

COMPAL CONFIDENTIAL

MODEL NAME : *NIM00*
PCB NO : *LA5461P(DA60000DD10) DAZ09L00100*
BOM P/N : *46174031L01*

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Argos M/B
Schematics Document

2009-06-24

REV:1.0

@X7618431L01 Parade HDMI LS
@X7618431L02 ST HDMI LS

PCB1
JBL00
LS-3807P REV0
Sniffer/B
PCB 042 LA-5461P REV0.2 B

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Model Name :

Argos Chipset System-Board

Thermal Sensor
EMC1402

Mobile Penym

Atom /CULV
uFCPGA-956 CPU - SFF

CK505

Clock Generator
ICS9LPRS397

CPU Regulator

+1.8V

+1.05VS

+0.9VS

+1.5VS

Intel ICH9-M

WBMMAP-569 - SFF

Intel Cantiga GS 45

FCBGA 1363 - SFF

DDR2 800MHz 1.8V

DDR2-SO-DIMM X 1
BANK 0, 1, 2, 3

DMI X4

FSB
667/800MHz 1.05V

200Pin Golden-Finger

page 3

LVDS I/F

SDVO I/F

PCIE

USB

PCIE

USB

PCIE

LPC BUS

Daughter Board

USB2.0

AZALIA

Audio Codec
ALC 272

Audio Jack

AMP
APA2031

Speaker
1W X2

USB Card Reader
RTS5159
SD/MMC/MS

USB Conn X 2

Camera/DMIC P5

USB Conn X 1 P9

BlueTooth P4

DCIN/CHARGER

P13/P16

BATT Conn/OTP

P15

+3VALW

+5VALW

Argos Main-Board

LVDS
Connector P5

HDMI LS
PS8101T P6

HDMI
Connector P6

LAN AR8132
P12

RJ45 10/100
P12

Mini Card2
WLAN P4

Mini Card 1
WWAN P4

EC
ENE KB926 P8

BIOS P10

TP P10

Int.KBD P8

SATA HDD P7

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Title		
Block Diagram		
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Voltage Rails O MEANS ON X MEANS OFF

power plane State	+B	+5VALW +3VALW	+5VS +3VS +1.8VS +1.5VS
S0	O	O	O
S1	O	O	O
S3	O	O	X
S5 S4/AC	O	O	X
S5 S4/ Battery only	O	X	X
S5 S4/AC & Battery don't exist	X	X	X

USB Port	Device
0	USB Right 1
1	USB Right 2
2	USB Left
3	NC
4	WLAN
5	WWAN
6	Bluetooth
7	Camera
8	Cardreader
9	NC
10	NC
11	NC

SATA Port	Device
0	HDD

PCIE Port	Device
1	LAN
2	JWLAN1
3	
4	JWWAN1
5	
6	

I2C / SMBUS ADDRESSING

DEVICE	HEX	ADDRESS
DDR SO-DIMM 0	A0	10100000
CLOCK GENERATOR (EXT.)	D2	11010010

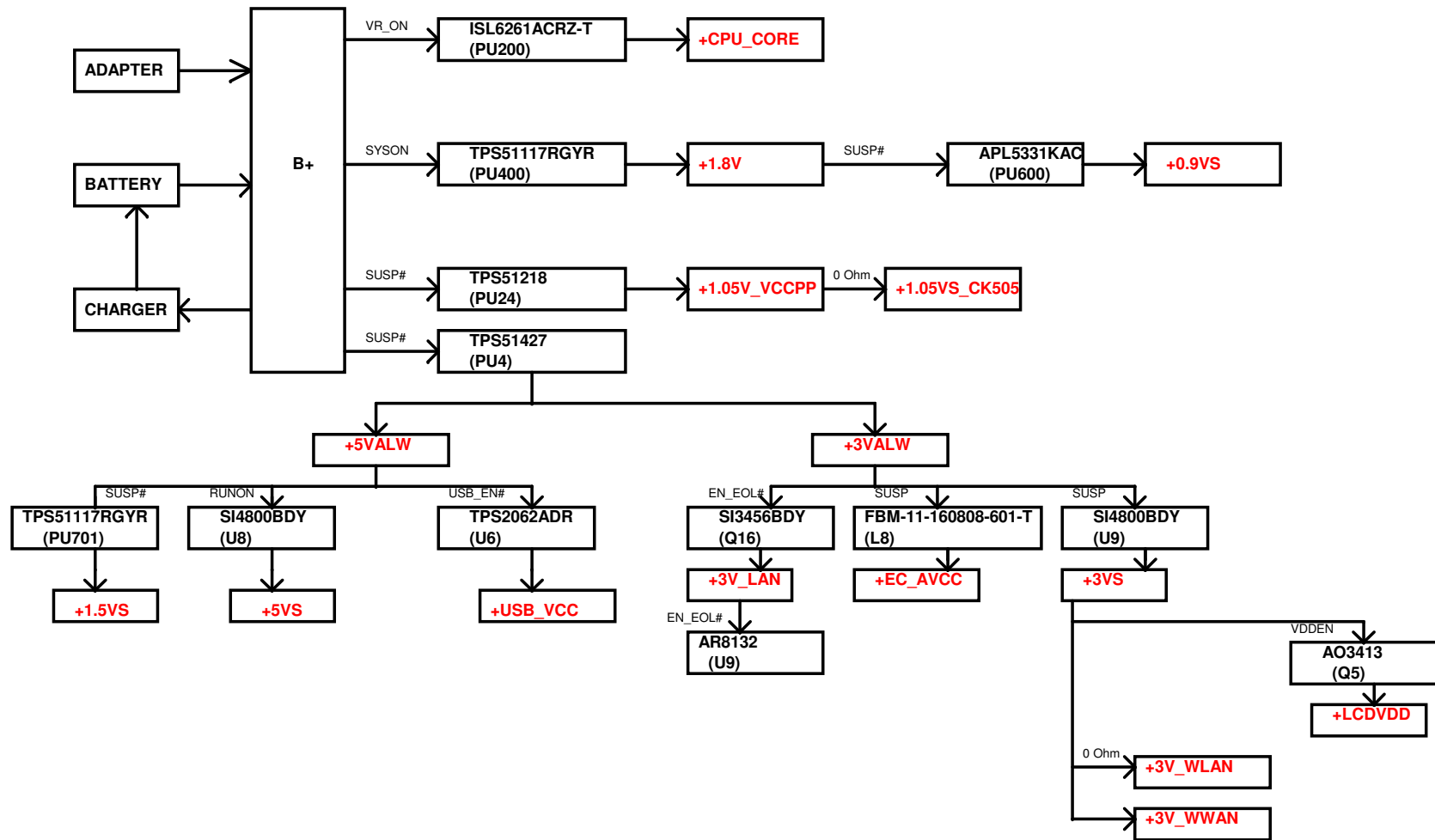
SMBUS Control Table

	SOURCE	INVERTER	BATT	SERIAL EEPROM	THERMAL SENSOR (CPU)	SODIMM	CLK CHIP	MINI CARD	LCD
SMB_EC_CK1 SMB_EC_DA1	KB926	X	V	X	X	X	X	X	X
SMB_EC_CK2 SMB_EC_DA2	KB926	X	X	X	V	X	X	X	X
SMB_CK_CLK1 SMB_CK_DAT1	ICH9	X	X	X	X	V	V	V	X
LCD_CLK LCD_DAT	Cantiga	X	X	X	X	X	X	X	V

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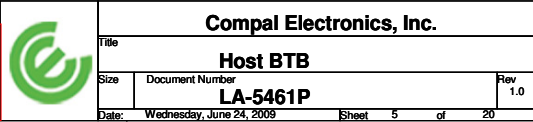


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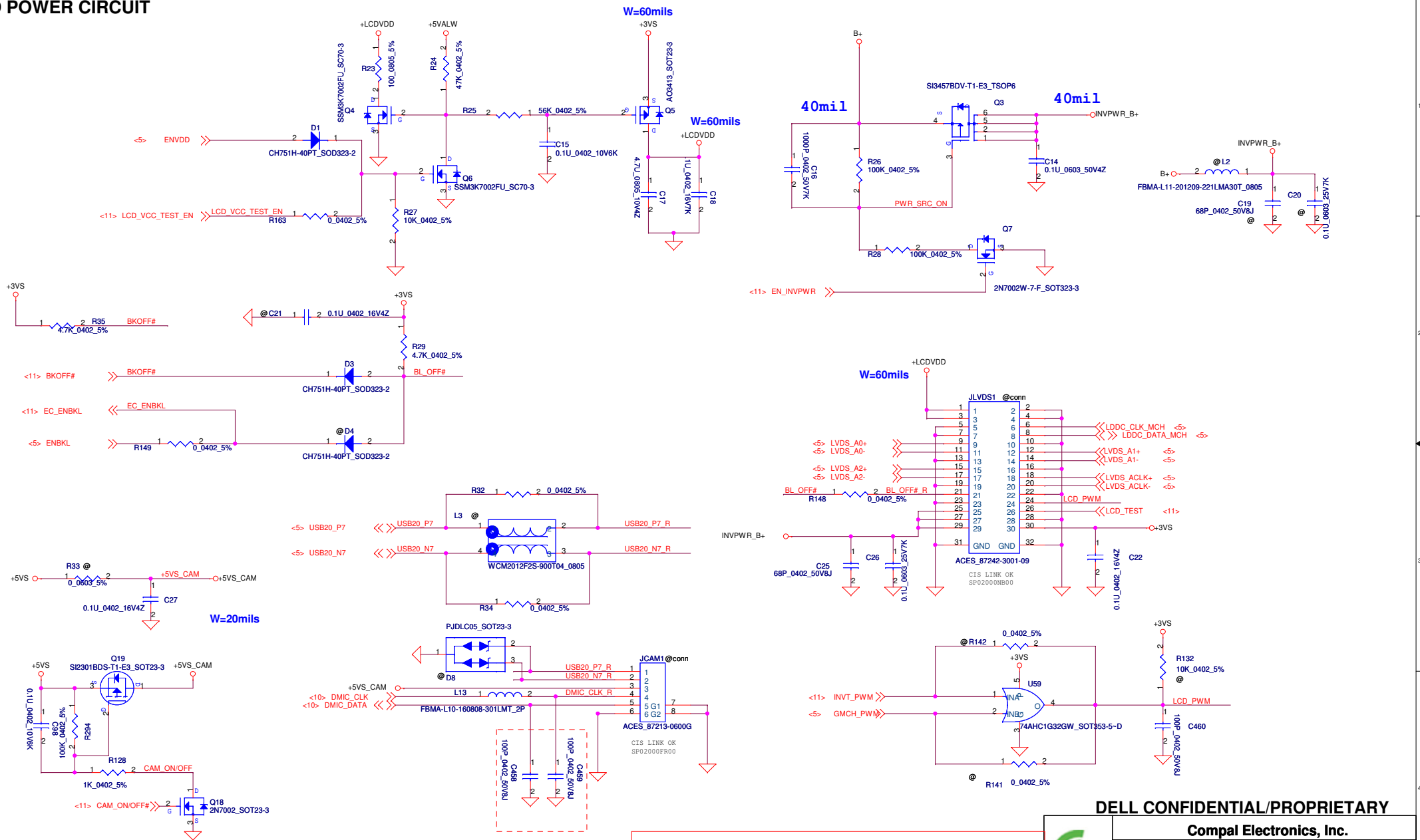
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LCD POWER CIRCUIT



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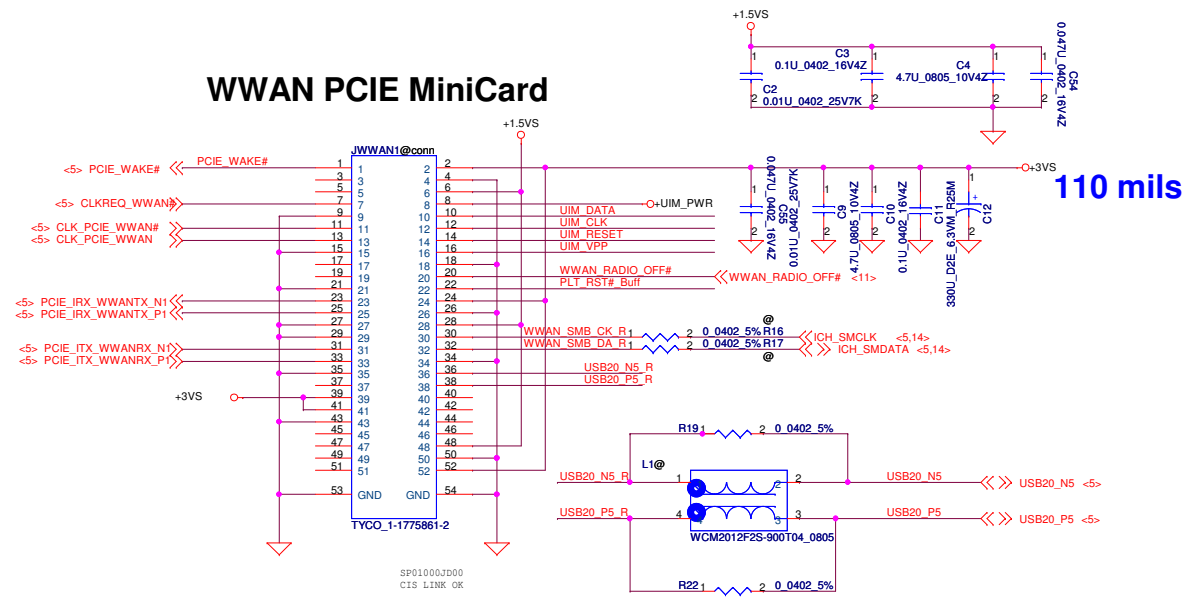
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LVDS

Size Document Number **LA-5461P** Rev 1.0

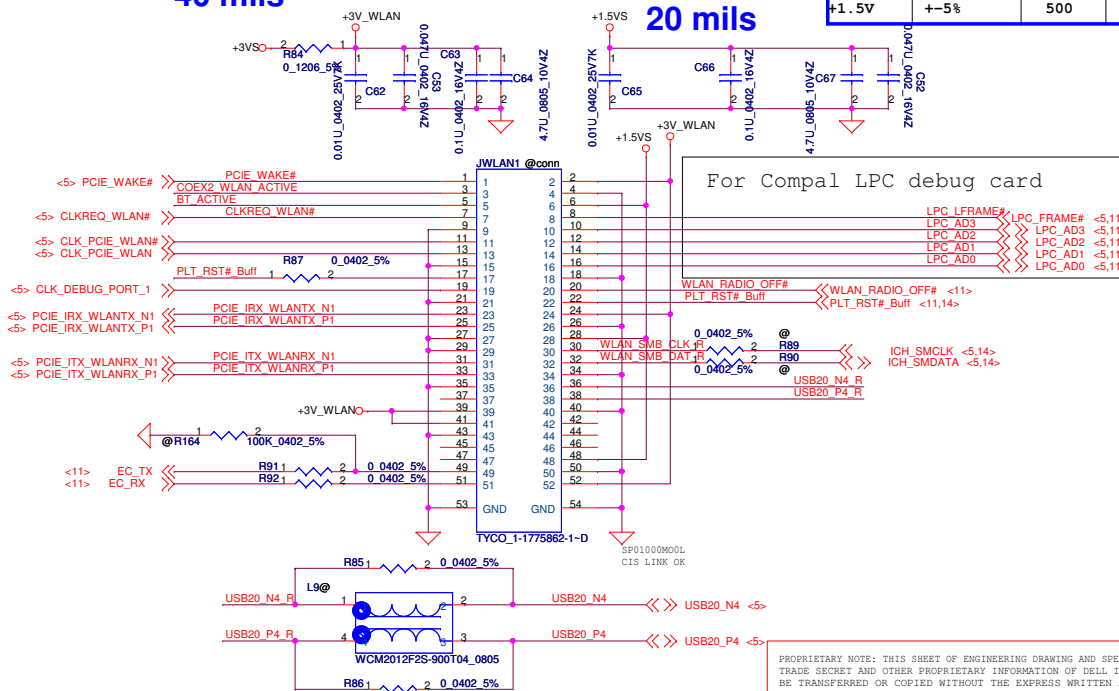
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WWAN PCIE MiniCard

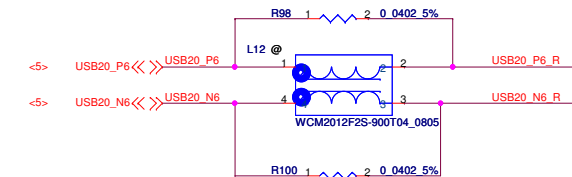
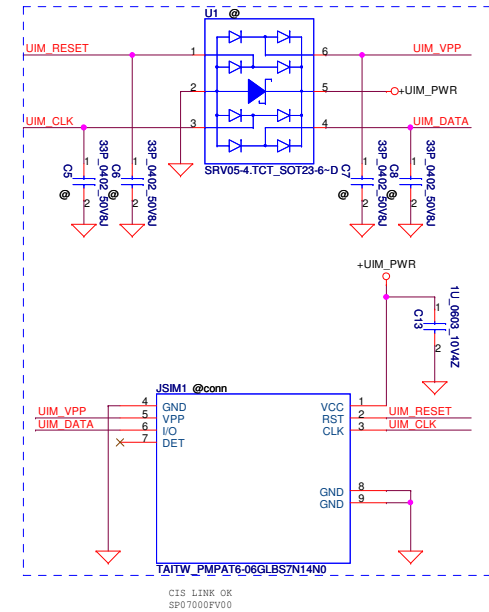


PWR Rail	Voltage Tolerance	Primary Power		Aux Power
		Peak	Normal	Normal
+3.3V	+−9%	1000	750	
+3.3Vaux	+−9%	330	250	250 (Wake enable) 5 (Not wake enable)
+1.5V	+−5%	500	375	NA

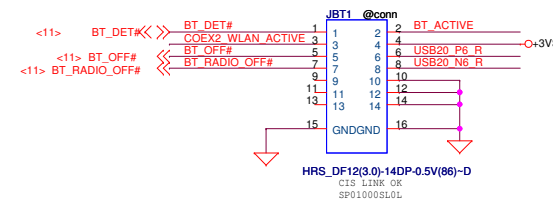
40 mils **WLAN/WIMAX PCIE Mini Card** **20 mils**



SIM Card



Bluetooth



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WLAN/WWAN/BT

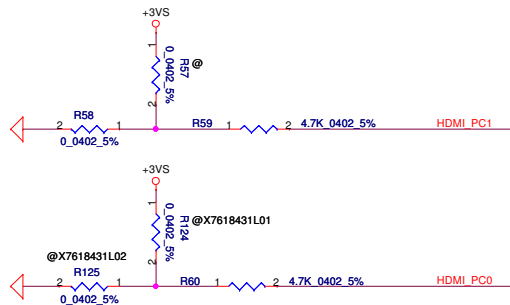
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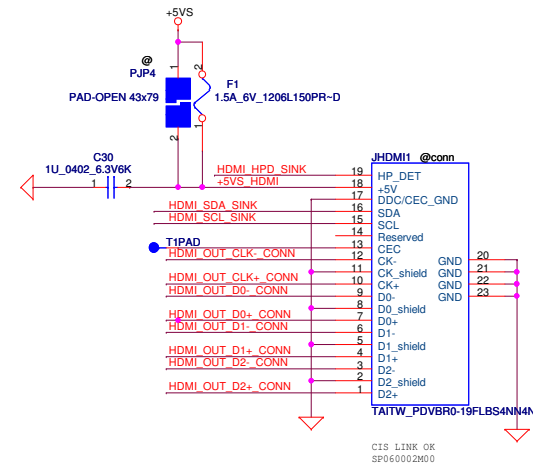
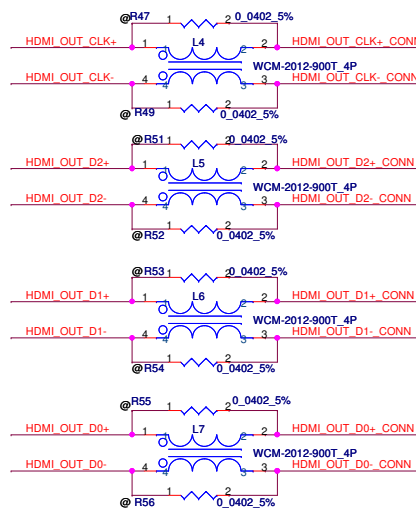
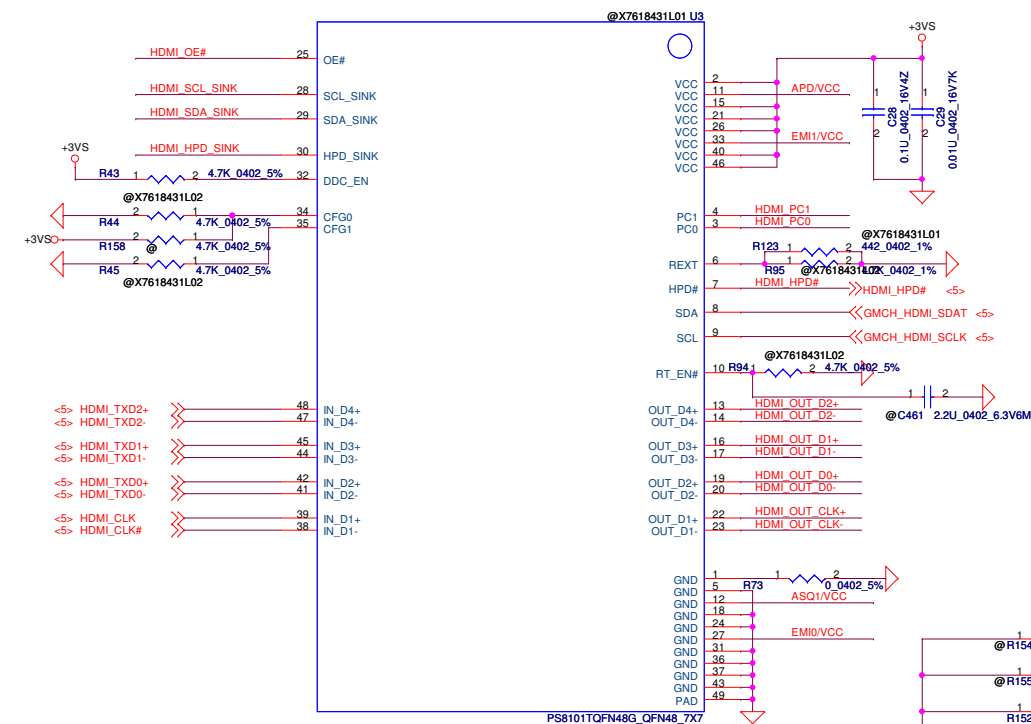
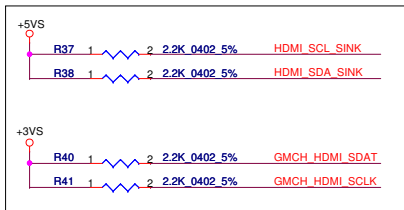
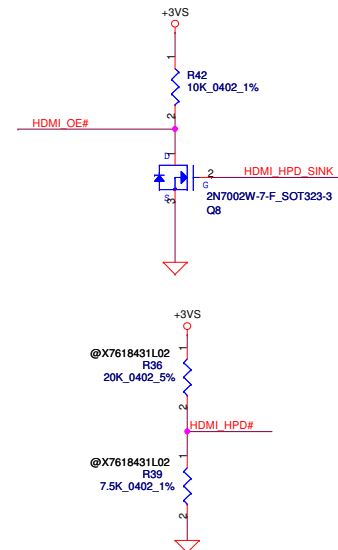
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U3 Select Component						
	Parade(1st) SA00002D700	ST(2nd) SA00002C610		Parade(3th)	PS8171	
R57	X	X	R73	4.7K ohm	R152	X
R124	V	X	R57	V	R153	X
R125	X	V	R58	X	R154	V
R36	X	V	R125	V	R155	V
R39	X	V	R124	X	R156	V
R44	X	V	R158	V	R157	V
R45	X	V	C461	V		
R123	442 ohm	X	R94	X		
R95	X	4.7K ohm	R150	X		
R94	X	V	R151	X		

Recommended Equalization: [PC1,PC0]=01, 4dB



Vendor's suggestion for power saving.



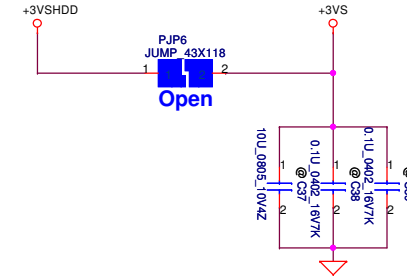
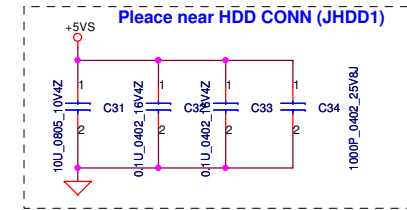
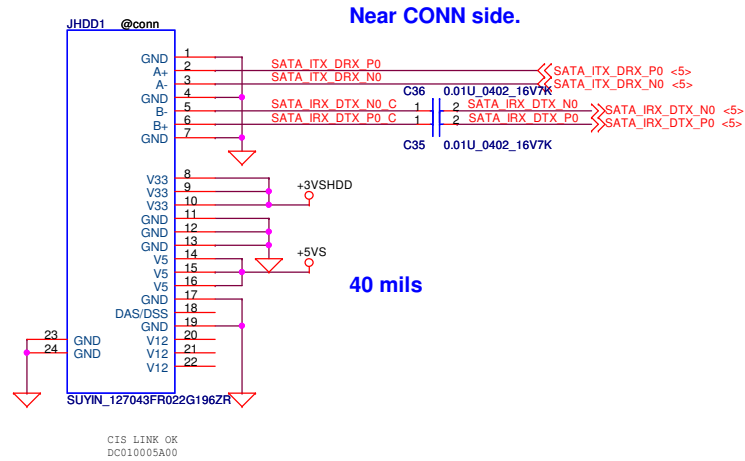
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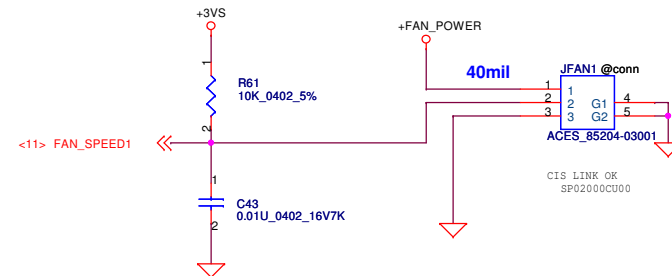
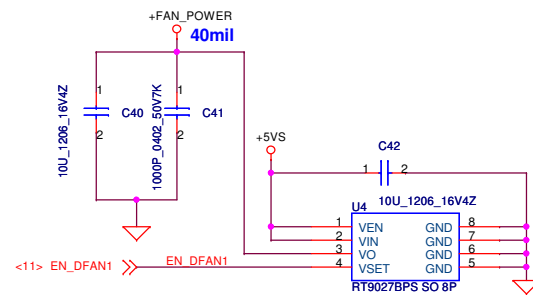
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HDMI			
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HDD Connector



FAN Control circuit



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FAN/HDD

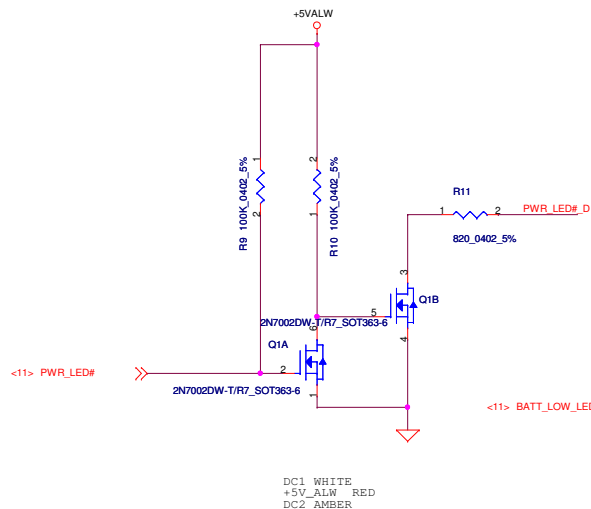
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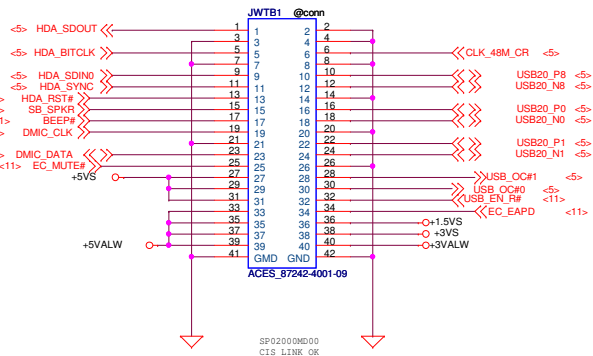
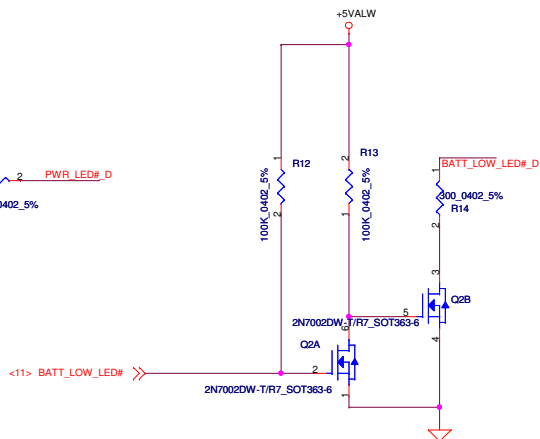
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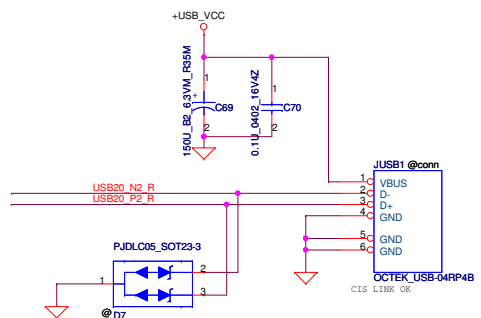
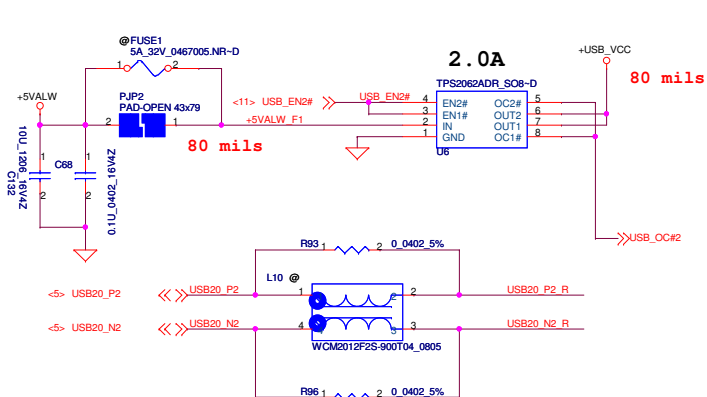
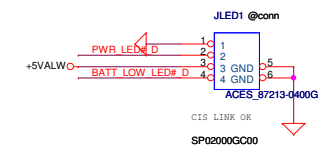
Power LED



BATT CHARGE



LED CONN



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[illegible]

The diagram shows a 3V battery pack (3V1W) connected to a 3V regulator (R62, 100K_0402_5%) and a 3V LED (R67, 374K_0402_1%). The regulator is connected to the battery pack via a 100K resistor (R62) and to the LED via a 374K resistor (R67). The LED is connected to ground via a 374K resistor (R67). The battery pack is connected to ground via a 374K resistor (R67). The LED is connected to ground via a 374K resistor (R67).

ID	BOARD ID	Ra	Rb	Vab
0	0.1(X00)	NC	0	0V
1	0.2(X01)	100K	9.09K	0.25V
2	1.0(A00)	100K	20K	0.55V
3	2.0(A01)	100K	NC	3.3V

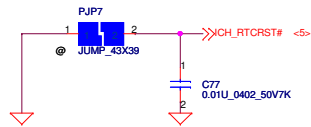
	JKB1	@com
KS17	1	
KS16	2	
KS15	3	
KS14	4	
KS13	5	
KS12	6	
KS11	7	
KS10	8	
KS09	9	
KS08	10	
KS07	11	
KS06	12	
KS05	13	
KS04	14	
KS03	15	
KS02	16	
KS01	17	
KS00	18	
KS016	19	
KS015	20	
KS013	21	
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	100	

KSO8 @C449	100P_0402_25V8K	100P_0402_25V8K	C235 @ KSI7
KSI3 @C239	100P_0402_25V8K	100P_0402_25V8K	C236 @ KSI6
KSO9 @C249	100P_0402_25V8K	100P_0402_25V8K	C237 @ KSI5
KSI2 @C240	100P_0402_25V8K	100P_0402_25V8K	C441 @ KSO0
KSI1 @C241	100P_0402_25V8K	100P_0402_25V8K	C442 @ KSO1
KSO10 @C248	100P_0402_25V8K	100P_0402_25V8K	C443 @ KSO2
KSO11 @C247	100P_0402_25V8K	100P_0402_25V8K	C238 @ KSI4
KSI0 @C242	100P_0402_25V8K	100P_0402_25V8K	C444 @ KSO3
KSO12 @C246	100P_0402_25V8K	100P_0402_25V8K	C445 @ KSO4
KSO13 @C245	100P_0402_25V8K	100P_0402_25V8K	C446 @ KSO5
KSO14 @C244	100P_0402_25V8K	100P_0402_25V8K	C447 @ KSO6
KSO15 @C243	100P_0402_25V8K	100P_0402_25V8K	C448 @ KSO7
KSO16 @C251	100P_0402_25V8K		

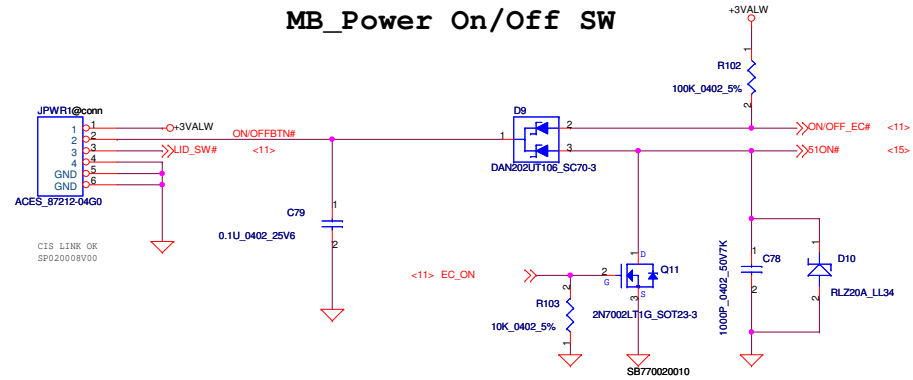
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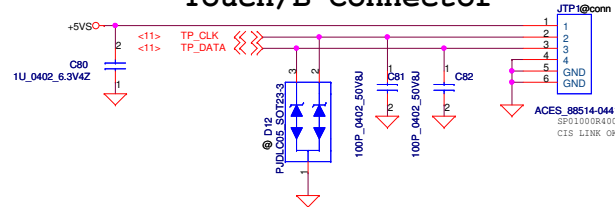
RTC Reset SW



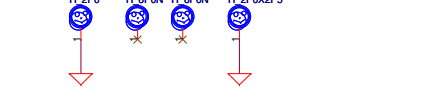
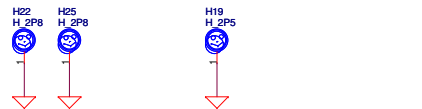
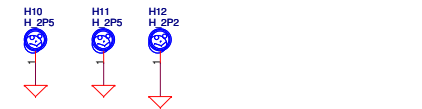
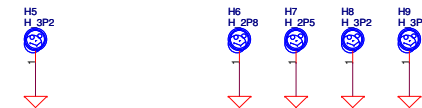
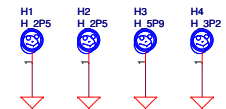
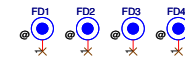
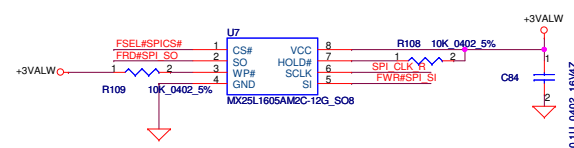
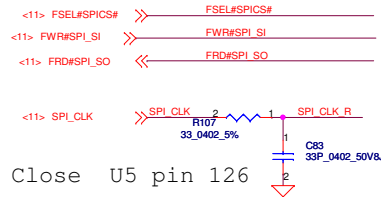
MB_Power On/Off SW



Touch/B Connector



System SPI Flash ROM (16Mb)



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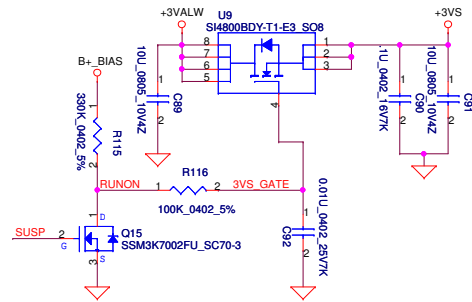
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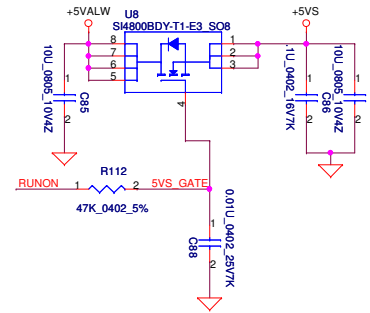
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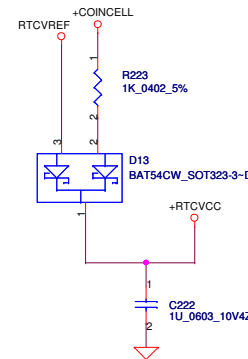
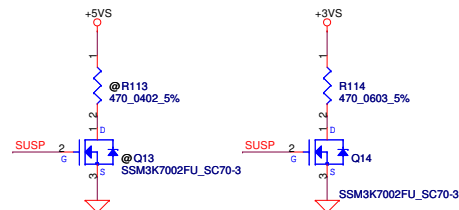
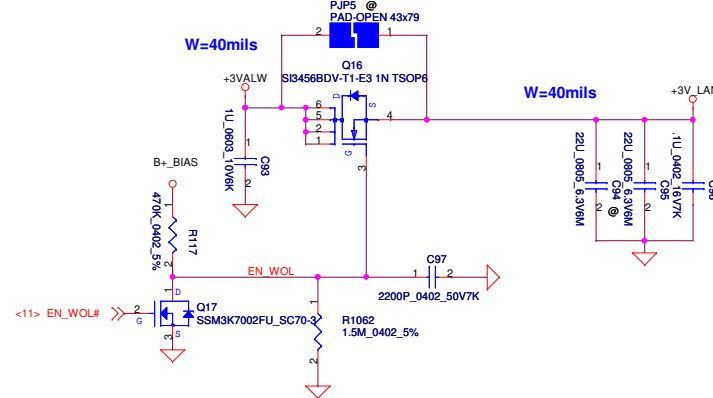
+3VALW to +3VS Transfer



+5VALW to +5VS Transfer



+3VALW to +3LAN Transfer



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Power Control

LA-5461P

Date: Wednesday, June 24, 2009

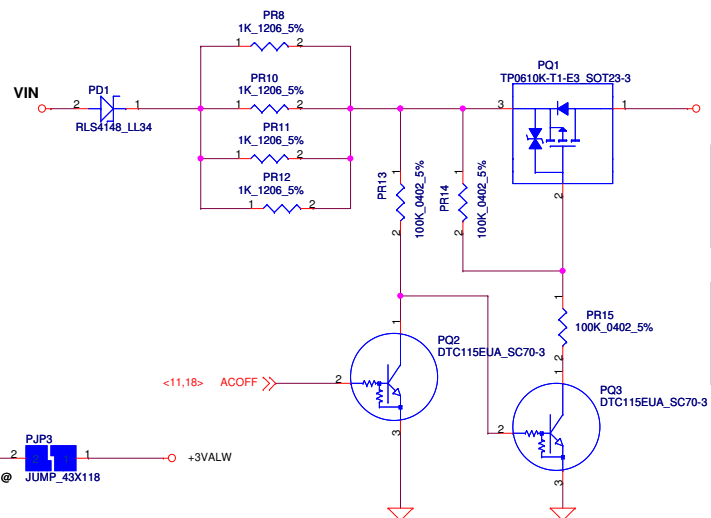
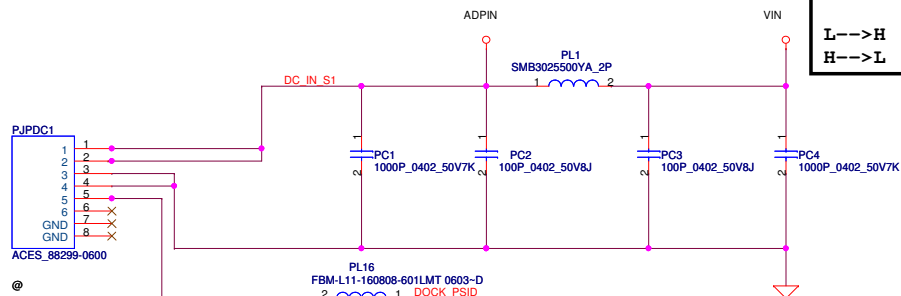
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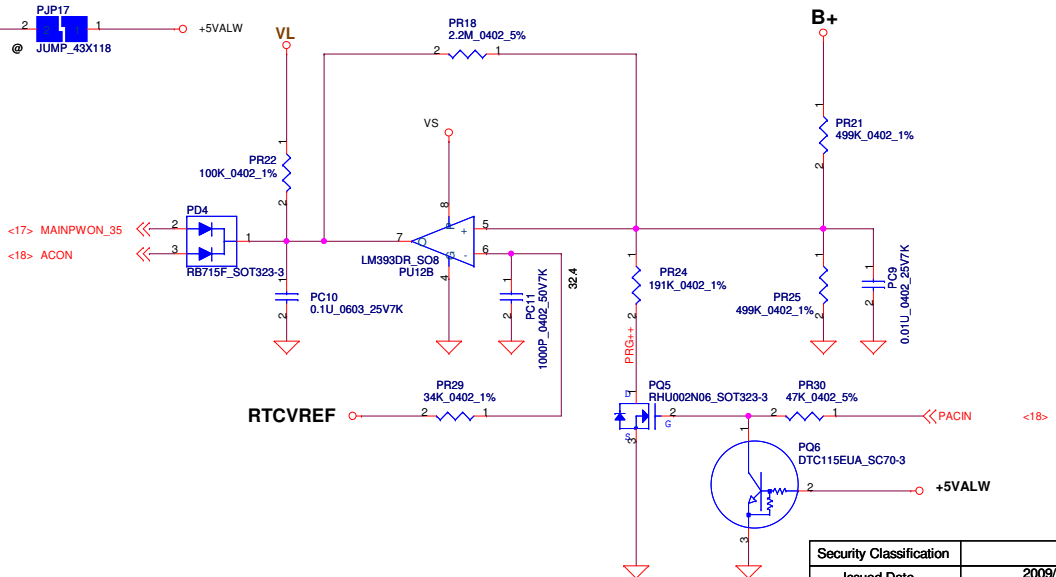
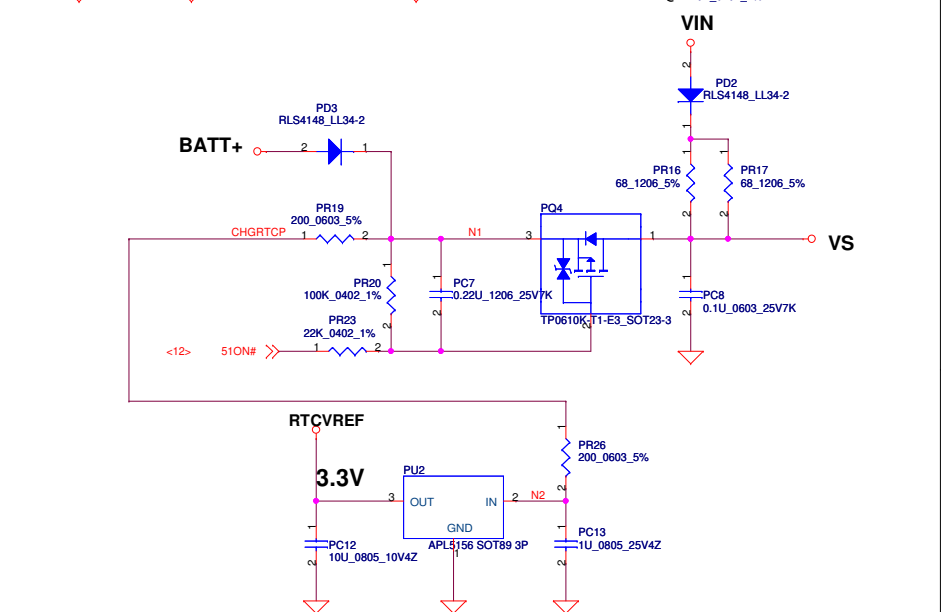
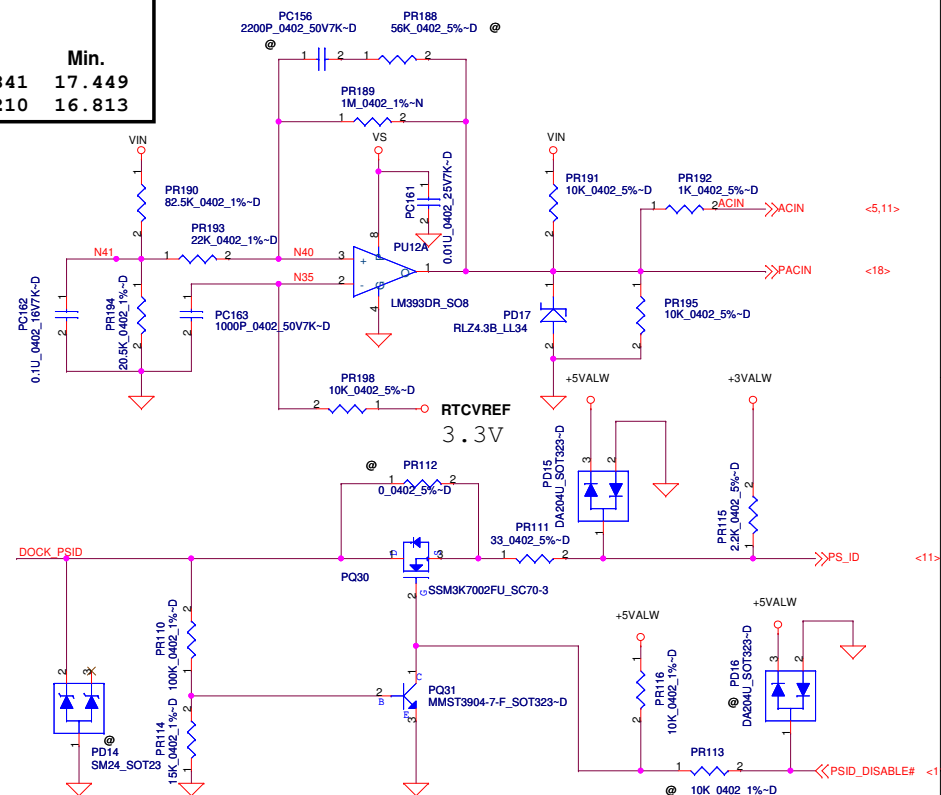
Vin Detector

	Max.	typ.	Min.
L-->H	18.234	17.841	17.449
H-->L	17.597	17.210	16.813

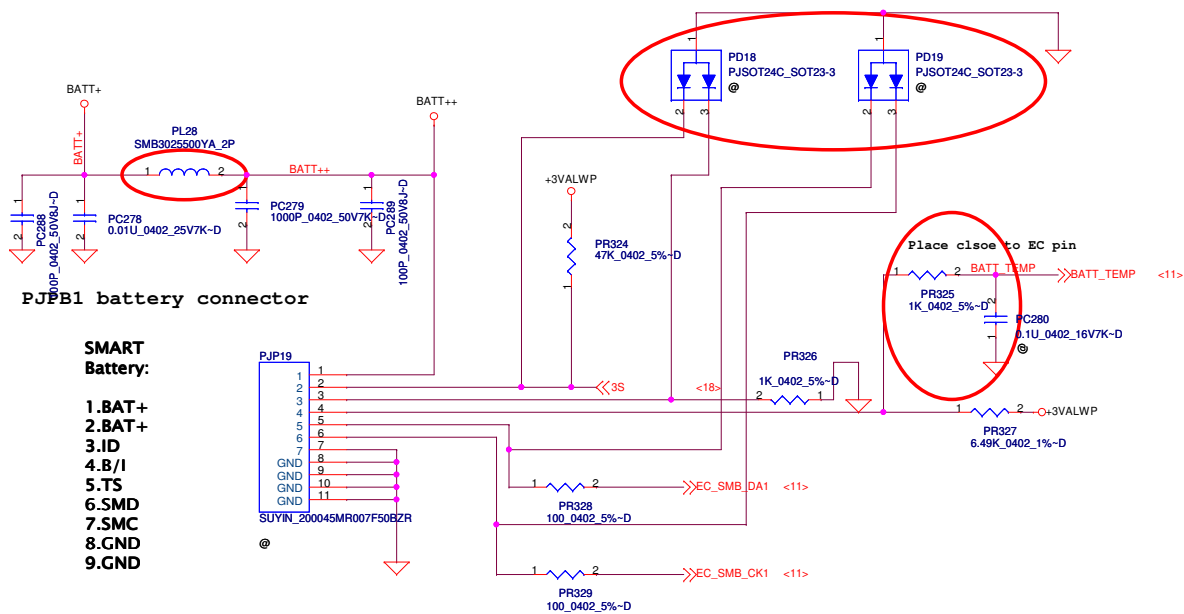


Precharge detector			
	Min.	typ.	Max.
H-->L	14.589V	14.84V	15.243V
L-->H	15.562V	15.97V	16.388V

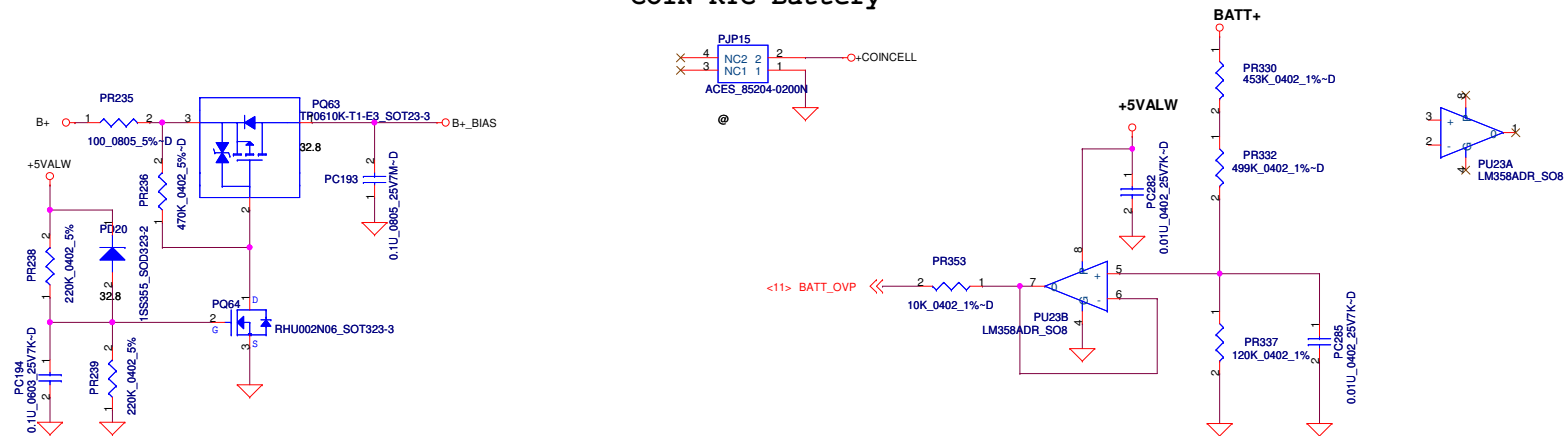
Precharge detector			
	Min.	typ.	Max.
H-->L	6.138V	6.214V	6.359V
L-->H	7.196V	7.349V	7.505V



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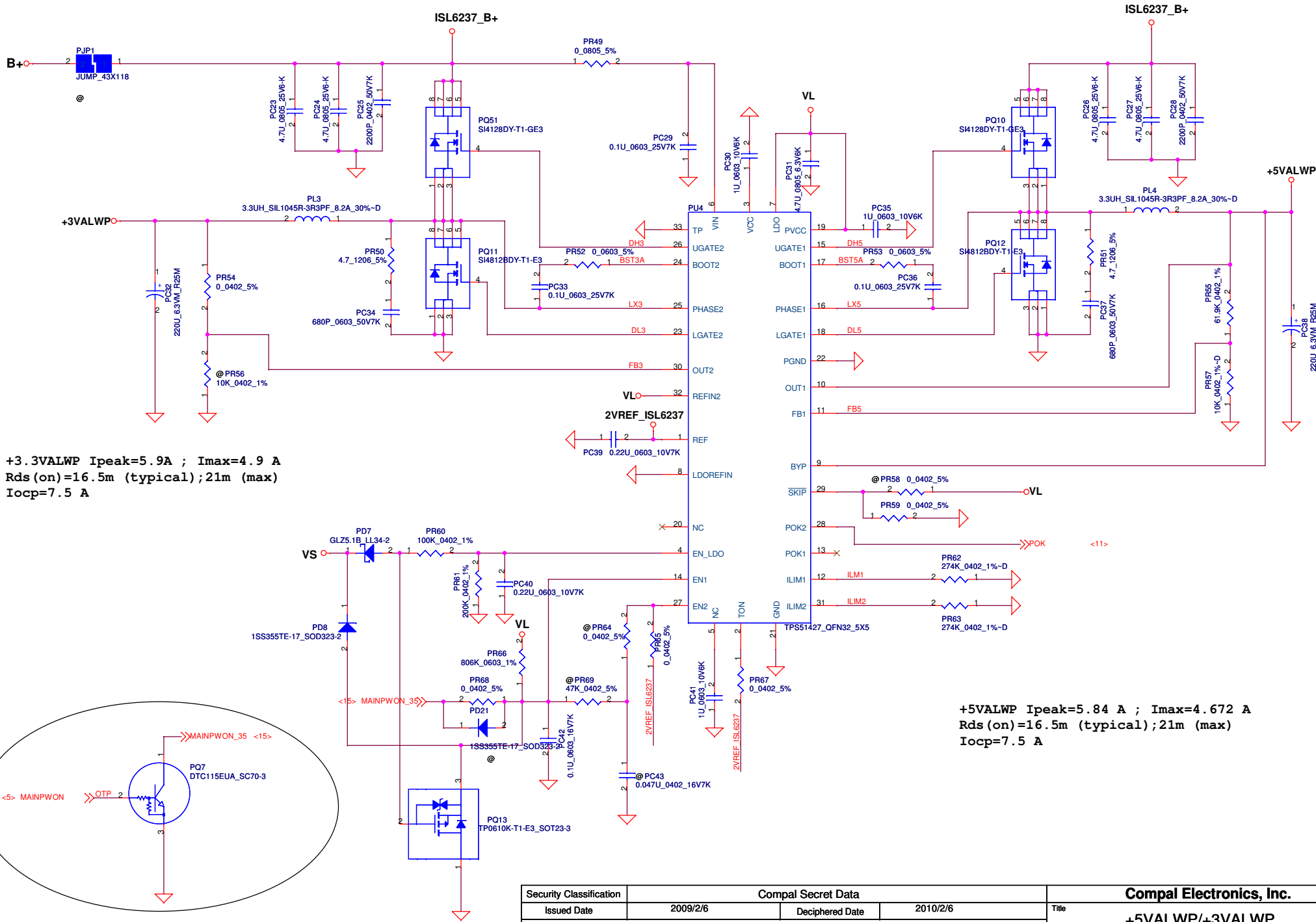


COIN RTC Battery



LI-3S : 13.5V----BATT-OVP=1.5V
BATT-OVP=0.111*BATT+

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+3.3VALWP $I_{peak}=5.9A$; $I_{max}=4.9 A$
 $R_{ds(on)}=16.5m$ (typical);21m (max)
 $I_{ocp}=7.5 A$

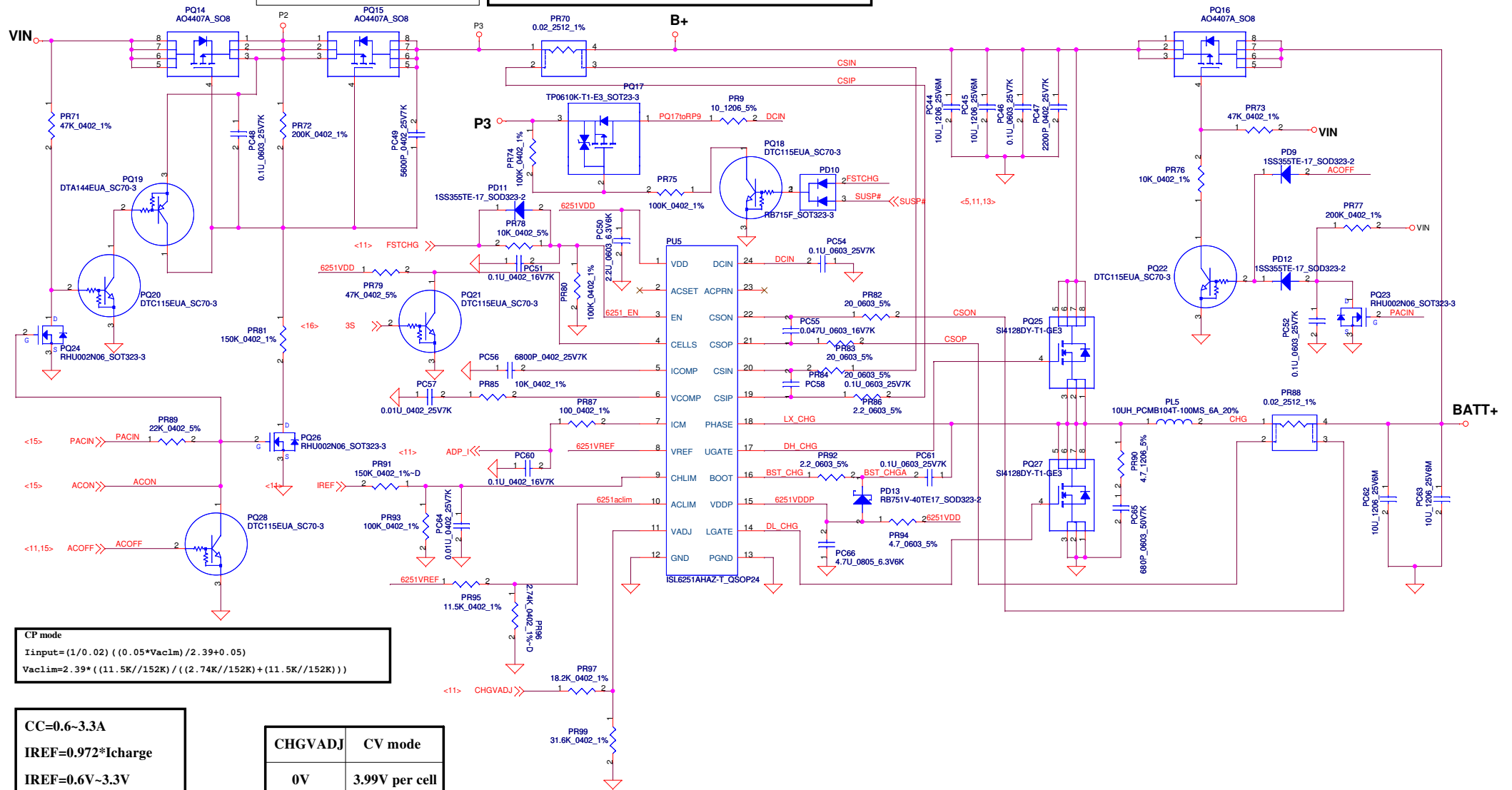
+5VALWP $I_{peak}=5.84 A$; $I_{max}=4.672 A$
 $R_{ds(on)}=16.5m$ (typical);21m (max)
 $I_{ocp}=7.5 A$

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								+5VALWP/+3VALWP	
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I_{ada}=0~3.34A (65W)

$$ADP_I = 19.9 * I_{adapter} * R_{sense}$$

$$CP = 90\% * I_{adapter} \text{ (rating)}; CP = 3.003A$$



CP mode
 $I_{input} = (1/0.02) * ((0.05 * V_{ac1m}) / (2.39 + 0.05))$
 $V_{ac1m} = 2.39 * ((11.5K / 152K) / ((2.74K / 152K) + (11.5K / 152K)))$

CC=0.6~3.3A
 IREF=0.972*Icharge
 IREF=0.6V~3.3V

CHGVADJ	CV mode
0V	3.99V per cell
1.91V	4.2V per cell
3.3V	4.35V per cell

Version change list (P.I.R. List)		power section		Page 1 of 1																																											
Item	Reason for change	PG#	Modify List	Date	Phase																																										
01	Reduce adapter plug in inrush current	P16	Add PR9 10 ohm	05/18/09	PT/ST																																										
02	adjust adapter plug in power sequence	P17	change PR68 from 0 to 100k, PC42 from 0.047u to 1u	05/18/09	PT/ST																																										
03	For OTP schematic	P17	Add PQ7	05/18/09	PT/ST																																										
04																																															
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Version Change List (P. I. R. List)

Page #	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
6	LVDS	2009/5/4	Compal	Support EC & MCH PWN BL	reserve OR gate (U59,R132) (Pop OR gate)	X01
6	LVDS	2009/5/4	EC	Panel power up sequence.	Change D2 to 0 ohm(R163)	X01
8	HDMI	2009/5/4	ME	DFX issue	Change HDMI connector to DIP type (TAITW_PDVBR0-19FLBS4NN4N1)	X01
11	EC	2009/5/4	Compal	follow CPU board SCI# to ALW power plane	Change EC_SCI# pull high from +3VS to +3VALW	X01
12	PWBOTTOM	2009/5/4	Compal	Add LID SW in PWR board duplication reserve ESD	Change Power botton connector to 4 pin,del D11	X01
5,6	Camrea	2009/5/6	BIOS	For external USB connector power manage feature implementation	Change Camera USB Port 3 to Port 7	X01
5	OTP	2009/5/6	Compal	OTP no function	Add VL power in JHOST pin 6	X01
14	Cyrstal	2009/5/7	Compal	For cyrstal EA result	Change Y1 to 25MHZ_12PF, C114 to 15pf,C24 to 18pf	X01
10	WTB	2009/5/7	ME	For ASSY issue	Redefine JWTB1 pinout	X01
6	LVDS, DMIC	2009/5/8	Compal	LCD sequence T1 issue,DMIC EMI issue	Change R25 to 56K,C15 to 0.1u,R30 to L13, pop C458,C459	X01
5	CLOCK	2009/5/8	Compal	duplication reserve R for CLK_EC on CPB and MB	Del R6	X01
12	PW SW	2009/5/12	Compal	Power derating fail	Add R1062 1.5M,change R117 to 470k	X01
8	HDMI	2009/5/12	Compal	HDMI TEST to got more eye margin	Change R123 to 442 ohm	X01
12	Pwr/SW	2009/5/13	Compal	Bear S5 Issue Recovery	Change C79 to 25V de-rating parts	X01
11	EC	2009/5/15	Compal	Change Board ID to X01	Depop R64,pop R65	X01
5,12	CLOCK	2009/6/15	Compal	For RF team request for WWW noise	Change C83 to 33pF,reserve C1252,C1253,C1254	A00
11	EC	2009/6/15	Compal	Change Board ID to A00	Depop R65,pop R66	A00
11	LID	2009/6/15	Compal	Change LID SW pull hight form PW/B to MB	Add R137	A00
7	WLAN/WWAN	2009/6/18	Compal	Remove 0 ohm for cost down	Depop R16,R17,R89,R90,Remove R88,R118,R119,R120,R121,R122,R292,R293	A00
13	3VLAN	2009/6/18	Compal	Remove 0 ohm for cost down	Remove R159	A00
8	HDMI	2009/6/18	Compal	For Safity test Overload issue	Pop F1, Change R48 to PJP4	A00
12	SPI	2009/6/18	Compal	Remove 0 ohm for cost down	Remove R104,R105,R106	A00
13						
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