Compal Confidential

AIWZ0/AIWZ1
DIS M/B Schematics Document

Intel Boardwell U Processor with DDR3L

AMD Meso XT / Tropo XT2

2015-02-02

LA-C281P

REV：1.0

Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/09/01	Deciphered Date	2015/09/01
Title	Cover Page		
Size C	Document Number LA-C281		Rev 1.0
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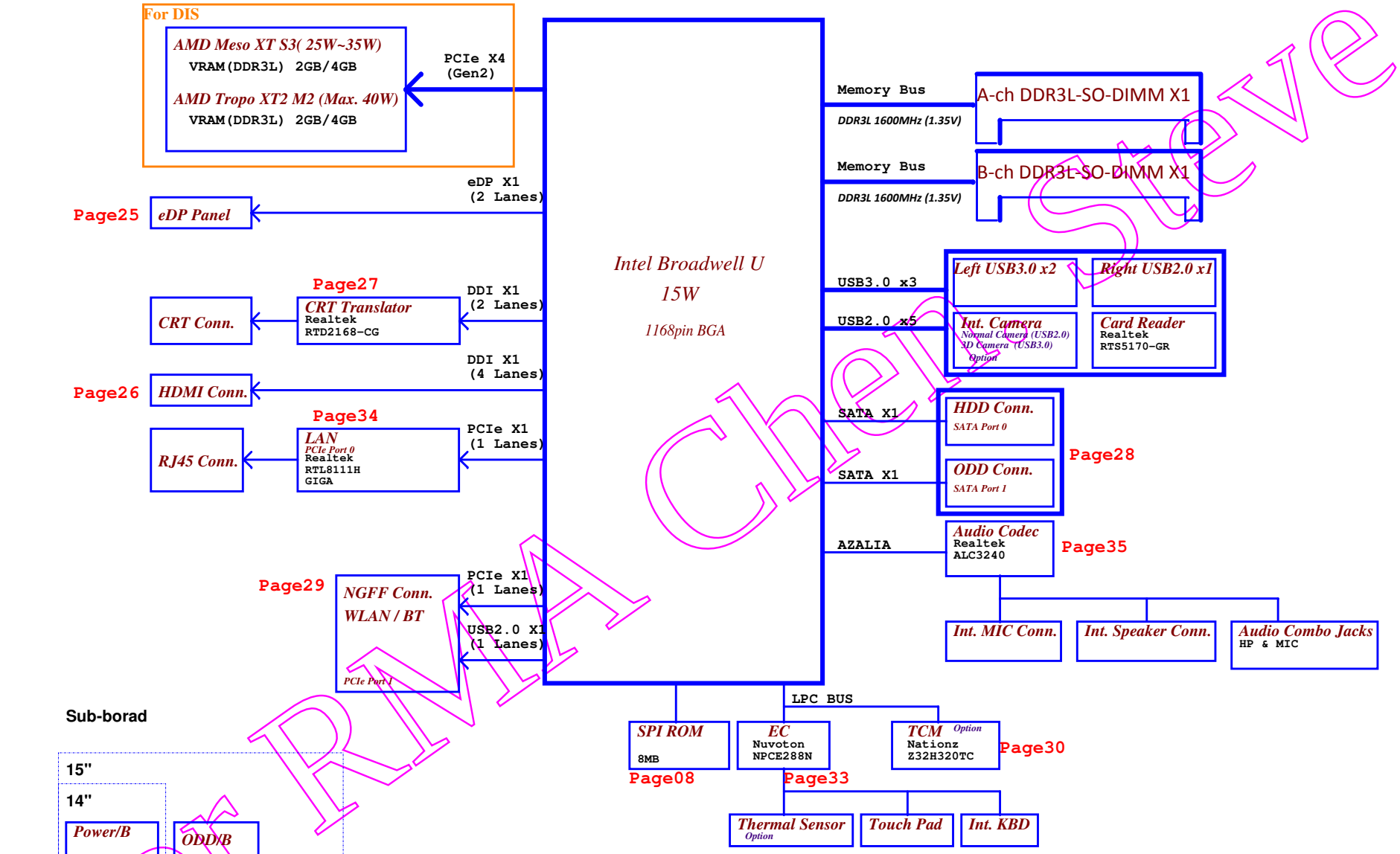

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Compal Electronics, Inc.			
Title	MB Block Diagram		
Size C	Document Number		Rev 1.0
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Voltage Rails

power plane / State	B+	+5VALW +3VALW	+1.35V	+5VS +3VS +1.5VS +1.05VS +VCC_CORE +VGA_CORE +1.8VS +0.675VS +1.05VS
S0	O	O	O	O
S3	O	O	O	X
S5 S4/AC	O	O	X	X
S5 S4/ Battery only	O	X	X	X
S5 S4/AC & Battery don't exist	X	X	X	X

USB Port Table

	USB 2.0	Port	3 External USB Port
EHCI1	UHCI0	0	USB Port (Left Side) USB3.0
		1	USB Port (Left Side) USB3.0
	UHCI1	2	Sub Board
		3	CardReader
	UHCI2	4	Touch Screen
		5	Camera
	UHCI3	6	Bluetooth (NGFF)
		7	
EHCI1	UHCI4	8	
		9	
	UHCI5	10	
		11	
	UHCI6	12	
		13	

BOM Structure Table

Item	BOM Structure
AIWZ0 (14")	Z14@
AIWZ1 (15")	Z15@
AIWZ0 (17")	Z17@
LAN Switch mode	SWITCH@
LAN RTL8111GS-CG	8111GLDO@
WLAN Support ISCT	ISCT@
WLAN No Support ISCT	NOISCT@
For Green CLK	GCLK@
For No Green CLK	NOGCLK@
Green CLK IC For DIS	GCLKDIS@
Green CLK IC For UMA	GCLKUMA@
For system DIS	PX@
For TROPO DIS pop	DIS@
For TROPO DIS unpop	@DIS@
For UMA	UMA@
3D Camera	3DCMOS@
Camera	CMOS@
HDMI	HDMI@
NO keyboard backlight	NOKBL@
Keyboard backlight	KBL@
HDMI Royalty	45@
Connector	ME@
Un-pop component for EMI	@EMI@
Un-pop component for ESD	@ESD@
pop component for EMI	EMI@
pop component for ESD	ESD@
Un-pop for TPM	TPM@
pop for TPM	NOTPM@
VRAM indentify	X76@
For TROPO function	TROPO@
ADB function	ADB@
NO ADB function	NOADB@
CPU_SA000083E30	QGZ3@
CPU_SA000083C10	QH17@
CPU_SA00007AM00	QFSY@
CPU_SA000083A10	QH15@
CPU_SA000083D30	QH18@
CPU_SA00007UG00	QGHA@
CPU_SA00007UH00	QGHB@
CPU_SA00007U900	QGH9@

BDW_CPU

UC1
SA000089A60 I7-5500U
S IC FH806580162004 SR23W F0 2.4G C38!
I7_5500@

UC1
SA000089970 I5-5200U
S IC FH806580162020 4 SR23Y F0 2.2G C38!
I5_5200@

UC1
SA000089880 I3-5010U
S IC FH806580162040 6 SR23Z F0 2.1G C38!
I3_5010@

UC1
SA000093EH0 I3-5005U
S IC FH806580188400 6 SR244 F0 2G C38!
I3_5005@

PCB

ZZZ
DAZ1BK00101
PCB AIWZ0 LA-C281P LS-C281P/C282P 02
Z14@
PCB AIWZ0 LA-C281P LS-C281P/C282P 02

ZZZ
DAZ1BJ00101
PCB AIWZ1 LA-C281P LS-C281P/C282P/C283P/C285P/C286P 02
Z15@
PCB AIWZ1 LA-C281P LS-C281P/C282P/C283P/C285P/C286P 02

EC SM Bus1 address

Device	Address
Smart Battery	0001 011x

EC SM Bus2 address

Device	Address
Thermal Sensor	0100 1100

PCH SM Bus address

Device	Address	
DDR_JDIMM1	1010 000x	A0h
DDR_JDIMM2	1010 010x	A4h

AMD-GPU SM Bus address

Device	Address	
Internal thermal sensor	0100 0001	41h

SMBUS Control Table

	SOURCE	CRT	BATT	KB9012	SODIMM	WLAN	Thermal Sensor	PCH
EC_SMB_CK1 EC_SMB_DA1	NPCE288 +3VALW	X	V +3VALW	X	X	X	X	X
EC_SMB_CK2 EC_SMB_DA2	NPCE288 +3VS	V +3VS	X	X	X	X	V +3VS	V +3VALW
PCH_SMBCLK PCH_SMBDATA	PCH +3VALW	X	X	X	V +3VS	X	X	X
PCH_SML0CLK PCH_SML0DATA	PCH +3VALW	X	X	X	X	X	X	X
SML1CLK SML1DATA	PCH +3VALW	V +3VS	X	V +3VS	X	X	V +3VGS	X

STATE \ SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	ON	OFF	OFF	OFF

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Title: Notes List
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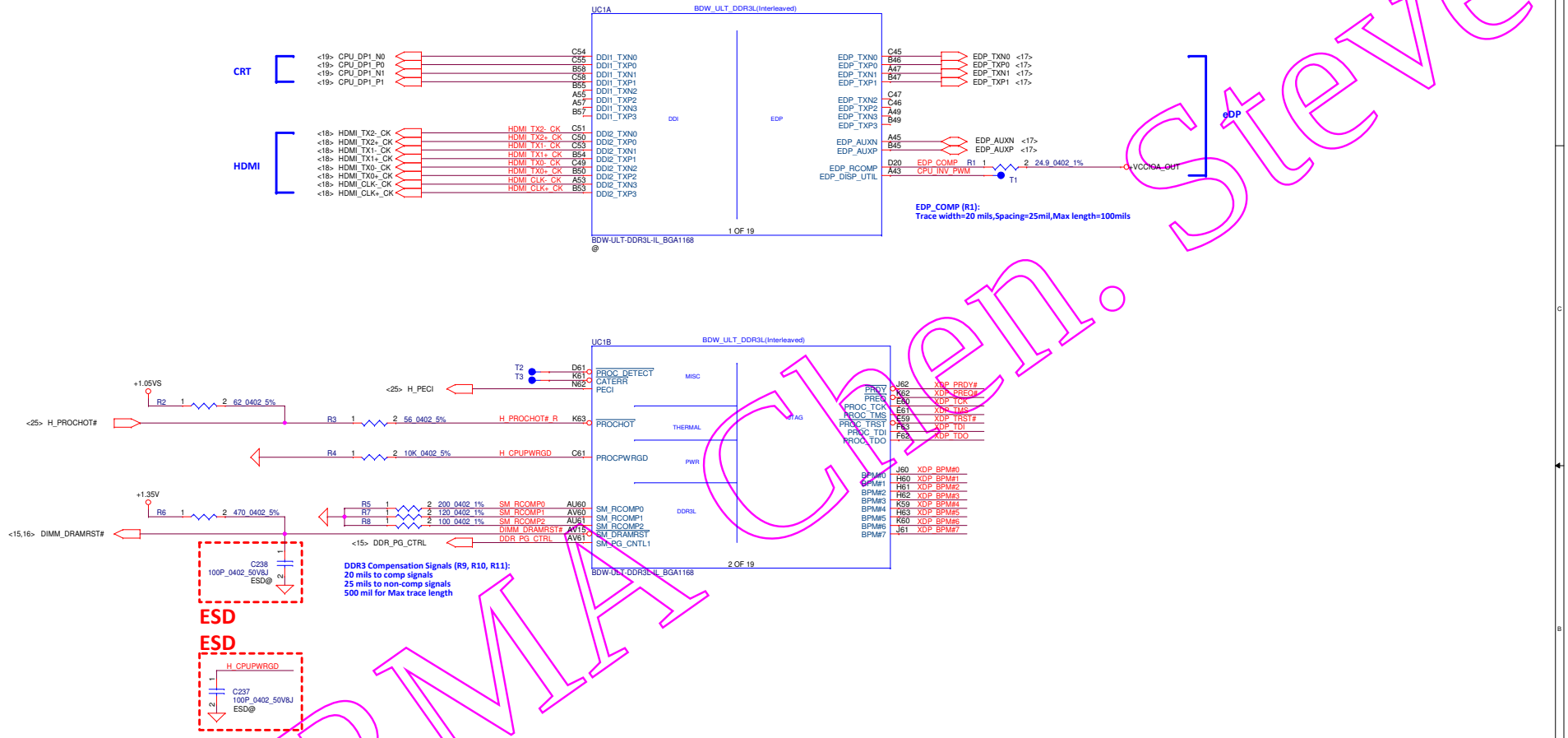

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Title	BDW MCP(1/11) DDI,MSIC,XDP		
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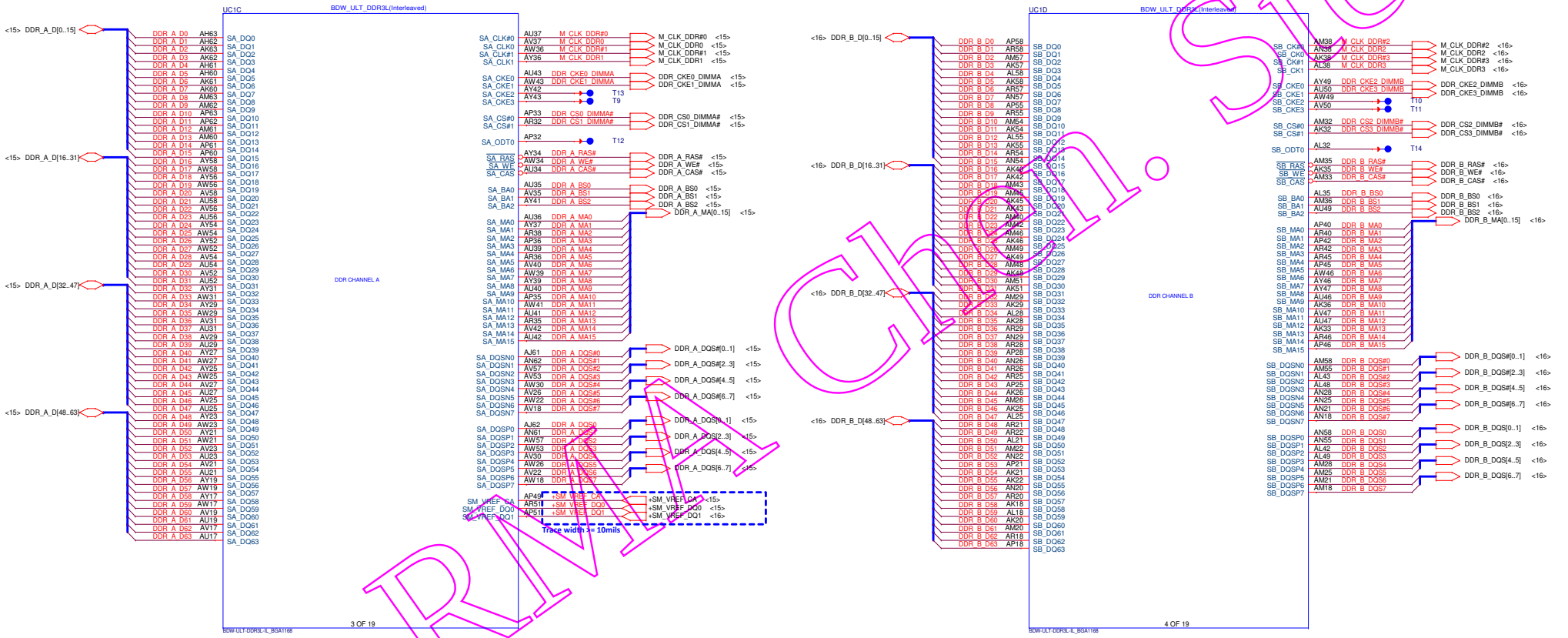
Interleaved Memory



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Issued Date	2014/09/01	Deciphered Date	2015/09/01
Title	BDW MCP(2/11) DDRIII		
Size C	Document Number LA-C281		Rev 1.0
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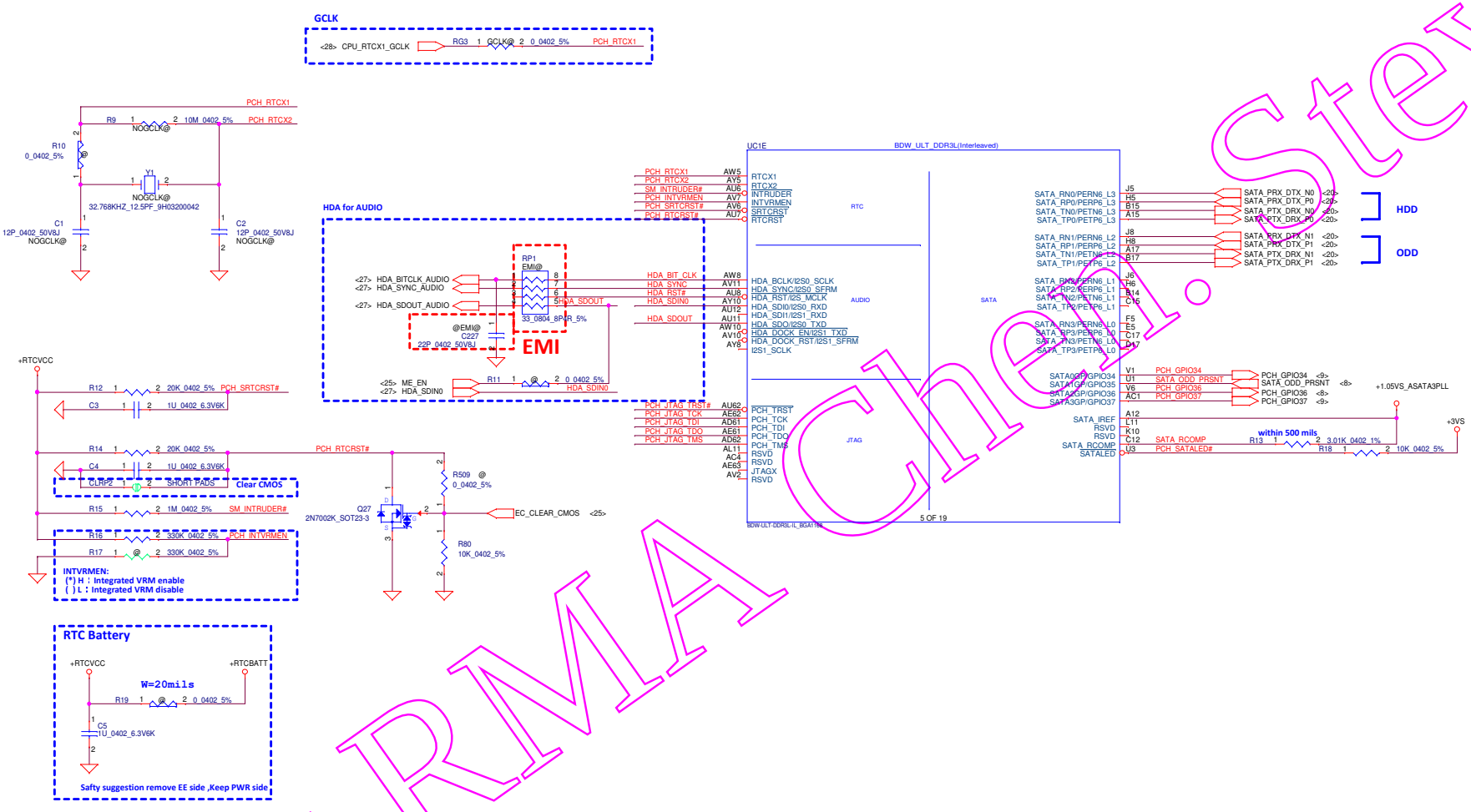

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Issued Date	2014/09/01	Deciphered Date	2015/09/01
Title	BDW MCP(3/11) RTC,SATA,XDP		
Size C	Document Number LA-C281		Rev 1.0
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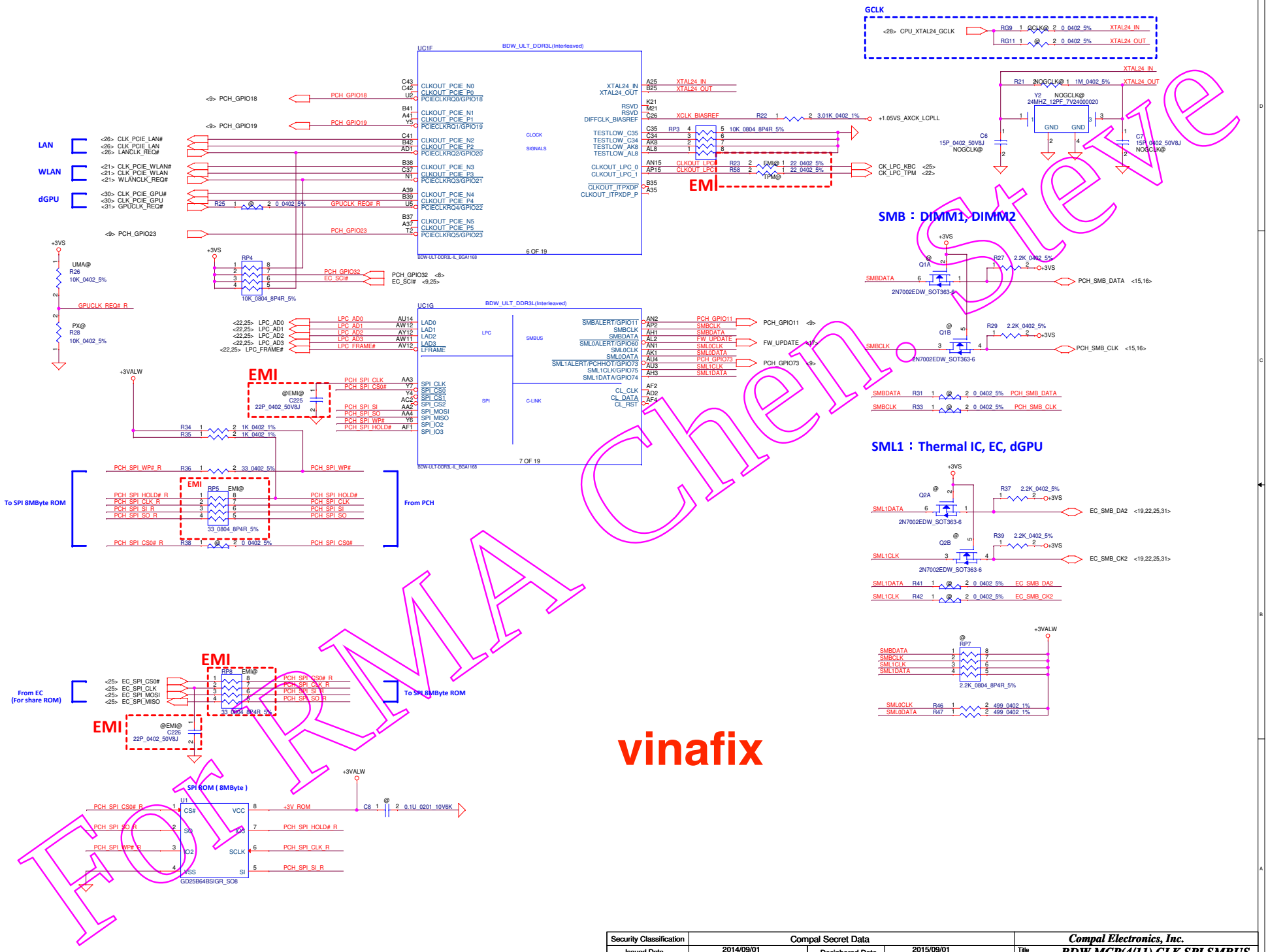

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Issued Date	2014/09/01	Deciphered Date 2015/09/01	Title BDW MCP(4/11) CLK,SPI,SMBUS
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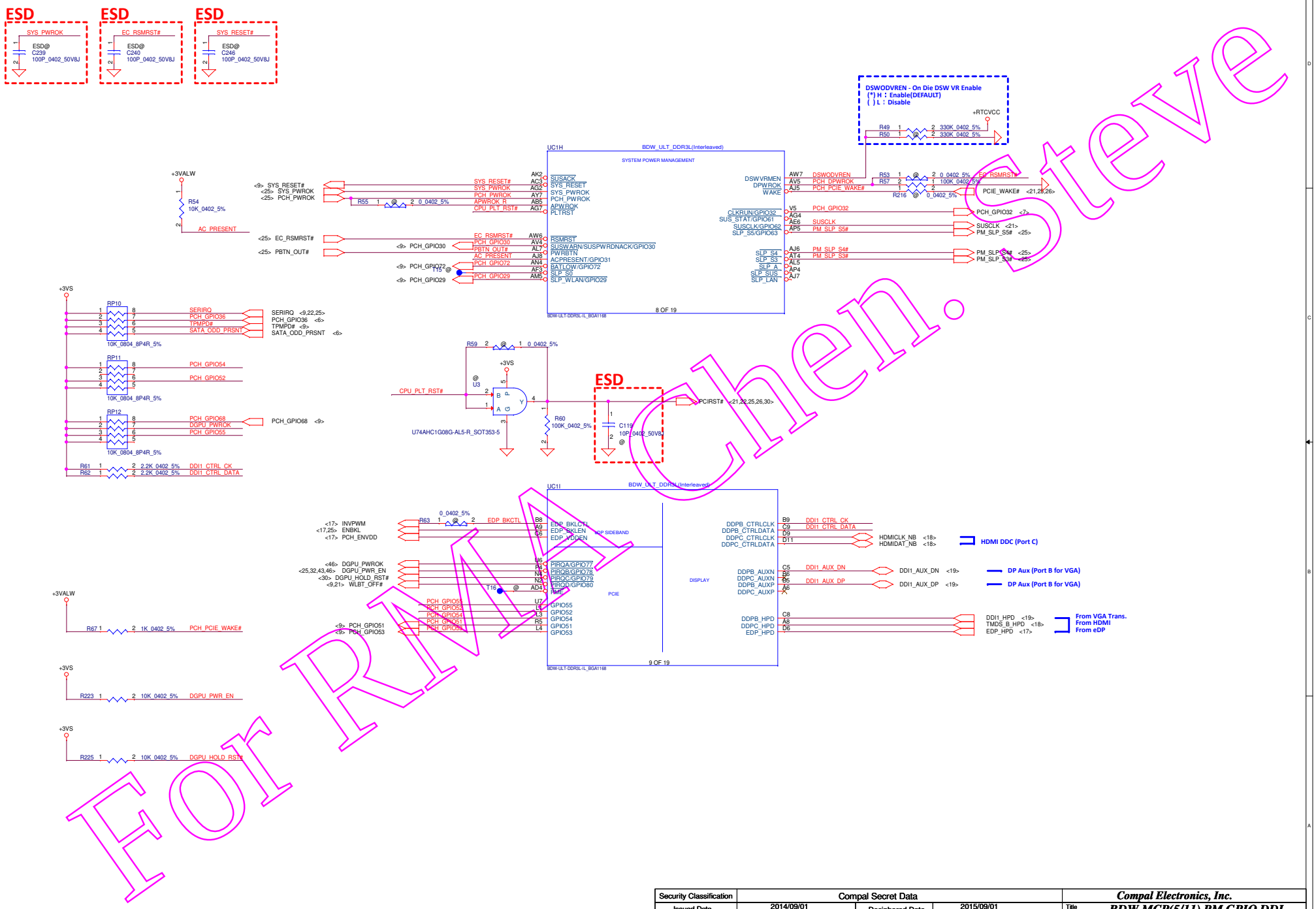

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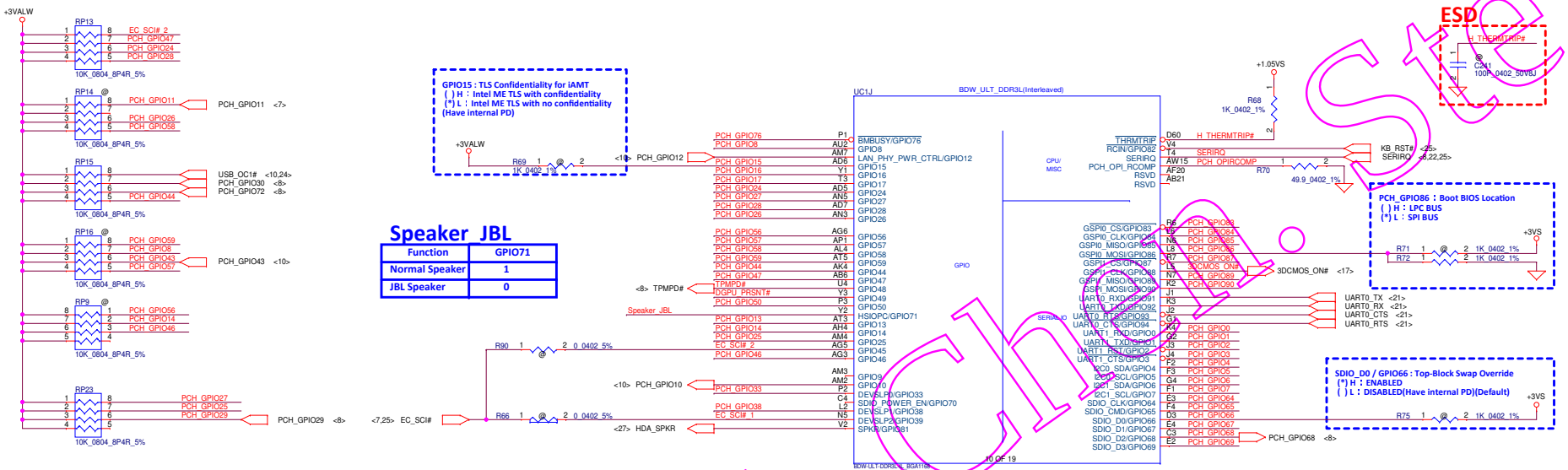

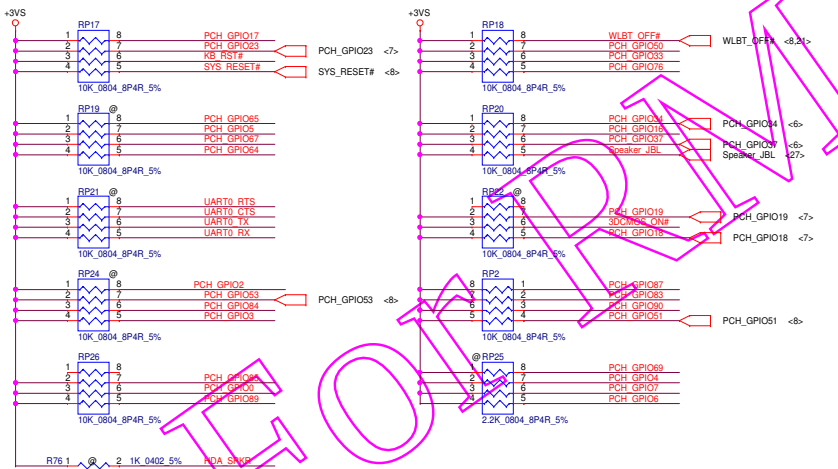

BIOS Strap Pin

Function	GPIO13
No ISCT	1
ISCT	0

+3VS
R282 10K_0402_5% NOISCT@
R283 10K_0402_5% ISCT@
PCH_GPIO13

Function	DGPU_PRSNT#(GPIO49)
UMA Only	1
SG	0

+3VS
R73 UMA@ 10K_0402_5%
R74 PAD 10K_0402_5%
DGPU_PRSNT#

Function	GPIO73
3DCMOS@	1
CMOS@	0

+3VS
R286 3DCMOS@ 10K_0402_5%
R287 CMOS@ 10K_0402_5%
PCH_GPIO73
PCH_GPIO73 <7>

Function	GPIO1
14 inch	1
15 inch	0

+3VS
R288 Z14@ 10K_0402_5%
R289 Z15@ 10K_0402_5%
PCH_GPIO1

Function	GPIO38
TPM@	1
NOTPM@	0

+3VS
R291 TPM@ 10K_0402_5%
R292 NOTPM@ 10K_0402_5%
PCH_GPIO38

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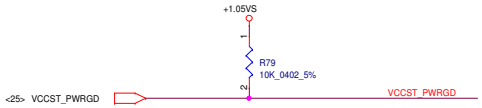

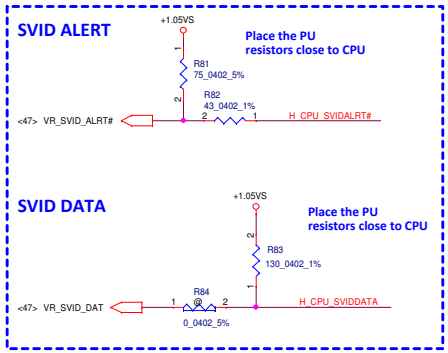

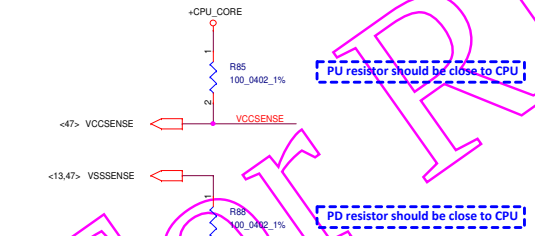

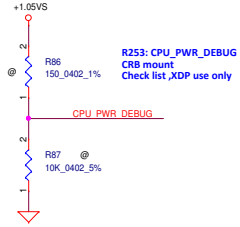

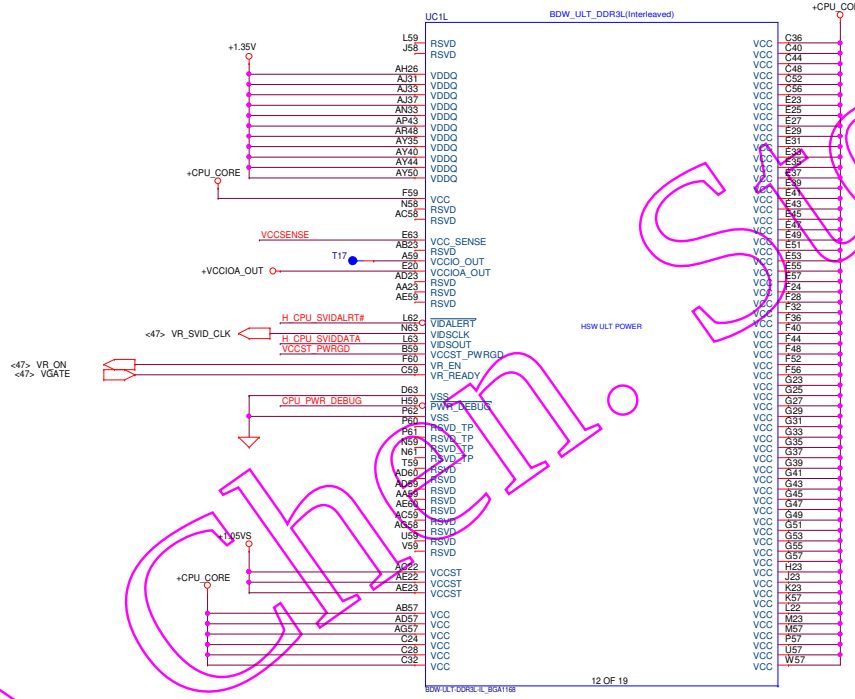

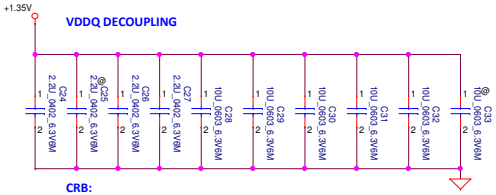

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Title	BDW MCP(8/11) Power		
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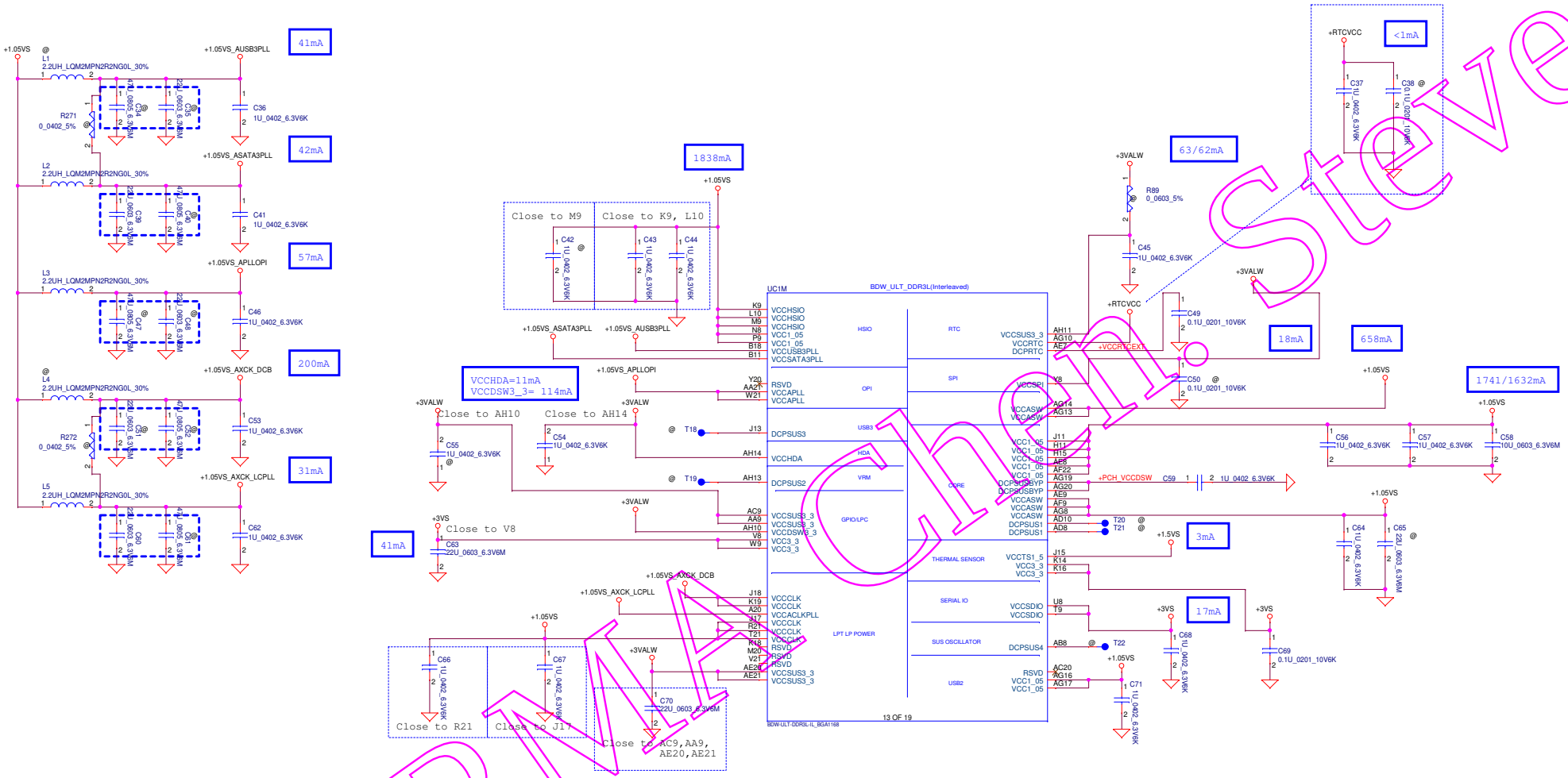

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Title	BDW MCP(9/11) Power		
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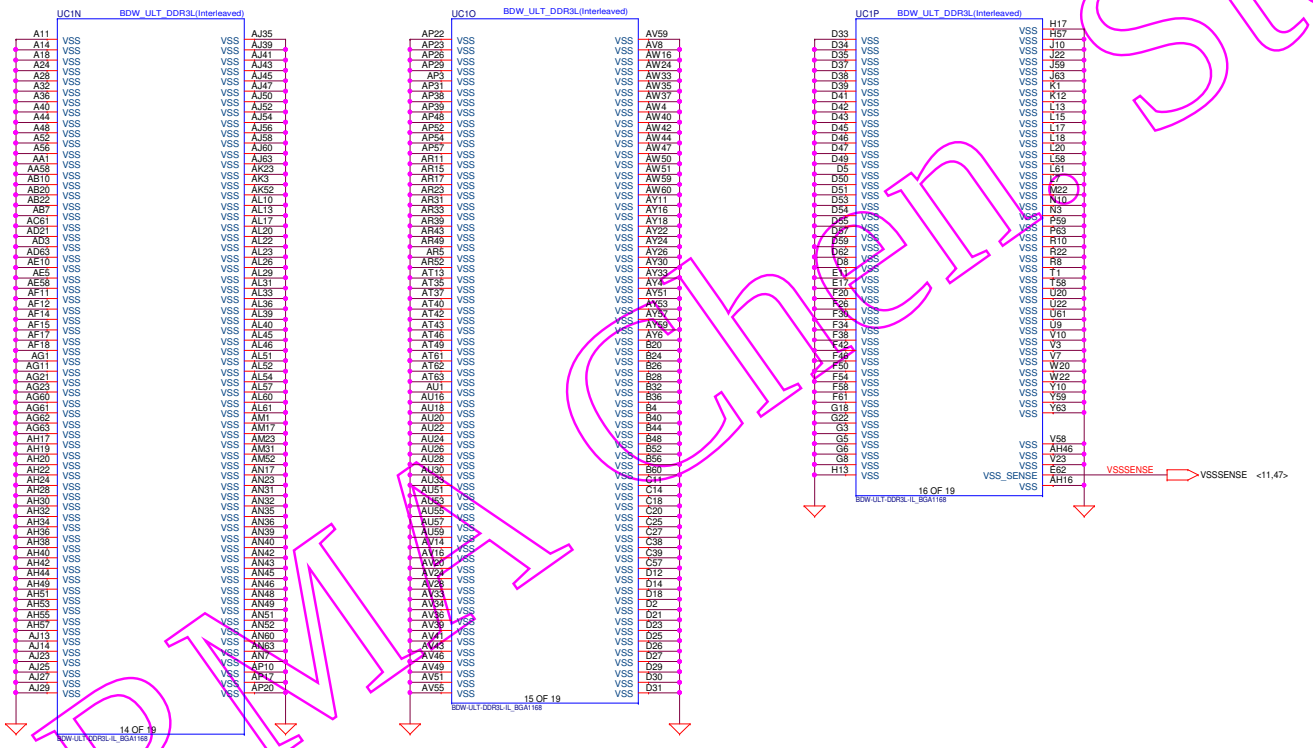

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Title	BDW MCP(10/11) GND		
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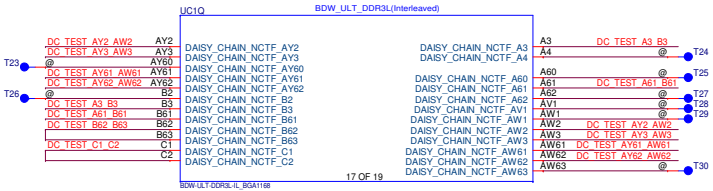
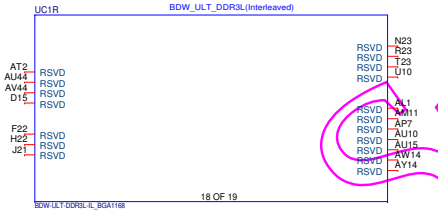
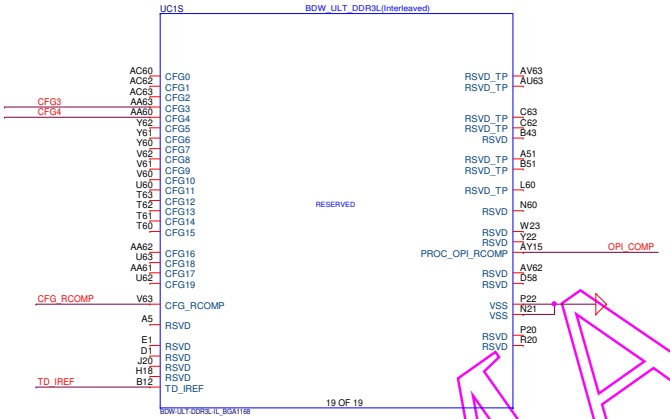
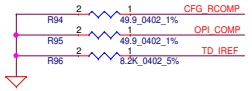
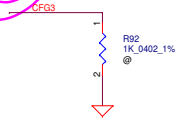




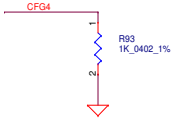




CFG Straps for Processor



Physical Debug Enable (DFX Privacy)	
CFG3	1: DISABLED 0: ENABLED; SET DFX ENABLED BIT IN DEBUG INTERFACE MSR



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

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Title	BDW MCP(11/11) RSVD		
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DIMM1 Reverse Type Near CPU

D/DQ Signals link to CPU
CMD Signals from CPU
Clock Signals from CPU
CTL Signals from CPU
SMBUS Signals link to CPU

Layout Note: Place near JDIMM1

Layout Note: Place near JDIMM1.203,204

Layout Note: Place near JDIMM1.199

ESD request DVT

ESD

Address : 00

DDR3L SODIMM ODT GENERATION

For ODT & VTT power control

Interleaved Memory

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Title: DDR3L_DIMMA

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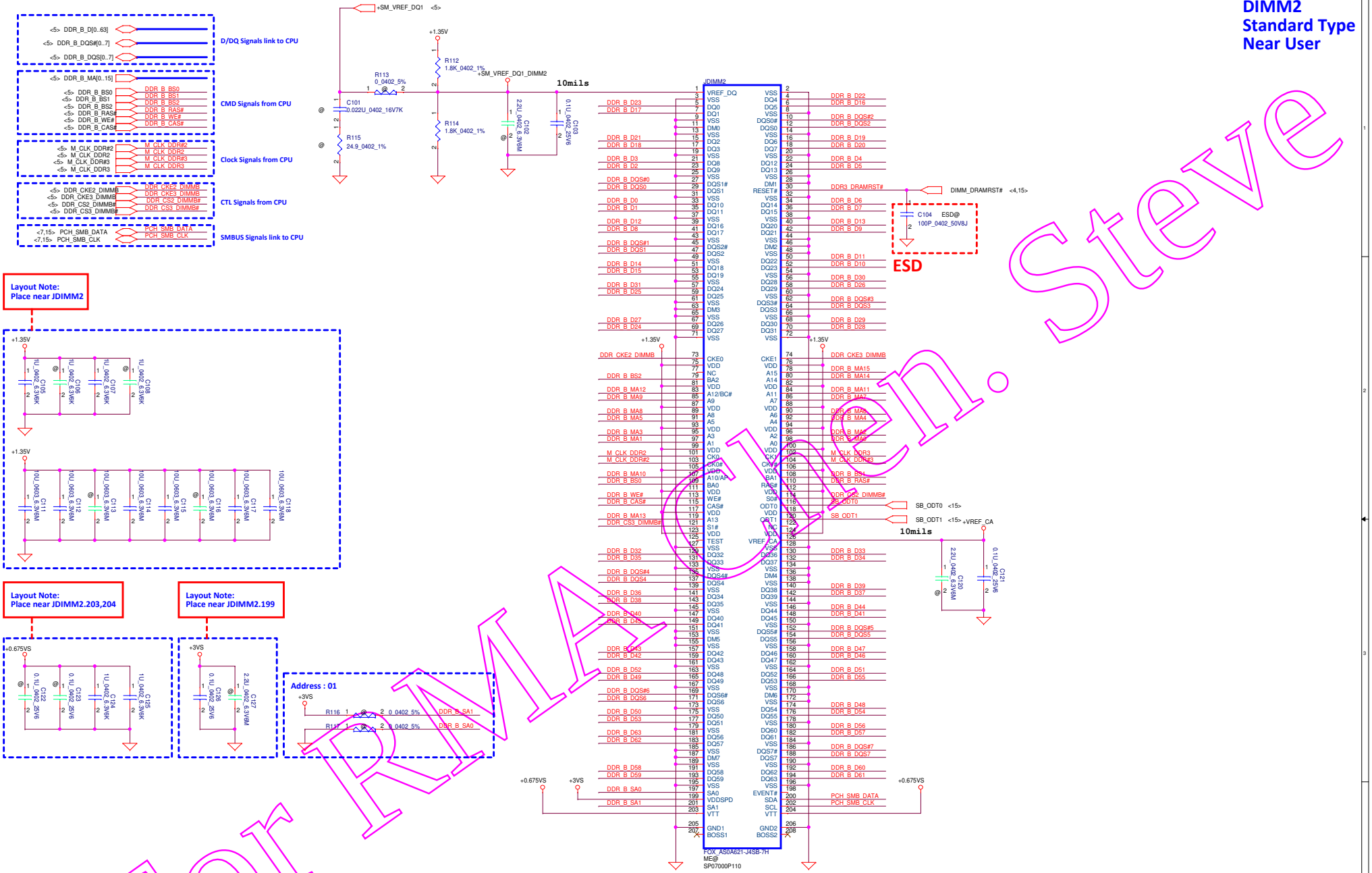
DIMM2
Standard Type
Near User



Interleaved Memory

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Title: DDR3L DIMMB			
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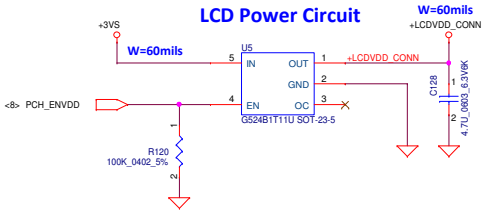
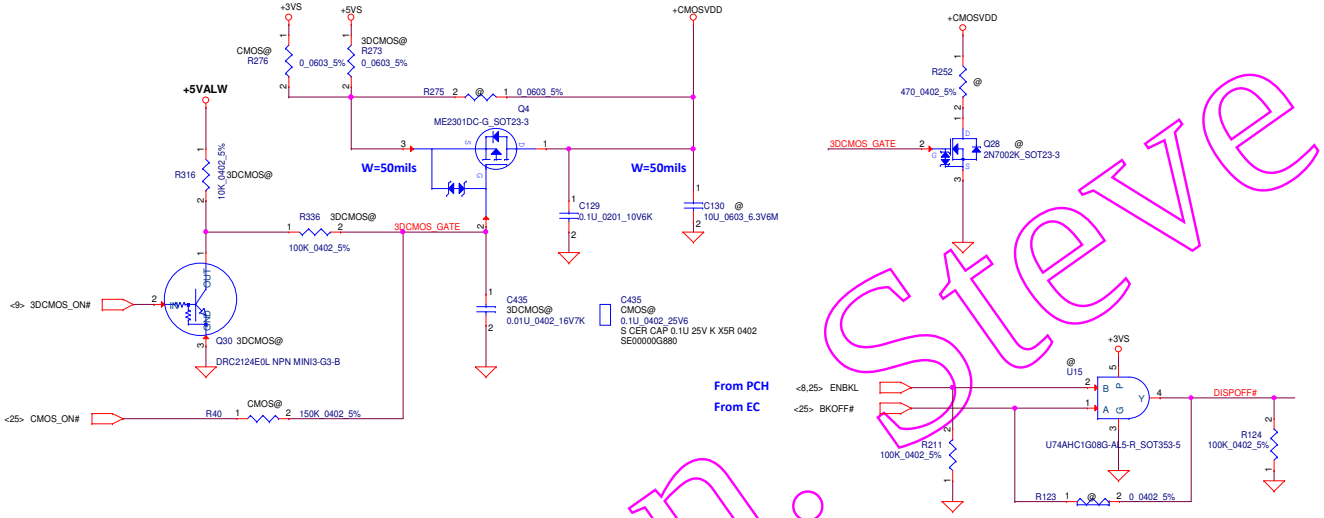
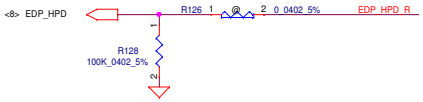
LCD Power Circuit

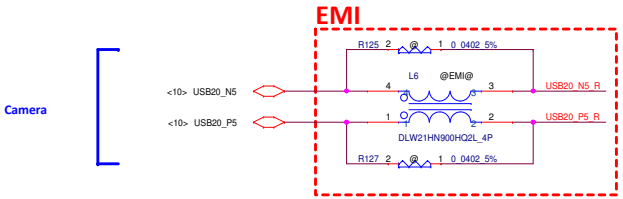


3D/Normal Camera Power Switch





EMI



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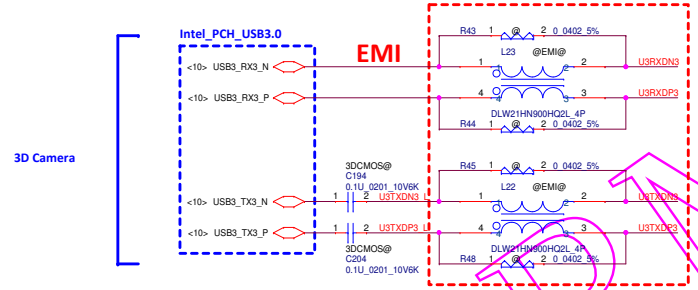

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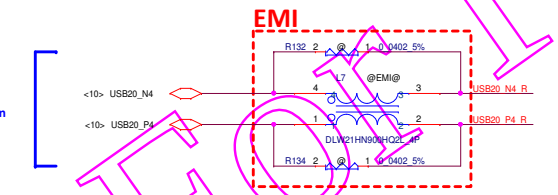
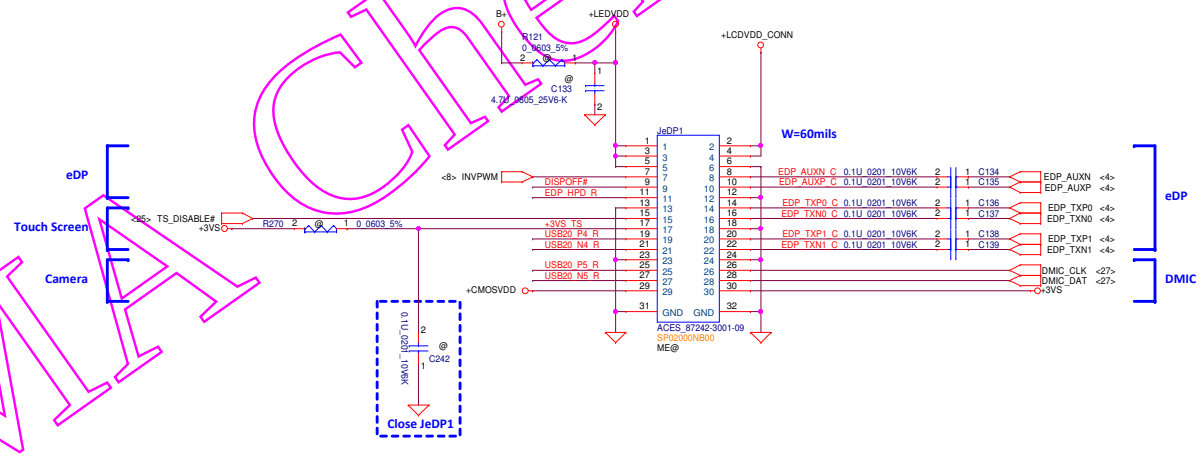
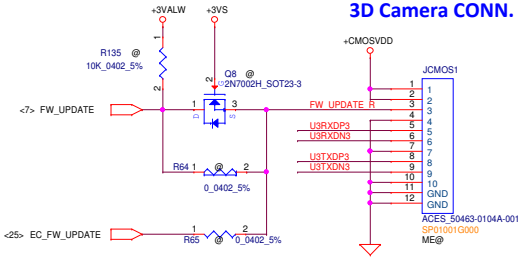


eDP CONN.



3D Camera CONN.



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Compal Electronics, Inc.			
Title: LVDS/CAMERA			
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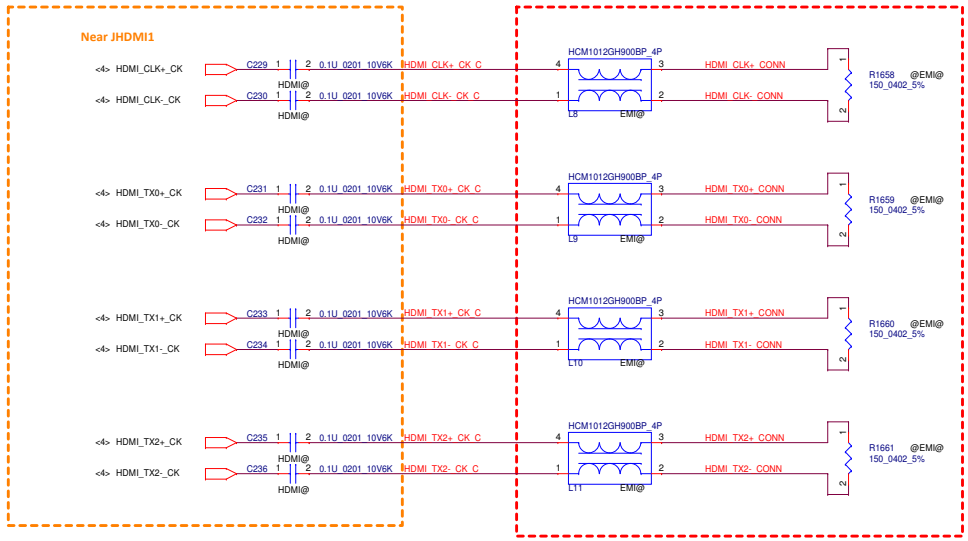
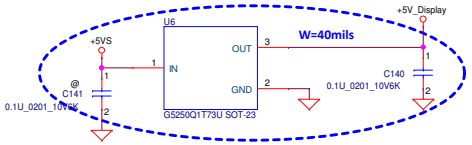
EMI

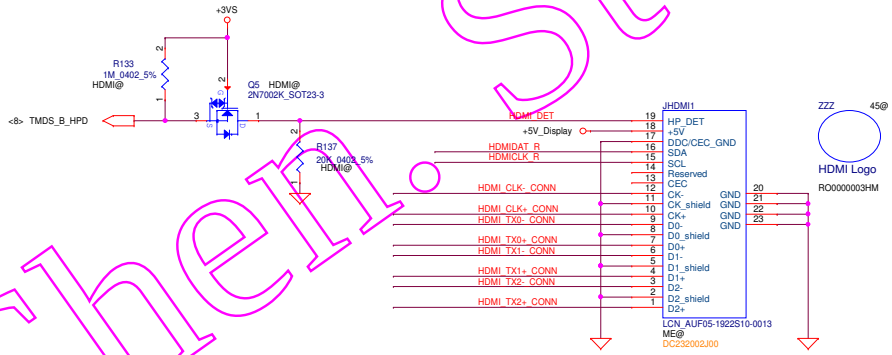
Near JHDMI1

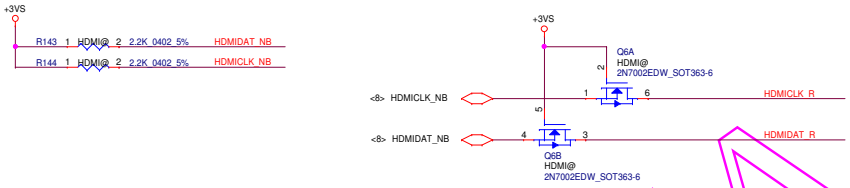
Only change P/N and value

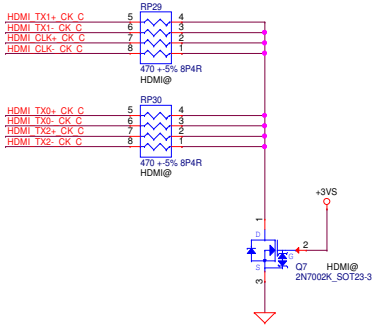




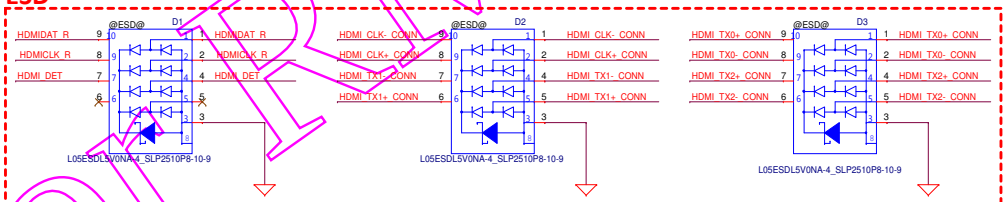
For CRT and HDMI





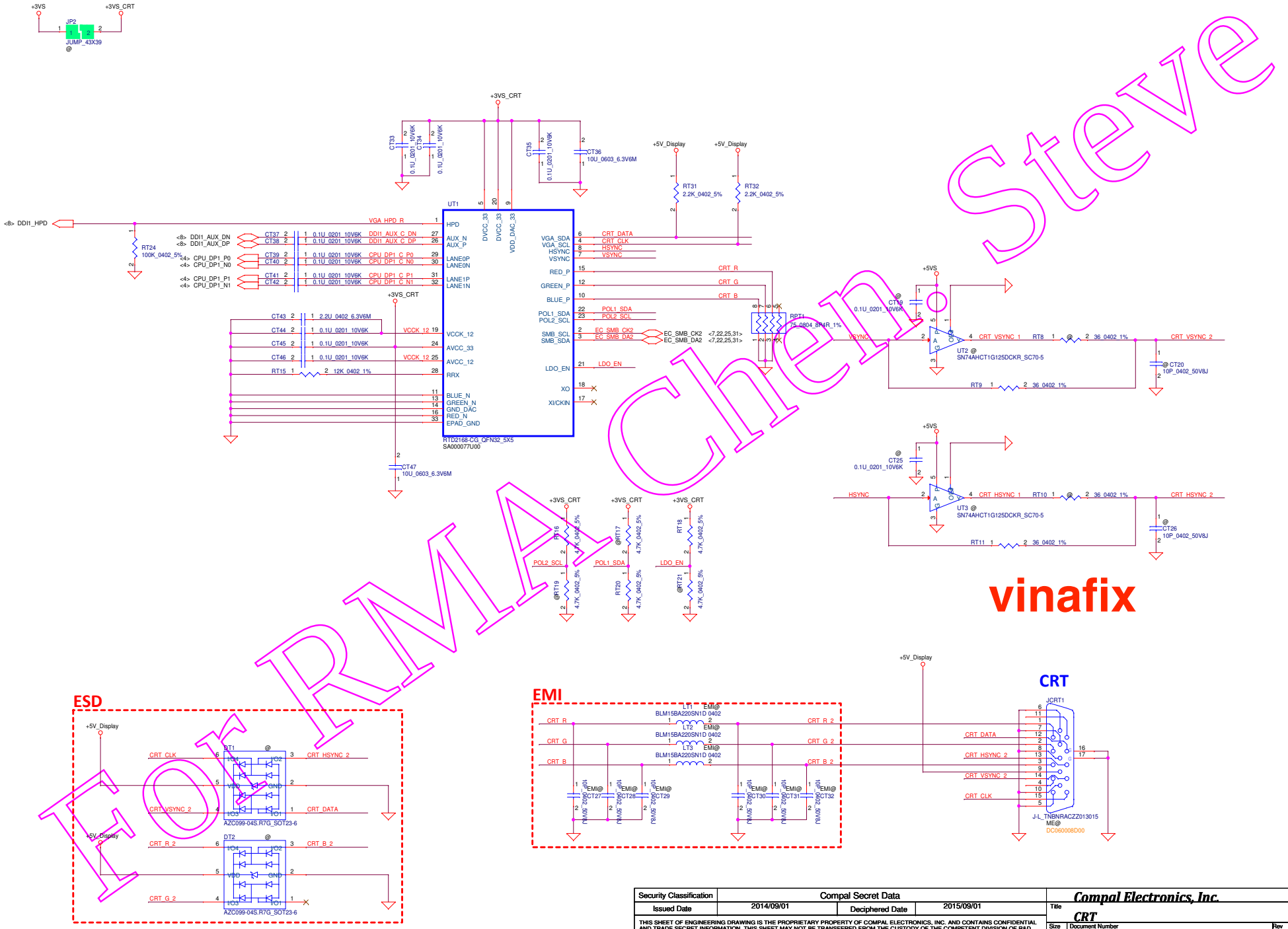


ESD



Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Title	HDMI CONN		
Size C	Document Number LA-C281		Rev 1.0
Date: Friday, February 06, 2015	Sheet 18 of 50		



vinafix

Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.

Title: CRT

Size	Document Number	Rev
C	LA-C281	1.0

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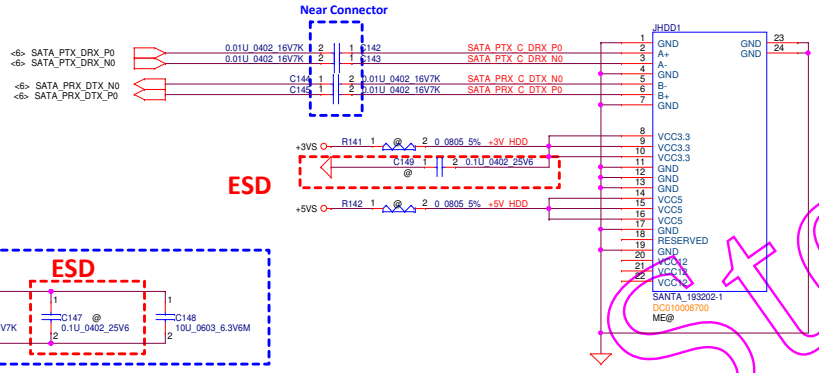
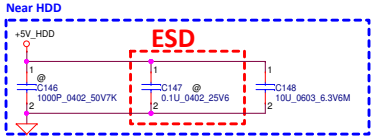
HDD

SATA HDD Conn.

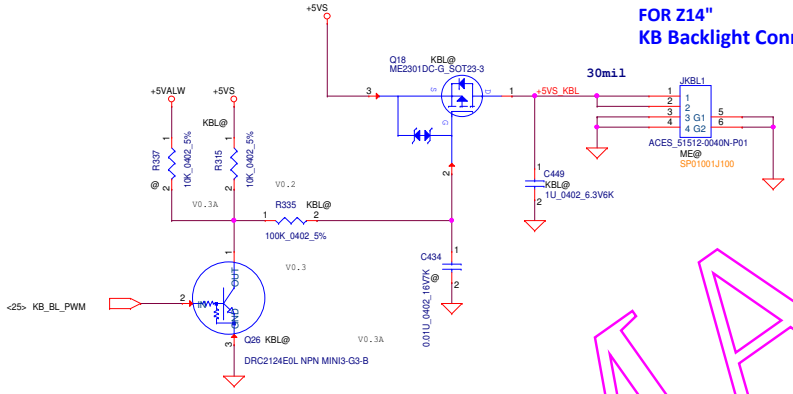


Near HDD

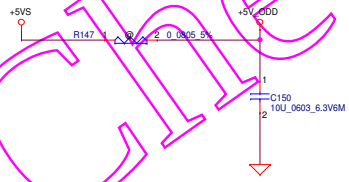


KB Backlight

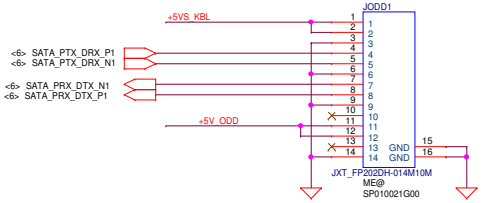
FOR Z14" KB Backlight Conn.



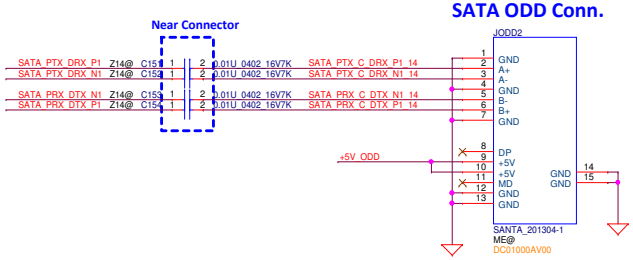
ODD



FOR Z15"/17" SATA ODD Conn.



FOR Z14" SATA ODD Conn.



Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.			
Title	HDD/ODD/KB_BL Connector		
Size C	Document Number LA-C281		Rev 1.0
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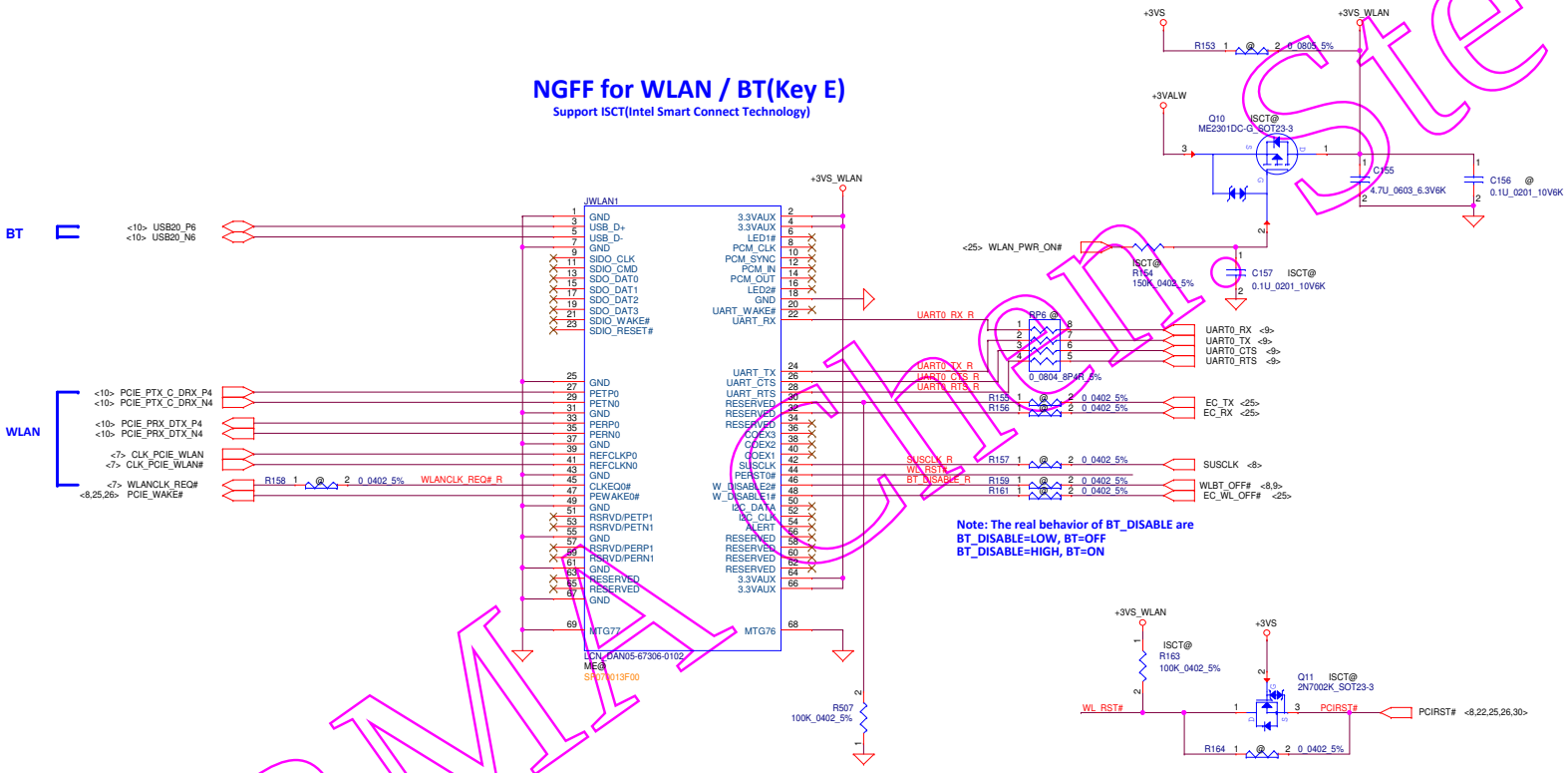
NGFF for WLAN / BT(Key E)

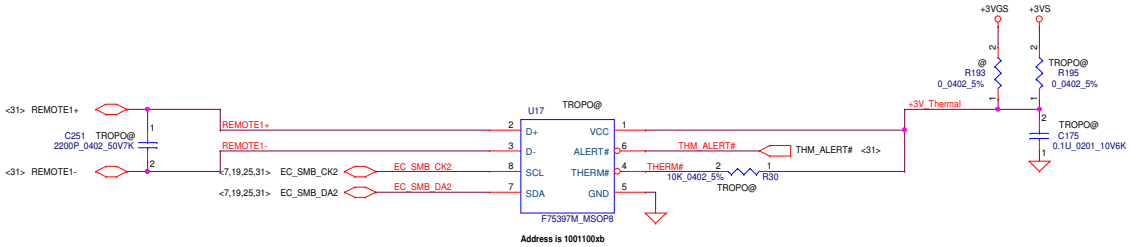
Support ISCT(Intel Smart Connect Technology)



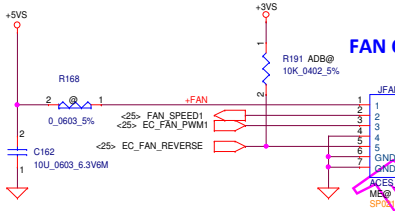
Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.			
Title	Mini-Card/NEW Card/SIM		
Size	Document Number	LA-C281	Rev 1.0
Date: Friday, February 06, 2015	Sheet 21 of 50		

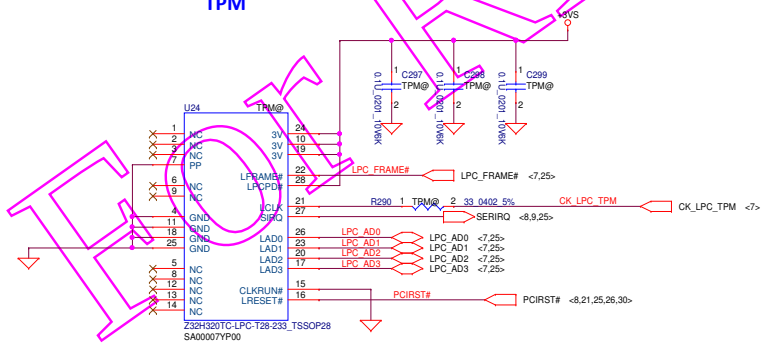
2 Channel



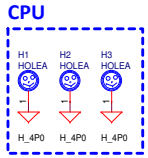
FAN Conn



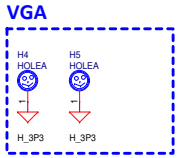
TPM



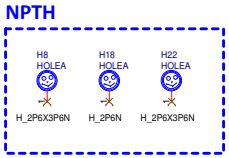
CPU



VGA

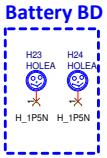


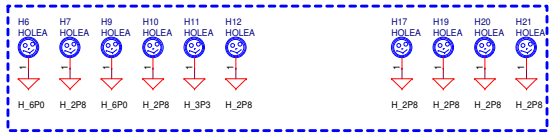
NPTH

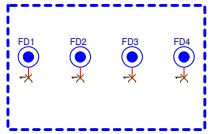


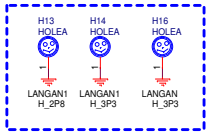
NGFF

Battery BD

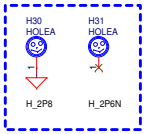








For LAN



Add at DVT

Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Title	Fintek-Thermal IC/FAN/screw		
Size C	Document Number LA-C281		Rev 1.0
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vinafix

J1: TOP
J2: BOT

J1
SHORT PADS
J2
SHORT PADS
ON/OFF#

+3VALW +3VALW +3VLP
R274 100K_0402_5%
R170 100K_0402_5%
PWR_LED#
<25> ON/OFF#
<25> LID_SW#
ON/OFF#
LID_SW#
JPWRB1
GND GND
ACES_88058-060N
ME@
SP010010T00
ESD@ D24
@ D26
MESC5V02BD03_SOT23-3
MESC5V02BD03_SOT23-3
ESD

KB For Z15

KSI[0..7]
KSO[0..17]
<25> KSI[0..7]
<25> KSO[0..17]
JKB2
ACES_88514-3001
ME@
SP010011A00

KB For Z17

JKB3
ACES_88514-3001
ME@
SP010011A00

KB For Z14

JKB1
ACES_88514-02601-071
ME@
SP01000R500

+3VS
R264 470_0402_5% Z17@
<25> CAPS_LED#
<25> NUM_LED#
R263 470_0402_5% CAPS_LED# R
R264 470_0402_5% NUM_LED# R
ESD
C131 ESD@
C132 ESD@
0.1U_0402_25V6

+3VS
R258 0_0402_5%
C163 0.1U_0201_10V6K
<25> TP_CLK
<25> TP_DATA
C164 100P_0402_50V8J
C165 100P_0402_50V8J
TP_VCC
TP_CLK
TP_DATA
@ESD@ D5
PACDN042Y3R_SOT23-3
ESD
TP_L
TP_R
C166 0.1U_0201_10V6K
C167 0.1U_0201_10V6K

For Z15/Z17

RP33 0_0804_8P4R_5% Z17@
RP34 0_0804_8P4R_5% Z17@
RP33 0_0804_8P4R_5% Z15@
RP34 0_0804_8P4R_5% Z15@
Z15_VCC_Z14_R
Z15_CLK_Z14_L
Z15_DATA_Z14_GND
Z15_GND_Z14_DATA
Z15_L_Z14_CLK
Z15_R_Z14_VCC
JTP1
ACES_88058-060N
ME@
SP010010T00

For Z14

RP35 0_0804_8P4R_5% Z14@
RP36 0_0804_8P4R_5% Z14@
Z15_R_Z14_VCC
Z15_L_Z14_CLK
Z15_GND_Z15_DATA
Z15_DATA_Z14_GND
Z15_CLK_Z14_L
Z15_VCC_Z14_R

Power (White) <25> PWR_LED#
Battery (white) <25> BATT_CHG_LED#
Battery (Amber) <25> BATT_LOW_LED#

LED1 Z15@ LTW-C193TS5-C_WHITE
R171 Z15@ 300_0402_1%
LED2 Z15@ LTW-C193TS5-C_WHITE
R173 Z15@ 300_0402_1%
LED3 Z15@ LTST-C191KFKT-2CA_ORANGE
R172 Z15@ 620_0402_5%

For Z15

LED4 Z14@ LTW-C193TS5-C_WHITE
R176 Z14@ 680_0402_1%
LED5 Z14@ LTW-C193TS5-C_WHITE
R174 Z14@ 300_0402_1%
LED6 Z14@ LTST-C191KFKT-2CA_ORANGE
R175 Z14@ 620_0402_5%

For Z14

For Z14,Z15,Z17 TP module(100*50)

1	1	VCC
2	2	CLK
3	3	DAT
4	4	GND
5	5	L
6	6	R

MB TP module

For Z14 TP module(100*50)

6	1	VCC
5	2	CLK
4	3	DAT
3	4	GND
2	5	L
1	6	R

MB TP module

NOVO

+3VLP
R163 100K_0402_5%
<25> NOVO#
NOVO#
SW8
NTC325-EA1J-A160C_3P
SN100008N00
GND

+3VALW
+3VLP
PWR_LED#
BATT_LOW_LED#
BATT_CHG_LED#
JLED1
E-T_6915K-Q06N-00L
SP01001NC00
ME@
GND

L L L R R R

Z17@ SW5 EVQPLHA15_4
Z15@ SW1 EVQPLHA15_4
Z14@ SW3 EVQPLHA15_4
Z17@ SW6 EVQPLHA15_4
Z15@ SW2 EVQPLHA15_4
Z14@ SW4 EVQPLHA15_4
TP_L
TP_R

For RMA Chen.Steve

Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.
Title: ROM/KBD/PWR/CR/LED/TP Conn.
Size: C
Document Number: LA-C281
Rev: 1.0
Date: Friday, February 06, 2015
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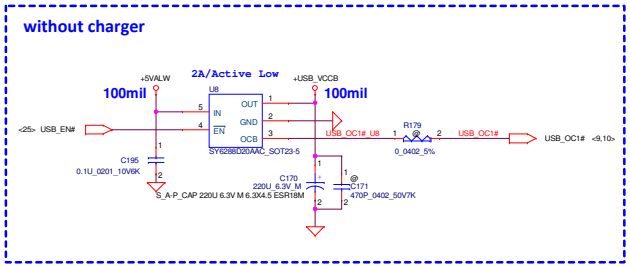
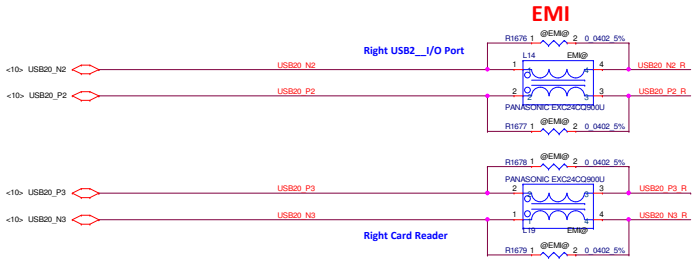
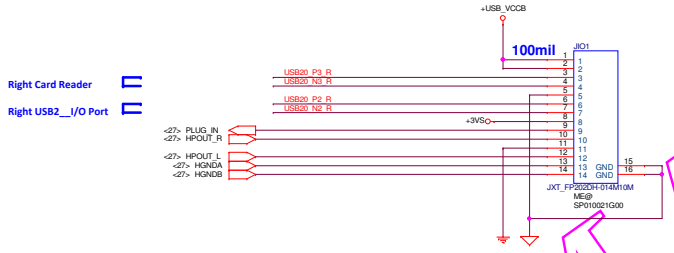
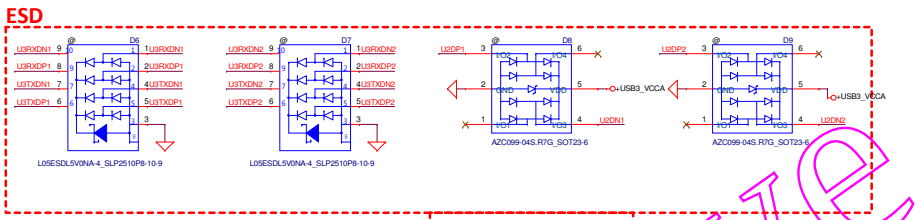
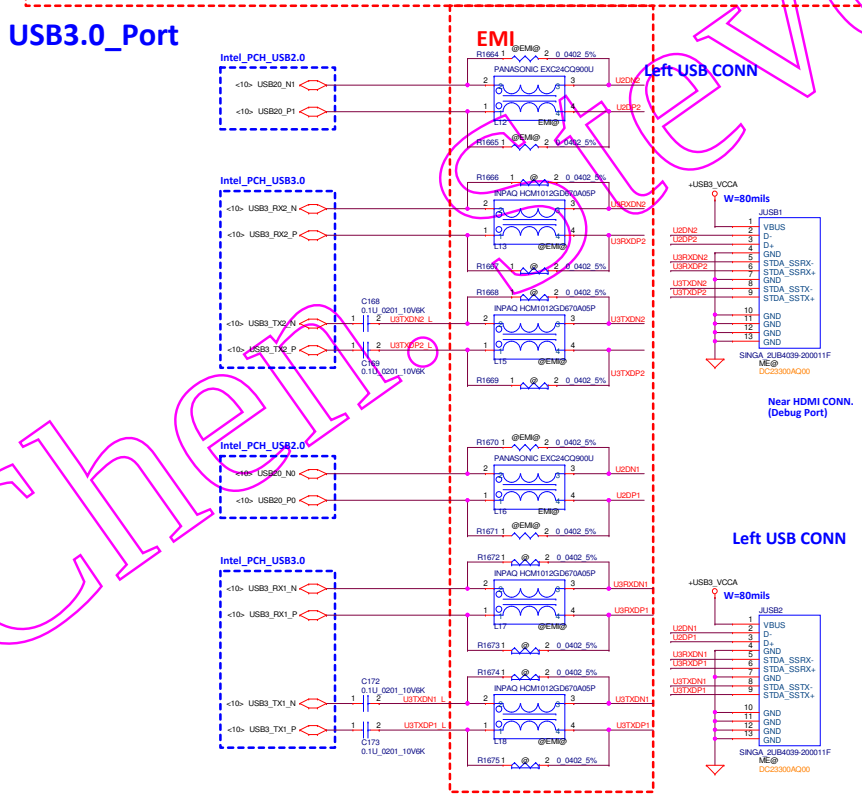


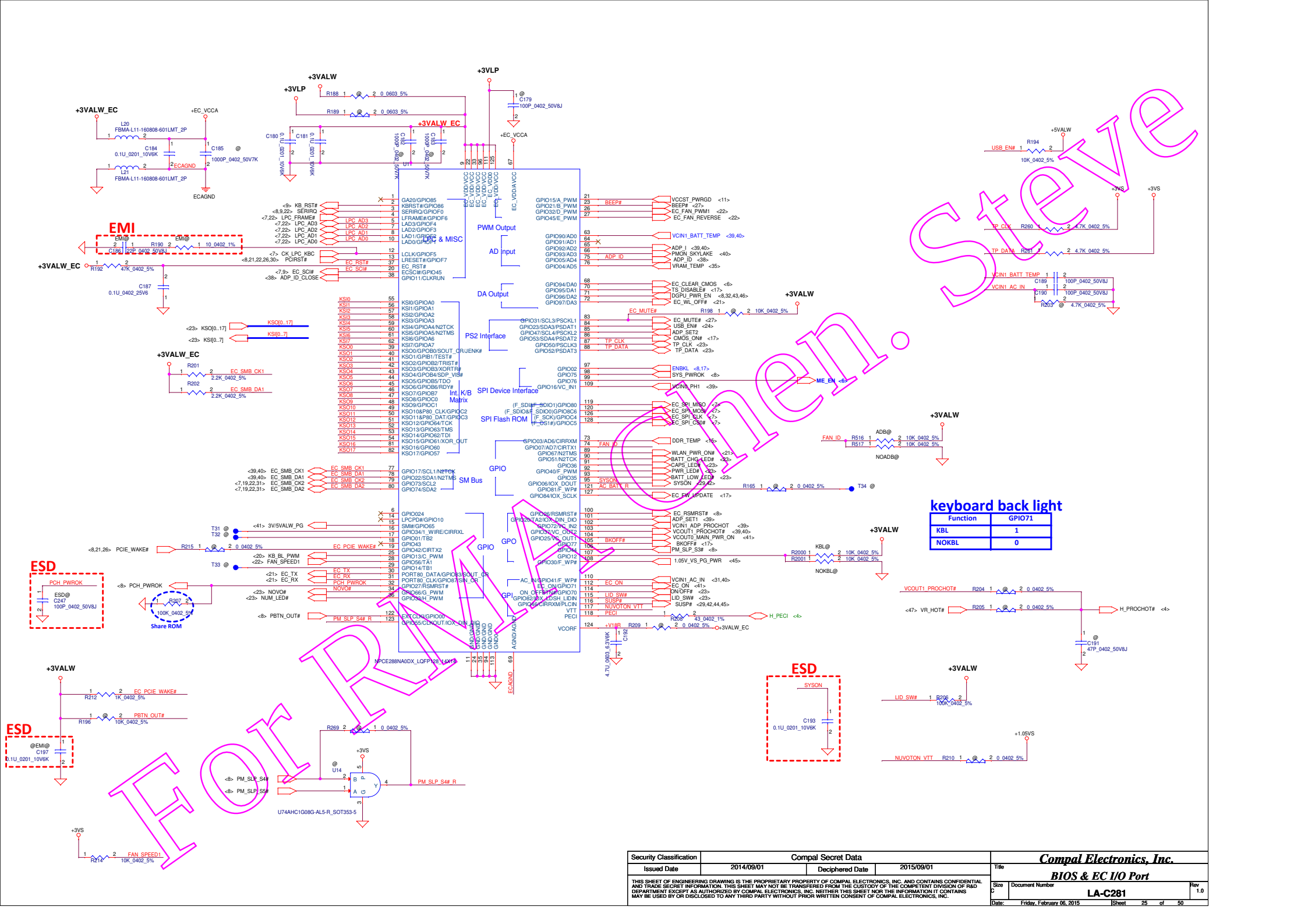








Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/09/01	Deciphered Date 2015/09/01	Title: USB3.0/Left USB Ports
Document Number			Rev 1.0
Date: Friday, February 06, 2015	Sheet 24 of 50		



Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

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Compal Electronics, Inc.

Title: **BIOS & EC I/O Port**

Size	Document Number	Rev
C	LA-C281	1.0

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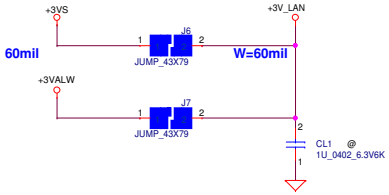
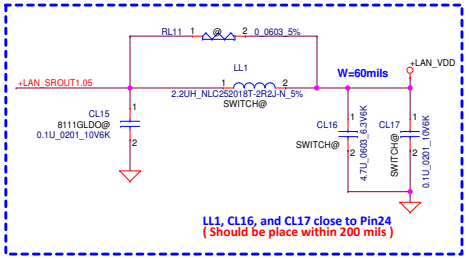
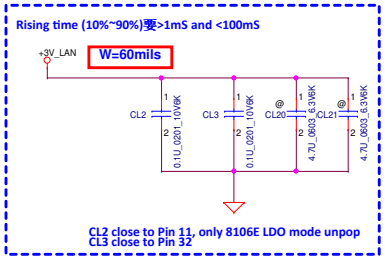
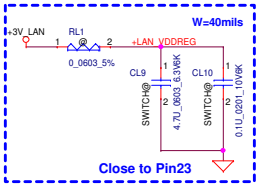


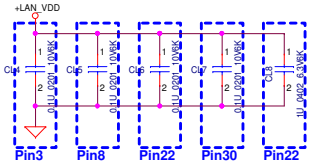


		1.0 V source	LL1	CL16, CL17	CL9, CL10	RL11	CL15
SA00005V700	RTL8111G	LDO	X	X	X	O	O
	~~RTL8111G~~	~~External~~	~~X~~	~~X~~	~~X~~	~~X~~	~~O~~
	RTL8111GS/ RTL8111GUS/ RTL8106EUS	SWR	O	O	O	X	X
SA00006Y000	RTL8106E	LDO	X	X	X	X	X

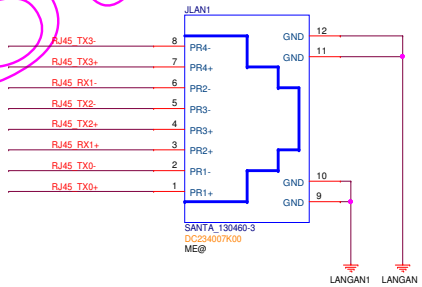
Please refer to the table above when using different 1.0V supply source.
For RTL8111GS, RTL8111GUS, RTL8106E and RTL8106EUS, External 1.0V Supply Is Not Permitted.

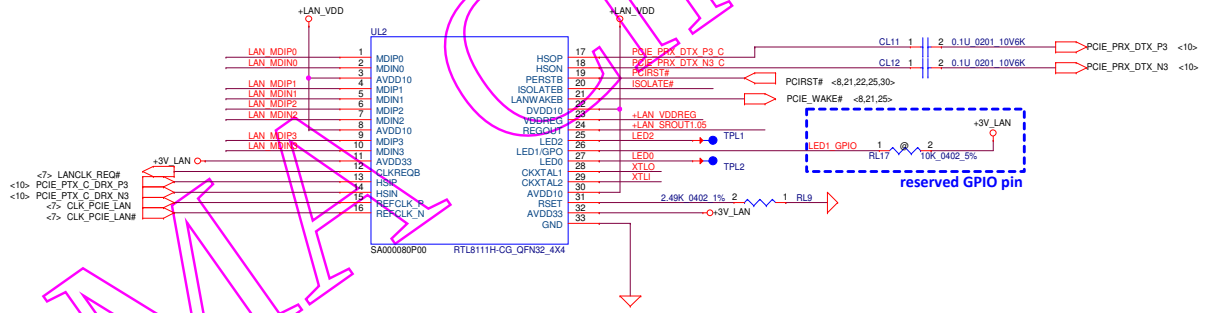


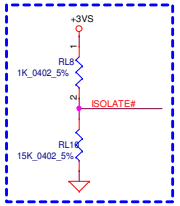




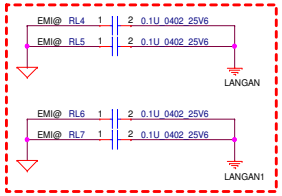
RJ-45 CONN.

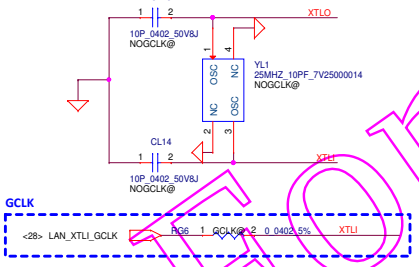




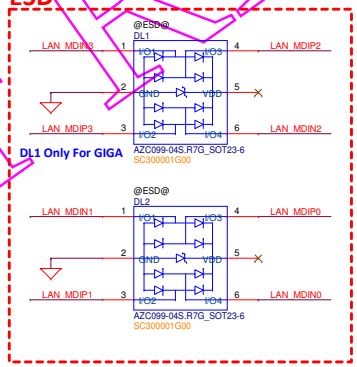


EMI

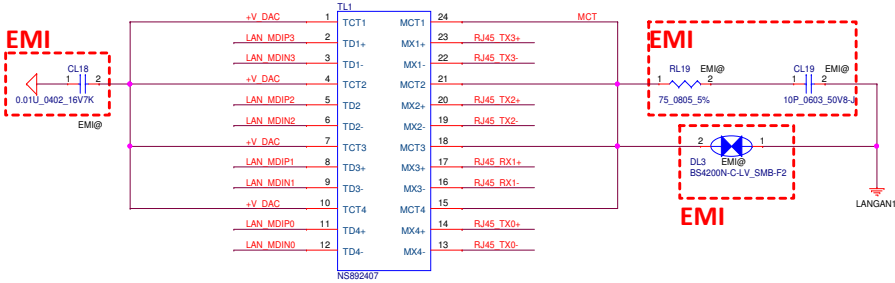




ESD



EMI



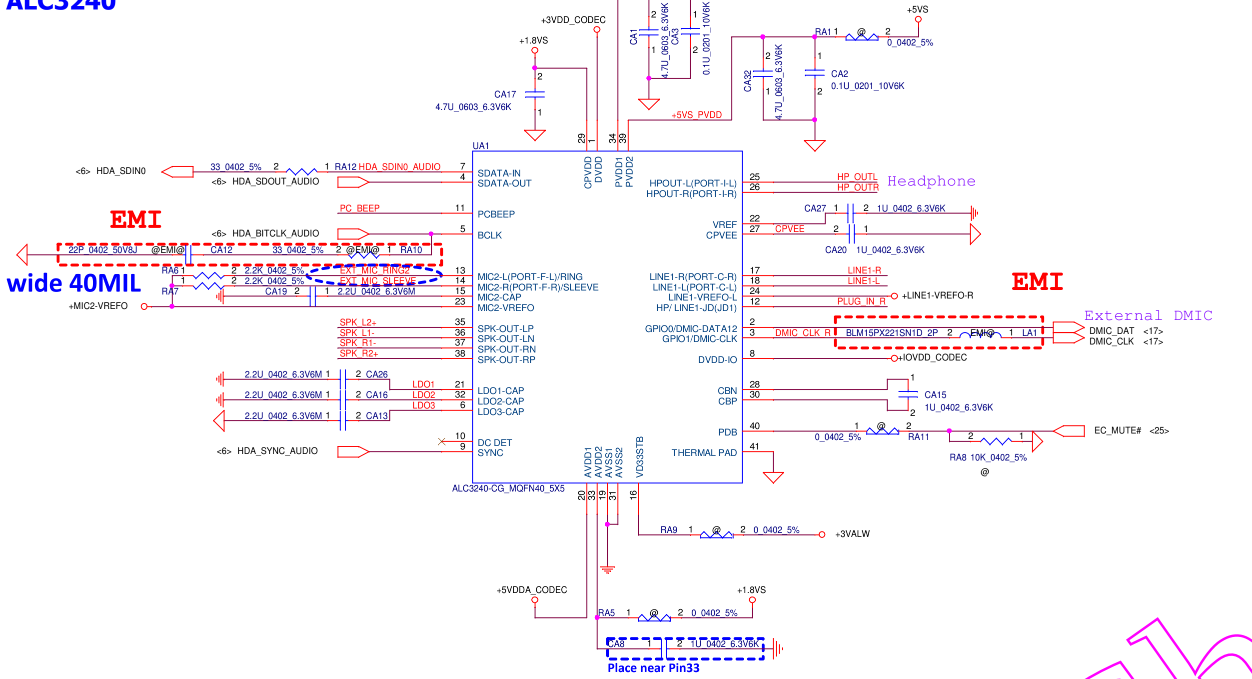
EMI

EMI

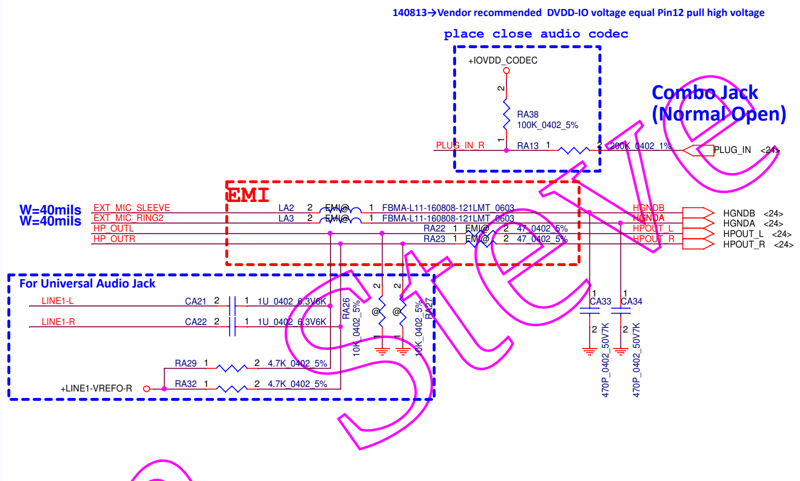
Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Title	LAN RTL8111/8106		
Size C	Document Number LA-C281		Rev 1.0
Date: Friday, February 06, 2015	Sheet 26 of 50		

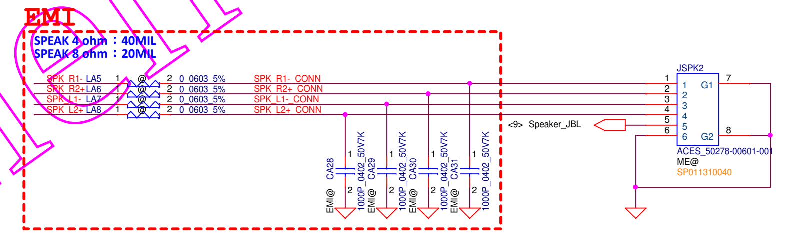
ALC3240



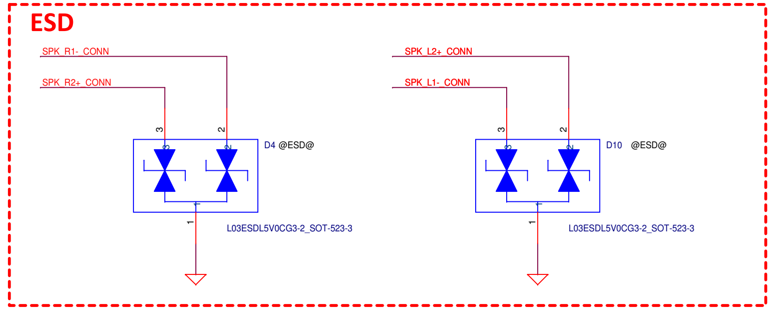
Input



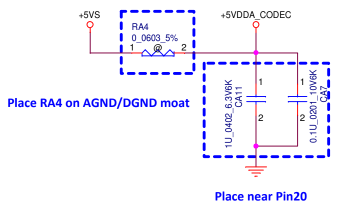
Output



ESD protection needs to be placed near connector side



+5VS → +5VDDA_CODEC



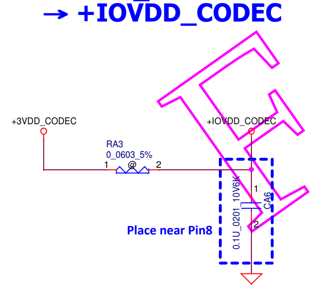
Each Platform Power Net Support List :

	+1.5VS	+1.8VS	+3VS	+5VS	+3VALW
	1.5V(S0)	1.8V(S0)	3.3V(S0)	5V(S0)	3.3V(S0~S5)
AMD Carrizo	V	V	V	V	V
AMD Carrizo-L	V	V		V	V
Intel Broadwell	V		V	V	V
Intel Braswell	V	V	V	V	V
Intel Skylake	V	V	V	V	V
Intel Bay trail-M	V	V	V	V	V

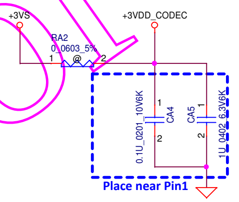
Each Platform HDA Link Voltage Support (Pin 8) :

	3.3V	1.5V
AMD Carrizo		V
AMD Carrizo-L		V
Intel Broadwell	V	V
Intel Braswell		V
Intel Skylake	V	V
Intel Bay trail-M		V

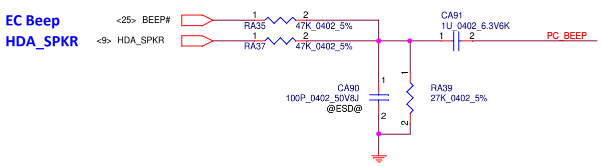
+3VDD_CODEC → +IOVDD_CODEC



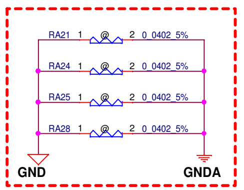
+3VS → +3VDD_CODEC



PC Beep



EMI



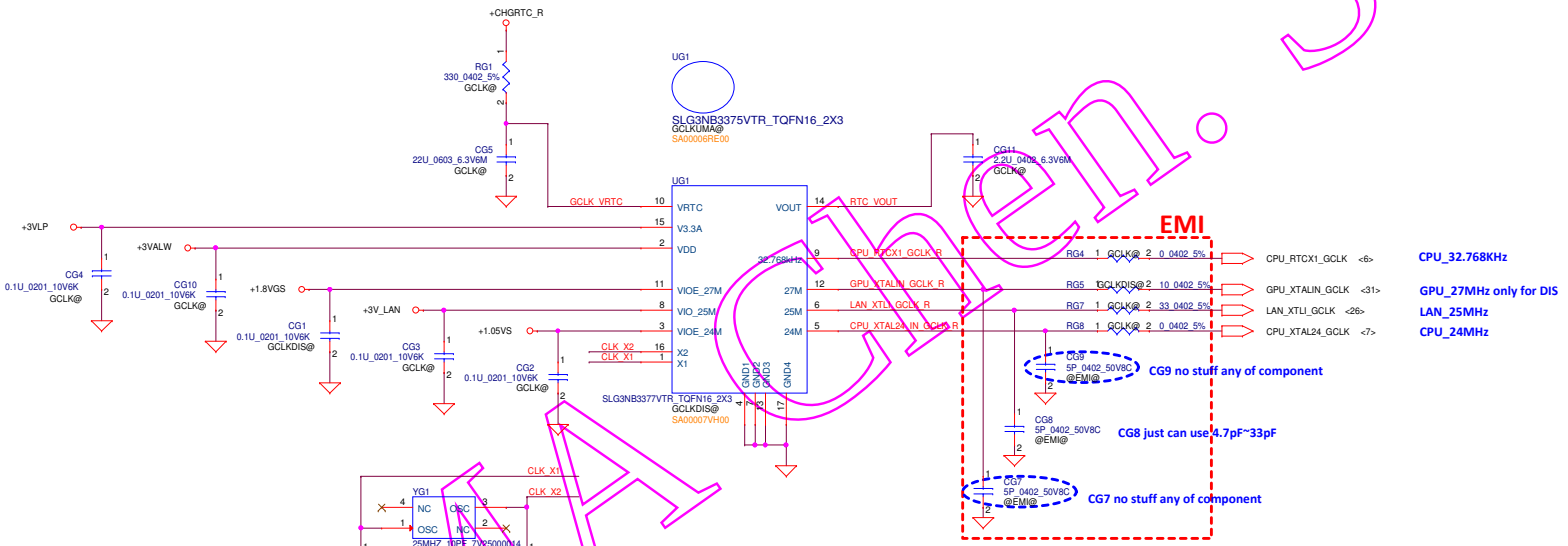
Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.

Title: HD Audio Codec_ALC3240

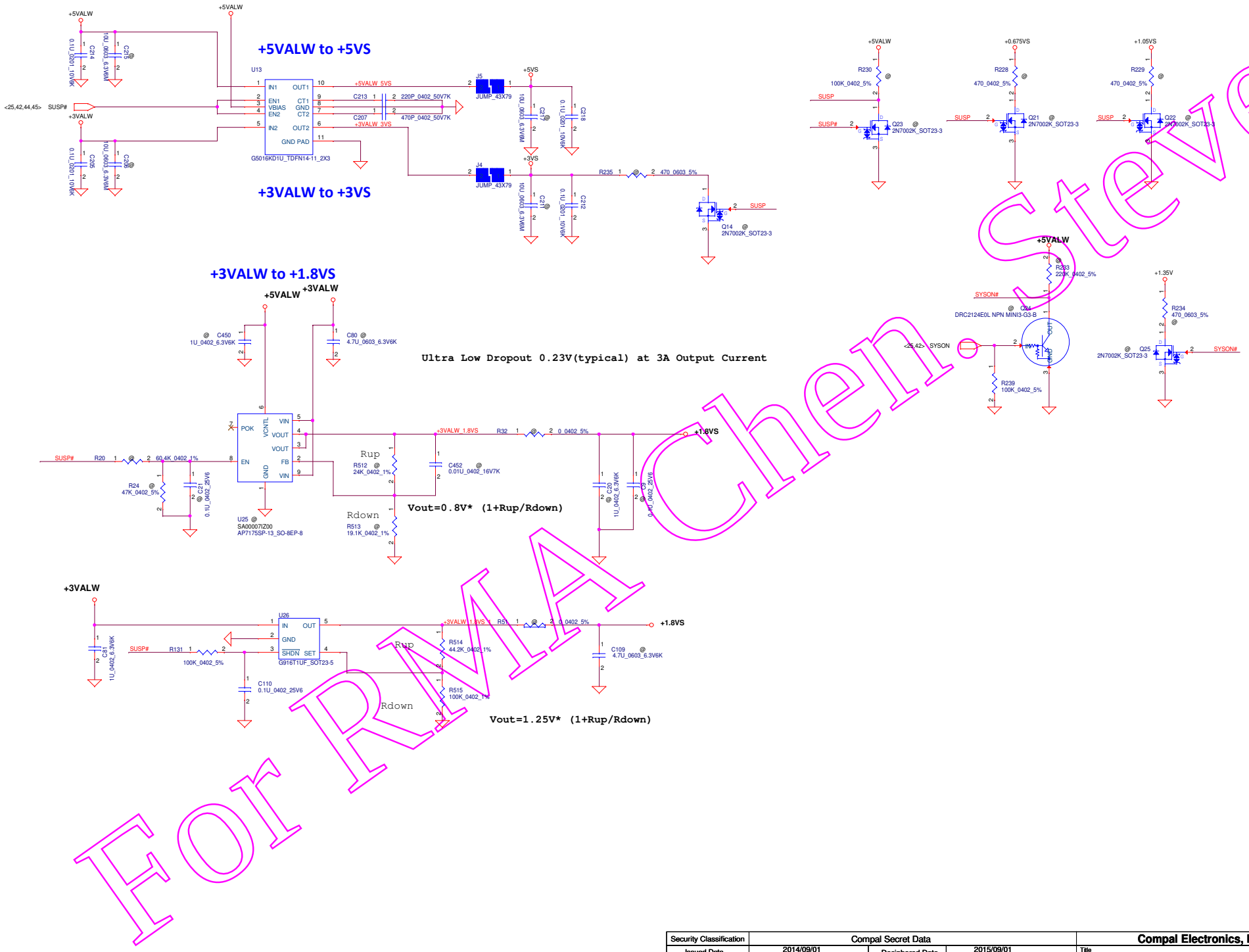
Size: C | Document Number: LA-C281 | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 27 of 50

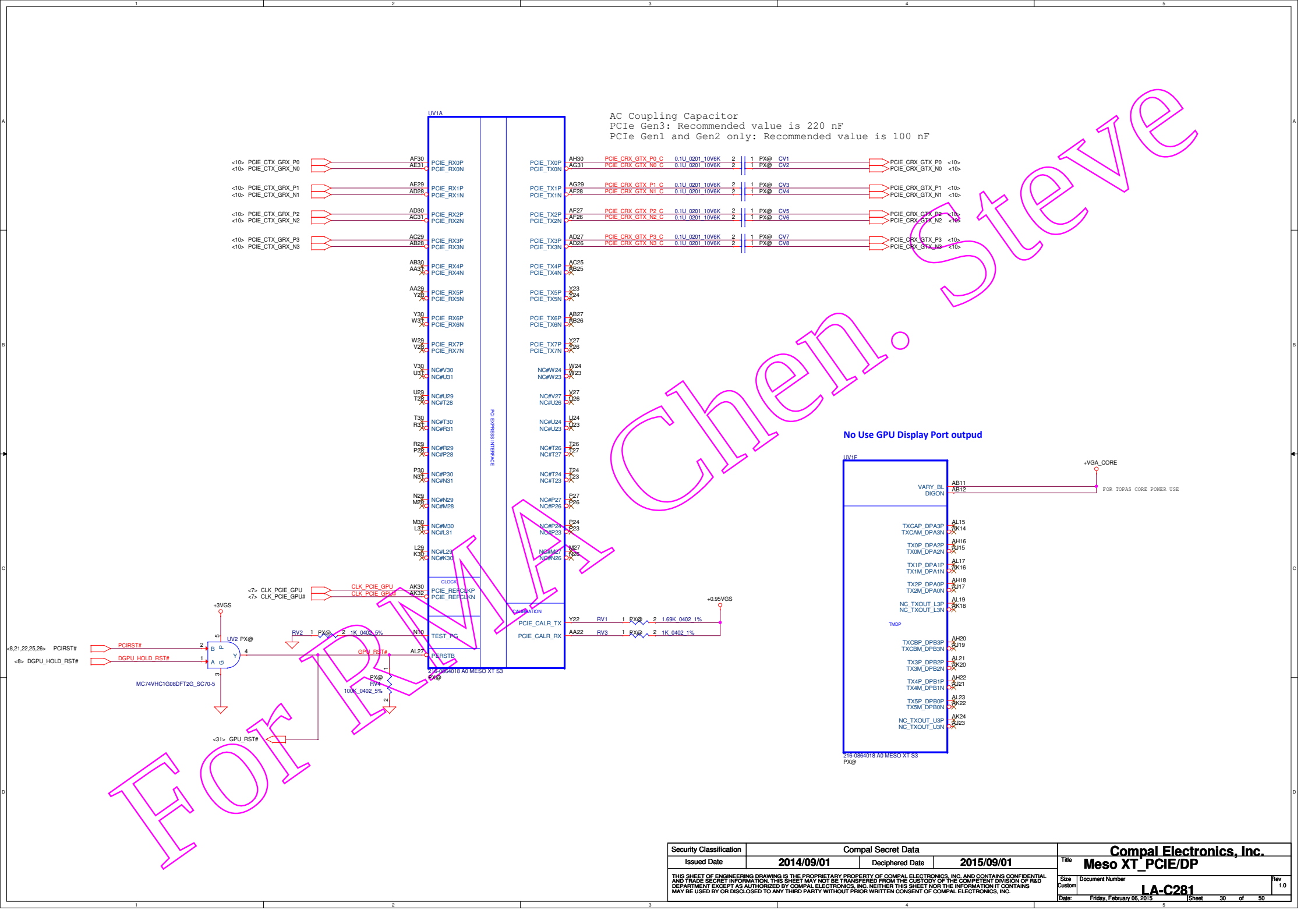


Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.		
Title: GCLK		
Size	Document Number: LA-C281	Rev: 1.0
Date: Friday, February 06, 2015	Sheet 28 of 50	



Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/09/01	Deciphered Date 2015/09/01	Title: DC Interface
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			Size: C; Document Number: LA-C281; Rev: 1.0
			Date: Friday, February 06, 2015; Sheet 29 of 50



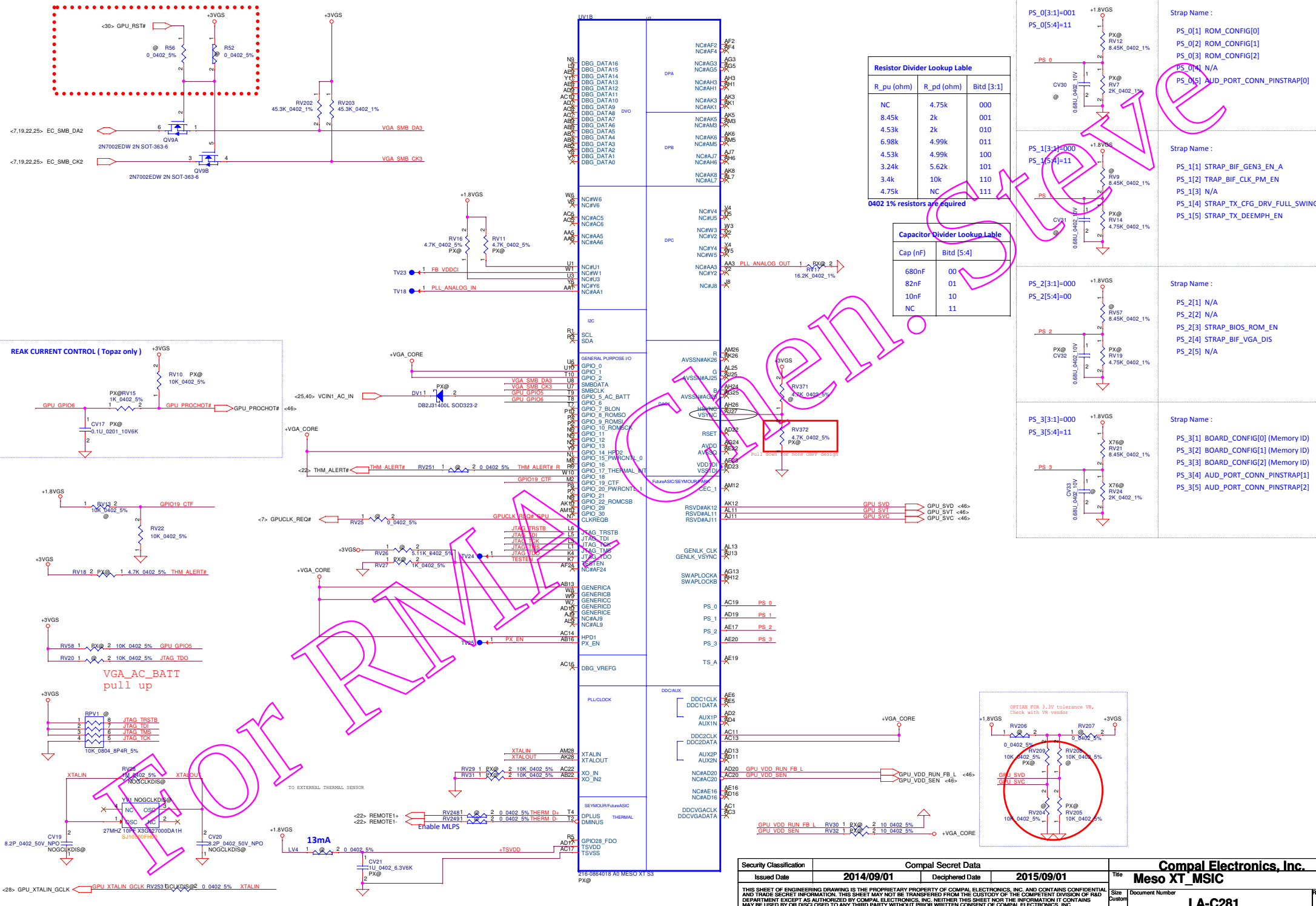
Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.			
Title	Meso XT_PCIE/DP		
Size: Custom	Document Number: LA-C281		Rev: 1.0
Date: Friday, February 06, 2015	Sheet 30 of 50		

for GPU tempture issue

VGA_AC_BATT
pull up

<28> GPU_XTALIN_GCLK — GPU_XTALIN_GCLK RV253 GCLKDIS@2 0_0402_5% XTALIN



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

Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

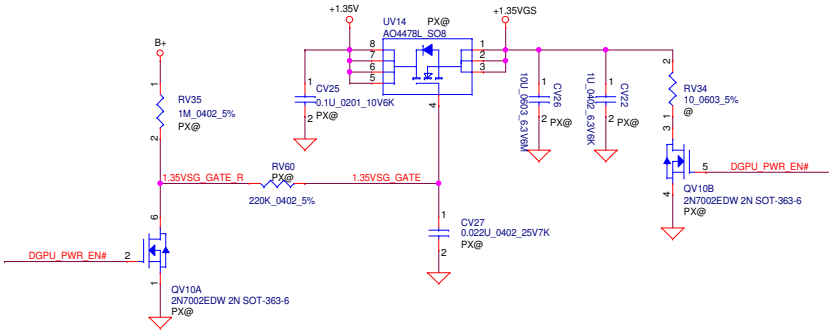
Compal Electronics, Inc.

Title: Meso XT_MSIC

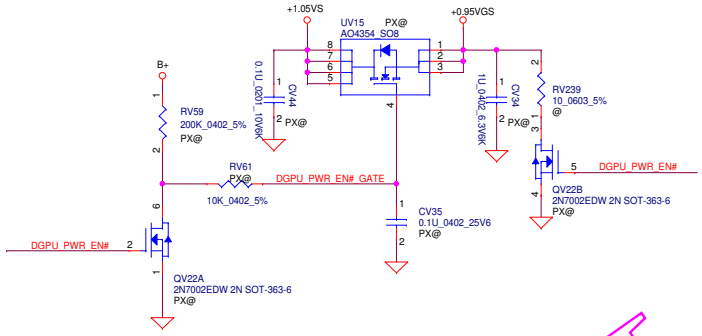
Size: Custom | Document Number: LA-C281 | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 31 of 50

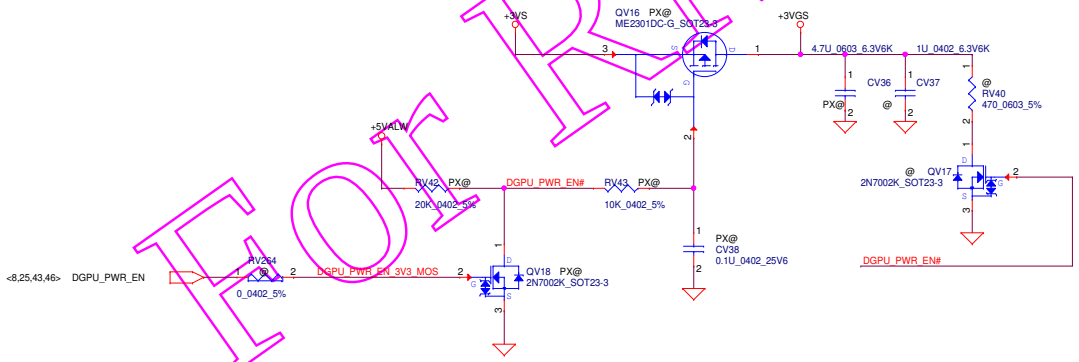
+1.35VS to +1.35VGS (6.234A)



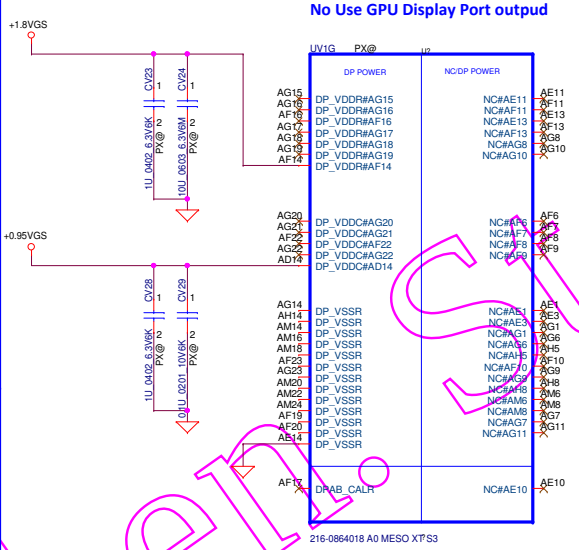
+1.05VS to +0.95VGS

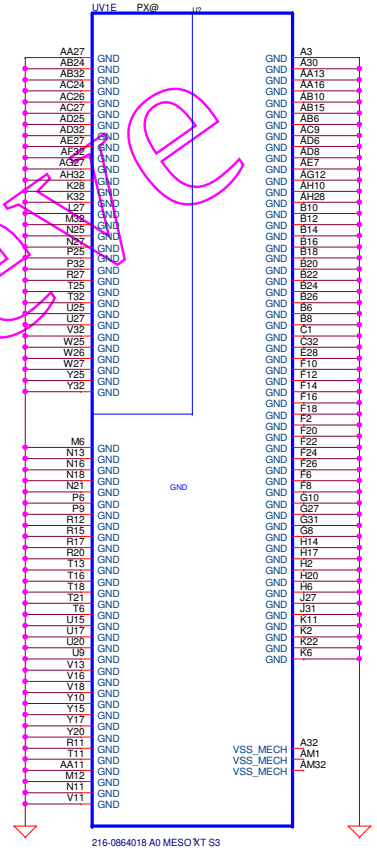


+3VS to +3VS_VGA (25mA)



No Use GPU Display Port outpud





Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.

Title: **Meso XT_Power/GND**

Size: Custom | Document Number: **LA-C281** | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 32 of 50

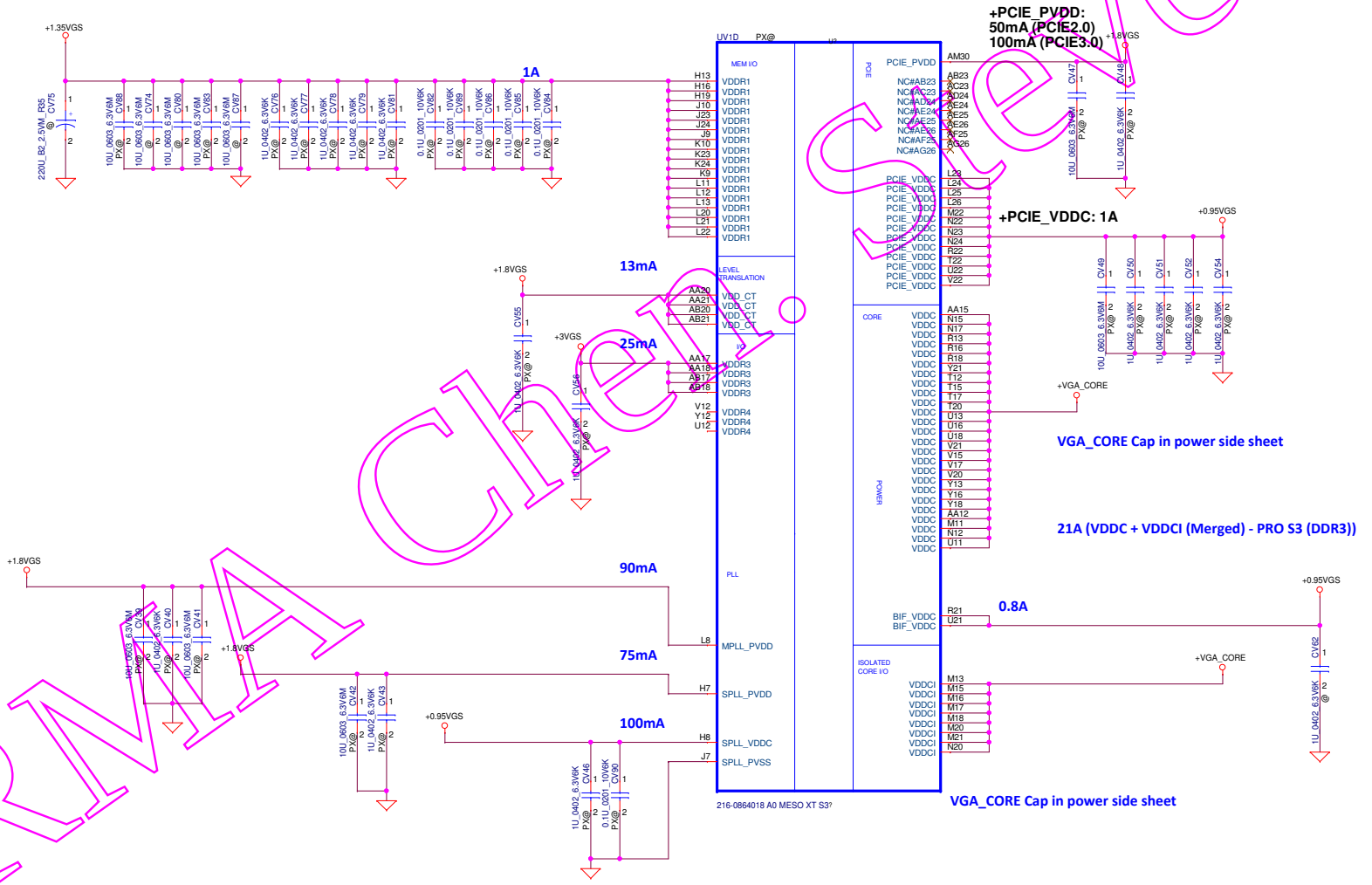
+VGA_CORE		10uF	2.2uF	1uF	0.1uF
VDDC	TBD	7	16	4	3
VDDCI	3.5A				

+0.95VGS		10uF	1uF	0.1uF
PCIE_VDDC	1A	1	5(1@)	0
BIF_VDDC	0.8A	0	1(1@)	0
SPLL_VDDC	100mA	0	1	1

+1.35VGS		10uF	1uF	0.1uF	0.01uF
VDDR1	1.5A	5(3@)	5	5	0

+1.8VGS		10uF	1uF	0.1uF
PCIE_PVDD	100mA	1	1	0
MPLL_PVDD	130mA	2	1	0
SPLL_PVDD	75mA	0	1	0
VDDR4	(300mA)	0	0	0
VDD_CT	13mA	0	1	0
+TSVDD	13mA	0	1	0
+DP_VDDR		1	1	0
+DP_VDDC		0	1	1

+3VGS		10uF	1uF	0.1uF
VDDR3	25mA	0	1	0



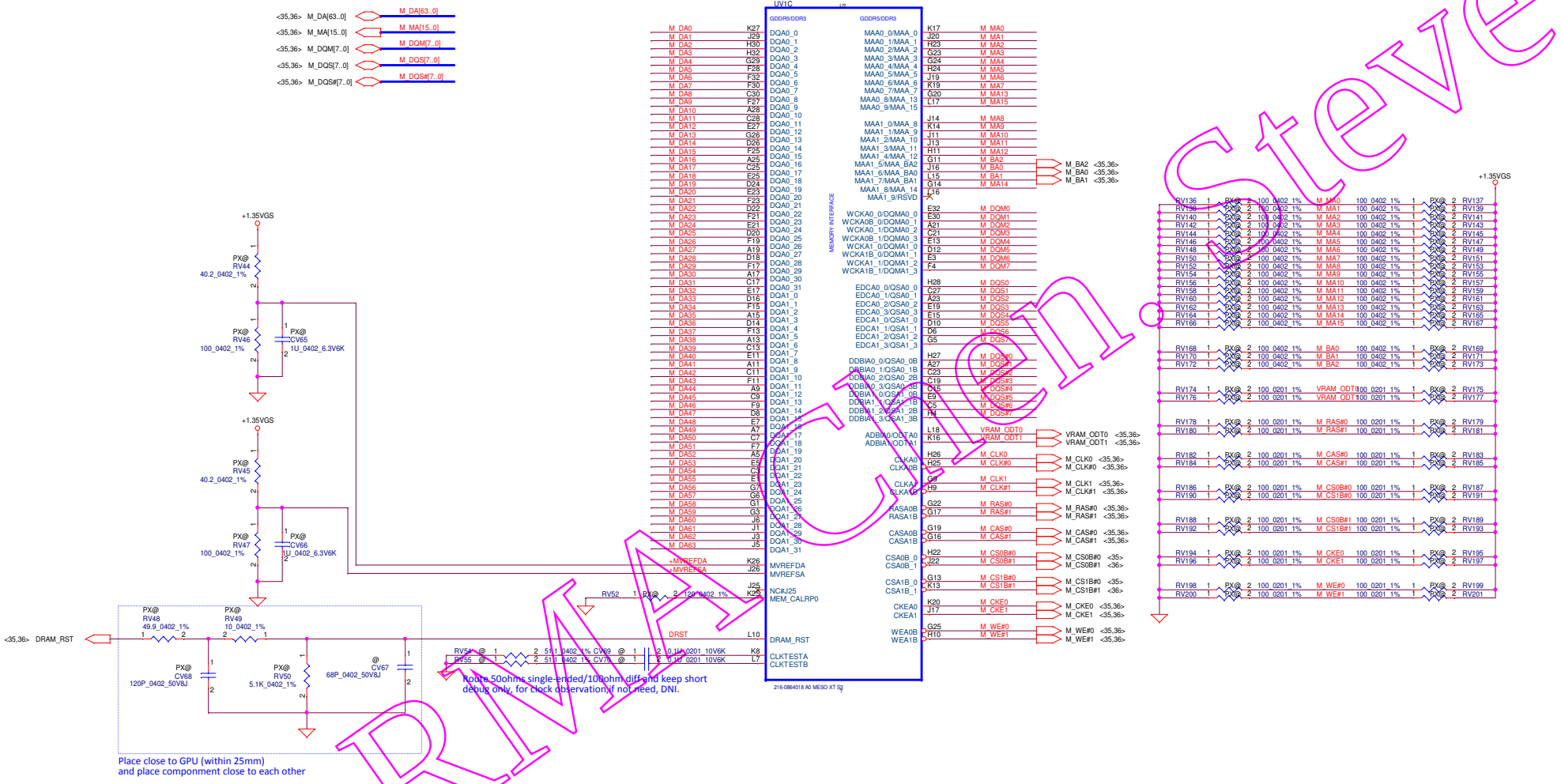
Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.

Title: Meso XT_Power

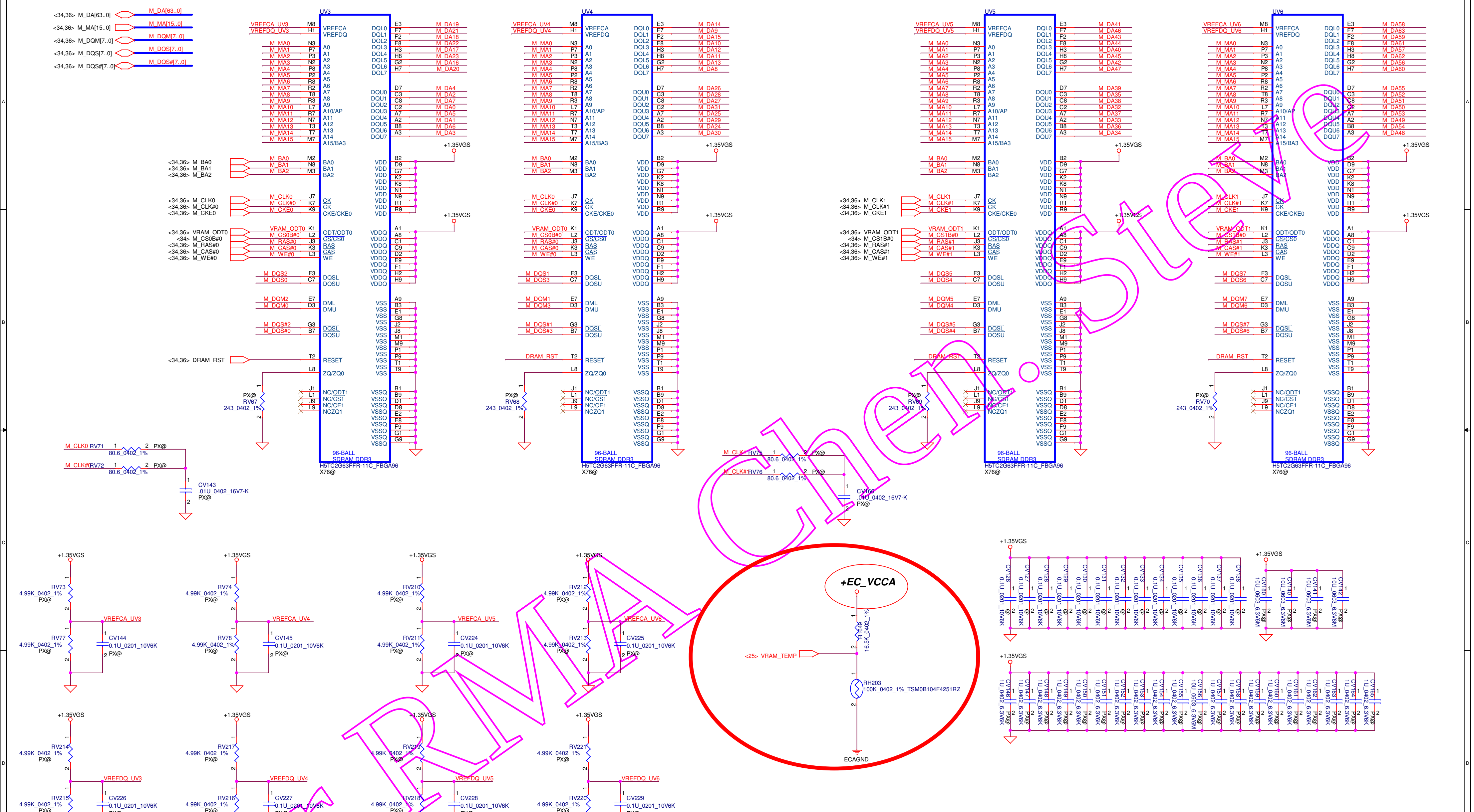
Size: Custom | Document Number: LA-C281 | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 33 of 50



Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.			
Title: Meso XT_MEM			
Size: C	Document Number: LA-C281		Rev: 1.0
Date: Friday, February 06, 2015		Sheet 34 of 50	

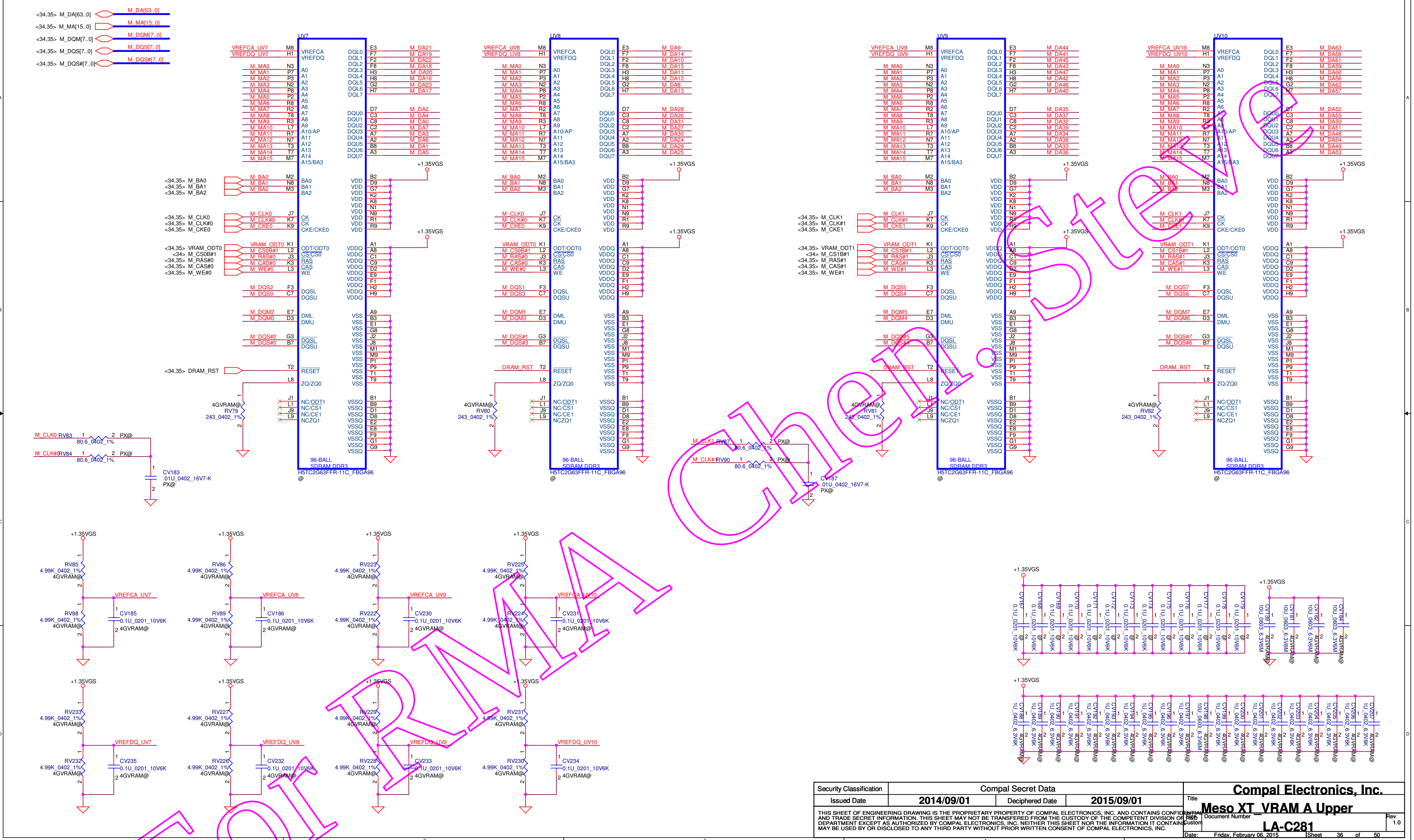


Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.

Title: **Meso XT_VRAM A Lower**

Size: Custom | Document Number: LA-C281 | Rev: 1.0



Security Classification	Compal Secret Data		
Issued Date	2014/09/01	Deciphered Date	2015/09/01

Compal Electronics, Inc.

Title: **Meso XT_VRAM A Upper**

Size: Custom — Document Number: **LA-C281** — Rev: 1.0

Date: Friday, February 06, 2015 — Sheet 36 of 50

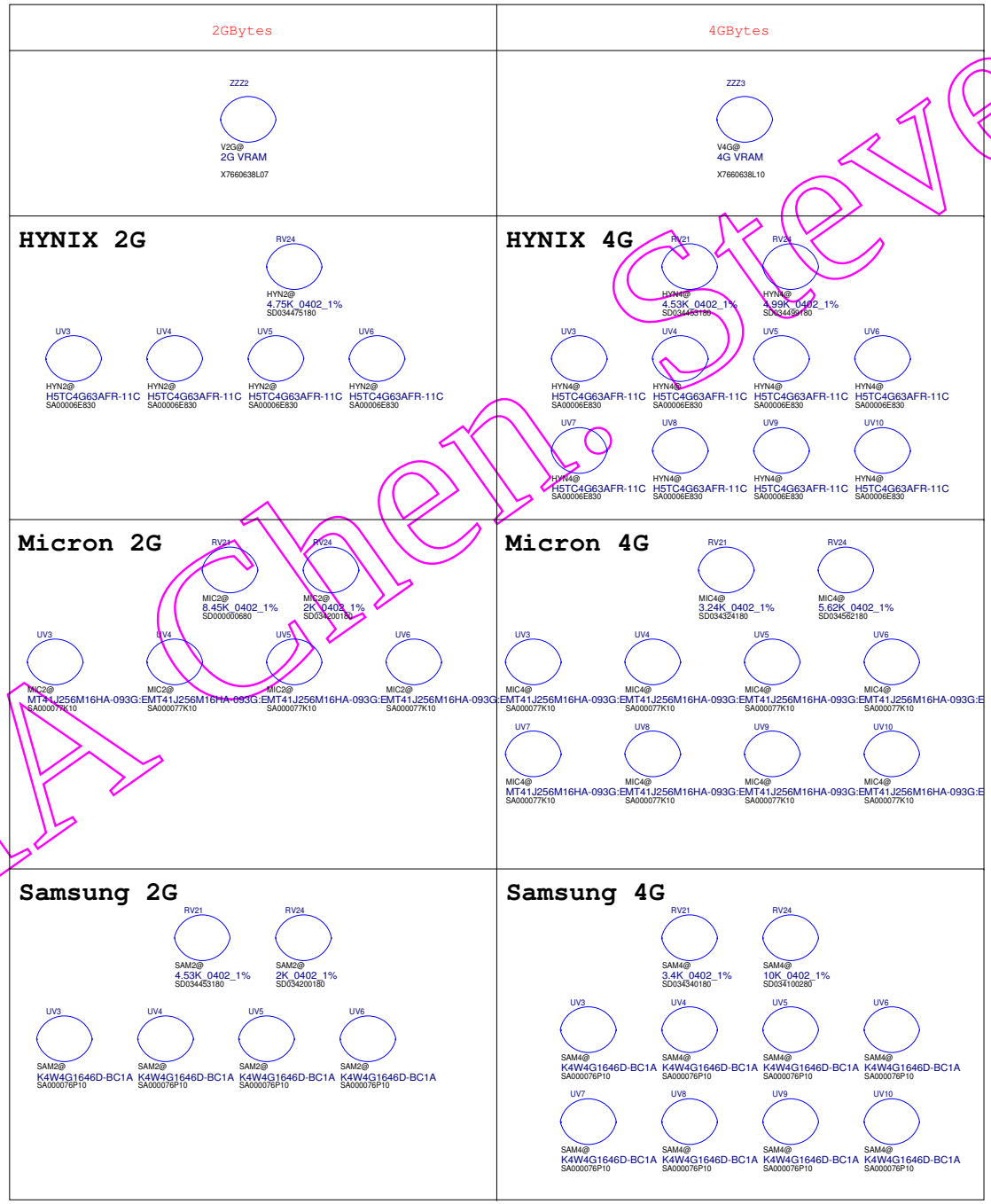
Meso XT_VRAM_STRAP

X76@

	Vendor (UV3, UV4, UV5, UV6, UV7, UV8, UV9, UV10)	ID	PS_3[3]	PS_3[2]	PS_3[1]	X76@ R_pu RV21	X76@ R_pd RV24
2GBytes	HYN2@ Hynix 2G SA00006E830 256Mx16 H5TC4G63AFR-11C	0	0	0	0	NC	4.75K
2GBytes	MIC2@ Micron 2G SA000077K10 256Mx16 MT41J256M16HA-093G:E	1	0	0	1	8.45K	2K
2GBytes	SAM2@ Samsung 2G SA000076P10 256Mx16 K4W4G1646D-BC1A	2	0	1	0	4.53K	2K
		3	0	1	1	6.98K	4.99K
4GBytes	HYN4@ Hynix 4G SA00006E830 256Mx16 H5TC4G63AFR-11C	4	1	0	0	4.53K	4.99K
4GBytes	MIC4@ Micron 4G SA000077K10 256Mx16 MT41J256M16HA-093G:E	5	1	0	1	3.24K	5.62K
4GBytes	SAM4@ Samsung 4G SA000076P10 256Mx16 K4W4G1646D-BC1A	6	1	1	0	3.4K	10K
		7	1	1	1	4.75K	NC

R_pu (Ω)	R_pd (Ω)	Bits [3:1]
NC	4750	000
8450	2000	001
4530	2000	010
6980	4990	011
4530	4990	100
3240	5620	101
3400	10000	110
4750	NC	111

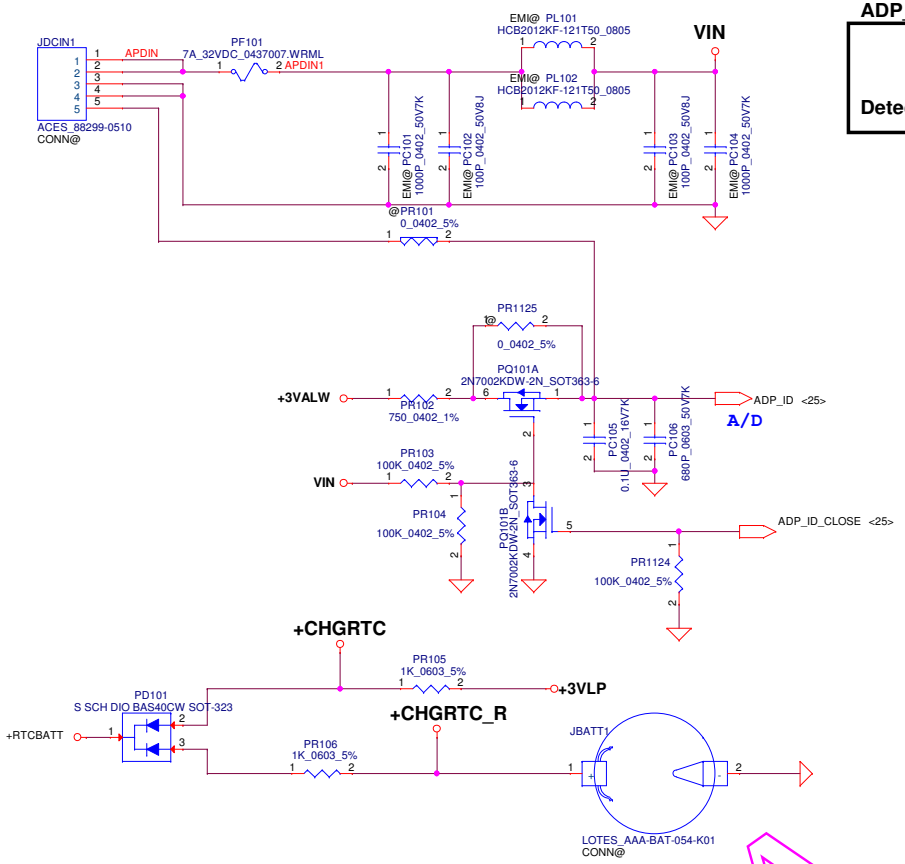
Note: 0402 1% resistors are required.



Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2014/09/01	Deciphered Date 2015/09/01	Title: VGA Notes List

Size	Document Number	Rev
C	LA-C281	1.0

Date: Friday, February 06, 2015 Sheet 37 of 50



ADP_ID

AC Adapter	90W	65W
R(K ohm)	open	10
ADP_ID(V)	3.3	1.65
Detection voltage	>2.64	1.32~1.98

RTC Battery

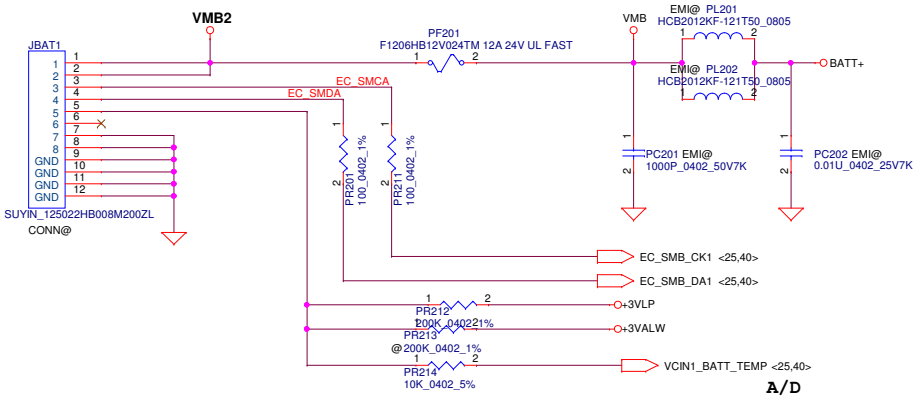
Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: PWR DCIN / RTC Battery

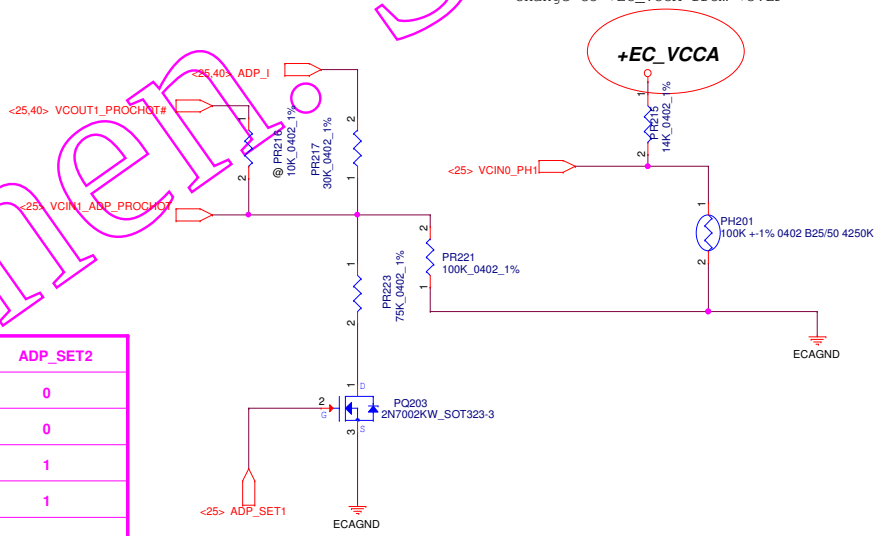
Size: Custom | Document Number: Z_BDW | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 38 of 50



PH201 under CPU botten side :
CPU thermal protection at 93 +-3 degree C
Recovery at 56 +-3 degree C

20120314
Change to +EC_VCCA from +3VLP



	ADP_SET1	ADP_SET2
45W adapter	0	0
65W adapter	1	0
90W adapter	0	1
135W adapter	1	1

135W: 150W active, 135W recovery
90W : 120W active, 90W recovery
65W : 85W active, 65W recovery
45W : 65W active, 45W recovery

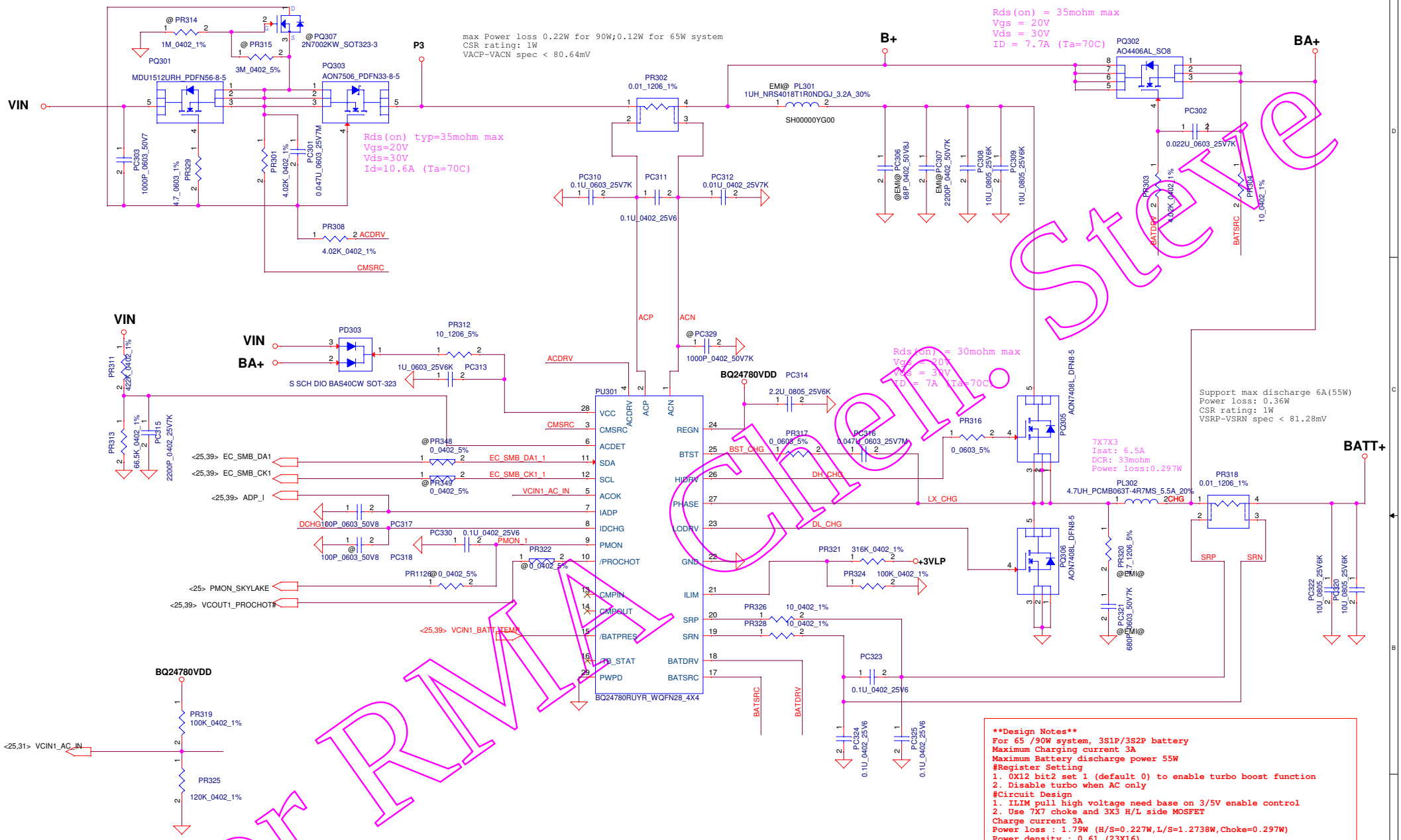
Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: PWR-BATTERY CONN/OTP

Size: Custom | Document Number: Z_BDW | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 39 of 50



Security Classification	Compal Secret Data		
Issued Date	2013/11/05	Deciphered Date	2015/11/05

Compal Electronics, Inc.			
Title: BQ24780			
Size: Custom	Document Number: Z_BDW		Rev: 1.0
Date: Friday, February 06, 2015	Sheet 40 of 50		

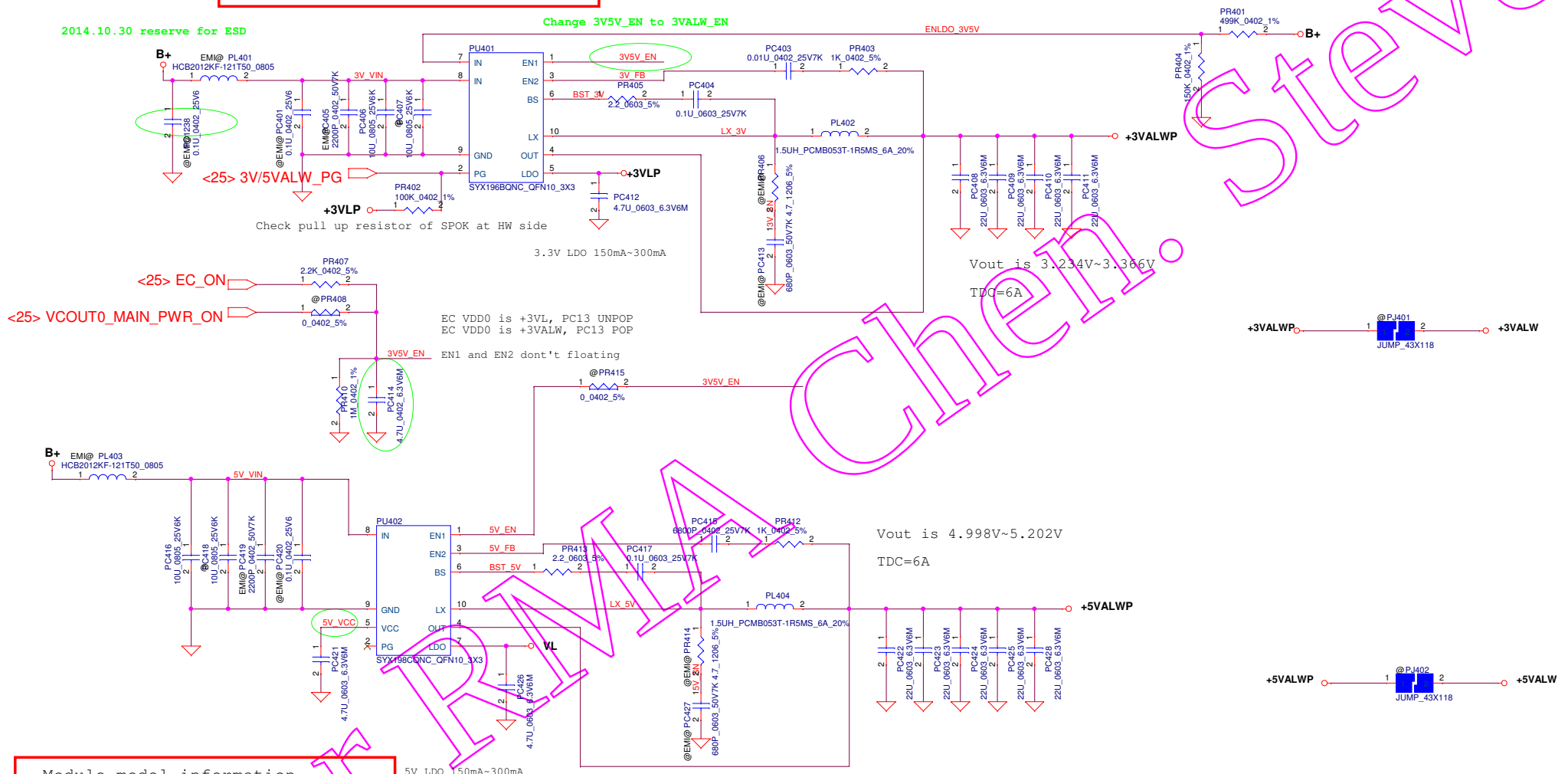
Module model information

SY8208B_V2.mdd

EN1 and EN2 dont't floating

2014.10.30 reserve for ESD

Change 3V5V_EN to 3VALW_EN



Module model information

SY8208C_V2.mdd

Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: +3VALW/+5VALW

Size: Custom | Document Number: Z_BDW | Rev: 1.0

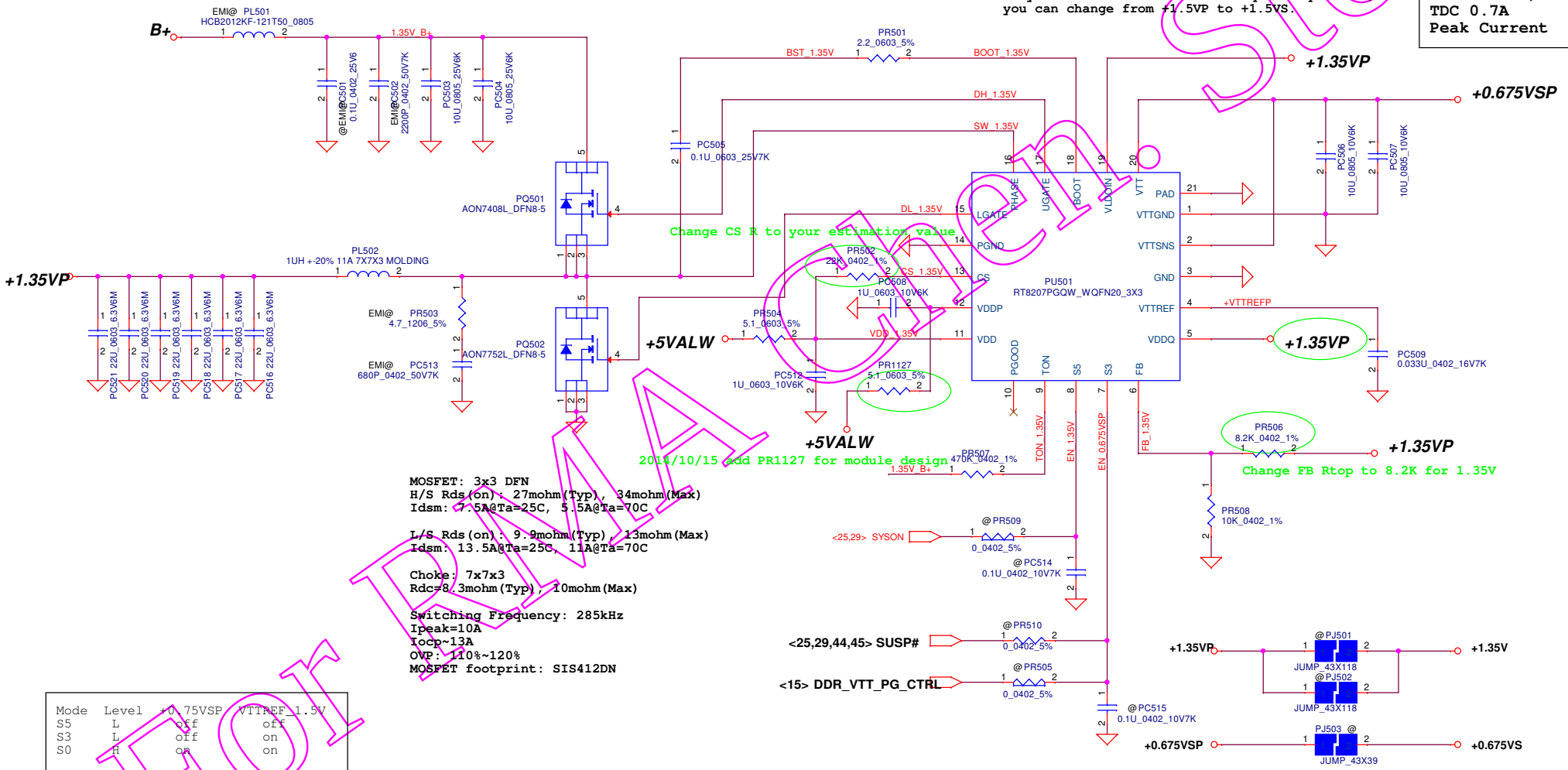
Date: Friday, February 06, 2015 | Sheet 41 of 50

Module model information

RT8207M_V1.mdd For Single layer
RT8207M_V2.mdd For Dual layer

Pin19 need pull separate from +1.5VP.
If you have +1.5V and +0.75V sequence question,
you can change from +1.5VP to +1.5VS.

0.75Volt +/- 5%
TDC 0.7A
Peak Current 1A



Change CS R to your estimation value

2011/10/15 add PR1127 for module design

Change FB Rtop to 8.2K for 1.35V

MOSFET: 3x3 DFN
H/S Rds(on): 27mohm(Typ), 34mohm(Max)
Idsm: 7.5A@Ta=25C, 5.5A@Ta=70C

L/S Rds(on): 9.9mohm(Typ), 13mohm(Max)
Idsm: 13.5A@Ta=25C, 11A@Ta=70C

Choke: 7x7x3
Rdc=8.3mohm(Typ), 10mohm(Max)

Switching Frequency: 285kHz
Ipeak=10A
Iocp~13A
OVP: 110%~120%
MOSFET footprint: SIS412DN

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

Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

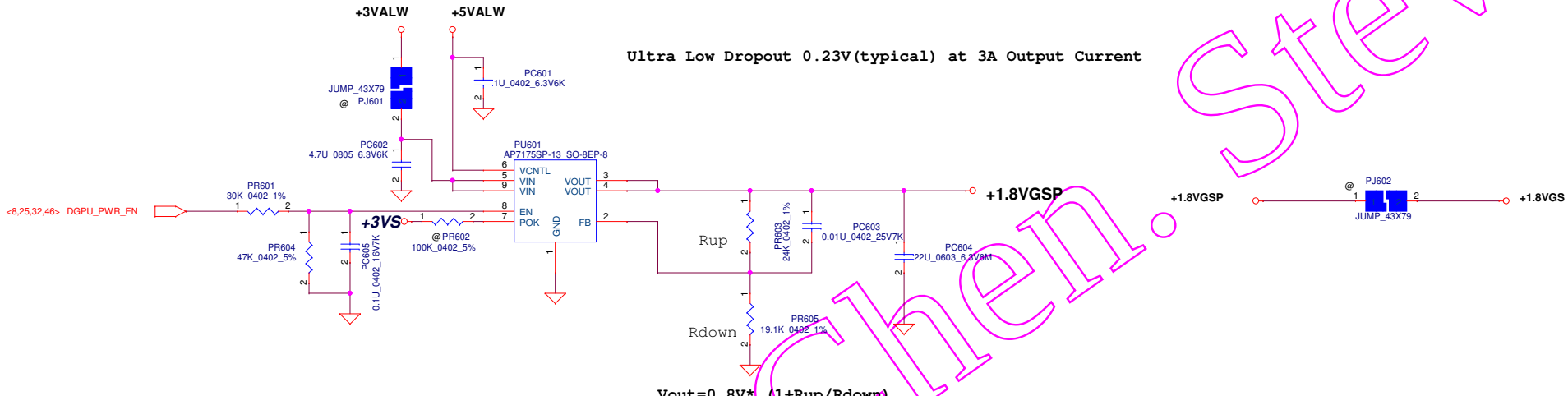
Title: RT8207M

Size: Custom | Document Number: Z_BDW | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 42 of 50

Module model information

APL5930_V1.mdd



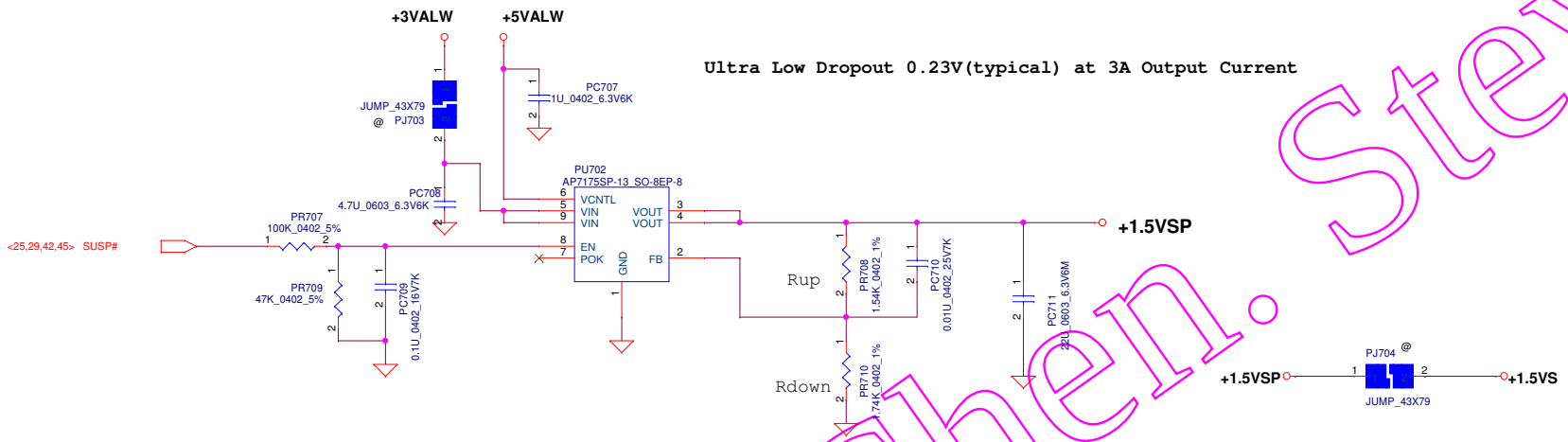
Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: +1.8VGS-+0.95VVGS

Size: Custom | Document Number: Z_BDW | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 43 of 50



Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: +1.5VS

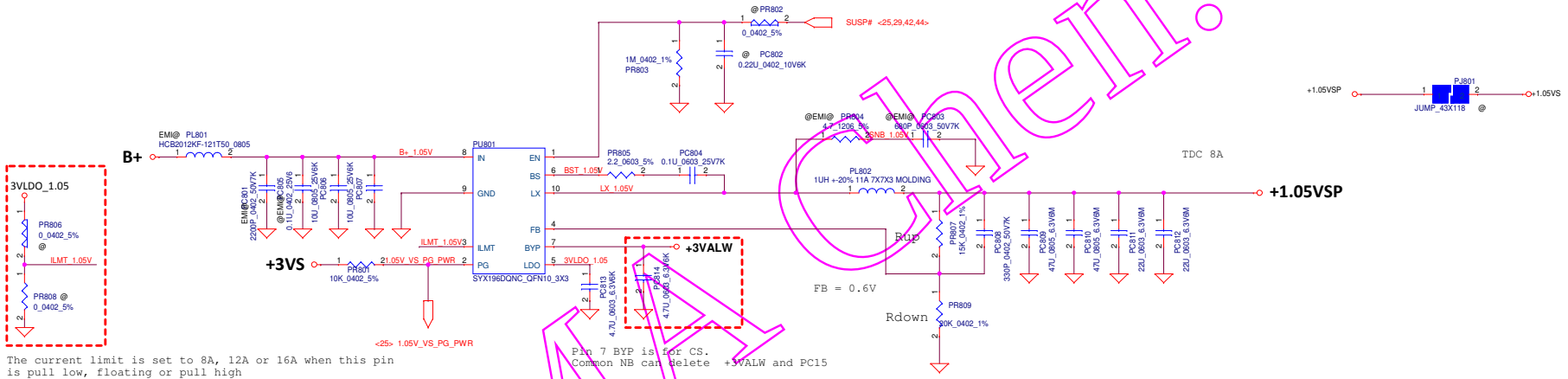
Size: Custom | Document Number: Z_BDW | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 44 of 50

Module model information

SY8208D_V1.mdd

EN pin don't floating
If have pull down resistor at HW side, pls delete PR2



The current limit is set to 8A, 12A or 16A when this pin is pull low, floating or pull high

Pin 7 BYP is for CS.
Common NB can delete +3VALW and PC15

VFB=0.6V
Vout=0.6V* (1+Rup/Rdown)

Vout=1.05V

Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: +1.05VS

Size	Document Number	Rev
C	Z_BDW	1.0

Date: Friday, February 06, 2015 Sheet 45 of 50

Module model information

ISL62771_V1A.mdd for IC portion

ISL62771_V1B.mdd for SW portion

+VGA_CORE

AMD Meso XT
TDC 36A, EDC 54A
OCP min 67.8A

Fsw=400K Hz

SH00000NX00 (DCR:1.4± 5%)

2014.10.15 reserve for RC delay

2014.09.22 modify from FAE

2014.09.22 modify from FAE

2014.09.22 modify from FAE

PR1046 set 536 ohm to OCP 26.32A

+VGA_CORE

For RMA Chen.steve

Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

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Compal Electronics, Inc.

Title: PWR-+VGA_CORE

Size: Custom | Document Number: Z_BDW | Rev: 1.0

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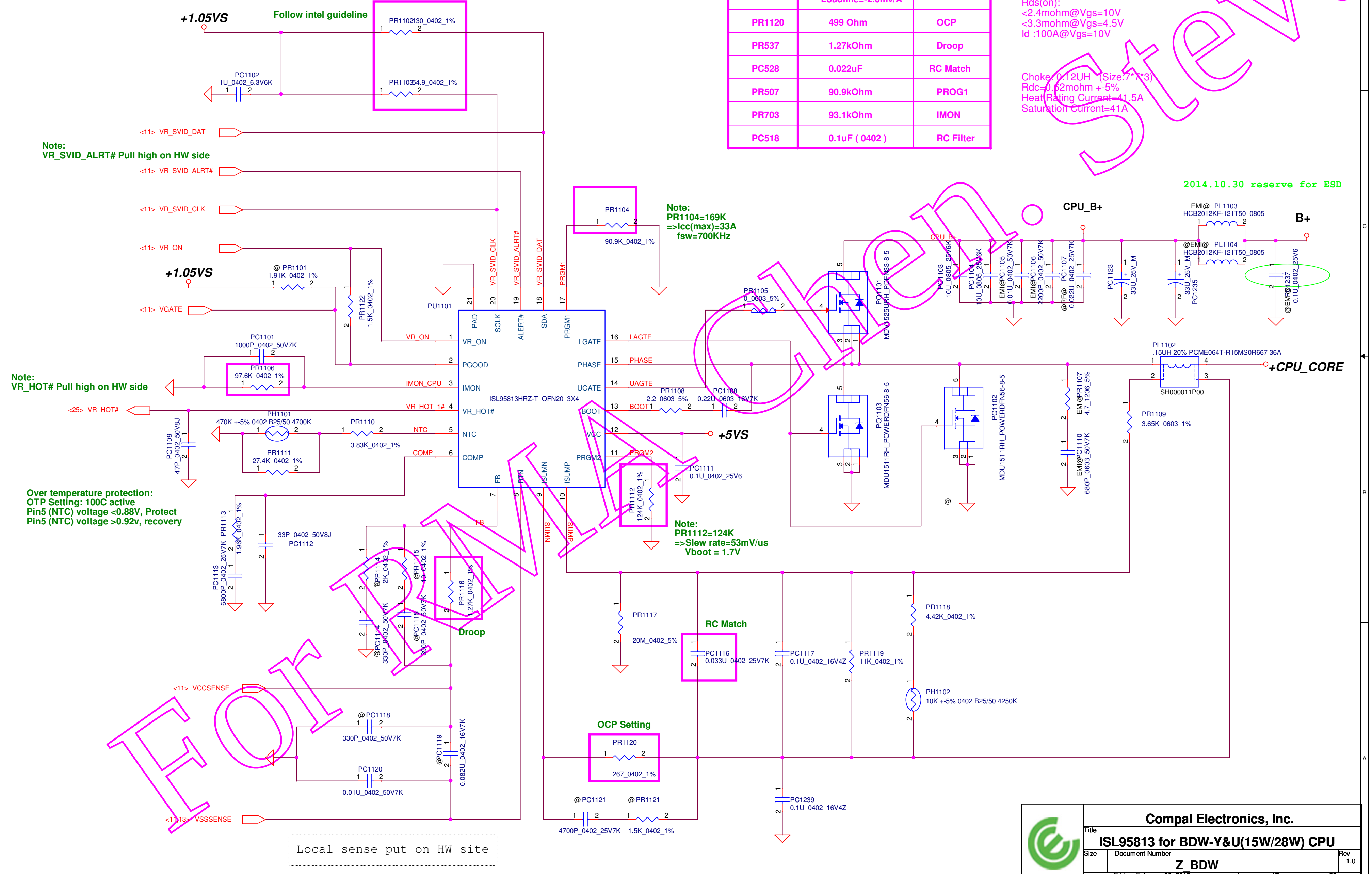
Module model information:
ISL95813 (for 15W & 28W CPU)

Base on BDW PDDG Rev_0_73		
Location	15W TDC 14A MAX 32A OCP 39A Loadline=-2.0mv/A	Note
PR1120	499 Ohm	OCP
PR537	1.27kOhm	Droop
PC528	0.022uF	RC Match
PR507	90.9kOhm	PROG1
PR703	93.1kOhm	IMON
PC518	0.1uF (0402)	RC Filter

H-side MOS: MDV1525URH
Rds(on):
<10.1mohm@Vgs=10V
<14.0mohm@Vgs=4.5V
Id :24A@Vgs=10V

L-side MOS: MDU1511RH
Rds(on):
<2.4mohm@Vgs=10V
<3.3mohm@Vgs=4.5V
Id :100A@Vgs=10V

Choke: 0.12UH (Size:7*7*3)
Rdc=0.62mohm +-5%
Heat Rating Current=41.5A
Saturation Current=41A



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Title: ISL95813 for BDW-Y&U(15W/28W) CPU

Size | Document Number: Z_BDW | Rev 1.0

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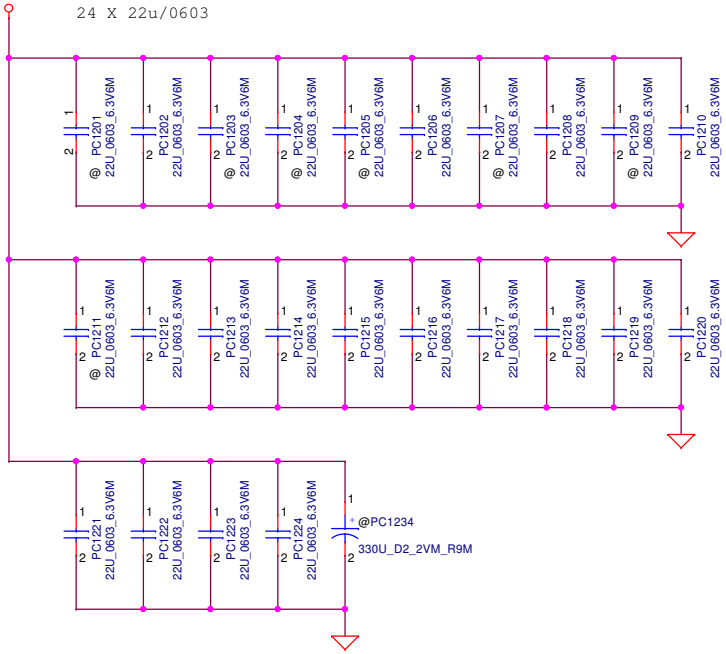
+CPU_CORE



Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: **PWR-PROCESSOR DECOUPLING**

Size	Document Number	Rev
Custom	Z_BDW	1.0

Date: Friday, February 06, 2015 Sheet 48 of 50

Version change list (P.I.R. List)

Item	Reason for change	PG#	Modify List	Date	Phase
1	reserve VGA_CORE RC delay	P46	add PC1236	2014.10.15	SIV
2	reserve 0.1uF for ESD	P41/P47	add PC1237,PC1238	2014.10.30	SIV
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Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: PIR (PWR)

Size: Custom | Document Number: BE_BDW | Rev: 1.0

Date: Friday, February 06, 2015 | Sheet 49 of 50

Version change list (P.I.R. List)

for HW

Item	Reason for change	PG#	Modify List		Phase
1	Reserve clean CMOS circuit	P06	reserve R80,Q27	2014.10.28	SIV
2	HDMI Design	P18	add R1650,R1651,R1652,R1653,R1654,R1655,R1656,R1657,R1658,R1659,R1660,R1661	2014.10.28	SIV
3	USB2.0 design for EMI request	P24	add R1676 and R1677	2014.10.28	SIV
4	Change commom chock symbol for EMI request	P24	change L12~L18	2014.10.28	SIV
5	Add FAN_ID for EC request	P25	add R516 and R517	2014.10.29	SIV
6	Audio design for EMI request	P36	add CA28,CA29,CA30,CA31	2014.10.29	SIV
7	Audio design for EMI request	P36	change from RA19,RA20 to LA2,LA3	2014.10.29	SIV
8	Audio design for EMI request	P36	add LA1	2014.10.29	SIV
9	+1.35V design for EMI request	P15	add C320~C324	2014.10.29	SIV
10	modify +MEM_GFX power sequence	P32	change C901 from 0.01uF to 0.1uF	2014.10.30	SIV
11	LAN design change for wake on lan	P26	delete RL18, add J6,J7	2014.11.13	SIT
12	Change pcb foot print by DFX request	P20,P24	change JIO1,JODD1,JHDMI pcb footprint	2014.12.08	SIT
13	Change for VGA power sequence	P32	change CV35 value	2014.12.08	SIT
14	Change Audio PCBEEP SCH by verdor suggestion	P27	add RA35,RA37,CA90,CA91,RA39 / DELETE CA23,CA24,RA36,RA34,CA25	2014.12.15	SIT
15	Modify LED BOM setting	P27	modify LED1,LED2,LED3,LED4,LED5,LED6 BOM setting	2014.12.15	SIT
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Compal Electronics, Inc.
Title: HW-PIR1
Size: C Document Number: LA-C281P Rev: 1.0
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