

COMPAL CONFIDENTIAL

MODEL NAME : Warlock TGL

PCB NO : DA8001PT000

PCB 2X2 LA-L242P REV0 M/B 1 S

TGL-U+N17S-G5+MEC1515  
(DSC) - Realtek Codec  
2021-04-07  
REV : 1.0 (A00)

**TGL CPU QS**

UC1  
SA0000DRS1L  
QS\_I3@  
S IC A31 FH8069004531502 QVBG B1 3G S

UC1  
SA0000DRR1L  
QS\_I5@  
S IC A31 FH8069004530601 QVBD B1 2.4G S

UC1  
SA0000DRG1L  
QS\_I7@  
S IC A31 FH8069004529905 QVBA B1 2.8G S

**TGL CPU Base-U**

UC1  
SA0000DXG2L  
PENTIUM@  
S IC A31 FH8069004531802 QVBK B1 2G S

UC1  
SA0000DXH2L  
CELERON@  
S IC A31 FH8069004531901 QVBS B1 1.8G S

**TGL CPU R3**

UC1  
SA0000DTV2L  
R3\_I3@  
S IC FH8069004531602 SRK08 B1 3G A31 !


UC1  
SA0000E4U3L  
R3\_I34C@  
S IC FH8069004531606 SRK8S B1 2G A31 !

UC1  
SA0000DTU2L  
R3\_I5@  
S IC FH8069004531301 SRK05 B1 2.4G A31 !

UC1  
SA0000DTT2L  
R3\_I7@  
S IC FH8069004530104 SRK02 B1 2.8G A31 !

@ : Un-pop Component  
DIS@/DISRF@ : GPU Surpport  
M\_STRAP@/H\_STRAP@/S\_STRAP@ : VRAM strap pin  
2G\_G5@/4G\_G5@ : 2G GDDR5 / 4G GDDR5 VRAM  
UMA@ : not Support external Graphic card  
N3@/V3@ : Inspiron/Vostro  
MSFT@/NMSFT@ : MSFT SKU / Normal SKU  
G3@ : Support G3 sharing SPI topology  
CNV@ : Support CNVi function  
S5LID@/LID@ : Support S5 LID power up Function/Normal LID close  
ES\_I3@/ES\_I5A@/ES\_I5B@/ES\_I7@ : TGL-U QS Sample  
STG@ : C10\_gate control VCCSTG  
I2CTCH@/USBTCH@ : Touch Screen support I2C signal / USB signal  
BASE@/PREM@ : Pentium,Celeron/i3,i5,i7  
I2CPAD@/PS2PAD@ : EC use I2C touch PAD signal(or PS2)  
JP@/JUMP@/PJP@ : JUMP  
100@/1000@ : 10/100 LAN / Giga-LAN  
PRO@/ICPRO@ : only LCDVDD protection/Hinge up protection Support  
EMI@/ESD@/RF@ : EMI, ESD and RF Component  
@EMI@/@ESD@/@RF@ : EMI, ESD and RF Un-POP Component  
CMC@ : XDP Component  
CONN@ : Connector Component  
KBBL@ : KB Backlight  
TPM@/NTPM@ : HW TPM/SW TPM  
750\_CTPM@ : 750 and china TPM  
CTPM@/ST\_CTPM@ : China TPM/ST China TPM  
FFS@ : Free Fall Sensor  
TYPEC@/NTYPEC@ : Support TypeC/non-TypeC  
TYPEC@EMI@/TYPEC@ESD@: EMI, ESD ,TypeC Component  
LBIST@/LBIST@RF@ : LBIST for LCD monitor  
N17S\_G3\_R3@/N17S\_G3\_R1@ : N17S-G3-A1\_BGA\_595P GPU  
TP@/CMC@TP@ : Test Point/XDP Test Point  
DISPCB@/UMAPCB@ : PCB MB

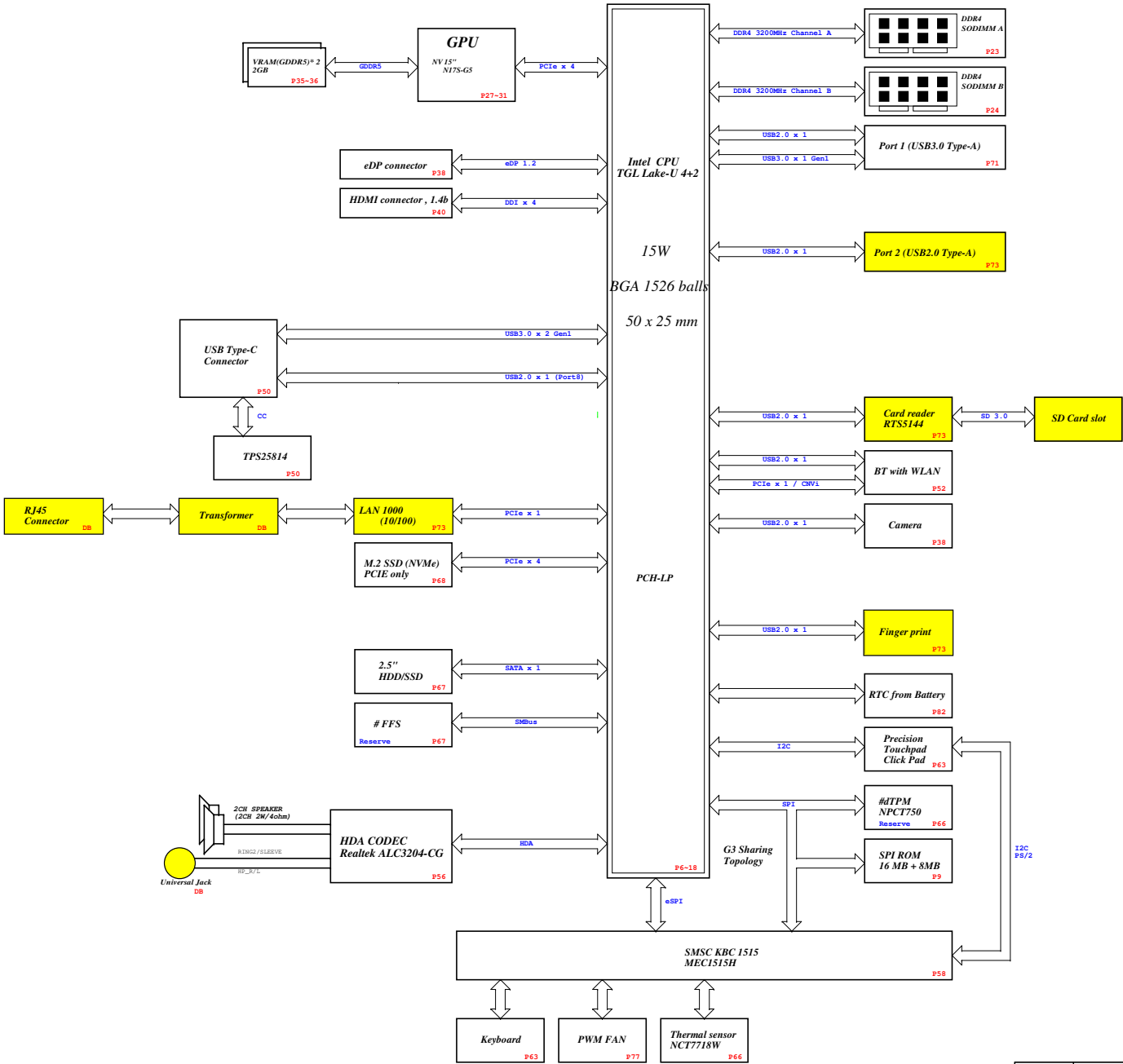
Layout Dell logo



COPYRIGHT 2014  
ALL RIGHT RESERVED  
REV: X01  
PWB: 9HTP8

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	Cover Page	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 1 of 121

Block Diagram



POWER STATES

Signal	SLP S3#	SLP S4#	SLP S5#	ALWAYS PLANE	SUS PLANE	RUN PLANE	CLOCKS
State							
S0 (Full ON) / M0	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM) / M3	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to DISK) / M3	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M3	LOW	LOW	LOW	ON	OFF	OFF	OFF
G3	OFF	OFF	OFF	OFF	OFF	OFF	OFF
DS3	---	---	---	---	---	---	---

USB 2.0	DESTINATION
1	USB2.0 port1
2	NC
3	USB2.0 port3, IO/B
4	Typec-C
5	Finger printer
6	CCD
7	Card reader , IO/B
8	NC
9	Reserved
10	BT

Board ID & Model ID Table

Bullseye TGL			
NBDR	SKU	Model-ID (RE4 PD-100K)	Board-ID (RE2 PD-100K)
	UMA	RE3 PU-10K	RE1 PU-10K -EVT RE1 PU-17.8K -DVT1 RE1 PU-27.0K -Reserve RE1 PU-37.4K -DVT2 RE1 PU-49.9K -Reserve
	DSC - N17S-G3	RE3 PU-17.8K	RE1 PU-64.9K -Pilot RE1 PU-82.5K -Reserve

Voltage Rails

Power Plane	Description	S0	S3	S4/S5	G3
+19V_ADPIIN	Adapter power supply	N/A	N/A	N/A	N/A
+17.4V_BATT++	Battery power supply	N/A	N/A	N/A	N/A
+19VB	AC or battery power rail for System	N/A	N/A	N/A	N/A
+RTC_SOC	RTC power	ON	ON	ON	ON
+3VALW_DSW	+3VALW power for PCH DSW rails	ON	ON	ON*	OFF
+5VALW	System +5V always on power rail	ON	ON	ON*	OFF
+3VALW	System +3V always on power rail	ON	ON	ON*	OFF
+1.8V_PRIM	System +1.8V always on power rail	ON	ON	ON*	OFF
+1.0V_PRIM	System +1.0V always on power rail	ON	ON	ON*	OFF
+1.2V_DDR	DDR4 +1.2V power rail	ON	ON	OFF	OFF
+2.5V_MEM	DDR4 +2.5V power rail	ON	ON	OFF	OFF
+0.6V_DDR_VTT	DDR +0.6VS power rail for DDR terminator	ON	OFF	OFF	OFF
+VCCIN_AUX	CPU and PCH merged auxiliary power rail	ON	ON	ON	OFF
+VCCST	+1.05 VCCST power rail	ON	ON	ON	OFF
+VCCSTG	+1.05 VCCSTG power rail	ON	OFF	OFF	OFF
VCCPLL	+1.05 VCCPLL power rail	ON	ON	ON	OFF
+VCC_IN	Core voltage for CPU	ON	OFF	OFF	OFF
+3VLP	+19VB to +3VLP power rail for suspend power	ON	ON	ON	OFF
+3VALW_DSW	+19VB to DSW power rail for suspend power	ON	ON	ON	OFF
+3VALW_PCH	+3VALW power for PCH suspend rails	ON	ON	ON*	OFF
+5VS	System +5VS power rail	ON	OFF	OFF	OFF
+3VS	System +3VS power rail	ON	OFF	OFF	OFF
+1.35V_MEM GFX	+1.35V power rail for GPU	ON	OFF	OFF	OFF
+3VGS	+3V power rail for GPU	ON	OFF	OFF	OFF
+1.8VGS	+1.8V power rail for GPU	ON	OFF	OFF	OFF
+0.95VSDGPU	+0.95V power rail for GPU	ON	OFF	OFF	OFF

Note : ON\* means that this power plane is ON only with AC power available, otherwise it is OFF

RE: ICL N3V3 MLK High Power Consumption on VCCIN\_AUX Under S3/S5

Wu, Eddie <eddie.wu@intel.com>

发件日期: 2019/5/6 (周四) 下午 09:41

收件人: Chen, Deval (TFB); Chen, Johany (TFB); Hong, Henry (TFB); Chang, Ivy Si; Lan, Joe (TFB); Lai, Carol (TFB); Krazy, Lu@del.com

副本: Chen, AlexCL (TFB); Chang, Gary; Hase, Jimmy

Hi David,  
VCCIN\_AUX only down to 0V while SLP\_S0# is asserted.  
On S3 mode, it only can down to 1.1V. Thanks.

Best Regards,  
Eddie Wu +886-2-66221110

10.12.4 Power States

Table 207. System with M3 State Supported

Rails	SKUs	S0/M0 3	C102	S0ix/M-off*	S3/M3	S3/M-off	S4 and S5/M3	S4 and S5/M-off	Deep S4/S5	G3+
VCCRTC	All	ON	ON	ON	ON	ON	ON	ON	ON	ON
VCCDSW_3P3	All	ON	ON	ON	ON	ON	ON	ON	ON	No Power
VBATA (VDC)	All	ON	ON	ON	ON	ON	ON	ON	ON	No Power
V5.0A	All	ON	ON	ON	ON	ON	ON	ON	OFF	No Power
VCCPRIM_3P3	All	ON	ON	ON	ON	ON	ON	ON	OFF	No Power
VCCPRIM_1P8	All	ON	ON	ON	ON	ON	ON	ON	OFF	No Power
VCC_VNNEXT_1 P05	All	ON	ON	ON	ON	ON	ON	ON	OFF	No Power
VCC_V1P0SEXT_1P05	All	ON	ON	ON	ON	ON	ON	ON	OFF	No Power
V3.3M <sup>5</sup>	All	ON	ON	OFF	ON <sup>10</sup>	OFF	ON <sup>10</sup>	OFF	OFF	No Power
V1.8M <sup>5</sup>	All	ON	ON	OFF	ON <sup>10</sup>	OFF	ON <sup>10</sup>	OFF	OFF	No Power
VDDQ	All	ON	ON	ON	ON	ON	OFF	OFF	OFF	No Power
V2.5U (VPP)	All	ON	ON	ON	ON	ON	OFF	OFF	OFF	No Power
VCCST	All	ON	ON	ON	ON <sup>13</sup>	ON <sup>13</sup>	OFF <sup>6</sup>	OFF <sup>6</sup>	OFF	No Power
VCCSTG	All	ON	OFF <sup>2</sup>	OFF	OFF	OFF	OFF	OFF	OFF	No Power
V3.3S	All	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	No Power
VCCIN	All	ON	ON	ON <sup>11</sup>	OFF	OFF	OFF	OFF	OFF	No Power
VCCIN_AUX	All	ON	ON	ON <sup>11</sup>	OFF <sup>14</sup>	OFF <sup>14</sup>	OFF <sup>14</sup>	OFF <sup>14</sup>	OFF	No Power

Note : VCCIN\_AUX only down to 0V while SLP\_S0# is asserted. On S3 mode, it only can down to 1.1V.

USB3.0	PCIE	SATA	DESTINATION
USB3.0-1	PCIE-1		USB3.0 (MB)(Type-A)
USB3.0-2	PCIE-2		NC
USB3.0-3	PCIE-3		USB3.0 (Type-C)
USB3.0-4	PCIE-4		USB3.0 (Type-C)
	PCIE-5		PCIE SSD
	PCIE-6		PCIE SSD
	PCIE-7		PCIE SSD
	PCIE-8		PCIE SSD
	PCIE-9		LOM
	PCIE-10		WLAN
	PCIE-11	SATA-0	SATA HDD
	PCIE-12	SATA-1	NC
	PCIE4 - 0		GPU
	PCIE4 - 1		GPU
	PCIE4 - 2		GPU
	PCIE4 - 3		GPU

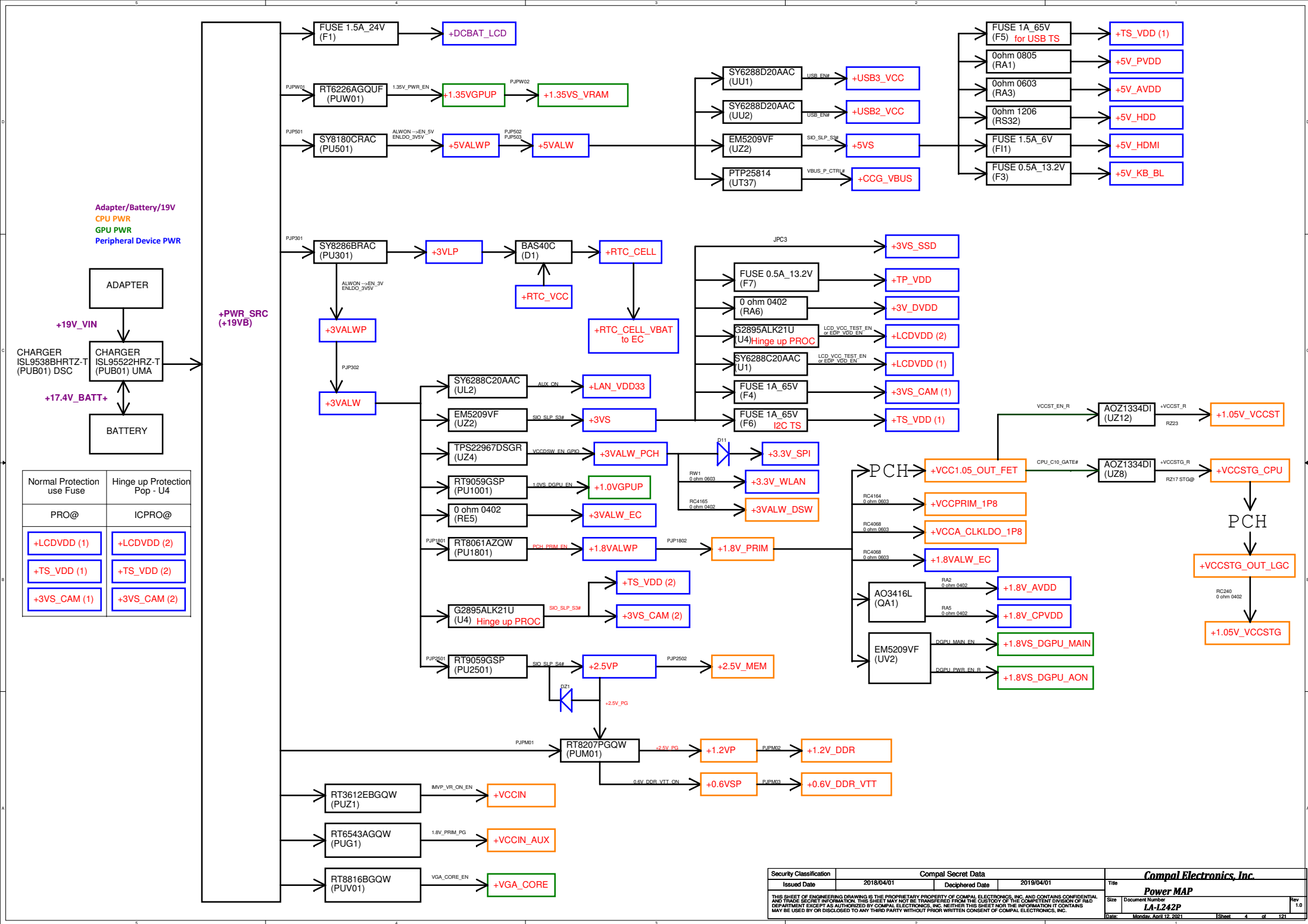
Figure 77. High Speed I/O (HSIO) Lane Multiplexing in PCH-LP (UP3)

Flex HSIO Lane	0	1	2	3	4	5	6	7	8	9	10	11
HSIO Type and Lane	USB 3.2 Gen 1x1/2x1 #1	USB 3.2 Gen 1x1/2x1 #2	USB 3.2 Gen 1x1/2x1 #3	USB 3.2 Gen 1x1/2x1 #4	PCIE* #5	PCIE* #6	PCIE* #7	PCIE* #8	PCIE* #9	PCIE* #10	PCIE* #11	PCIE* #12
	PCIE* #1	PCIE* #2	PCIE* #3	PCIE* #4							SATA 0	SATA 1

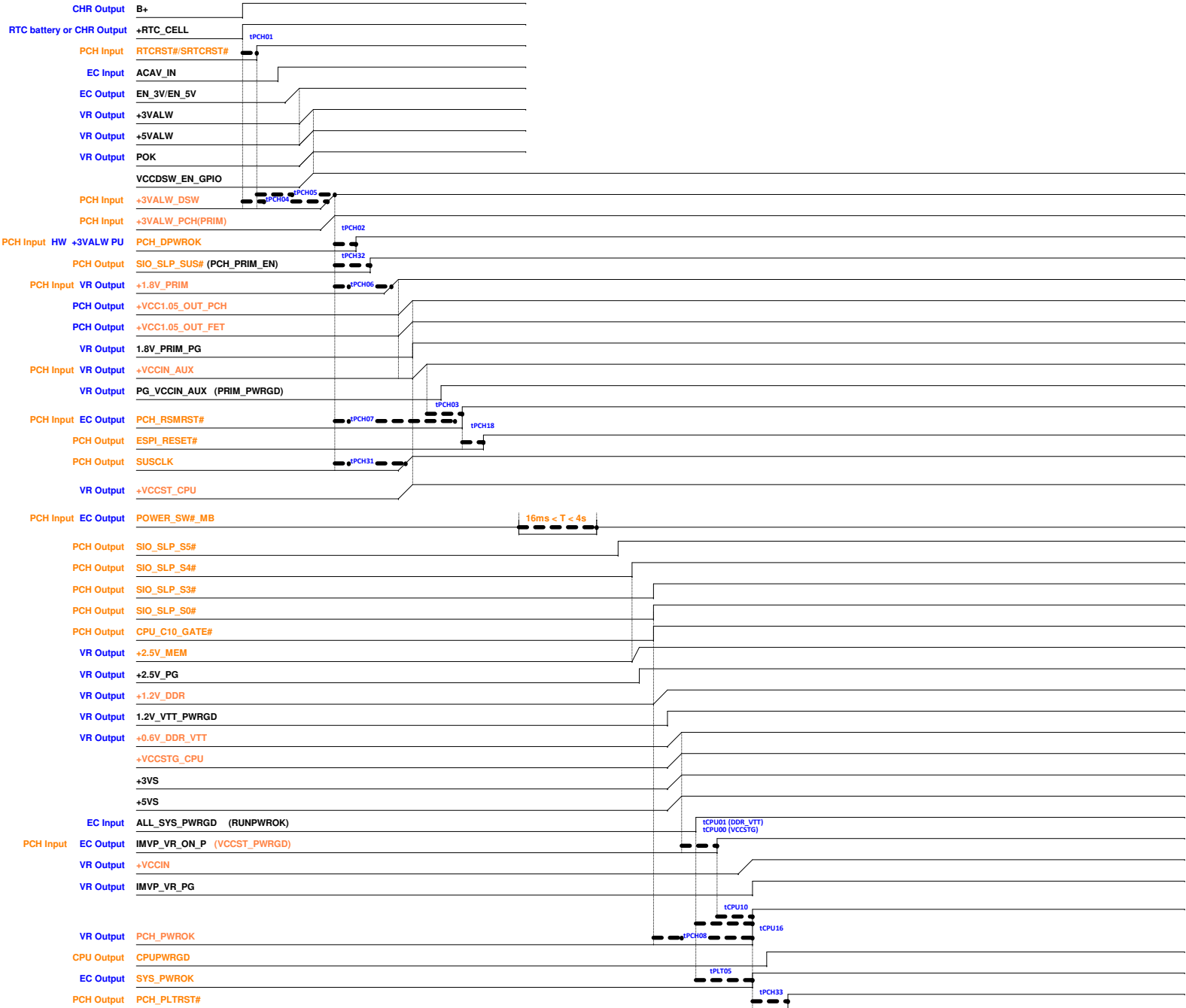
Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/04/01	Deciphered Date	2018/04/01	Docu
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPETENCY 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.				Notes List
LA-L242P				Rev 1.0
Date: Monday, April 12, 2021				Page 3 of 181

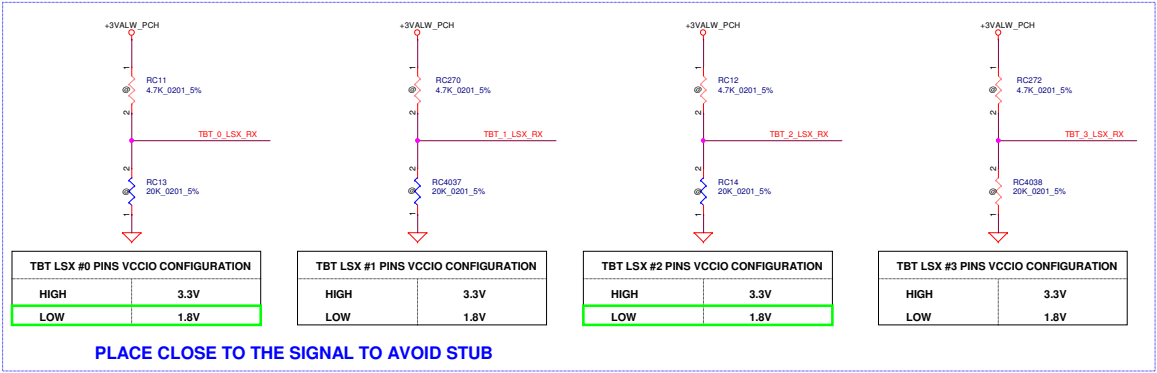
DELL CONFIDENTIAL/PROPRIETARY

PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL, TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSMITTED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.



Power Up Sequence  
G3 to S0

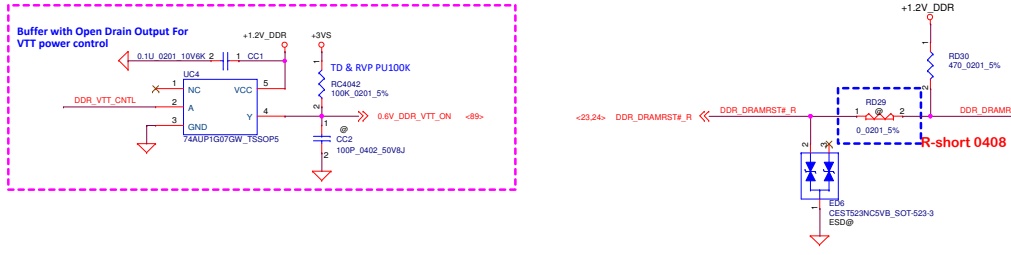
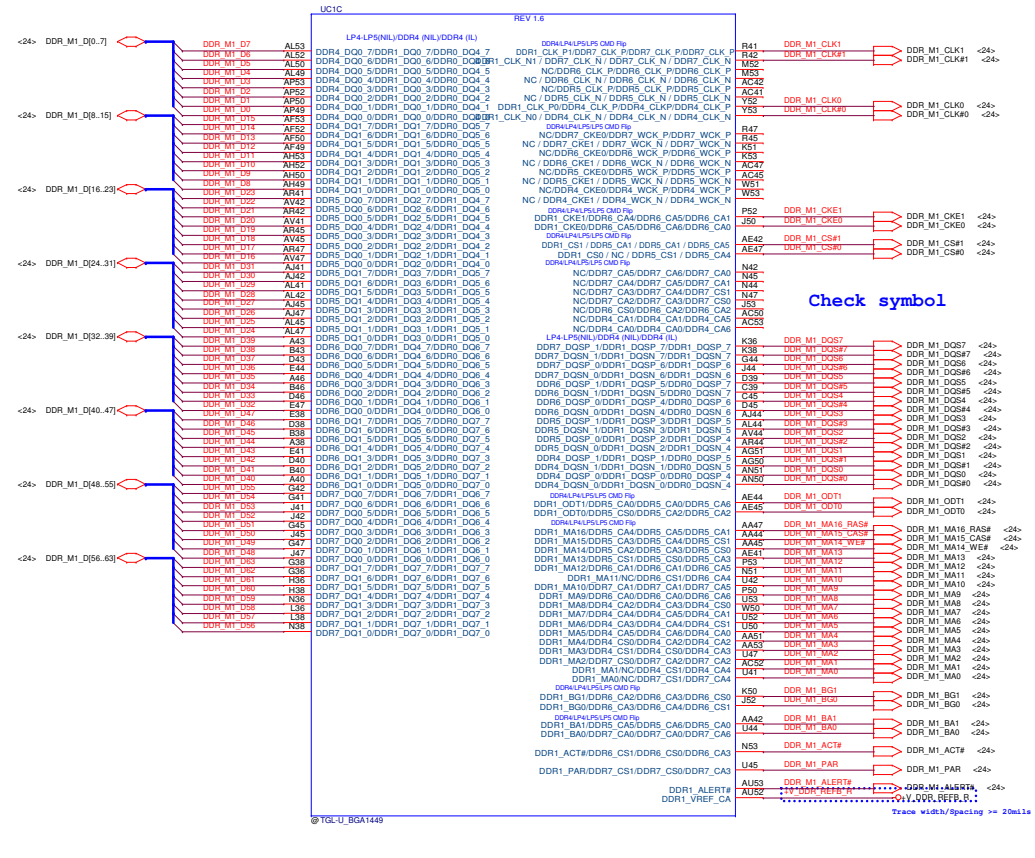
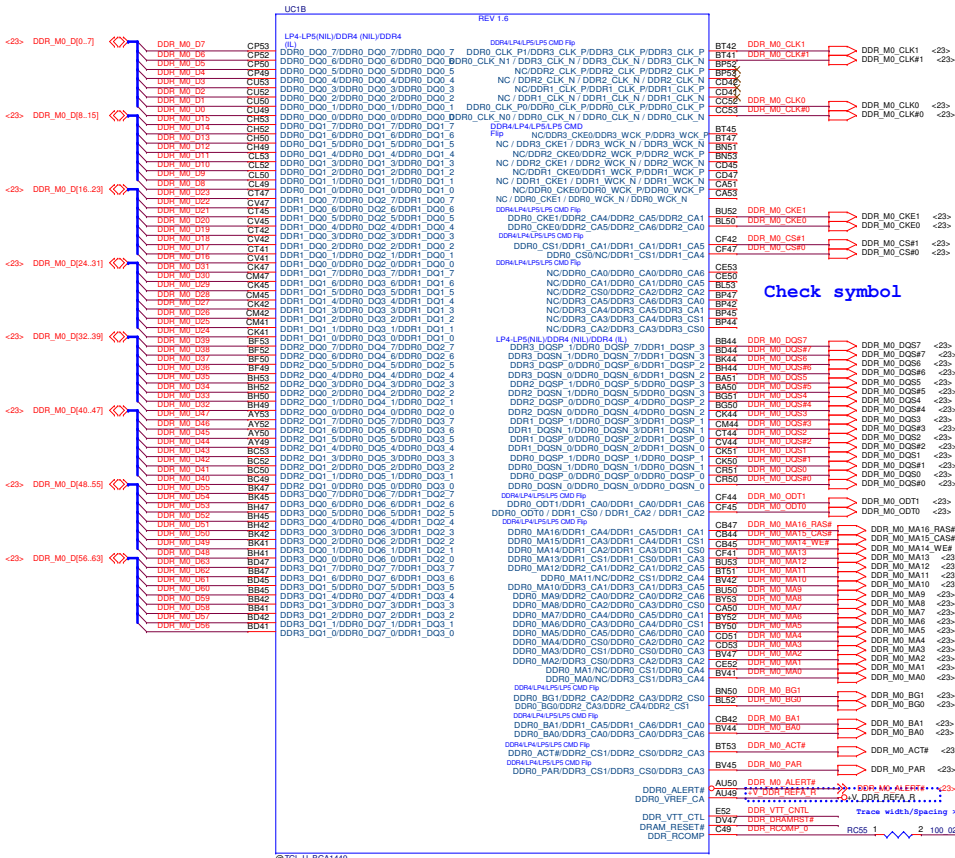




Security Classification	Compal Secret Data			Compal Electronics, Inc.				
Issued Date	2020/10/01	Deciphered Date	2018/10/01	Title	P006 - TGL-U(1/13)TCSS.EDP			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMITTED OR IN CUSTODY OF THE COMPETITIVE 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		
				LA-1242P				1.0
				Date:	Monday, April 12, 2021	Sheet	6	of

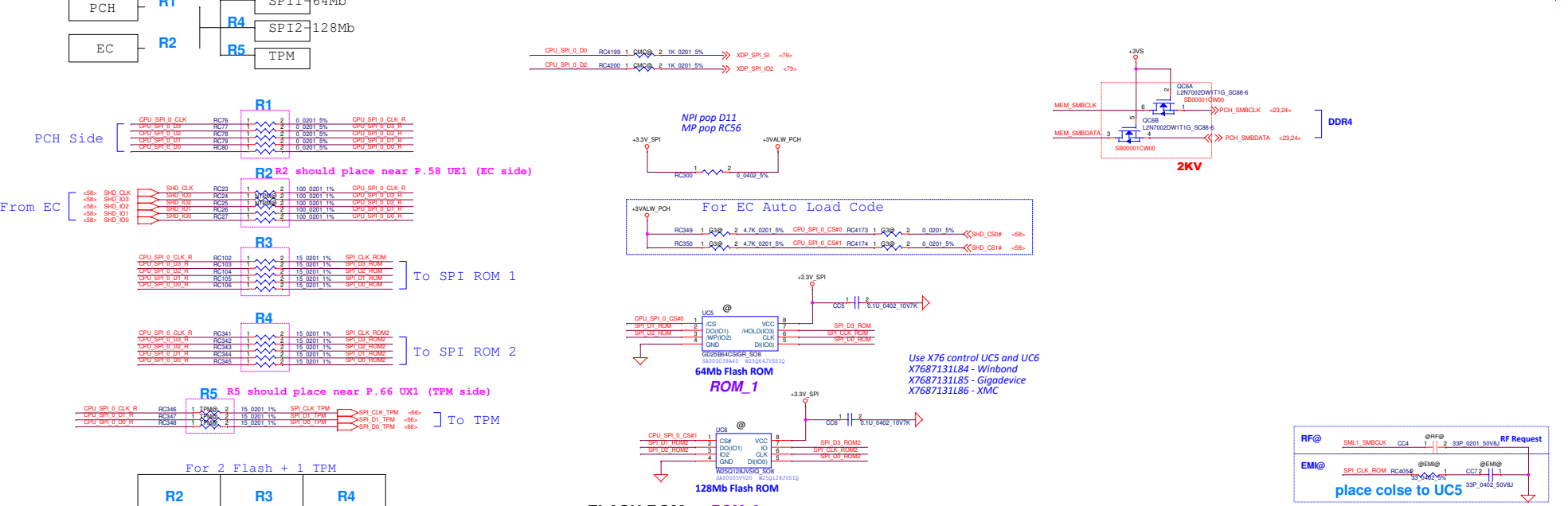
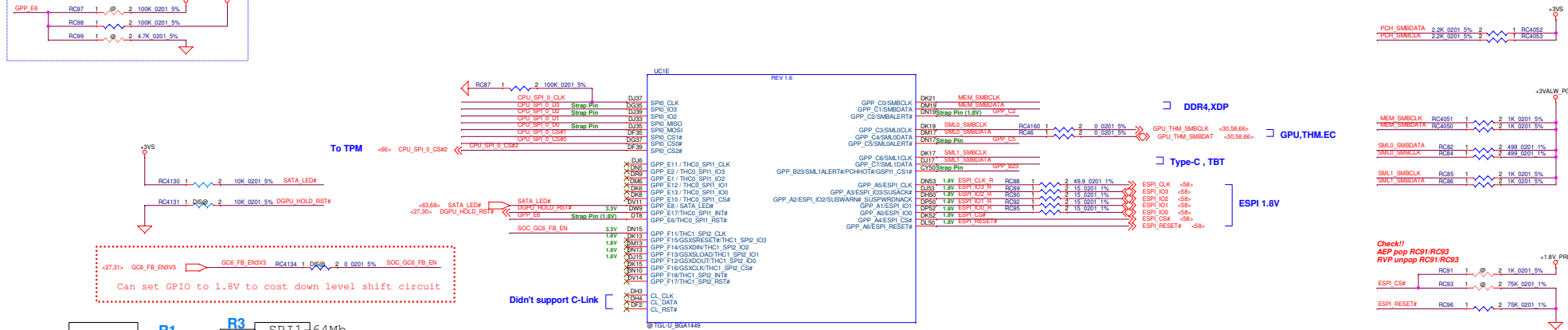
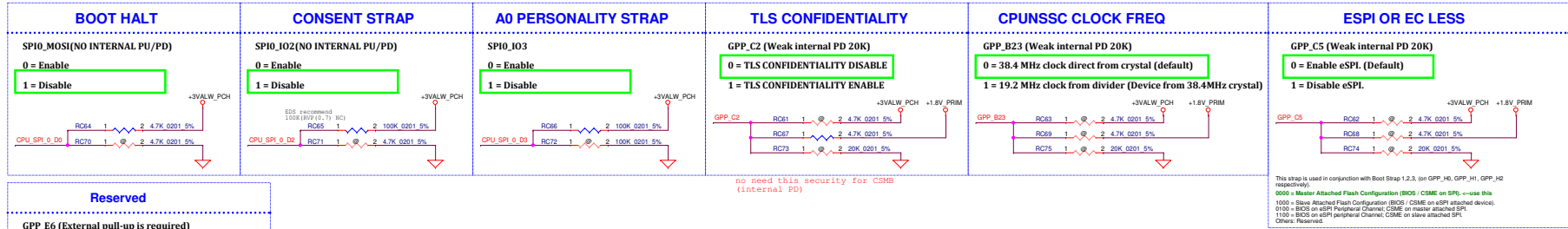




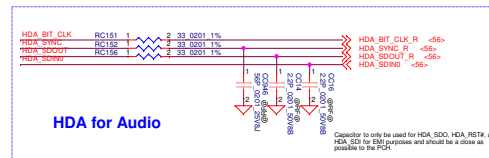
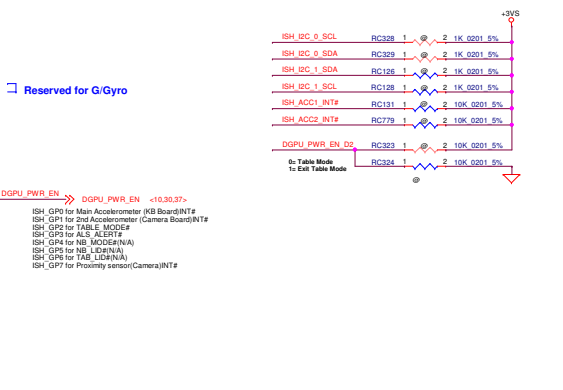
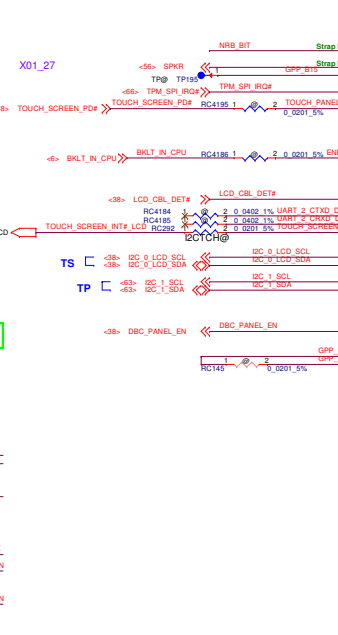
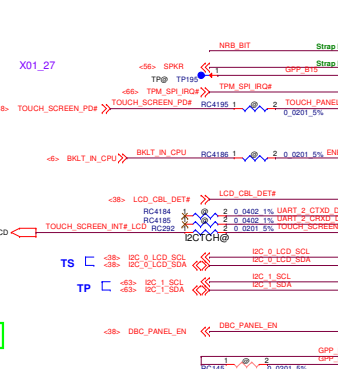


Security Classification		Compal Secret Data		2018/10/01	
Issued Date	Deciphered Date	Title			
2020/10/01	2018/10/01	P008 - TGL-U(313)/LPDDR4x			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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.					
Site		Document Number		Rev	
LA-1242P		80.6, 0201.1%		1.0	
Date		Monday, April 12, 2021		Sheet 6 of 121	

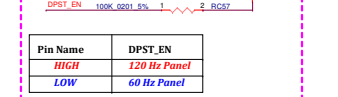
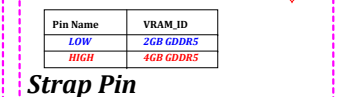
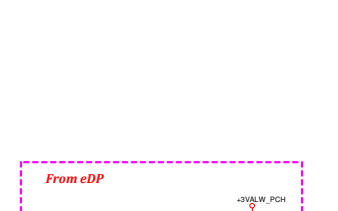
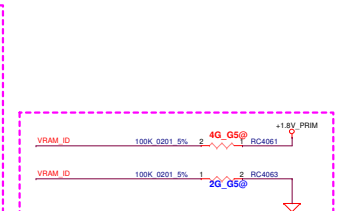
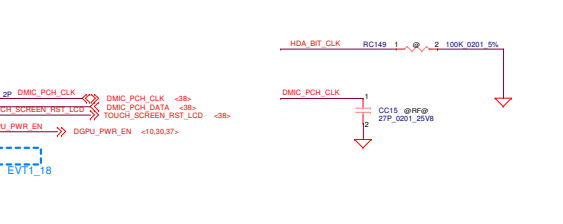
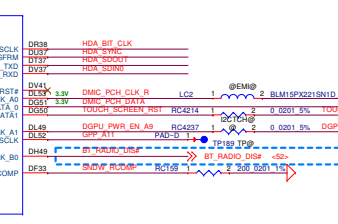
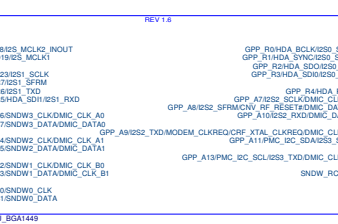
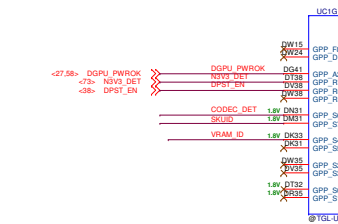
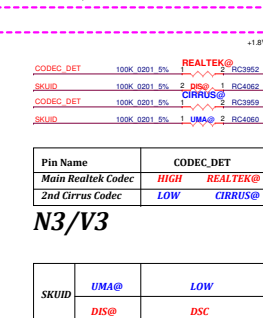
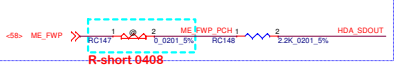




1 = NO REBOOT (This function is useful when running ITP/XDP).



**1 = DISABLE (ME can update)**



Security Classification	Compul Secret Data	Compul Electronics, Inc.		
Issued Date	2020/10/01	Deciphered Date	2018/10/01	Title
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 TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPUL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPUL ELECTRONICS, INC.				Size
				Document Number
				LA-1242P



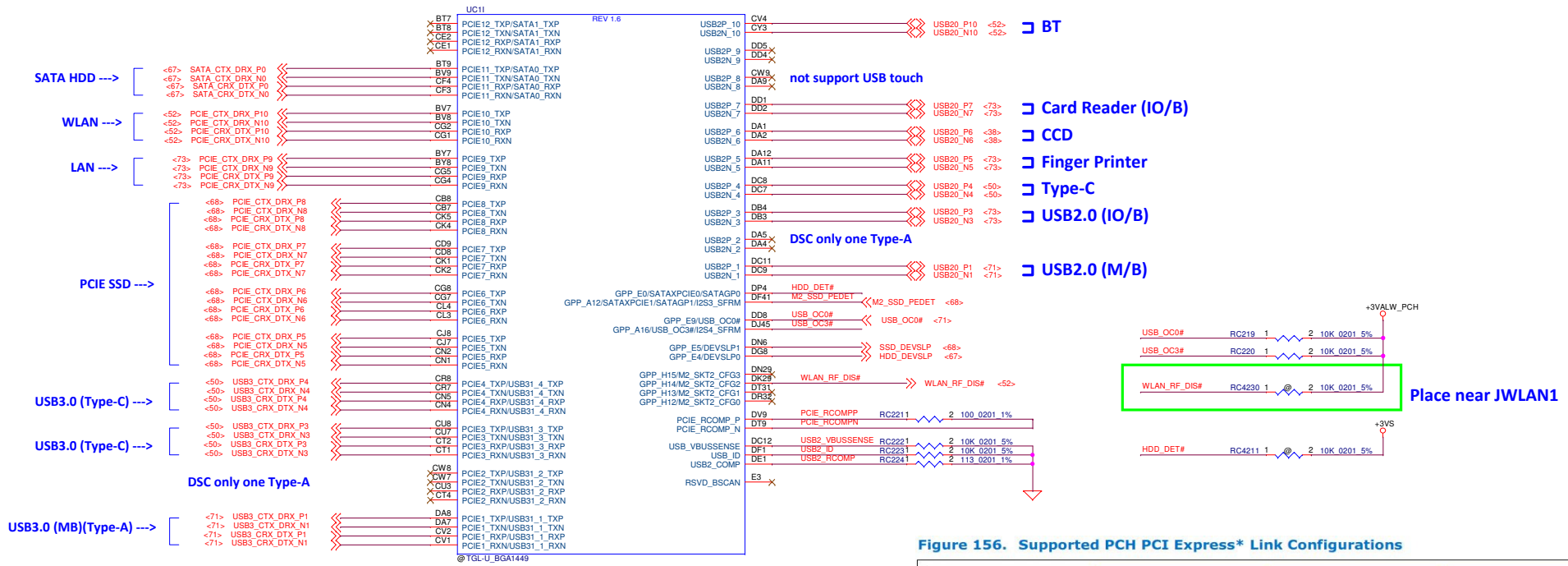
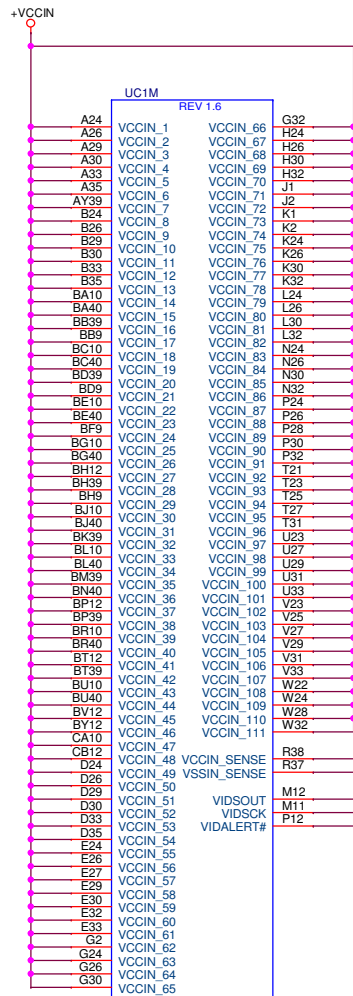


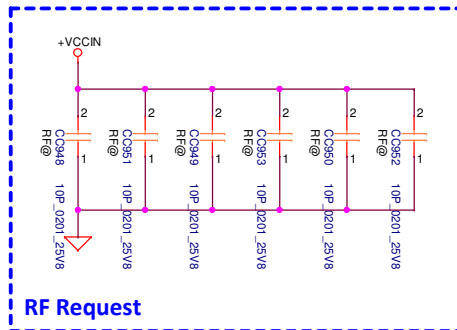
Figure 156. Supported PCH PCI Express\* Link Configurations

PCH-LP	PCIe* Controller #1				PCIe* Controller #2				PCIe* Controller #3			
Flex I/O Lanes	0	1	2	3	4	5	6	7	8	9	10	11
PCIe* Lanes	1	2	3	4	5	6	7	8	9	10	11	12
Link Lanes	1x4	0	1	2	3	0	1	2	3	0	1	2
	1x4 LR	3	2	1	0	3	2	1	0	3	2	1
	2x2	0	1	0	1	0	1	0	1	0	1	0
	1x2+2x1	0	1	0	0	0	1	0	0	0	1	0
	2x1+1x2	0	0	1	0	0	0	1	0	0	0	1
Base-U	4x1	0	0	0	0	0	0	0	0	0	0	0
	1x4					RP5				RP9		
	1x4 LR					RP5				RP9		
	2x2					RP5		RP7		RP9		RP11
	1x2+2x1					RP5	RP7	RP8		RP9	RP11	RP12
Premium-U	2x1+1x2					RP8	RP7	RP5		RP12	RP11	RP9
	4x1					RP5	RP6	RP7	RP8	RP9	RP10	RP11
	1x4	RP1				RP5				RP9		
	1x4 LR	RP1				RP5				RP9		
	2x2	RP1		RP3		RP5		RP7		RP9		RP11
Premium-Y	1x2+2x1	RP1		RP3	RP4			RP7	RP8	RP9	RP11	RP12
	2x1+1x2	RP4	RP3		RP1					RP12	RP11	RP9
	4x1	RP1	RP2	RP3	RP4	RP5	RP6	RP7	RP8	RP9	RP10	RP11
	1x4	RP1								RP9		
	1x4 LR	RP1								RP9		





@TGL-U\_BGA1449



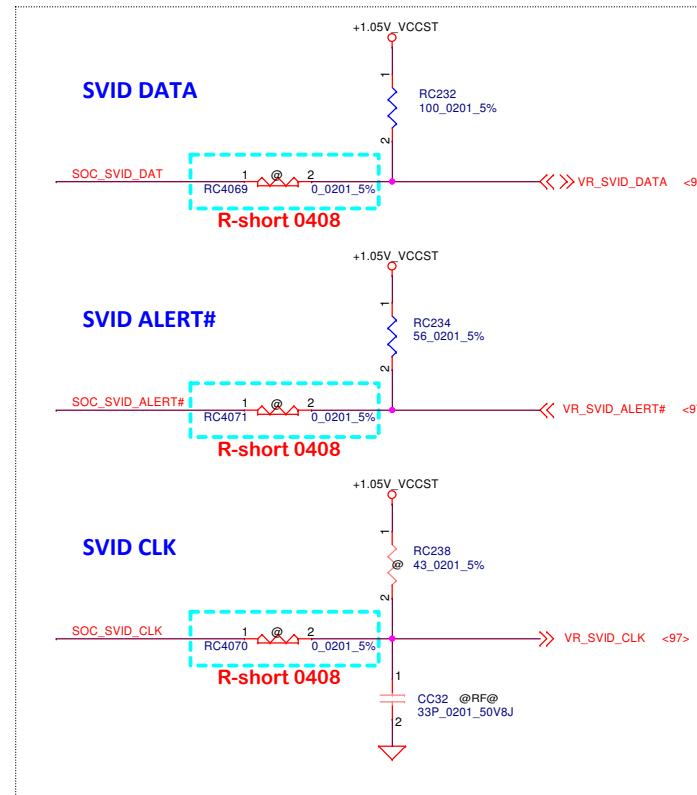
Trace Length Match<25 mils  
Must be routed as differential pair to VR

VCC\_SENSE\_VCCIN <97>  
VSS\_SENSE\_VCCIN <97>

SOC\_SVID\_DAT  
SOC\_SVID\_CLK  
SOC\_SVID\_ALERT#

- 1.The total Length of Data and Clock (from CPU to each VR) must be equal (±0.1 inch).
- 2.Route the Alert signal between the Clock and the Data signals.

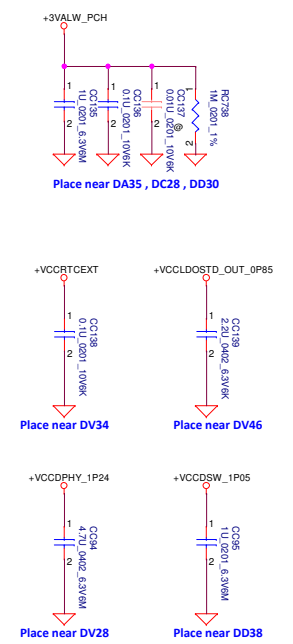
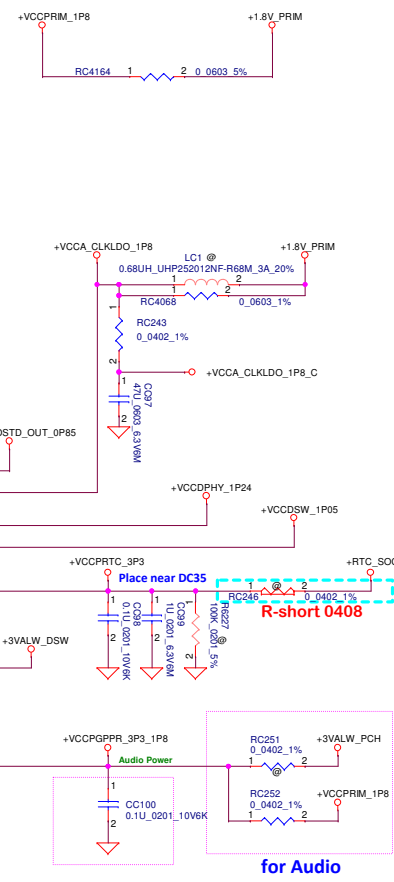
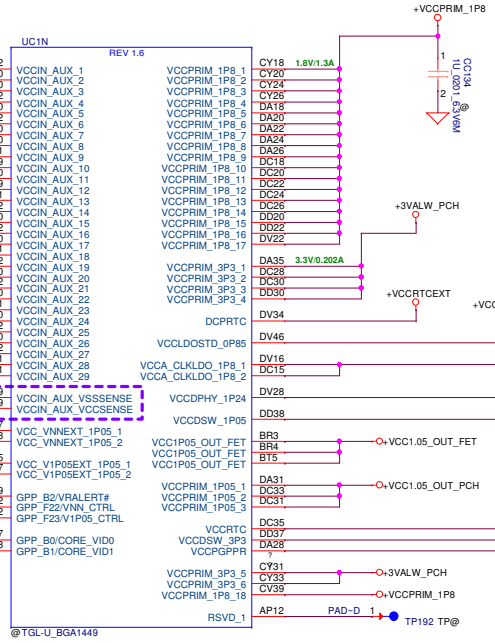
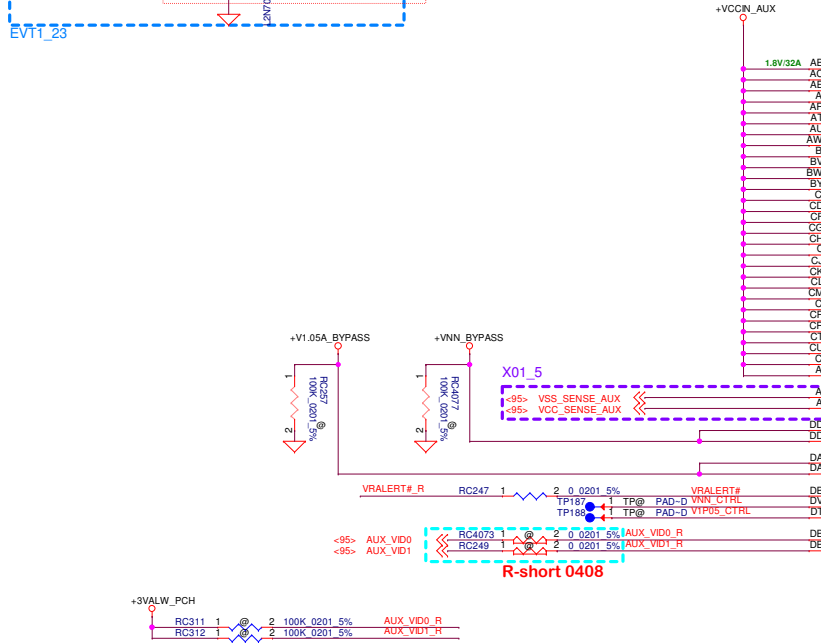
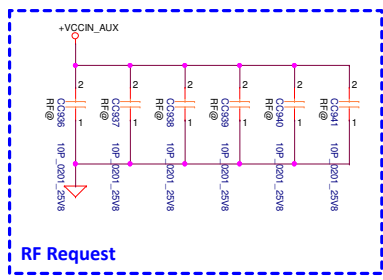
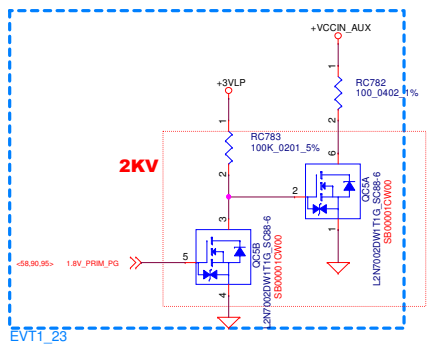
CAD Note: Place the PU resistors close to CPU



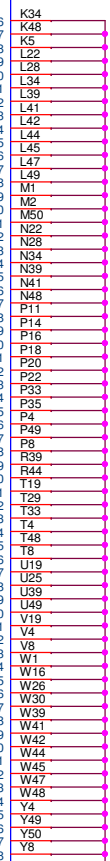
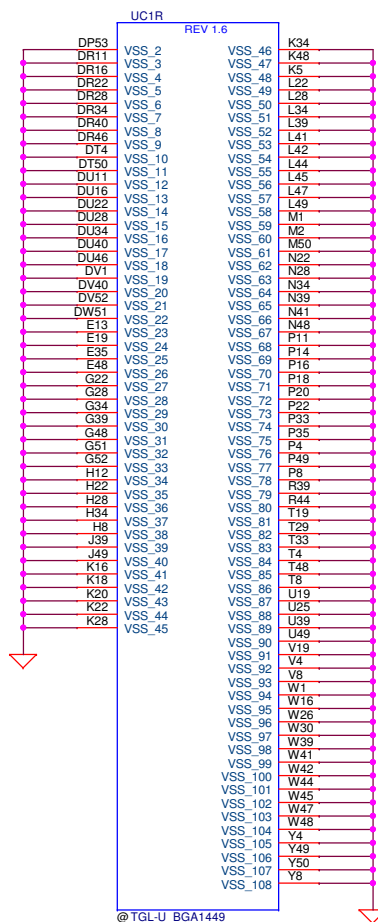
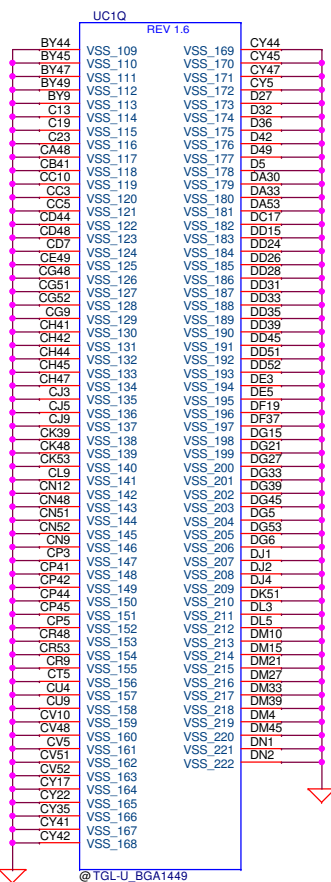
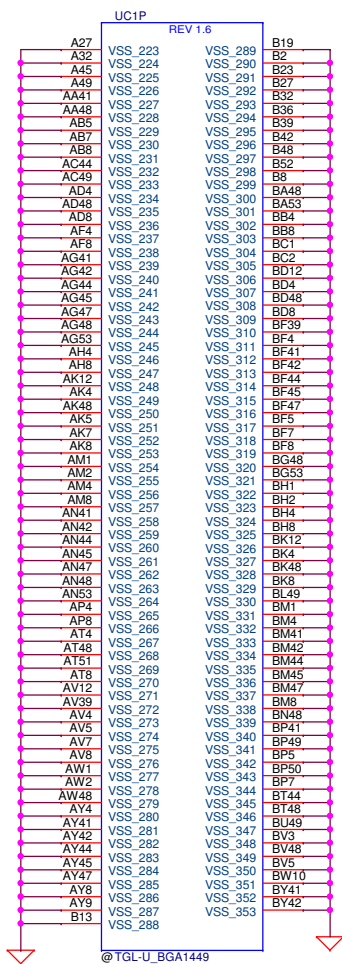
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2020/10/01	Deciphered Date	2018/10/01	Title	P014 - TGL-U(9/13)CPU PWR,SVID
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. 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	Monday, April 12, 2021
				Sheet	14 of 121
				Rev	1.0





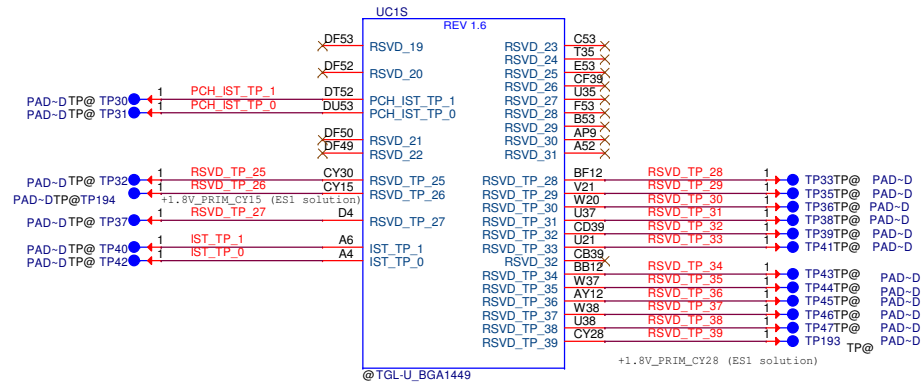


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2020/10/01	Deciphered Date	2018/10/01	Title	P016 - TGL-U(11/13)PCH Power
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF ROAD 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	LA-L242P
				Sheet	16 of 121



Security Classification		Compal Secret Data		Compal Electronics, Inc.													
Issued Date		2020/10/01		Deciphered Date		2018/10/01		Title									
								P017 - TGL-U(12/13)GND									
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							
LA-L242P								1.0									
						Date:		Monday, April 12, 2021		Sheet 17 of 121							

ES1 Workaround Circuit  
Intel Document Number: 614056



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2020/10/01	Deciphered Date	2018/10/01	Title	P018 - TGL-U(13/13)RSVD
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:	Monday, April 12, 2021
				Sheet	18 of 121
				Rev	1.0

Main Function:

Reserve

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date		2014/09/08	Deciphered Date	2013/10/28	
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	
				(RSVD)	
				Document Number	Rev
				LA-L242P	1.0
Date:		Monday, April 12, 2021		Sheet	19 of 121

Main Function:

Reserve

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2014/09/08	Deciphered Date	2013/10/28	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 20 of 121

Main Function:

Reserve

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2014/09/08	Deciphered Date	2013/10/28	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 21 of 121

Main Function:

Reserve

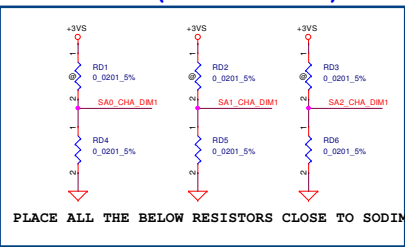
LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2014/09/08	Deciphered Date	2013/10/28	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 22 of 121



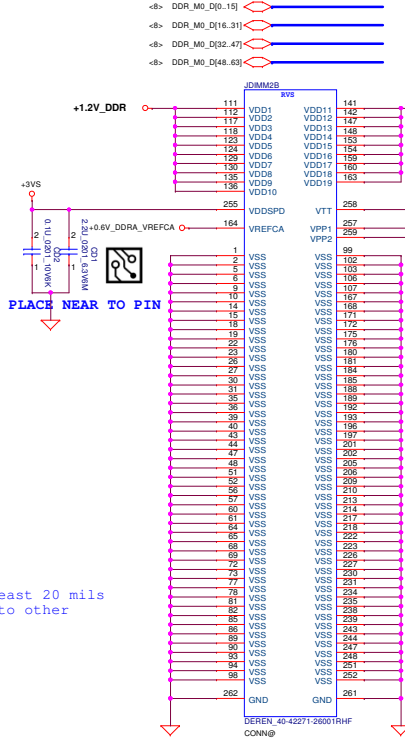
# CHANNEL-M0

BOT: DIMM1(JDIMM2 CONN) Non-ECC DIMM

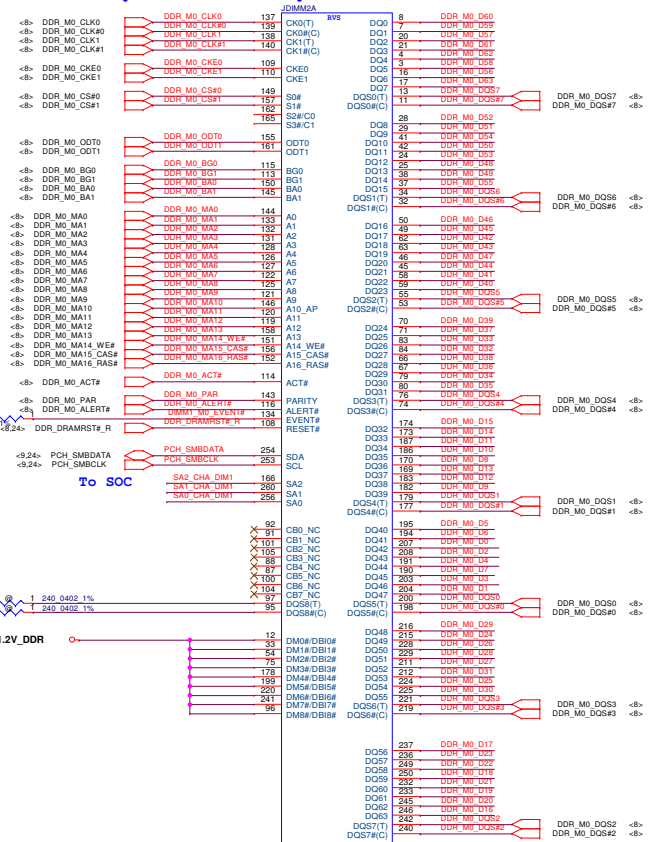


SPD ADDRESS FOR CHANNEL A :  
SA0 = 0; SA1 = 0; SA2 = 0.

## Non-Interleaved Memory

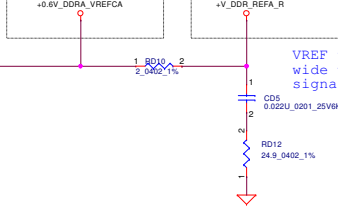


## REVERSE TYPE (5.2 mm)

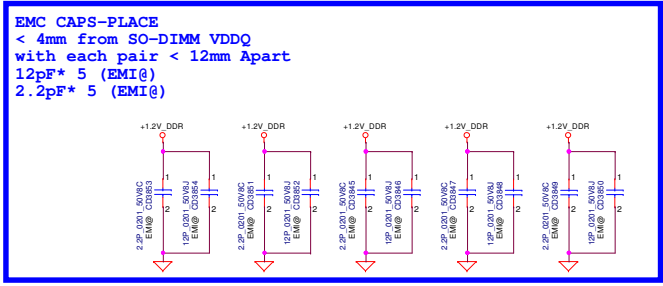
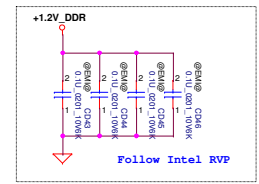
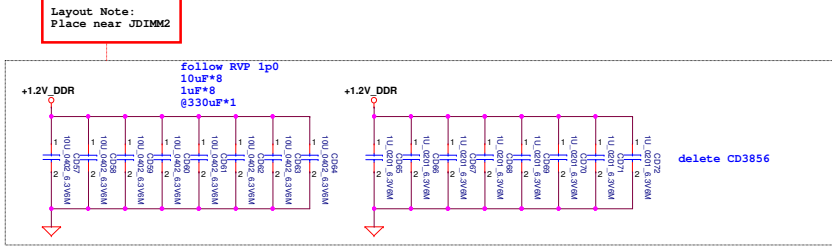
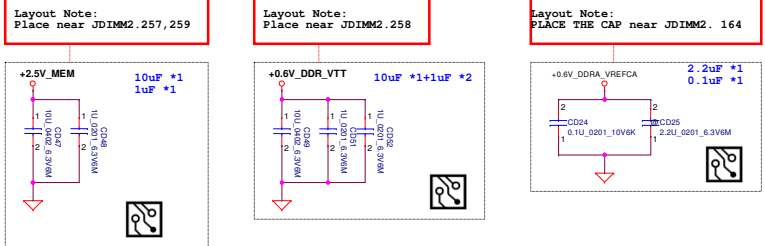


### DIMM Side

### CPU Side



### Decoupling Cap\_Channel A



Part Number:SP07001JH00  
Part Value:S SOCKET LOTES ADDR0208-P001A 260P DDR4

POP  
EMI@  
UNPOP  
@EMI@ESD@RF@CONN@



Main Function:

Reserve

LA-L242P watermark

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 25 of 121

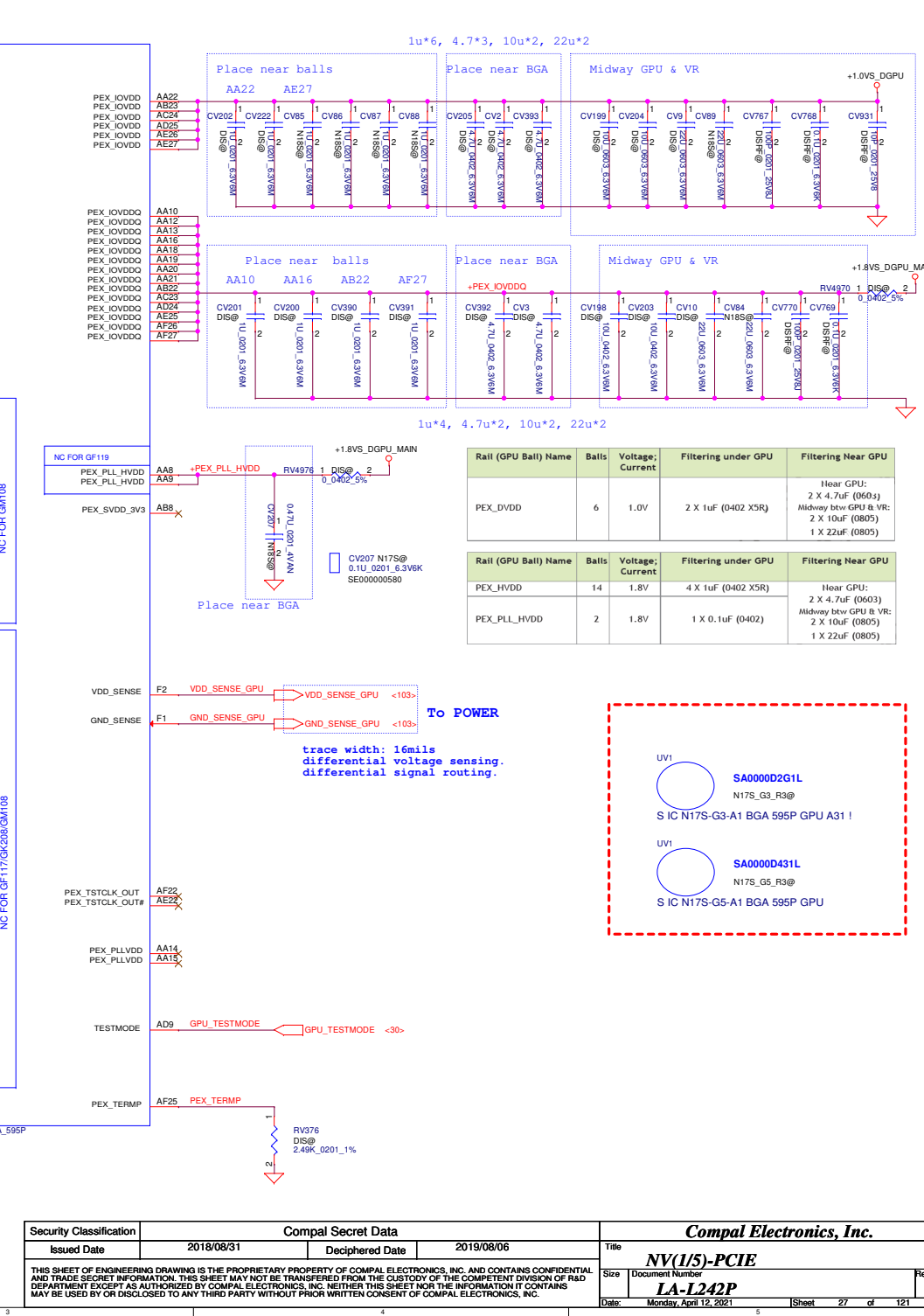
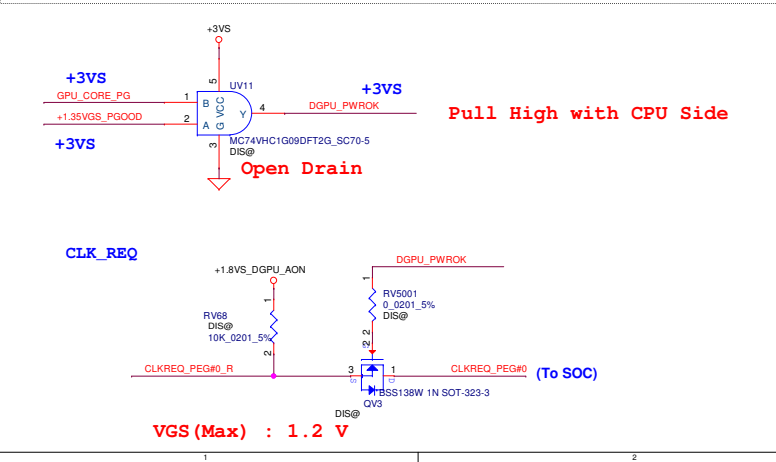
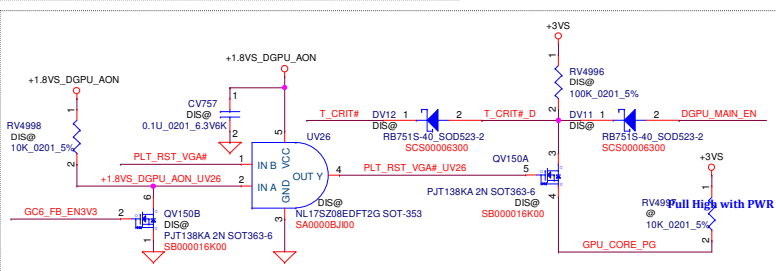
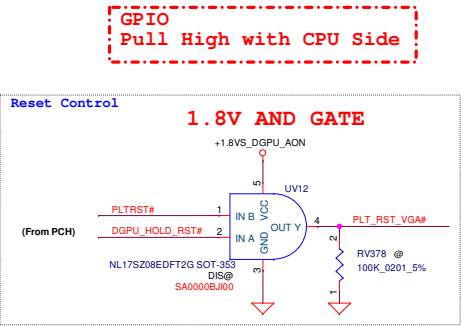
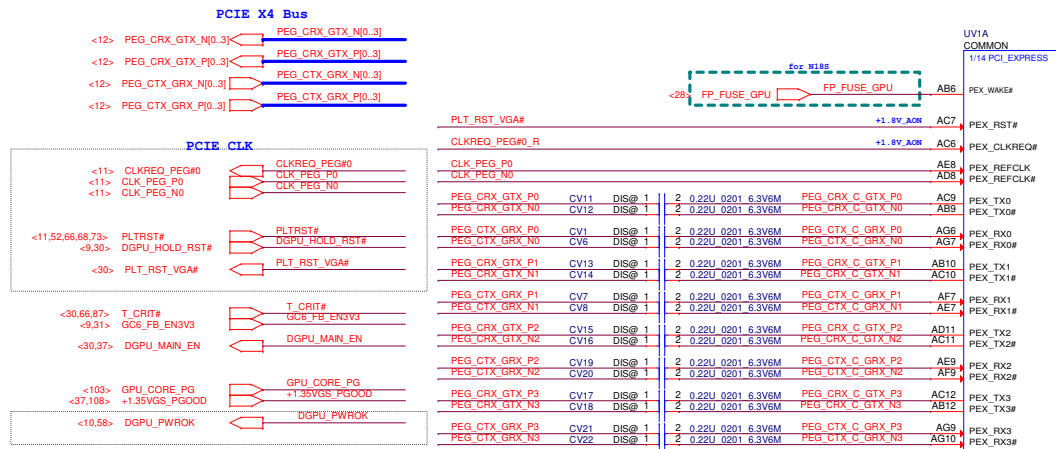
Main Function:

Reserve

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 26 of 121

## Main Func = GPU



Rail (GPU Ball) Name	Balls	Voltage; Current	Filtering under GPU	Filtering Near GPU
PEX_DVDD	6	1.0V	4 X 1uF (0402 X5R)	Near GPU: 2 X 4.7uF (0603) Midway betw GPU & VR: 2 X 10uF (0805) 1 X 22uF (0805)

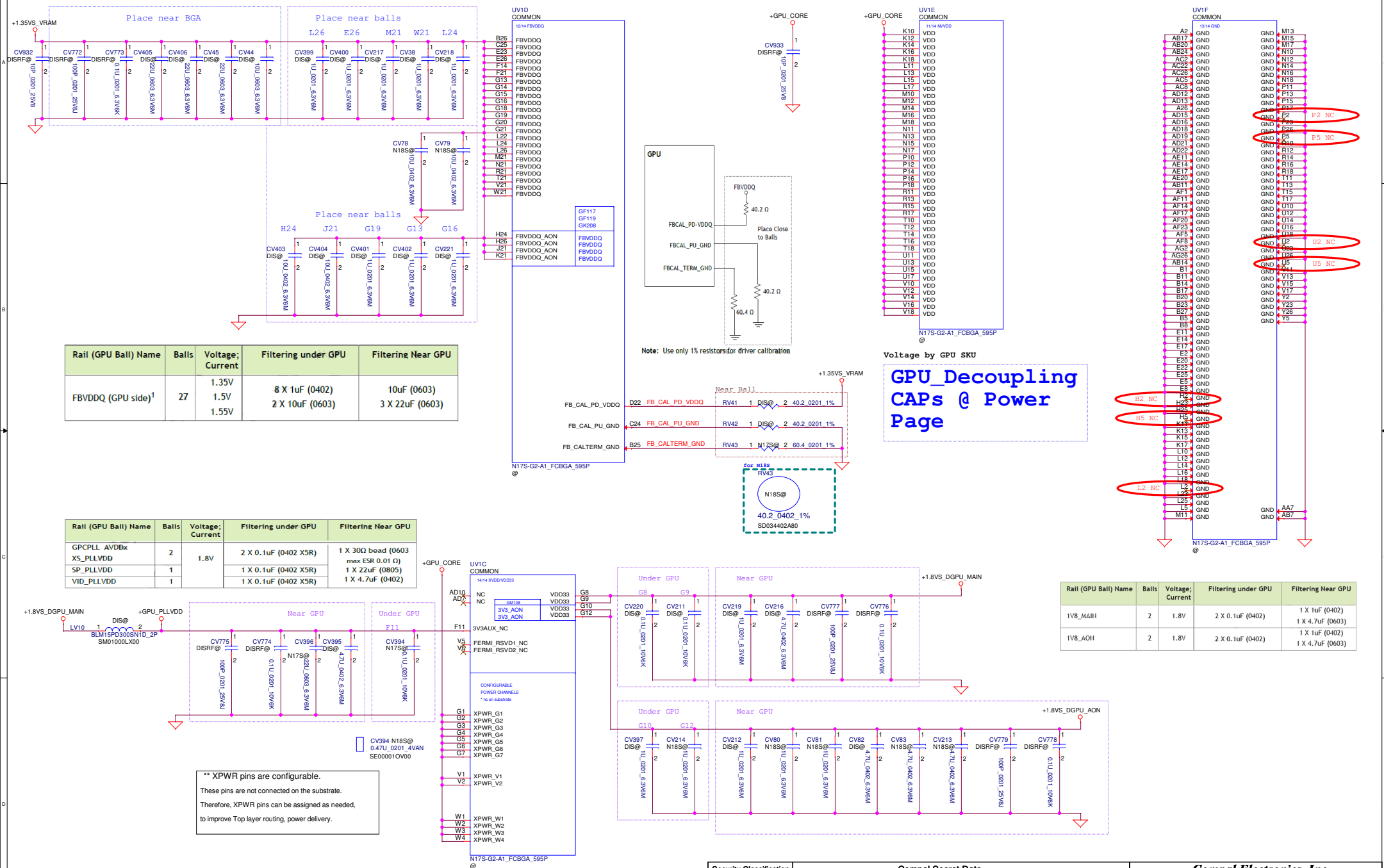
  

Rail (GPU Ball) Name	Balls	Voltage; Current	Filtering under GPU	Filtering Near GPU
PEX_HVDD	14	1.8V	4 X 1uF (0402 X5R)	Near GPU: 2 X 4.7uF (0603) Midway betw GPU & VR: 2 X 10uF (0805) 1 X 22uF (0805)
PEX_PL1_HVDD	2	1.8V	1 X 0.1uF (0402)	

Security Classification	Compal Secret Data			<b>Compal Electronics, Inc.</b>		
Issued Date	2018/08/31	Deciphered Date	2019/08/06	Title	<b>NV(1/5)-PCIE</b>	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL 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
					<b>LA-1242P</b>	1.0
				Date	Monday, April 12, 2021	Sheet 27 of 121



**Main Func = GPU**

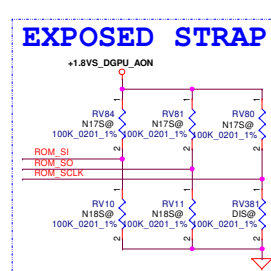
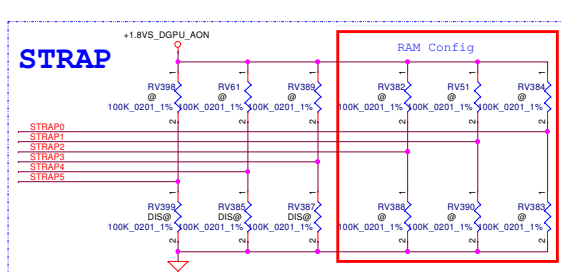
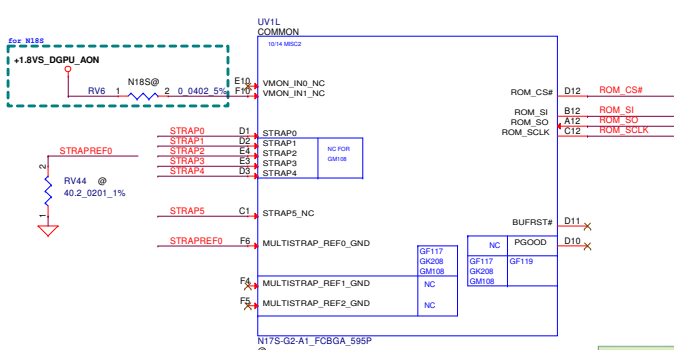
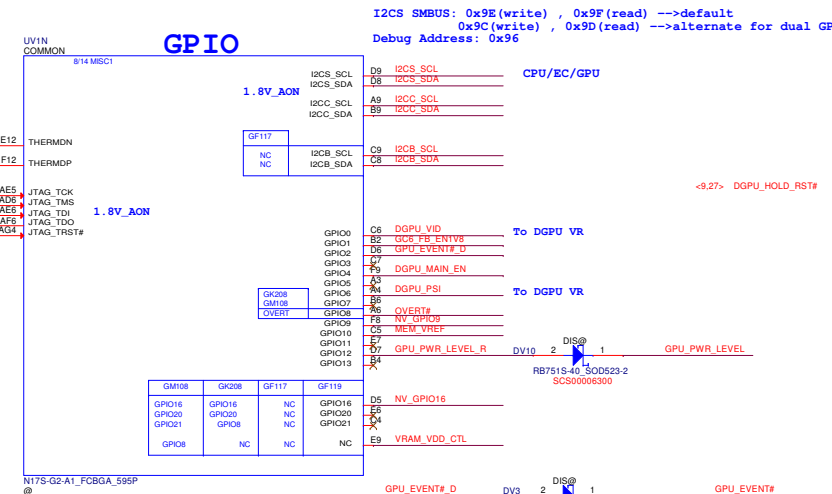


Rail (GPU Ball) Name	Balls	Voltage; Current	Filtering under GPU	Filtering Near GPU
1V8_MALLI	2	1.8V	2 X 0.1uF (0402)	1 X 1uF (0402) 1 X 4.7uF (0603)
1V8_AONI	2	1.8V	2 X 0.1uF (0402)	1 X 1uF (0402) 1 X 4.7uF (0603)

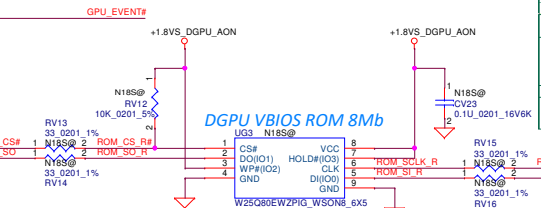


Figure 10: Register Map of the TCRIT# and GPU Test Mode Registers

Address Range	Register Name	Bit Range
0x27.66,87	T_CRIT#	0x27.66,87
0x37.103	VGA_CORE_EN	0x37.103
0x37.103	DGPU_PSI	0x37.103
0x37.110	DGPU_VID	0x37.110
0x37.110	1.0VS_DGPU_EN	0x37.110
0x37.110	DGPU_MAIN_EN	0x37.110
0x35	MEM_VREF	0x35
0x4985	T4985	0x4985
0x4986	T4986	0x4986
0x4987	T4987	0x4987
0x27	GPU_TESTMODE	0x27
0x31	QC6_FB_EN[18:16]	0x31
0x31	PLT_RST_VGA#	0x31
0x58,66	GPU_THM_SMBCLK	0x58,66
0x58,66	GPU_THM_SMBCLK	0x58,66
0x58,66	GPU_PWR_EN	0x58,66
0x58,66	GPU_EVENT#	0x58,66
0x58	GPU_PWR_LEVEL	0x58

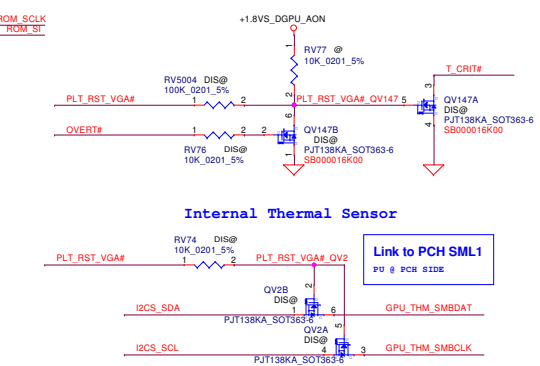
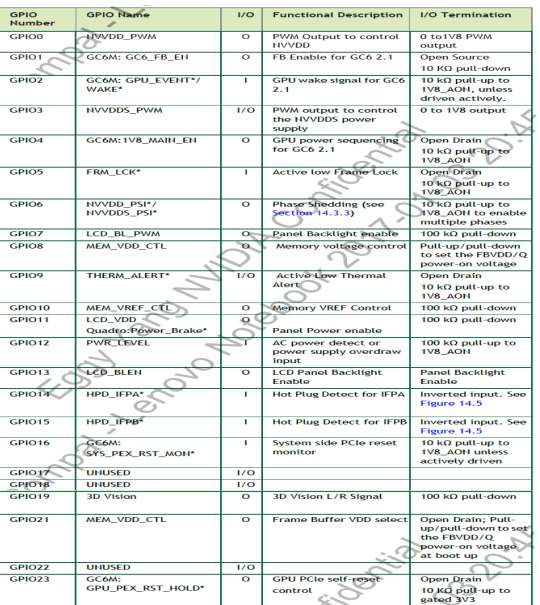


GPU_MAIN_EN	RV930	1	DISEN	2	10K	0201	5%
GPU_PSI	RV931	1	DISEN	2	10K	0201	5%
GPU_PWR_LEVEL_R	RV932	1	DISEN	2	10K	0201	5%
GPU_EVENT#_D	RV72	1	DISEN	2	10K	0201	5%
OVERT#	RV69	1	DISEN	2	100K	0201	5%
NV_GP109	RV933	1	DISEN	2	10K	0201	5%
NV_GP106	RV4991	1	DISEN	2	10K	0201	5%
GPU_HOLD_RST#	RV5011	1	0	2	10K	0201	5%
I2CS_SCL	RV2031	1	DISEN	2	2.2K	0201	5%
I2CS_SDA	RV2041	1	DISEN	2	2.2K	0201	5%
I2CC_SCL	RV2051	1	DISEN	2	2.2K	0201	5%
I2CC_SDA	RV2061	1	DISEN	2	2.2K	0201	5%
I2CB_SCL	RV2071	1	DISEN	2	2.2K	0201	5%
I2CB_SDA	RV2081	1	DISEN	2	2.2K	0201	5%
VRAM_VDD_CTL	RV4989	1	DISEN	2	10K	0201	5%
GPU_JTAG_TRST#	RV934	1	DISEN	2	10K	0201	5%
MEM_VREF	RV1021	1	DISEN	2	100K	0201	5%
GC6_FB_EN1V8	RV88	1	DISEN	2	10K	0201	5%
GPU_TESTMODE	RV71	1	DISEN	2	10K	0201	5%



Row Index	Strap Pins <small>see Note</small>			Resulting SORX_EXPOSED Enablements			
	ROM_S0	ROM_S1	ROM_SCLK	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
15	L	L	L	ENABLED	ENABLED	ENABLED	ENABLED
14	L	L	H	ENABLED	ENABLED	ENABLED	disabled
13	L	H	L	ENABLED	ENABLED	disabled	ENABLED
12	L	H	H	ENABLED	ENABLED	disabled	disabled
8	H	H	H	ENABLED	disabled	disabled	disabled
0	H	H	M	disabled	disabled	disabled	disabled
	M	X	X	(Reserved; do not configure)			

Strap Pins		Functions Selected by this Strapping				
STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
L	L	L	0	0	0	0
L	L	H	0	0	0	1
L	H	L	0	0	1	0
L	H	H	0	0	1	1
H	L	L	0	1	0	0
H	L	H	0	1	0	1
H	H	L	0	1	1	0
H	H	H	0	1	1	1



SMB_ALT_ADDR		VGA_DEVICE	
Low	Single GPU	Low	3D Device
High	Dual GPU	High	VGA Device

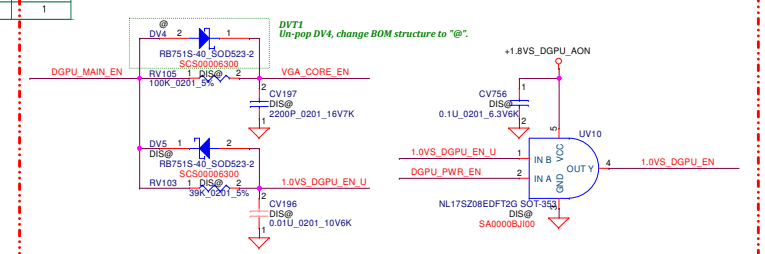
DEVID_SEL		PCIE_CFG	
Low	Original Device ID	Low	Normal signal swing
High	Re-brand Device ID	High	Reduce the signal amplitude

Memory Density	Allowed Memory Configuration	FBV/DD/Q	Vendor	Manufacturer Part Number	The Revision	Strap	Memory Speed Grade	Date Code Alert	Qual Plan	Status
8 Gb	Z56Mx32 512Mx16	1.35V	Micron	MT51J256M32HF-B0	B-die	0x9	8 Gbps	N/A	Full	Production candidate
			Hynix	H5GC38J244UR-R2C	A-die	0xA	8 Gbps	N/A	Full	Production candidate
			Samsung	K4G800325FC-HC25	C-die	0xB	8 Gbps	N/A	Full	Production candidate

**Notes:**

1. For H175-G5/LP, the maximum allowable memory case temperature is 85 °C.

RAM_CFG	STRAP2	STRAP1	STRAP0
0x09 (LML) <b>M2G</b>	<input type="checkbox"/> RV388 M_STRAP@	<input type="checkbox"/> RV390 M_STRAP@ <input type="checkbox"/> RV51 M_STRAP@	<input type="checkbox"/> RV383 M_STRAP@
0x0A (LMH) <b>H2G</b>	<input type="checkbox"/> RV388 H_STRAP@	<input type="checkbox"/> RV390 H_STRAP@ <input type="checkbox"/> RV51 H_STRAP@	<input type="checkbox"/> RV384 H_STRAP@
0x0B (LHM) <b>S2G</b>	<input type="checkbox"/> RV388 S_STRAP@	<input type="checkbox"/> RV51 S_STRAP@	<input type="checkbox"/> RV383 S_STRAP@ <input type="checkbox"/> RV384 S_STRAP@



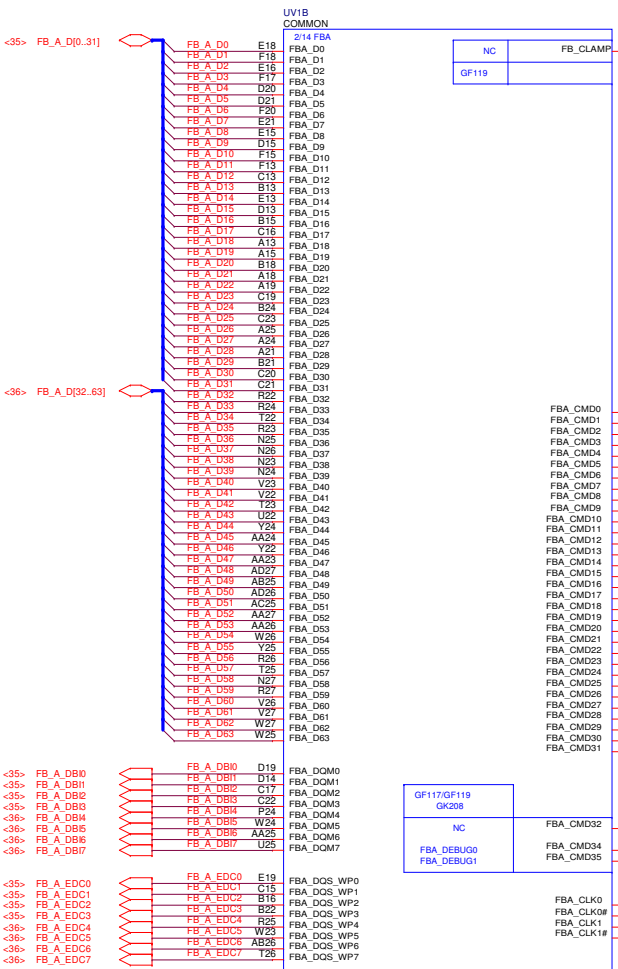
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date		2018/08/31	Deciphered Date		2019/08/06
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. WITHOUT THE INFORMATION CONTAINED HEREIN BEING USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Title	NV(4/5)-GPIO/Strap
				Size	Document Number LA-L242P
Date: Monday, April 12, 2021				Sheet	30 of 121

Main Func = GPU

For GC6



Can set GPIO to 1.8V to cost down level shift circuit if pop RV5012 need check double PU  
GC6\_FB\_EN1V8 RV5012 2 0 0201.5% GC6\_FB\_EN3V3



Reserve

LA-L242P Warlock turnA

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/08/31	Deciphered Date	2019/08/06	Title	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:	Monday, April 12, 2021
				Sheet	32 of 121
				Rev	1.0
				LA-L242P	

Reserve

LA-L242P Warlock turnA

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/08/31	Deciphered Date	2019/08/06	Title	SMbus 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.				Size	Document Number
				Date:	Monday, April 12, 2021
				Sheet	33 of 121
				Rev	1.0
				LA-L242P	

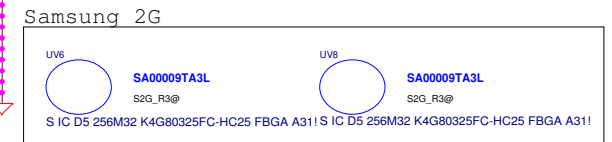
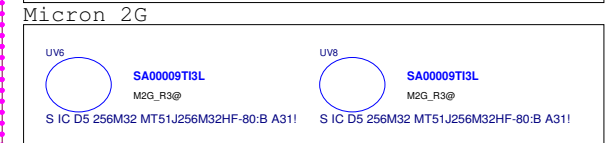
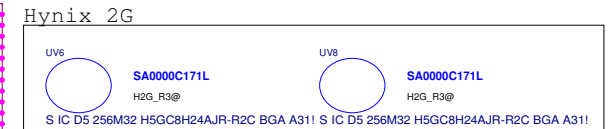
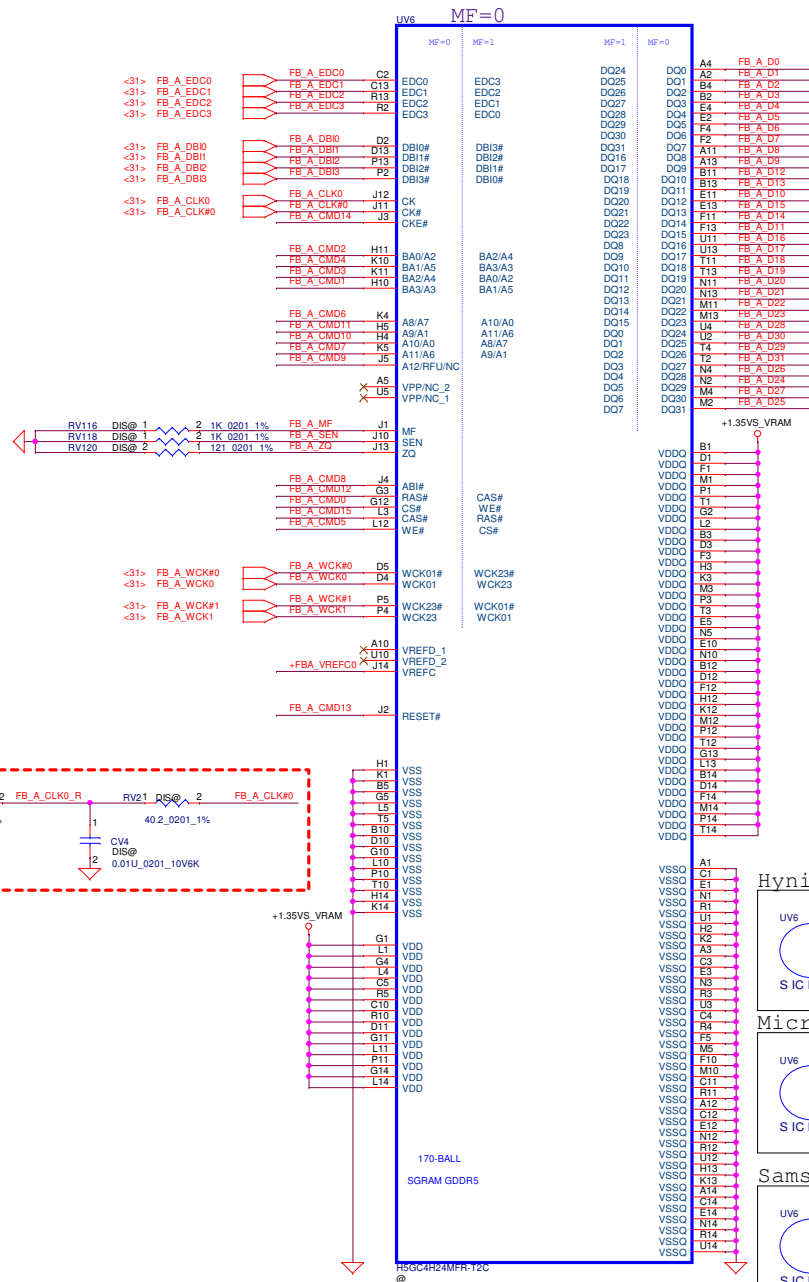
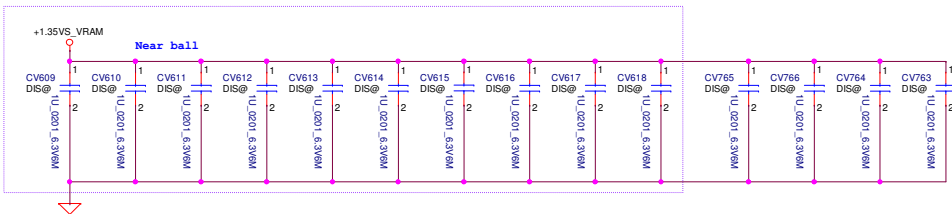
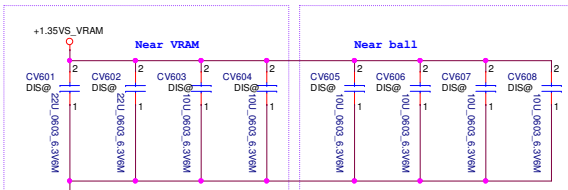
Reserve

LA-L242P Warlock turnA

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/08/31	Deciphered Date	2019/08/06	Title	SMbus 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.				Size	Document Number
				Date:	Monday, April 12, 2021
				Sheet	34 of 121
				Rev	1.0
				LA-L242P	

## Memory Partition A

GB2-64, GB28-64, GB4B-128	Channel 0 0...31	GB2-64, GB28-64, GB4B-128	Channel 1 32...63
CMD0	C5*	CMD16	C5*
CMD1	A3_BA3	CMD17	A3_BA3
CMD2	A2_BA0	CMD18	A2_BA0
CMD3	A4_BA2	CMD19	A4_BA2
CMD4	A5_BA1	CMD20	A5_BA1
CMD5	WE*	CMD21	WE*
CMD6	A7_A8	CMD22	A7_A8
CMD7	A6_A11	CMD23	A6_A11
CMD8	AB1*	CMD24	AB1*
CMD9	A12_RFU	CMD25	A12_RFU
CMD10	A0_A10	CMD26	A0_A10
CMD11	A1_A9	CMD27	A1_A9
CMD12	RA5*	CMD28	RA5*
CMD13	RST*	CMD29	RST*
CMD14	CKE*	CMD30	CKE*
CMD15	CA5*	CMD31	CA5*

[illegible]

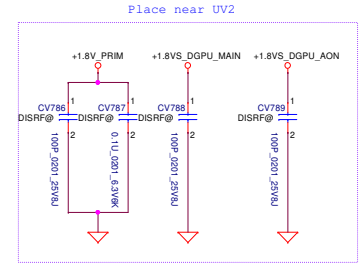
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/08/31	Deciphered Date	2019/08/06	Title		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				<b><i>N17S GDDR5 A</i></b>		
				Size	Document Number	Rev
				<b><i>LA-1242P</i></b>		
Date: Monday, April 12, 2021				Sheet	35	of 121



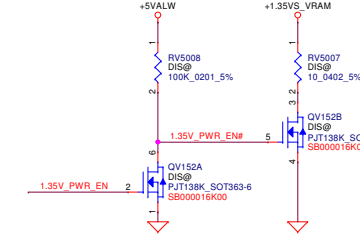


Main Func = GPU DC

- <30,103> VGA\_CORE\_EN
- <30,110> 1.0VS\_DGPU\_EN
- <27,108> +1.35VGS\_PGOOD
- <10,30> DGPU\_PWR\_EN
- <27,30> DGPU\_MAIN\_EN
- <31,108> 1.35V\_PWR\_EN



+1.35VS\_VRAM Discharge



Power-Up Sequence

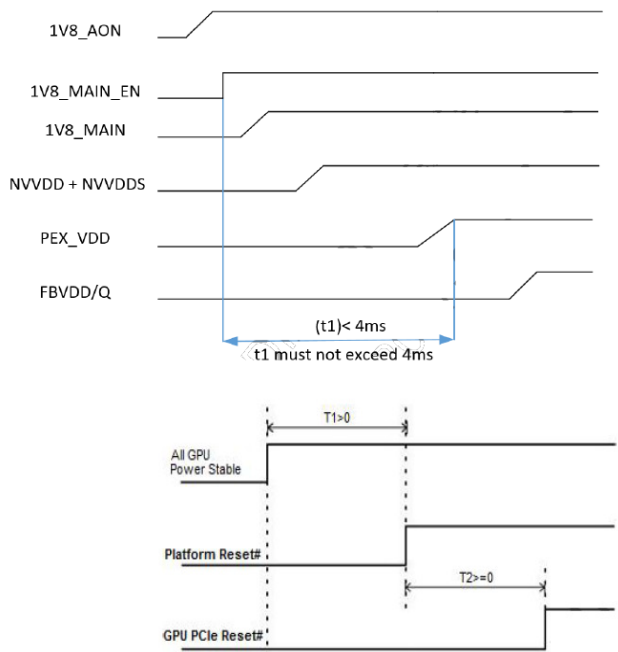
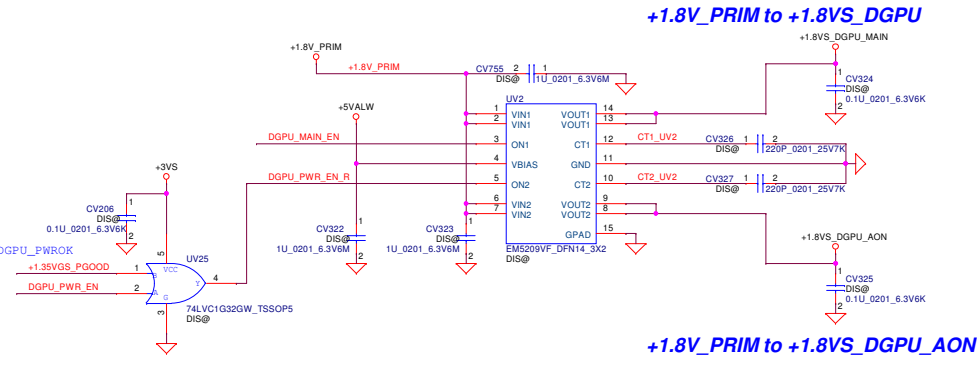
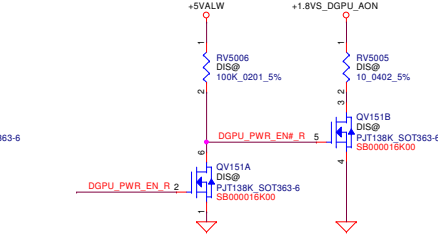


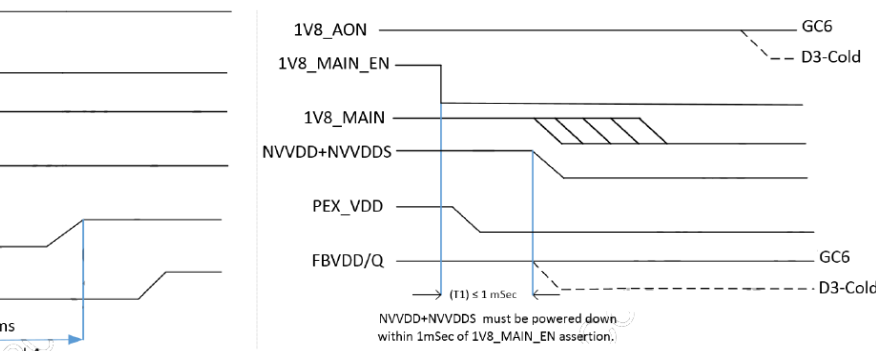
Figure 8.4 Cold Reset Sequence Requirement for Optimus



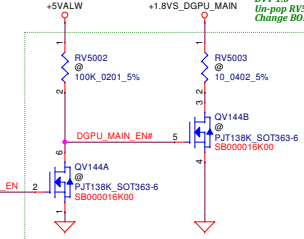
+1.8VS\_DGPU\_AON Discharge



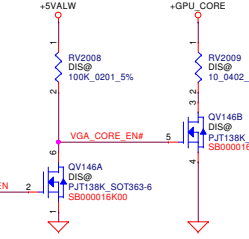
Power-Down Sequence



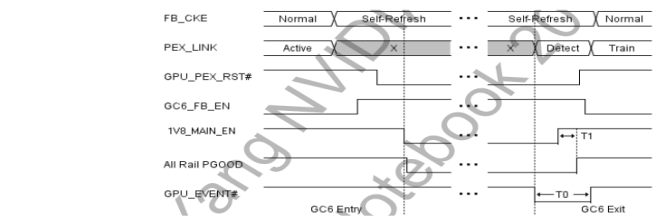
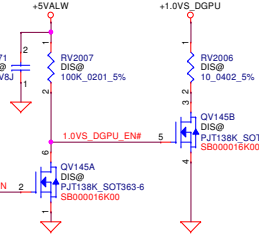
+1.8VS\_DGPU\_MAIN Discharge



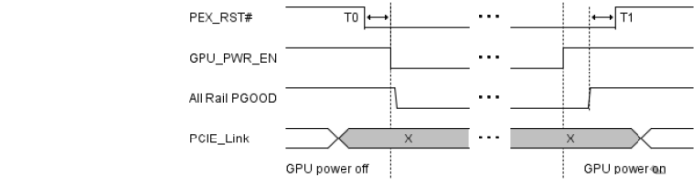
+GPU\_CORE Discharge



+1.0VS\_DGPU Discharge

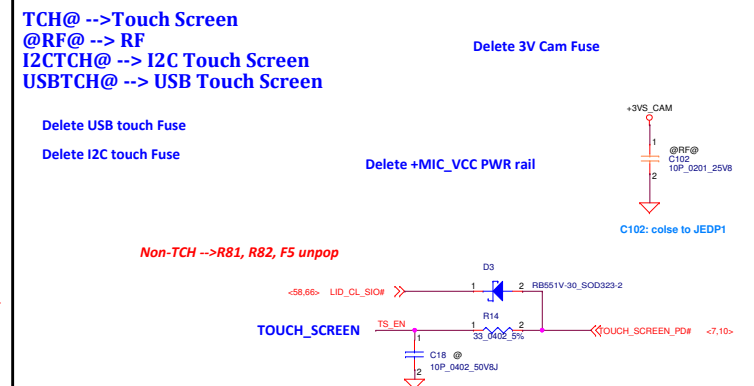


Symbol	Description	Min	Max	Units
T0	GPU_EVENT# assertion period	0.001	N/A	ms
T1	1V8_MAIN_EN assertion to all power rails up and stable	0.04	4	ms



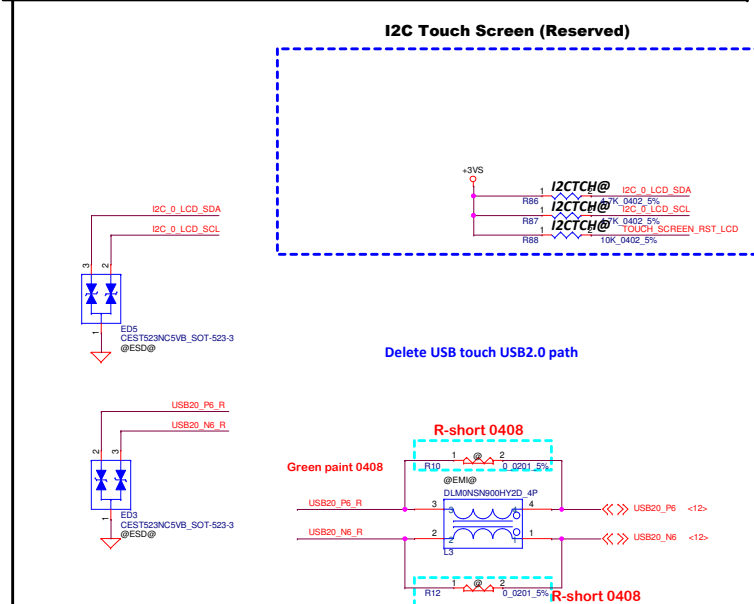
Symbol	Description	Min	Max	Units
T0	PEX_RST# assertion to GPU_PWR_EN=0	>0	5	ms
T1	All GPU power rail up and stable to PEX_RST# de-assertion	0.1	5	ms

Main Func = CAM&MIC, TS



The schematic diagram illustrates the internal circuitry of the IC2P00 module. It features a central IC labeled G2895BLK21U TDFN2K2, which is a SA0000E0700. The module is powered by +3VALW and +3VSW. Key connections include:

- Power and Ground:** +3VALW, +3VSW, LCDVDD, and GND connections are shown.
- Control Signals:** LCDVDD\_EN, EN1, EN2, and SIO\_SLP\_S# are connected to the IC.
- Output Signals:** OUT1, OUT2, and CABLE2\_OCP# are connected to the IC.
- Internal Components:** The IC includes internal components like C350, R331, R341, R342, R343, R344, R345, R346, R347, R348, R349, R350, R351, R352, R353, R354, R355, R356, R357, R358, R359, R360, R361, R362, R363, R364, R365, R366, R367, R368, R369, R370, R371, R372, R373, R374, R375, R376, R377, R378, R379, R380, R381, R382, R383, R384, R385, R386, R387, R388, R389, R390, R391, R392, R393, R394, R395, R396, R397, R398, R399, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R420, R421, R422, R423, R424, R425, R426, R427, R428, R429, R430, R431, R432, R433, R434, R435, R436, R437, R438, R439, R440, R441, R442, R443, R444, R445, R446, R447, R448, R449, R450, R451, R452, R453, R454, R455, R456, R457, R458, R459, R460, R461, R462, R463, R464, R465, R466, R467, R468, R469, R470, R471, R472, R473, R474, R475, R476, R477, R478, R479, R480, R481, R482, R483, R484, R485, R486, R487, R488, R489, R490, R491, R492, R493, R494, R495, R496, R497, R498, R499, R500, R501, R502, R503, R504, R505, R506, R507, R508, R509, R510, R511, R512, R513, R514, R515, R516, R517, R518, R519, R520, R521, R522, R523, R524, R525, R526, R527, R528, R529, R530, R531, R532, R533, R534, R535, R536, R537, R538, R539, R540, R541, R542, R543, R544, R545, R546, R547, R548, R549, R550, R551, R552, R553, R554, R555, R556, R557, R558, R559, R560, R561, R562, R563, R564, R565, R566, R567, R568, R569, R570, R571, R572, R573, R574, R575, R576, R577, R578, R579, R580, R581, R582, R583, R584, R585, R586, R587, R588, R589, R590, R591, R592, R593, R594, R595, R596, R597, R598, R599, R600, R601, R602, R603, R604, R605, R606, R607, R608, R609, R610, R611, R612, R613, R614, R615, R616, R617, R618, R619, R620, R621, R622, R623, R624, R625, R626, R627, R628, R629, R630, R631, R632, R633, R634, R635, R636, R637, R638, R639, R640, R641, R642, R643, R644, R645, R646, R647, R648, R649, R650, R651, R652, R653, R654, R655, R656, R657, R658, R659, R660, R661, R662, R663, R664, R665, R666, R667, R668, R669, R670, R671, R672, R673, R674, R675, R676, R677, R678, R679, R680, R681, R682, R683, R684, R685, R686, R687, R688, R689, R690, R691, R692, R693, R694, R695, R696, R697, R698, R699, R700, R701, R702, R703, R704, R705, R706, R707, R708, R709, R710, R711, R712, R713, R714, R715, R716, R717, R718, R719, R720, R721, R722, R723, R724, R725, R726, R727, R728, R729, R730, R731, R732, R733, R734, R735, R736, R737, R738, R739, R740, R741, R742, R743, R744, R745, R746, R747, R748, R749, R750, R751, R752, R753, R754, R755, R756, R757, R758, R759, R760, R761, R762, R763, R764, R765, R766, R767, R768, R769, R770, R771, R772, R773, R774, R775, R776, R777, R778, R779, R780, R781, R782, R783, R784, R785, R786, R787, R788, R789, R790, R791, R792, R793, R794, R795, R796, R797, R798, R799, R800, R801, R802, R803, R804, R805, R806, R807, R808, R809, R810, R811, R812, R813, R814, R815, R816, R817, R818, R819, R820, R821, R822, R823, R824, R825, R826, R827, R828, R829, R830, R831, R832, R833, R834, R835, R836, R837, R838, R839, R840, R841, R842, R843, R844, R845, R846, R847, R848, R849, R850, R851, R852, R853, R854, R855, R856, R857, R858, R859, R860, R861, R862, R863, R864, R865, R866, R867, R868, R869, R870, R871, R872, R873, R874, R875, R876, R877, R878, R879, R880, R881, R882, R883, R884, R885, R886, R887, R888, R889, R890, R891, R892, R893, R894, R895, R896, R897, R898, R899, R900, R901, R902, R903, R904, R905, R906, R907, R908, R909, R910, R911, R912, R913, R914, R915, R916, R917, R918, R919, R920, R921, R922, R923, R924, R925, R926, R927, R928, R929, R930, R931, R932, R933, R934, R935, R936, R937, R938, R939, R940, R941, R942, R943, R944, R945, R946, R947, R948, R949, R950, R951, R952, R953, R954, R955, R956, R957, R958, R959, R960, R961, R962, R963, R964, R965, R966, R967, R968, R969, R970, R971, R972, R973, R974, R975, R976, R977, R978, R979, R980, R981, R982, R983, R984, R985, R986, R987, R988, R989, R990, R991, R992, R993, R994, R995, R996, R997, R998, R999, R1000, R1001, R1002, R1003, R1004, R1005, R1006, R1007, R1008, R1009, R1010, R1011, R1012, R1013, R1014, R1015, R1016, R1017, R1018, R1019, R1020, R1021, R1022, R1023, R1024, R1025, R1026, R1027, R1028, R1029, R1030, R1031, R1032, R1033, R1034, R1035, R1036, R1037, R1038, R1039, R1040, R1041, R1042, R1043, R1044, R1045, R1046, R1047, R1048, R1049, R1050, R1051, R1052, R1053, R1054, R1055, R1056, R1057, R1058, R1059, R1060, R1061, R1062, R1063, R1064, R1065, R1066, R1067, R1068, R1069, R1070, R1071, R1072, R1073, R1074, R1075, R1076, R1077, R1078, R1079, R1080, R1081, R1082, R1083, R1084, R1085, R1086, R1087, R1088, R1089, R1090, R1091



Security Classification	Compal Secret Data		Title	<b>Compal Electronics, Inc.</b>	
Issued Date	2018/04/01	Deciphered Date	2018/04/01	<b>LCD/Cam/MIC/T.Panel</b>	
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 FURTHER DISSEMINATION EXCEPT AS AUTHORIZED BY COMPAL. ALL OTHER INFORMATION CONTAINED HEREIN IS UNCLASSIFIED. THIS INFORMATION MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			Document Number <b>LA-L242P</b>	Rev	1.0
Date: Monday, April 12, 2021			Sheet	38	of 121

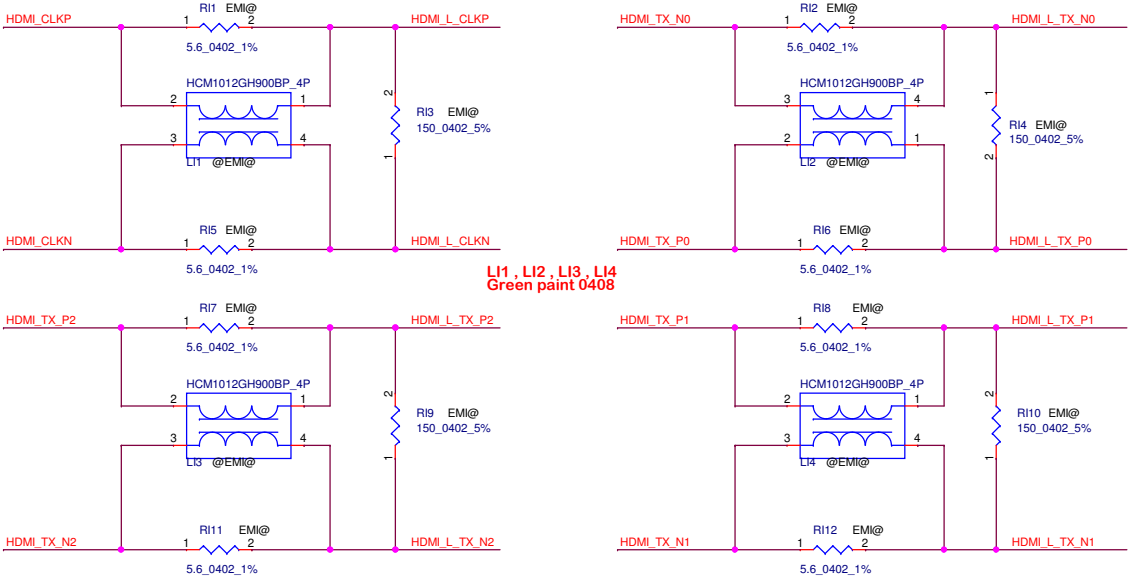
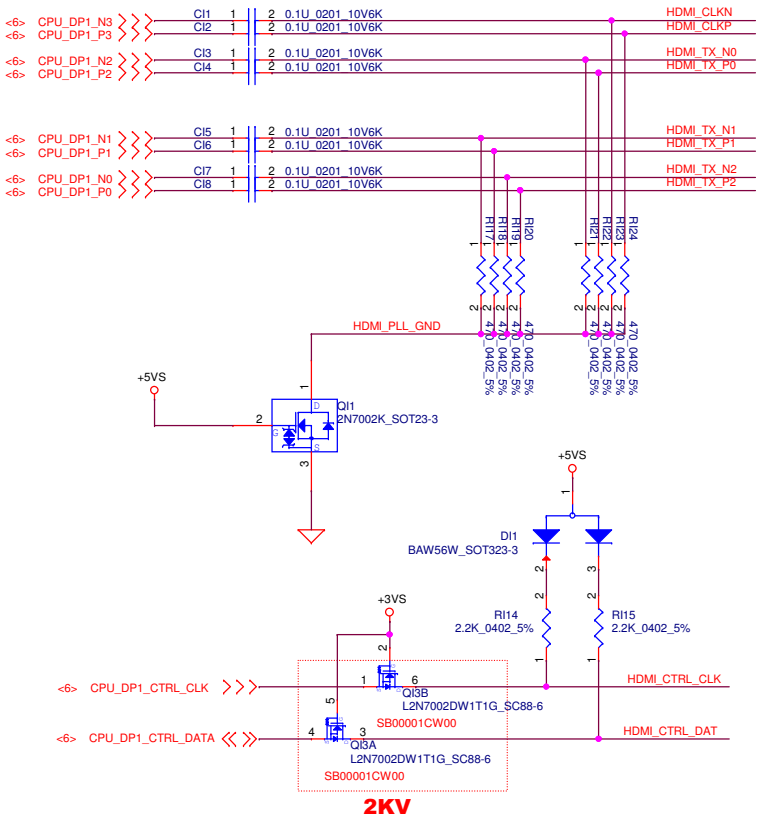
Main Function:

Reserve

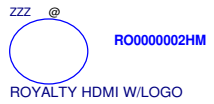
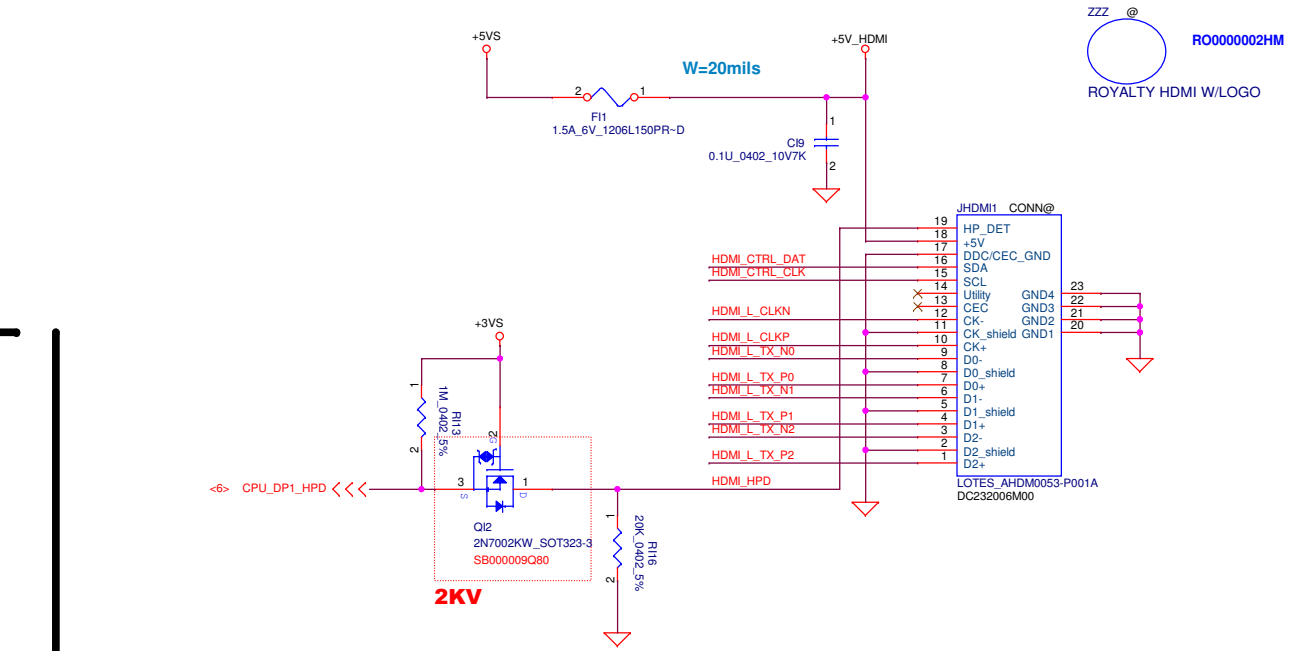
LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 39 of 121

Main Func = HDMI



L11, L12, L13, L14  
Green paint 0408



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	HDMI L Shifter/Conn
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-1242P
				Rev	1.0
				Date	Monday, April 12, 2021
				Sheet	40 of 121

Main Function:

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	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.				(RSVD)		
				Size	Document Number	Rev
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 41 of 121

LA-L242P Warlock turnA

Security Classification		Compal Secret Data		Compal Electronics, Inc.			
2018/12/24		Deciphered Date		2018/12/31		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.				TBT TYPE-C Port0 (1/2)			
				Size	Document Number		Rev
				LA-1424P			1.0
				Date:	Monday, April 12, 2021		Sheet

Main Func =

Reserve

LA-L242P Warlock turnA

Security Classification		Compal Secret Data		Title			
Issued Date		Deciphered Date		Title			
2018/12/24		2018/12/31		TBT TYPE-C Port0 (2/2)			
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-1242P		Rev	1.0
				Date: Monday, April 12, 2021		Sheet	43 of 121

# Reserve

LA-L242P Warlock turnA

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/12/24	Deciphered Date	2018/12/31	Title	TBT TYPE-C Port1 (1/2)
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
				Monday, April 12, 2021	1.0
				Sheet	44 of 121



Reserve

LA-L242P Watlock turnA

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/12/24	Deciphered Date	2018/12/31	Title	TBT TYPE-C Port1 (2/2)
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:	Monday, April 12, 2021
				Sheet	45 of 121
				Rev	1.0
				LA-L242P	

LA-L242P Warlock turnA

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/12/24	Deciphered Date	2018/12/31	Title	TBT TYPE-C Port2 (1/2)
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:	Monday, April 12, 2021
				Sheet	46 of 121
				Rev	1.0
				LA-L242P	

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2018/12/24	Deciphered Date	2018/12/31	Title	TBT TYPE-C Port2 (2/2)
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-L242P
				Date	Monday, April 12, 2021
				Sheet	47 of 121
				Rev	1.0

Reserve

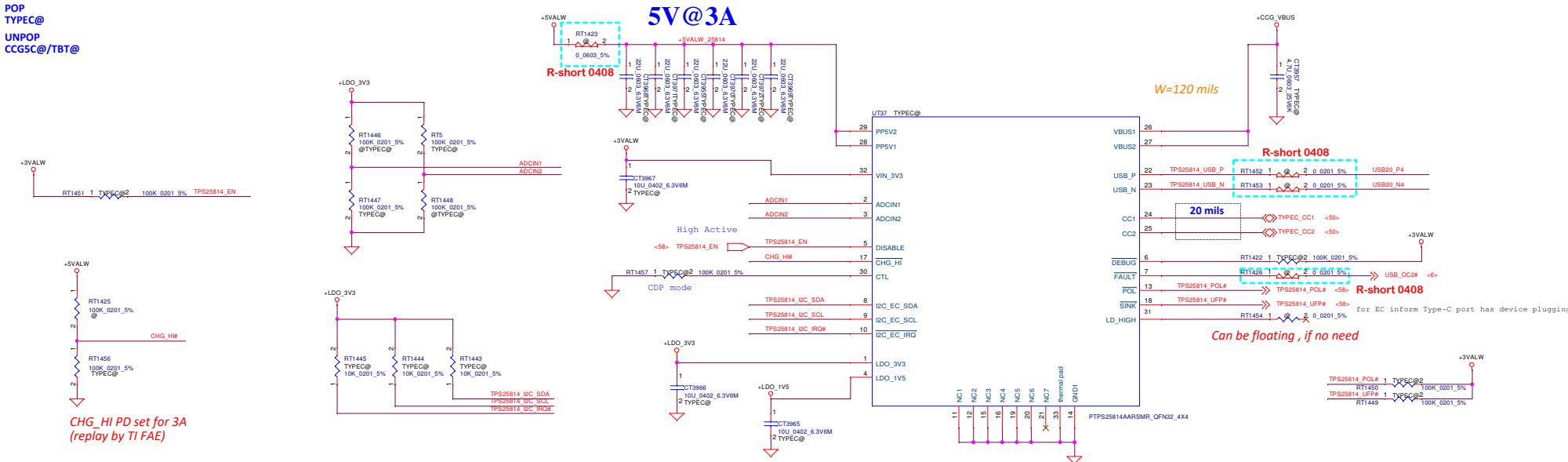
LA-L242P Wallock turnA

LA-L242P Warlock turnA

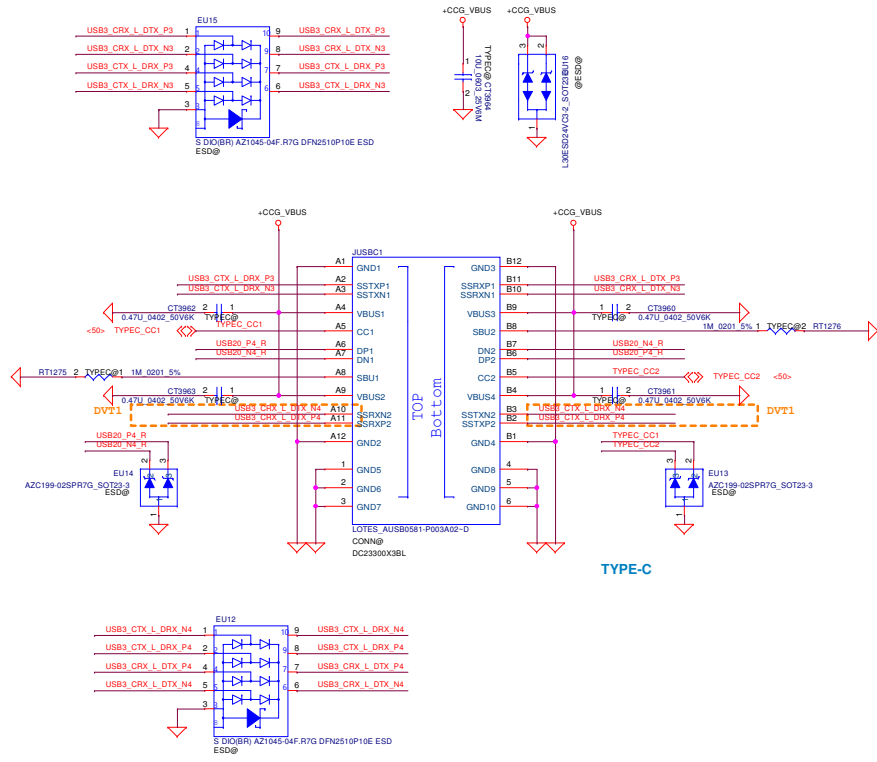
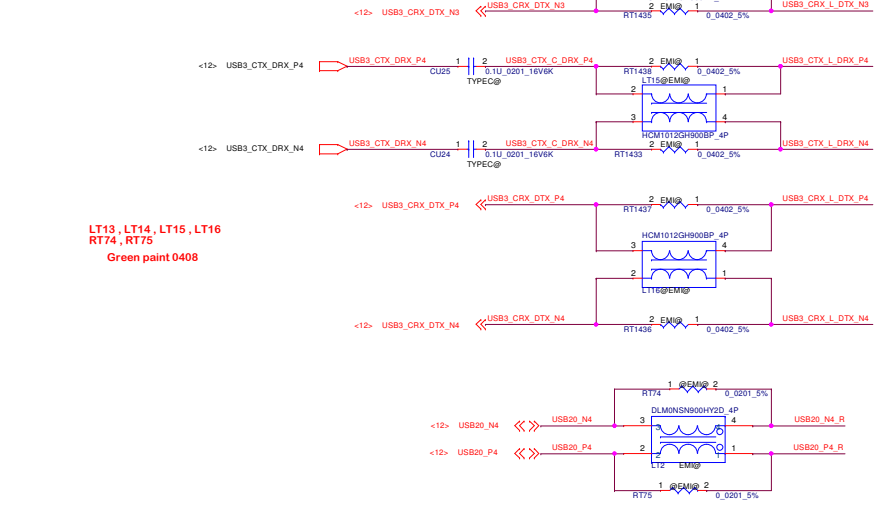
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/12/24	Deciphered Date	2018/12/31	Title	Reserve for TBT TYPE-C Port3 (2/2)
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. 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:	Monday, April 12, 2021
				Sheet	49 of 121
				Rev	1.0
				LA-L242P	

MB\_USB3.1 TypeC Conn. (Power Path)

POP  
TYPEC@  
UNPOP  
CCG5C@/TBT@



POP  
EMI@/TYPEC@/TYPEC@EMI@/TYPEC@ESD@  
UNPOP  
CCG5C@/EMI@/CCG5C@EMI@/ESD@/CCG5C@RF@



Main Func = LAN

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	LAN RTL8111/RTL8106
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 THE 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-L242P	Rev 1.0
				Date: Monday, April 19, 2021	Sheet 51 of 121





# Reserve

LA-L242P Wallock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	WIGIG / WIDI(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 53 of 121

Main Function:

Reserve

LA-L242P Wallock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 54 of 121

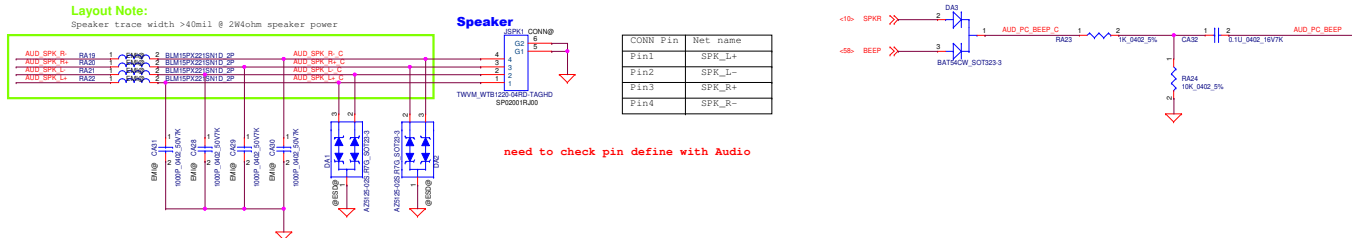
Main Function:

Reserve

LA-L242P Wallock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 55 of 121

**Main Func = Audio Jack**



**Layout Note:**  
Close to UA1

Security Classification	Compal Secret Data			<b>Compal Electronics, Inc.</b>		
Issued Date	2018/04/01	Deciphered Date	2018/04/01	Title	<b>Audio Codec ALC3204</b>	
THIS SHEET OF ENGINEERING DRAWINGS IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. THIS SHEET AND ITS CONTENTS ARE NOT TO BE TRANSMITTED, REPRODUCED, COPIED, OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.				Size	Document Number <b>LA-1242P</b>	Rev 1.0
THIS SHEET OF ENGINEERING DRAWINGS IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. THIS SHEET AND ITS CONTENTS ARE NOT TO BE TRANSMITTED, REPRODUCED, COPIED, OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC.				Date	Issued Monday, April 12, 2021	Sheet 56 of 121

Main Function:

# Reserve

LA-L242P Warlock turnA

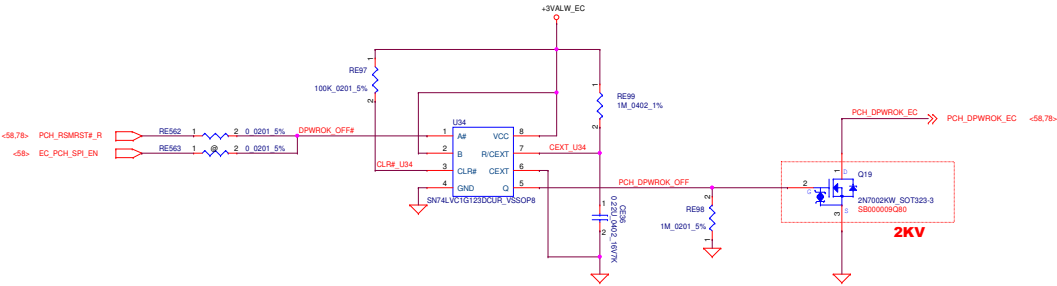
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 57 of 121



Main Function: WDT circuit

FUNCTION TABLE

INPUTS			OUTPUTS
CLR	$\bar{A}$	B	Q
L	X	X	L
X	H	X	L <sup>(1)</sup>
X	X	L	L <sup>(1)</sup>
H	L	↑	⌋
H	↓	H	⌋
↑	L	H	⌋



$t_{wOUT}^{(2)}$	Q	$C_{int} = 28 \text{ pF}$ $R_{ext} = 2 \text{ k}\Omega$	225	600	190	220	170	200	150	180	ns
		$C_{int} = 0.01 \text{ }\mu\text{F}$ $R_{ext} = 10 \text{ k}\Omega$	100	110	100	110	100	110	100	110	$\mu\text{s}$
		$C_{int} = 0.1 \text{ }\mu\text{F}$ $R_{ext} = 10 \text{ k}\Omega$	1	1.1	1	1.1	1	1.1	1	1.1	ms

Main Function:

Main Function:

Reserve

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 60 of 121



I2C Address: 0x10

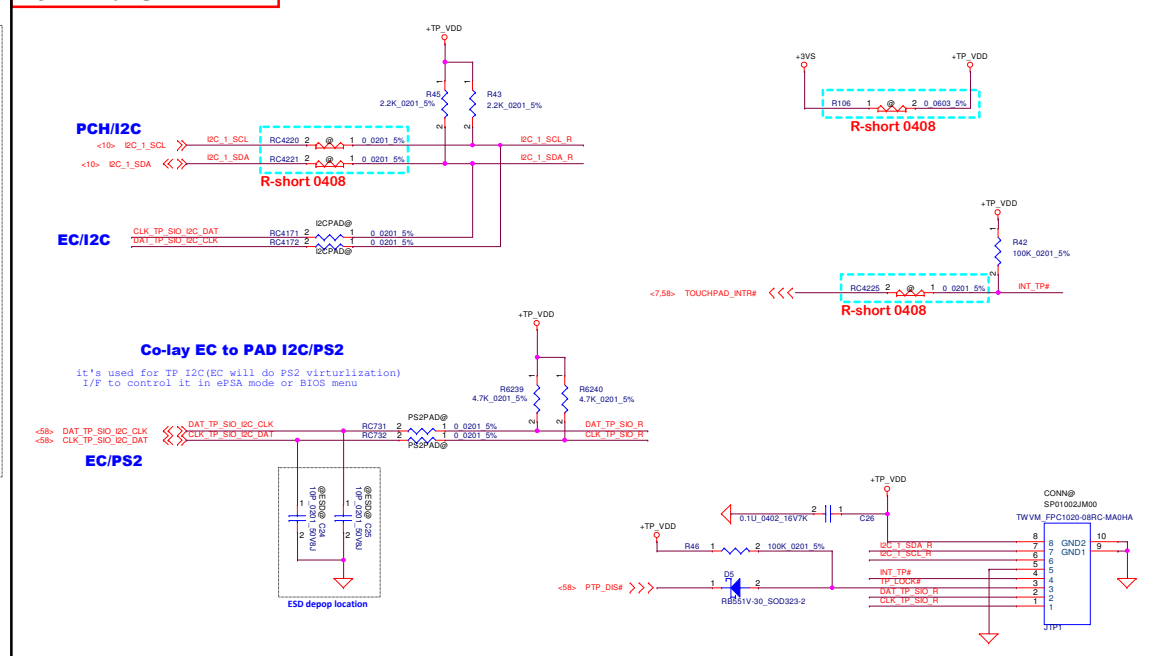
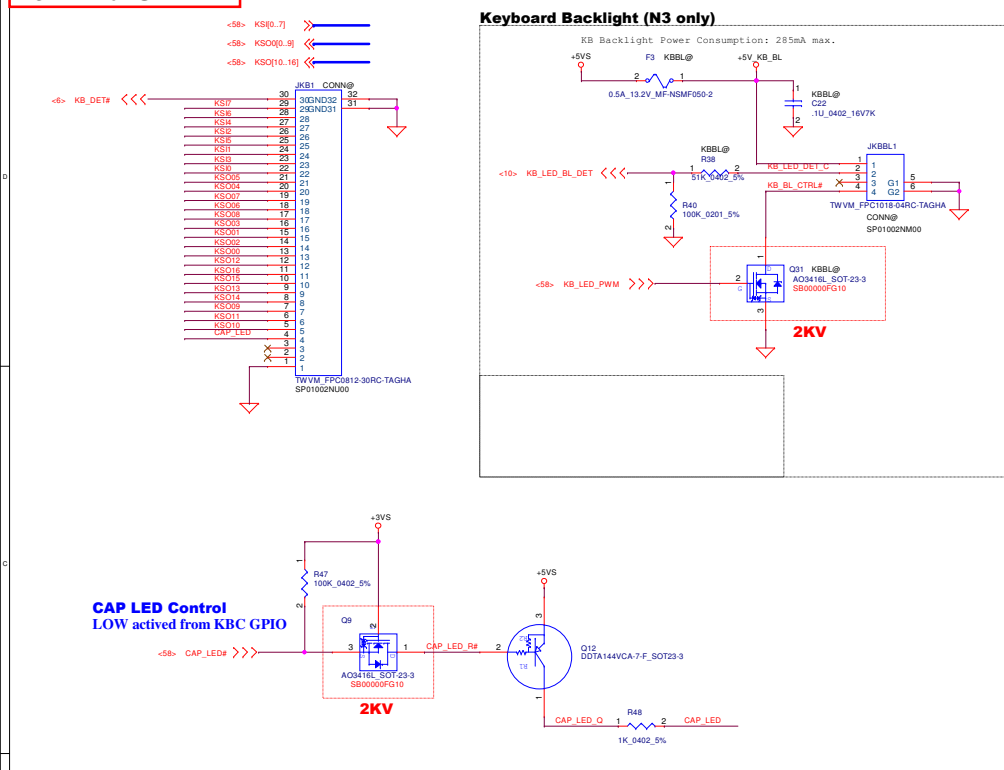


Main Function:

Reserve

LA-L242P Wallock turnA

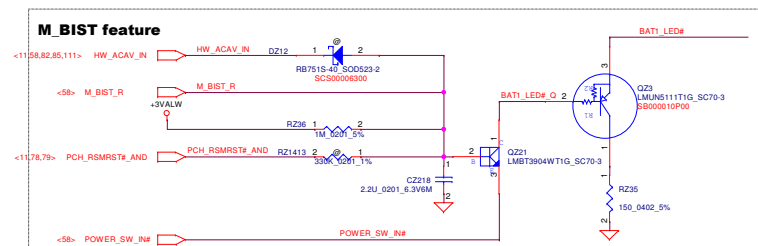
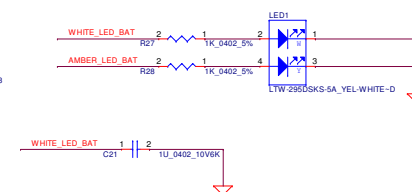
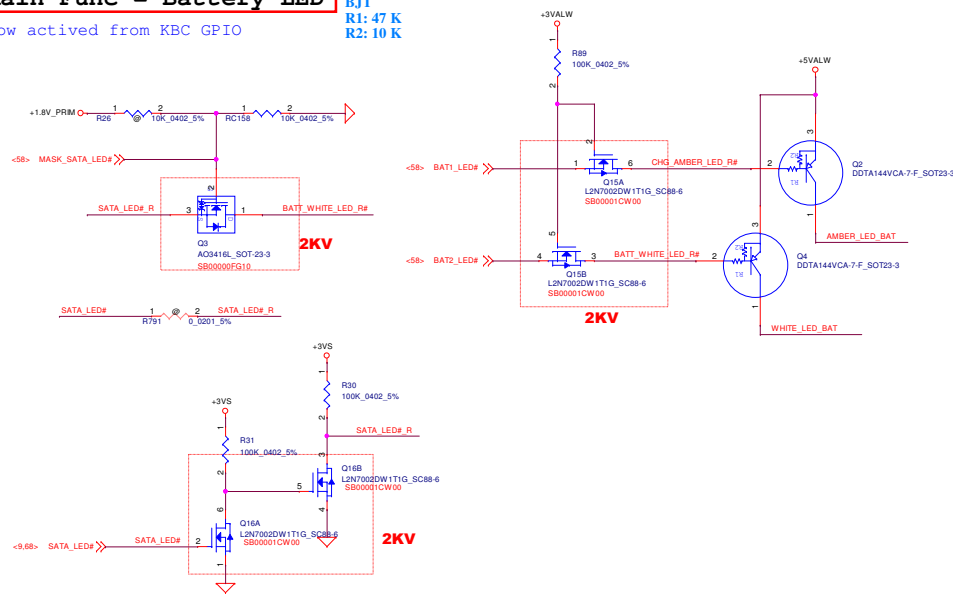
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 62 of 121



**Main Func = Battery LED**

Low activated from KBC GPIO

BJT  
R1: 47 K  
R2: 10 K



Main Function:

Reserve

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 64 of 121

Main Function:


Reserve

LA-L242P Warlock turnA

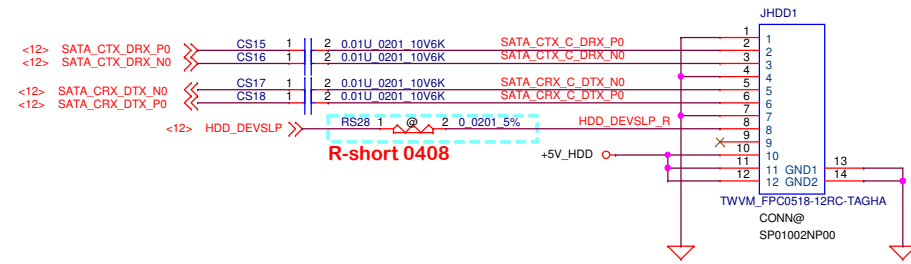
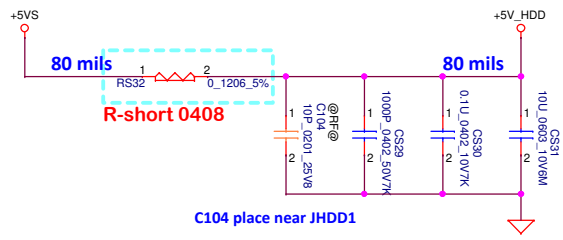
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 65 of 121

[illegible]

TEMPERATURE (°C)		T_CRIT#				
		2KΩ	7.5KΩ	10.5KΩ	14KΩ	18.7KΩ
ALERT#	2KΩ	77	87	97	107	117
	7.5KΩ	79	89	99	109	119
	10.5KΩ	81	91	101	111	121
	14KΩ	83	93	103	113	123
	18.7KΩ	85	95	105	115	125

Security Classification	Compul Secret Data			
Issued Date	2018/04/01	Deciphered Date	2018/04/01	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPUL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. THIS DRAWING IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF COMPUL ELECTRONICS, INC.			Size Document Number <b>LA-1242P</b>	
THIS DRAWING IS THE PROPERTY OF COMPUL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. IT IS TO BE KEPT IN THE POSSESSION OF THE USER AND NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF COMPUL ELECTRONICS, INC.			Rev 1.0	
DATE: Monday, April 12, 2021			Sheet 66 of 121	

Main Func = HDD&FFS



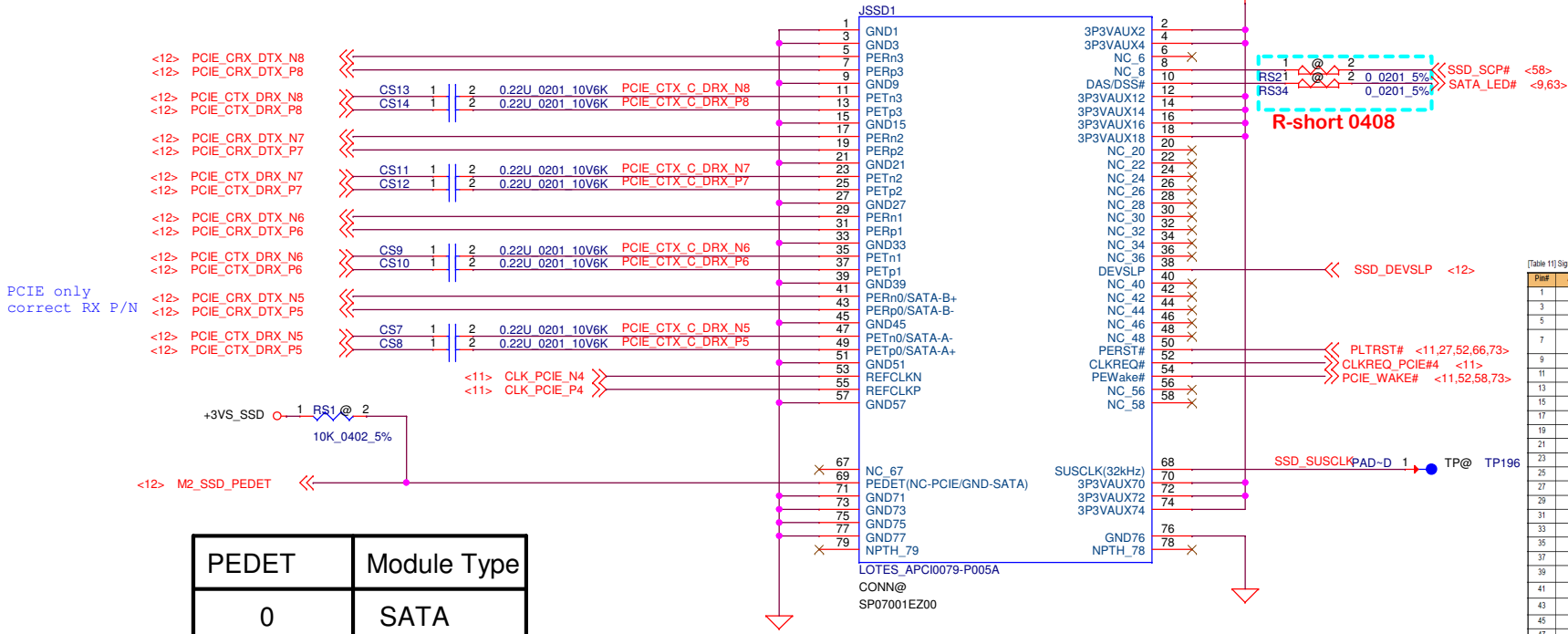
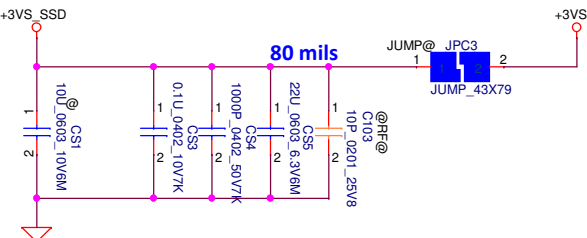
CONN		FFC
GND	S1	1
A+	S2	2
A-	S3	3
GND	S4	4
B-	S5	5
B+	S6	6
GND	S7	7
DEVSLP	P3	8
5V	P7	10
5V	P8	11
5V	P9	12
GND	P10	
Device Activity	P11	9

Main Func = ODD

Cancel ODD

Main Func = SSD M Key CONN

NGFF Key M



PCIE only  
correct RX P/N

PEDET	Module Type
0	SATA
1	PCIE

Table 11) Signal Assignments					
Pin#	Assignment	Description	Pin#	Assignment	Description
1	GND	Return current path	2	3.3V	3.3V source
3	GND	Return current path	4	3.3V	3.3V source
5	PETn3	PCie TX	6	NIC	NIC
7	PETp3	PCie TX	8	PLP#_INT# (optional)	PLP Control Signal
9	GND	Return current path	10	LED#	Device Active Signal (Refer to Table 12)
11	PERn3	PCie Rx	12	3.3V	3.3V source
13	PERp3	PCie Rx	14	3.3V	3.3V source
15	GND	Return current path	16	3.3V	3.3V source
17	PETn2	PCie TX	18	3.3V	3.3V source
19	PETp2	PCie TX	20	NIC	NIC
21	GND	Return current path	22	NIC	NIC
23	PERn2	PCie Rx	24	NIC	NIC
25	PERp2	PCie Rx	26	NIC	NIC
27	GND	Return current path	28	NIC	NIC
29	PETn1	PCie TX	30	NIC	NIC
31	PETp1	PCie TX	32	NIC	NIC
33	GND	Return current path	34	NIC	NIC
35	PERn1	PCie Rx	36	NIC	NIC
37	PERp1	PCie Rx	38	NIC	NIC
39	GND	Return current path	40	SMB_CLK (iO <sup>2</sup> )	DNU (Do Not Use)
41	PETn0	PCie TX	42	SMB_DATA (iO <sup>2</sup> )	DNU (Do Not Use)
43	PETp0	PCie TX	44	ALERT# (iO <sup>1</sup> )	DNU (Do Not Use)
45	GND	Return current path	46	NIC	NIC
47	PERn0	PCie Rx	48	NIC	NIC
49	PERp0	PCie Rx	50	PERST#	PCie Reset
51	GND	Return current path	52	CLKREQ#	PCie Device Clock Request
53	REFCLKN	PCie Reference Clock	54	PEWake#	NIC
55	REFCLKP	PCie Reference Clock	56	Reserved for MFG - Data	DNU (Do Not Use)
57	GND	Return current path	58	Reserved for MFG - CLOCK	DNU (Do Not Use)
67	NIC	NIC	68	SUSCLK	DNU (Do Not Use)
69	PEDET	NIC	70	3.3V	3.3V source
71	GND	Return current path	72	3.3V	3.3V source
73	GND	Return current path	74	3.3V	3.3V source
75	GND	Return current path	76	3.3V	3.3V source

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	NVME SSD
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	Monday, April 12, 2021
				Sheet	68 of 121
				Rev	1.0
				LA-L242P	



Main Func = eMMC

LA-L242P Warlock turnA

Security Classification		Compal Secret Data		Title	
Issued Date	2018/04/01	Deciphered Date	2019/04/01	eMMC (RSVD)	
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-L242P
				Date:	Monday, April 12, 2021
				Sheet	69 of 121
				Rev	1.0

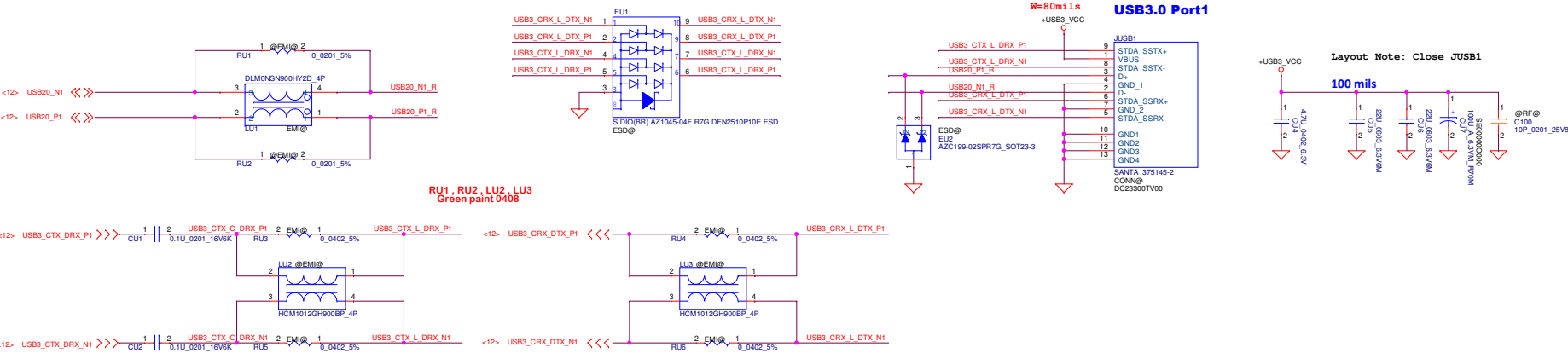
Main Function:

Reserve

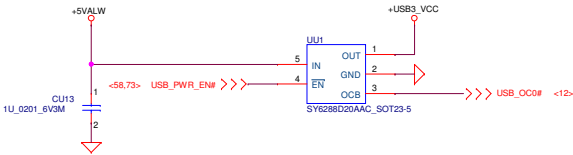
LA-L242P Wallock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 70 of 121

Main Func = USB3.0 Port1



Maximum Output  
Current 2A



Main Func =

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	USB3.0
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-L242P
				Date	Monday, April 12, 2021
				Sheet	71 of 121
				Rev	1.0

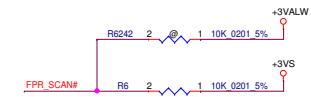
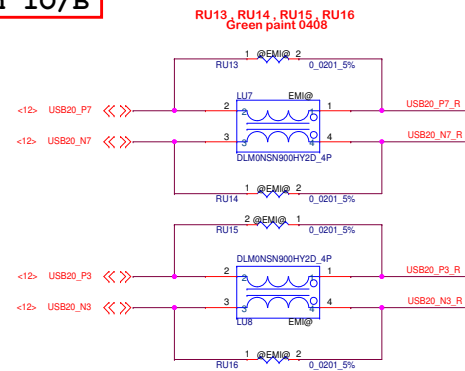
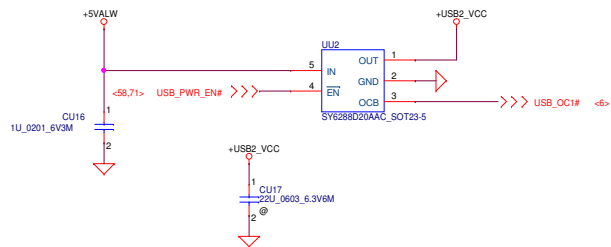
Main Function:

Reserve

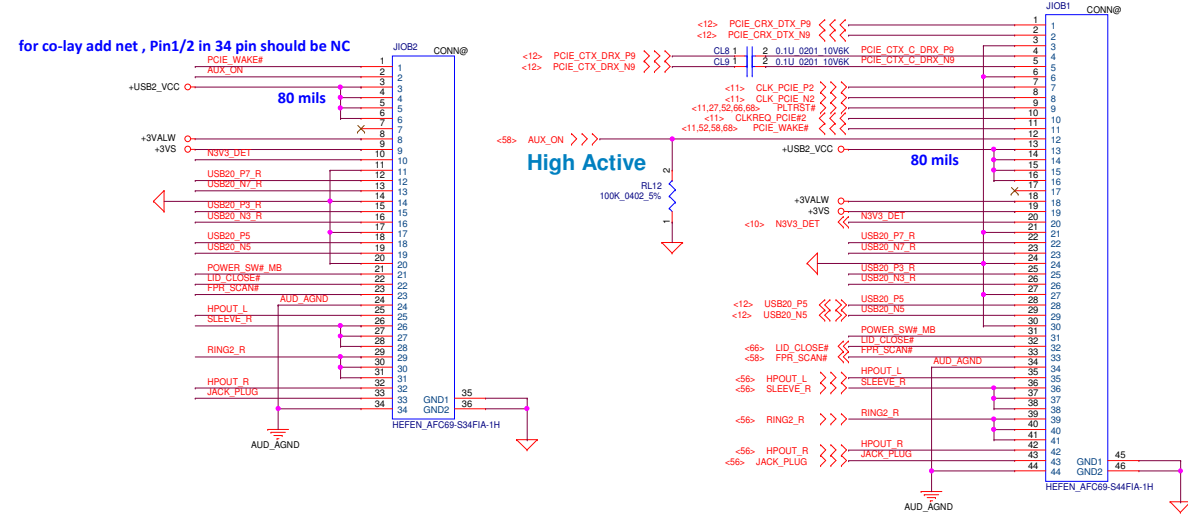
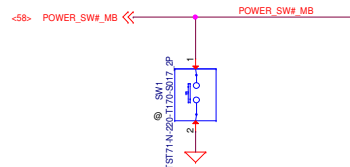
LA-L242P Wallock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 72 of 121

2  
Main Func = FPR



## JIOB1 and JIOB2 CONN co-lay



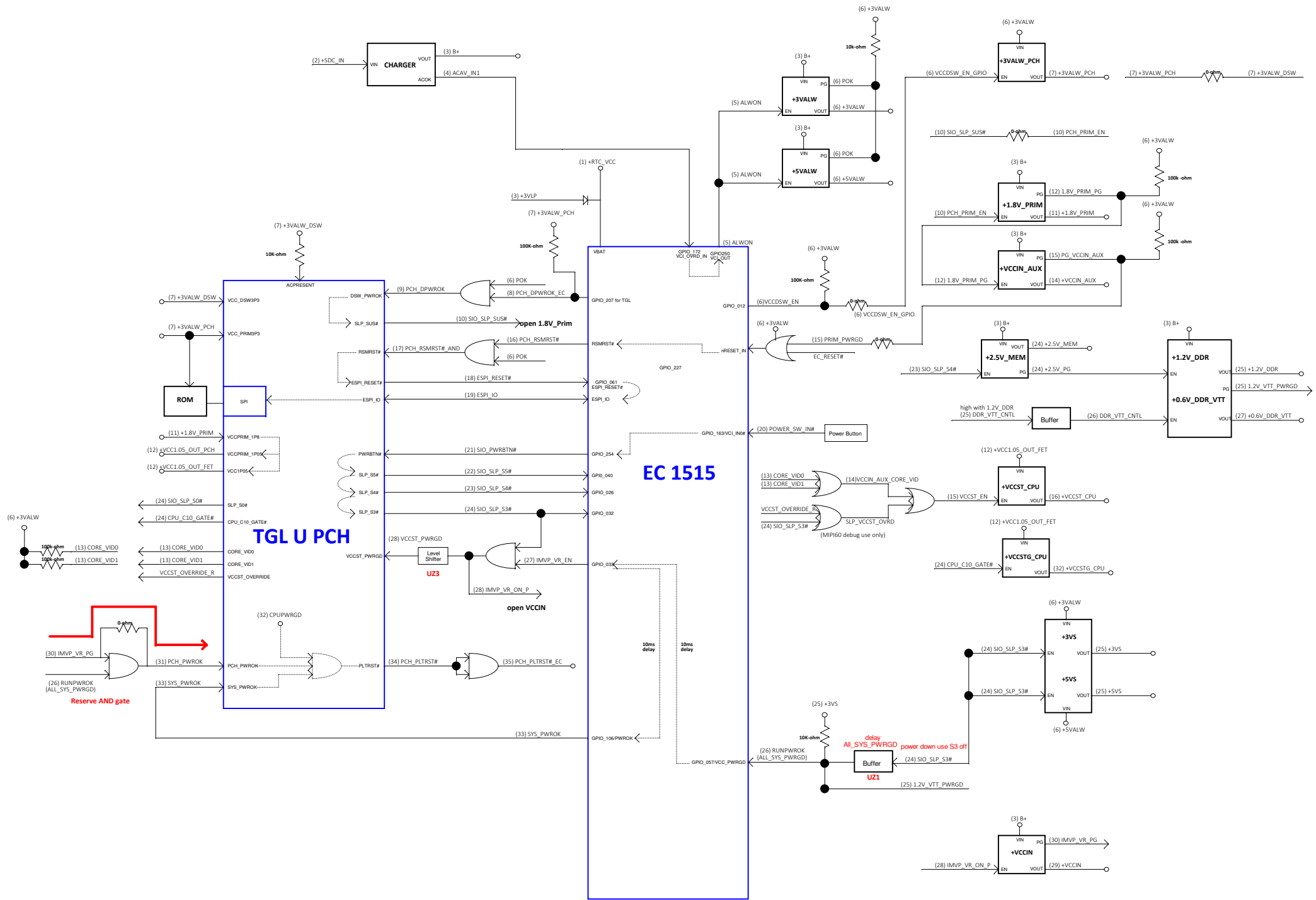
Security Classification	Compal Secret Data			<b>Compal Electronics, Inc.</b> <b>Finger Print &amp; I/O CONN</b>		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET 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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 73 of 121

Main Function:

Reserve

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	DOCK(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 74 of 121



Main Function:

Reserve

LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	(RSVD)	
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
					LA-L242P	1.0
				Date:	Monday, April 12, 2021	Sheet 76 of 121



H1 HOEA  
H\_2P5X3P0

H2 HOEA  
H\_6P0X8P0

H3 HOEA  
H\_2P5X4P9-G-V

H4 HOEA  
H\_3P7-G-V

H5 HOEA  
H\_6P0

H6 HOEA  
H\_2P5-G-V

H7 HOEA  
H\_7P0-G-V

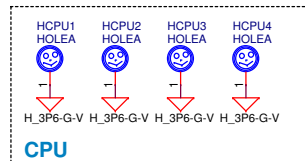
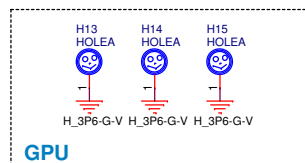
H8 HOEA  
H\_2P5-G-V

H9 HOEA  
H\_3P2-G-V

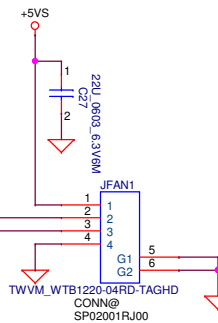
H10 HOEA  
H\_2P5

H11 HOEA  
H\_2P8-G-V

H12 HOEA  
H\_3P2-G-V



PU 10k on EC side



need to check pin define with Thermal

*PCB R1*



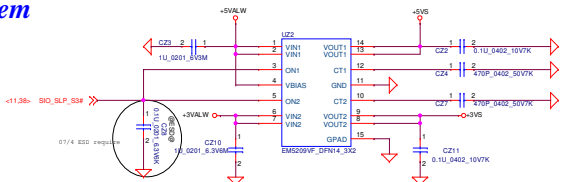
**PCB DAZ R3**



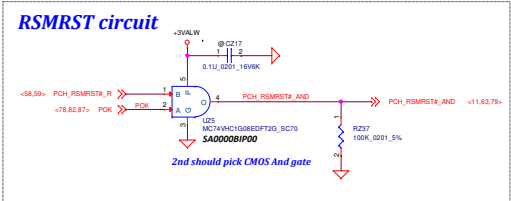
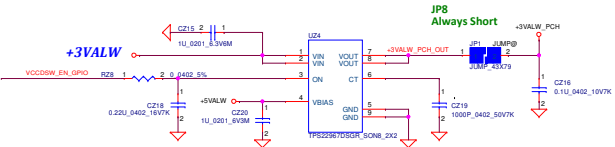
## 1029 ME update

Security Classification		Compal Secret Data		<b>Compal Electronics, Inc.</b>		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	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.				<b>PWRBTN/PCB PN//SCREW/FAN</b>		
				Size	Document Number	Rev
				<b>LA-1242P</b>		
Date: Monday, April 19, 2021				Sheet	77 of 121	

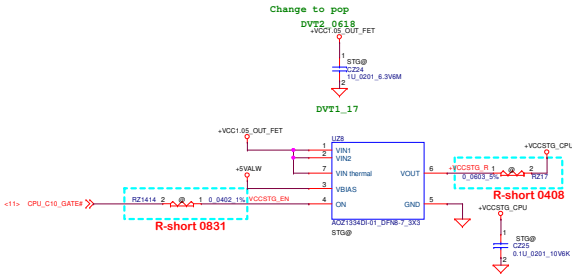
+5VS / +3VS for System



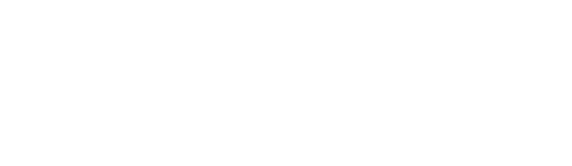
+3VALW TO +3VALW\_PCH



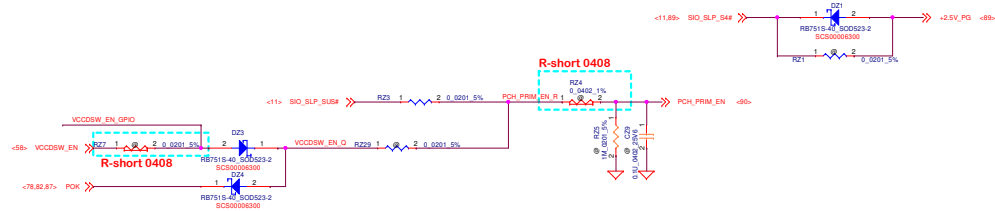
VCCSTG



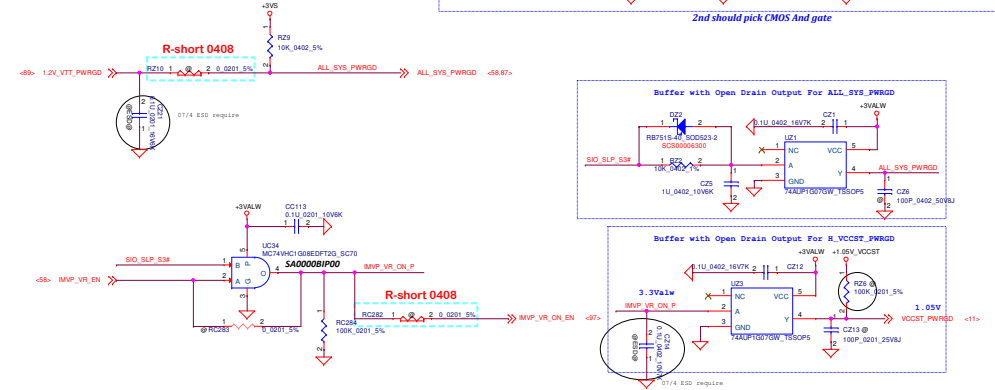
+1.2V\_VDDQ TO +1.2V\_VCCPLL\_OC



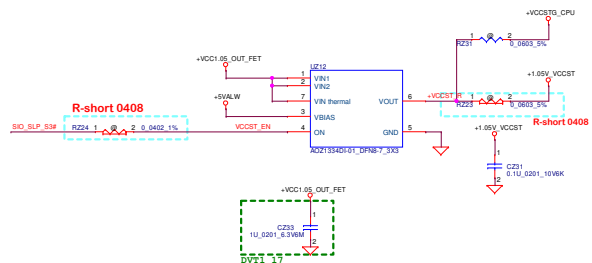
Sequence Logic



IMVP\_VR\_ON&VCCST\_PWRGD



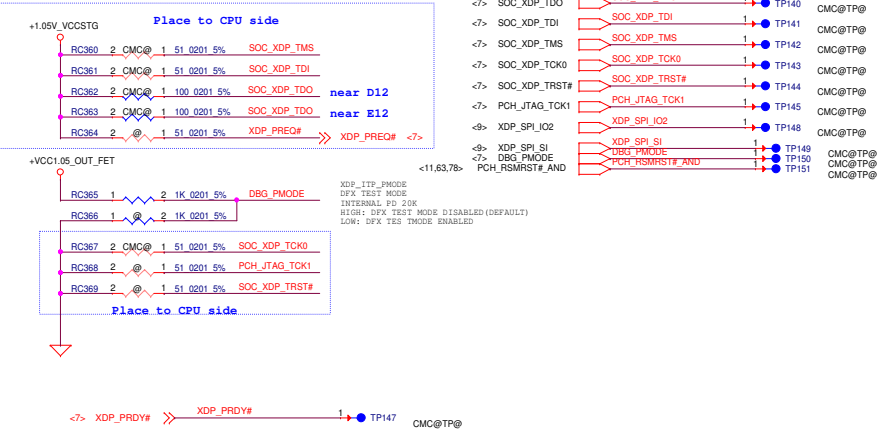
VCCST



SN74AUP1C FUNCTION TABLE with table

INPUTS		OUTPUT	
C	B	A	Y
L	L	L	L
L	L	H	L
L	H	L	H
L	H	H	H
H	L	L	L
H	L	H	L
H	H	L	L
H	H	H	H

Main Func = Debug connector



LA-L242P Warlock turnA

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title XDP		
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 B	Document Number LA-L242P	Rev 1.0
				Date Monday, April 12, 2021	Sheet 80	of 121

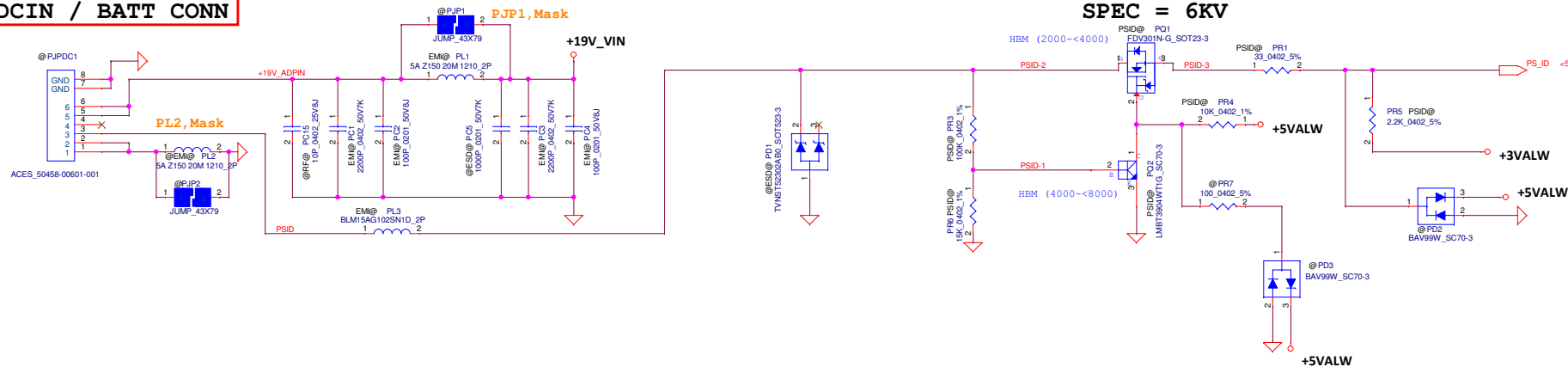
# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 81 of 121

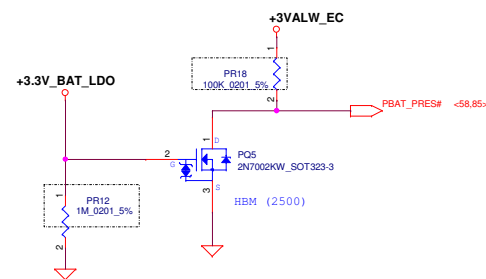
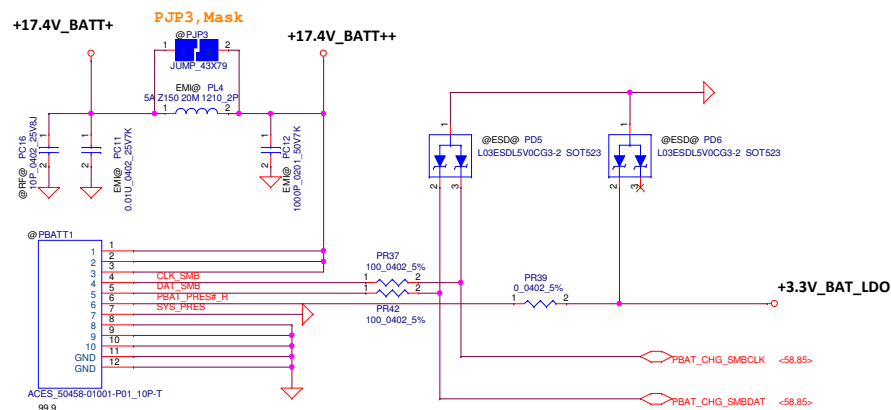
**Main Func = DCIN / BATT CONN**



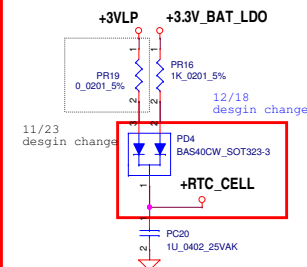
**Battery Bot Side**

PIN1 Batt+  
PIN2 Batt+  
PIN3 Batt+  
PIN4 CLK\_SMB  
PIN5 DAT\_SMB  
PIN6 BATT\_PRS  
PIN7 SYS\_PRES  
PIN8 GND  
PIN9 GND  
PIN10 GND  
SP021412220

ACES\_50458-01001-P01\_10P-T

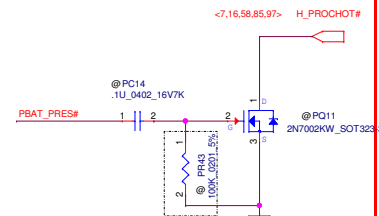


COIN RTC Battery



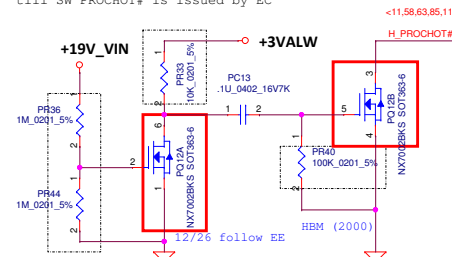
**Adapter protection:**

if battery removed, adaptor only,  
then trigger the H\_PROCHOT#,  
keep @ in BOM since battery can not  
be removed by end user

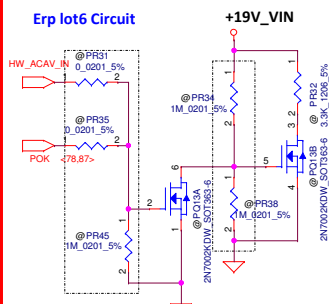


**Battery protection:**

```
asserts H_PROCHOT# when adaptor is
unplugged, keep low for 10ms
till SW PROCHOT# is issued by EC
```



### Erp lot6 Circuit



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2018/04/01	Deciphered Date	2019/04/01	Title	PWR DCIN / BATT CONN	
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 THE 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.				Docu- ment Number	Rev	
				LA-L242P	0.1	
Date:				Tuesday, April 13, 2021	Sheet	20 of 121

# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
				LA-L242P		0.1
Date: Tuesday, April 13, 2021				Sheet	83	of 121

Reserve

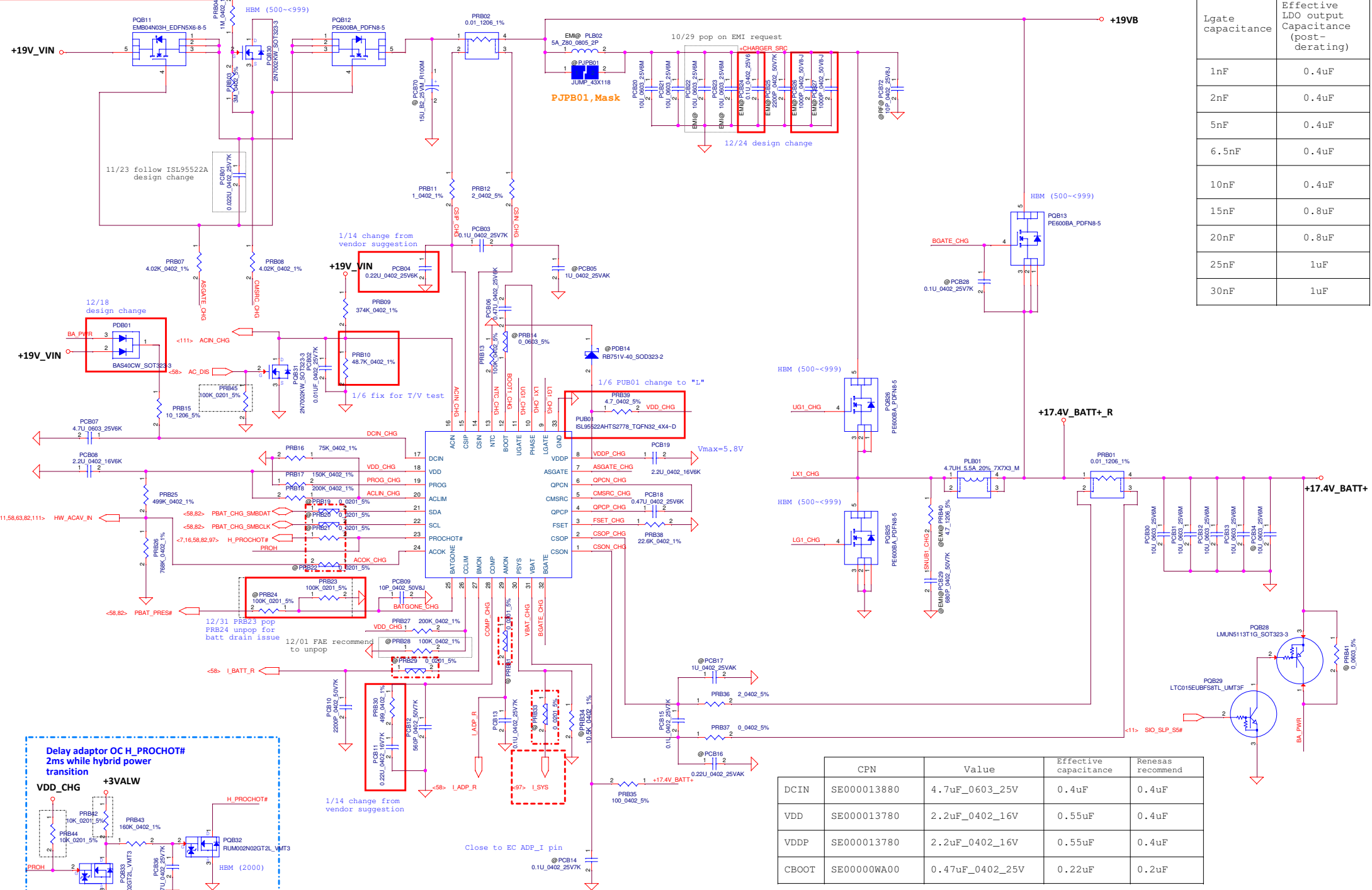
LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 84 of 121



Main Func = CHARGER



Lgate capacitance	Effective LDO output Capacitance (post-derating)
1nF	0.4uF
2nF	0.4uF
5nF	0.4uF
6.5nF	0.4uF
10nF	0.4uF
15nF	0.8uF
20nF	0.8uF
25nF	1uF
30nF	1uF

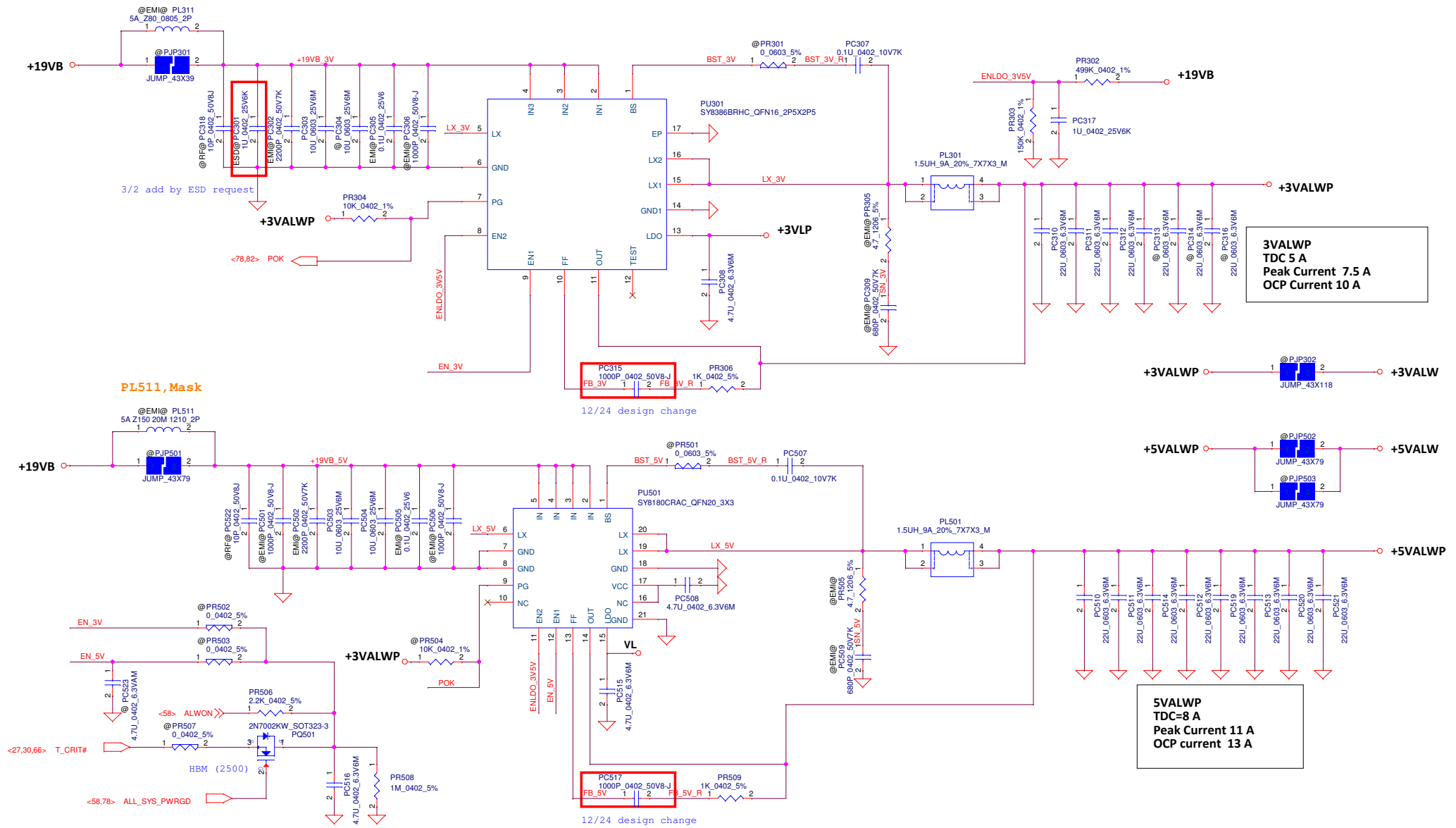
# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 86 of 121

# Main Func = 3.3VALWP/5VALWP



Security Classification		Compal Secret Data		Title	
Issued Date	2019/05/10	Deciphered Date	2024/05/10	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 COMPAL ELECTRONICS, INC. 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	Rev
				LA-L242P	0.
Date: Tuesday, April 13, 2021				Sheet	87 of 121

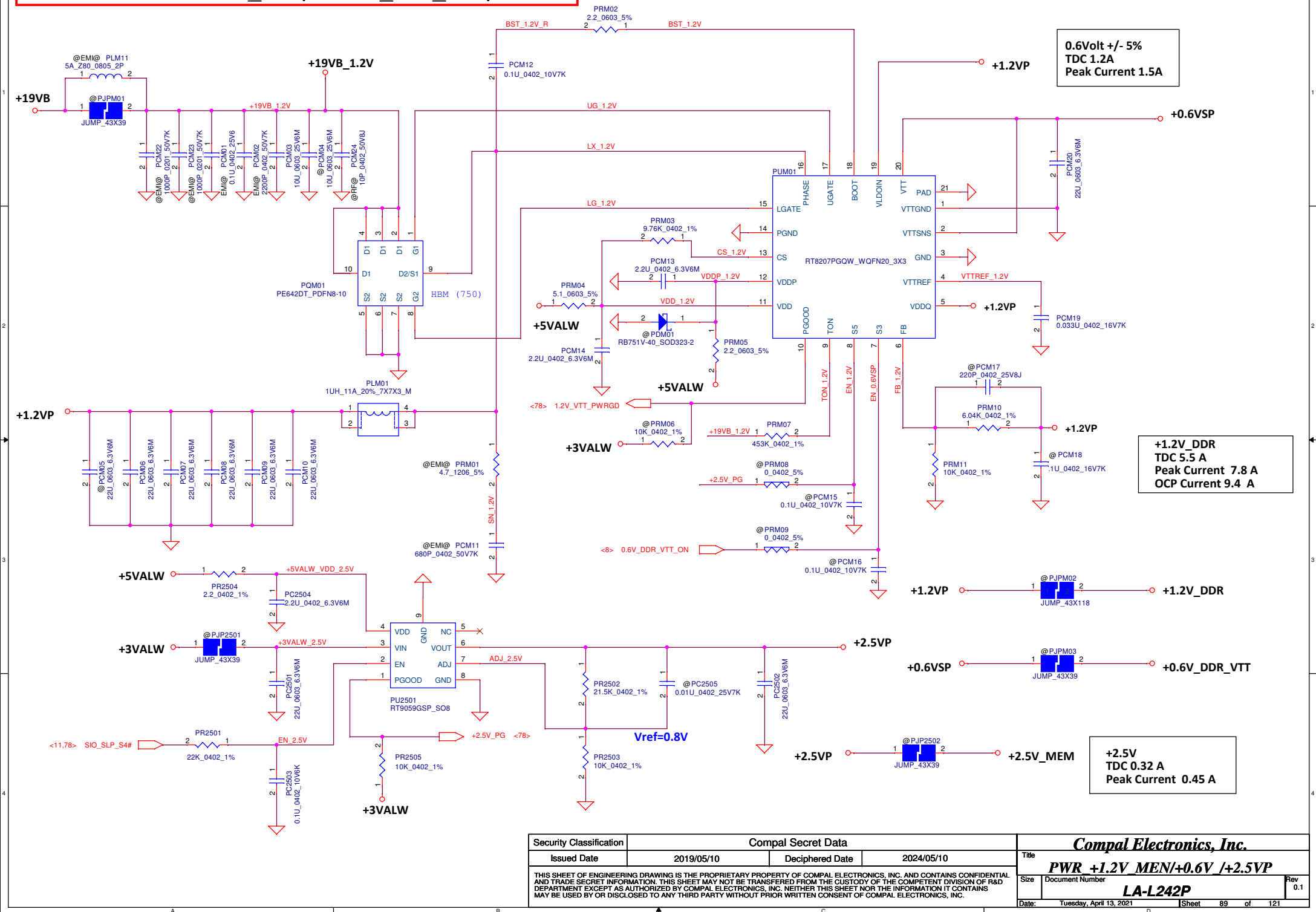
# Reserve

LA-L242P Warlock turnA

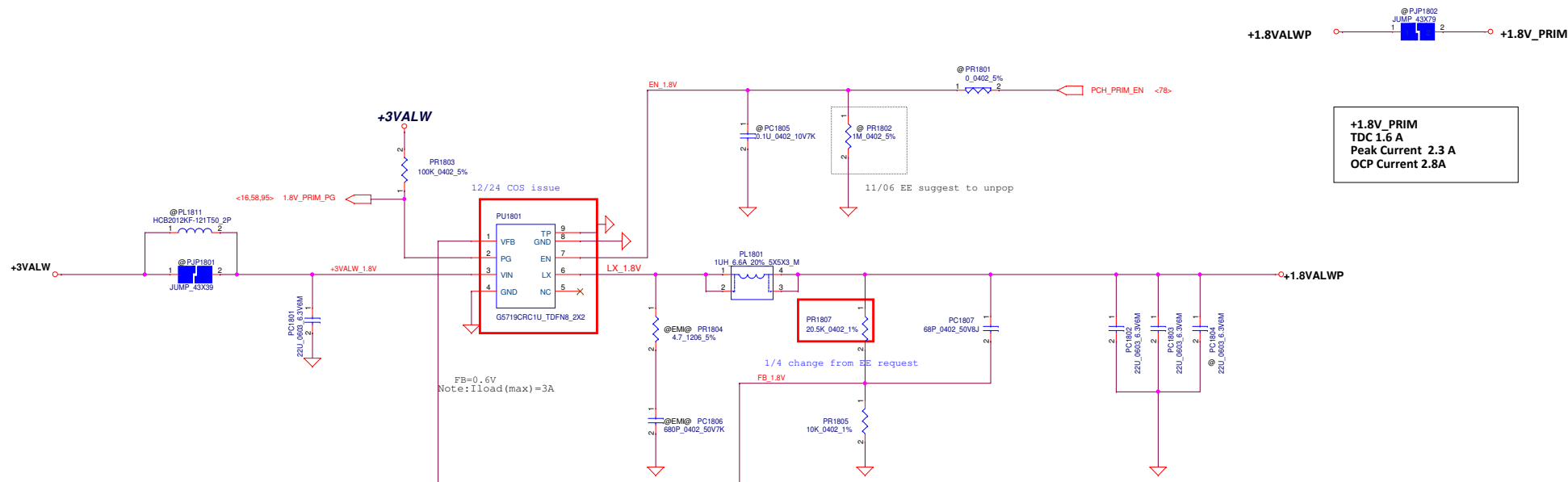
DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 88 of 121

Main Func = +1.2V\_DDR/+0.6V\_DDR\_VTT/+2.5VP



**Main Func = +1.8VALWP**



Security Classification		Compal Secret Data		<b>Compal Electronics, Inc.</b>	
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	<b>PWR +1.8VALWP</b>
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
				<b>LA-L242P</b>	
				Date:	Tuesday, April 13, 2021
				Sheet	90 of 121

# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 91 of 121

# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 92 of 121



# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 93 of 121

# Reserve

LA-L242P Warlock turnA

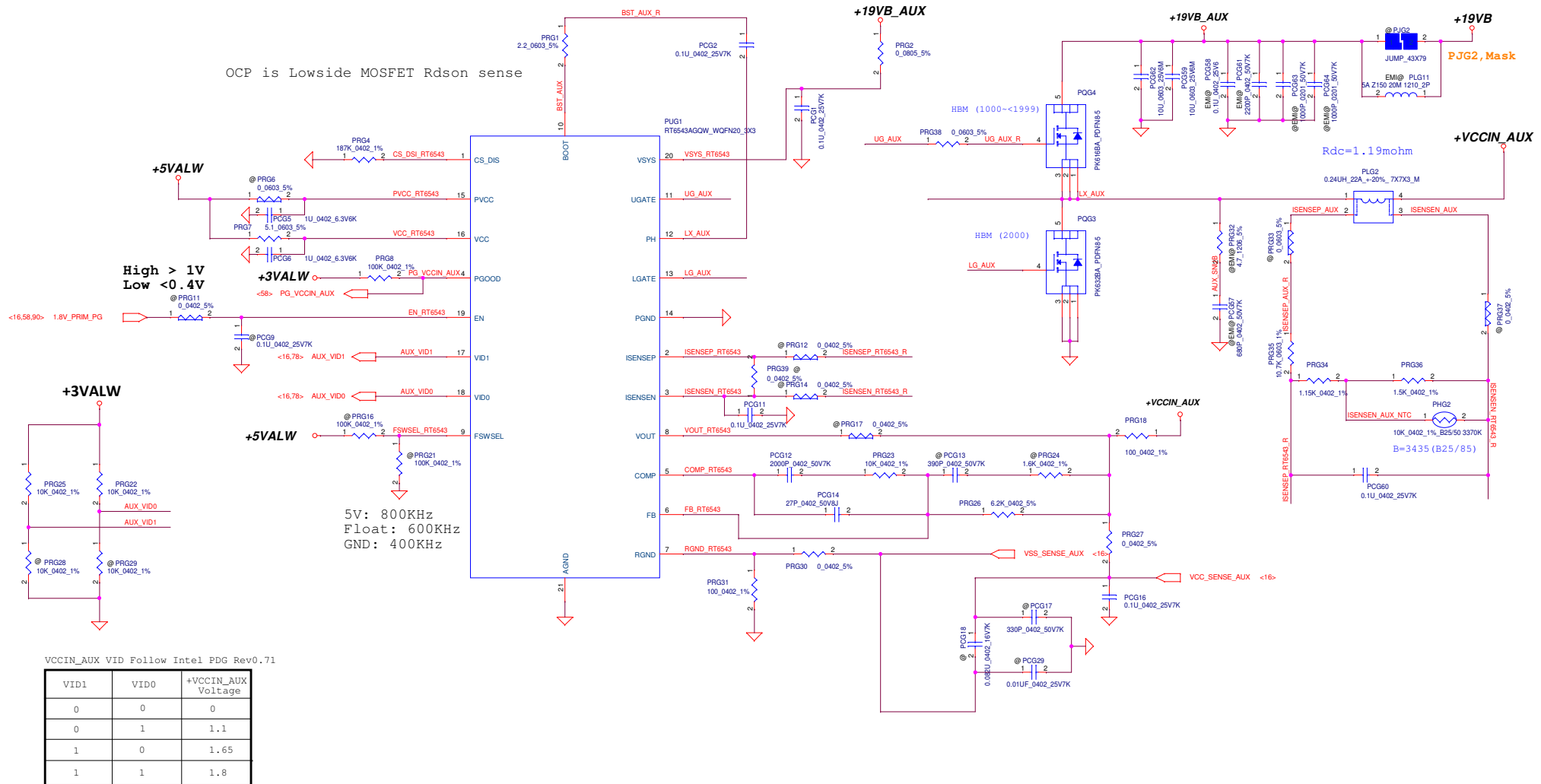
DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 94 of 121

Main Func = VCCIN\_AUX

ICCMAX=27A  
TDC=14A  
DC LL=1.8m (mV/A)  
AC LL=TBD

OCF is Lowside MOSFET Rdson sense



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

PWR VCCIN\_AUX

LA-L242P

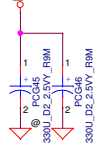
Date: Tuesday, April 13, 2021

Sheet 95 of 121

Rev 0.1

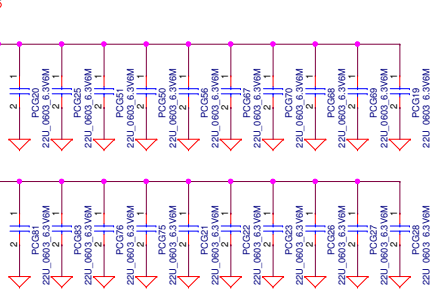
Main Func = VCCIN\_AUX Decoupling

+VCCIN\_AUX

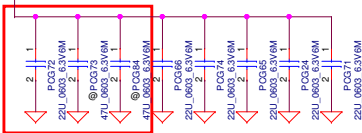


330U\_R9 \*1  
22U\_0603 \*26

+VCCIN\_AUX



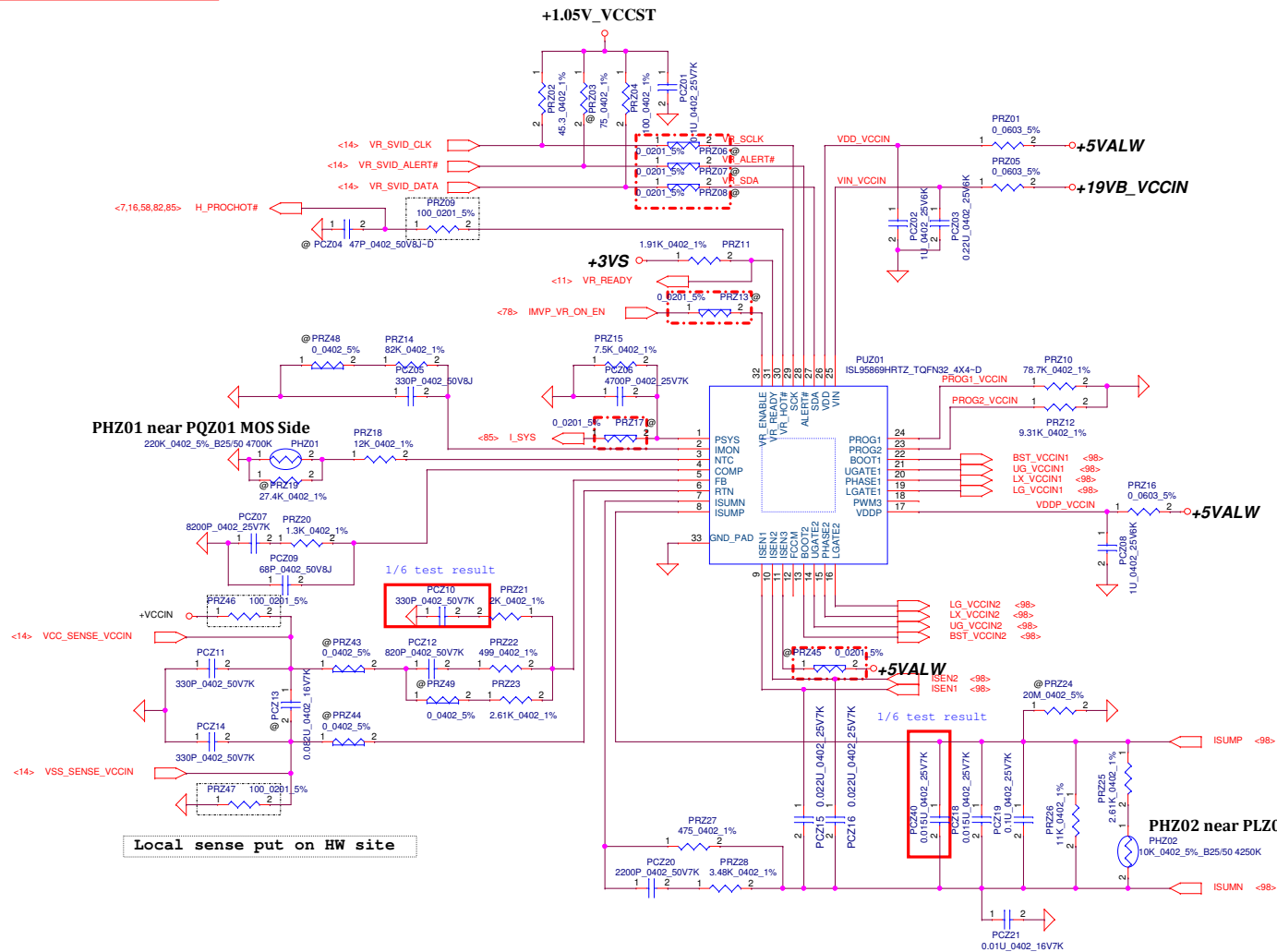
+VCCIN\_AUX



1/12 validation result

Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		2024/05/10	
2019/05/10		2024/05/10		PWR_VCCIN_AUX Decoupling	
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		Tuesday, April 13, 2021	
				Sheet 96 of 121	
				Rev 0.1	

Main Func = VCCIN



Local sense put on HW site

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data		Title	
Issued Date	2014/11/05	Deciphered Date	2014/12/15	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.				Document Number
				LA-L242P
Date: Tuesday, April 13, 2021				Rev X00(0.1)
1 Sheet 97 of 121				



Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date		2019/05/10	Deciphered Date	2024/05/10	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
				LA-L242P	
Date: Tuesday, April 13, 2021				Sheet	99 of 121

# Reserve

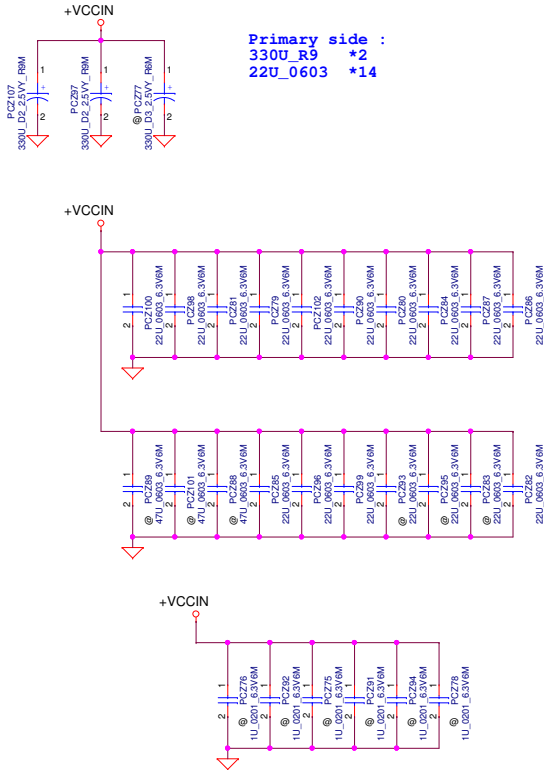
LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 100 of 121



Main Func = VCCIN Decoupling



Reserve

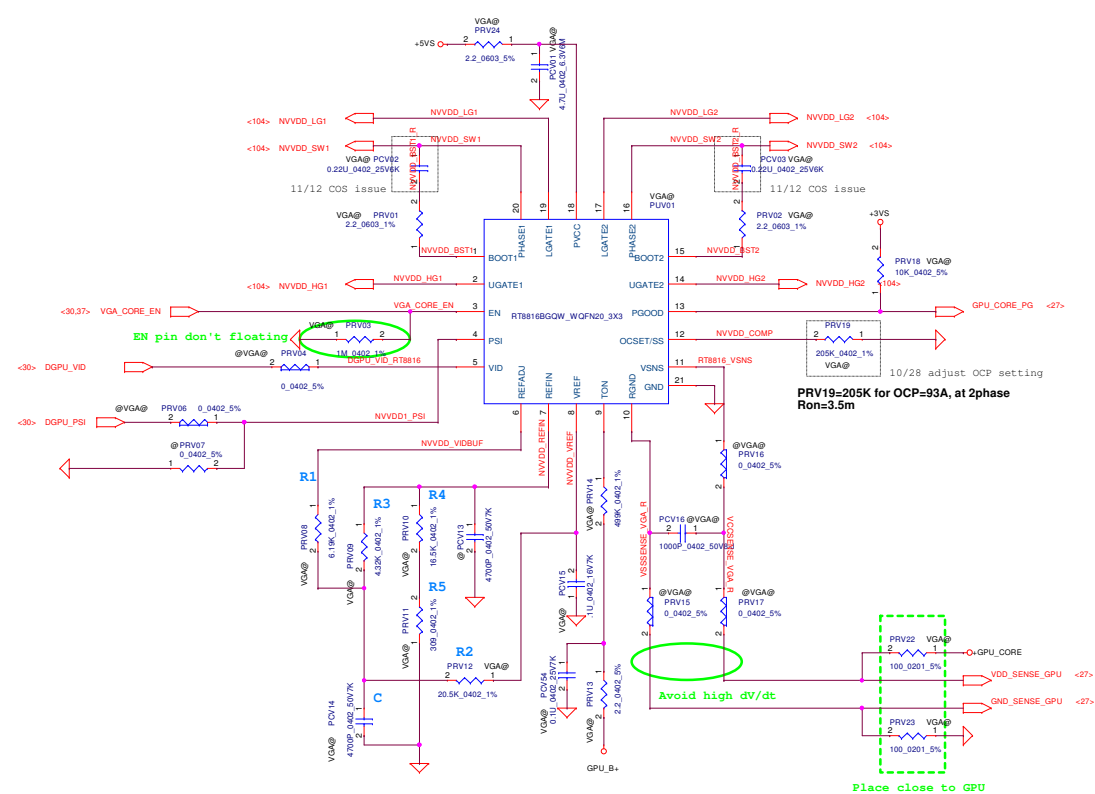
LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-K033P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 102 of 121

Main Func = GPU CORE

Operation Phase Number PSI Voltage Setting  
1phase with DEM 0V to 0.4V  
1phase with CCM 0.7V to 0.88V  
2phase with DEM 1.08V to 1.35V  
2phase with CCM 1.6V to 5.3V



+GPU\_CORE (N17S-G5)  
TDC=35A  
Peak Current 78A  
OCP= 93A  
DCR:0.9mohm +-5%  
H/SRds (on): 8.2mohm 10.5mohm  
L/SRds (on): 2.8mohm 3.5mohm

Security Classification		Compal Secret Data		<b>Compal Electronics, Inc.</b> <b>PWR GPU CORE</b>	
Issued Date	2018/05/10	Deciphered Date	2024/05/10	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 PARTNERED ENGINEERING AUTHORITY TO ANY OTHERS WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. IT MAY NOT BE REPRODUCED OR DISCLOSED TO ANY THIRD PARTY WITHOUT THEIR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
					<b>LA-L242P</b> Rev 0.1
Date: Tuesday, April 13, 2021				Sheet	104 of 121

# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 105 of 121

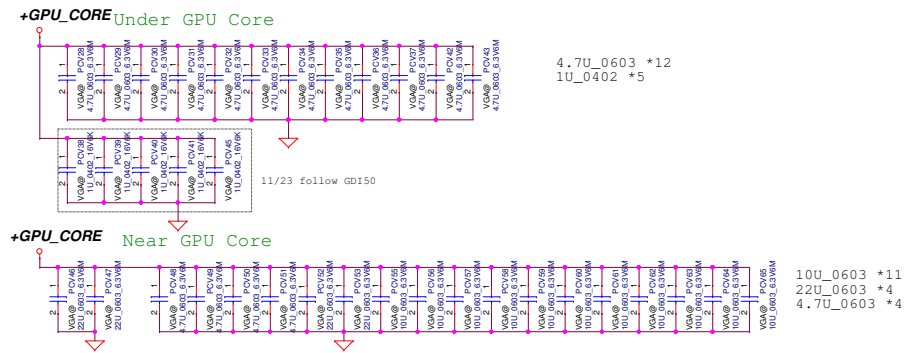
# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 106 of 121

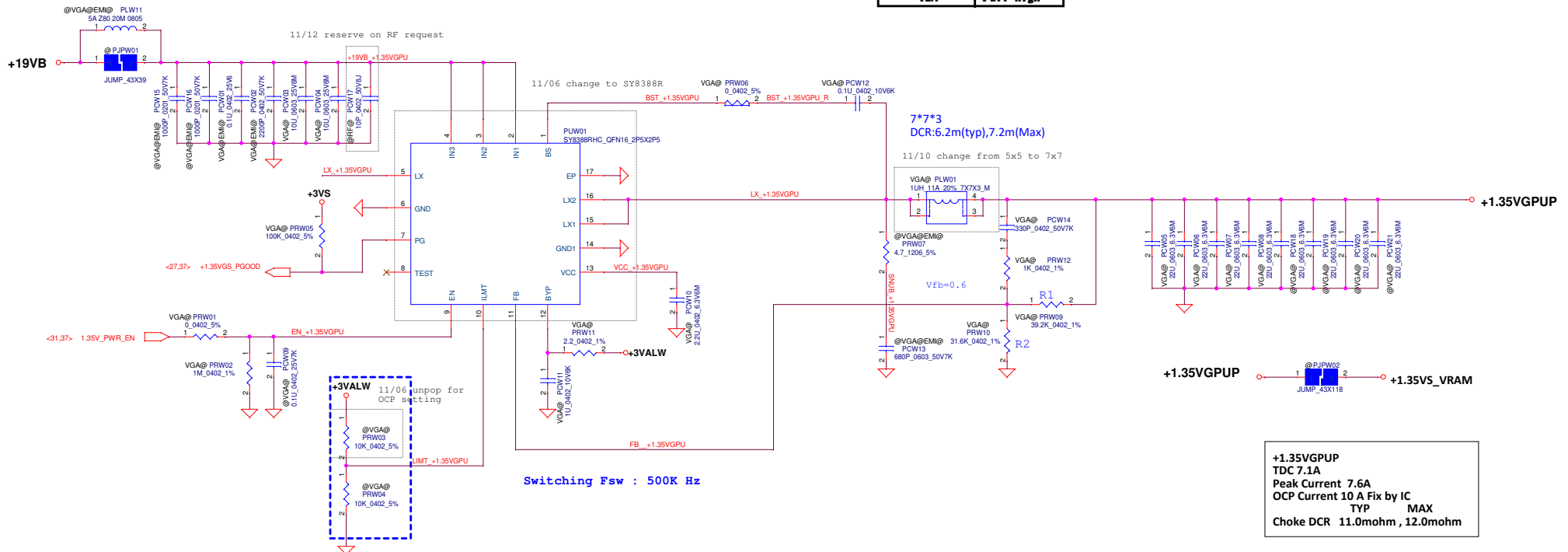
## Main Func = GPU CORE Decoupling



Security Classification		Compal Secret Data		<b>Compal Electronics, Inc.</b> <b>PWR GPU CORE Decoupling</b>	
Issued Date	2018/05/10	Deciphered Date	2024/05/10	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 AUTHORIZED EXCEPT BY AUTHORIZED PERSONNEL. THIS INFORMATION IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Number
				Date: <b>Monday, April 13, 2021</b>	Rev <b>0.1</b>
				Sheet <b>107</b> of <b>121</b>	

The current limit is set to 8A, 10A or 12A when this pin is pull low, floating or pull high.

OCP setting	ILMT(pin3)
8A	Pull low
10A	Floating
12A	Pull high



Security Classification		Compal Secret Data		Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	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 DEPARTMENTS 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 +1.35VGPUP		
				Size	Document Number	
				LA-L242P		
				Date:	Tuesday, April 13, 2021	Sheet



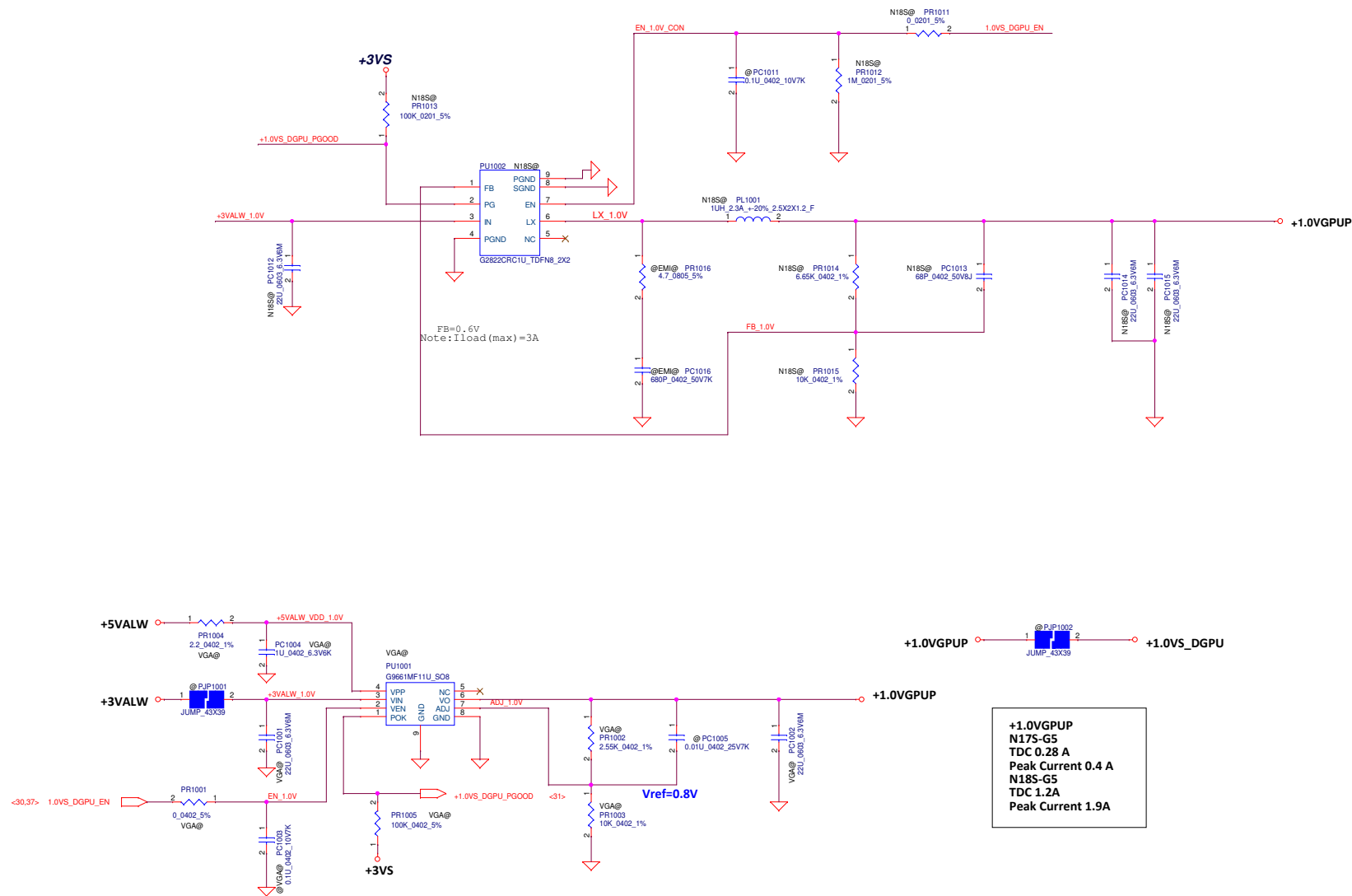
# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 109 of 121

Main Func = +1.0VG PUP



Security Classification		Compal Secret Data		Compal Electronics, Inc.			
Issued Date		2019/05/10	Deciphered Date	2024/05/10	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 +1.0VGPUP		
					Size	Document Number	Rev
					LA-L242P		0.1
Date:					Tuesday, April 13, 2021	Sheet	110 of 121



# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 112 of 121

# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 113 of 121

# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 114 of 121

# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-K033P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 115 of 121

# Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 116 of 121



Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date		2019/05/10	Deciphered Date	2024/05/10	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
				LA-L242P	
Date: Tuesday, April 13, 2021				Sheet	117 of 121

Reserve

LA-L242P Warlock turnA

DELL CONFIDENTIAL/PROPRIETARY

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2019/05/10	Deciphered Date	2024/05/10	Title	Reserve for PWR	
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
					LA-L242P	0.1
				Date:	Tuesday, April 13, 2021	Sheet 118 of 121

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

Item	Page#	Date	Request Owner	Issue Description	Solution Description	Rev.
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

DELL CONFIDENTIAL/PROPRIETARY

Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		Document Number	
2019/05/10		2024/05/10		LA-K033P	
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.				Rev 0.1	
Date: Tuesday, April 13, 2021				Sheet 119 of 121	

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

Item	Page#	Date	Request Owner	Issue Description	Solution Description	Rev.
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

DELL CONFIDENTIAL/PROPRIETARY

Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		Date	
2019/05/10		2024/05/10		Tuesday, April 13, 2021	
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-L242P	
				Rev	
				0.1	
				Sheet 120 of 121	

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

Item	Page#	Date	Request Owner	Issue Description	Solution Description	Rev.
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

DELL CONFIDENTIAL/PROPRIETARY

Security Classification		Compal Secret Data		Title	
Issued Date		2019/05/10	Deciphered Date	2024/05/10	
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.					Rev 0.1
Size	Document Number				
LA-L242P					
Date: Tuesday, April 13, 2021					Sheet 121 of 121