31 Reserve U17,C382-C386, R355-R357, D20 (Fan Drive Circuit)

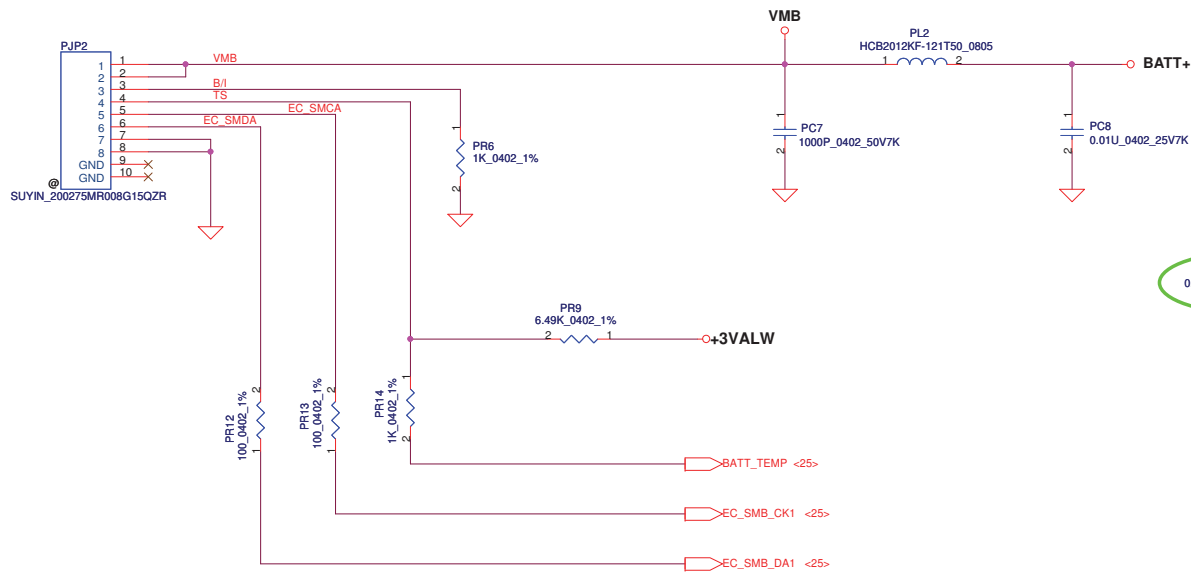


Security Classification				Compal Secret Data				Compal Electronics, Inc.			
Issued Date				2010/08/12				Deciphered Date			
								2012/08/12			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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			
								Screw / EC ROM / FAN			
Size B				Document Number				P0VE6 Schematics			
Date:				Wednesday, November 17, 2010				Sheet 26 of 36			
								Rev 1.0			

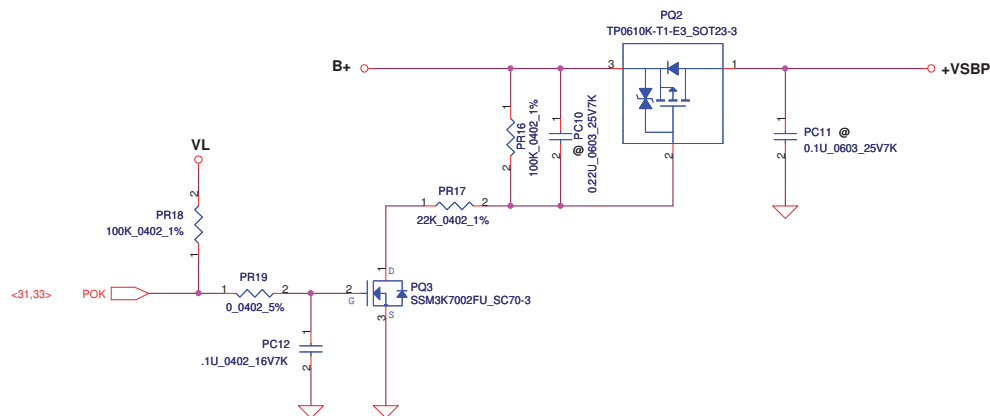
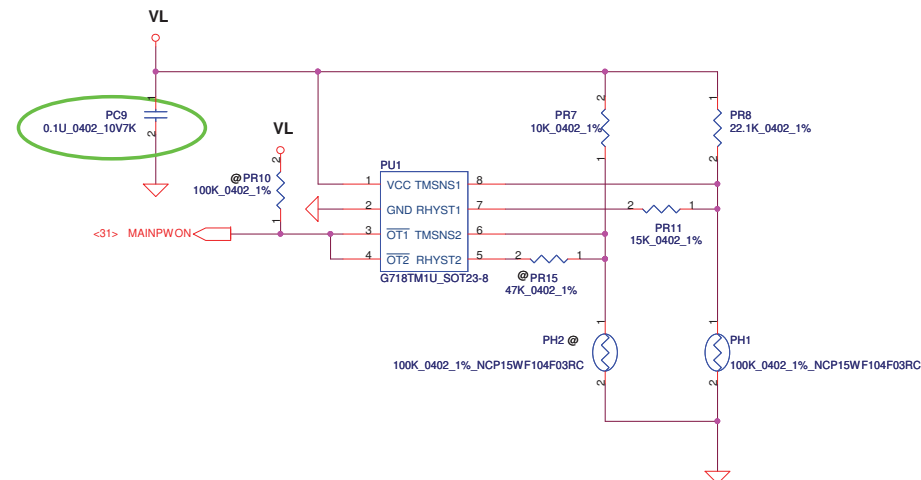


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. IT IS TO BE KEPT FROM THE PUBLIC AND IF IT IS COMPROMISED, IT IS TO BE REPORTED TO THE COMPANY IMMEDIATELY. NO PART OF THIS SHEET IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PRIOR WRITTEN PERMISSION FROM COMPAL ELECTRONICS, INC.				DCIN/VIN DETECTOR	
Size	Document Number				Rev
	Date: Wednesday, November 17, 2010				1.0
	Sheet	28	of	36	

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



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



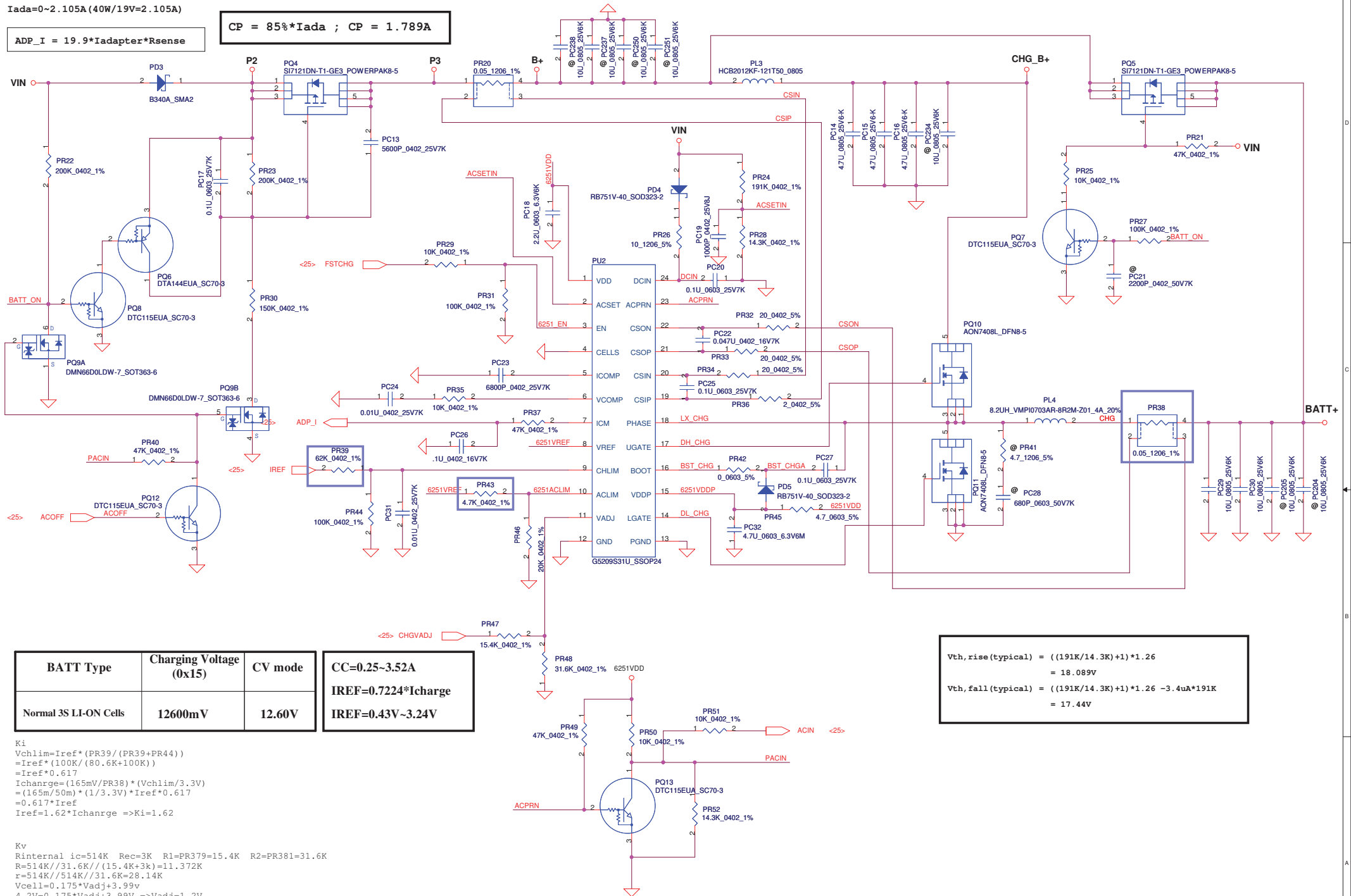
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. IT IS NOT TO BE REPRODUCED, COPIED, OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				BATTERY CONN / OTP		
Size	Document Number	Rev		1.0		
Date:	Wednesday, November 17, 2010	Sheet	29	of 35		

http://laptop-motherboard.schematics.net/Compal_Electronics_Inc/

Iada=0~2.105A (40W/19V=2.105A)

ADP_I = 19.9*Iadapter*Rsense

CP = 85%*Iada ; CP = 1.789A



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

CC=0.25~3.52A
IREF=0.7224*Icharge
IREF=0.43V~3.24V

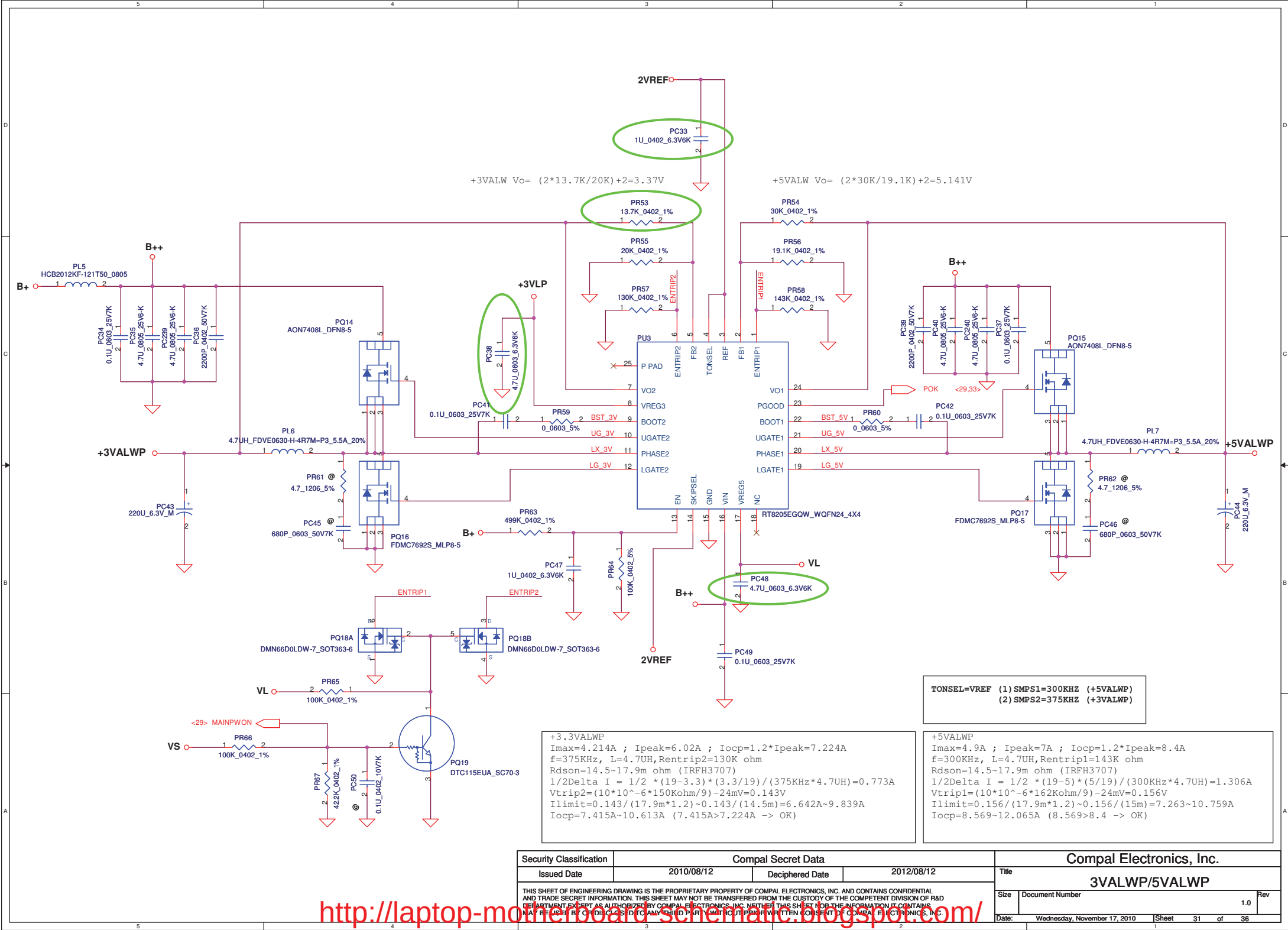
Ki
Vchlim=Iref*(PR39/(PR39+PR44))
=Iref*(100K/(80.6K+100K))
=Iref*0.617
Icharge=(165mV/PR38)*(Vchlim/3.3V)
=(165m/50m)*(1/3.3V)*Iref*0.617
=0.617*Iref
Iref=1.62*Icharge => Ki=1.62

Kv
Rinternal ic=514K Rec=3K R1=PR379=15.4K R2=PR381=31.6K
R=514K/(31.6K/(15.4K+3K))=11.372K
r=514K/(514K/31.6K+28.14K)
Vcell=0.175*Vadj+3.99v
4.2V=0.175*Vadj+3.99v => Vadj=1.2V
Vadj=Vref*(R/(R+514K))+CALIBRATE*(r/(r+514K))
1.1483=CALIBRATE*0.6046 => CALIBRATE=1.899
1.899=(4.2-(Vcell+A*0.175))*Kv=(4.2-(4.2+A*0.175))*Kv
A=Vref*(R/(R+514K))=0.052
Kv=9.451

Vth, rise (typical) = ((191K/14.3K)+1)*1.26
= 18.089V
Vth, fall (typical) = ((191K/14.3K)+1)*1.26 - 3.4uA*191K
= 17.44V

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

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title	CHARGER
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				Rev	1.0
				Date:	Wednesday, November 17, 2010
				Sheet	30 of 36



+3VALW Vo= (2*13.7K/20K)+2=3.37V

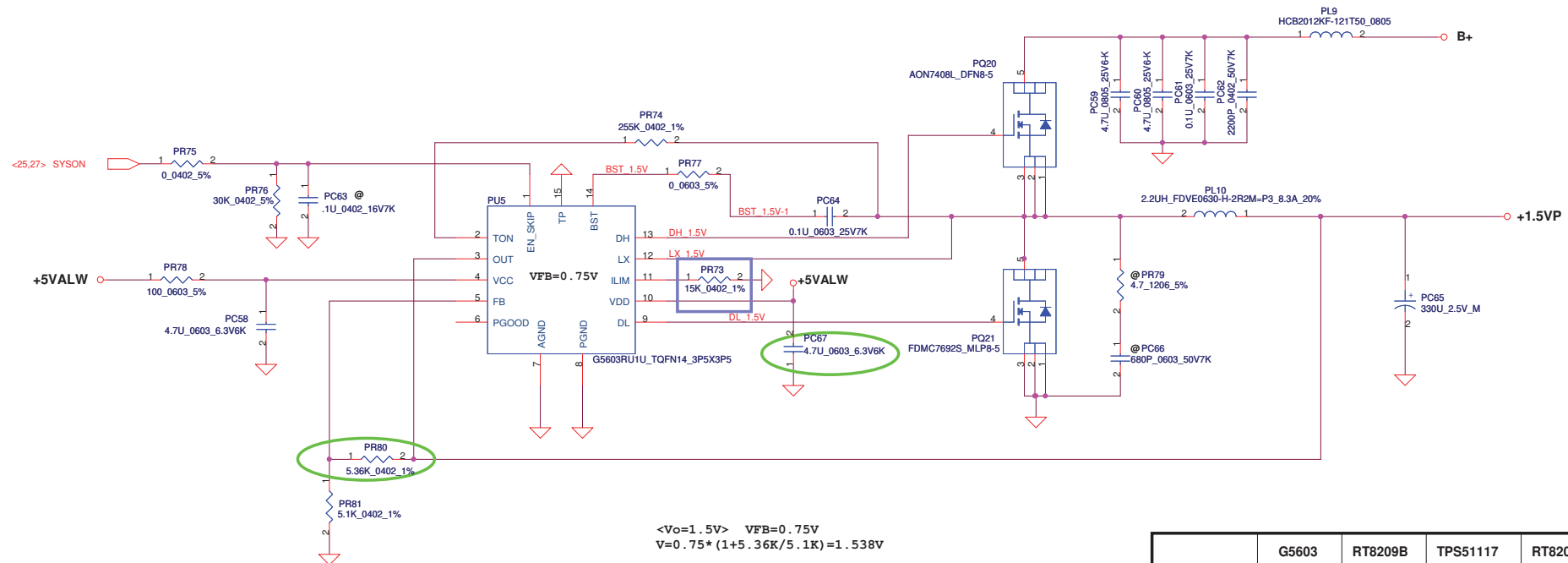
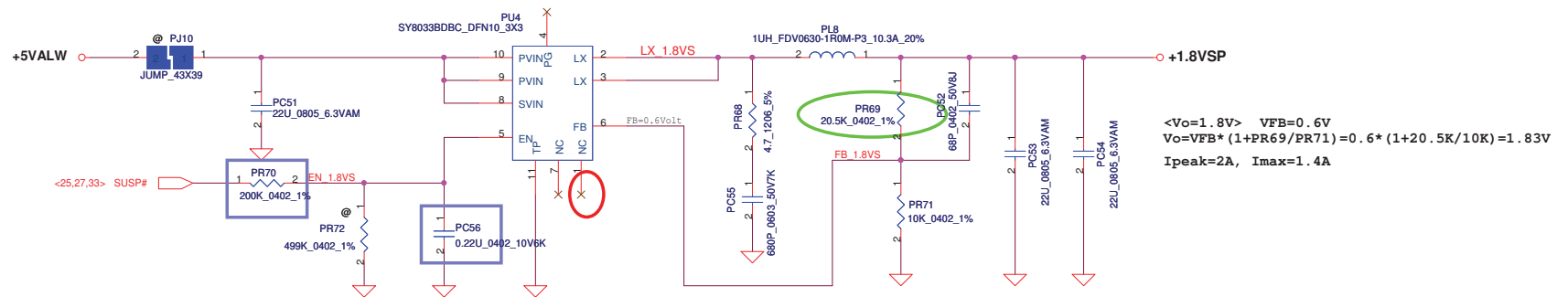
+5VALW Vo= (2*30K/19.1K)+2=5.141V

TONSEL=VREF (1) SMPS1=300KHZ (+5VALWP)
(2) SMPS2=375KHZ (+3VALWP)

+3.3VALWP
Imax=4.214A ; Ipeak=6.02A ; Iocp=1.2*Ipeak=7.224A
f=375KHz, L=4.7UH, Rentrip2=130K ohm
Rdson=14.5~17.9m ohm (IRFH3707)
1/2Delta I = 1/2 * (19-3.3) * (3.3/19) / (375KHz*4.7UH)=0.773A
Vtrip2=(10*10^-6*150Kohm/9)-24mV=0.143V
Ilimit=0.143/(17.9m*1.2)-0.143/(14.5m)=6.642A~9.839A
Iocp=7.415A~10.613A (7.415A>7.224A -> OK)

+5VALWP
Imax=4.9A ; Ipeak=7A ; Iocp=1.2*Ipeak=8.4A
f=300KHz, L=4.7UH, Rentrip1=143K ohm
Rdson=14.5~17.9m ohm (IRFH3707)
1/2Delta I = 1/2 * (19-5) * (5/19) / (300KHz*4.7UH)=1.306A
Vtrip1=(10*10^-6*162Kohm/9)-24mV=0.156V
Ilimit=0.156/(17.9m*1.2)-0.156/(15m)=7.263~10.759A
Iocp=8.569~12.065A (8.569>8.4 -> OK)

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	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.				3VALWP/5VALWP	
Size	Document Number	1.0	Rev	Date	Wednesday, November 17, 2010
Sheet	31	of	36	Sheet	31

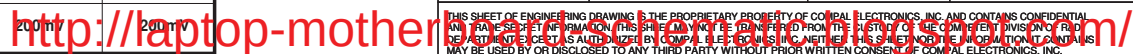


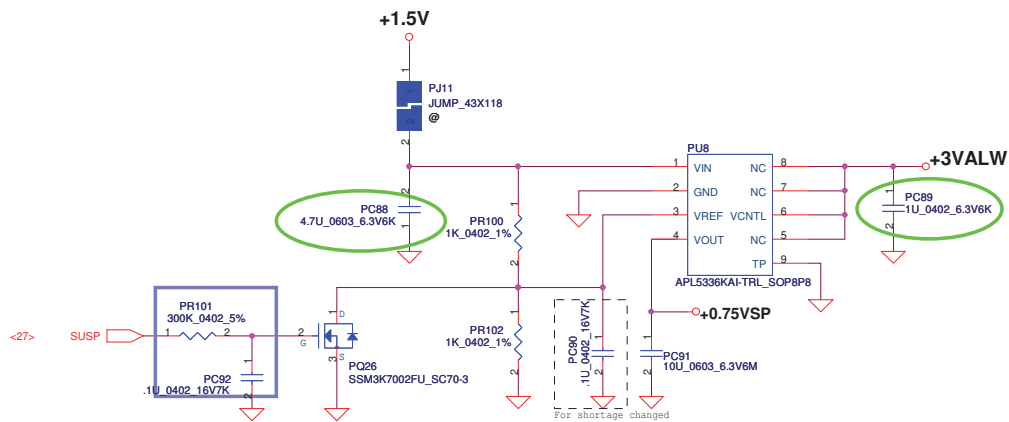
Cout ESR=25m ohm
 $R_{ds(on)(max)} = 17.9 \text{ mohm}$ $R_{ds(on)(typ)} = 14.5 \text{ mohm}$. (IRFH3707)
 $I_{peak} = 6.5A, I_{max} = 4.55A, I_{ocp} > 7.8A$

	G5603	RT8209B	TPS51117	RT8209M
OCP setting	6.821A	7.235A	8.000A	8.178A

	G5603	RT8209B	TPS51117	RT8209M
Temperature Compensated	-1180ppm/°C	1600ppm/°C	4500ppm/°C	4800ppm/°C
Vtrip_min (SPEC)	30mV	50mV	30mV	50mV
Vtrip_max (SPEC)	200mV	200mV	200mV	200mV

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2010/08/12	Deciphered Date	2012/08/12	Title		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. IT IS NOT TO BE REPRODUCED, COPIED, OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				1.8VSP/1.5VP		
Size	Document Number	Rev		1.0		
Date:	Wednesday, November 17, 2010	Sheet	32	of 36		





Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2010/08/12	Deciphered Date	2012/08/12	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. GROUPS AS AUTHORIZED BY COMPAL ELECTRONICS, INC. WITHOUT THE WRITTEN PERMISSION OF IT CONTAINING MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
					Rev
				Date	Wednesday, November 17, 2010
				Sheet	34 of 36

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

Page 1 of 1 for PWR

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

Size Custom	Document Number	Rev 1.0
Date: Monday, November 15, 2010	Sheet 36 of 36	