

COMPAL CONFIDENTIAL

MODEL NAME : NAL60
PCB NO : LA-5691P (DAA00001K00)
BOM P/N : 43178731L01/43178731L02

M10 Lafite
BGA Arrandale (34 x 28 mm) +
SFF IBEXPEAK-M

2009-07-07
REV : 0.1(X00)

@ : Nopop Component

MB Type	BOM P/N	CPU	With BLT	Non BLT	TCM		TPM		BOM CONFIG
			1@	2@	W(3@)	W/O(4@)	W(5@)	W/O(6@)	
BLT EN, TPM EN	43178731L01	SV 2.4G	*			*	*		1@, 4@, 5@
BLT EN, TPM EN	43178731L02	SV 2.0G	*		*			*	1@, 3@, 6@
BLT DIS, TCM EN	43178731L03	LV 1.8G		*		*	*		2@, 4@, 5@

MB PCB	
Part Number	Description
DAA00001K00	PCB QAW LA-5691P REV0 M/B

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Title

Cover Sheet

Size

Document Number

LA-5691P

Rev

0.1

Date

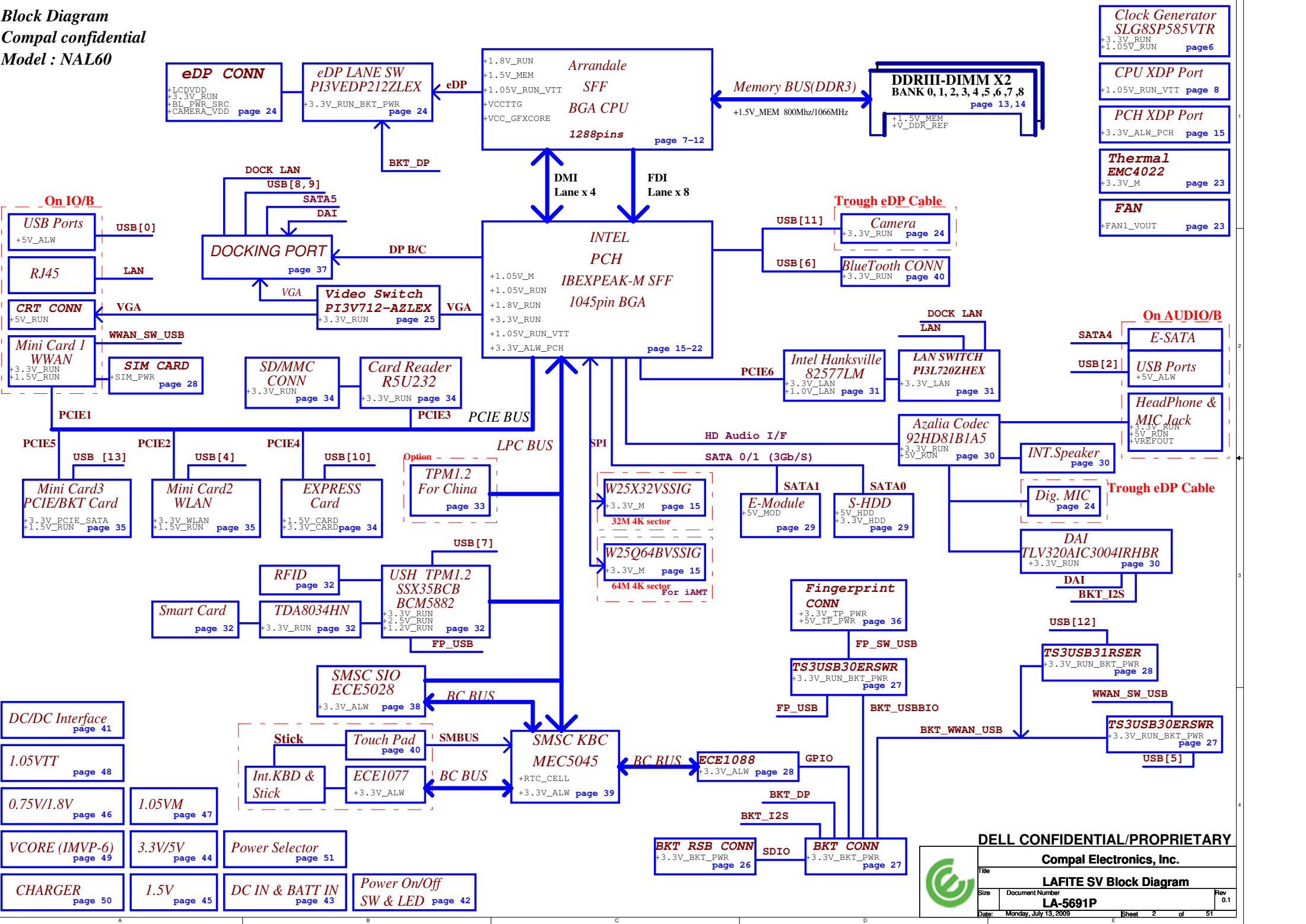
Monday, July 13, 2009

Sheet

1

of

51



POWER STATES

Signal State	SLP S3#	SLP S4#	SLP S5#	S4 STATE#	SLP M#	ALWAYS PLANE	M PLANE	SUS PLANE	RUN PLANE	CLOCKS
S0 (Full ON) / M0	HIGH	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON	ON
S3 (Suspend to RAM) / M1	LOW	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	OFF	ON
S4 (Suspend to DISK) / M1	LOW	LOW	HIGH	LOW	HIGH	ON	ON	OFF	OFF	ON
S5 (SOFT OFF) / M1	LOW	LOW	LOW	LOW	HIGH	ON	ON	OFF	OFF	ON
S3 (Suspend to RAM) / M-OFF	LOW	HIGH	HIGH	HIGH	LOW	ON	OFF	ON	OFF	OFF
S4 (Suspend to DISK) / M-OFF	LOW	LOW	HIGH	LOW	LOW	ON	OFF	OFF	OFF	OFF
S5 (SOFT OFF) / M-OFF	LOW	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF	OFF

PM TABLE

power plane State	+15V_ALW +5V_ALW +3.3V_ALW_PCH +3.3V_RTC_LDO	+3.3V_SUS +1.5V_MEM	+5V_RUN +3.3V_RUN +1.5V_RUN +0.75V_DDR_VTT +VCC_CORE +1.05V_RUN_VTT +1.05V_RUN	+3.3V_M +1.05V_M	+3.3V_M +1.05V_M (M-OFF)
S0	ON	ON	ON	ON	ON
S3	ON	ON	OFF	ON	OFF
S5 S4/AC	ON	OFF	OFF	ON	OFF
S5 S4/AC don't exist	OFF	OFF	OFF	OFF	OFF

PCH	USB PORT#	DESTINATION
	0	USB Port (Ext Right Side)
	1	NA
	2	USB Port (Ext Left Side)
	3	NA
	4	WLAN
	5	WWAN
	6	Bloetooth
	7	USB->BIO
	8	DOCKING
	9	DOCKING
	10	Express Card
	11	Camera
	12	BKT
	13	WPAN/NVMHCI

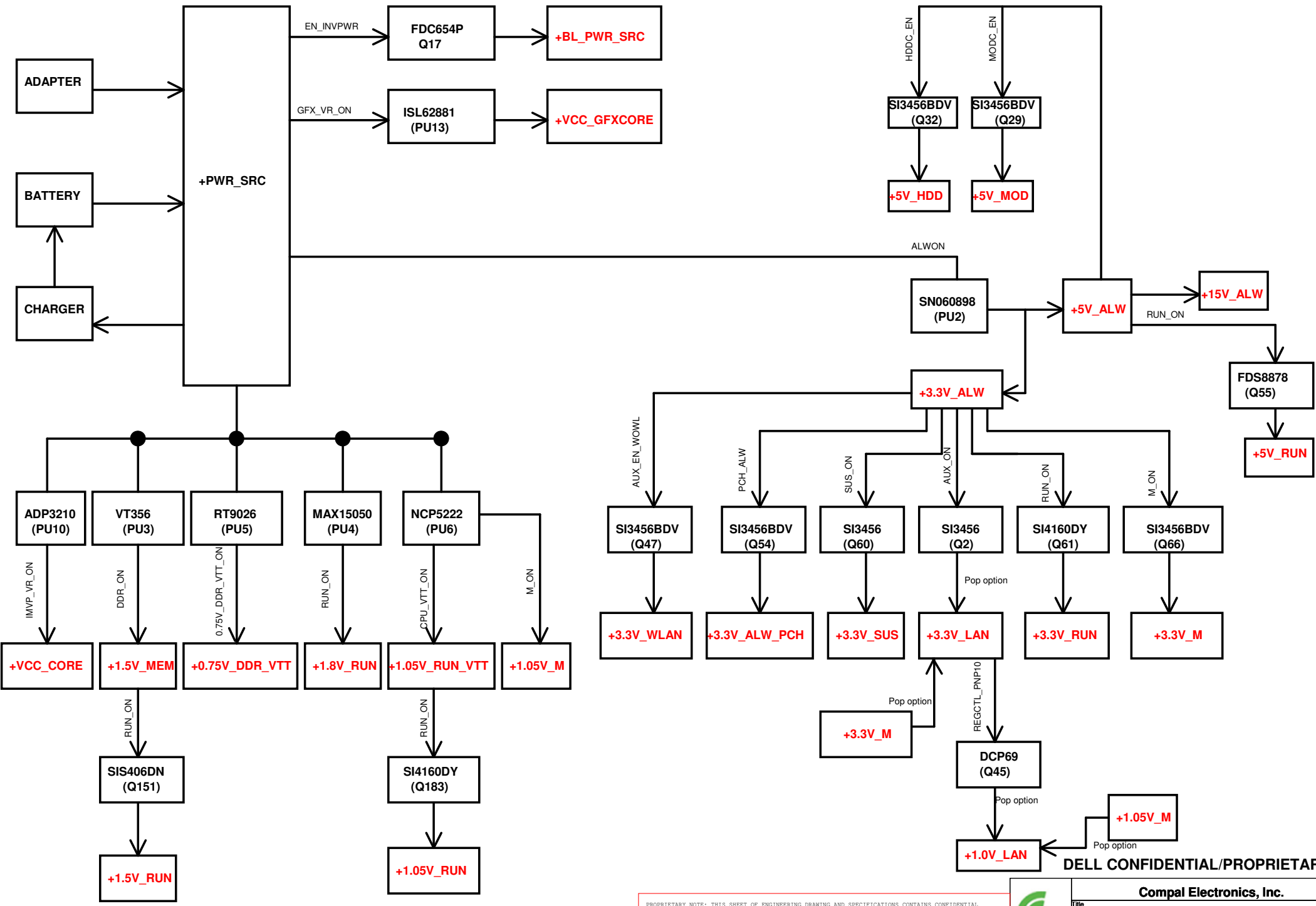
PCI EXPRESS	DESTINATION
Lane 1	MINI CARD-1 WWAN
Lane 2	MINI CARD-2 WLAN
Lane 3	Card Reader
Lane 4	EXPRESS CARD
Lane 5	MINI CARD-3 WPAN/NVMHCI
Lane 6	10/100/1G LAN
Lane 7	None
Lane 8	None

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Title	Index and Config.		
Size	Document Number	Rev	0.1
Date	Monday, July 13, 2009	Sheet	3 of 51

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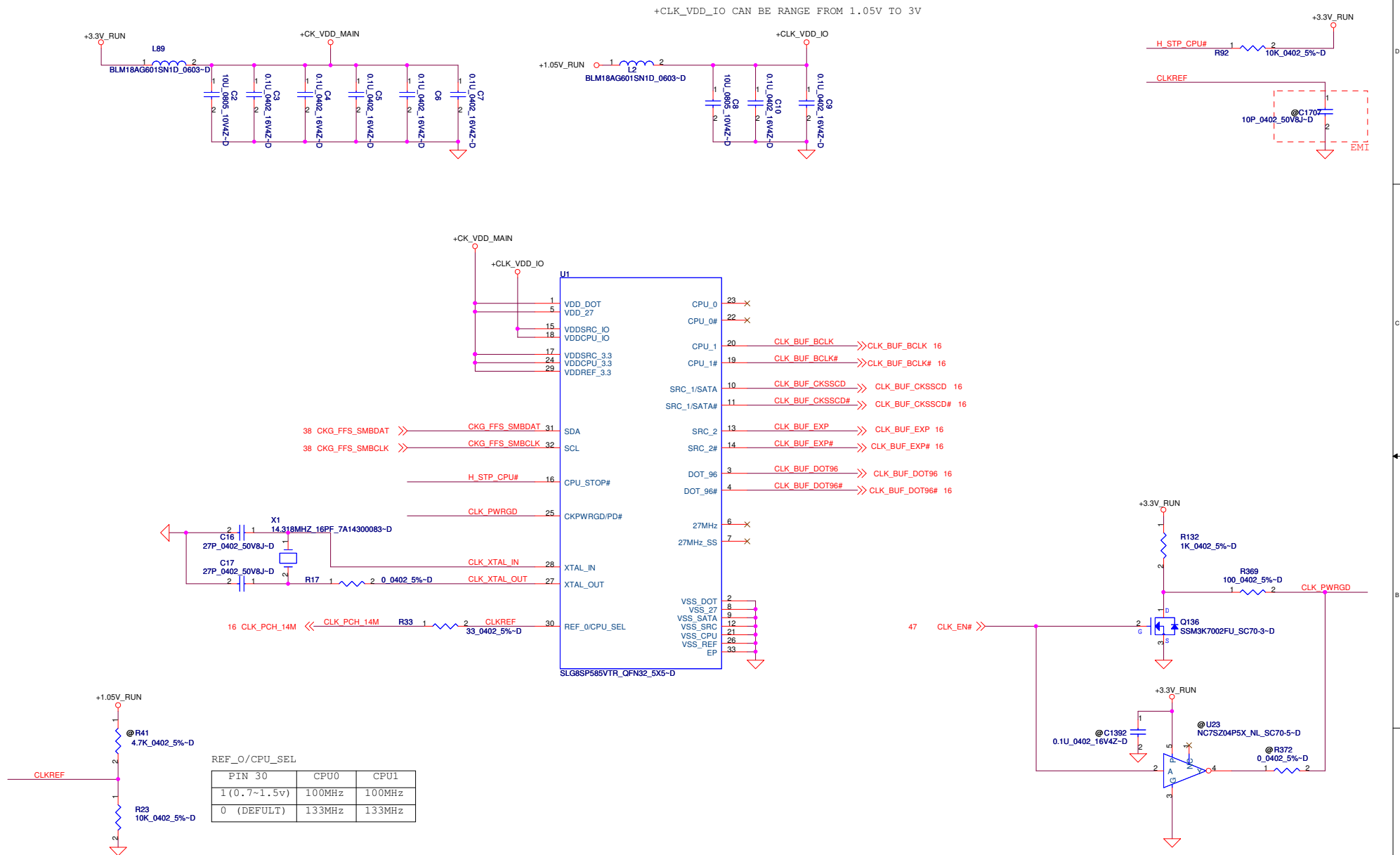


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Title Power Rail			
Size	Document Number	Rev	
	LA-5691P	0.1	
Date:	Monday, July 13, 2009	Sheet	4 of 51

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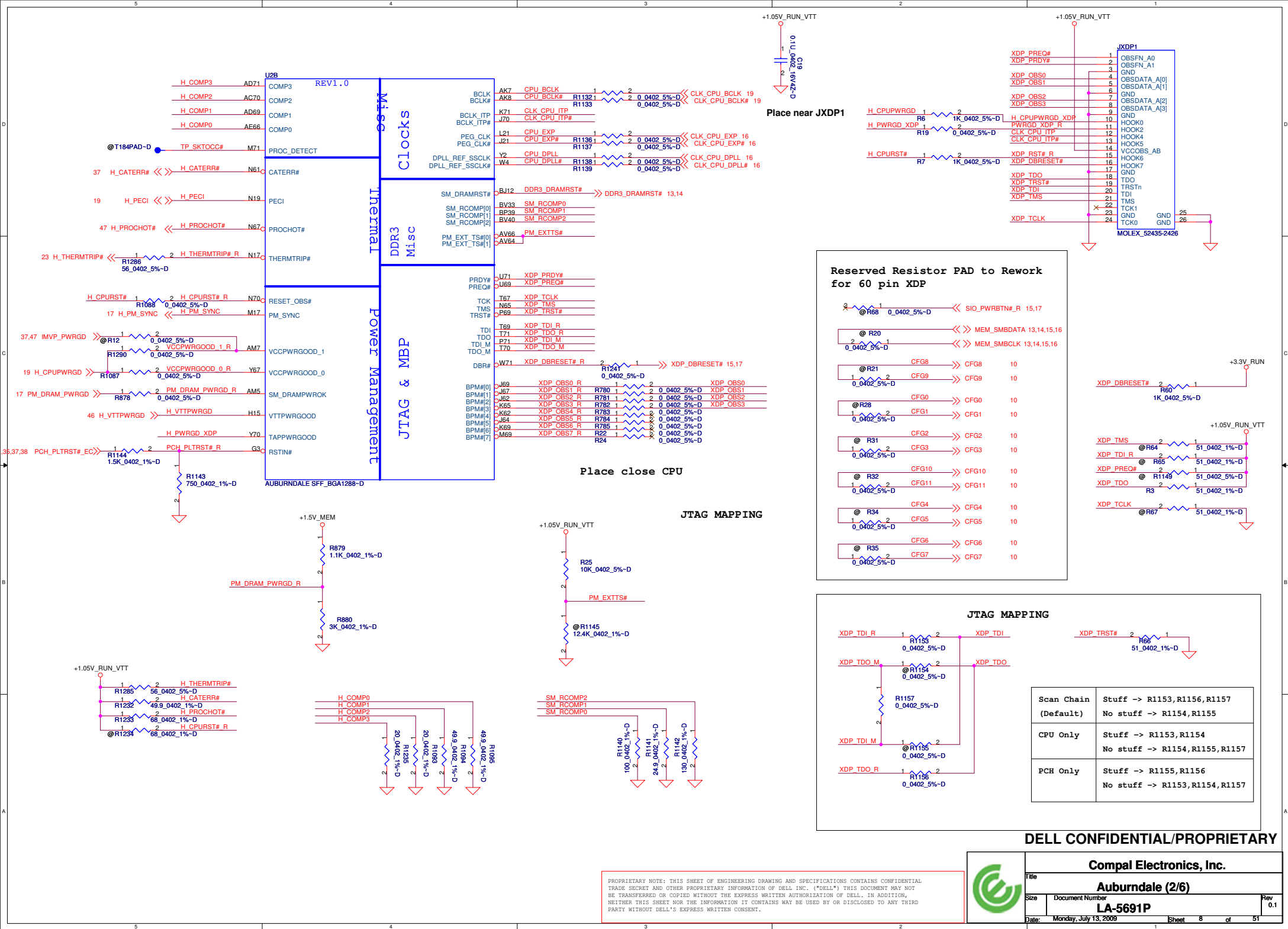
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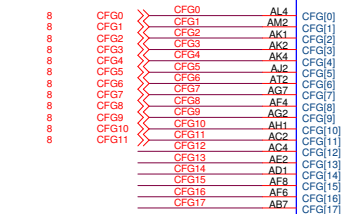


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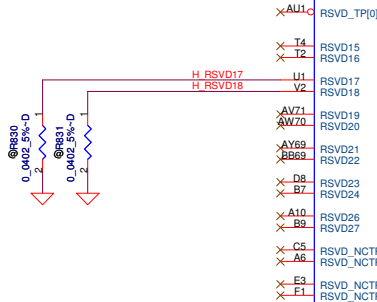
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Title			
Clock Generator			
Size	Document Number	Rev	
	LA-5691P	0.1	
Date:	Monday, July 13, 2009	Sheet	6 of 51





Reserve VIA on PCB



AUBURNDAL SFF_BGA1288-D

RESERVED

Package Daisy Chain:

- 1: BR71 - pkg - BT71- board - BT69 - pkg - BV71 - board - BV69 - pkg - BV68
- 2: A68 - pkg - A69 - board - C69 - pkg - A71 - board - C71 - pkg - E71
- 3: A5 - pkg - C3
- 4: BR1 - pkg - BT1 - board - BV1 - pkg - BT3 - board - BV3 - pkg - BV5

PCI-Express Configuration Select	
CFG0	1 : Single PEG 0 : Bifurcation enable

PCI-Express Static Lane Reversal	
CFG3	1 : Normal Operation 0 : Lane Number Reversed 15->0, 14->1 ...

Display Port Presence	
CFG4	1 : Disabled; No Physical Display Port attached to Embedded Display Port 0 : Enabled; An external Display Port device is connected to the Embedded Display Port

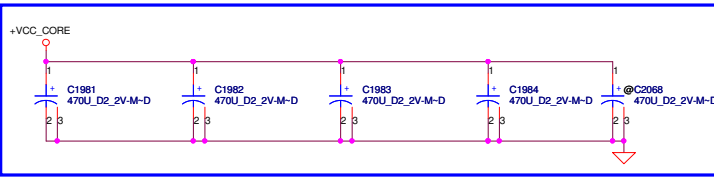
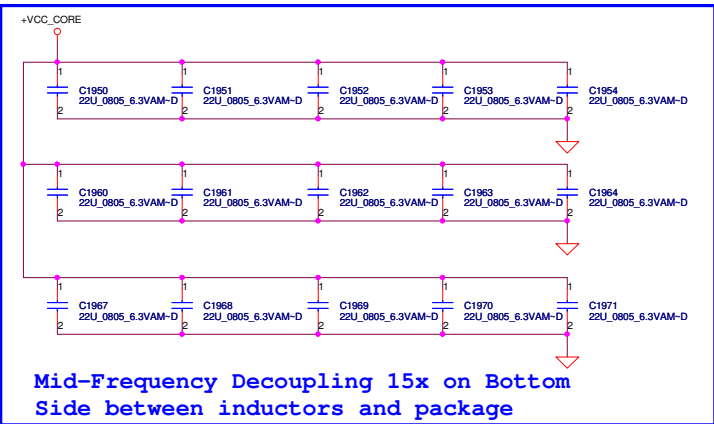
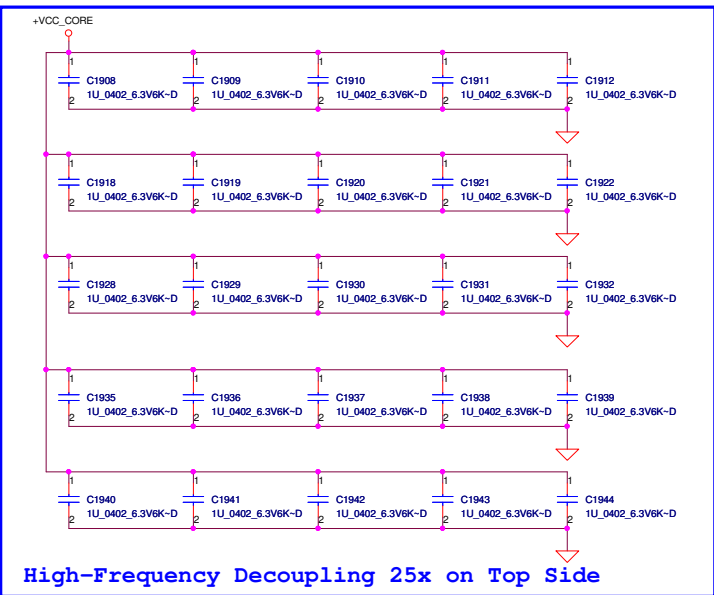
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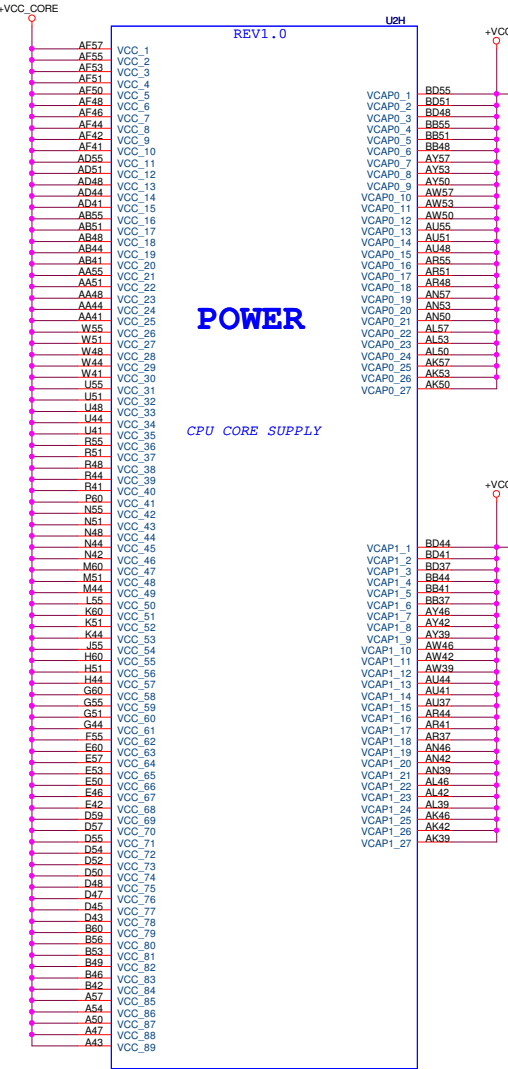
Auburndale (4/6)

File	Document Number	Rev
LA-5691P	LA-5691P	0.1
Date	Monday, July 13, 2009	Sheet 10 of 51

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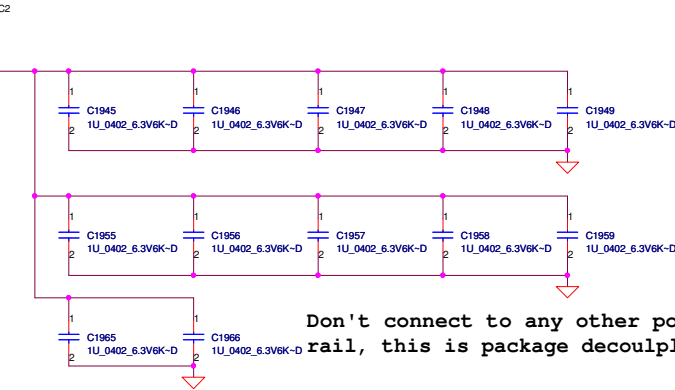
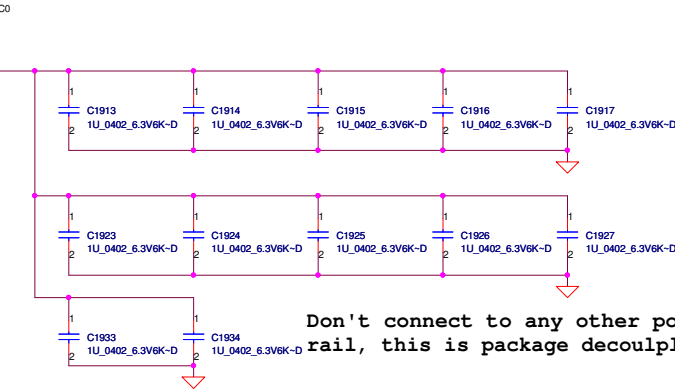


Current =48A



POWER

CPU CORE SUPPLY



PROCESSOR Power Rail Table (EDS V1.0)		
Voltage Rail	Voltage	S0 Iccmax Current (A)
VXMG	1.5	22
VccPLL	1.8	1.35
VCORE	0.75	48
VDDR	1.5	3
VTT	1.05	18

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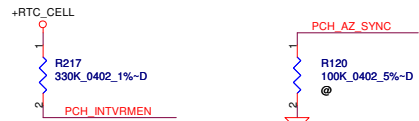
Auburndale (5/6)

File	LA-5691P	
Size	Document Number	Rev 0.1
Date	Monday, July 13, 2009	Sheet 11 of 51

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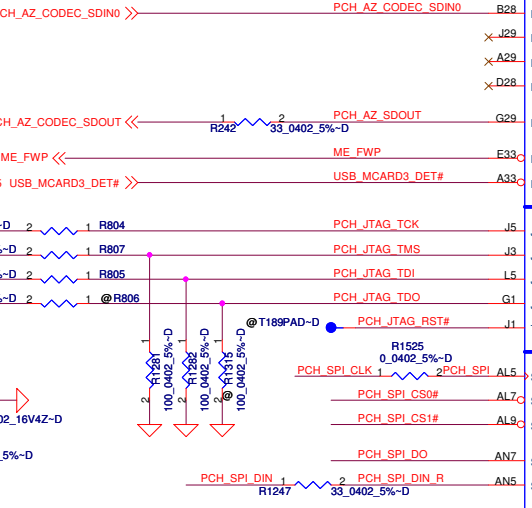
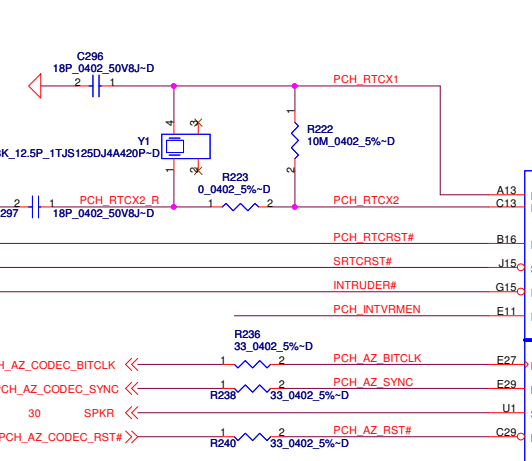
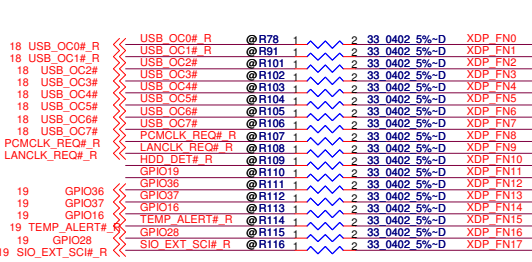
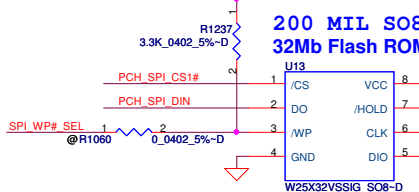
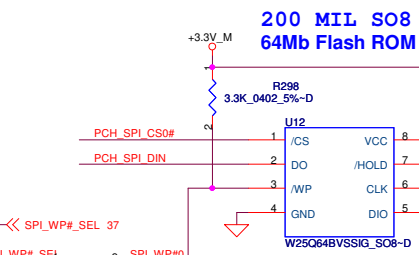
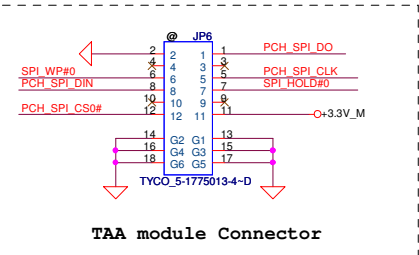
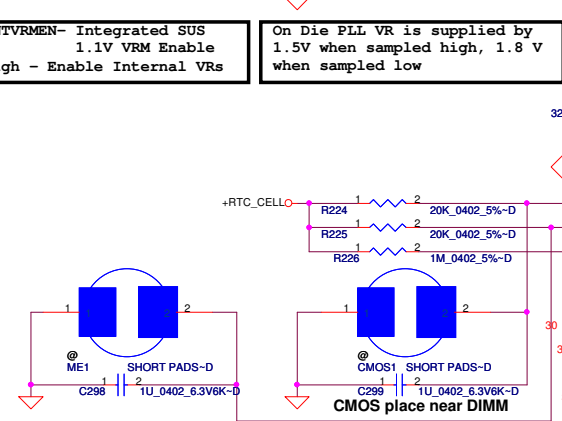
CMOS_CLR1	CMOS setting
Shunt	Clear CMOS
Open	Keep CMOS

ME_CLR1	TPM setting
Shunt	Clear ME RTC Registers
Open	Keep ME RTC Registers

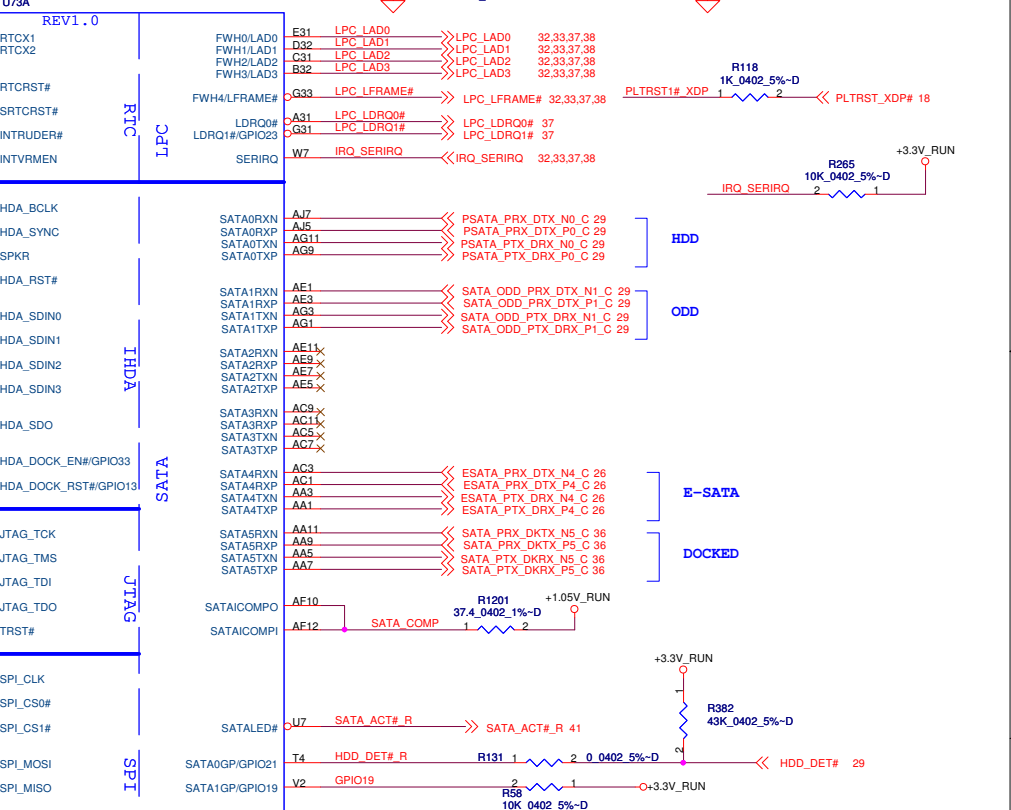
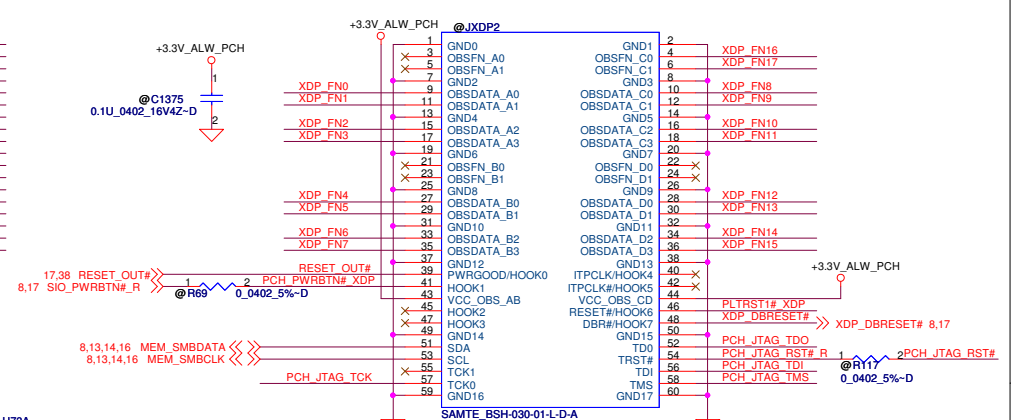


INTVRMEN - Integrated SUS
1.1V VRM Enable
High - Enable Internal VRs

On Die PLL VR is supplied by
1.5V when sampled high, 1.8 V
when sampled low



		PCH JTAG Enable		PCH JTAG Disabl	
PCH Pin	Ref.	ES1	ES2	ES1	ES2
TDO	R806	No Stuff	200 ohm	No Stuff	No St
	R1315	No Stuff	100 ohm	No Stuff	No St
TMS	R807	200 ohm	200 ohm	No Stuff	No St
	R1281	100 ohm	100 ohm	No Stuff	No St
TDI	R805	200 ohm	200 ohm	20K ohm	No St
	R1282	100 ohm	100 ohm	10K ohm	No St
TCK	R804	51 ohm	51 ohm	51 ohm	51 oh
TRST#	R808	20K ohm	20K ohm	No Stuff	No St
	R1316	10K ohm	10K ohm	No Stuff	No St



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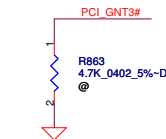
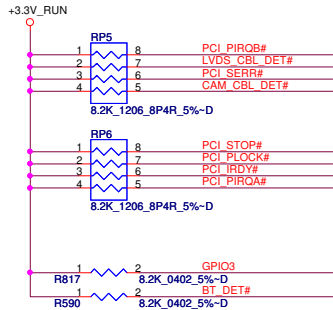
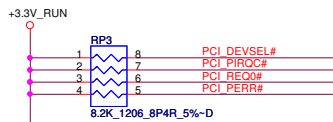
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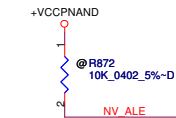
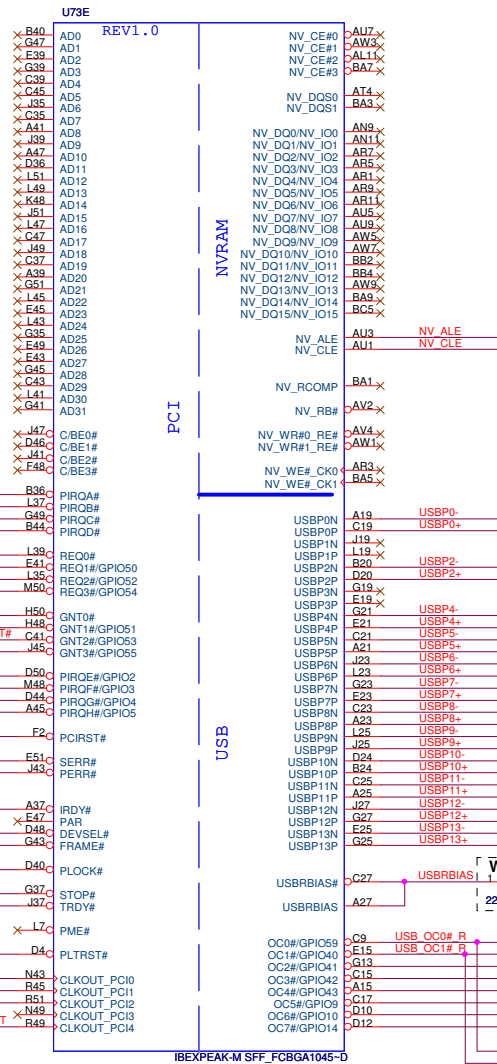
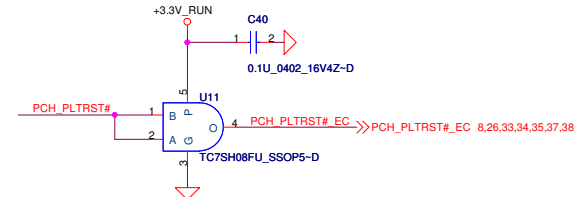
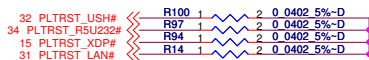
PCH (1/8)

LA-5691P
Monday, July 13, 2009
Sheet 15 of 51

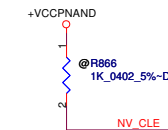




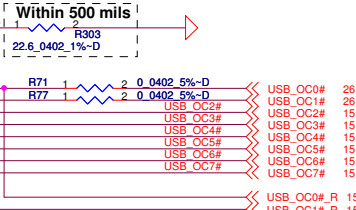
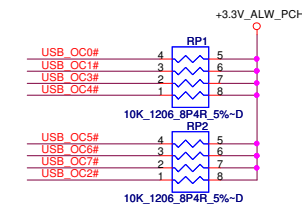
A16 swap override Strap/Top-Block Swap Override jumper	
PCI_GNT#3	Low = A16 swap High = Default



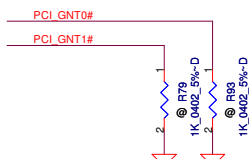
Danbury Technology Enabled	
NV_ALE	High = Enabled (Default) Low = Disabled



DMI Termination Voltage	
NV_CLE	Set to Vss when LOW Set to Vcc when HIGH

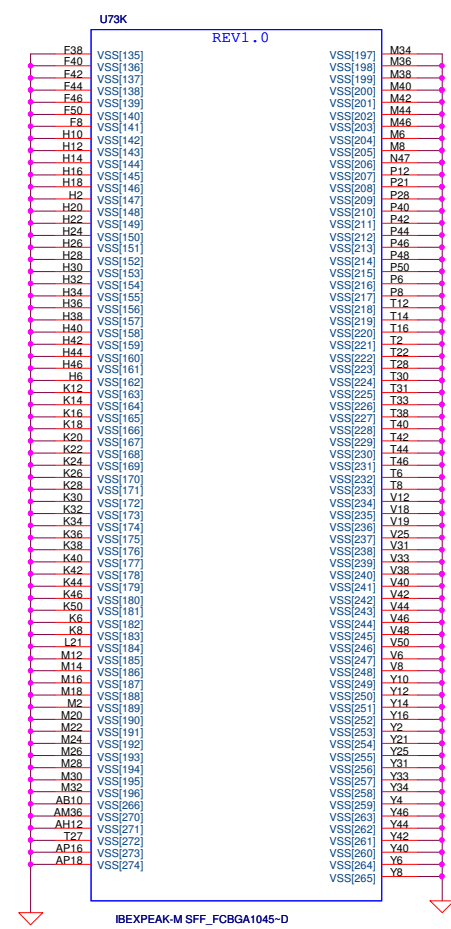
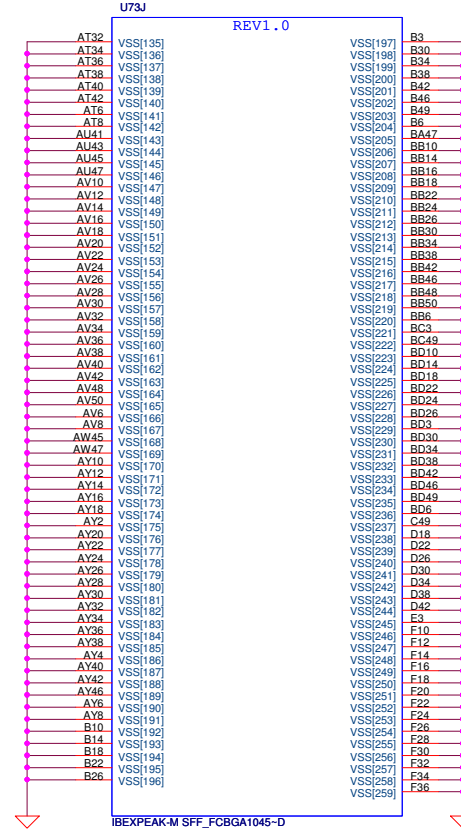
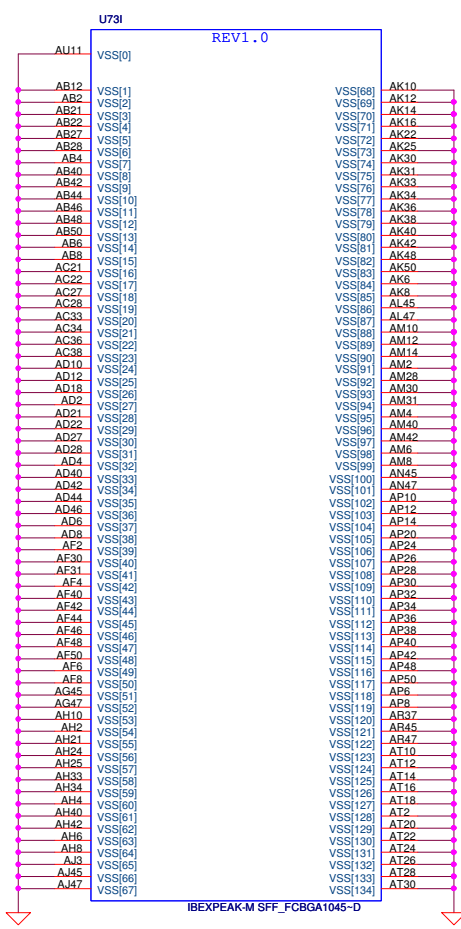


Boot BIOS Strap		
PCI_GNT#1	PCI_GNT#0	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI



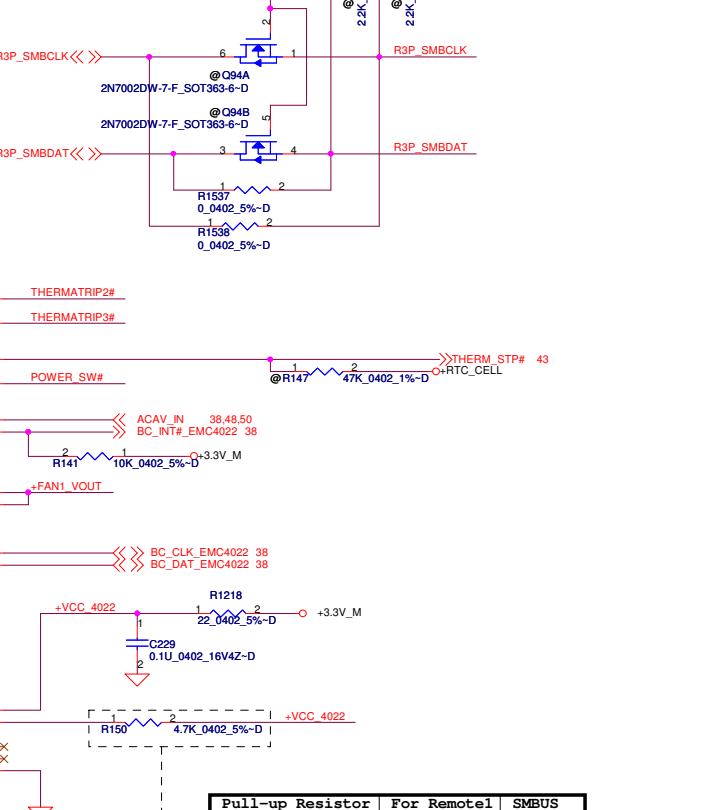
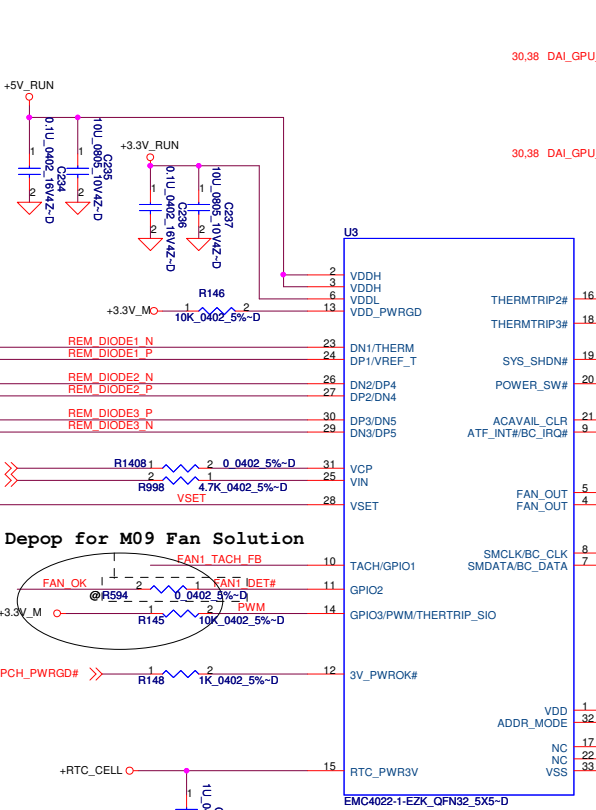
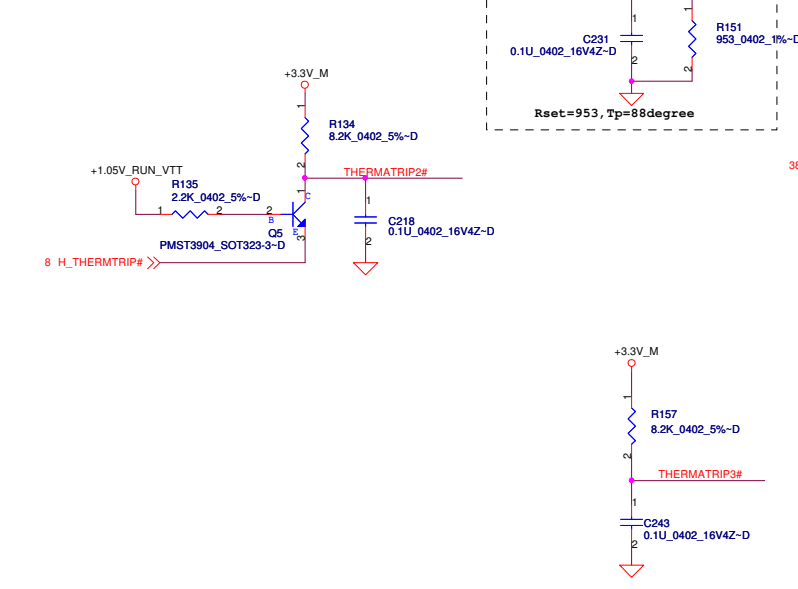
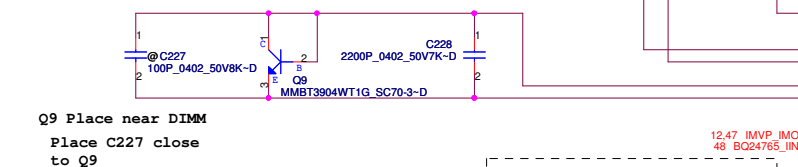
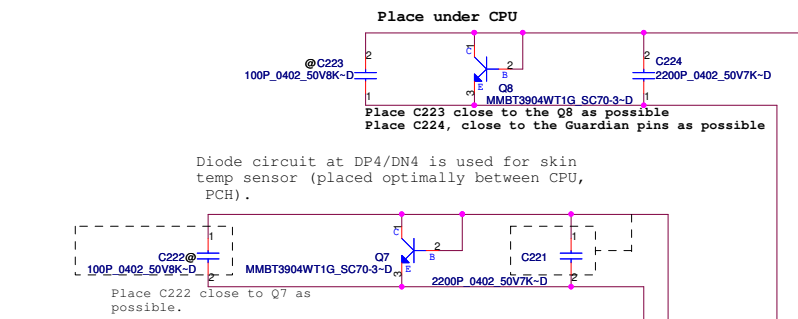
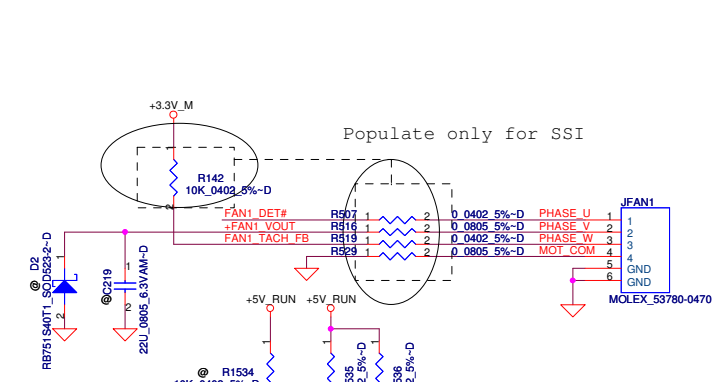
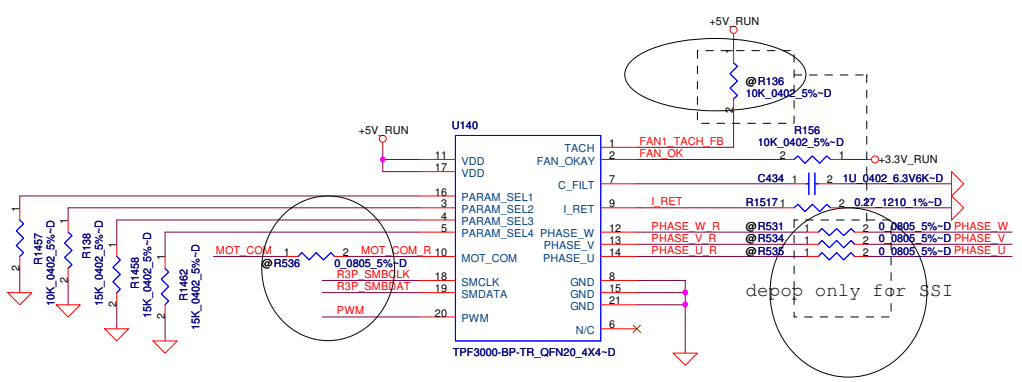
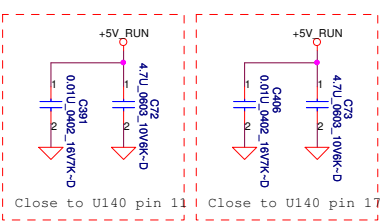
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Compal Electronics, Inc.		
PCH (4/8)		
Title	Document Number	Rev
	LA-5691P	0.1
Date	Monday, July 13, 2009	Sheet 18 of 51



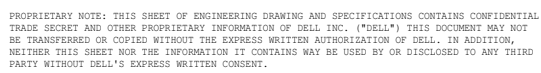
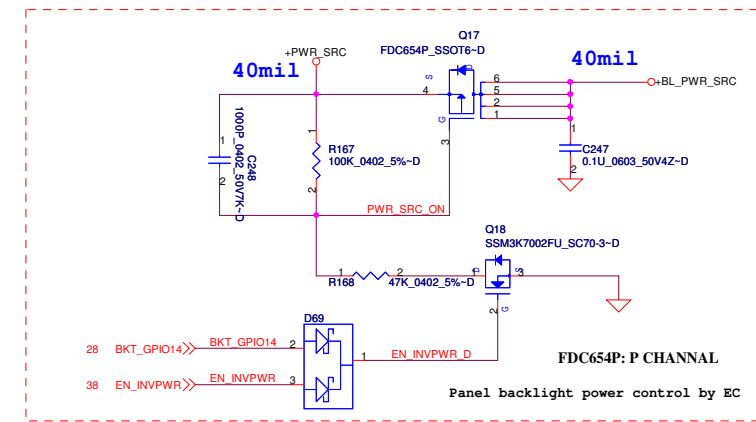
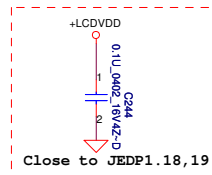
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.	
Title	
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Size	Document Number
LA-5691P	
Date	Monday, July 13, 2009
Sheet	22 of 51
Rev	0.1

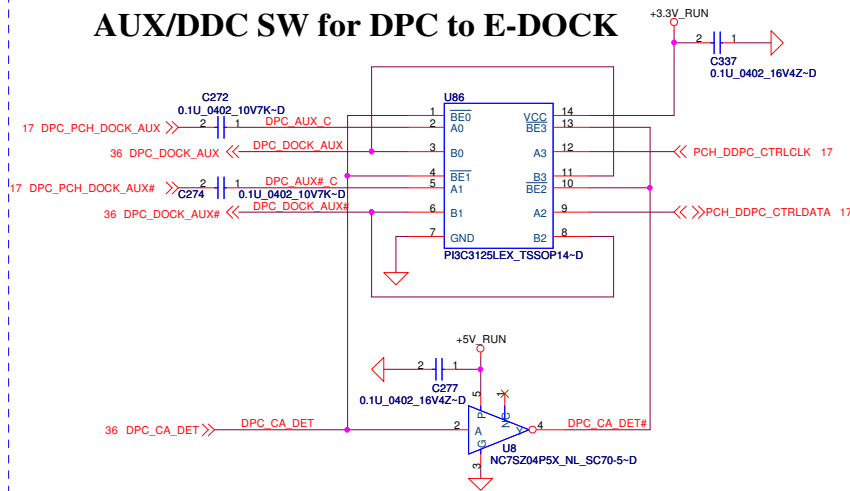


Pull-up Resistor on ADDR_MODE#XEN	For Remotel mode	SMBUS Address
<= 4.7K +/- 5%	2N3904	2F(r/w)
10K	2N3904	2E(r/w)
18K	Thermistor	2F(r/w)
>= 33K	Thermistor	2E(r/w)

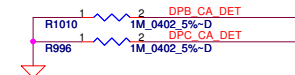
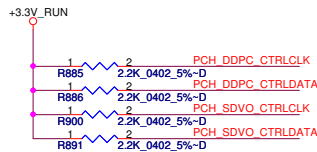
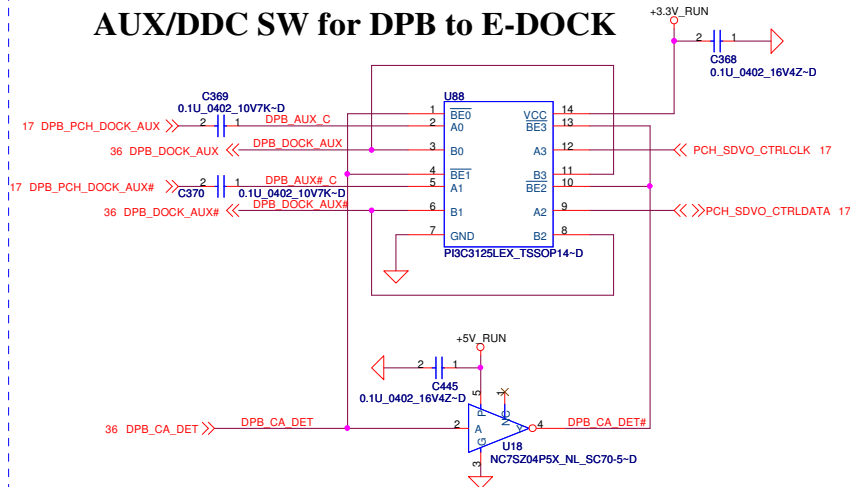
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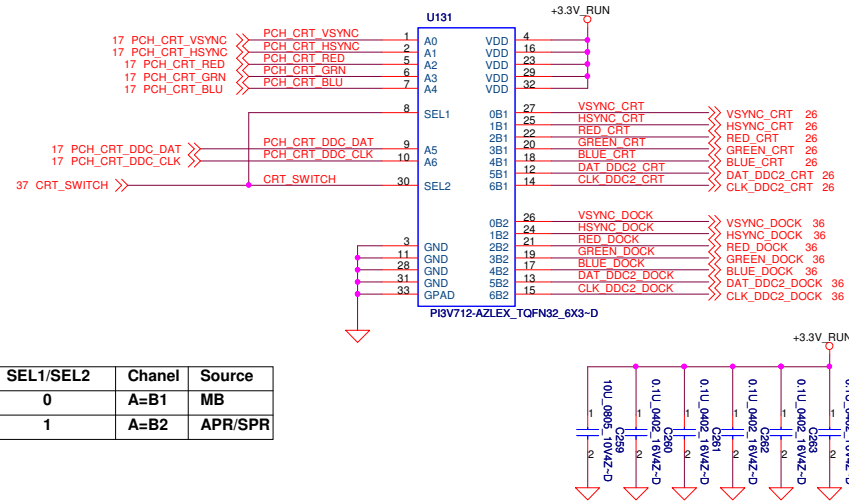
AUX/DDC SW for DPC to E-DOCK



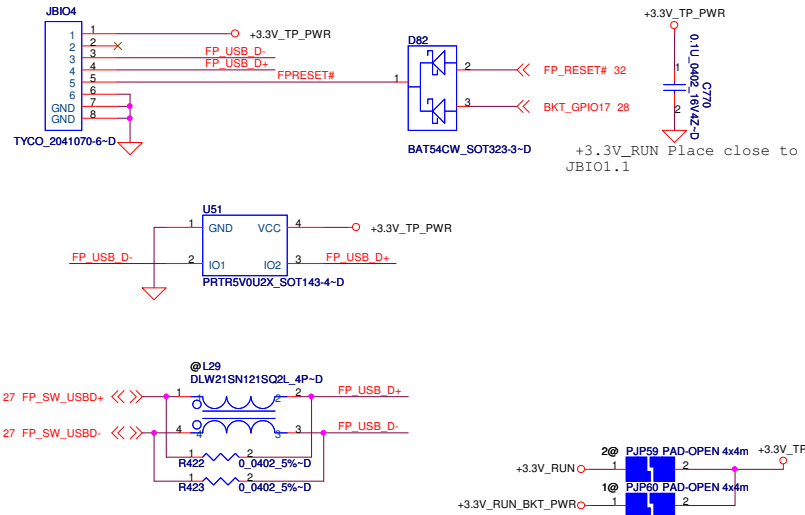
AUX/DDC SW for DPB to E-DOCK



VGA SW for MB/DOCK



Fingerprint CONN.



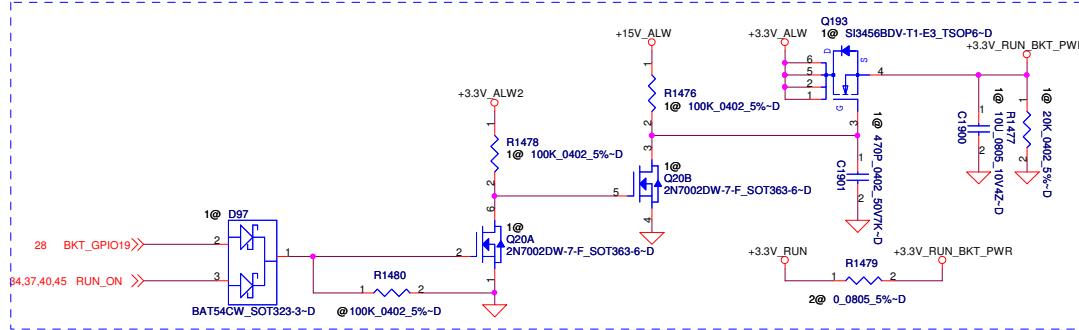
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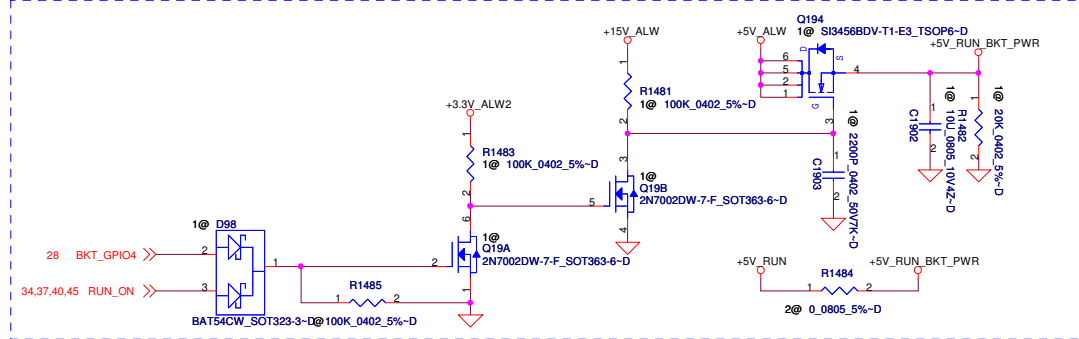
Title				
DPC DPD SW for DOCK				
Size	Document Number			Rev
	LA-5691P			0.1
Date:	Monday, July 13, 2009		Sheet 25 of 51	

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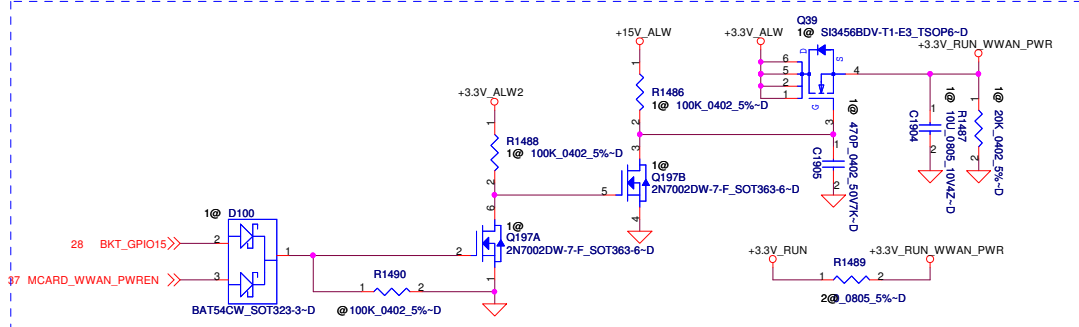
+3.3V_RUN_BKT_PWR Source



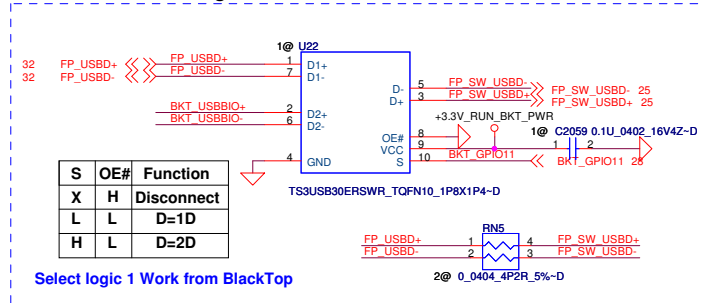
+5V_RUN_BKT_PWR Source, for Touch Pad and Audio Amplifier



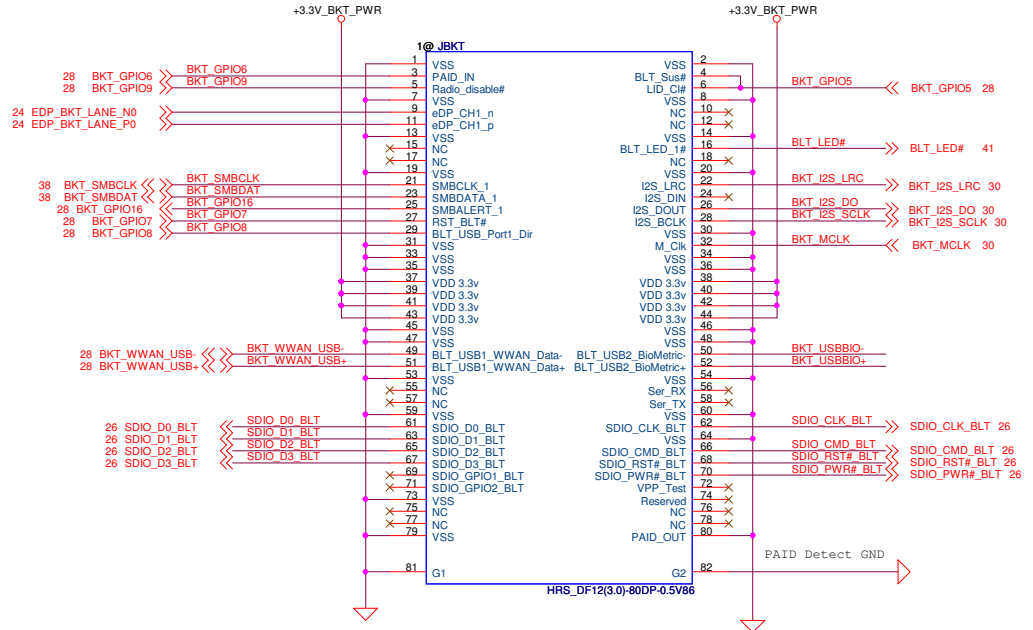
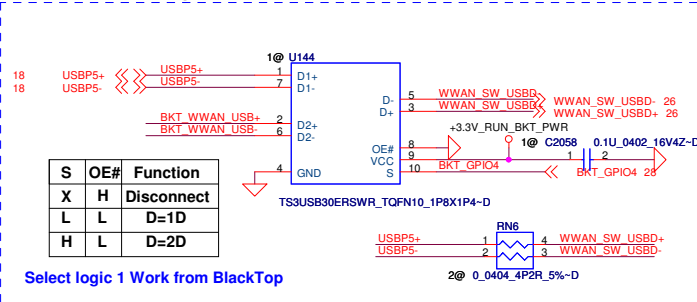
+3.3V_RUN_WWAN_PWR Source, for WWAN



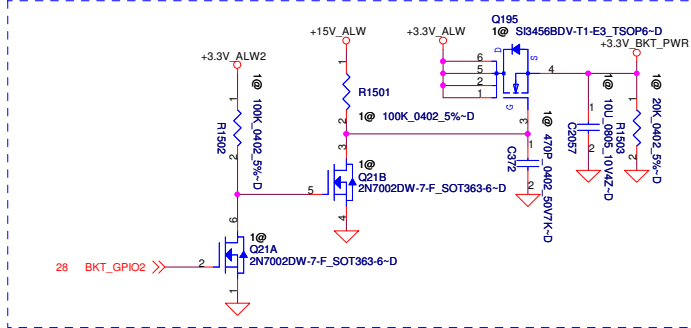
For Biometric USB signals isolation



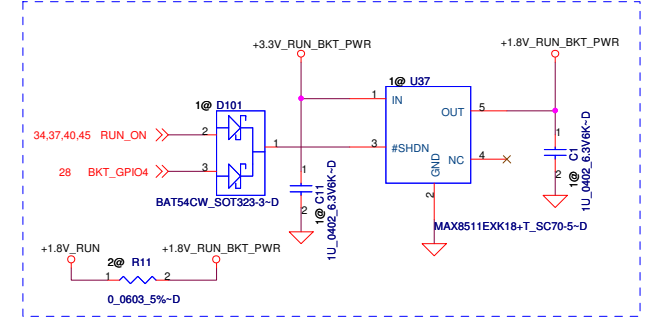
For WWAN USB signals isolation



Enable BlackTop POWER



For Audio I2S



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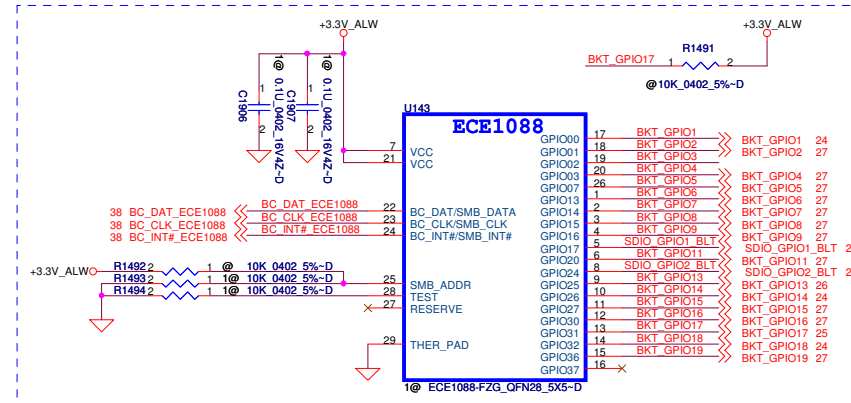
Compal Electronics, Inc.



BlackTop POWER and CONN			
Size	Document Number	Rev	
	LA-5691P	0.1	
Date:	Monday, July 13, 2009	Sheet	27 of 51

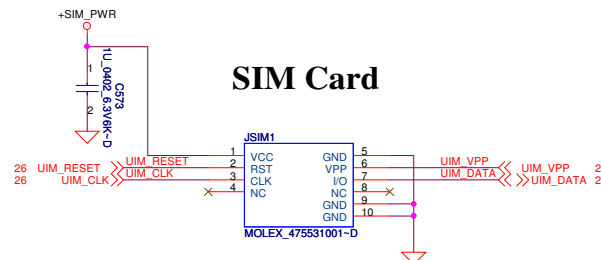
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GPIO Expander for BlackTop



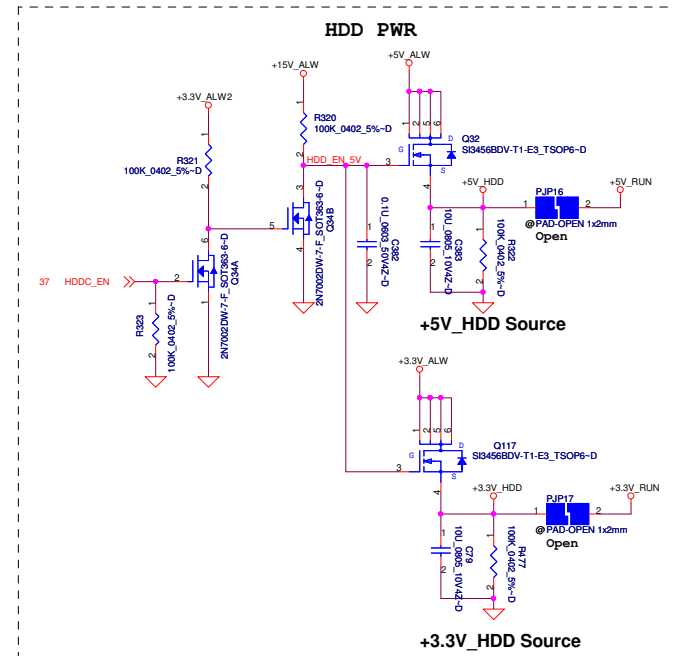
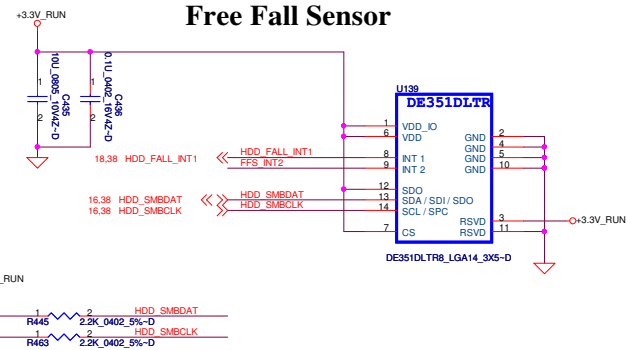
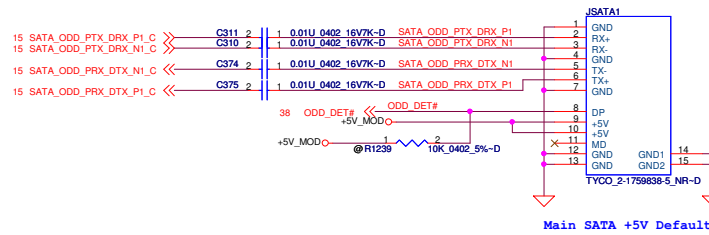
-

SIM Card



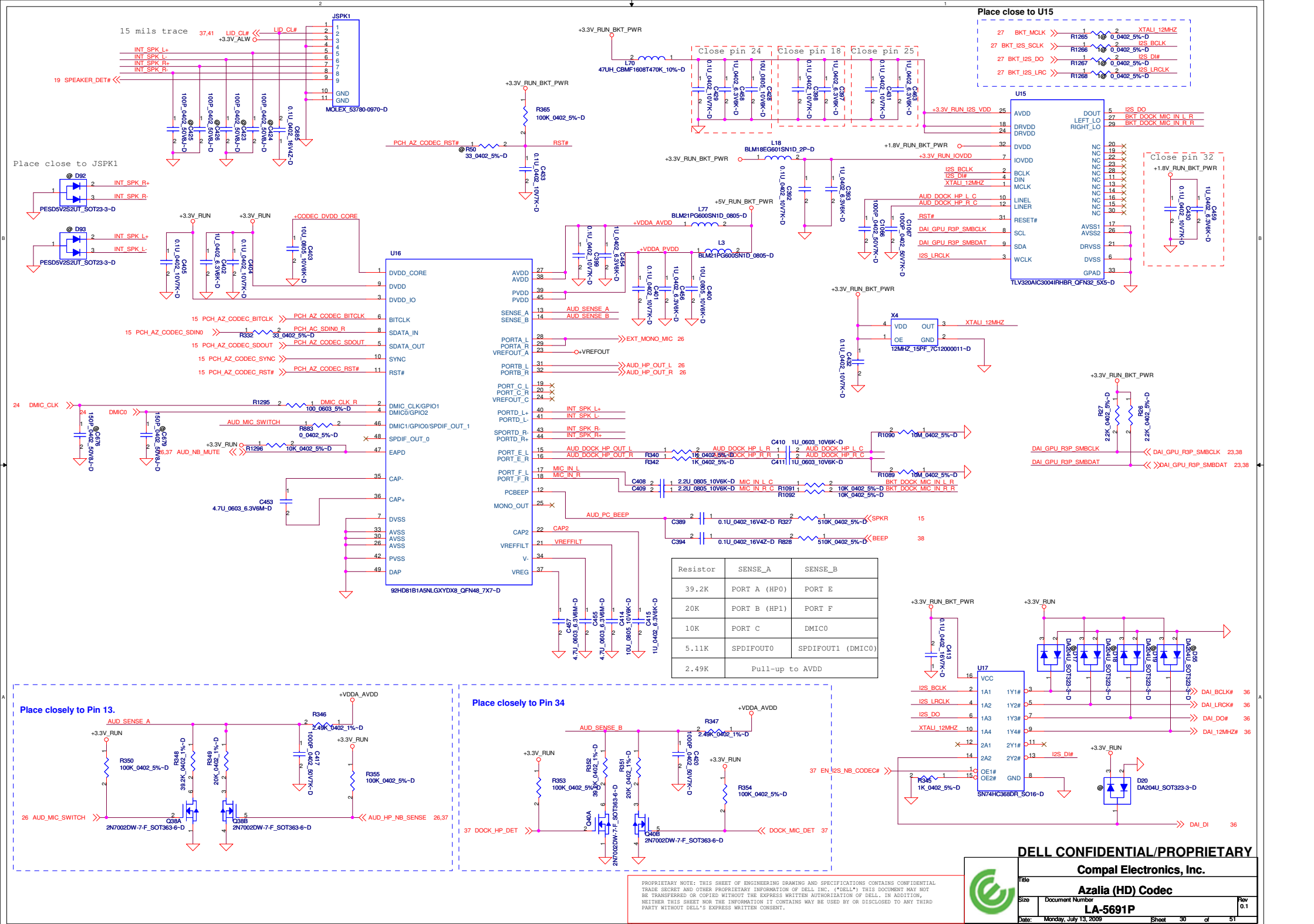
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Braidwood/ SATA repeater & PCIE SATA SW			
Size	Document Number	Rev	
	LA-5691P	0.1	
Date:	Monday, July 13, 2009	Sheet	28 of 51

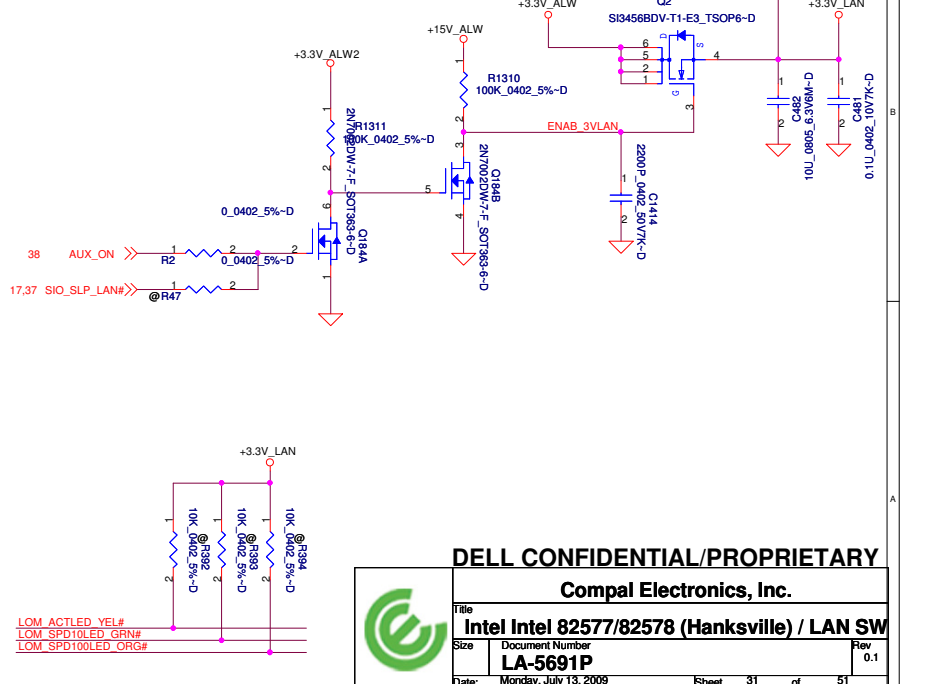
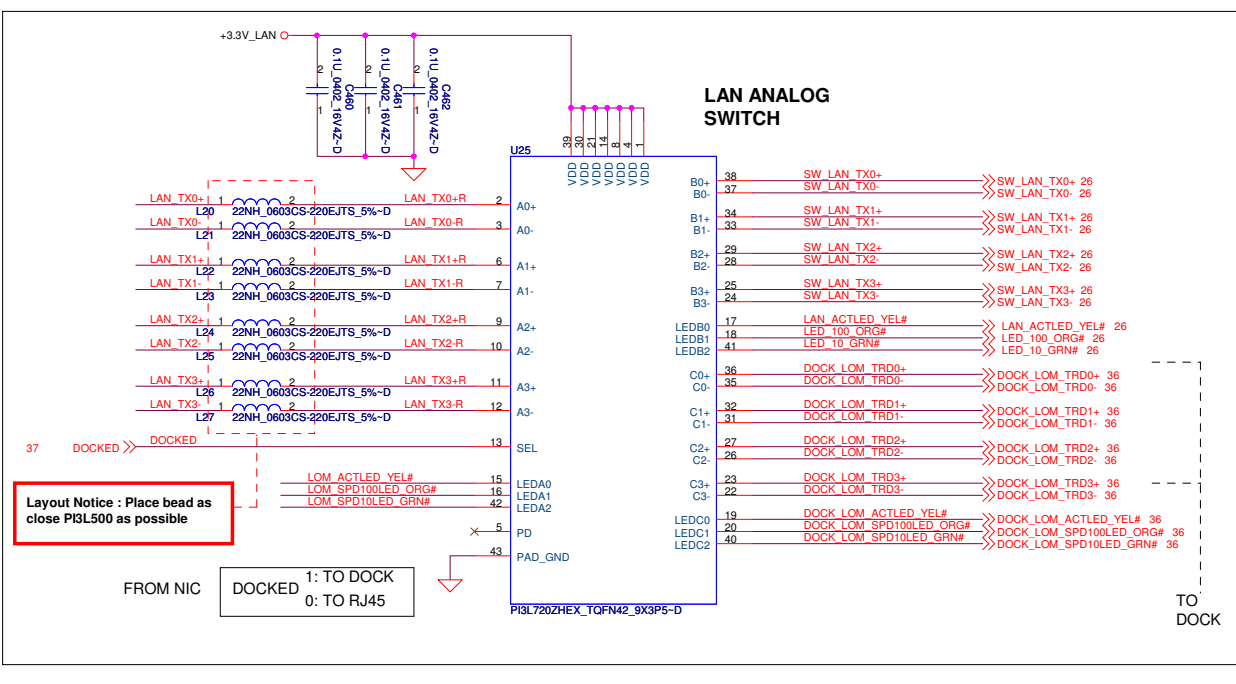
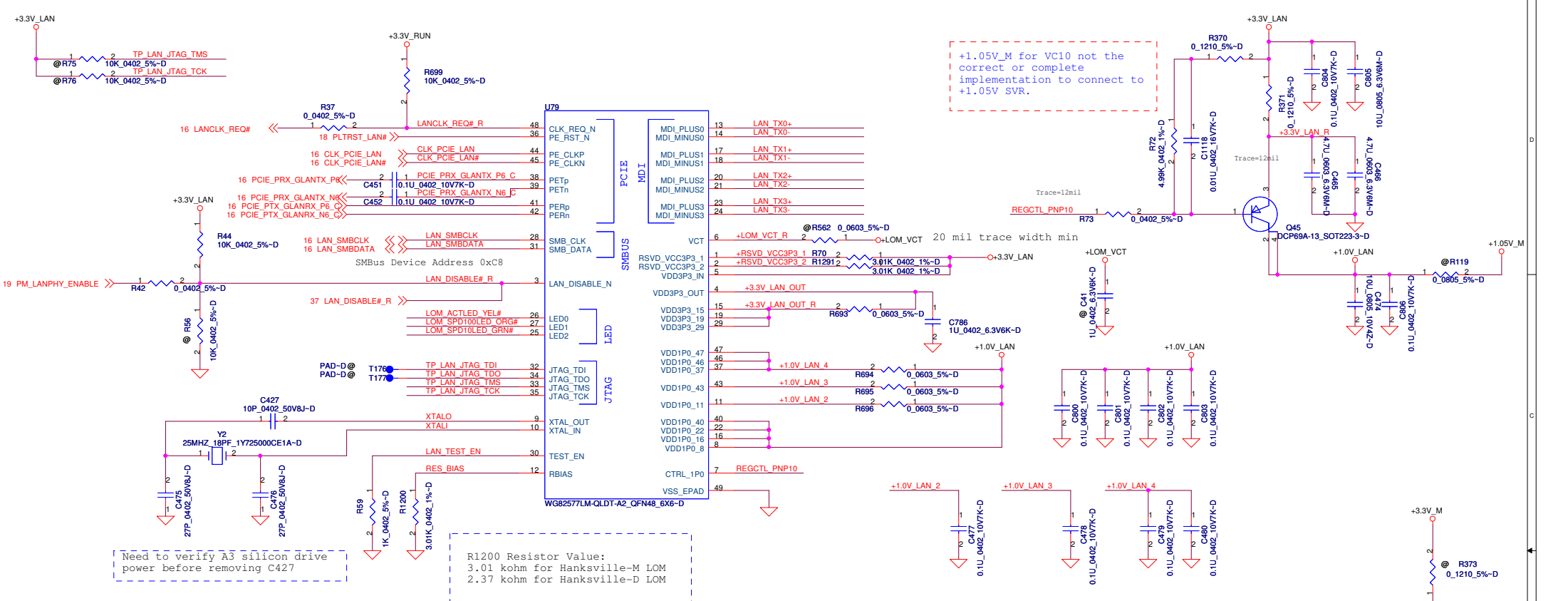
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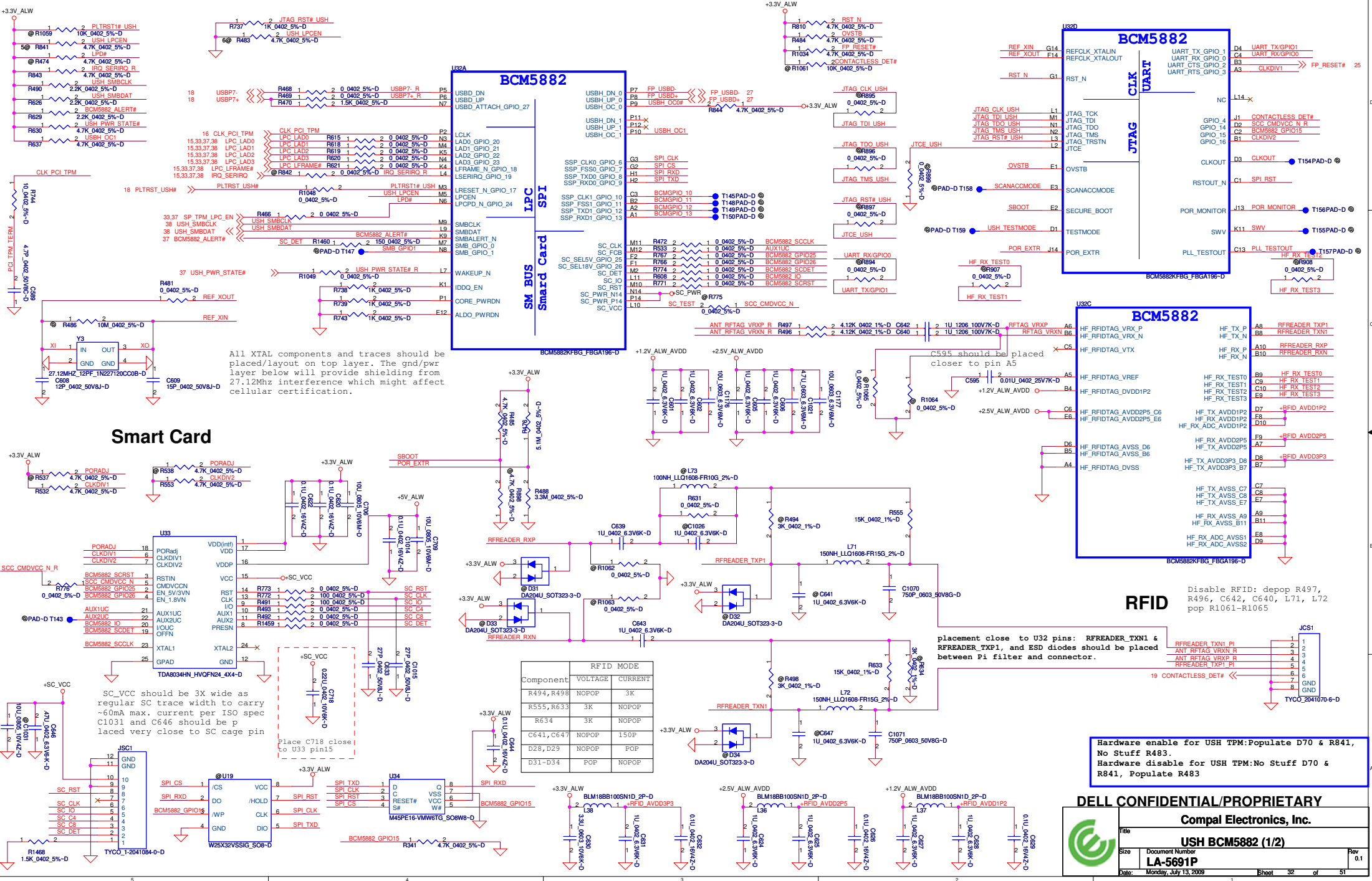


Title			
ODD/HDD CONNECTOR			
Size	Document Number	Rev	
	LA-5691P	0.1	
Date:	Monday, July 13, 2009	Sheet	29 of 51

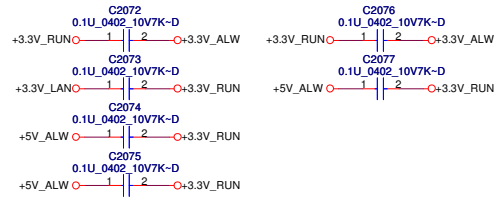
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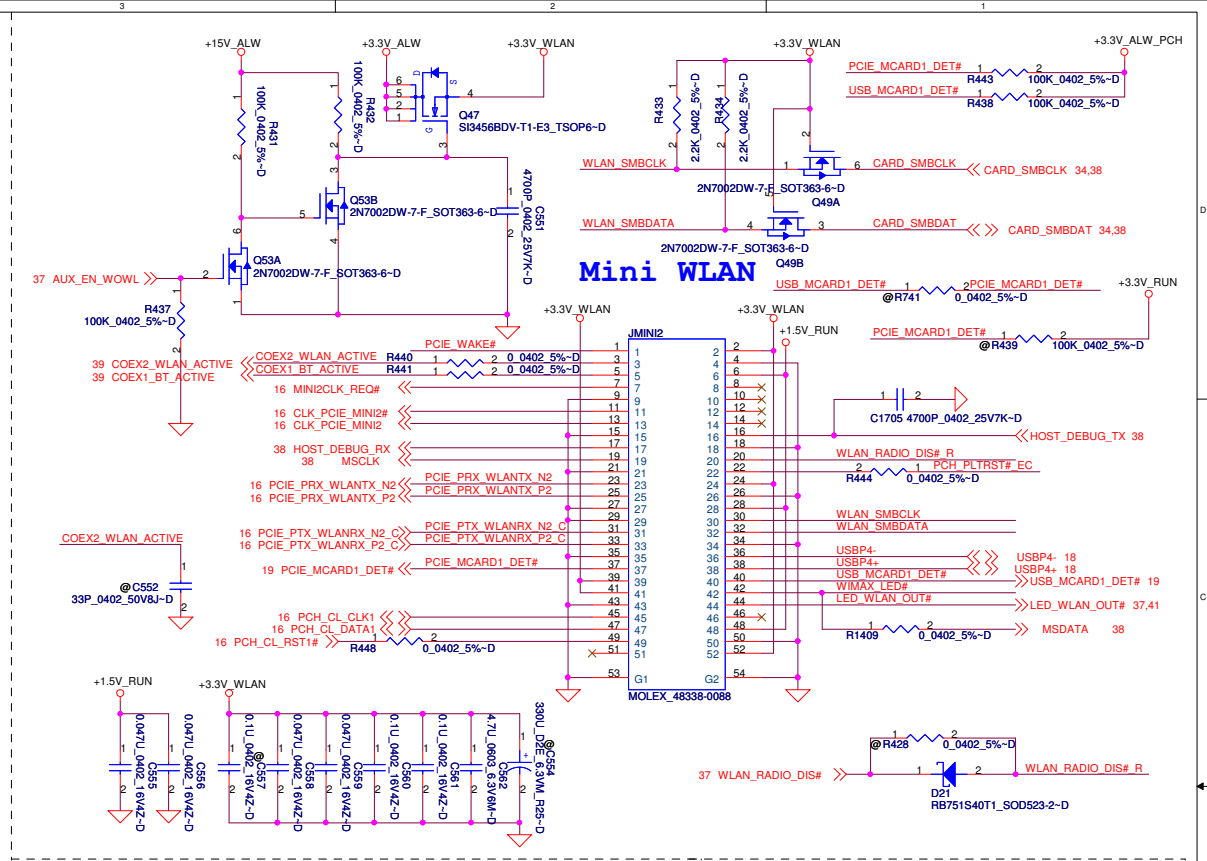




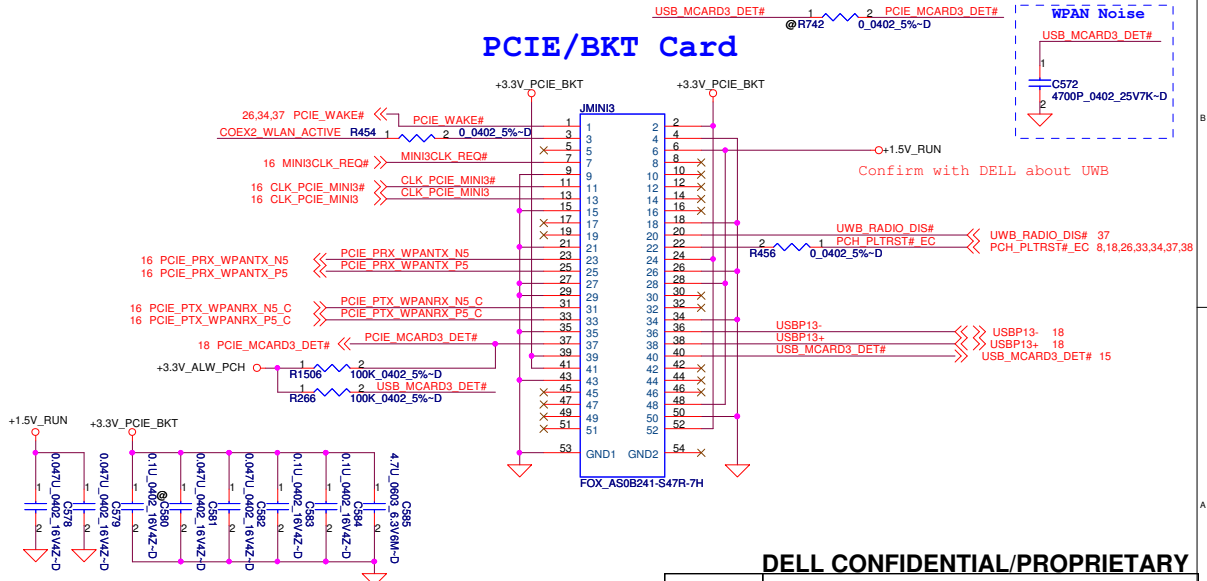
Stitching caps for MDI



Stitching caps for PCIE6



PCIE/BKT Card



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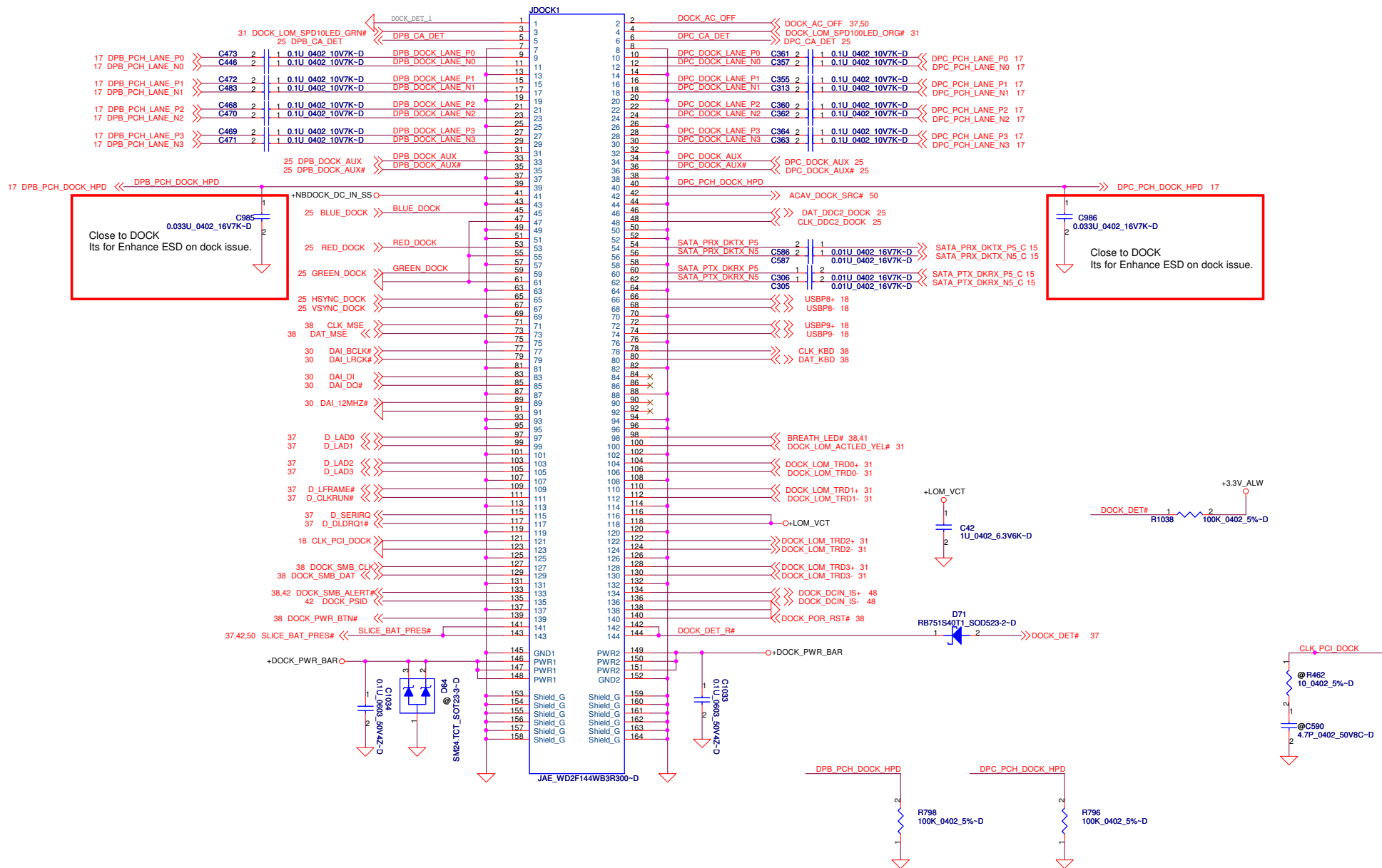
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Mini Card

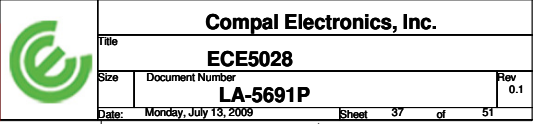
LA-5691P

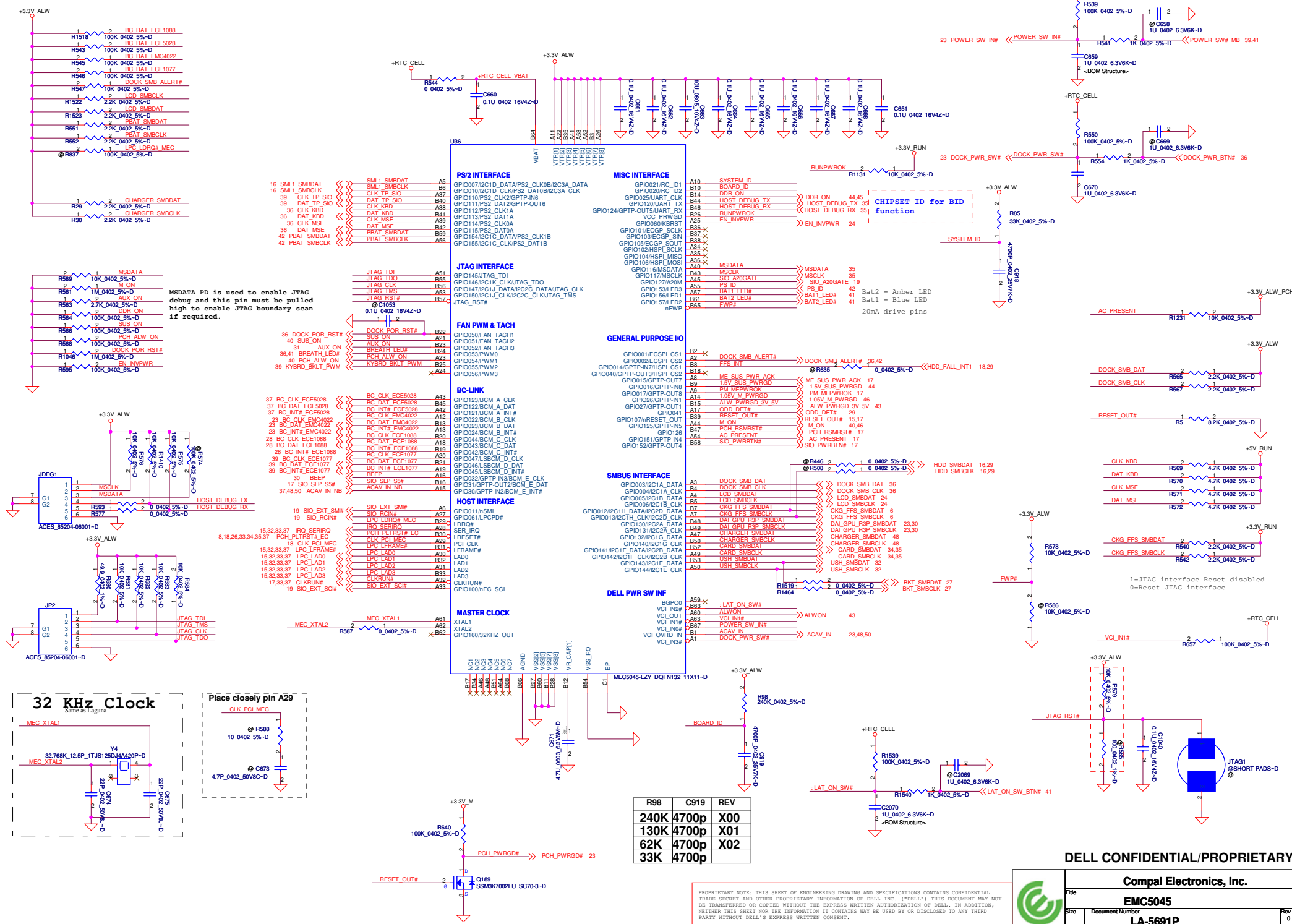
Date: Monday, July 13, 2008 Sheet 35 of 51



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				DOCKING CONN	
Title	Document Number	LA-5691P		Rev 0.1	
Date: Monday, July 13, 2009	Sheet 36	of 51			





R98	C919	REV
240K	4700p	X00
130K	4700p	X01
62K	4700p	X02
33K	4700p	

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EMC5045

Document Number

LA-5691P

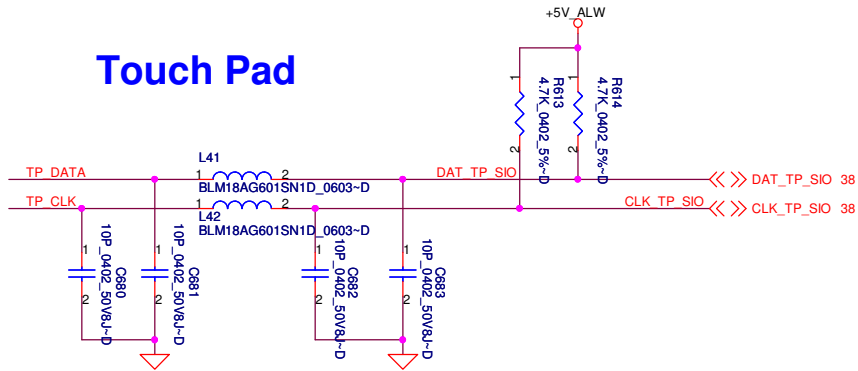
Rev 0.1

Monday, July 13, 2009

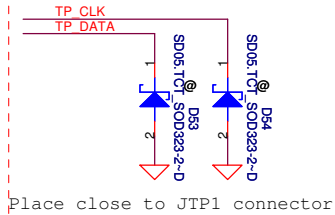
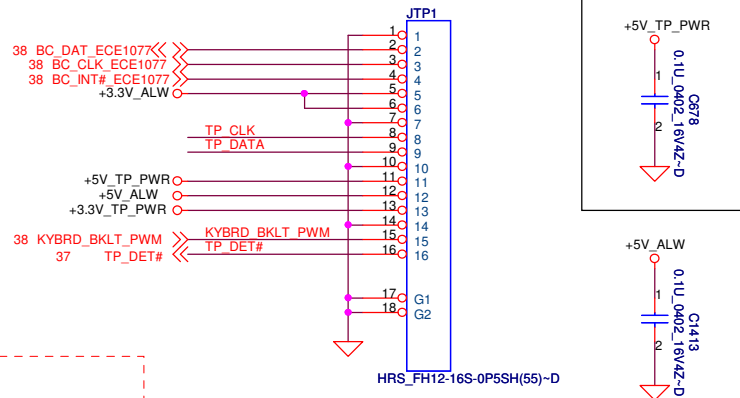
Sheet 38 of 51

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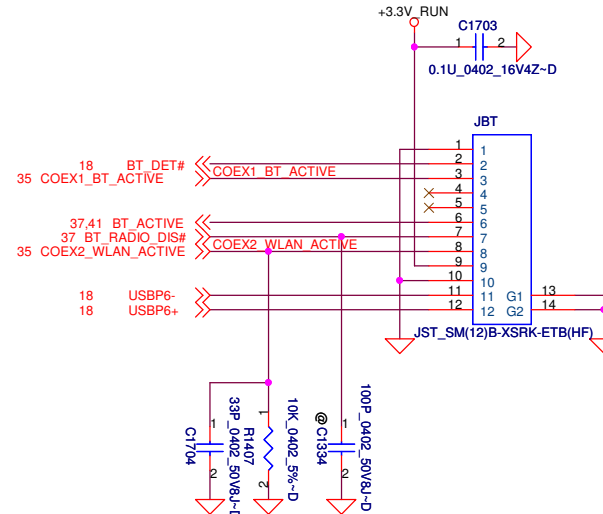
Touch Pad



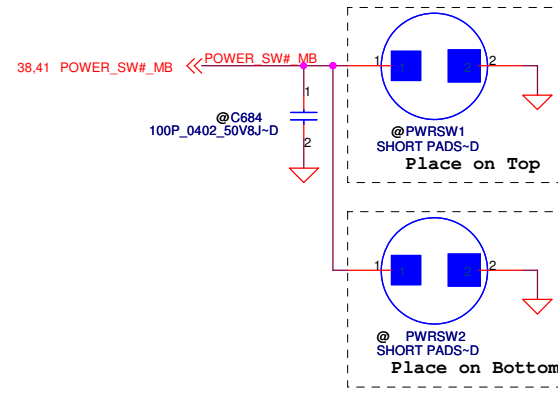
New Keyboard connector assignment



BlueTooth



Power Switch for debug



@FAN

Part Number	Description
DC28A000800	FAN SET DAQ20 DC5V AB7405HB-HB3 ADDA

@Speak

Part Number	Description
PK230003Q0L	SPK PACK ZJX 2.0W 4 OHM FG

@SM CARD BODY

Part Number	Description
SP070007V0L	\$ SOCKET TYCO 1770551-1 10P H5.9 SMART

@PCMCIA BODY

Part Number	Description
DC000001Q0L	PCMCIA TYCO 1759096-1

@MDC wire set cable

Part Number	Description
DC02000CS0L	H-CONN SET ZGX MB-MDC

@T/P wire set cable

Part Number	Description
DC02000840L	H-CONN SET ZJX MB-B/T-TP-FP

@LVDS cable

Part Number	Description
DC020003Y0L	H-CONN SET ZJX MB-LCD 14 WXGA+(-1ch)

@LVDS cable

Part Number	Description
DC02000870L	H-CONN SET ZJX MB-LCD 14 WXGA+(-2ch)

@RTC BATT

Part Number	Description
GC20323MX00	BATT CR2032 3V 220MAH MAXELL

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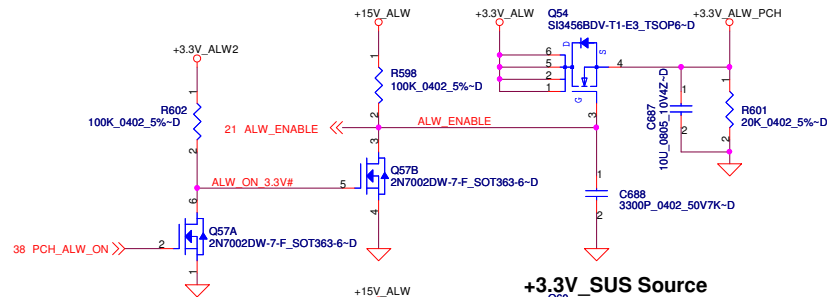
Compal Electronics, Inc.

Title		
Touch PAD/Int KB/LID		
Size	Document Number	Rev
	LA-5691P	0.1
Date:	Monday, July 13, 2009	Sheet 39 of 51

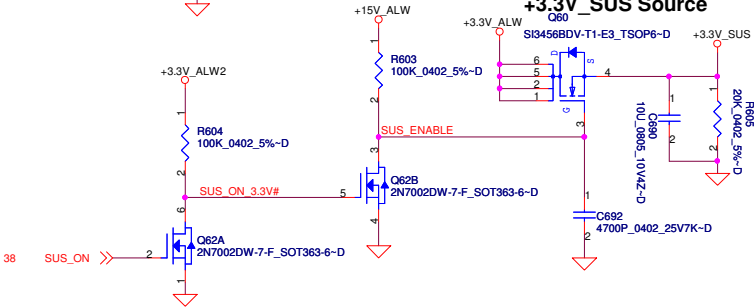
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DC/DC Interface

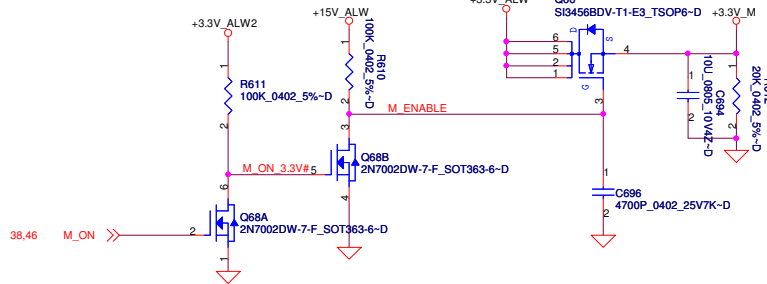
+3.3V_ALW_PCH Source



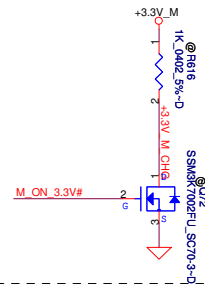
+3.3V_SUS Source



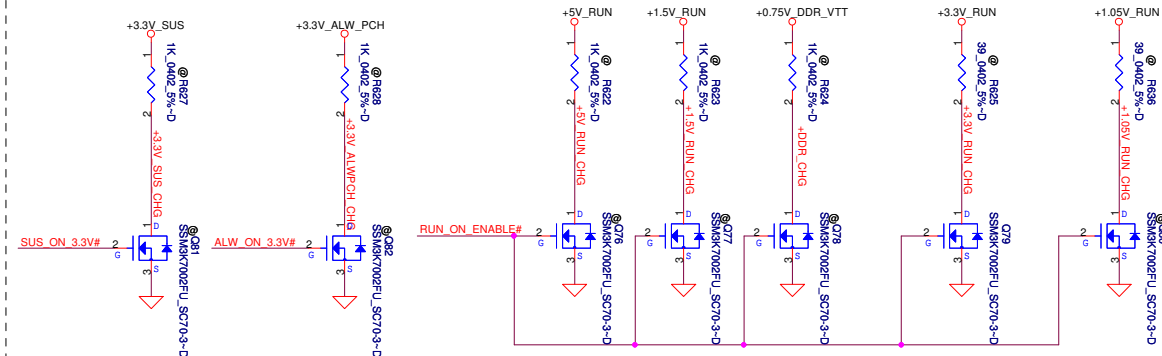
+3.3VM Source



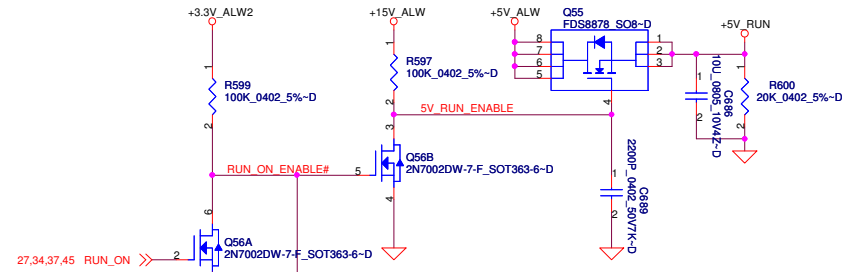
Discharg Circuit



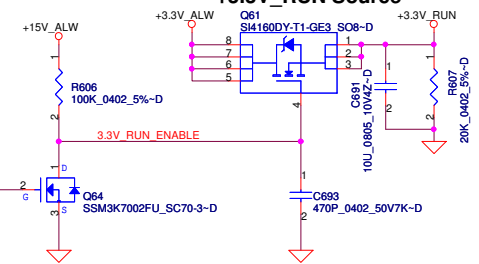
Discharg Circuit



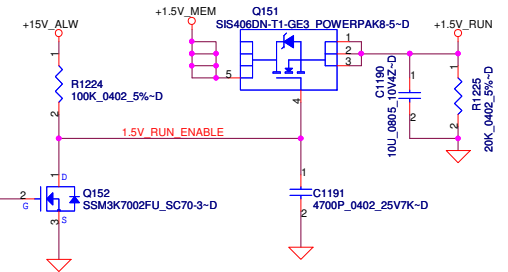
+5VRUN Source



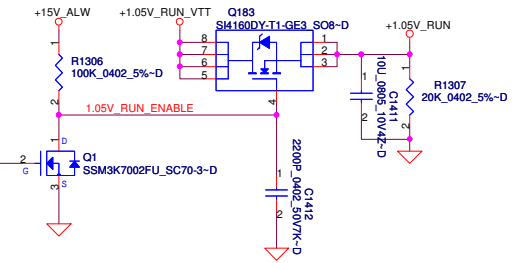
+3.3V_RUN Source



+1.5V_RUN Source



+1.05V_RUN Source



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Compal Electronics, Inc.

POWER CONTROL

LA-5691P

Date: Monday, July 13, 2009

Sheet 40 of 51

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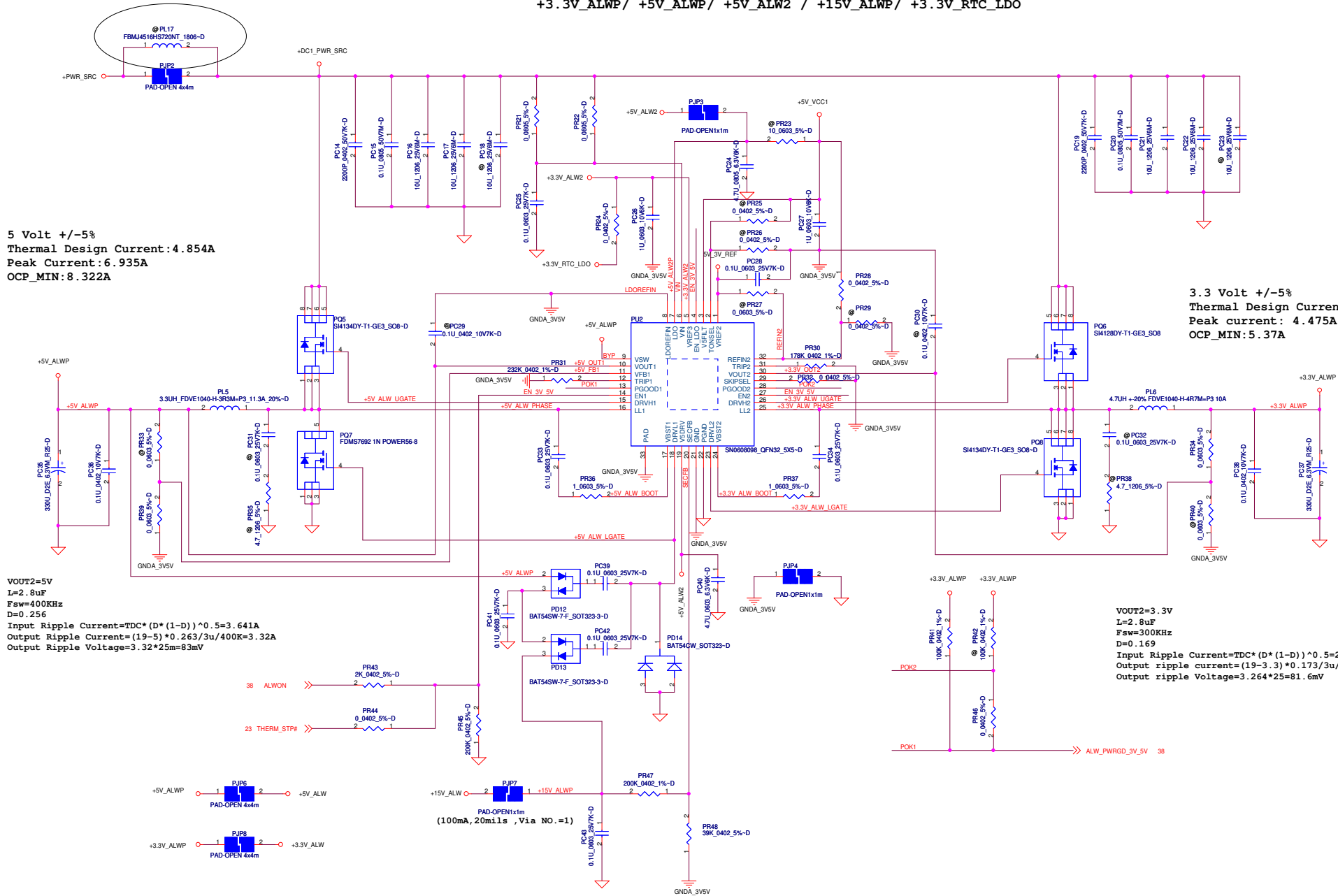
+3.3V_ALWP/ +5V_ALWP/ +5V_ALW2 / +15V_ALWP/ +3.3V_RTC_LDO

5 Volt +/-5%
Thermal Design Current:4.854A
Peak Current:6.935A
OCP_MIN:8.322A

3.3 Volt +/-5%
Thermal Design Current: 3.133A
Peak current: 4.475A
OCP_MIN:5.37A

VOUT2=5V
L=2.8uF
Fsw=400KHz
D=0.256
Input Ripple Current=TDC*(D*(1-D))^0.5=3.641A
Output Ripple Current=(19-5)*0.263/3u/400K=3.32A
Output Ripple Voltage=3.32*25m=83mV

VOUT2=3.3V
L=2.8uF
Fsw=300KHz
D=0.169
Input Ripple Current=TDC*(D*(1-D))^0.5=2.051A
Output ripple current=(19-3.3)*0.173/3u/300K=3.264A
Output ripple Voltage=3.264*25=81.6mV



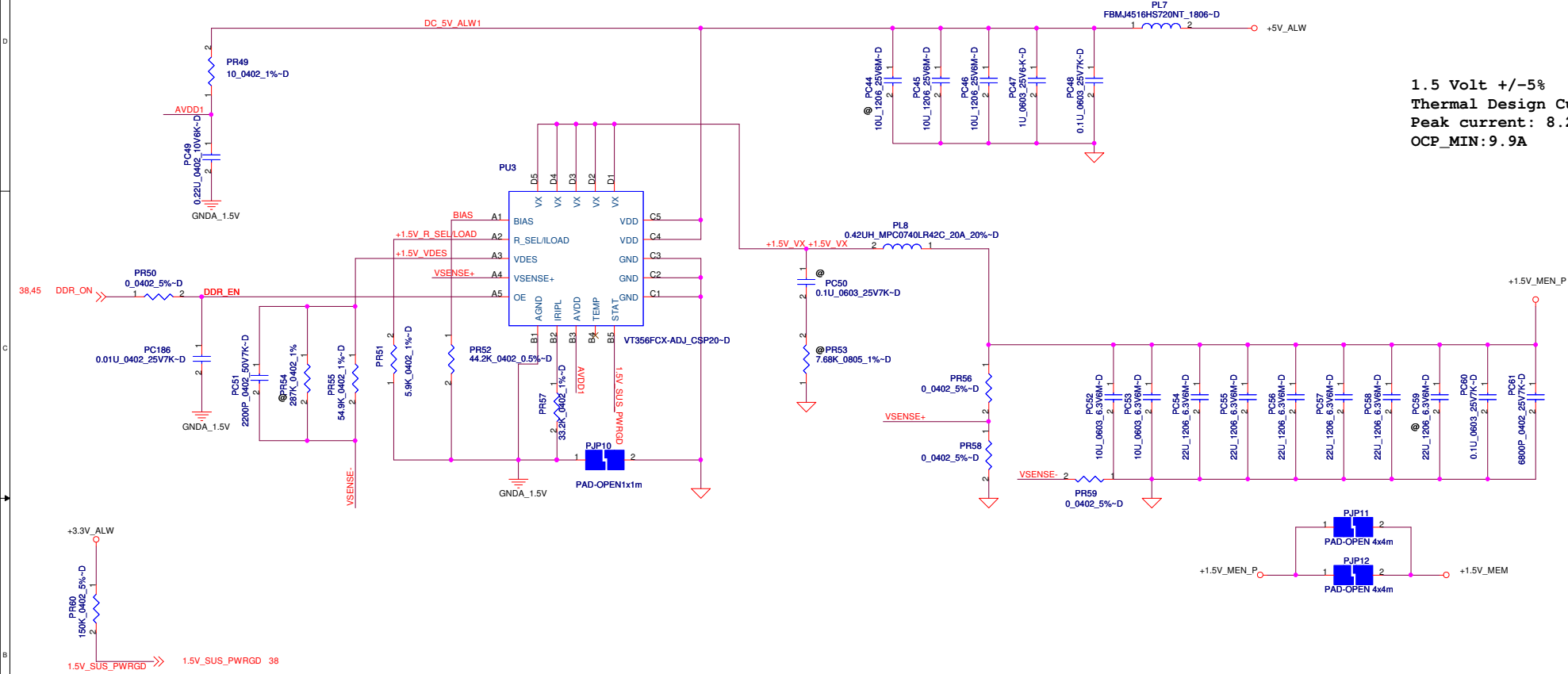
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		DC/DC +3V/ +5V	
Size	Document Number	LA-5691P	
Date	Monday, July 13, 2009	Sheet	43 of 51

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+1.5V_MEN_P (VT356)

1.5 Volt +/-5%
Thermal Design Current: 5.775A
Peak current: 8.25A
OCP_MIN: 9.9A



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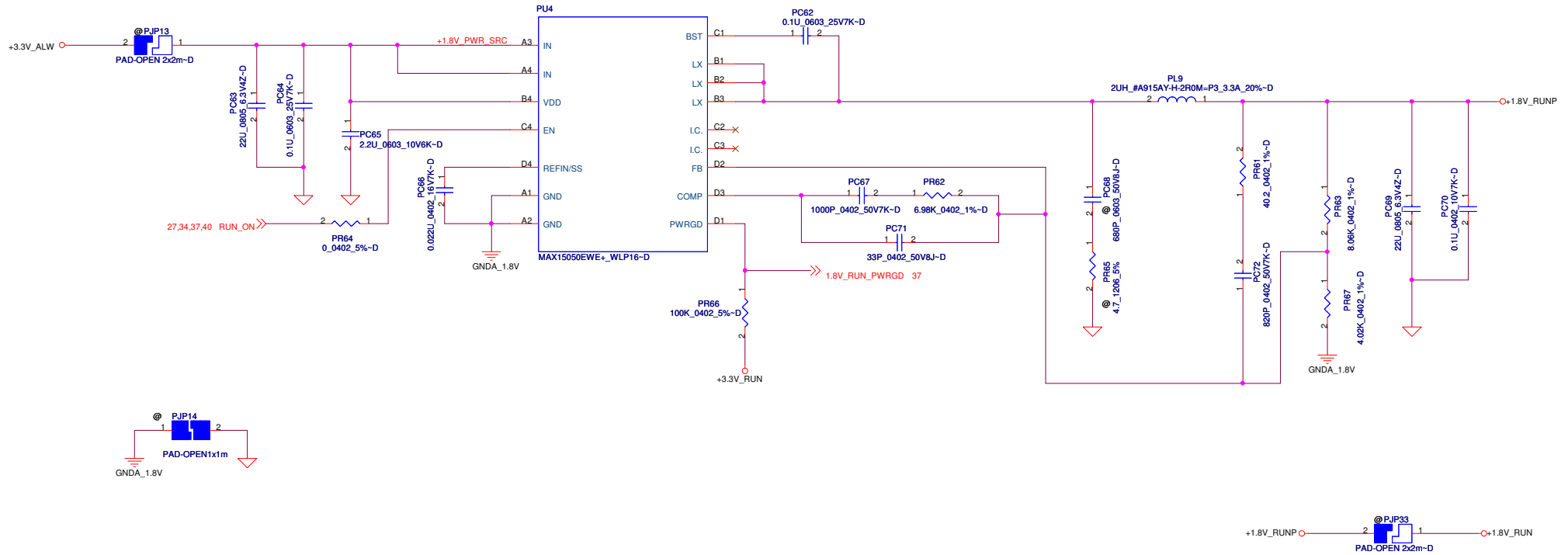
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+1.5V_MEM

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Size	Document Number	Rev	
	LA-5691P	0.1	
Date:	Monday, July 13, 2009	Sheet	44 of 51

+1.8V_RUN

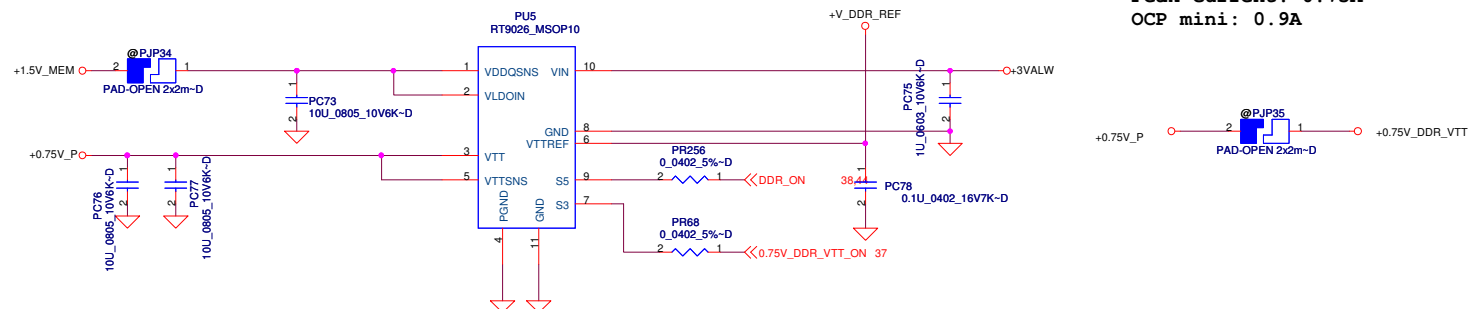
1.8 Volt +/-5%
Thermal Design Current: 0.894A
Peak current: 1.277A
OCP_min:1.532A



+0.75V_DDR_VTT

DDR3 Termination

0.75Volt +/-5%
Thermal Design Current: 0.525A
Peak current: 0.75A
OCP mini: 0.9A



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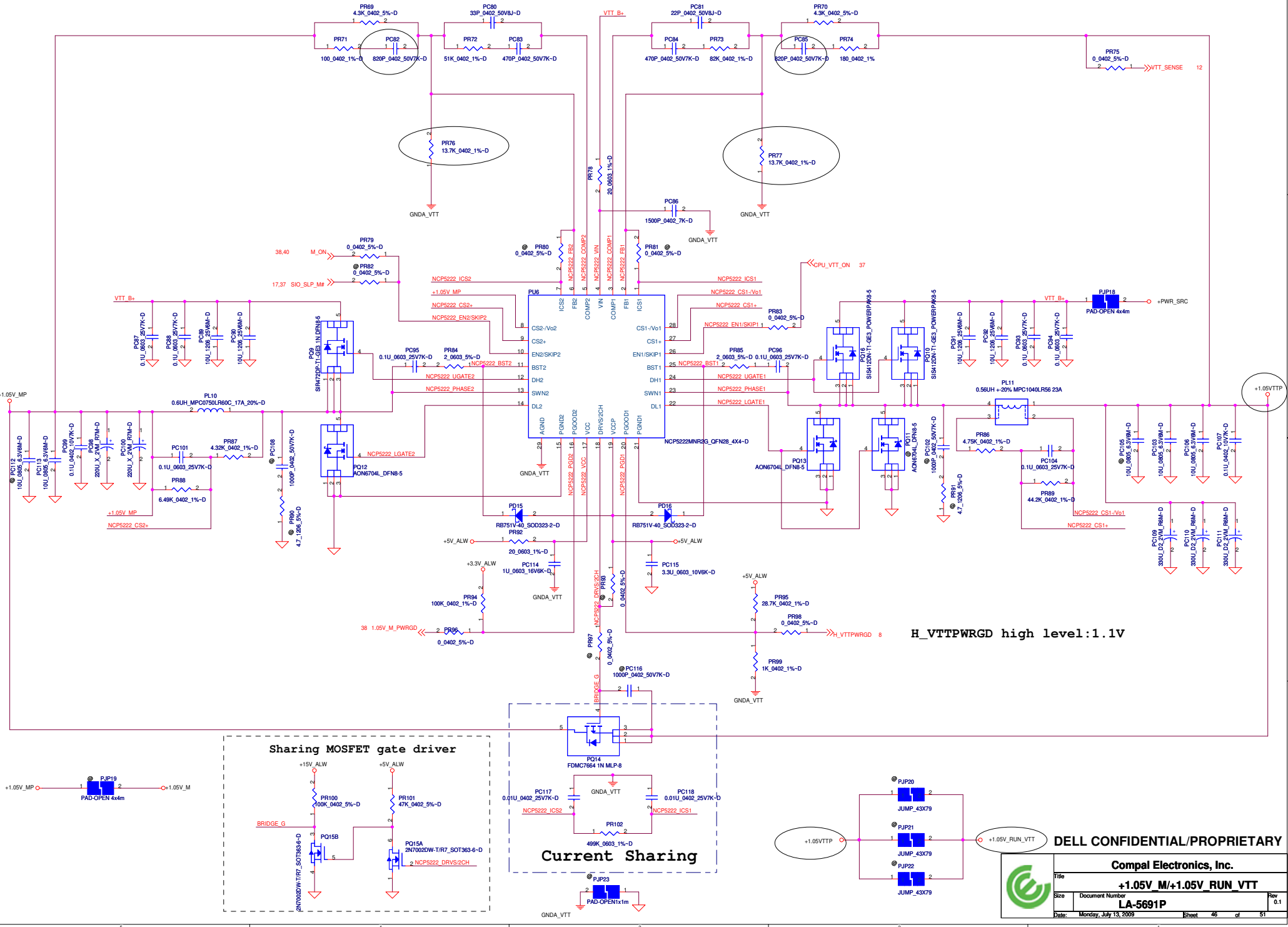
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Size	Document Number	Rev	
	LA-5691P	0.1	
Date: Monday, July 13, 2009		Sheet	45 of 51

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1.05 Volt +/-5%
Thermal Design Current: 1.51A
Peack current: 2.17A

+1.05V_M/+1.05VTT_RUN

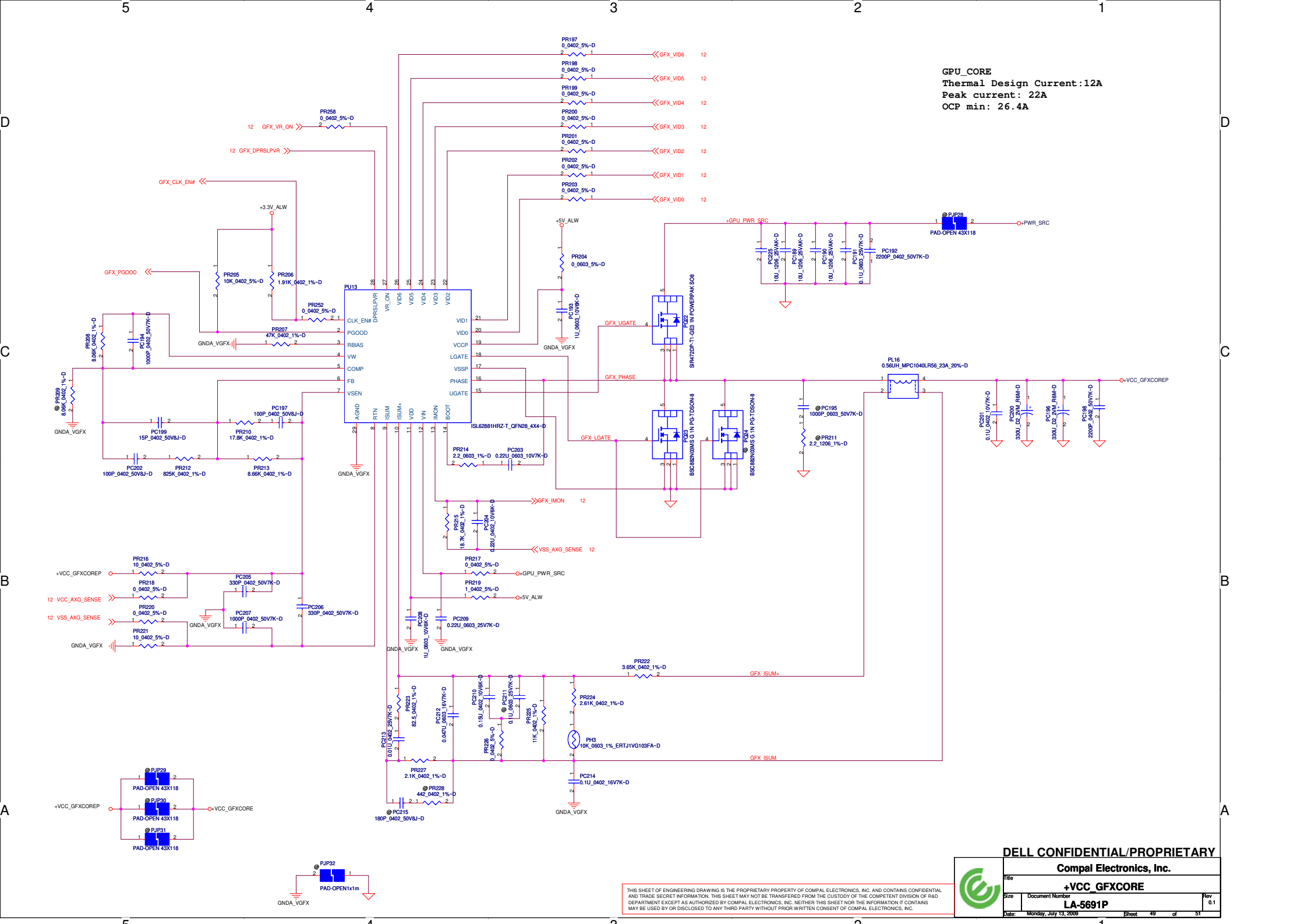
1.05 Volt +/-5%
Thermal Design Current: 15.9A
Peack current: 22.7A



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+1.05V_M/+1.05V_RUN_VTT			
Size	Document Number	Rev	
	LA-5691P	0.1	
Date:	Monday, July 13, 2009	Sheet	46 of 51



GPU_CORE
Thermal Design Current:12A
Peak current: 22A
OCP min: 26.4A

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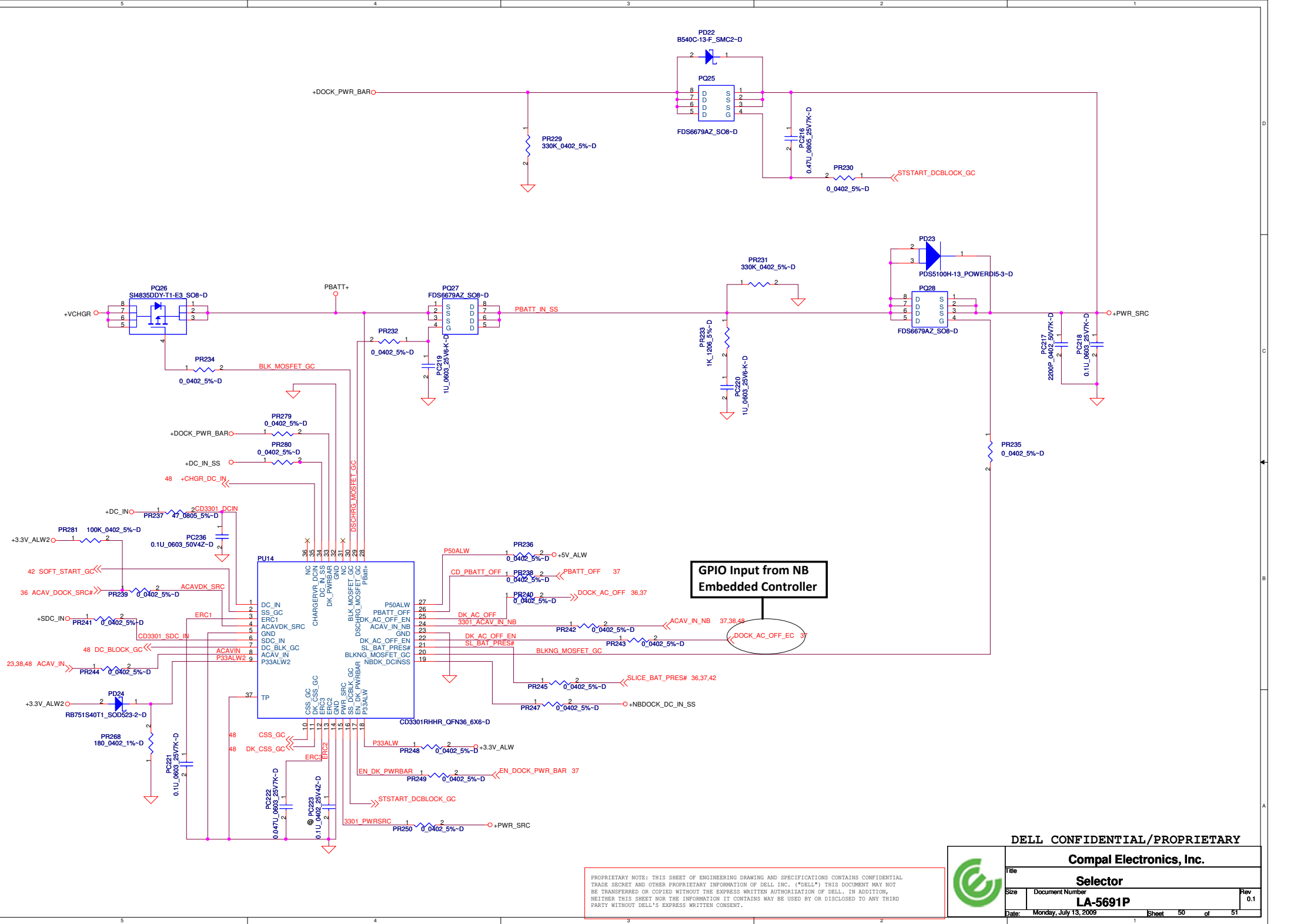
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Date: Monday, July 13, 2009 Sheet 48 of 51

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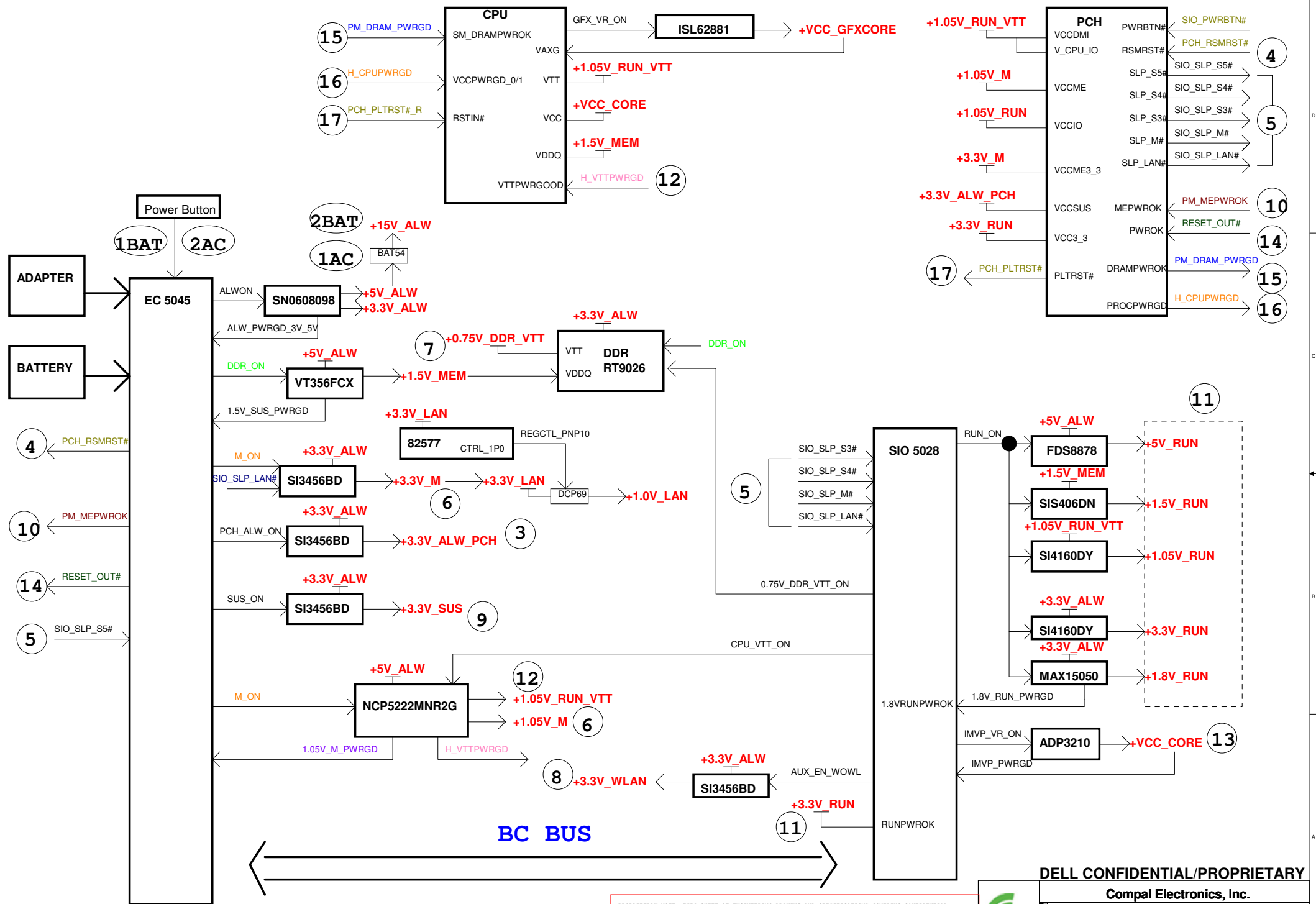
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Title				
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Size	Document Number			Rev
	LA-5691P			0.1
Date:	Monday, July 13, 2009	Sheet	50 of 51	



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Title	Document Number	Rev
LA-5691P	0.1	
Date: Monday, July 13, 2009	Sheet 51 of 51	