

MODEL NAME : ZBW00
PCB NO :

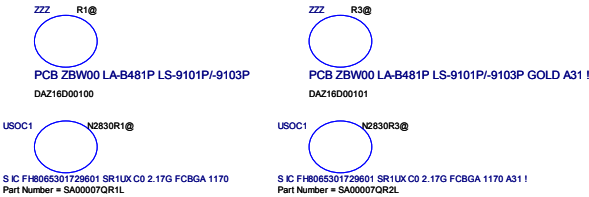
Dell / Compal Confidential
Schematic Document
Intel Bay Trail M
OAK MLK UMA

X76@ : 76 level
46@ : 46 level
3VLP@For EC +3VLP
EMC@Pop EMC Component
ESD@Pop ESD Component
XDP@XDP Component

2014-03-10 Rev: 2.0

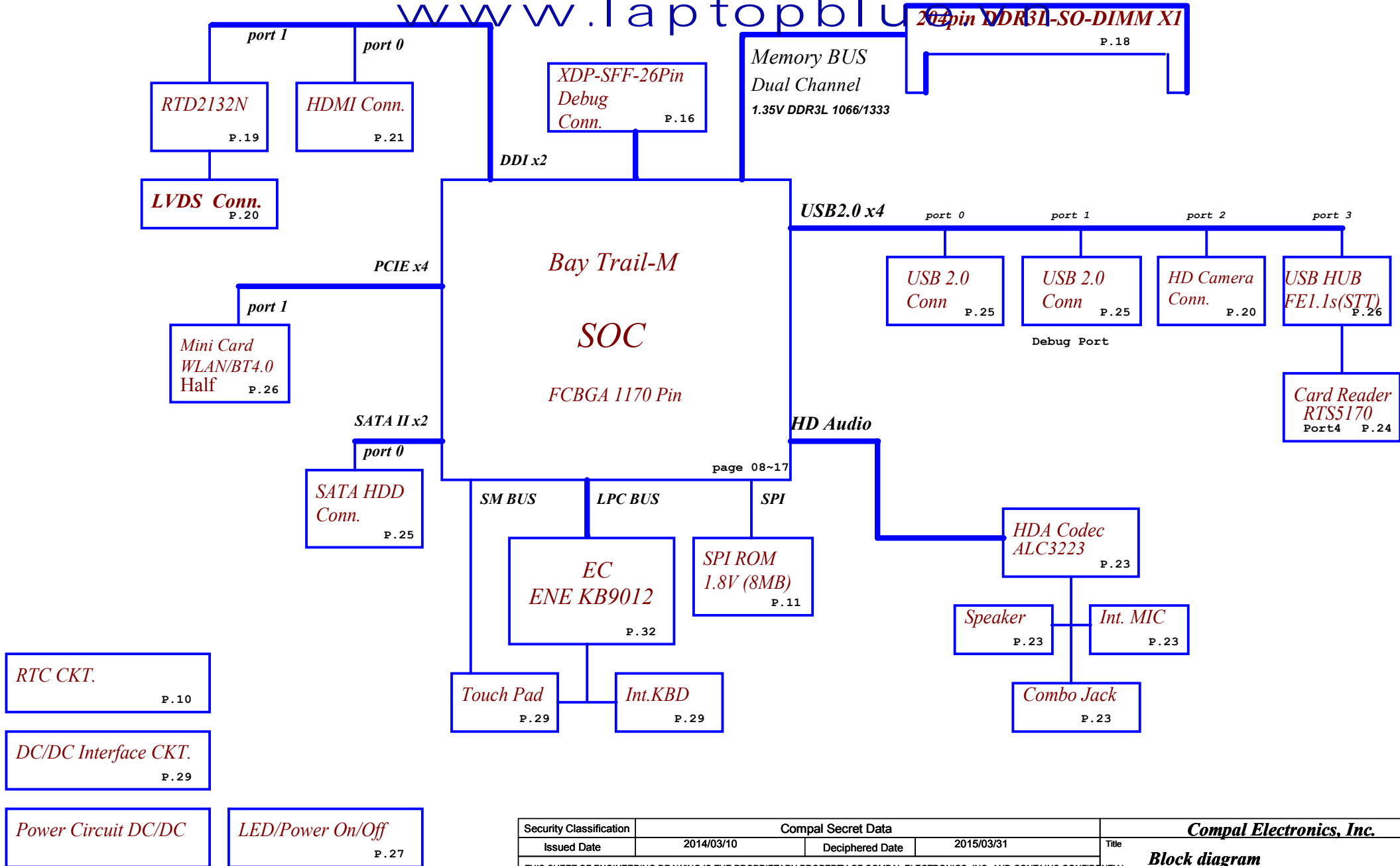
CONN@Connector Component
@Un-pop Component
GCLK@For Green CLK function
JP@Jump Component
N3VLP@For EC +3VALW
NEMC@Un-pop EMC Component
NESD@Un-pop ESD Component
TEST@Test Point
TOUCH@For Touch Screen Function

BOM config
LM-43XXXXXXL01:N2910@/3VLP@/EMC@/ESD@/XDP@/3223@/JHP@
LM-43XXXXXXL01:N2910@/3VLP@/EMC@/ESD@/XDP@/3234@/JHP@

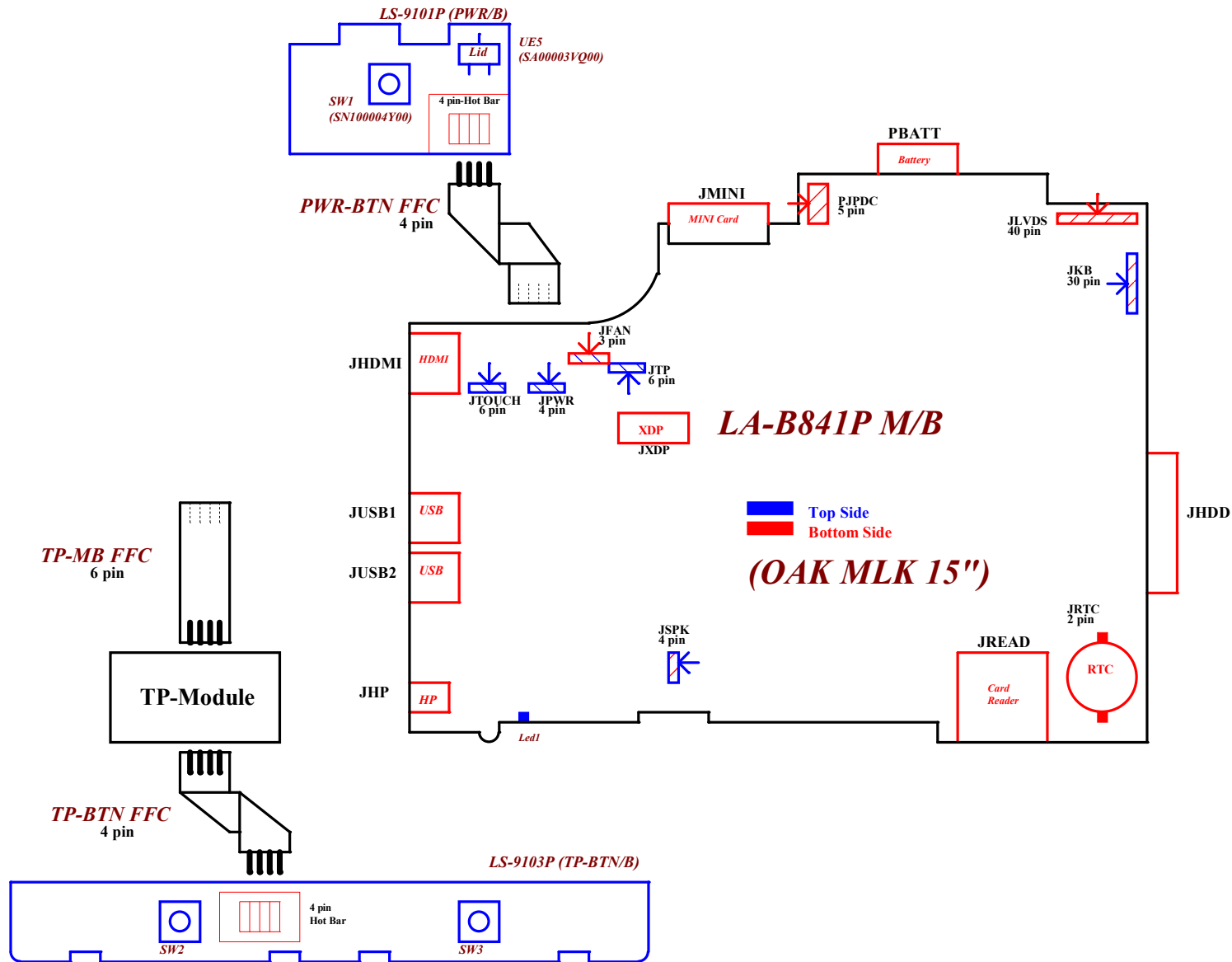


N2910@CPU Component
N3510@CPU Component
R1@PCB

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2014/03/10		2015/03/31		Cover Page	
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Voltage Rails

Power Plane	Description	S0	S3	S4/S5
VIN	19V Adapter power supply	ON	ON	ON
BATT+	12V Battery power supply	ON	ON	ON
B+	AC or battery power rail for power circuit. (19V/12V)	ON	ON	ON
+RTCVCC	RTC Battery Power	ON	ON	ON
+1.0VALW	+1.0v Always power rail	ON	ON	ON
+1.8VALW	+1.8v Always power rail	ON	ON	ON
+3VALW	+3.3v Always power rail	ON	ON	ON
+5VALW	+5.0v Always power rail	ON	ON	ON
+1.35V	+1.35V power rail for DDR3L	ON	ON	OFF
+SOC_VCC	Core voltage for SOC	ON	OFF	OFF
+SOC_VNN	GFX voltage for SOC	ON	OFF	OFF
+0.675VS	+0.675V power rail for DDR3L Terminator	ON	OFF	OFF
+1.0VS	+1.0v system power rail	ON	OFF	OFF
+1.05VS	+1.05v system power rail	ON	OFF	OFF
+1.35VS	+1.35v system power rail	ON	OFF	OFF
+1.5VS	+1.5v system power rail	ON	OFF	OFF
+1.8VS	+1.8v system power rail	ON	OFF	OFF
+3VS	+3.3v system power rail	ON	OFF	OFF
+5VS	+5.0v system power rail	ON	OFF	OFF
Note : ON* means that this power plane is ON only with AC power available, otherwise it is OFF.				

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Board ID / SKU ID Table for AD channel

Vcc	3.3V +/- 5%			
Ra/Rc/Re	100K +/- 5%			
Board ID	Rb / Rd / Rf	VAD_BID min	VAD_BID typ	VAD_BID max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

BOARD ID Table

Board ID	PCB Revision
0	X01
1	X02
2	X03
3	A00
4	
5	
6	
7	

BOM Option Table

Item	BOM Structure
Unpop	@
Connector	CONN@
XDP (Debug Port)	XDP@
EMC requirement	EMC@
EMC requirement unpop	@EMC@
TPM	TPM@
Touch Screen	TS@
R short	RS@
Test Point	TEST@

EC SM Bus1 address

EC SM Bus2 address

Device Address
Smart Battery 0001 011X b

Device Address
SoC 0x9A

SOC SM Bus address

MINI Card 0x98
DDR 0x82
RTD2136 0x94

Device Address
SO-DIMM A (JDIMM1) A0h

43 level BOM table

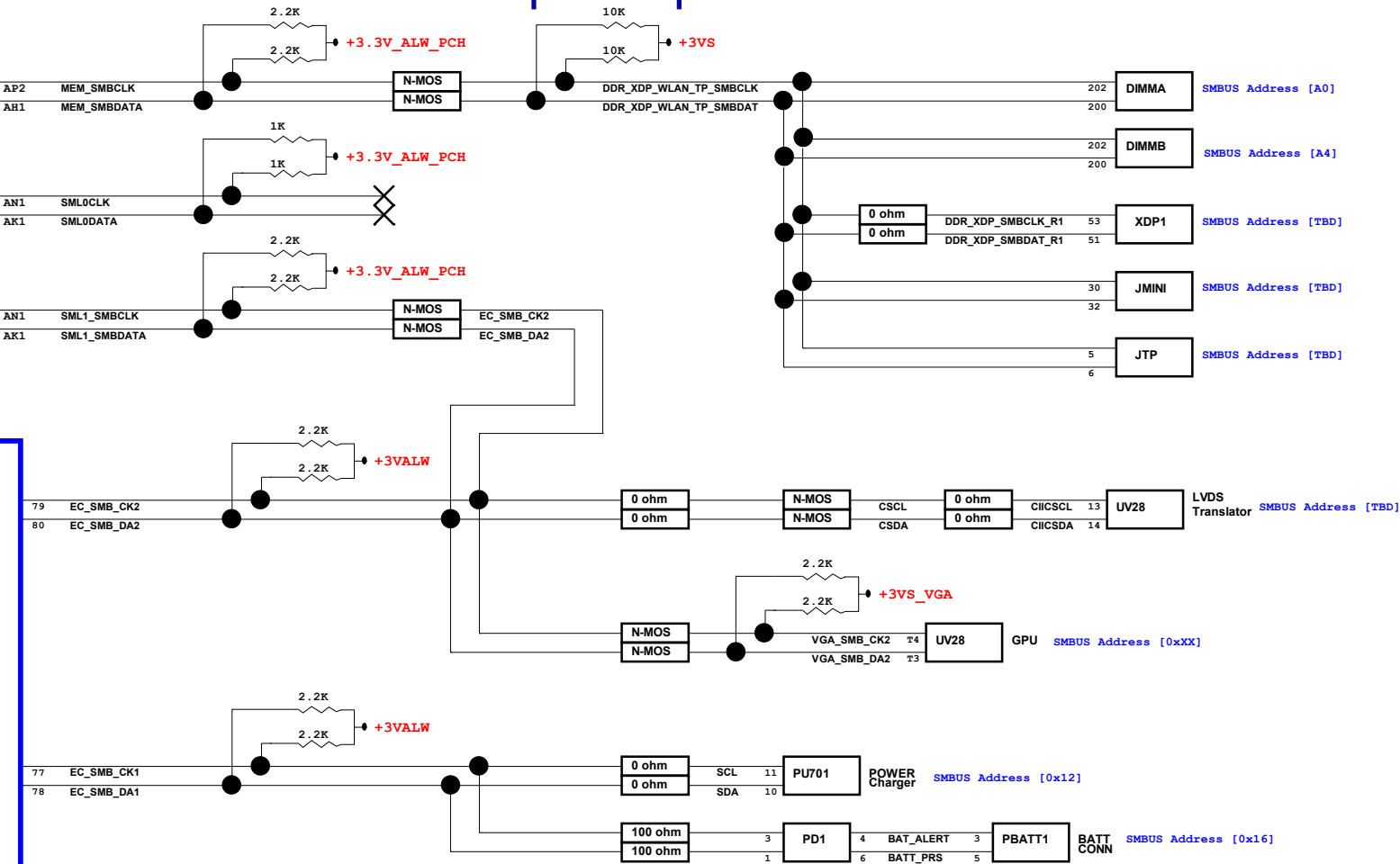
43 Level	Description	BOM Structure
4319T731L01	SMT MB AB481 ZBW00 UMA BTM HDMN2R30R1@/EMC@/ESD@/XDP@/3223@/JHP@/R1@	

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SMBUS Address [0x9a]

MCH
Shark bay

KBC
KB9012A4

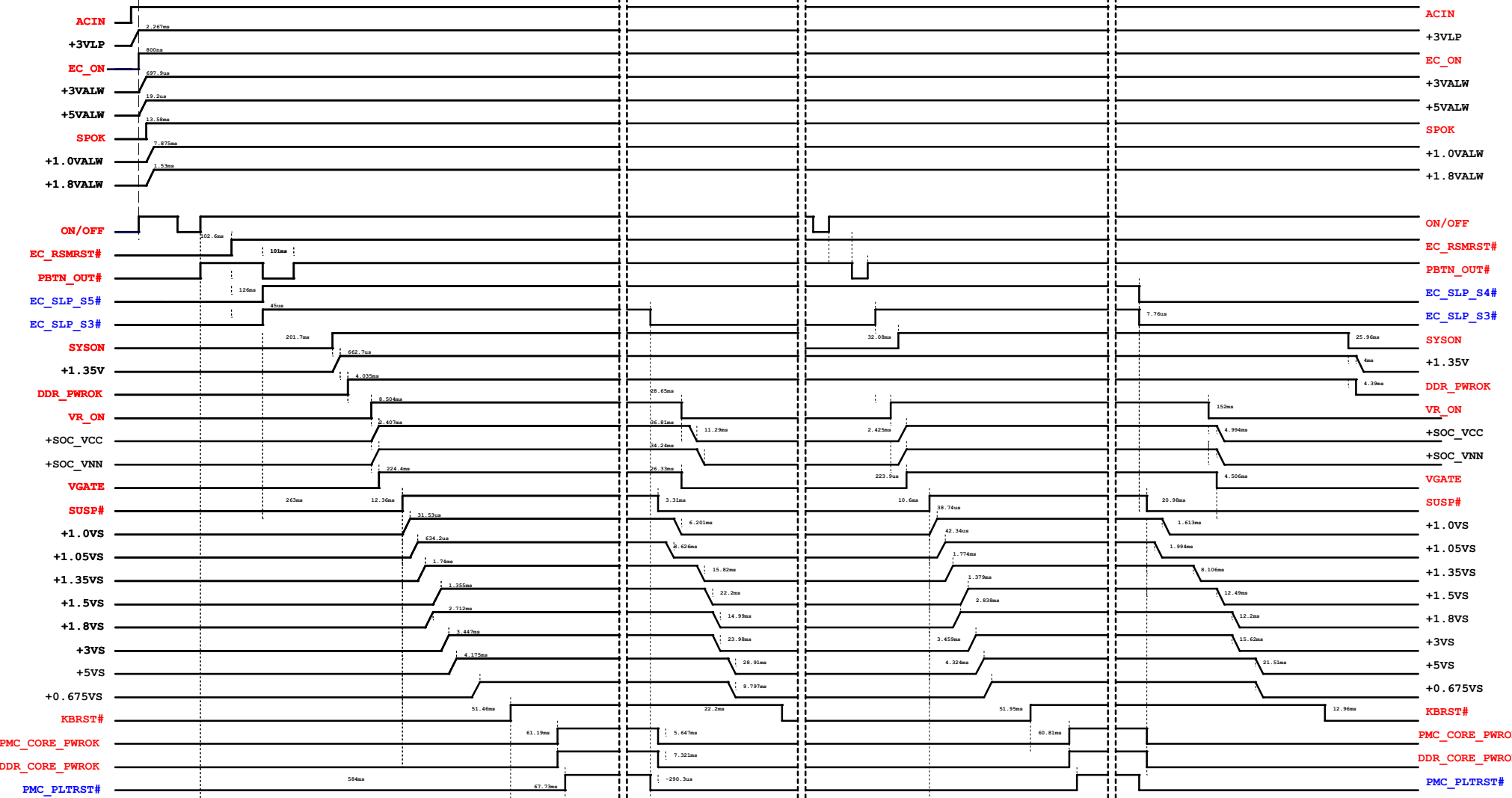


S5->S0

S0->S3

S3->S0

S0->S5

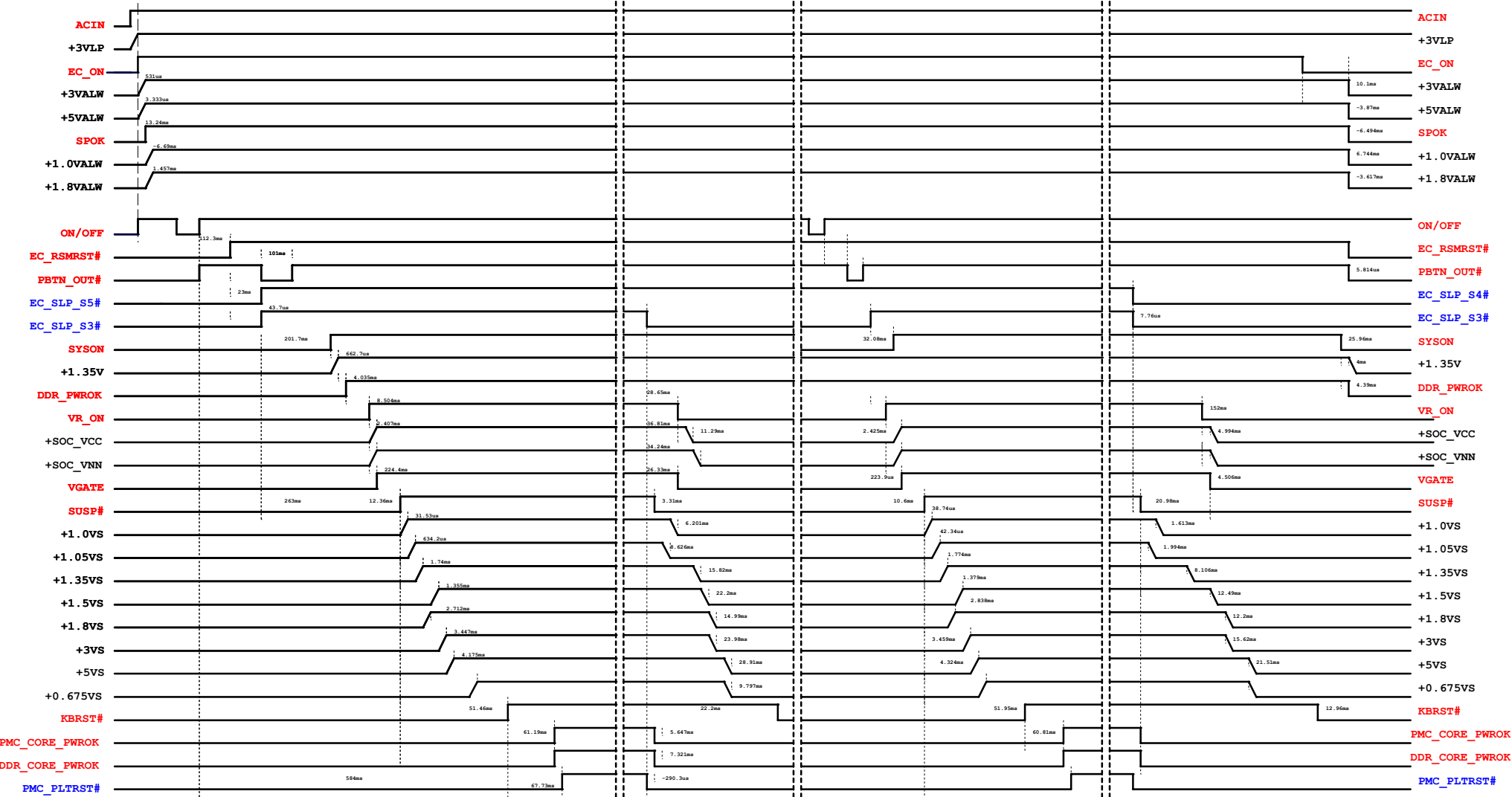


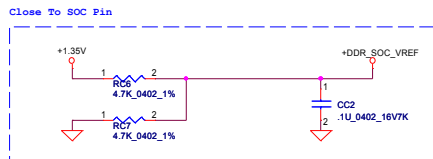
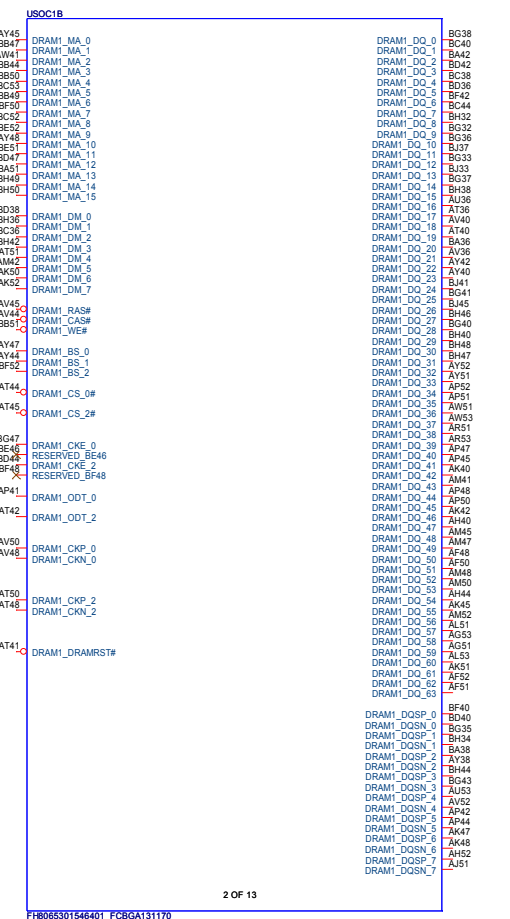
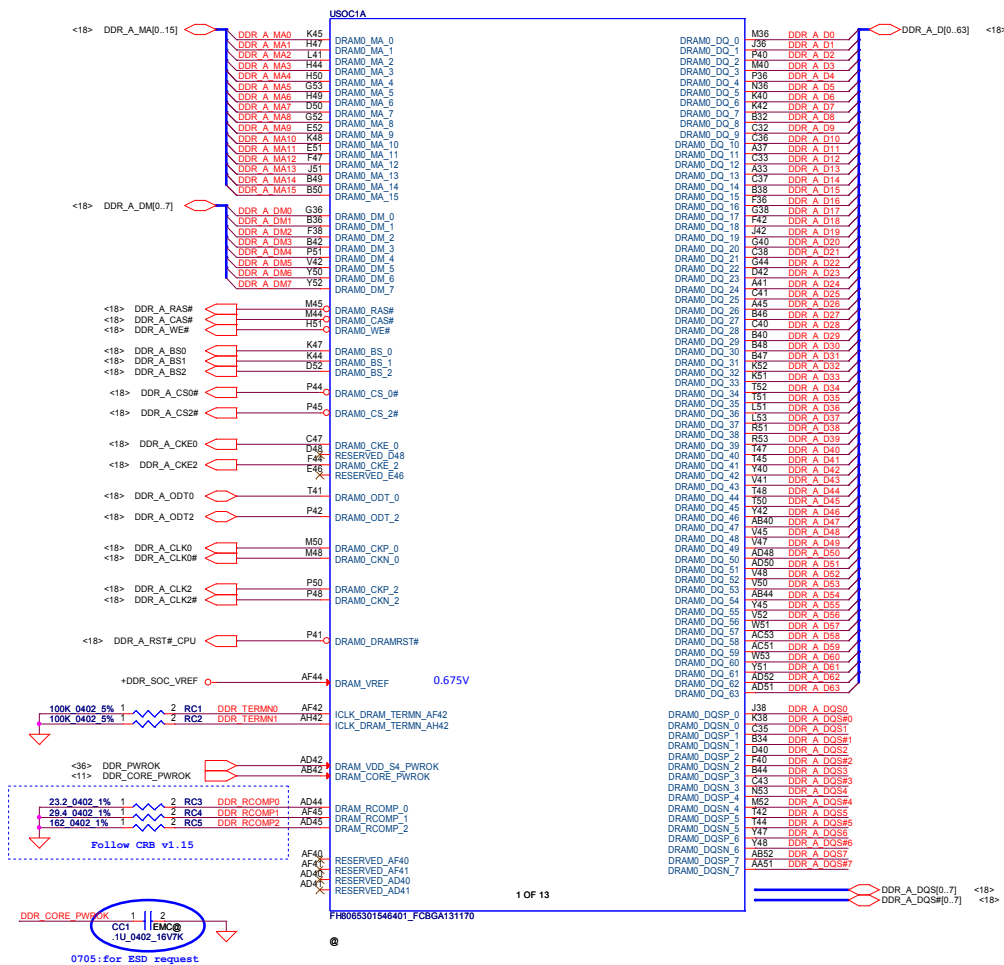
S5->S0

S0->S3

S3->S0

S0->S5

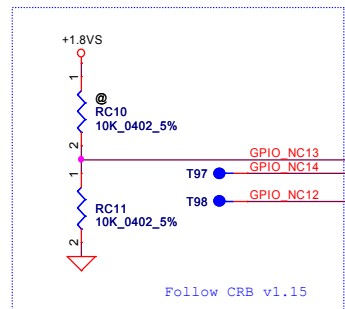
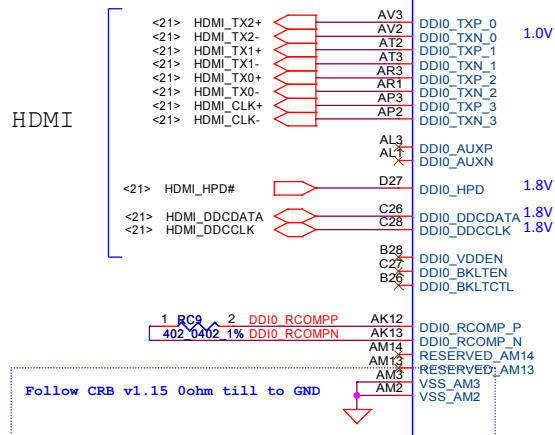




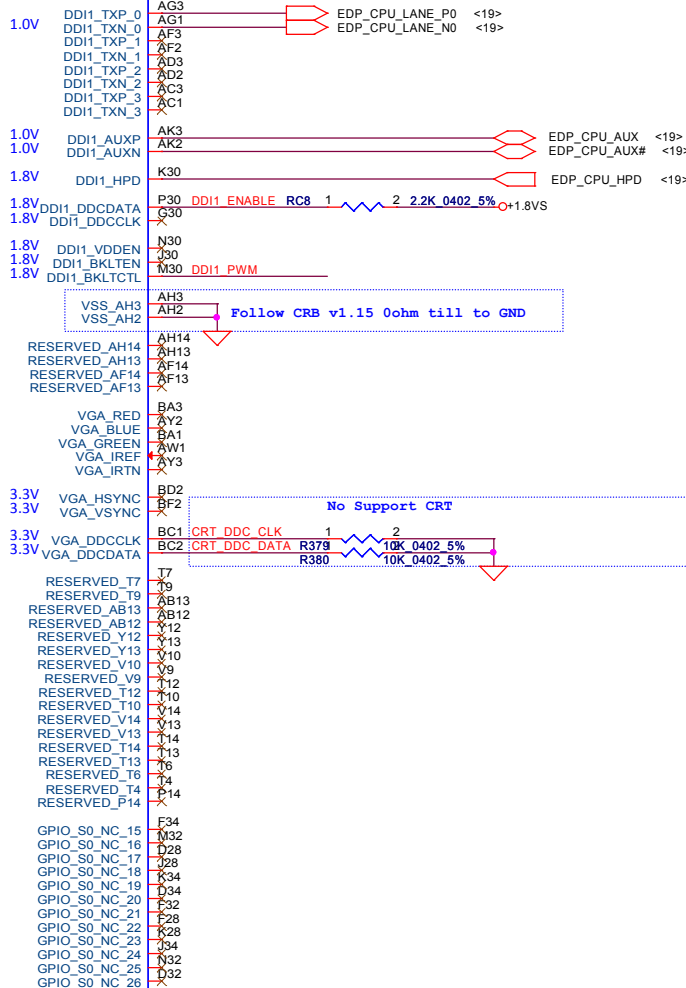
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<p>Size Document Number</p> <p>LA-B481P</p>			<p>Rev 2.0</p>	
<p>Date: 10/10/2014</p>			<p>(Sheet 8 of 42)</p>	

HDMI

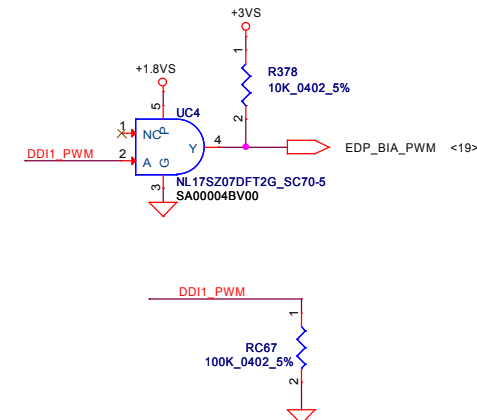
USOC1C



GPIO_S0_NC[13]:
Multiplexed with Hardware Straps Pin:MDSI_DDCDATA



eDP to LVDS Panel

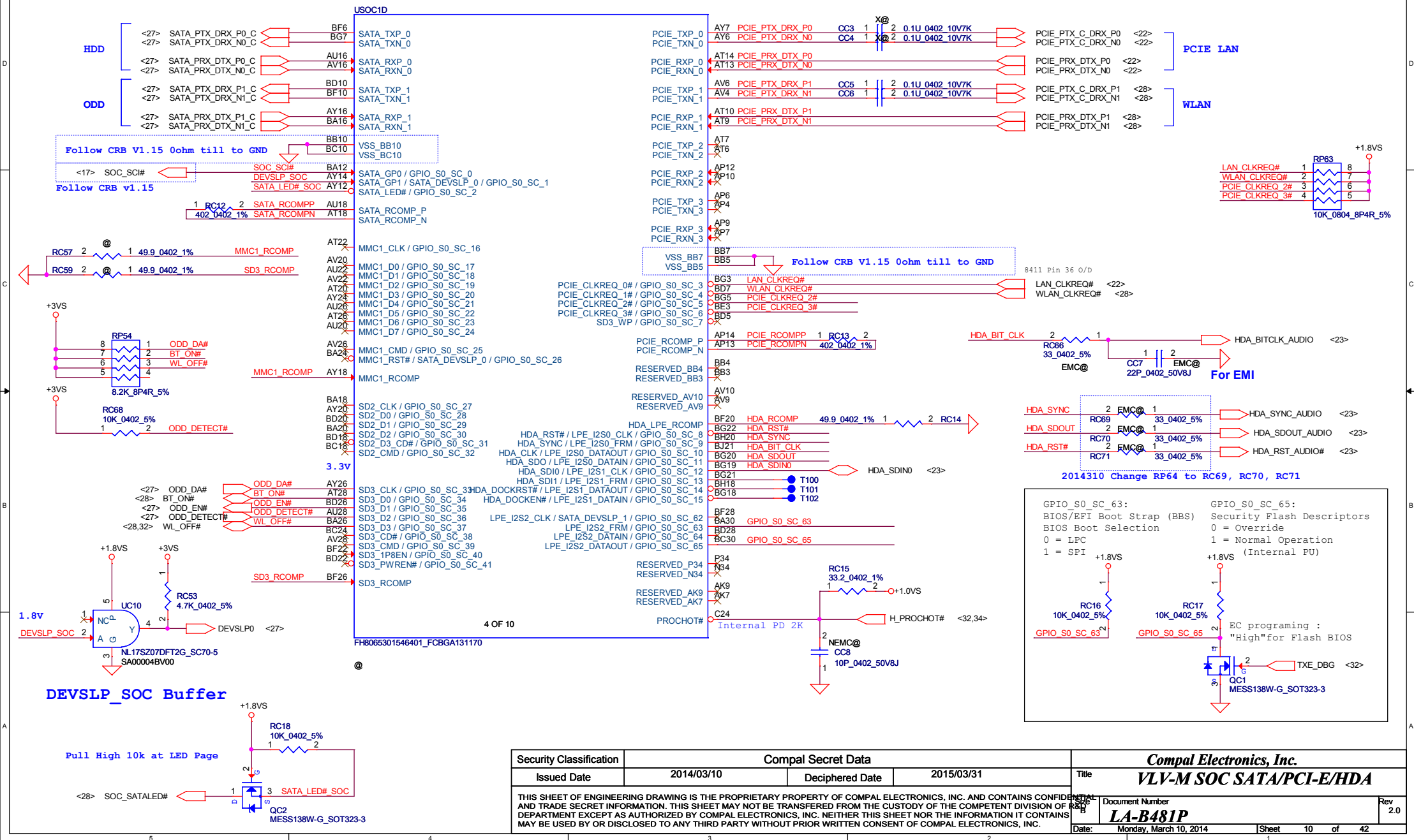


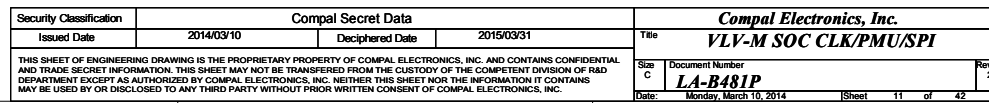
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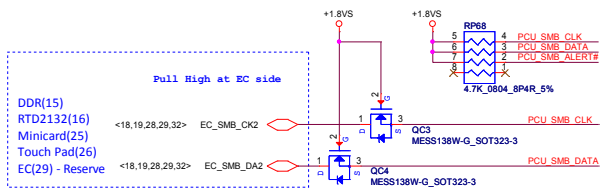
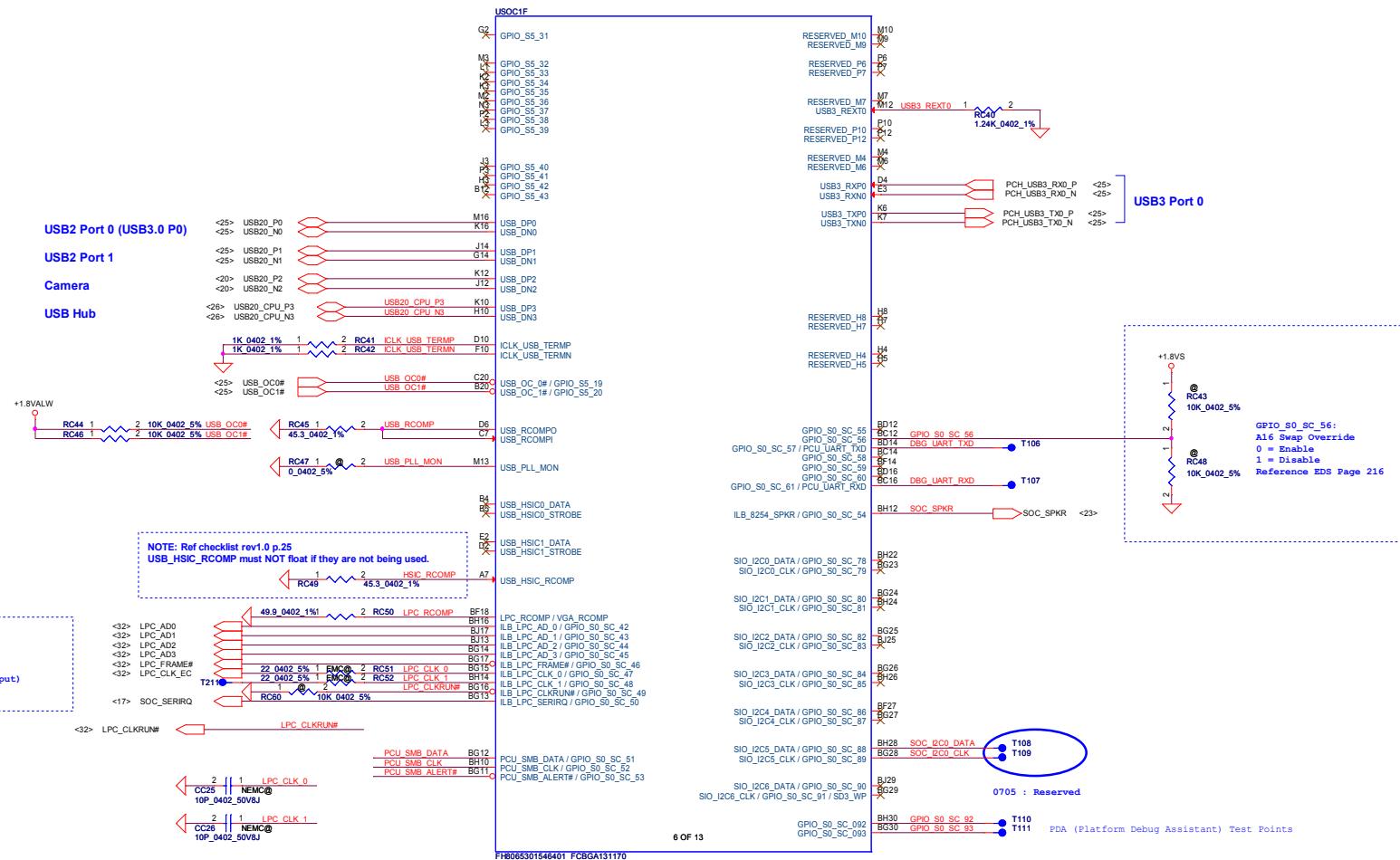
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		Deciphered Date		2015/03/31	
				VLV-M SOC Display	
				Document Number	
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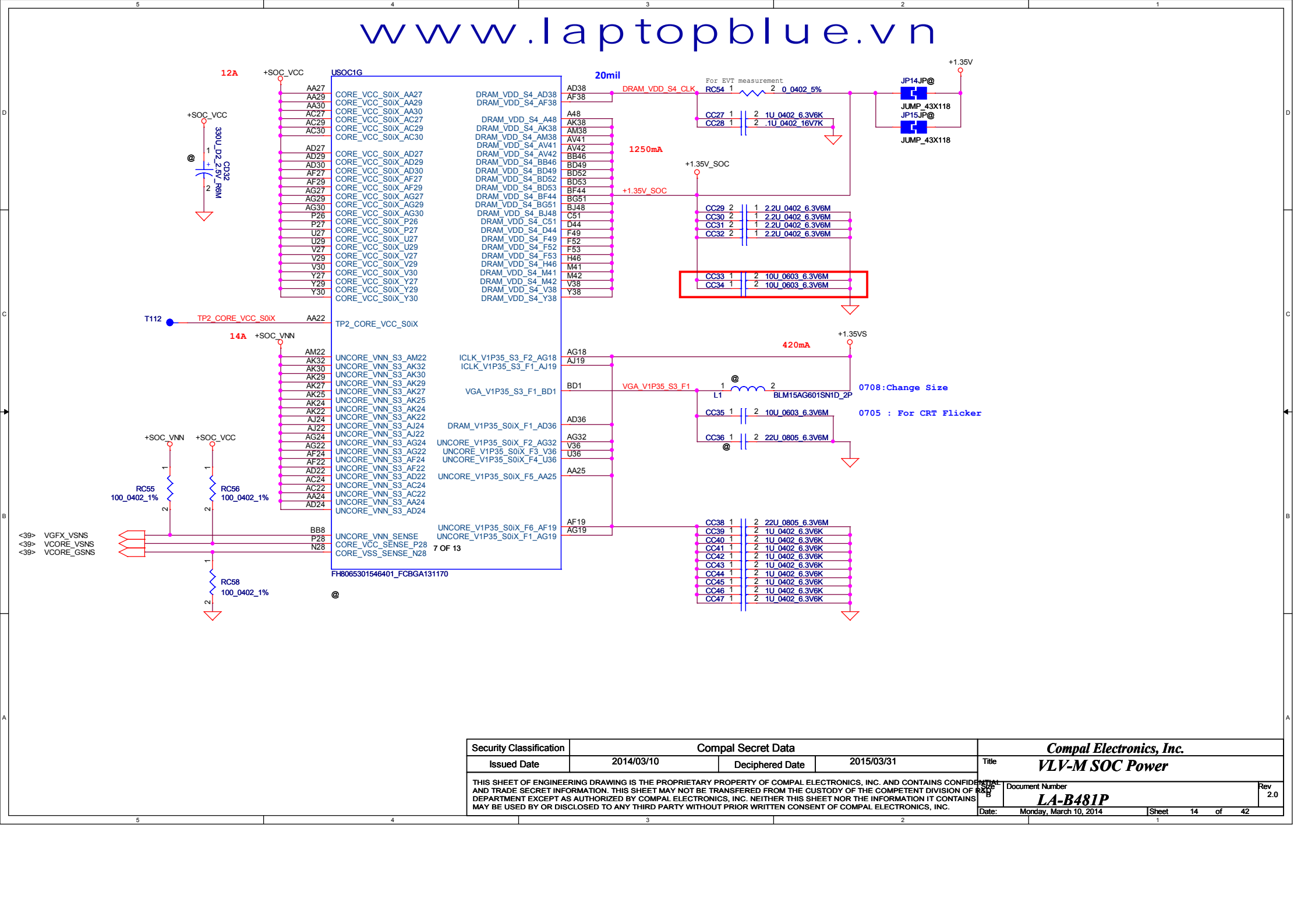


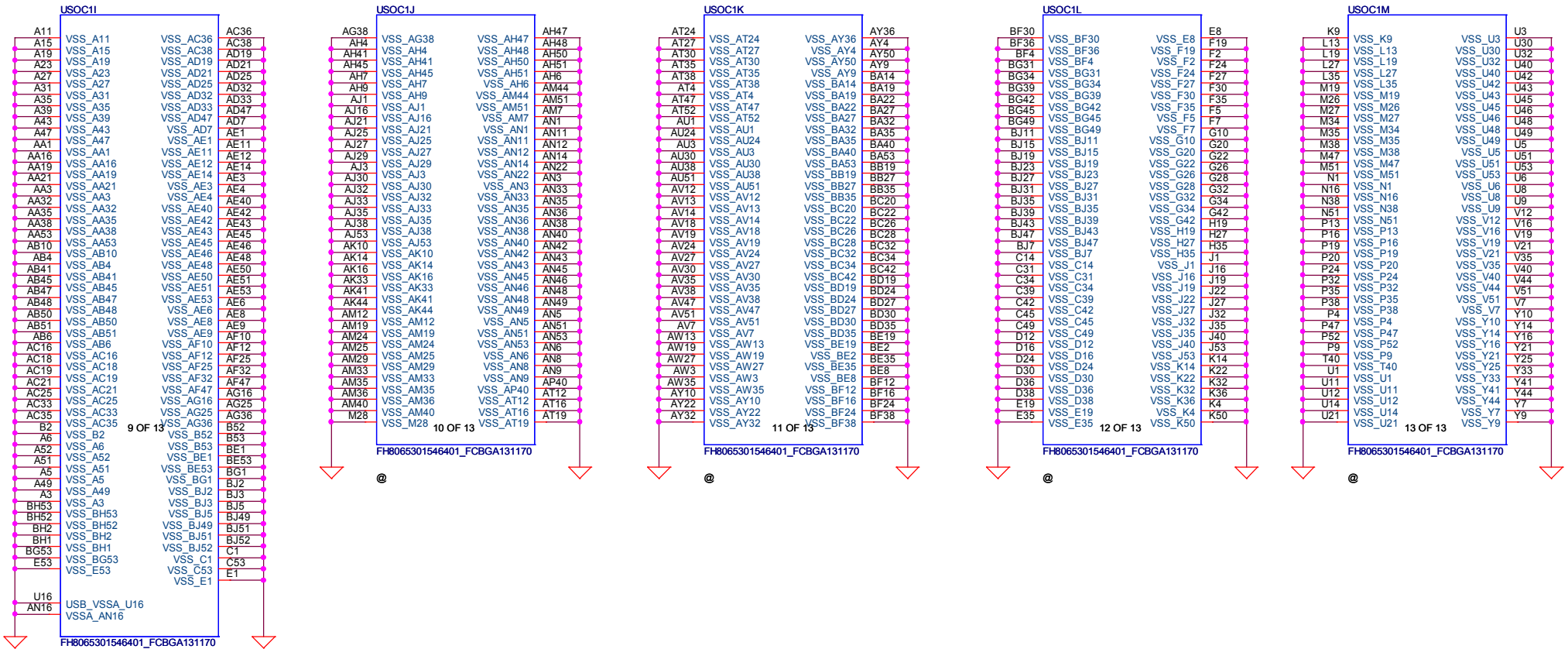




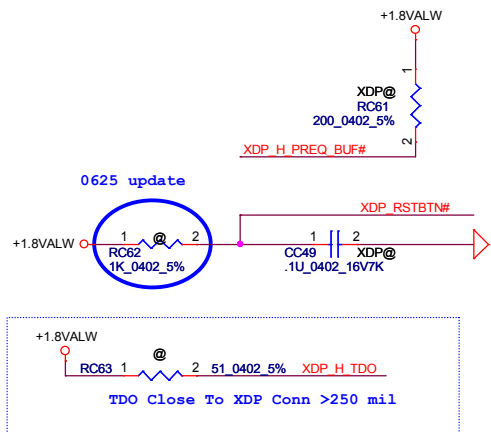
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	VLV-M SOC USB/LPC/SMBus	
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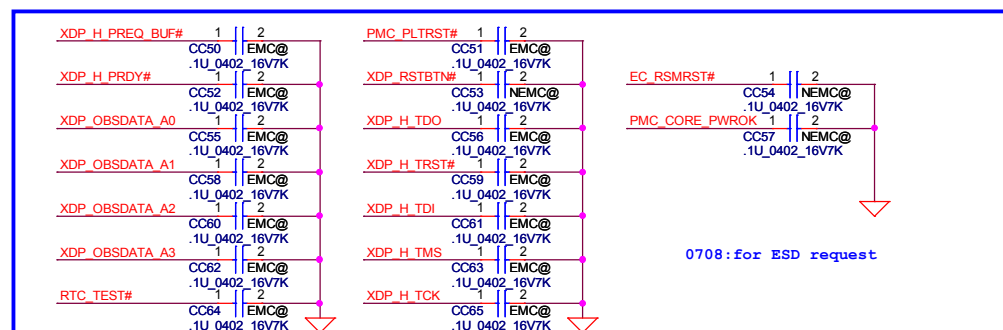
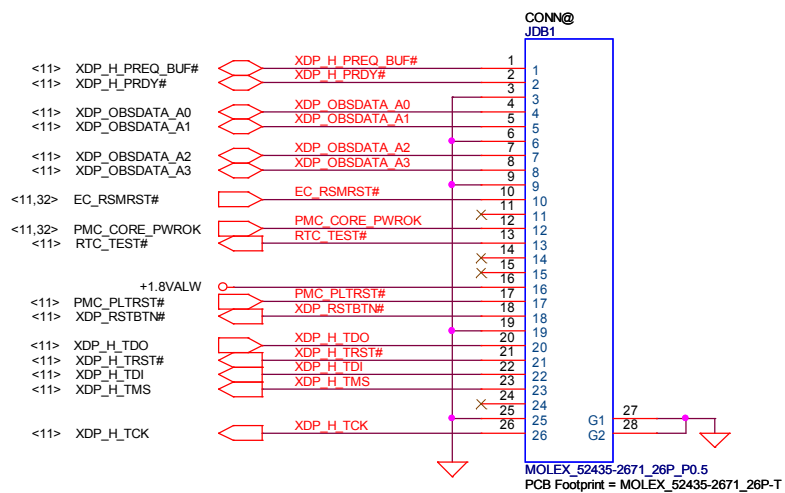
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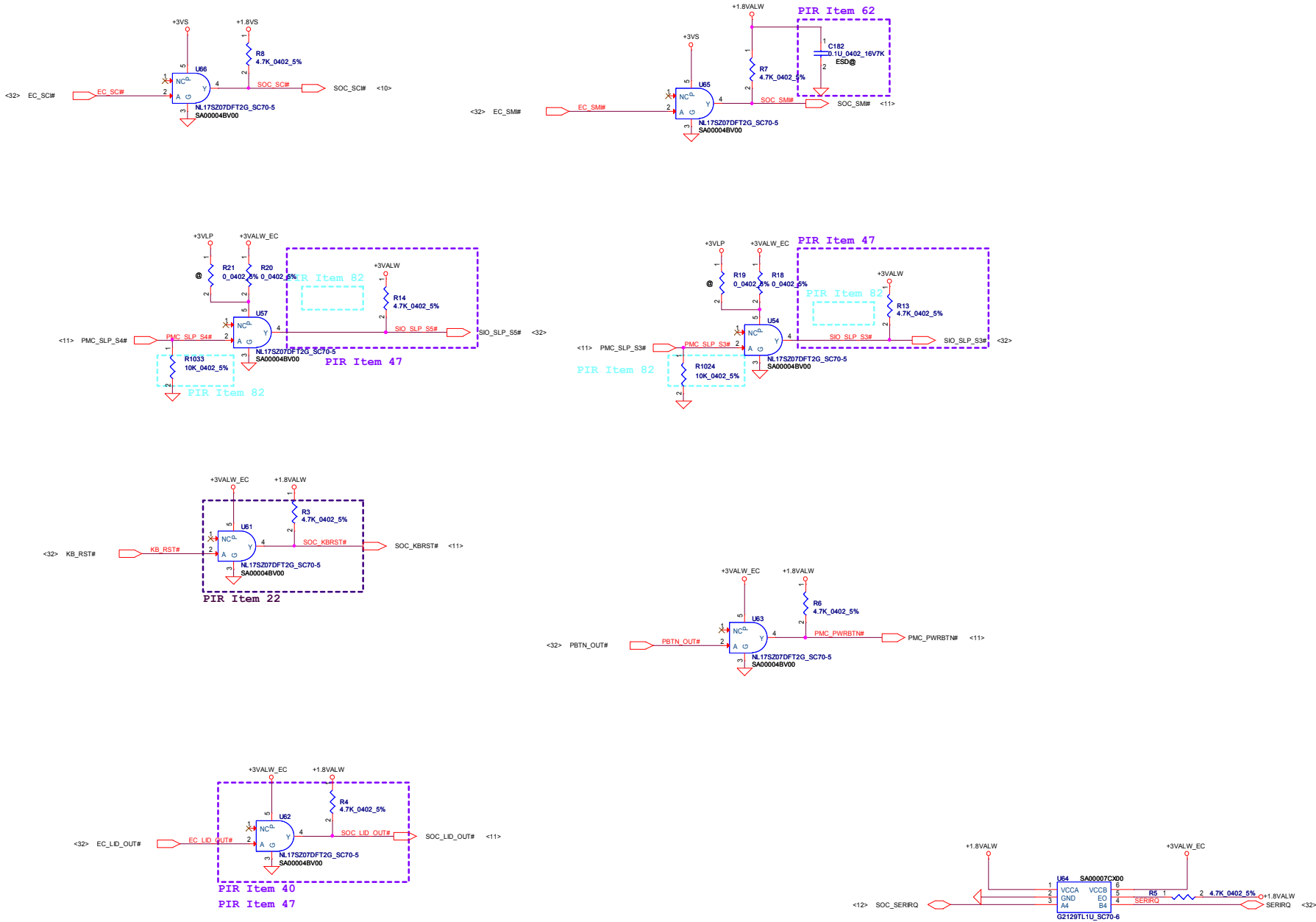
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Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	VLV-M SOC GND
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XDP-SFF-26Pin



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H=4mm

2-3A to 1 DIMMs/channel

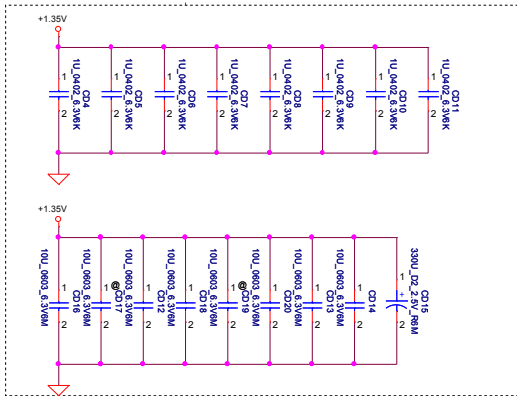
Populate RD1, De-Populate RD7 for Intel DDR3 VREFDQ multiple methods M1
Populate RD7, De-Populate RD1 for Intel DDR3 VREFDQ multiple methods M3

<> DDR_A_DM[0..7]
<> DDR_A_DQS[0..7]
<> DDR_A_DQ[0..63]
<> DDR_A_DQS[0..7]
<> DDR_A_MA[0..15]

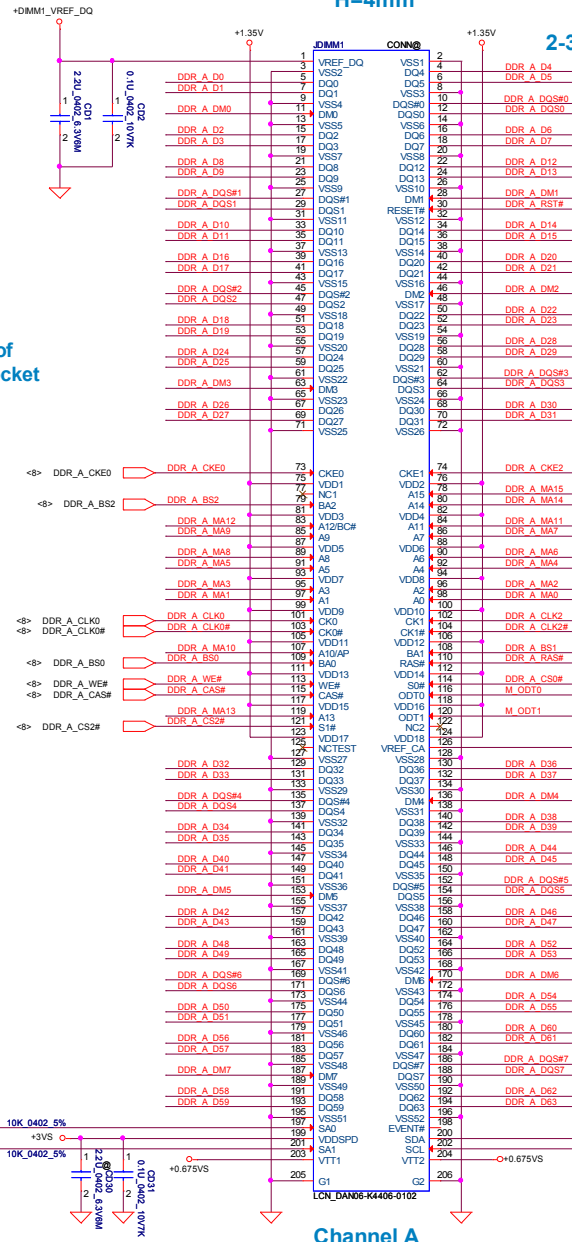
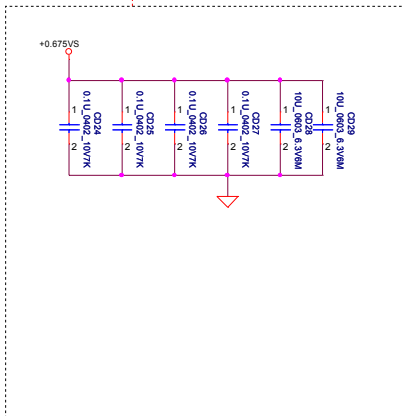
All VREF traces should have 10 mil trace width

Layout Note:
Place near JDIMM1

Note:
Check voltage tolerance of VREF_DQ at the DIMM socket

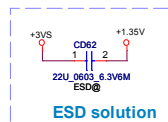


Layout Note:
Place near JDIMM1.203,204



Channel A

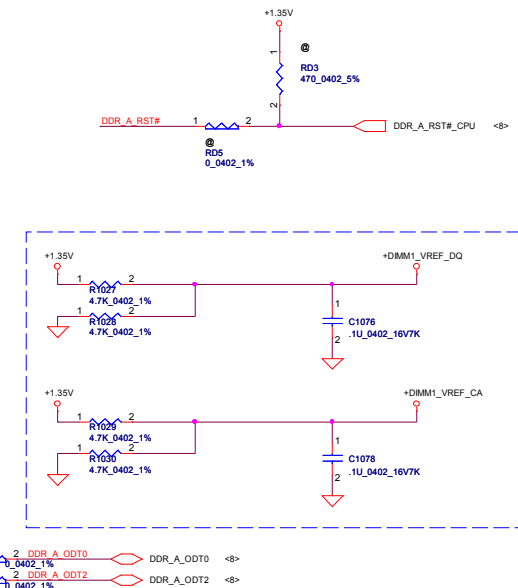
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DIMM_1 STD H:4mm



ESD solution

CAD NOTE
PLACE THE CAP NEAR TO DIMM RESET PIN

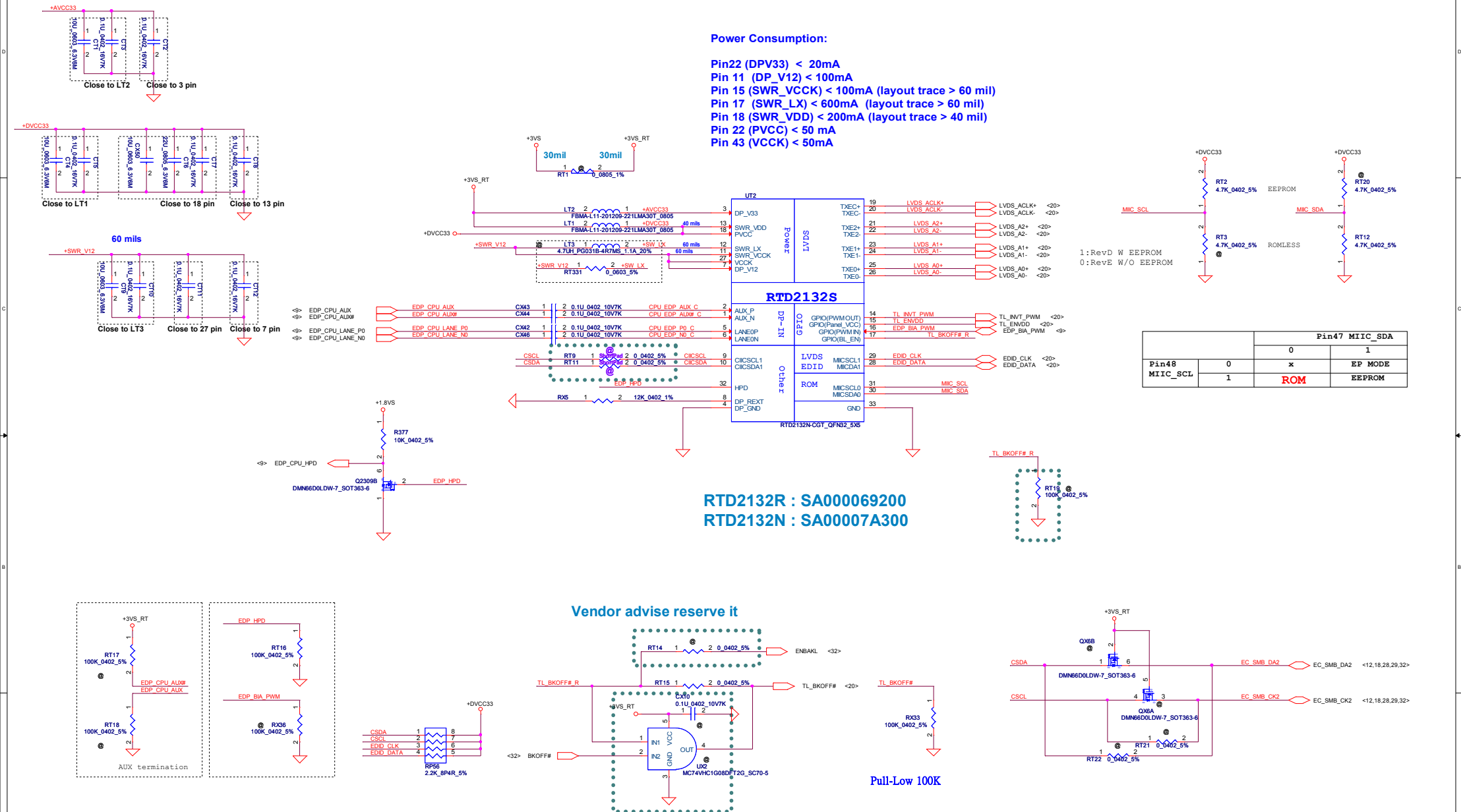
Need to Confirm

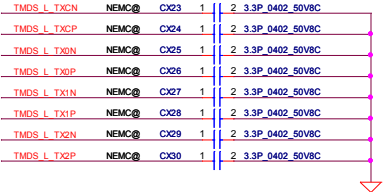
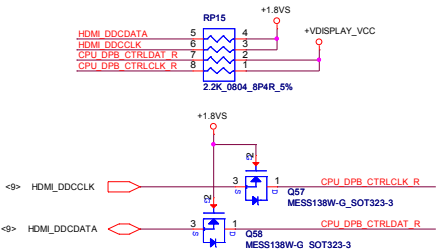
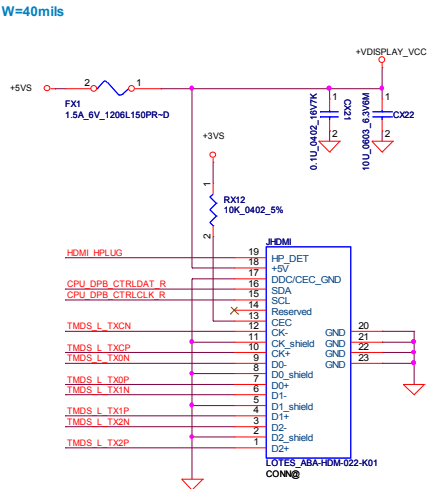
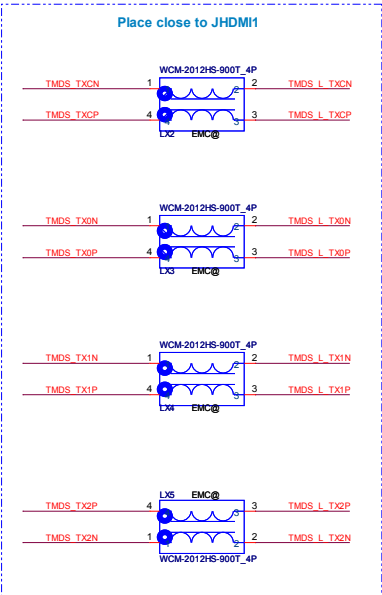
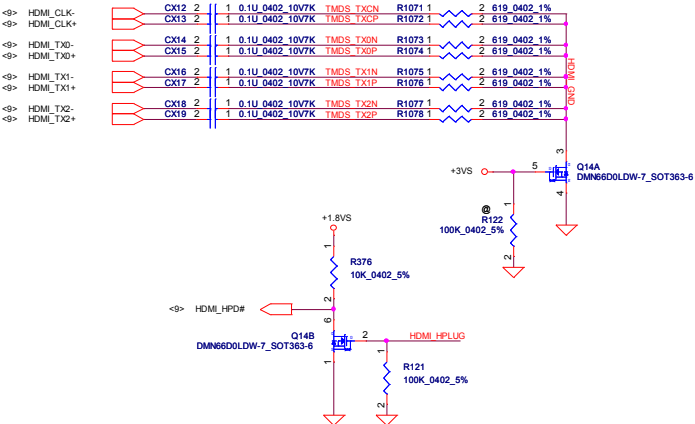


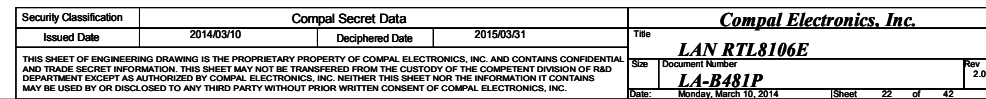
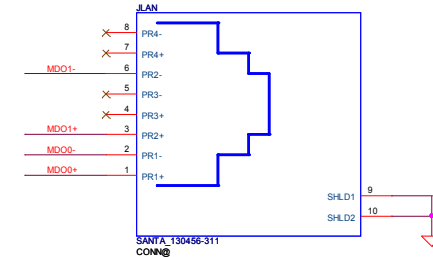
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Issued Date	2014/03/10	Deciphered Date	2015/03/31	DDR3 DIMM	
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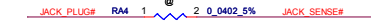
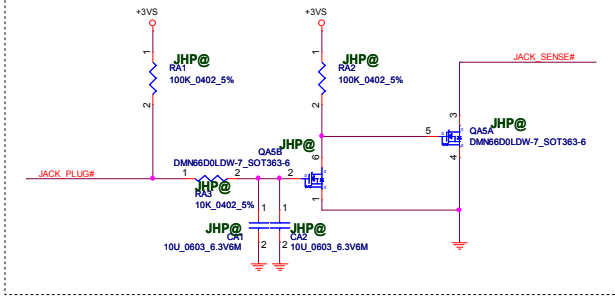
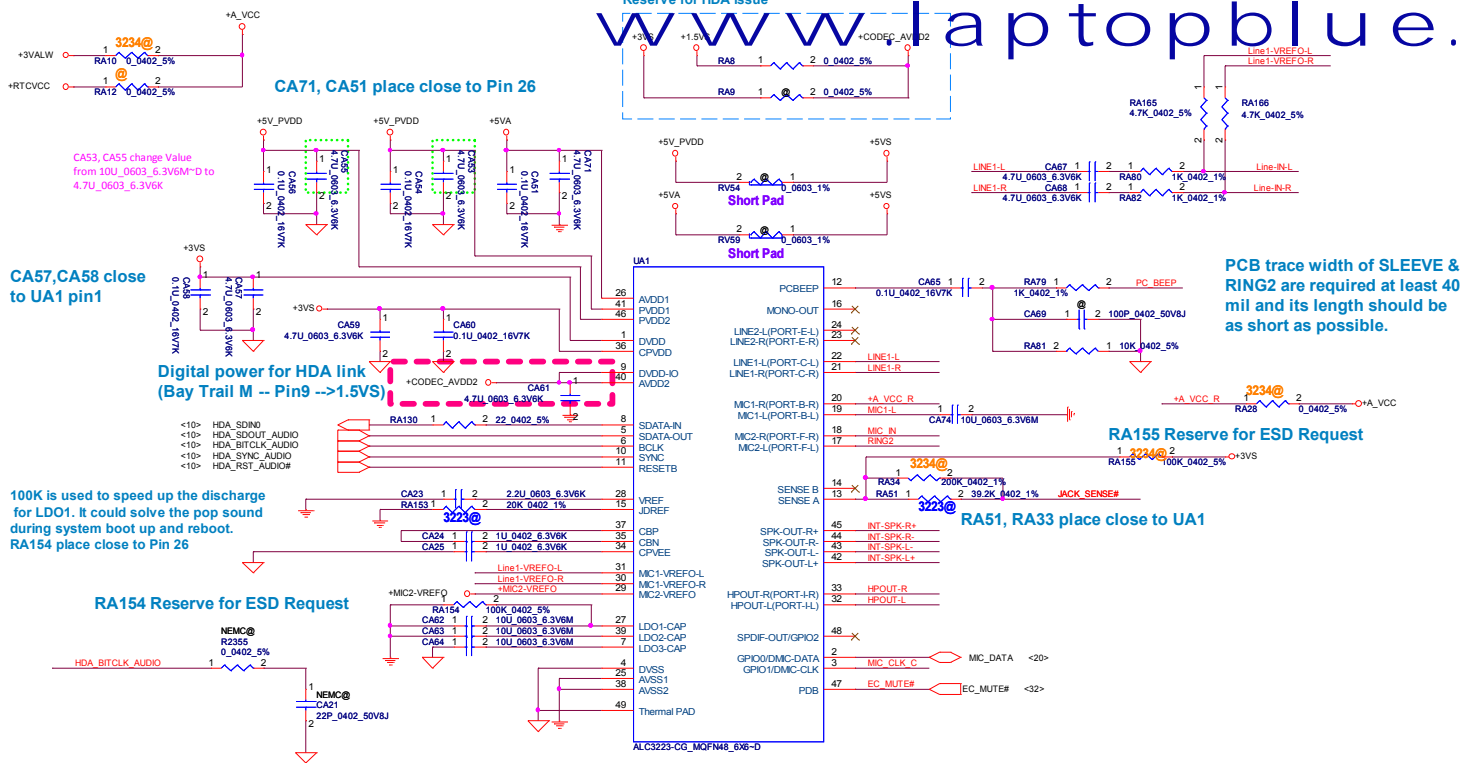
Power Consumption:

Pin22 (DPV33) < 20mA
 Pin 11 (DP_V12) < 100mA
 Pin 15 (SWR_VCCK) < 100mA (layout trace > 60 mil)
 Pin 17 (SWR_LX) < 600mA (layout trace > 60 mil)
 Pin 18 (SWR_VDD) < 200mA (layout trace > 40 mil)
 Pin 22 (PVCC) < 50 mA
 Pin 43 (VCCK) < 50mA

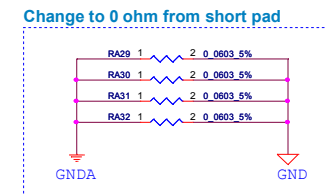




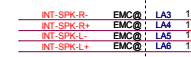
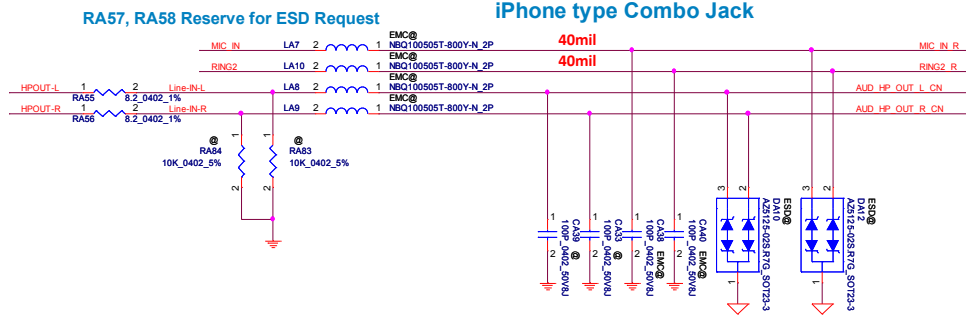
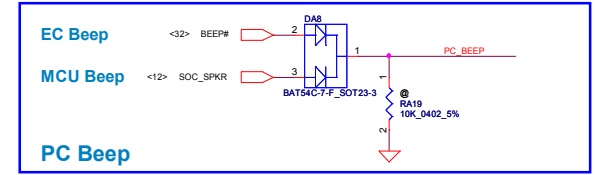
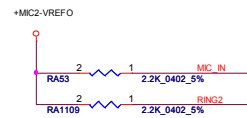
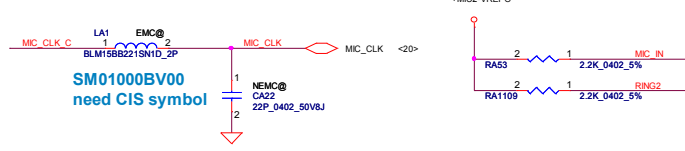
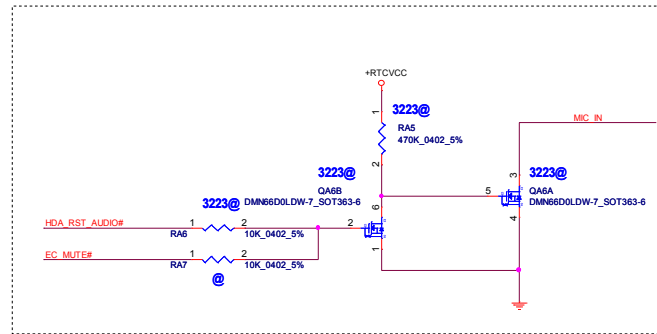




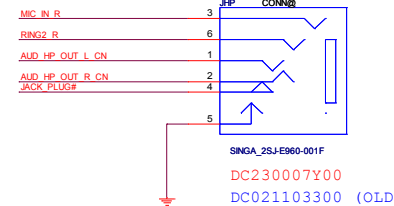
Reserve for cancel Delay circuitis



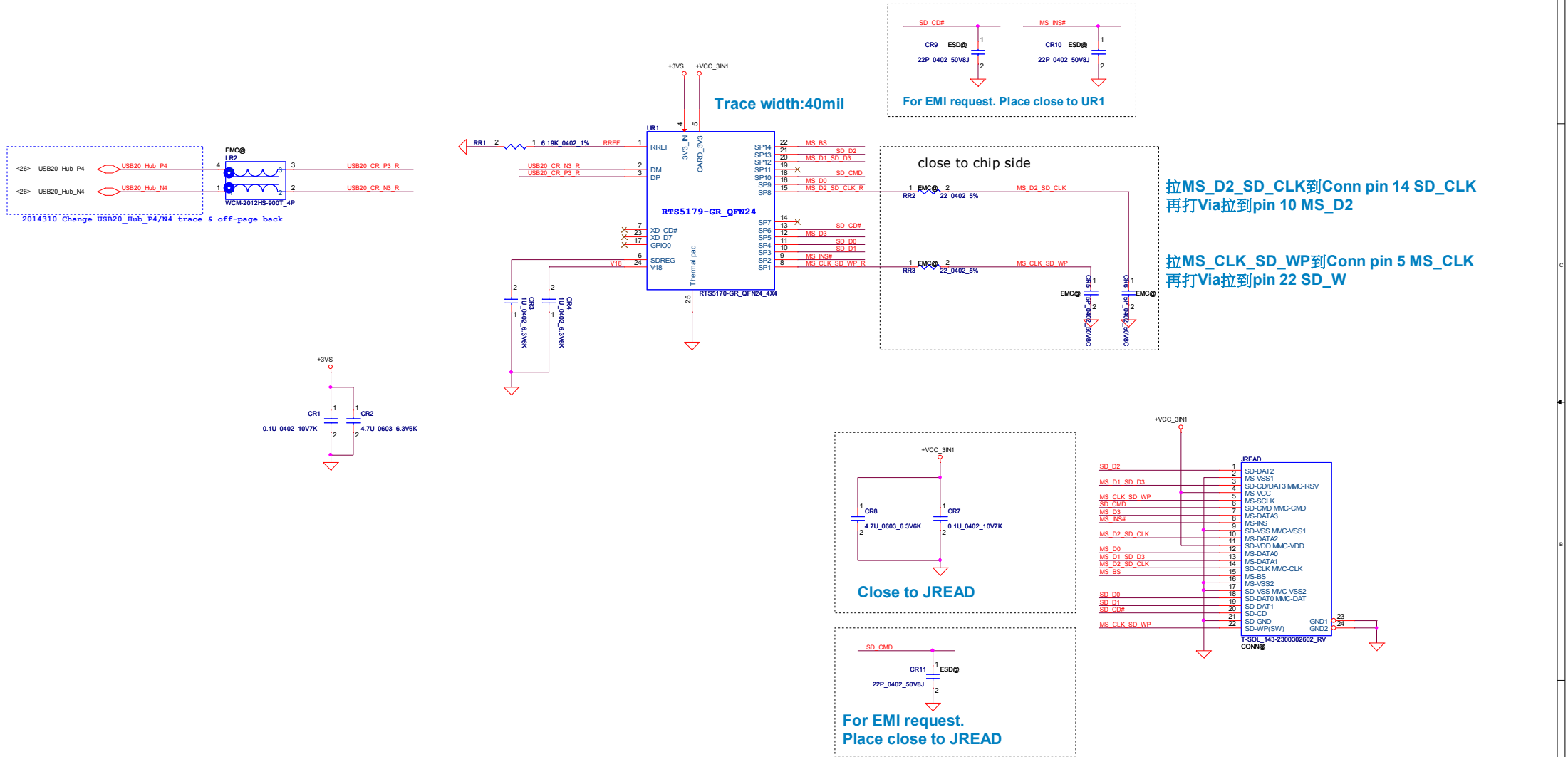
Place on the moat between GND & GNDA.

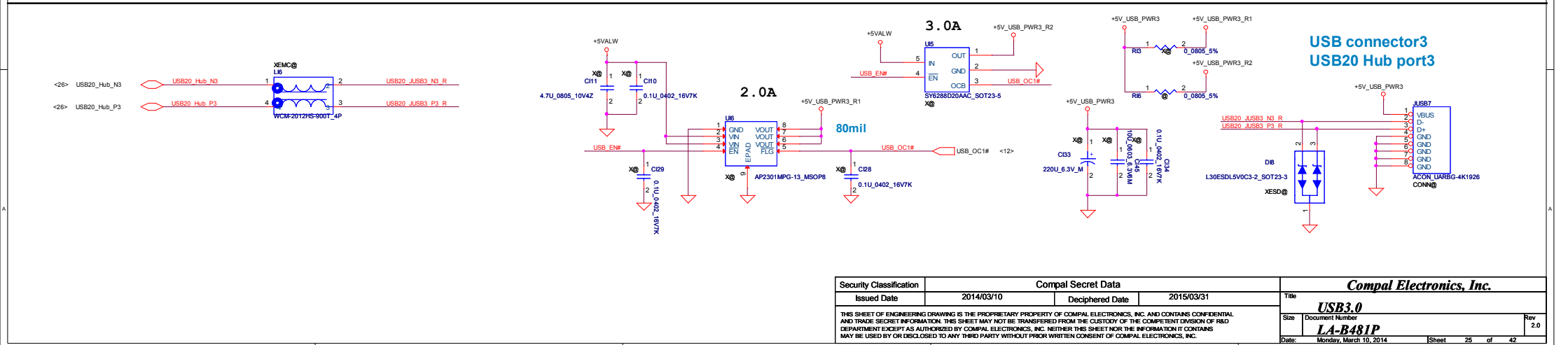
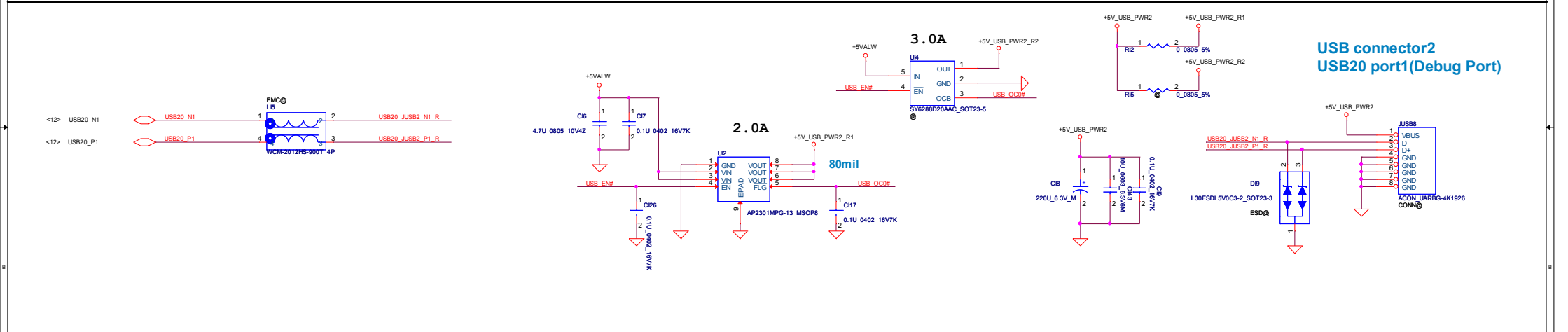
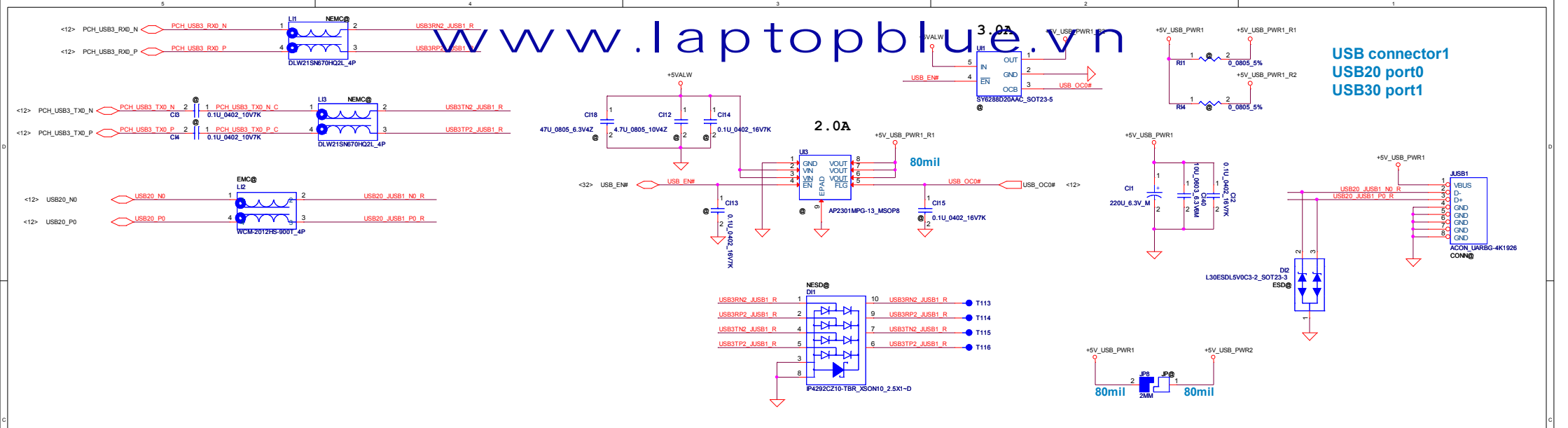


Trace width for SPK-L+/SPK-L-/SPK-R+/SPK-R-
Speaker 4 ohm : 40mil
Speaker 8 ohm : 20mil



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Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	
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				LA-B481P	
				Date:	Monday, March 10, 2014
				Sheet	23 of 42

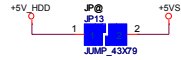




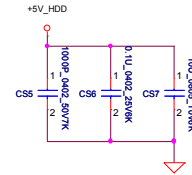
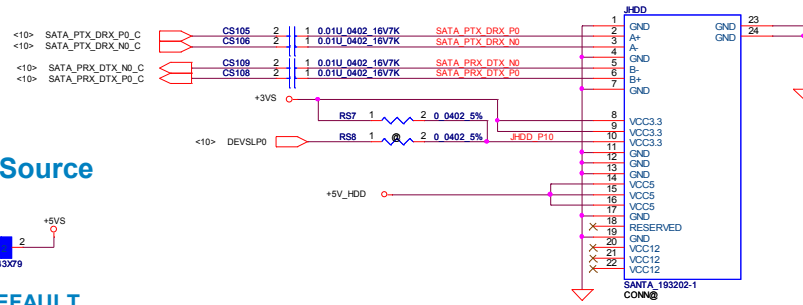
Security Classification		Compal Secret Data		Title	
Issued Date	2014/03/10	Deciphered Date	2015/03/31	Compal Electronics, Inc.	
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Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	USB Conn & Hub FE1.1S
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				LA-B481P	2.0
Date:		Monday, March 10, 2014		Sheet	26 of 42

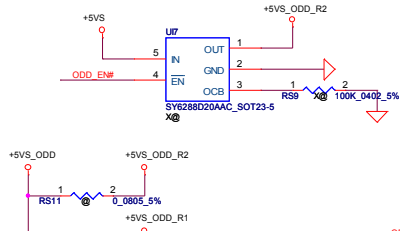
+5V_HDD Source



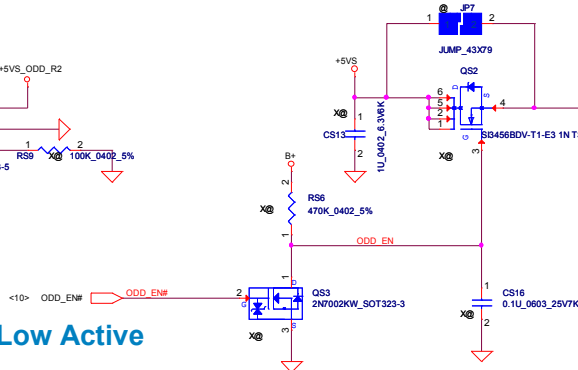
SHORT DEFAULT



ODD Power Control

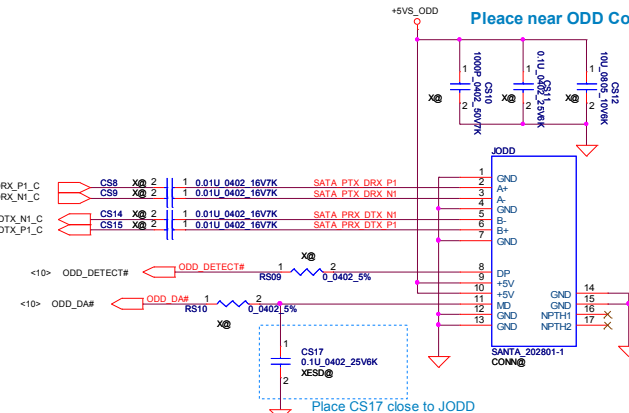


Low Active

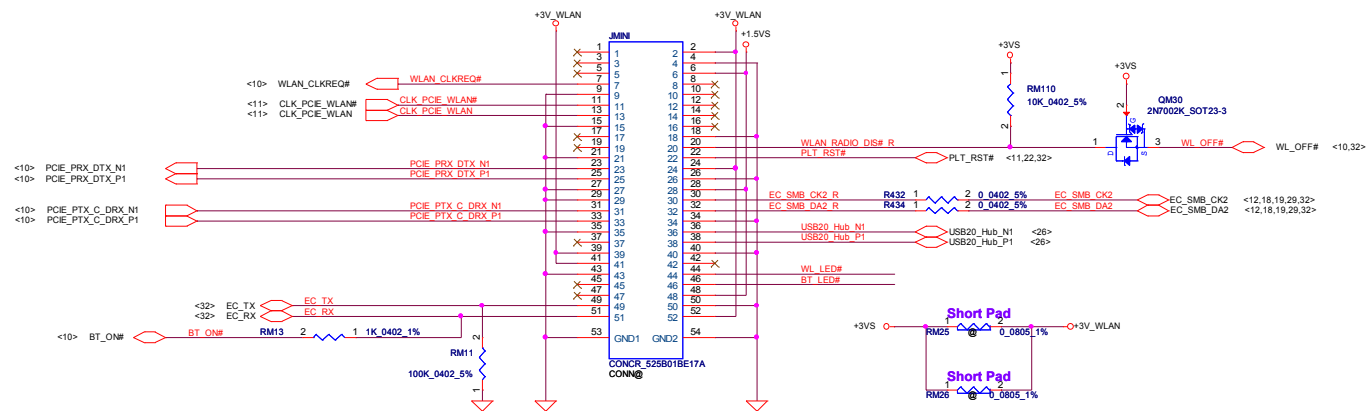


SATA ODD Connector

Place near ODD Connector

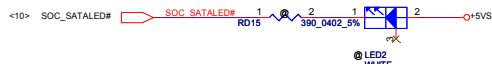


Mini WLAN/WIMAX H=6.7



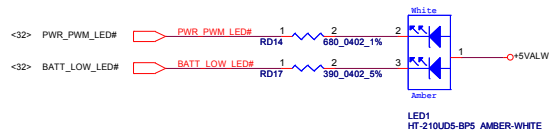
10mils, All pins

HDD LED

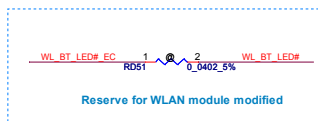
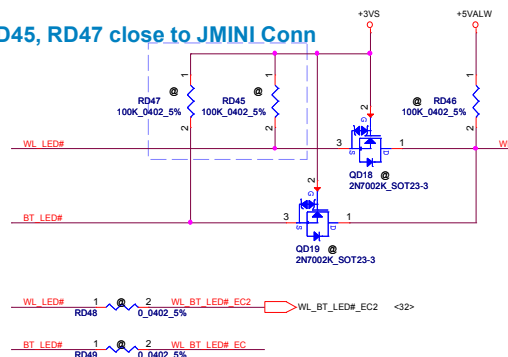


12-21C-T3D-CM2P1B18X-2C_WHITE

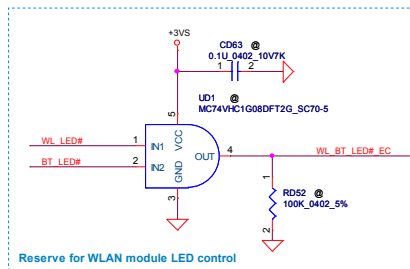
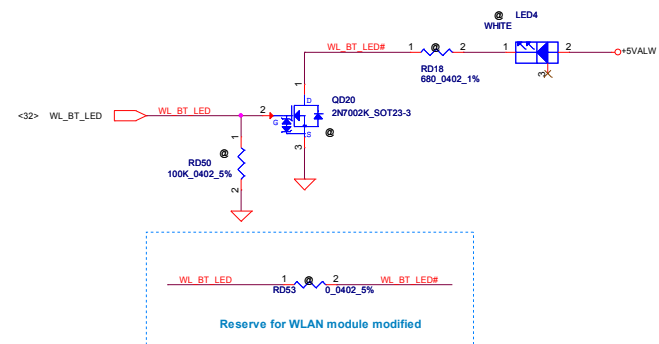
Power / Battery LED

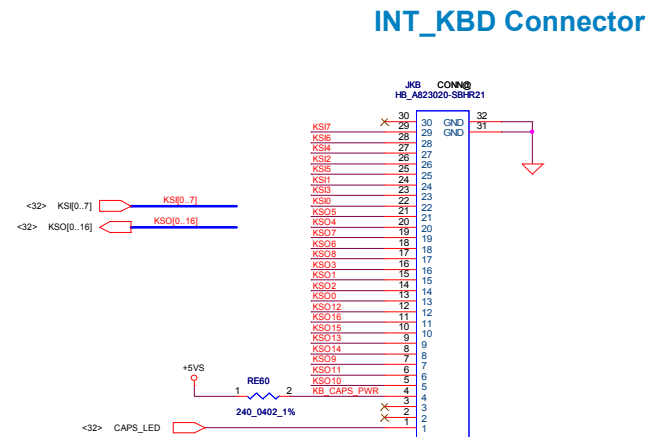
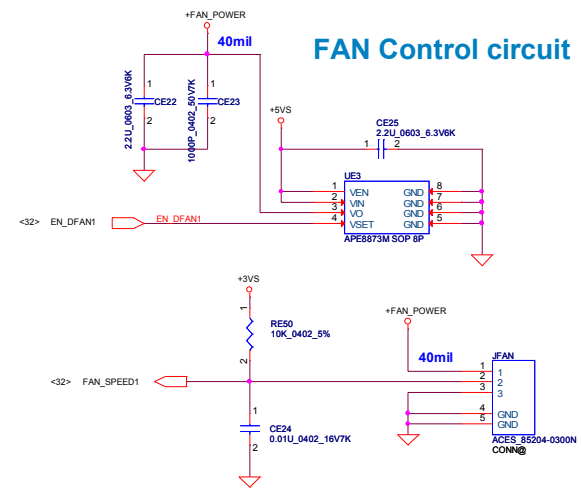
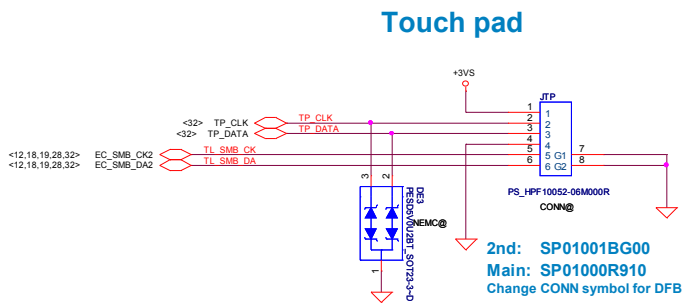
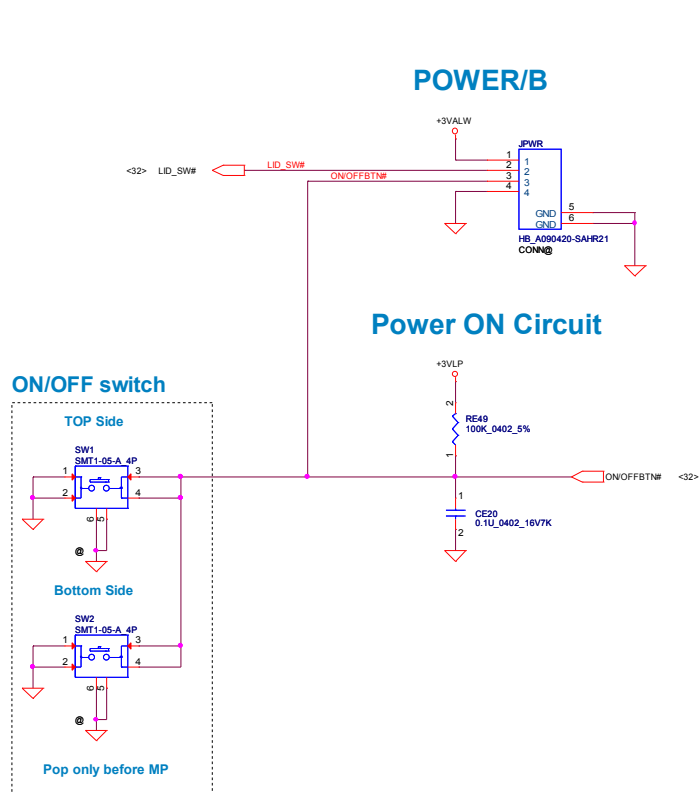


RD45, RD47 close to JMIN Conn



Wireless LED

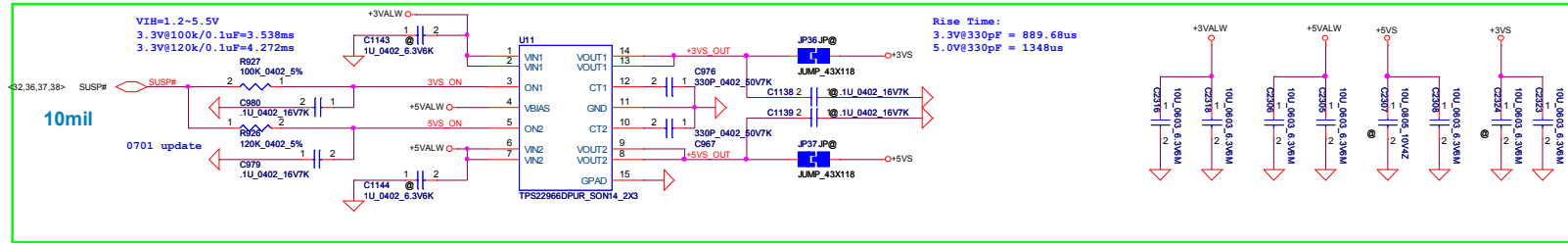




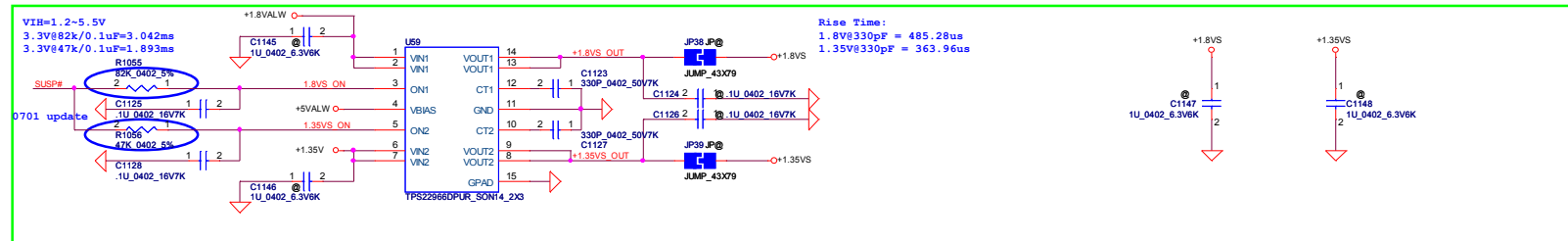
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	FAN/TP/PWR SW	
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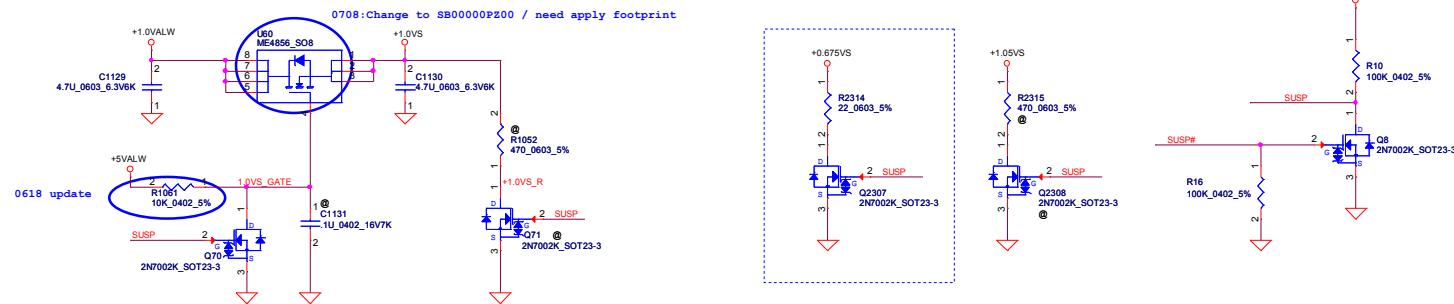
+5VS and +3VS Switch



+1.8VS and +1.35VS Switch



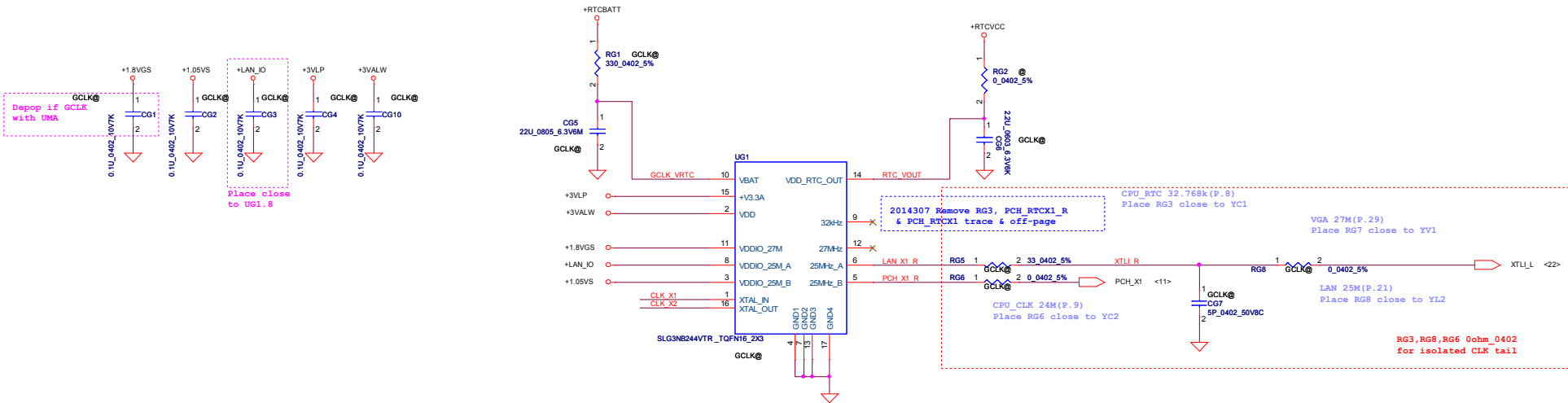
+1.0VALW TO +1.0VS

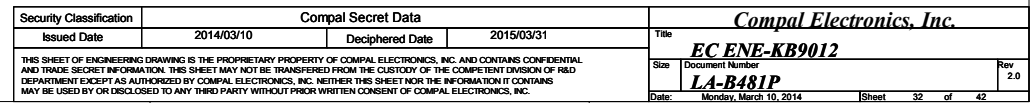


For Intel S3 Power Reduction

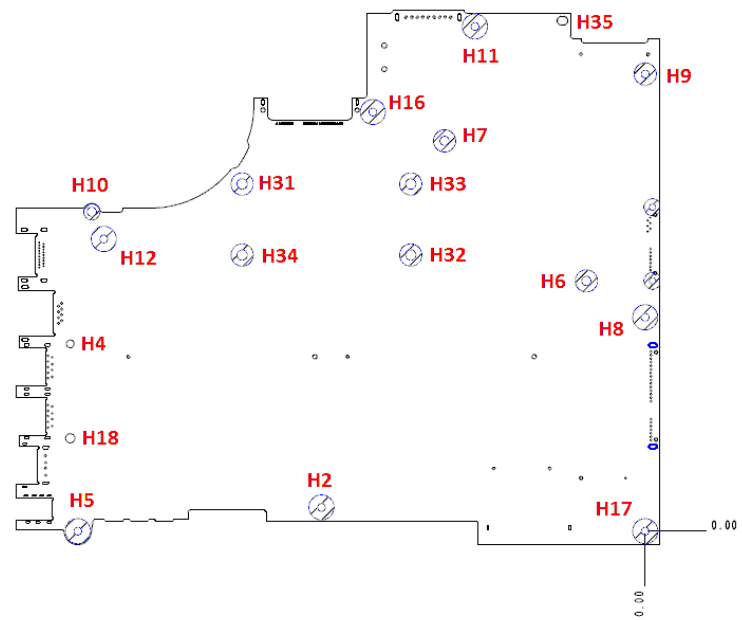
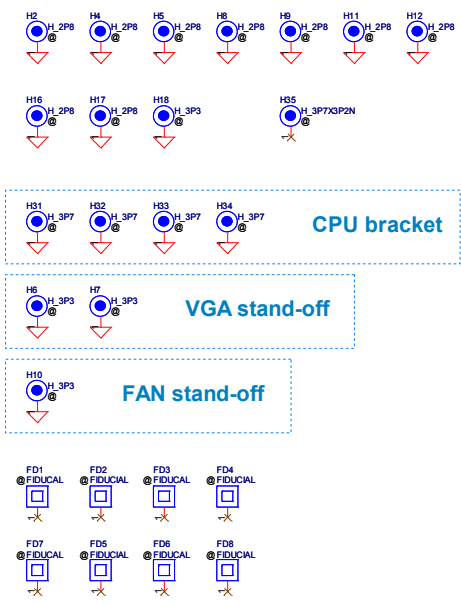
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	DC/DC Interface
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SLG3NB3374VTR is for DIS by output 24M*1,25M*1, 27M*1, 32K*1
SLG3NB3375VTR is for UMA by output 24M*1, 25M*1, 32K*1
SLG3NB244VTR is for UMA by output 25M*2, 32K*1





Screw Hole



[illegible]

ERP lot6 Circuit

VIN

ERP_LOT6 <32>

ACIN <11,32,40>

PR16

200k_0402_1%

PC5

0.1u_0402_25V

PR14

1M_0402_1%

PR19

1M_0402_1%

PC3B8

3.3K_1206_5%-D

L2N7002DW1T1G_S08e6

[illegible]

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	P31-PWR DCIN/BATT CONN/OTP	
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3VALWP
TDC 4.5A
Peak Current 7.09A
OCP current 8.51A

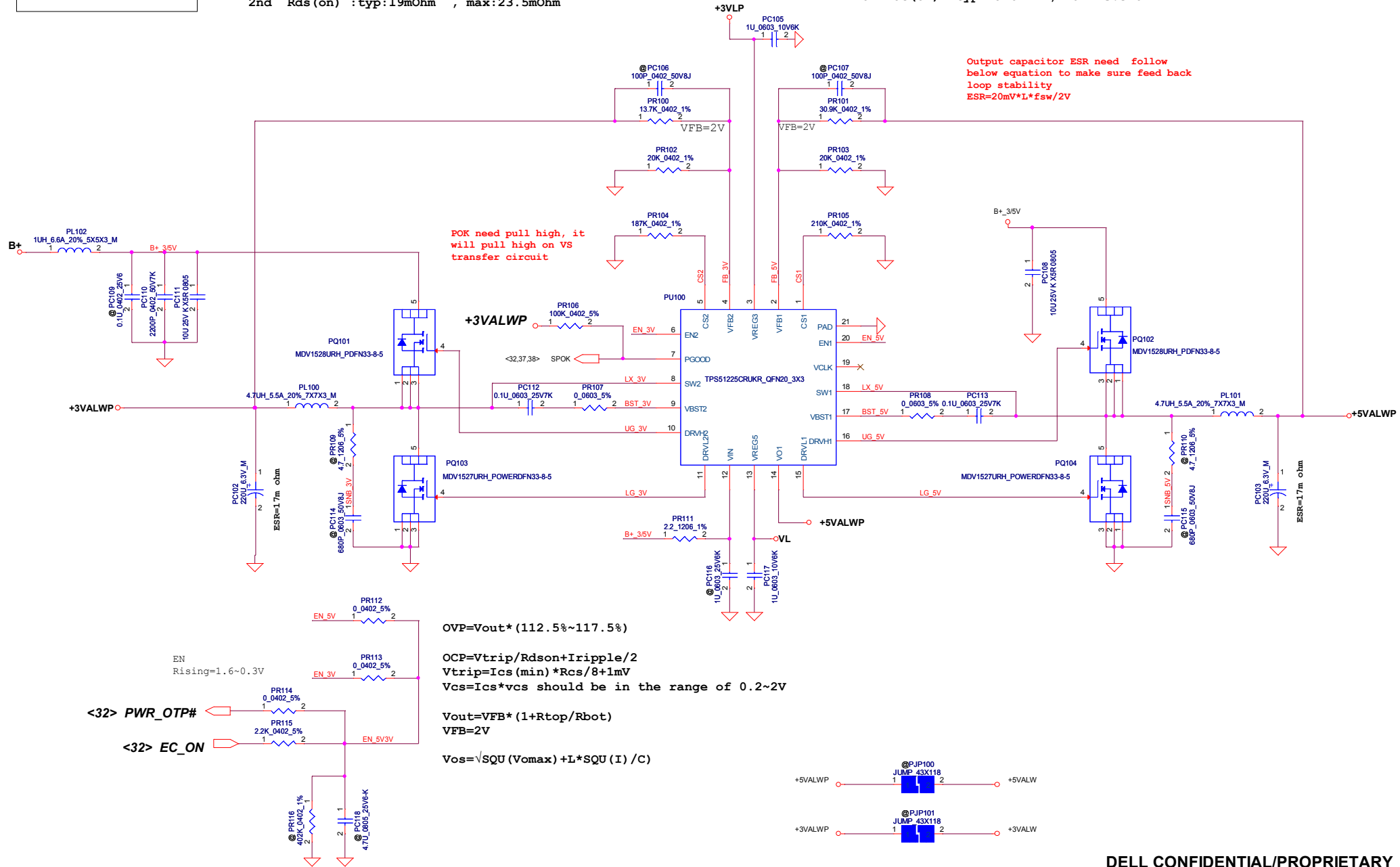
H/S main Rds(on) :typ:23.2mOhm, max:27.8mOhm
2nd Rds(on) :typ:27mOhm, max:34mOhm

L/S main Rds(on) :typ:19.7mOhm, max:23.7mOhm
2nd Rds(on) :typ:19mOhm, max:23.5mOhm

H/S main Rds(on) :typ:23.2mOhm, max:27.8mOhm
2nd Rds(on) :typ:27mOhm, max:34mOhm

L/S main Rds(on) :typ:19.7mOhm, max:23.7mOhm
2nd Rds(on) :typ:19mOhm, max:23.5mOhm

5VALWP
TDC 4.91A
Peak Current 8.63A
OCP current 10.36A

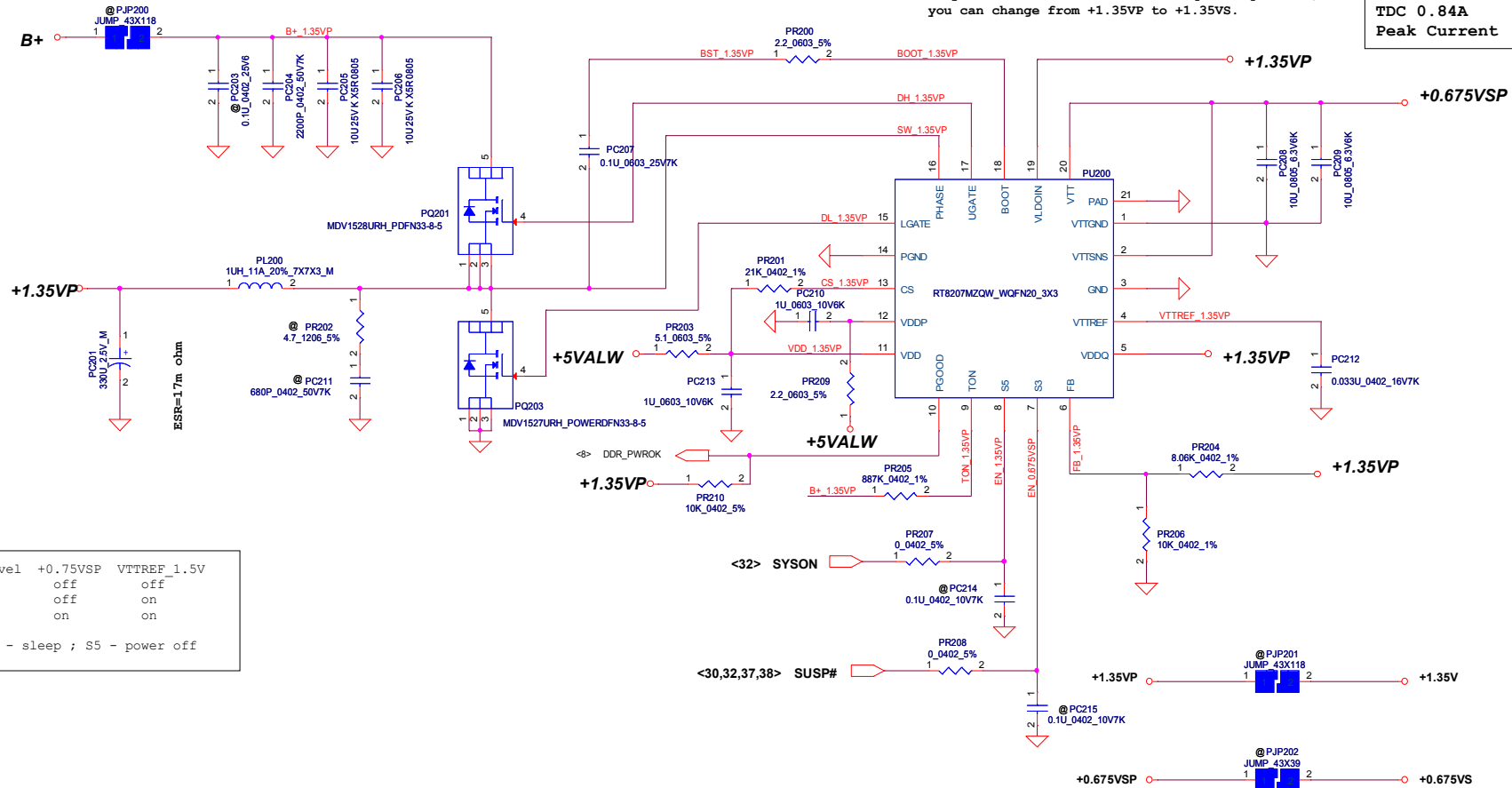


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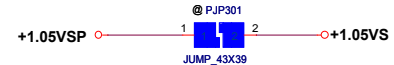
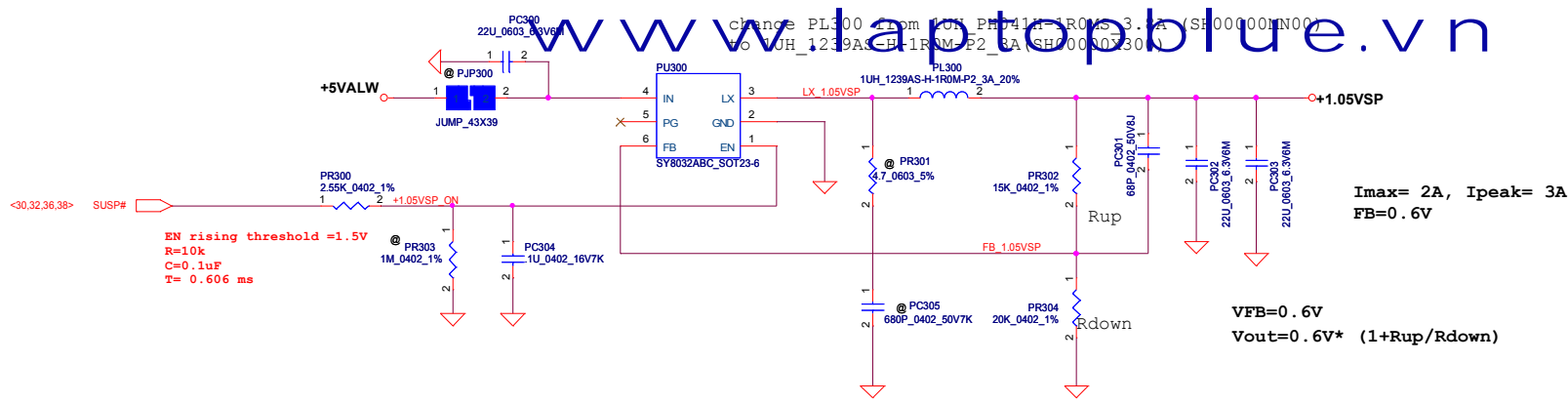
L/S main Rds(on) : typ:19.7mOhm, max:23.7mOhm
2nd Rds(on) : typ:19mOhm , max:23.5mOhm

0.675Volt +/- 5%
TDC 0.84A
Peak Current 1.2A

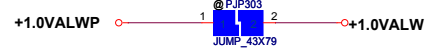
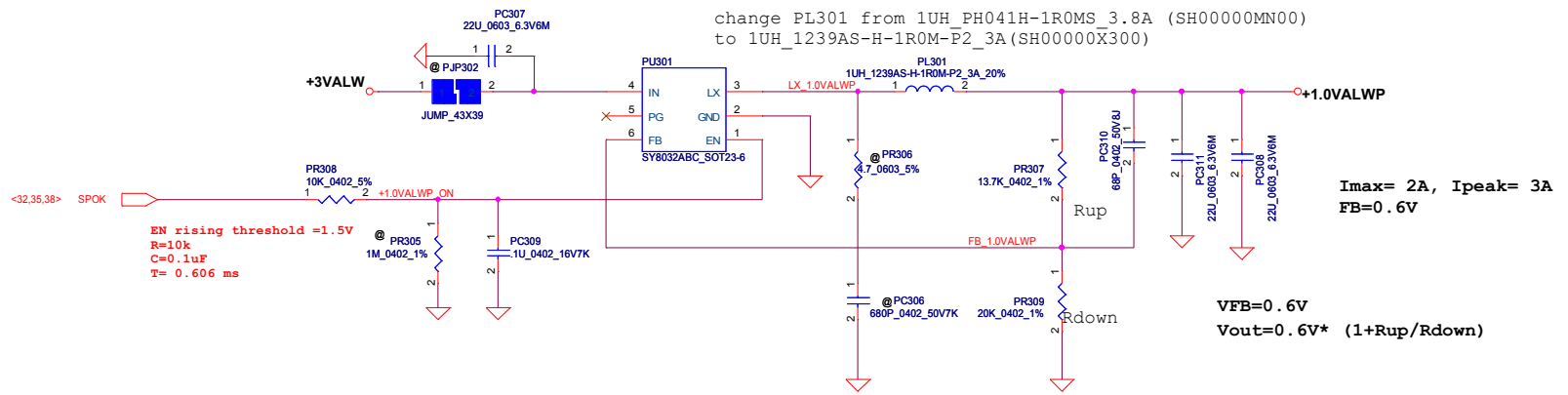


Mode	Level	+0.75VSP	VTTREF_1.5V
S5	L	off	off
S3	L	off	on
S0	H	on	on

Note: S3 - sleep ; S5 - power off



+1.05VSP
TDC 0.7A
Peak Current 1A
OCP current 3.5A

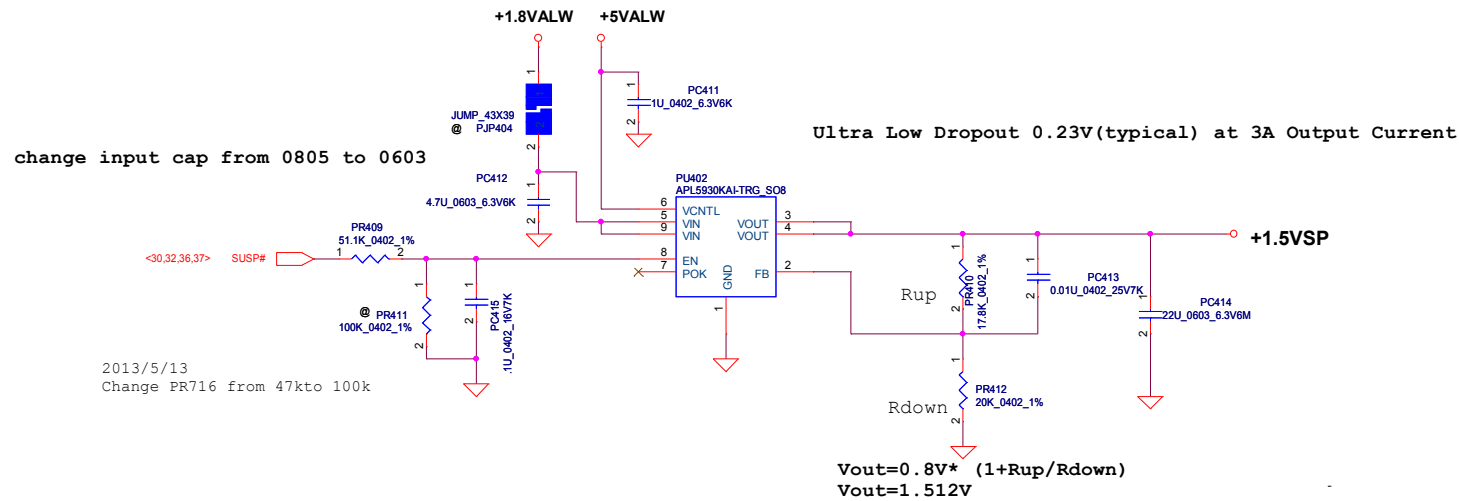
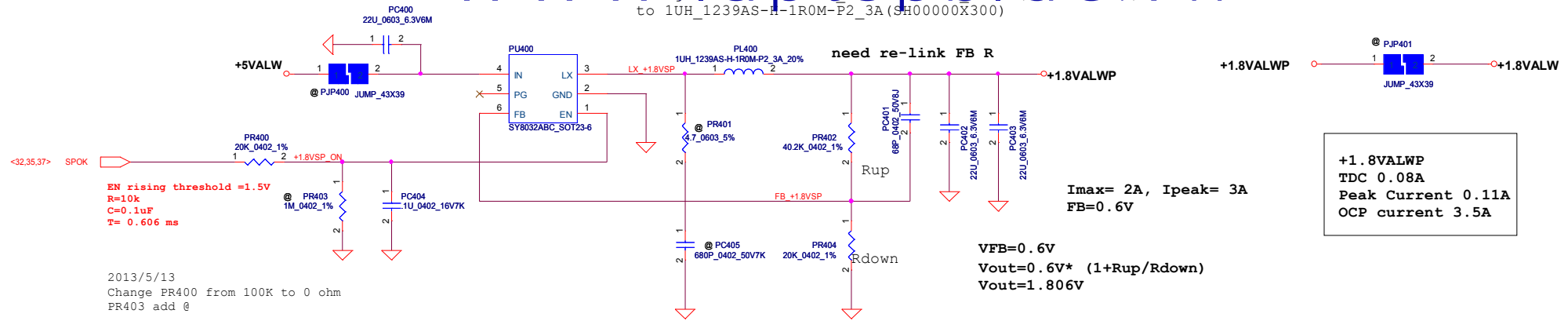


+1.0VALWP
TDC 2.15A
Peak Current 3.08A
OCP current 3.5A

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change PL00 from 1UH_1239AS-H-1R0M-P2_3A (SH00000X300) to 1UH_1239AS-H-1R0M-P2_3A (SH00000X300)



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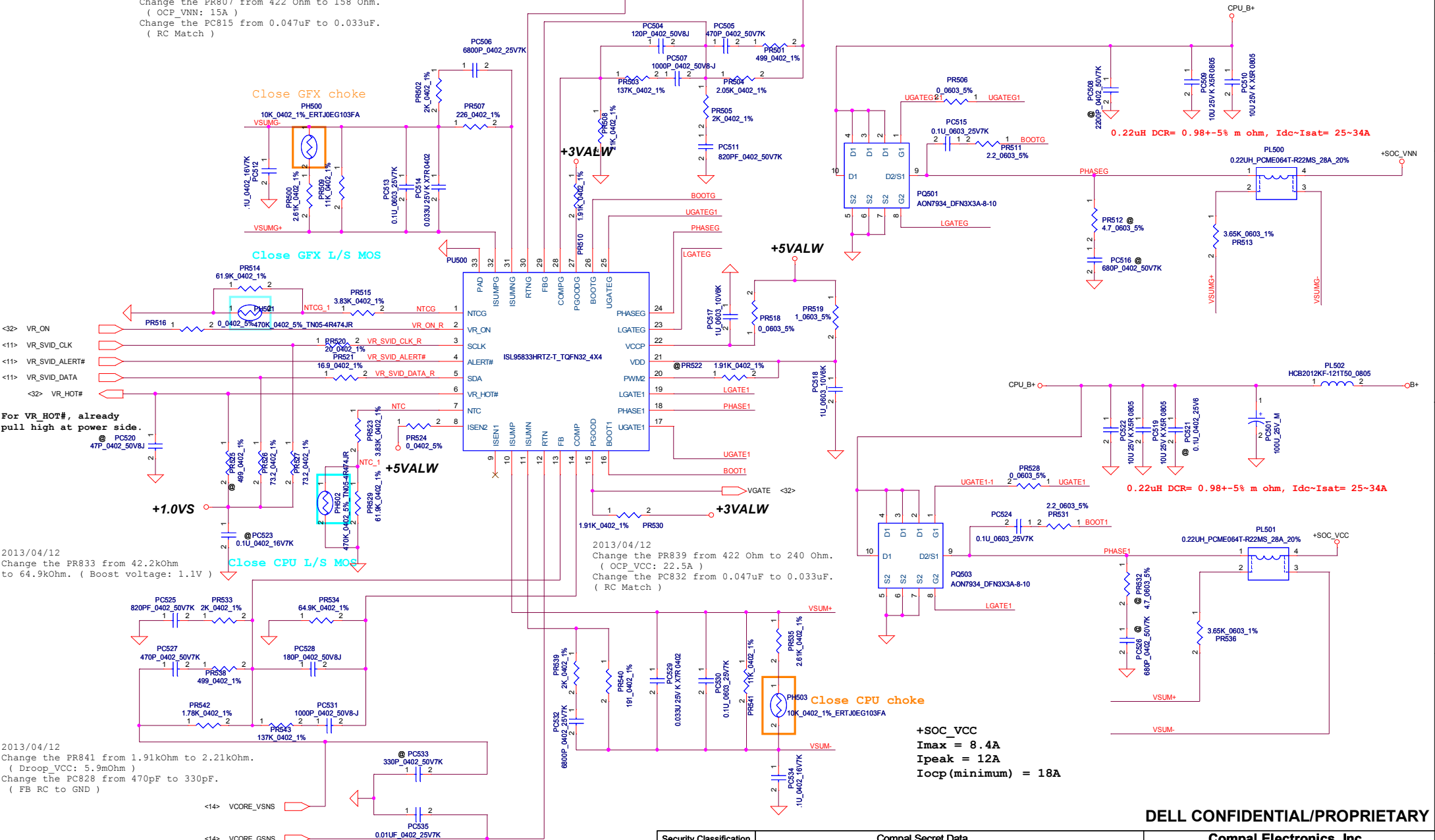
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	
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2013/04/12
Change the PR805 from 2.61kOhm to 1.47kOhm.
(Droop_VNN: 5.9mOhm)

2013/04/12
Change the PR808 from @ to 21kOhm.
(Freq: 450kHz)
Change the PR807 from 422 Ohm to 158 Ohm.
(OCP_VNN: 15A)
Change the PR815 from 0.047uF to 0.033uF.
(RC Match)

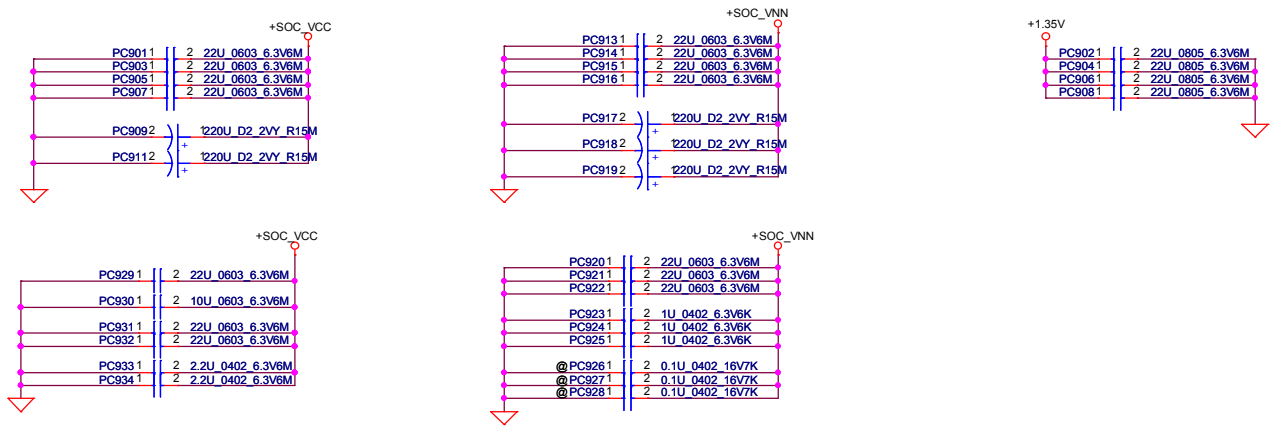
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SOC_VNN
Imax = 8.8A
Ipeak = 14A
Iocp(minimum) = 21A



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	2014/03/10	2015/03/31	P38-PWR-CPU_CORE	
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Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
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Issued Date	2014/03/10	Deciphered Date	2015/03/31	Title	PWR-PIR		
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				Date:	Sheet	42	of 42