PROJECT :ZAVA1/ZAVC1
PCB NO : DA60018A000 LA-B016P-R1.0

Compal Confidential

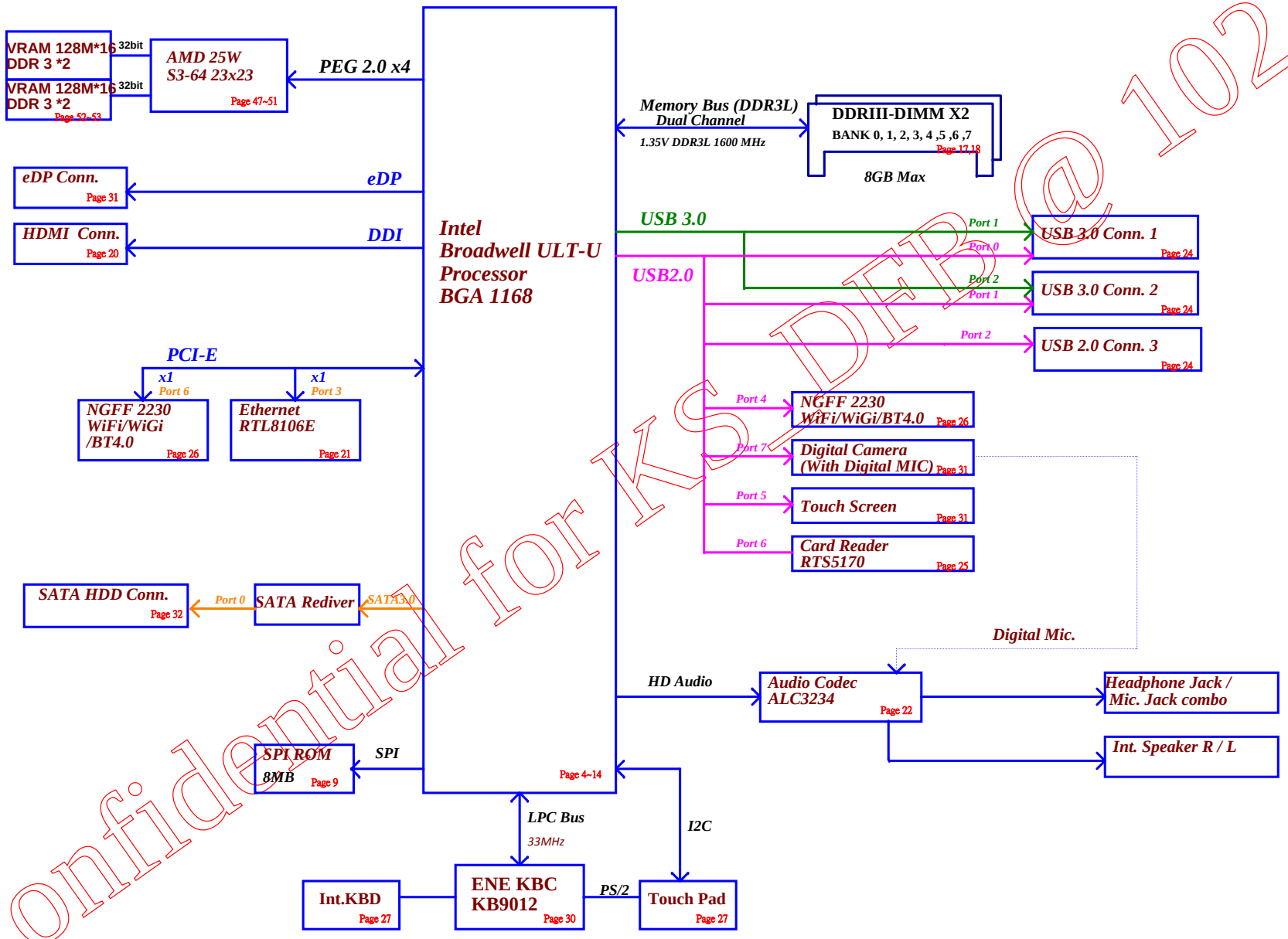
Schematic Document

Intel Shark Bay ULT
UMA / DIS AMD 25W/S3+DDR3x4

2014-10-20 Rev: 1.0

Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2018/03/31

Compal Electronics, Inc.		
Title: Cover Page		
Size:	Document Number: LA-B016P	Rev: 1.0
Date: Friday, October 24, 2014	Sheet 1 of 56	



Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/03/26	Deciphered Date	2018/03/31
Title	Block Diagram		
Size	Document Number		Rev
	LA-B016P		1.0
Date:	Friday, October 24, 2014	Sheet	2 of 56

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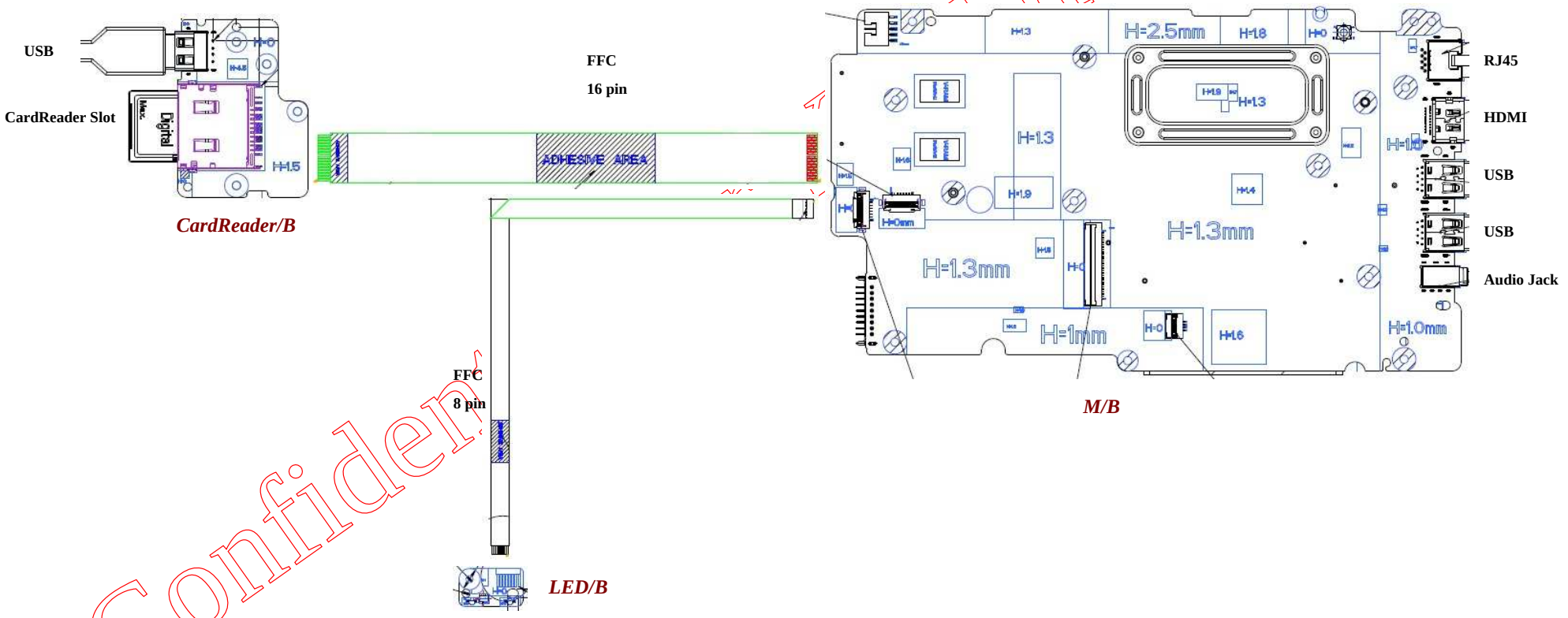
Project: ZAVA1/ZAVC1
File Name : LA-B016P



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Issued Date	2014/03/26	Deciphered Date	2018/03/31

Compal Electronics, Inc.			
Title	MB & DB Ass'y		
Size	Document Number	LA-B016P	Rev 1.0
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Board ID Table for AD channel

Vcc	3.3V +/- 1%
Ra	100K +/- 1%

Board ID	Rb	V_{AD_BID} min	V_{AD_BID} typ	V_{AD_BID} max	EC AD3
0	0	0.000V	0.000V	0.300V	0x00 - 0x0B
1	12K +/- 1%	0.347V	0.354V	0.360V	0x0C - 0x1C
2	15K +/- 1%	0.423V	0.430V	0.438V	0x1D - 0x26
3	20K +/- 1%	0.541V	0.550V	0.559V	0x27 - 0x30
4	27K +/- 1%	0.691V	0.702V	0.713V	0x31 - 0x3B
5	33K +/- 1%	0.807V	0.819V	0.831V	0x3C - 0x46
6	43K +/- 1%	0.978V	0.992V	1.006V	0x47 - 0x54
7	56K +/- 1%	1.169V	1.185V	1.200V	0x55 - 0x64
8	75K +/- 1%	1.398V	1.414V	1.430V	0x65 - 0x76
9	100K +/- 1%	1.634V	1.650V	1.667V	0x77 - 0x87
10	130K +/- 1%	1.849V	1.865V	1.881V	0x88 - 0x96
11	160K +/- 1%	2.015V	2.031V	2.046V	0x97 - 0xA3
12	200K +/- 1%	2.185V	2.200V	2.215V	0xA4 - 0xAD
13	240K +/- 1%	2.316V	2.329V	2.343V	0xAE - 0xB7
14	270K +/- 1%	2.395V	2.408V	2.421V	0xB8 - 0xC0
15	330K +/- 1%	2.521V	2.533V	2.544V	0xC1 - 0xC9
16	430K +/- 1%	2.667V	2.677V	2.687V	0xCA - 0xD3
17	560K +/- 1%	2.791V	2.800V	2.808V	0xD4 - 0xDC
18	750K +/- 1%	2.905V	2.912V	2.919V	0xDD - 0xE6
19	NC	3.000V	3.300V	3.300V	0xE7 - 0xFF

BDW 3D BOARD ID Table

Board ID	UMA	DIS(JET)	DIS(Topaz)
0	Pre-SSI		
1		Pre-SSI	
2			Pre-SSI
3	SSI		
4		SSI	
5			SSI
6	PT		
7		PT	
8			PT
9	ST		
10		ST	
11			ST
12	1.0		
13		1.0	
14			1.0

SMBUS Control Table

	SOURCE	BATT	Charger	VGA	DIMM	XDP	Thermal Sensor	FFS
EC_SMB_CK1 EC_SMB_DA1	KB9012	V	V					
EC_SMB_CK2 EC_SMB_DA2	KB9012			V			V	
SMBCLK SMBDATA	ULT				V	V		V
SML0CLK SML0DATA	ULT							
SML1CLK SML1DATA	ULT							

Link

Symbol Note :

: means Digital Ground

: means Analog Ground

CLOCK SIGNAL	
CLKOUT_PCIE0	
CLKOUT_PCIE1	
CLKOUT_PCIE2	10/100 LAN
CLKOUT_PCIE3	MINI Card (WLAN)
CLKOUT_PCIE4	dGPU
CLKOUT_PCIE5	

ULT		
	USB3.0	
	Port1	USB connector 1
	Port2	USB connector 2
	Port3	
	Port4	
	USB2.0	
	Port0	USB connector 1
	Port1	USB connector 2
	Port2	USB connector 3 (D/B)
	Port3	
	Port4	MINI Card (WLAN)
	Port5	Touch Screen Panel
	Port6	Card Reader
	Port7	Camera
	PCI EXPRESS	
	Lane 1	
	Lane 2	
	Lane 3	10/100 LAN
	Lane 4	MINI Card (WLAN)
	Lane 5	PEG (AMD JET/TOBAZ)
	Lane 6	
	SATA	
	SATA0	HDD
	SATA1	
	SATA2	
	SATA3	

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Title: Notes

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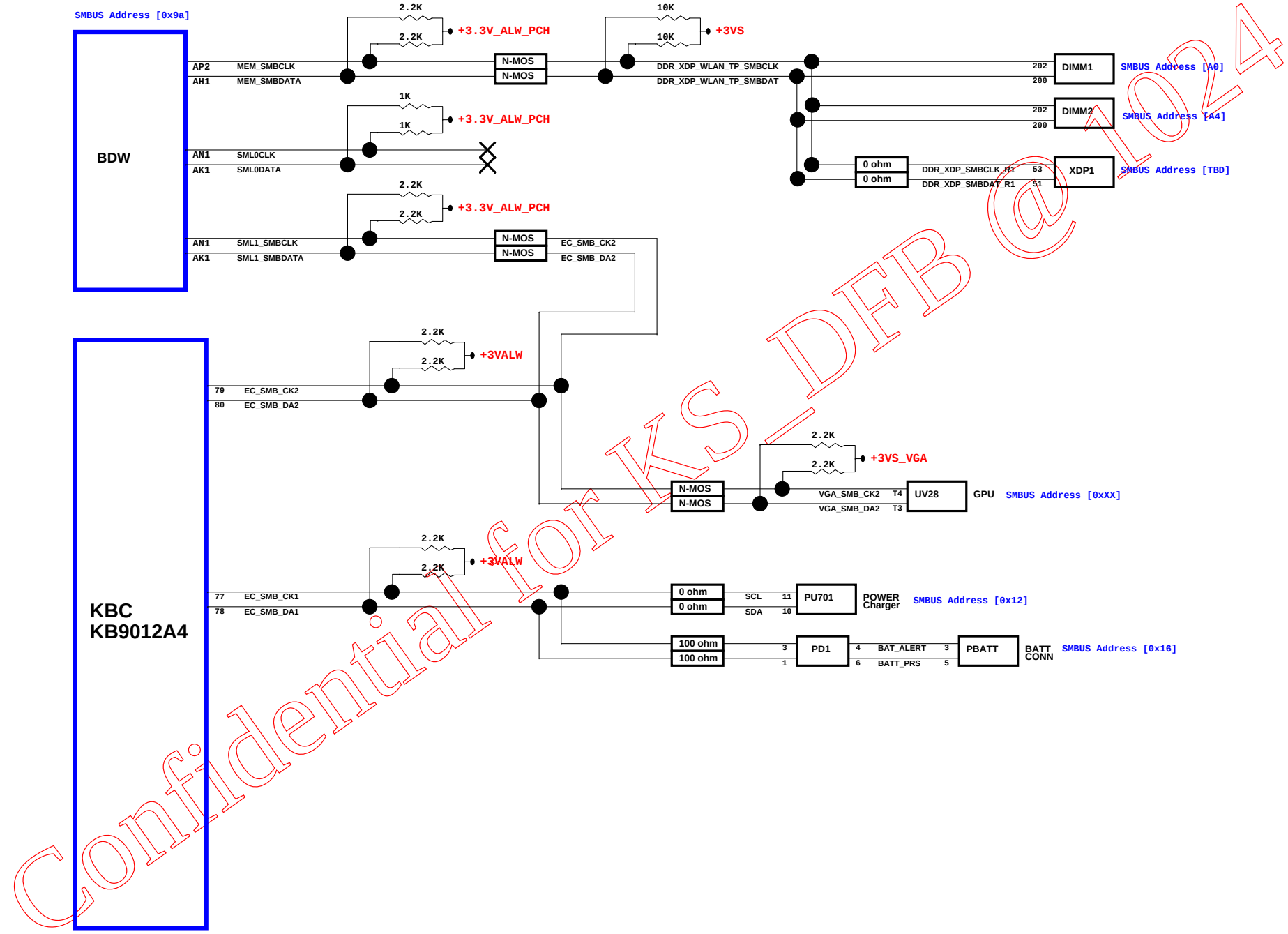

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Compal Electronics, Inc.			
Title	SMBUS connection		
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i3-4020U-15W-GT2-MP

UC1 I3R1@ — CL8064701552800 QEZ5 D0 1.8G — **SA00007MG0L**

UC1 I3R3@ — CL8064701478202 SR16Q C1 1.7G A31! — **SA00006SX2L** TBD

i5-4210U-15W-GT2-MP

UC1 I5R1@ — CL8064701477802 QEAK D0 1.7G — **SA00007LO0L**

UC1 I5R3@ — CL8064701477702 SR170 C1 1.6G A31! — **SA00006SM3L** TBD

i7-4510U-15W-GT2-MP

UC1 I7R1@ — CL8064701477301 QEAF D0 2G BGA — **SA00007M70L**

UC1 I7R3@ — CL8064701477202 SR16Z C1 1.8G A31! — **SA00006SL2L** TBD

Broadwell

UC1 QFSY@ — CL8064701614813 QFSY C0 1.6G — **SA00007AM0L**

UC1 QG21@ — CL8065801674128 QG21 C0 1.2G — **SA00007OS0L**

UC1 QG22@ — CL8065801675027 QG22 C0 1.2G — **SA00007OT0L**

UC1A HASWELL_MCP_E

DDI1_LANE_N0 C54 DDI1_TXN0
DDI1_LANE_P0 C55 DDI1_TXP0
DDI1_LANE_N1 B58 DDI1_TXN1
DDI1_LANE_P1 C58 DDI1_TXP1
DDI1_LANE_N2 B55 DDI1_TXN2
DDI1_LANE_P2 A55 DDI1_TXP2
DDI1_LANE_N3 A57 DDI1_TXN3
DDI1_LANE_P3 B57 DDI1_TXP3
DDI2_TXN0 C51 DDI2_TXN0
DDI2_TXP0 C52 DDI2_TXP0
DDI2_TXN1 B53 DDI2_TXN1
DDI2_TXP1 C49 DDI2_TXP1
DDI2_TXN2 B51 DDI2_TXN2
DDI2_TXP2 A52 DDI2_TXP2
DDI2_TXN3 B52 DDI2_TXN3
DDI2_TXP3 DDI2_TXP3

DDI — EDP — 1 OF 19 — Rev1p2

EDP_TXN0 C45 EDP_TX0# <31>
EDP_TXP0 B46 EDP_TX0 <31>
EDP_TXN1 A47 EDP_TX1# <31>
EDP_TXP1 B47 EDP_TX1 <31>
EDP_TXN2 C47
EDP_TXP2 C46
EDP_TXN3 B49
EDP_TXP3 A49
EDP_AUXN A45 EDP_AUX# <31>
EDP_AUXP B45 EDP_AUX <31>
EDP_RCOMP D20 EDP_COMP
EDP_DISP_UTIL A43 EDP_DISP_UTIL

EDP_BIA_PWM <10,31> — 24.9_0402_1%~D — RC71 — +VCCIOA_OUT
@ RC72 0_0402_5%

COMPENSATION PU FOR eDP

CAD Note:Trace width=20 mils ,Spacing=25mil, Max length=100 mils.

SYS_RESET# — SYS_RESET# <10> — SYS_RESET# — RC362 1K_0402_1% — +3VS — CC17 0.1U_0402_10V7K

+1.05VS_PCH — @RC58 49.9_0402_1% H_CATERR# — RC60 62_0402_5% H_PROCHOT#

H_CPUPWRGD — RC66 10K_0402_5% — CC27 100P_0402_50V8J @EMI@

ESD solution

CAD Note:
Avoid stub in the PWRGD path while placing resistors RC115

DDR3 COMPENSATION SIGNALS

200_0402_1% RC68 SM_RCOMP0
120_0402_1% RC69 SM_RCOMP1
100_0402_1% RC70 SM_RCOMP2

CAD Note:
Trace width=12~15 mil, Spcing=20 mils
Max trace length= 500 mil

UC1B HASWELL_MCP_E

<30> PECI_EC — H_CATERR# — PECI_EC — D61 K61 N62 — PROC_DETECT CATERR PECI — MISC
<30,34> H_PROCHOT# — RC67 56_0402_5% — H_PROCHOT#_R — K63 — PROCHOT — THERMAL
H_CPUPWRGD — C61 — PROCPWRGD — PWR
H_PROCHOT# — @EMI@ CC42 22P_0402_50V8J
SM_RCOMP0 AU60 SM_RCOMP0
SM_RCOMP1 AV62 SM_RCOMP1
SM_RCOMP2 AU61 SM_RCOMP2
AV15 SM_DRAMRST
AV61 SM_PG_CNTL1
<17> DDR3_DRAMRST#_CPU
<17> DDR_PG_CTRL
DDR

2 OF 19 — Rev1p2

PROC_TCK E61 XDP_TCK
PROC_TMS E60 XDP_TMS
PROC_TRST# E59 XDP_TRST#
PROC_TDI F63 XDP_TDI
PROC_TDO F62 XDP_TDO
XDP_TCK @ T123
XDP_TDI @ T122
R3 0_0402_5% — PCH_JTAG_RST# <8>

BPM#0 J60 XDP_OBS0_R — RC141 1 @ 2 0_0402_1%
BPM#1 H60 XDP_OBS1_R
BPM#2 H61 @ T111
BPM#3 H62 @ T112
BPM#4 K59 @ T113
BPM#5 H63 @ T114
BPM#6 K60 @ T115
BPM#7 J61 @ T116

+1.05VS_PCH
XDP_TDO
XDP_TCK
XDP_TRST#
RP45 51_8P4R_5%

PU/PD for JTAG signals

DDR3_DRAMRST#_CPU — CC25 @ESD@ 0.047U_0402_16V4Z

Place CC35 on BOT

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Issued Date	2014/03/26	Deciphered Date 2015/03/31	Title: MCP(1,2/19) eDP,XDP,MISC
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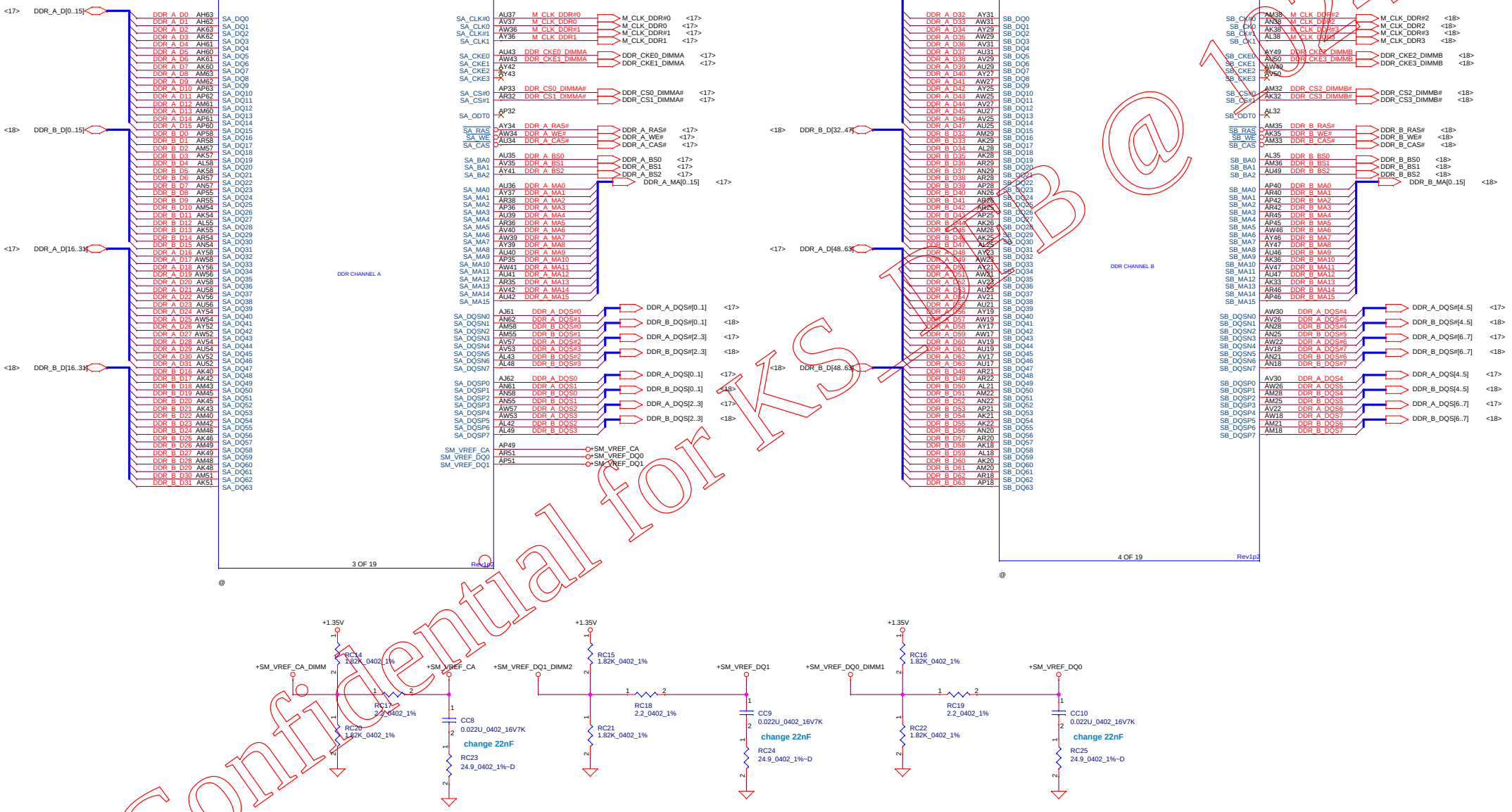
			Date: Monday, October 20, 2014 — Sheet 6 of 56

Interleaved Memory



confirm by intel request PDG P141

Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.			
Title: MCP(3,4/19) DDR3			
Size: C	Document Number: LA-B016P		Rev: 0.1
Date: Monday, October 20, 2014	Sheet 7 of 56		

RTC Battery

+RTCBATT
+CHGRTC
RC10 1K_0402_5%
W=20mils
W=20mils
DC1 BAT54CW_SOT323-3
+RTCVCC
W=20mils
CC26 1U_0603_10V6K

JP14 JUMP_43X39
+RTCVCC
JP12 JUMP_43X39
+CHGRTC
+3VLP

For GCLK
<19> PCH_RTCX1 PCH_RTCX1

+RTCVCC
RC1 330K_0402_1%
PCH_INTVRMEN
RC2 330K_0402_1%

INTVRMEN - INTEGRATED SUS 1.05V VRM ENABLE
High - Enable Internal VRs
Low - Enable External VRs

+3VS
@RC3 PCH_AZ_SDOUT 1K_0402_5%

FLASH DESCRIPTOR SECURITY OVERRIDE
LOW = DESABLED (DEFAULT)
HIGH = ENABLED

CC1 XTAL@ 15P_0402_50V8J
PCH_RTCX1
XTAL@
YC1 32.768KHZ_12.5PF_Q13FC1350000
XTAL@ RC4 10M_0402_5%
CC2 XTAL@ 15P_0402_50V8J
PCH_RTCX2
INTRUDER#
PCH_INTVRMEN
SRTCRST#
PCH_RTCRST#
+RTCVCC
RC7 1M_0402_5%
RC5 20K_0402_5%
RC6 20K_0402_5%
CC3 1U_0402_6.3V6K
@ CMOS1 SHORT PADS~D
CC4 1U_0402_6.3V6K

CMOS place near DIMM

UC1E HASWELL_MCP_E
RTCX1 RTCX2 INTRUDER INTVRMEN SRTCRST RTCRST
RTC
HDA_BCLK/I2S0_SCLK
HDA_SYNC/I2S0_SFRM
HDA_RST/I2S_MCLK
HDA_SDI0/I2S0_RXD
HDA_SDI1/I2S1_RXD
HDA_SDO/I2S0_TXD
HDA_DOCK_EN/I2S1_TXD
HDA_DOCK_RST/I2S1_SFRM
I2S1_SCLK
AUDIO
PCH_AZ_BITCLK
PCH_AZ_SYNC
PCH_AZ_RST#
PCH_AZ_CODEC_SDIN0
<22> PCH_AZ_CODEC_SDIN0
<30> ME_EN
RC8 PCH_AZ_SDOUT 1K_0402_5%
JTAG
PCH_JTAG_TCK PCH_JTAG_TDI PCH_JTAG_TDO PCH_JTAG_TMS
PCH_JTAG_TRST
PCH_TCK PCH_TDI PCH_TDO PCH_TMS RSVD JTAGX
<6> PCH_JTAG_RST#
T175
SATA
SATA_RN0/PERN6_L3 SATA_RP0/PERP6_L3 SATA_TN0/PETN6_L3 SATA_TP0/PETP6_L3
SATA_RN1/PERN6_L2 SATA_RP1/PERP6_L2 SATA_TN1/PETN6_L2 SATA_TP1/PETP6_L2
SATA_RN2/PERN6_L1 SATA_RP2/PERP6_L1 SATA_TN2/PETN6_L1 SATA_TP2/PETP6_L1
SATA_RN3/PERN6_L0 SATA_RP3/PERP6_L0 SATA_TN3/PETN6_L0 SATA_TP3/PETP6_L0
SATA0GP/GPIO34 SATA1GP/GPIO35 SATA2GP/GPIO36 SATA3GP/GPIO37
SATA_IREF RSVD RSVD SATA_RCOMP SATALED
5 OF 19
Rev1p2

SATA_PRX_DTX_N0_C <32>
SATA_PRX_DTX_P0_C <32>
SATA_PTX_DRX_N0_C <32>
SATA_PTX_DRX_P0_C <32>
SATA HDD

PCH Rx side need use strap pin to update PCIE +/-
+3VS
RC107 10K_0402_5%
EC_SMI# <30>
ODD_DETECT#
+1.05VS_ASATA3PLL
SATA_IREF RC126 1 @ 2 0_0603_1%
SATA_RCOMP SATA_ACT# RC131 1 2 3.01K_0402_1%
SATA_ACT# <25>
within 500 mils

SATA Impedance Compensation
CAD note:
Place the resistor within 500 mils of the PCH. Avoid routing next to clock pins.
reference FFRD sch 0.5

RTC discharge by EC

SRTCRST#
PCH_RTCRST#
@ DMN66D0LDW-7_SOT363-6 QC2B
@ DMN66D0LDW-7_SOT363-6 QC2A
<30> RTC_DIS
@ RC368 100K_0402_5%

CMOS_CLR1	CMOS setting
Shunt	Clear CMOS
Open	Keep CMOS

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

HDA for Codec

<22> PCH_AZ_CODEC_SDOUT EMI@ R2356 1 2 33_0402_5% PCH_AZ_SDOUT
<22> PCH_AZ_CODEC_SYNC EMI@ R2357 1 2 33_0402_5% PCH_AZ_SYNC
<22> PCH_AZ_CODEC_RST# EMI@ R2358 1 2 33_0402_5% PCH_AZ_RST#
<22> PCH_AZ_CODEC_BITCLK EMI@ R2359 1 2 33_0402_5% PCH_AZ_BITCLK
1 @EMI@ CC5 27P_0402_50V8J 2

EMI depop location

+3VS
ODD_DETECT# PCH_GPIO35 PCH_GPIO37
RP37 10K_8P4R_5%

+1.05VS_PCH
PCH_JTAG_TDI PCH_JTAG_TDO PCH_JTAG_TMS
RP48 51_8P4R_5%

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Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.
Title: MCP(5/19) RTC,SATA,HDA,JTAG
Size: C
Document Number: LA-B016P
Rev: 0.1
Date: Monday, October 20, 2014
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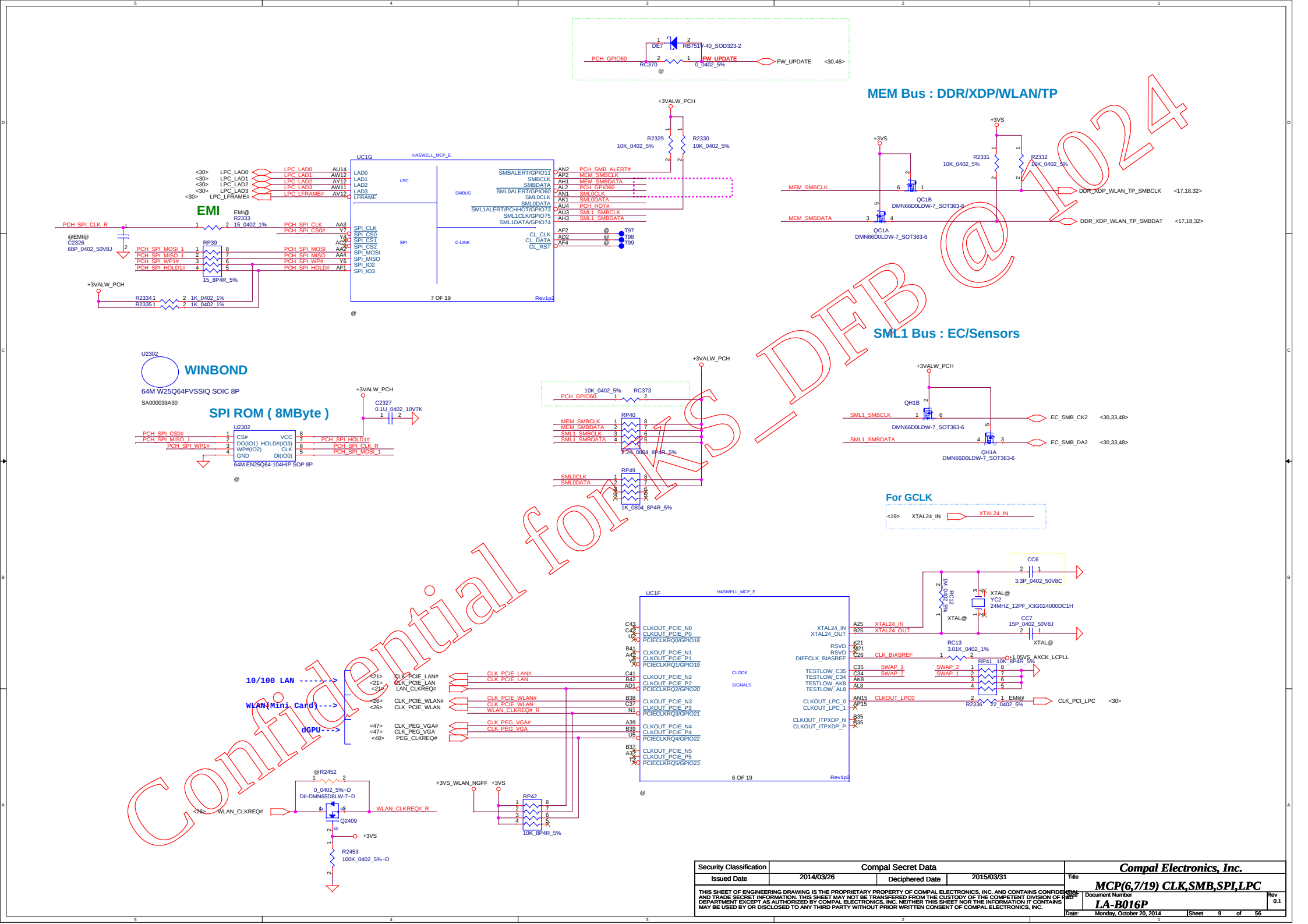

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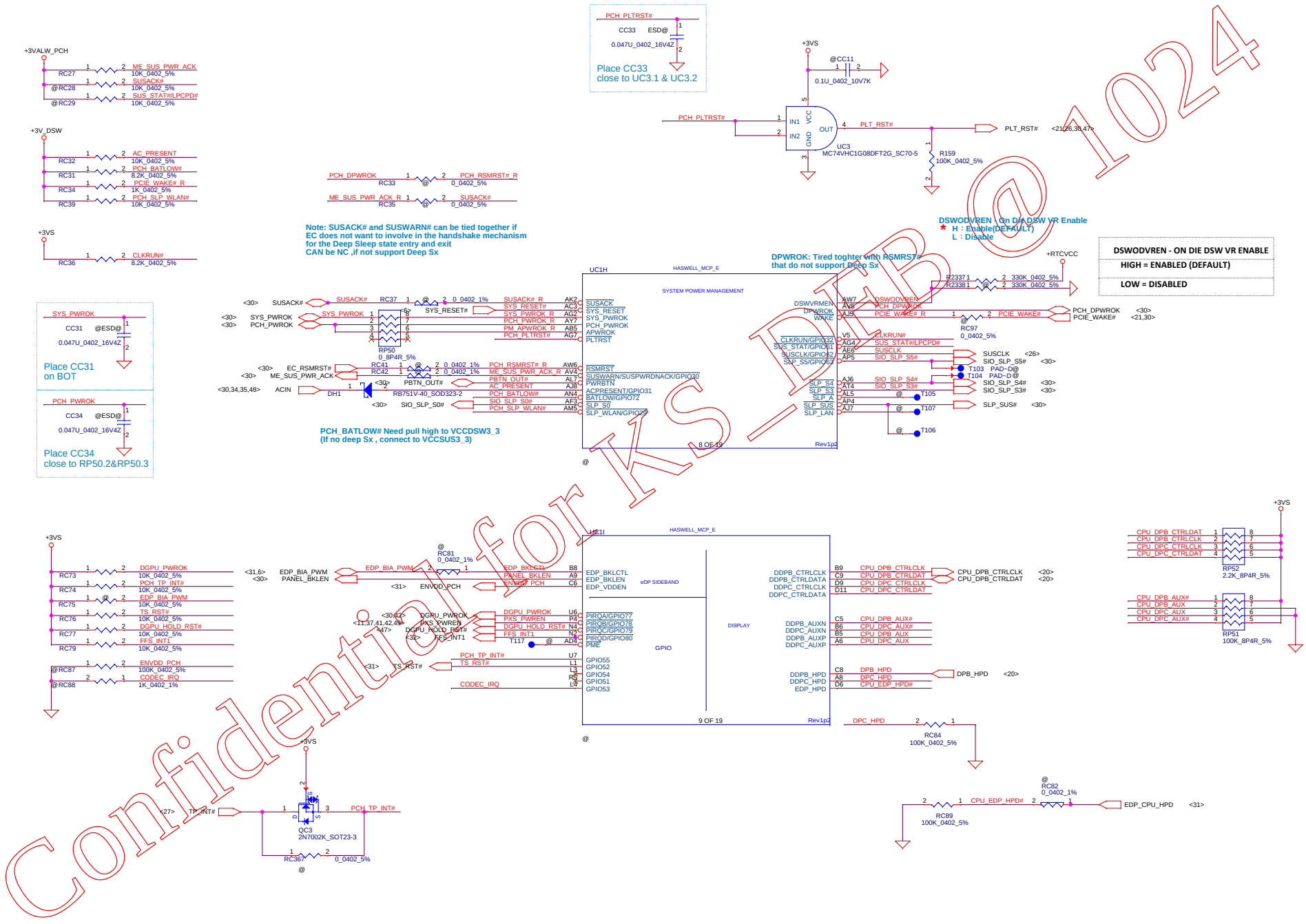
Compal Electronics, Inc.

Title: **MCP(6,7/19) CLK,SMB,SPI,LPC**

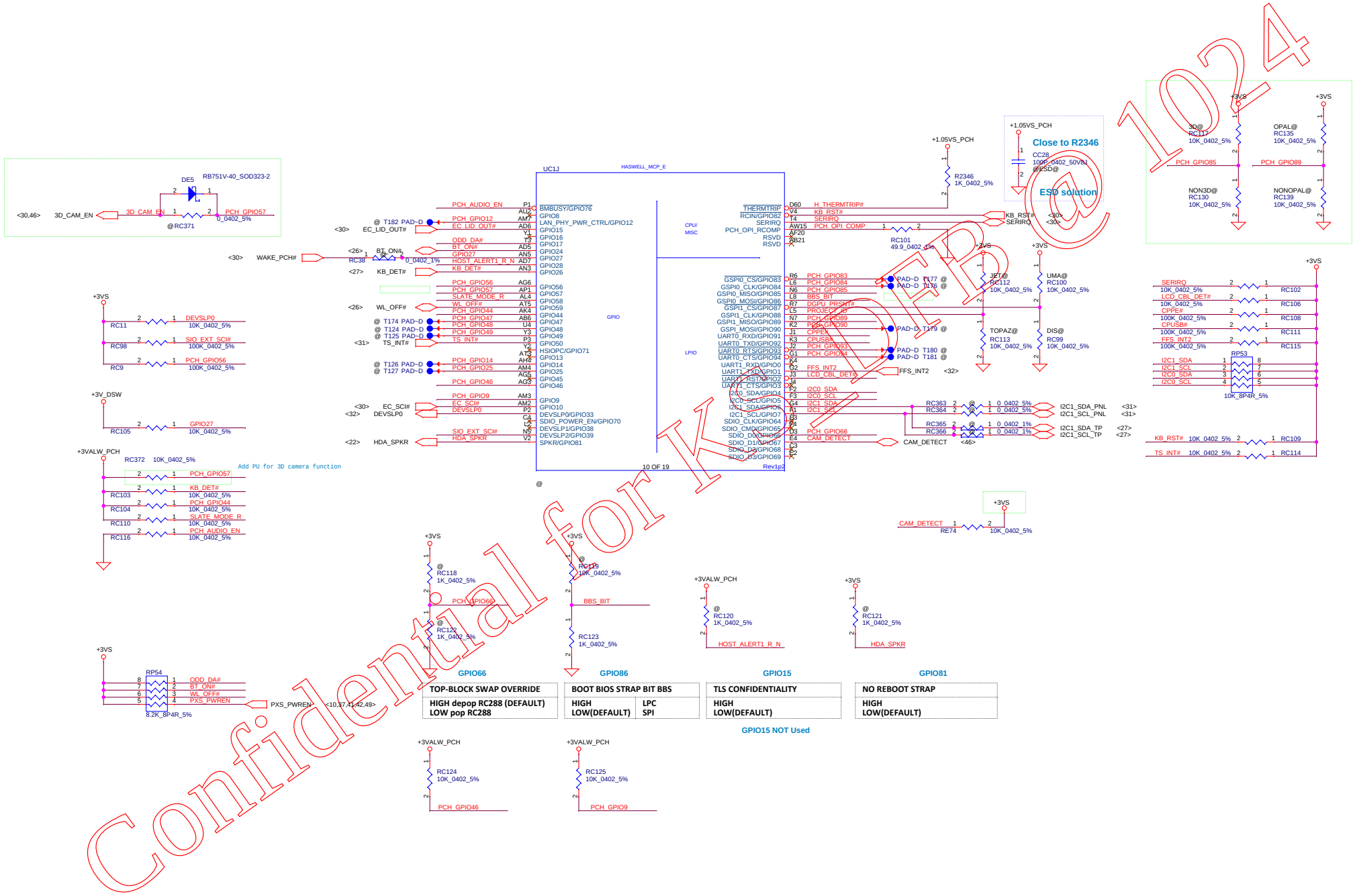
Size: C | Document Number: **LA-B016P** | Rev: 0.1

Date: Monday, October 20, 2014 | Sheet 9 of 56



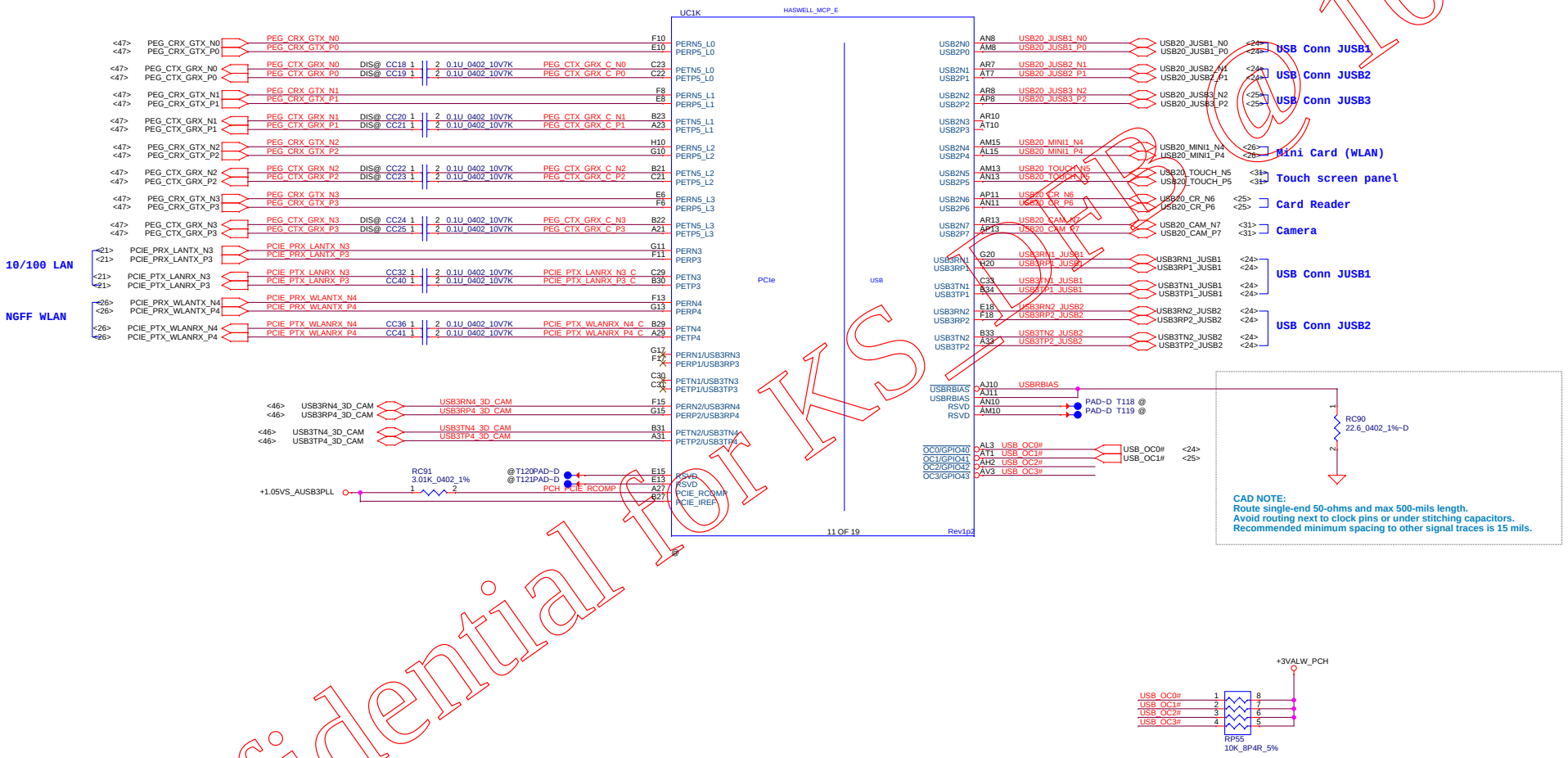
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.	
Title	MCP(8,9/19) DDI,EDP,GPIO
Size	Document Number: LA-B016P
Rev	0.1
Date: Monday, October 20, 2014	Sheet 10 of 56



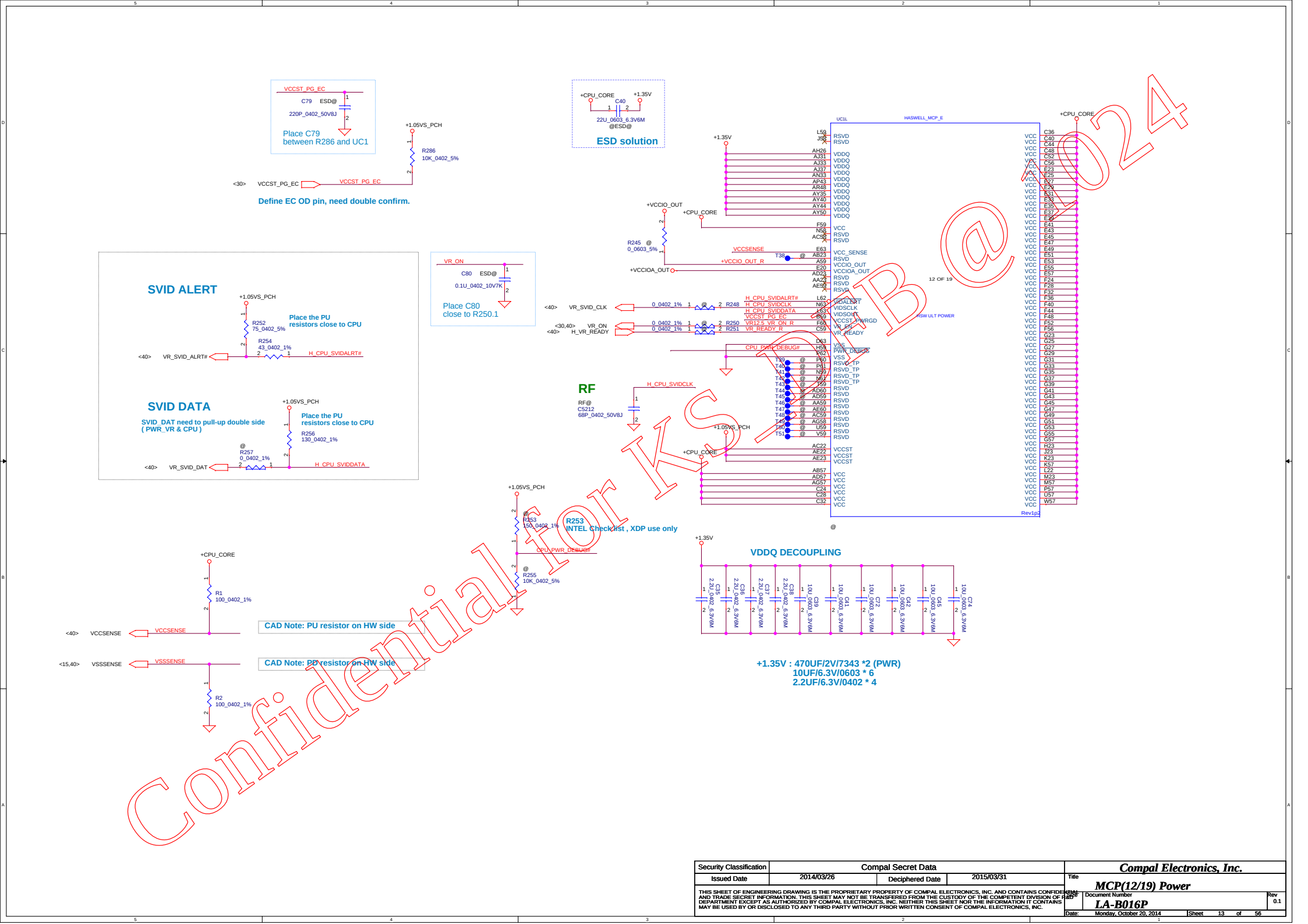
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.			
Title: MCP(10/19) GPIO,LPIO,MISC			
Size: A3	Document Number: LA-B016P		Rev: 0.1
Date: Monday, October 20, 2014	Sheet 11 of 56		



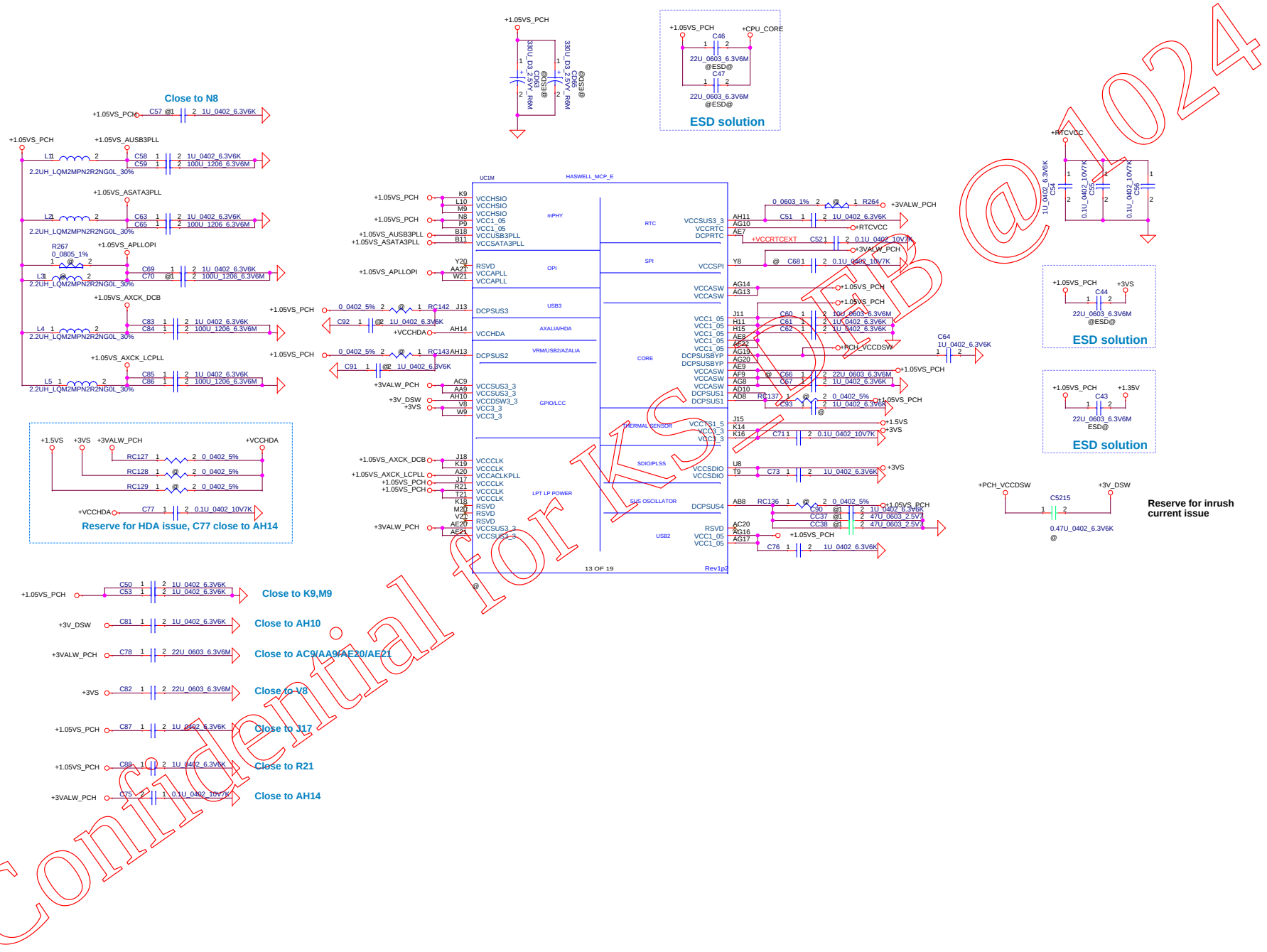
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.			
Title: MCP(11/19) PCIE,USB			
Size: A3	Document Number: LA-B016P		Rev: 0.1
Date: Monday, October 20, 2014	Sheet 12 of 56		



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.			
Title: MCP(12/19) Power			
Size: B	Document Number: LA-B016P		Rev: 0.1
Date: Monday, October 20, 2014	Sheet 13 of 56		



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: **MCP(13/19) Power**

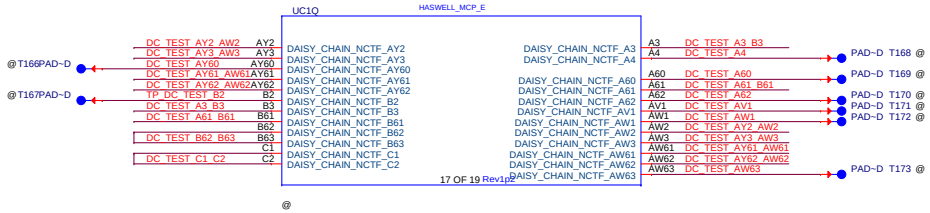
Size: A3 | Document Number: **LA-B016P** | Rev: 0.1

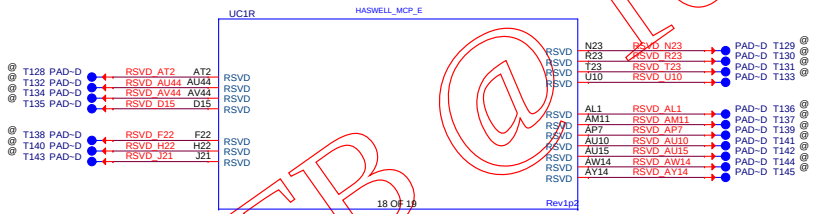
Date: Monday, October 20, 2014 | Sheet 14 of 56

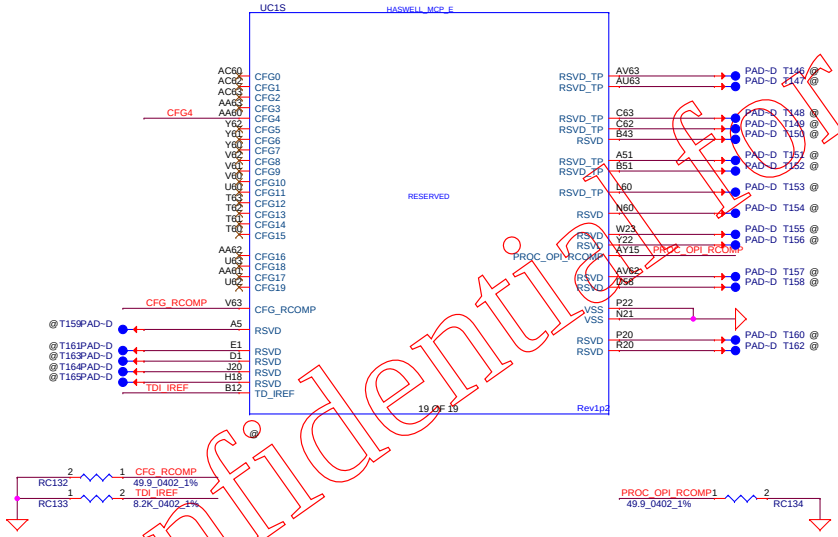
CAD Note: RC163 SHOULD BE PLACED CLOSE TO CPU

Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

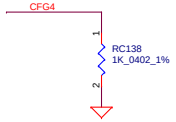
Compal Electronics, Inc.		
Title: MCP(14,15,16/19) VSS		
Size: A3	Document Number: LA-B016P	Rev: 0.1
Date: Monday, October 20, 2014	Sheet 15 of 56	







CFG STRAPS for CPU



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

Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.	
Title	MCP(17,18,19/19) CFG,RSVD
Size	Document Number LA-B016P
Rev	0.1
Date: Monday, October 20, 2014	Sheet 16 of 56

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

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

CAD NOTE
PLACE THE CAP NEAR TO DIMM RESET PIN

DDR3L SODIMM ODT GENERATION

Place CC31 between QD2 and R2349

ESD solution

Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: DDRIII DIMMA

Document Number: LA-B016P

Rev: 0.1

Date: Monday, October 20, 2014 Sheet 17 of 56

H=4mm

2-3A to 1 DIMMs/channel

Populate RD4, De-Populate RD8 for Intel DDR3 VREFDQ multiple methods M1
Populate RD8, De-Populate RD4 for Intel DDR3 VREFDQ multiple methods M3

All VREF traces should have 10 mil trace width

Layout Note: Place near JDIMM2

Note: Check voltage tolerance of VREF_DQ at the DIMM socket

Layout Note: Place near JDIMM2.203,204

CAD NOTE PLACE THE CAP NEAR TO DIMM RESET PIN

JDIMM2

BELLW_80011-1021 CONN@

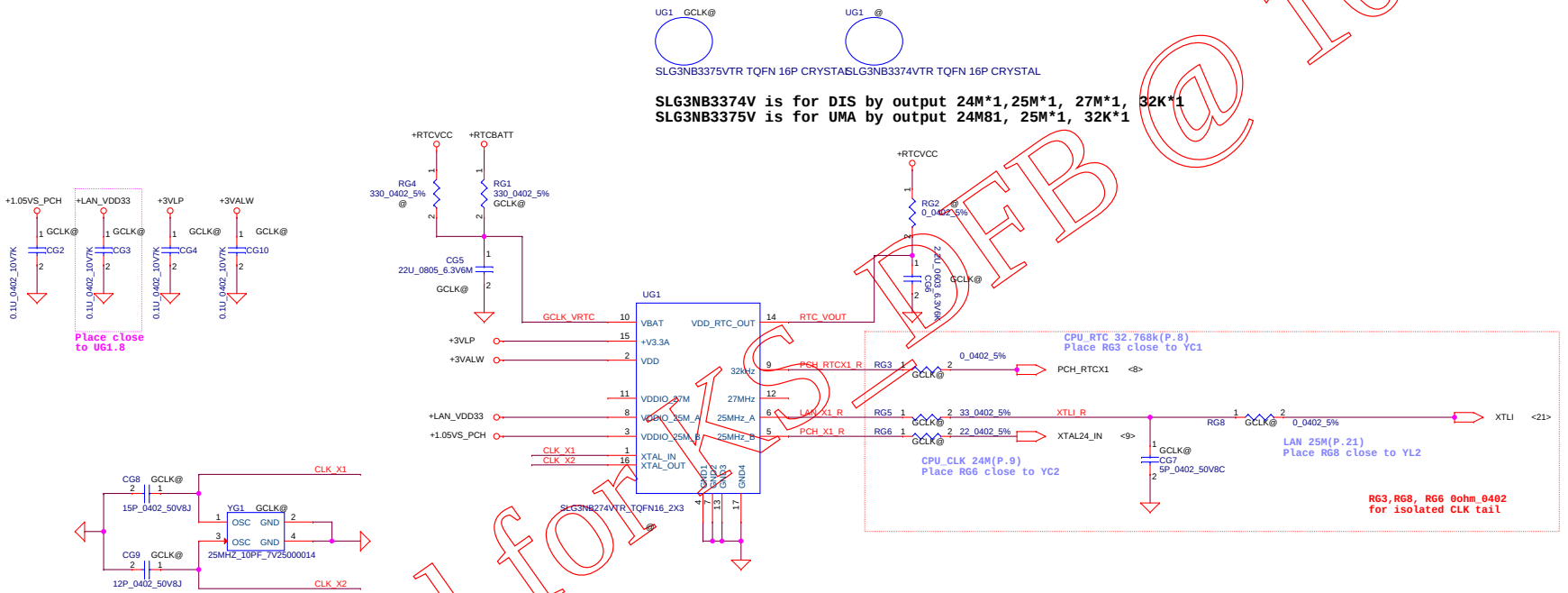
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: DDRIII DIMMB

Size: C | Document Number: LA-B016P | Rev: 0.1

Date: Monday, October 20, 2014 | Sheet 18 of 56



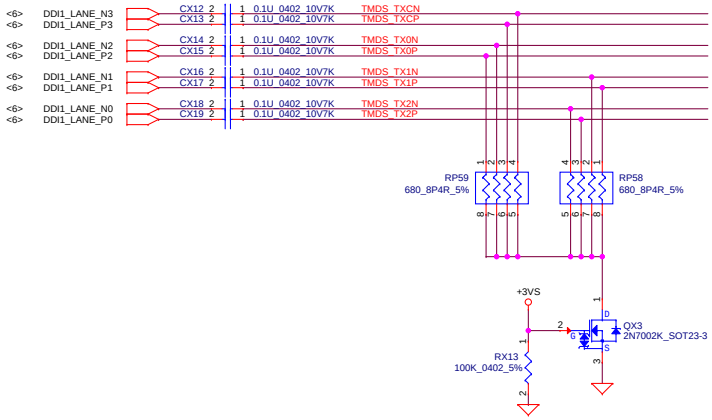
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

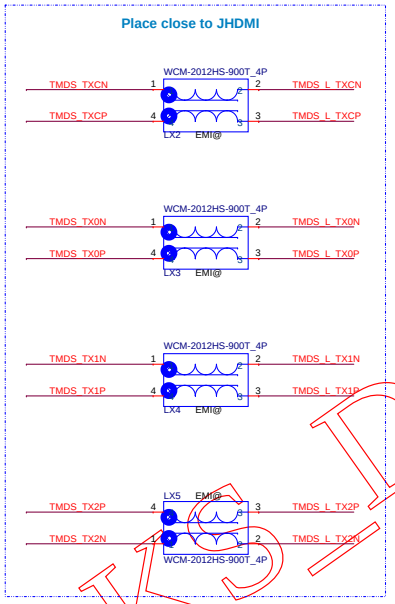
Compal Electronics, Inc.

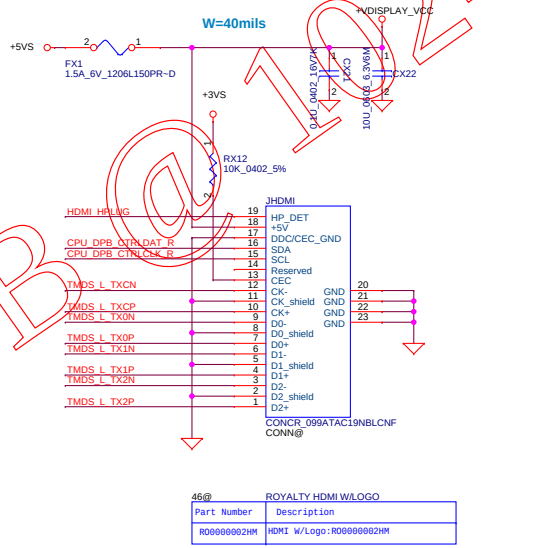
Title: **Green CLK**

Size: A3 | Document Number: **LA-B016P** | Rev: 0.1

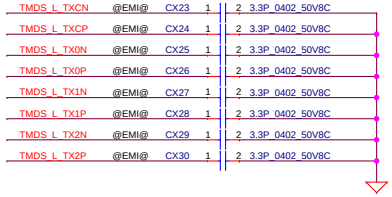
Date: Monday, October 20, 2014 | Sheet 19 of 56

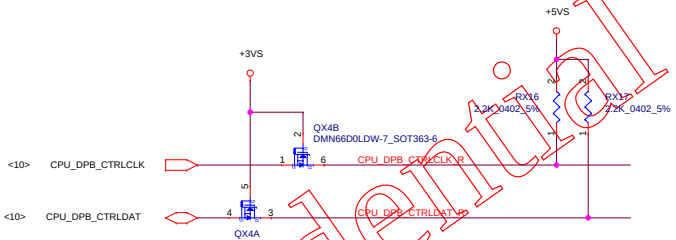


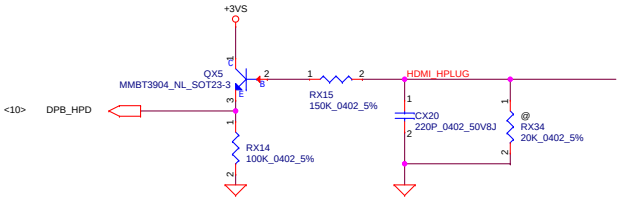




46@	ROYALTY HDMI W/LOGO
Part Number	Description
RO0000002HM	HDMI W/Logo:RO0000002HM







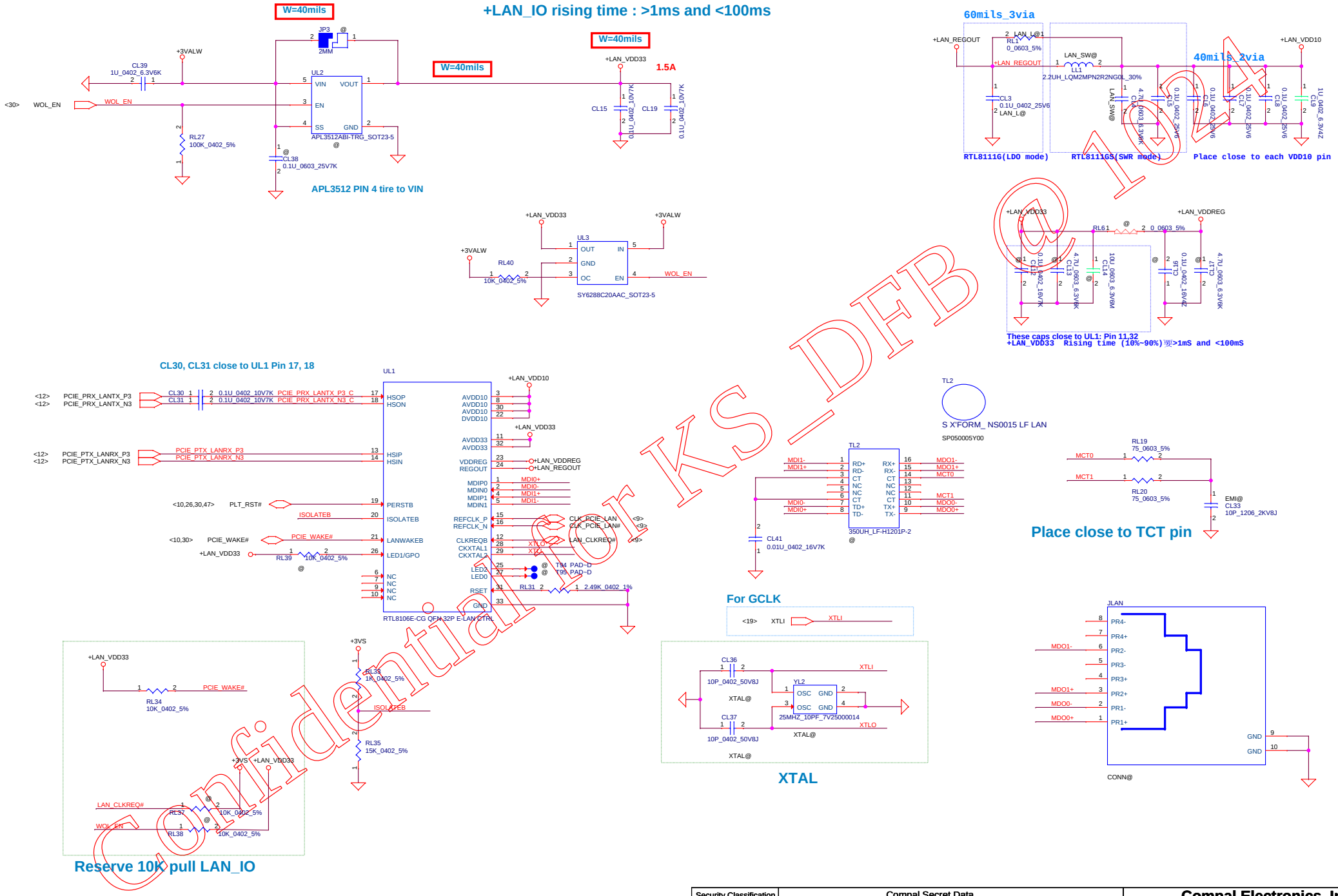
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: **HDMI**

Size: A3 | Document Number: **LA-B016P** | Rev: 0.1

Date: Monday, October 20, 2014 | Sheet 20 of 56



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: LAN RTL8106EUS

Size: Custom | Document Number: LA-B016P | Rev: 0.1

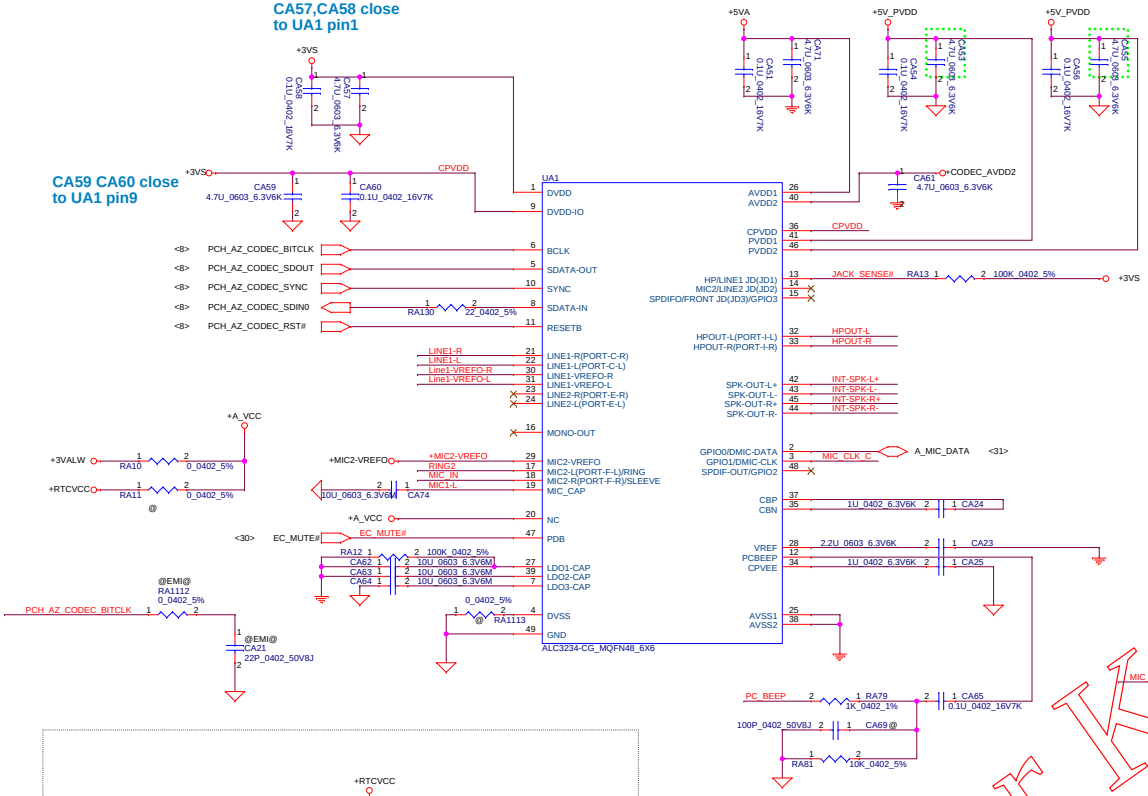
Date: Monday, October 20, 2014 | Sheet 21 of 56

CA71, CA51 place close to Pin 26

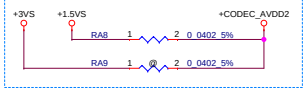
CA53, CA55 change Value from 10U_0603_6.3V6M~D to 4.7U_0603_6.3V6K

CA57,CA58 close to UA1 pin1

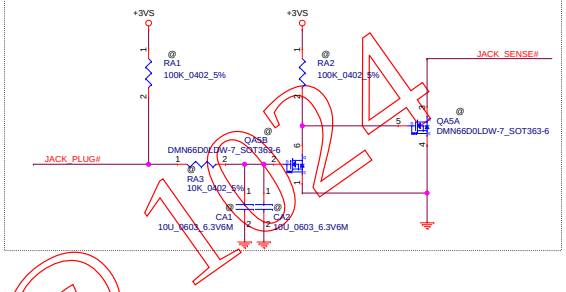
CA59 CA60 close to UA1 pin9



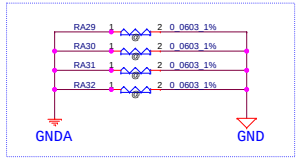
Reserve for HDA issue



JACK_PLUG Delay circutis

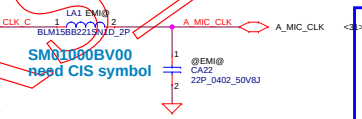


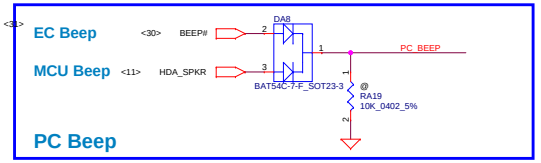
Reserve for cancel Delay circutis



Place on the moat between GND & GNDA.

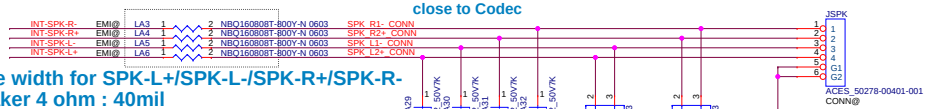
SM01000BV00 need CIS symbol



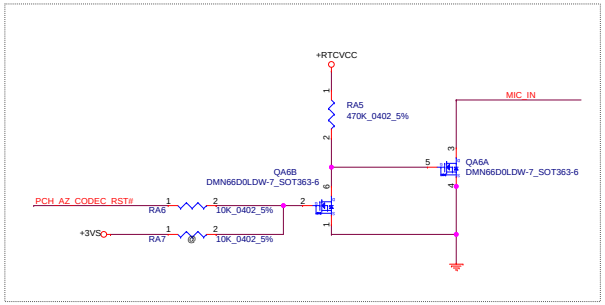


Close to UA1 Pin11,13,14,16

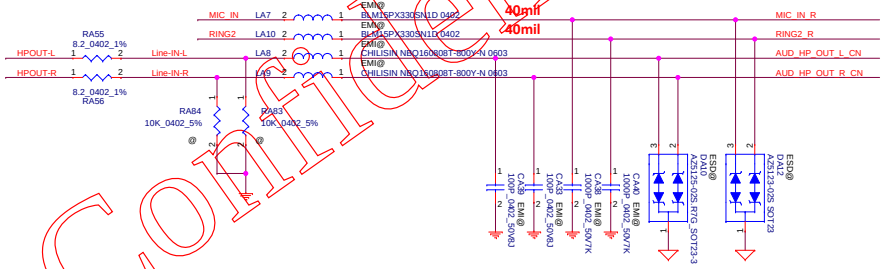
close to Codec

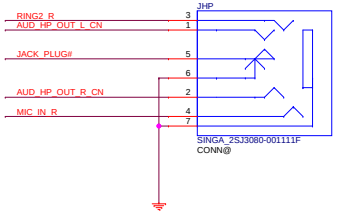


Trace width for SPK-L+/SPK-L-/SPK-R+/SPK-R-
Speaker 4 ohm : 40mil
Speaker 8 ohm : 20mil



iPhone and Nokia type Combo Jack





Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: Audio Codec ALC3234

Document Number: LA-B016P

Rev: 0.1

Date: Monday, October 20, 2014 Sheet 22 of 56

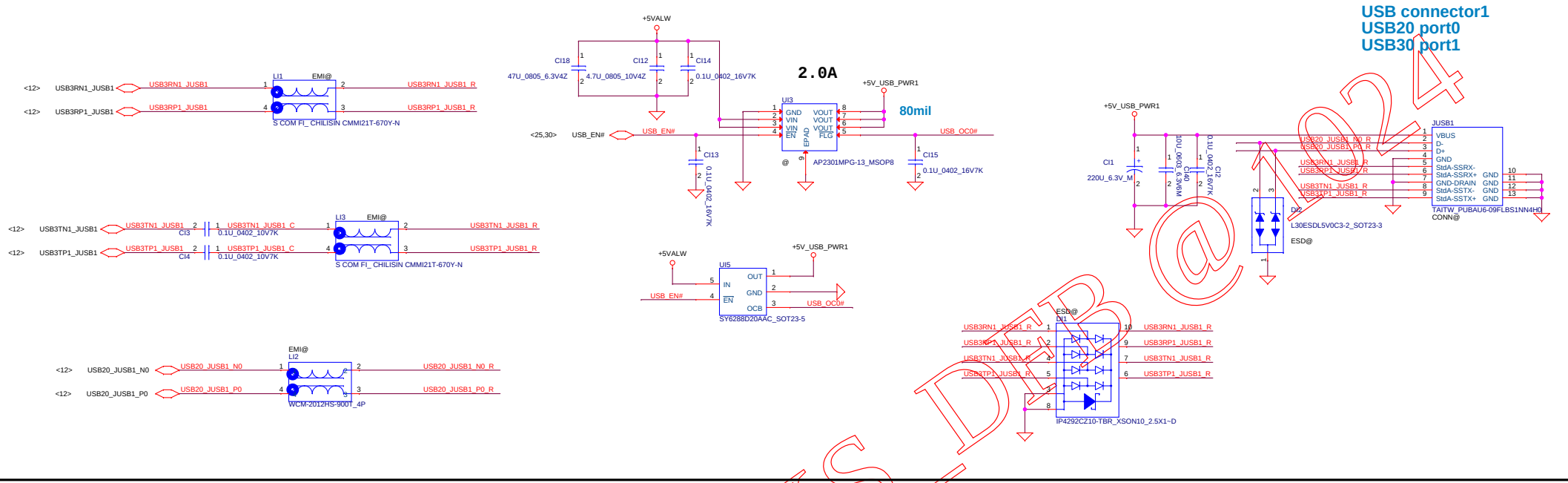
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

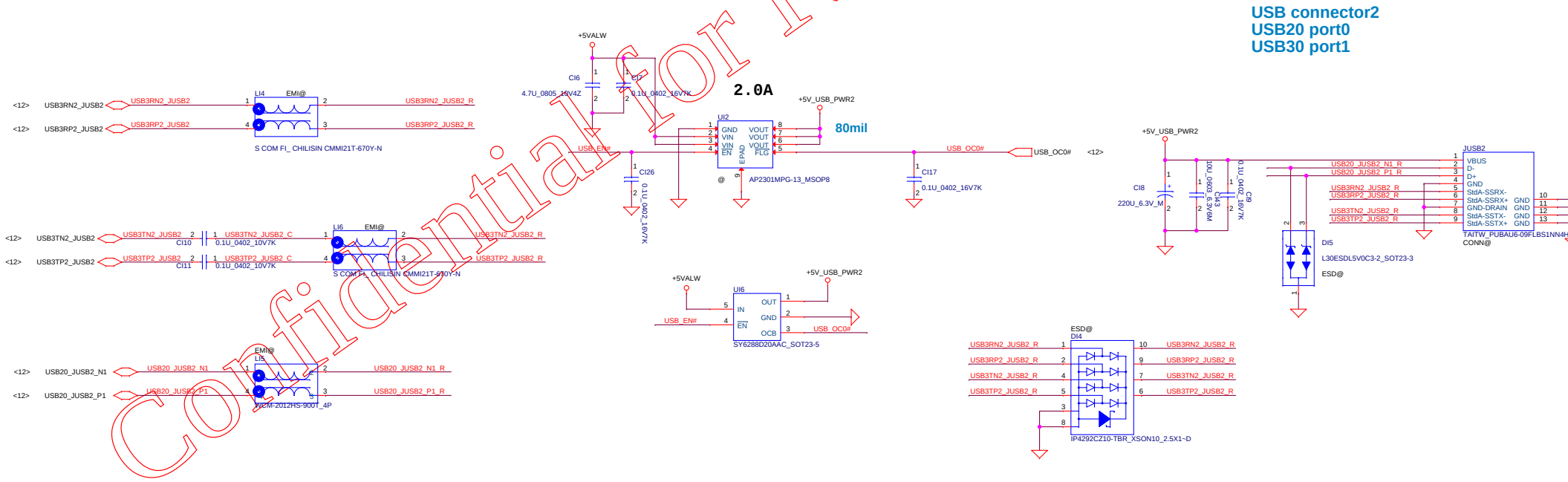
Compal Electronics, Inc.

Title: **Reserved Page**

Size: | Document Number: **LA-B016P** | Rev: 0.1

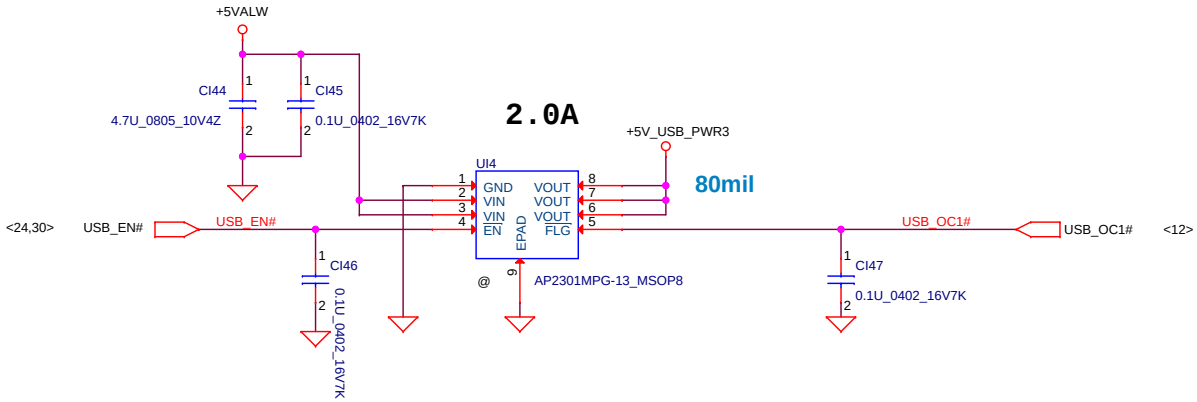
Date: Monday, October 20, 2014 | Sheet 23 of 56

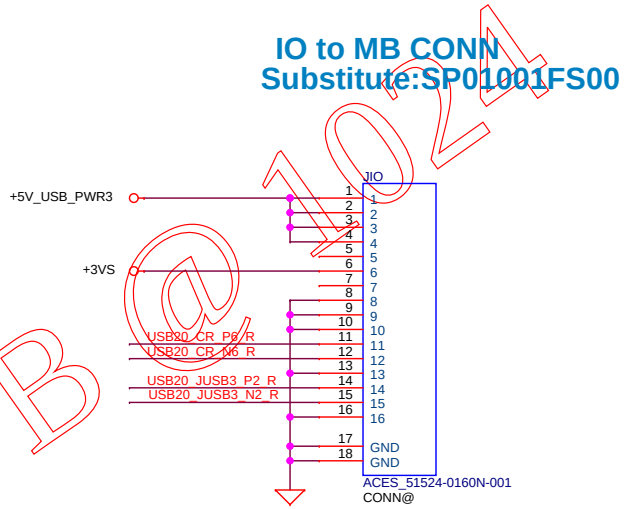


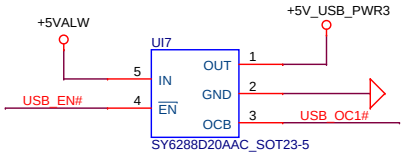


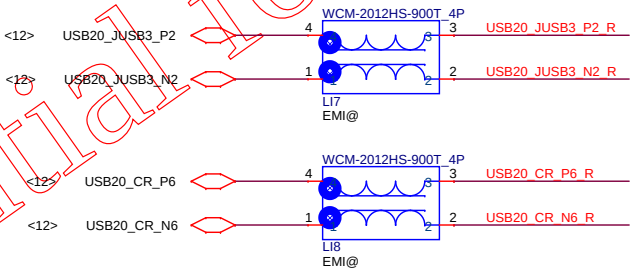
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

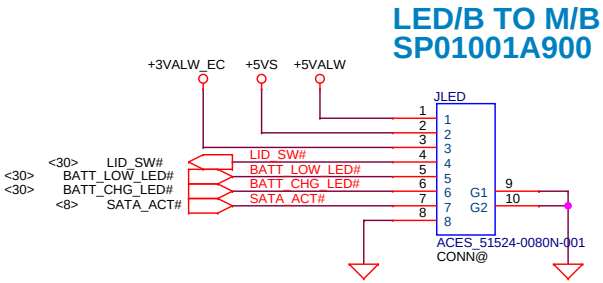
Compal Electronics, Inc.			
Title: USB3.0			
Size: A3	Document Number: LA-B016P		Rev: 0.1
Date: Monday, October 20, 2014	Sheet 24 of 56		











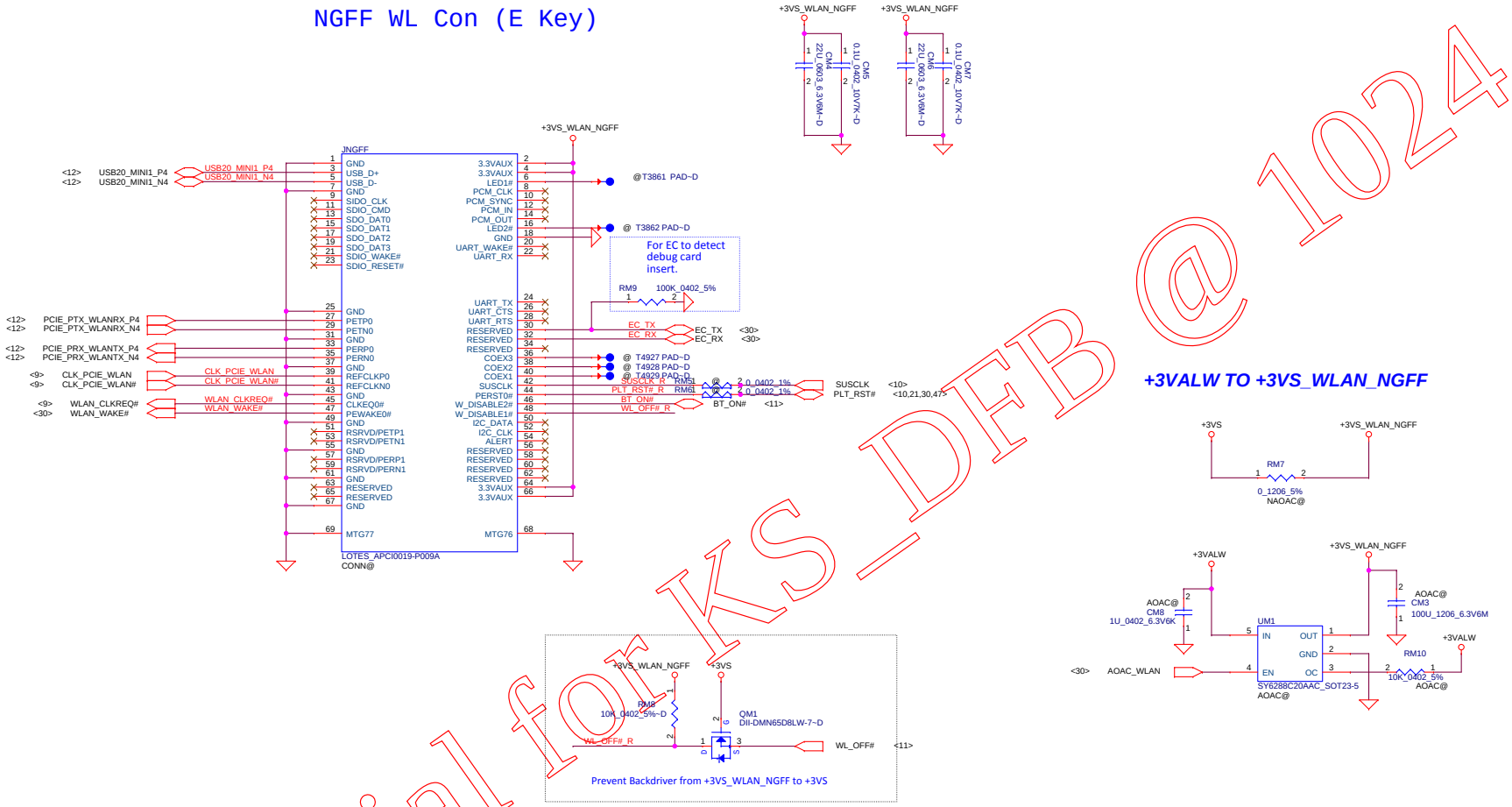
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Title: *IO/B, LED/B*

Size: B | Document Number: *LA-B016P* | Rev: 0.1

Date: Monday, October 20, 2014 | Sheet 25 of 56

NGFF WL Con (E Key)



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: NGFF WLAN

Size: A3 | Document Number: LA-B016P | Rev: 0.1

Date: Monday, October 20, 2014 | Sheet 26 of 56

Power ON Circuit

ON/OFF switch

TOP Side

SW1
SMT1-05-A 4P

RE49
100K_0402_5%

CE20
0.1U_0402_16V7K

ON/OFFBTN# <30>

@ESD@
L03ESDL5V0CC3-2_SOT23-3
DE2

FAN Control circuit

+FAN_POWER
40mil

CE22 2.2U_0603_6.3V6K
CE23 100P_0402_50V7K

+5VS
CE25 2.2U_0603_6.3V6K

UE3
VEN GND
VIN GND
VO GND
VSET GND
NCT3942S SOP 8P

<30> EN_DFAN1
EN_DFAN1

+3VS
RE50
10K_0402_5%

<30> FAN_SPEED1

+FAN_POWER
40mil

JFAN
GND
GND
GND
ACES_88231-03041
CONN@

CE24
0.01U_0402_16V7K

HE1 place around FAN area.

+3VALW
+3VLP
RE332
13.7K_0402_1%
AOAC@
RE333
13.7K_0402_1%
@
<30> VCIN0_PH2
AOAC@
HE1
100K_0402_1%_TSM0B104F4251RZ

1024

RE330
0_0603_5%
+3VALW
+V_TP

RE331
0_0603_5%
+3VS
@

RE341
0_0603_5%
@

+V_TP
+3VS_TOUCH

UE4
VIN VOUT
VIN VOUT
ON CT
VBIAS
GND
GND

TPS22967DSGR_SON8_2X2

<30> TP_EN

CE60
2200P_0402_25V7K
@

CE59
0.1U_0402_10V6K

+3VALW
CE61
1U_0402_6.3V6K
@

For Test,
APE8937(SA000070L00)
AOZ1336(SA00006U600)
TPS22967(SA000070S00)

INT_KBD Connector

JKB
KSI7 KSI6 KSI4 KSI2 KSI5 KSI1 KSI3 KSI0
KSO5 KSO4 KSO7 KSO6 KSO8 KSO3 KSO1 KSO2 KSO0 KSO12 KSO16 KSO15 KSO13 KSO14 KSO9 KSO11 KSO10
KB_CAPS_PWR
GND GND
HB_A823020-SBHR21
CONN@

+5VS
RE60
240_0402_1%
<30> CAPS_LED

<30> KSI[0..7]
KSI[0..7]
<30> KSO[0..16]
KSO[0..16]

* Key Board Back Light

+5VS
FE1 @
0.75A_24V_1812L075-24DR~OK
+5VS_KBL
20mil
CE56 1U_0603_10V6K
KBBL@
RE59
0_0805_5%
KBBL@
KBBL@
CE57 10U_0603_6.3V6M

+3VS
<11> KB_DET#
@
RE68
10K_0402_5%
+5VS_KBL
QE4
2N7002KW 1N SOT323-3
KBBL@
KB_BL_PWM
20mil
JKBBL
GND
GND
ACES_50524-00401-P01
CONN@
RE58
100K_0402_5%
KBBL@
QE5
AP2606AGY-HF 1N SOT26-6
KBBL@
<30> KB_LED_PWM

Touch pad

+3VS_TOUCH
RE340
10K_0402_5%
RC78
10K_0402_5%
PTP@
RE328
100K_0402_5%
RE336 @ 0_0402_5%
RE337 0_0402_5%
RE338 0_0402_5%
PTP@
PTP@

<11> I2C1_SDA_TP
<11> I2C1_SCL_TP
<30> EC_TP_INT#
<10> TP_INT#
<30> PTP_DIS#
<30> TP_DATA
<30> TP_CLK

I2C1_SDA_TP_R
I2C1_SCL_TP_R
TP_INT#
PTP_DIS#

JTP
G2
G1
ACES_51524-0080N-001
CONN@

CE58
1U_0402_6.3V6K~D

PTP

JTP1
GND
GND
I2C1_SDA_TP_R
I2C1_SCL_TP_R
TP_INT#
PTP_DIS#
TP_DATA
TP_CLK
ACES_51524-0100N-001
CONN@

<30> PTP_KBBL#
RE339
10K_0402_5%

PTP

+3VS
RE334
10K_0402_5%
PTP@
RE335
10K_0402_5%
PTP@
PTP@

I2C1_SDA_TP
I2C1_SCL_TP
QE6B
DMN66D0LDW-7_SOT363-6
QE6A
DMN66D0LDW-7_SOT363-6
I2C1_SDA_TP_R
I2C1_SCL_TP_R

Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

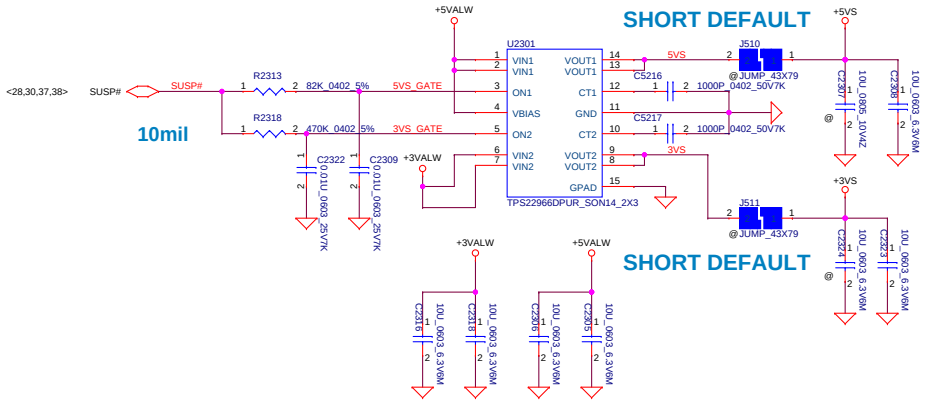
Title: FAN / TP / PWR SW / KBBL

Document Number: LA-B016P

Rev: 0.1

Date: Friday, October 24, 2014 Sheet 27 of 56

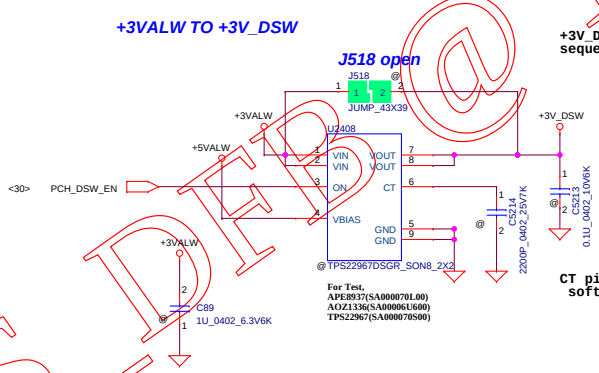
+5VS and +3VS switch



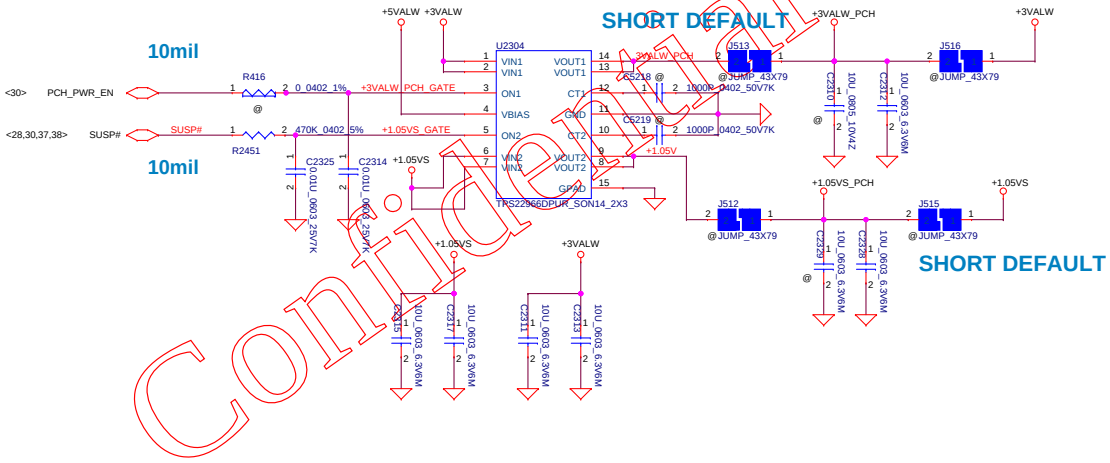
+3VALW to +3V_DSW

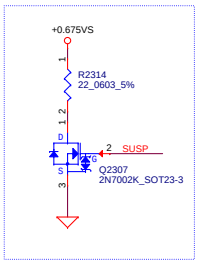
J518 open

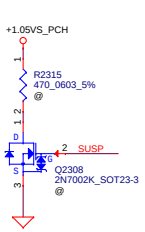
+3V_DSW have soft start sequence: +3V_DSW stable > +3VALW_PCH > 0ms



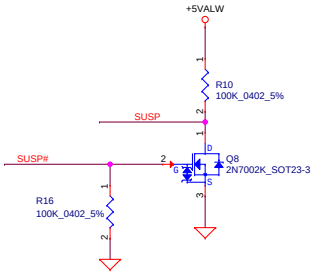
+3VALW_PCH switch







For Intel S3 Power Reduction



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.			
Title: DC/DC Interface			
Size: A3	Document Number: LA-B016P		Rev: 0.1
Date: Monday, October 20, 2014	Sheet 28 of 56		

Screw Hole

ZZZ

PCB 13P LA-B011P REV0 M/B

DA60013U000

H1 H_2P8N @
H20 H_2P8N @
H21 H_2P8N @
H22 H_2P8X3P3N @
H23 H_2P8X4P8N @

H2 H_2P8 @
H3 H_2P8 @
H4 H_2P8 @
H5 H_2P8 @
H6 H_2P8 @
H7 H_2P8 @
H8 H_2P8 @
H9 H_2P8 @

H10 H_3P0 @

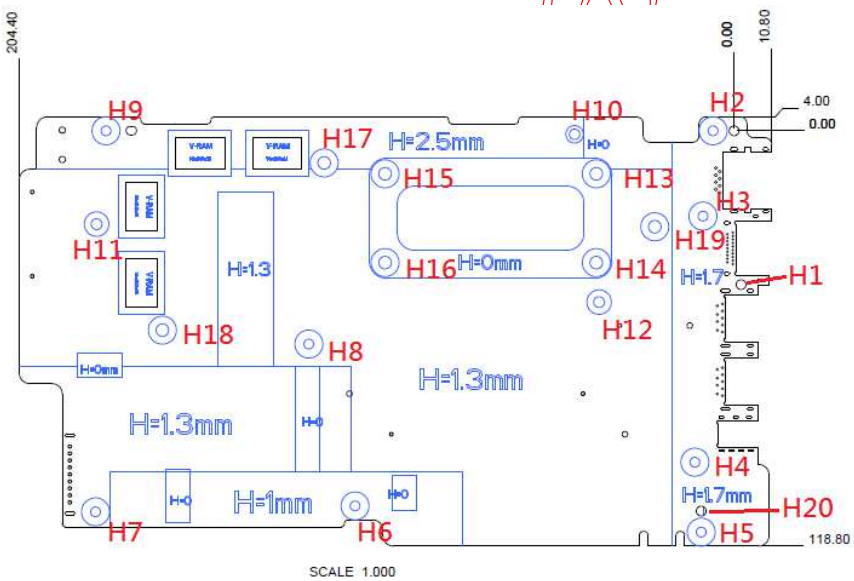
H11 H_2P8 @
H12 H_2P8 @

H13 H_3P6 @
H14 H_3P6 @
H15 H_3P6 @
H16 H_3P6 @
CPU bracket

H17 H_3P3 @
H18 H_3P3 @
VGA stand-off

H19 H_3P3 @
NGFF stand-off

FD1 @FIDUCAL
FD2 @FIDUCIAL
FD3 @FIDUCAL
FD4 @FIDUCIAL



SCALE 1.000

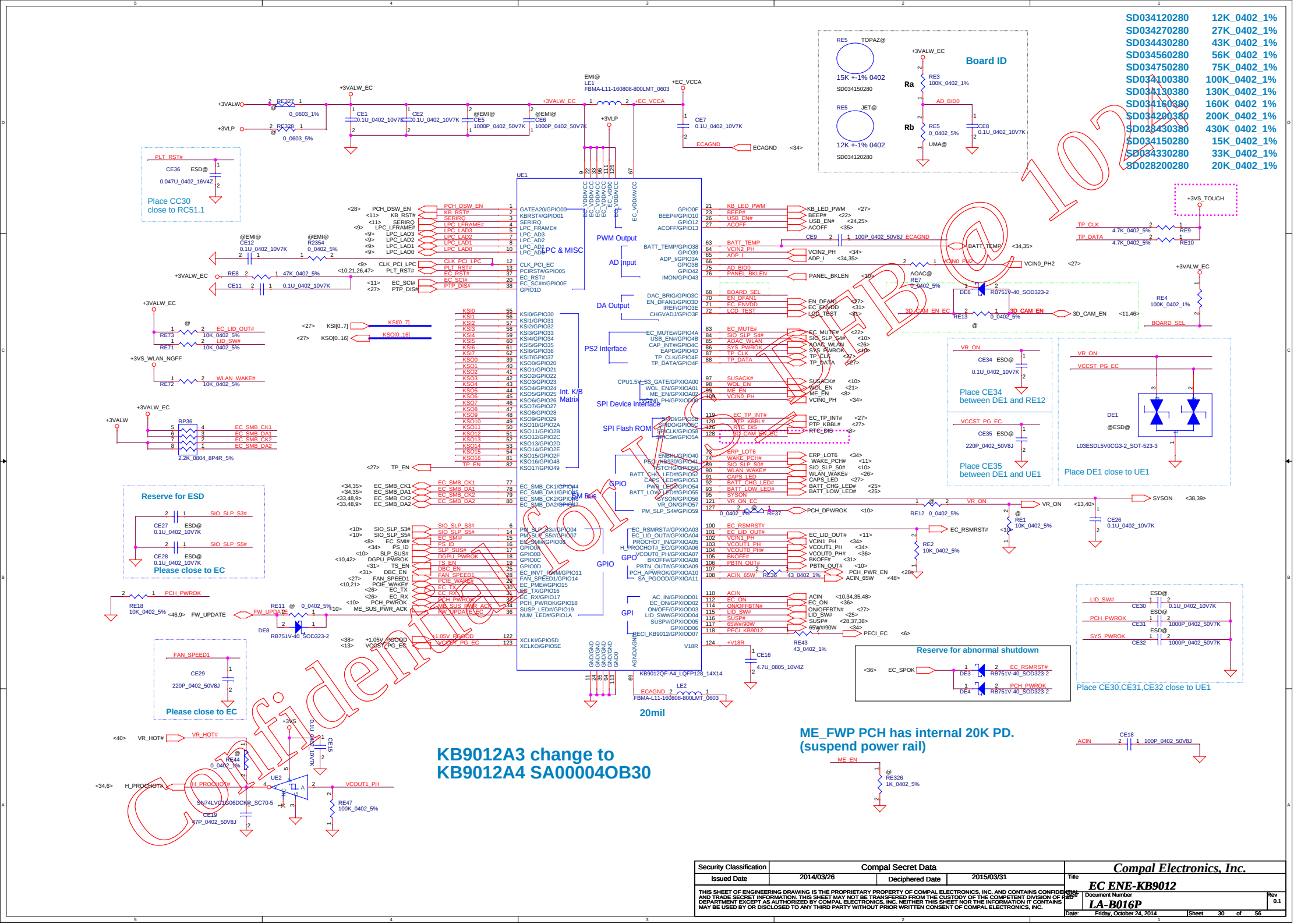
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: **Screw Hole**

Size | Document Number: **LA-B016P** | Rev: 0.1

Date: Monday, October 20, 2014 | Sheet 29 of 56



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

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Compal Electronics, Inc.

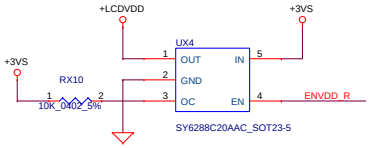
Title: EC ENE-KB9012

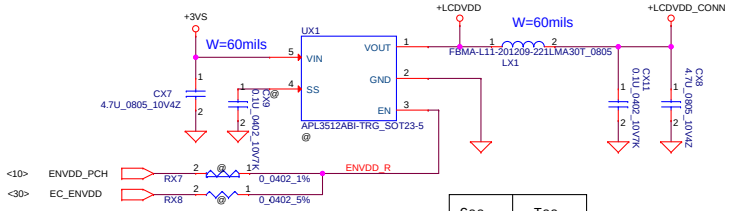
Document Number: LA-B016P

Rev: 0.1

Date: Friday, October 24, 2014 Sheet 30 of 56

LCD PWR CTRL

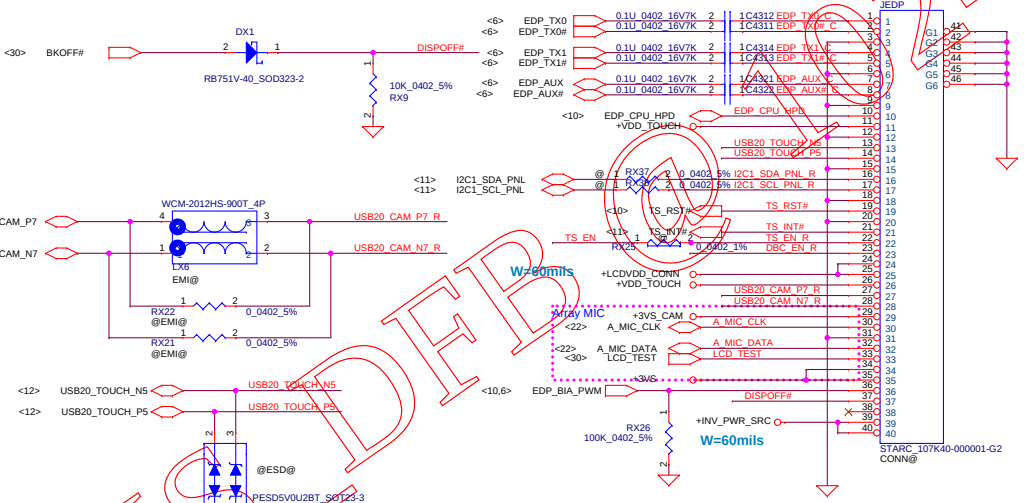


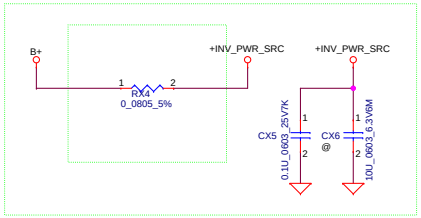


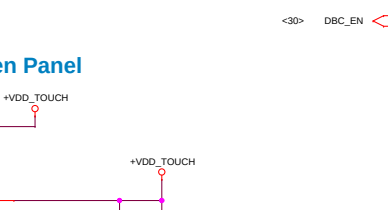
Css	Tss
0.1uF	100mS
10nF	10mS
1nF	1mS
Open or tied to VIN	1mS

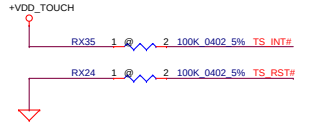
SS table

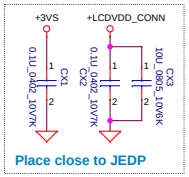
eDP Connector

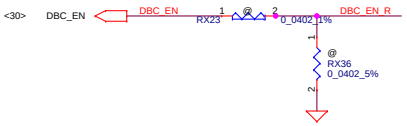






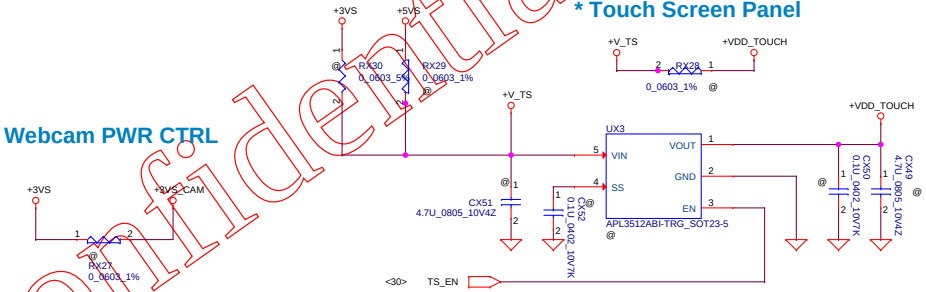


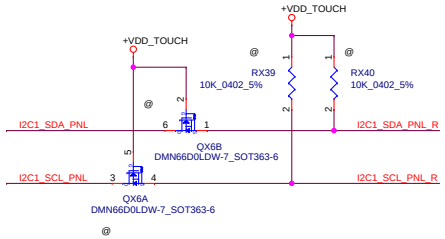




* Touch Screen Panel

Webcam PWR CTRL





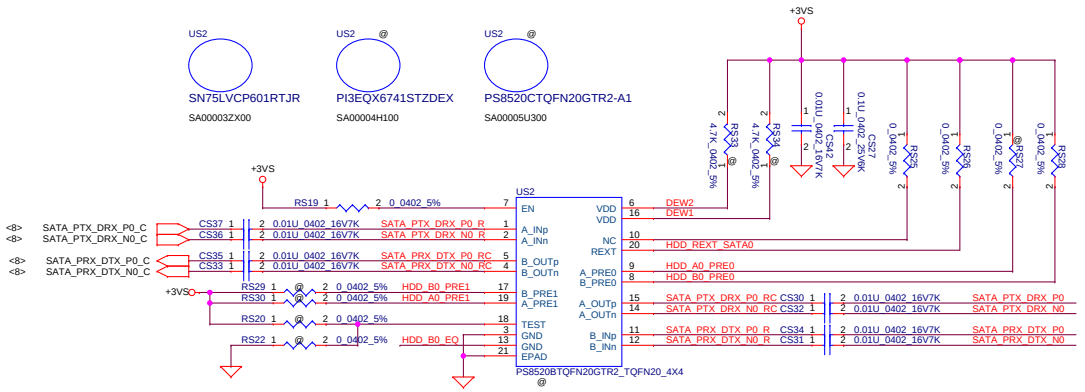
Css	Tss
0.1uF	100mS
10nF	10mS
1nF	1mS
Open or tied to VIN	1mS

SS table

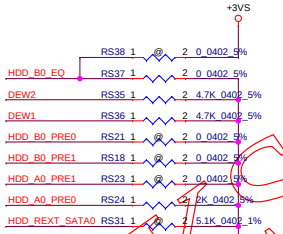
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

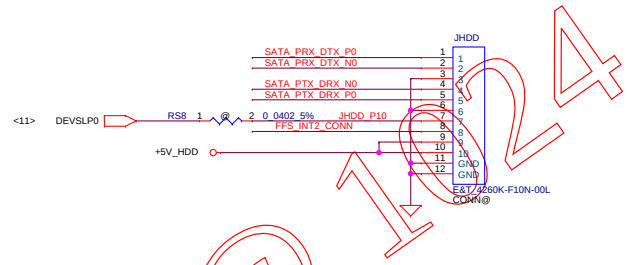
Compal Electronics, Inc.	
Title	eDP / webcam / TouchScreen
Size	Document Number: LA-B016P
Rev	0.1
Date:	Monday, October 20, 2014
Sheet	31 of 56

SATA HDD Connector



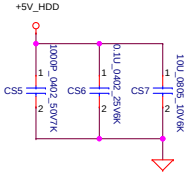
	US2	RS35	RS36	RS18	RS22	RS23	RS24	RS28
TI	SA00003ZX00	4.7K	4.7K	NC	NC	NC	2K	V
PARADE	SA00007U00	7.5K	NC	V	V	V	NC	NC



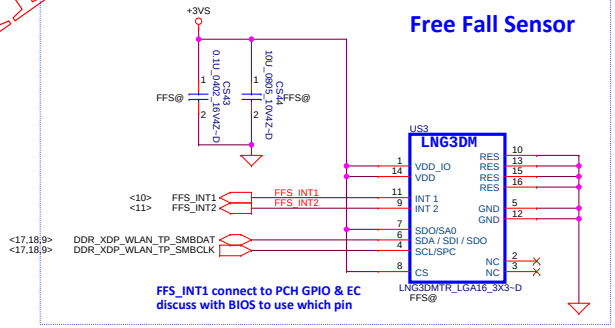


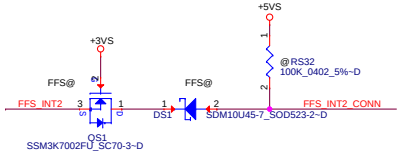
+5V_HDD Source

SHORT DEFAULT



Free Fall Sensor





Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

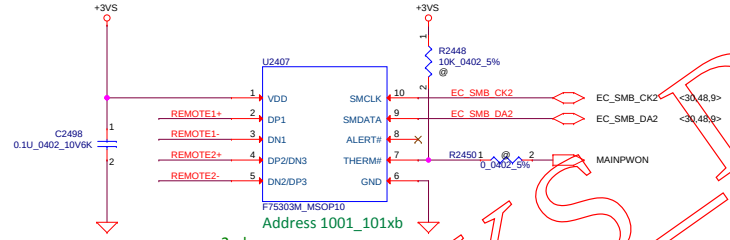
Compal Electronics, Inc.

Title: **HDD**

Document Number: **LA-B016P** Rev: 0.1

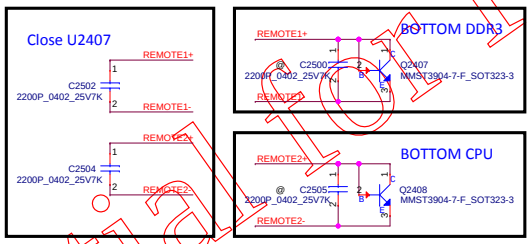
Date: Monday, October 20, 2014 Sheet 32 of 56

Fintek thermal sensor
placed near by TOP DDR3



Address 1001_101xb

2nd source
SA000029210-->EMC1403-2-AIZL-TR



REMOTE1,2 (+/-) :
Trace width/space:10/10 mil
Trace length:<8"

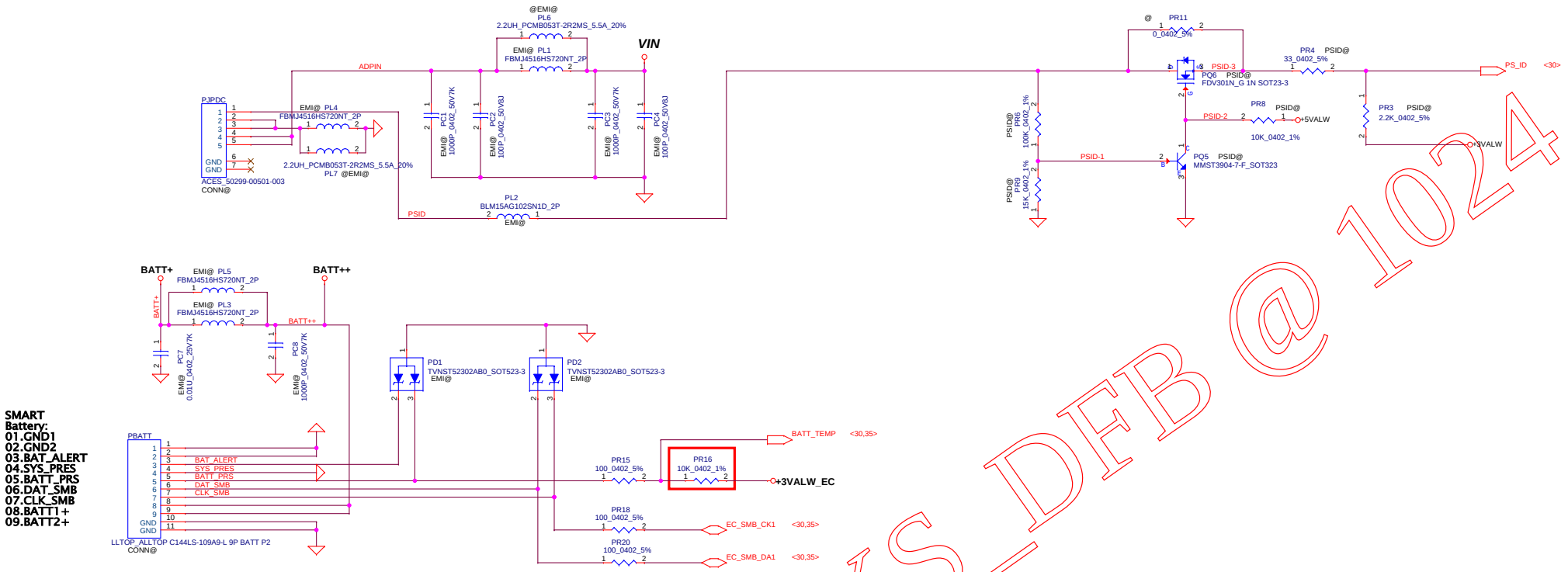
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: **Thermal Sensor**

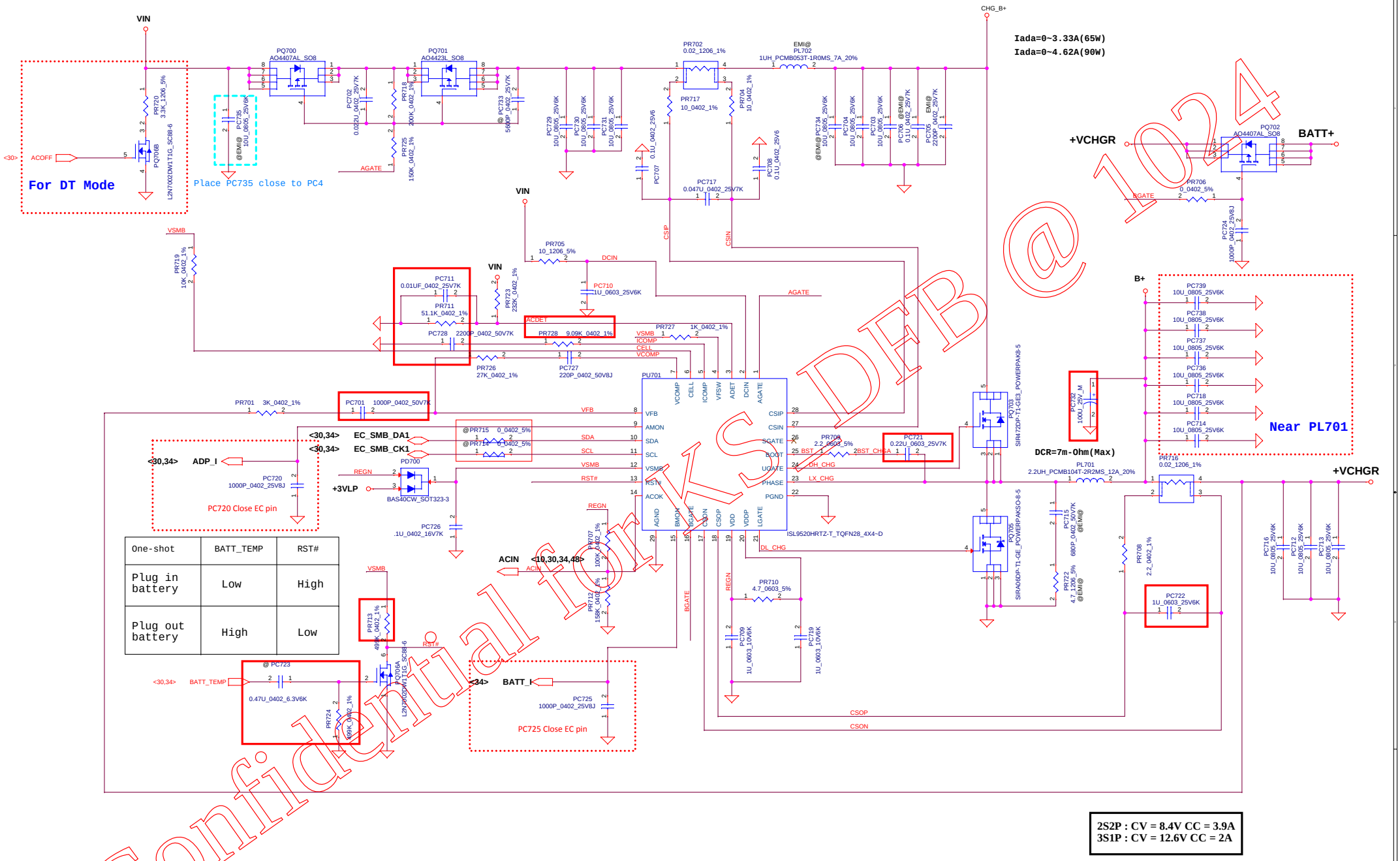
Size: | Document Number: **LA-B016P** | Rev: 0.1

Date: Monday, October 20, 2014 | Sheet 33 of 56



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.	
Title	PWR_DCIN/BATT CONN/OTP
Size	Document Number: LA-B016P
Rev	0.1
Date: Monday, October 20, 2014	Sheet 34 of 56



One-shot	BATT_TEMP	RST#
Plug in battery	Low	High
Plug out battery	High	Low

Security Classification	Compal Secret Data	
Issued Date	2014/03/26	Deciphered Date 2015/03/31

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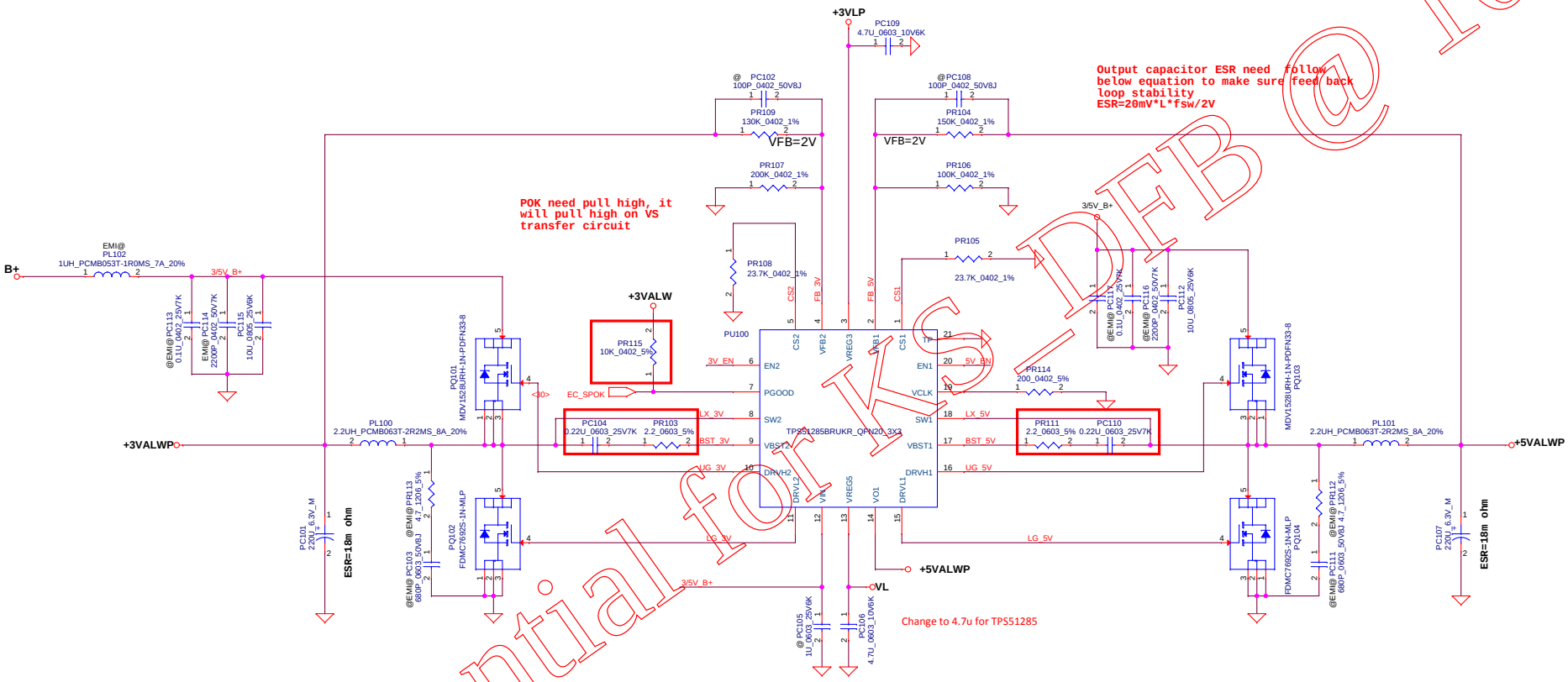
Compal Electronics, Inc.

Title: PWR_CHARGER

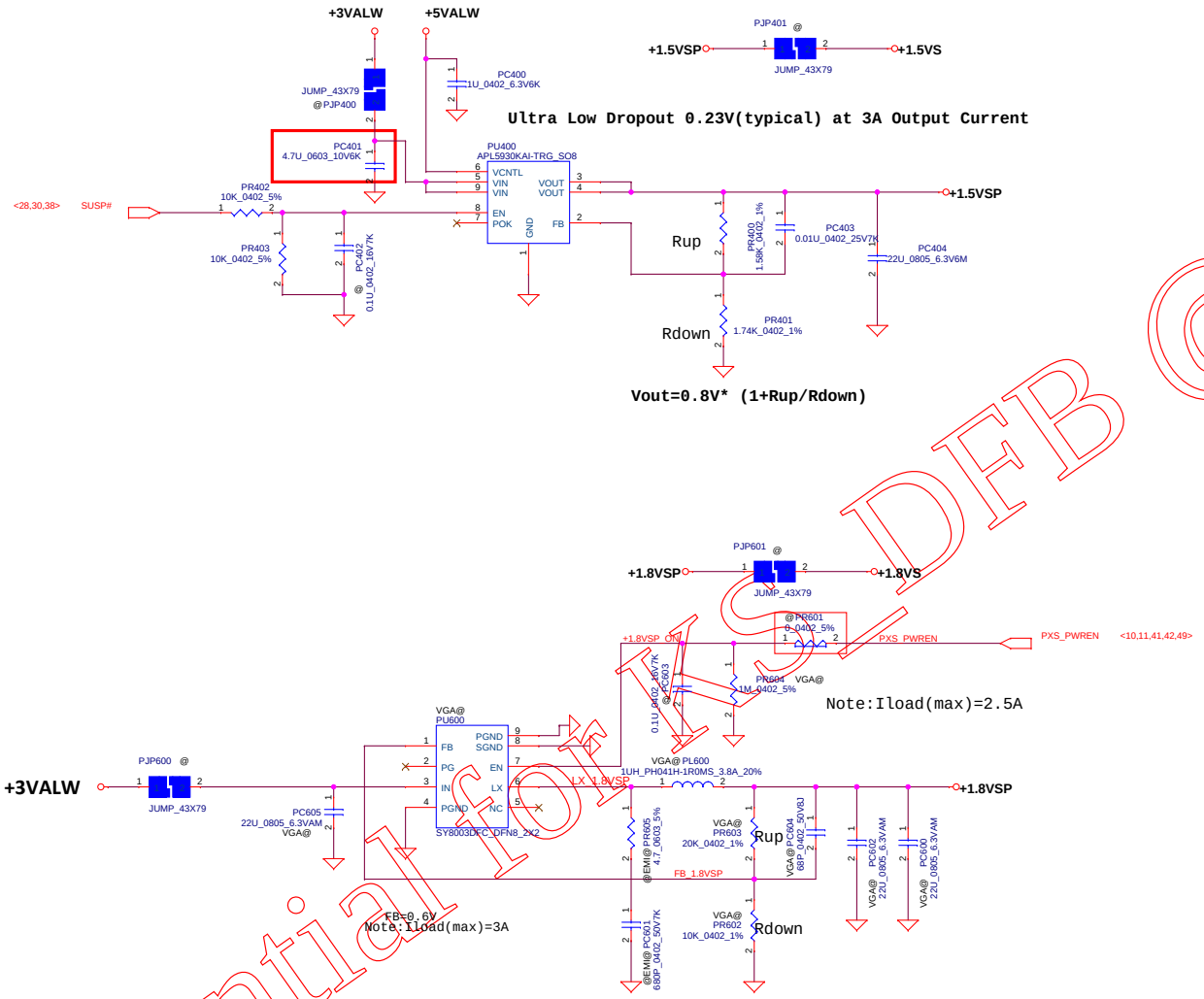
Size: Document Number: LA-B016P Rev: 0.1

Date: Monday, October 20, 2014 Sheet 35 of 56



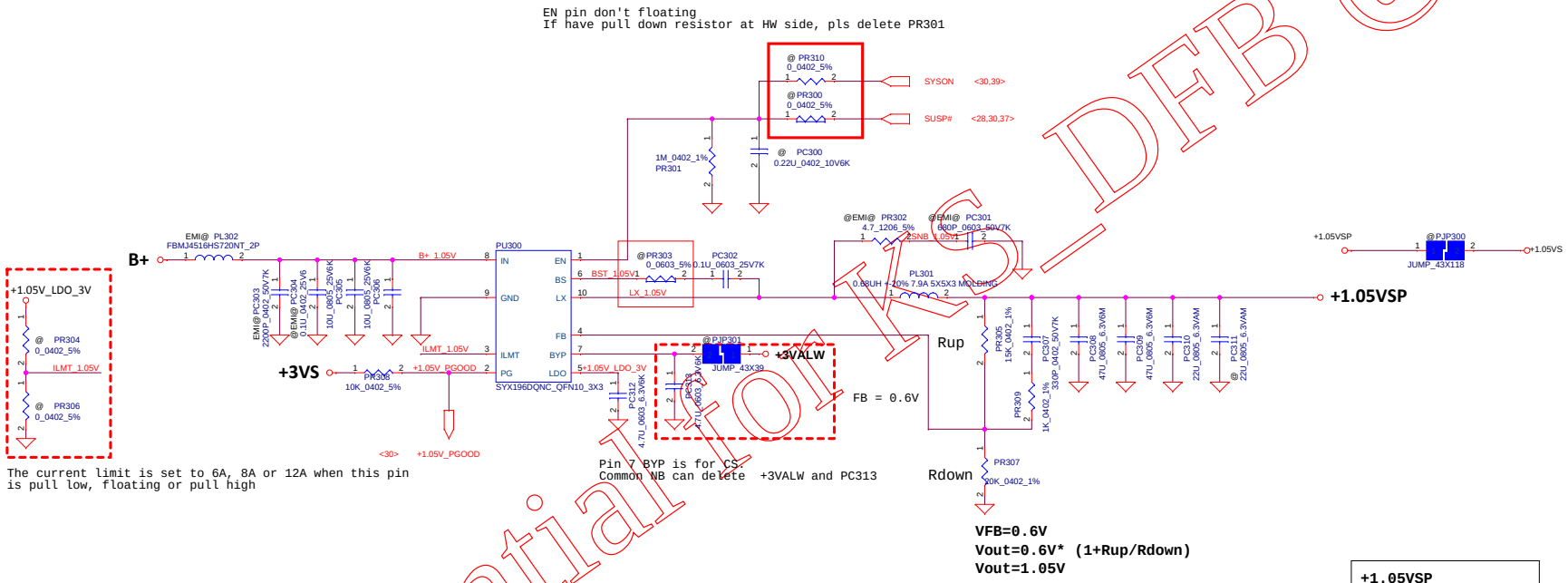
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.	
Title	PWR_3.3VALWP/5VALWP
Size	Document Number: LA-B016P
Rev	0.1
Date:	Monday, October 20, 2014
Sheet	36 of 56



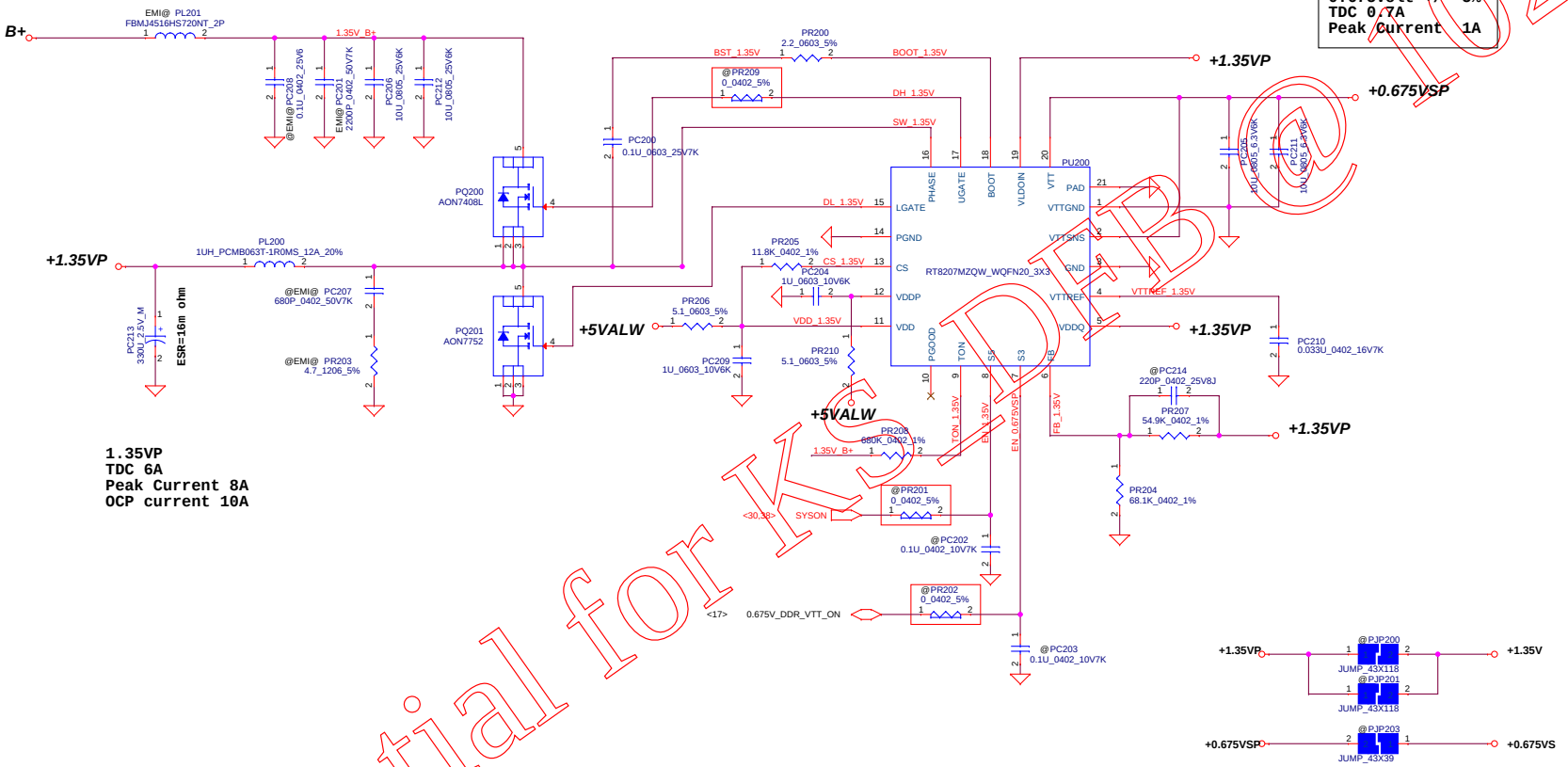
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.			
Title: PWR_1.5VSP / 1.8VSP			
Size:	Document Number: LA-B016P		Rev: 0.1
Date: Monday, October 20, 2014	Sheet 37 of 56		



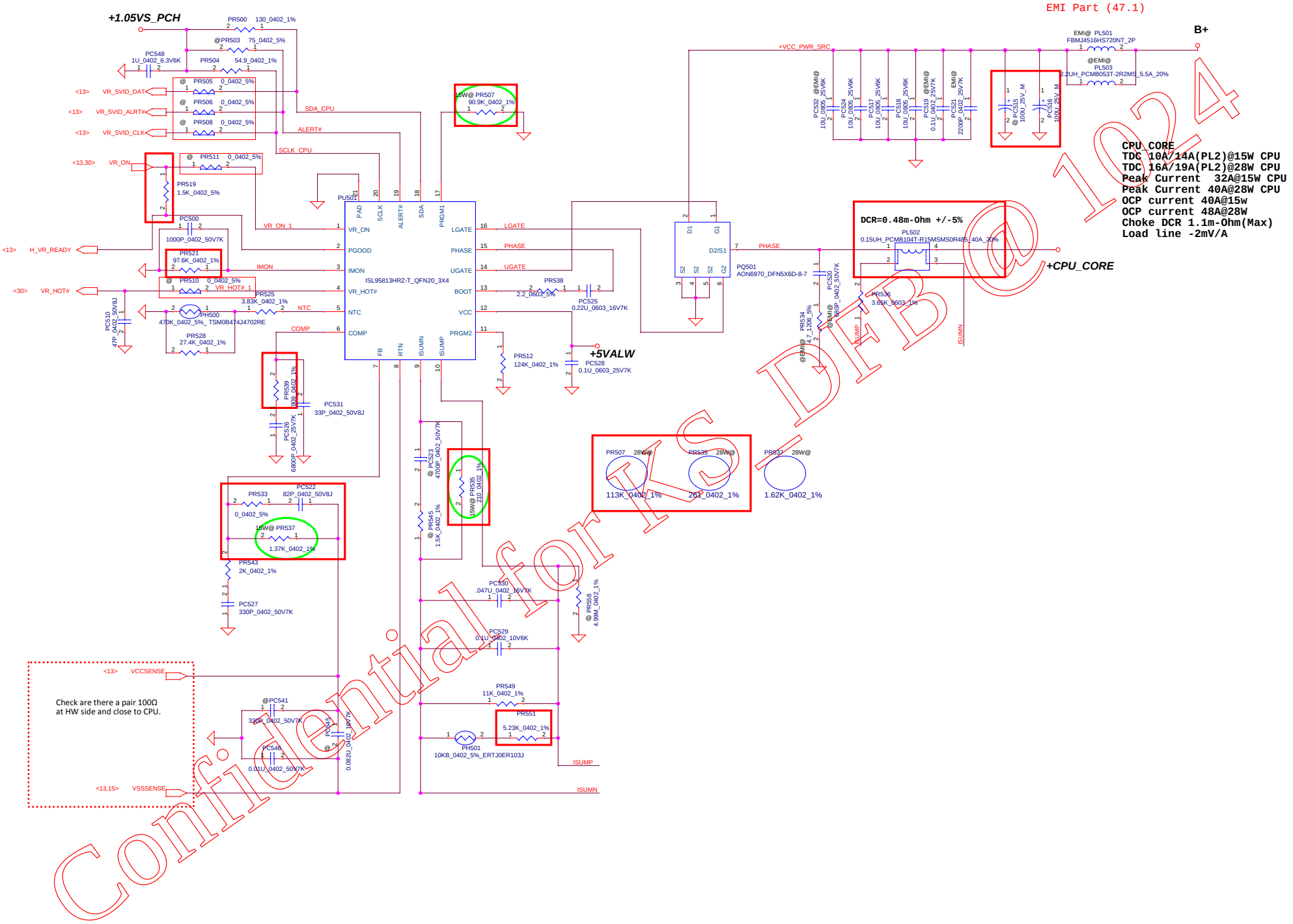
Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Title	PWR_+VCCIO		
Size C	Document Number LA-B012P		Rev 0.1
Date: Monday, October 20, 2014	Sheet 38 of 56		



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.			
Title	PWR_+1.35VP/0.675VSP		
Size	Document Number		Rev
	LA-B016P		0.1
Date: Monday, October 20, 2014	Sheet 39 of 56		



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

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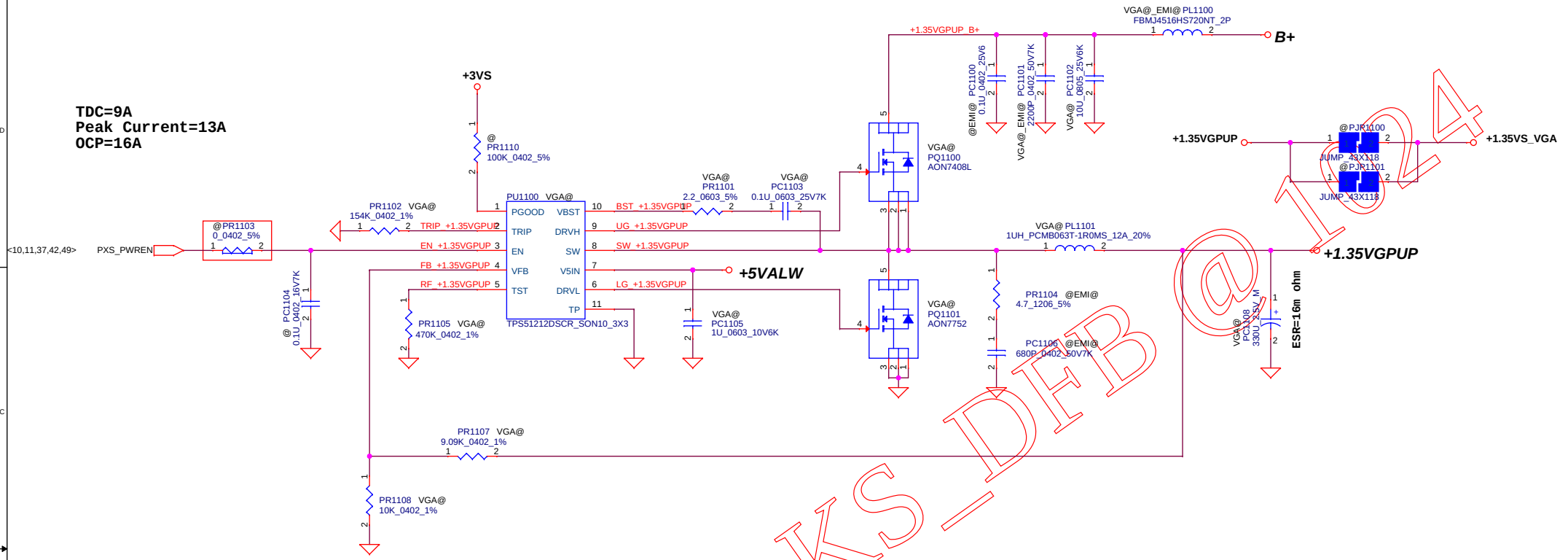
Compal Electronics, Inc.

Title: **PWR_VCORE**

Size: Document Number: **LA-B016P** Rev: 0.1

Date: Monday, October 20, 2014 Sheet 40 of 56



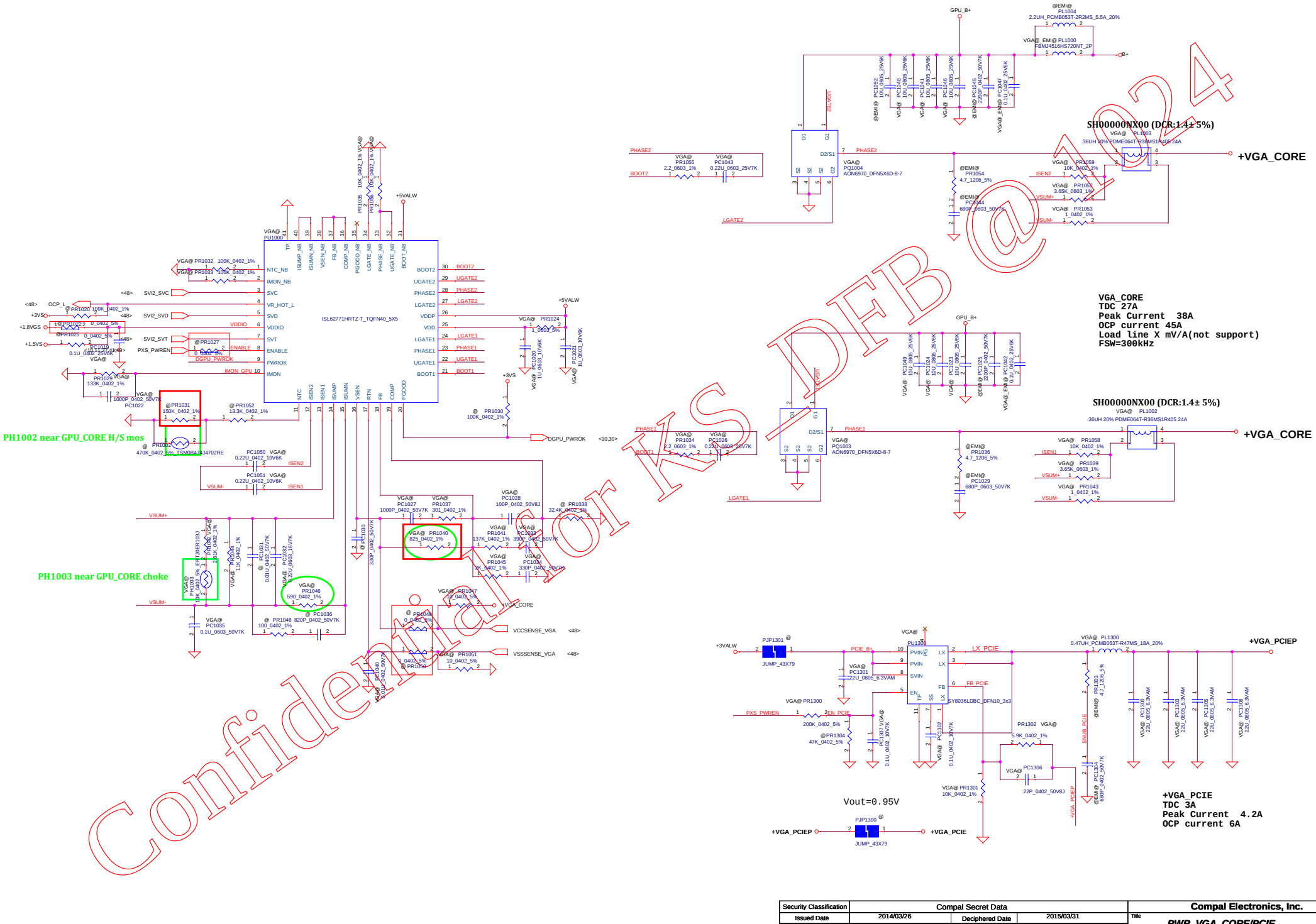
Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: **PWR_+1.35VGPU**

Size: | Document Number: **LA-B016P** | Rev: 0.1

Date: Monday, October 20, 2014 | Sheet 41 of 56



Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/03/26	Deciphered Date 2015/03/31	Title PWR_VGA_CORE/PCIE
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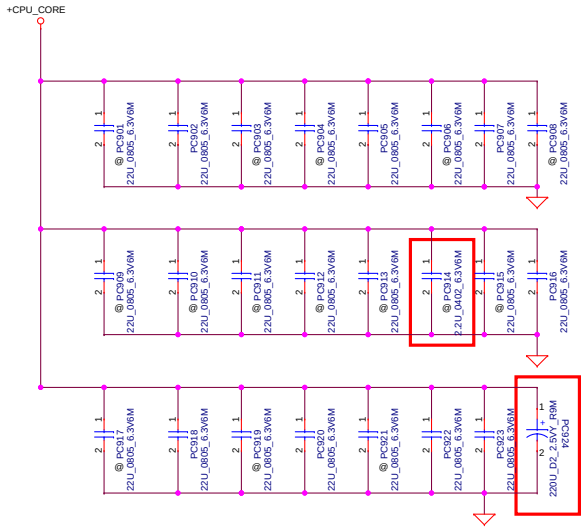
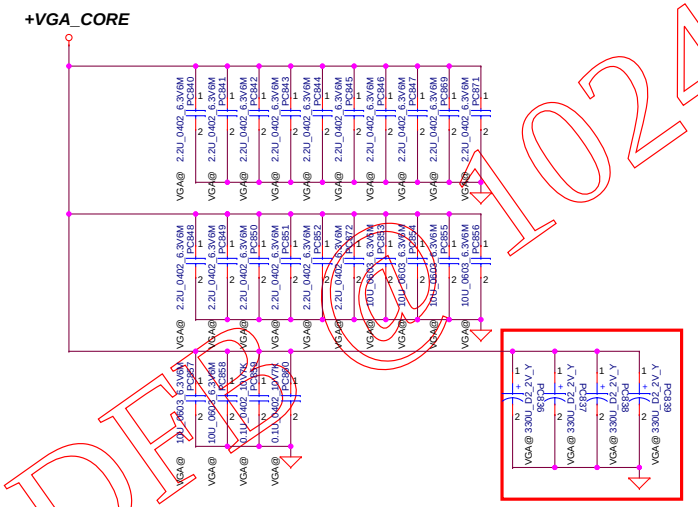
			Date: Monday, October 20, 2014 / Sheet 42 of 56

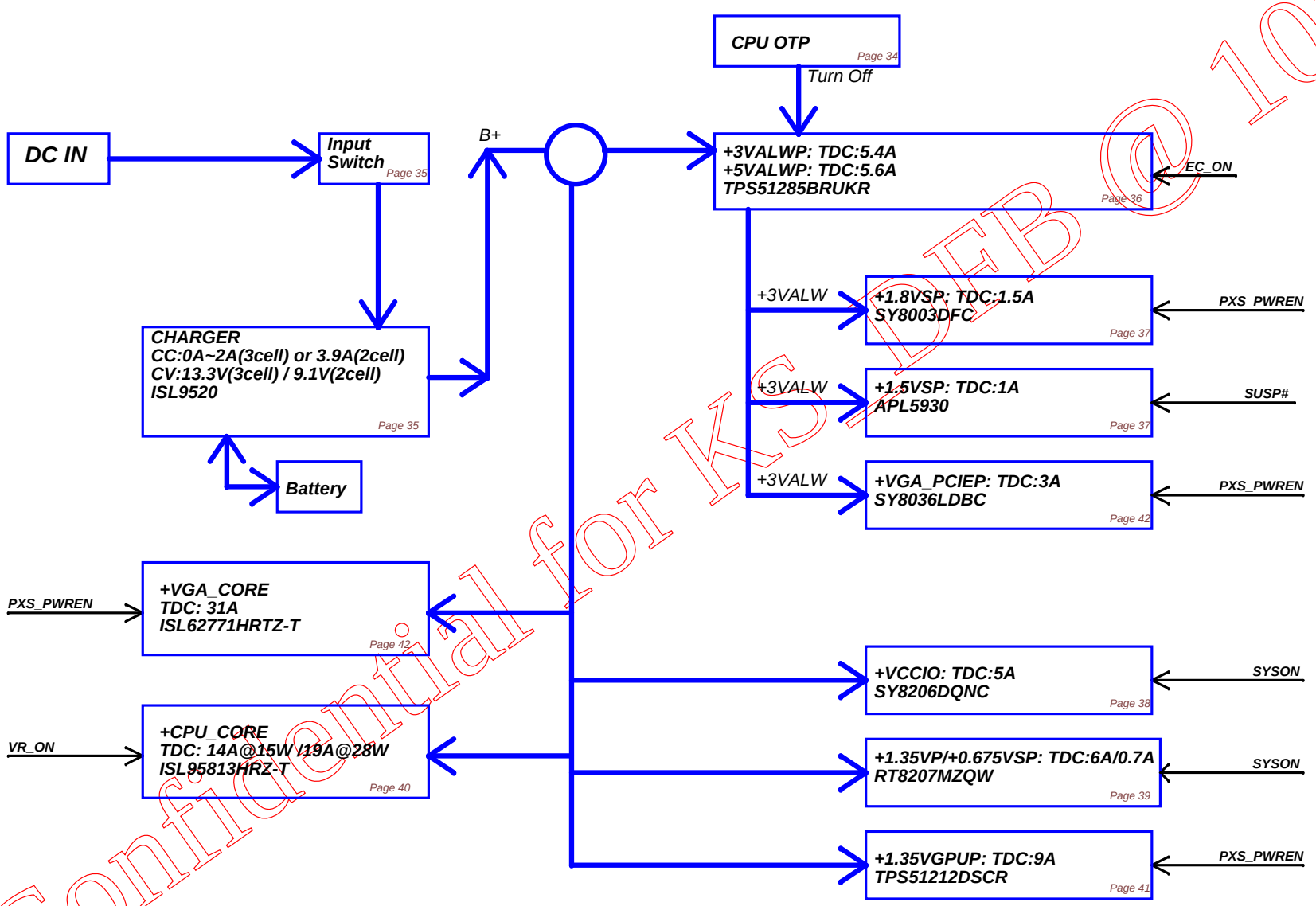




Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.		
Title: PWR_PROCESSOR DECOUPLING		
Size: A3	Document Number: LA-B016P	Rev: 0.1
Date: Monday, October 20, 2014	Sheet 43 of 56	

Power block



Security Classification	Compal Secret Data		
Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.			
Title	PWR_POWER BLOCK DIAGRAM		
Size	Document Number		Rev
	LA-B016P		0.1
Date:	Monday, October 20, 2014	Sheet	44 of 56

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

Item	Page #	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	44	DCIN/BATT CONN/OTP	13/10/24	Morris	design change	change PR16 from 100K to 10K add PR37 10K	0.2
2	45	CHARGER	13/10/24	Morris	design change	change PC711 from 1000pF to 0.01uF change PR711 from 49.9K to 51.1K change PR713 from 10K to 499K change PR724 from 100K to 499K change PC721 from 0.047u to 0.22u change PC722 from 0.1u to 1u add PC732 100u	0.2
3	46	3.3VALWP/5VALWP	13/10/24	Morris	design change for solve can't root issue	change PC104 from 0.1u to 0.22u change PC110 from 0.1u to 0.22u change PR102 from 2.2K to 10K add PR110 20K	0.2
4	50	VCORE	13/10/24	Morris	adjust CPU parameter	change PR507(15W@) from 90.9K to 169K change PR519 from 1.91K to 10K change PR521 from 95.3K to 97.6K change PR539 from 8.06K to 909 change PC515,PC516 from SF000005100 to SF000004M00 change PL502 from SH00000NM00 to SH00000PQ00 change PR535(15W@) from 340 to 210 change PR537 from 1.27K to 1.37K change PR535(28W@) from 432 to 261 change PR507(28W@) from 113K to 205K change PR551 from 2.61K to 5.23K add PC522 82pF add PR533 0-ohm	0.2
6	52	VGA_CORE/PCIE	13/10/24	Morris	design change from vendor change LL	change PR1040 from 1.24K to 825	0.2
7	53	PROCESSOR DECOUPLING	13/10/24	Morris	adjust CPU parameter	change PC924 from SGA20331E10 to SGA00009800 remove PC901,PC903,PC904,PC906,PC908,PC909,PC910,PC911,PC912,PC913,PC914,PC915,PC917,PC919,PC921	0.2
8	45	CHARGER	13/10/28	Morris	design change for plug out battery shut down issue	change PC723 from 0.01uF to 0.47uF change PR728 from 0 to 9.09K change PC728 from 4700pF to 2200pF change PC701 from 220pF to 1000pF	0.2
9	46	3.3VALWP/5VALWP	13/12/12	Morris	design change from EE request	add PR115 10K-ohm	0.3
10	50	VCORE	13/12/12	Morris	design change from Intel recommend	change PR519 from 10K to 1.5K	0.3
11	48	+VCCIO	13/12/13	Morris	design change from EE request	delete PR310 and add PR300 0-ohm	0.3
12	50	VCORE	14/01/20	Morris	adjust CPU parameter	change PR507(15W@) from 169K to 90.9K change PR507(28W@) from 205K to 113K	1.0
13	53	PROCESSOR DECOUPLING	14/02/13	Morris	design change from thermal request	change PC836 PC837 PC838 PC839 from SGA20331E10 to SGA00006A00	1.0
14	50	VCORE	14/03/03	Morris	design change for VGA thermal issue	change PC836 PC837 PC838 PC839 from SGA20331E10 to SGA00006A00	1.0

Vendor	PS8713B	TI	Spec				schematic netname	3Vs		GND	
1	VDD	VCC	Same								
2	B_EQ0	EQ1	**LL:** 9.5dB (default)	**LH:** 13dB	**HL:** 4.5dB	**HH:** 7.7 dB	USB3_EQ1_P0	RI23	@	RI32	@
3	DE0	DE1	LL: 3.5dB (default)	**LH:** no DE	**HL:** 2.7dB	**HH:** 5 dB	USB3_DE1_P0	RI26	@	RI35	@
4	EQ1	OS1	**LL:** 9.5dB	**LH:** 13dB	**HL:** 4.5dB	**HH:** 7.7 dB	USB3_OS1_P0	RI22	@	RI40	@
5	PD#	EN_RXD	it can be left open				USB3_ERD_P0	RI44	@	RI48	@
6	B_DE1	GND	**LL:** 3.5dB (default)	**LH:** no DE	**HL:** 2.7dB	**HH:** 5 dB	USB3_P0_PIN6	RI53	@	RI49	@
7	REXT	NC		4.99K						RI56	4.99K
8	B_Inn	RX1-	Same								
9	B_Inp	RX1+	Same								
10	GND	GND	Same								
11	A_OUTn	TX2-	Same								
12	A_OUTp	TX2+	Same								
13	VDD	VCC	Same								
14	TST/NC	CM	4.7K ohm resistor for perfomance adjustment				USB3_CM_P0	RI42	@	RI50	@
15	A_EQ1	OS2	LL: 9.5 dB (default)	**LH:** 13 dB			USB3_OS2_P0	RI19	@	RI87	@
16	A_DE0	DE2	**LL:** 3.5dB (default)	**LH:** no DE	**HL:** 2.7dB	**HH:** 5 dB	USB3_DE2_P0	RI20	@	RI31	@
17	A_EQ0	EQ2	LL: 9.5 dB (default)	**LH:** 13 dB			USB3_EQ2_P0	RI21	@	RI36	@
18	A_DE1	GND	**LL:** 3.5dB (default)	**LH:** no DE	**HL:** 2.7dB	**HH:** 5 dB	USB3_P0_PIN18	RI52	@	RI50	@
19	A_Inp	RX2+	Same								
20	A_Inn	RX2-	Same								
21	GND	GND	Same								
22	B_OUTp	TX1+	Same								
23	B_OUTn	TX1-	Same								
24	I2C_EN	NC	this pin canbe NC or connected to GND				NC			RI57	@

+3VS

RI53 1 @ 2 3.3K_0402_5% USB3_P0_PIN6
RI52 1 @ 2 3.3K_0402_5% USB3_P0_PIN18
RI421 2 4.7K_0402_5%~D USB3_CM_P0
RI441 @ 2 4.7K_0402_5%~D USB3_ERD_P0
RI191 @ 2 4.7K_0402_5%~D USB3_OS2_P0
RI201 @ 2 4.7K_0402_5%~D USB3_DE2_P0
RI211 @ 2 4.7K_0402_5%~D USB3_EQ2_P0
RI221 @ 2 4.7K_0402_5%~D USB3_OS1_P0
RI261 @ 2 4.7K_0402_5%~D USB3_DE1_P0
RI231 @ 2 4.7K_0402_5%~D USB3_EQ1_P0

RI871 @ 2 4.7K_0402_5%~D USB3_OS2_P0
RI311 @ 2 4.7K_0402_5%~D USB3_DE2_P0
RI361 @ 2 4.7K_0402_5%~D USB3_EQ2_P0
RI401 @ 2 4.7K_0402_5%~D USB3_OS1_P0
RI351 @ 2 4.7K_0402_5%~D USB3_DE1_P0
RI321 @ 2 4.7K_0402_5%~D USB3_EQ1_P0
RI461 @ 2 4.7K_0402_5%~D USB3_CM_P0
RI481 @ 2 4.7K_0402_5%~D USB3_ERD_P0
RI49 1 @ 2 0_0402_5%~D USB3_P0_PIN6
RI50 1 @ 2 0_0402_5%~D USB3_P0_PIN18

+3VS
CI23 0.01U_0402_16V7K~D
CI20 .1U_0402_16V7K~D

UI8
1 VCC
13 VCC
7 NC
24 NC
RI56 1 2 3.3K_0402_1%
RI57 1 2 0_0402_5%~D
11 TX2-
12 TX2+
20 RX2-
19 RX2+
15 OS2
16 DE2
17 EQ2
5 EN_RXD
CM
14
8 RX1-
9 RX1+
23 TX1-
22 TX1+
4 OS1
3 DE1
2 EQ1
6 GND
10 GND
18 GND
21 GND
25 PGND
PS8713BTQFN24GTR2-A0_TQFN24_4X4

<12> USB3RN4_3D_CAM
<12> USB3RP4_3D_CAM
USB3RN4 CI22 1 2 0.1U_0402_10V6K~D USB3RN4_L
USB3RP4 CI19 1 2 0.1U_0402_10V6K~D USB3RP4_L
USB3RN4_L
USB3RP4_L
USB3RN4_R_C
USB3RP4_R_C

USB3_OS2_P0
USB3_DE2_P0
USB3_EQ2_P0
USB3_OS1_P0
USB3_DE1_P0
USB3_EQ1_P0
USB3_ERD_P0
USB3_CM_P0
USB3_P0_PIN6
USB3_P0_PIN18

<12> USB3TN4_3D_CAM
<12> USB3TP4_3D_CAM
USB3TN4 CI16 1 2 0.1U_0402_10V6K~D USB3TN4_L
USB3TP4 CI5 1 2 0.1U_0402_10V6K~D USB3TP4_L
USB3TN4_L
USB3TP4_L
USB3TN4_RC CI21 1 2 0.1U_0402_10V6K~D USB3TN4_R_C
USB3TP4_RC CI24 1 2 0.1U_0402_10V6K~D USB3TP4_R_C

@RI3 1 2 0_0402_5%~D
EMI@ LI10
USB3RN4_R_C
USB3RP4_R_C
USB3RN4_R
USB3RP4_R
S COM FI_ CHILISIN CMMI21T-670Y-N
@RI4 1 2 0_0402_5%~D

@RI5 1 2 0_0402_5%~D
EMI@ LI9
USB3TN4_R_C
USB3TP4_R_C
USB3TN4_R
USB3TP4_R
S COM FI_ CHILISIN CMMI21T-670Y-N
@RI6 1 2 0_0402_5%~D

<11> CAM_DETECT
<30,9> FW_UPDATE

+5VALW
C94 1U_0402_6.3V6K
+5VALW
+5VALW
+5VALW
RI90 100K_0402_5%
U2409
1 VIN
2 VIN
3 ON
4 VBIAS
7 VOUT
8 VOUT
6 CT
5 GND
9 GND
TPS22967DSGR_SON8_2X2
C5220 2200P_0402_25V7K
C5221 0.1U_0402_10V6K
+5V_CAM

+3VALW TO +5V_3DCAM
J518 open
J521 @ 1 2 JUMP_43X39

For Test,
APE8937(SA000070L00)
AOZ1336(SA00006U600)
TPS22967(SA000070S00)

CT pin use 2200pf for soft start tuning

+3VALW_PCH
+3VS
RI55 10K_0402_5%
RI89 @ 10K_0402_5%
FW_UPDATE

+3VALW_PCH
+3VS
RI54 10K_0402_5%
RI88 @ 10K_0402_5%
3D_CAM_EN

JCAM3D
USB3RN4_R
USB3RP4_R
USB3TN4_R
USB3TP4_R
RI58 0_0402_5%~D
CAM_DETECT
FW_UPDATE
DETECT
+5V_CAM
RI91 100K_0402_5%
@
GND
GND
ACES_50463-0104A-001

DI3
USB3RN4_R
USB3RP4_R
USB3TN4_R
USB3TP4_R
S DIO(BR) TVWDF1004AD0 DFN ESD
@

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Title: **LED / B**

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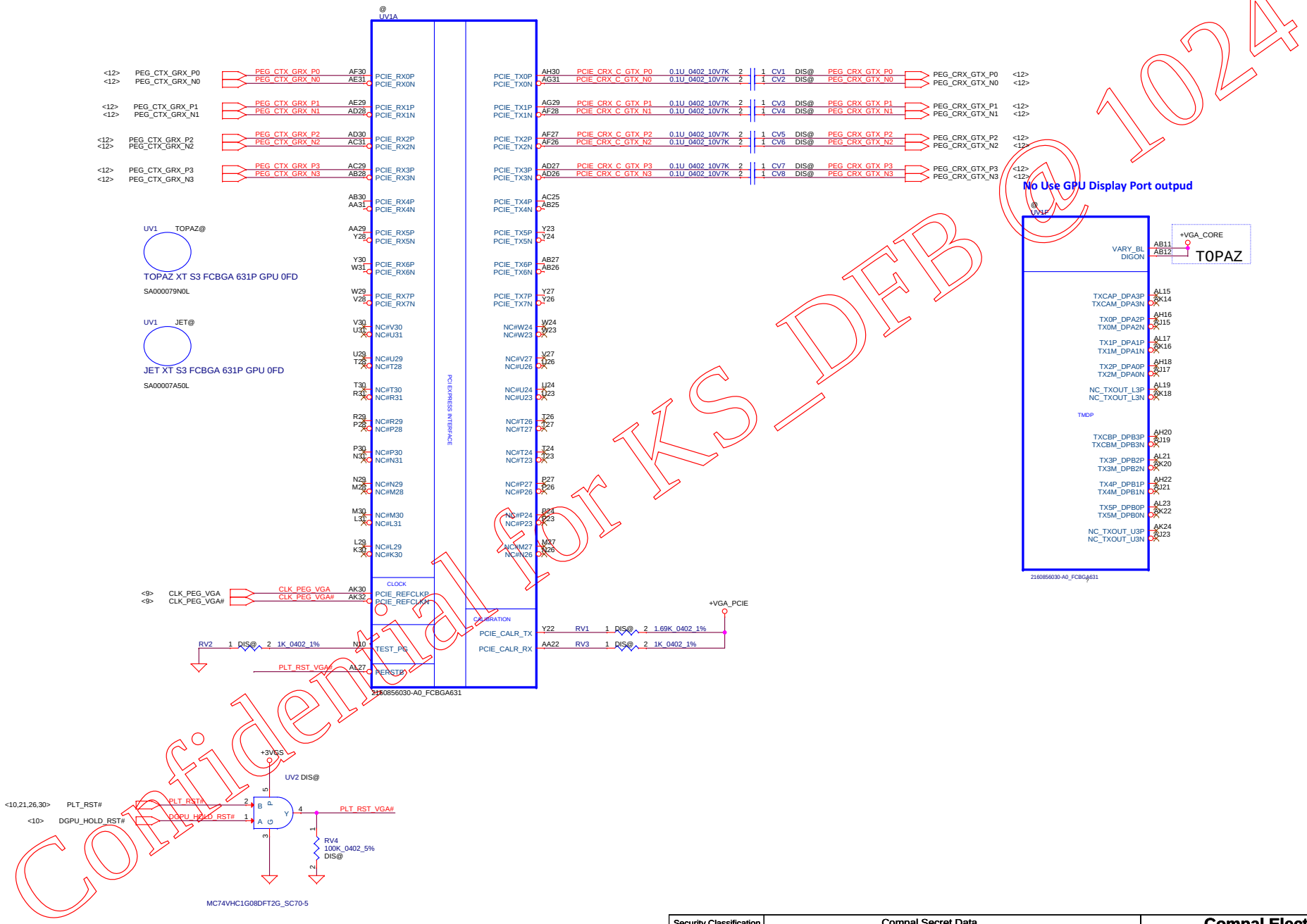

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Issued Date	2014/03/26	Deciphered Date	2015/03/31

Compal Electronics, Inc.

Title: **TOPAZ_PCIE/DP**

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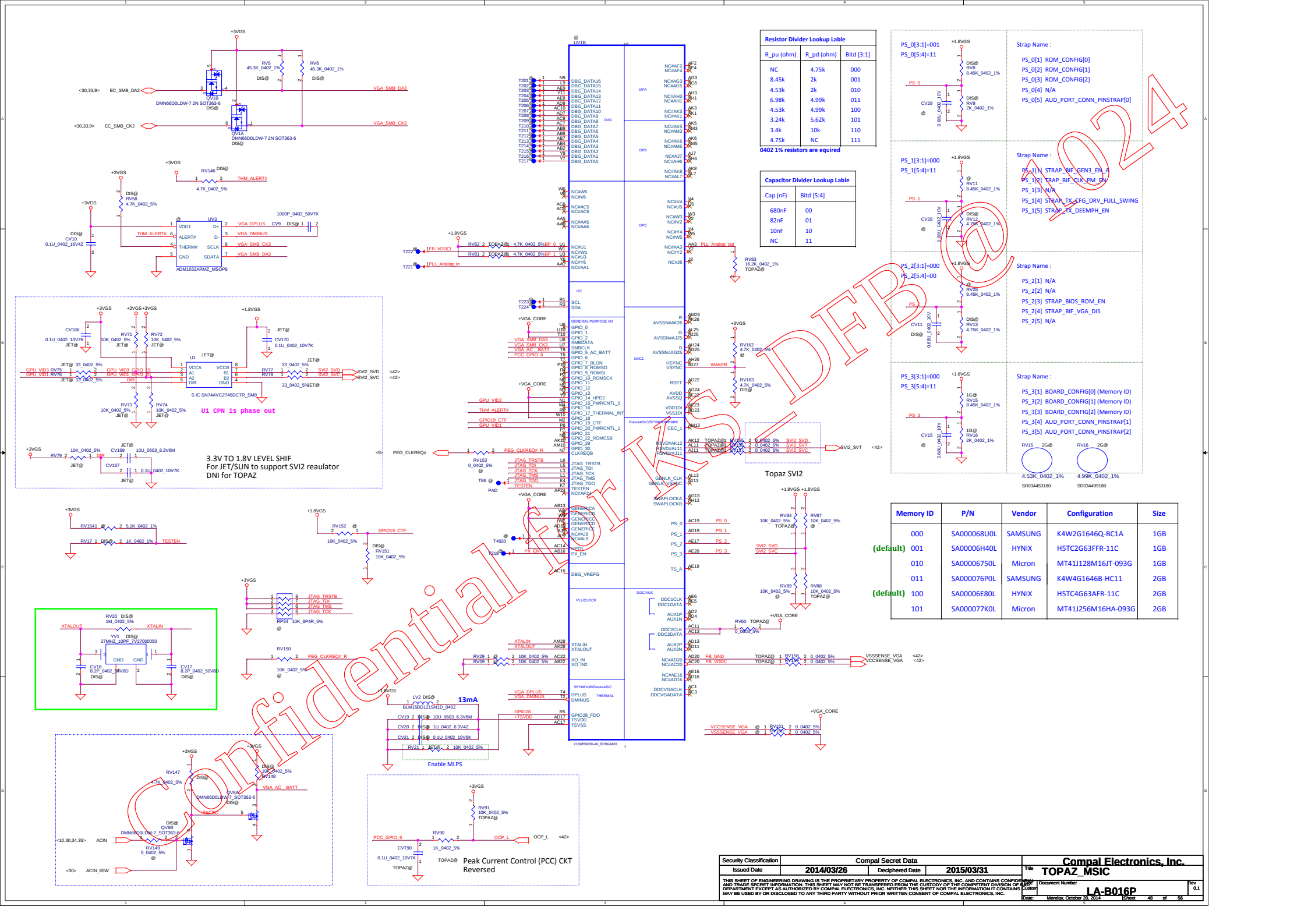
Resistor Divider Lookup Lable
R_pu (ohm) | R_pd (ohm) | Bitd [3:1]
NC | 4.75k | 000
8.45k | 2k | 001
4.53k | 2k | 010
6.98k | 4.99k | 011
4.53k | 4.99k | 100
3.24k | 5.62k | 101
3.4k | 10k | 110
4.75k | NC | 111
0402 1% resistors are equired
Capacitor Divider Lookup Lable
Cap (nF) | Bitd [5:4]
680nF | 00
82nF | 01
10nF | 10
NC | 11
PS_0[3:1]=001
PS_0[5:4]=11
Strap Name :
PS_0[1] ROM_CONFIG[0]
PS_0[2] ROM_CONFIG[1]
PS_0[3] ROM_CONFIG[2]
PS_0[4] N/A
PS_0[5] AUD_PORT_CONN_PINSTRAP[0]
PS_1[3:1]=000
PS_1[5:4]=11
PS_1[1] STRAP_BIF_GEN3_EN_A
PS_1[2] TRAP_BIF_CLK_PM_EN
PS_1[3] N/A
PS_1[4] STRAP_TX_CFG_DRV_FULL_SWING
PS_1[5] STRAP_TX_DEEMPH_EN
PS_2[3:1]=000
PS_2[5:4]=00
Strap Name :
PS_2[1] N/A
PS_2[2] N/A
PS_2[3] STRAP_BIOS_ROM_EN
PS_2[4] STRAP_BIF_VGA_DIS
PS_2[5] N/A
PS_3[3:1]=000
PS_3[5:4]=11
Strap Name :
PS_3[1] BOARD_CONFIG[0] (Memory ID)
PS_3[2] BOARD_CONFIG[1] (Memory ID)
PS_3[3] BOARD_CONFIG[2] (Memory ID)
PS_3[4] AUD_PORT_CONN_PINSTRAP[1]
PS_3[5] AUD_PORT_CONN_PINSTRAP[2]
4.53K_0402_1%
4.99K_0402_1%
SD034453180
SD034499180
U1 CPN is phase out
3.3V TO 1.8V LEVEL SHIF
For JET/SUN to support SVI2 reaulator
DNI for TOPAZ
Topaz SVI2
13mA
Enable MLPS
Peak Current Control (PCC) CKT
Reversed
Memory ID | P/N | Vendor | Configuration | Size
000 | SA000068U0L | SAMSUNG | K4W2G1646Q-BC1A | 1GB
(default) 001 | SA00006H40L | HYNIX | H5TC2G63FFR-11C | 1GB
010 | SA00006750L | Micron | MT41J128M16JT-093G | 1GB
011 | SA000076P0L | SAMSUNG | K4W4G1646B-HC11 | 2GB
(default) 100 | SA00006E80L | HYNIX | H5TC4G63AFR-11C | 2GB
101 | SA000077K0L | Micron | MT41J256M16HA-093G | 2GB
Confidential For ITS DFB 2024
Security Classification
Compal Secret Data
Issued Date
2014/03/26
Deciphered Date
2015/03/31
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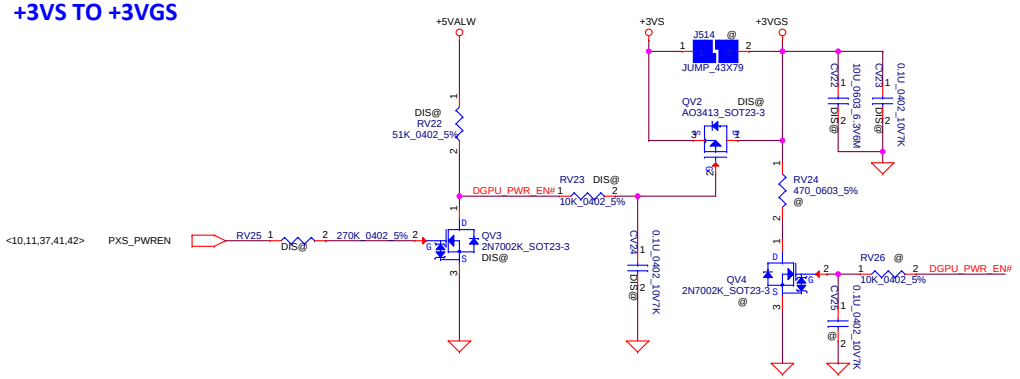
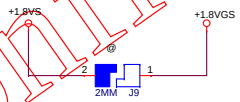
+3VS TO +3VGS



+1.35VS_VGA TO +1.35V_MEM_GFX

SHORT DEFAULT

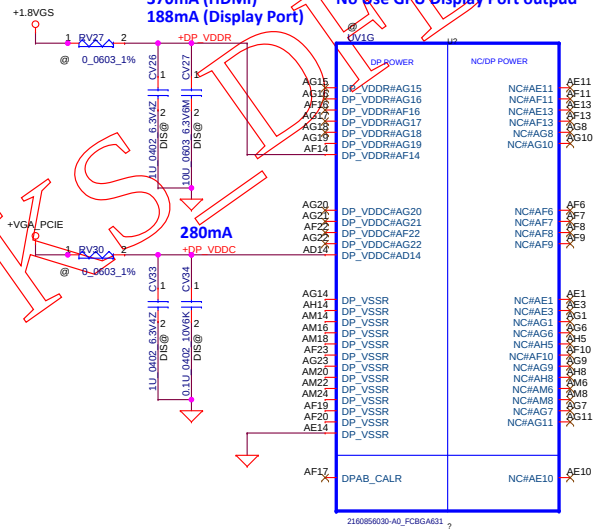
+1.8VS TO +1.8VGS

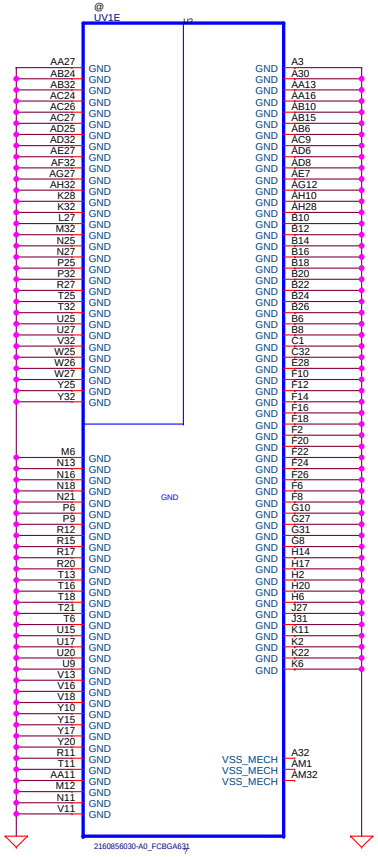


SHORT DEFAULT

370mA (HDMI)
188mA (Display Port)

No Use GPU Display Port outpud





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Compal Electronics, Inc.

Title: **TOPAZ_Power/GND**

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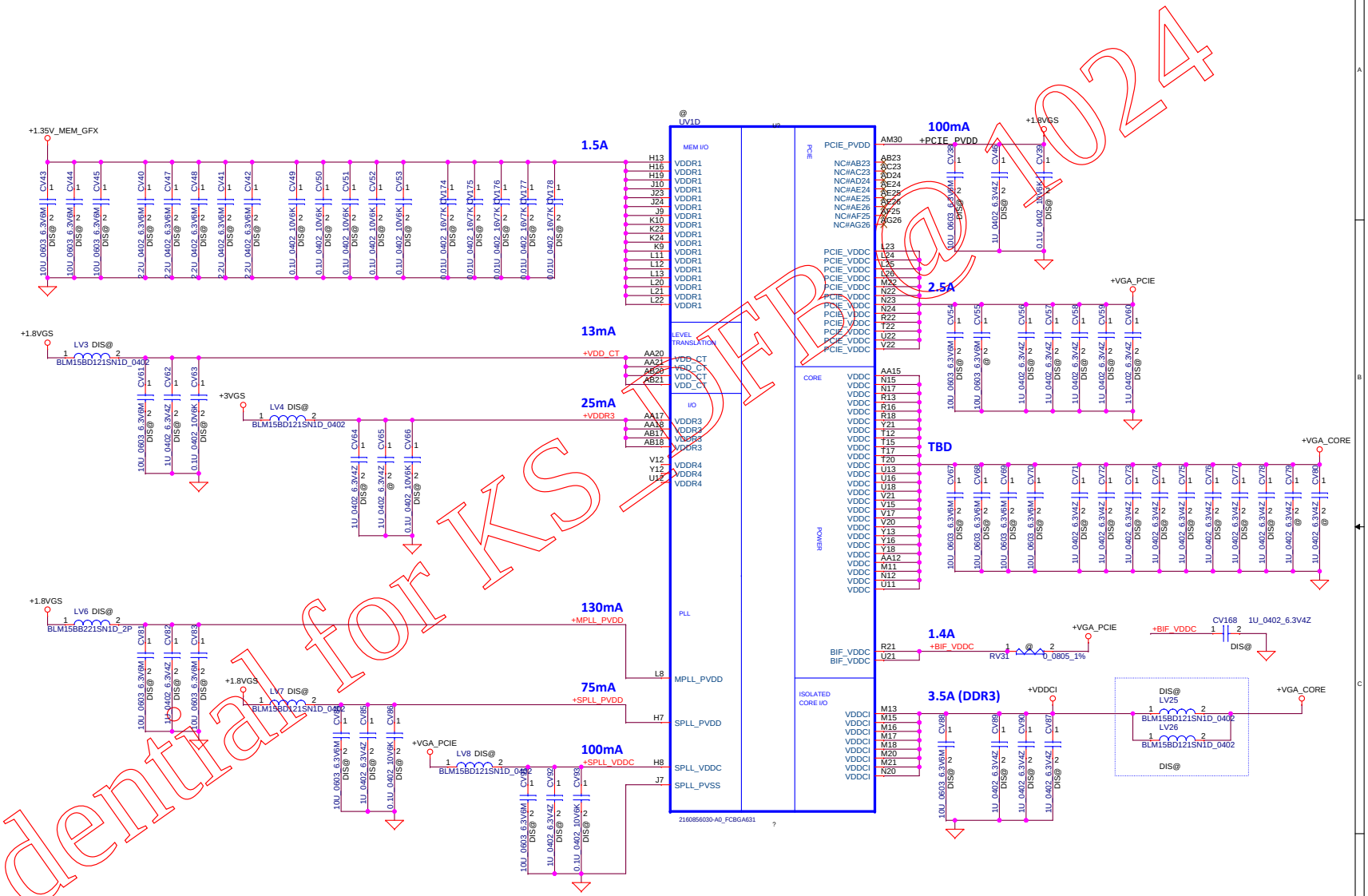
+VGA_CORE		10uF	1uF	0.1uF
VDDC	TBD	5 (1@)	10 (2@)	0
VDDCI	3.5A	1	3	0

+VGA_PCIE		10uF	1uF	0.1uF
PCIE_VDDC	2.5A	2 (1@)	5 (1@)	0
BIF_VDDC	1.4A	0	1	0
SPLL_VDDC	100mA	1	1	1

+1.35V_MEM_GFX		10uF	2.2uF	0.1uF	0.01uF
VDDR1	1.5A	3	5	5	5

+1.8VGS		10uF	1uF	0.1uF
PCIE_PVDD	100mA	1	1	1
MPLL_PVDD	130mA	1	1	1
SPLL_PVDD	75mA	1	1	1
VDDR4	(300mA)	0	0	0
VDD_CT	13mA	1	1	1
+TSVDD	13mA	1	1	1
+DP_VDDR		0	0	0
+DP_VDDC		0	0	0

+3VGS		10uF	1uF	0.1uF
VDDR3	25mA	0	2 (1@)	1



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Title: TOPAZ_Power

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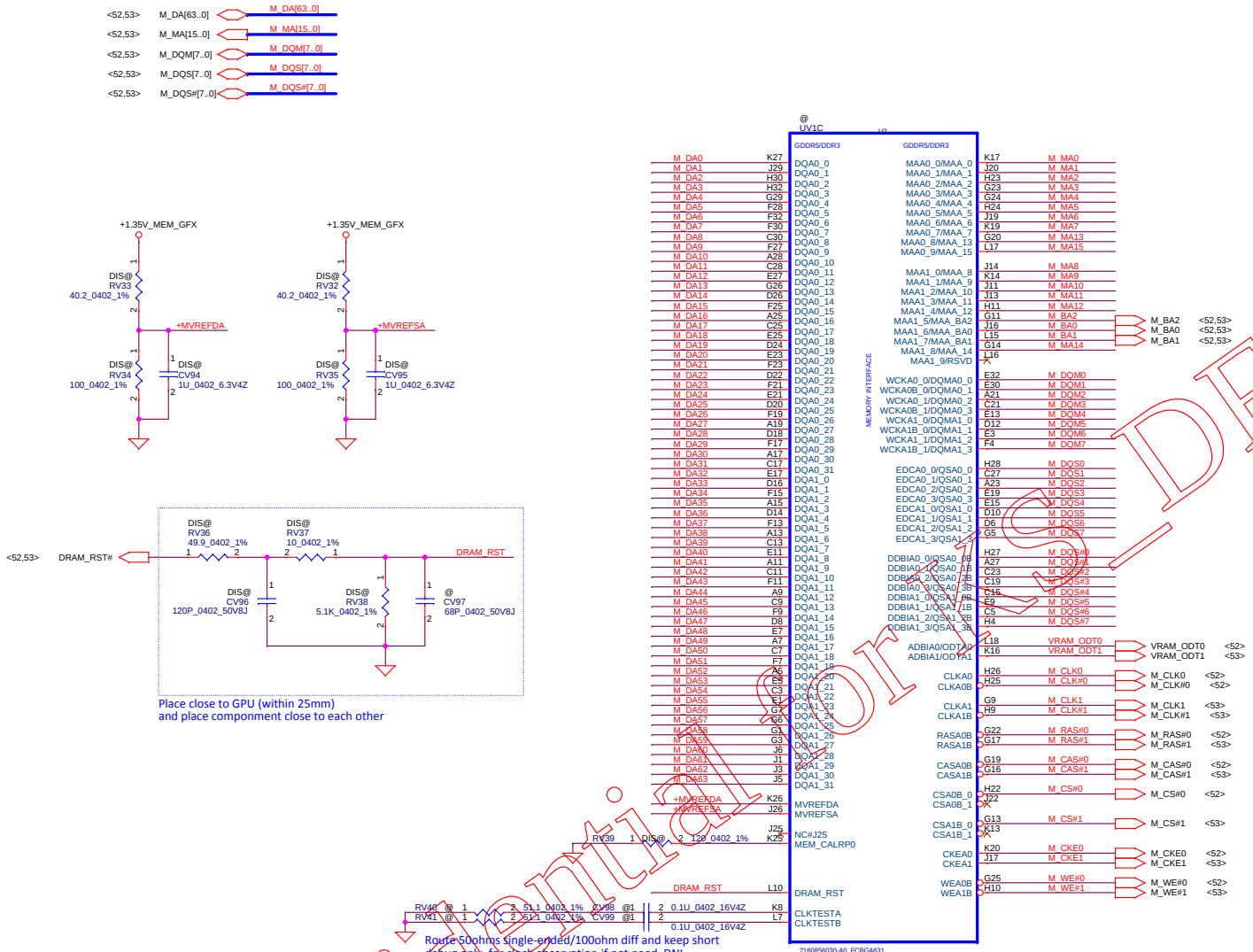

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Title: **TOPAZ_MEM**

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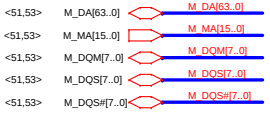
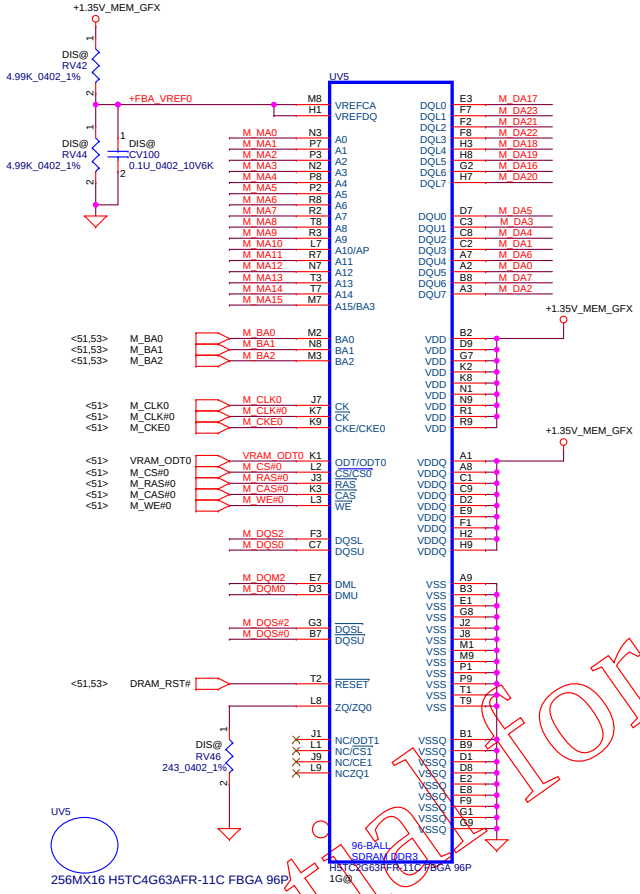
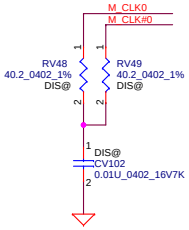
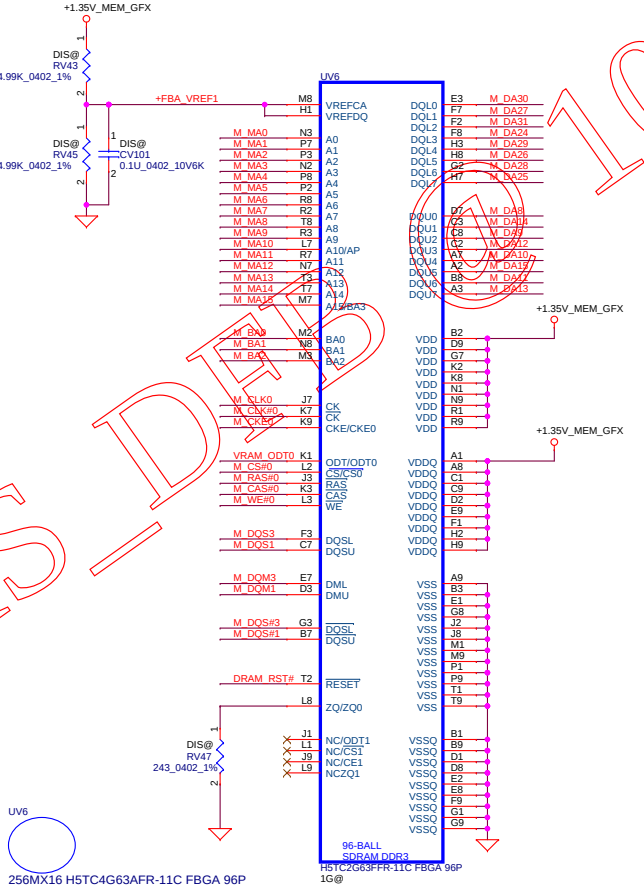
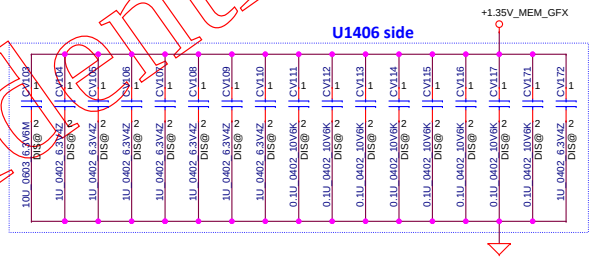
Memory Partition A - Lower 32 bits

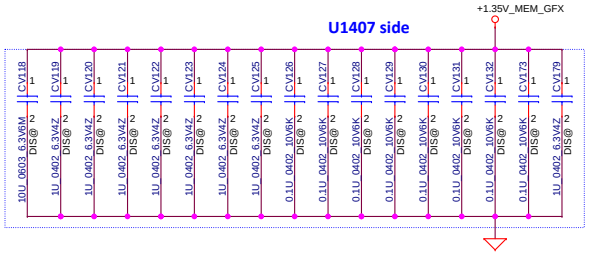












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Title: TOPAZ_VRAM A Lower

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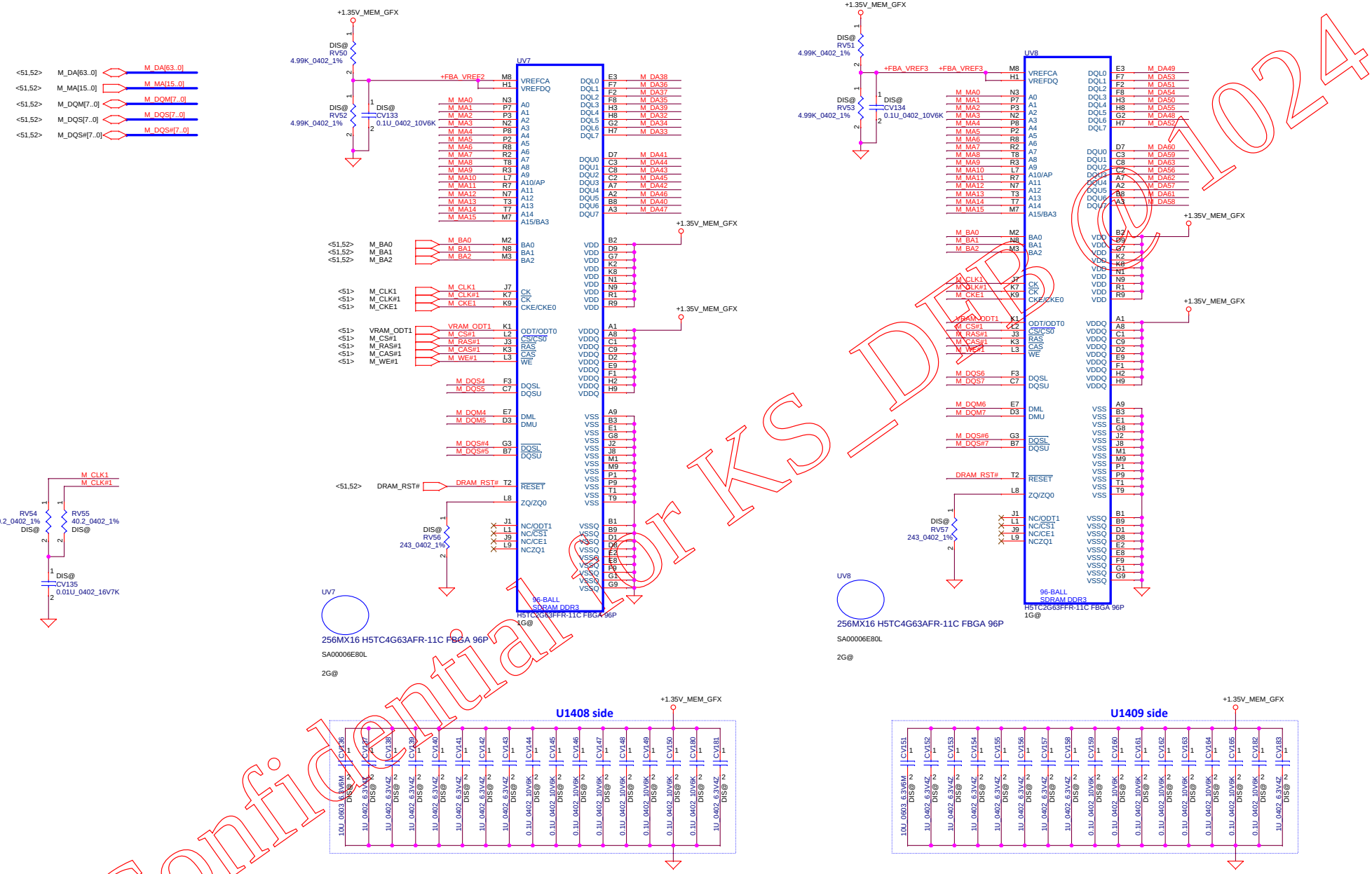
Memory Partition A - Upper 32 bits



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Title: **TOPAZ_VRAM A Upper**

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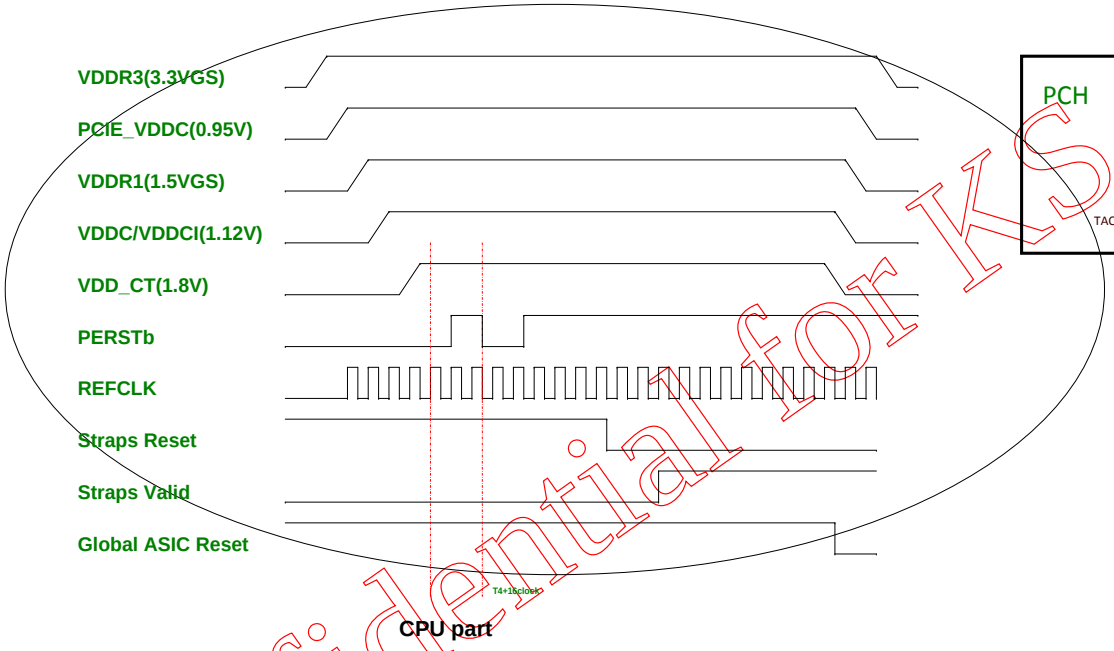
Power-Up/Down Sequence

1. All the ASIC supplies must reach their respective nominal voltages within 20 ms of the start of the ramp-up sequence, though a shorter ramp-up duration is preferred. The maximum slew rate on all rails is 50 mV/µs.

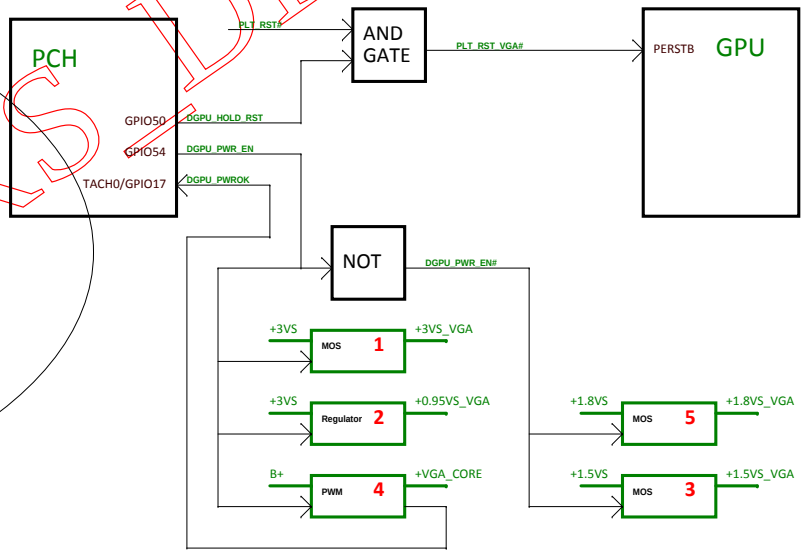
2. The external pull ups on the DDC/AUX signals (if applicable) should ramp up before or after both VDDC and VDD_CT have ramped up.

3. VDDC and VDD_CT should not ramp up simultaneously. For example, VDDC should reach 90% before VDD_CT starts to ramp up (or vice versa).

4. For power down, reversing the ramp-up sequence is recommended.



CPU part



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Title: **Reserved Page**

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Compal Electronics, Inc.

Title: **Reserved Page**

Size | Document Number: **LA-B016P** | Rev: 0.1

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