

# COMPAL CONFIDENTIAL

MODEL NAME : *NAL20*

PCB NO : *LA-5571P ( DA80000FP00)*

BOM P/N : *43176531LXX*

## M10 Margaux UMA rPGA Auburndale + FCBGA PCH IBEXPEAK-M

2010-01-21

REV : 1.0(A00)

@ : Nopop Component

MB Type	BOM P/N	TCM		TPM		BOM CONFIG
		W(3@)	W/O(4@)	W(5@)	W/O(6@)	
TPM EN, TCM DIS	43176531L01		*	*		4@, 5@
ALL TPM DISABLE	43176531L02		*		*	4@, 6@
TCM EN, TPM DIS	43176531L03	*			*	3@, 6@

#### MB PCB

Part Number	Description
DA80000FP00	PCB OAF LA-5571P REV0 M/S UMA

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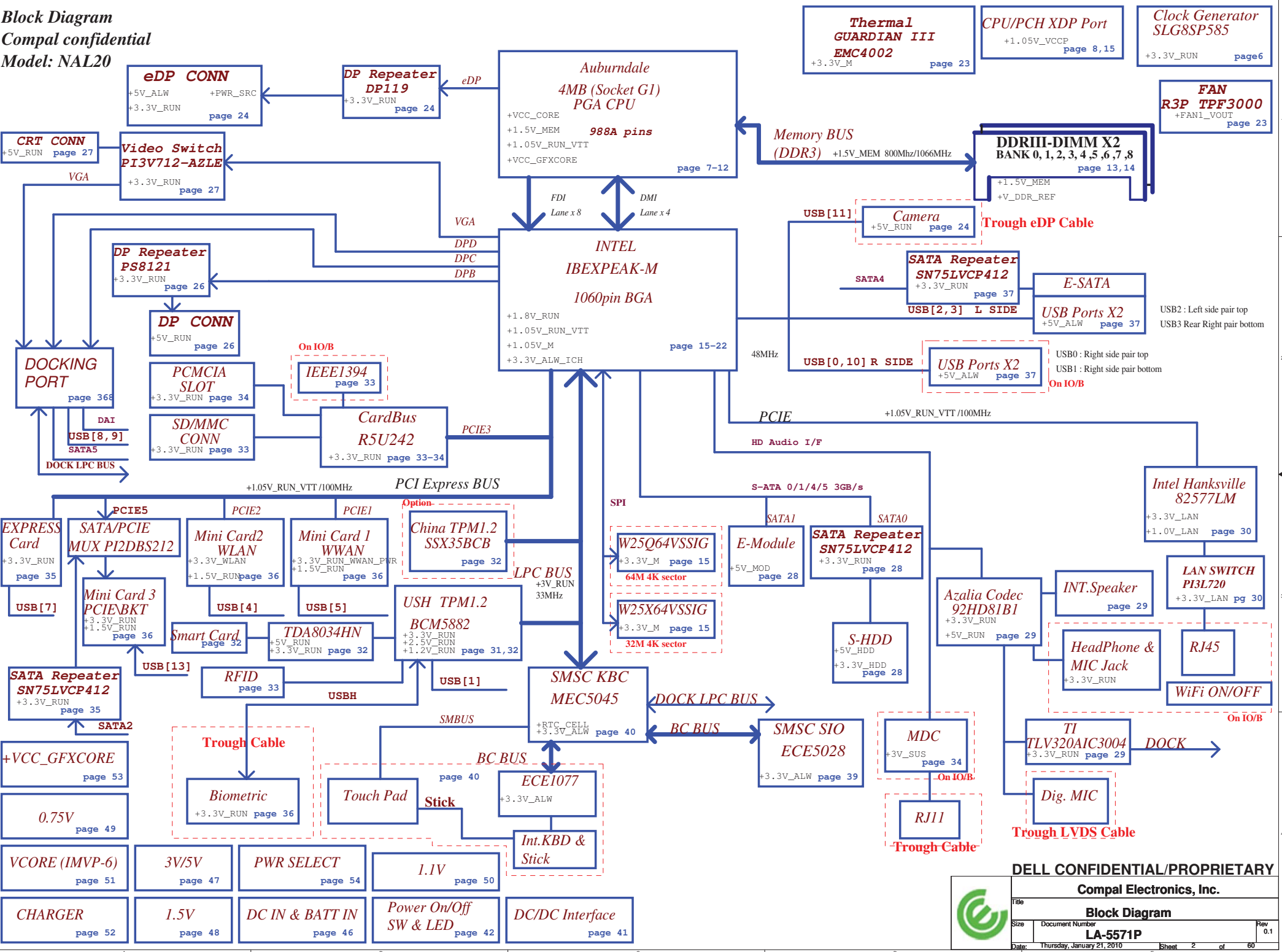


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**Block Diagram**  
 Compal confidential  
 Model: NAL20



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**POWER STATES**

State \ Signal	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	OFF
S4 (Suspend to DISK) / M1	LOW	LOW	HIGH	LOW	HIGH	ON	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M1	LOW	LOW	LOW	LOW	HIGH	ON	ON	OFF	OFF	OFF
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**

State \ power plane	+15V_ALW +5V_ALW +3.3V_ALW_PCH +3.3V_RTC_LDO	+3.3V_SUS +1.5V_MEM	+5V_RUN +3.3V_RUN +1.8V_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	JUSB1 (Ext Right Side Bottom)
	1	JUSB1 (Ext Right Side Top)
	2	JESA1 (Ext Left Side Top)
	3	JESA1 (Ext Left Side Bottom)
	4	WLAN
	5	WWAN
	6	Bluetooth
	7	USH->BIO
	8	DOCKING
	9	DOCKING
	10	Express card
	11	Camera
	12	NA
13	WPAN/NVMHCI	

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

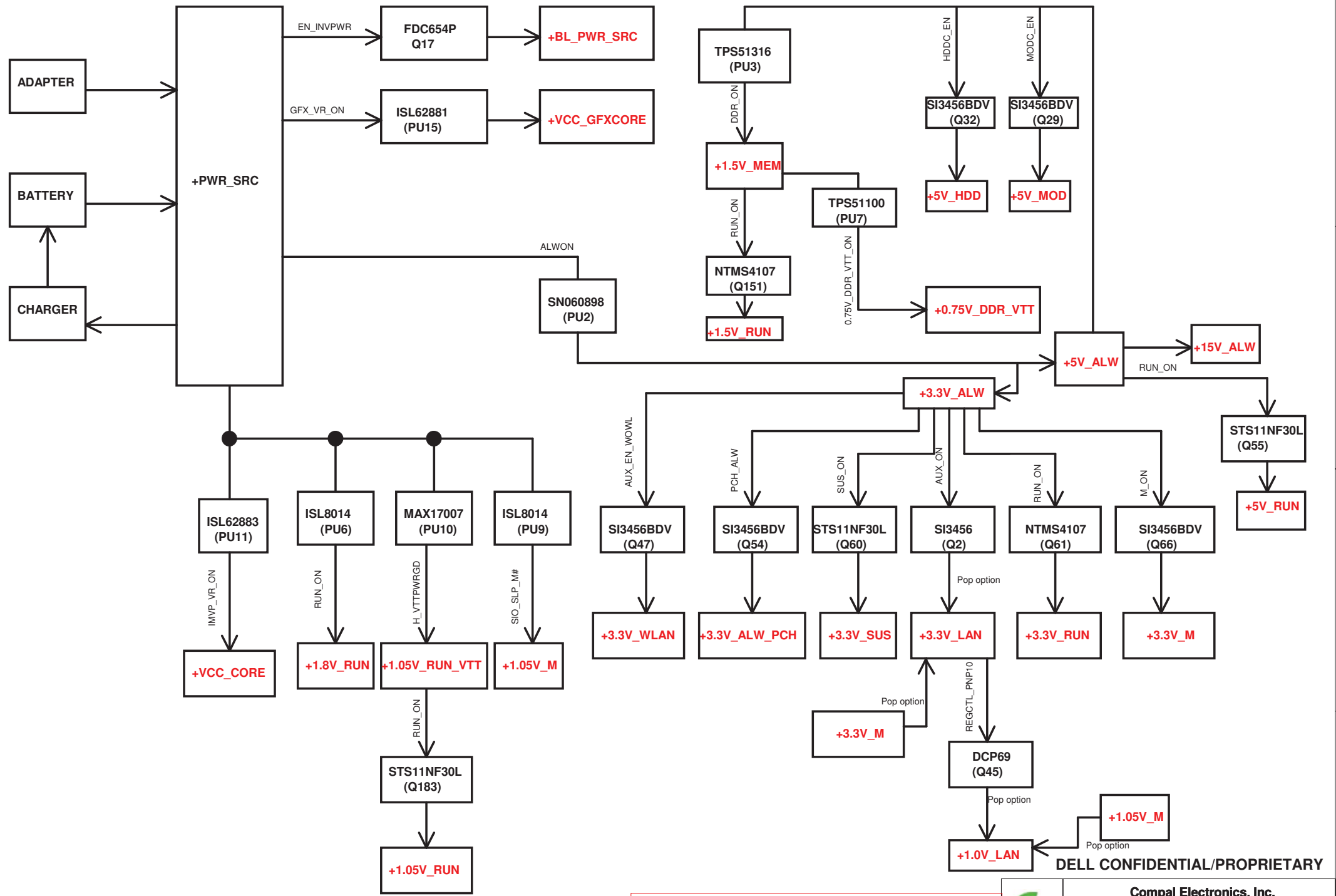
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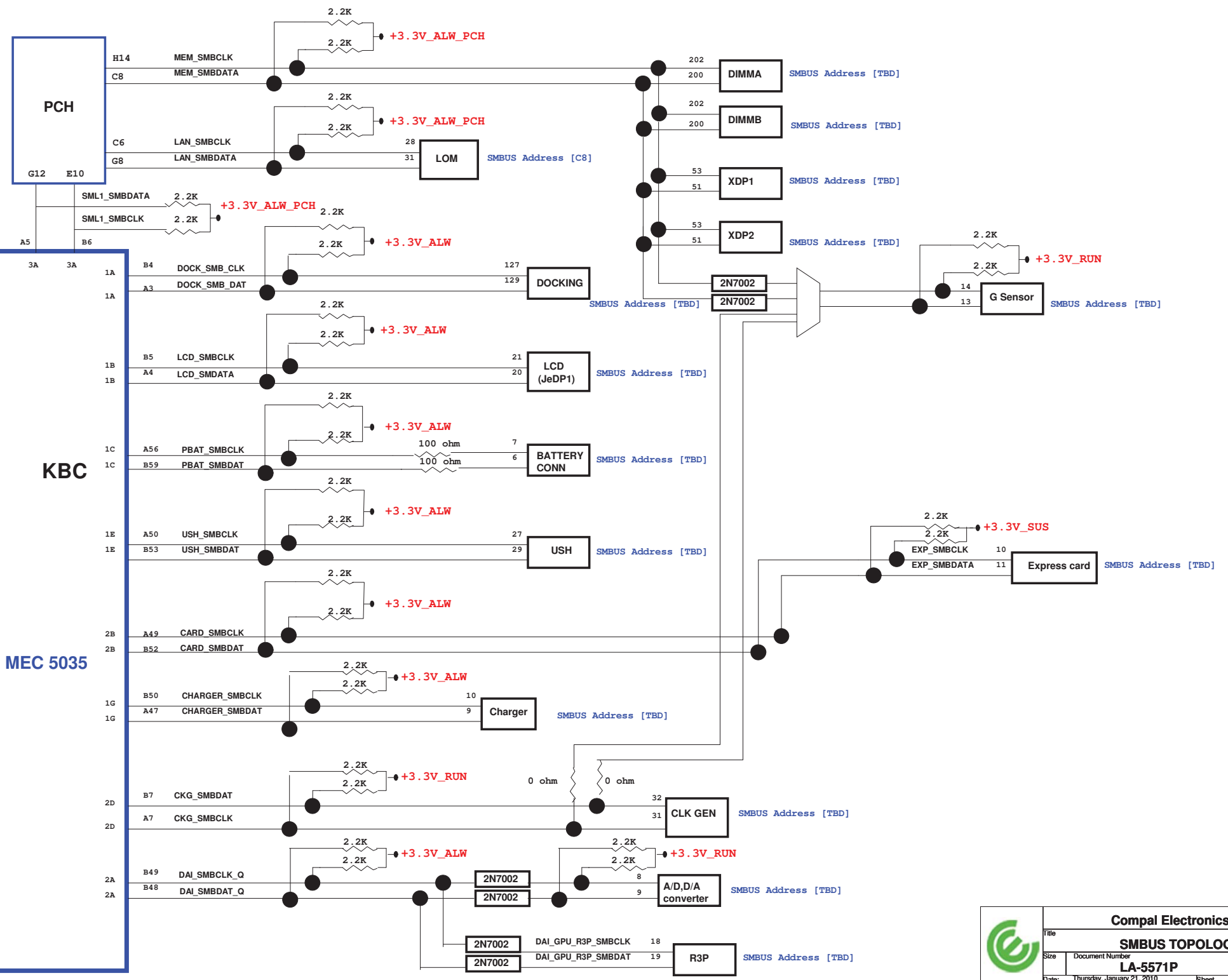


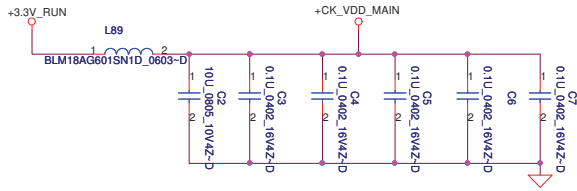
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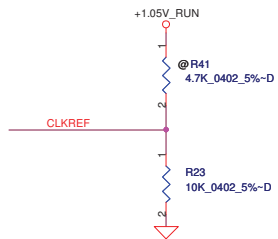
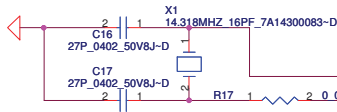
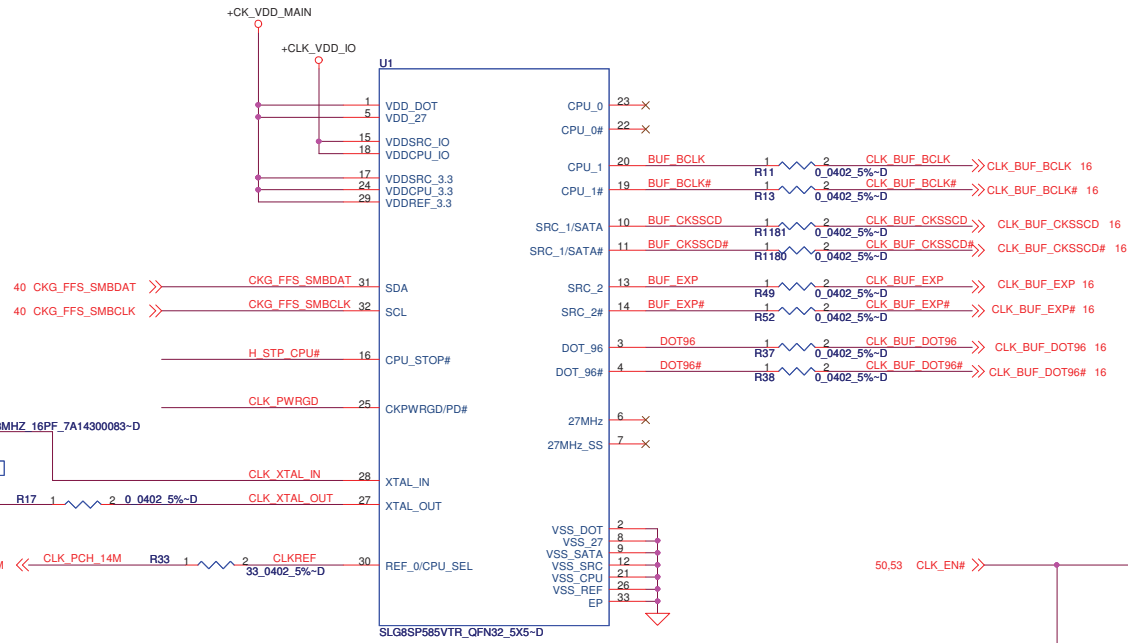
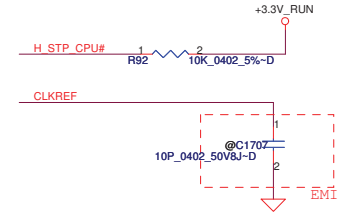
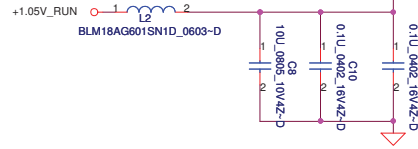


<b>Compal Electronics, Inc.</b>			
<b>Power Rail</b>			
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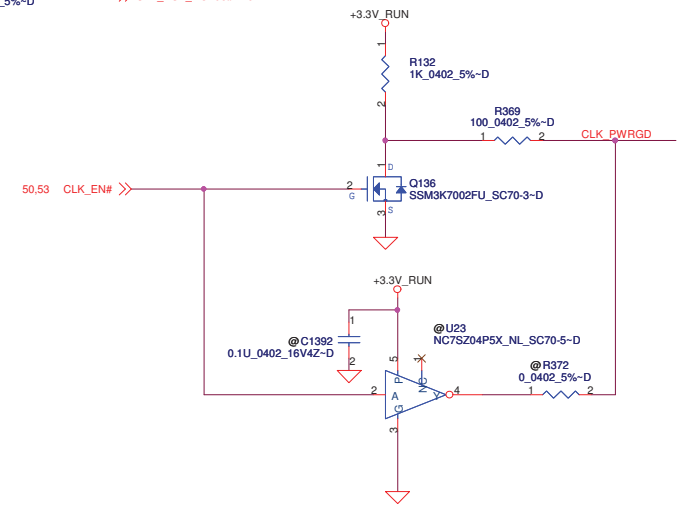


+CLK\_VDD\_IO CAN BE RANGE FROM 1.05V TO 3V



REF\_0/CPU\_SEL

PIN 30	CPU0	CPU1
1 (0.7~1.5v)	100MHz	100MHz
0 (DEFAULT)	133MHz	133MHz



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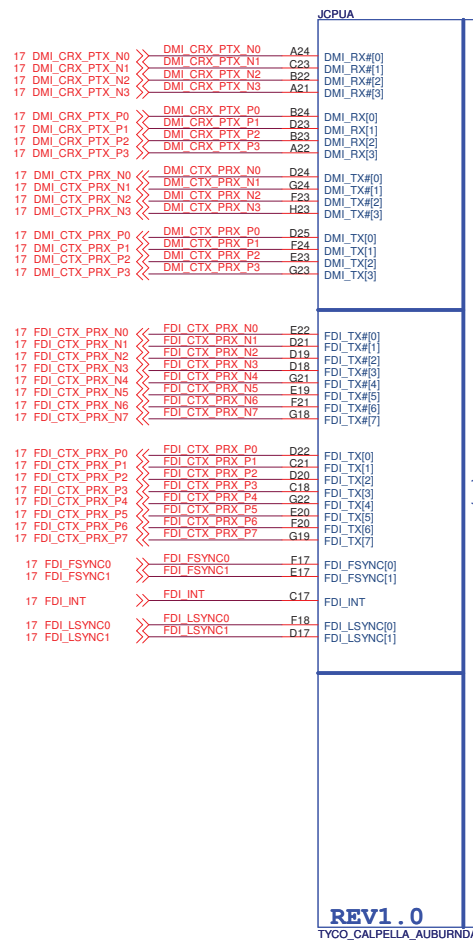
Clock Generator

LA-5571P

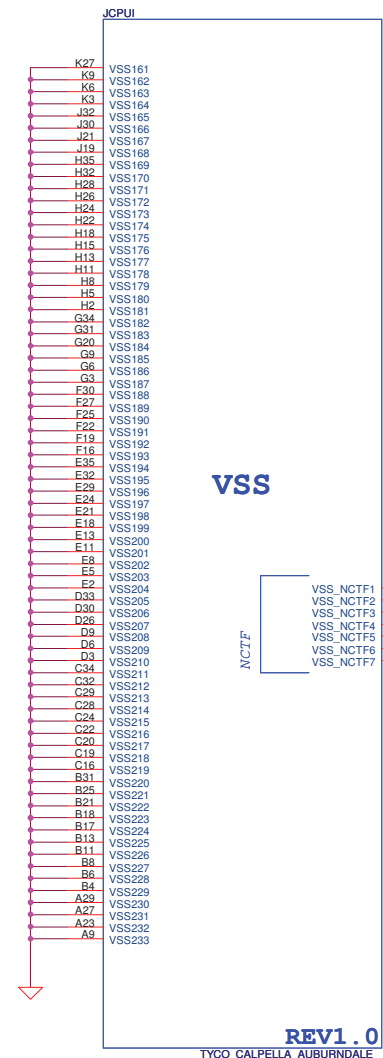
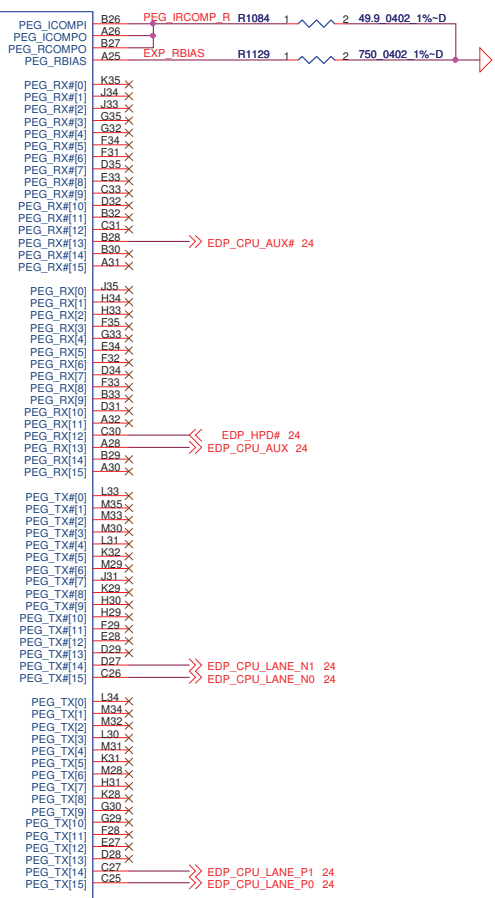
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DMI  
PCI EXPRESS 3.0 GRAPHICS



REV1.0  
TYCO\_CALPELLA\_AUBURNDALE

REV1.0  
TYCO\_CALPELLA\_AUBURNDALE

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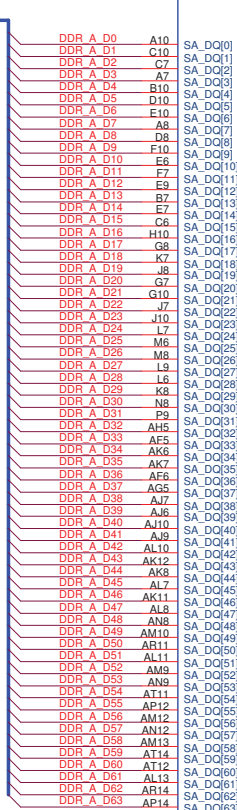
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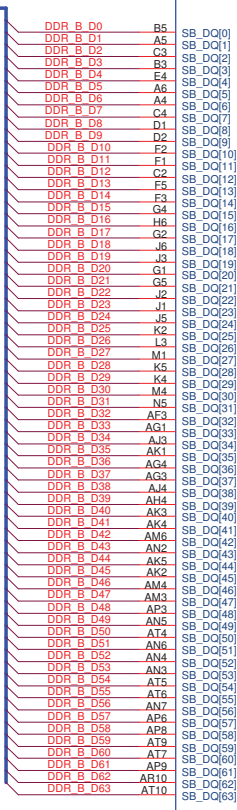
JCPUD



DDR SYSTEM MEMORY A

REV1.0  
TYCO\_CALPELLA\_AUBURDALE

JCPUD



DDR SYSTEM MEMORY - B

REV1.0  
TYCO\_CALPELLA\_AUBURDALE

13 DDR\_A\_D[0..63] <<<

14 DDR\_B\_D[0..63] <<<

13 DDR\_A\_BS0 <<< DDR A BS0 AC3  
13 DDR\_A\_BS1 <<< DDR A BS1 AB2  
13 DDR\_A\_BS2 <<< DDR A BS2 U7

14 DDR\_B\_BS0 <<< DDR B BS0 AB1  
14 DDR\_B\_BS1 <<< DDR B BS1 WS  
14 DDR\_B\_BS2 <<< DDR B BS2 R7

13 DDR\_A\_CAS# <<< DDR A CAS# AE1C  
13 DDR\_A\_RAS# <<< DDR A RAS# AB3C  
13 DDR\_A\_WE# <<< DDR A WE# AE9C

14 DDR\_B\_CAS# <<< DDR B CAS# ACS  
14 DDR\_B\_RAS# <<< DDR B RAS# YC  
14 DDR\_B\_WE# <<< DDR B WE# ACCC

SB\_CK[0] <<< W8 M\_CLK\_DDR2 <<< M\_CLK\_DDR2 14  
SB\_CK[0] <<< W9 M\_CLK\_DDR#2 <<< M\_CLK\_DDR#2 14  
SB\_CKE[0] <<< M3 DDR\_CKE2\_DIMMB <<< DDR\_CKE2\_DIMMB 14

SB\_CK[1] <<< V7 M\_CLK\_DDR3 <<< M\_CLK\_DDR3 14  
SB\_CK[1] <<< V6 M\_CLK\_DDR#3 <<< M\_CLK\_DDR#3 14  
SB\_CKE[1] <<< M2 DDR\_CKE3\_DIMMB <<< DDR\_CKE3\_DIMMB 14

SB\_CS[0] <<< AB8 DDR\_CS2\_DIMMB# <<< DDR\_CS2\_DIMMB# 14  
SB\_CS[1] <<< AD6 DDR\_CS3\_DIMMB# <<< DDR\_CS3\_DIMMB# 14

SB\_ODT[0] <<< AC7 M\_ODT2 <<< M\_ODT2 14  
SB\_ODT[1] <<< AD1 M\_ODT3 <<< M\_ODT3 14

SB\_DM[0] <<< D4 DDR B DM0 <<< DDR\_B\_DM[0..7] 14  
SB\_DM[1] <<< H3 DDR B DM1 <<< DDR\_B\_DM[0..7] 14  
SB\_DM[2] <<< K1 DDR B DM2 <<< DDR\_B\_DM[0..7] 14  
SB\_DM[3] <<< AH1 DDR B DM3 <<< DDR\_B\_DM[0..7] 14  
SB\_DM[4] <<< AL4 DDR B DM4 <<< DDR\_B\_DM[0..7] 14  
SB\_DM[5] <<< AR4 DDR B DM5 <<< DDR\_B\_DM[0..7] 14  
SB\_DM[6] <<< AT8 DDR B DM6 <<< DDR\_B\_DM[0..7] 14  
SB\_DM[7] <<< AT8 DDR B DM7 <<< DDR\_B\_DM[0..7] 14

SB\_DQS[0] <<< D5 DDR B DQS#0 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS[1] <<< J4 DDR B DQS#1 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS[2] <<< L4 DDR B DQS#2 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS[3] <<< AH2 DDR B DQS#3 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS[4] <<< AL4 DDR B DQS#4 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS[5] <<< AR5 DDR B DQS#5 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS[6] <<< AR8 DDR B DQS#6 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS[7] <<< AR8 DDR B DQS#7 <<< DDR\_B\_DQS[0..7] 14

SB\_DQS0 <<< C5 DDR B DQS0 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS1 <<< E3 DDR B DQS1 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS2 <<< H4 DDR B DQS2 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS3 <<< M5 DDR B DQS3 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS4 <<< AG2 DDR B DQS4 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS5 <<< AL5 DDR B DQS5 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS6 <<< AP5 DDR B DQS6 <<< DDR\_B\_DQS[0..7] 14  
SB\_DQS7 <<< AR7 DDR B DQS7 <<< DDR\_B\_DQS[0..7] 14

SB\_MA[0] <<< U5 DDR B MA0 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[1] <<< T5 DDR B MA1 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[2] <<< V3 DDR B MA2 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[3] <<< R1 DDR B MA3 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[4] <<< T8 DDR B MA4 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[5] <<< R2 DDR B MA5 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[6] <<< R6 DDR B MA6 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[7] <<< R4 DDR B MA7 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[8] <<< R5 DDR B MA8 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[9] <<< AB5 DDR B MA9 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[10] <<< P3 DDR B MA10 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[11] <<< R3 DDR B MA11 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[12] <<< AE7 DDR B MA12 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[13] <<< P5 DDR B MA13 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[14] <<< N1 DDR B MA14 <<< DDR\_B\_MA[0..15] 14  
SB\_MA[15] <<< N1 DDR B MA15 <<< DDR\_B\_MA[0..15] 14

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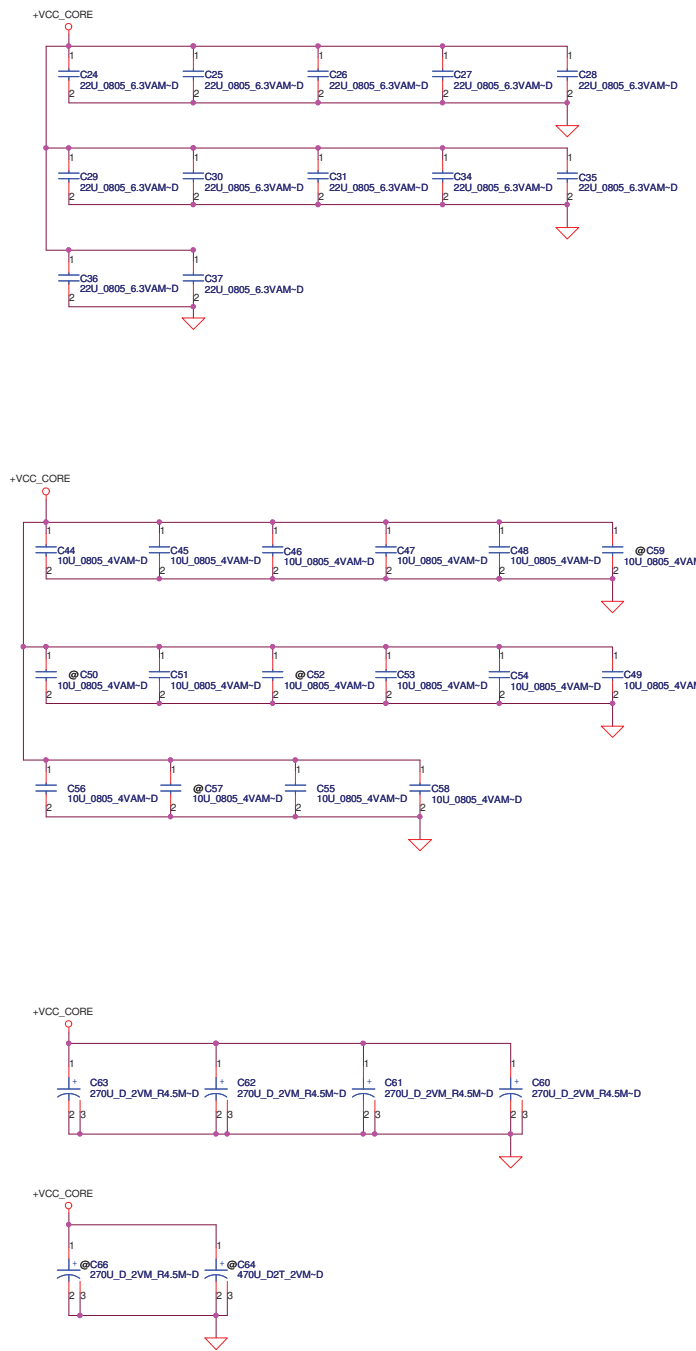
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Auburndale (3/6)

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JCPUIF

48A	AG35	VCC1
	AG34	VCC2
	AG33	VCC3
	AG32	VCC4
	AG31	VCC5
	AG30	VCC6
	AG29	VCC7
	AG28	VCC8
	AG27	VCC9
	AG26	VCC10
	AF35	VCC11
	AF34	VCC12
	AF33	VCC13
	AF32	VCC14
	AF31	VCC15
	AF30	VCC16
	AF29	VCC17
	AF28	VCC18
	AF27	VCC19
	AF26	VCC20
	AD35	VCC21
	AD34	VCC22
	AD33	VCC23
	AD32	VCC24
	AD31	VCC25
	AD30	VCC26
	AD29	VCC27
	AD28	VCC28
	AD27	VCC29
	AD26	VCC30
	AC35	VCC31
	AC34	VCC32
	AC33	VCC33
	AC32	VCC34
	AC31	VCC35
	AC30	VCC36
	AC29	VCC37
	AC28	VCC38
	AC27	VCC39
	AC26	VCC40
	AA35	VCC41
	AA34	VCC42
	AA33	VCC43
	AA32	VCC44
	AA31	VCC45
	AA30	VCC46
	AA29	VCC47
	AA28	VCC48
	AA27	VCC49
	AA26	VCC50
	Y35	VCC51
	Y34	VCC52
	Y33	VCC53
	Y32	VCC54
	Y31	VCC55
	Y30	VCC56
	Y29	VCC57
	Y28	VCC58
	Y27	VCC59
	Y26	VCC60
	V35	VCC61
	V34	VCC62
	V33	VCC63
	V32	VCC64
	V31	VCC65
	V30	VCC66
	V29	VCC67
	V28	VCC68
	V27	VCC69
	V26	VCC70
	U35	VCC71
	U34	VCC72
	U33	VCC73
	U32	VCC74
	U31	VCC75
	U30	VCC76
	U29	VCC77
	U28	VCC78
	U27	VCC79
	U26	VCC80
	R35	VCC81
	R34	VCC82
	R33	VCC83
	R32	VCC84
	R31	VCC85
	R30	VCC86
	P35	VCC87
	P34	VCC88
	P33	VCC89
	P32	VCC90
	P31	VCC91
	P30	VCC92
	P29	VCC93
	P28	VCC94
	P27	VCC95
	P26	VCC96
		VCC97
		VCC98
		VCC99
		VCC100

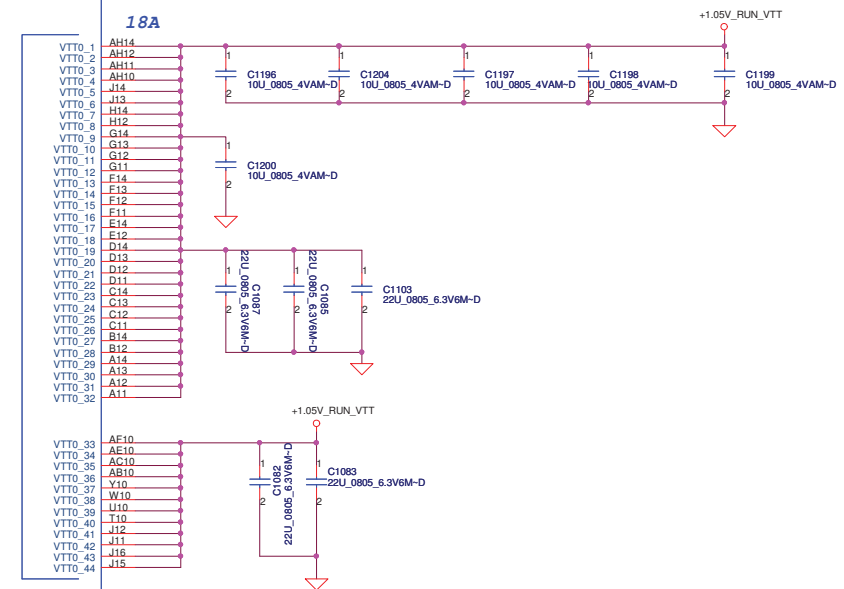
I.1V RAIL POWER

CPU CORE SUPPLY

POWER

CPU VID5

SENSE LINES



VTT\_SELECT = low, 1.1V  
VTT\_SELECT = high, 1.05V

Place R1116 and R1117 near CPU  
Route VCCSENSE and VSSSENSE trace at 27.4 ohms, 7 mils spacing

REV1.0  
TYCOO\_CALPELLA\_AUBURNDALE

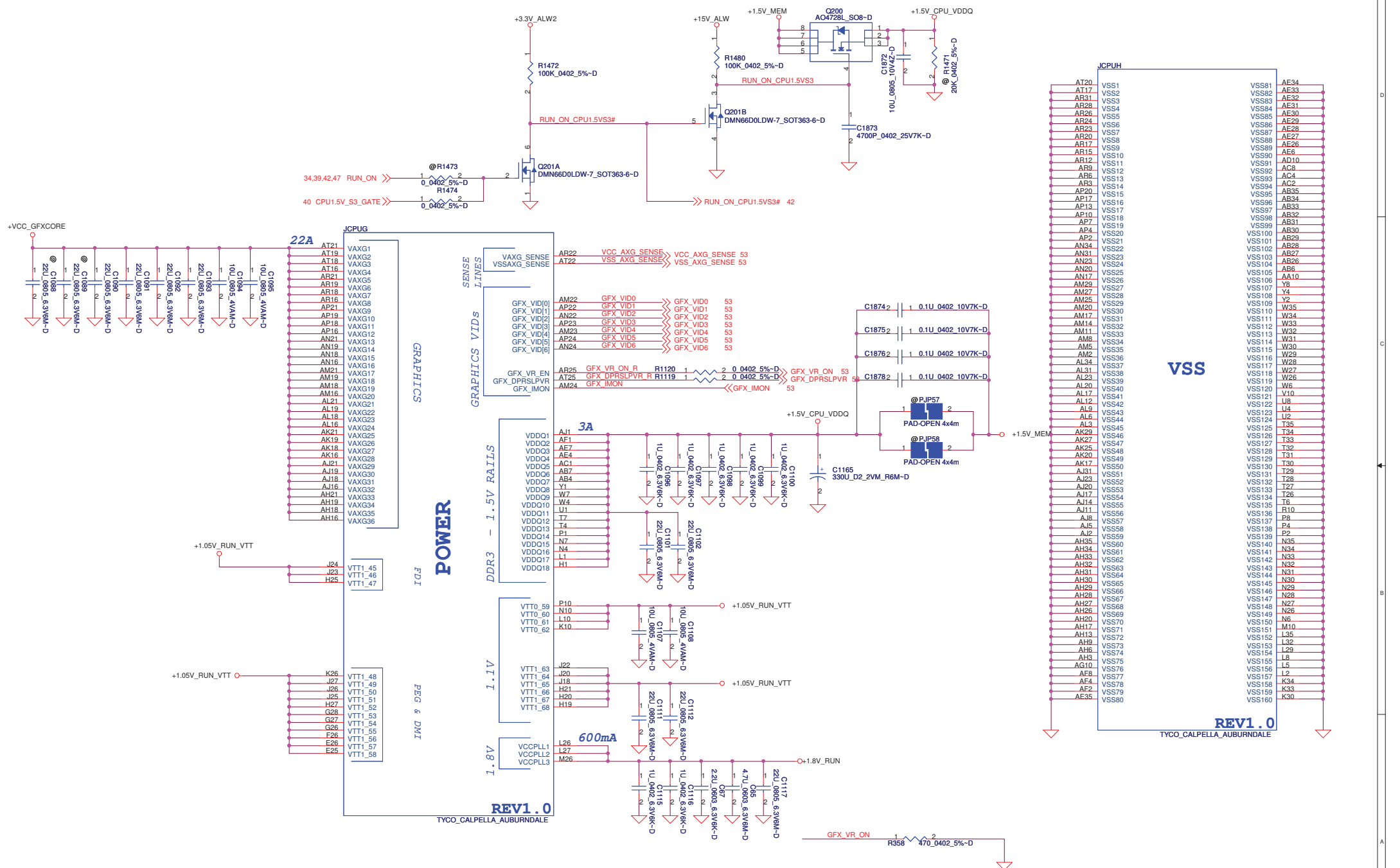
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**+1.5V\_CPU\_VDDQ Source**



JCPUH		AE34	
AT20	VSS1	VSS81	AE33
AT17	VSS2	VSS82	AE32
AR31	VSS3	VSS83	AE31
AR28	VSS4	VSS84	AE30
AR26	VSS5	VSS85	AE29
AR24	VSS6	VSS86	AE28
AR23	VSS7	VSS87	AE27
AR20	VSS8	VSS88	AE26
AR17	VSS9	VSS89	AE6
AR15	VSS10	VSS90	AD10
AR12	VSS11	VSS91	AC8
AR9	VSS12	VSS92	AC4
AR6	VSS13	VSS93	AC3
AR3	VSS14	VSS94	AC2
AP20	VSS15	VSS95	AB35
AP17	VSS16	VSS96	AB34
AP13	VSS17	VSS97	AB33
AP10	VSS18	VSS98	AB32
AP7	VSS19	VSS99	AB31
AP4	VSS20	VSS100	AB30
AP2	VSS21	VSS101	AB29
AN31	VSS22	VSS102	AB27
AN23	VSS23	VSS103	AB26
AN20	VSS24	VSS104	AB26
AM27	VSS25	VSS105	AB6
AM29	VSS26	VSS106	Y8
AM25	VSS27	VSS107	Y4
AM20	VSS28	VSS108	Y2
AM17	VSS29	VSS109	Y2
AM14	VSS30	VSS110	W34
AM11	VSS31	VSS111	W33
AM8	VSS32	VSS112	W32
AM5	VSS33	VSS113	W31
AM2	VSS34	VSS114	W31
AL34	VSS35	VSS115	W29
AL34	VSS36	VSS116	W28
AL31	VSS37	VSS117	W27
AL29	VSS38	VSS118	W27
AL20	VSS39	VSS119	W26
AL17	VSS40	VSS120	U4
AL12	VSS41	VSS121	U8
AL9	VSS42	VSS122	U10
AL6	VSS43	VSS123	U2
AL3	VSS44	VSS124	U3
AK29	VSS45	VSS125	T35
AK27	VSS46	VSS126	T34
AK25	VSS47	VSS127	T32
AK20	VSS48	VSS128	T31
AK17	VSS49	VSS129	T30
AK13	VSS50	VSS130	T29
AK10	VSS51	VSS131	T28
AJ20	VSS52	VSS132	T27
AJ17	VSS53	VSS133	T27
AJ14	VSS54	VSS134	T26
AJ11	VSS55	VSS135	T6
AJ8	VSS56	VSS136	P8
AJ5	VSS57	VSS137	P2
AJ2	VSS58	VSS138	P4
AH35	VSS59	VSS139	N35
AH34	VSS60	VSS140	N34
AH33	VSS61	VSS141	N33
AH32	VSS62	VSS142	N33
AH31	VSS63	VSS143	N32
AH30	VSS64	VSS144	N30
AH29	VSS65	VSS145	N31
AH28	VSS66	VSS146	N29
AH27	VSS67	VSS147	N28
AH26	VSS68	VSS148	N26
AH20	VSS69	VSS149	N6
AH17	VSS70	VSS150	M10
AH13	VSS71	VSS151	L5
AH9	VSS72	VSS152	L2
AH6	VSS73	VSS153	L29
AH3	VSS74	VSS154	L8
AG10	VSS75	VSS155	L5
AF8	VSS76	VSS156	L2
AF4	VSS77	VSS157	K34
AF2	VSS78	VSS158	K33
AE35	VSS79	VSS159	K30
	VSS80	VSS160	K30

**REV1.0**  
TYCO\_CALPELLA\_AUBURNDALE

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**Auburndale (6/6)**

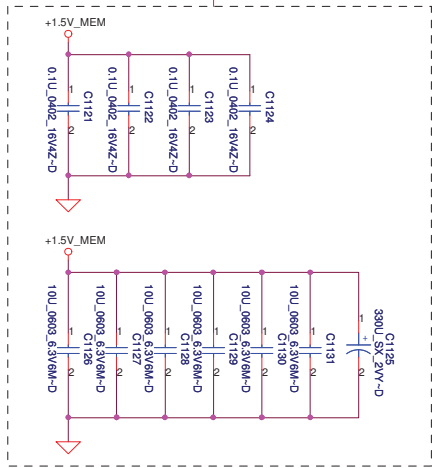
Title	Document Number	Rev
	<b>LA-571P</b>	<b>0.1</b>
Date:	Thursday, January 21, 2010	Sheet 12 of 60

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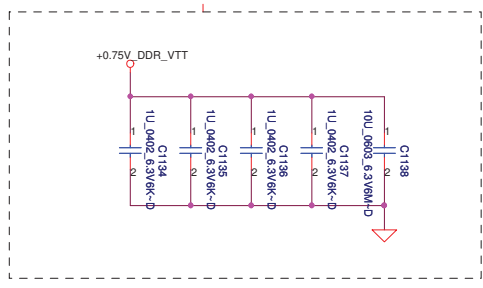
- 9 DDR\_A\_DQS#[0..7] <<>
- 9 DDR\_A\_D[0..63] <<>
- 9 DDR\_A\_DM[0..7] <<>
- 9 DDR\_A\_DQS[0..7] <<>
- 9 DDR\_A\_MA[0..15] <<>

Populate R87 for Intel DDR3 VREFDQ multiple methods M1

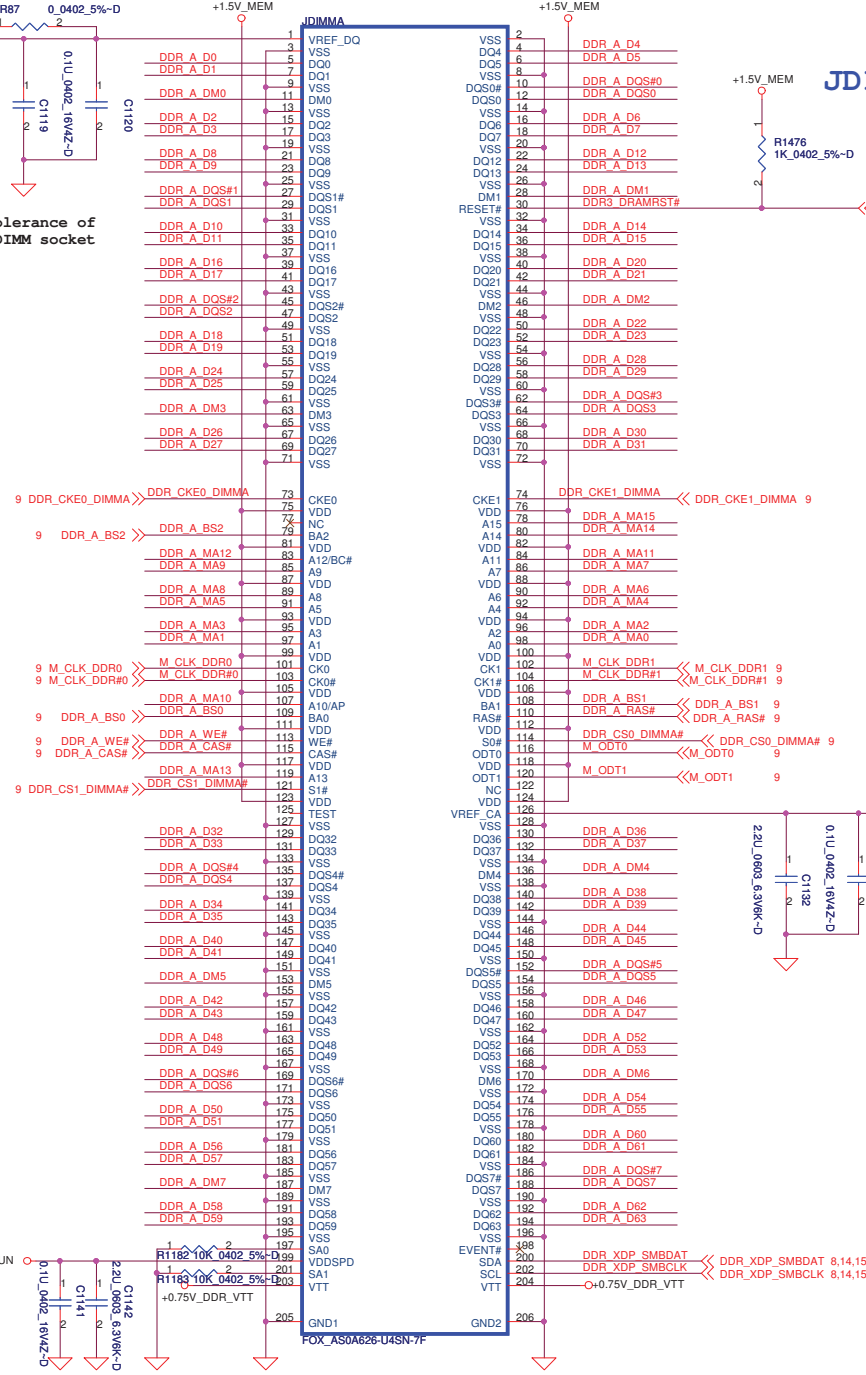
Layout Note:  
Place near JDIMMA



Layout Note:  
Place near JDIMMA.203,204



Note:  
Check voltage tolerance of VREF\_DQ at the DIMM socket



# JDIMMA H=5.2

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Title		DDRIII-SODIMM SLOT1	
Size	Document Number	LA-5571P	
Date	Thursday, January 21, 2010	Sheet	13 of 60

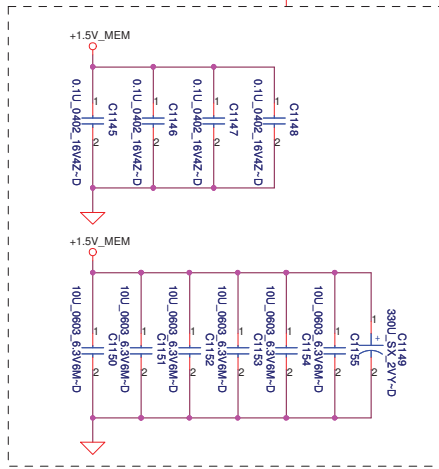
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- 9 DDR\_B\_DQS#(0.7) <<>
- 9 DDR\_B\_D[0..63] <<>
- 9 DDR\_B\_DM[0..7] <<>
- 9 DDR\_B\_DQS(0.7) <<>
- 9 DDR\_B\_MA[0..15] <<>

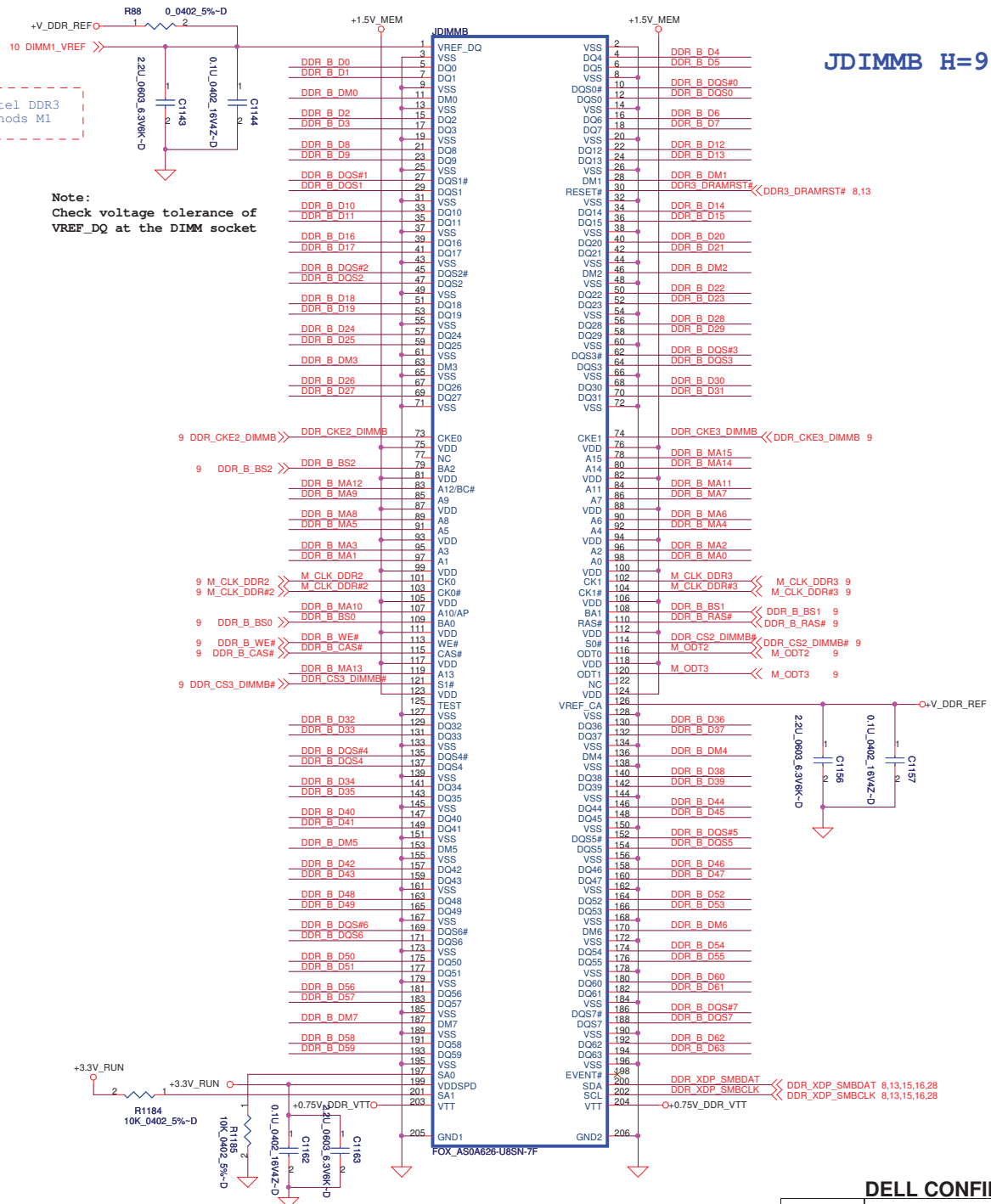
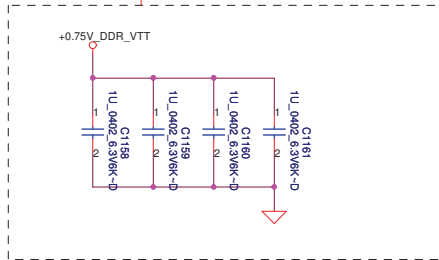
Populate R88 for Intel DDR3 VREFDQ multiple methods M1

Note:  
Check voltage tolerance of VREF\_DQ at the DIMM socket

Layout Note:  
Place near JDIMMB



Layout Note:  
Place near JDIMMB.203,204



## JDIMMB H=9.2

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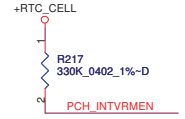
Compal Electronics, Inc.

Title		
DDR3-SODIMM SLOT2		
Size	Document Number	Rev
	LA-5571P	0.1
Date:	Thursday, January 21, 2010	Sheet 14 of 60

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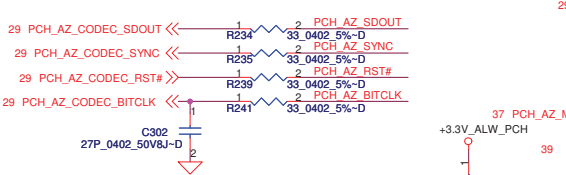
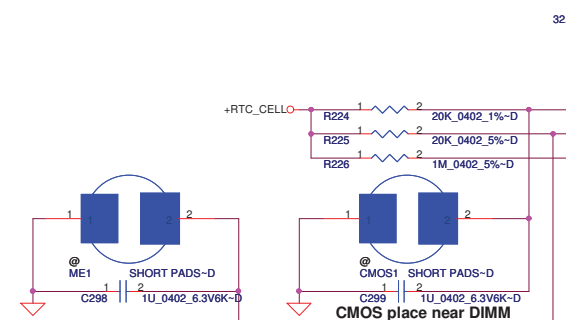
CMOS CLR1	CMOS setting
Shunt	Clear CMOS
Open	Keep CMOS

ME CLR1	TPM setting
Shunt	Clear ME RTC Registers
Open	Keep ME RTC Registers

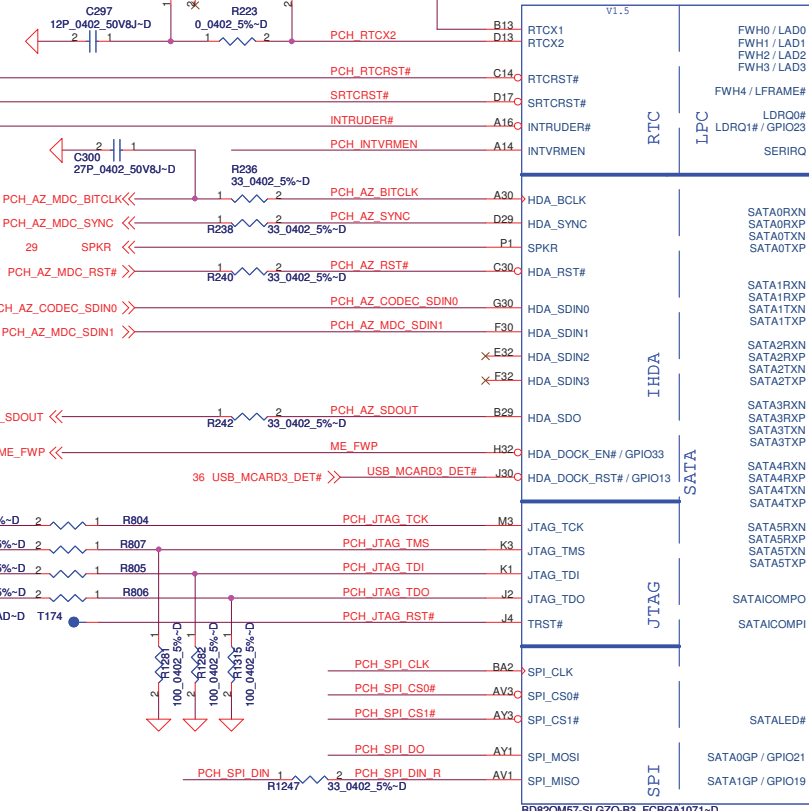
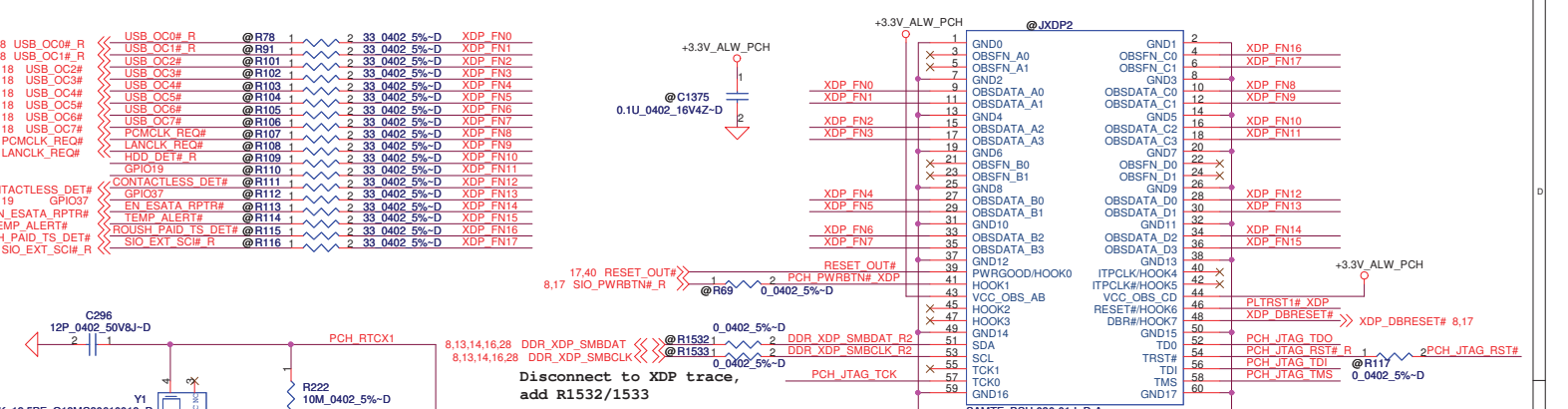
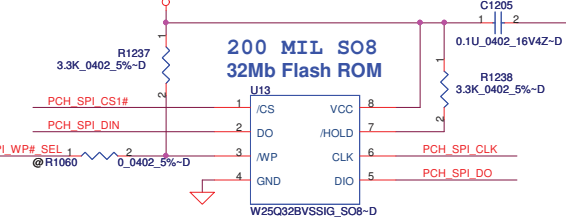
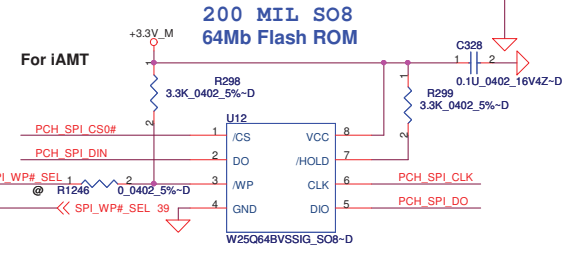


**INTVRMEN- Integrated SUS**  
 1.1V VRM Enable  
 High - Enable Internal VRs

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



Stuff R128, no stuff R123 when production



PCH Pin	Ref.	PCH JTAG Enable		PCH JTAG Disable		Production
		ES1	ES2	ES1	ES2	
TDO	R806	No Stuff	200 ohm	No Stuff	No Stuff	No Stuff
	R1315	No Stuff	100 ohm	No Stuff	No Stuff	No Stuff
TMS	R807	200 ohm	200 ohm	No Stuff	No Stuff	No Stuff
	R1281	100 ohm	100 ohm	No Stuff	No Stuff	No Stuff
TDI	R805	200 ohm	200 ohm	20K ohm	No Stuff	No Stuff
	R1282	100 ohm	100 ohm	10K ohm	No Stuff	No Stuff
TCK	R804	4.7K ohm	4.7K ohm	4.7K ohm	4.7K ohm	No Stuff
TRST#	R808	20K ohm	20K ohm	No Stuff	No Stuff	No Stuff
	R1316	10K ohm	10K ohm	No Stuff	No Stuff	No Stuff

No Reboot Strap  
 Low = Default  
 High = No Reboot

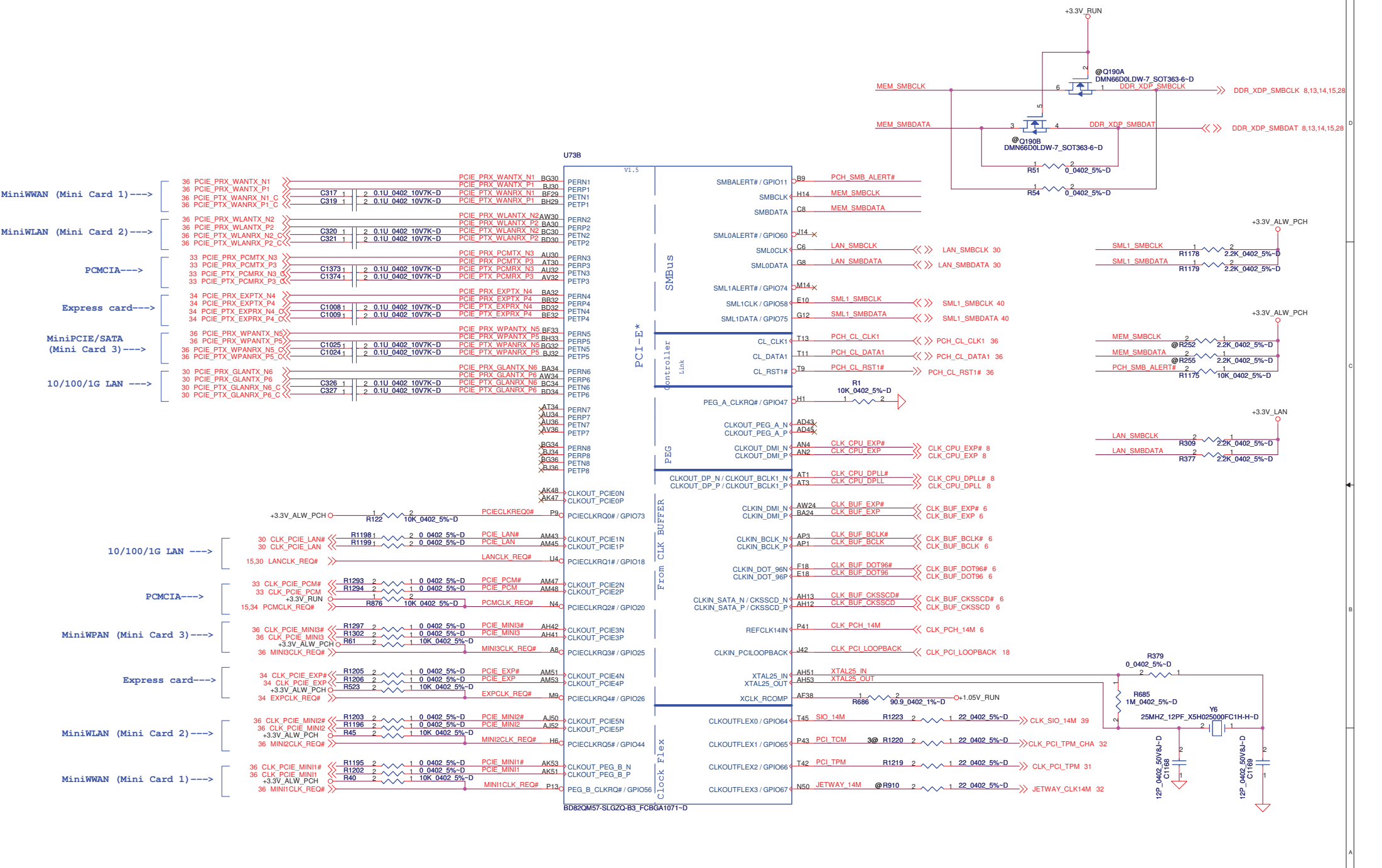
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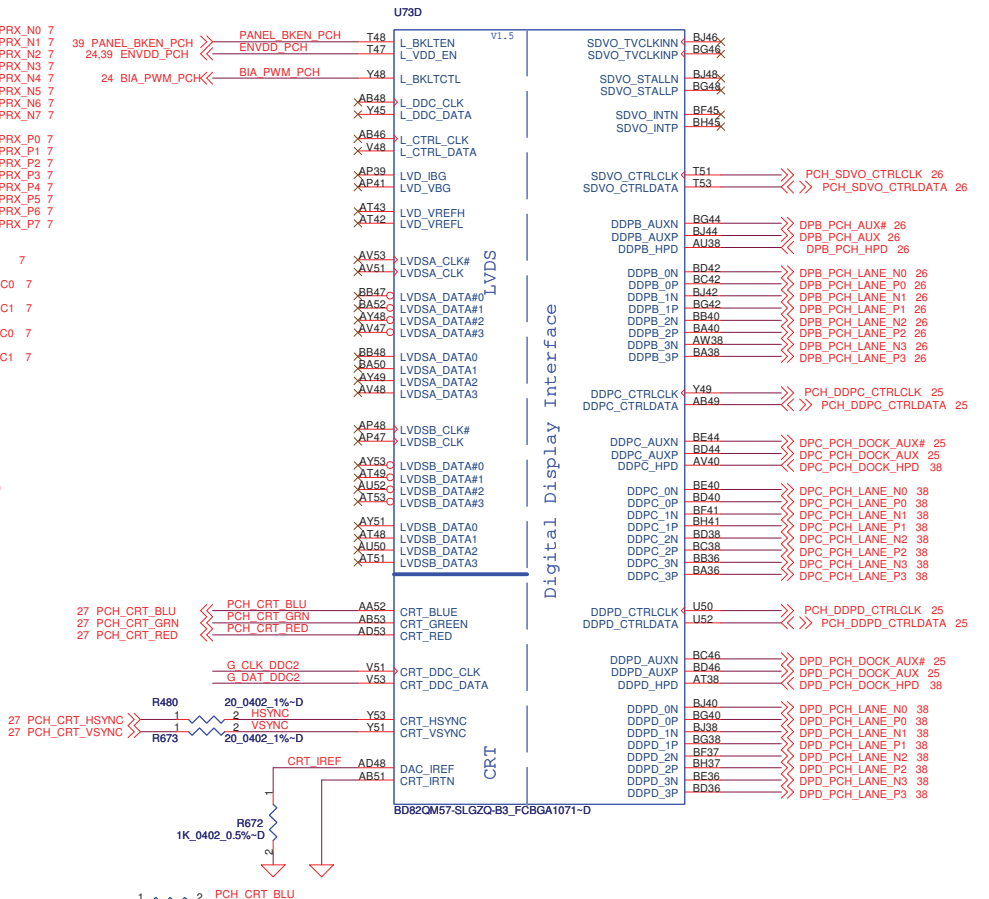
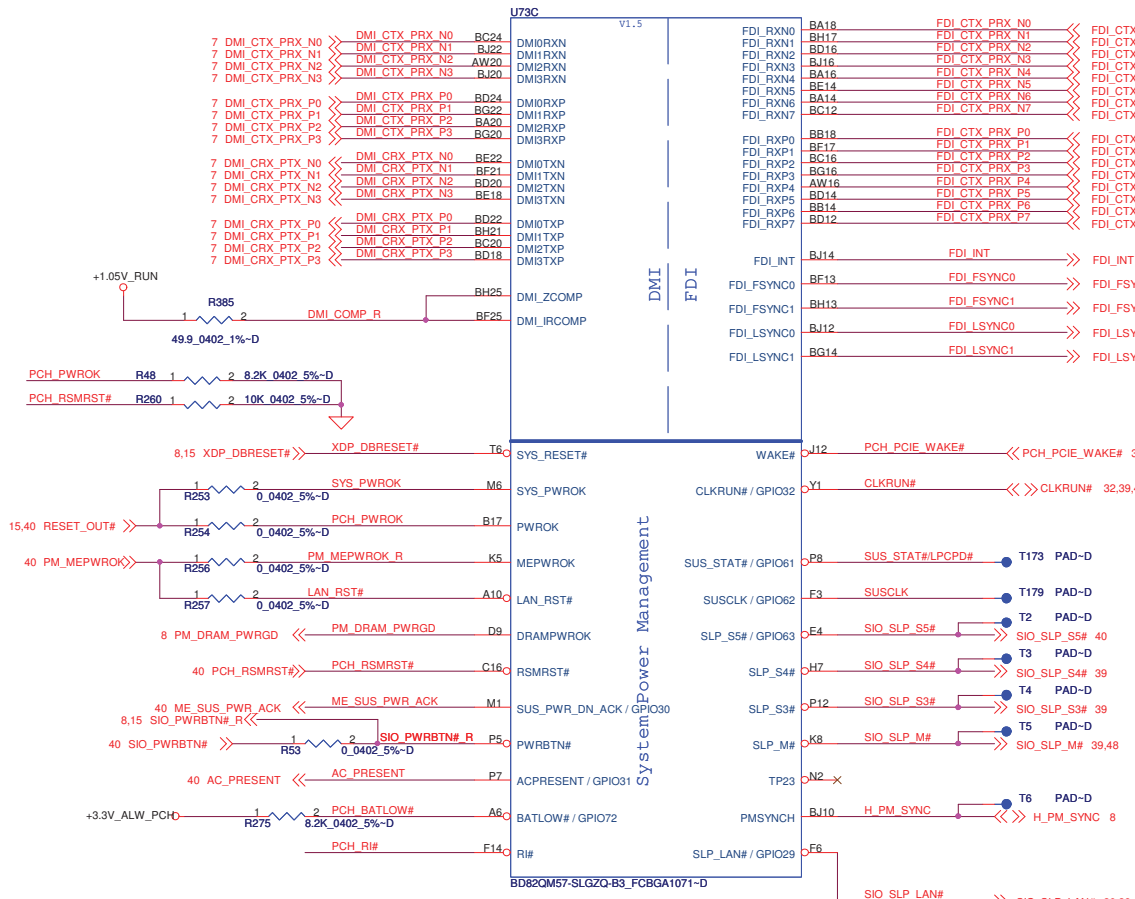
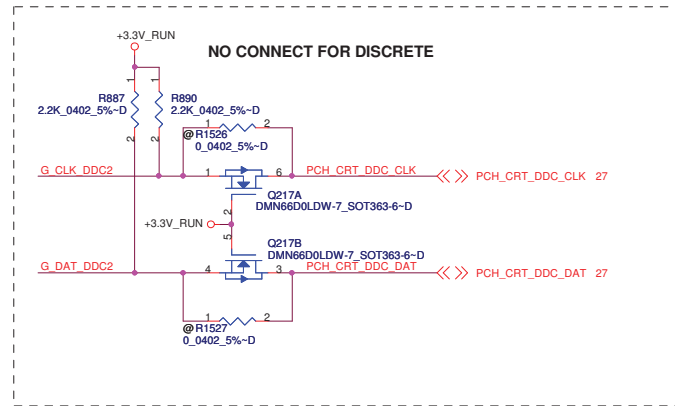
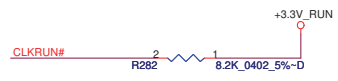
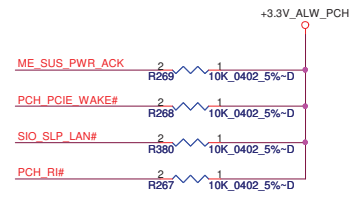
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**PCH (1/8)**

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Intel request DDPB can not support eDP

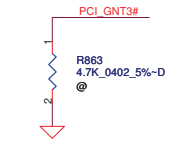
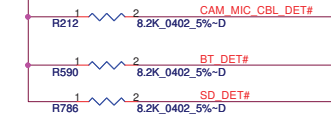
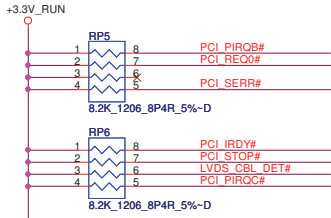
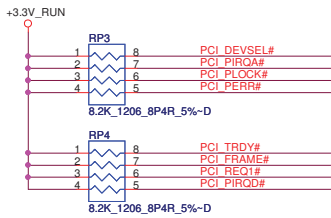
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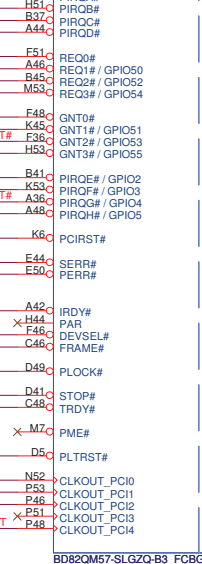
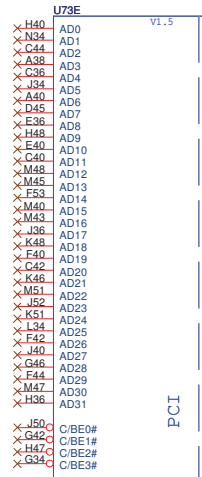
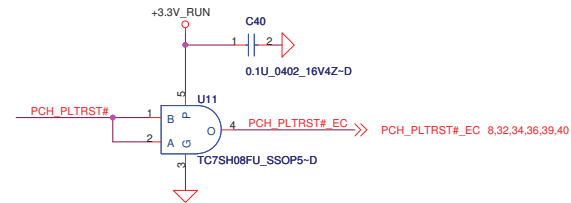
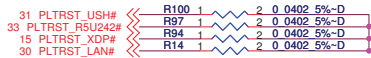
PCH (3/8)



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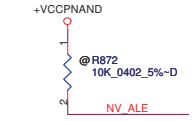


A16 swap override Strap/Top-Block	
Swap Override jumper	
PCI_GNT#3	Low = A16 swap High = Default

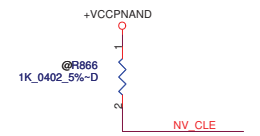


PCI_GNT#1	PCI_GNT#0	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

PCH XDP ENABLE	Stuff: R78,R89,R101-R116
	No Stuff: R71,R77,RP1,RP2,R45,R40,R131,R58,R1242,R1243,R1244,R1245,R74,R130
PCH XDP DISABLE	Stuff: R71,R77,RP1,RP2,R45,R40,R131,R58,R1242,R1243,R1244,R1245,R74,R130
	No Stuff: R78,R89,R101-R116

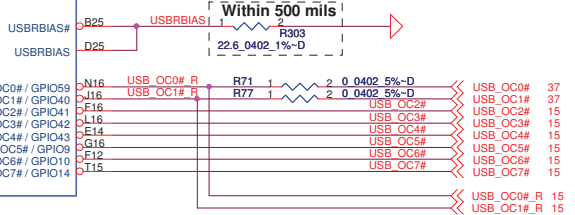
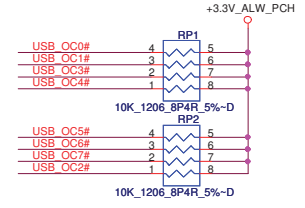


Danbury Technology Enabled	
NV_ALE	High = Enabled (Default) Low = Disabled



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

- >Right Side Bottom
- >Right Side Top
- >Left Side Top
- >Left Side Bottom
- >WLAN
- >WWAN
- >Blue Tooth
- >BIO
- >DOCK
- >Express Card
- >Camera
- >PCIe/BKT

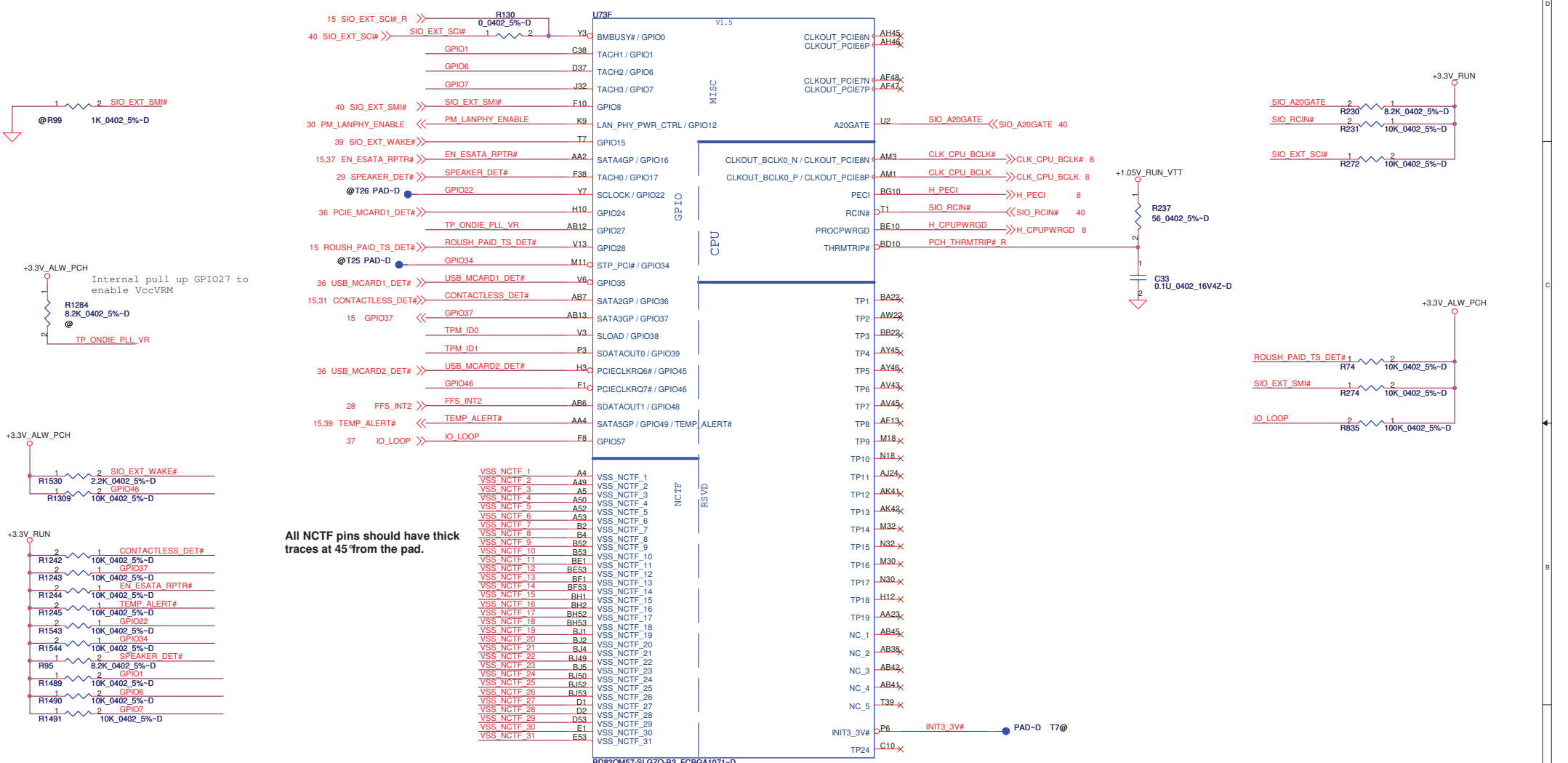


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PCH (4/8)

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Size: Document Number  
Date: Thursday, January 21, 2010 Sheet 18 of 60 Rev 0.1

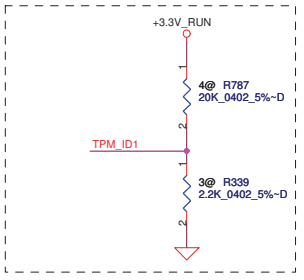
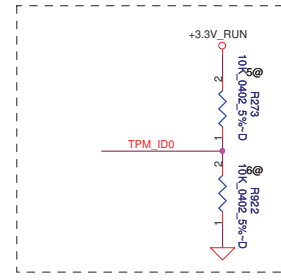
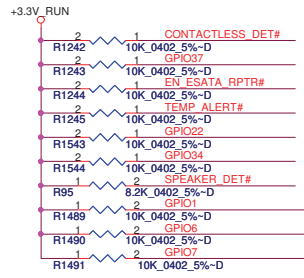
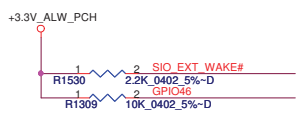
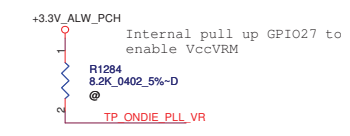


All NCTF pins should have thick traces at 45° from the pad.

- VSS\_NCTF\_1 A4
- VSS\_NCTF\_2 A49
- VSS\_NCTF\_3 A5
- VSS\_NCTF\_4 A50
- VSS\_NCTF\_5 A52
- VSS\_NCTF\_6 A53
- VSS\_NCTF\_7 B2
- VSS\_NCTF\_8 B4
- VSS\_NCTF\_9 B52
- VSS\_NCTF\_10 B53
- VSS\_NCTF\_11 BE1
- VSS\_NCTF\_12 BE53
- VSS\_NCTF\_13 B1
- VSS\_NCTF\_14 BF53
- VSS\_NCTF\_15 BH1
- VSS\_NCTF\_16 BH2
- VSS\_NCTF\_17 BH52
- VSS\_NCTF\_18 BH53
- VSS\_NCTF\_19 BJ1
- VSS\_NCTF\_20 BJ2
- VSS\_NCTF\_21 BJ4
- VSS\_NCTF\_22 BJ49
- VSS\_NCTF\_23 BJ5
- VSS\_NCTF\_24 BJ50
- VSS\_NCTF\_25 BJ52
- VSS\_NCTF\_26 BJ53
- VSS\_NCTF\_27 D1
- VSS\_NCTF\_28 D2
- VSS\_NCTF\_29 D53
- VSS\_NCTF\_30 E1
- VSS\_NCTF\_31 E53

	TPM_ID0	TPM_ID1
China TPM	0	0
No TPM, No China TPM	0	1
USH1.0 (For SSI)	1	0
USH2.0	1	1

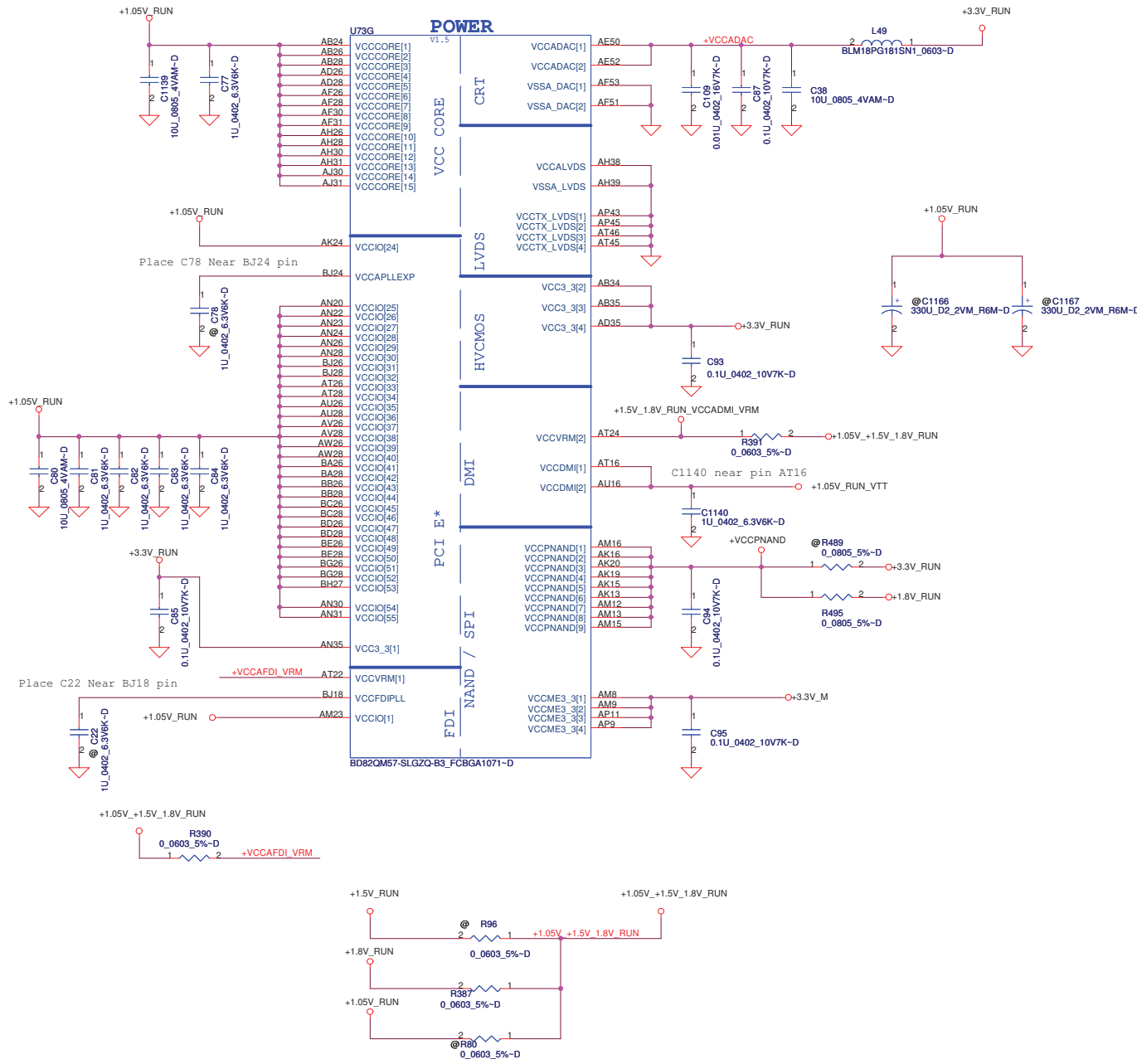
----> will use MEMO control pop R339 & de-pop R787 when USH1.0 enable for SSI build only



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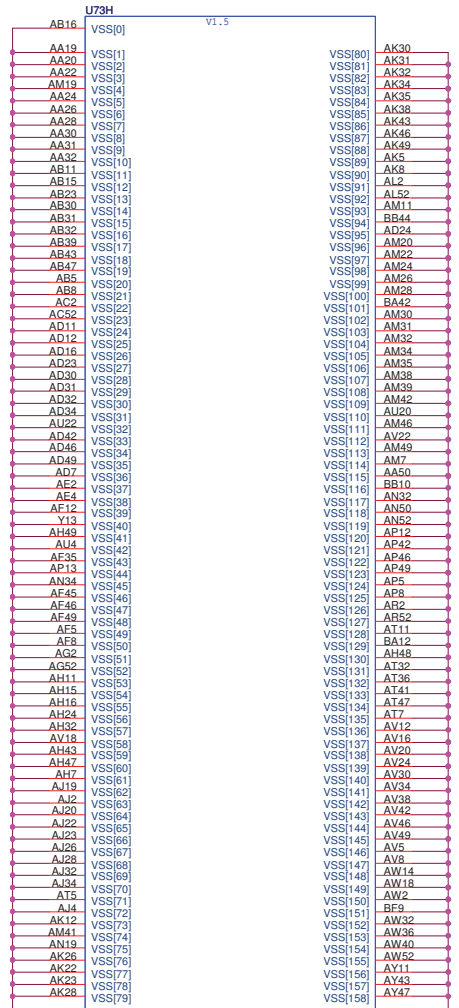
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Title			PCH (5/8)		
Size	Document Number	Rev			
	LA-5571P	0.1			
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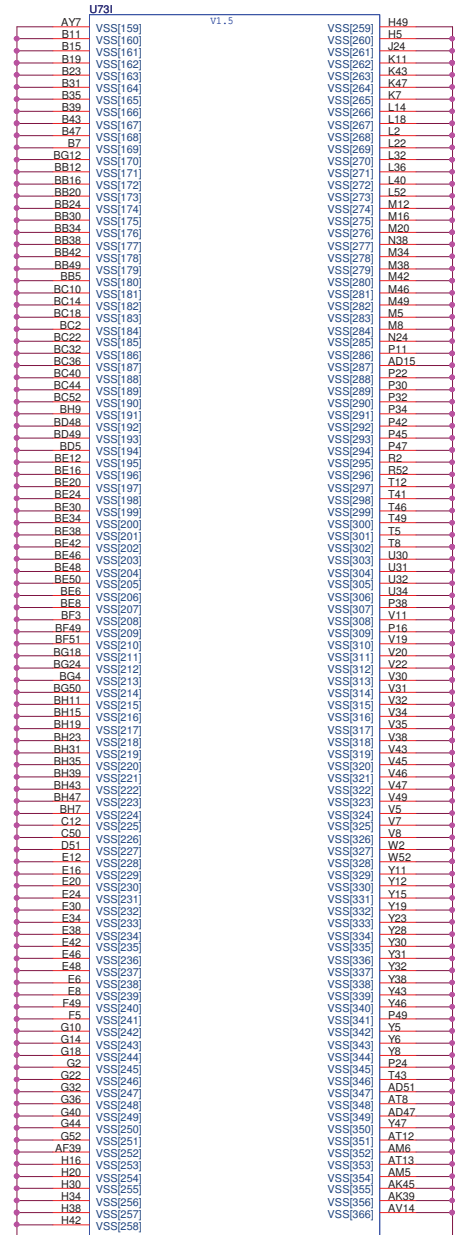


PCH Power Rail Table		
Voltage Rail	Voltage	SO Iccmax Current (A)
V_CPU_IO	1.1/1.05	< 1 (mA)
V5REF	5	< 1 (mA)
V5REF_Sus	5	< 1 (mA)
Vcc3_3	3.3	0.357
VccAClk	1.1	0.052
VccADAC	3.3	0.069
VccADPLLA	1.1	0.068
VccADPLLB	1.1	0.069
Vccap11EXP	1.1	0.04
VccCore	1.1	1.432
VccDMI	1.1	0.058
VccDMI	1.1	0.061
VccFDIPLL	1.1	0.037
VccIO	1.1	3.062
VccLAN	1.1	0.32
VccME	1.1	1.849
VccME3_3	3.3	0.085
VccpNAND	1.8	0.156
VccRTC	3.3	2 (mA)
VccSATAPLL	1.1	0.031
VccSus3_3	3.3	0.163
VccSusHDA	3.3	0.006
VccVRM	1.05 / 1.5	0.196
VccALVDS	3.3	< 1 (mA)
VccTX_LVDS	1.8	0.059





BD82QM57-SLGZQ-B3\_FCBGA1071-D



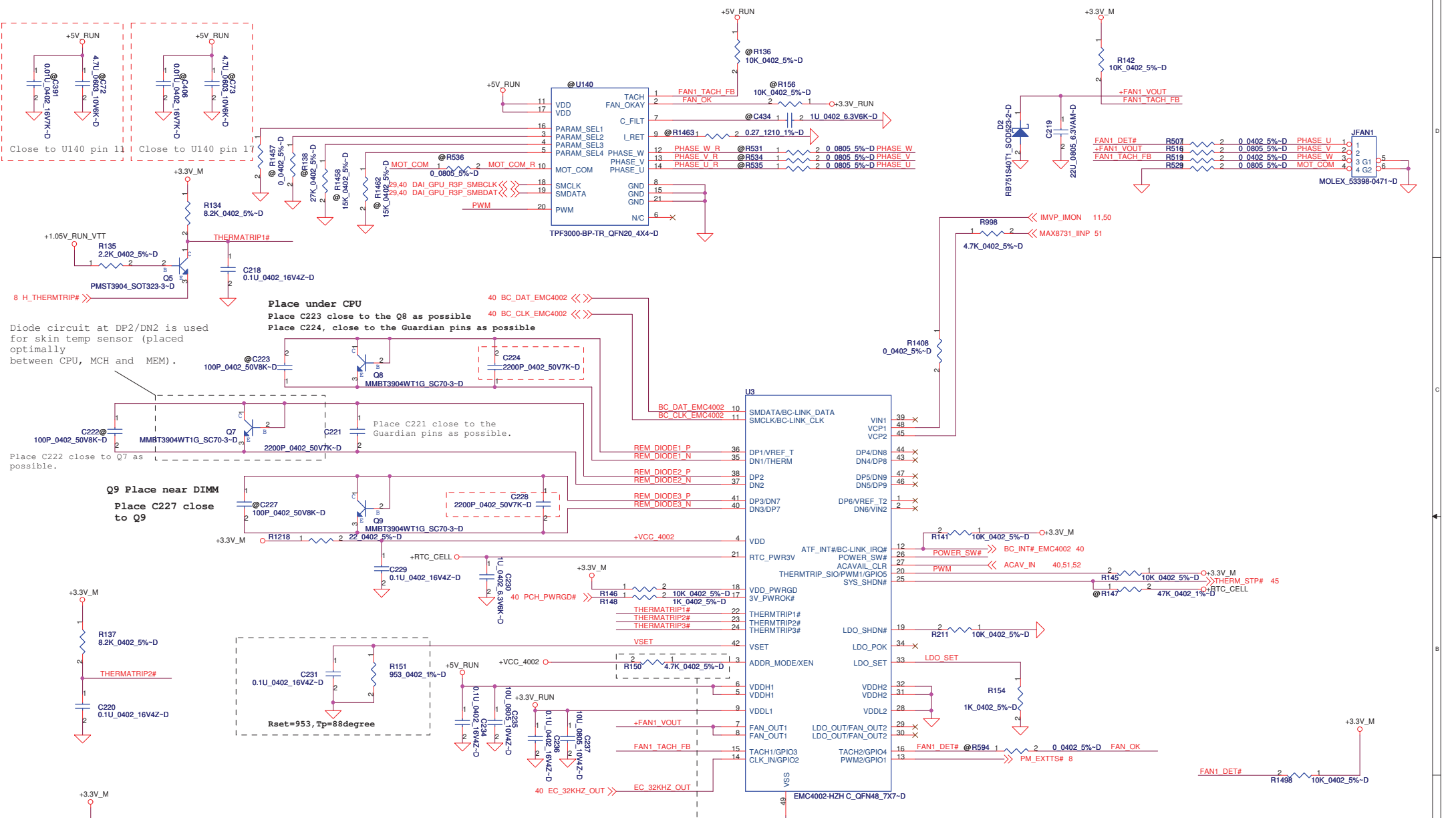
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Title		
PCH (8/8)		
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Diode circuit at DP2/DN2 is used for skin temp sensor (placed optimally between CPU, MCH and MEM).

Place C222 close to Q7 as possible.

Q9 Place near DIMM Place C227 close to Q9

Place under CPU Place C223 close to the Q8 as possible Place C224, close to the Guardian pins as possible

Place C221 close to the Guardian pins as possible.

Rset=953, Tp=88degree

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

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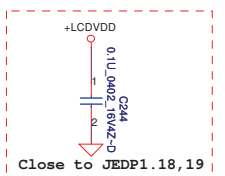
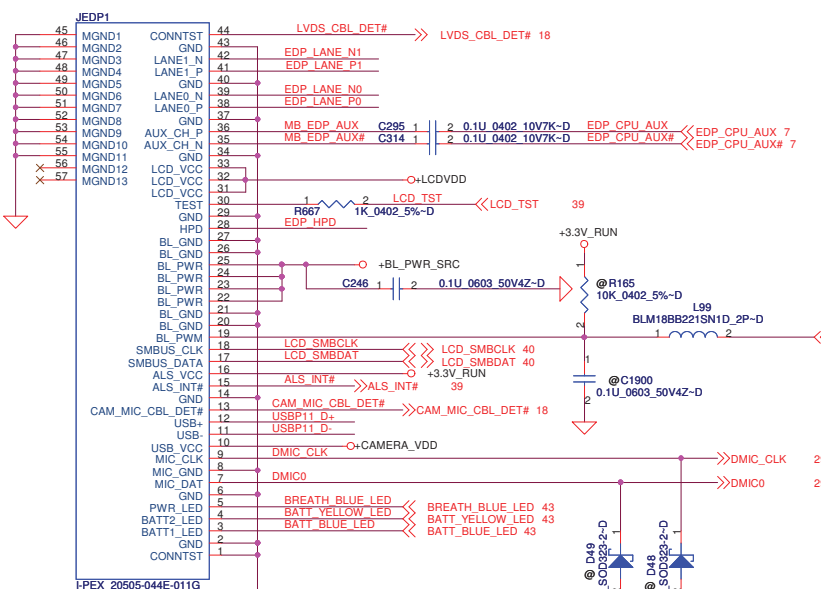
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FAN & Thermal Sensor

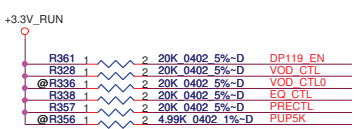
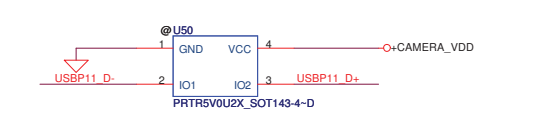
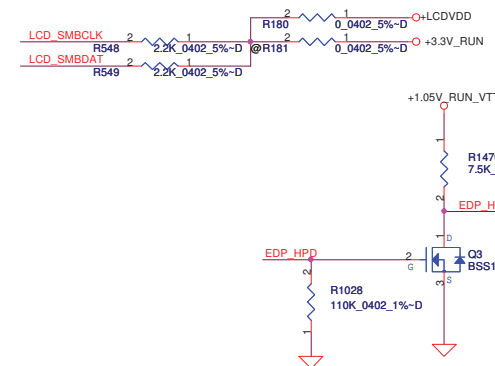
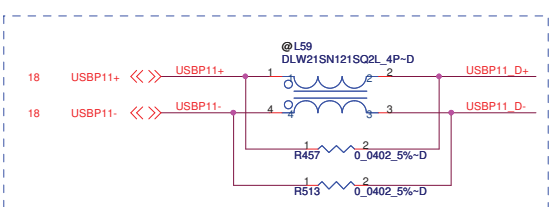
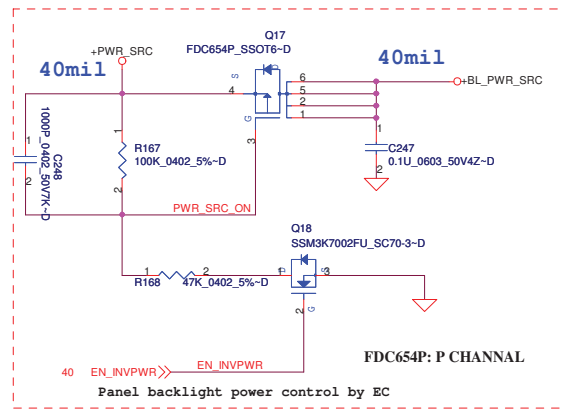
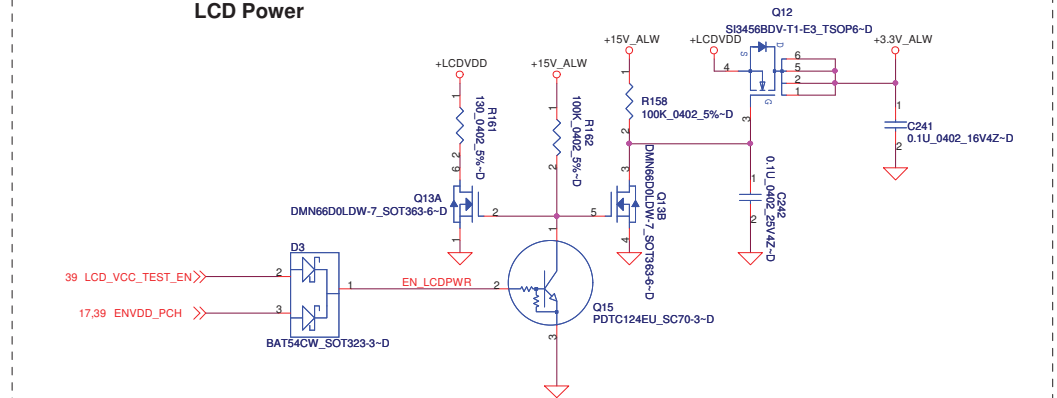
LA-5571P

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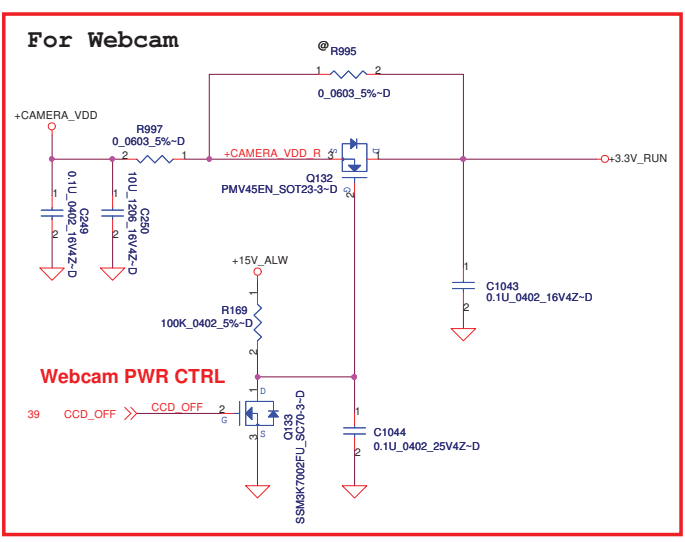
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**LCD Power**



X1EDP & DP119 co-lay circuit: (Default DP119)  
 X1EDP->R356,R1031,R336,R279,R1029==>POP  
 R328,R338==>De-POP  
 DP119->R356,R1031,R336,R279,R1029==>De-POP  
 R328,R338==>POP



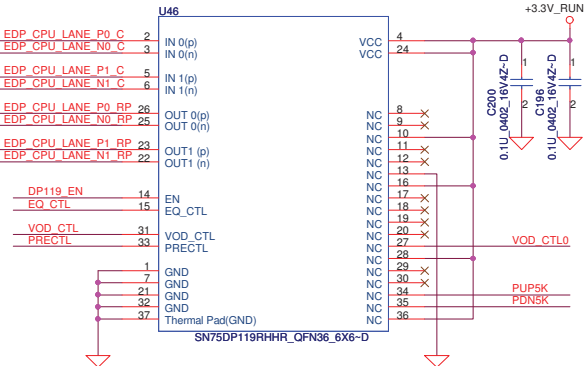
**Refer to SN75DP119RHRH rev. 0P35**

VOD (mV)	PRE (dB)	PRECTL	VOD_CTL
300	2.5	0	0
	6	VCC/2	0
	8.5	1	0
400	0	0	VCC/2
	3.5	VCC/2	VCC/2
	5.5	1	VCC/2
600	0	0	1
	2	VCC/2	1
	800	0	1

EQ gain (dB)	EQ_CTL
0	0
3	VCC/2
6	1

MODE	DP119_EN
PWR Down	0
OUT2 DIS	VCC/2
OUT1 OUT2 EN	1

**eDP Repeater**



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**Compal Electronics, Inc.**

**eDP & CAM Conn**

LA-571P

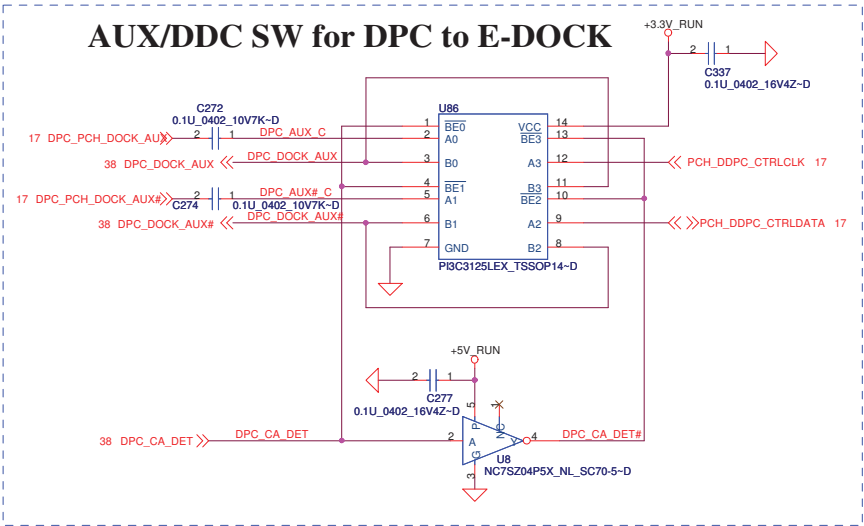
Thursday, January 21, 2010

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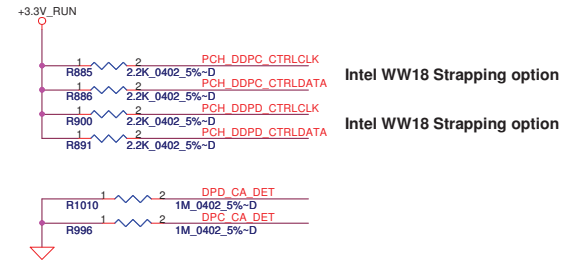
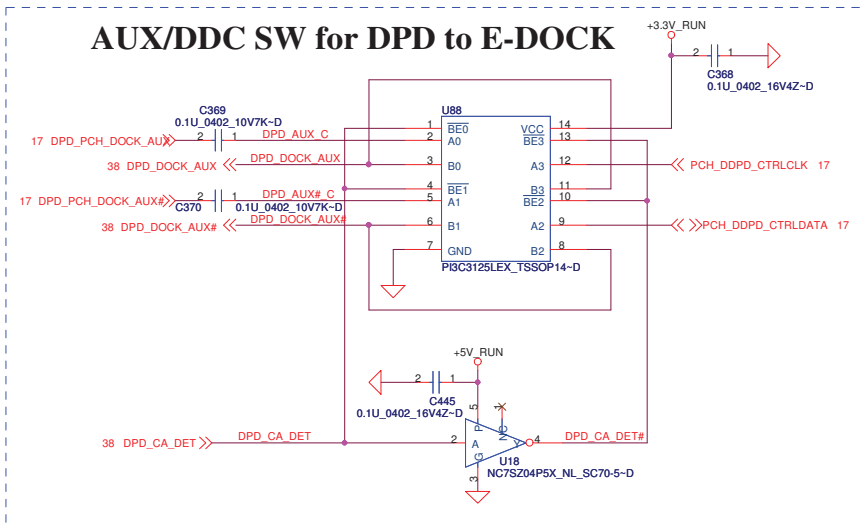
Rev 0.1



### AUX/DDC SW for DPC to E-DOCK



### AUX/DDC SW for DPD to E-DOCK

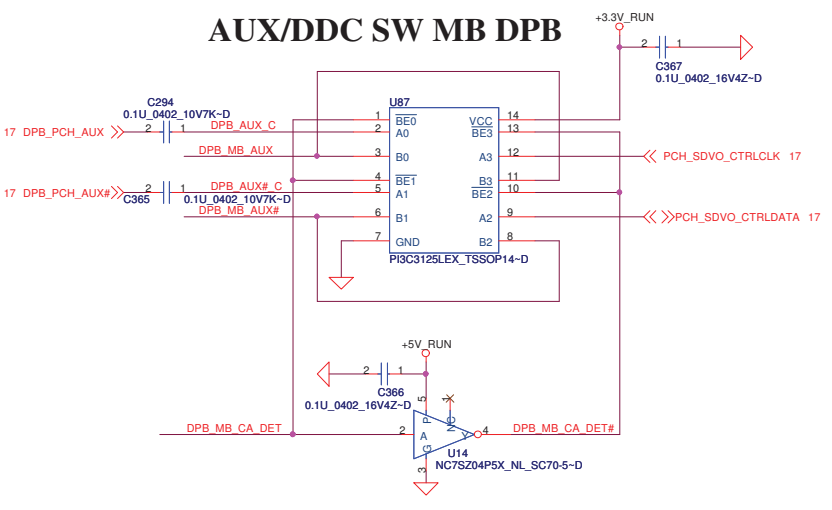


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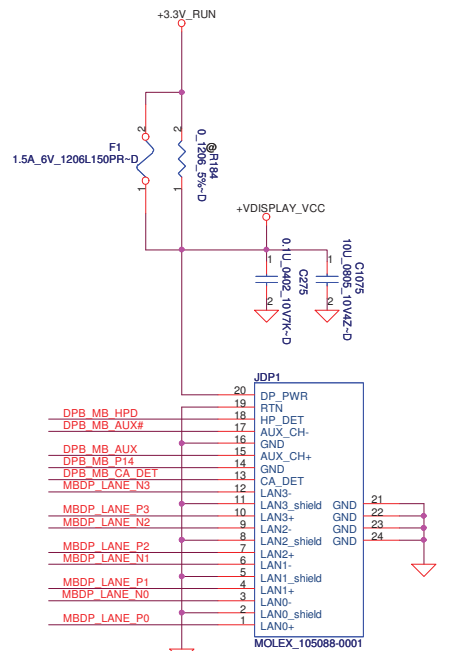
**DELL CONFIDENTIAL/PROPRIETARY**

<b>Compal Electronics, Inc.</b>		
<b>DPD DPD SW for DOCK</b>		
Size	Document Number	Rev
	<b>LA-5571P</b>	<b>0.1</b>
Date:	Thursday, January 21, 2010	Sheet 25 of 60

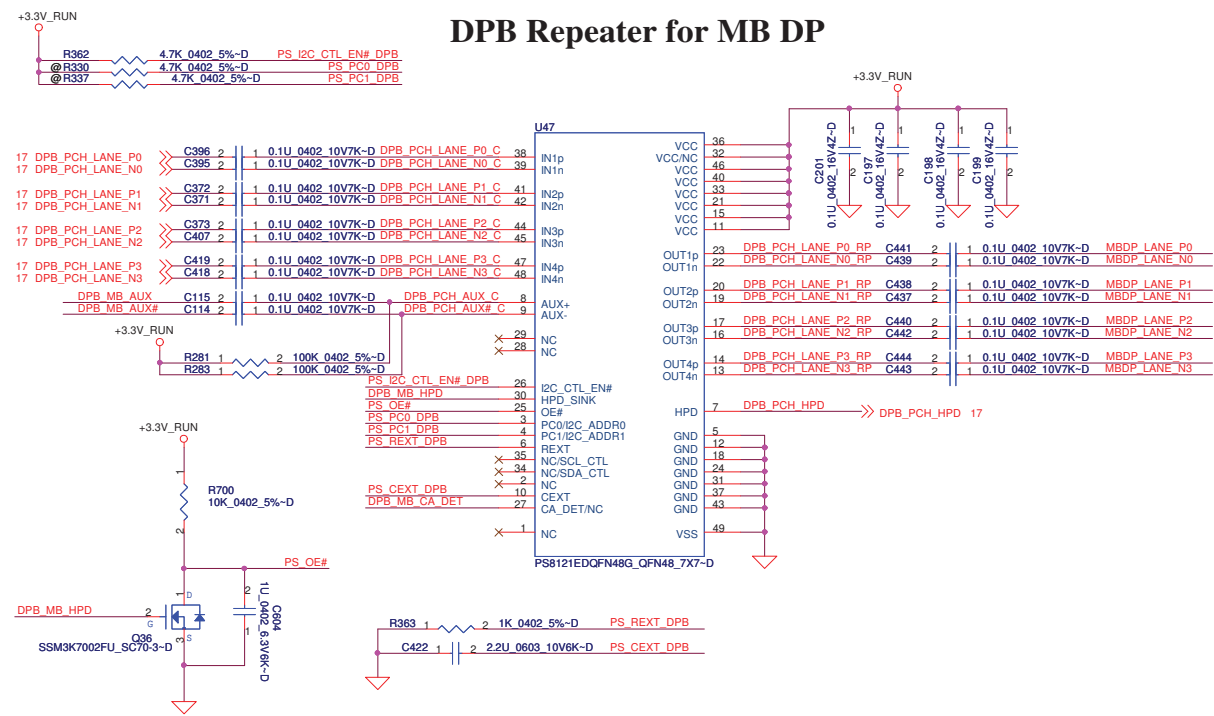
# AUX/DDC SW MB DPB



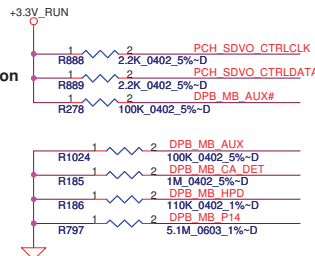
# Display port Dip Connector



# DPB Repeater for MB DP



### Intel WW18 Strapping option

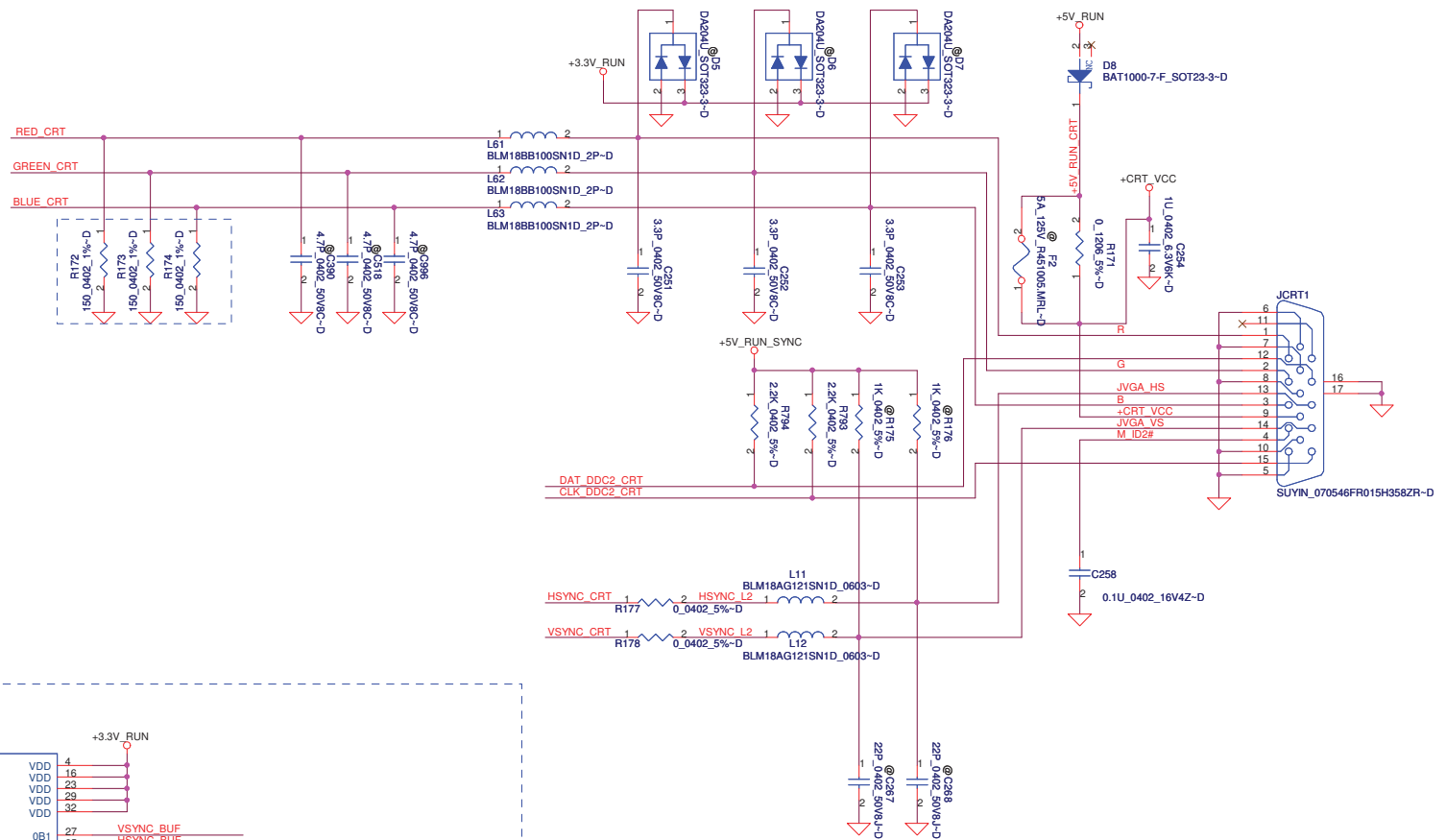


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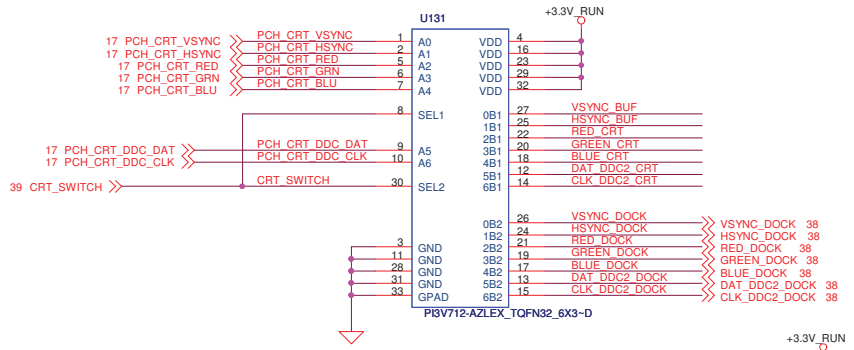
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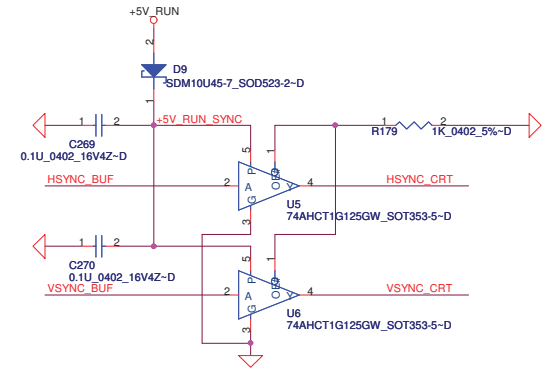
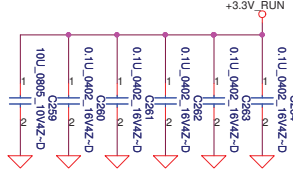
Compal Electronics, Inc.		
Title <b>Display port</b>		
Size	Document Number <b>LA-5571P</b>	Rev <b>0.1</b>
Date	Thursday, January 21, 2010	Sheet 26 of 60



### VGA SW for MB/DOCK



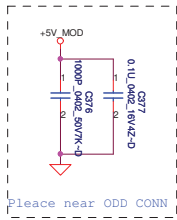
SEL1/SEL2	Chanel	Source
0	A=B1	MB
1	A=B2	APR/SPR



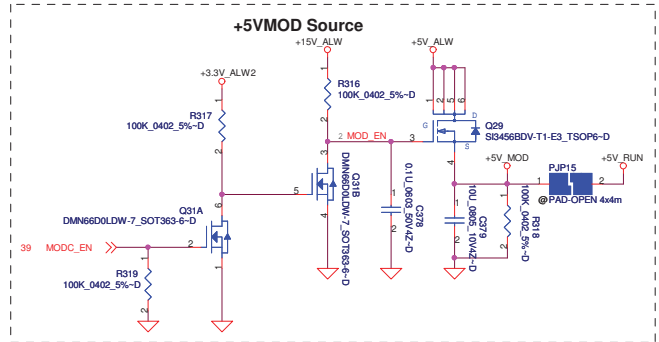
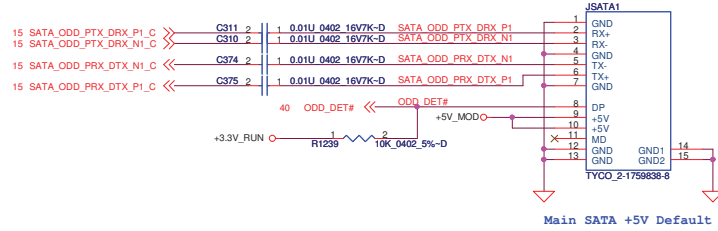
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	<b>Compal Electronics, Inc.</b>	
	<b>CRT/Video switch</b>	
	<b>LA-5571P</b>	
Size	Document Number	Rev
Date	Thursday, January 21, 2010	0.1
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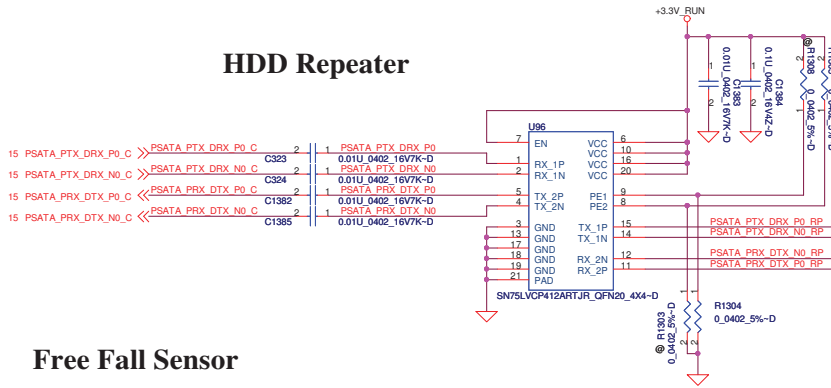
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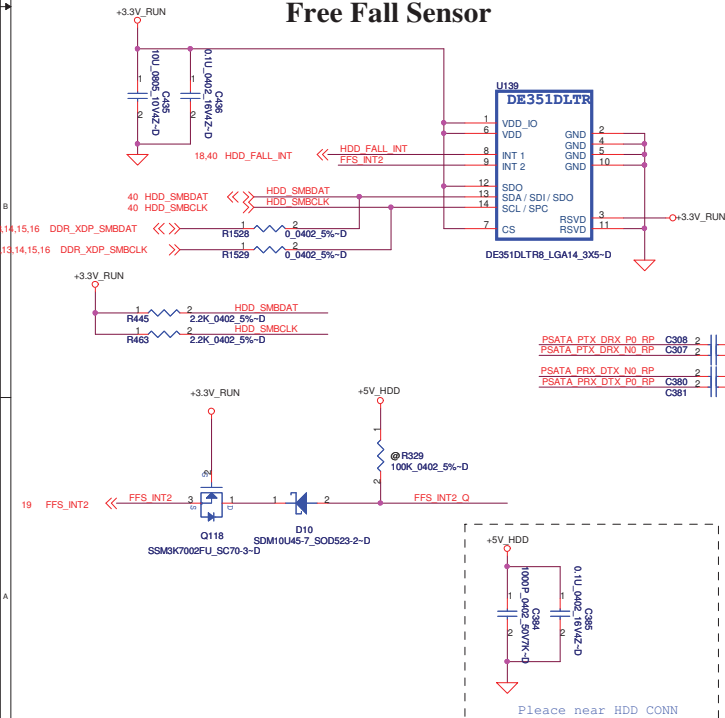
### For ODD



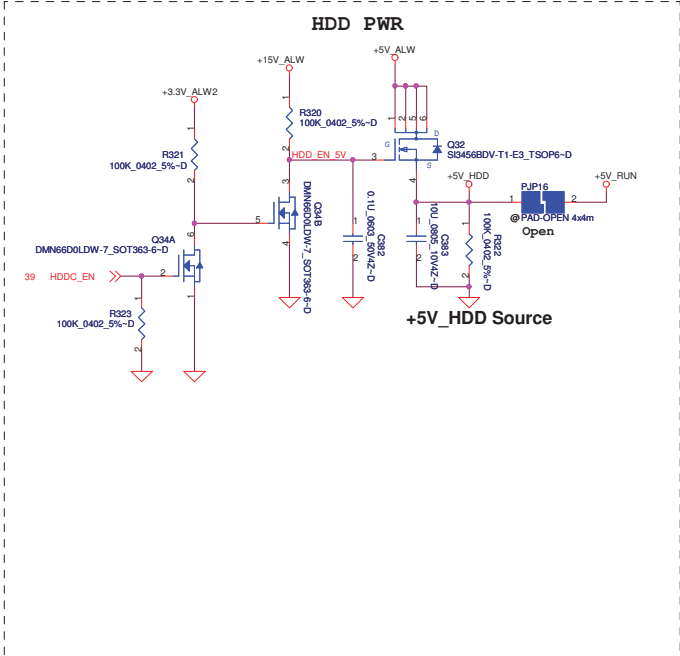
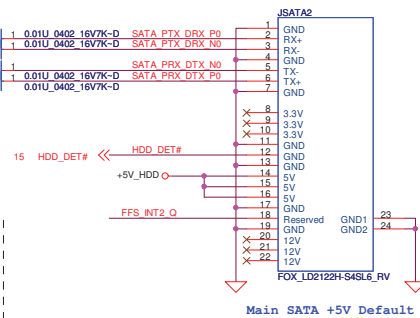
### HDD Repeater



### Free Fall Sensor



### For HDD Temp.



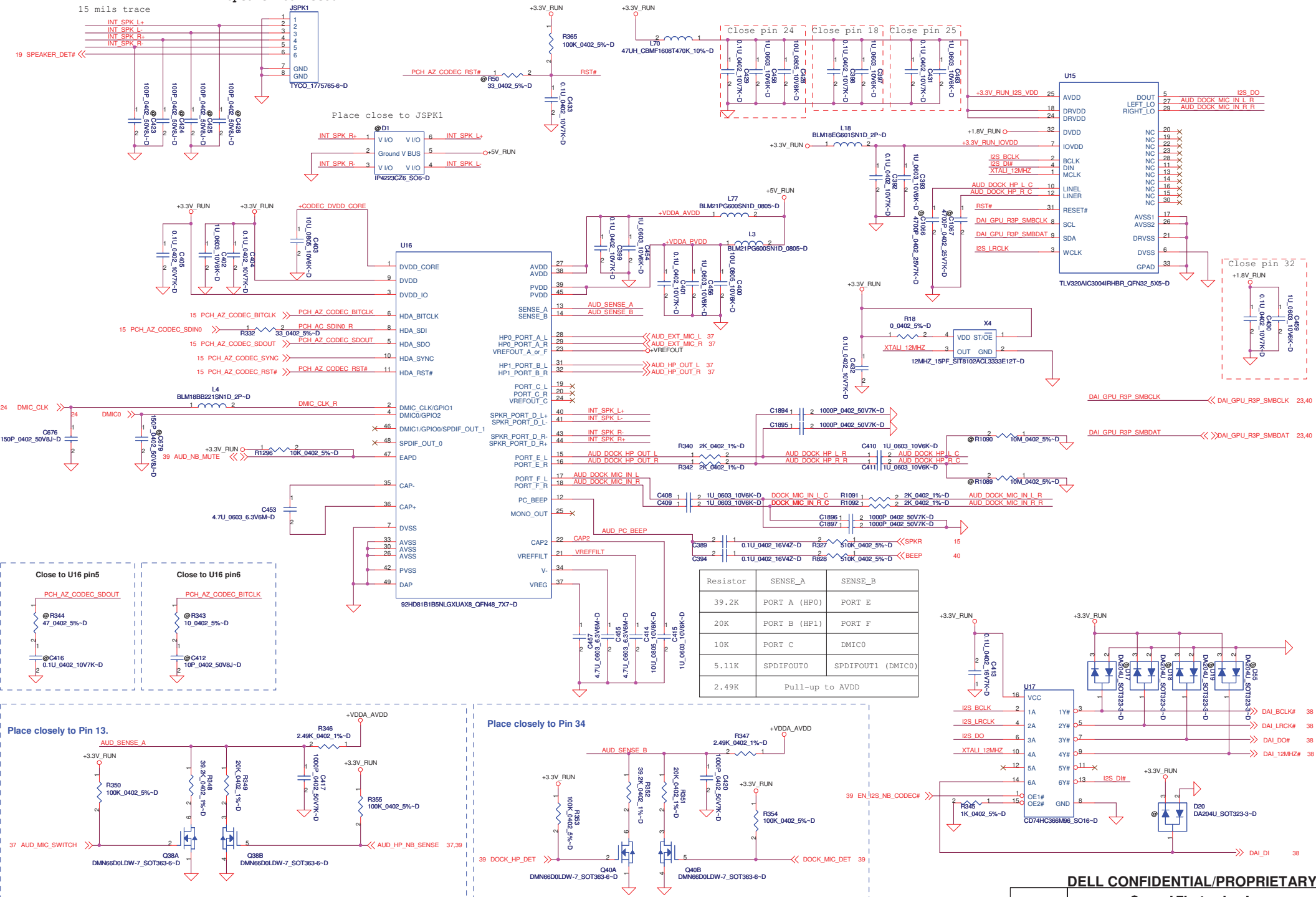
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Compal Electronics, Inc.

Title		ODD/HDD CONNECTOR	
Size	Document Number	LA-5571P	
Date:	Thursday, January 21, 2010	Sheet	28 of 60

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**Speaker Connector**



Resistor	SENSE_A	SENSE_B
39.2K	PORT A (HP0)	PORT E
20K	PORT B (HP1)	PORT F
10K	PORT C	DMIC0
5.11K	SPDIFOUT0	SPDIFOUT1 (DMIC0)
2.49K	Pull-up to AVDD	

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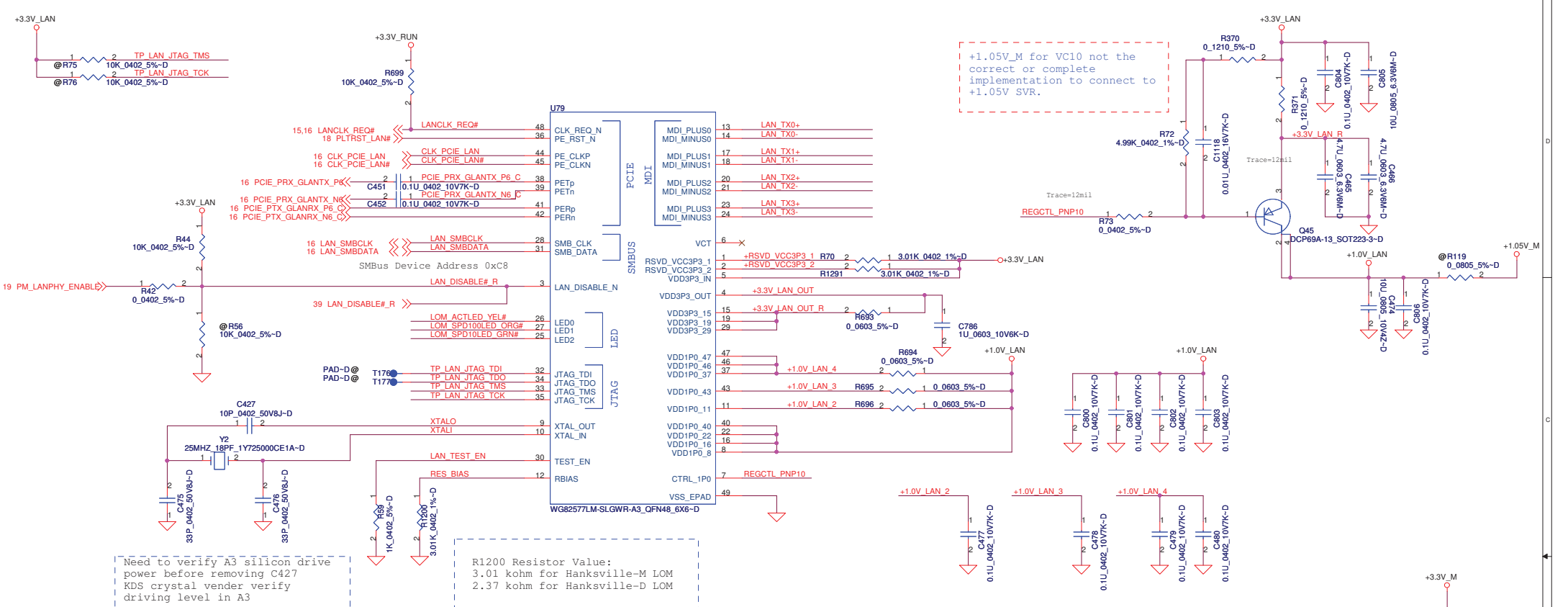
**Compal Electronics, Inc.**

**Azalia (HD) Codec**

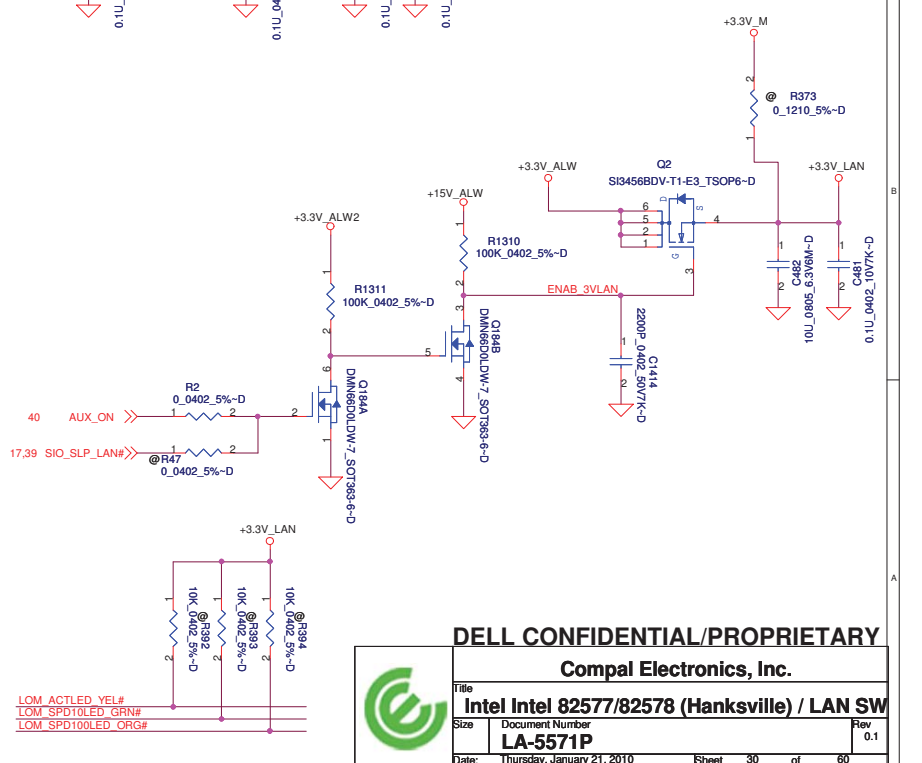
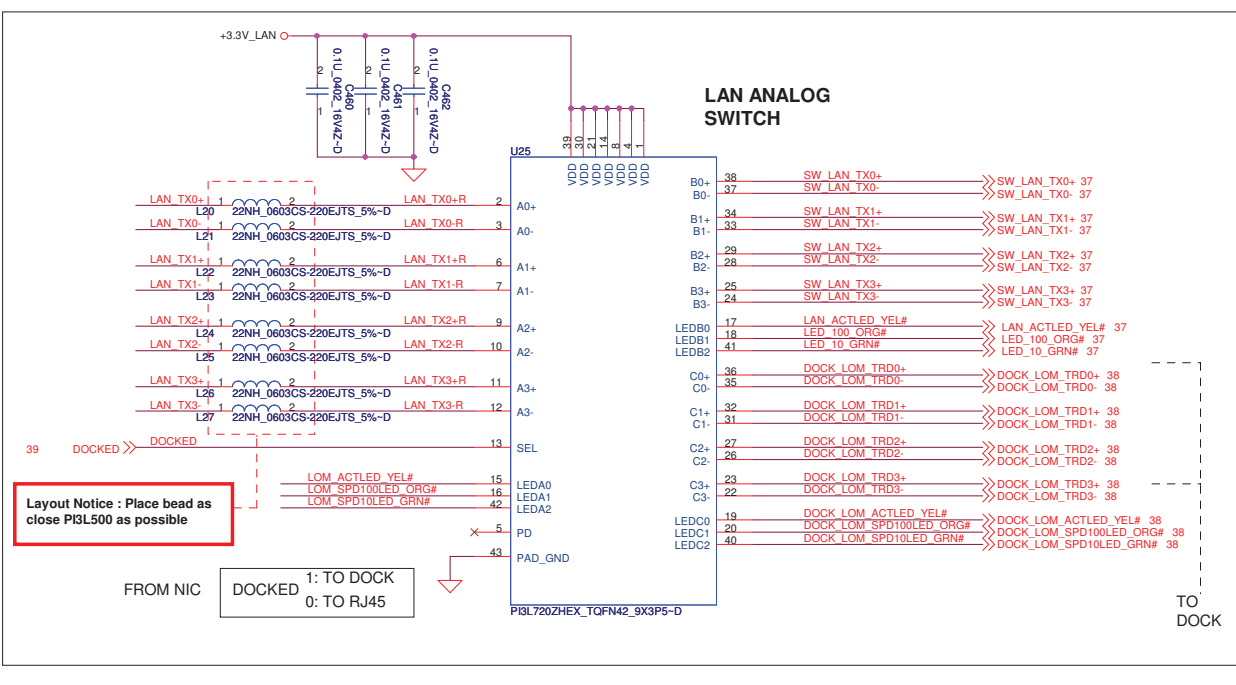
LA-5571P

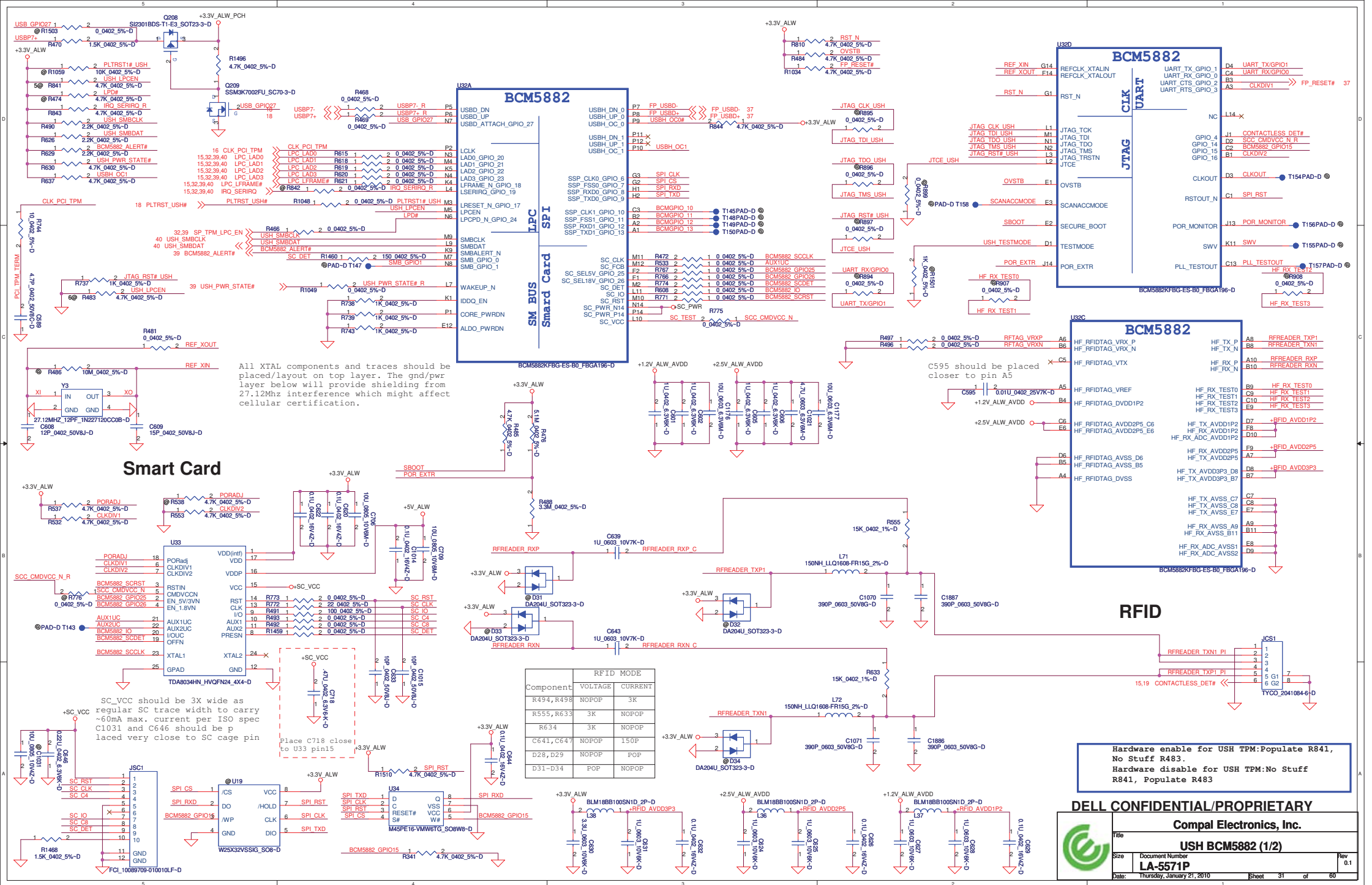
Thursday, January 21, 2010 Sheet 29 of 60

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+1.05V\_M for VC10 not the correct or complete implementation to connect to +1.05V\_SVR.





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**USH BCM5882 (1/2)**

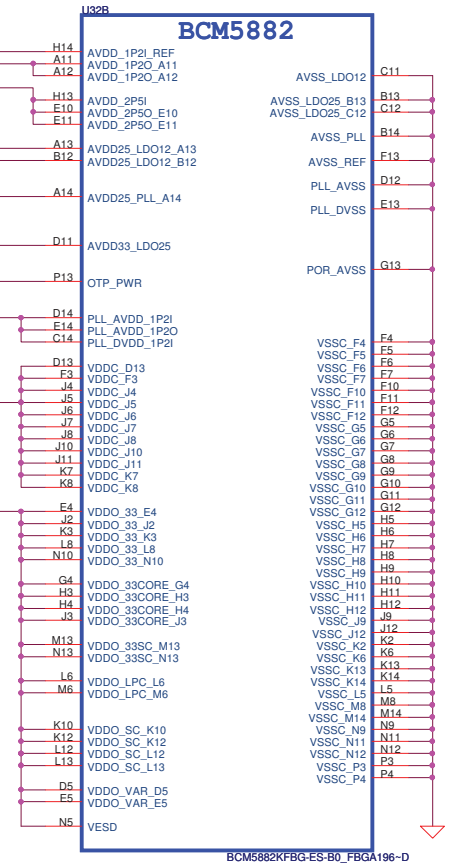
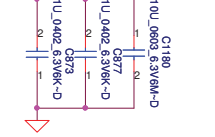
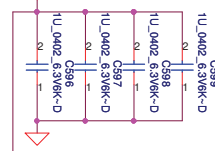
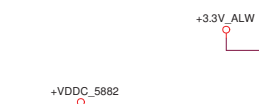
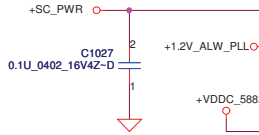
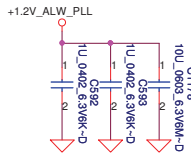
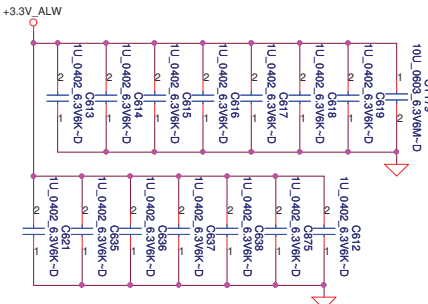
File: **LA-5571P**

Date: Thursday, January 21, 2010

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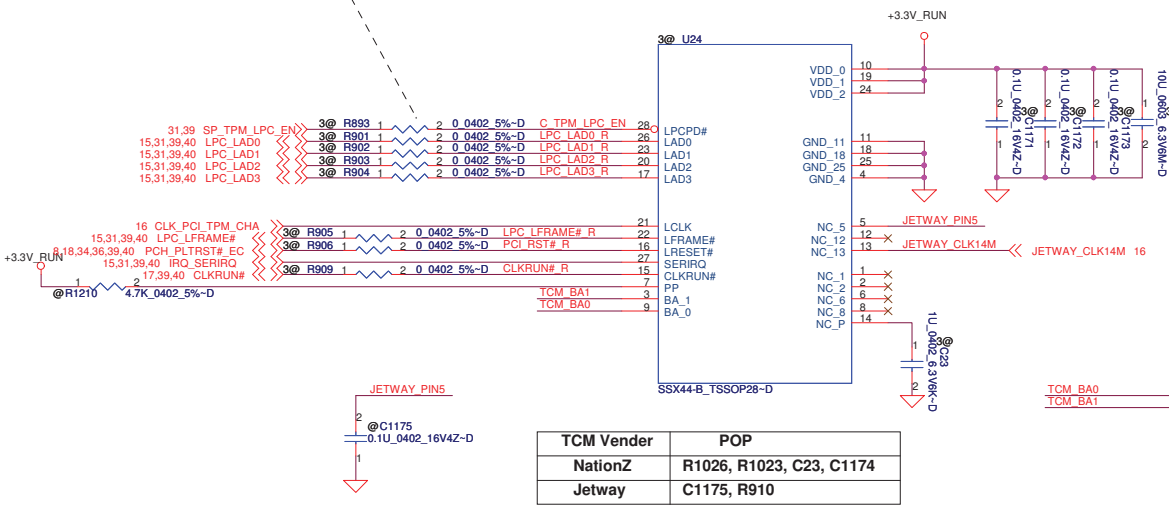
**USH BCM5882 and China TCM Z8H172T Option**

PART/PIN	Ref Des	TCM Enable	TPM Enable	ALL TPM/TCM Disable
TCM circuit	All 3@	POP	@	@
USH_LPCEN	PU R841	@	POP	@
SIO 5028 ->SP_TPM_LPC_EN	PD R483	POP	@	@
PCH GPIO39 ->TPM_ID1	PU R787	@	@	POP
	PD R339	POP	POP	@
PCH GPIO38 ->TPM_ID0	PU R273	POP	POP	@
	PD R922	@	@	POP



LOW: Power Down Mode  
High: Working Mode

**China TCM: NationZ & Jetway co-lay**



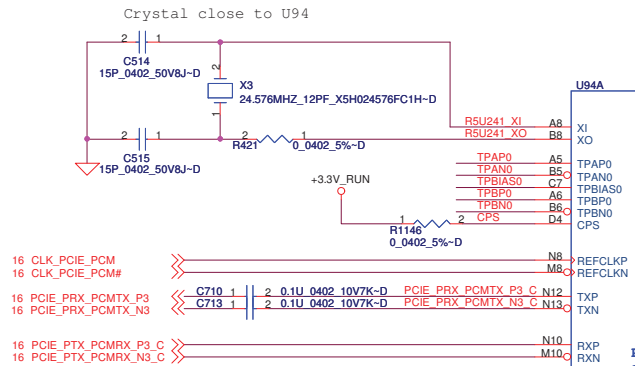
TCM Vender	POP
NationZ	R1026, R1023, C23, C1174
Jetway	C1175, R910

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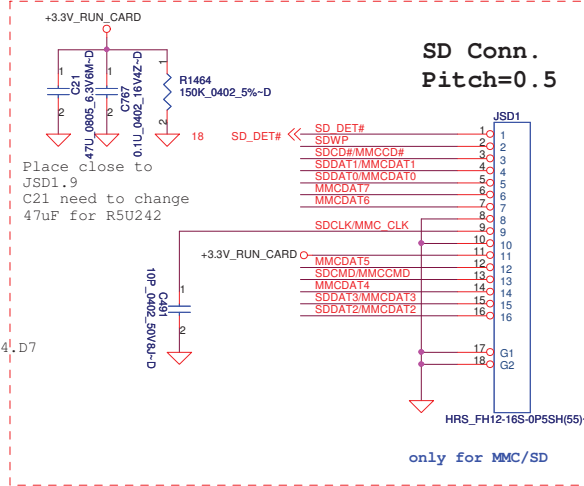
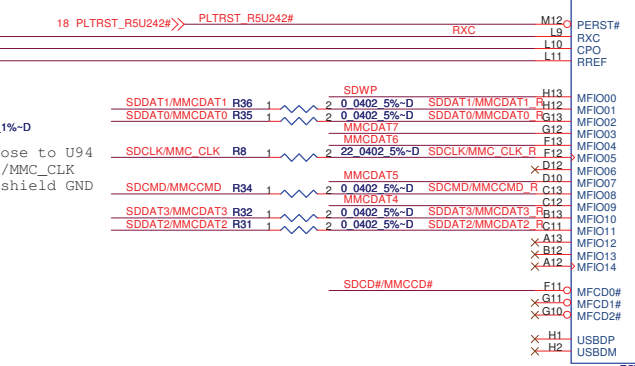
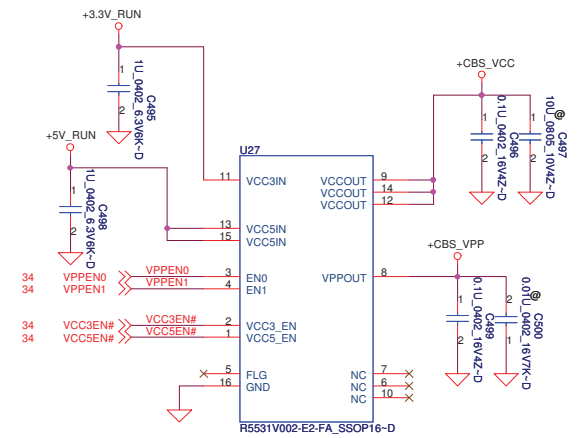
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USH BCM5882 (2/2)  
LA-5571P  
Rev 0.1

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- C645, Close to U94.C10
- C603, Close to U94.J4/K3
- C695, Close to U94.M13
- C697, Close to U94.M11/N11
- C698, Close to U94.J3
- C699, Close to U94.C8



**MFIO Pin Assignment Table**

MFIO	SD8	XD	MS8
00	WP	D7	BS
01	D1	D6	-
02	D0	D5	D1
03	D7	D4	-
04	D6	D3	D5
<b>05</b>	<b>CLK</b>	<b>D2</b>	<b>D0</b>
06	-	D1	-
07	D5	D0	D4
08	CMD	WP#	D2
09	D4	WE#	D6
10	D3	ALE	D3
11	D2	CLE	-
12	-	CE#	-
13	-	RE#	D7
<b>14</b>	-	R/B#	<b>CLK</b>

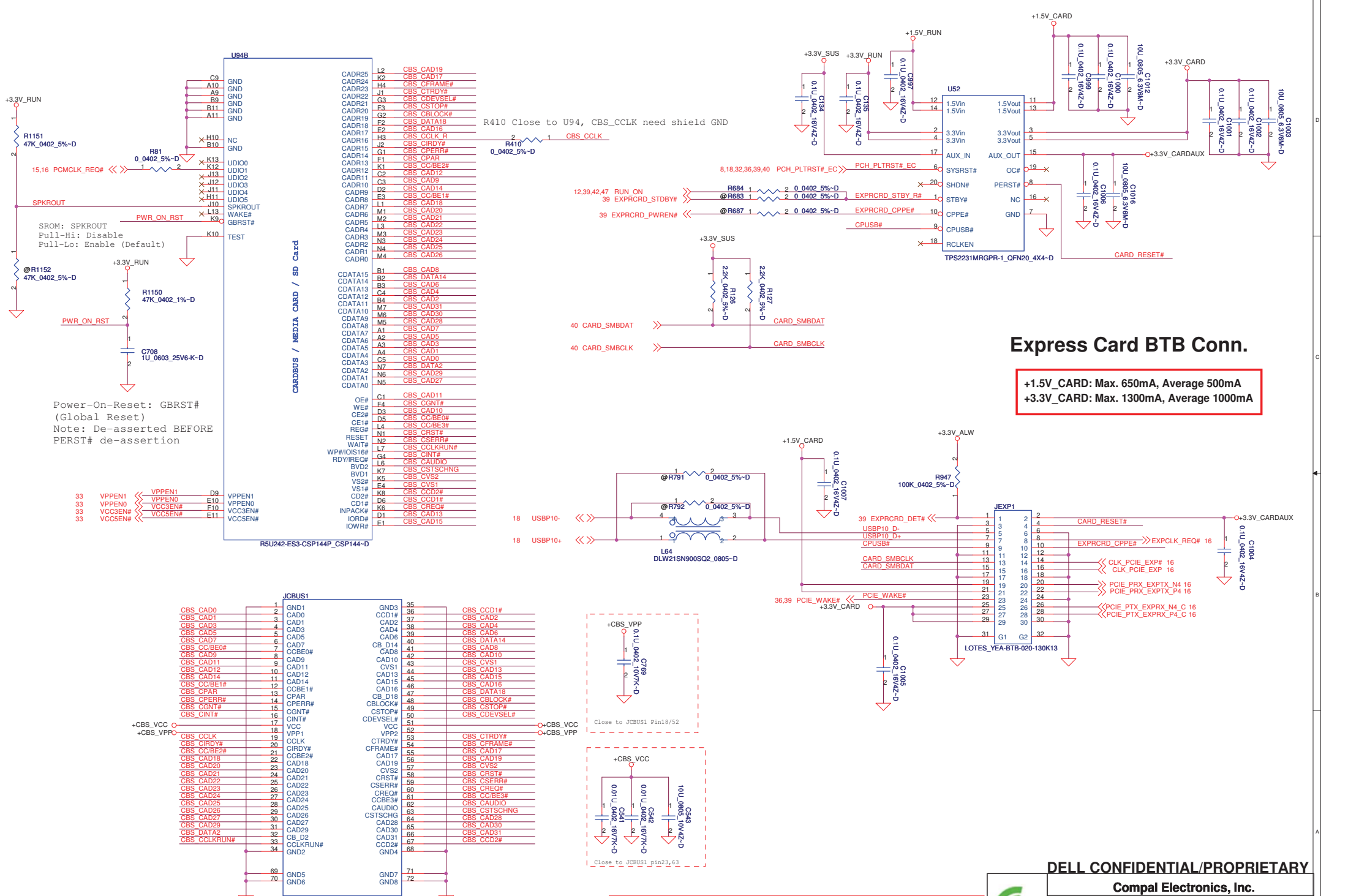
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Title: **R5U242 (1/2)**

Size: Document Number **LA-5571P** Rev: **0.1**

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**Express Card BTB Conn.**

**+1.5V\_CARD: Max. 650mA, Average 500mA**

**+3.3V\_CARD: Max. 1300mA, Average 1000mA**

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Title: **RSU242 (2/2)**

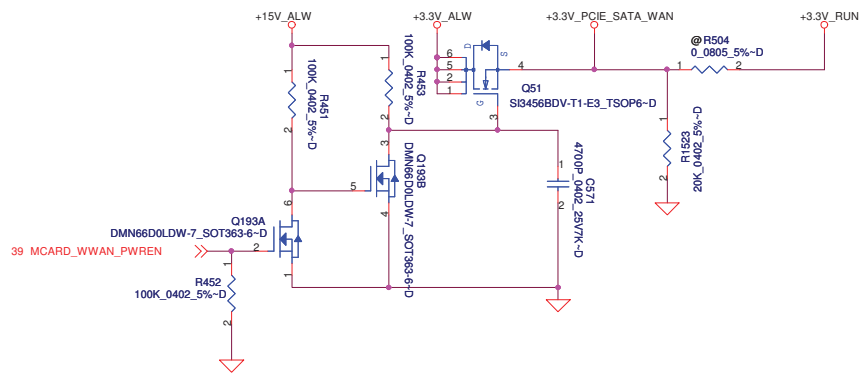
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Date: **Thursday, January 21, 2010** Sheet **34** of **60**

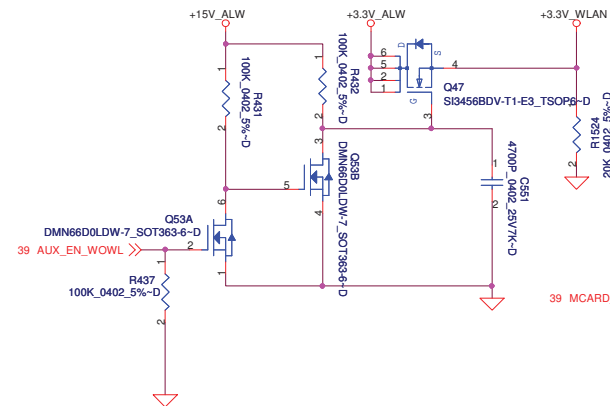
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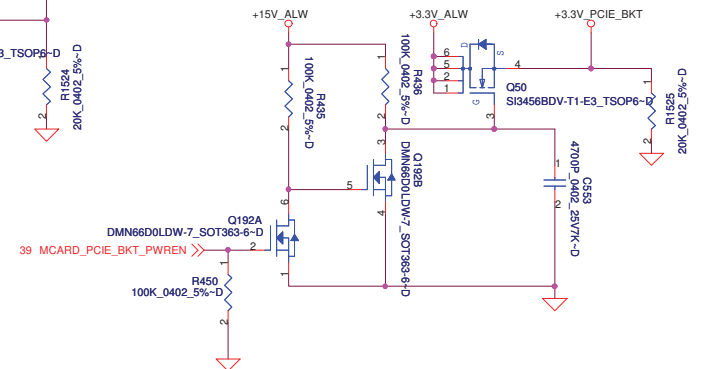
### Power Control for Mini card1



### Power Control for Mini card2



### Power Control for Mini card3



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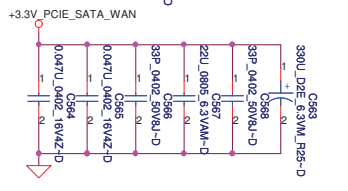
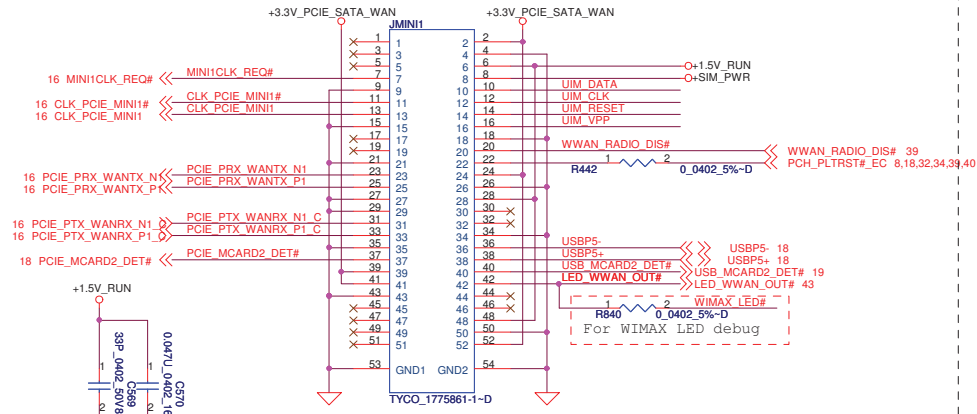
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**Title**  
**PCIE PWR**

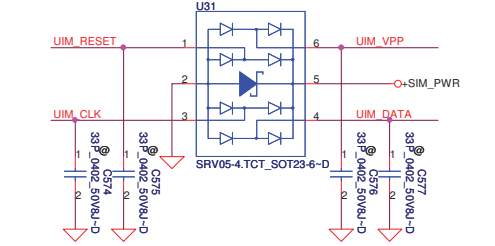
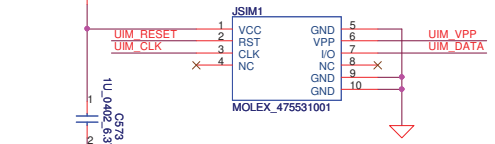
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	<b>LA-5571P</b>	0.1
<b>Date:</b> Thursday, January 21, 2010		<b>Sheet</b> 35 <b>of</b> 60

## Mini WWAN H=5.2

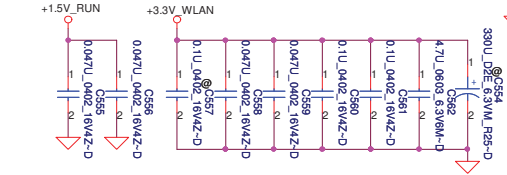
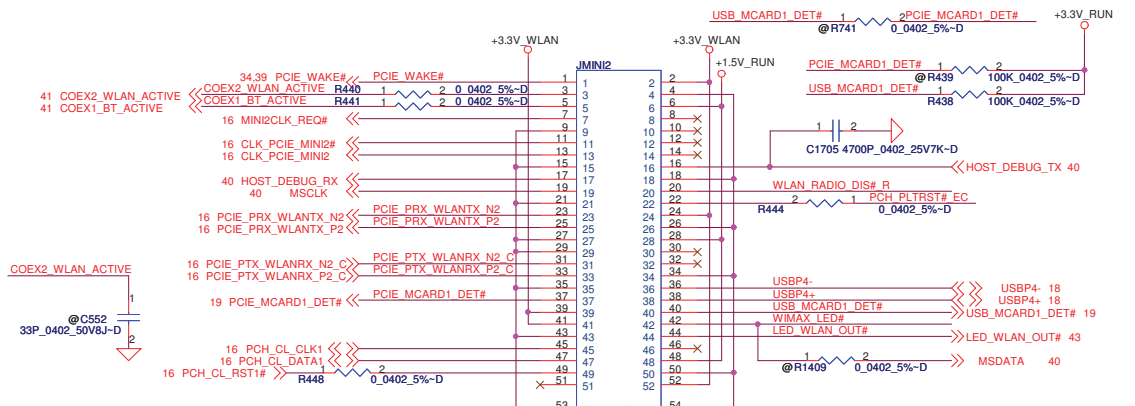


PWR Rail	Voltage Tolerance	Primary Power		Aux Power
		Peak	Normal	Normal
+3.3V	+/-9%	1000	750	
+3.3Vaux	+/-9%	330	250	250 (Wake enable) 5 (Not wake enable)
+1.5V	+/-5%	500	375	NA

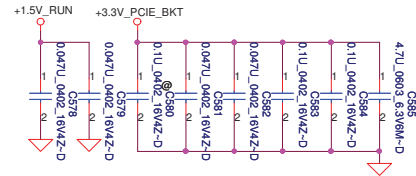
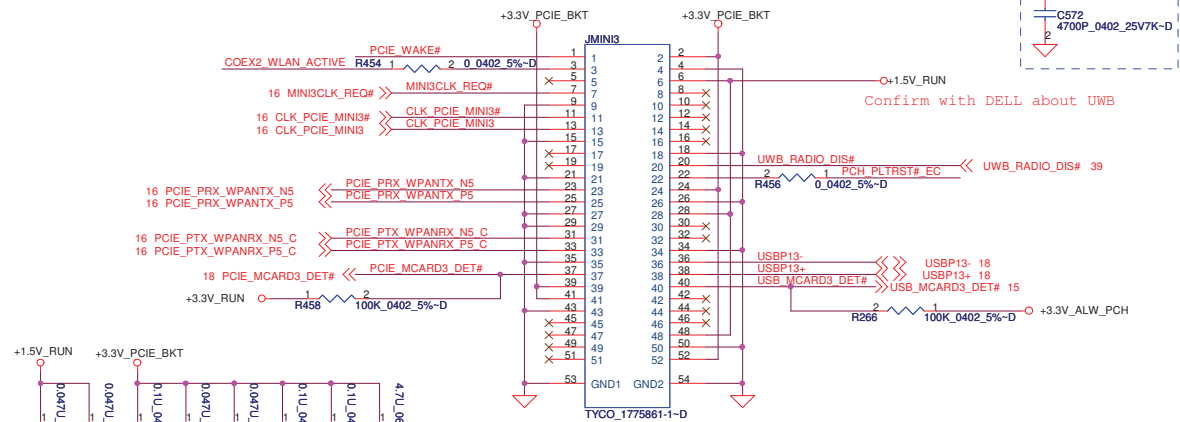
## SIM Card Push-Push



## Mini WLAN H=4



## PCIE/BKT Card H=4



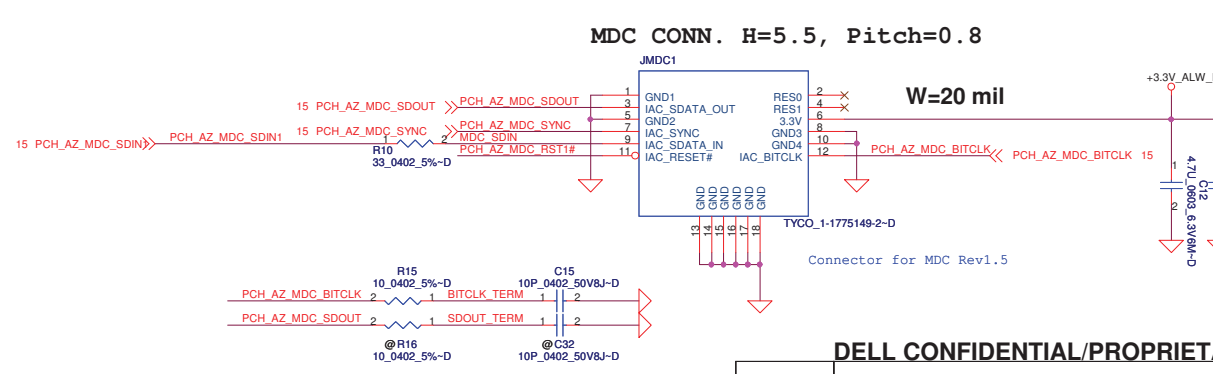
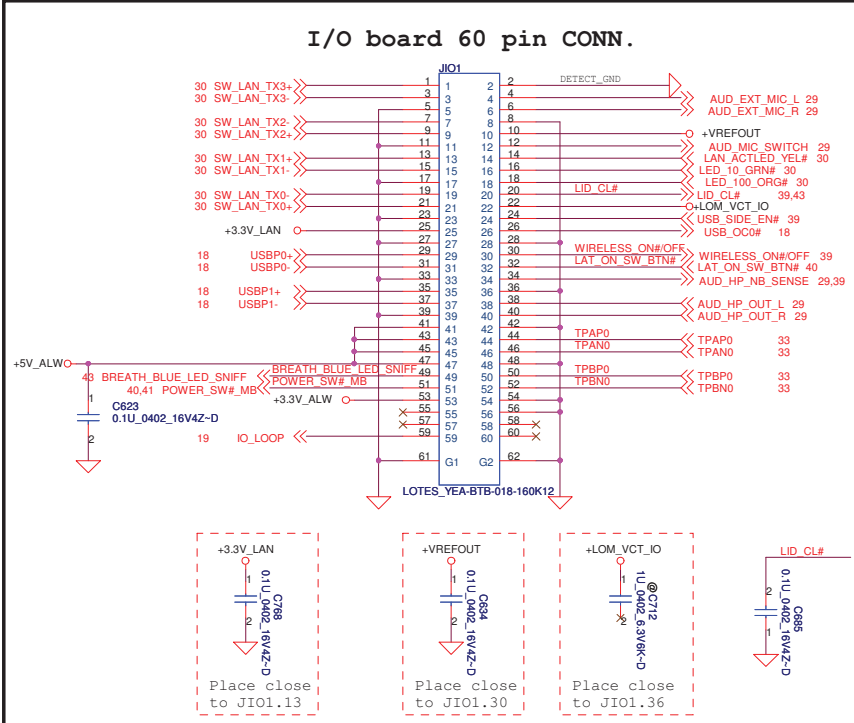
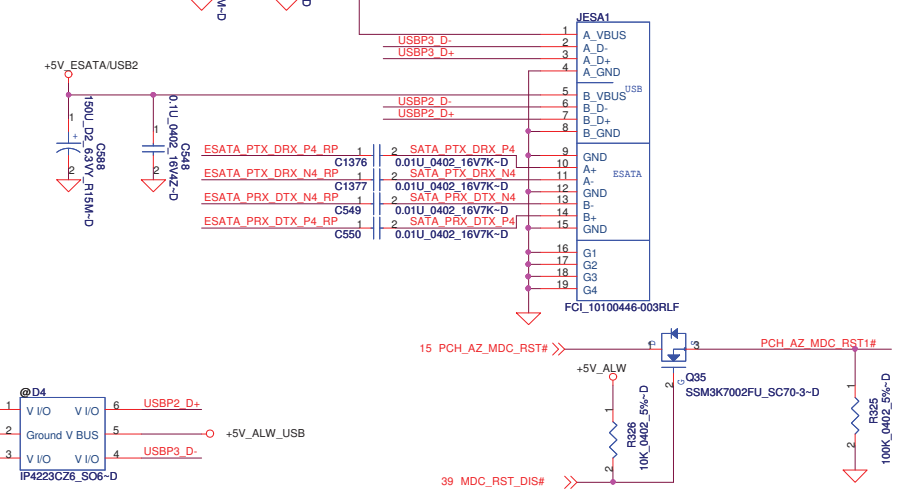
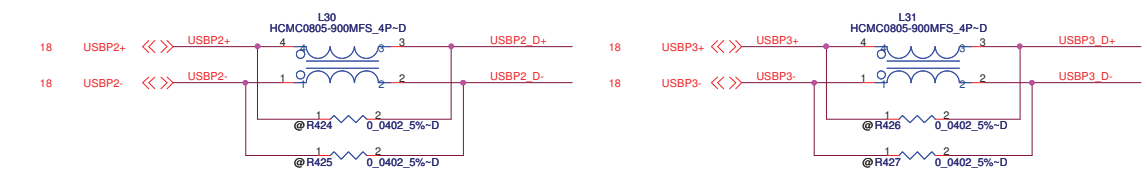
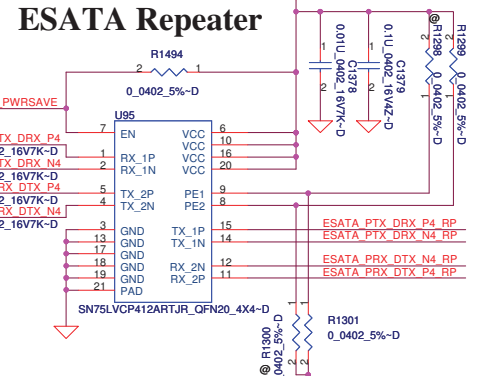
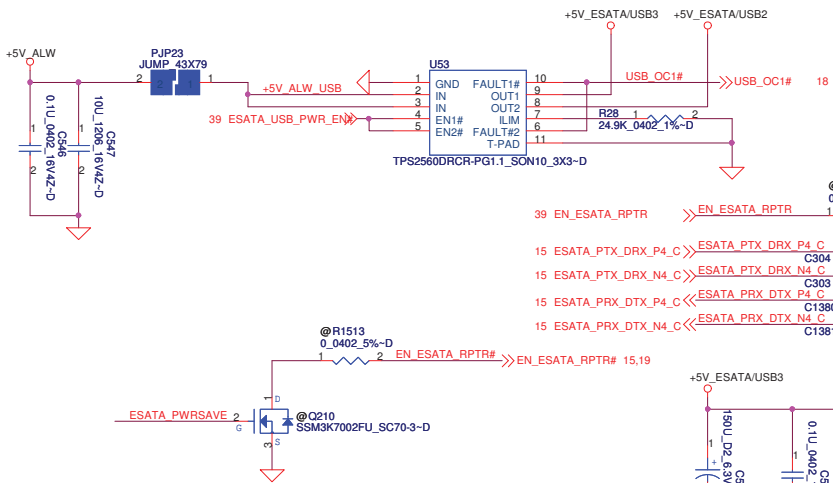
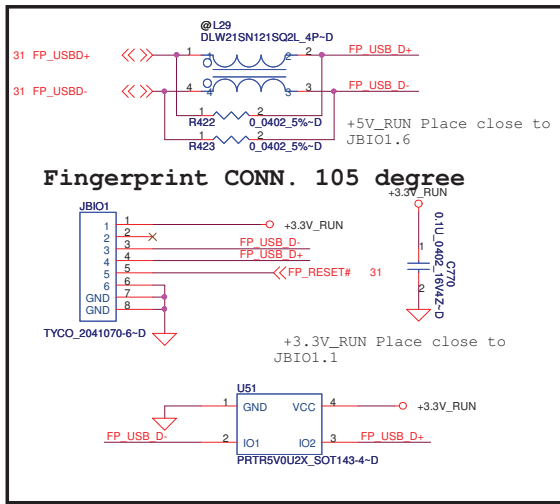
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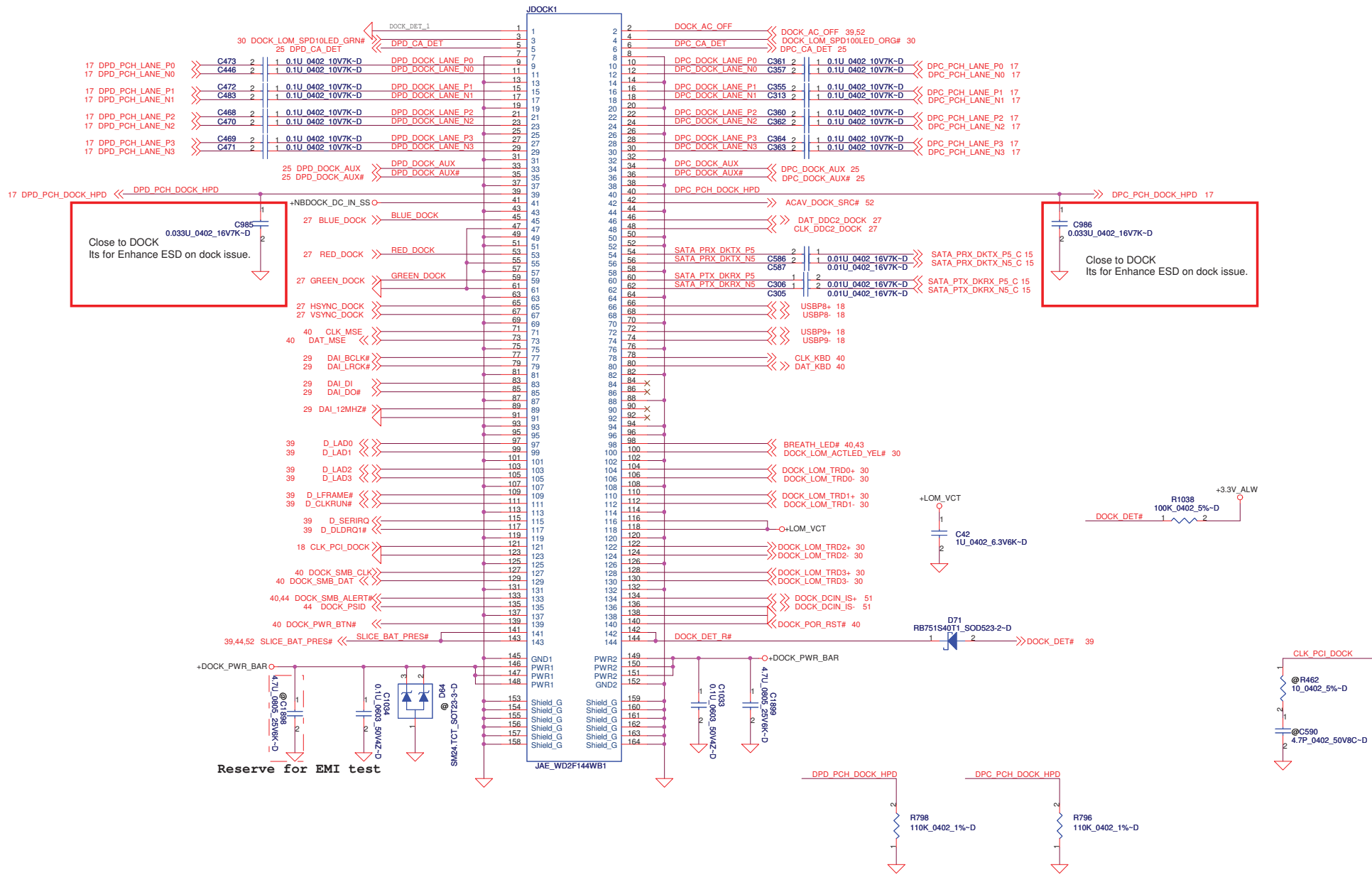
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Mini Card			
Size	Document Number	Rev	
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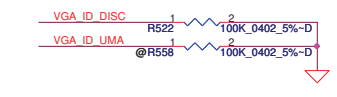
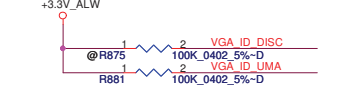
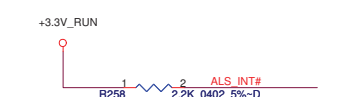
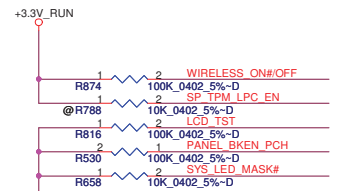
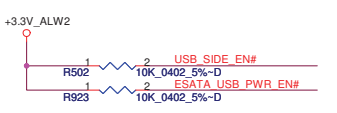
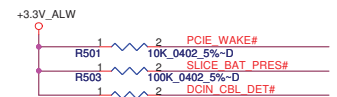
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**Compal Electronics, Inc.**  
**USB 2.0 PORT**

Title: **USB 2.0 PORT**  
 Document Number: **LA-5571P**  
 Date: Thursday, January 21, 2010 Sheet 37 of 60

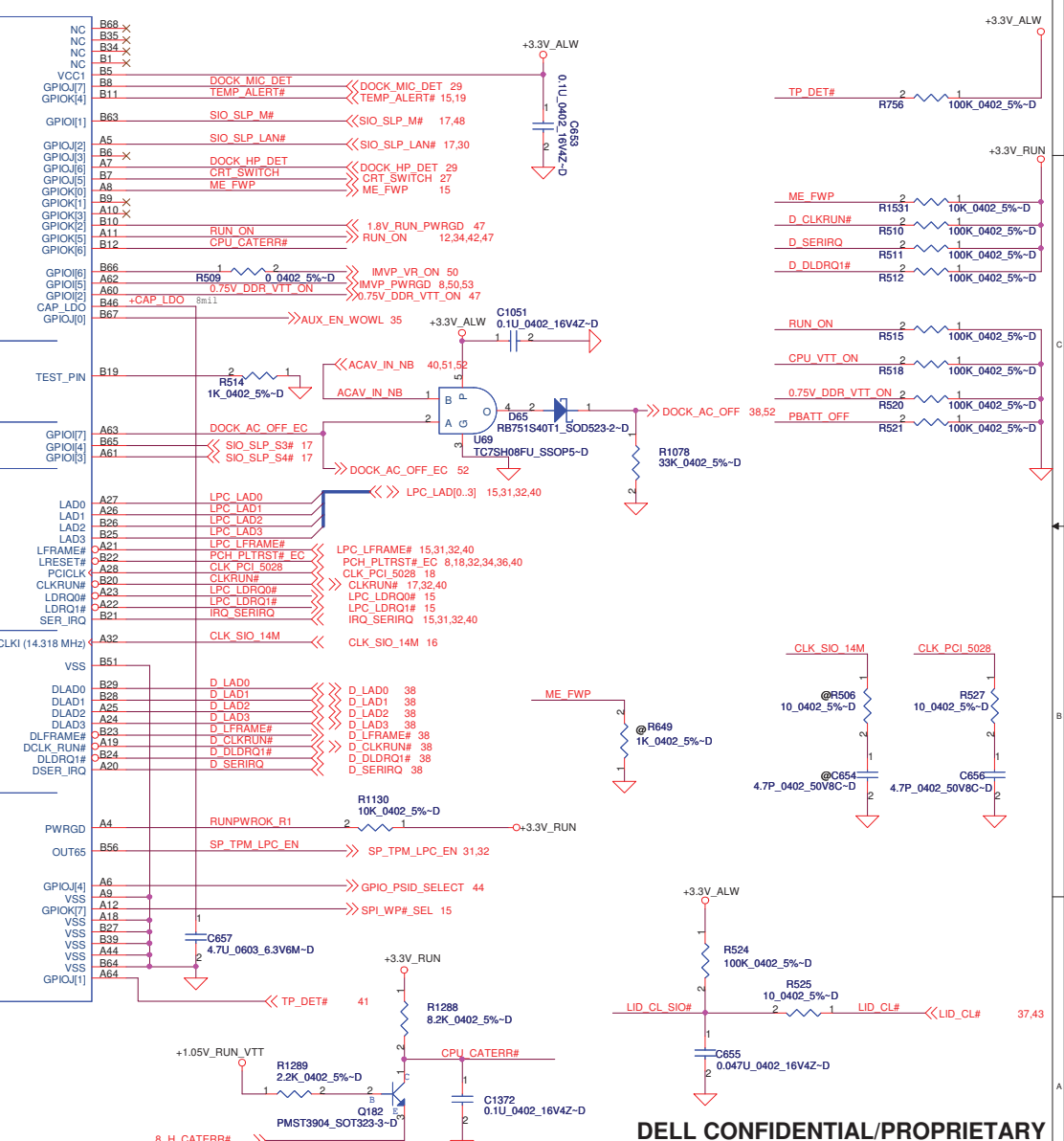
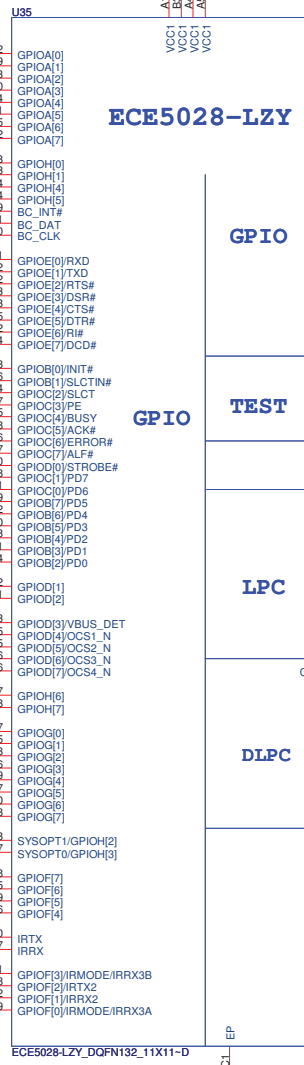
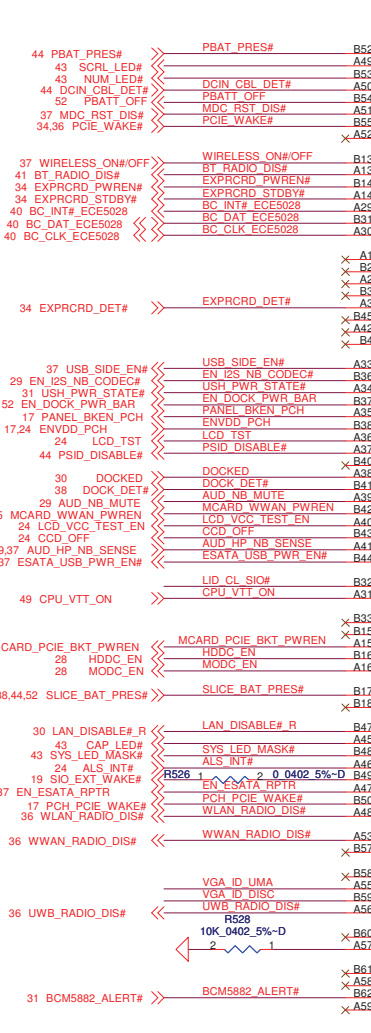


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<b>DOCKING CONN</b>			
<b>LA-5571P</b>			
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	VGA_ID_UMA	VGA_ID_DISC
Discrete	0	1
UMA	1	0
SG	1	1



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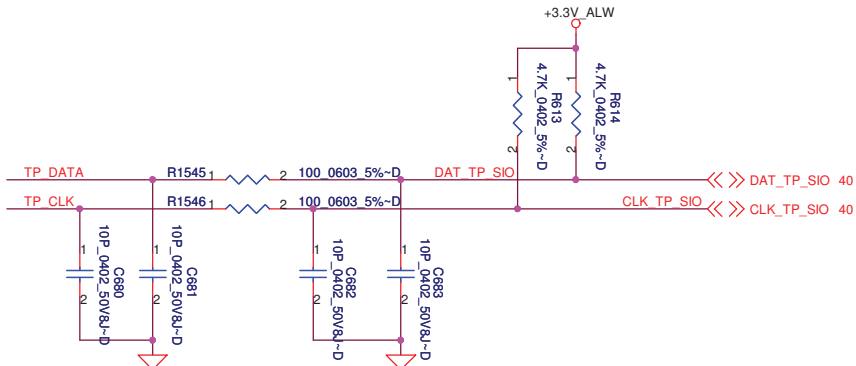


<b>Compal Electronics, Inc.</b>			
<b>ECE5028</b>			
Size	Document Number	Rev	
	<b>LA-5571P</b>	0.1	
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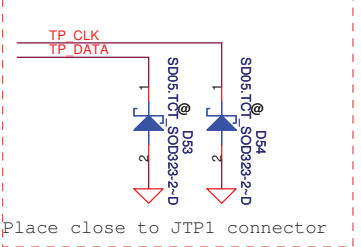
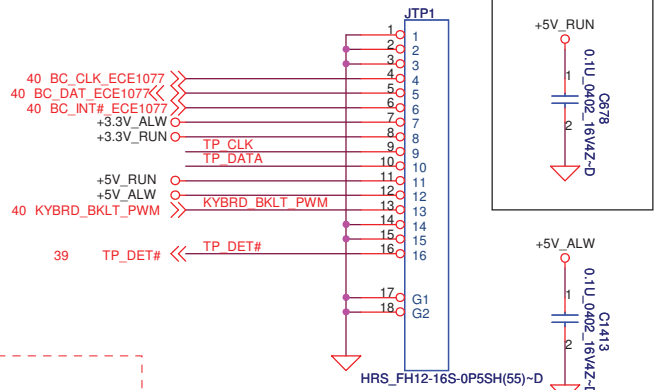
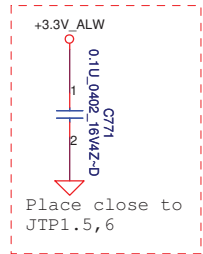




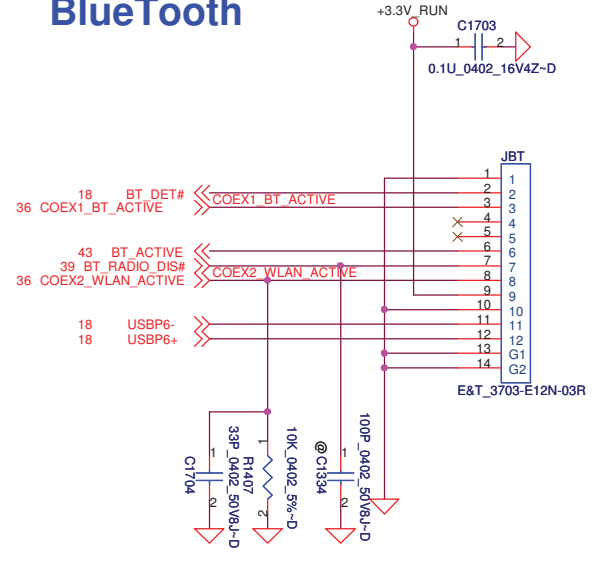
# Touch Pad



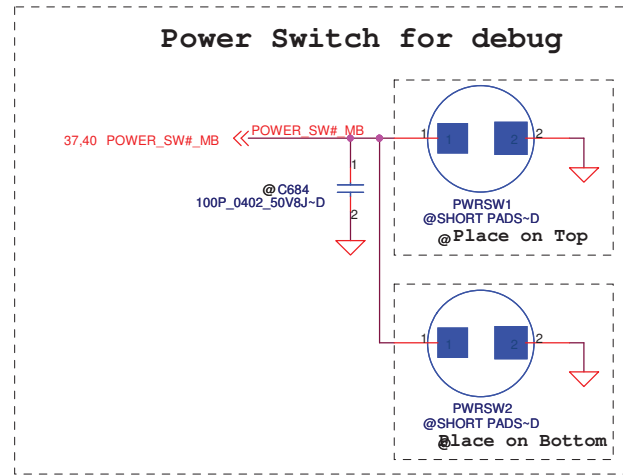
Touch Pad Conn. Pitch=0.5



# 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.

Touch PAD/Int KB/LID

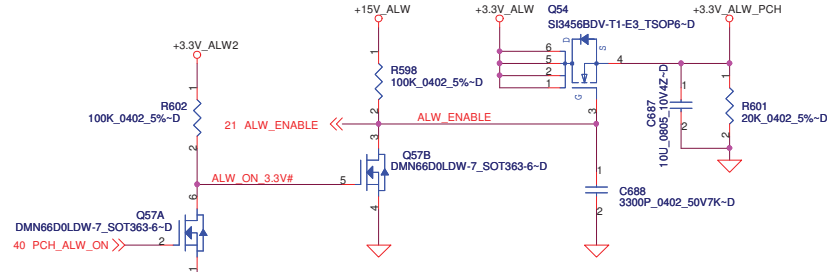
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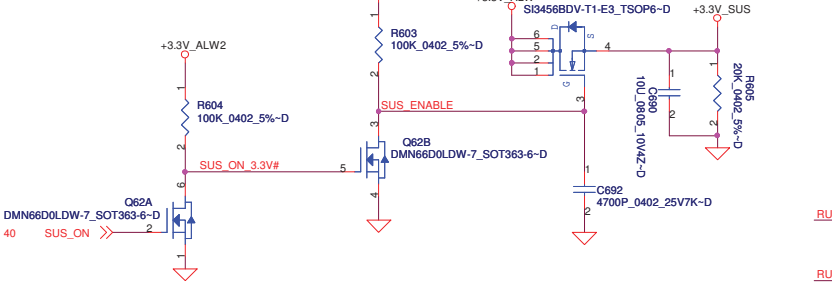


# DC/DC Interface

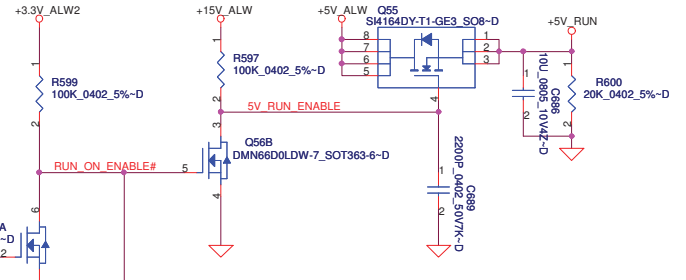
## +3.3V\_ALW\_PCH Source



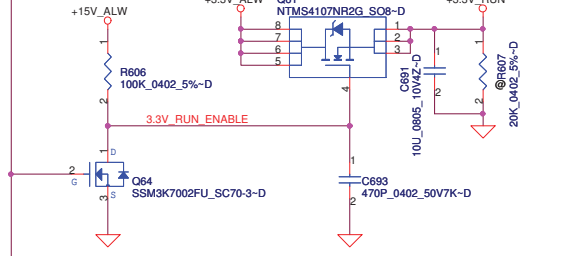
## +3.3V\_SUS Source



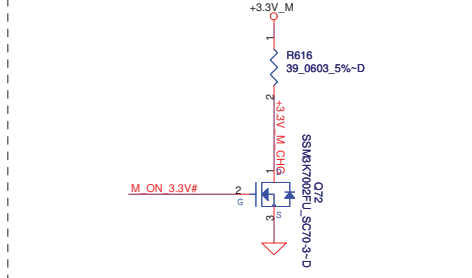
## +5VRUN Source



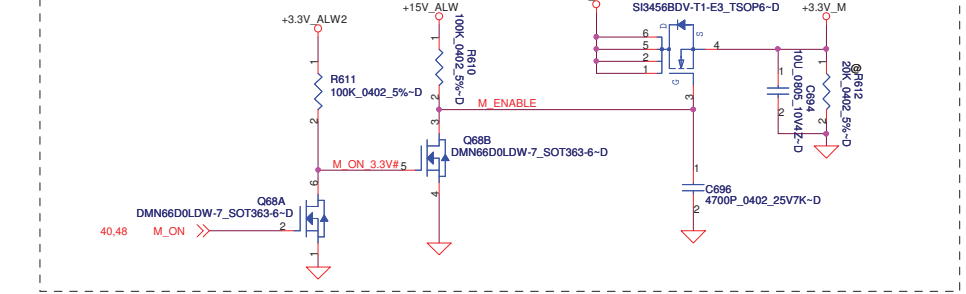
## +3.3V\_RUN Source



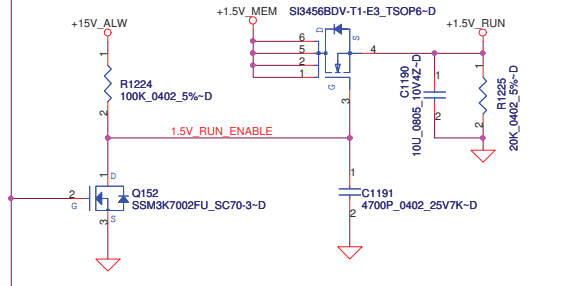
## Discharg Circuit



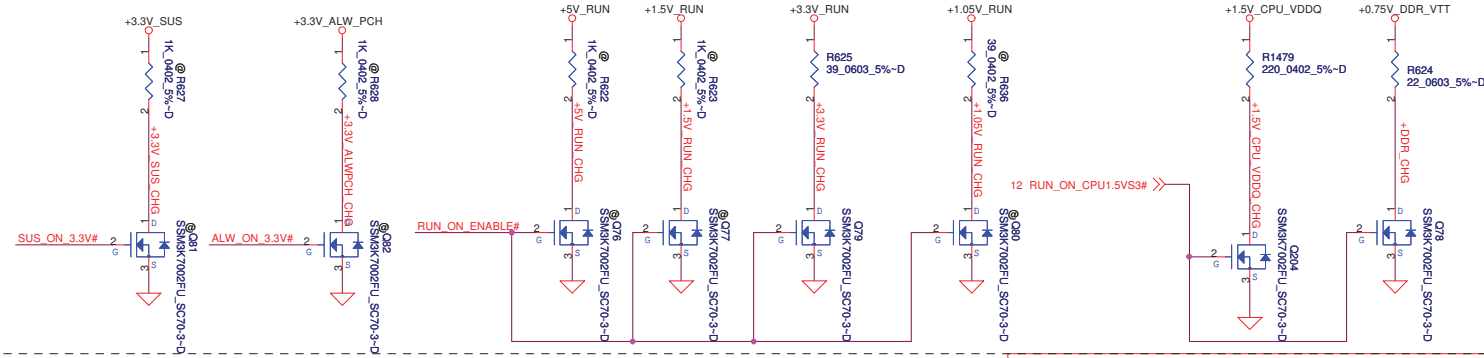
## +3.3VM Source



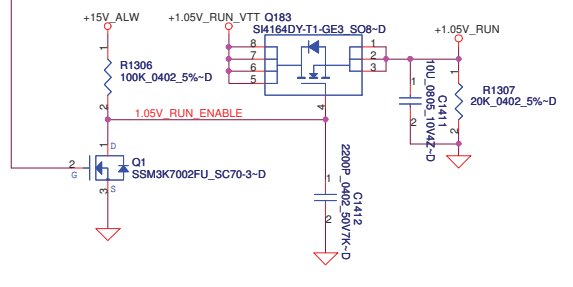
## +1.5V\_RUN Source



## Discharg Circuit

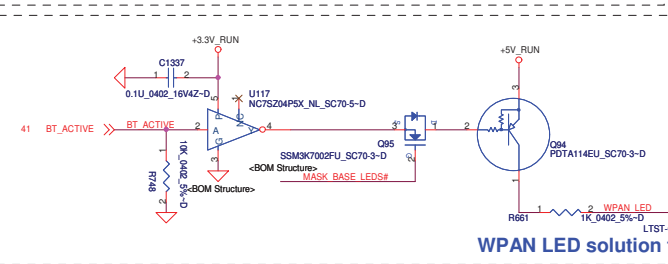
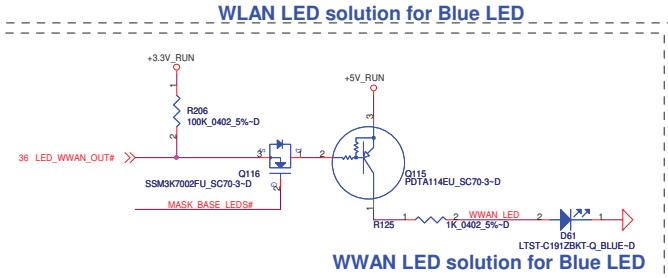
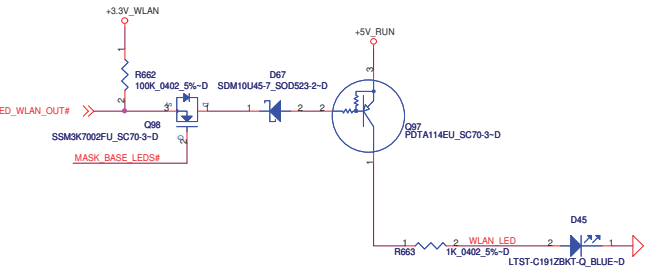
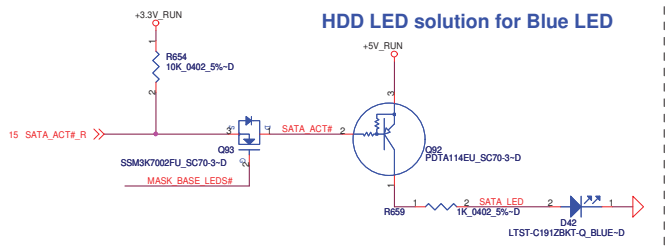


## +1.05V\_RUN Source

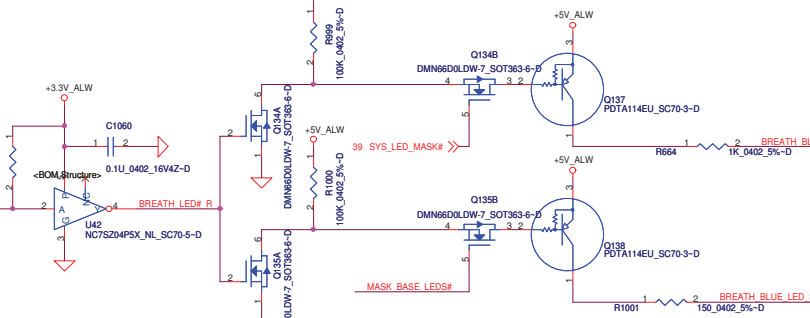
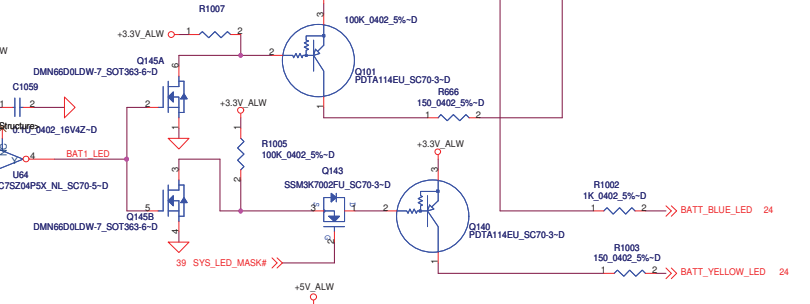
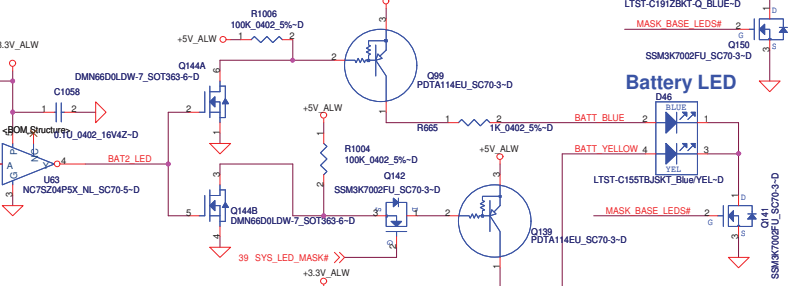
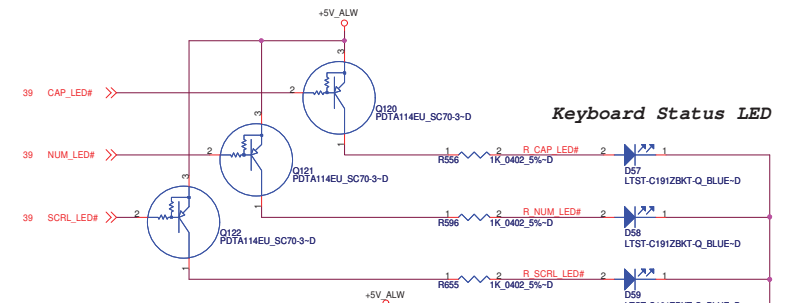
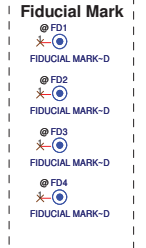
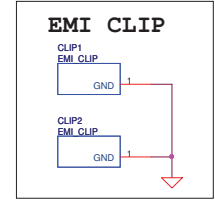
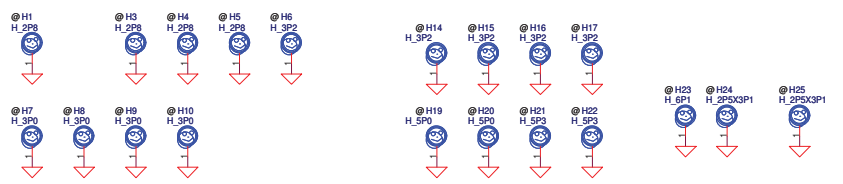
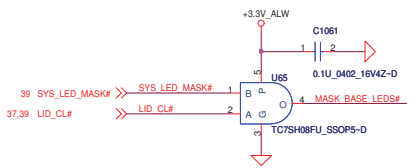


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LED Circuit Control Table		
	SYS_LED_MASK#	LID_CL#
Mask All LEDs (Sniffer Function)	0	X
Mask Base MB LEDs (Lid Closed)	1	0
Do not Mask LEDs (Lid Opened)	1	1



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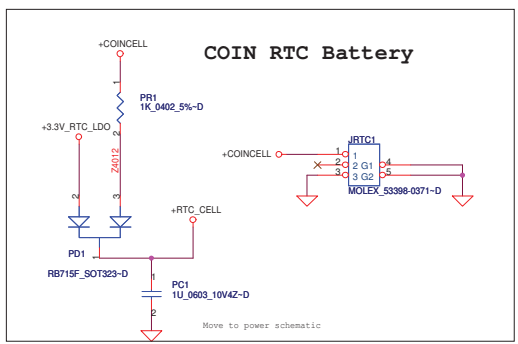
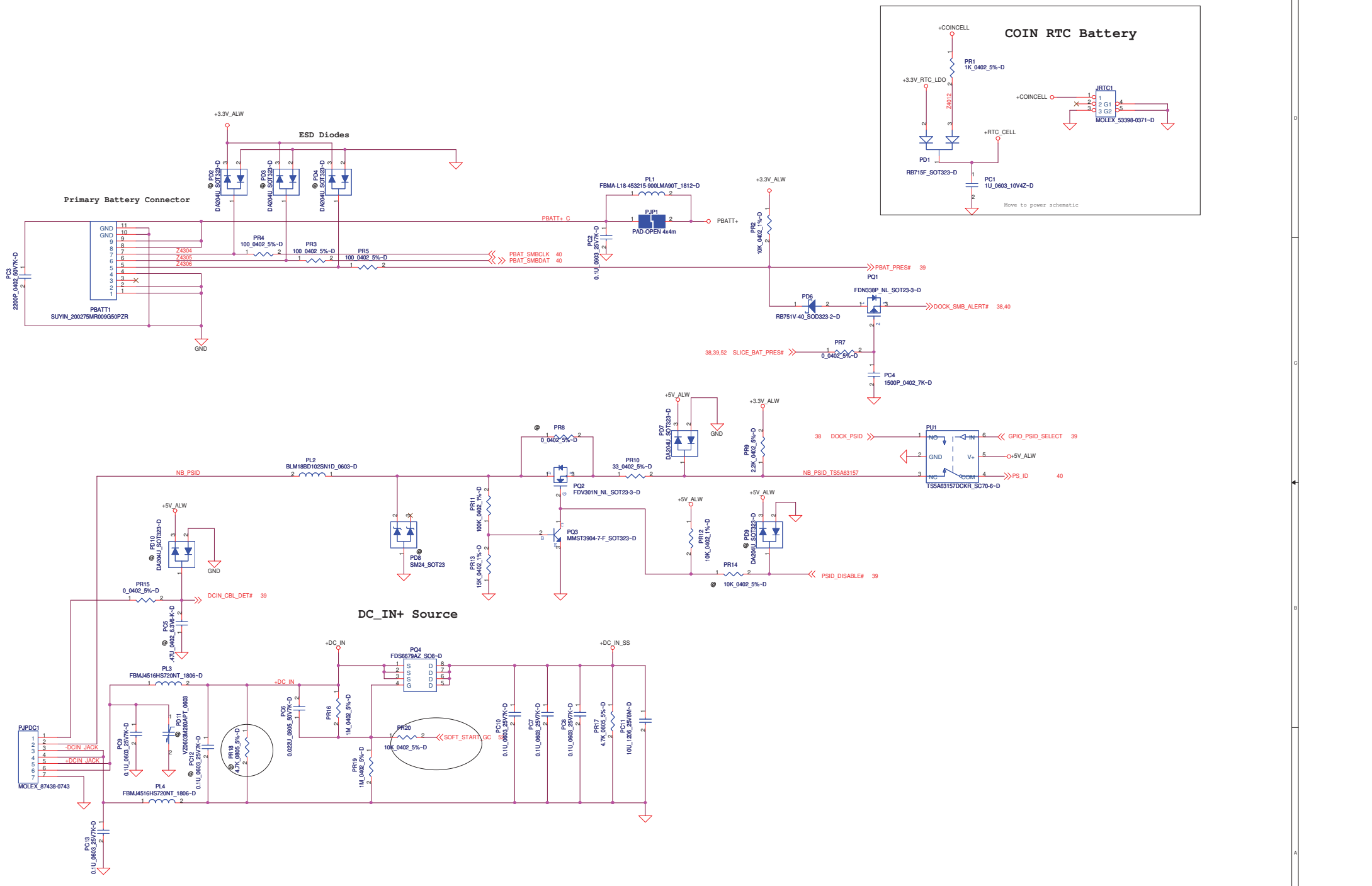
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**PAD and Standoff**

LA-5571P

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		<b>+DCIN</b>	
File	Document Number	LA-5772P	Rev 0.1
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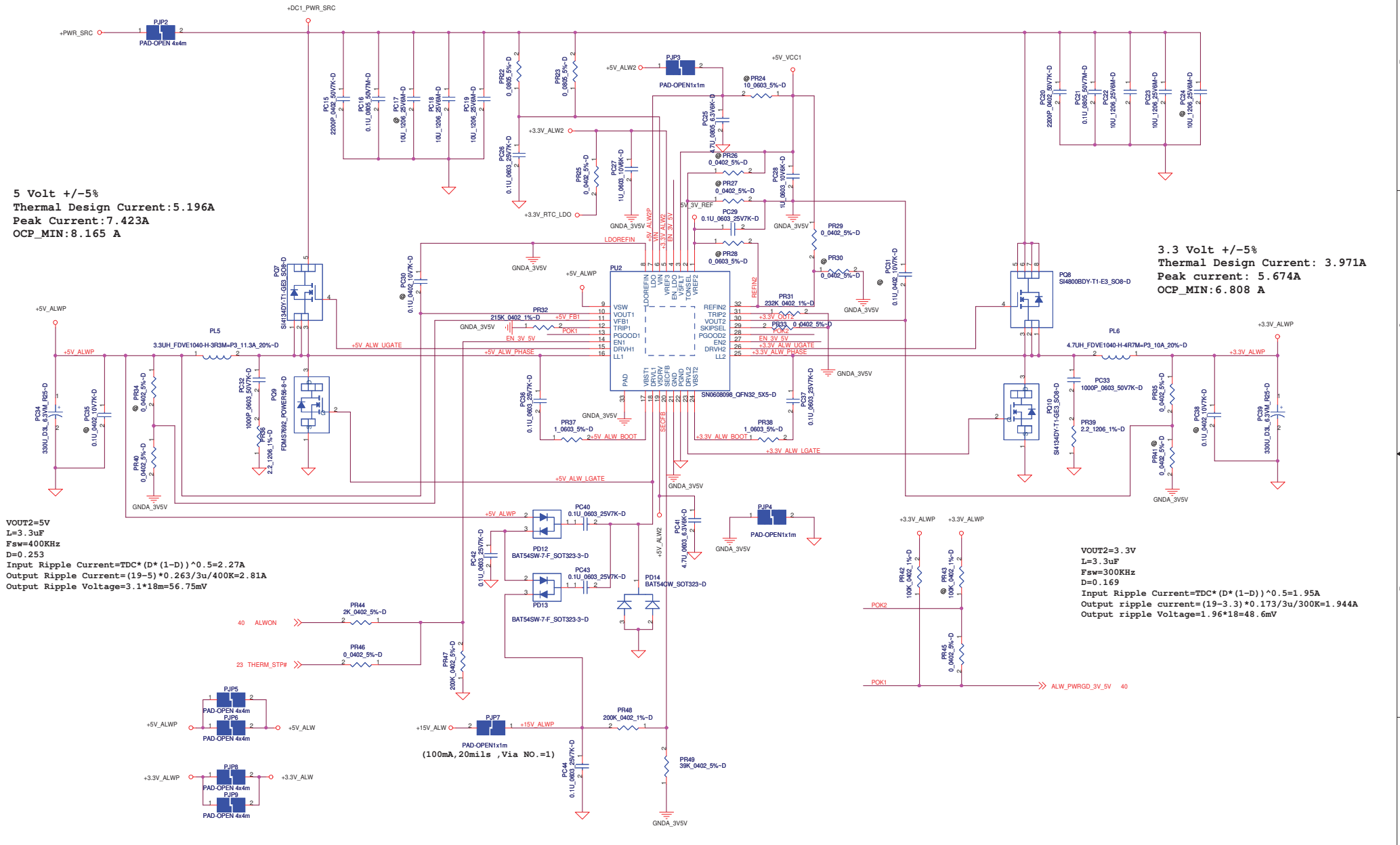
+3.3V\_ALWP / +5V\_ALWP / +5V\_ALW2 / +15V\_ALWP / +3.3V\_RTC\_LDO

5 Volt +/-5%  
 Thermal Design Current: 5.196A  
 Peak Current: 7.423A  
 OCP\_MIN: 8.165 A

3.3 Volt +/-5%  
 Thermal Design Current: 3.971A  
 Peak current: 5.674A  
 OCP\_MIN: 6.808 A

VOUT2=5V  
 L=3.3uF  
 Fsw=400KHz  
 D=0.253  
 Input Ripple Current=TDC\*(D\*(1-D))^0.5=2.27A  
 Output Ripple Current=(19-5)\*0.263/3u/400K=2.81A  
 Output Ripple Voltage=3.1\*18=56.75mV

VOUT2=3.3V  
 L=3.3uF  
 Fsw=300KHz  
 D=0.169  
 Input Ripple Current=TDC\*(D\*(1-D))^0.5=1.95A  
 Output ripple current=(19-3.3)\*0.173/3u/300K=1.944A  
 Output ripple Voltage=1.96\*18=48.6mV



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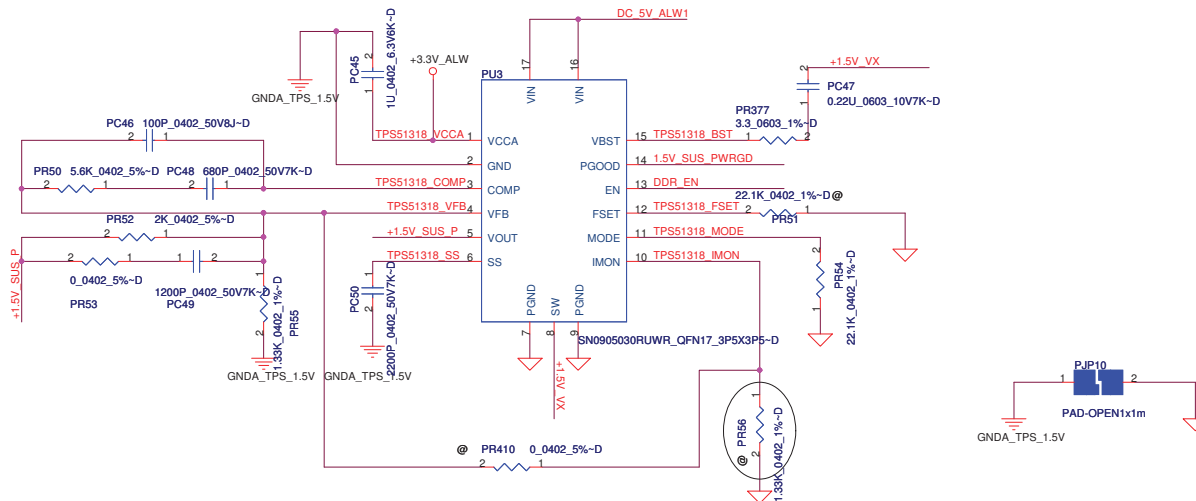
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Title		DC/DC +3V/ +5V	
Size	Document Number	LA-5772P	
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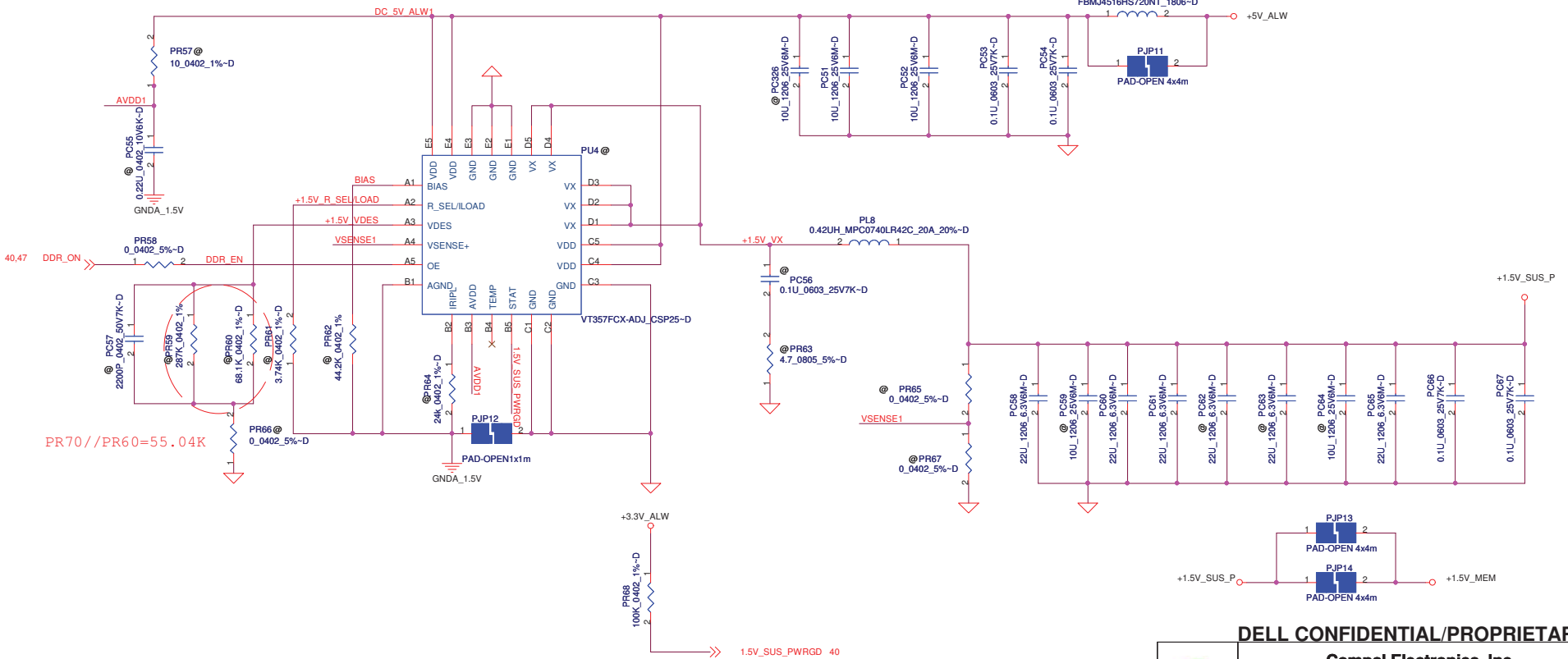
Rev 0.1

**+1.5V\_SUS\_P (TPS51318)**



1.5 Volt +/-5%  
 Thermal Design Current: 7.876A  
 Peak current: 11.251A  
 OCP\_MIN:12.376A

**+1.5V\_SUS\_P (VT356)**

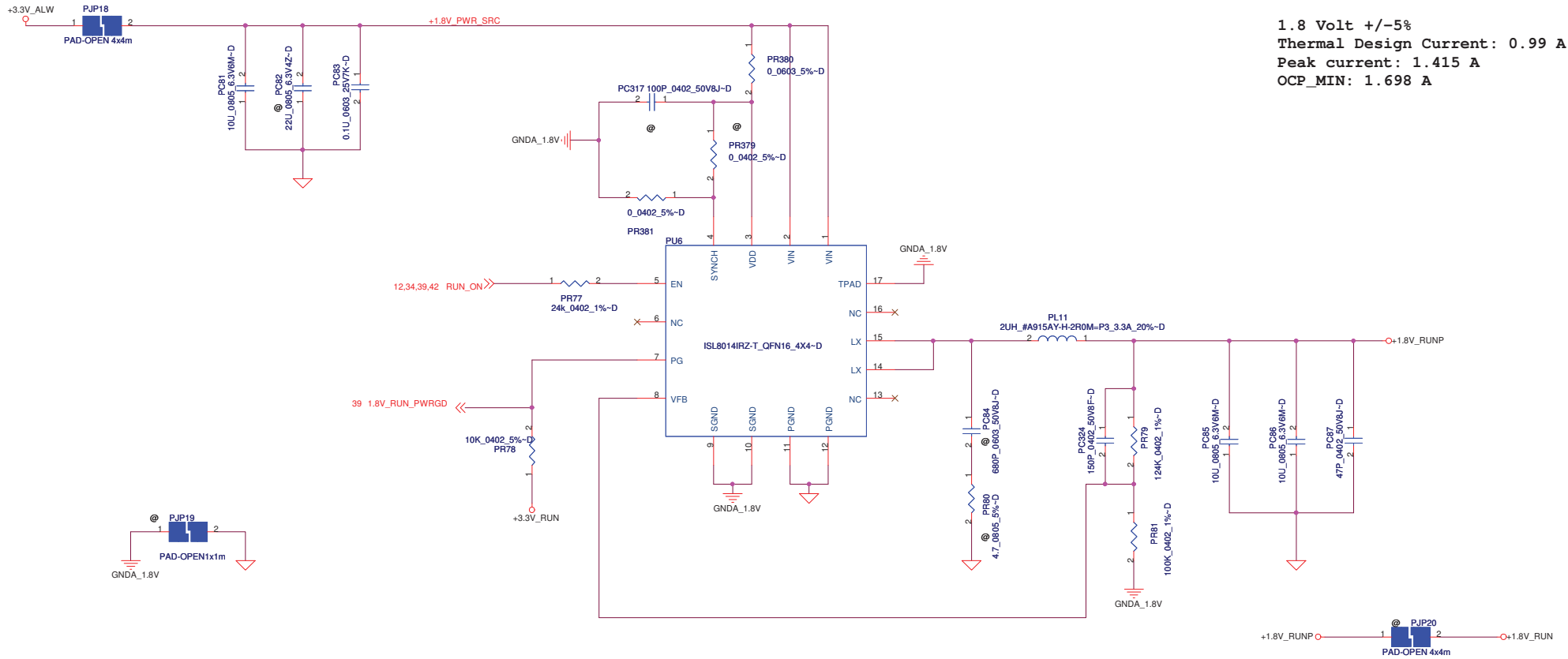


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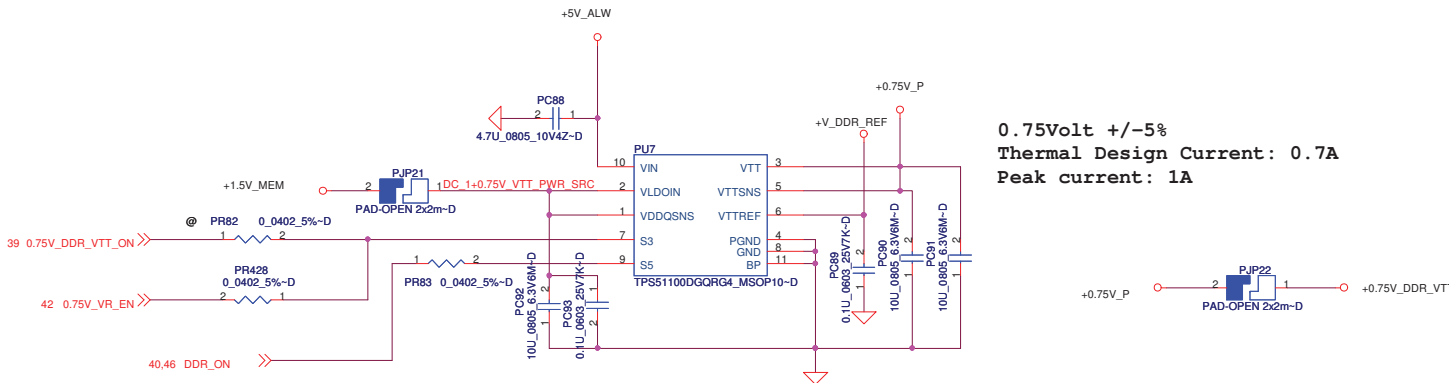
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 Compal Electronics, Inc.  
 Title: **+1.5V MEM**  
 Size: Document Number **LA-5772P** Rev 0.1  
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### +1.8V\_RUNP



1.8 Volt +/-5%  
 Thermal Design Current: 0.99 A  
 Peak current: 1.415 A  
 OCP\_MIN: 1.698 A

### +0.75V\_DDR\_VTT DDR3 Termination



0.75Volt +/-5%  
 Thermal Design Current: 0.7A  
 Peak current: 1A

VOUT=1.8V  
 L=3.3uF  
 Fsw=290KHz  
 D=0.092  
 Input Ripple Current=TDC\*(D\*(1-D))^0.5=0.884A  
 Output Ripple Current=1.707A  
 Output Ripple Voltage=1.707\*15m=20.5mV

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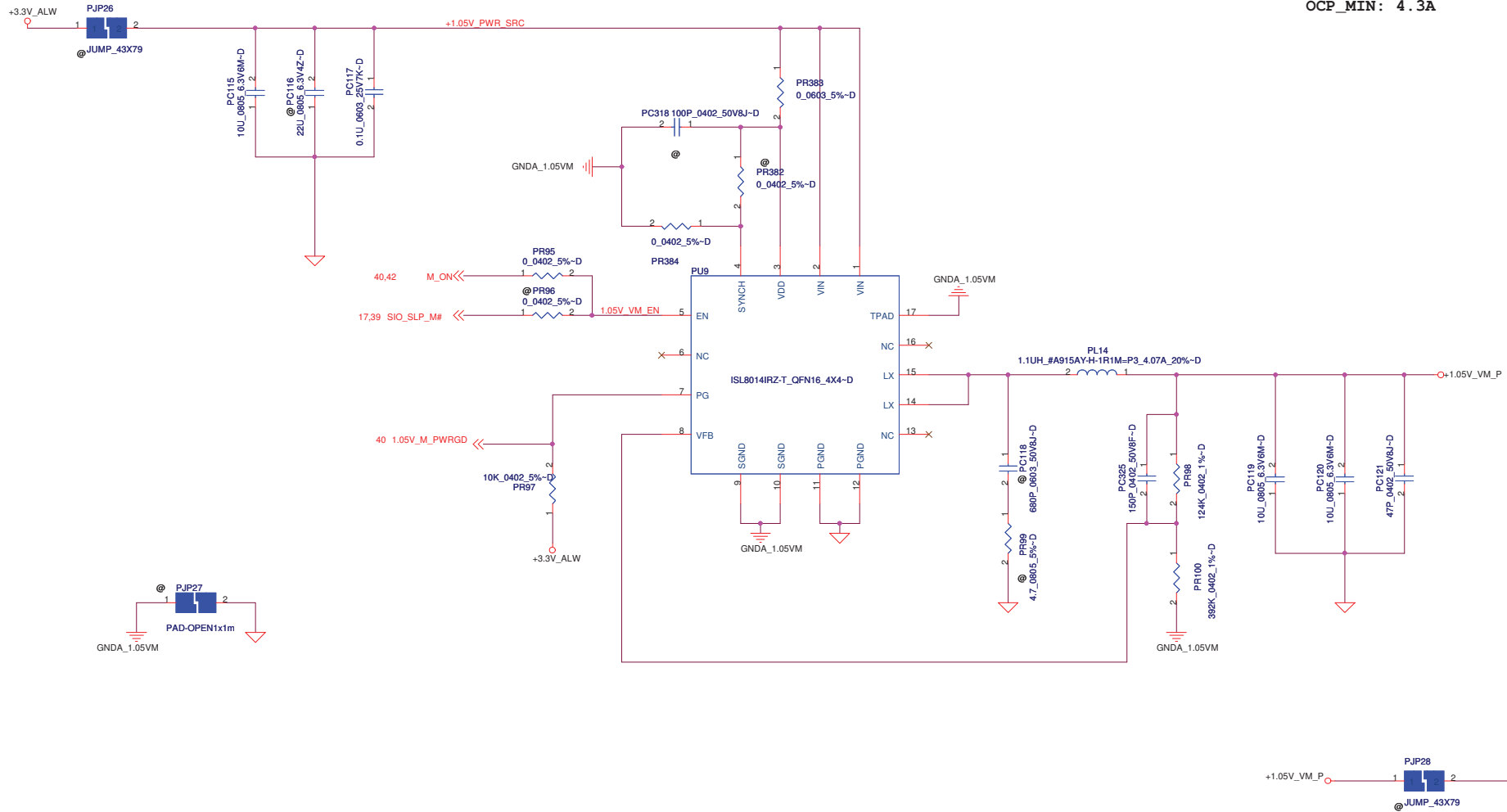
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Compal Electronics, Inc.			
Title <b>+0.75V DDR VT/+1.8V RUN</b>			
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# +1.05V\_M\_P

1.05 Volt +/-5%  
 Thermal Design Current: 1.518A  
 Peak current: 2.169A  
 OCP\_MIN: 4.3A



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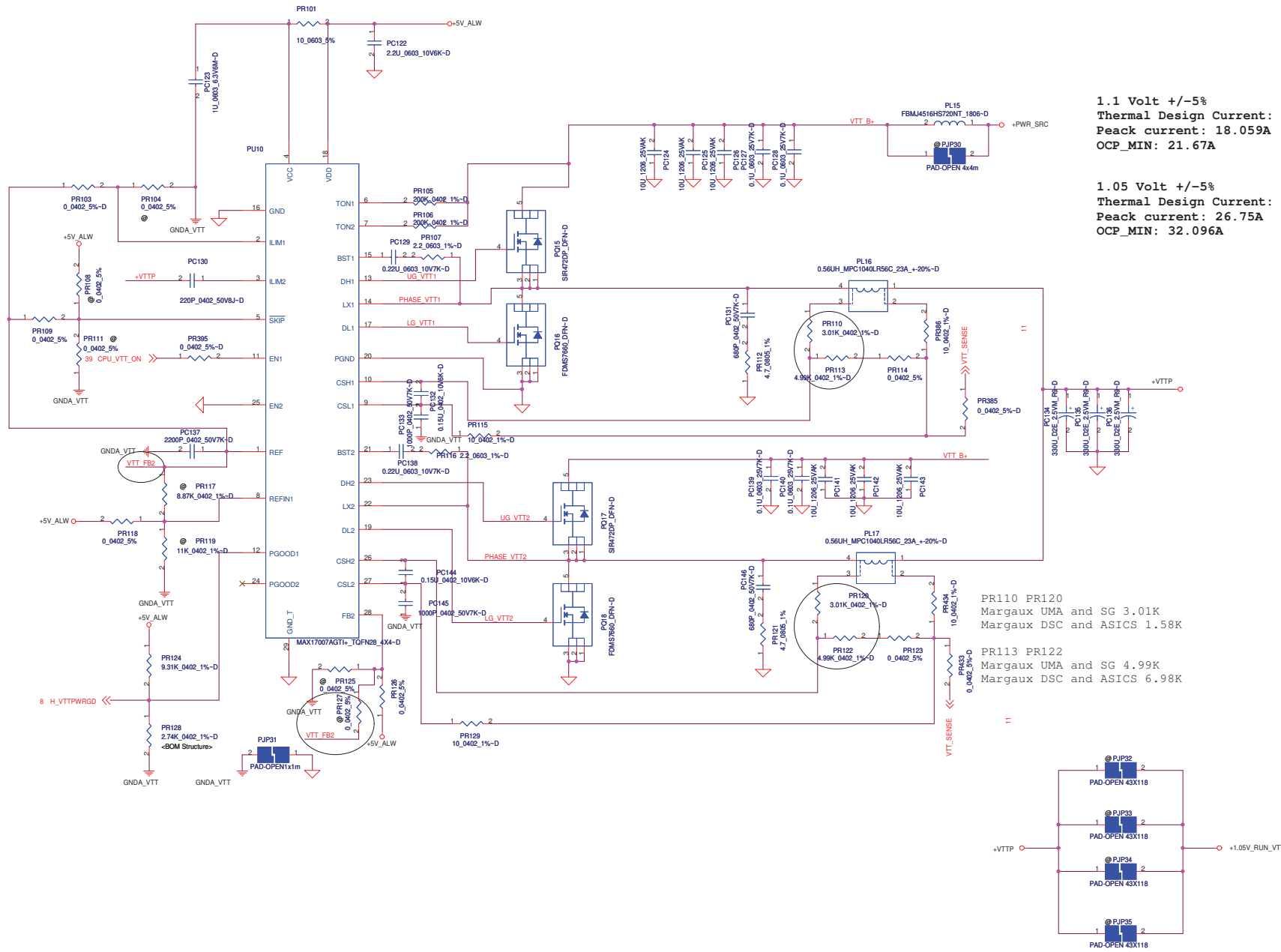
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Title: **+1.05VM**

Size: Document Number **LA-5772P** Rev: **0.1**

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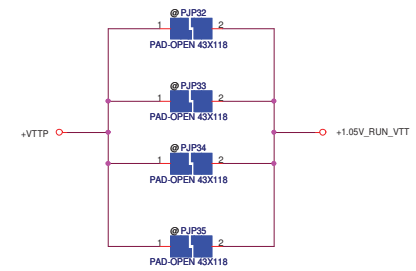


1.1 Volt +/-5%  
 Thermal Design Current: 12.641A  
 Peak current: 18.059A  
 OCP\_MIN: 21.67A

1.05 Volt +/-5%  
 Thermal Design Current: 18.72A  
 Peak current: 26.75A  
 OCP\_MIN: 32.096A

PR110 PR120  
 Margaux UMA and SG 3.01K  
 Margaux DSC and ASICS 1.58K

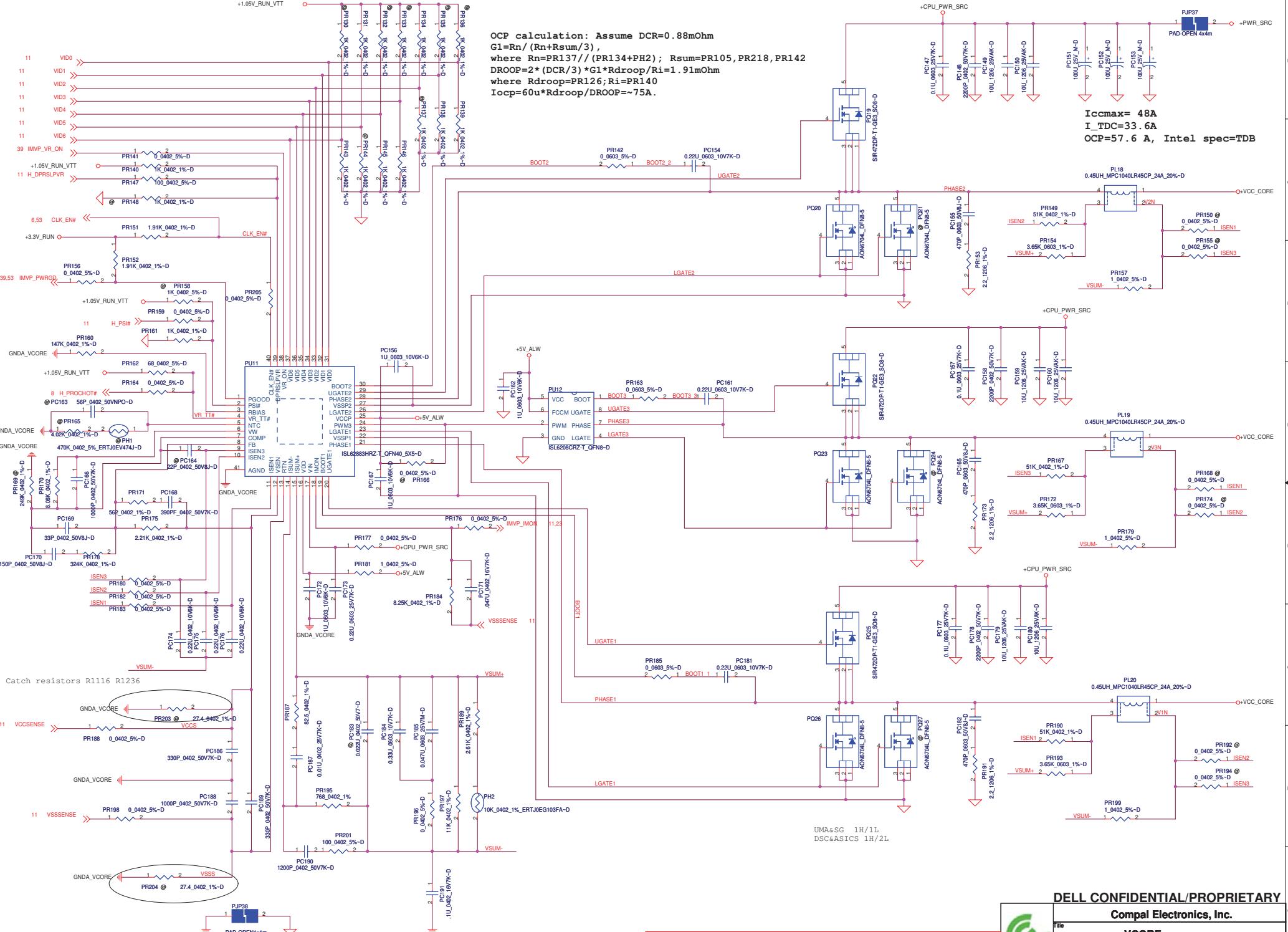
PR113 PR122  
 Margaux UMA and SG 4.99K  
 Margaux DSC and ASICS 6.98K



Title		
<Title>		
Size	Document Number	Rev
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OCP calculation: Assume DCR=0.88mohm  
 $G1=Rn/(Rn+Rsum/3)$ ,  
 where  $Rn=PR137//((PR134+PH2)$ ;  $Rsum=PR105, PR218, PR142$   
 $DROOP=2*(DCR/3)*G1*Rdroop/Ri=1.91mOhm$   
 where  $Rdroop=PR126$ ;  $Ri=PR140$   
 $Iocp=60u*Rdroop/DROOP\sim 75A$ .

$I_{ccmax} = 48A$   
 $I_{TDC} = 33.6A$   
 $OCP = 57.6 A$ , Intel spec=TDB



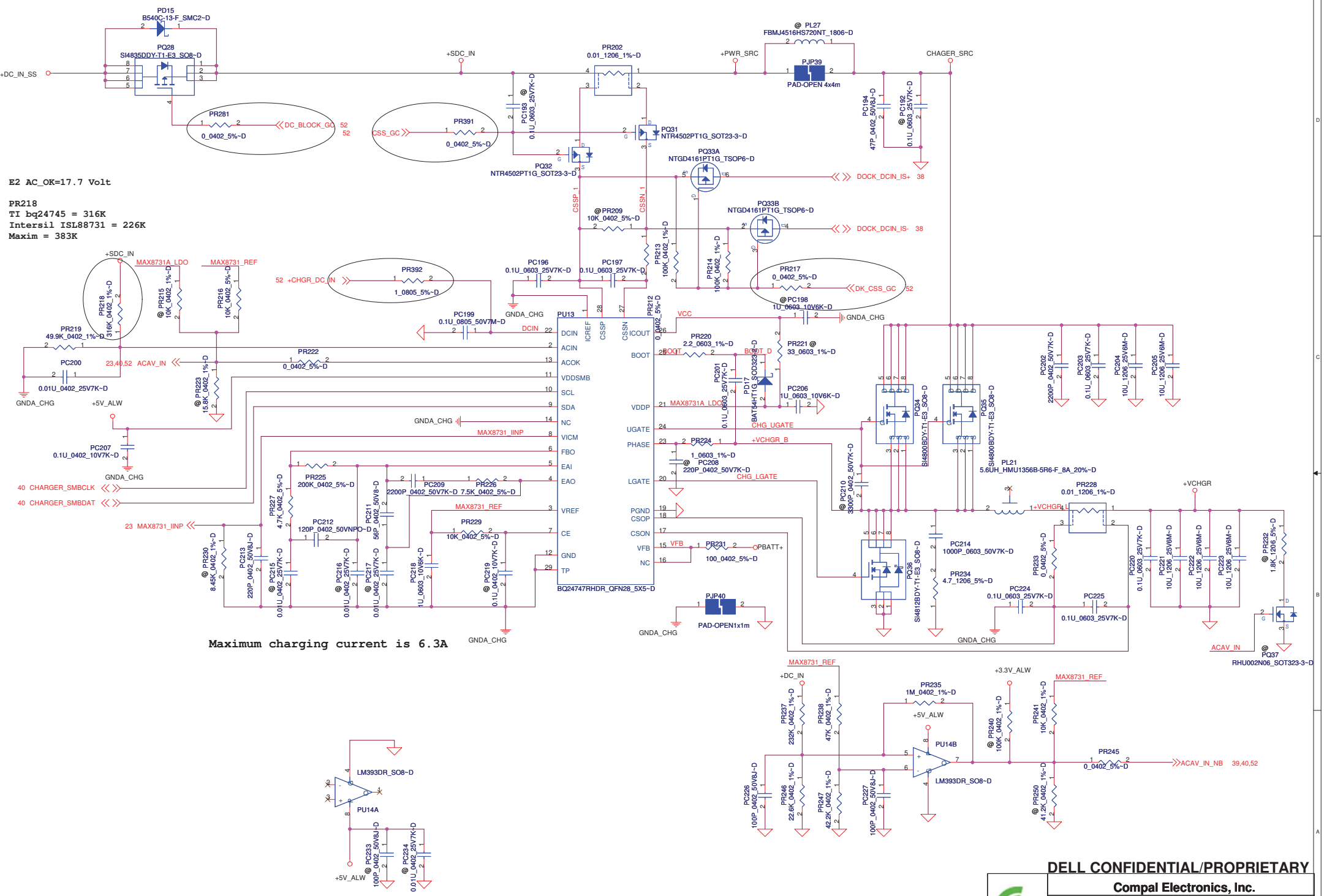
Catch resistors R1116 R1236

UMA&SG 1H/1L  
 DSC&ASICS 1H/2L

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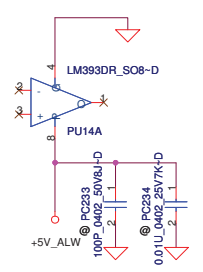
<b>Compal Electronics, Inc.</b>			
<b>+VCORE</b>			
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E2 AC\_OK=17.7 Volt  
 PR218  
 TI bq24745 = 316K  
 Intersil ISL88731 = 226K  
 Maxim = 383K

Maximum charging current is 6.3A



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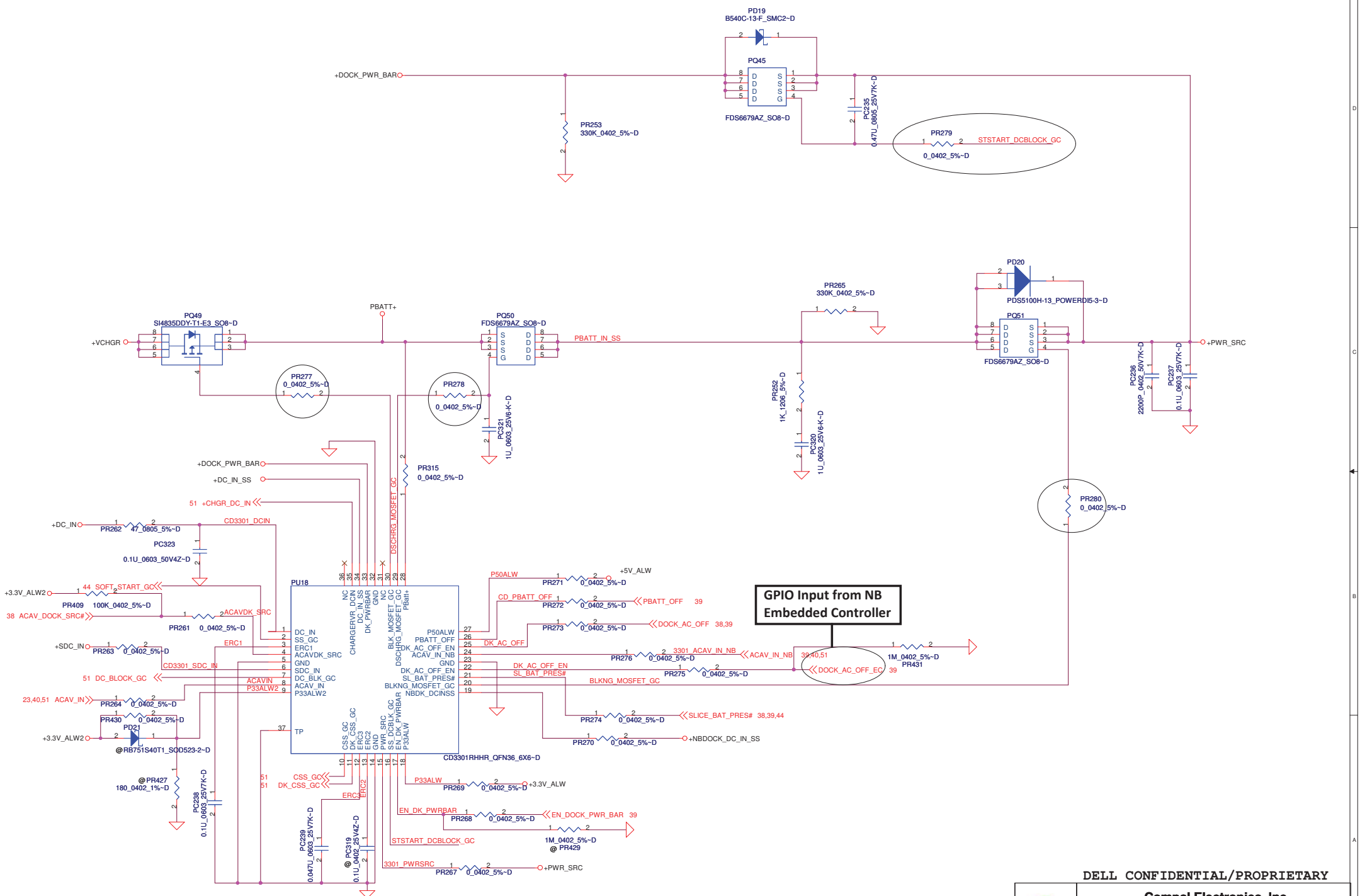
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Charger

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**GPIO Input from NB Embedded Controller**

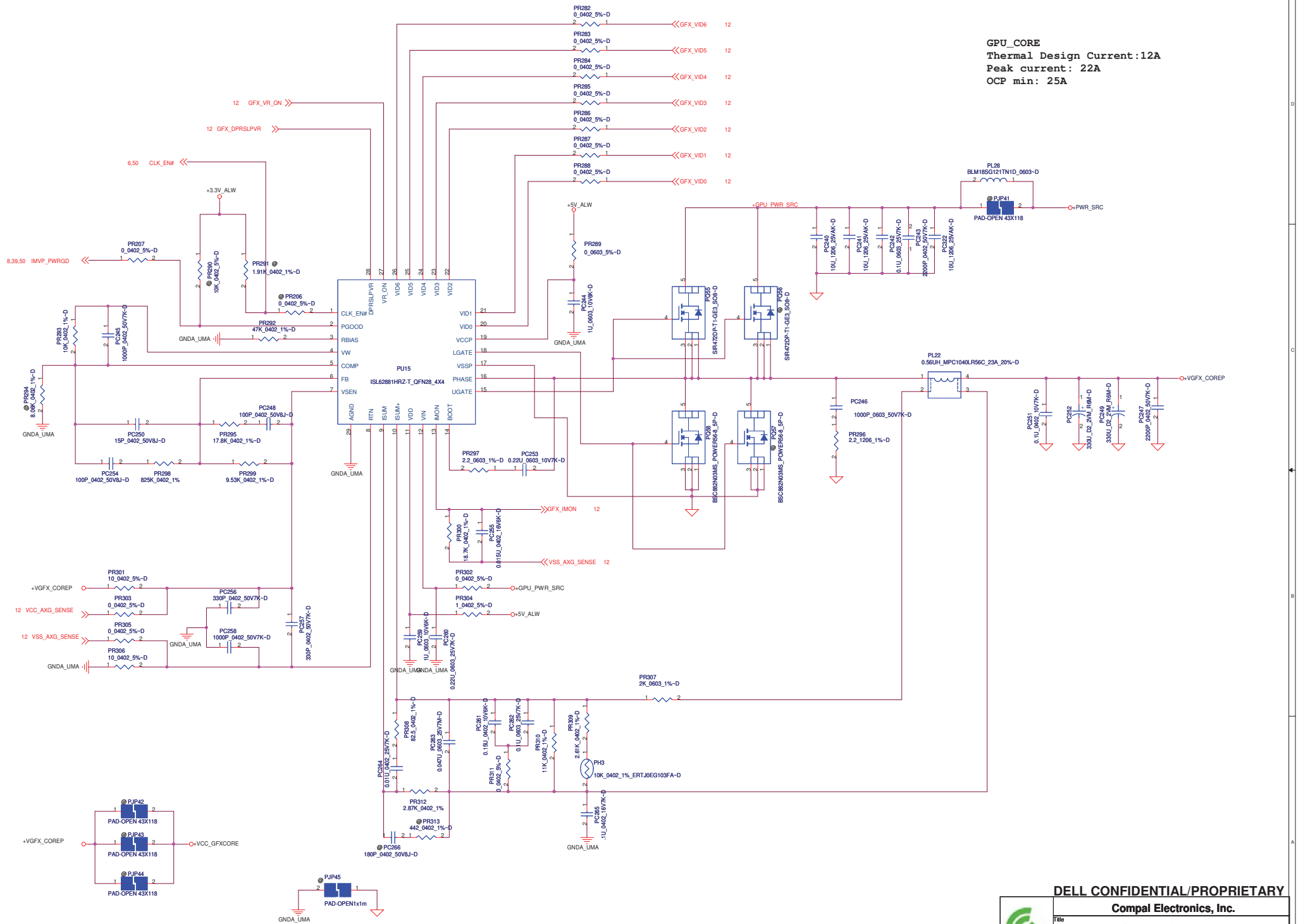
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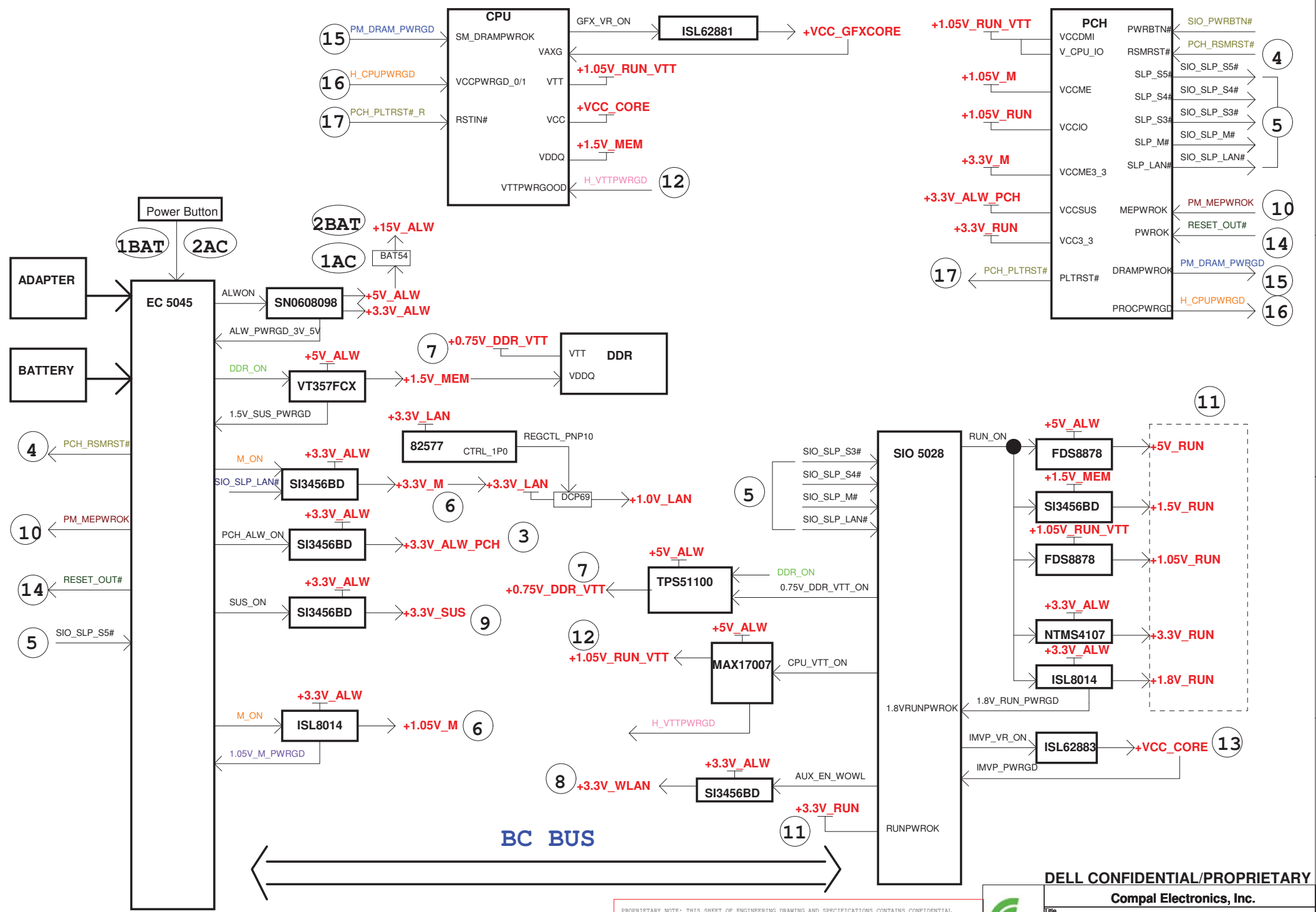
GPU\_CORE  
 Thermal Design Current: 12A  
 Peak current: 22A  
 OCP min: 25A

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**Power Sequence**

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Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	21	HW	5/19/2009	Intel	Remove R689	R689 is only required is power measurements are planned	X01
2	28	HW	5/19/2009	DELL	Remove AGND	Remove the AGND plane and leave everything as DGND. After discussing with IDT there is no value having AGND plane if there is no AGND plane on the IO board and all along the analog signal path.	X01
3	40	HW	5/19/2009	COMPAL	Board ID	R98 change to 130k ohm	X01
4	31	HW	5/21/2009	DELL	5882 support M25 ROM part	Add U19	X01
5	15	HW	5/27/2009	Intel	ES2 deos not need PU/PD for TRST#	Remove R808 & R1316, add test point	X01
6	31	HW	6/01/2009	Broadcom	Reserve SC_TEST & SCC_CMDVCC_N pad	Add @R775 & R776	X01
7	40	HW	6/02/2009	DELL	to prefent Q18 to glitch	Add R595 100K PD at EN_INVNWR	X01
8	34	HW	6/02/2009	DELL	for U52-STBY to both EXPRCRD_STBY# (Depop 0ohm res) and RUN_ON (Pop 0ohm res) for U52-CPPE to both EXPRCRD_PWREN# (Depop 0ohm res) and Card JEXP1 CPPE# pin 17	Add R684, @R687, depop R683	X01
9	15	HW	6/03/2009	Intel	Follow DPDG & ES2 request	R804 change from 47k to 51 ohm, pop R806 & R1315	X01
10	23	HW	6/03/2009	DELL	Fan solution change to M09 design	POP R507, R516, R519, R529, depop R531, R534, R535, D94-D96	X01
11	23	HW	7/01/2009	SMSC	Fan solution change by SMSC request	Change R1463 from 0.56 to 0.27	X01
12	42	HW	7/01/2009	COMPAL	Cost concern & Rdson concern by ADC	Change Q61 to A04456 & Q55/Q183 to SI4164	X01
13	43	HW	7/01/2009	COMPAL	for derating concern	Change R1001 from 82 to 150 ohm	X01
14	8	HW	7/01/2009	Intel	Follow CRB by Intel request	R1286 needs to change to 0-ohm	X01
15	40	HW	7/01/2009	COMPAL	Board ID	Change R98 to 62K ohm.	X02
16	8, 12, 13, 42	HW	7/13/2009	Intel	Intel S3 reduction circuit.	Add R1469, R1471-R1474, R1476, R1479-R1484, R1487, C1872-C1879, Q199-Q201, Q204-Q207, U141, PJP57, PJP58, PR428, change R624 to 22 ohm, R879 to 1.5K, R880 to 750, pop Q78, add net DDR_HVREF_RST_GATE from U36.A34, CPU1.5V_S3_GATE from U36.A36, change CPU VDDQ net name to +1.5V_CPU_VDDQ connect RUN_ON_CPU1.5VS3# to Q78.2 Q204.2,	X02
17	30	HW	7/13/2009	COMPAL	+3.3V_LAN enable control follow M09	De-pop R47	X02
18	8, 15	HW	7/14/2009	COMPAL	Depop all related components where are located at 0 Z-hight area	Depop JXDP1, JXDP2, JDEG1, JP2 circuit	X02
19	21	HW	7/14/2009	Intel	Add filter for PCH VCCADPLLA/B	Add L97, L98, R1488, C1880-C1883, Remove C105, C106	X02
20	19	HW	7/14/2009	Intel	GPI01, 6, 7 PU if not being used	Add R1489-R1491	X02
21	24	HW	7/14/2009	COMPAL	Camera need to be changed from 7 to 8 pin	Change JEDP1 pin definition	X02
22	37	HW	7/16/2009	COMPAL	JTP1, JBIO1 power gnd pins redefined	Change JTP1, JBIO1 pin definition	X02
23	37, 40	HW	7/16/2009	SMSC	LAT_ON_SW# needs to be added a luF cap	Add @C1884, C1885, R1492, change R560 to 100K, JIO.32 change to LAT_ON_SW_BTN#	X02
24	23	HW	7/16/2009	SMSC	R594 has to be a group with R3P circuit	De-pop R594 for M09 fan solution	X02
25	23	HW	7/16/2009	SMSC	Request by SMSC R3P	Remove D94-D96	X02
26	31	HW	7/17/2009	Braodcom	Found both PD R898 and PU R485 pop	depopulate R898 for normal operation	X02
27	31	HW	7/17/2009	Braodcom	RFID disable circuit remove	Remove R1062-R1065	X02
28	16	HW	7/17/2009	Intel	Intel requires the use of the 25Mhz crystal on UMA and SG platforms	Populate Y6, C1168(18pF), R379, R685, R381 change to C1169(18pF).	X02
29	31	HW	7/17/2009	Braodcom	+SC_VCC Capacitor (C718) Value Change	Broadcom has recommneded changing the value of C718 from .47uF to 220nF	X02
30	42	HW	7/17/2009	COMPAL	Backdrive EA Failure on Margaux/ASICS	Pop R625 and Q79	X02
31	24	HW	7/17/2009	DELL	eDP repeater change to SN75DP119.	update U46 circuit for eDP repeater	X02
32	29	HW	7/17/2009	COMPAL	EMI solution	C676 to 150pF and R1295 to L4 (220 ohm), R1217 change to 47 ohm, pop C673 & R588	X02
33	23	HW	7/17/2009	COMPAL	R3P circuit by SMSC request	R536 depop for 3P FAN, R1457 change to 0 ohm, R138 change to 27K ohm	X02
34	36, 39	HW	7/22/2009	DELL	Reconnect the signal UWB_RADIO_DIS#	connect UWB_RADIO_DIS# from EC5028.A56 to MINI3.20	X02
35	23	HW	7/22/2009	DELL	Change FAN solution to M09	De-pop R3P circuit component & pop M09 solution	X02
36	42	HW	7/23/2009	COMPAL	de-rating result fail	Change Q61 from A04456 to NTMS4107	X02

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37	24	HW	7/23/2009	TI	EDP repeater DP119 vender review request	reserve pop option for X1EDP & DP119, change PU/PD to 20K.	X02
38	28	HW	7/23/2009	DELL	We will never disable the power to HDD redriver, go back connected in SSI	Remove R1493 & delete SATA_PWRSAVE	X02
39	18, 28, 40	HW	7/23/2009	DELL	There has been some confusion due to the net name showing active low	change net name HDD_FALL_INT1# to HDD_FALL_INT to show correct polarity	X02
40	29	HW	7/24/2009	DELL	use the SiTimes part due to the cost savings	change X4 from TXC to SiTimes.	X02
41	31	HW	7/24/2009	Broadcom	connect pin-L10 of U32 to pin-5 of U33, and disconnect pin-D2 from pin-5 of U33	pop R775, de-pop R776	X02
42	33	HW	7/24/2009	COMPAL	fixed SD/MMC Clock overshoot and undershoot	Changing R8 dumping from 0-ohm to 10-ohm	X02
43	31	HW	7/24/2009	Broadcom	BCM5880 Leakage Issue on Margaux	Add Q208, Q209, R1496 circuit to fix.	X02
44	37, 39	HW	7/27/2009	DELL	ESATA repeater power saving	Add a 0 ohm jumper between EN pin and VDD, but no-pop it. Then connect the EN pin to 5028.A47 with a 0 ohm jumper that is popped.	X02
45	39	HW	7/27/2009	DELL	Sometimes VGA_ID_DISC and VGA_ID_UMA both read as low	Change R875 and R881 to +3.3V_ALW rail.	X02
46	26	HW	7/27/2009	Parade	new DP PHY test requirement	change R363 value from 499ohm to 1k ohm	X02
47	23	HW	7/27/2009	SMSC	SMSC review feedback	The pull-up source of the R150 should be changed to +VCC 4002	X02
48	31	HW	7/27/2009	NXP	Better for decoupling noise	Change C1015, C633 to 10pf	X02
49	33	HW	7/27/2009	TXC	EA result	C514, C515 have to change to 22pF	X02
50	36	HW	7/27/2009	DELL	For PCH GPIOs rail.	PCIE_MCARD3_DET# & USB_MCARD1_DET# pull-ups (R458 & R438) need to change from +3.3V_ALW_PCH rail to +3.3V_RUN rail	X02
51	23, 40	HW	7/29/2009	SMSC	per SMSC 5045 AN 19.6, 4002 AN 16.11	R541, R554, R1492 should be 10K, R147 should be populate, Add R1498	X02
52	35	HW	7/29/2009	DELL	Braidwood has been removed from IbeX Peak platforms	De-pop JBW1 & R1453	X02
53	15, 40	HW	7/29/2009	KDS	KDS crystal EA result	change UMA C296 & C297 to 12pF, C674, C675 to 27pF	X02
54	39	HW	7/29/2009	DELL	GPIO MAP update	change net name from RESERVED FOR ESATA to EN_ESATA_RPTR	X02
55	42	HW	7/29/2009	Compal	By Intel S3 timing concern	reserve R1500 & @R1499 0 ohm for Q206.2 from RUN_ON_CPU1.5VS3# & RUN_ON_ENABLE#	X02
56	13, 14	HW	7/30/2009	Compal	EMI concern	POP C1121-C1124, C1145-C1148	X02
57	37	HW	7/30/2009	Intel	Intel continues to recommend that all pre-production and production motherboards include common mode choke footprints to enable a stuffing option in case a choke is required to pass EMI testing	Add @L30, @L31, R424-R427	X02
58	31	HW	7/30/2009	Broadcom	Broadcom schematic review request	pop R537; Remove C647, C641, R634, R498, R898; Add @C1886 & @C1887; Remove L73, R631, C1026, R494, Short net RFREADER_TXN1_PI_R to RFREADER_RXP_C; Remove C642, C640, change R487, R496 to 0 ohm; Add @R1501; de-pop R496 & R497; JCS1 pin2 & pin3 and pin4 & pin5 should be short to carry higher current.	X02
59	31	HW	7/30/2009	Compal	Solve smart card cage vender reverse pin definition.	Reverse JCS1 pin definition	X02
60	27	HW	7/31/2009	Compal	CRB EA result	C390, C518, C996, C251-C253 to 4.7pF; L61-L63 to 5-Ohm Bead	X02
61	31	HW	7/31/2009	Broadcom	Broadcom schematic review request	The pin1 of R497 and R496 should be connected to GND	X02
62	8, 15	HW	7/31/2009	Intel	For XDP debug concern	Populate all the resistors and leave out the connector	X02
63	27	HW	8/03/2009	Compal	CRB EA result	C251-C253 to 3.3pF; L61-L63 to 10-Ohm Bead; De-pop C996, C518, C390	X02
64	23	HW	8/03/2009	Compal	If populate R147 PU resistor for THERM_STP#, it will impact ALWON signal at MEC 5045	De-pop R147	X02
65	30, 33	HW	8/04/2009	KDS	KDS crystal EA result	change UMA C427 change to 200 ohm, C514, C515 back to 15P and change X3 from CL=16pF to CL=12pF	X02
66	8	HW	8/05/2009	DELL	fix the Intel S3 power up timing	change C1877 from 0.01uF to 0.22uF 0402 cap.	X02
67	21	HW	8/05/2009	Intel	WW30 Calpella MoW	Intel request change L97 & L98 to 10uH, DCR=0.36 ohm	X02

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68	28, 37	HW	8/06/2009	Compal	Per ESATA/SATA EA result	pop R1301, R1304, de-pop R1298, R1308	X02
69	10, 26, 38	HW	8/06/2009	Intel	Per Intel check list rev1.6	change R186, R796, R798 from 100k to 110k ohm, R1109 to 3.3K ohm	X02
70	28	HW	8/06/2009	Compal	ODD_DET# PU from +5V_MOD to +3.3V_RUN	connect R1239.1 to +3.3V_RUN & pop R1239	X02
71	42	HW	8/06/2009	SMSC	Watch dog timer may not be resetED when 4002 VDD_PWRGD is not completely at Logic Low	Pop R616 to 39 & pop Q72	X02
72	30	HW	8/10/2009	Intel	Remove the VCT trace	Remove @R562, @C41	X02
73	35	HW	8/10/2009	DELL	Braidwood Removal on RAM	Remove @JBW1, @C1851, @R1452, @R1453, @C1852, R1411	X02
74	31	HW	8/11/2009	Broadcom	Broadcom review request	Remove @R1061, Change C718 value to 470pF, change C646 value to 220pF. pin2 of R470 should have a 0ohm but de-pop resistor to USB_GPIO27 net. add @R1504 for DDR3_DRAMRST#_CPU PD & add C1888 for PM_DRAMRST# to slow down gate of FET	X02
75	8	HW	8/11/2009	Intel	Intel review request	Change C21 from 10U to 47U, change R46 to C1889 (1uF)	X02
76	33	HW	8/11/2009	Richo	Change pop option for R5U242	Change Q3 to BSS138	X02
77	24	HW	8/12/2009	DELL	EDP_HPDI signal may too low to turn on FET.	No stuff C111 and C112	X02
78	21	HW	8/12/2009	Intel	Follow CRB rev 1.6 schematic	pop R496 & R497 (0 ohm)	X02
79	31	HW	8/12/2009	Broadcom	Per Broadcom request	change R772 to 47 Ohm for resolving SC_CLK Rise/Fail timing issue	X02
80	31	HW	8/12/2009	Compal	Smart card EA result	pop R1504 & change C1888 to 470pF	X02
81	8	HW	8/12/2009	Intel	Follow Intel S3 white paper rev0.9	rename IO VCT to +LOM_VCT_IO & reserve C712 pad for test.	X02
82	37	HW	8/12/2009	Compal	disconnect IO & DOCK VCT	need to have 4.7K pull-up to 3.3V_ALW for BCM5882 pin-C1 "RSTOUT_N"	X02
83	31	HW	8/13/2009	Broadcom	Per Broadcom request	change C1888 to 0.1u, add @R1511 for PM_DRAM_PWRGD_R	X02
84	8	HW	8/13/2009	DELL	Avoid a glitch for DDR_HVREF_RST_GATE, please add a 1.1K 1% no-stuff pull-up to +1.5V_CPU_VDDQ rail on the PM_DRAM_PWRGD_R signal for a back-up option		
85	8, 45	HW	8/13/2009	DELL	CPU detection since the edge diode has been removed from M'09	Add R1512 for CPU_DETECT# and connect JCPU.AH24 to U36.B18	X02
86	37	HW	8/14/2009	DELL	Invert the EN_ESATA_RPTR signal and connect this to SATAGP4/GPIO16	Add @R1513 & @Q210, pop R1494 and de-pop R1497, change net name from GPIO16 to EN_ESATA_RPTR#	X02
87	33	HW	8/14/2009	Compal	Solve 1394 impedance issue	Change R399, R400, R401, R403 to 54.9 ohm.	X02
88	37	HW	8/14/2009	Compal	EMI solution	pop L30 & L31, de-pop R424-R427	X02
89	11, 12	HW	9/11/2009	Compal	Per PWR EA result	De-pop C66, pop C1090, C1091	X02
90	16	HW	9/11/2009	KDS	crystal EA result	Y6 change to CL=12pF & change C1168 & C1169 to 12pF.	X02
91	33, 34	HW	9/11/2009	COMPAL	EMI solution for SD CLOCK & EXP card USB	R8 change to 22 ohm, pop L64 & depop R791, R792	X02
92	21	HW	9/11/2009	Intel	Intel request	de-pop C39, C610	X02
93	31	HW	9/11/2009	Broadcom	Broadcom review feedback	change C718 from 470p to .47u, C646 from 220p to .22u	X02
94	30	HW	9/11/2009	Intel	Follow Intel document request	change R1502 to C427 10pF, C475, C476 to 33pF	X02
95	12	HW	9/11/2009	DELL	Intel S3 circuitry issue on Margaux UMA	change C1873 from 4700p to 0.01uF	X02
96	21	HW	10/15/2009	Intel	Isolate pins AF32, AF34 and AH34 of PCH	Add C1893.	X02
97	35	HW	10/23/2009	Compal	Add PD 10k for Minicard PWR	Add R1523-R1525	X03
98	31	HW	10/23/2009	Compal	Smart card connector DFM issue	change JSC1 type (the same with Rothschild)	X03
99	40	HW	10/23/2009	COMPAL	Board ID	Change R98 to 4.3K ohm.	X03
100	17, 21	HW	10/23/2009	Intel	Intel schematic check list 2.0 request	R268 change from 1k ohm to 10k ohm, de-pop C1881 & C1883	X03
101	40	HW	10/23/2009	SMSC	SMSC review feed back	R561 and R1046 are too large it is recommend that no PU/PD be larger than 100K	X03
102	12, 42	HW	10/23/2009	COMPAL	avoid double bleed off	+3.3V_M, +3.3V_RUN, +1.5V_CPU_VDDQ power plane discharge circuit have been pop, de-pop R612, R607, R1471.	X03
103	36	HW	10/23/2009	DELL	support WiMax LED status	Need to populate R840	X03
104	40	HW	10/25/2009	KDS	KDS Crystal EA result	change C674, C675 from 27pF to 33pF	X03
105	16, 32	HW	10/25/2009	COMPAL	Change R910 placement	Please put R910 close to PCH not TCM chip	X03
106	41	HW	10/25/2009	COMPAL	Touch Pad PU need to move from 5V to 3V	R613, R614 change power rail from +5V_ALW to +3.3V_ALW	X03
107	31	HW	10/28/2009	Broadcom	For 5882-B0 request	L71, L72 68nH, 2%, 400mA; C1070, C1071 1500pF, 2%, 50V; C1886, C1887 150pF, 2%, 50V	X03

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108	29	HW	10/28/2009	IDT	create a low pass filter with the pole set at 36kHz to filter out of band noise	de-pop C1066 & C1067, R1090, R1089 ; R340 & R342, R1091 & R1092 change to 2k, add C1894-C1897 1000pF.	X03
109	24	HW	10/28/2009	COMPAL	EMI concern	add 220 ohm bead for BIA_PWM_PCH	X03
110	29	HW	10/28/2009	COMPAL	ME request for JSPK1 swap	JSPK1 Pin 2 and pin 4 swap, pin 3 and pin 5 swap	X03
111	17	HW	10/29/2009	COMPAL	PCH CRT DDC pin up to 3.8V	add CRT DDC level shift, Q217, @R1526, @R1527	X03
112	8,12,13,15,16,28	HW	10/29/2009	DELL	MEM SMBus design needs to change	Move Q190 connection, add R1528,R1529, add net name DDR_XDP_CLK/DAT	X03
113	31	HW	10/29/2009	DELL	smart card clock resistor	Change R772 from 47 ohm to 22 ohm	X03
114	37	HW	10/29/2009	COMPAL	EMI concern	pop R15 with 10 ohm and C15 with 10pF	X03
115	36	HW	10/29/2009	COMPAL	USB MCARD2_DET# change to +3.3V_ALW_PCH	R447 pull up should change to +3.3V_ALW_PCH	X03
116	40	HW	10/29/2009	COMPAL	avoid RESET_OUT# double PD	de-pop R5	X03
117	15	HW	11/02/2009	COMPAL	EMI, RF team concern	pop C300, C302	X03
118	24	HW	11/04/2009	COMPAL	LCD power sequencing issue	change R161 from 470 to 130 ohm	X03
119	37	HW	11/05/2009	COMPAL	EMI concern	Change choke vender from Murata to Delta on L30,L31	X03
120	29	HW	11/05/2009	COMPAL	RF team concern	X4 change from Sitime to TXC	X03
121	15	HW	11/05/2009	COMPAL	RTC issue	Y1 & Y4 change from 30ppm to 10ppm.	X03
122	15	HW	11/05/2009	COMPAL	For flash ROM EOL issue	U13 change from W25X32 to W25Q32	X03
123	19	HW	11/09/2009	DELL	PCH driving the siganl low at GPIO15 initial	add R1530 2.2K PU resistor to +3.3V_ALW_PCH on the SIO_EXT_WAKE# signal	X03
124	39	HW	11/10/2009	DELL	add a 10K 5% PU to +3.3V_RUN on ME_FWP	Add R1531	X03
125	12	HW	11/11/2009	COMPAL	Surge voltage found at UMA GFX core	R358 changed from 4.7k ohm to 470 ohm	X03
126	8,15	HW	11/13/2009	COMPAL	To cut redundant trace for SMBUS	Add @R1532/R1533/R1536/R1537	X03
127	19	HW	11/17/2009	Intel	By Intel check list request	Add R1543 & R1544 for PCH GPIO22/34	X03
128	41	HW	12/24/2009	Compal	To solve touch pad ESD issue	Change L41 and L42 to R1545 & R1546 with 100 ohm.	X03
129	29	HW	12/24/2009	Compal	RF noise issue concern	change Sitime 12MHz oscillator X4 to driver strength 1x	X03
130	15	HW	12/24/2009	Intel	Follow Intel check list rev2.0	Change R224 to tolerance from 5% to 1%	X03
131	36	HW	12/24/2009	DELL	Wimax LED abnormal operation.	de-pop R1409	X03
132	38	HW	12/24/2009	Compal	Simplo battery slice EMI issue	Add C1899 and C1898(Depop,reserve for EMI test)	A00
133	31	HW	12/24/2009	Braodcom	By Broadcom request	Change L71,L72 from 68nH to 150nH, C1070,C1071 from 1500pF to 390pF.C1887, C1888 from 150pF to 390pF.	A00
134	40	HW	12/30/2009	DELL	Board ID	Change R98 from 4.3K to 1K for A00	A00
135	33,34	HW	12/30/2009	COMPAL	Change R5U242 to rev ES3	Change U94 from ES2 to ES3	A00
136	8,15	HW	12/30/2009	Intel	De-pop XDP & JTAG resistor	de-pop C19,C20,R6,R7,R68,R19,R3,R1153,R1156,R1157,R66,R1241,R780-R785,R22,R24,R78,R91,R101-R116,C1375,R69,R118,R123,R804,R807,R805,R806,R1281,R1282,R1315	A00
137	24	HW	01/14/2010	COMPAL	RF team concern	reserve C1900 for PWM	A00
138	28,37	HW	01/15/2010	COMPAL	Change Esata repeater for power save	Change U95 U96 from 412 to 412A	A00
139	11	HW	01/18/2010	COMPAL	No stuff MLCC caps to fix Acoustic noise	de-pop C50, C52, C57, C59	A00
140	15	HW	01/21/2010	COMPAL	For factory to do JTAG test	Pop R123, R804-R807, R1281, R1282, R1315	A00

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<b>EE-PIR</b>			
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# Version Change List (P. I. R. List)

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	52	Selector	6/1	Compal	CD3301 burn issue	Change PR262 to 47_ohm, add PC323 0.1uF. Add PR409 pull up to +3.3V_ALW2. Delete PR266, add PD21 RB751.	
2	49	+1.05VTT	6/1	Compal ADC Guangyong	Change high side MOS to power pak	Change PQ15 PQ17 to Power pak SIR472DP.	
3	47	+0.75_DDR_VT/ +1.8V_RUN	6/1	Compal ADC Guangyong	Add type 3 cap	Add PC324 150pF	
4	48	+1.05V_VM_UMA	6/1	Compal ADC Guangyong	Add type 3 cap	Add PC325 150pF	
5	46	1.5V_MEM_UMA	6/1	Compal ADC Guangyong	Add droop resistor and input cap.	Add PR410 PC326	
6	47	+0.75_DDR_VT/ +1.8V_RUN	6/1	Compal ADC Guangyong	optimize ISL8014	change PR78 to 10K_ohm change PC81 PC85 PC86 to 10uH unpop PC82 unpop PR379 pop PR381	
7	48	+1.05V_VM_UMA	6/1	Compal ADC Guangyong	optimize ISL8014	change PR97 to 10K_ohm change PC115 PC119 PC120 to 10uH unpop PC116 unpop PR382 pop PR384	
8	50	+VCORE	6/8	Intersil	Change Isen resistor to 11K	Change PR149 PR167 PR190 to 11K_ohm SD03411028L	
9	46	+1.5V_MEM_UMA	6/11	Compal / TI	+1.5V_MEM_UMA output voltage over 2V	unpop PR56	
10	44	+DCIN	6/3	Dell	remove PBAT_ALARM# (6/3 Youssef_Daou)	delete DP5 PR6	
11	50	+VCORE	7/14	Dell / intersil	change Cisense GND to VSUM-	PC174 PC175 PC176 pin2 connect to VSUM-	
12	45	+5V/+3.3V	7/14	Compal ADC Guangyong	change 7*7 & 5*5 choke for cost down	change PL5 from SH00000H90L to SH00000FN0L change PL6 from SH00000HE0L to SH00000HR0L change PL11 from SH00000HE0L to SH00000H00L change PL14 from SH00000HE0L to SH00000HY0L	
13	52	Selector	7/14	TI	CSS GC logic wrong issue	Add PR427 180_ohm to GND	
14	53	ISL62881_UMA	7/16	intersil	change Rbias to 47K_ohm	change PR292 to 47K_ohm	
15	52	Selector	7/16	Compal	Add 1M_ohm pull down to fix ACAV_IN_NB oscillation when battery mode S5	Add PR429	
16	50	+VCORE	7/16	intersil	change Isense resistor to 51K_ohm	change PR149 PR167 PR190 to 51K_ohm	
17	52	Selector	7/22	TI	new version CD3301 (PG2.1) dont need PD21	un-pop PD21 add PR430	
18	52	Selector	7/22	TI	DOCK_AC_OFF_EC floating issue	add PR431	
19	53	ISL62881_UMA	7/22	Intersil	change frequency to 300K	change PR293 to 10K	
20	53	ISL62881_UMA	7/22	Intersil	change Rsum to 0603 package improve Vout accuracy	change PR307 from SD03436518L to SD01436518L	
21	50 / 53	+VCORE / ISL62881_UMA	8/10	Compal	change thermistor from 0603 to 0402 package for cost down	Change PH2 PH3 from SL200000B0L to SL20000100L	

# Version Change List ( P. I. R. List )

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
24	45 / 49 50 / 51	+5V/+3.3V +1.05VTT +Vcore charger	8/11	Compal	solve EMI issue	pop PC32 PC33 PR36 PR39 PL15 PC155 PC165 PC182 PR153 PR173 PR191 add PL27 PL28	
25	50	+Vcore	8/11	intersil / Gary	FAE suggestion (8/5)	PR175 change to 2.21K_ohm depop PC190 PR201	
26	50	+Vcore	8/11	Compal	adjust Vimom	change PC171 to 47nF	
27	53	ISL62881_UMA	8/13	Intersil	FAE suggestion (Kidwell gary) (maill from AJ 0813)	PR307 change to 2k, PR312 change to 2.87k, PR299 change to 10.5k, PC262 change to 0.12uF, PC255 change to 0.015uF, PC266 PR313 depop.	
28	45	+5V/+3.3V	8/17	TI/Compal	adjust OCP setting	Change PR31 from 243K to 232K, PR32 from 232K to 215K	
29	44	+DCIN	10/23	TI/Compal	slow soft star to fast issue	Change PR20 from 0_ohm to 10K.	
30	49	+1.05VTT	10/23	Intel	VTT power good voltage level change	Change PR124 from 28.7K to 9.31K. Change PR128 from 10K to 2.74K.	
31	51	Charger	10/23	Compal EMI	EMI solution	pop PC214 1000pF, PR234 4.7_ohm	
32	49	+1.05VTT	10/23	Maxim	fix VTT drop issue	ILIM = 30mV, un-pop PR104, PR103=0_ohm, PR110, PR120=3.01K_ohm ; PR113, PR122=4.99K_ohm ; PR114, PR123=0_ohm Ceq PC132, PC144 =0.15uF ; Filter PC133, PC145=un-pop ; PR115, PR129=0_ohm REF capacitor PC137 change to 2.2nF Add PR432, PR433 for dual remote sense	
33	51	Charger	10/23	TI	Reduce CD3301 pin34 pin 35 peak current	Change PR392 to 0805 size.	
34	51	Charger	11/10	Compal	ACAV_IN_NB level adjust. (10/29)	Change PR246 from 21.5K to 22.6K	
35	50	+Vcore	11/17	Compal	pop PC190 PR201 for improve 2nd source FDIM	pop PC190 PR201	
36	53	ISL62881_UMA	11/17	Compal	adjust Load Line for 2nd source	change PR299 from 10.5K to 9.53K.	
37	49	+1.05VTT	01/20	Maxim	fix dual pulse issue	pop filter PC133, PC145=1000p ; PR115, PR129=10_ohm	
38	51	Charger	01/20	Compal	reduce surge current. (for CD3301)	Change PR392 form 0_ohm to 1ohm change PC199 from 1uF to 0.1uF	
39	51	Charger	01/20	Compal	EMI can pass without this bead. remove for cost saving.	un-pop PL27	