

MODEL NAME : *ANREDB4100*
PCB NO : *LA-G441P*
BOM P/N : *431ACQ31L**

Dell/Compal Confidential

Schematic Document

(Spyglass Whiskey Lake U)

BOM Structure

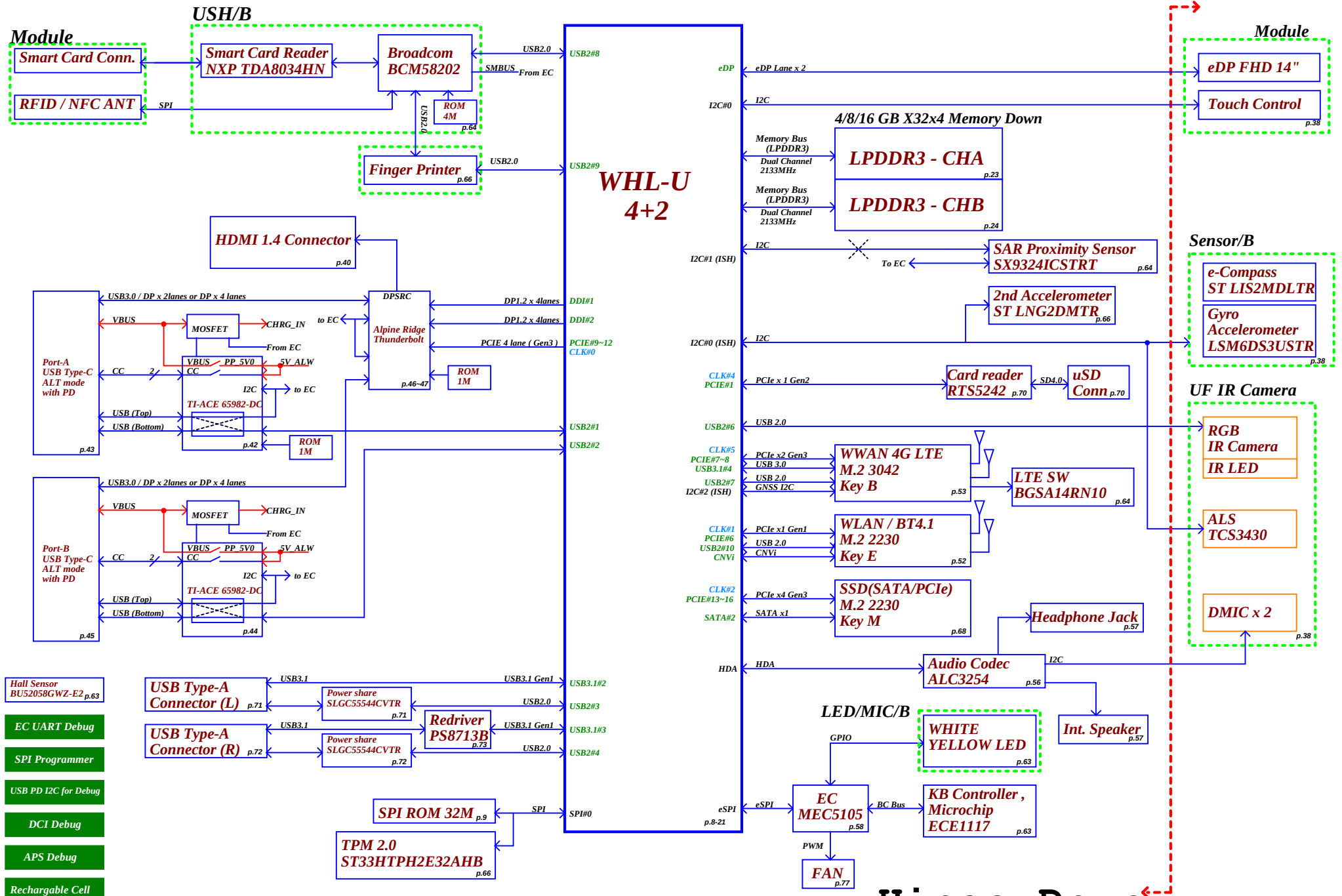
- 128M@ : 128M SPI ROM
- 256M@ : 256M SPI ROM
- @ : Nopop Component
- RF@ : RF Component
- @RF@ : RF Nopop Component
- EMC@ : EMI Component
- @EMC@ : EMI Nopop Component
- 5105@ : Option for MEC5105
- 5106@ : Option for MEC5106
- ST@ : ST TPM
- 750@ : Nuvoton TPM
- NRTD3@ : non RTD3 support
- RTD3@ : RTD3 support
- NDS3@ : non Deep sleep support
- DS3@ : Deep sleep support
- XDP@ : XDP Component
- DB@ : Debug Component
- BreakDown@ : Breakdown Component

2018-09-28
Rev: 1.0 (A00)
PVT

<http://www.repair1.ru/>

Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		Deciphered Date		Compal Electronics, Inc.	
2018/01/23		2022/12/31		Title	
				P001 - Cover	
				Document Number	
				LA-G441P	
				Date	
				Friday, December 14, 2018	
				Sheet 1 of 100	

Hinge up



<http://www.repair1.ru/>

Hinge Down

Board ID Option

Vcc	3.3V +/- 5%		1.20k, 2.00k, 2.5k	1.5k, 1.8k, 2.2k	6.2k, 6.8k, 7.5k	20k, 22k, 25k	
Board ID	RE200	CE44	Phase	REV	PCB Revision		
0	240k +/- 5%	4700p	EV1T	X00	0.1		
1	130k +/- 5%	4700p	EV1T	X01	0.2		
2	62k +/- 5%	4700p	DV1T.1	X02	0.3		
3	33k +/- 5%	4700p	DV1T.2	X03	0.4		
4	8.2k +/- 5%	4700p	DV1T.1	X04	0.5		
5	4.3k +/- 5%	4700p	PVT	A00	1.0		
6	2k +/- 5%	4700p					
7	NC						

 : means de-pop

 : means Digital Ground

 : means Analog Ground

CLK

SSIC	USB 3.1	PCI-E	SATA	DESTINATION
	USB 3.1#1	PCI-E#1		SD Card Reader RTS5242
	USB 3.1#2	PCI-E#2		JUSB2-->RIGHT
	USB 3.1#3	PCI-E#3		JUSB1-->LEFT
	USB 3.1#4	PCI-E#4		M.2 3042(LTE)
	USB 3.1#5	PCI-E#5		N/A
	USB 3.1#6	PCI-E#6		M.2 2230(WLAN)
		PCI-E#7		M.2 3042 (WWAN) Alpine Ridge
		PCI-E#8		
		PCI-E#9		
		PCI-E#10		
		PCI-E#11	SATA#0	
		PCI-E#12	SATA#1A	
		PCI-E#13		M.2 2230 SSD (PCIe4 or SATA)
		PCI-E#14		
		PCI-E#15	SATA#1B	
		PCI-E#16	SATA#2	

CLK	DIFFERENTIAL	DESTINATION
	CLKOUT_PCIE_0	Alpine Ridge
	CLKOUT_PCIE_1	WLAN
	CLKOUT_PCIE_2	M.2 SDD
	CLKOUT_PCIE_3	N/A
	CLKOUT_PCIE_4	SD Card Reader
	CLKOUT_PCIE_5	WWAN
	FLEX CLOCKS	DESTINATION
ESPI CLK	EC eSPI	

TCP	2	USB
-----	---	-----

TCP	TBT PORT#	DESTINATION
	1	USB Type-C Port-1
	2	USB Type-C Port-2
	3	
	4	

[illegible]

USB 2.0

USB 2.0 PORT	#DESTINATION
1	TYPE-C Front Side
2	TYPE-C Rear Side
3	JUSB1-->LEFT
4	JUSB2-->RIGHT
5	
6	UF IR Camera
7	M2 3042(WWAN)
8	USH
9	Finger Printer
10	M.2 2230(BT)

Displayport

DDI	DDI PORT#	DESTINATION
	1	Alpine Ridge
	2	
eDP	1	FHD

UT1 PO_DG@ 5A0000B200	UT5 PO_DG@ 5A0000B200
UT1 PO_DG@ 5A0000C800	UT5 PO_DG@ 5A0000C800

UC18 250Mg SA00009R10	UC18 120Mg SA0000AAG10
-----------------------------	------------------------------

U26 ST@ SA0000C5G10	U26 750@ SA0000AQ220
---------------------------	----------------------------

UE1	UE1
S106@	S106@
SA00009GL30	SA0000CSD00

UCPU1 CPU_E51@ SA00000BK10	UCPU1 CPU_Q5_I7@ SA00000CEP0L	UCPU1 MFR0_I7@ SA00000CEP1L
UCPU1 CPU_E52_1.8G@ SA00000C150L	UCPU1 CPU_Q5_I5@ SA00000CEQ0L	UCPU1 MFR0_I5@ SA00000CEQ1L
UCPU1 CPU_E52_1.6G@ SA00000C160L		

```
UICPUI  
ES_QRCSE@  
SA0000C161L
```

```
UICPUI  
ES_QRCT@  
SA0000CF0SL
```

Figure 6-17. High Speed I/O (HSIO) Lane Multiplexing in ICL U PCH-LP

X76	DRAM Option	DRAM Config Option (Resistor pop location)											
		MEM_CONFIG1			MEM_CONFIG2			MEM_CONFIG3			MEM_CONFIG4		
X7678331L03	Micron 4GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12
X7678331L06	Micron 8GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12
X7678331L09	Micron 16GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12
X7678331L01	Hynix 4GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12
X7678331L04	Hynix 8GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12
X7678331L07	Hynix 16GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12
X7678331L02	Samsung 4GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12
X7678331L05	Samsung 8GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12
X7678331L08	Samsung 16GB/2133												
		U03 MEMCFG1	U04 MEMCFG2	U05 MEMCFG3	U06 MEMCFG4	U07 MEMCFG5	U08 MEMCFG6	U09 MEMCFG7	U10 MEMCFG8	U11 MEMCFG9	U12 MEMCFG10	U13 MEMCFG11	U14 MEMCFG12

Flex I/O Lane	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
High Speed I/O (HSIO) Type and Lane	USB3.1 Gen1/Gen2 #1	USB3.1 Gen1/Gen2 #2	USB3.1 Gen1/Gen2 #3	USB3.1 Gen1/Gen2 #4	USB3.1 Gen1/Gen2 #5	USB3.1 Gen1/Gen2 #6	PCIe* #7	PCIe* #8	PCIe* #9	PCIe* #10	PCIe* #11	PCIe* #12	PCIe* #13	PCIe* #14	PCIe* #15	PCIe* #16
	PCIe* #1	PCIe* #2	PCIe* #3	PCIe* #4	PCIe* #5	PCIe* #6	GbE	GbE	GbE		SATA 0	SATA 1a	GbE	GbE	SATA 1b	SATA 2
Intel® RST Support	No Support			No Support			Yes			Yes						

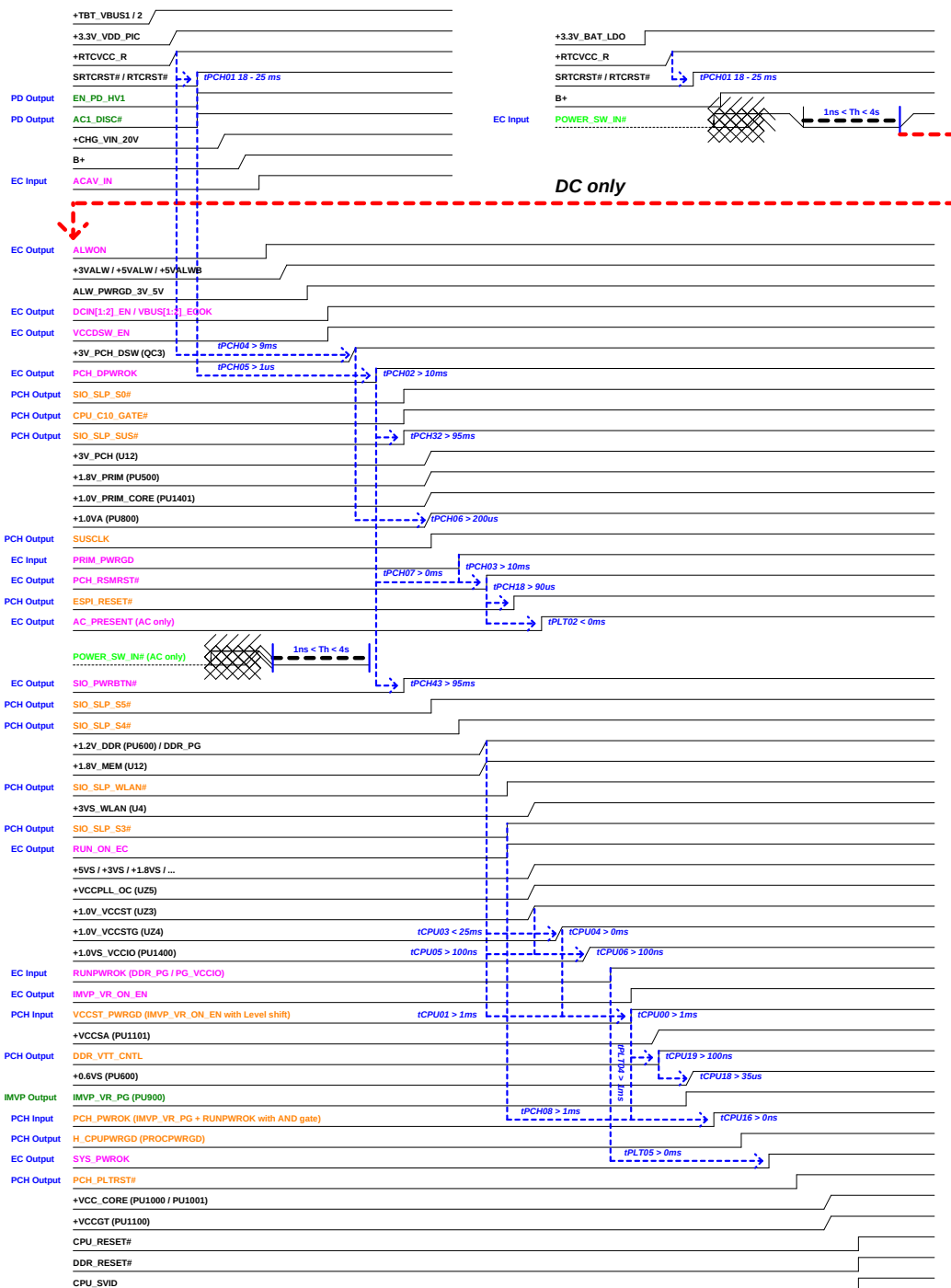
Right Side



Support Deep Sleep

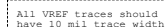
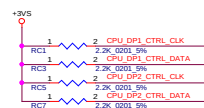
[AC in] (remove RTC)

[Battery only, AC absent] (remove RTC)



<http://www.repair1.ru/>

Security Classification		Compul Secret Data		DELL CONFIDENTIAL/PROPRIETARY Compul Electronics, Inc.	
Issued Date	2018/01/23	Declassified Date	2022/12/31	Title	P005 - Power Sequence
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPUL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPETENT DIVISION OR BUREAU TO ANY OTHER PERSON OR ORGANIZATION WITHOUT THE WRITTEN PERMISSION OF COMPUL ELECTRONICS, INC. ANY INFORMATION CONTAINED HEREIN MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPUL ELECTRONICS, INC.				Size	Document Number LA-641P
				Sheet	1 of 2

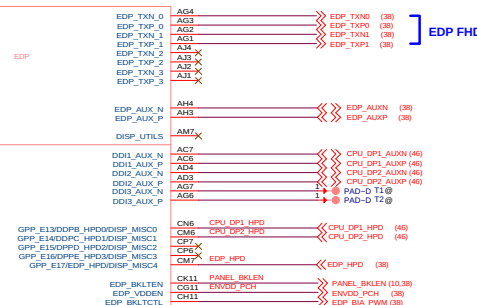
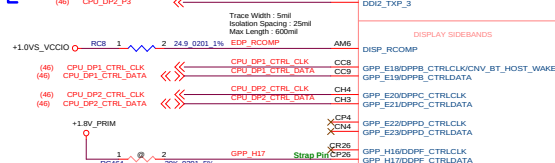
[illegible]

Alpine Ridge

GPP E19 (WEAK INTERNAL PD)
0 = Port B is not detected. (Default)
1 = Port B is detected.

GPP E21 (WEAK INTERNAL PD)
0 = Port C is not detected. (Default)
1 = Port C is detected.

GPP_E23 (WEAK INTERNAL PD)
0 = Port D is not detected. (Default)
1 = Port D is detected.



PCH GLITCH ISSUE MITIGATION(PDG p.130)

Security Classification		Compal Secret Data		CONFIDENTIAL/PROPRIETARY Compal Electronics, Inc.	
Issued Date	2015/12/16	Deciphered Date	2016/12/13	Title	P006 - WHL-U(1/14)DDI,EDP See Document Number LA-G441P
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 TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D WITHOUT THE WRITTEN AUTHORIZATION OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Date:	Friday, December 14, 2018 Sheet 6 of 100

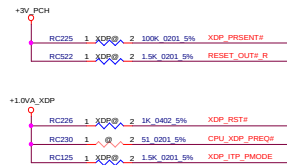


DIMM TYPE

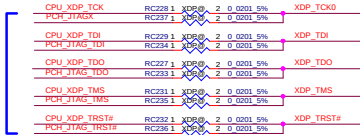
1 : Interleave

0 : Non-Interleave

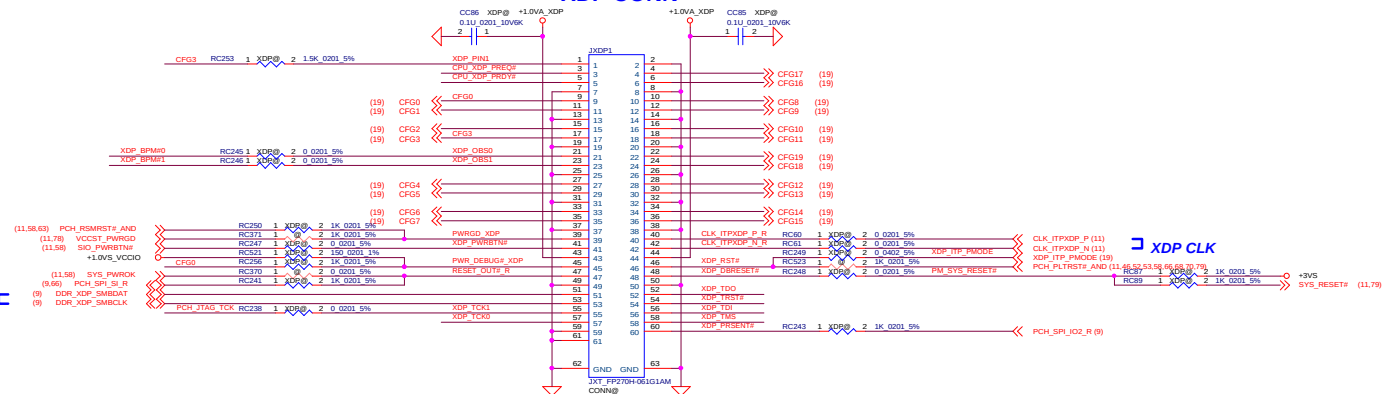
The signal has a weak internal pull-down.



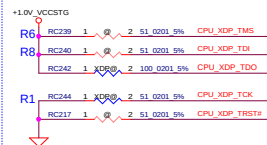
To CPU / PCH JTAG



XDP CONN

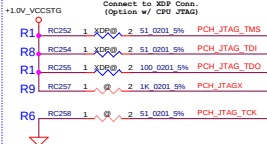


PU/PD for CPU JTAG signals

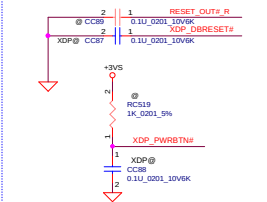


PU/PD for PCH JTAG signals

Connect to XDP Conn.
(Option w/ CPU JTAG)

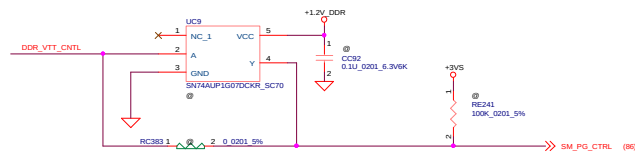
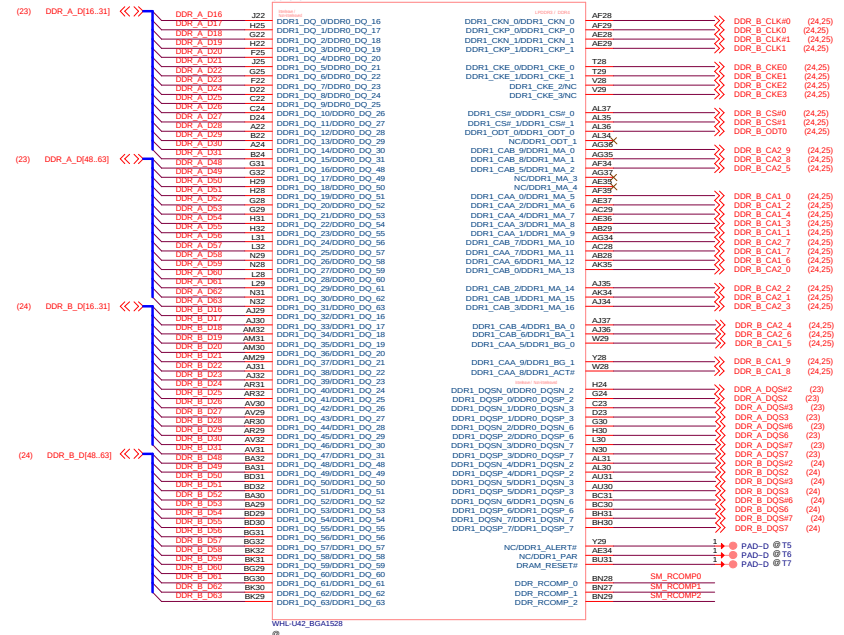


Close to JXDP1

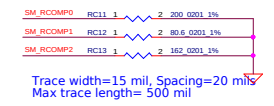


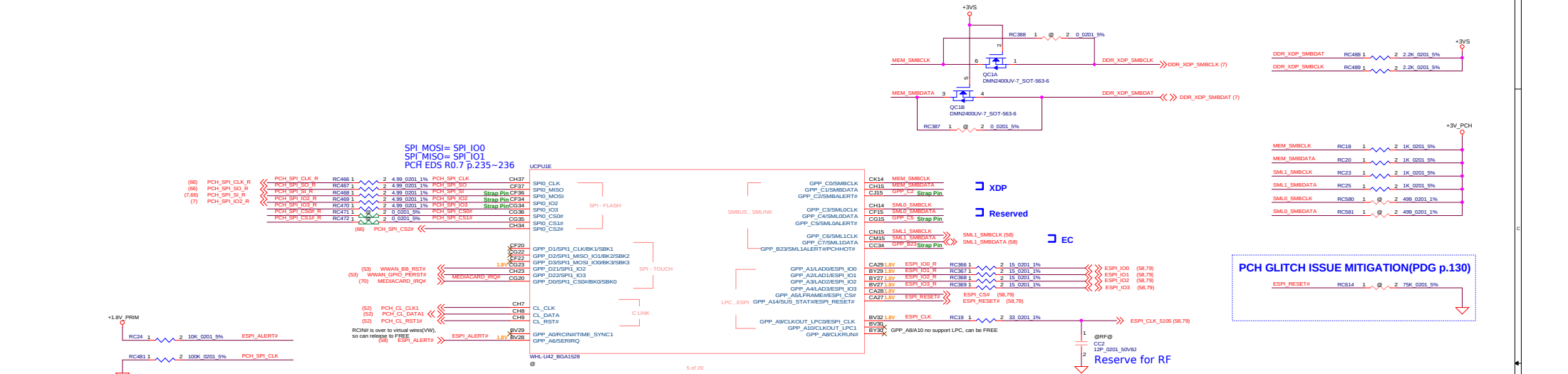
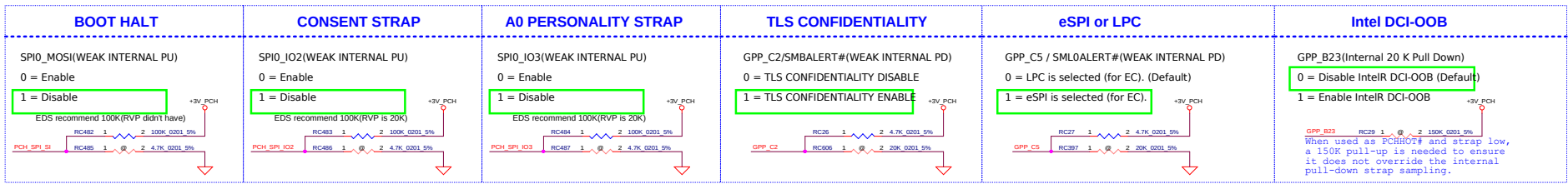
Security Classification		Compul Secret Data		ALL CONFIDENTIAL/PROPRIETARY Compul Electronics, Inc.	
Issued Date	2015/12/18	Deciphered Date	2016/12/13	Title	P007 - WHL-U(2/14)MISC,XDP
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPUL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMIRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D TO ANY EMPLOYEE OR SUPPLY AGENT, OR DISCLOSED BY COMPANY EMPLOYEE OR AGENT. THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED.				Size 1A-G441P	New 0.1(000)
MAY BE USED BY OR DISCLOSED TO THIS PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPUL ELECTRONICS, INC.				Date: FRI, Dec-14, 2018	Sheet 7 of 100

LPDDR3, Ballout for side by side(Non-Interleave)

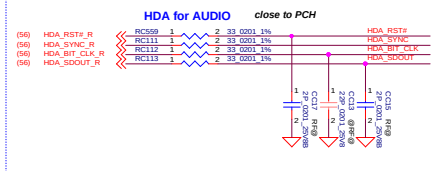


LPDDR3 COMPENSATION SIGNALS

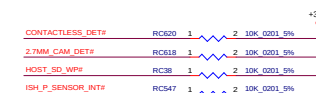
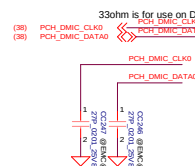
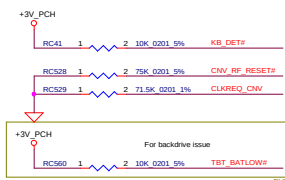




Capacitor to only be used for HDA_SDO, HDA_RST#, and HDA_SDI for EMI purposes and should be as close as possible to the PCH.
For HDA_SDO and HDA_RST# the cap should be after the series resistor closest to the PCH.



PCH GLITCH ISSUE MITIGATION(PDG p.130)



TOP SWAP OVERRIDE

GPP B14 / SPKR (WEAK INTERNAL PD)

0 = Disable Top Swap mode. (Default)

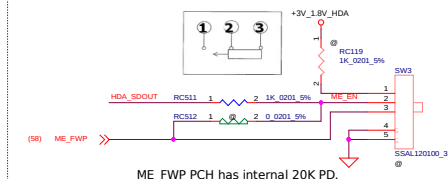
1 = Enable Top Swap mode.

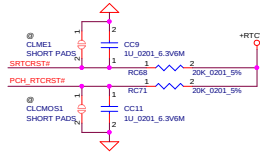
Flash Descriptor Security Override

HDA_SDO / I2S0_TXD (WEAK INTERNAL PD)

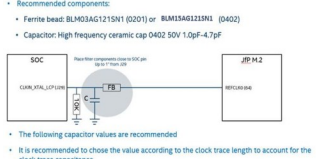
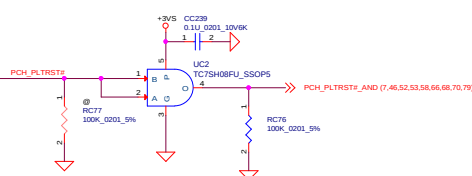
Disable ME Protect (ME can be updated) ----> Pin1 & Pin2 short

Enable ME Protect (ME cannot be updated)-->Pin3 & Pin2 short(Default position)

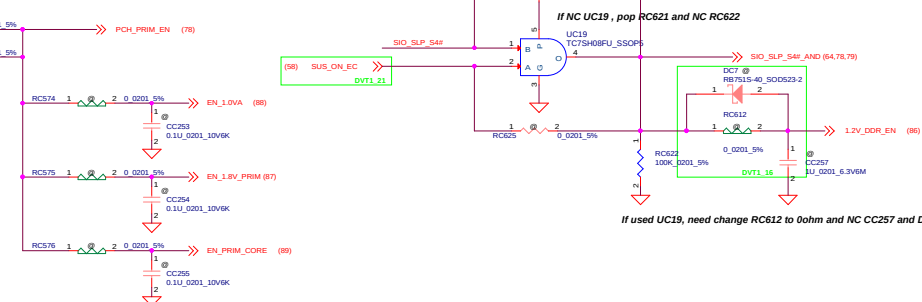
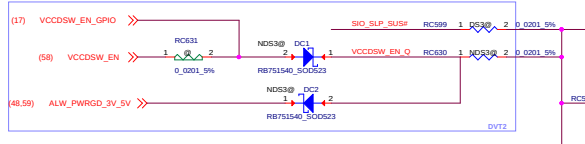
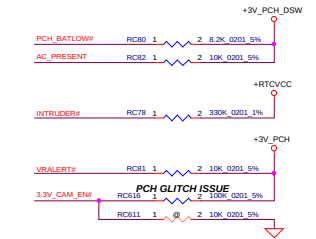
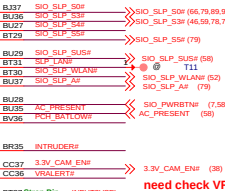
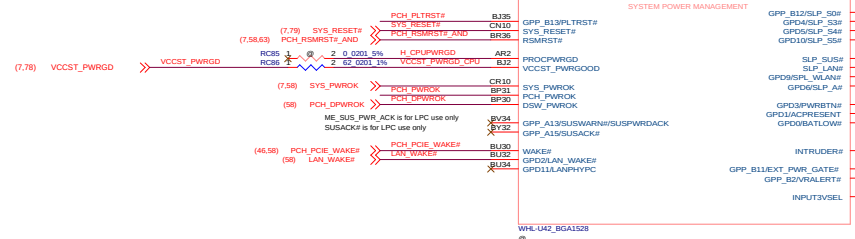
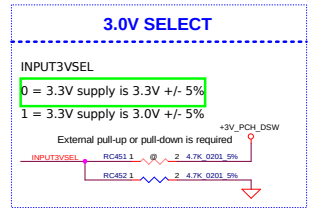




The schematic diagram shows the RC433 receiver circuit. It features an RC433 100K_0201_5% resistor connected to a +3V5 supply. The receiver IC is a TC7S40BFU_SSOP5, which is also connected to a +3V5 supply and a 100K_0201_5% resistor. The output of the receiver is connected to a PCH_PWRONK signal line, which is also connected to a 100K_0201_5% resistor. The input of the receiver is connected to a signal line labeled (90) IMVP_VR_PG and (58,79) RUN/PWRONK.



The schematic diagram illustrates the power line connections for the PCH and AC. It shows several signal lines (PCH_BATLOW#, AC_PRESENT, INTRUDER#, VREALERT#, 3.3V_CAM_EN#, PCH_GLITCH_ISSUE) connected to various components (resistors and capacitors) and power sources (+3V_PCH, DSW, +RTCVCC, +3V_PCH). The components are labeled with part numbers (RC80, RC82, RC78, RC81, RC10, RC11) and values (8.2K, 10K, 330K, 0201, 5%, 1%, 0.1%). The diagram also shows the connection of the PCH_GLITCH_ISSUE signal to the AC power lines.



JTAG ODT DISABLE

1 = Enable "No Reboot" mode

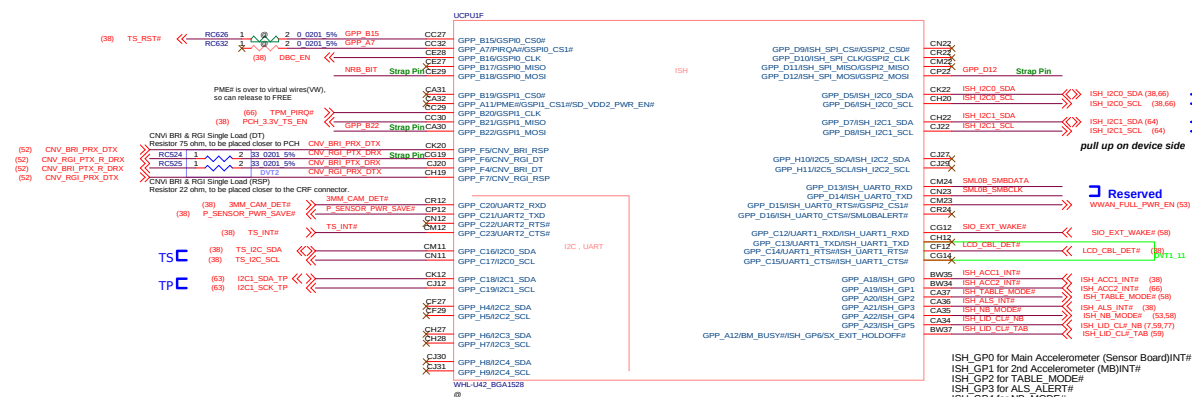
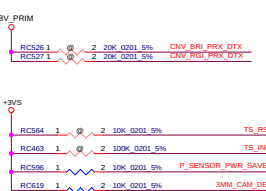
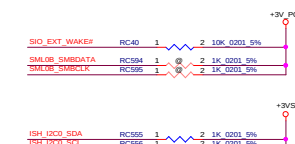


1 = LPC



1 = JTAG ODT ENABLED

GPP_D12 RC609 1 2 10K 0201



ISH_I2C1_SCL (64)
pull up on device side

Reserved
WWAN FULL PWR EN (53)

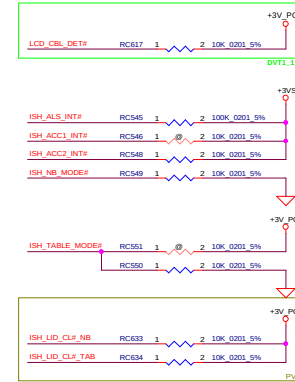
← LCD_CBL_DET# (38) DVT1_11

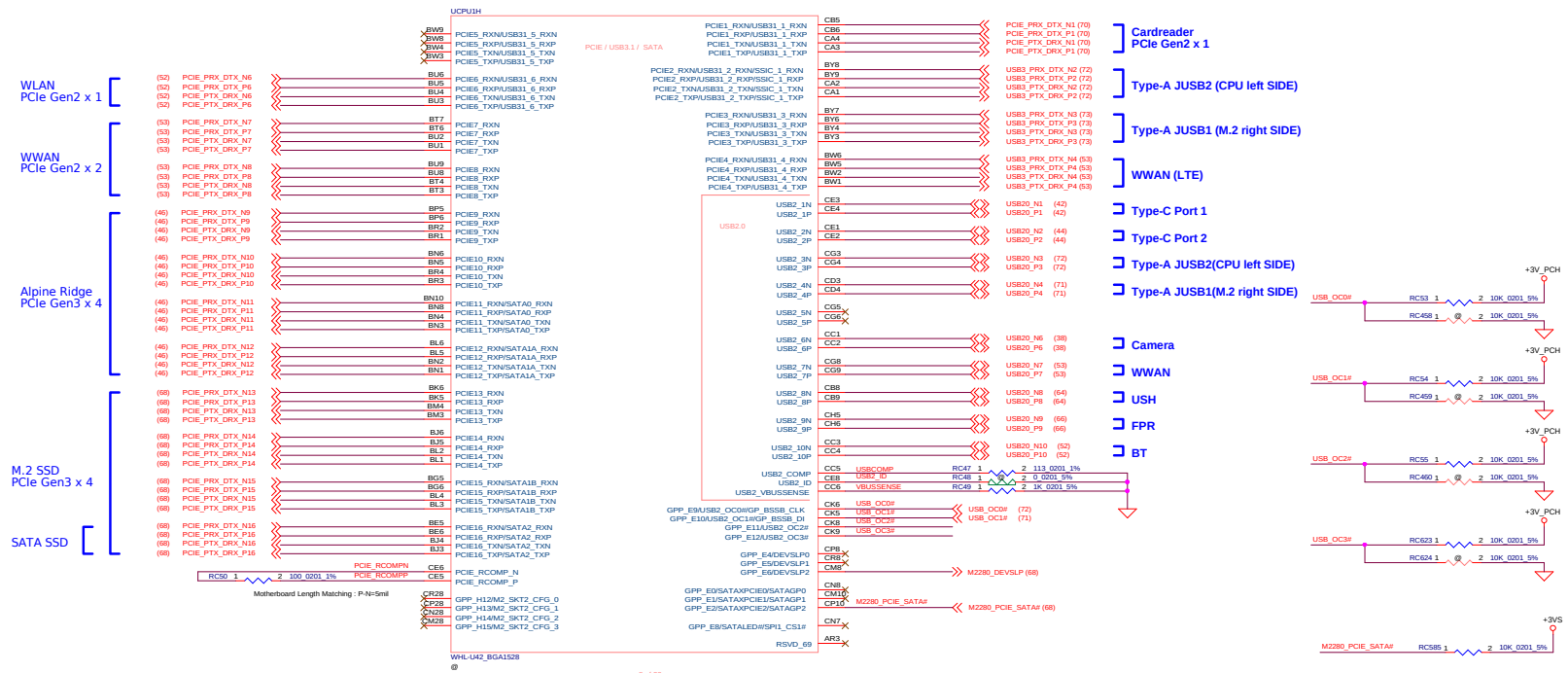
ISH_ALS_INT# (38)
ISH_NB_MODE# (53,58)
ISH_LID_CL#_NB (7,59,77)
ISH_LID_CL#_TAB (59)

```

ISH_GP0 for Main Accelerometer (Sensor Board)INT#
ISH_GP1 for 2nd Accelerometer (MB)INT#
ISH_GP2 for TABLE_MODE#
ISH_GP3 for ALS_ALERT#
ISH_GP4 for NB_MODE#
ISH_GP5 for NB_LID#
ISH_GP6 for TAB_LID#
ISH_GP7 for DrawInitsCameraINT#

```



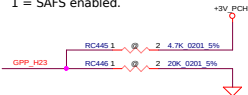


eSPI Flash Sharing Mode

GPP_H23 (WEAK INTERNAL PD)

0 = MAFS enabled (Default)

1 = SAFS enabled.

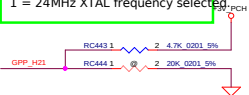


XTAL Frequency Select

GPP_H21 (WEAK INTERNAL PD)

0 = 38.4 XTAL frequency selected. (Default)

1 = 24MHz XTAL frequency selected

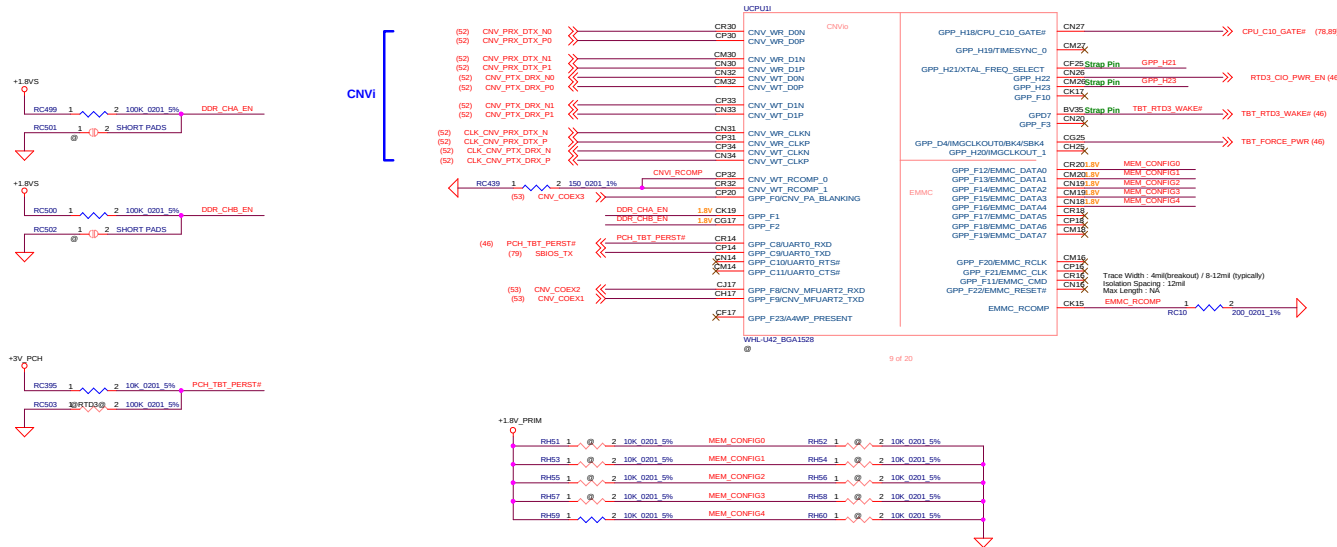
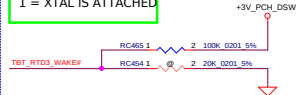


XTAL INPUT MODE (HVM ONLY)

GPD7(External pull-up is required)

0 = XTAL INPUT IS SINGLE ENDED

1 = XTAL IS ATTACHED



DDR Memory Configuratio Type Strap pin

GPIO Pin	Pin Name		Micron 8Gb (4Gb)	Micron 16Gb (8Gb)	Micron 32Gb (16Gb)	Rynix 8Gb (4Gb)	Rynix 16Gb (8Gb)	Rynix 32Gb (16Gb)	Samsung 8Gb (4Gb)	Samsung 16Gb (8Gb)	Samsung 32Gb (16Gb)
GPP_F12	MEM_CONFIG0	2133 Mbps	0	1	0	1	0	1	0	1	0
GPP_F13	MEM_CONFIG1		1	1	0	0	1	1	0	0	1
GPP_F14	MEM_CONFIG2		0	0	1	1	1	1	0	0	0
GPP_F15	MEM_CONFIG3		0	0	0	0	0	0	1	1	1
GPP_F16	MEM_CONFIG4		1	1	1	1	1	1	1	1	1

DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.

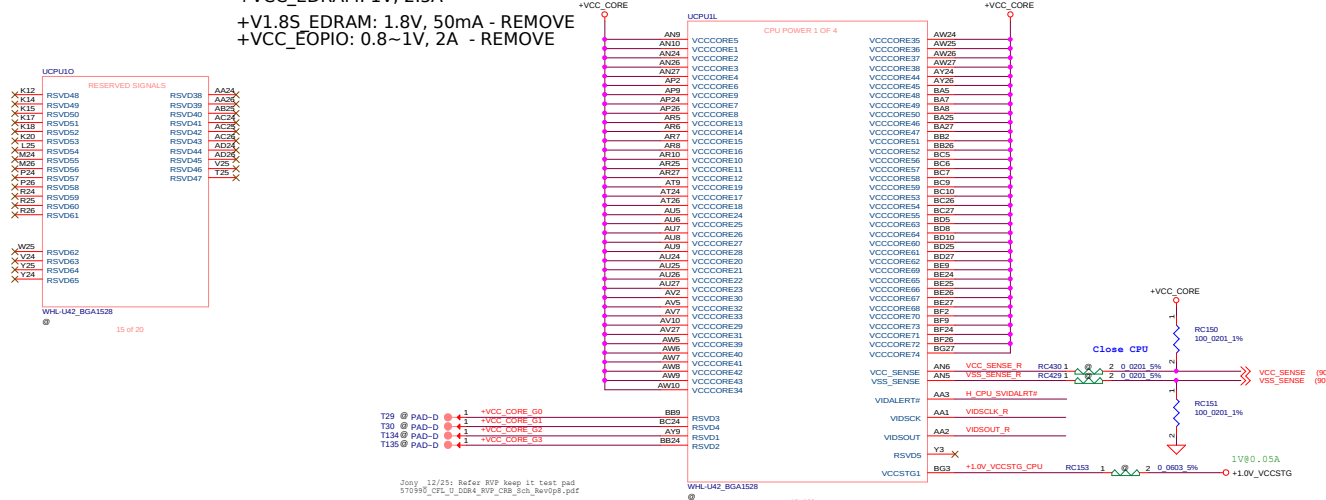
Security Classification	Compal Secret Data		Deciphered Data		Title	
Issued Date	2015/12/16	Deciphered Date	2016/12/13		P014 - WHL-U(9/14)CNV,EMMC	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OR 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.						Rev 0.10
Date:	Friday, December 14, 2018	Sheet	14	of	100	

Pin Number	CTL Label	WHL U42 Q6/Production	ICN U42Z(WHL-U42 ES01)
AV08	2VW	RSVD	RSVD
73	VCCOPN0_SENSE	RSVD	RSVD
V05	VCCOPN0_SENSE	RSVD	RSVD
AA04	VCCOPN0	RSVD	RSVD
AA08	VCCOPN0	RSVD	RSVD
AA25	VCCOPN0	RSVD	RSVD
AA28	VCCOPN0	RSVD	RSVD
AA29	VCCOPN0	RSVD	RSVD
AA30	VCCOPN0	RSVD	RSVD
AA31	VCCOPN0	RSVD	RSVD
AA32	VCCOPN0	RSVD	RSVD
AA33	VCCOPN0	RSVD	RSVD
AA34	VCCOPN0	RSVD	RSVD
AA35	VCCOPN0	RSVD	RSVD
AA36	VCCOPN0	RSVD	RSVD
AA37	VCCOPN0	RSVD	RSVD
AA38	VCCOPN0	RSVD	RSVD
AA39	VCCOPN0	RSVD	RSVD
AA40	VCCOPN0	RSVD	RSVD
AA41	VCCOPN0	RSVD	RSVD
AA42	VCCOPN0	RSVD	RSVD
AA43	VCCOPN0	RSVD	RSVD
AA44	VCCOPN0	RSVD	RSVD
AA45	VCCOPN0	RSVD	RSVD
AA46	VCCOPN0	RSVD	RSVD
AA47	VCCOPN0	RSVD	RSVD
AA48	VCCOPN0	RSVD	RSVD
AA49	VCCOPN0	RSVD	RSVD
AA50	VCCOPN0	RSVD	RSVD
AA51	VCCOPN0	RSVD	RSVD
AA52	VCCOPN0	RSVD	RSVD
AA53	VCCOPN0	RSVD	RSVD
AA54	VCCOPN0	RSVD	RSVD
AA55	VCCOPN0	RSVD	RSVD
AA56	VCCOPN0	RSVD	RSVD
AA57	VCCOPN0	RSVD	RSVD
AA58	VCCOPN0	RSVD	RSVD
AA59	VCCOPN0	RSVD	RSVD
AA60	VCCOPN0	RSVD	RSVD
AA61	VCCOPN0	RSVD	RSVD
AA62	VCCOPN0	RSVD	RSVD
AA63	VCCOPN0	RSVD	RSVD
AA64	VCCOPN0	RSVD	RSVD
AA65	VCCOPN0	RSVD	RSVD
AA66	VCCOPN0	RSVD	RSVD
AA67	VCCOPN0	RSVD	RSVD
AA68	VCCOPN0	RSVD	RSVD
AA69	VCCOPN0	RSVD	RSVD
AA70	VCCOPN0	RSVD	RSVD
AA71	VCCOPN0	RSVD	RSVD
AA72	VCCOPN0	RSVD	RSVD
AA73	VCCOPN0	RSVD	RSVD
AA74	VCCOPN0	RSVD	RSVD
AA75	VCCOPN0	RSVD	RSVD
AA76	VCCOPN0	RSVD	RSVD
AA77	VCCOPN0	RSVD	RSVD
AA78	VCCOPN0	RSVD	RSVD
AA79	VCCOPN0	RSVD	RSVD
AA80	VCCOPN0	RSVD	RSVD
AA81	VCCOPN0	RSVD	RSVD
AA82	VCCOPN0	RSVD	RSVD
AA83	VCCOPN0	RSVD	RSVD
AA84	VCCOPN0	RSVD	RSVD
AA85	VCCOPN0	RSVD	RSVD
AA86	VCCOPN0	RSVD	RSVD
AA87	VCCOPN0	RSVD	RSVD
AA88	VCCOPN0	RSVD	RSVD
AA89	VCCOPN0	RSVD	RSVD
AA90	VCCOPN0	RSVD	RSVD
AA91	VCCOPN0	RSVD	RSVD
AA92	VCCOPN0	RSVD	RSVD
AA93	VCCOPN0	RSVD	RSVD
AA94	VCCOPN0	RSVD	RSVD
AA95	VCCOPN0	RSVD	RSVD
AA96	VCCOPN0	RSVD	RSVD
AA97	VCCOPN0	RSVD	RSVD
AA98	VCCOPN0	RSVD	RSVD
AA99	VCCOPN0	RSVD	RSVD
AA00	VCCOPN0	RSVD	RSVD

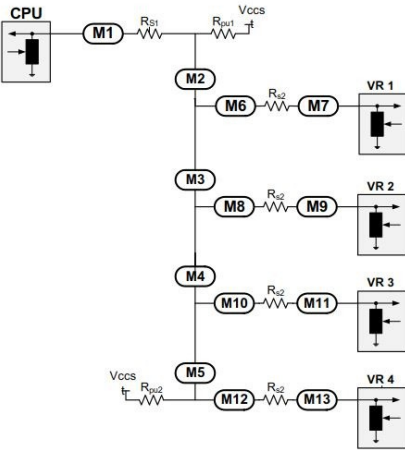
PSC(Primary side cap) : Place as close to the package as possible
BSC(Backside cap) : Place on secondary side, underneath the package

Component placement order:
Package edge > 0402 caps > 0805 caps > Power source

+VCC_CORE: 0.55~1.5V, 29A
+VCC_EDRAM: 1V, 2.5A
+V1.85_EDRAM: 1.8V, 50mA - REMOVE
+VCC_EOPIO: 0.8~1V, 2A - REMOVE



VCCOPC,VCCOPC_1P8,VCCEPIO for SKYLAKE-U 2+3e
(w/ on package cache)



VIDSOUT platform resistors	Rpu1=100Ω, Rpu2=100Ω, Rs1=0Ω, Rs2=10Ω
VIDSCK platform resistors	Rpu1=Empty, Rpu2=45Ω, Rs1=0Ω, Rs2=49.9Ω
VIDSALERT# platform resistors	Rpu1=56Ω, Rpu2=Empty, Rs1=220Ω, Rs2=0Ω

SVID ALERT



SVID DATA



SVID CLK

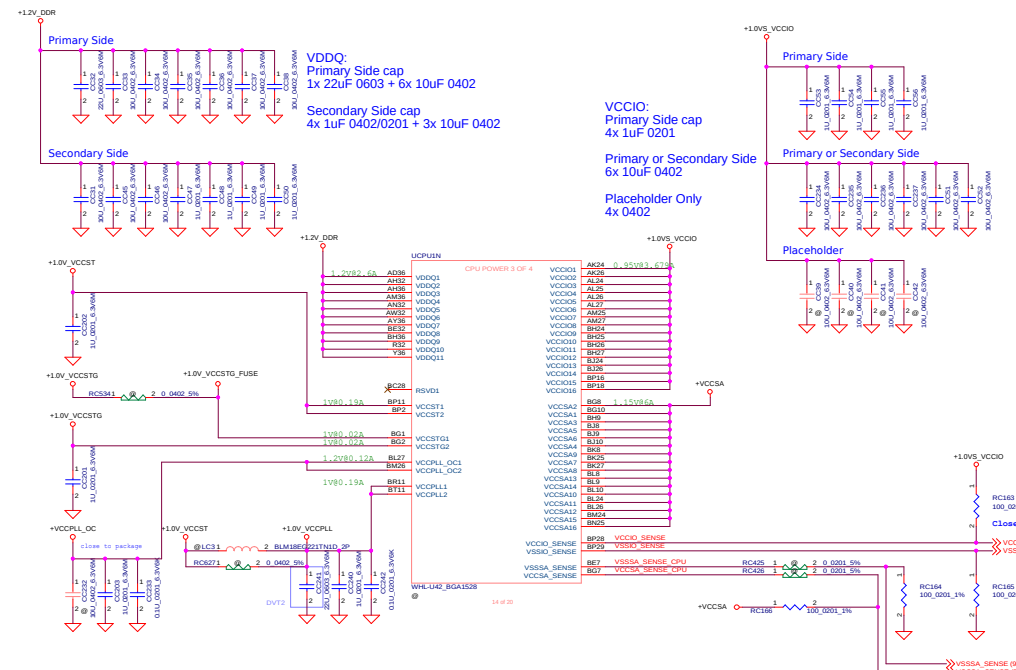
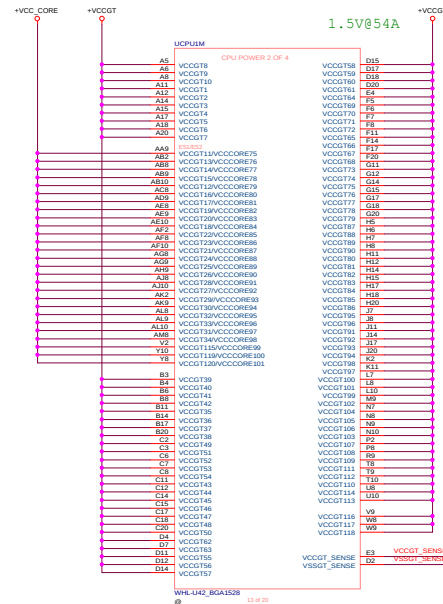


DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.

Security Classification	Compal Secret Data	2016/12/13
Issued Date	2015/12/16	Deciphered Date
THIS SHEET OF ENGINEERING DRAWINGS IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OR 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.		
Title	P015 - WHL-U(10/14)CORE Power	
Document Number	LA-G441P	
Date	Friday, December 14, 2018	Sheet 15 of 100

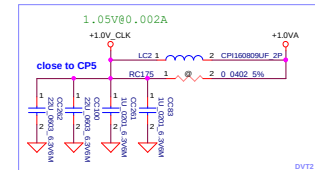
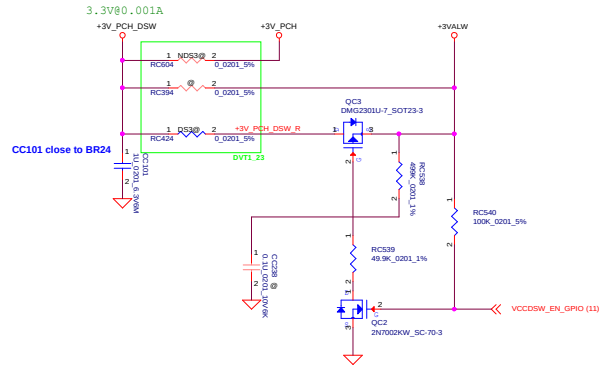
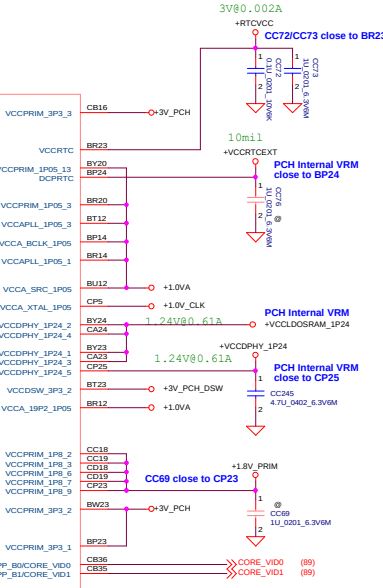
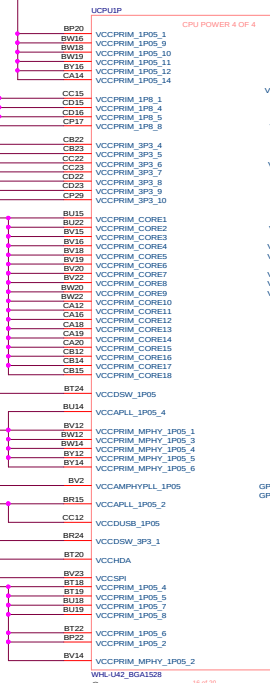
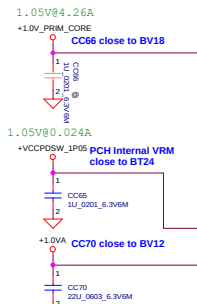
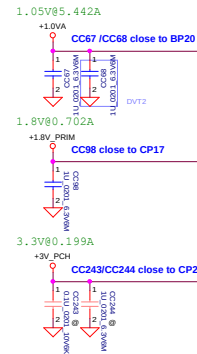
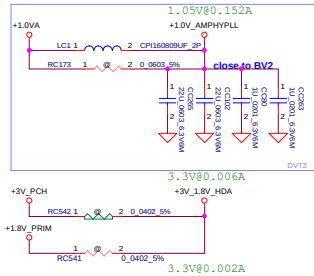
VCCIO / VDDQ

Pin Number	KFL-U43E	WHL ES1 Netname	WHL ES2 Netname
AA9	VCCGT	VCCGT	VCCCGH2
AB10	VCCGT	VCCGT	VCCCGH1
AB2	VCCGT	VCCGT	VCCCGH1
AB8	VCCGT	VCCGT	VCCCGH1
AB9	VCCGT	VCCGT	VCCCGH1
AC8	VCCGT	VCCGT	VCCCGH1
AD9	VCCGT	VCCGT	VCCCGH1
AE10	VCCGT	VCCGT	VCCCGH1
AE8	VCCGT	VCCGT	VCCCGH1
AE9	VCCGT	VCCGT	VCCCGH1
AF10	VCCGT	VCCGT	VCCCGH1
AF2	VCCGT	VCCGT	VCCCGH1
AF8	VCCGT	VCCGT	VCCCGH1
AG8	VCCGT	VCCGT	VCCCGH1
AG9	VCCGT	VCCGT	VCCCGH1
AH9	VCCGT	VCCGT	VCCCGH1
AJ10	VCCGT	VCCGT	VCCCGH1
AJ8	VCCGT	VCCGT	VCCCGH1
AK2	VCCGT	VCCGT	VCCCGH1
AK9	VCCGT	VCCGT	VCCCGH1
AL10	VCCGT	VCCGT	VCCCGH1
AL8	VCCGT	VCCGT	VCCCGH1
AL9	VCCGT	VCCGT	VCCCGH1
AM8	VCCGT	VCCGT	VCCCGH1
V2	VCCGT	VCCGT	VCCCGH1
Y10	VCCGT	VCCGT	VCCCGH1
Y8	VCCGT	VCCGT	VCCCGH1



VCCA_1P02_IP05 : 0.027A
VCCAPLL_IP05 : 0.102A
VCCA_BCLK_IP05 : 0.009A
VCCA_SEC_IP05 : 0.042A
VCCPRIM_IP05 : 1.625A
VCCDSW_IP05 : 0.28A
VCCDSW_IP05 : 0.024A
VCCPRIM_MPHY_IP05 : 3.333A
USB3.1(I/O Gb/s) : 0.259*3 port = 0.777A
PCIe(Gen3) : 0.213*12 port = 2.556A

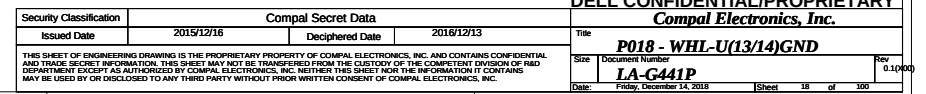
PDG: 1U_0402*1 + 47U_0603*1 + 2.2uH inductor

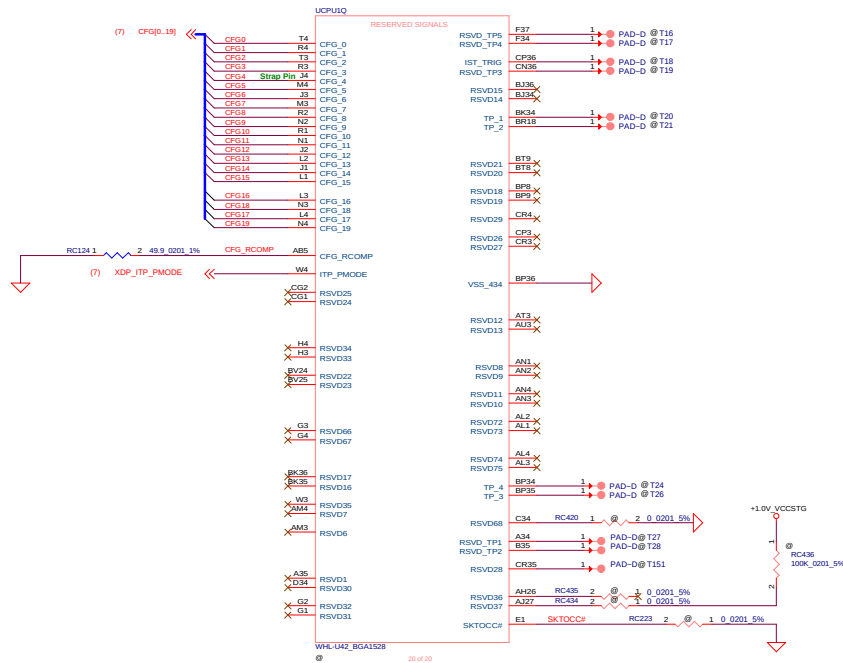
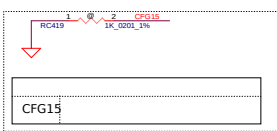
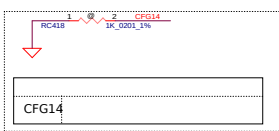
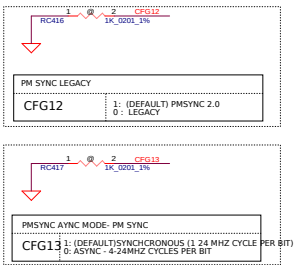
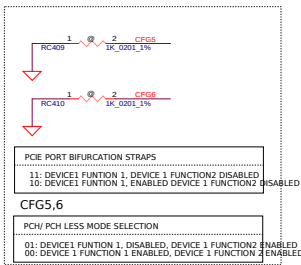
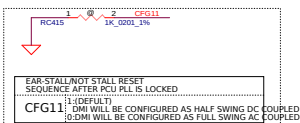
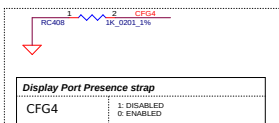
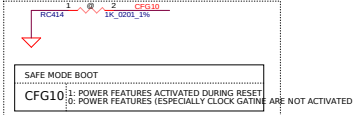
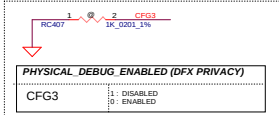
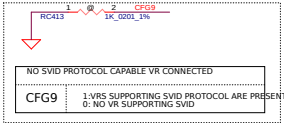
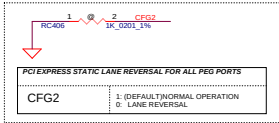
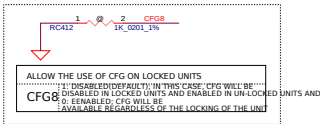
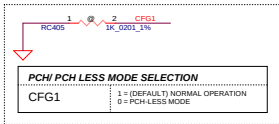
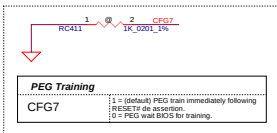
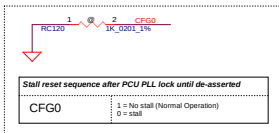


PDG: 1U_0402*1 + 47U_0603*1 + 2.2uH inductor

Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		Document Number	
2015/12/16		2016/12/13		P017 - WHL-U(12/14)PCH Power	
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 TRANSFERRED 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.		Date		Friday, December 14, 2018	
Sheet		17		of 100	

Note1: VCCPRIM_CORE Implementation with PCH CORE_VID Recommendation







Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		Deciphered Date		Title	
2018/01/23		2022/12/31		P020 - Reserve	
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 TRANSFERRED 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	Document Number
				LA-G441P	
Date: Friday, December 14, 2018				Sheet	20 of 100
				Rev	0.1(X00)



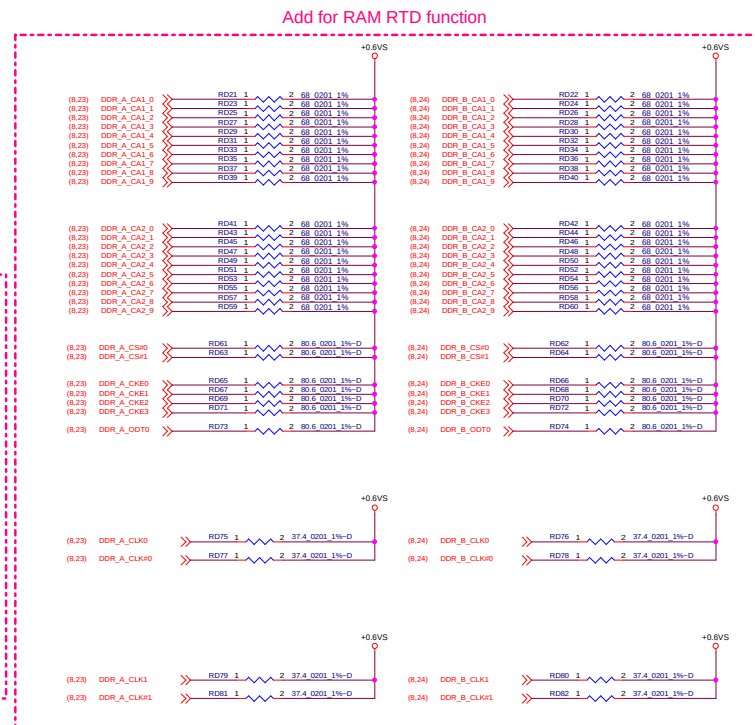
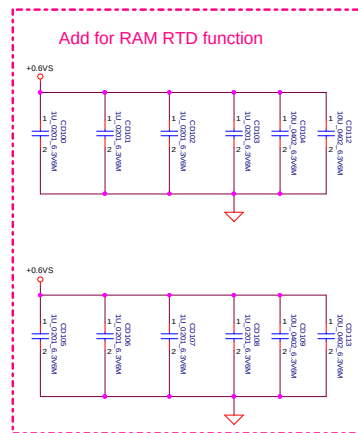
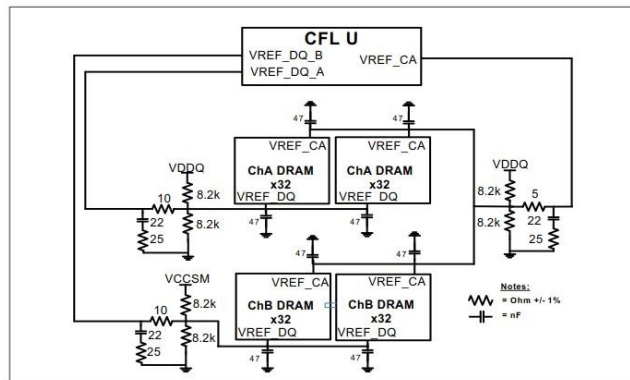
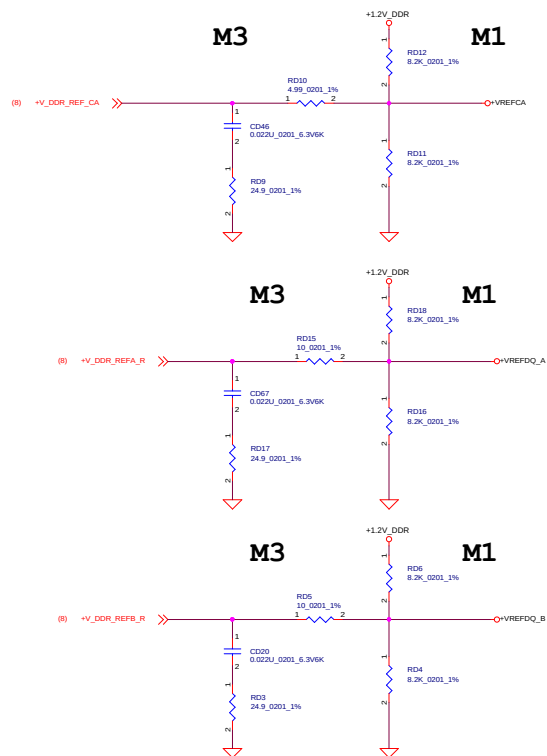
Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		2018/01/23	Deciphered Date	2022/12/31	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.		Title		Compal Electronics, Inc.	
Size		Document Number			Rev
Date:		Friday, December 14, 2018			0.1(X00)
Sheet		21		of 100	



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P022 - Reserve	
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 TRANSFERRED 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	Document Number LA-G441P
				Date	Friday, December 14, 2018



VREF traces should be at least 20 mils wide with 20 mils spacing to other signals/planes.





Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		2018/01/23	Deciphered Date	2022/12/31	Title
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 TRANSFERRED 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.				Compal Electronics, Inc.	
				P026 - Reserve	
				LA-G441P	
		Date: Friday, December 14, 2018		Sheet 26 of 100	Rev 0.1(X00)



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date		2018/01/23	Deciphered Date		2022/12/31
<small>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 TRANSFERRED 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.</small>				Title	
				P027 - Reserve	
				Size	Document Number
				LA-G441P	
				Rev	0.1(X00)
Date:		Friday, December 14, 2018		Sheet	27 of 100



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P028 - Reserve	
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 TRANSFERRED 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	Document Number LA-G441P
				Date	Friday, December 14, 2018



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		2018/01/23	Deciphered Date	2022/12/31	
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 TRANSFERRED 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.		Title		Compal Electronics, Inc.	
Size		Document Number			Rev
Date:		Friday, December 14, 2018			0.1(X00)
Sheet		29		of 100	



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		2018/01/23	Deciphered Date	2022/12/31	
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 TRANSFERRED 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.		Title		Compal Electronics, Inc.	
Size		Document Number			Rev
Date:		Friday, December 14, 2018			0.1(X00)
Sheet		30		of 100	



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P031 - Reserve	
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 TRANSFERRED 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	Document Number LA-G441P
				Date	Friday, December 14, 2018



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P032 - Reserve	
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 TRANSFERRED 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	Document Number LA-G441P
				Date	Friday, December 14, 2018



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		Deciphered Date		Title	
2018/01/23		2022/12/31		P033 - Reserve	
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 TRANSFERRED 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	Document Number
				Date	Rev
				Friday, December 14, 2018	LA-G441P
				Sheet 33 of 100	0.1(X00)



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>		
Issued Date		2018/01/23	Deciphered Date			
			2022/12/31			
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 TRANSFERRED 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.						
Title		P034 - Reserve				
Size	Document Number				Rev	
		LA-G441P				0.1(X00)
Date:	Friday, December 14, 2018			Sheet	34 of 100	
				1		



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY							
Issued Date		2018/01/23	Deciphered Date	2022/12/31	Compal Electronics, Inc.						
<small>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 TRANSFERRED 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.</small>				Title							
				P035 - Reserve							
				Size	Document Number						
				LA-G441P							
				Date	Friday, December 14, 2018	Sheet	35	of	100	Rev	0.1(X00)

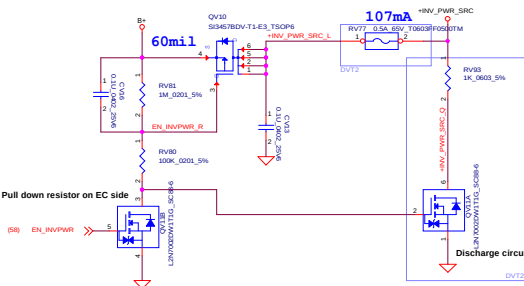


Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P036 - Reserve	
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.</small>				Size	Document Number LA-G441P
				Date	Friday, December 14, 2018

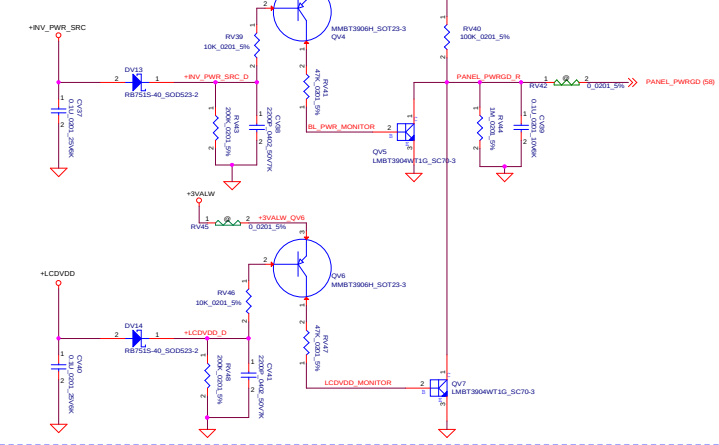


Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P037 - Reserve	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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	Document Number LA-G441P
				Date	Friday, December 14, 2018

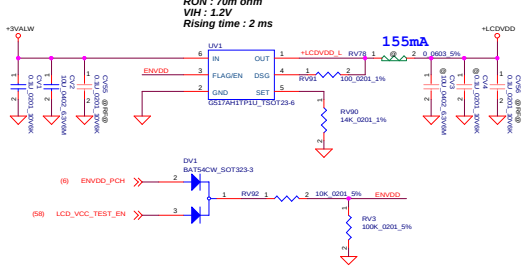
B+ eDP BackLight Power



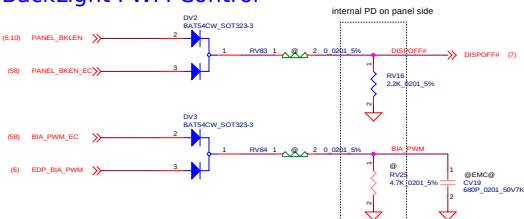
BL_PWR_SRC & LCDVDD monitor



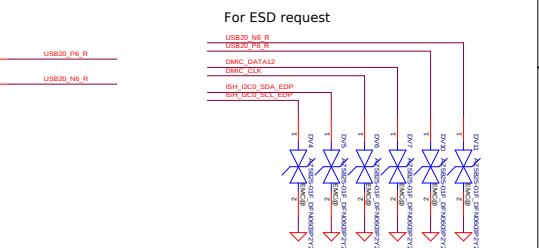
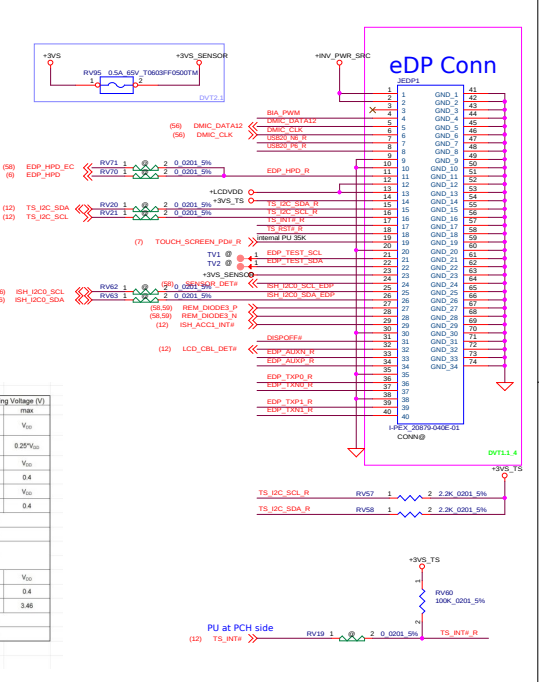
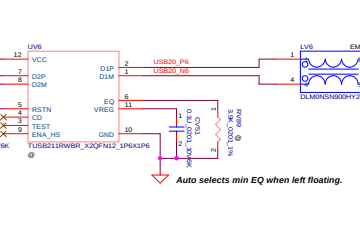
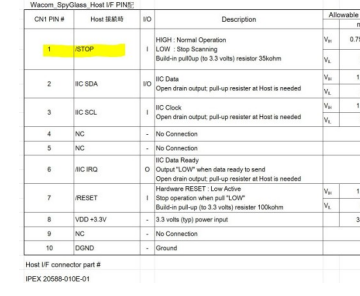
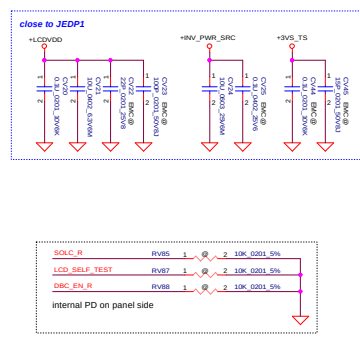
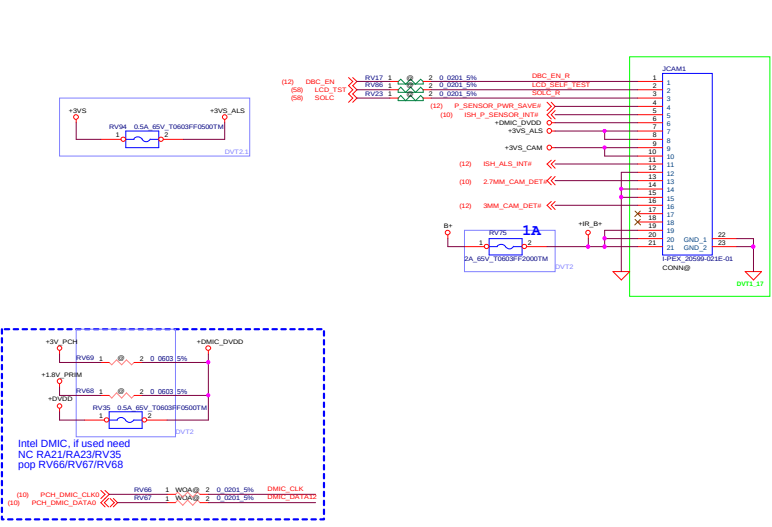
3.3V LCD Power



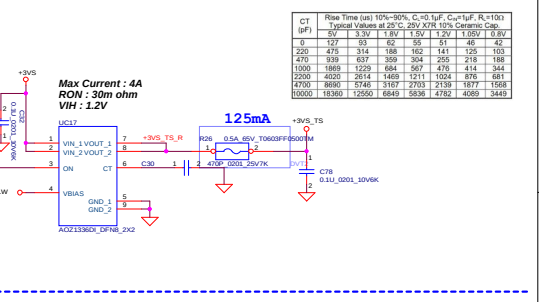
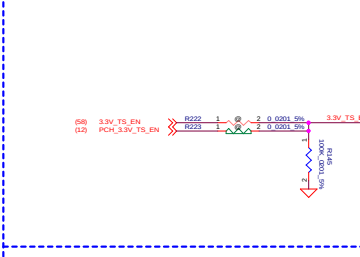
BackLight PWM Control



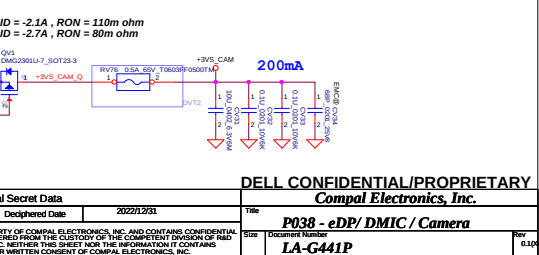
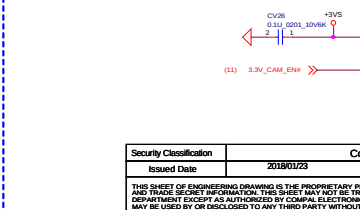
CAM CONN



3VS_TS



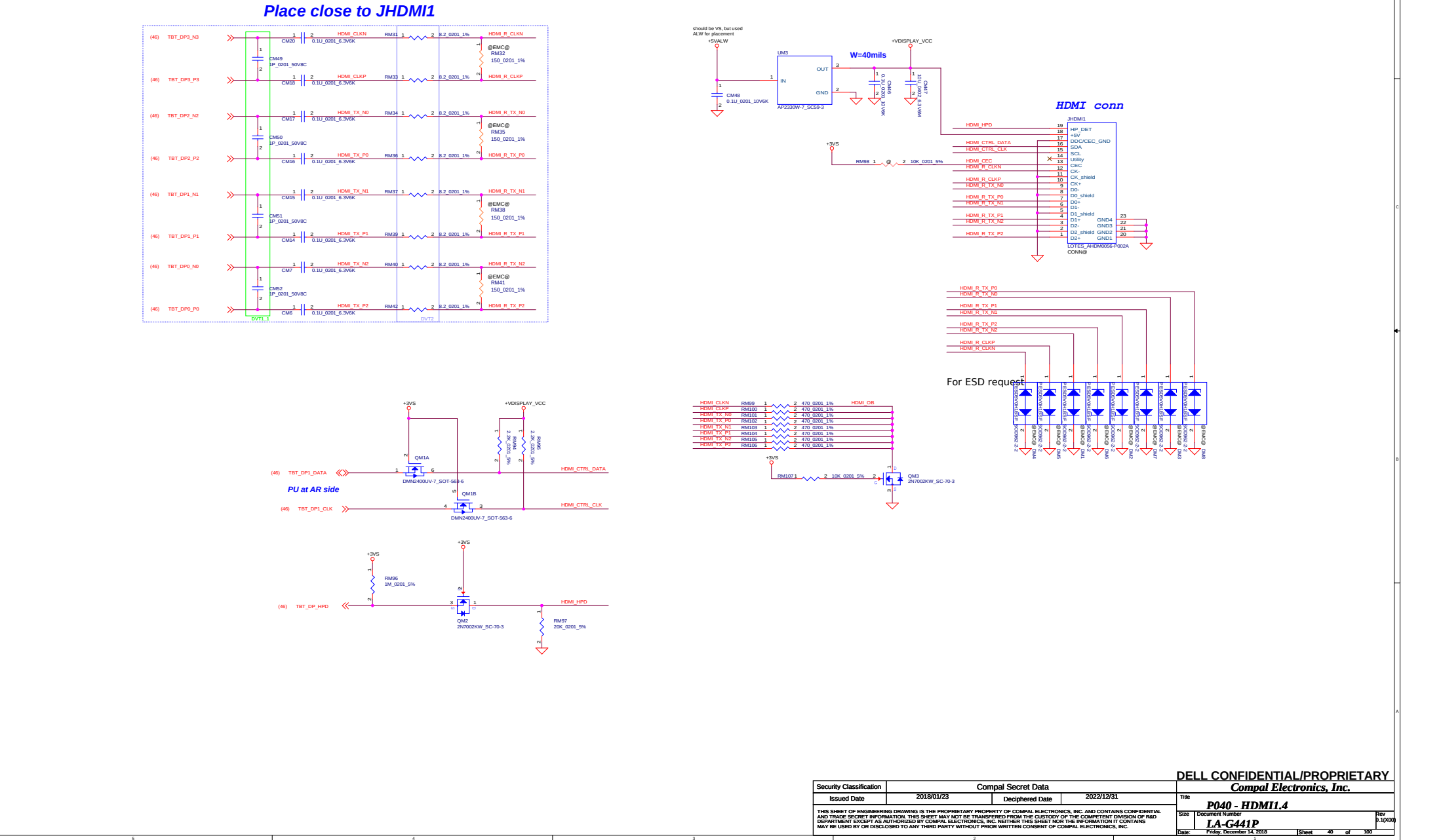
3VS_CAM





Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		Deciphered Date		Title	
2018/01/23		2022/12/31		P039 - Reserve	
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 TRANSFERRED 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	Document Number
				Date	Rev
				Friday, December 14, 2018	LA-G441P
				Sheet 39 of 100	0.1(X00)

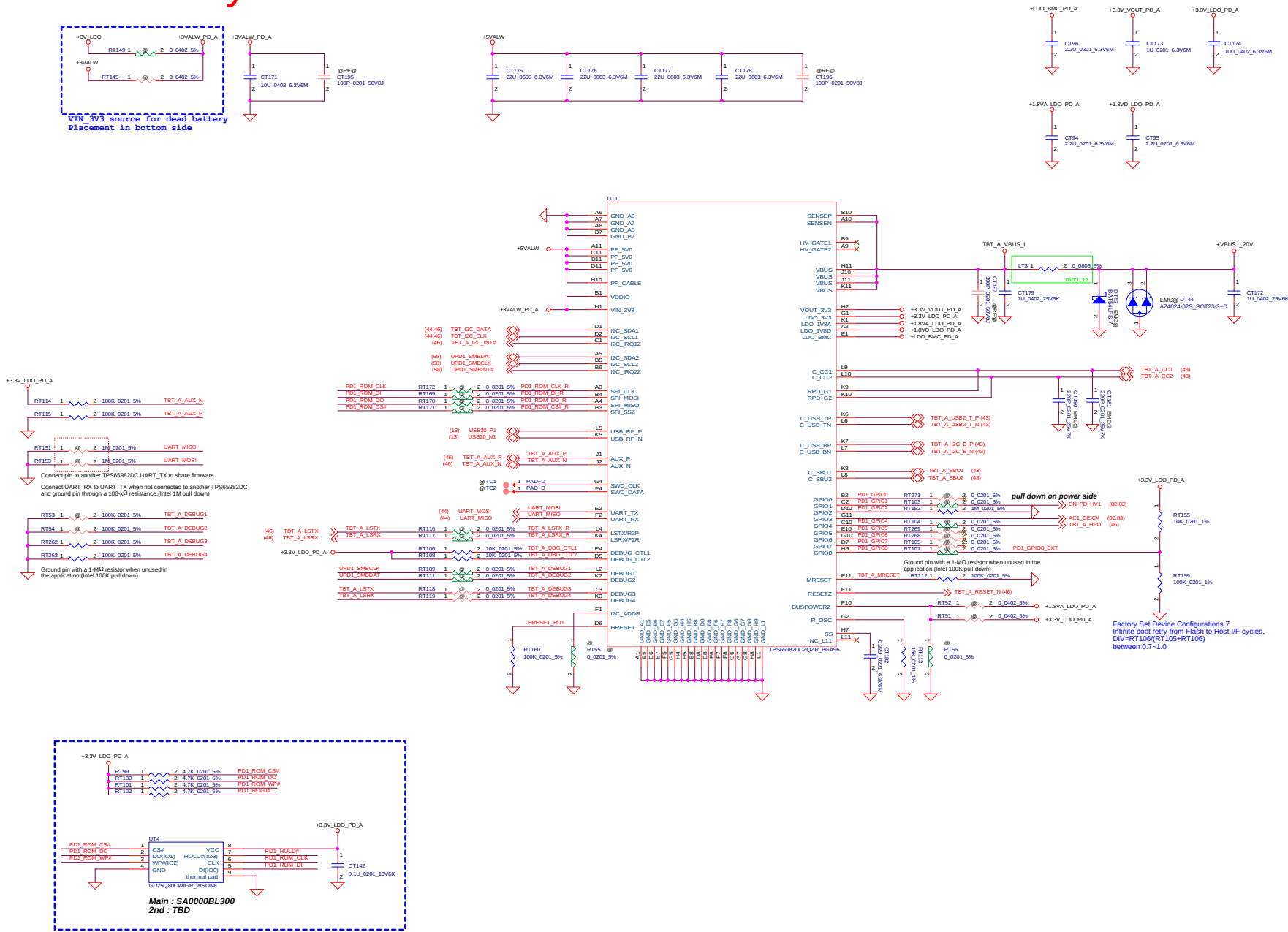
Follow Kirkwood design





Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		2018/01/23	Deciphered Date	2022/12/31	
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 TRANSFERRED 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.		Title		Compal Electronics, Inc.	
Size		Document Number			Rev
Date:		Friday, December 14, 2018			0.1(X00)
Sheet		41		of	100

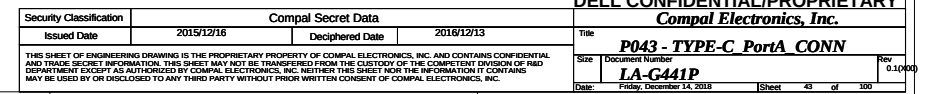
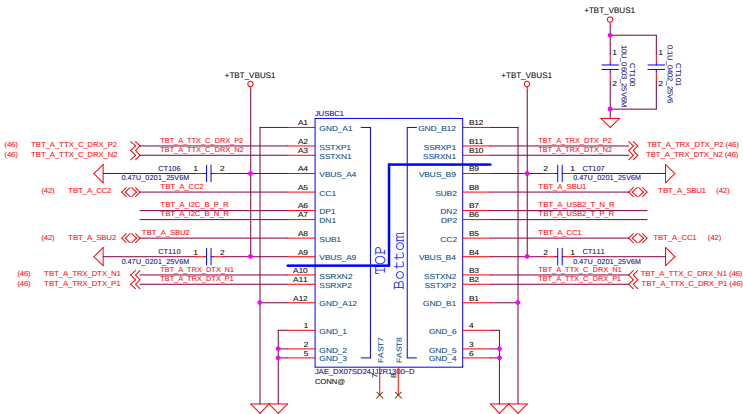
Check done by vendor on 0323



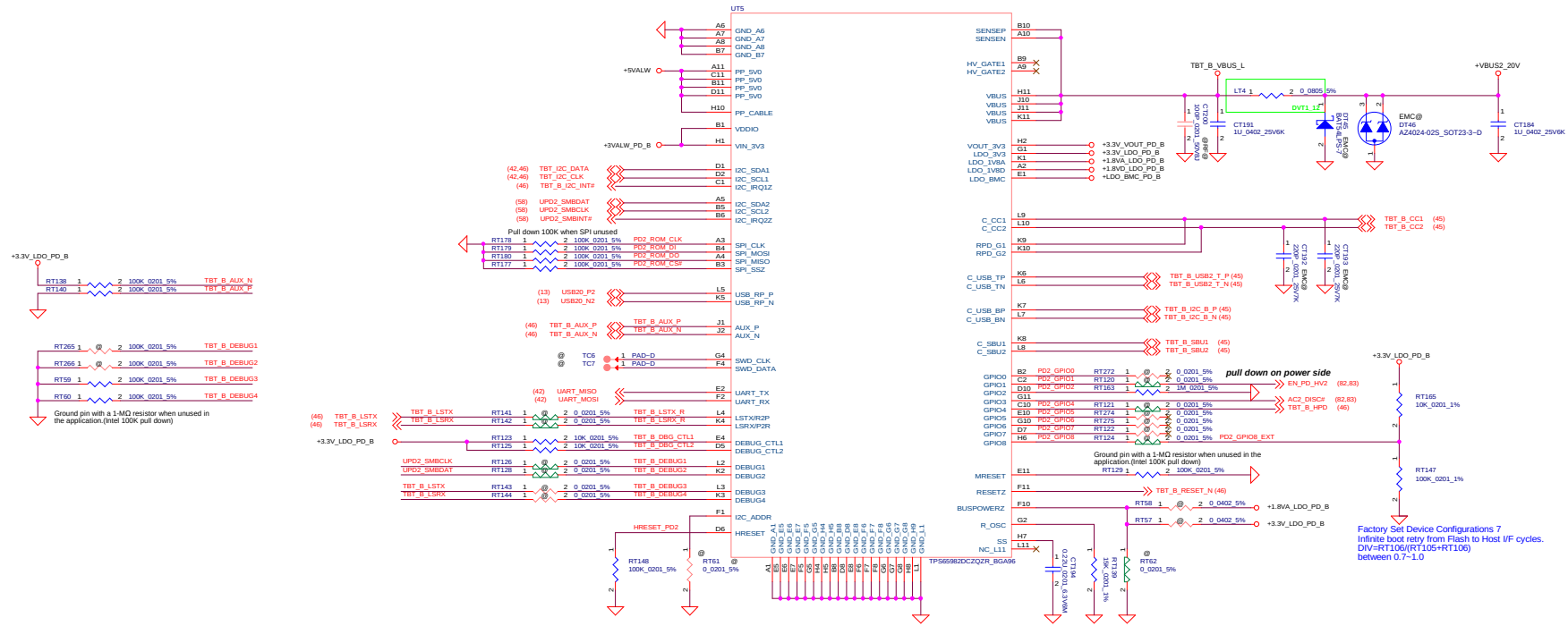
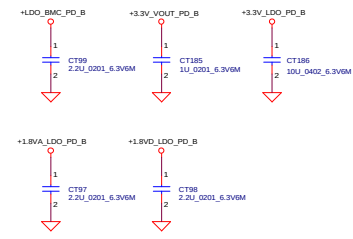
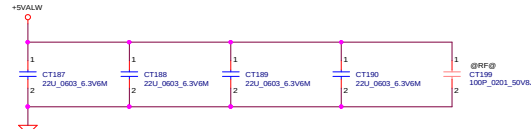
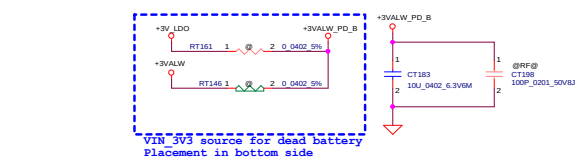
USB Type-C Receptacle Interface (Front View)

Pin	Function
Pin1	A1
	A2
	A3
	A4
	A5
	A6
	A7
	A8
	A9
	A10
	A11
Pin12	A12
	GND
	TX1+ TX1-
	VBUS
	CC1
	D+
	D-
	SBU1
	VBUS
	RX2-
	RX2+ GND
	GND
	RX1+ RX1-
	VBUS
	SBU2
	D-
	D+
	CC2
	VBUS
	TX2-
	TX2+ GND
Pin24	B12
	B11
	B10
	B9
	B8
	B7
	B6
	B5
	B4
	B3
	B2
	B1
Pin13	

Printed Circuit Board

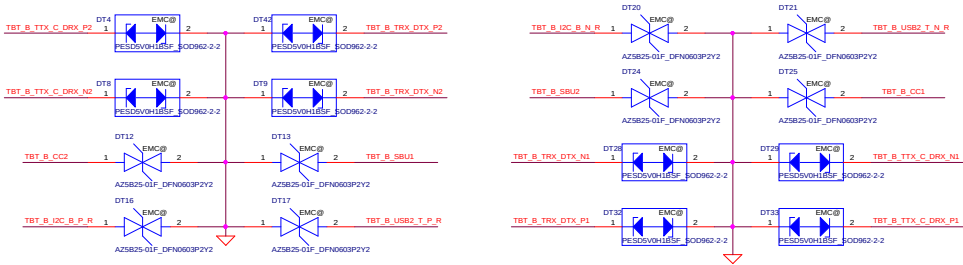
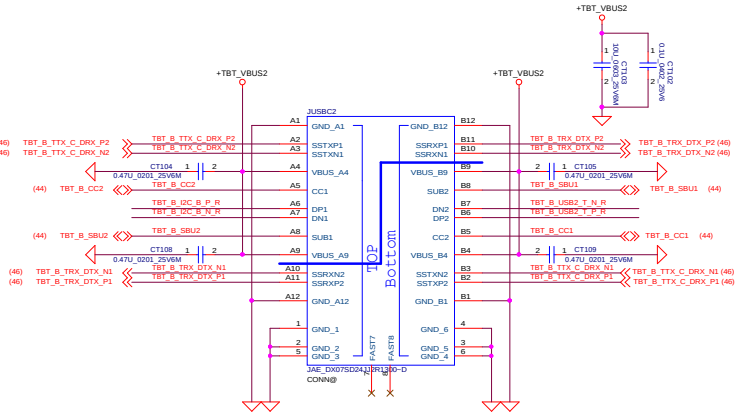
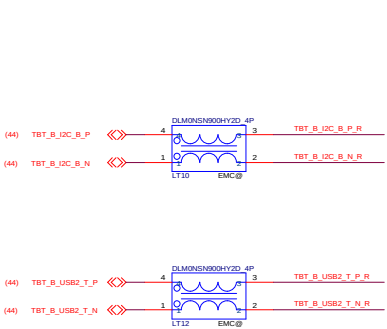
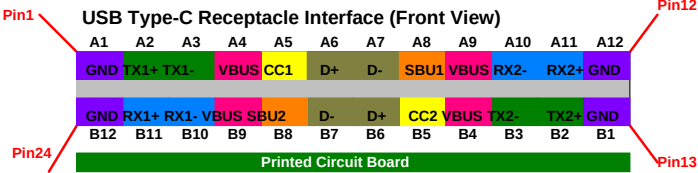


Check done by vendor on 0323

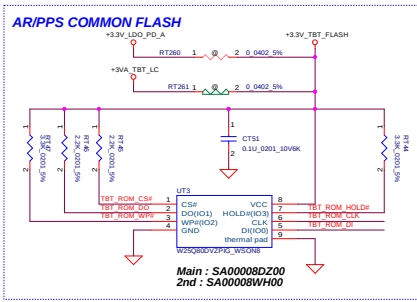
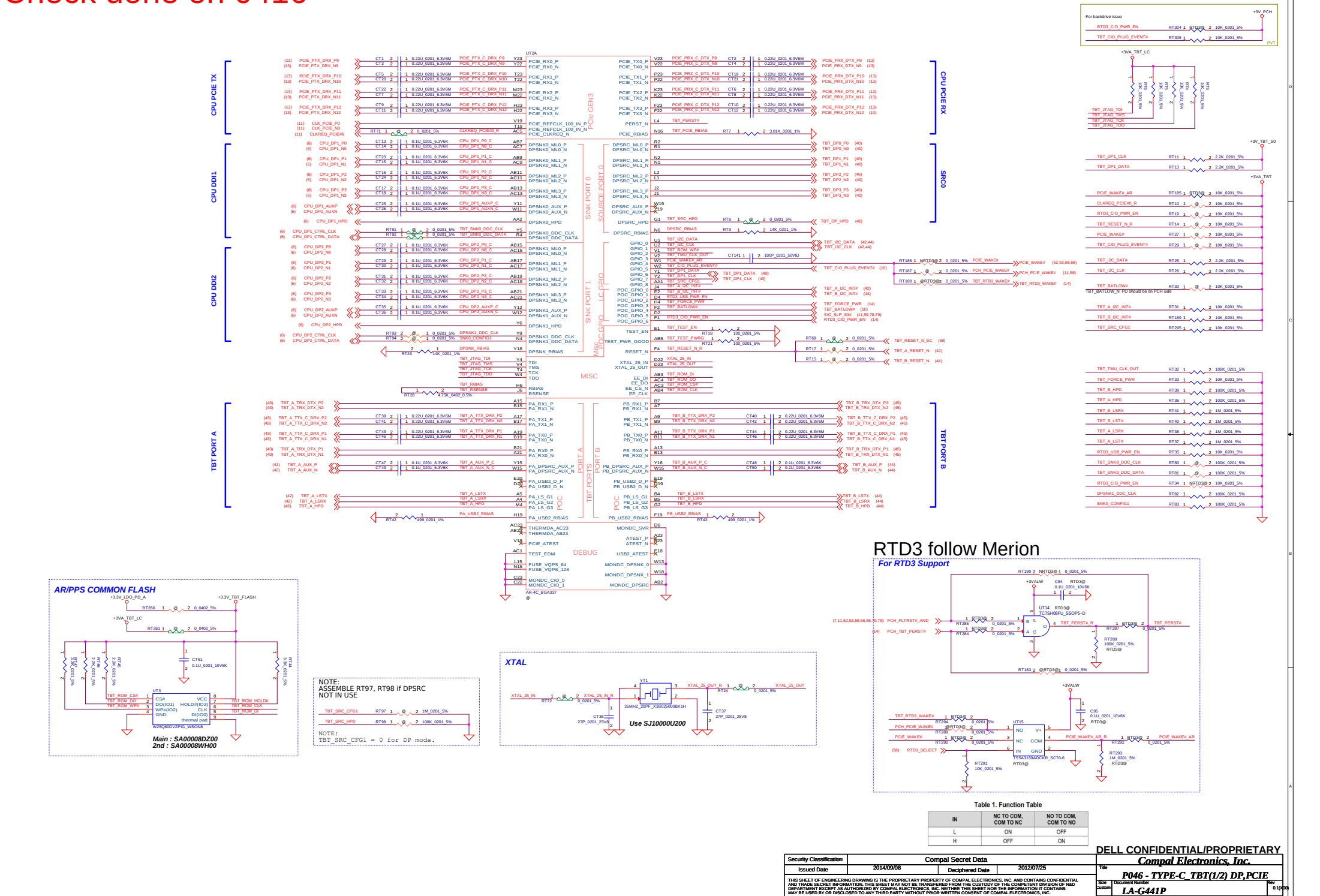


Security Classification	Compal Secret Data		ALL CONFIDENTIAL/PROPRIETARY Compal Electronics, Inc.	
Issued Date	2015/12/16	Deciphered Date	2018/12/13	Title: P044 - TYPE-C PortB PD Size / Document Number: LA-G441P Date: Friday, December 14, 2018
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MUST NOT BE REPRODUCED OR DISCLOSED TO THE COMPANY'S DIVISION OR THIRD 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.			Rev: 0.1(000) Sheet: 44 of 100	

Type-C Port-B

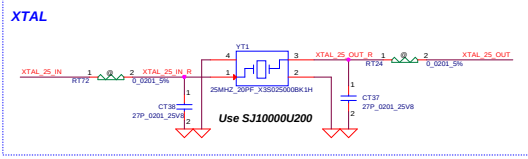


Check done on 0416



NOTE: ASSEMBLE RT97, RT98 IF DPSRC NOT IN USE

NOTE: TBT_SRC_CFG1 = 0 for DP mode.



RTD3 follow Merion

For RTD3 Support

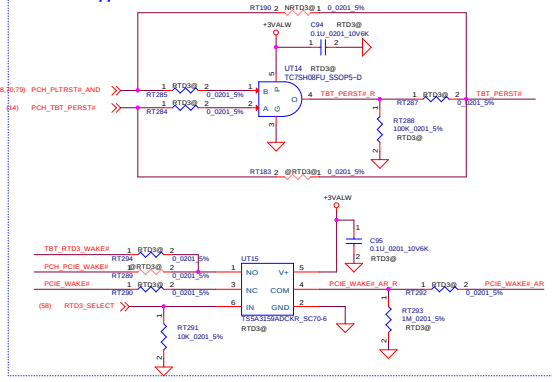
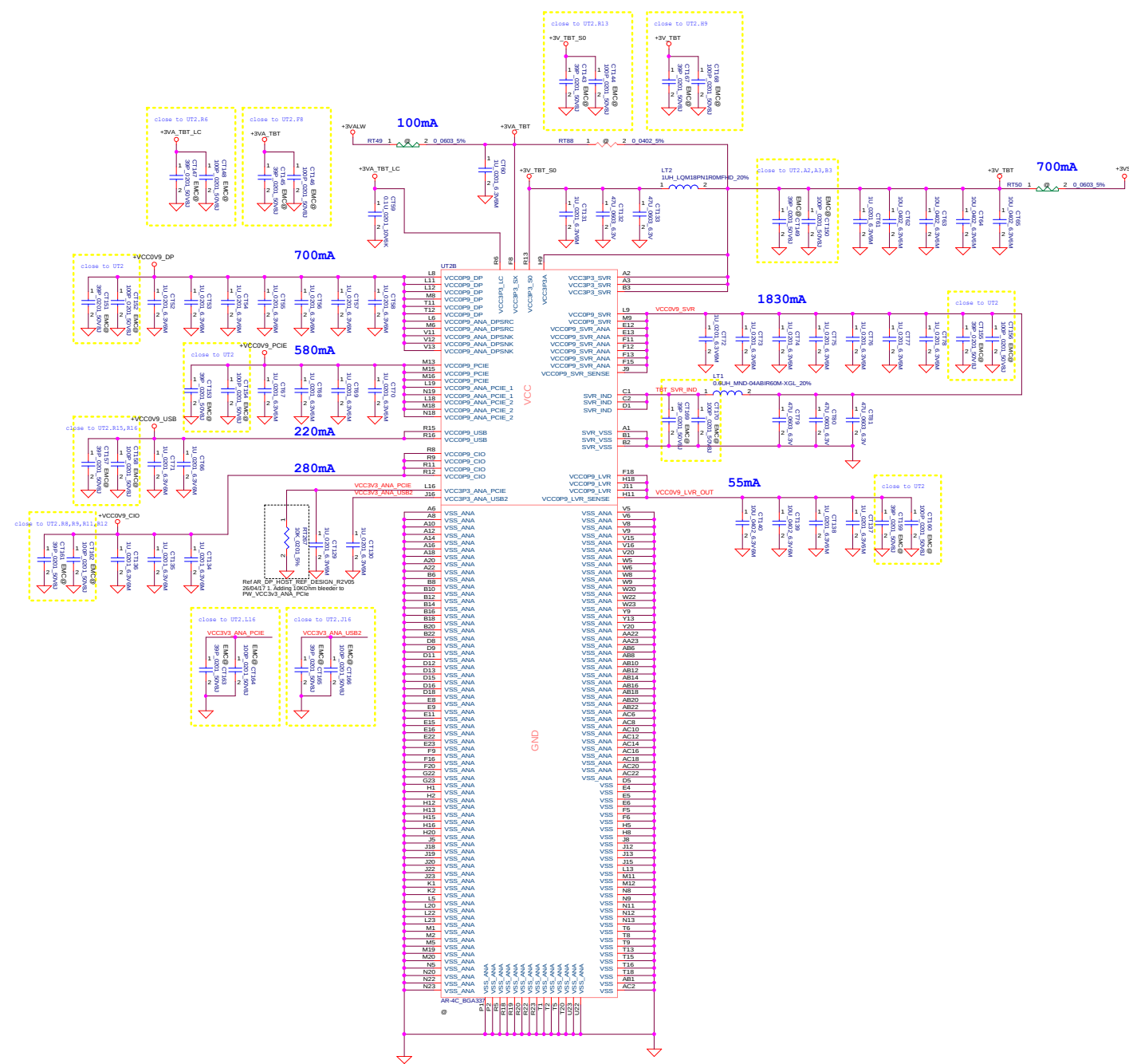


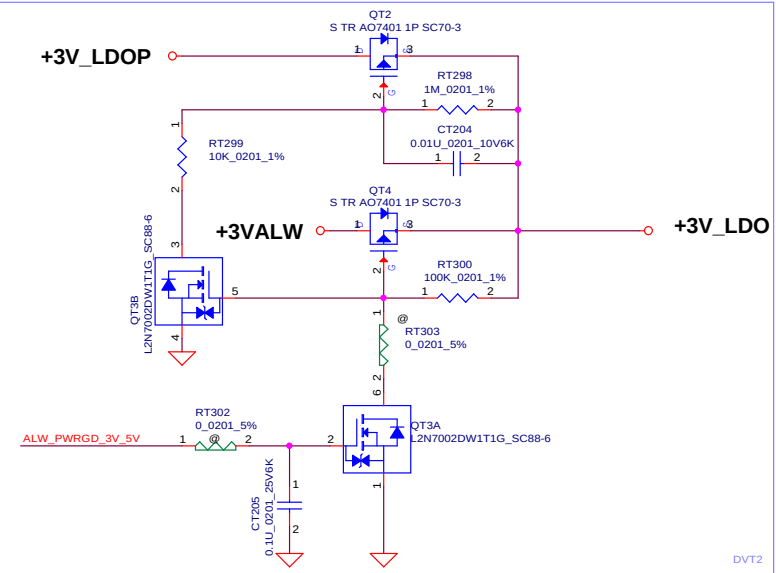
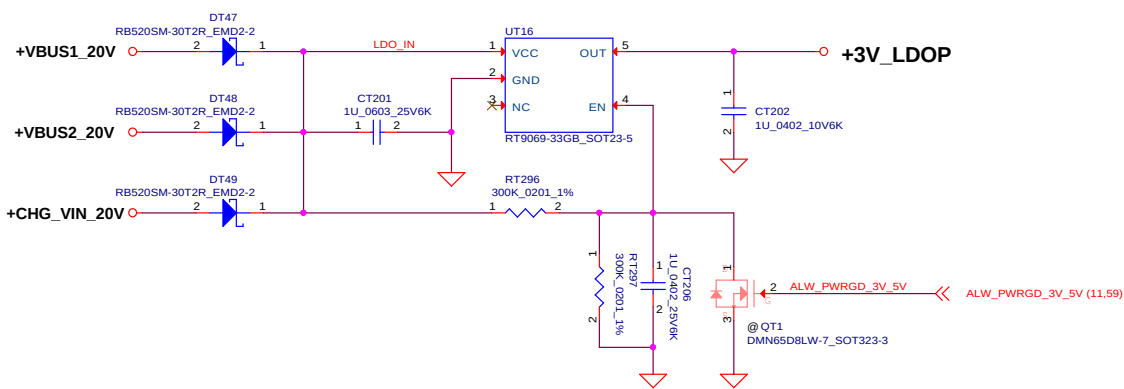
Table 1. Function Table

IN	NC TO COM, COM TO NC	NO TO COM, COM TO NO
L	ON	OFF
H	OFF	ON

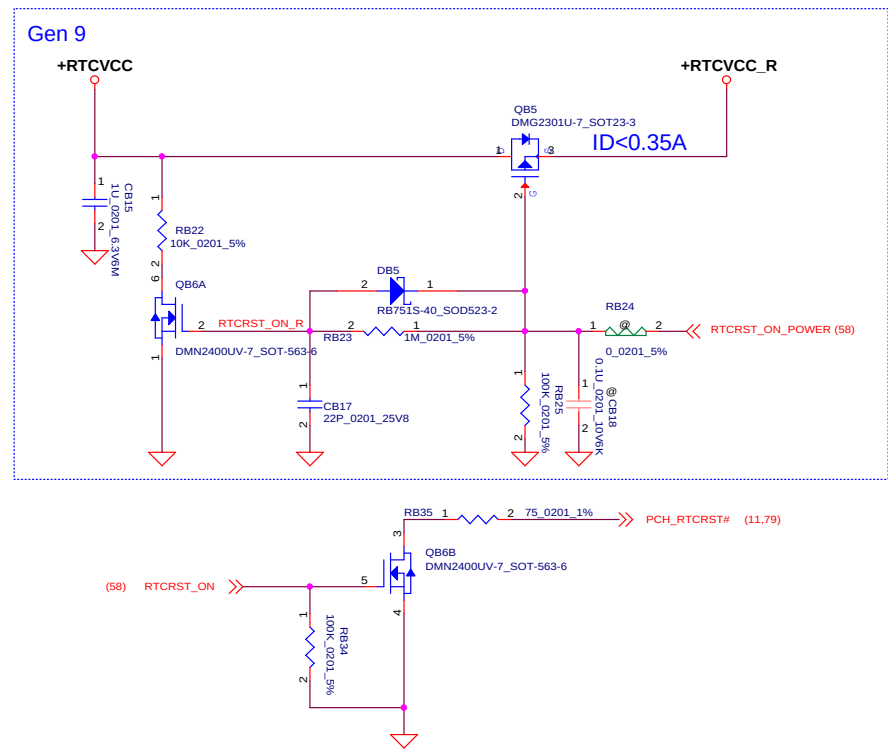
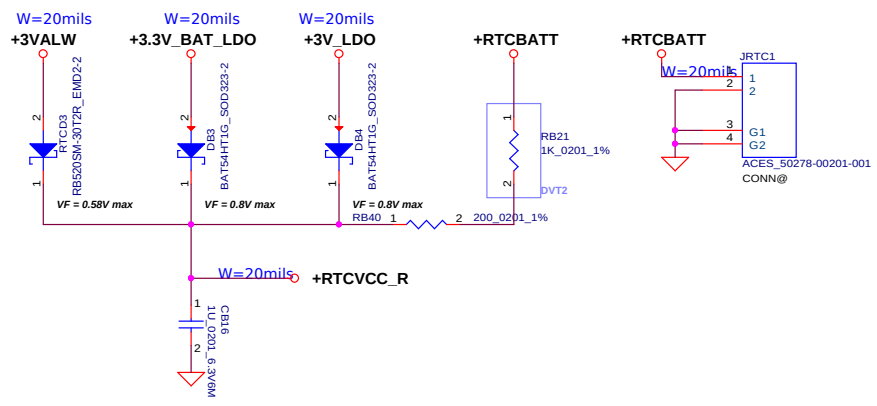
Check done on 0416



3V_LDO power



RTC



<http://www.repair1.ru/>

Security Classification				Compal Secret Data				DELL CONFIDENTIAL/PROPRIETARY			
Issued Date				Deciphered Date				Compal Electronics, Inc.			
2018/01/23				2022/12/31				Title			
								P048 - TYPE-C_PD LDO/RTC			
								Size			
								Document Number			
								LA-G441P			
								Rev			
								0.1(X00)			
								Date			
								Friday, December 14, 2018			
								Sheet			
								48 of 100			



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		Deciphered Date		Title	
2018/01/23		2022/12/31		P049 - Reserve	
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 TRANSFERRED 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	Document Number
				LA-G441P	
Date: Friday, December 14, 2018				Sheet	49 of 100
				Rev	0.1(X00)

1

1

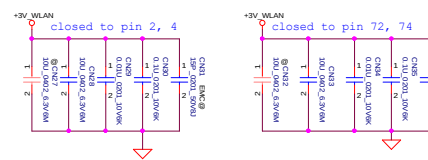
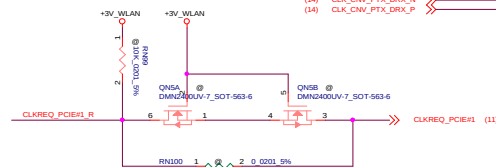
1

1

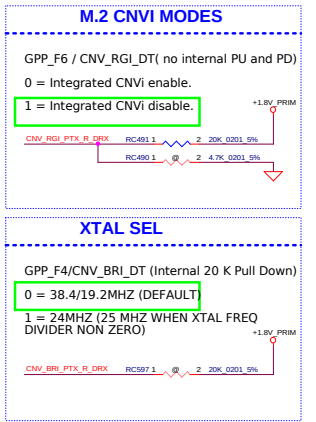
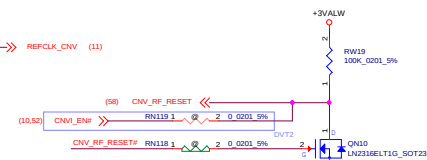
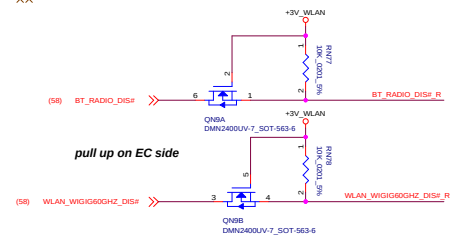
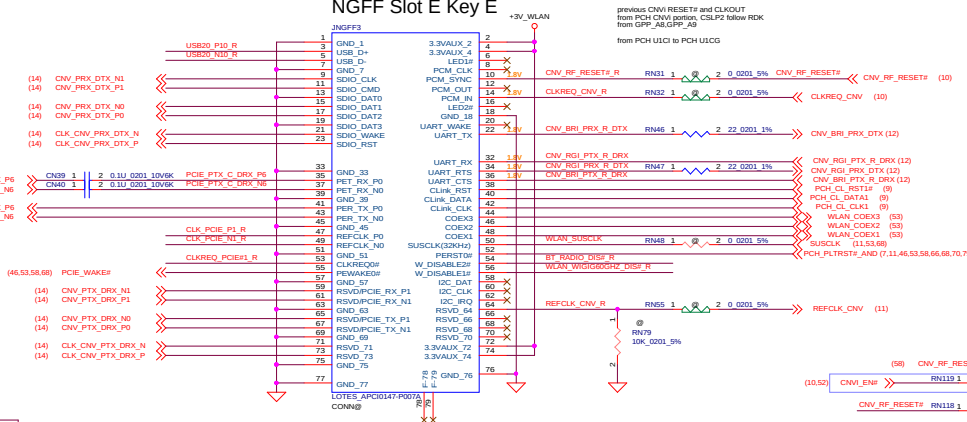
Security Classification		Compal Secret Data		Title	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	P050 - Reserve Compal Electronics, Inc.	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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	Document Number LA-G441P
				Date:	Friday, December 14, 2018 Sheet 50 of 100



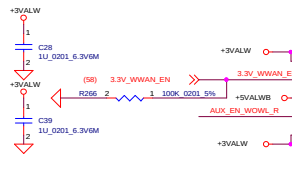
Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		Deciphered Date		Title	
2018/01/23		2022/12/31		P051 - Reserve	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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	Document Number
				LA-G441P	
Date: Friday, December 14, 2018				Sheet	Rev
				1	0.1(X00)
				51	
				of	
				100	



Wireless LAN
NGFF Slot E Key E

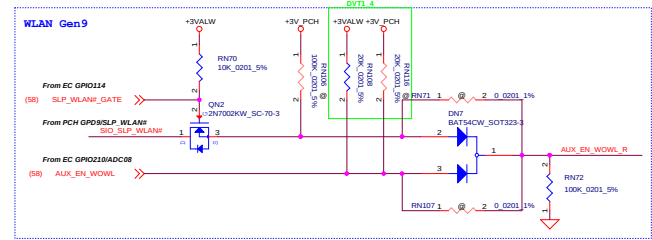
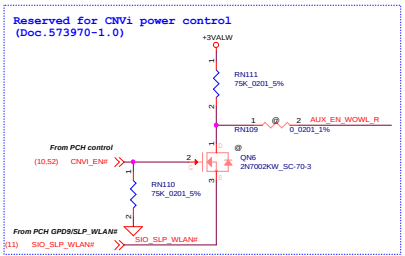
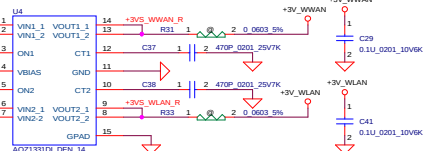


3V_WWAN & 3V_WLAN



C _{TX} (pF)	Rise Time (μs) 10%-90%, C _{IX} =0.1pF, C _{PKX} =1μF, R _{OX} =10Ω							
	Typical Values at 25°C, 25V X7R 10% Ceramic Cap							
	V _{OX} =5V	3.3V	1.8V	1.5V	1.2V	1.05V	0.8V	
0	85	68	49	45	40	37	34	
220	431	297	172	147	122	106	89	
470	888	583	332	269	218	189	161	
1000	1700	1130	657	550	446	390	316	
2200	3805	2534	1347	1152	966	867	701	
4700	8053	5255	2997	2578	2101	1838	1483	
10000	18330	12050	5545	5545	4155	4155	3229	

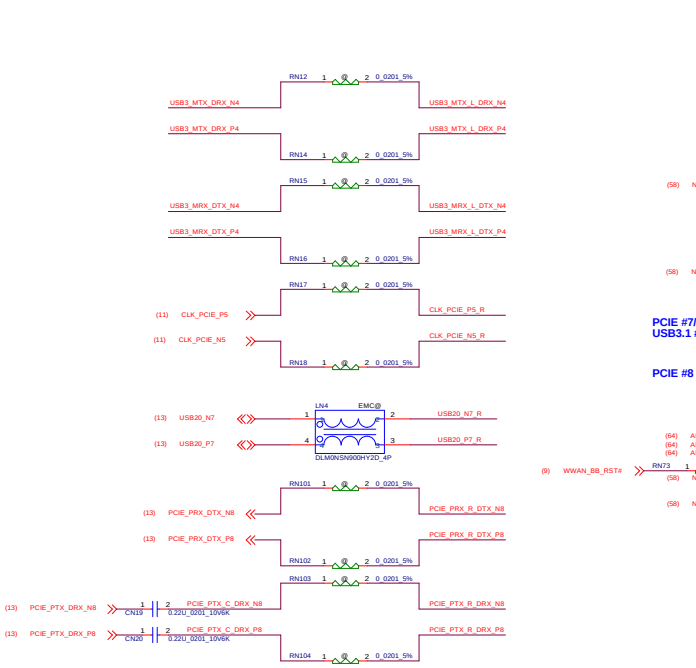
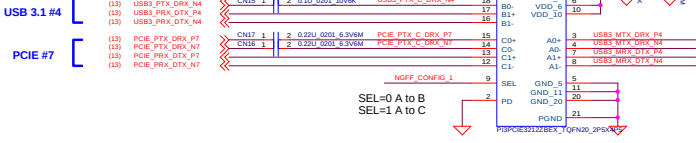
Max Current : 6A
RON : 20m ohm
VIH : 1.2V



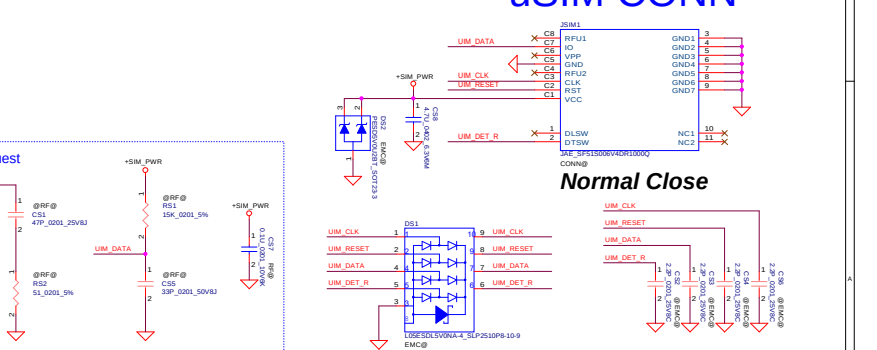
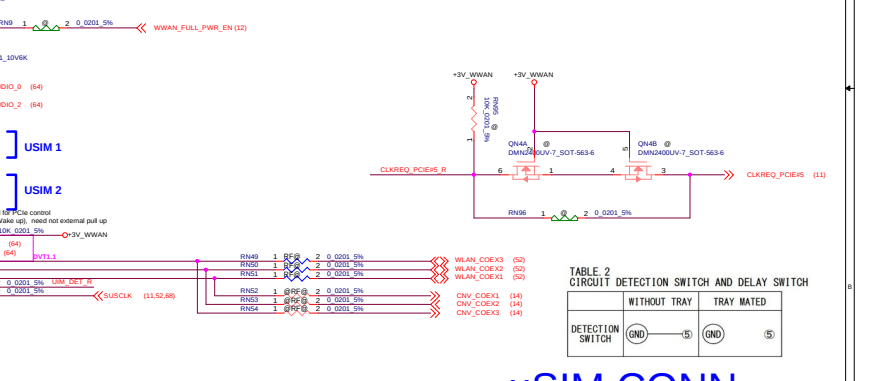
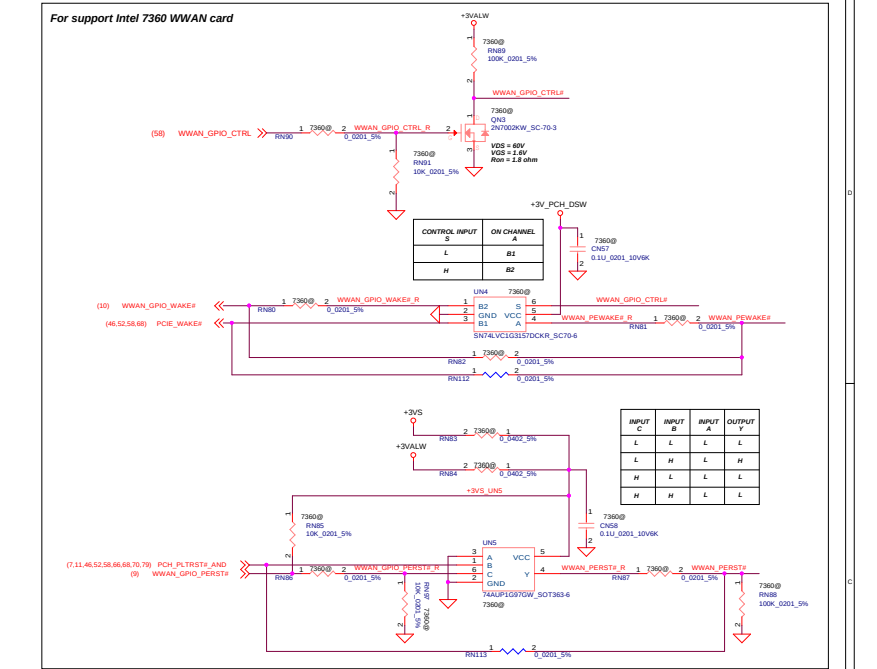
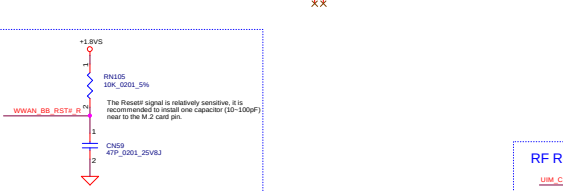
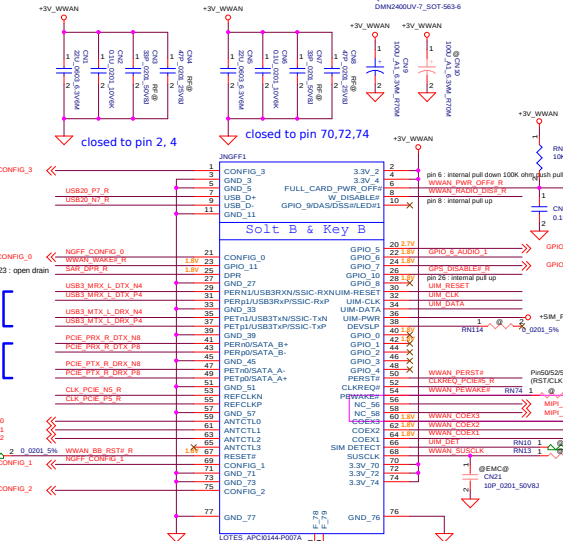
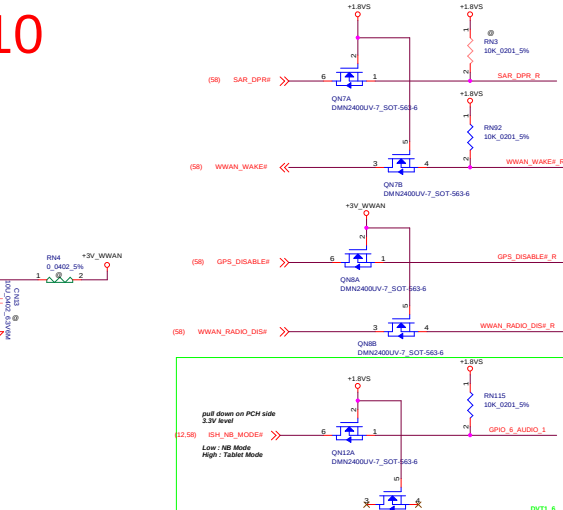
Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		Deciphered Date		Title P052 - WLAN/BT (w/ CNVt)	
2018/01/23		2022/12/31		Size Document Number 1A-441P	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OR R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. IN WRITING. THIS SHEET NOB THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Date Fri, December 14, 2018	
				Sheet 52 of 100	

Check done by vendor on 0410

PCIe/USB 3.0 Mux



State#	CONFIG 0	CONFIG 1	CONFIG 2	CONFIG 3	Module Type	Port Configuration
	(Pin 21)	(Pin 69)	(Pin 75)	(Pin 1)		
0	GND	GND	GND	GND	SSD - SATA	N/A
1	GND	HIGH	GND	GND	SSD - PCIe	N/A
2	GND	GND	HIGH	GND	WWAN - PCIe	0
3	GND	HIGH	GND	GND	WWAN - PCIe	1
4	GND	GND	GND	HIGH	WWAN - USB 3.0	0
5	GND	HIGH	GND	HIGH	WWAN - USB 3.0	1
6	GND	GND	HIGH	HIGH	WWAN - USB 3.0	2
7	GND	HIGH	HIGH	HIGH	WWAN - USB 3.0	3
8	HIGH	GND	GND	GND	WWAN - SSIC	0
9	HIGH	HIGH	GND	GND	WWAN - SSIC	1
10	HIGH	GND	HIGH	GND	WWAN - SSIC	2
11	HIGH	HIGH	HIGH	GND	WWAN - SSIC	3
12	HIGH	GND	GND	HIGH	WWAN - PCIe	2
13	HIGH	GND	GND	HIGH	WWAN - PCIe	3
14	HIGH	GND	HIGH	HIGH	DDP/HCA - PCIe	N/A
15	HIGH	HIGH	HIGH	HIGH	No Module	N/A



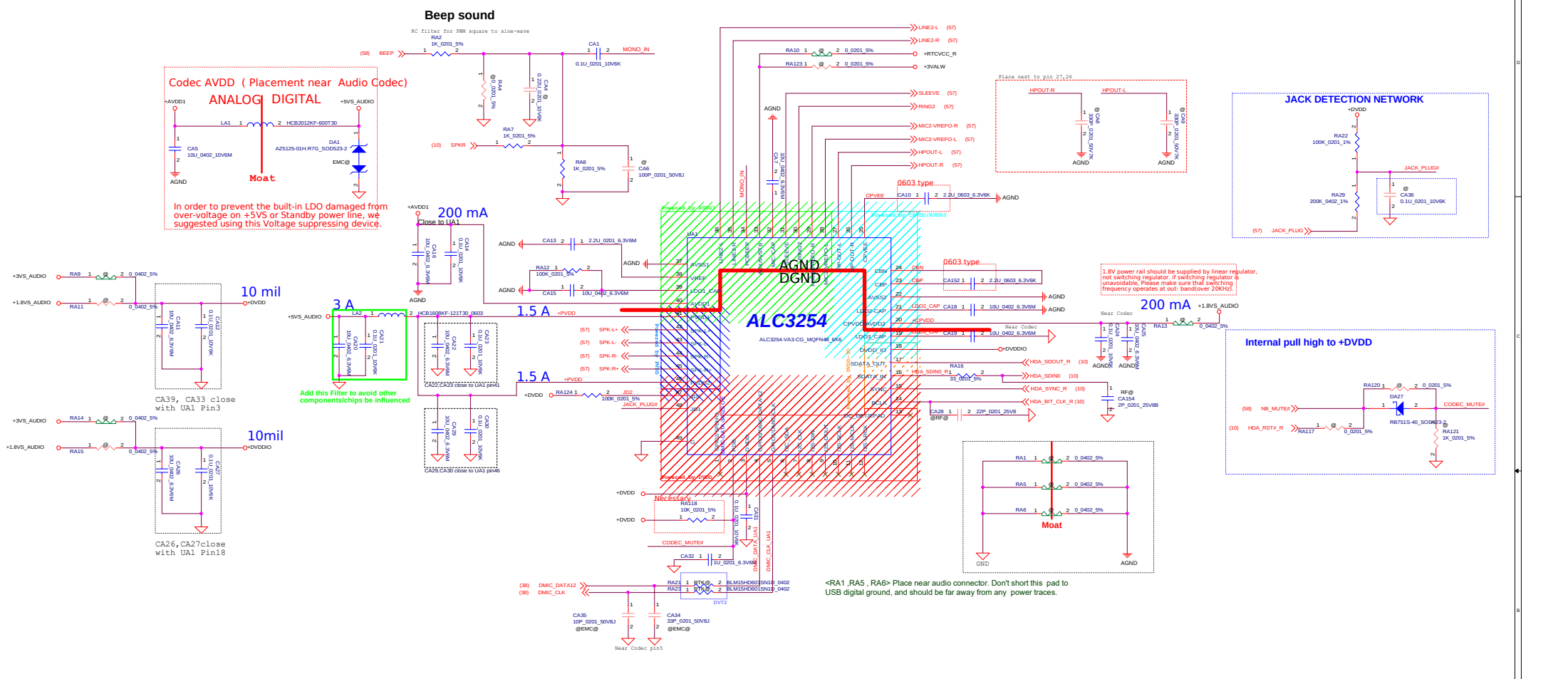


Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY							
Issued Date		2018/01/23	Deciphered Date	2022/12/31	Compal Electronics, Inc.						
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.</small>				Title							
				P054 - Reserve							
				Size	Document Number						
				LA-G441P							
				Date	Friday, December 14, 2018	Sheet	54	of	100	Rev	0.1(X00)

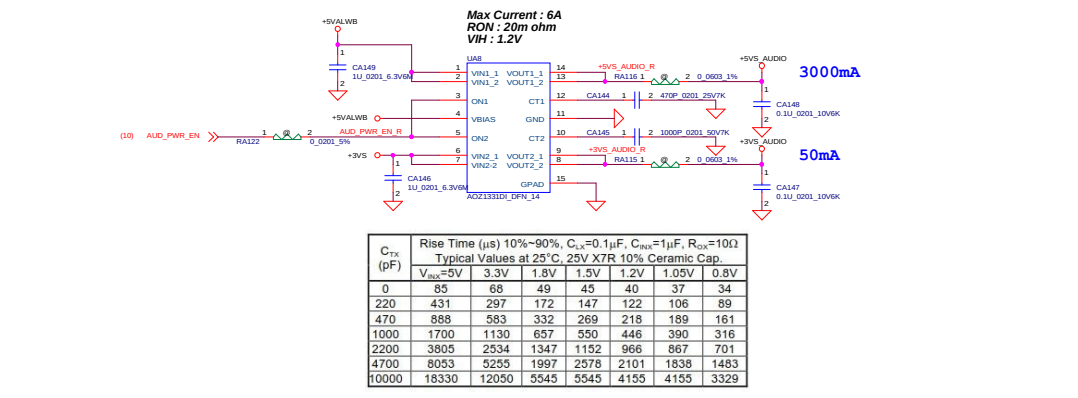


Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P055 - Reserve	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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	Document Number LA-G441P
				Date	Friday, December 14, 2018

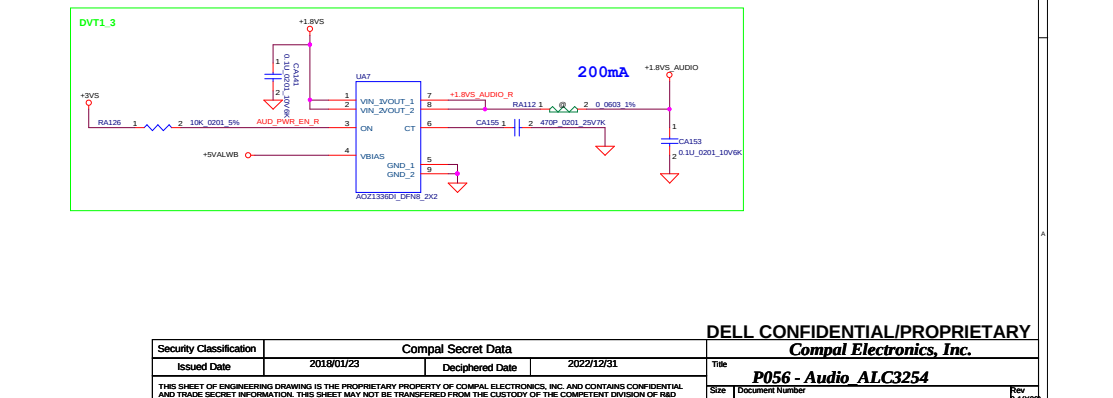
Check done by vendor on 0309



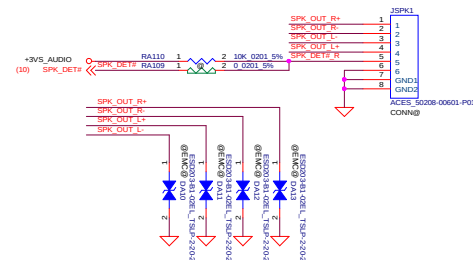
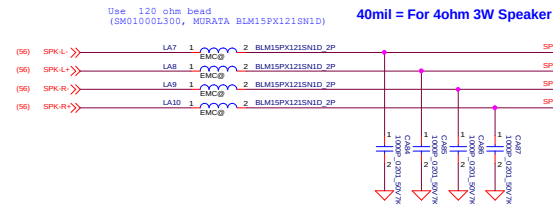
5VS_AUDIO & 3VS_AUDIO



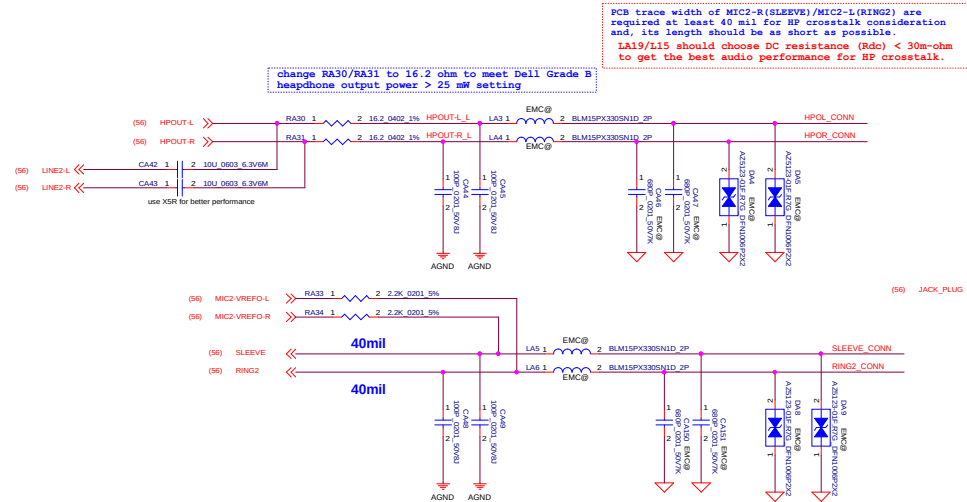
1.8VS_AUDIO



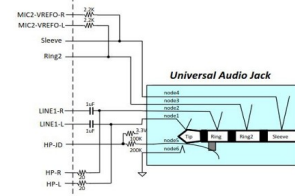
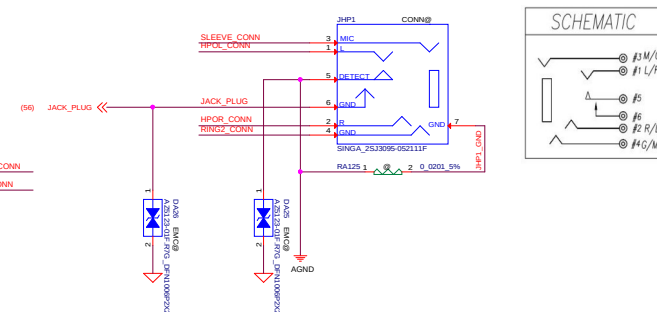
Int. Speaker Conn.



Universal Audio Jack



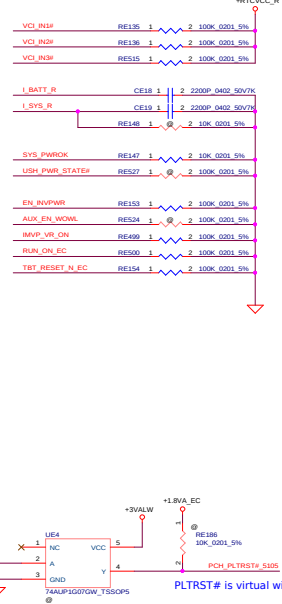
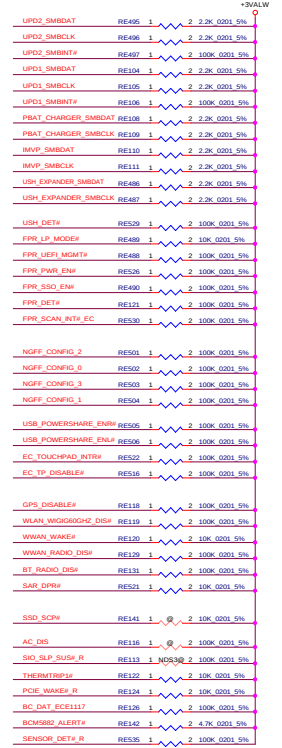
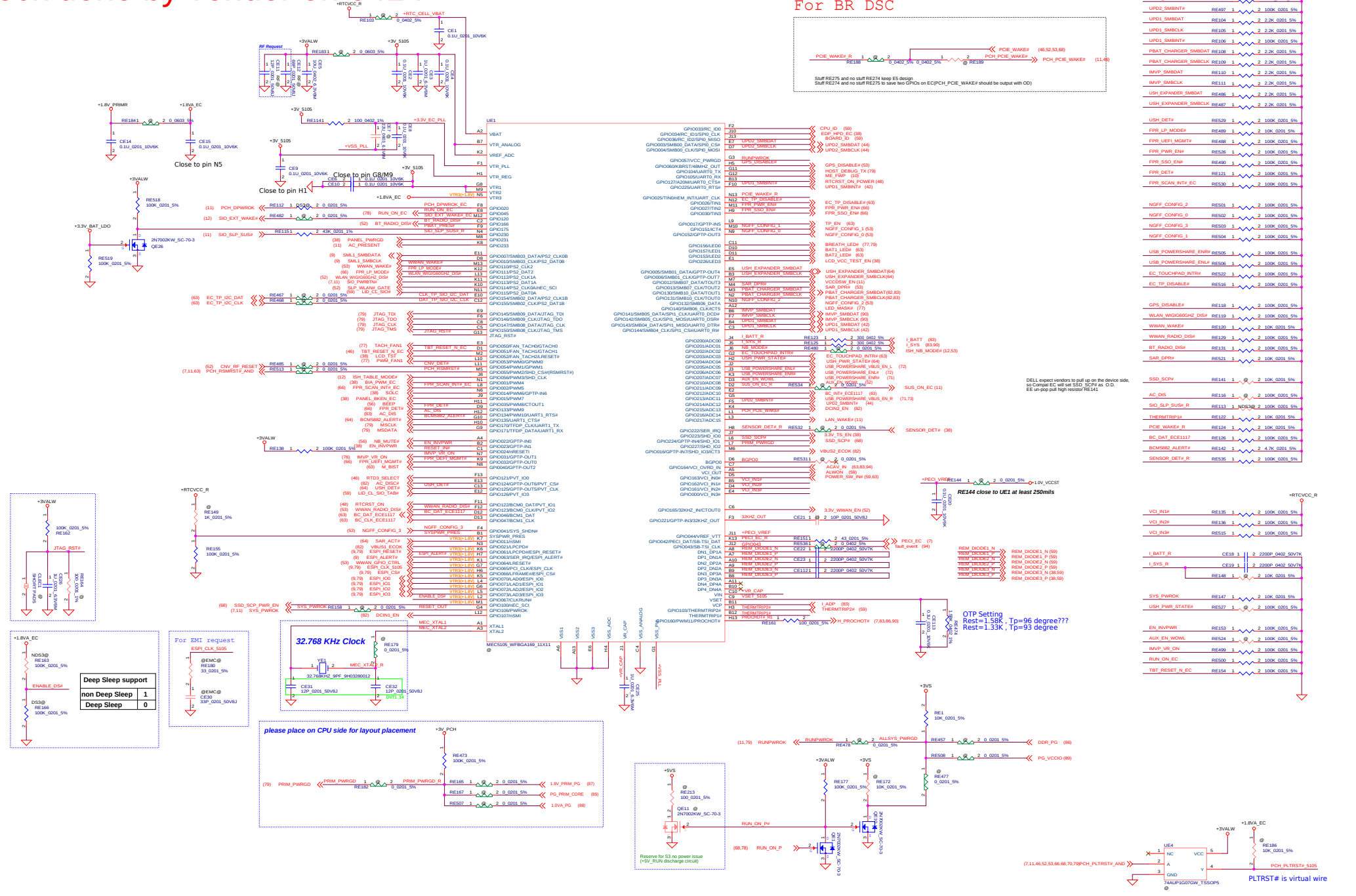
Analog Connector and Device

**Universal Audio Jack CONN**

Security Classification		Compel Secret Data		ALL CONFIDENTIAL/PROPRIETARY Compel Electronics, Inc.	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title	P057 - Audio Jack/Speaker Site Document Number: IA-G441P New 0.10X00
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 TRANSMITTED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D TO ANY PARTNER OR SUPPLIER WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. THE INFORMATION CONTAINED HEREIN MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Date:	Friday, December 14, 2018 Sheet 57 of 100

Check done by vendor on 0424

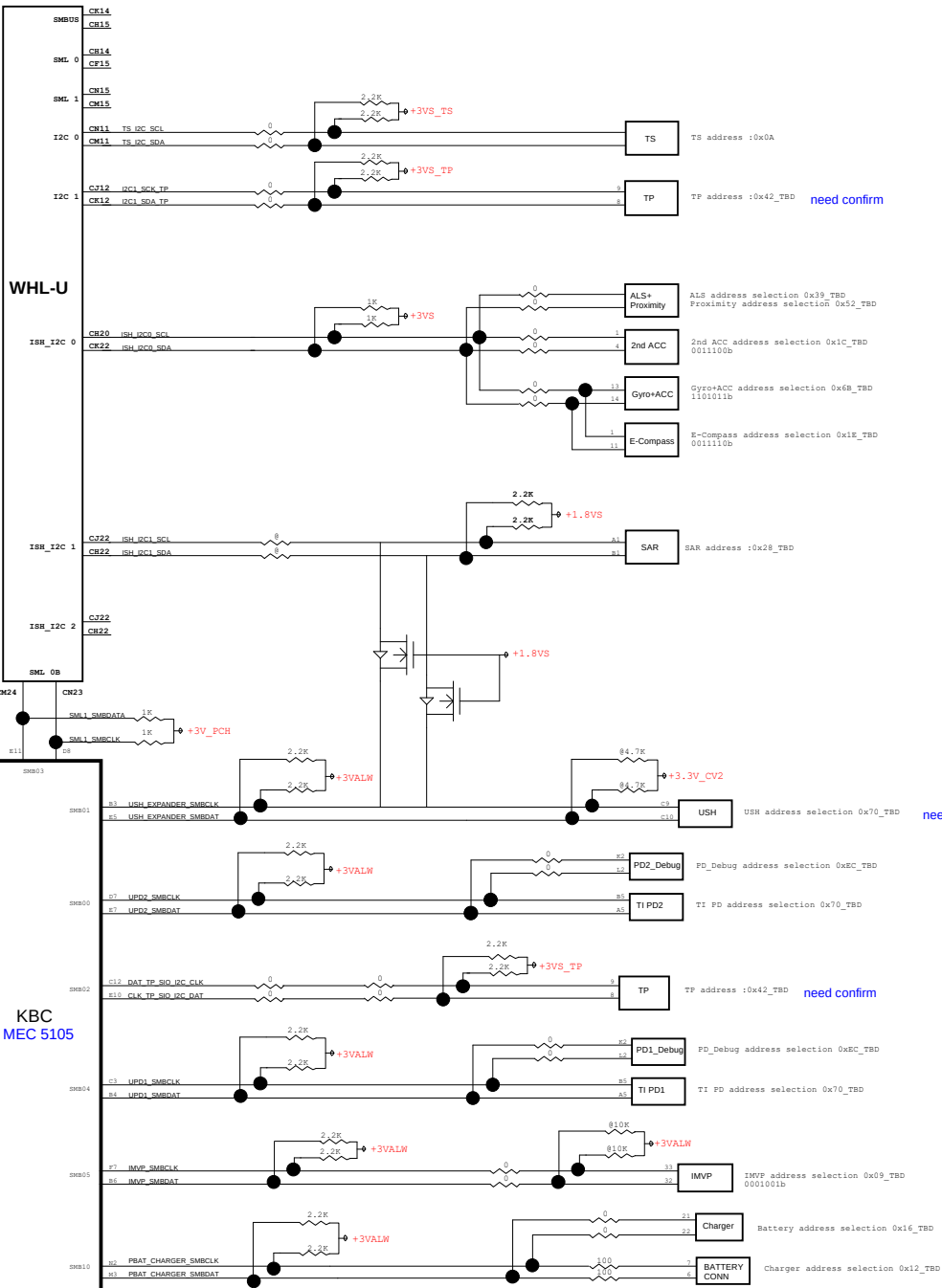
For BR DSC



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY					
Issued Date		Deciphered Date		Title					
2018/01/23		2022/12/31		Compal Electronics, Inc.					
<small>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 TRANSFERRED 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.</small>				Size		Document Number		Rev	
				1A-G441P		1-10000			
				Date: Friday, December 14, 2018		Sheet 60 of 100			

WHL-U

KBC
MEC 5105

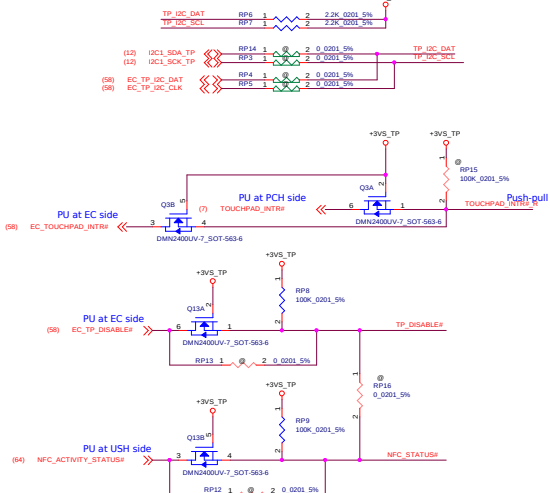


Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		2018/03/23	Designed Date		2022/12/01
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPETITIVE DIVISION OF HMD AND SHALL BE KEPT IN A SECURE LOCATION. ANY UNAUTHORIZED DISCLOSURE OF THIS INFORMATION TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. MAY BE SUBJECT TO LEGAL ACTION.				Ver	
				P061 - SMB/I2C Block Diagram	
				Site	010000
				Doc	LA-G441P
				Rev	110000



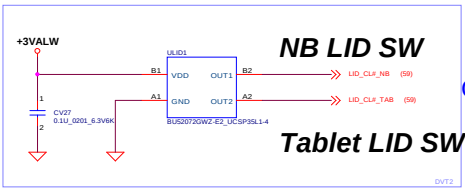
Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		2018/01/23	Deciphered Date	2022/12/31	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Compal Electronics, Inc.	
				P062 - Reserve	
				LA-G441P	
				Date: Friday, December 14, 2018	Rev 0.1(X00)
				Sheet 62 of 100	

Touch Pad CONN



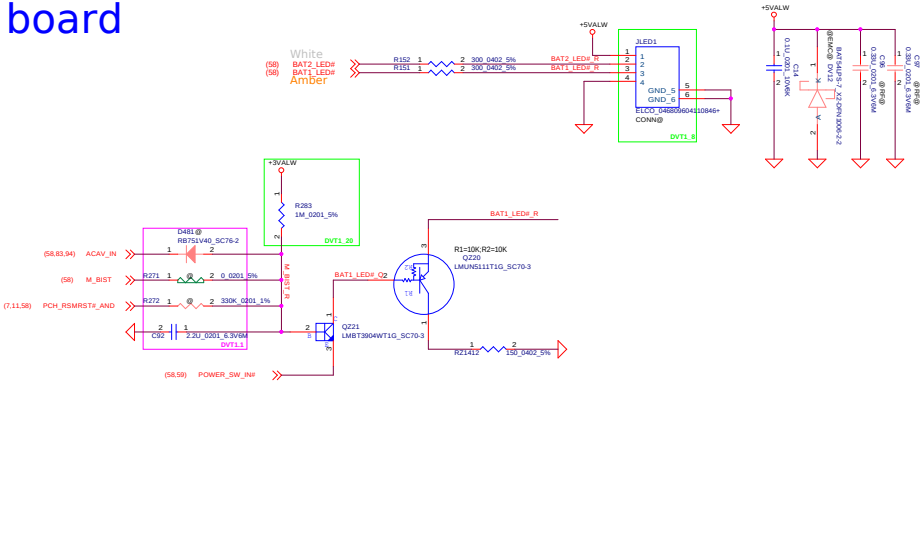
Pin No.	Definition	Description
1	Vdd (+3.3V D.C)	3.3V D.C
2	I2C SDA	Bidirectional, open drain without pull-up
3	I2C SCL	Bidirectional, open drain without pull-up
4	GND	Signal ground
5	I2C Int.	Output, push-pull
6	Disable#	refer behavioral spec in later page
7	(P5/2-DATA) NFC Status	refer behavioral spec in later page
8	(P5/2-CLK) N.C	No connection
9	NFC-signal	refer behavioral spec in later page
10	N-C	

Hall Sensor (LID switch)

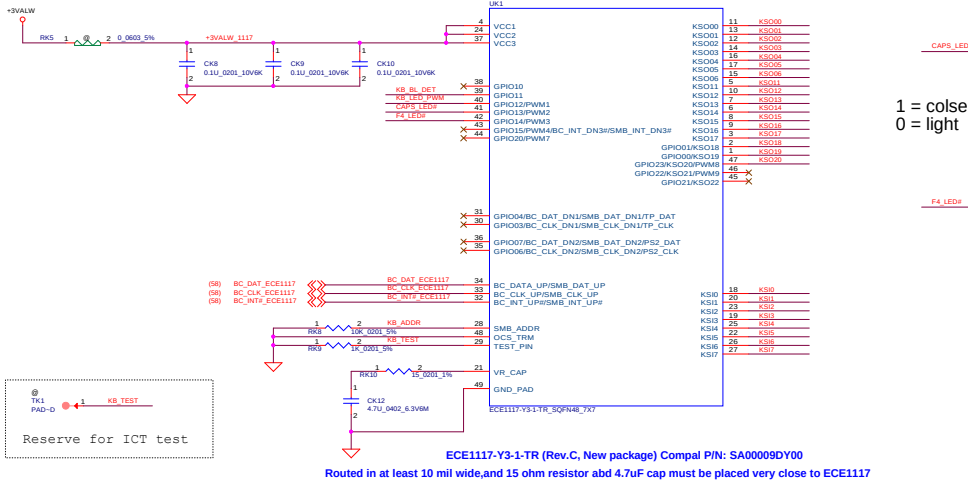


Output is P.P. type

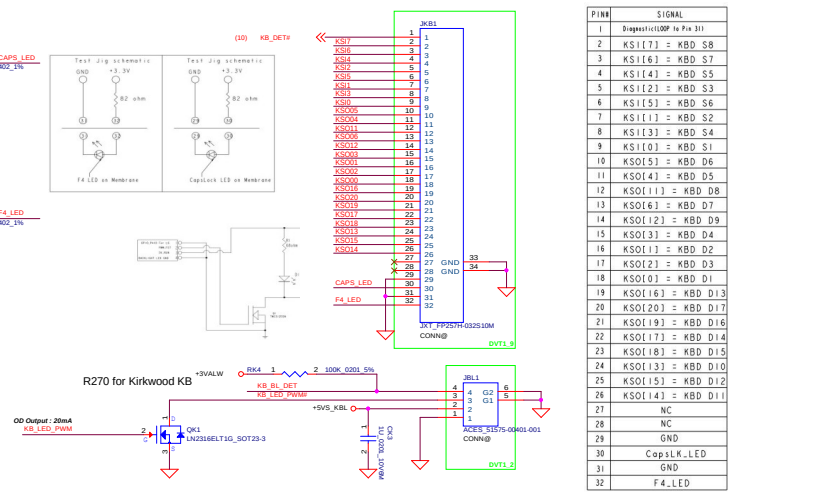
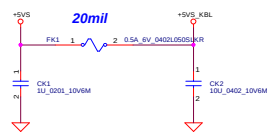
LED board



KB control & KB conn & Backlight



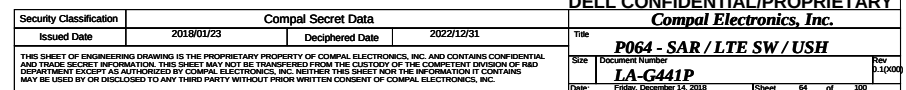
Fuse for Backlight



check with RF on 0918

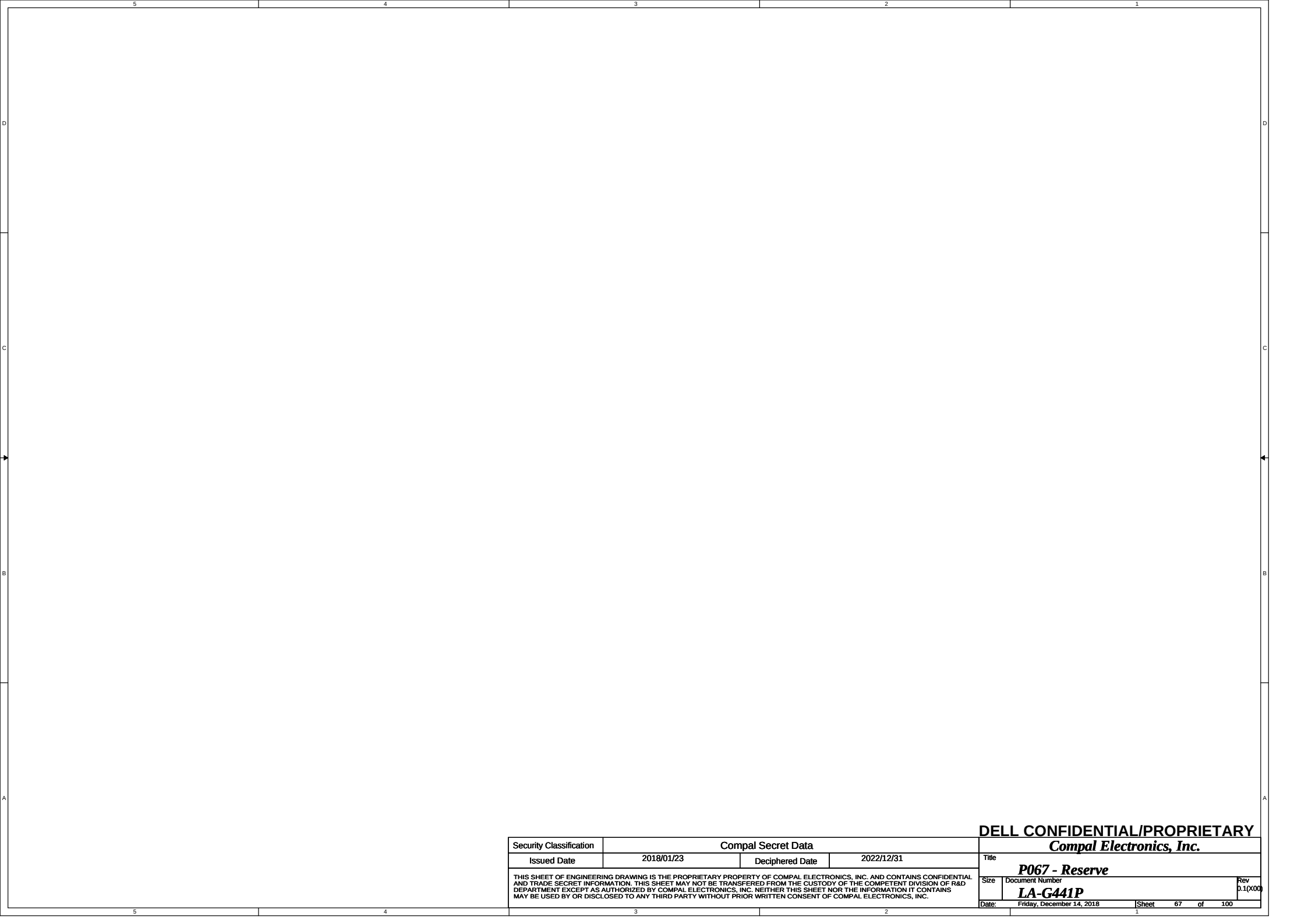


check with RF on 0213

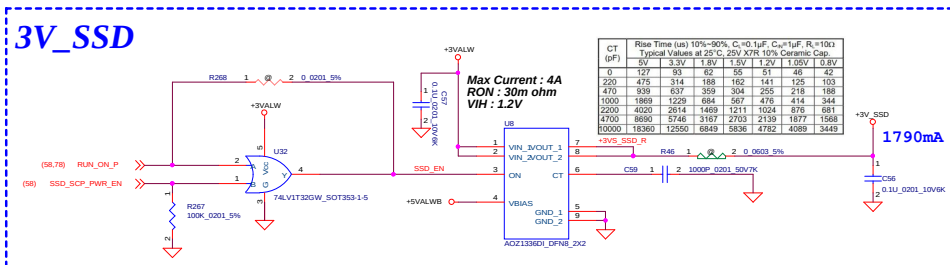
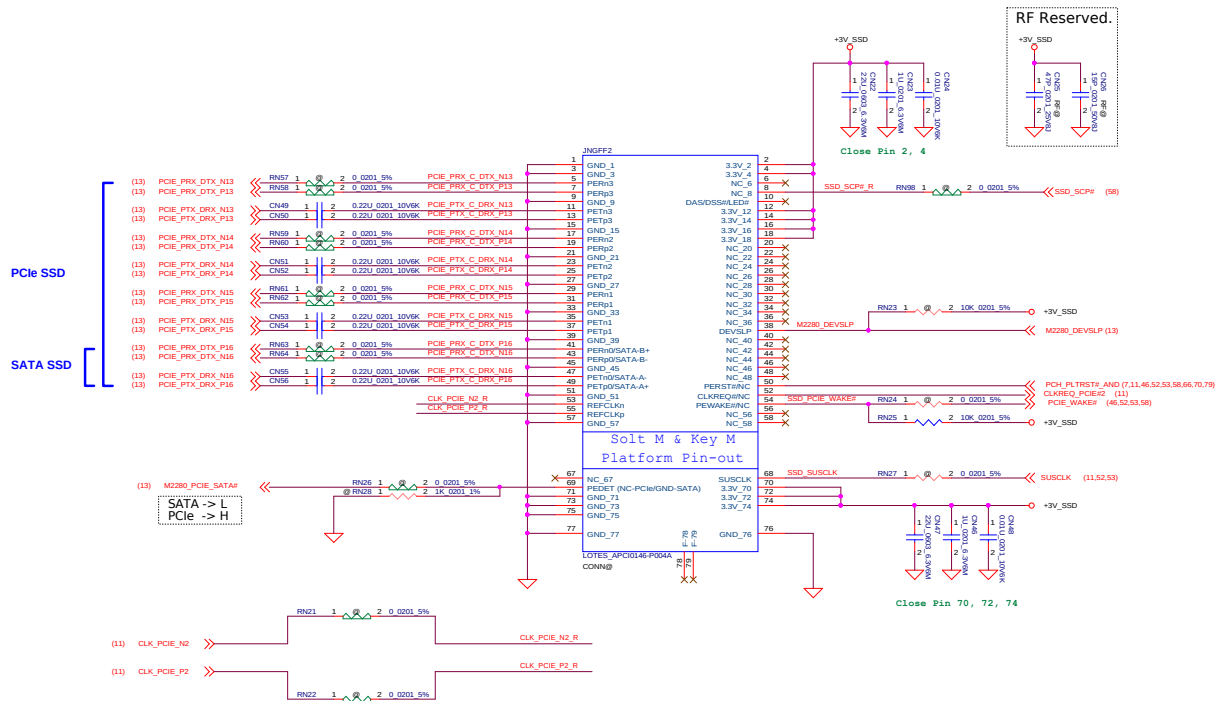




Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P065 - Reserve	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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	Document Number LA-G441P
				Date	Friday, December 14, 2018



Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>			
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P067 - Reserve			
<small>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 TRANSFERRED 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.</small>				Size	Document Number		
				LA-G441P		Rev	0.1(X00)
				Date:	Friday, December 14, 2018	Sheet	67 of 100





Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY	
Issued Date		Deciphered Date		Title	
2018/01/23		2022/12/31		P069 - Reserve	
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 TRANSFERRED 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	Document Number
				LA-G441P	
Date: Friday, December 14, 2018				Sheet	69 of 100
				Rev	0.1(X00)

Check done by vendor on 0309

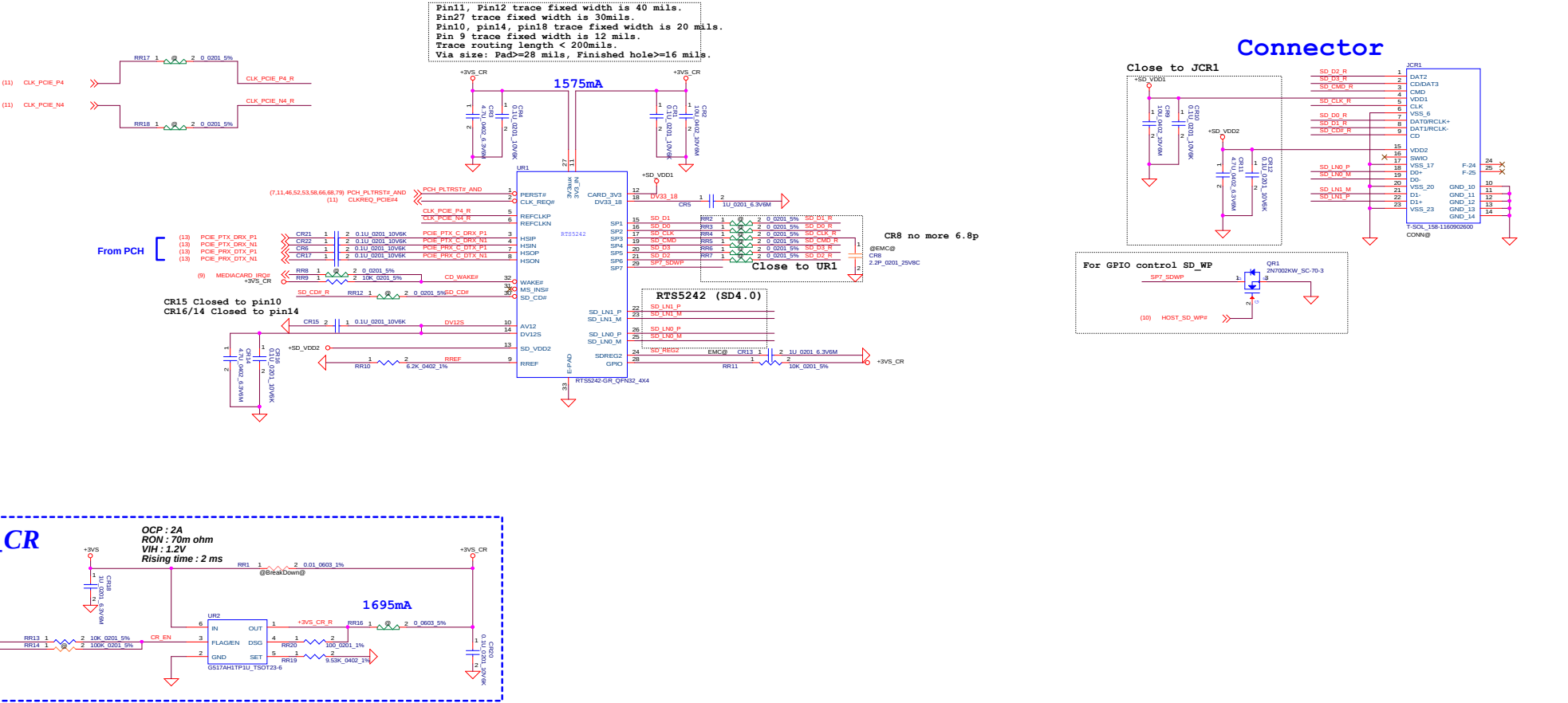
SN65 PCIe Redriver

Remove PCIe Redriver

Check down by vendor on 0309

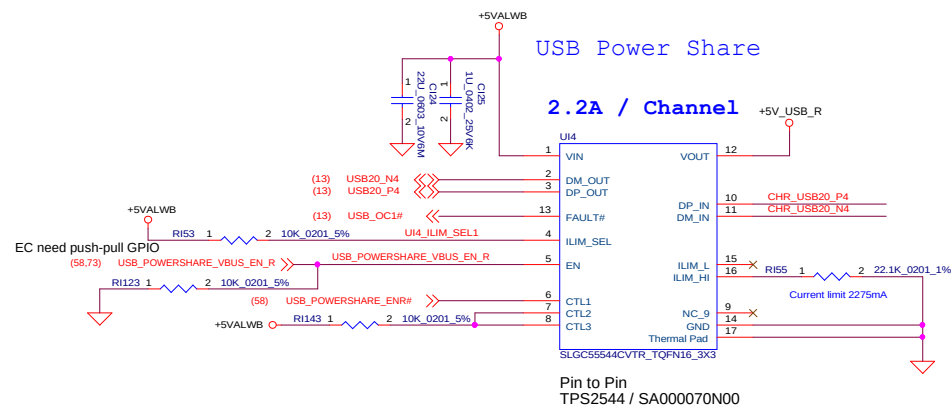
uSD Card Reader Connector

Contoller

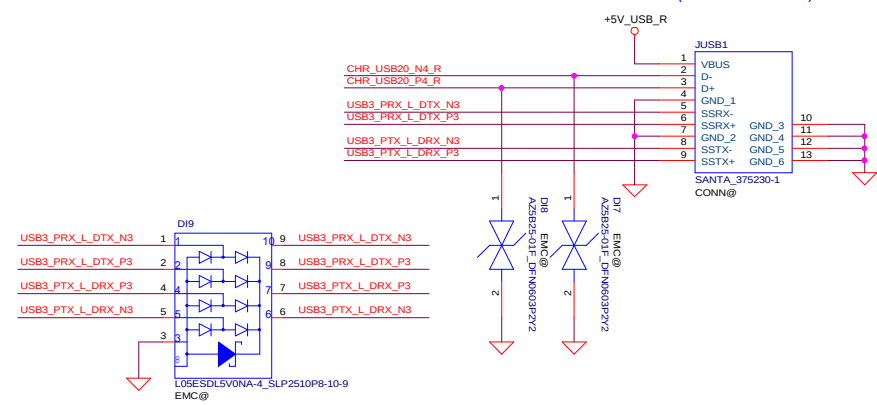
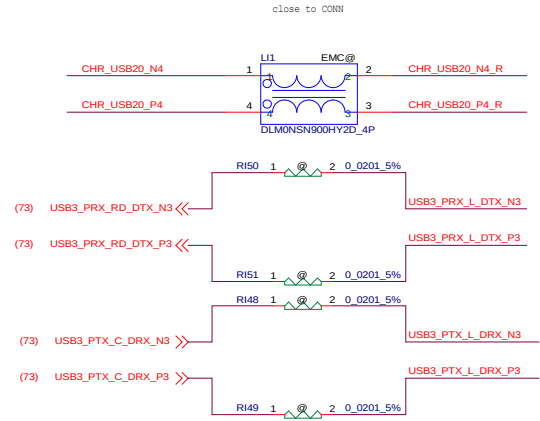
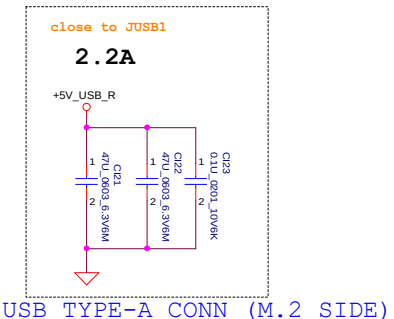


Check done by vendor on 0321

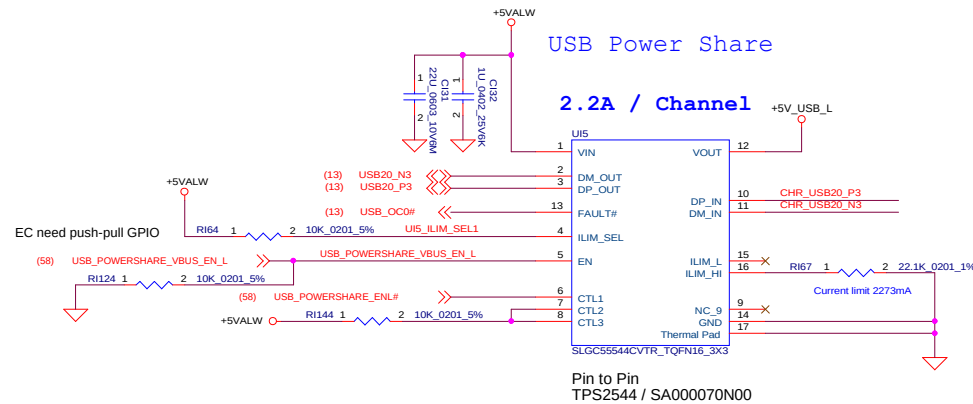
USB Type-A Connector (M.2 SIDE)



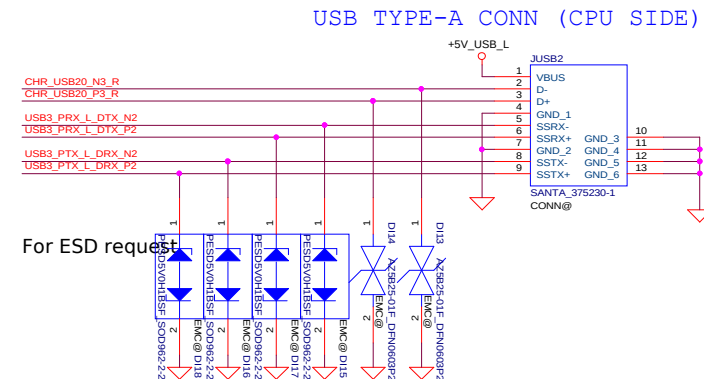
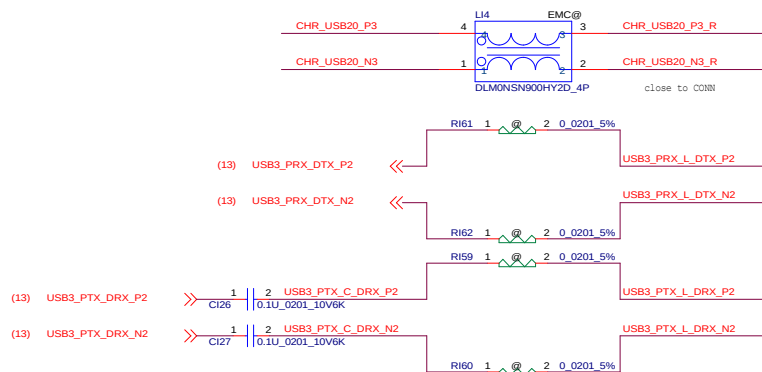
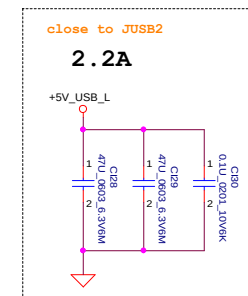
CTL1	CTL2	CTL3	ILIM_SEL	MODE
0	1	1	0	DCP_Auto
0	1	1	1	DCP_Auto
1	1	1	0	SDP
1	1	1	1	CDP



USB Type-A Connector (CPU Side)

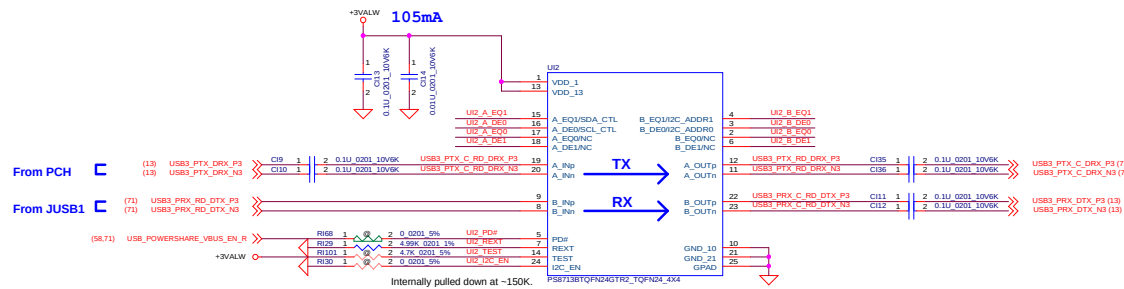


	CTL1	CTL2	CTL3	ILIM_SEL	MODE
	0	1	1	0	DCP_Auto
	0	1	1	1	DCP_Auto
	1	1	1	0	SDP
	1	1	1	1	CDP



Security Classification		Compal Secret Data		ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. Compal Electronics, Inc.	
Issued Date	2015/12/16	Deciphered Date	2016/12/13	Title	P072 - USB3 TYPE-A PortB
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 TRANSFERRED 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	Document Number LA-G441P
				Date:	Friday, December 14, 2018 Sheet 72 of 100 Rev 0.10(00)

USB3.0 Re-driver PS8713 (M.2 SIDE TO JUSB1)

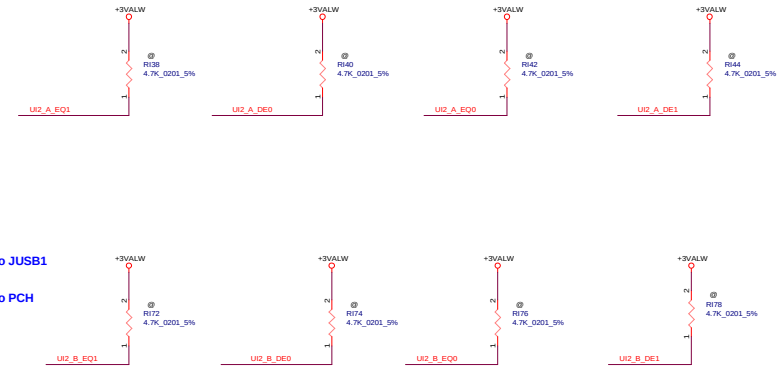


Parade_PS8713B

A_EQ0	A_EQ0	B_EQ0	B_EQ0	Recommended EQ	A_DE1	A_DE0	B_DE1	B_DE0	Recommended DE
0	0	0	0	loss up to 9.5dB	0	0	0	0	3.5dB de-emphasis
0	1	0	1	loss up to 13dB	0	1	0	1	No de-emphasis
1	0	1	0	loss up to 4.5dB	1	0	1	0	2.7dB de-emphasis
1	1	1	1	loss up to 7.5dB	1	1	1	1	5dB de-emphasis

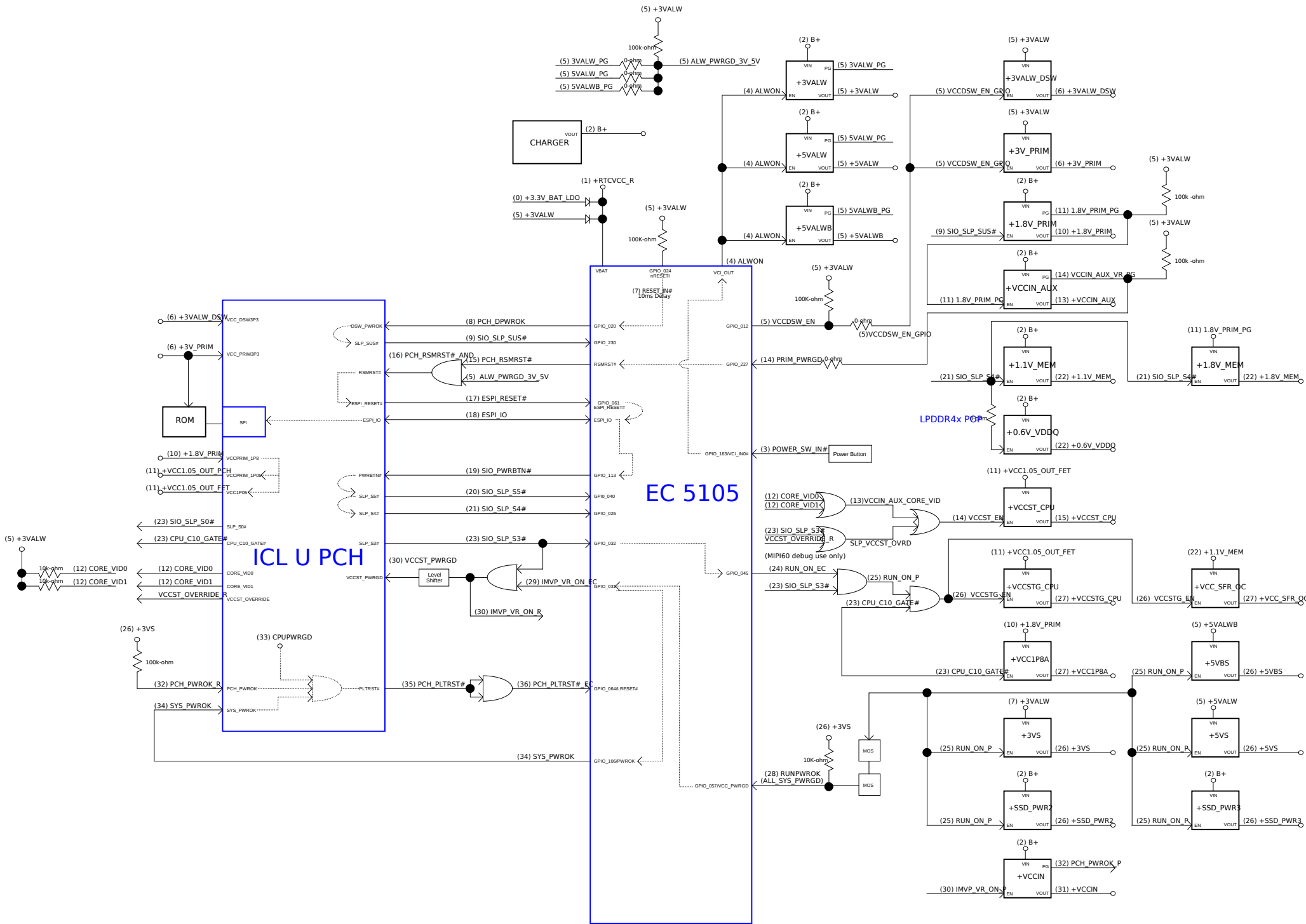
Both A_EQ&B_EQ have internal pull-down 150k

Both A_DE&B_DE have internal pull-down 150k

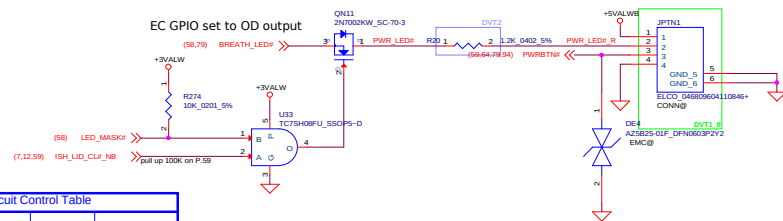




Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY <i>Compal Electronics, Inc.</i>	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title P074 - Reserve	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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	Document Number LA-G441P
				Date	Friday, December 14, 2018

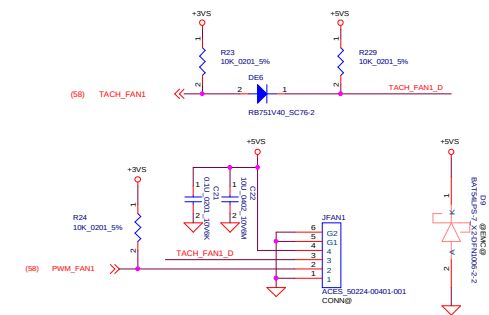


PW Switch Conn.

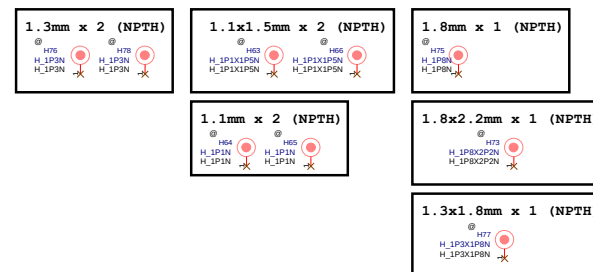
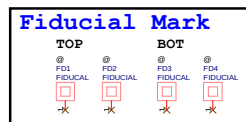
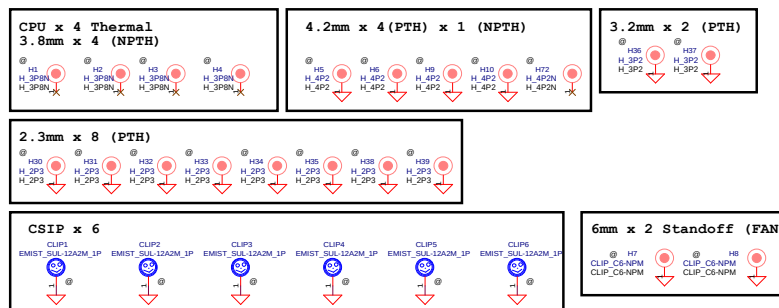


	LED MASK#	ISH LID CLF NB
Mask All LEDs (Nonobtrusive mode)	0	X
Mask Base MB LEDs (Lid Closed)	1	0
Do not Mask LEDs (Lid Opened)	1	1

FAN1 ??need to check pin define

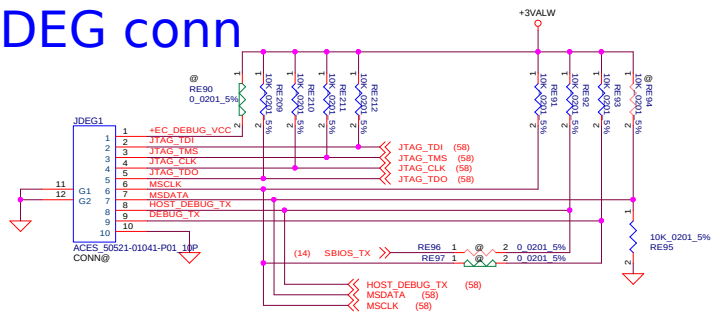


Screw Hole

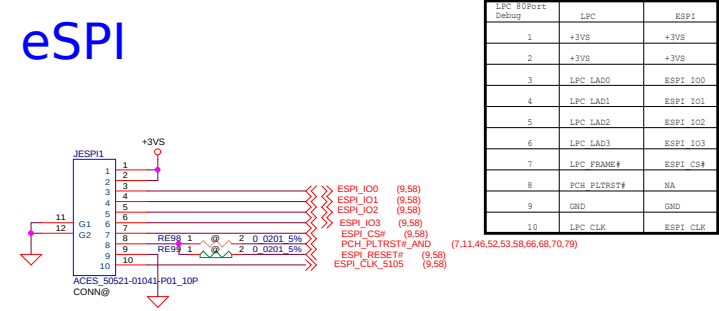


Security Classification		Compal Secret Data		DELL CONFIDENTIAL/PROPRIETARY Compal Electronics, Inc.	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title	P077 - PWRBTN / SCREW / FAN Part Number: LA-G441P
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D TO ANY OTHER DIVISION OR PERSON WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. THE INFORMATION CONTAINED HEREIN MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Date: 2018/01/23 1 Sheet 77 of 100	Rev: 0.1 (100%)

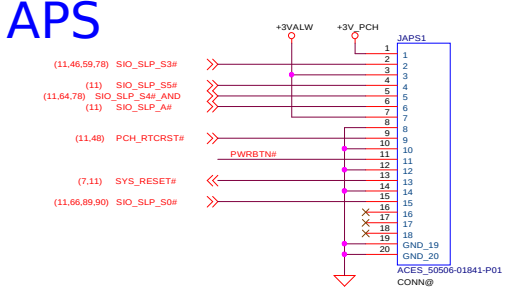
DEG conn



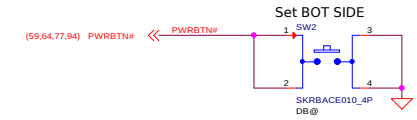
eSPI



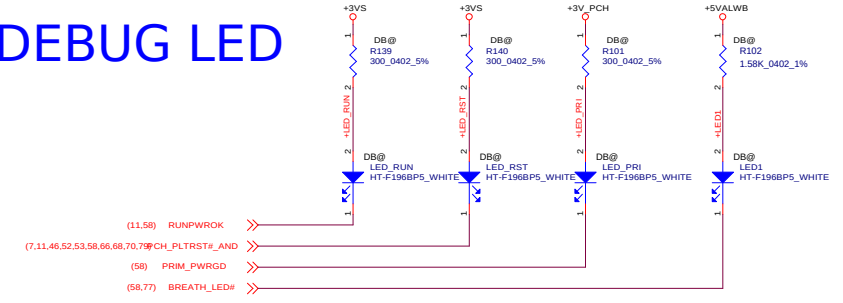
APS

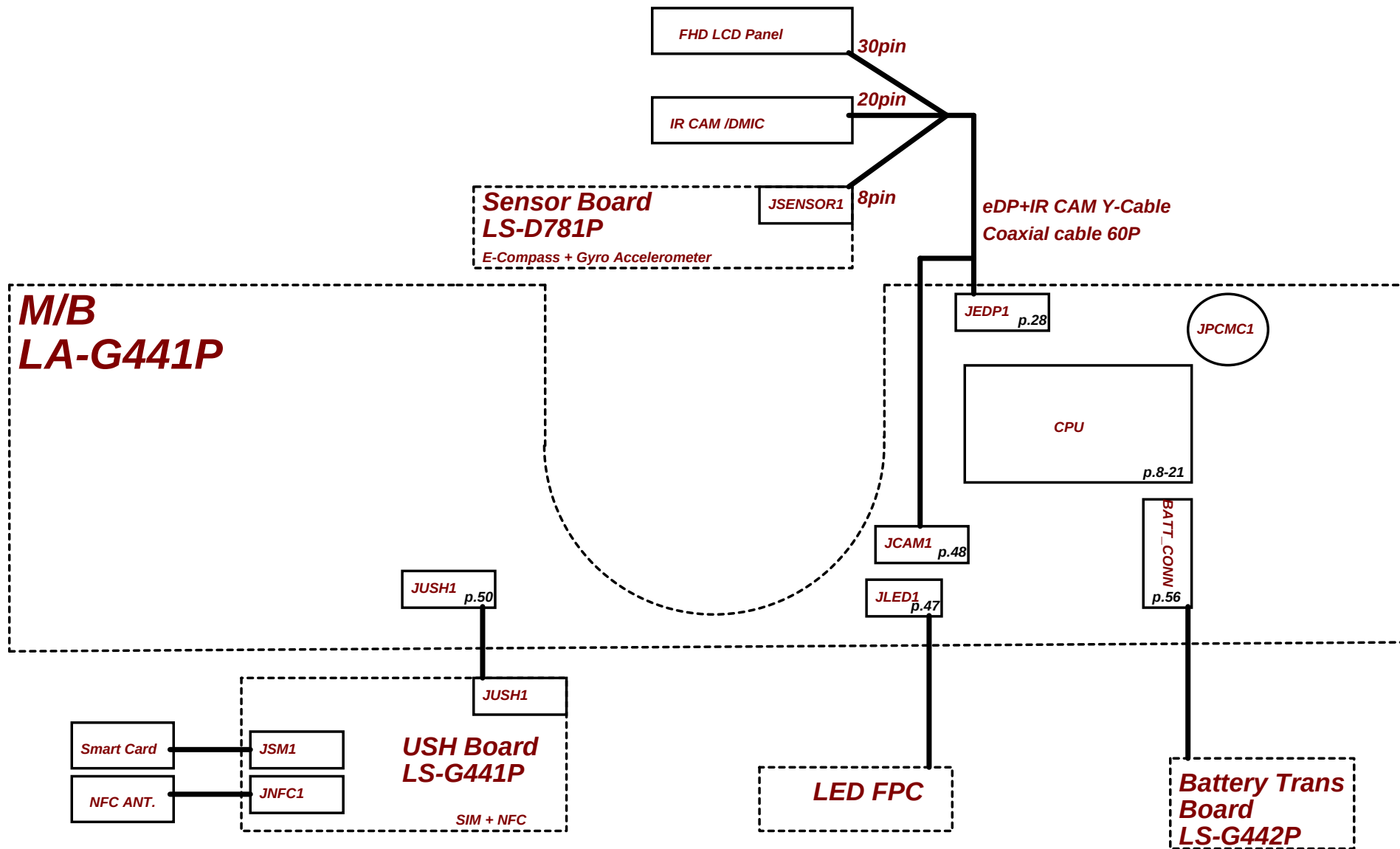


Test Power Button

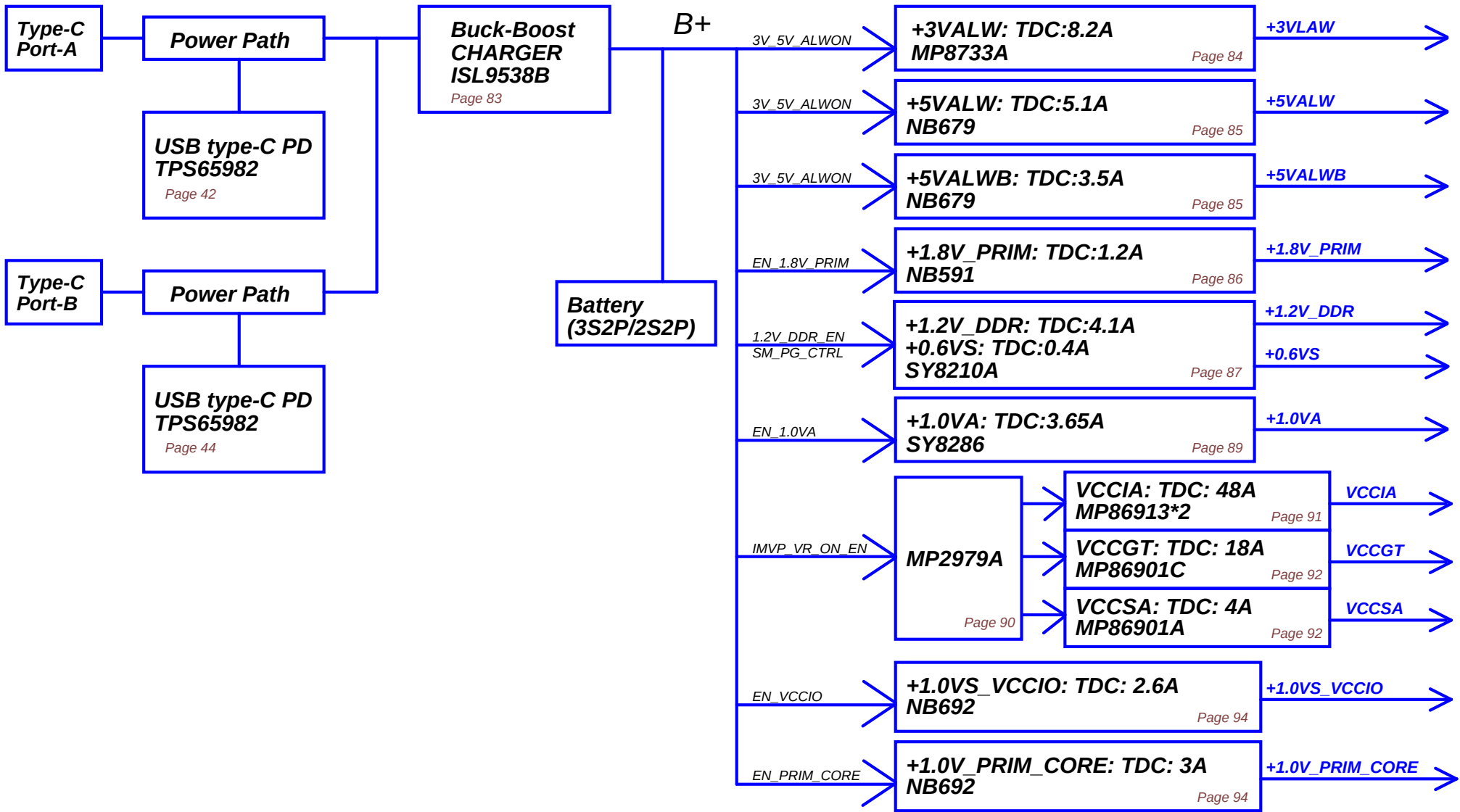


DEBUG LED

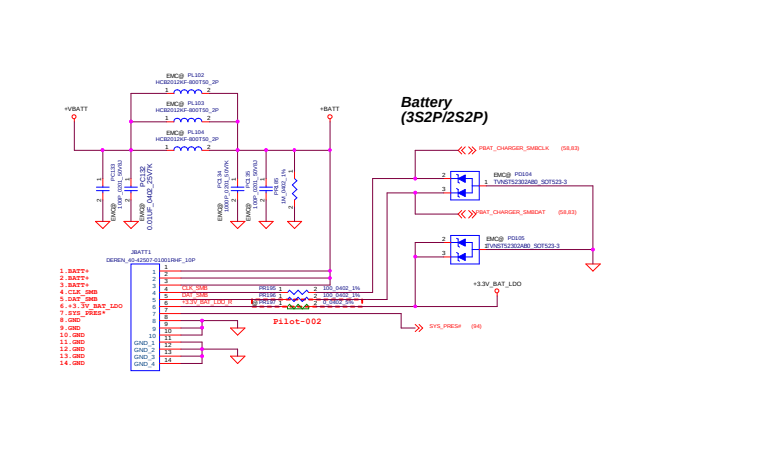
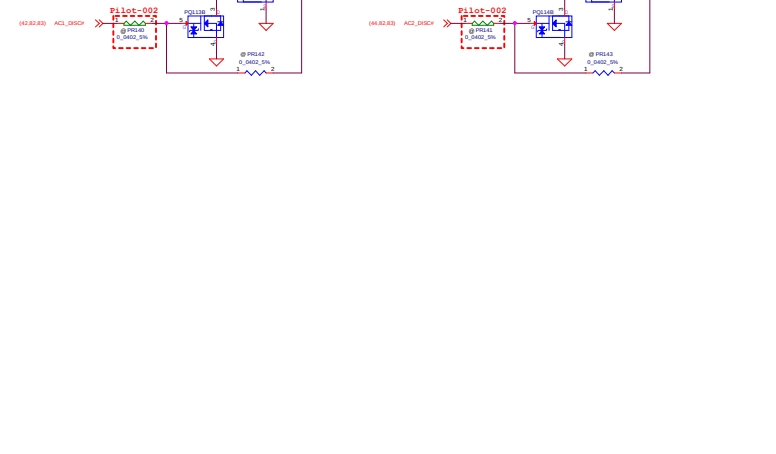
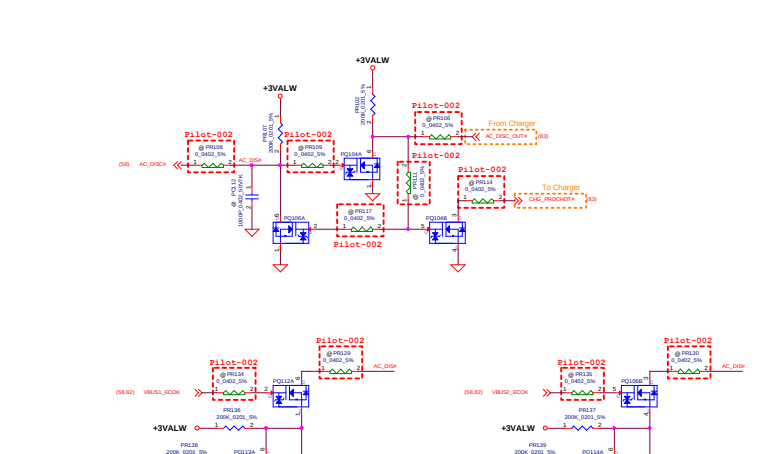




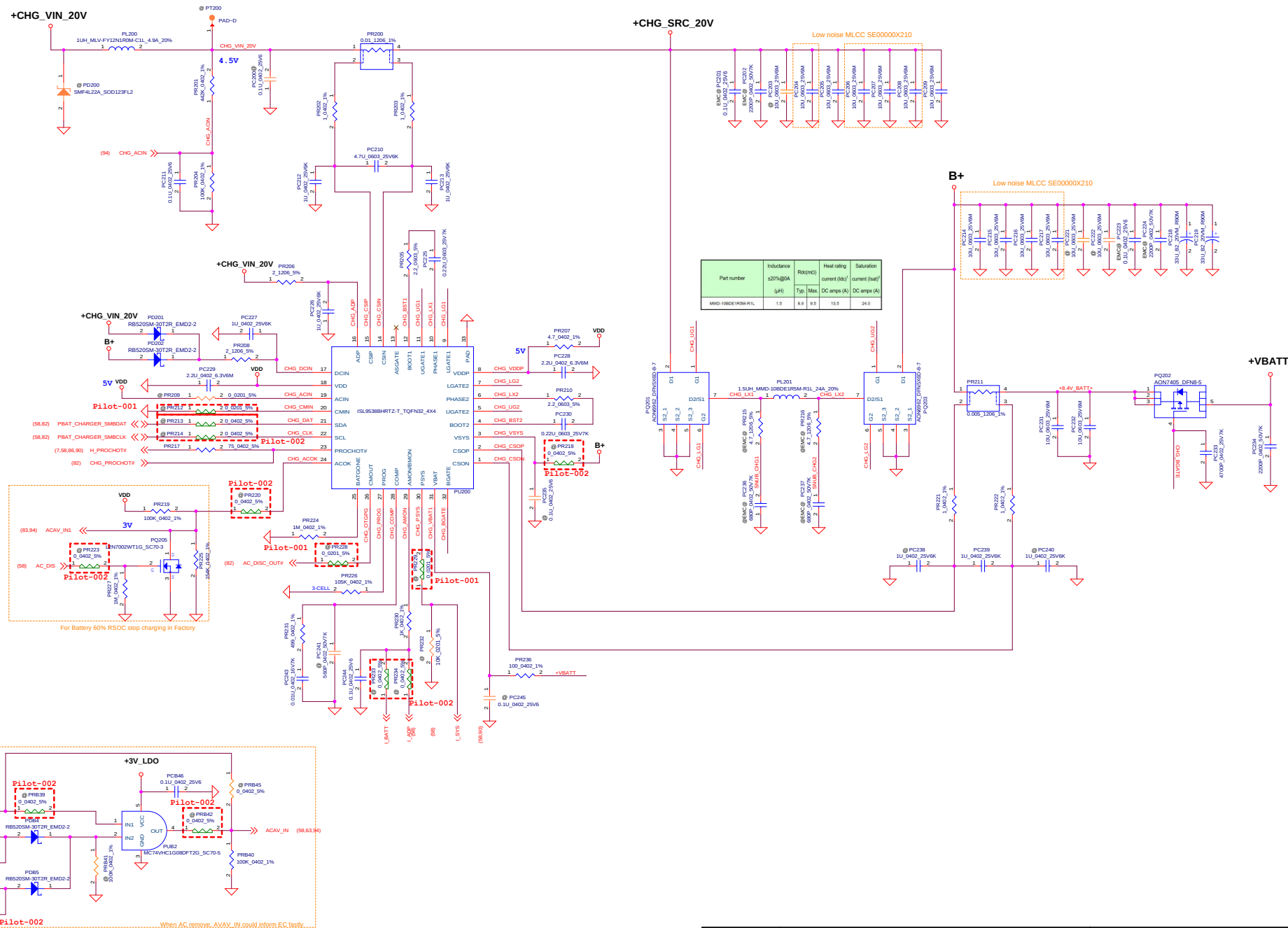
Security Classification				Compal Secret Data				DELL CONFIDENTIAL/PROPRIETARY			
Issued Date				Deciphered Date				Compal Electronics, Inc.			
2018/01/23				2022/12/31				Title			
								P080 - DaughterB Block Diagram			
								Size			
								Document Number			
								LA-G441P			
								Rev			
								0.1(x00)			
								Date:			
								Friday, December 14, 2018			
								Sheet			
								80 of 100			



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2014/10/17	Deciphered Date	2014/12/05	Title	P52-PWR Block Diagram	
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 TRANSFERRED 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.				Document Number	LA-F371P	Rev 0.1
				Date:	Friday, December 14, 2018	Sheet 81 of 100

[illegible]

Charger controller(40.1), Support component(40.2)



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2017/08/24	Deciphered Date	2017/08/24	Title	PWR Charger
<p>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 TRANSFERRED FROM THE CUSTODY OF THE COMPLETE DIVISION OF R&D INFORMATION & AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</p>				Doc Number	Rev 0.1
Name	Friday, December 14, 2018		Sheet	61	of 100

3V controller(35.1), Support component

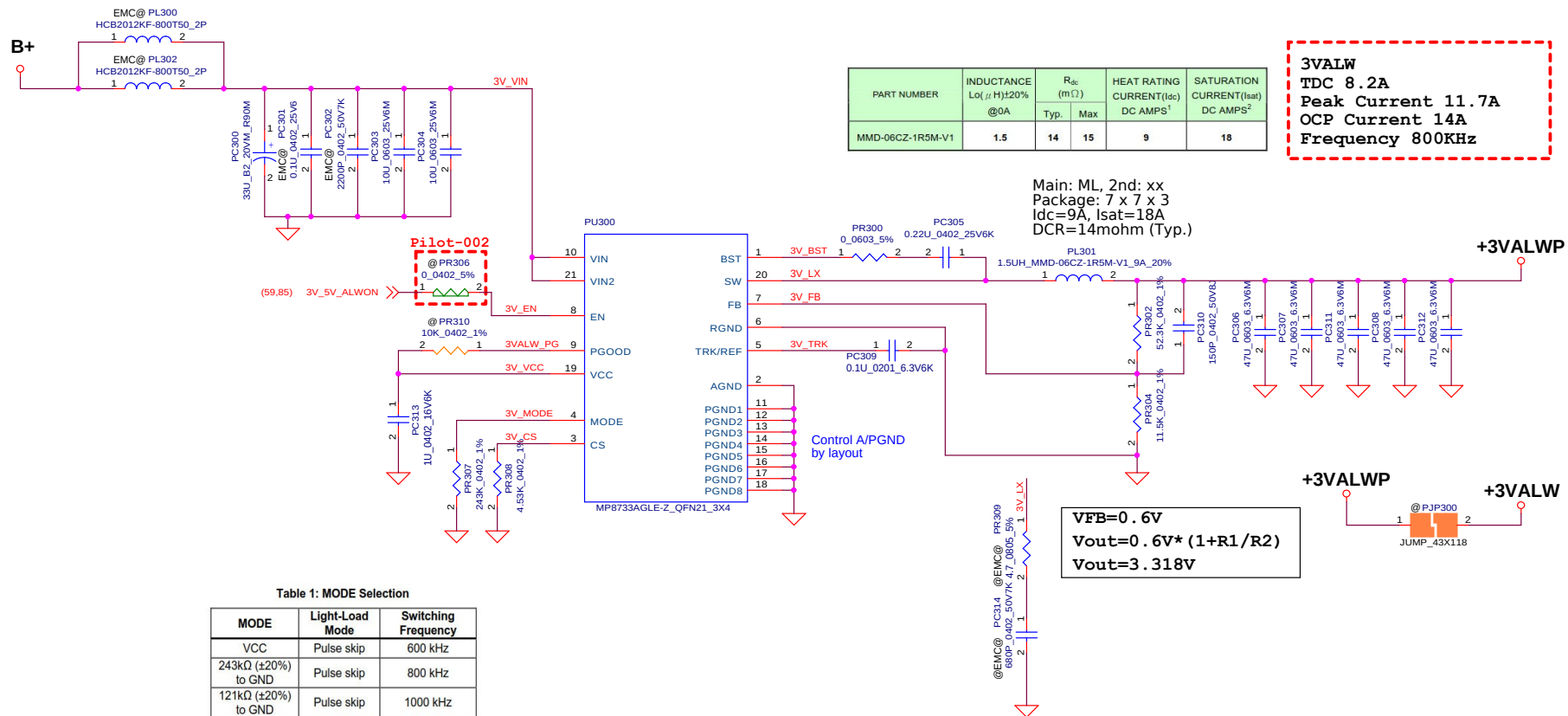


Table 1: MODE Selection

MODE	Light-Load Mode	Switching Frequency
VCC	Pulse skip	600 kHz
243k Ω ($\pm 20\%$) to GND	Pulse skip	800 kHz
121k Ω ($\pm 20\%$) to GND	Pulse skip	1000 kHz
GND	Forced CCM	600 kHz
30.1k Ω ($\pm 20\%$) to GND	Forced CCM	800 kHz
60.4k Ω ($\pm 20\%$) to GND	Forced CCM	1000 kHz

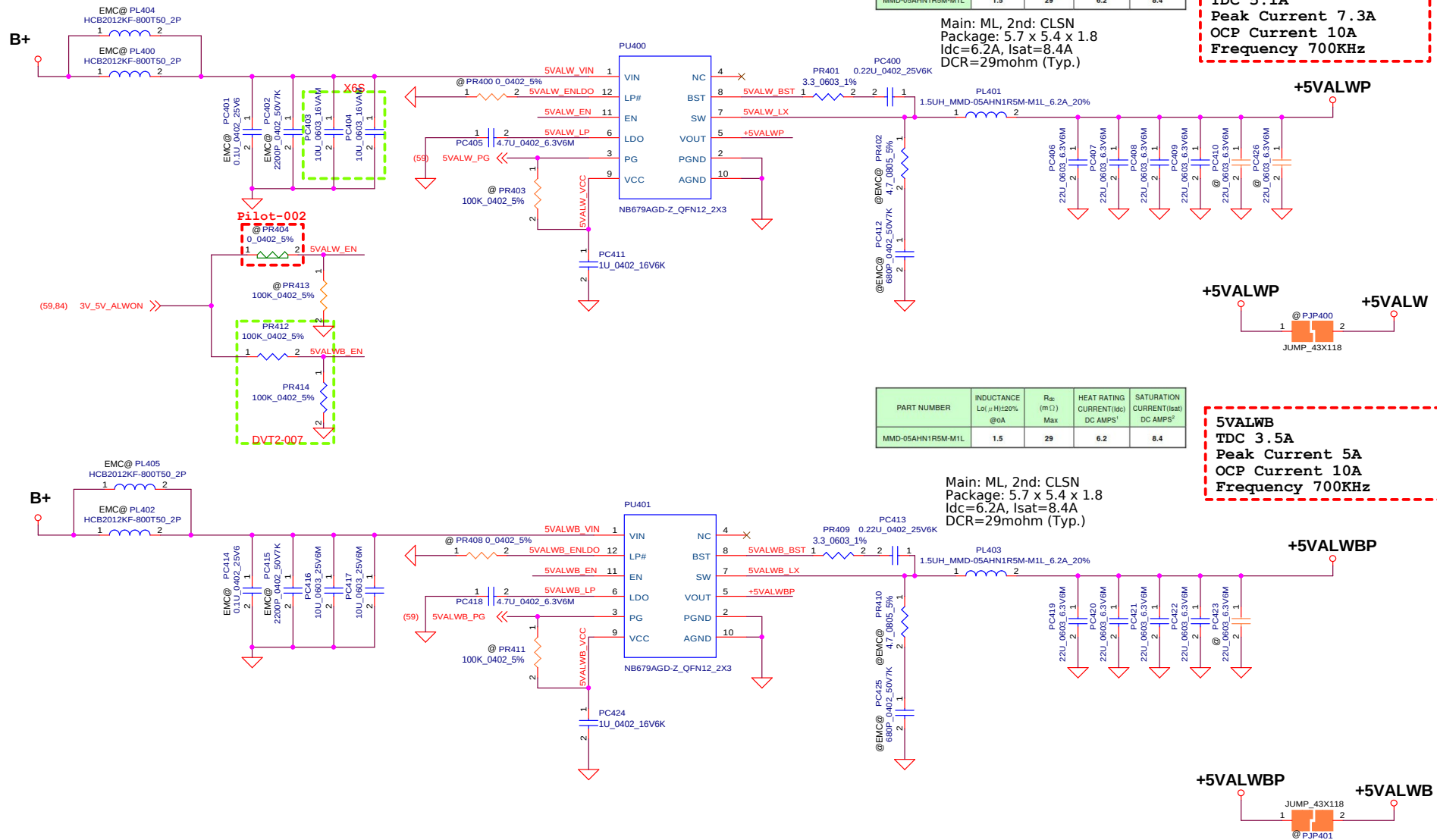
PART NUMBER	INDUCTANCE Lo(μ H) \pm 20% @0A	R _{dc} (m Ω)		HEAT RATING CURRENT(I _{dc})	SATURATION CURRENT(I _{ts})
		Typ.	Max	DC AMPS ¹	DC AMPS ²
MMD-06CZ-1R5M-V1	1.5	14	15	9	18

```
3VALW
TDC 8.2A
Peak Current 11.7A
OCP Current 14A
Frequency 800KHz
```

Main: ML, 2nd: xx
Package: 7 x 7 x 3
Idc=9A, Isat=18A
DCR=14mohm (Typ.)

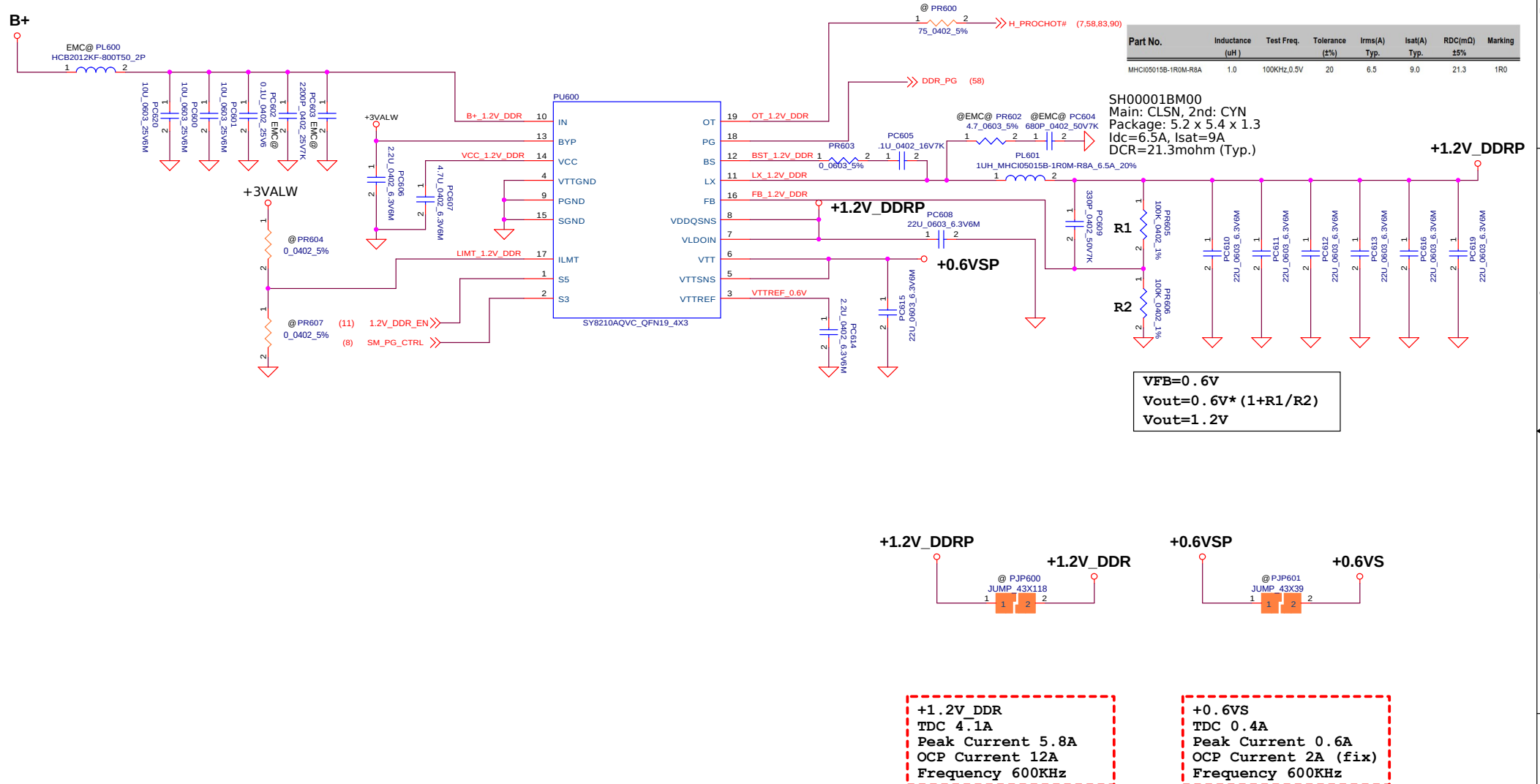
$$\begin{aligned} V_{FB} &= 0.6V \\ V_{out} &= 0.6V \cdot (1 + R_1/R_2) \\ V_{out} &= 3.318V \end{aligned}$$

5V controller(35.1), Support component(35.2)



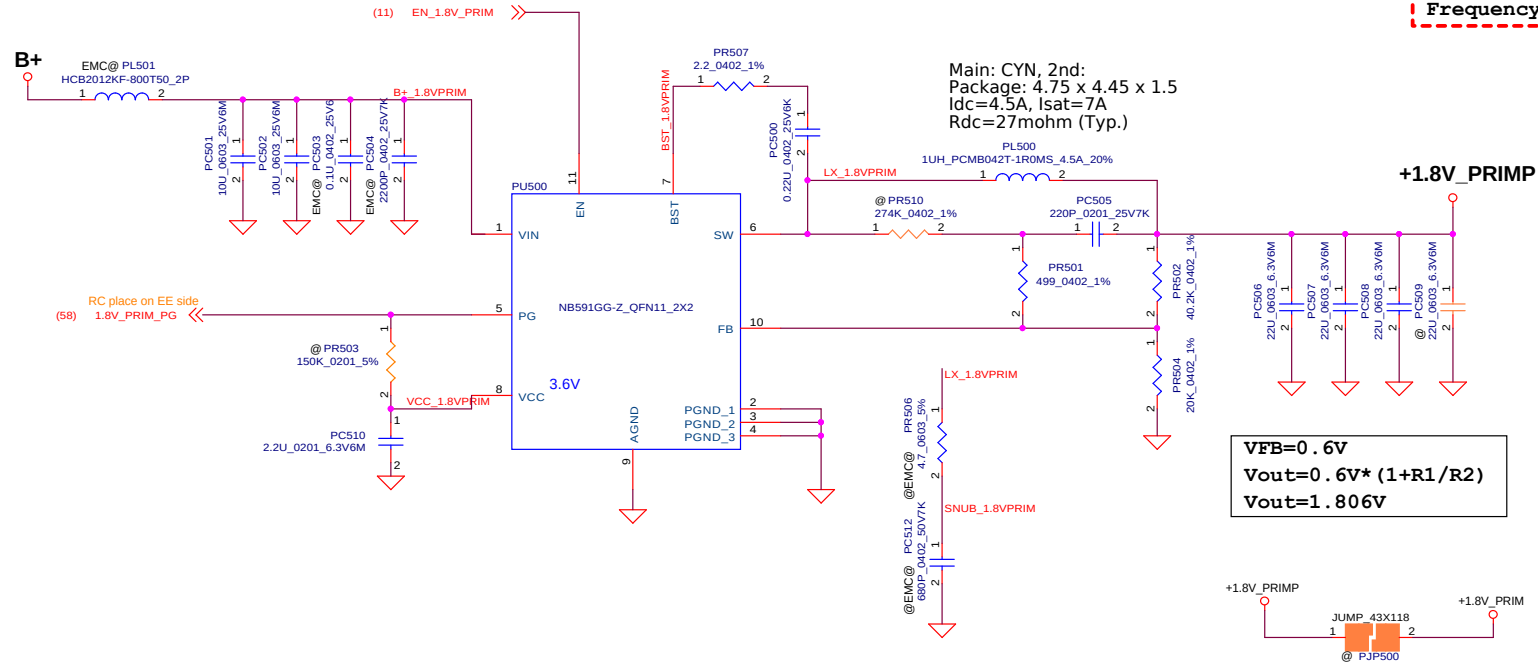
Security Classification		Compal Secret Data		Title	
Issued Date	2017/08/24	Deciphered Date	2017/08/24	+5VALW/+5VALWB	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM 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	Document Number
				Date	Friday, December 14, 2018
				Sheet	85 of 100
				Rev	0.1

DDR controller(35.3), Support componeht(35.4)



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2017/08/24	Deciphered Date	2017/08/24	Title	PWR +1.1V MEM
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 TRANSFERRED 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	Document Number
				Date	Friday, December 14, 2018
				Sheet	86 of 100
				Rev	0.1

+1.8V_PRIM controller(35.13), Support component(35.14)

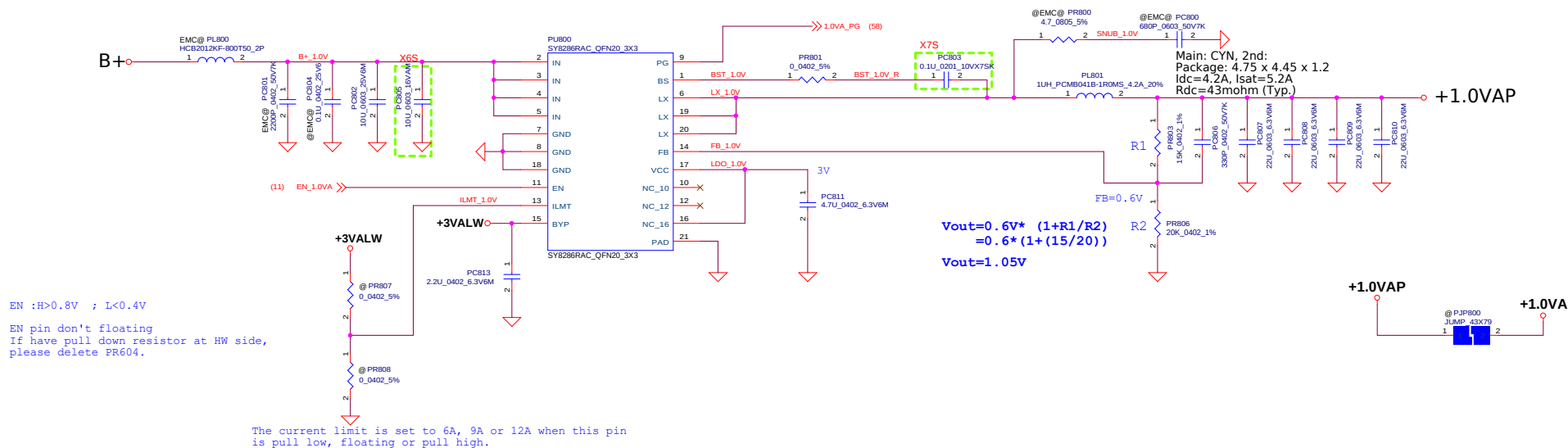


Security Classification				Compal Secret Data				Compal Electronics, Inc.			
Issued Date				2017/08/24		Deciphered Date		2017/08/24		Title	
										+1.8VPRIM	
										Size Document Number	
										Rev 0.1	
										Date Friday, December 14, 2018	
										Sheet 87 of 100	

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 TRANSFERRED 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.

1.05V controller(35.5), Support component(35.6)

+1.0VA
TDC 3.65A
Peak Current 5.2A
OCP current 9.0A
Frequency 500KHz

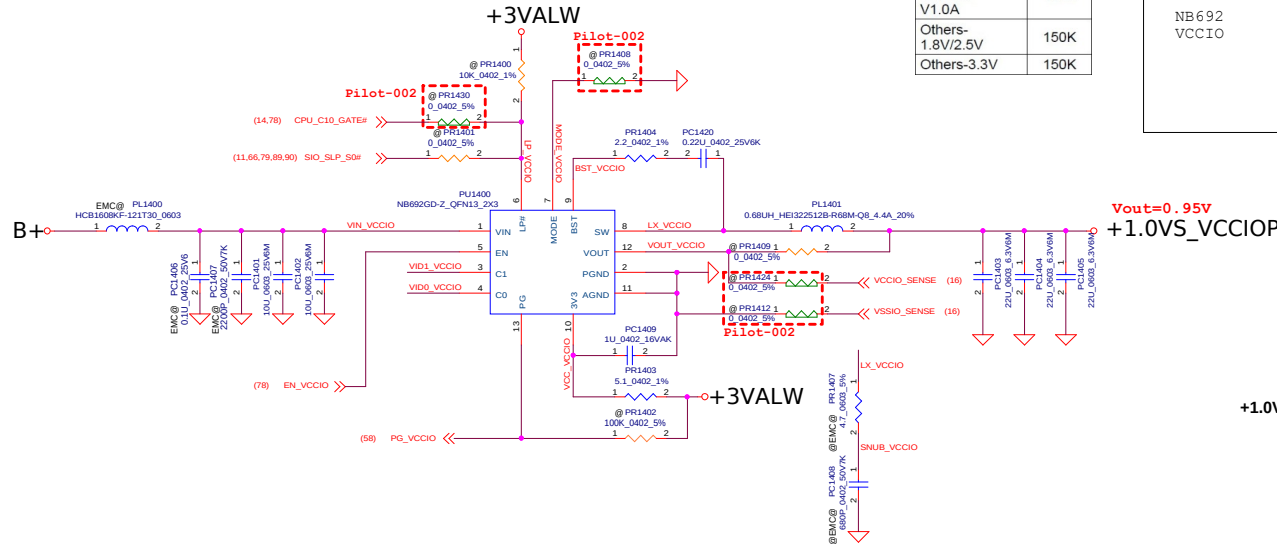
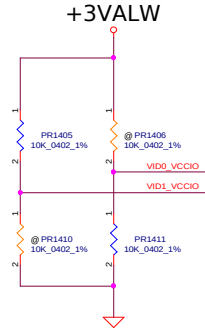


Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/06/02	Deciphered Date	2013/10/28	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				Document Number
				Rev
				1.0
				Date
				Friday, December 14, 2018
				Sheet 88 of 100

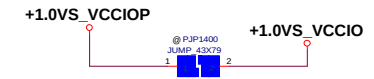
VCCIO controller(35.37), Support component(35.38)

V _{OUT} (V)	R _{Mode} (Ω)
VCCIO	0
PRIMCORE	Float
EDRAM/ EOPIO/ V1.0A	100K
Others- 1.8V/2.5V	150K
Others-3.3V	150K

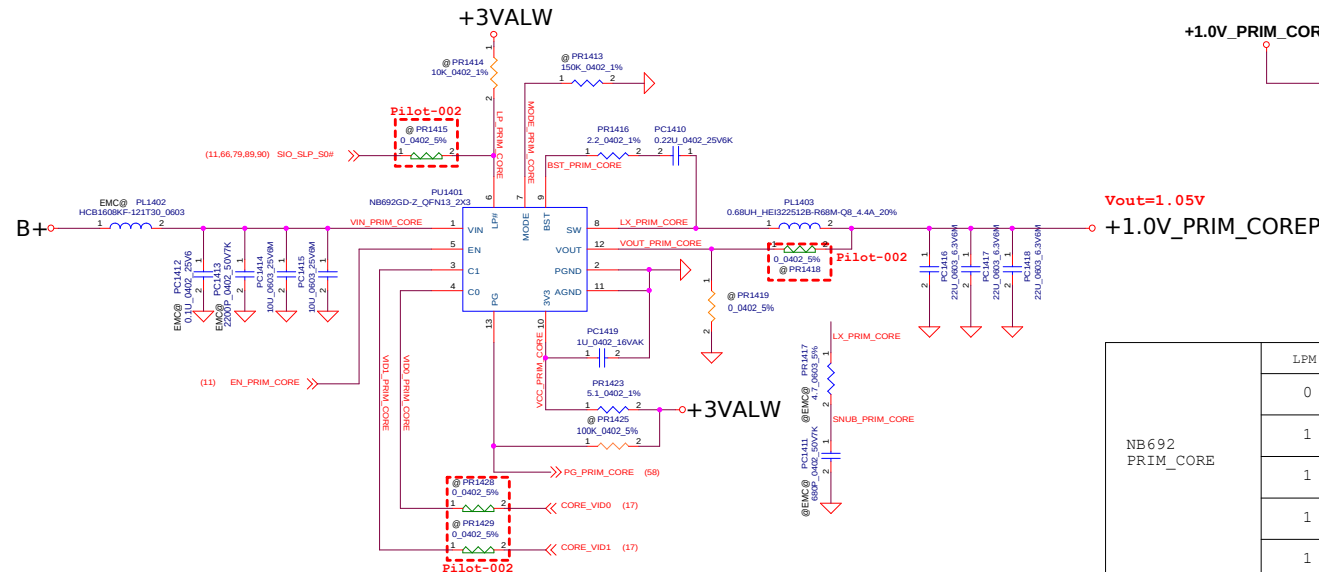
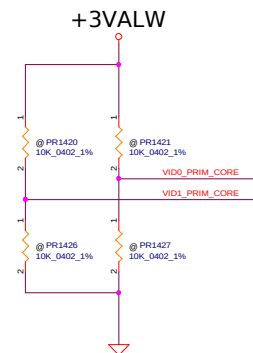
	LPM	VID1	VID0	Vout
VCCIO	0	X	X	0 (LPM)
EDRAM/ EOPIO/ V1.0A	1	0	0	0.85
Others- 1.8V/2.5V	1	0	1	0.875
Others-3.3V	1	1	0	0.95
Others-3.3V	1	1	1	0.975



VCCIO
TDC 2.6A
Peak Current 3.7 A
OCP Current 7.6 A Fix by I_C
MIN:7A
MAX:8.5A
Frequency:750KHz



+1.0V_PROM controller(35.35), Support component(35.36)



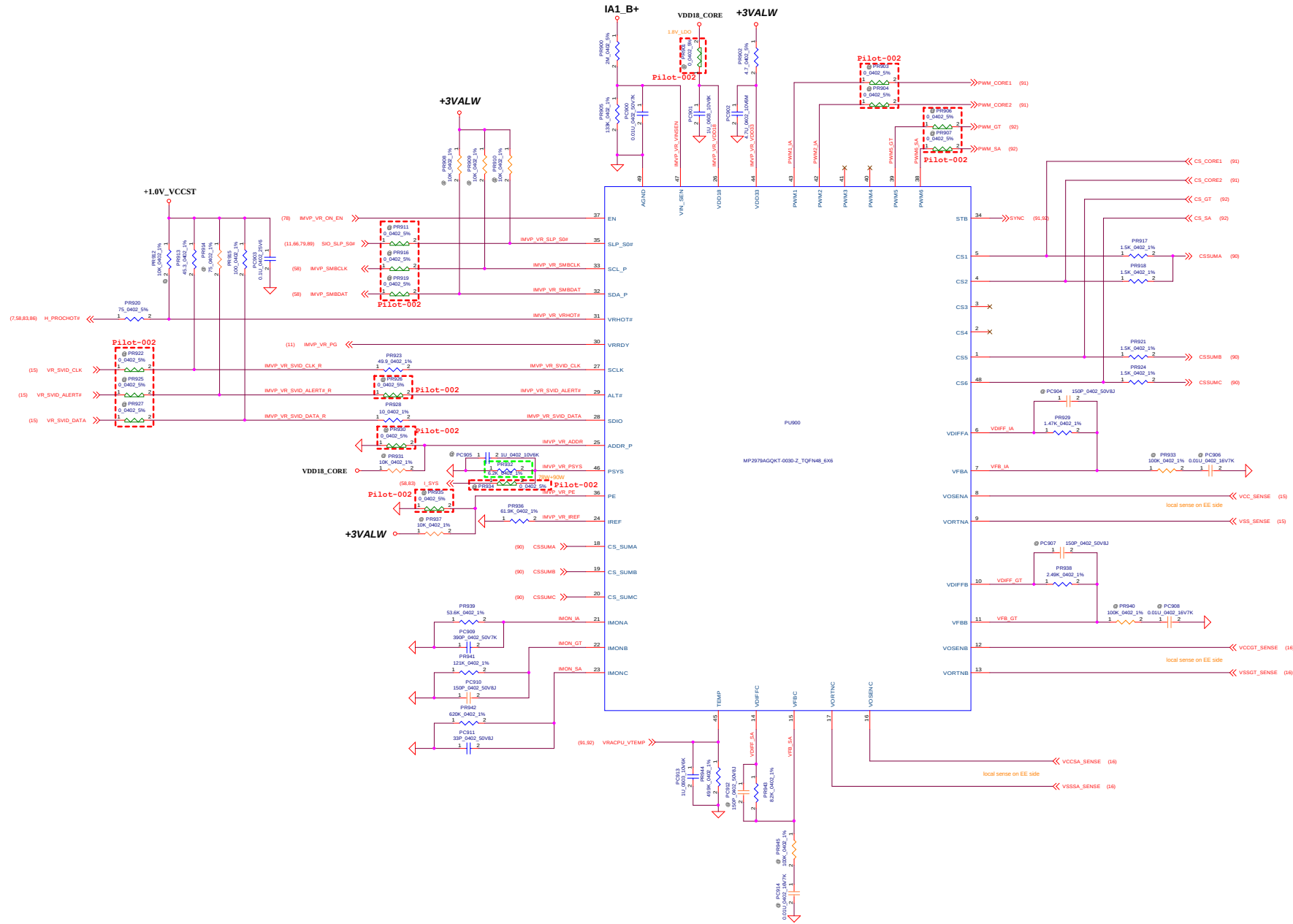
PRIM_CORE
TDC 3A
Peak Current 4.3 A
OCP Current 7.6 A Fix by I_C
MIN:7A
MAX:8.5A
Frequency:750KHz



	LPM	VID1	VID0	Vout
PRIM_CORE	0	X	X	0.75 (LPM)
EDRAM/ EOPIO/ V1.0A	1	0	0	0.9
Others- 1.8V/2.5V	1	0	1	0.95
Others-3.3V	1	1	0	1
Others-3.3V	1	1	1	1.05

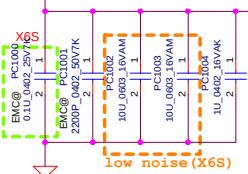
+1.0VS VCCIO controller(35.21), Support component(35.22)
+1.0V PRIM_CORE controller(35.23), Support component(35.24)

Security Classification	Compal Secret Data	Compal Electronics, Inc.
Issued Date	2014/10/17	Deciphered Date
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 TRANSFERRED 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.		<div> <div> VCCIO/PRIM CORE </div> <div> LA-E671P </div> </div> <div> <div> Friday, December 14, 2018 </div> <div> Sheet 89 of 100 </div> </div>



VCC_CORE Dr. MOS (36.2), Support component(36.3)

IA1_B+



+3VALW

Pilot-002

PR1000

0.0402_5%

PC1005

1U_0402_16VAK

X6S

PC1006

0.22U_0402_25VAK

X6S

PC1007

0.0402_5%

PC1008

1U_0402_16VAK

X6S

PC1009

0.0402_5%

PC1010

1U_0402_16VAK

X6S

PC1011

0.0402_5%

PC1012

1U_0402_16VAK

X6S

PC1013

0.0402_5%

PC1014

1U_0402_16VAK

X6S

PC1015

0.0402_5%

PC1016

1U_0402_16VAK

X6S

PC1017

0.0402_5%

PC1018

1U_0402_16VAK

X6S

PC1019

0.0402_5%

PC1020

1U_0402_16VAK

X6S

PC1021

0.0402_5%

PC1022

1U_0402_16VAK

X6S

PC1023

0.0402_5%

PC1024

1U_0402_16VAK

X6S

PC1025

0.0402_5%

PC1026

1U_0402_16VAK

X6S

PC1027

0.0402_5%

PC1028

1U_0402_16VAK

X6S

PC1029

0.0402_5%

PC1030

1U_0402_16VAK

X6S

PC1031

0.0402_5%

PC1032

1U_0402_16VAK

X6S

PC1033

0.0402_5%

PC1034

1U_0402_16VAK

X6S

PC1035

0.0402_5%

PC1036

1U_0402_16VAK

X6S

PC1037

0.0402_5%

PC1038

1U_0402_16VAK

X6S

PC1039

0.0402_5%

PC1040

1U_0402_16VAK

X6S

PC1041

0.0402_5%

PC1042

1U_0402_16VAK

X6S

PC1043

0.0402_5%

PC1044

1U_0402_16VAK

X6S

PC1045

0.0402_5%

PC1046

1U_0402_16VAK

X6S

PC1047

0.0402_5%

PC1048

1U_0402_16VAK

X6S

PC1049

0.0402_5%

PC1050

1U_0402_16VAK

X6S

PC1051

0.0402_5%

PC1052

1U_0402_16VAK

X6S

PC1053

0.0402_5%

PC1054

1U_0402_16VAK

X6S

PC1055

0.0402_5%

PC1056

1U_0402_16VAK

X6S

PC1057

0.0402_5%

PC1058

1U_0402_16VAK

X6S

PC1059

0.0402_5%

PC1060

1U_0402_16VAK

X6S

PC1061

0.0402_5%

PC1062

1U_0402_16VAK

X6S

PC1063

0.0402_5%

PC1064

1U_0402_16VAK

X6S

PC1065

0.0402_5%

PC1066

1U_0402_16VAK

X6S

PC1067

0.0402_5%

PC1068

1U_0402_16VAK

X6S

PC1069

0.0402_5%

PC1070

1U_0402_16VAK

X6S

PC1071

0.0402_5%

PC1072

1U_0402_16VAK

X6S

PC1073

0.0402_5%

PC1074

1U_0402_16VAK

X6S

PC1075

0.0402_5%

PC1076

1U_0402_16VAK

X6S

PC1077

0.0402_5%

PC1078

1U_0402_16VAK

X6S

PC1079

0.0402_5%

PC1080

1U_0402_16VAK

X6S

PC1081

0.0402_5%

PC1082

1U_0402_16VAK

X6S

PC1083

0.0402_5%

PC1084

1U_0402_16VAK

X6S

PC1085

0.0402_5%

PC1086

1U_0402_16VAK

X6S

PC1087

0.0402_5%

PC1088

1U_0402_16VAK

X6S

PC1089

0.0402_5%

PC1090

1U_0402_16VAK

X6S

PC1091

0.0402_5%

PC1092

1U_0402_16VAK

X6S

PC1093

0.0402_5%

PC1094

1U_0402_16VAK

X6S

PC1095

0.0402_5%

PC1096

1U_0402_16VAK

X6S

PC1097

0.0402_5%

PC1098

1U_0402_16VAK

X6S

PC1099

0.0402_5%

PC1100

1U_0402_16VAK

X6S

PC1101

0.0402_5%

PC1102

1U_0402_16VAK

X6S

PC1103

0.0402_5%

PC1104

1U_0402_16VAK

X6S

PC1105

0.0402_5%

PC1106

1U_0402_16VAK

X6S

PC1107

0.0402_5%

PC1108

1U_0402_16VAK

X6S

PC1109

0.0402_5%

PC1110

1U_0402_16VAK

X6S

PC1111

0.0402_5%

PC1112

1U_0402_16VAK

X6S

PC1113

0.0402_5%

PC1114

1U_0402_16VAK

X6S

PC1115

0.0402_5%

PC1116

1U_0402_16VAK

X6S

PC1117

0.0402_5%

PC1118

1U_0402_16VAK

X6S

PC1119

0.0402_5%

PC1120

1U_0402_16VAK

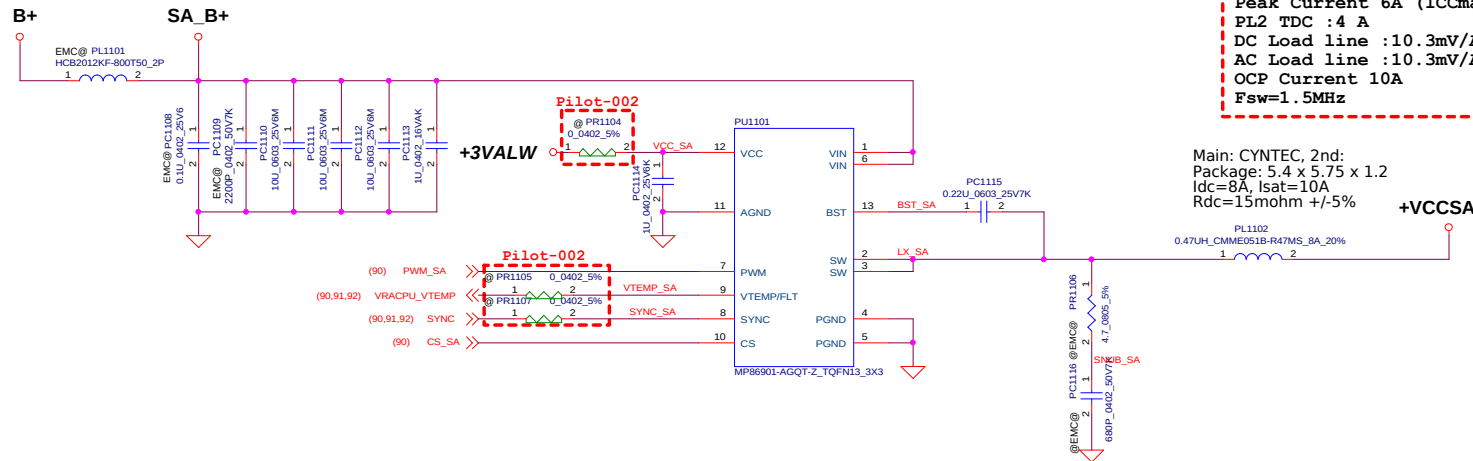
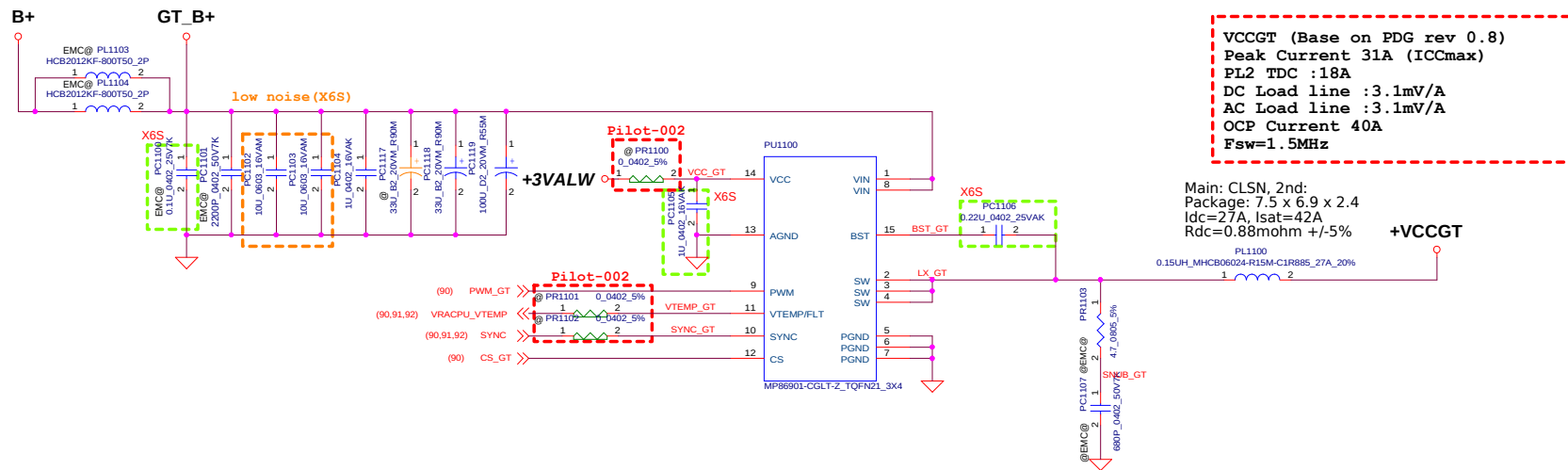
X6S

PC1121

0.0402_5%

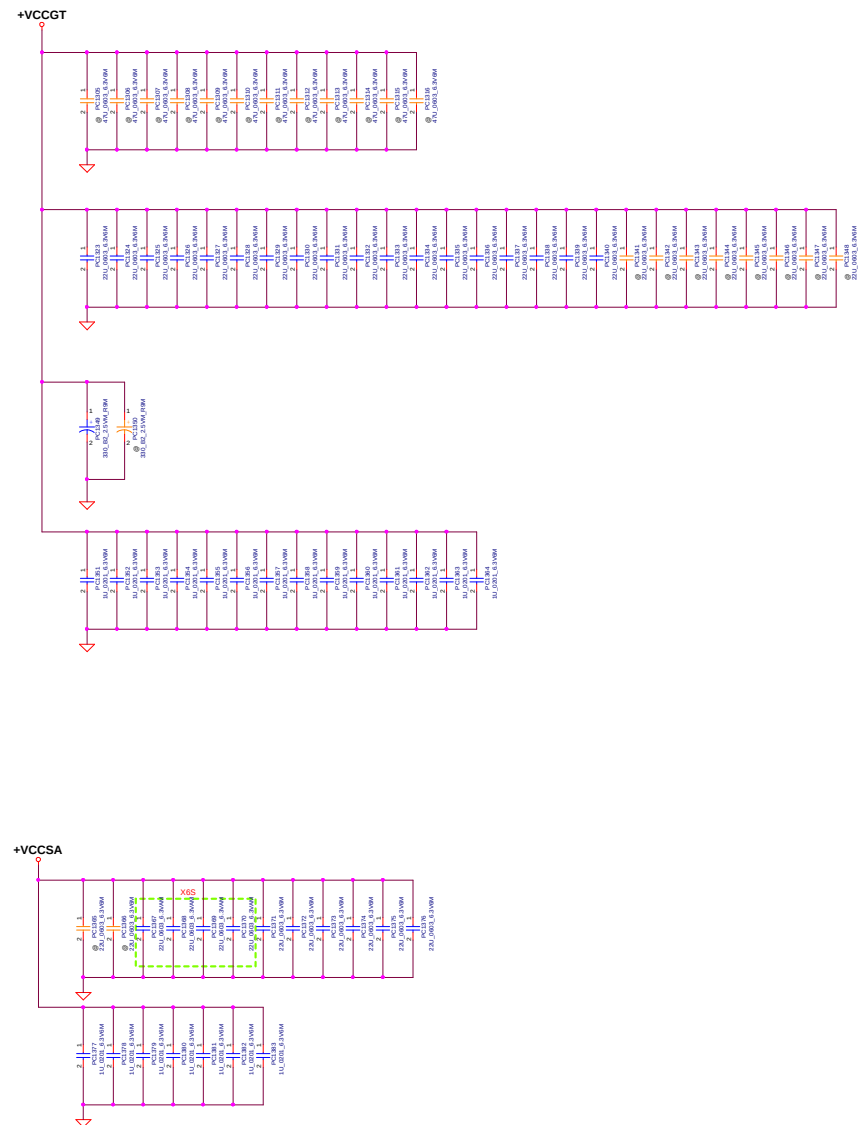
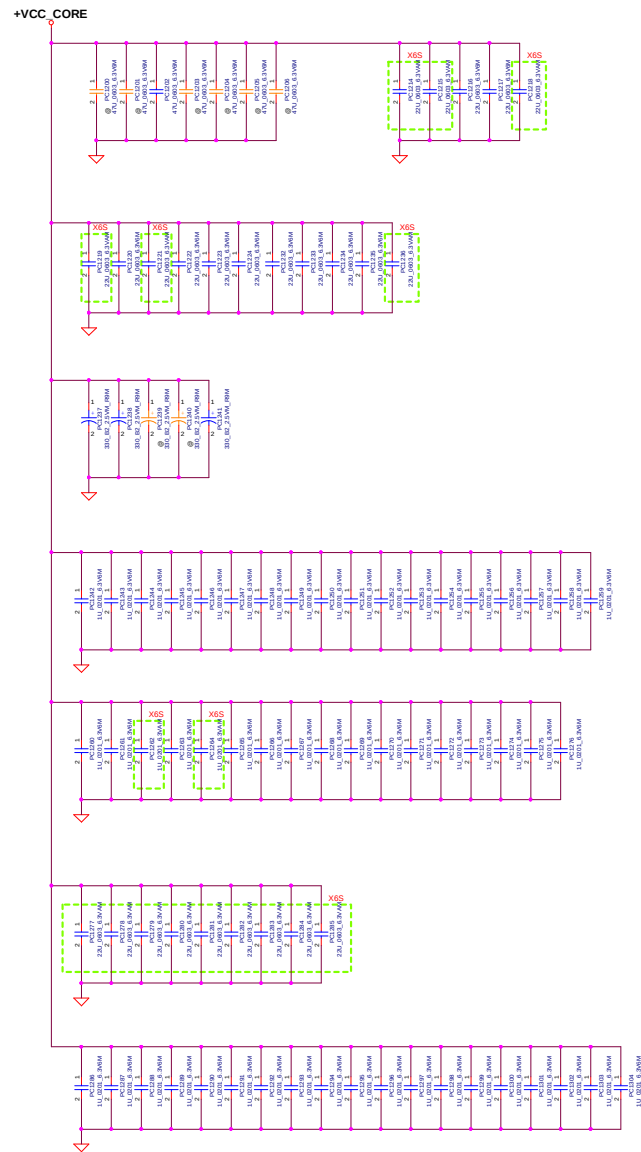
PC1122

VCC_GT/SA Dr. MOS (36.2), Support component(36.3)



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2011/06/02	Deciphered Date	2013/10/28	Title		
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 TRANSFERRED 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.				PWR_VCORE, +VCCSA		
				Size	Document Number	Rev
					LA-F371P	0.1
				Date:	Friday, December 14, 2018	Sheet 92 of 100

VCC_Core Output Cap(36.4), VCCGT Output Cap(36.5), VCCSA Output Cap(36.6)



VCC_CORE output cap(36.4), VCC_GT output cap(36.5), VCC_SA output cap(36.6)

Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		Compal Electronics, Inc.	
2014/10/17		2014/12/05		CPU BACK SIDE MLCC	
Rev		Document Number		LA-E671P	
1.0		1.0		1.0	
Issue		Page		Sheet	
1		1		1	

5	4	3	2	1																																																												
D				D																																																												
C				C																																																												
B				B																																																												
A				A																																																												
<table><tr><td colspan="2">Security Classification</td><td colspan="2">Compal Secret Data</td><td>Compal Electronics, Inc.</td></tr><tr><td>Issued Date</td><td>2018/01/23</td><td>Deciphered Date</td><td>2022/12/31</td><td>Title</td></tr><tr><td colspan="4">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 TRANSFERRED 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.</td><td>Size</td></tr><tr><td colspan="4"></td><td>Document Number</td></tr><tr><td colspan="4"></td><td>Rev</td></tr><tr><td colspan="4"></td><td>0.1(X00)</td></tr><tr><td colspan="4"></td><td>Date</td></tr><tr><td colspan="4"></td><td>Friday, December 14, 2018</td></tr><tr><td colspan="4"></td><td>Sheet</td></tr><tr><td colspan="4"></td><td>95</td></tr><tr><td colspan="4"></td><td>of</td></tr><tr><td colspan="4"></td><td>100</td></tr></table>					Security Classification		Compal Secret Data		Compal Electronics, Inc.	Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title	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 TRANSFERRED 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					Document Number					Rev					0.1(X00)					Date					Friday, December 14, 2018					Sheet					95					of					100
Security Classification		Compal Secret Data		Compal Electronics, Inc.																																																												
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title																																																												
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 TRANSFERRED 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																																																												
				Document Number																																																												
				Rev																																																												
				0.1(X00)																																																												
				Date																																																												
				Friday, December 14, 2018																																																												
				Sheet																																																												
				95																																																												
				of																																																												
				100																																																												

Security Classification		Compal Secret Data		Compal Electronics, Inc.
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title
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 TRANSFERRED 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
				Document Number
				Rev
				0.1(X00)
				Date
				Friday, December 14, 2018
				Sheet
				95
				of
				100



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title	P45-Reserved
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 TRANSFERRED 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	Document Number
				Date	Rev
				Friday, December 14, 2018	0.1(X00)
				Sheet	96 of 100

5	4	3	2	1																																																												
D				D																																																												
C				C																																																												
B				B																																																												
A				A																																																												
<table><tr><td colspan="2">Security Classification</td><td colspan="2">Compal Secret Data</td><td>Compal Electronics, Inc.</td></tr><tr><td>Issued Date</td><td>2018/01/23</td><td>Deciphered Date</td><td>2022/12/31</td><td>Title</td></tr><tr><td colspan="4">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 TRANSFERRED 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.</td><td>Size</td></tr><tr><td colspan="4"></td><td>Document Number</td></tr><tr><td colspan="4"></td><td>Rev</td></tr><tr><td colspan="4"></td><td>0.1(X00)</td></tr><tr><td colspan="4"></td><td>Date</td></tr><tr><td colspan="4"></td><td>Friday, December 14, 2018</td></tr><tr><td colspan="4"></td><td>Sheet</td></tr><tr><td colspan="4"></td><td>97</td></tr><tr><td colspan="4"></td><td>of</td></tr><tr><td colspan="4"></td><td>100</td></tr></table>					Security Classification		Compal Secret Data		Compal Electronics, Inc.	Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title	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 TRANSFERRED 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					Document Number					Rev					0.1(X00)					Date					Friday, December 14, 2018					Sheet					97					of					100
Security Classification		Compal Secret Data		Compal Electronics, Inc.																																																												
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title																																																												
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 TRANSFERRED 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																																																												
				Document Number																																																												
				Rev																																																												
				0.1(X00)																																																												
				Date																																																												
				Friday, December 14, 2018																																																												
				Sheet																																																												
				97																																																												
				of																																																												
				100																																																												
5	4	3	2	1																																																												

5	4	3	2	1																																																												
D				D																																																												
C				C																																																												
B				B																																																												
A				A																																																												
<table><tr><td colspan="2">Security Classification</td><td colspan="2">Compal Secret Data</td><td>Compal Electronics, Inc.</td></tr><tr><td>Issued Date</td><td>2018/01/23</td><td>Deciphered Date</td><td>2022/12/31</td><td>Title</td></tr><tr><td colspan="4">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 TRANSFERRED 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.</td><td>Size</td></tr><tr><td colspan="4"></td><td>Document Number</td></tr><tr><td colspan="4"></td><td>Rev</td></tr><tr><td colspan="4"></td><td>0.1(X00)</td></tr><tr><td colspan="4"></td><td>Date</td></tr><tr><td colspan="4"></td><td>Friday, December 14, 2018</td></tr><tr><td colspan="4"></td><td>Sheet</td></tr><tr><td colspan="4"></td><td>98</td></tr><tr><td colspan="4"></td><td>of</td></tr><tr><td colspan="4"></td><td>100</td></tr></table>					Security Classification		Compal Secret Data		Compal Electronics, Inc.	Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title	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 TRANSFERRED 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					Document Number					Rev					0.1(X00)					Date					Friday, December 14, 2018					Sheet					98					of					100
Security Classification		Compal Secret Data		Compal Electronics, Inc.																																																												
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title																																																												
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 TRANSFERRED 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																																																												
				Document Number																																																												
				Rev																																																												
				0.1(X00)																																																												
				Date																																																												
				Friday, December 14, 2018																																																												
				Sheet																																																												
				98																																																												
				of																																																												
				100																																																												

Security Classification		Compal Secret Data		Compal Electronics, Inc.
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title
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 TRANSFERRED 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
				Document Number
				Rev
				0.1(X00)
				Date
				Friday, December 14, 2018
				Sheet
				98
				of
				100



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title	P45-Reserved
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 TRANSFERRED 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	Document Number
				Date:	Friday, December 14, 2018
				Sheet	99 of 100
				Rev	0.1(X00)
				LA-G441P	

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/01/23	Deciphered Date	2022/12/31	Title	
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 TRANSFERRED 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.				P45-Reserved	
				Size Document Number LA-G441P Date: Friday, December 14, 2018 Sheet 100 of 100	
				Rev 1.0(X00)	