

# COMPAL CONFIDENTIAL

MODEL NAME : *NIM00*

PCB NO : *LA5461P(DA60000DD10) DAZ09L00100*

BOM P/N : *46174031L01*

# Compal Confidential

## 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

<http://hobi-elektronika.net>

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Size	Document Number	Rev
	<b>LA-5461P</b>	<b>1.0</b>
Date: Wednesday, June 24, 2009		
Sheet 1		of 20

# Compal Confidential

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

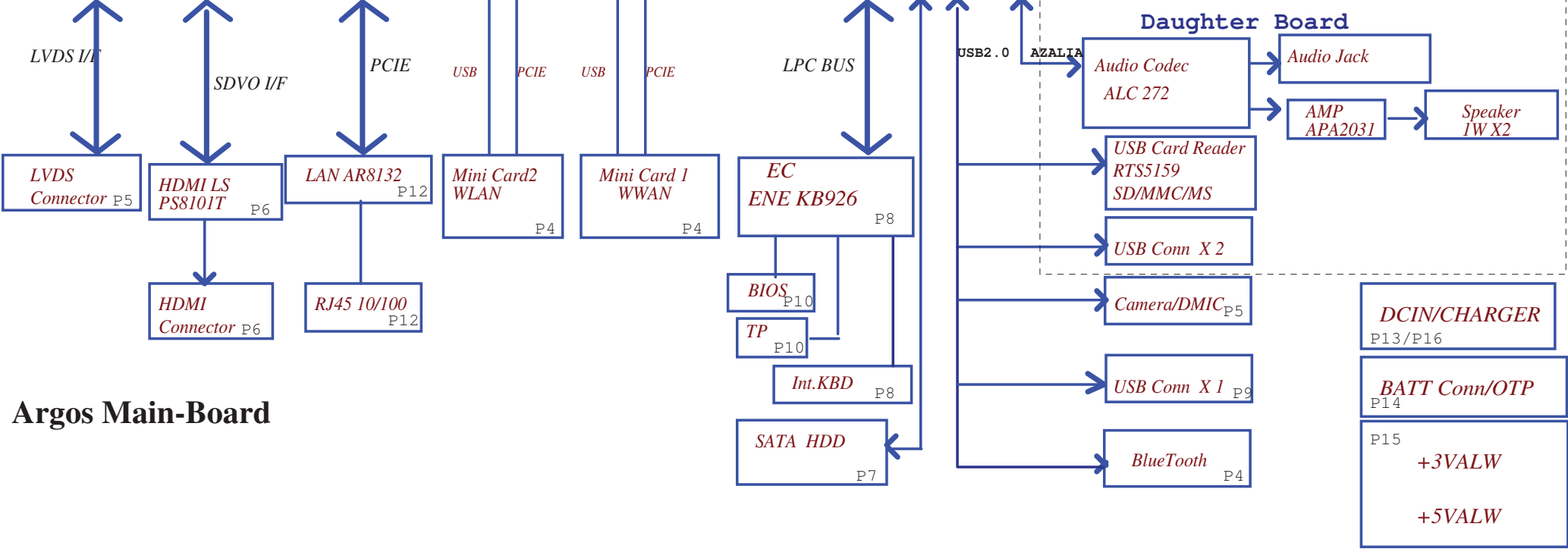
*DDR2-SO-DIMM X 1*  
BANK 0, 1, 2, 3

H\_A#(3..35)  
H\_D#(0..63)  
FSB  
667/800MHz 1.05V

DMI X4

DDR2 800MHz 1.8V

200Pin Golden-Finger



## Argos Main-Board

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Title		Block Diagram	
Size	Document Number	Rev	
	LA-5461P	1.0	
Date:	Wednesday, June 24, 2009	Sheet	2 of 20

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## Voltage Rails ○ MEANS ON ✗ MEANS OFF

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

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

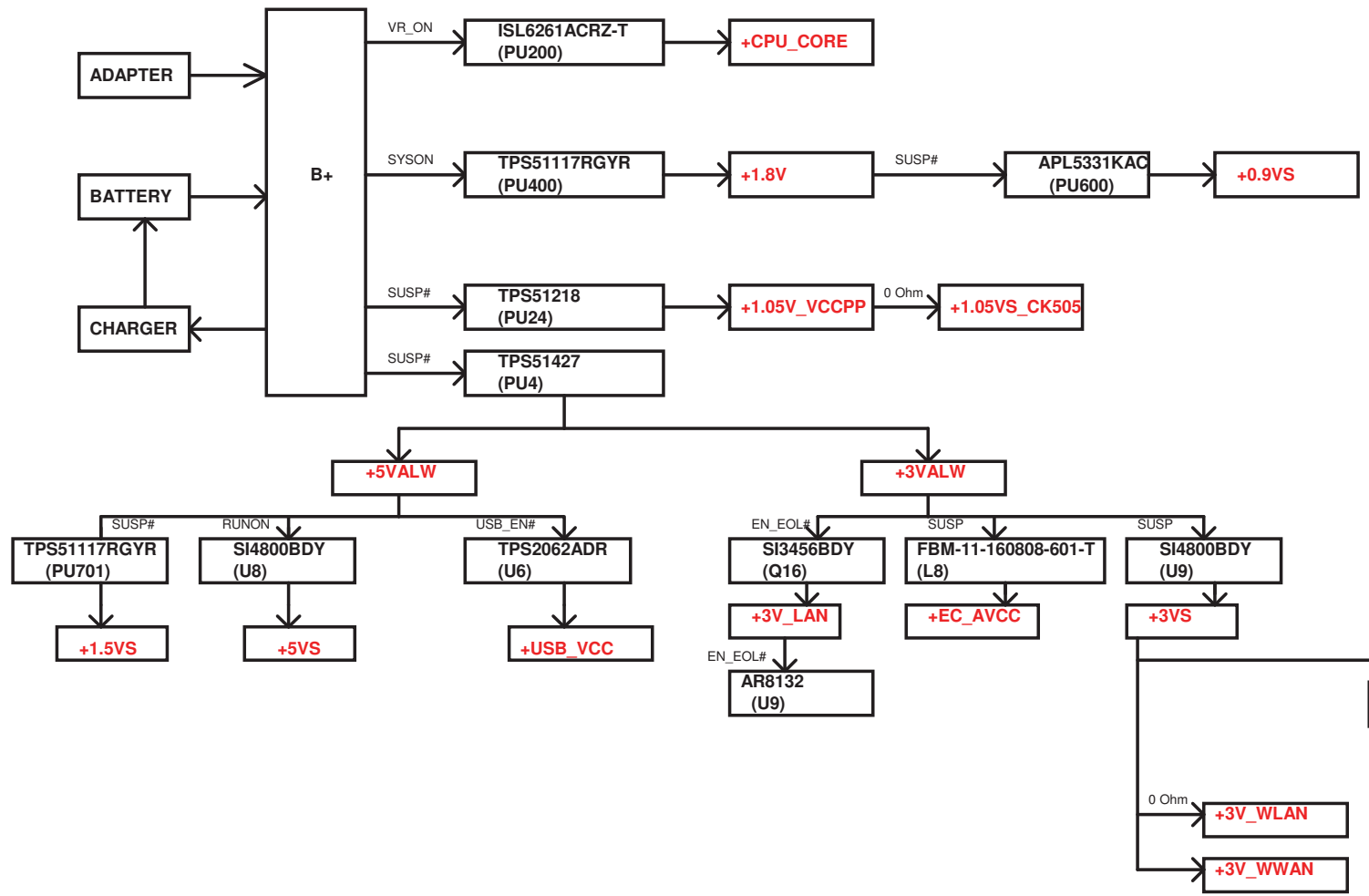
	SOURCE	INVERTER	BATT	SERIAL EEPROM	THERMAL SENSOR (CPU)	SODIMM	CLK CHIP	MINI CARD	LCD
SMB_EC_CK1 SMB_EC_DAT1	KB926	✗	✓	✗	✗	✗	✗	✗	✗
SMB_EC_CK2 SMB_EC_DAT2	KB926	✗	✗	✗	✓	✗	✗	✗	✗
SMB_CK_CLK1 SMB_CK_DAT1	ICH9	✗	✗	✗	✗	✓	✓	✓	✗
LCD_CLK LCD_DAT	Cantiga	✗	✗	✗	✗	✗	✗	✗	✓

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<b>Note List</b>			
File	Document Number		Rev
	<b>LA-5461P</b>		1.0
Date:	Wednesday, June 24, 2009	Sheet	3 of 20

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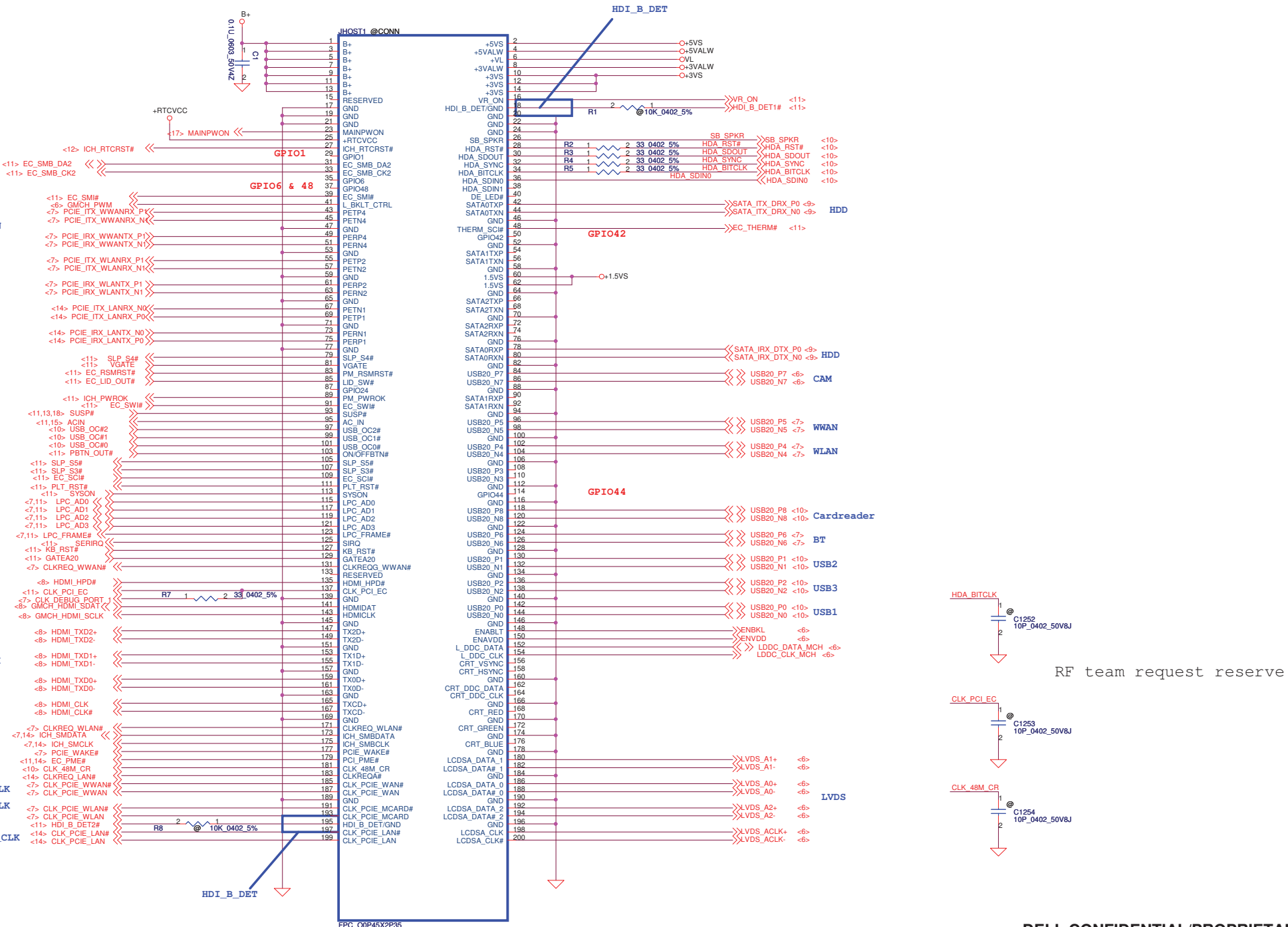




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		<b>Power Rail</b>	
Size	Document Number	Rev 1.0	
Date: Wednesday, June 24, 2009		Sheet 4 of 20	

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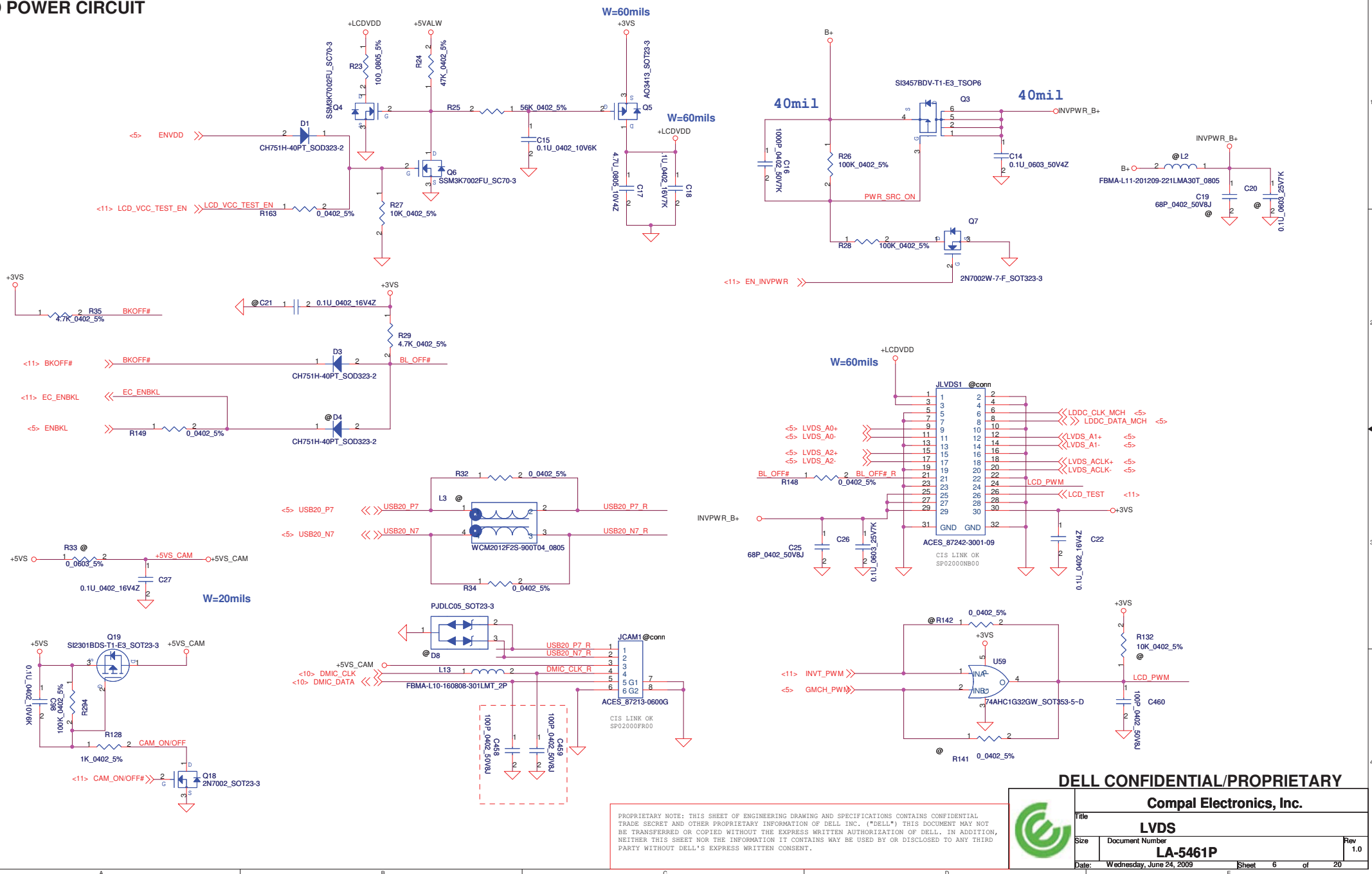


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**Host BTB**  
**LA-5461P**  
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# LCD POWER CIRCUIT

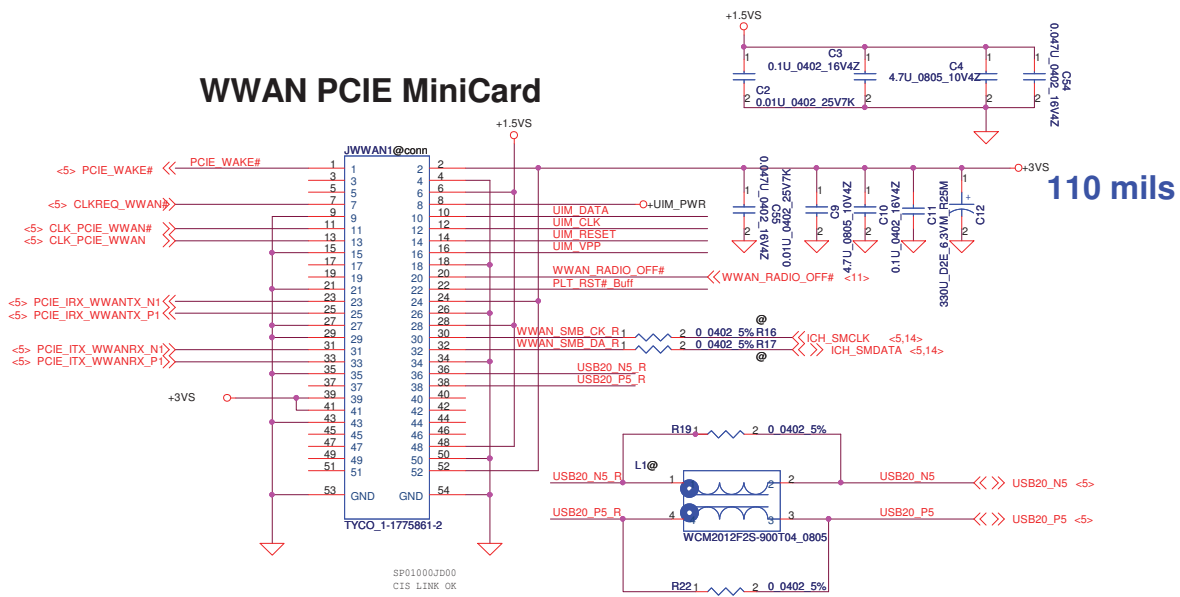


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<b>LVDS</b>		
Size	Document Number	Rev
	<b>LA-5461P</b>	<b>1.0</b>
Date:	Wednesday, June 24, 2009	Sheet 6 of 20

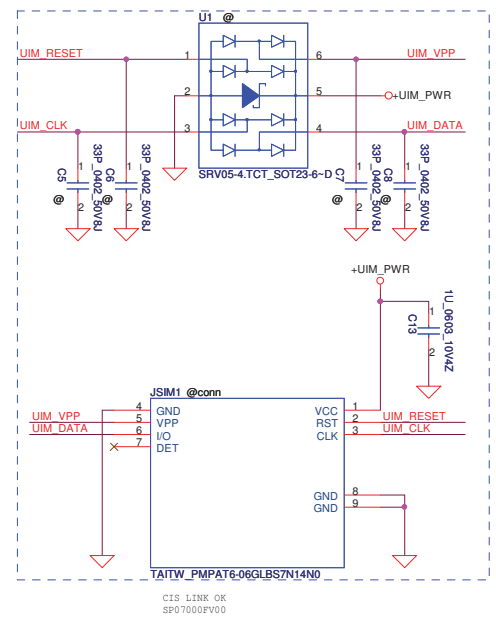
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# WWAN PCIE MiniCard



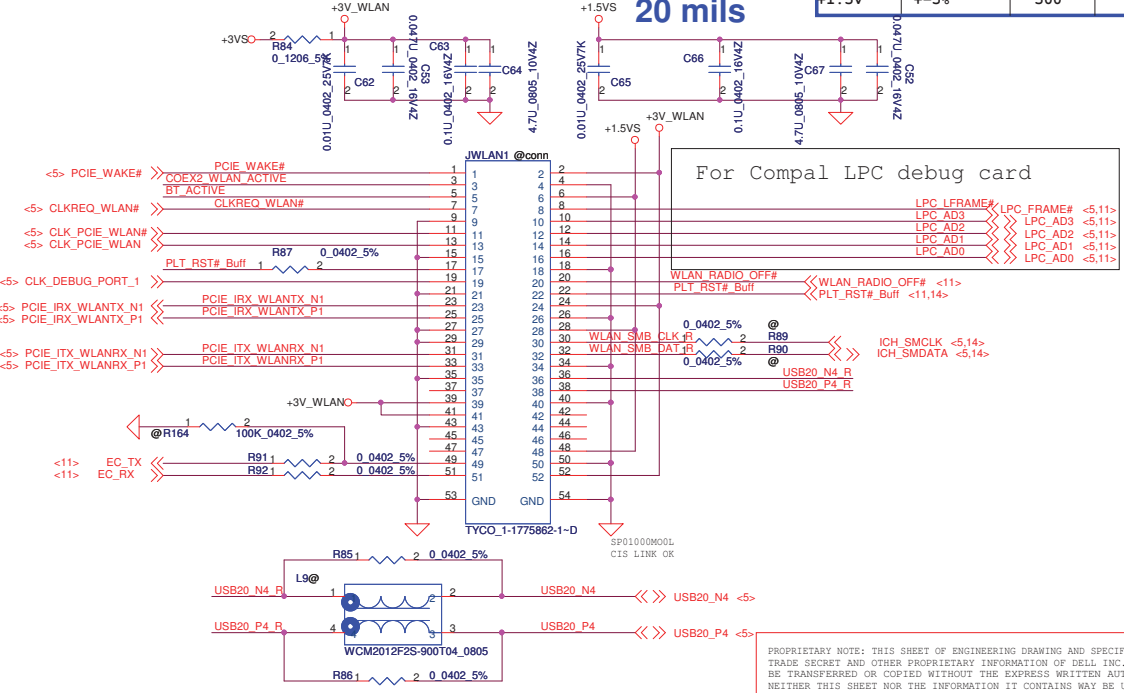
110 mils

# SIM Card

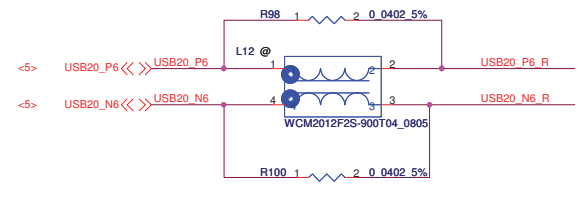


PWR Rail	Voltage Tolerance	Primary Power		Aux Power
		Peak	Normal	Normal
+3.3V	+9%	1000	750	
+3.3Vaux	+9%	330	250	250 (Wake enable) 5 (Not wake enable)
+1.5V	+5%	500	375	NA

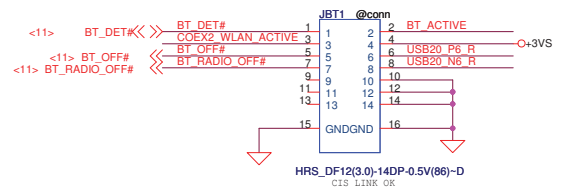
# 40 mils WLAN/WIMAX PCIE Mini Card



For Compal LPC debug card



# Bluetooth



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File: **WLAN/WWAN/BT**

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

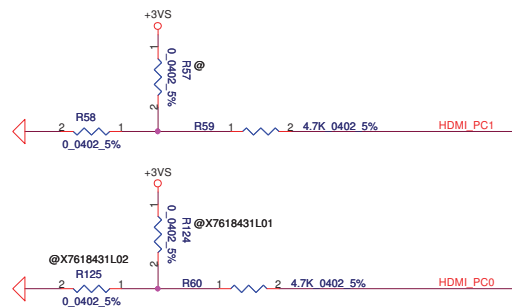
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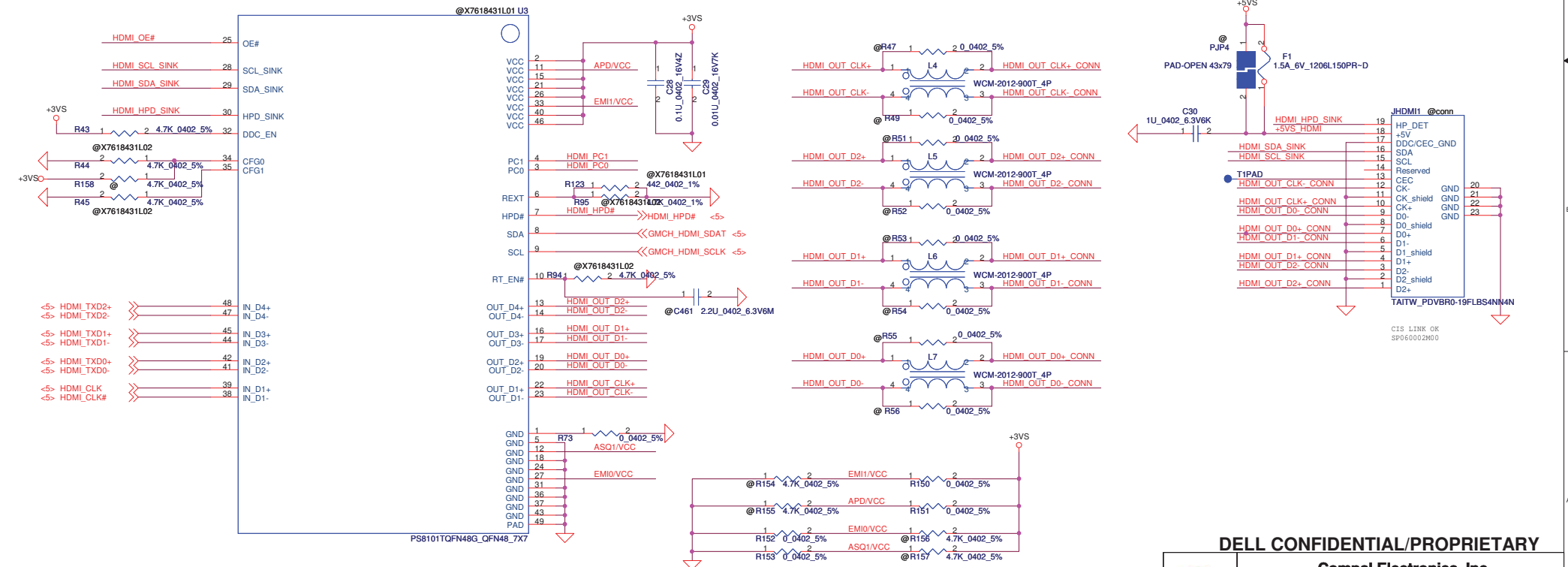
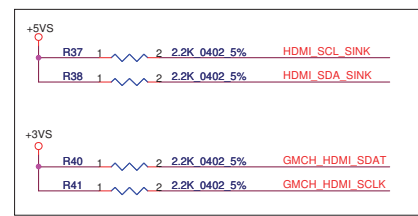
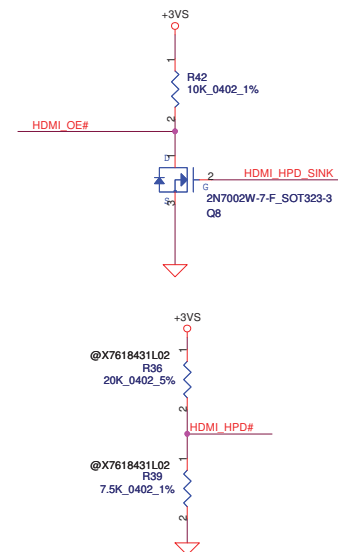
# U3 Select Component

	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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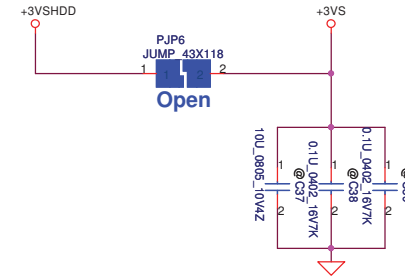
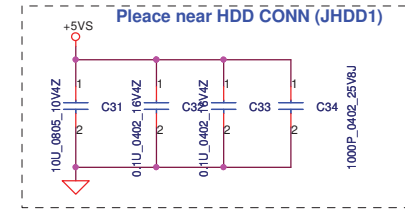
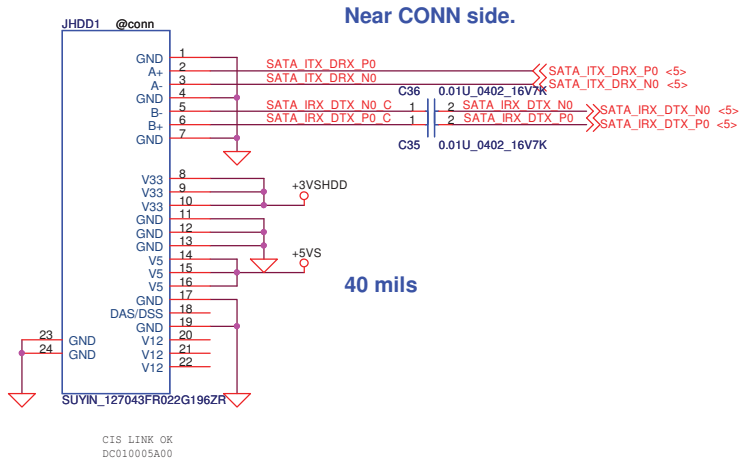
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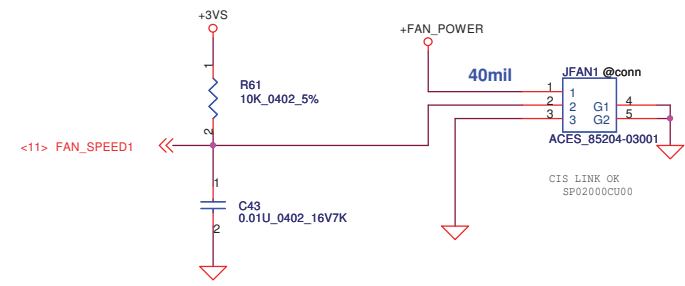
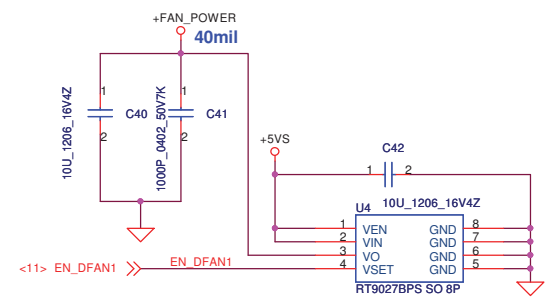
Title			HDMI		
Size			Document Number		
Date			Wednesday, June 24, 2009		
Sheet			8 of 20		
Rev			1.0		



# HDD Connector



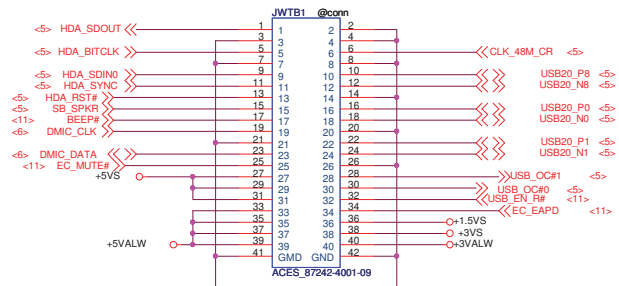
# FAN Control circuit



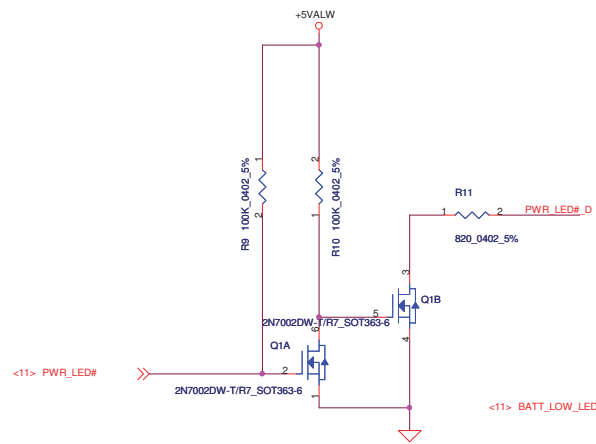
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<b>FAN/HDD</b>		
Size	Document Number	Rev
	<b>LA-5461P</b>	1.0
Date:	Wednesday, June 24, 2009	Sheet 9 of 20

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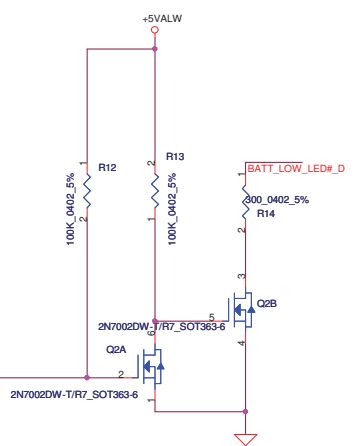


**Power LED**

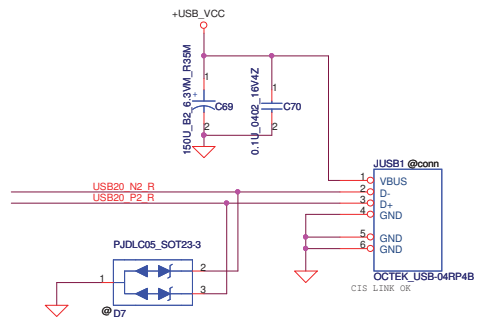
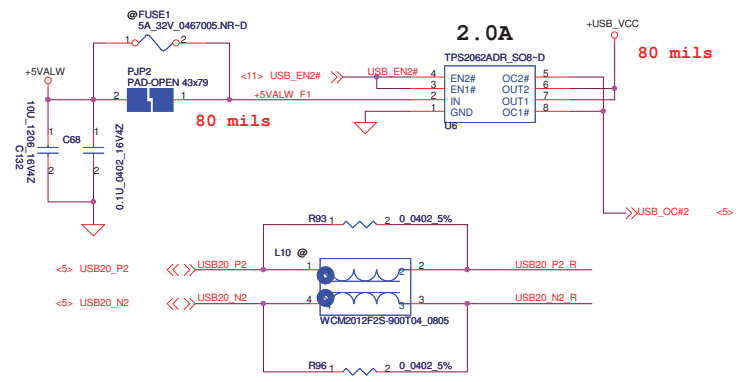
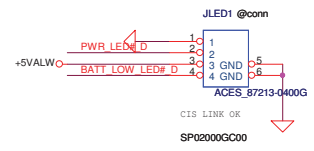


DC1 WHITE  
+5V\_ALW RED  
DC2 AMBER

**BATT CHARGE**



**LED CONN**



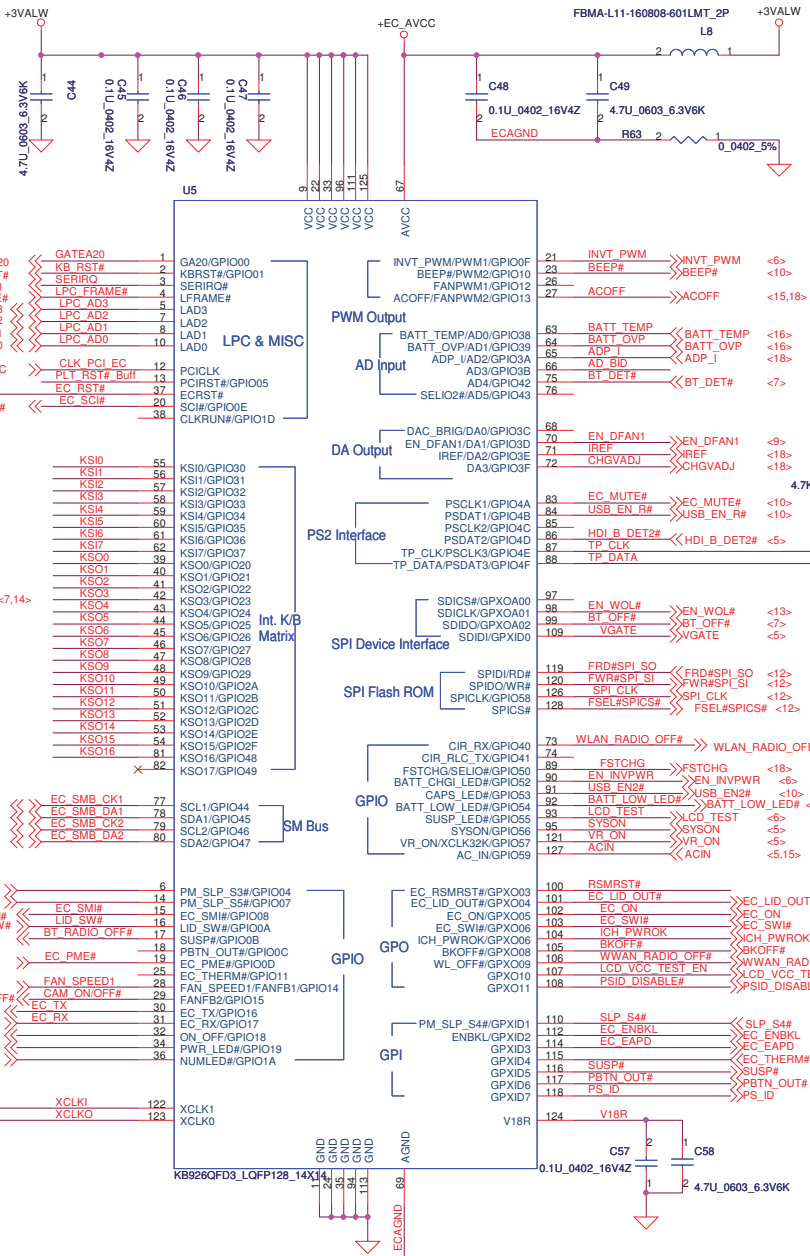
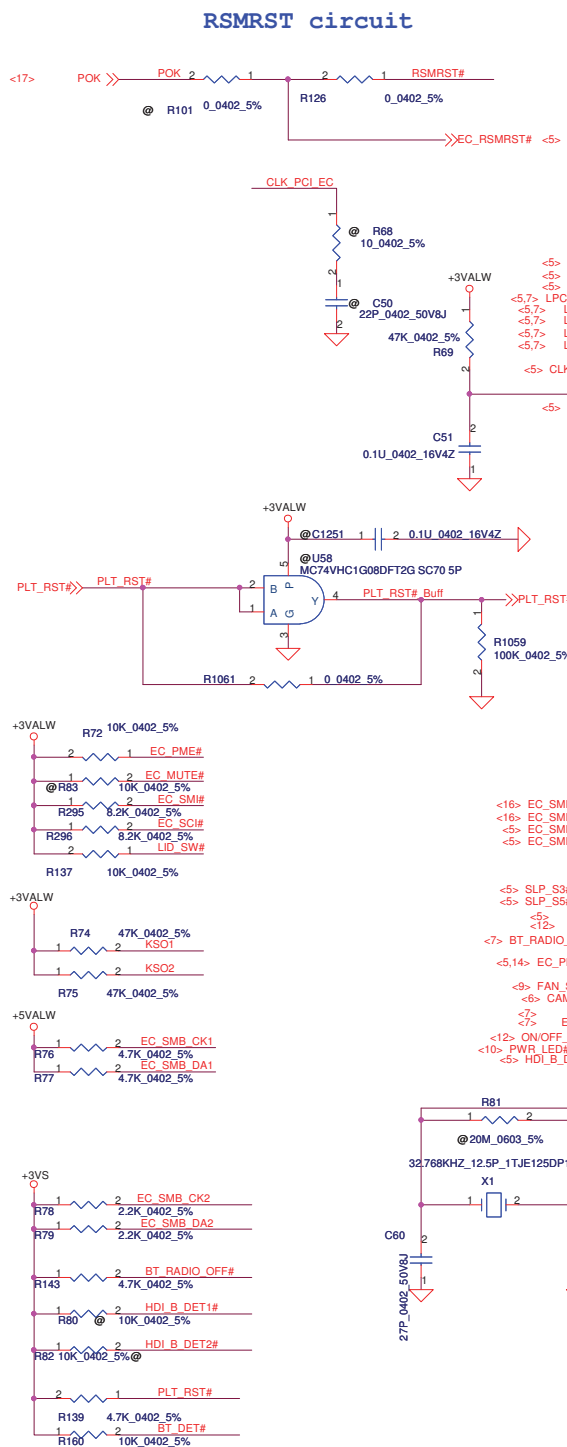
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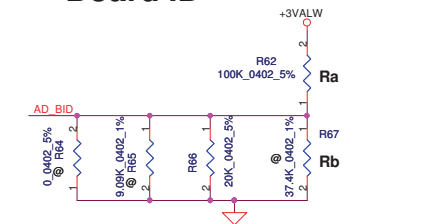
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USB/WTB/LED			
Size	Document Number	Rev	
	LA-5461P	1.0	
Date:	Wednesday, June 24, 2009	Sheet	10 of 20

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RSMRST circuit



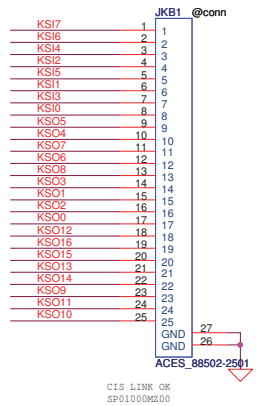
Board ID



**BOARD ID Table**

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

KEYBOARD CONN.



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
KSO10	@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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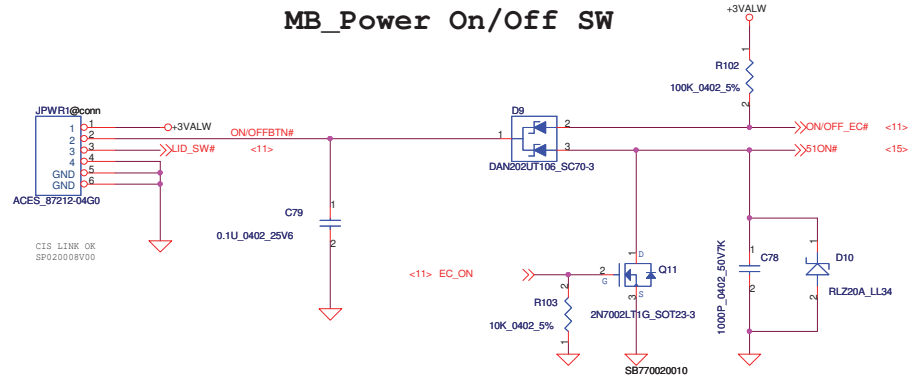
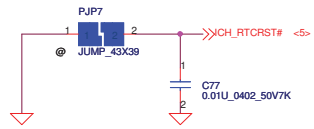
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Title			EC KB926		
Size			Document Number		
Date			Wednesday, June 24, 2009		
Sheet			11 of 20		
Rev			1.0		
Part Number			LA-5461P		

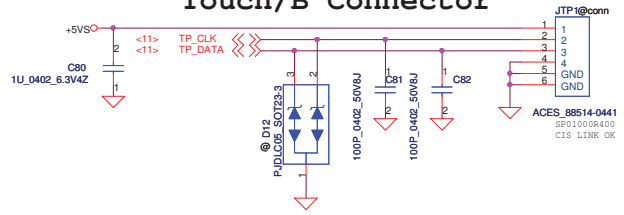
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# MB\_Power On/Off SW

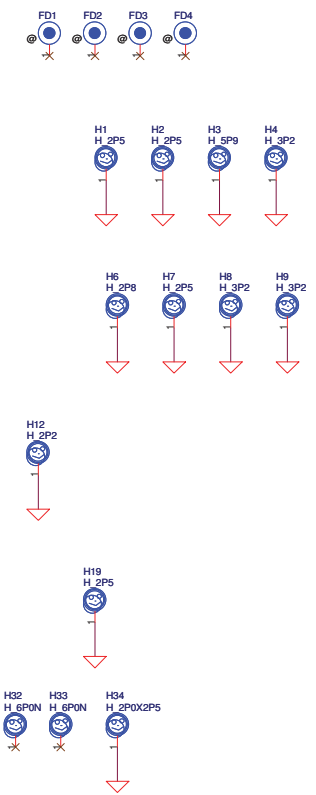
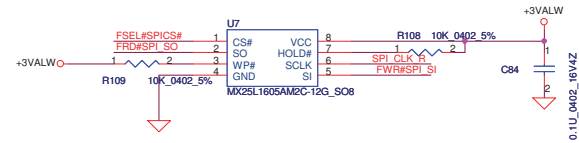
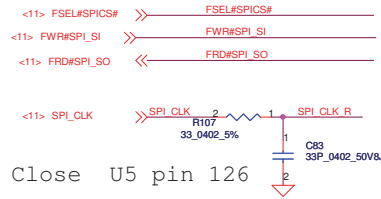
## RTC Reset SW



## Touch/B Connector




## System SPI Flash ROM (16Mb)



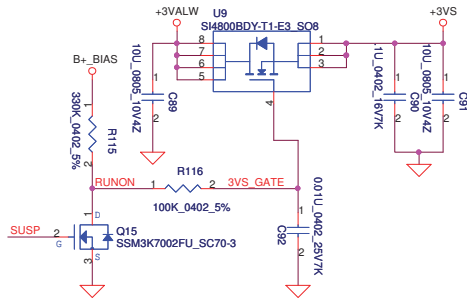
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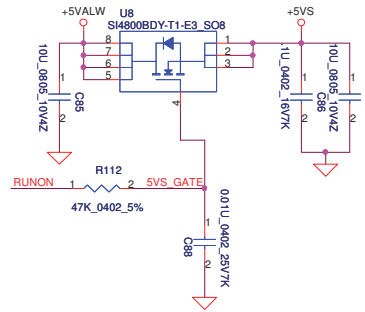
		
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Size:	Document Number: LA-5461P	Rev: 1.0
Date: Wednesday, June 24, 2009	Sheet: 12	of: 20

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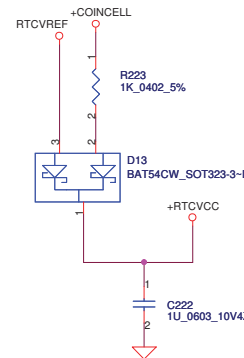
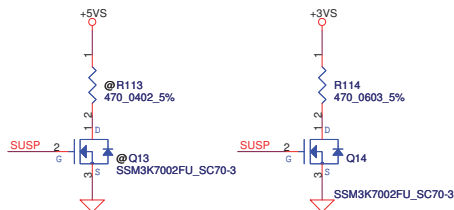
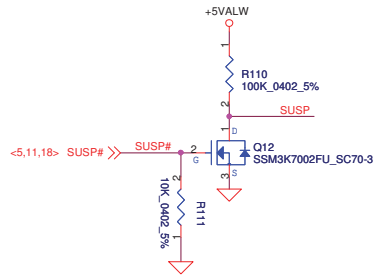
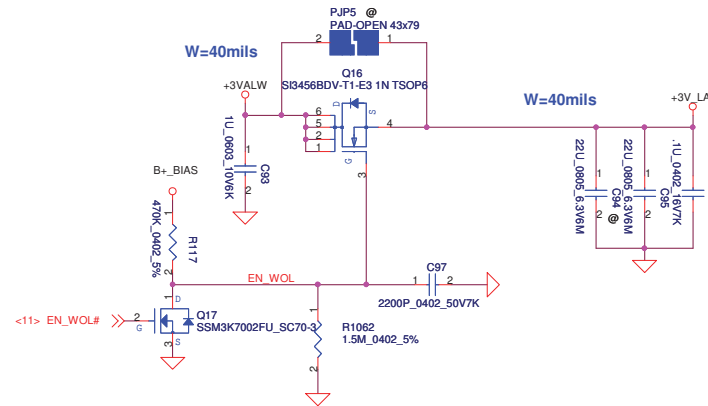
### +3VALW to +3VS Transfer

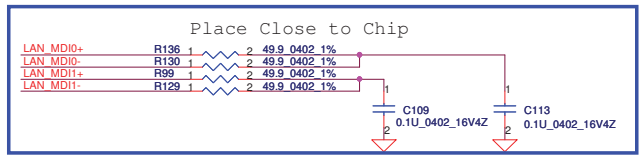
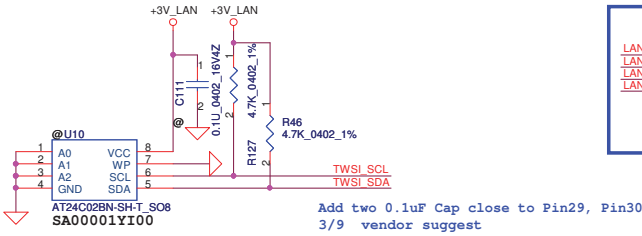
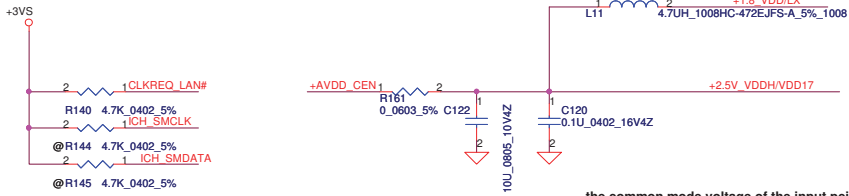


### +5VALW to +5VS Transfer

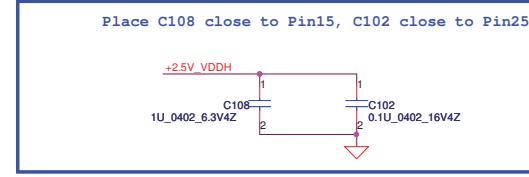
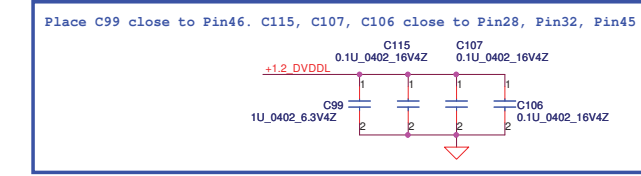
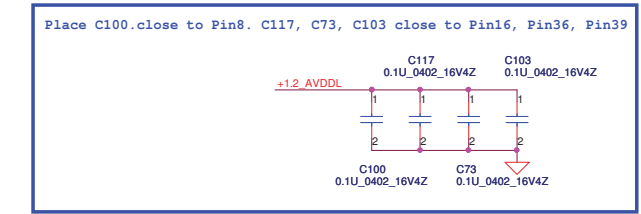
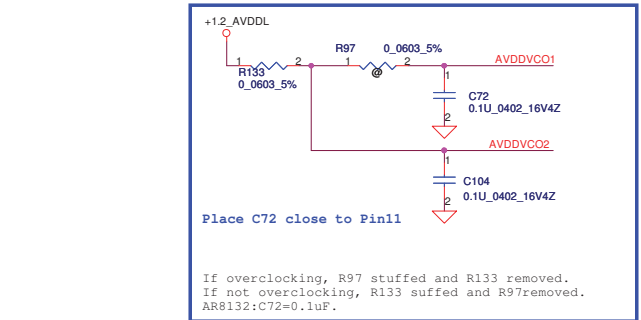
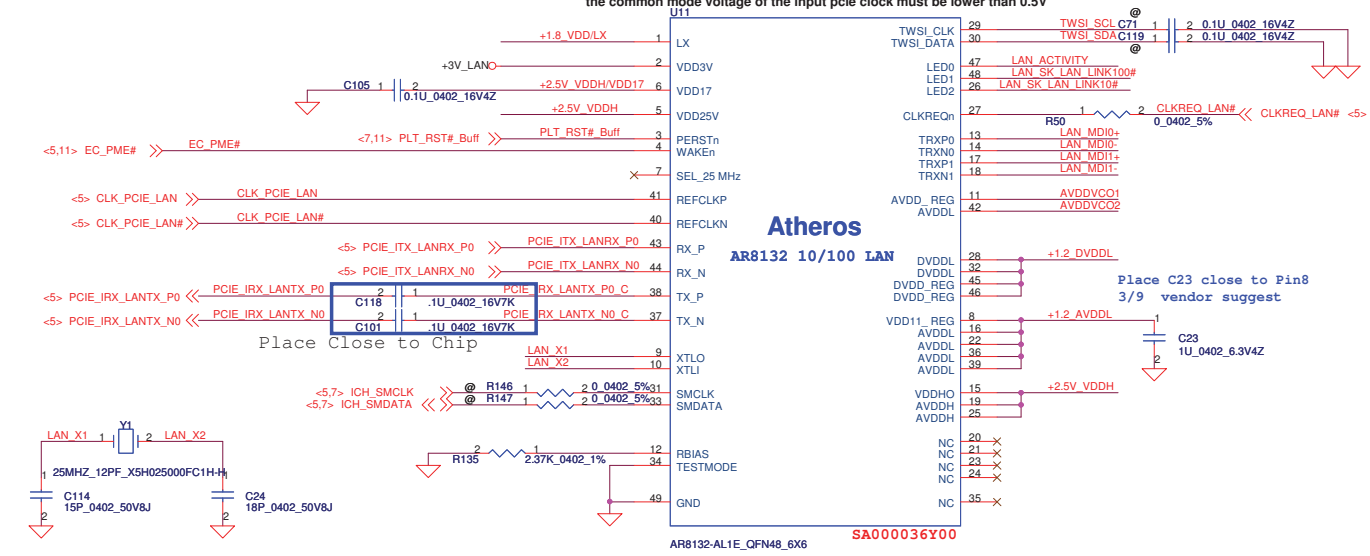
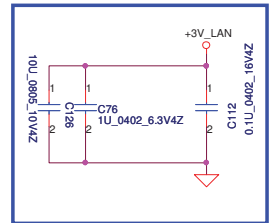
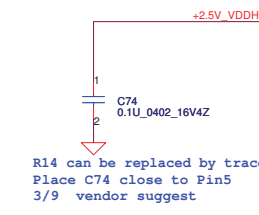


### +3VALW to +3LAN Transfer

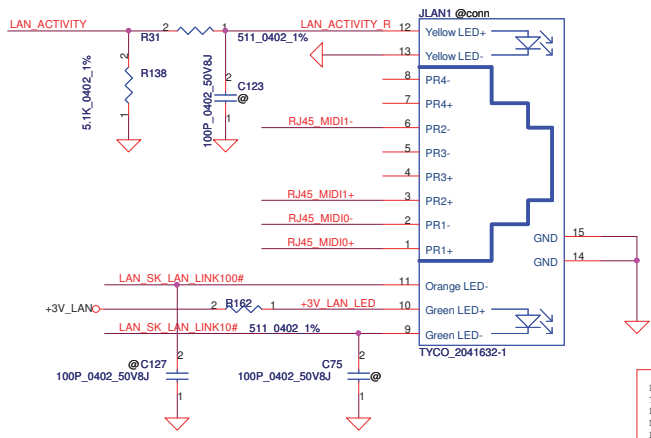
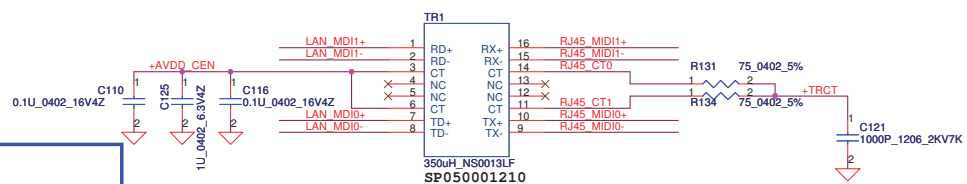




Layout Notice : Place as close chip as possible.



Pull down circuit:  
more power saving in no-overclocking mode  
3/9 vendor suggestion



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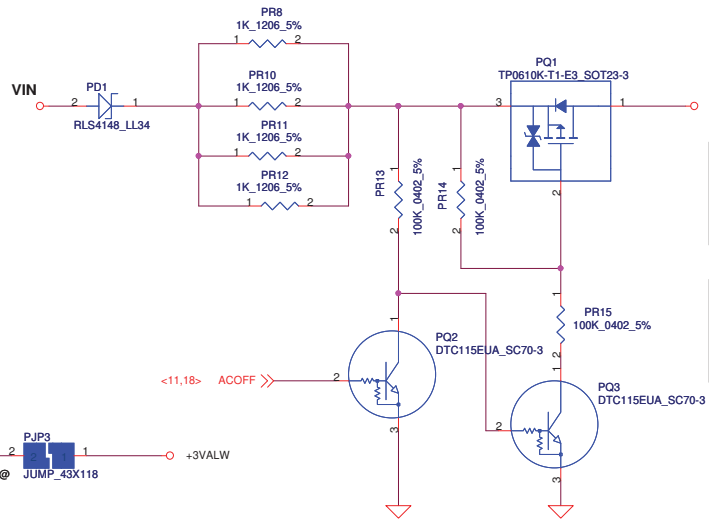
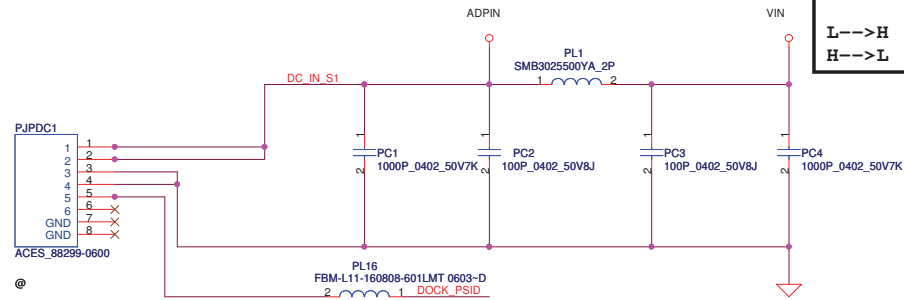
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Title		LAN AR8132	
Size	Document Number	LA-5461P	
Date	Wednesday, June 24, 2009	Sheet	14 of 20

### Vin Detector

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

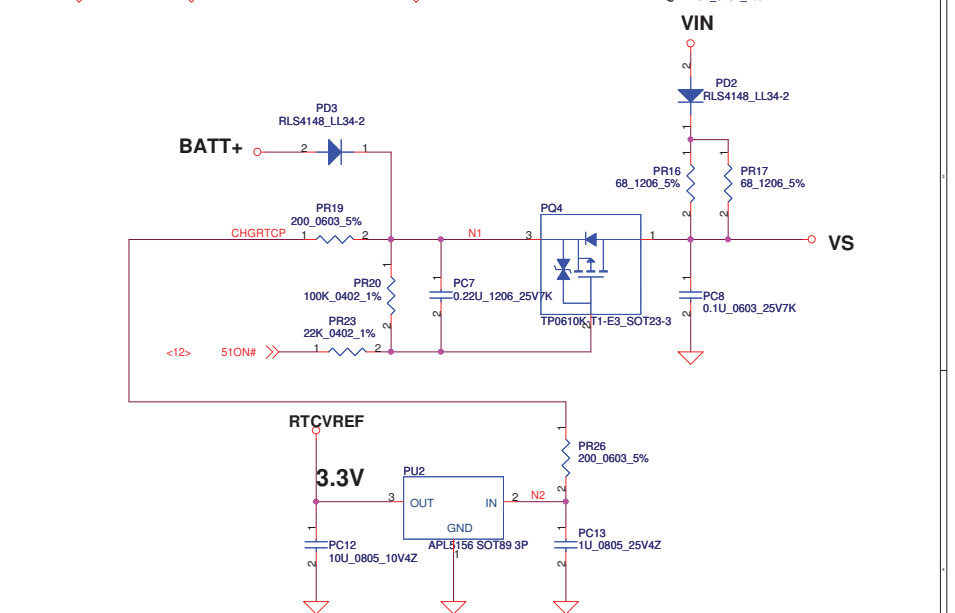
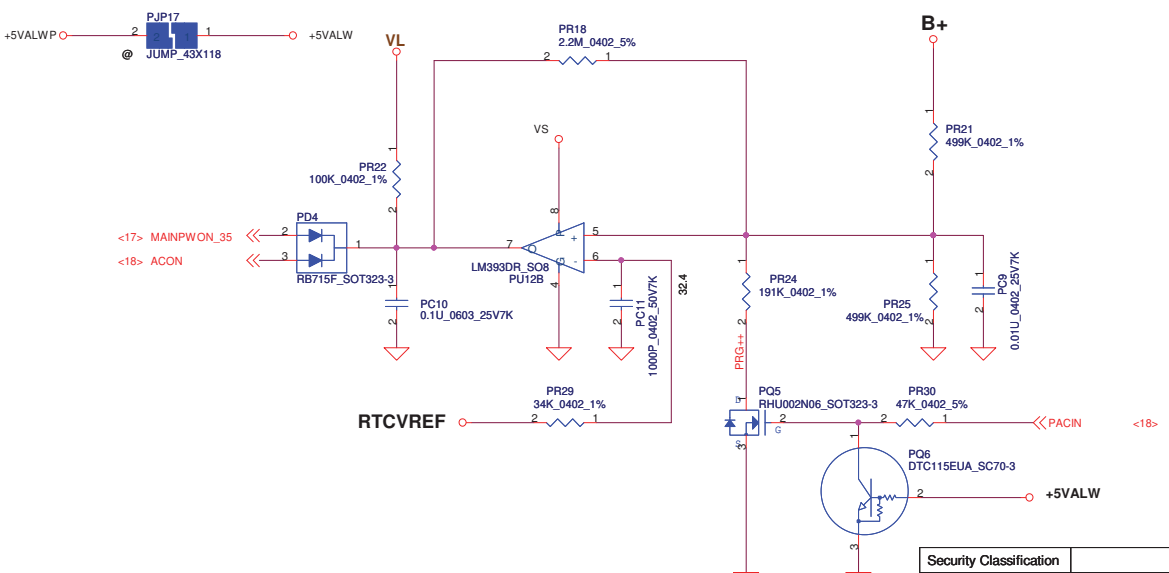
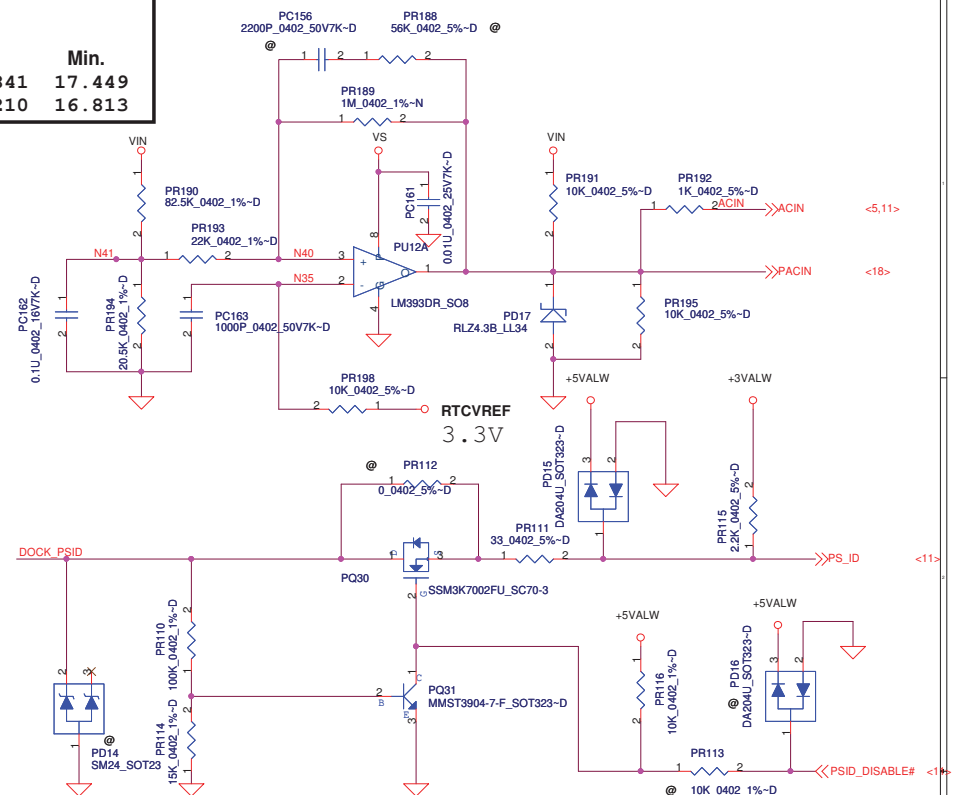


**B+**  
**ACIN**

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

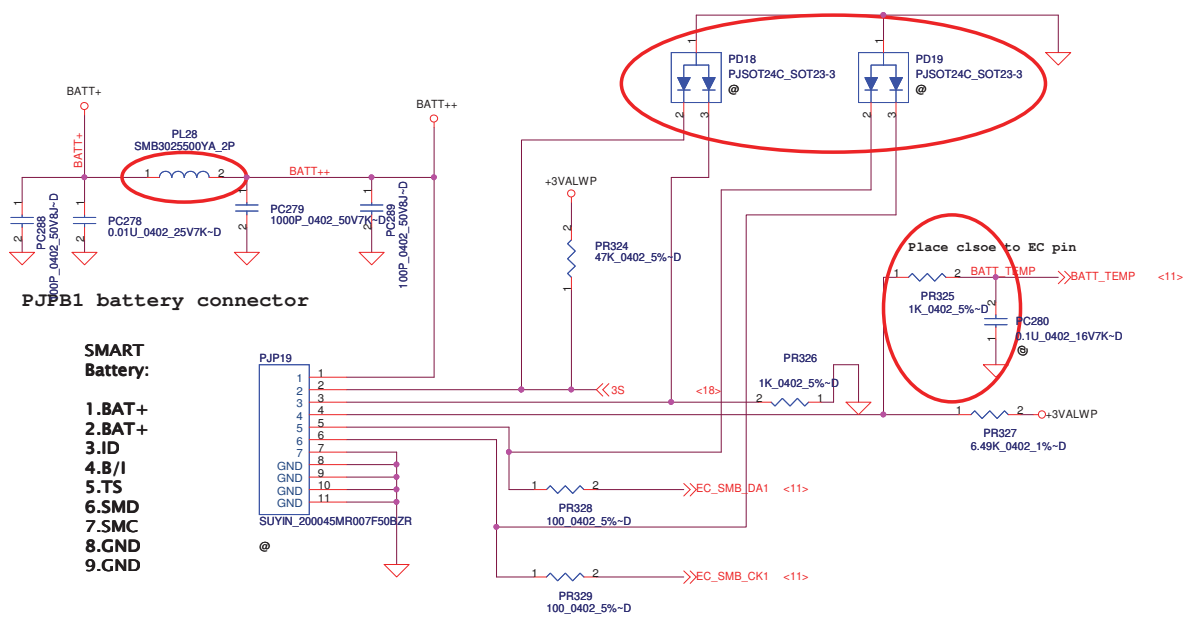
**BATT ONLY**

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



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Compal Electronics, Inc.			
Title <b>DCIN &amp; DETECTOR</b>			
Size	Document Number	Rev	
Custom	<b>LA-5461P</b>	1.0	
Date:	Wednesday, June 24, 2009	Sheet	15 of 20

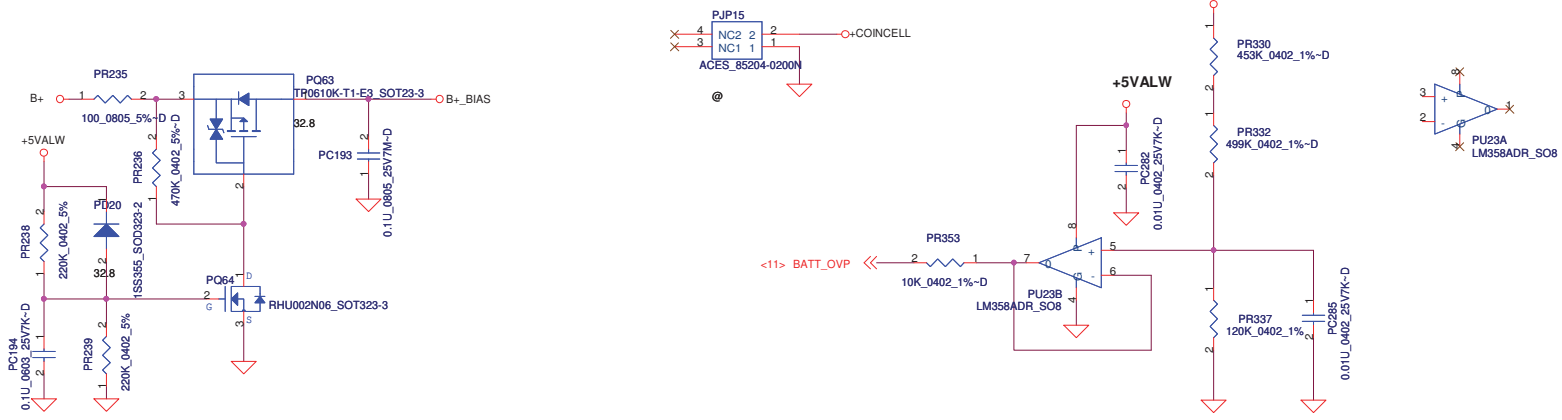


PJPB1 battery connector

**SMART Battery:**

- 1. BATT+
- 2. BATT+
- 3. ID
- 4. B/I
- 5. TS
- 6. SMD
- 7. SMC
- 8. GND
- 9. GND

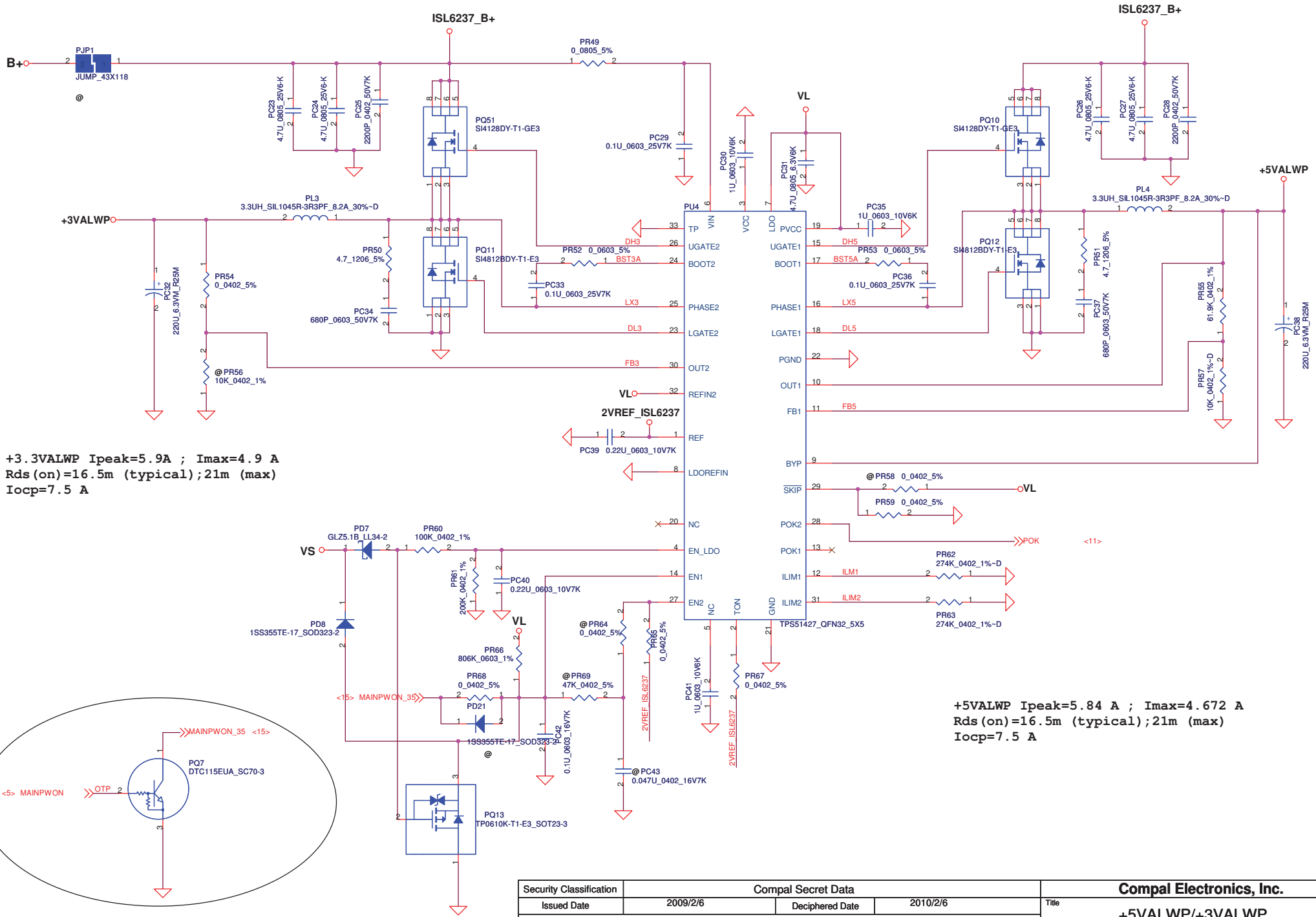
**COIN RTC Battery**



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

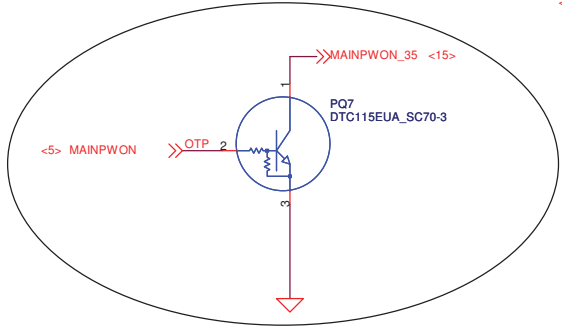
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Issued Date		2009/2/6		Deciphered Date		2010/2/6		Title				
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Date: Wednesday, June 24, 2009								Sheet 16 of 20				





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

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

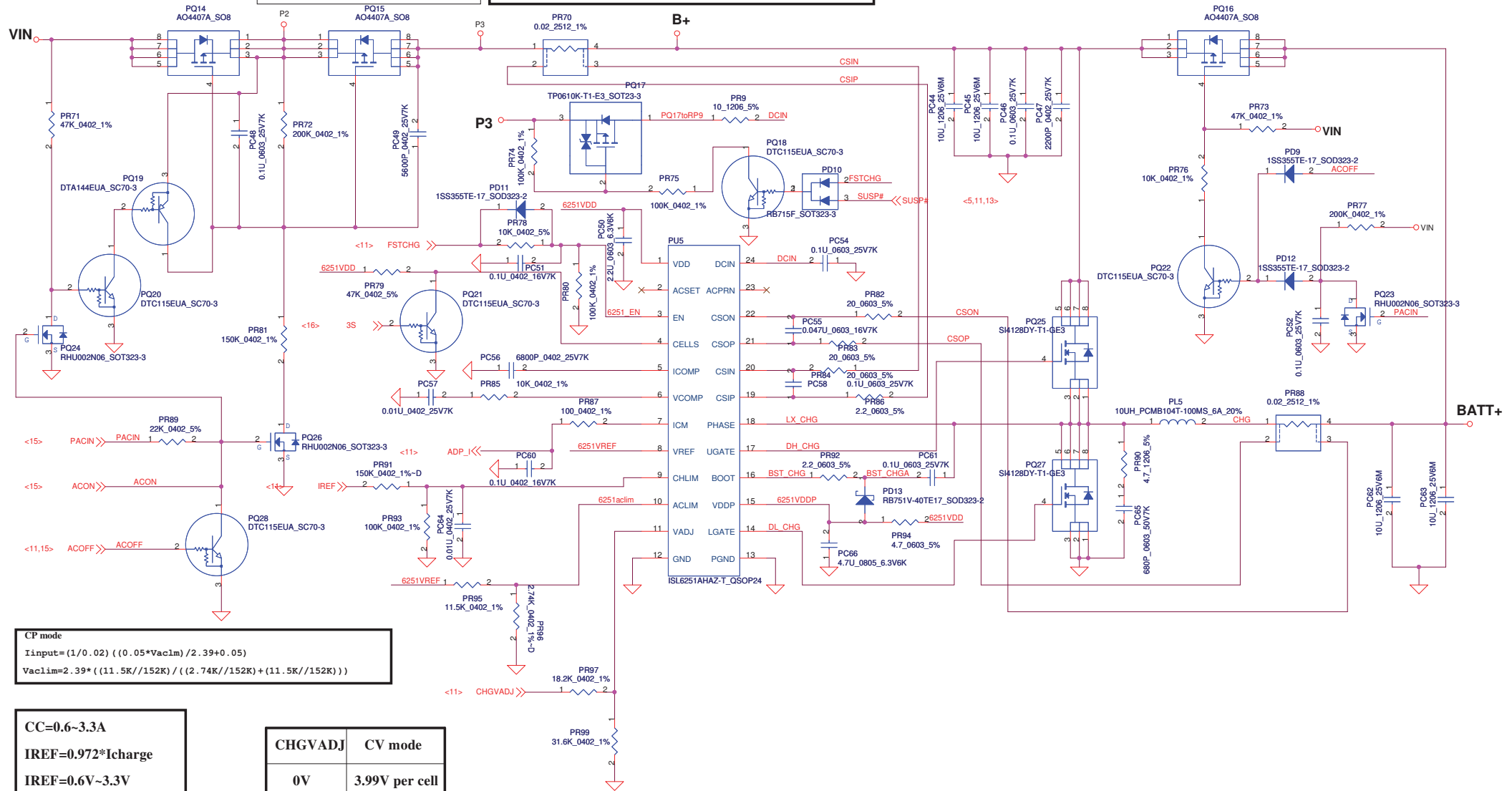


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				Custom	1.0
				Date:	Wednesday, June 24, 2009
				Sheet	17 of 20

I<sub>ada</sub>=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\*I<sub>charge</sub>  
 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

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					
05					
06					
07					
08					
09					
10					

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Date: Wednesday, June 24, 2009				Sheet		19 of 20	

# 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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Size	Document Number	Rev	
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Date:	Wednesday, June 24, 2009	Sheet	20 of 20

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