

COMPAL CONFIDENTIAL

MODEL NAME : LOKI 15/17
PCB NO : DA6001TR010
BOM P/N : 431A7X31L01~L07

KBL-U & R + MEC1416 board
2017-07-26
REV : 1.0 (A00)

ZZZ

DAZ21Q00101

PCB@

PCB CAL60 LA-F114P LS-F111P GOLD A31 !

SKL

UC1

SKL_U

SA0000ACL1L

i3SKL_2.0G_SMB0@

S IC FJ8066201931106 SR2UW D1 2G A31!

KBL

UC1

KBL_U_Celeron

SA0000ADL3L

KBL_U_Celeron@

S IC FJ8067702739933 SR349 H0 1.8G A31!

UC1

KBL_U_Pentium

SA0000ADV3L

KBL_U_Pentium@

S IC FJ8067702739932 SR348 H0 2.3G A31!

UC1

KBL_U_i3

SA0000A380L

KBL_U_i3@

S IC A31 FJ8067702739738 QLDP H0 2.4G

UC1

KBL_R_i5

SA0000AWB3L

i5KBLR_1.6G_QS@

S IC FJ8067703282221 SR3LB Y0 1.6G A31!

UC1

KBL_R_i7

SA0000AQZ0L

i7KBLR_1.8G_ES@

S IC A31 FJ8067703281813 QN5C Y0 1.8G

UC1

KBL_R_i7

SA0000AWC2L

i7KBLR_1.8G_QS@

S IC FJ8067703281816 SR3LC Y0 1.8G A31!

UC1

KBL_U_i3

SA0000B2Y1L

i3KBLU_2.7G_QS@

S IC FJ8067702739765 SR3JY H0 2.7G A31!

Layout Dell logo

COPYRIGHT 2014
ALL RIGHT RESERVED
REV: X00
PWB: 9HTP8

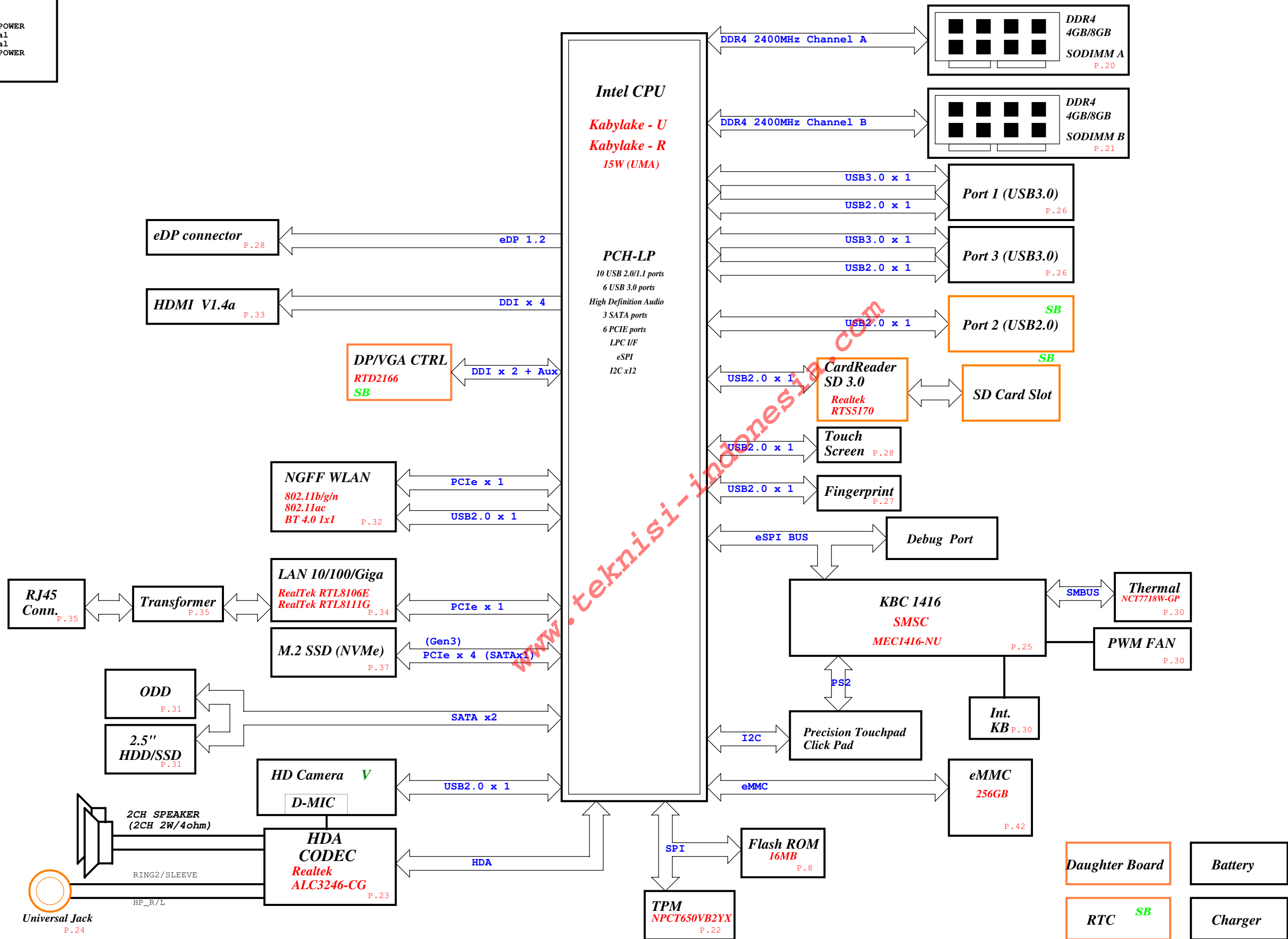
@ : Un-pop Component
UMA@/DIS@ : UMA & DIS Type
U22@/U42@ : KBL U/KBL U-R
EC@ : EC
JP@/PJP@ : JUMP

EMI@/ESD@/RF@ : EMI, ESD and RF Component
@EMI@/@ESD@/@RF@ : EMI, ESD and RF Un-POP Component
CMC@ : XDP Component
CONN@ : Connector Component
TP_WAKE@/NTP_WAKE@ : TouchPad wake
KBBL@ : KB Backlight
TPM@/FTPM@ : HW TPM/SW TPM
MMC@ : eMMC
FFS@ : Free Fall Sensor
MODS@ : Modern Standby

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	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 Custom	Document Number LA-F114P
				Date: Wednesday, July 26, 2017	Rev A00
				Sheet 1	of 54

PCB Stack
1.0mm/6L
L1:TOP L2:GND/POWER L3:Signal L4:Signal L5:GND/POWER L6:BOT

Block Diagram



Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	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.			Document Number	Rev
			LA-F114P	A00
			Date: Wednesday, July 26, 2017	Sheet 2 of 54

POWER STATES

Signal State	SLP S3#	SLP S4#	SLP S5#	ALWAYS PLANE	SUS PLANE	RUN PLANE	CLOCKS
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

USB PORT#	DESTINATION
1	USB2.0 Port1
2	USB2.0 Port2 , IO/B
3	USB2.0 Port3
4	NC
5	CCD
6	Card Reader IO/B
7	BT
8	Touch Screen
9	Finger Printer
10	NC

USB3.0	PCI-E	SATA	DESTINATION
USB3.0-1			USB3.0 Port1
USB3.0-2			NC
USB3.0-3			USB3.0 Port3
USB3.0-4			NC
USB3.0-5	PCI-E-1		NC
USB3.0-6	PCI-E-2		NC
	PCI-E-3		NC
	PCI-E-4		NC
	PCI-E-5		10/100M LAN
	PCI-E-6		WLAN
	PCI-E-7	SATA-0	SATA HDD
	PCI-E-8	SATA-1	SATA ODD
	PCI-E-9		NVME SSD
	PCI-E-10		NVME SSD
	PCI-E-11	SATA-1*	NVME SSD
	PCI-E-12	SATA-2	NVME SSD

PM TABLE

State \ power plane	+RTC_CELL	B+	+1.0V_PRIM +1.0V_MPHYGT +1.8V_PRIM +3VALW +3VALW_PCH +3.3V_ALW_DSW +5VALW	+1.0V_VCCST +1.2V_DDR +2.5V_MEM	+1.0VS_VCCIO +1.0V_VCCSTG +VCC_GT +VCC_SA +VGA_CORE +VCC_CORE +0.6V_DDR_VT
S0	ON	ON	ON	ON	ON
S3	ON	ON	ON	ON	OFF
M3	ON	ON	ON	ON	OFF
S4&S5 / AC	ON	ON	ON	OFF	OFF
S4&S5 / AC doesn't exist	ON	ON	OFF	OFF	OFF
G3	ON	OFF	OFF	OFF	OFF

Board ID table

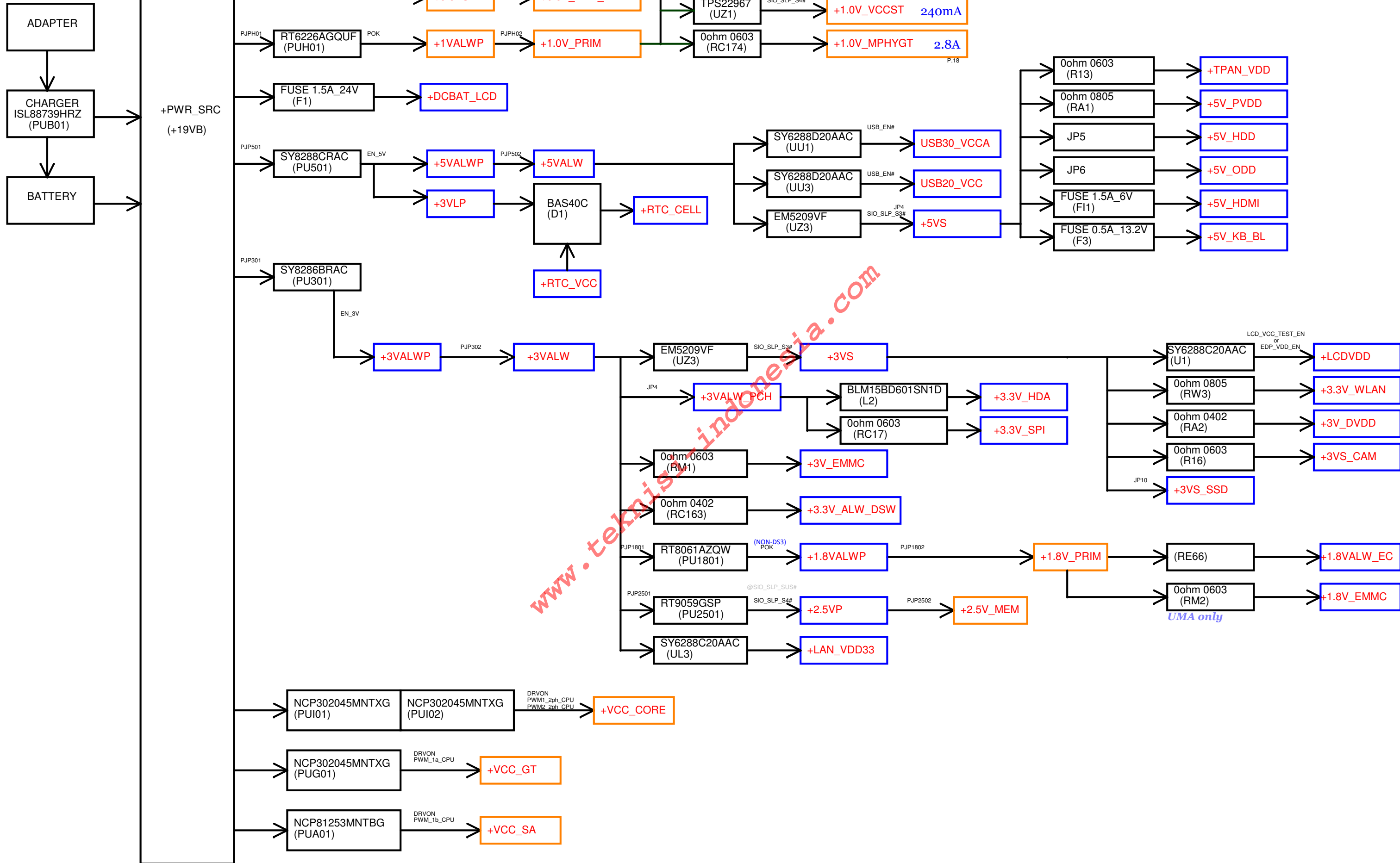
Item	Pull-down	Pull-up	Voltage	Board ID/Model ID
1	100	10K	3.000	EVT
2	100	17.8K	2.801	DVT1
3	100	27K	2.598	DVT2
4	100	37.4K	2.402	
5	100	49.9K	2.201	Pilot
6	100	64.9K	2.001	
7	100	82.5K	1.808	
8	100	107K	1.594	
9	100	154K	1.299	
10	100	200K	1.1	
11	100	TBD	0.9	
12	100	TBD	0.7	
13	100	TBD	0.5	
14	100	TBD	0.3	

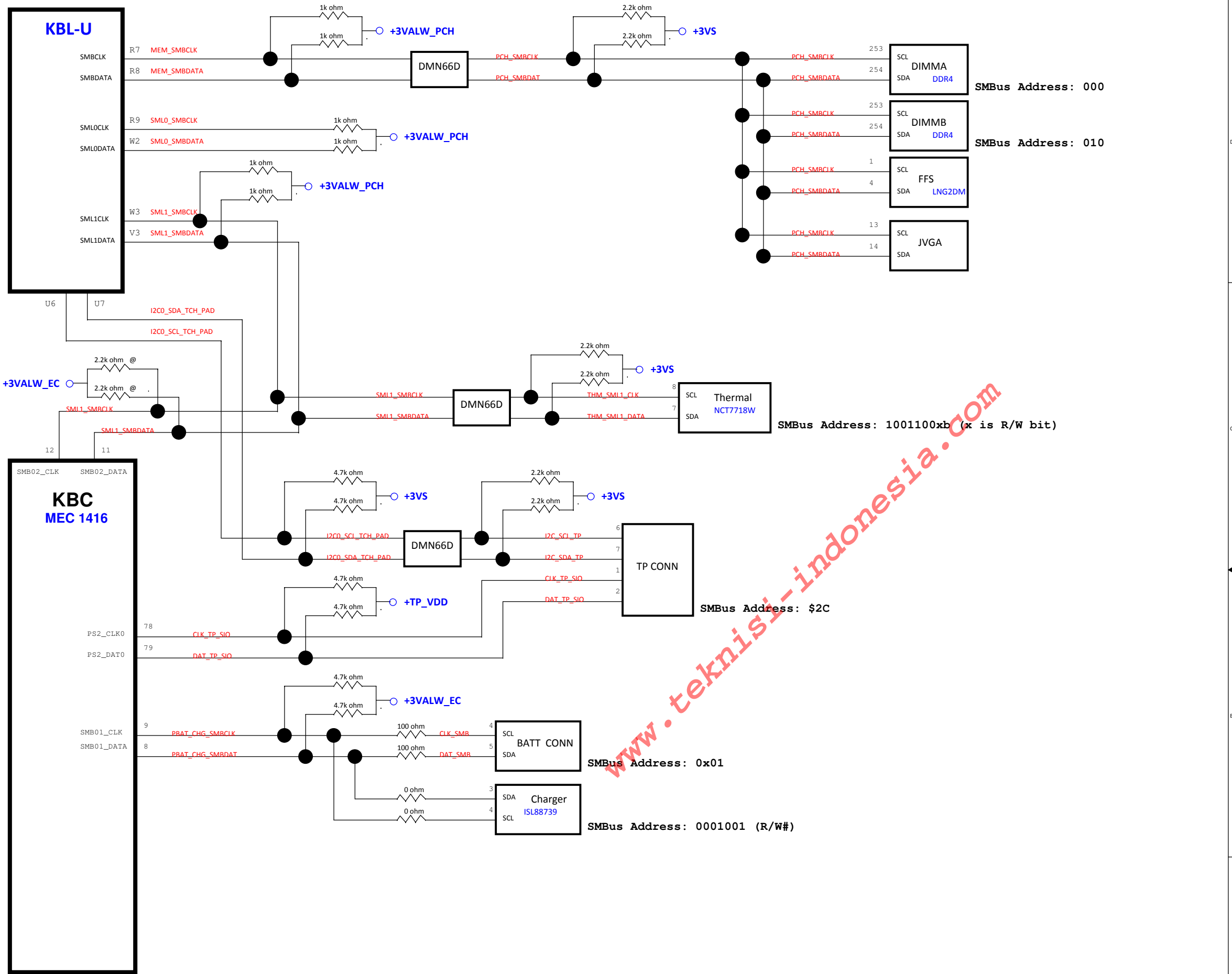
High Speed I/O (HSIO) Lane Multiplexing in KBL U PCH-LP

[illegible]

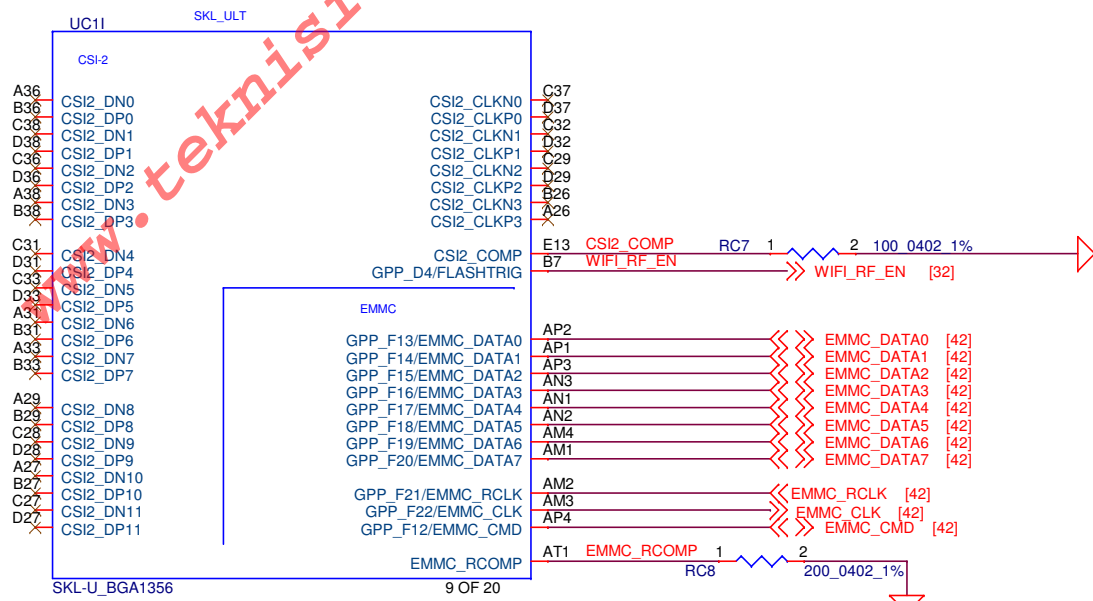
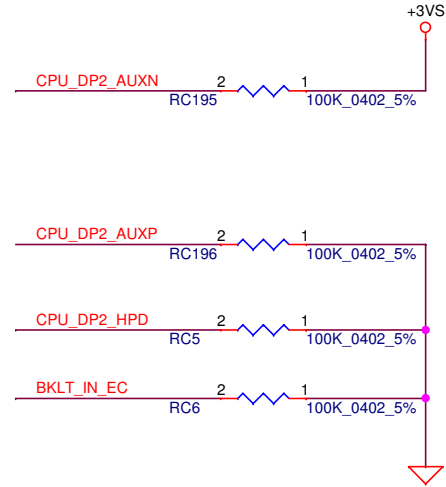
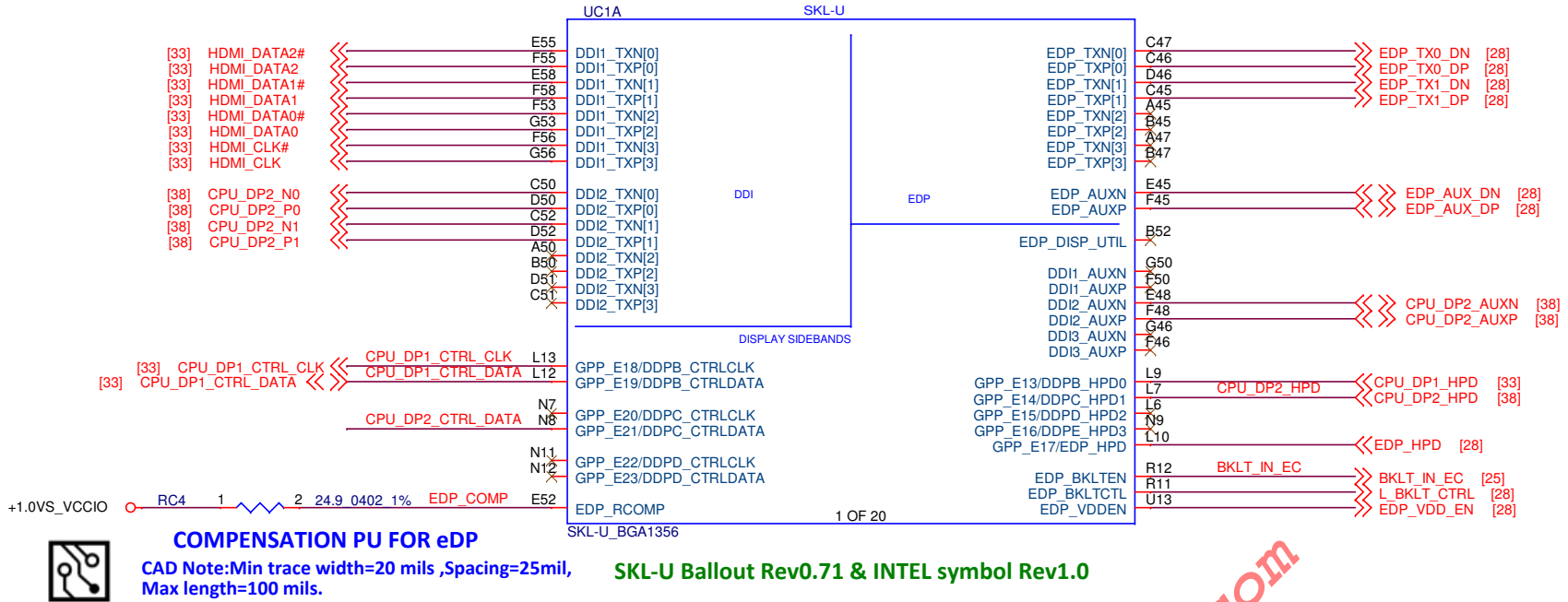
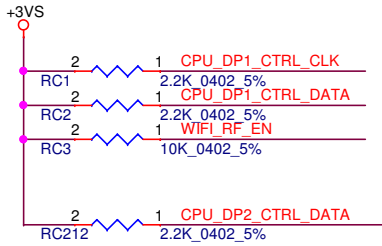
Security Classification		Compal Secret Data		Compal Electronics, Inc. Index and Configuration	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title	Rev A00
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. 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 C LA-F114P	Document Number 3 of 54
Date: Wednesday, July 26, 2017				Sheet 3 of 54	

CPU PWR
Peripheral Device PWR





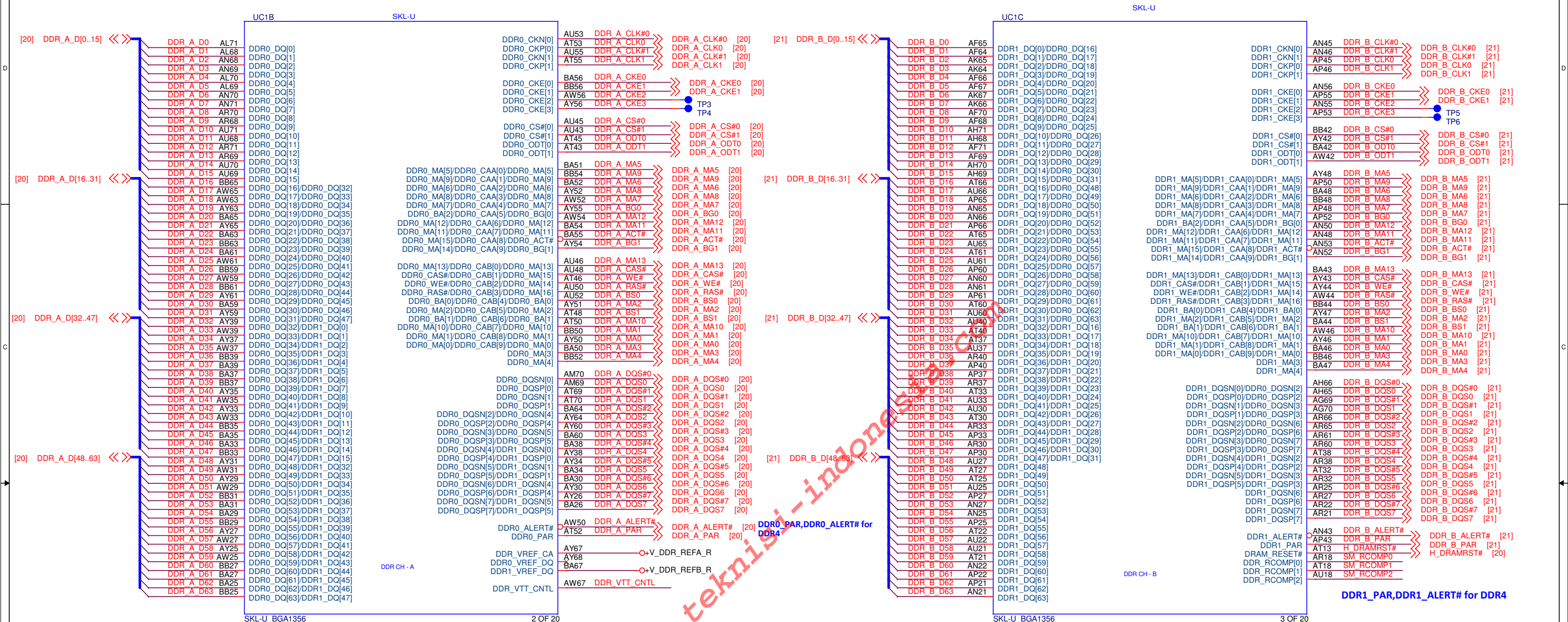
Main Func = CPU



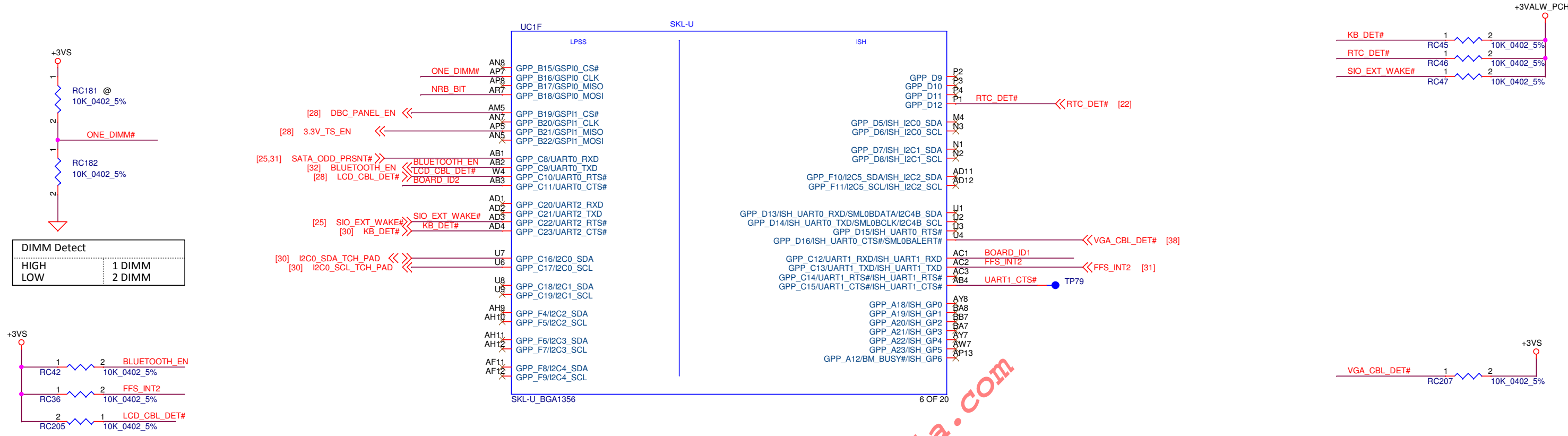
Security Classification		Compal Secret Data				Compal Electronics, Inc.			
Issued Date		2016/12/01		Deciphered Date		2017/12/01		Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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.						MCP(1/14)DDI,EDP,CSI2,EMMC			
		Size		Document Number		Rev			
		Custom		LA-F114P		A00			
		Date: Wednesday, July 26, 2017		Sheet 6 of 54					

Main Func = CPU

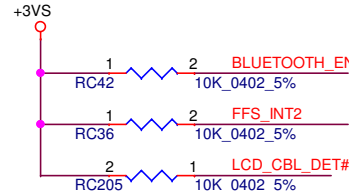
DDR4 Interleaved Memory



Main Func = CPU



DIMM Detect	
HIGH	1 DIMM
LOW	2 DIMM



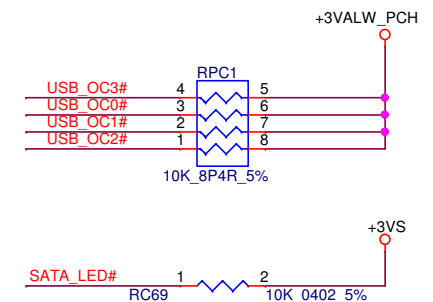
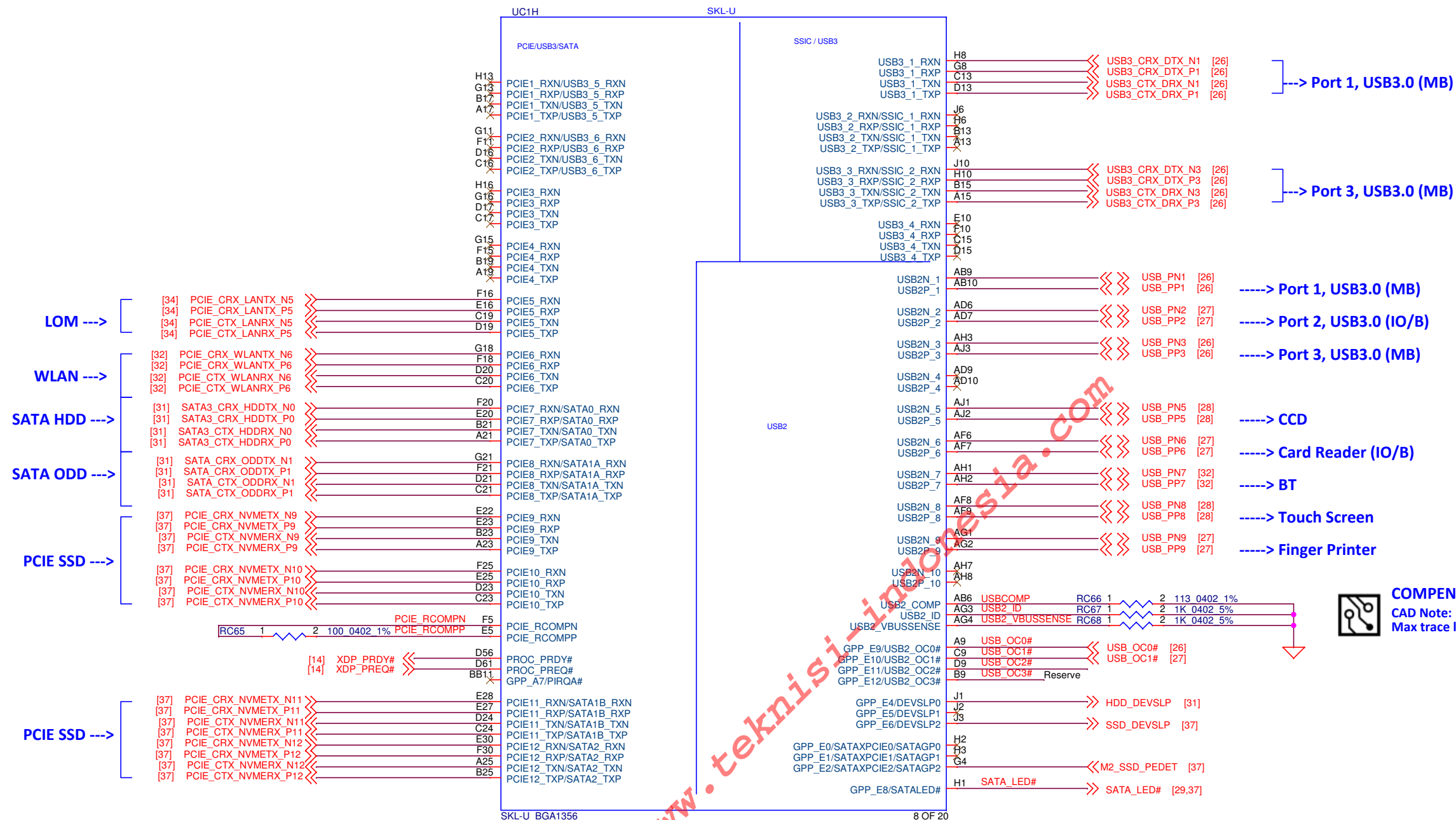
NO REBOOT STRAP	
HIGH	No REBOOT
LOW(DEFAULT)	REBOOT ENABLE
Weak IPD	

CPU ID (PCBA VRAM Size Config.)	BOARD_ID2 (GPP_C11)	BOARD_ID1 (GPP_C12)
KBL-U	1	1
KBL-R	1	0
Reserved	0	1
SKL-U	0	0

RC55 KBLR@
10K_0402_5%
SD028100280

RC58 KBLR@
10K_0402_5%
SD028100280

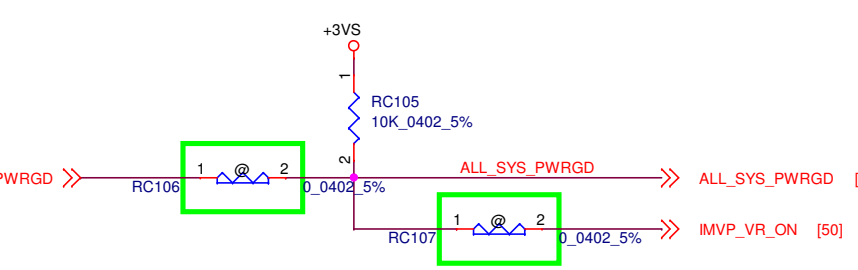
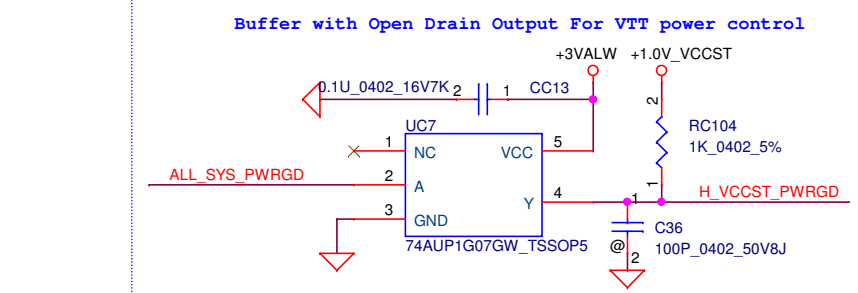
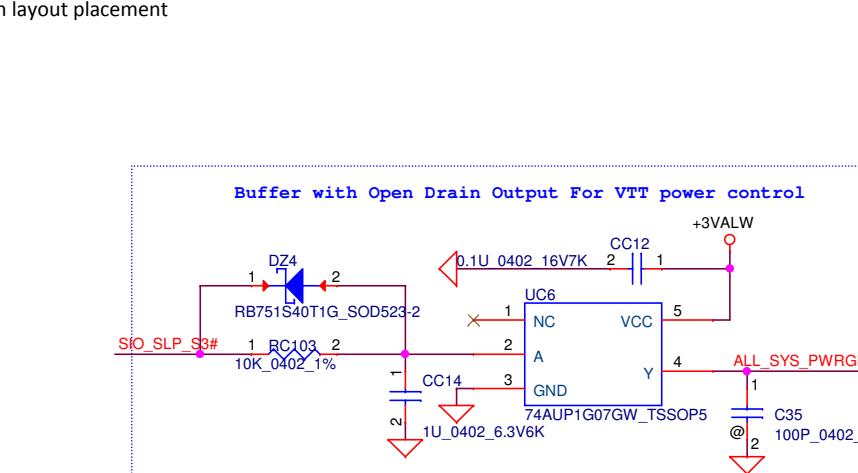
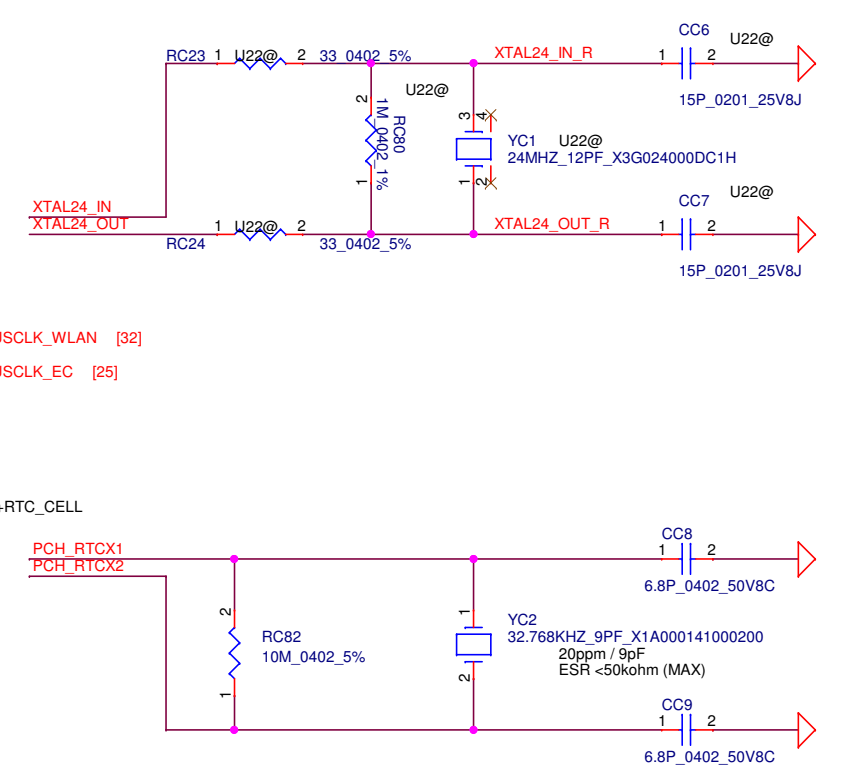
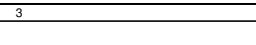
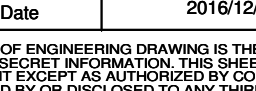
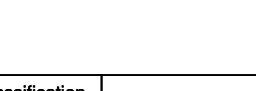
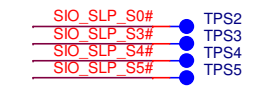
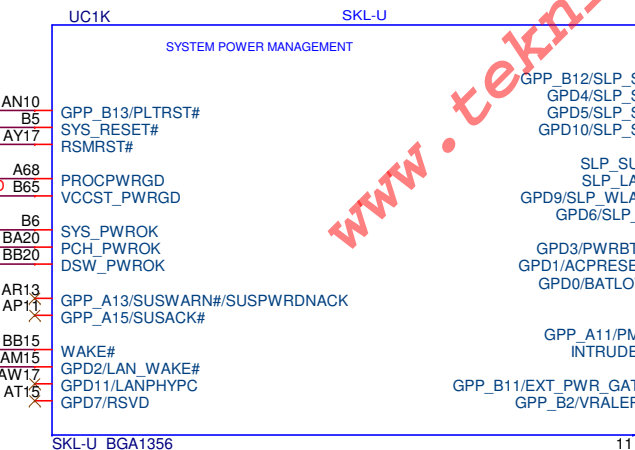
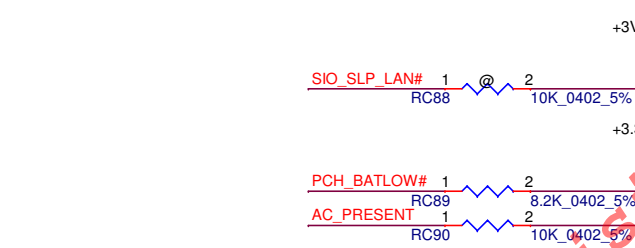
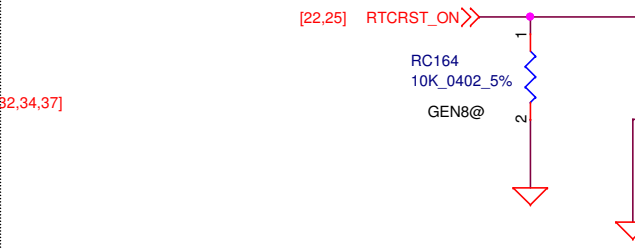
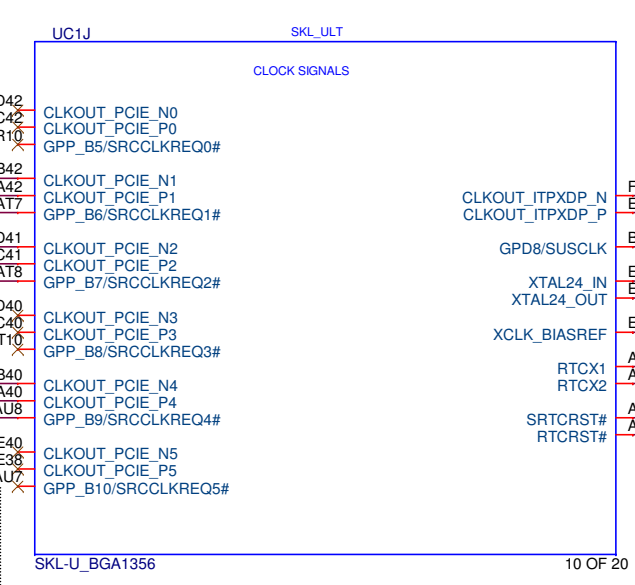
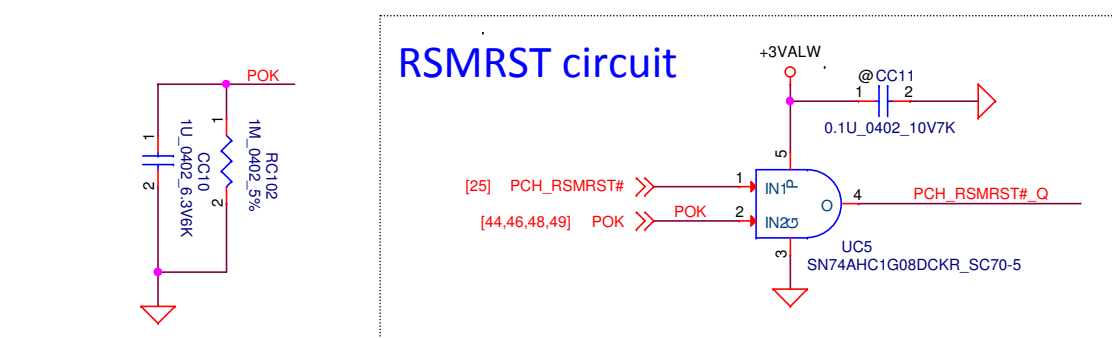
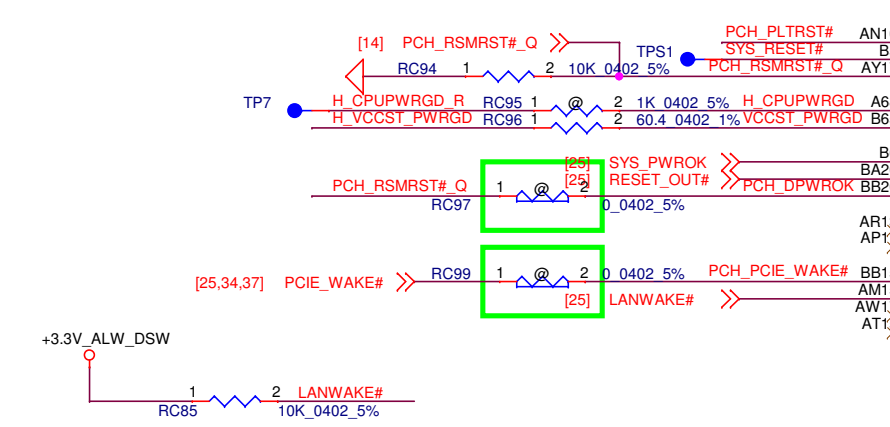
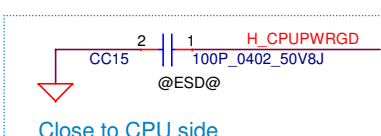
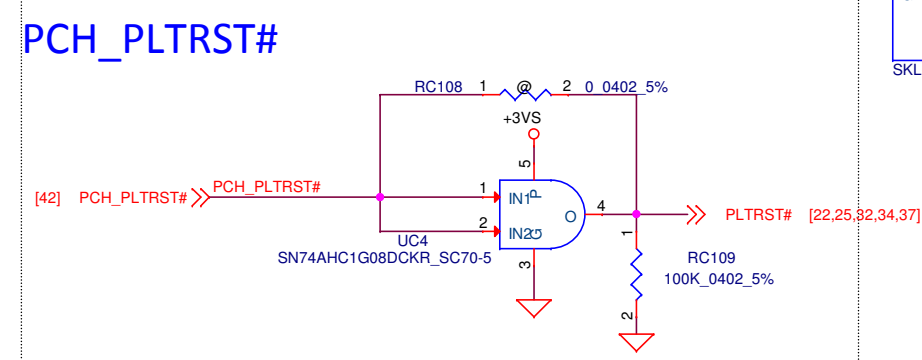
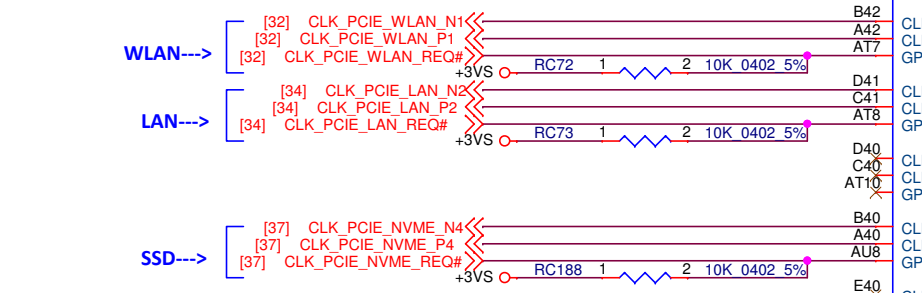
Main Func = CPU



GPIO	Device Control
USB_OC0#	USB Port 1&Port3
USB_OC1#	USB Port 6
USB_OC2#	NA
USB_OC3#	NA

Security Classification		Compal Secret Data				Compal Electronics, Inc.				
Issued Date		2016/12/01		Deciphered Date		2017/12/01		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.						MCP(5/14)PCIE,USB,SATA				
						Size	Document Number		Rev	
						Custom	LA-F114P		A00	
Date: Wednesday, July 26, 2017						Sheet 10 of 54				

Main Func = CPU



Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	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.				Document Number	Rev
				LA-F114P	A00
				Date: Wednesday, July 26, 2017	Sheet 11 of 54

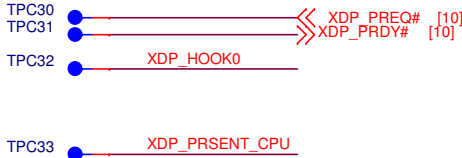
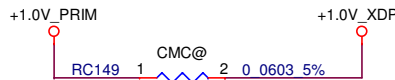
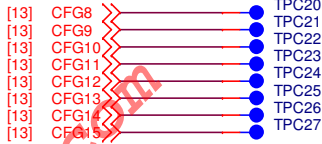
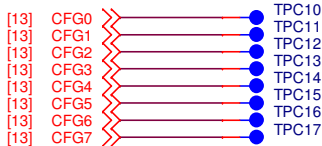
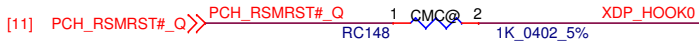
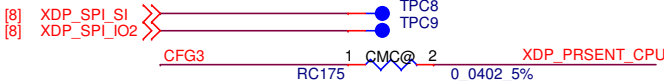
Connector Less Routing Topology

DCI Link
RC142 need POP
RC146 need POP

Place to CPU side

Place to CPU side

PRIMARY CMC CONN



www.teknisi-indonesia.com

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date		2016/12/01	Deciphered Date	2017/12/01	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.		MCP(9/14)XDP			Rev
		LA-F114P			A00
Date:		Wednesday, July 26, 2017		Sheet	14 of 54

+VCC_CORE: 0.3~1.35V

+VCC_CORE(U22): 32A(MAX)

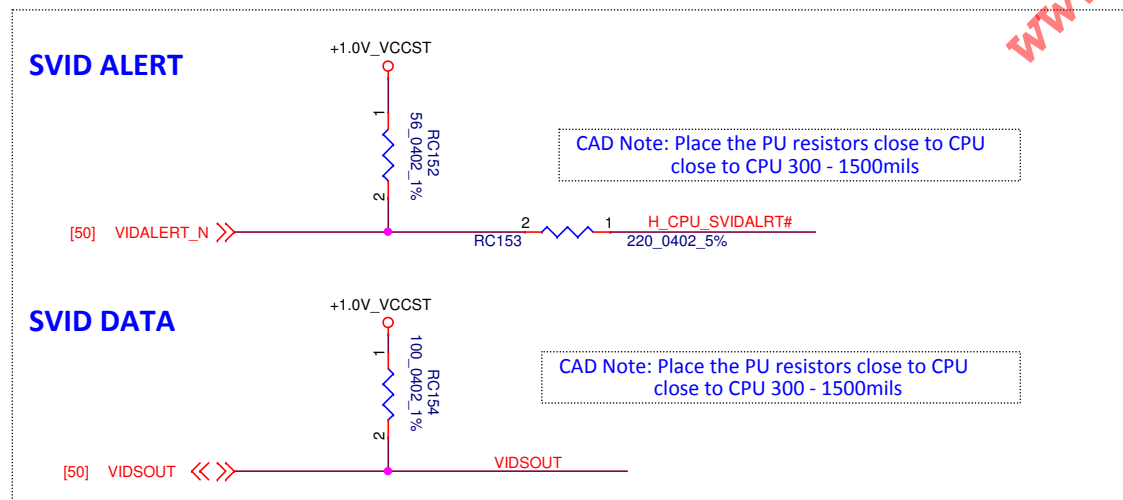
+VCC_CORE(U42): 64A(MAX)

Pin configuration details for SKL-U BGA1356:

- UC1L** and **SKL-U** are the main components.
- CPU POWER 1 OF 4** is indicated for the SKL-U component.
- +VCC_CORE** is connected to pins A30, A34, A39, A44, AK33, AK35, AK37, AK38, AK40, AL33, AL37, AL40, AM32, AM33, AM35, AM37, AM38, G30, G32, G33, G35, G37, G38, G40, G42, J30, J33, J37, J40, K33, K35, K37, K38, K40, K42, K43, VCC_G32, VCC_G33, VCC_G35, VCC_G37, VCC_G38, VCC_G40, VCC_G42, VCC_J30, VCC_J33, VCC_J37, VCC_J40, VCC_K33, VCC_K35, VCC_K37, VCC_K38, VCC_K40, VCC_K42, and VCC_K43.
- TP32** is connected to **+VCC_CORE_G0** (K32) and **+VCC_CORE_G1** (AK32).
- TP33** is connected to **+VCC_CORE_G1** (AK32).
- AB62** is connected to **VCCOPC_AB62**.
- Pe2** is connected to **VCCOPC_P62**.
- V62** is connected to **VCCOPC_V62**.
- H63** is connected to **VCC_OPC_1P8_H63**.
- G61** is connected to **VCC_OPC_1P8_G61**.
- AC63** is connected to **VCCOPC_SENSE**.
- AE63** is connected to **VSSOPC_SENSE**.
- AE62** is connected to **VCCEOPIO**.
- AG62** is connected to **VCCEOPIO**.
- AL63** is connected to **VCCEOPIO_SENSE**.
- AJ62** is connected to **VSSEOPIO_SENSE**.
- E32** is connected to **VCCSENSE**.
- E33** is connected to **VSSSENSE**.
- B63** is connected to **H CPU SVID**.
- A63** is connected to **VIDSCLK**.
- D64** is connected to **VIDSOUT**.
- G20** is connected to **VCCSTG_G20**.

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

www.teknisi-indonesia.com

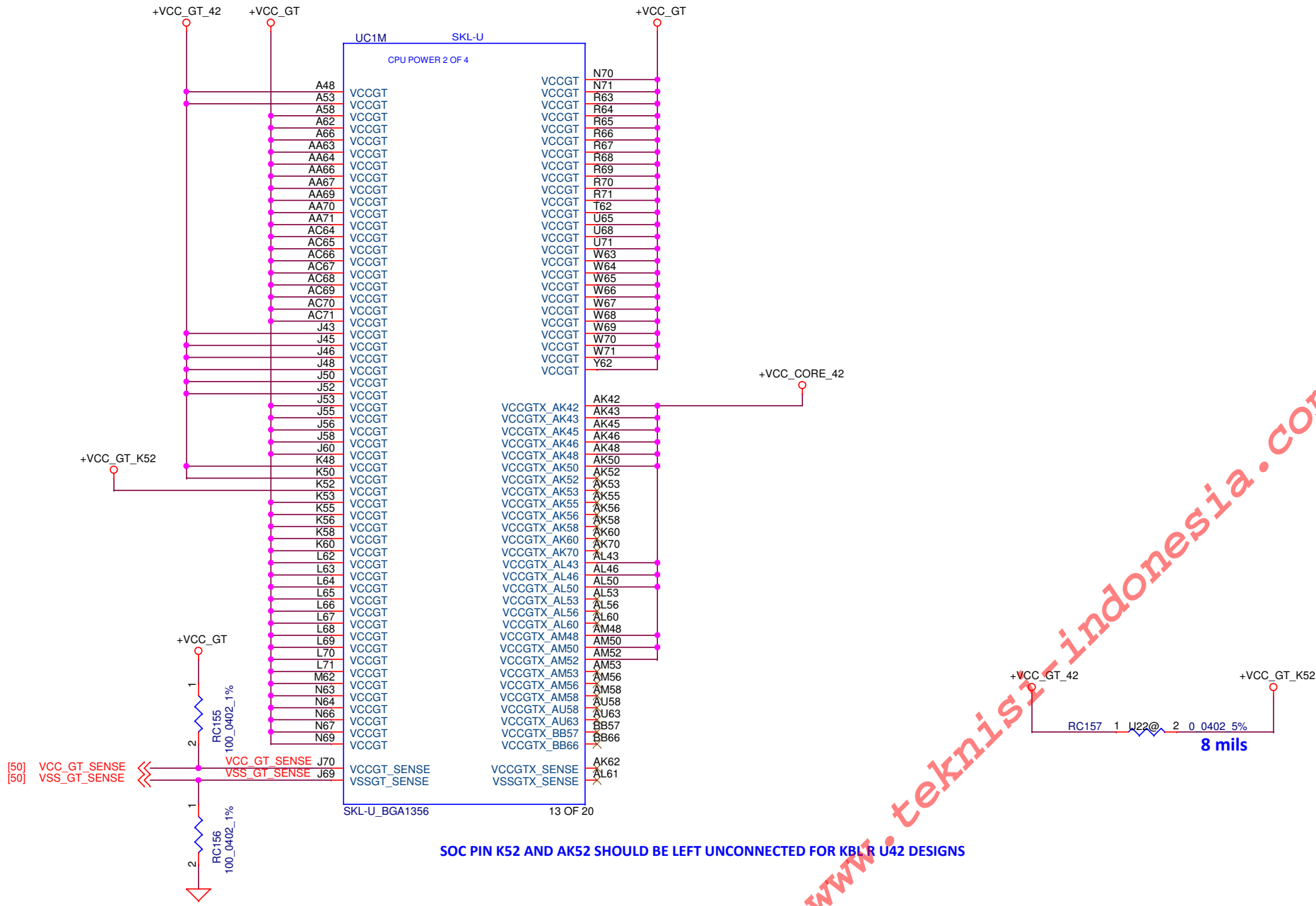


Security Classification		Compal Secret Data		<div>Compal Electronics, Inc.</div> <div>MCP(10/14)PWR-VCC CORE</div>		
Issued Date	2016/12/01	Deciphered Date	2017/12/01			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE 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
				Custom	LA-F114P	A00
				Date:	Wednesday, July 26, 2017	Sheet

Main Func = CPU

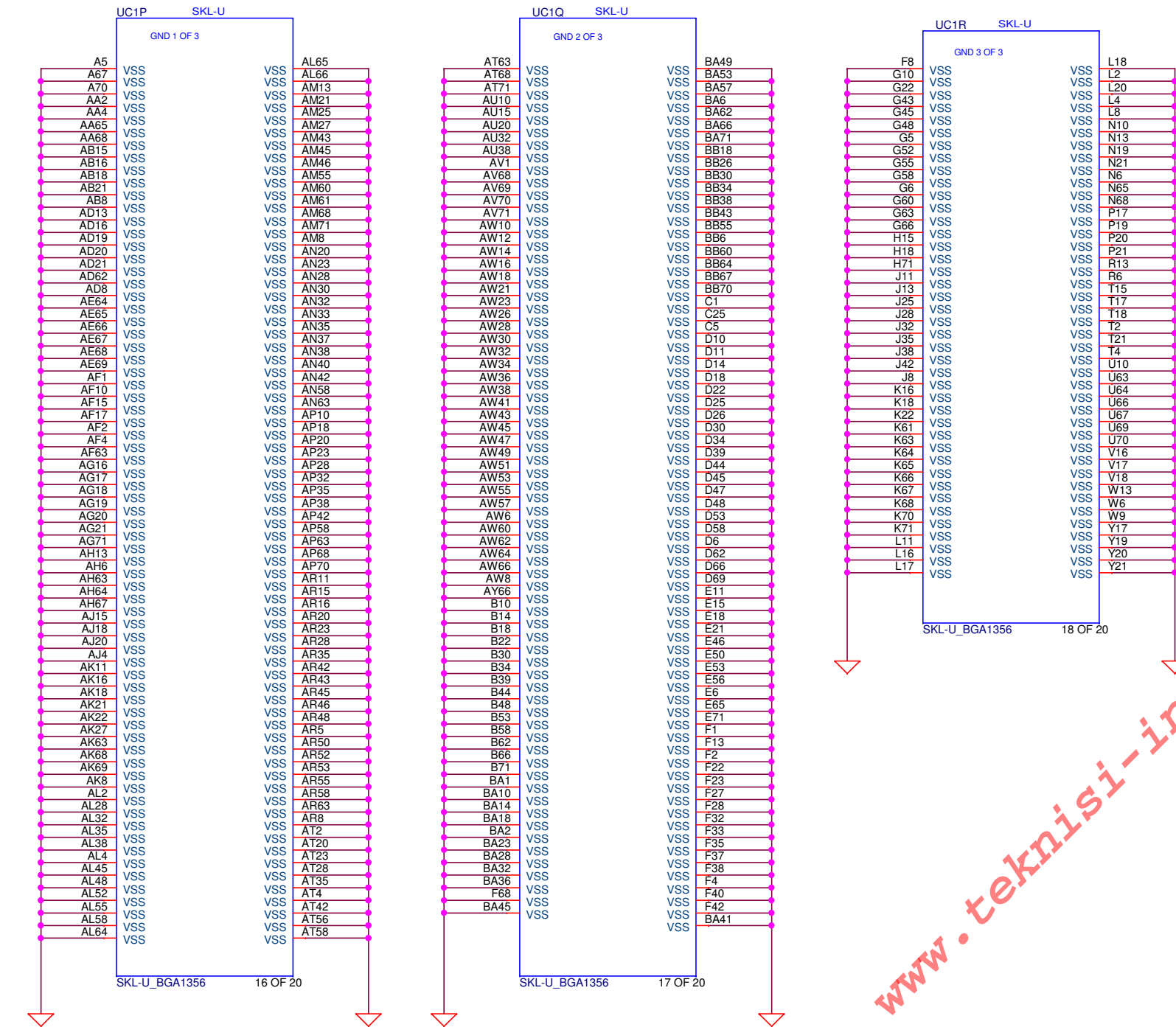
+VCCGT: 0.3~1.35V
+VCCGTX : 0.3~1.35V

+VCC_GT(U22): 31A(MAX)
+VCC_GT(U42): 28A(MAX)



Security Classification		Compal Secret Data		Title	
Issued Date		2016/12/01	Deciphered Date	2017/12/01	Compal Electronics, Inc. MCP(11/14)PWR-VCCGT
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	
		Custom		LA-F114P	Rev A00
Date:		Wednesday, July 26, 2017		Sheet	16 of 54

Main Func = CPU



For Pre-ES Parts: Disconnect PCH CORE_VID[1:0] to the VR and fix PCH VCCPRIM_CORE voltage at 1.00 V.

- R1: not populated
- R2, R3: populated to set VCCPRIM_CORE to 1.00V. Consult with VR vendor for appropriate values.
- R4, R5 (feedback resistor): populated if needed. Some VRs only support up to 0.95V natively with VID options. 1.00 V should be created by selecting 0.95V option and using feedback resistors to shift voltage up 50 mV. Consult with VR vendor for appropriate values for proper VR operation while minimizing power consumption

For ES and Later Parts: Connect PCH CORE_VID[1:0] to the VR.

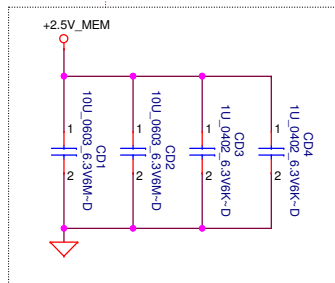
- R1: populated
- R2, R3: not populated
- R4, R5 (feedback resistors): populated if needed to obtain appropriate voltage per the updated PCH VID encoding table above. Consult with VR vendor for appropriate values

For VRs that only support up to 0.95V natively with VID options, using R4 and R5 to shift the voltage table up 50mV will result in the LPM voltage output being shifted up slightly. If the VR supports LPM voltage, the specified, lowest supportable voltage is 0.70V for optimized power consumption. With R4, R5 configured to shift from 0.95V to 1.00V, the LPM voltage will effectively be shifted from 0.70V to ~0.75V. This will not be a functional issue for the platforms, but will slightly de-optimize power consumption. It is recommended that customers work with their VR vendors to adjust to the new voltage table.

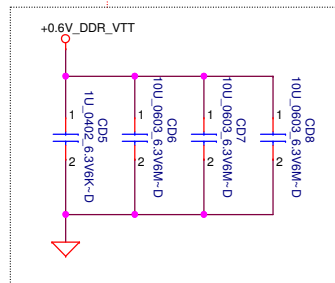
Security Classification		Compal Secret Data		Title	
Issued Date		2016/12/01	Deciphered Date	2017/12/01	Compal Electronics, Inc. MCP(14/14)VSS
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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		Rev	
		LA-F114P		A00	
Date:		Wednesday, July 26, 2017		Sheet	19 of 54

Main Func = DDR

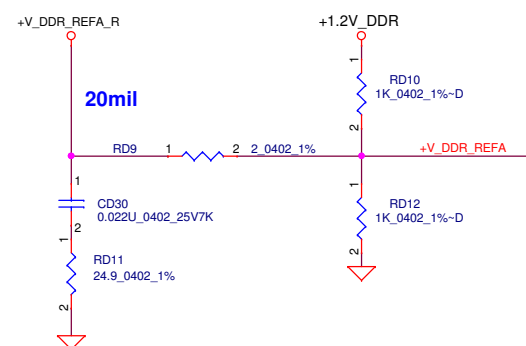
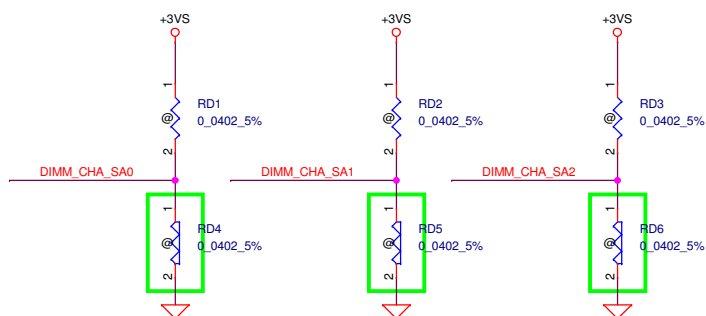
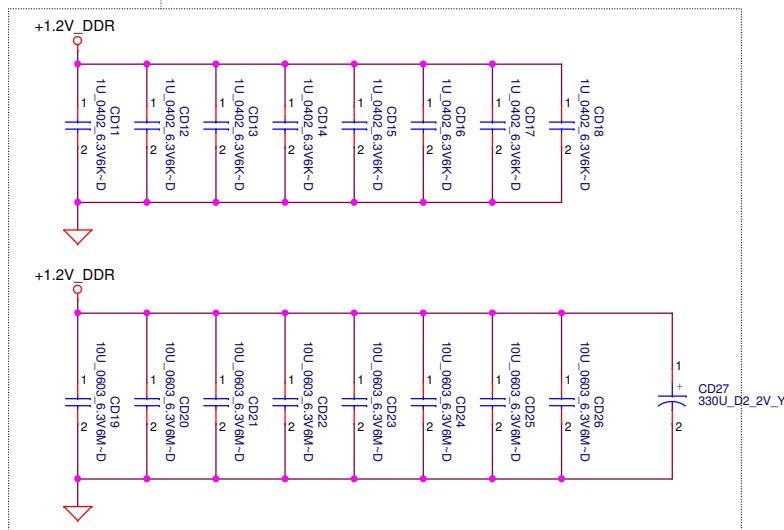
Layout Note:
Place near JDIMM1.257,259



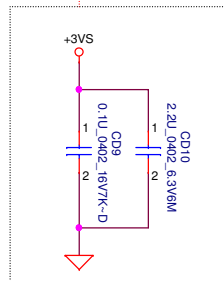
Layout Note:
Place near JDIMM1.258



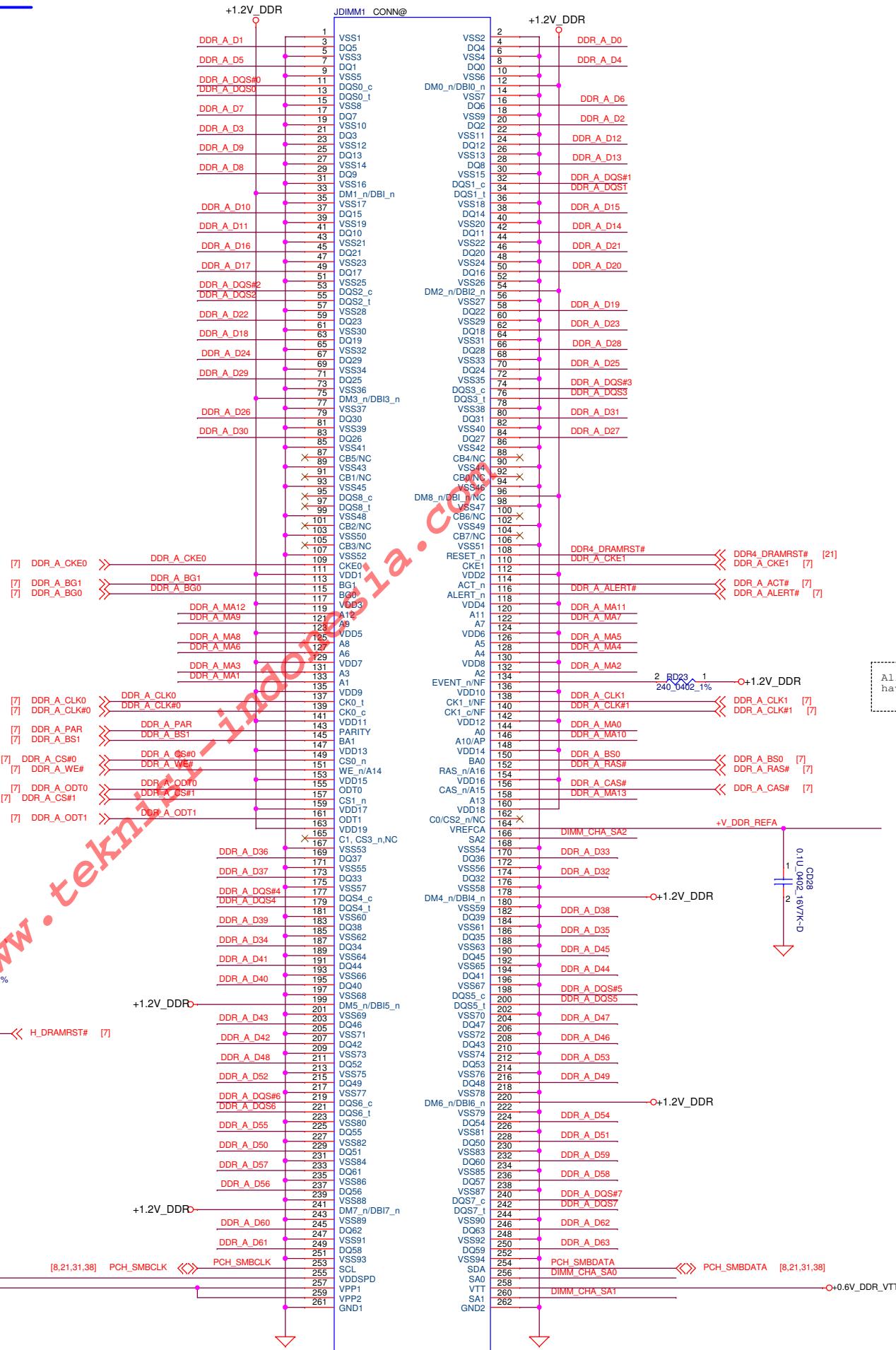
Layout Note:
Place near JDIMM1



Layout Note:
Place near JDIMM1.255



```
[7] DDR_A_D[0..63]
[7] DDR_A_MA[0..13]
[7] DDR_A_DQS#[0..7]
[7] DDR_A_DQS[0..7]
```

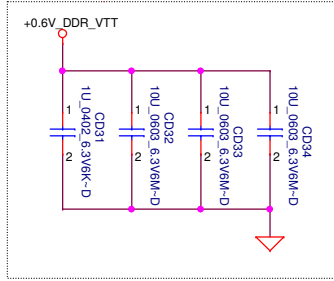


All VREF traces should
have 10 mil trace width

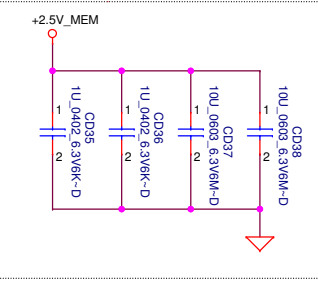
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title	DDR4 DIMMA RVS	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PARTS 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.				File Number	A00	
				Document Number	LA-F114P	
				Date:	Wednesday, July 26, 2017	Sheet 20 of 54

Main Func = DDR

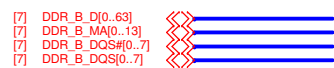
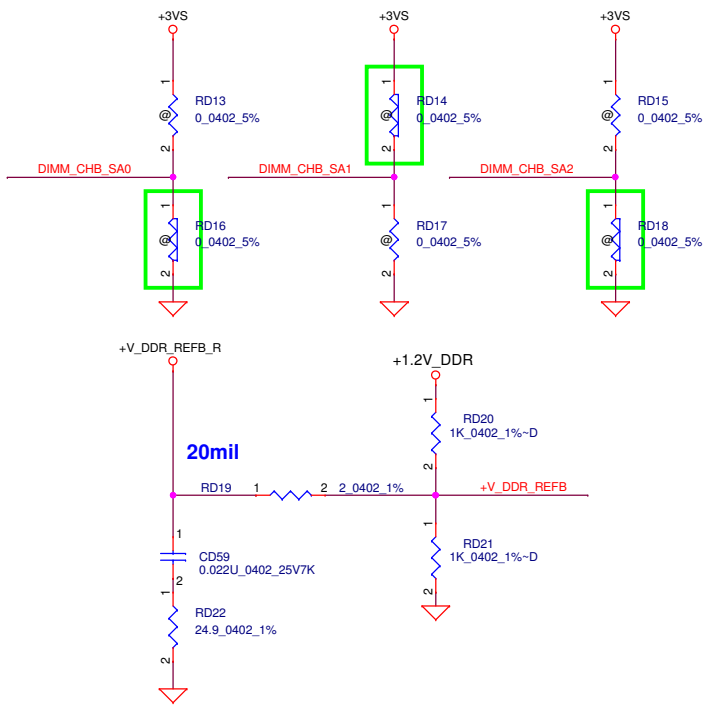
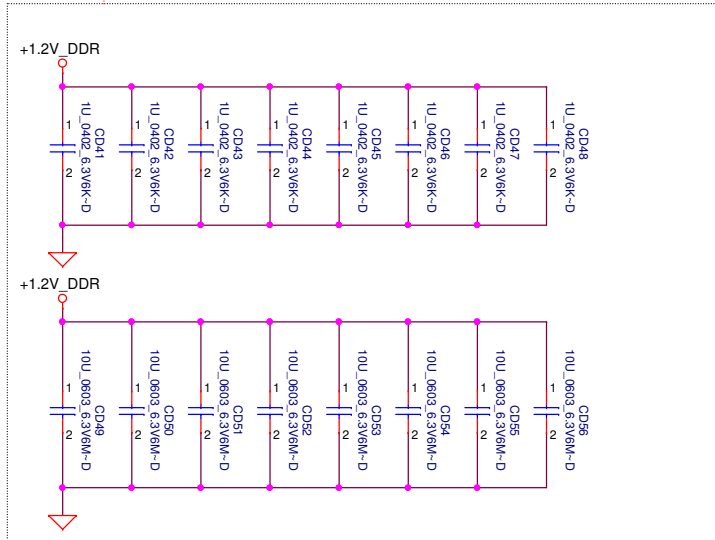
Layout Note:
Place near JDIMM2.258



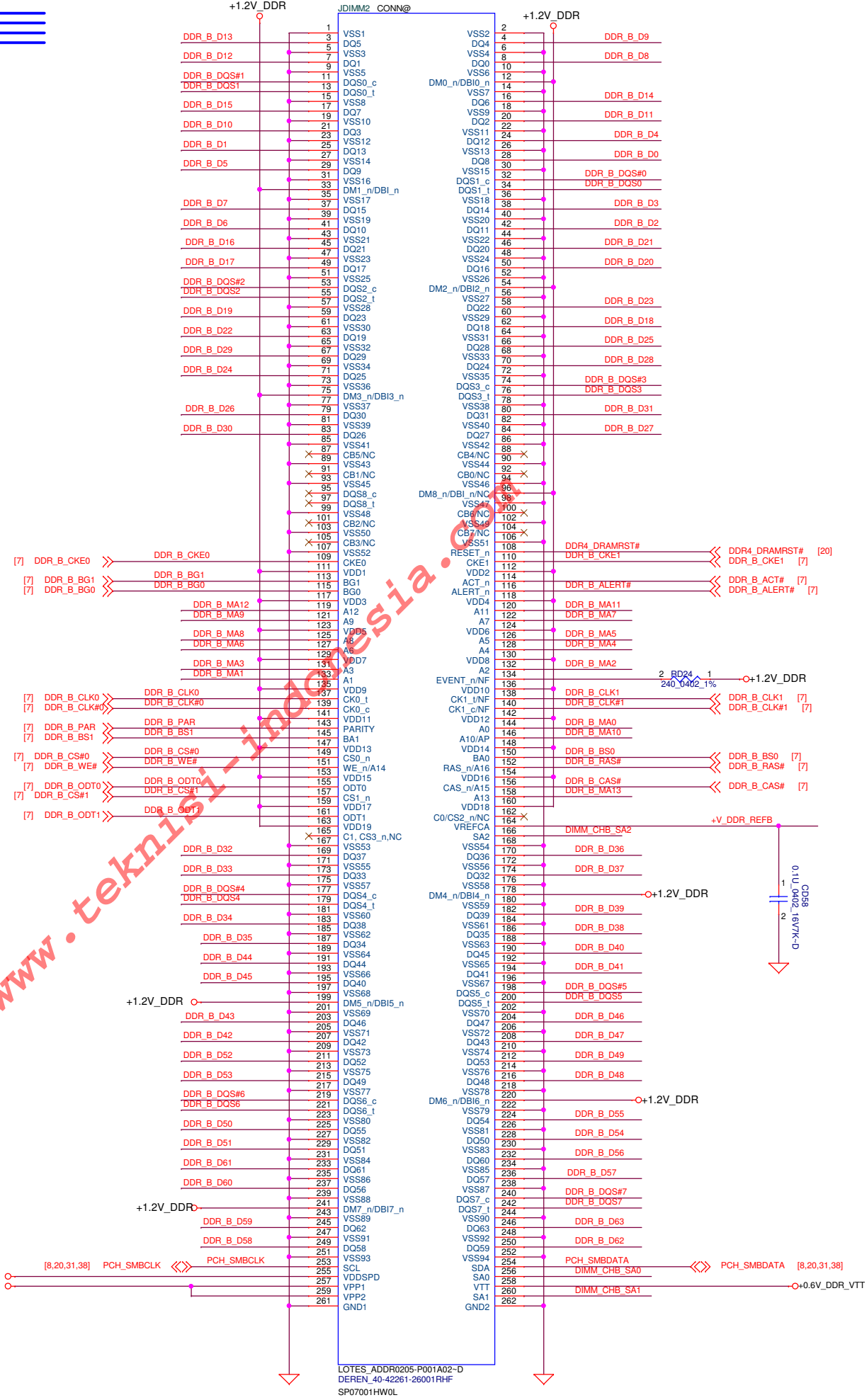
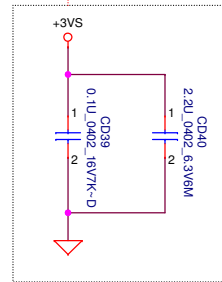
Layout Note:
Place near JDIMM2.257,259



Layout Note:
Place near JDIMM2



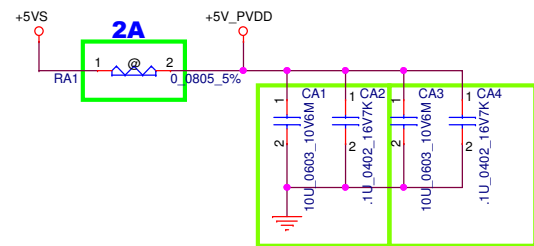
Layout Note:
Place near JDIMM2.255



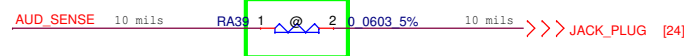
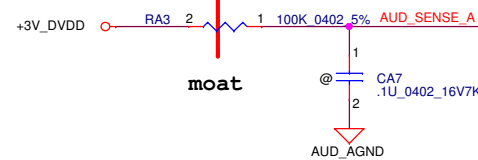
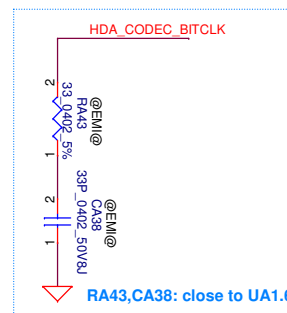
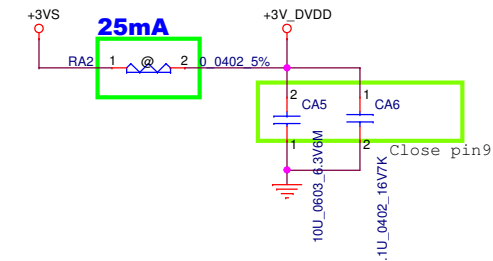
All VREF traces should
have 10 mil trace width

Security Classification	Compal Secret Data		Title	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Document Number
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. 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
Compal Electronics, Inc.				A00
DDR4 DIMMB STD				LA-F114P
Date: Wednesday, July 26, 2017				Sheet 21 of 54

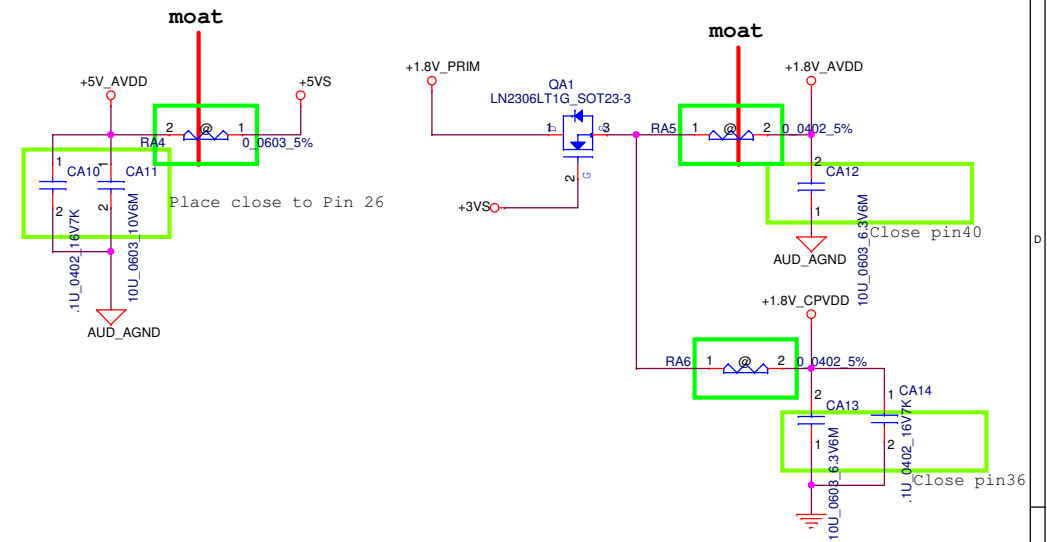
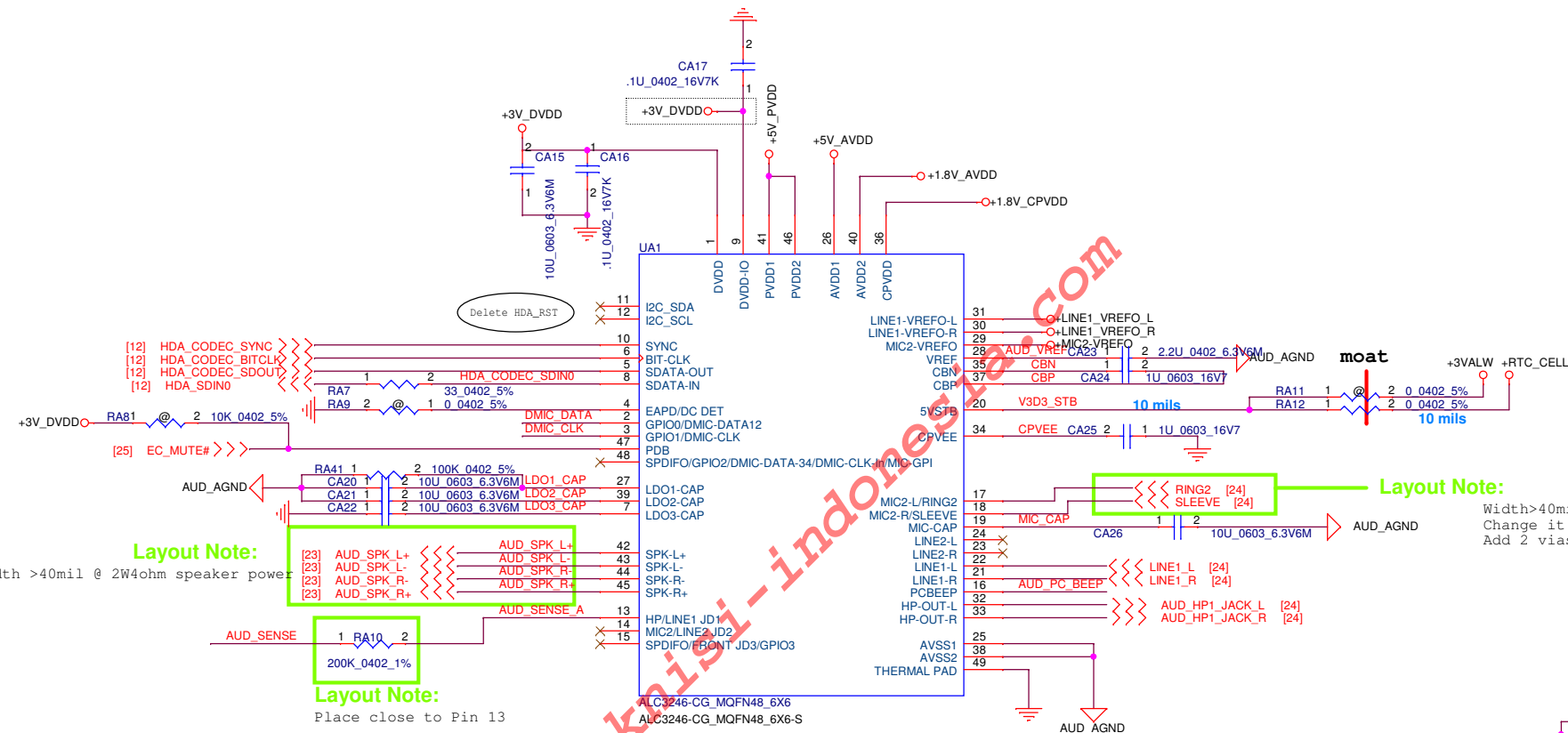
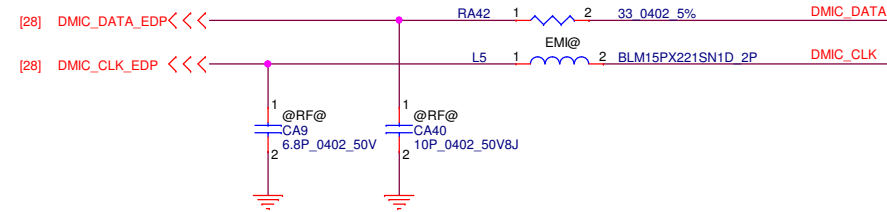
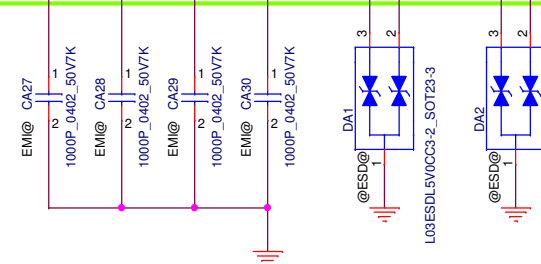
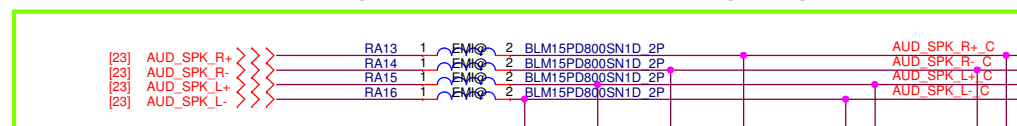
Main Func = Audio



Layout Note: Close pin41

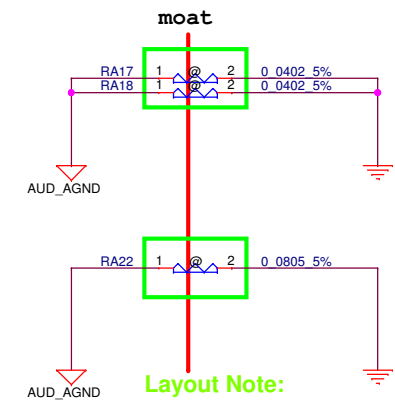


Layout Note:
Speaker trace width >40mil @ 2W4ohm speaker power

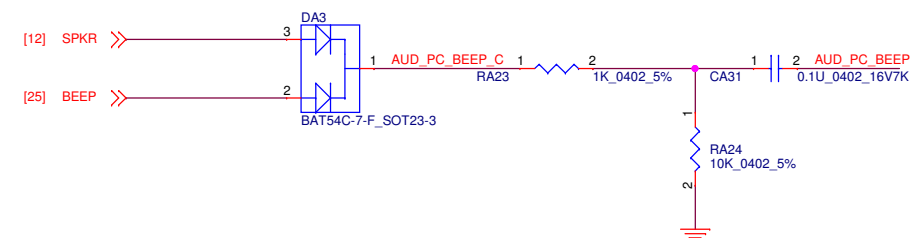
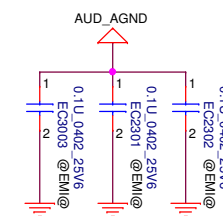


- Layout Note:

Width>40mil, to improve Headphone Crosstalk noise
Change it to sharp will be better.
Add 2 vias (>0.5A) when trace layer change.



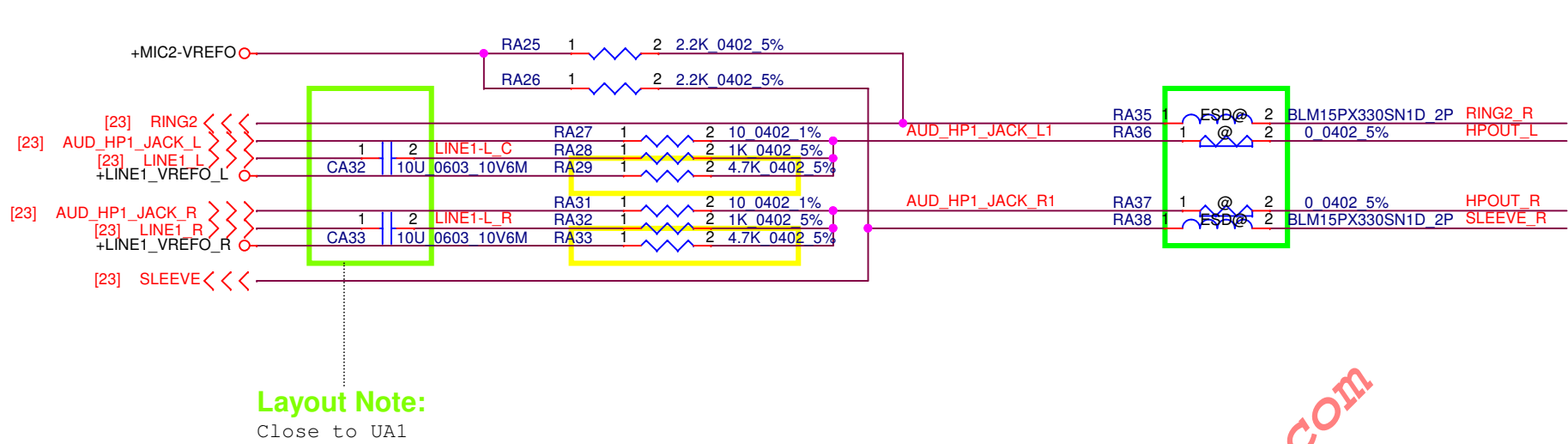
Place on the moat between GND & GNDA.



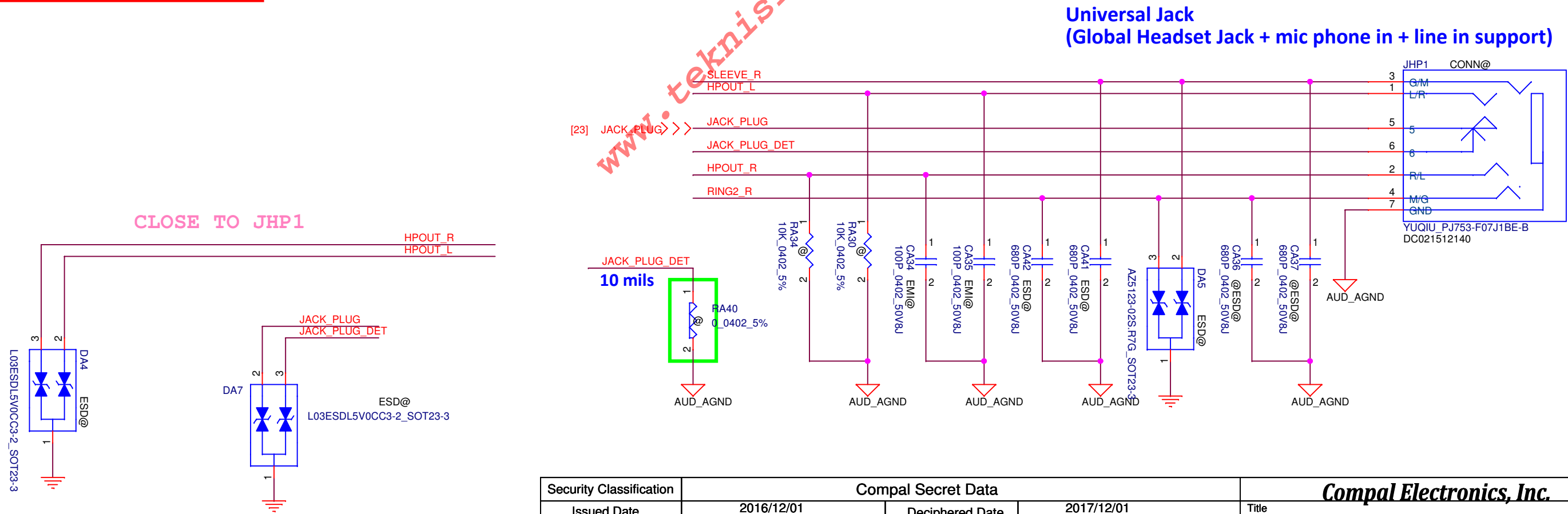
CONN Pin	Net name
Pin1	SPK_R+
Pin2	SPK_R-
Pin3	SPK_L+
Pin4	SPK_L-

Security Classification		Compal Secret Data		Compal Electronics, Inc. Audio Codec ALC3246	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title	LA-F114P Document Number
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 C	Rev A00
Date: Wednesday, July 26, 2017				Sheet 23	of 54

Main Func = Audio Jack



Main Func = Audio Jack



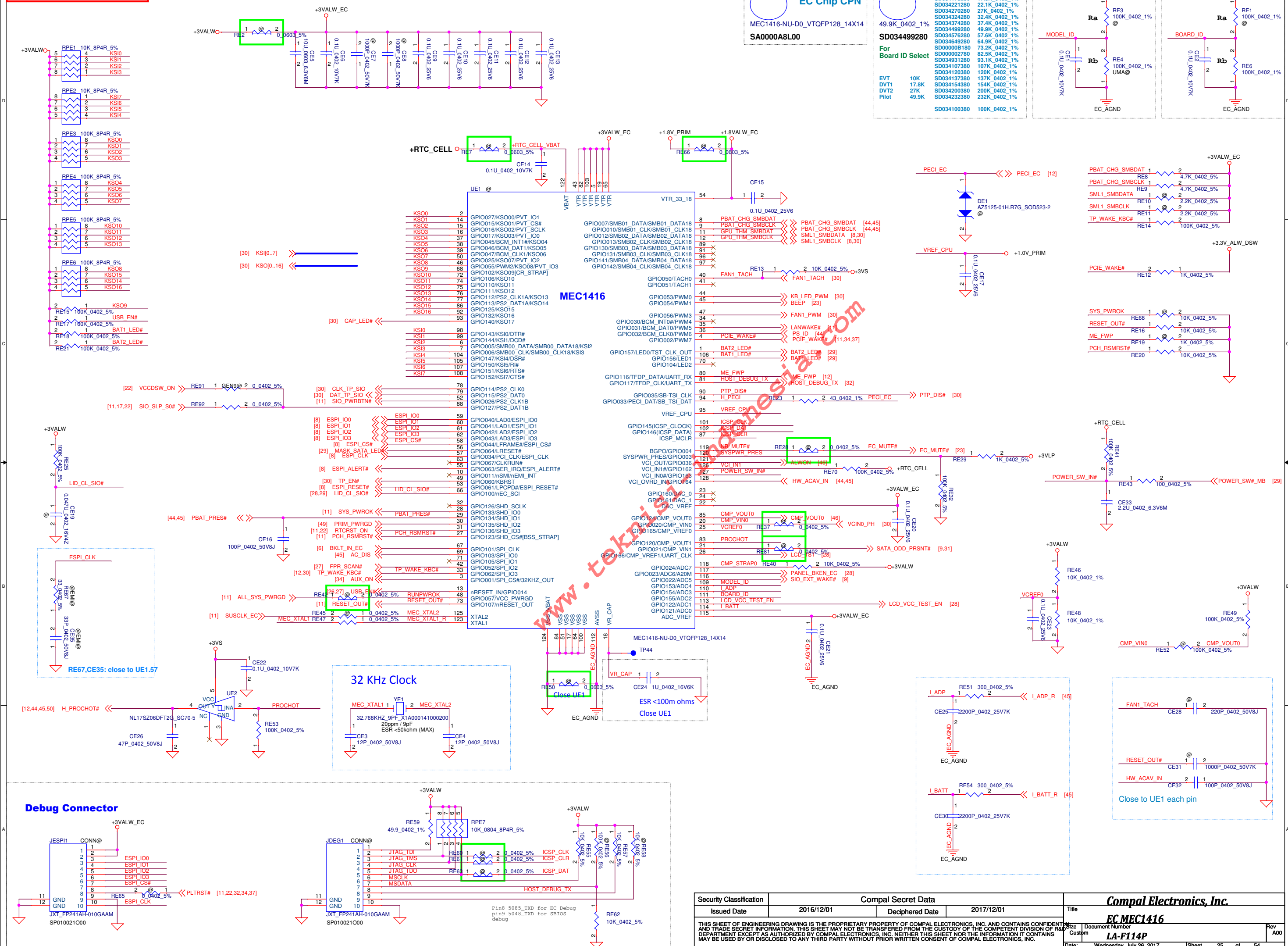
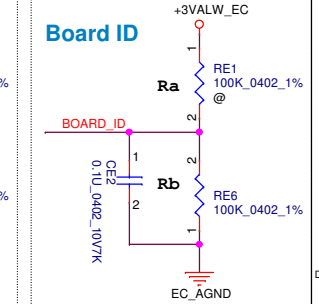
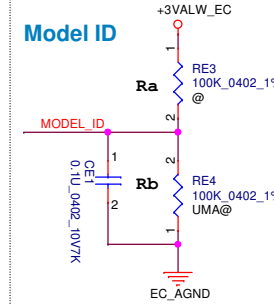
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title	Audio JACK
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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-F114P
				Rev	A00
Date: Wednesday, July 26, 2017				Sheet	24 of 54

UE1 EC@
EC Chip CPN
MEC1416-NU-D0_VTQFP128_14X1
SA0000A8L00

RE1 EC@
49.9K_0402_
SD0344992

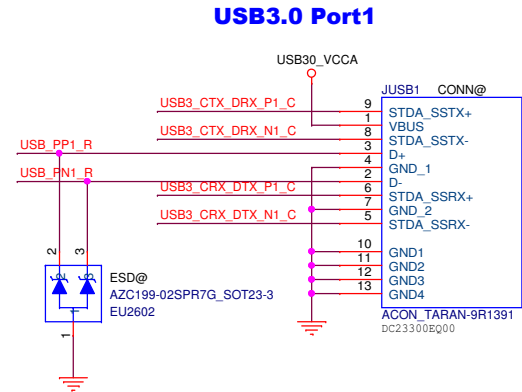
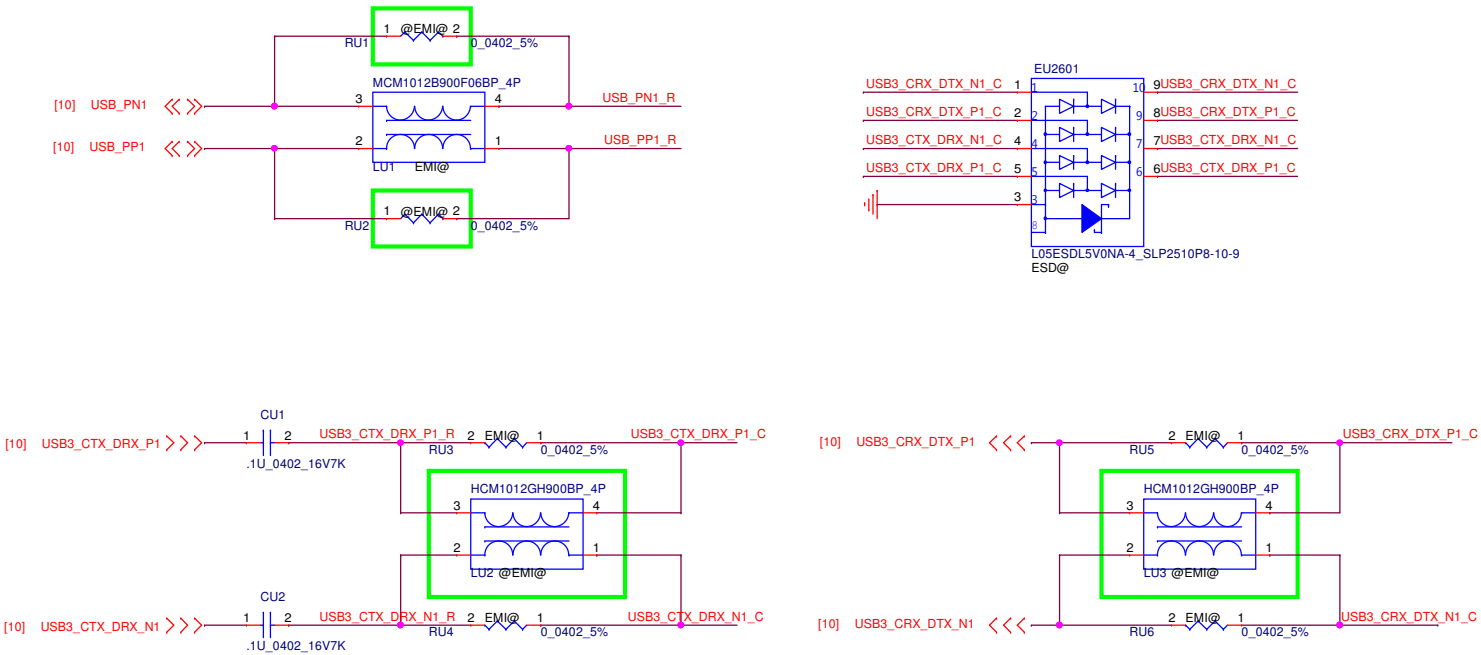
Board ID

	SD034100280	10K_0402 1%
	SD034137280	13.7K 0402 1%
	SD034178280	17.8K 0402 1%
	SD034221280	22.1K 0402 1%
	SD034270280	27K 0402 1%
	SD034324280	32.4K 0402 1%
	SD034374280	37.4K 0402 1%
	SD034499280	49.9K 0402 1%
	SD034576280	57.6K 0402 1%
	SD034649280	64.9K 0402 1%
	SD0000008180	73.2K 0402 1%
	SD000020780	82.5K 0402 1%
	SD034831280	93.1K 0402 1%
	SD034107380	107K 0402 1%
	SD034120380	120K 0402 1%
	SD034137380	137K 0402 1%
	SD034154380	154K 0402 1%
	SD034200380	200K 0402 1%
	SD034232380	232K 0402 1%
	SD034100380	100K_0402 1%

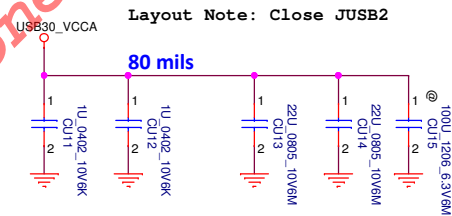
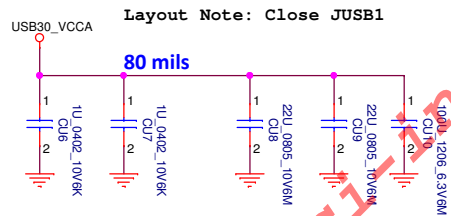
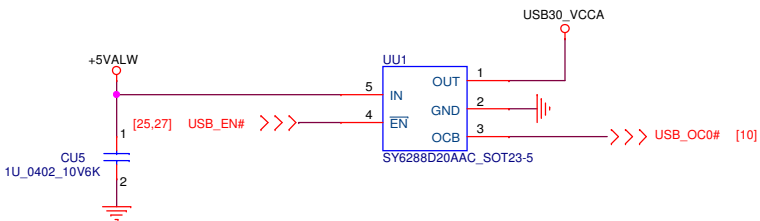


Security Classification		Compal Secret Data		Compal Electronics, Inc. EC MEC1416			
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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 A00	
				Custom	LA-F114P		
				Date:	Wednesday, July 26, 2017	Sheet	25 of 54

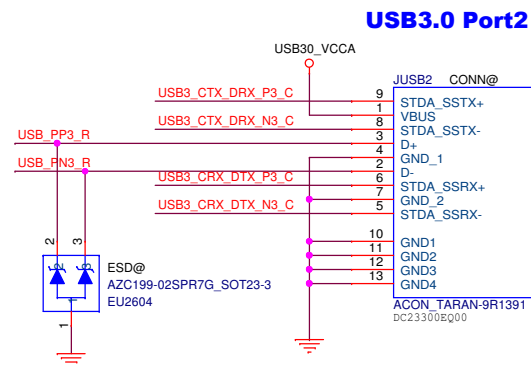
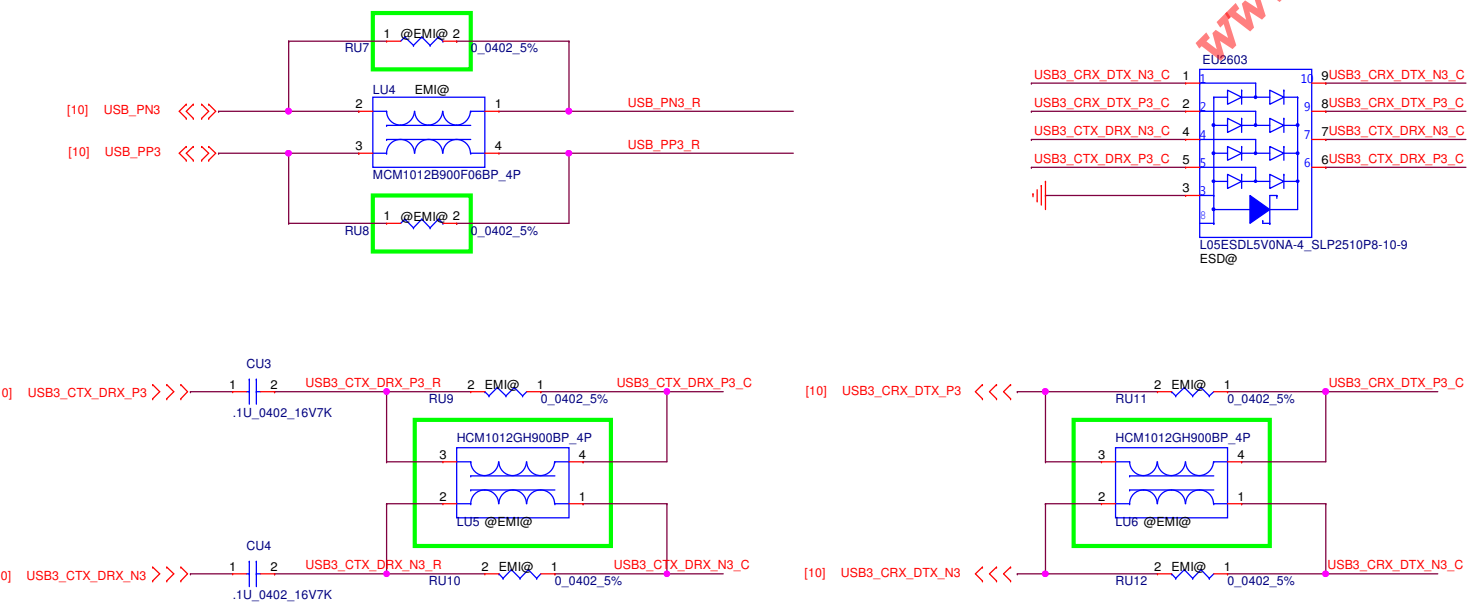
Main Func = USB3.0 Port1



Maximum Output Current 2A

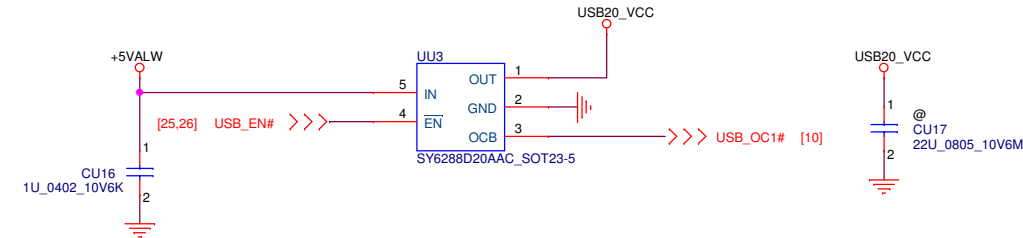


Main Func = USB3.0 Port2

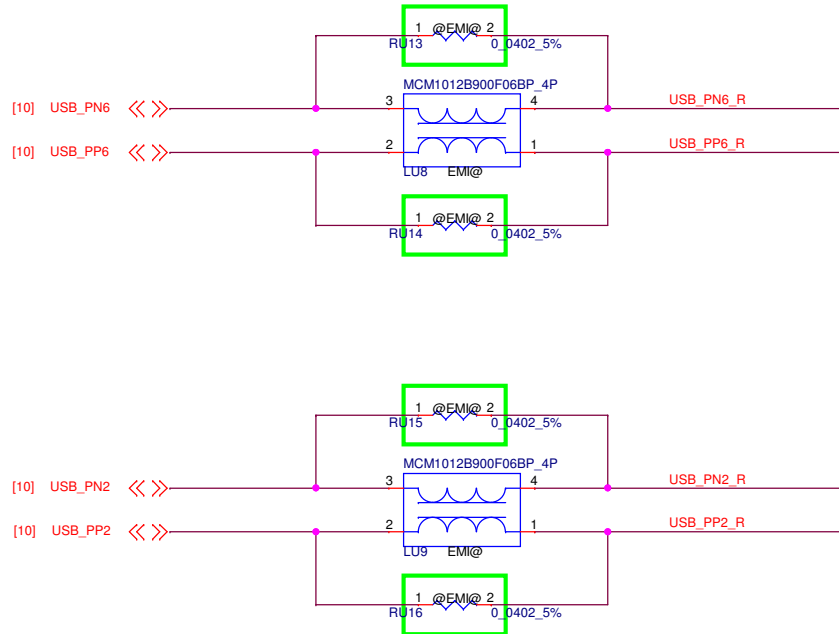


Main Func = USB2.0 + Card Reader on IO/B

SY6288D Support 2A

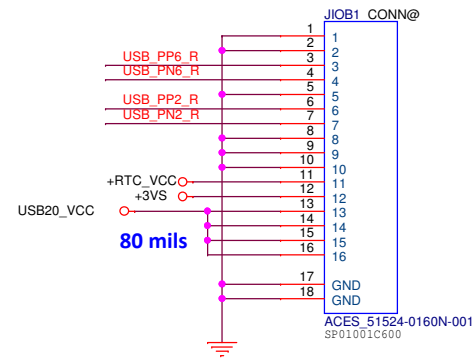


CardReader

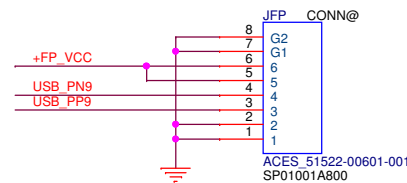
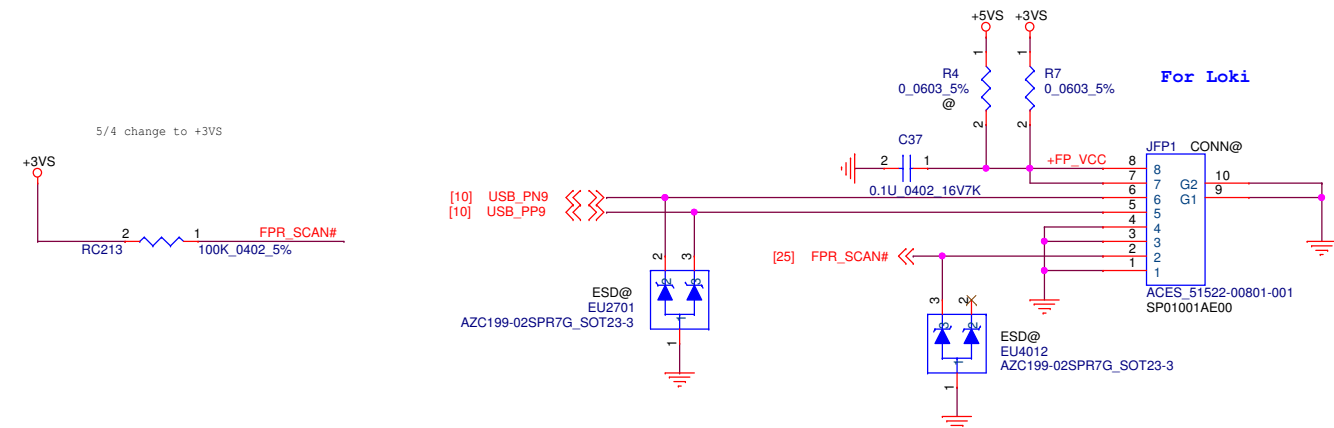


I/O Board Connector

CardReader

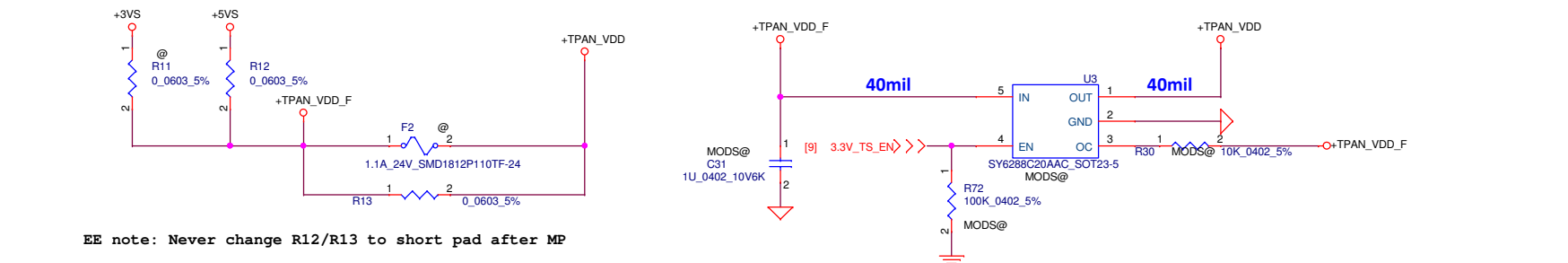
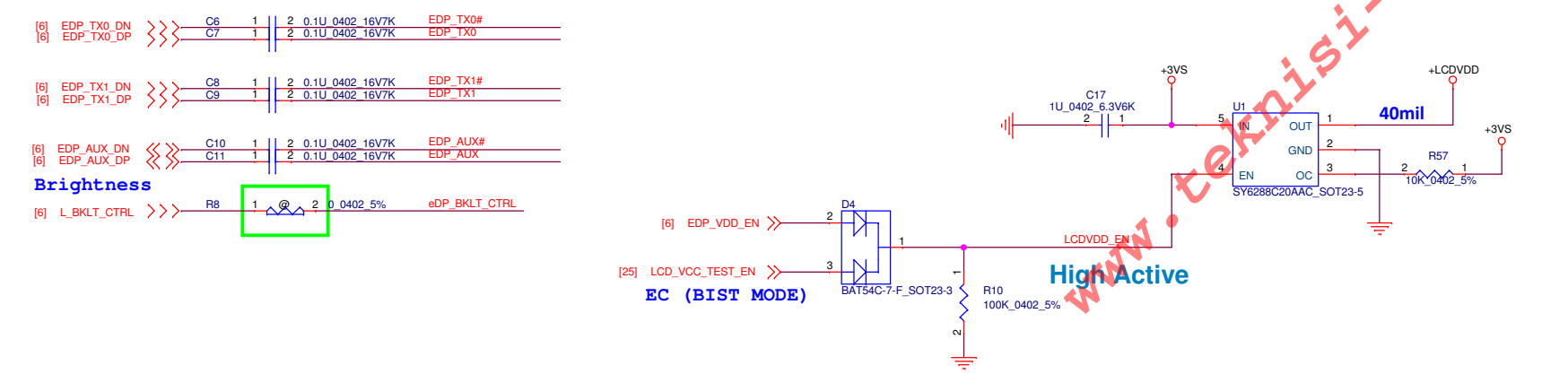
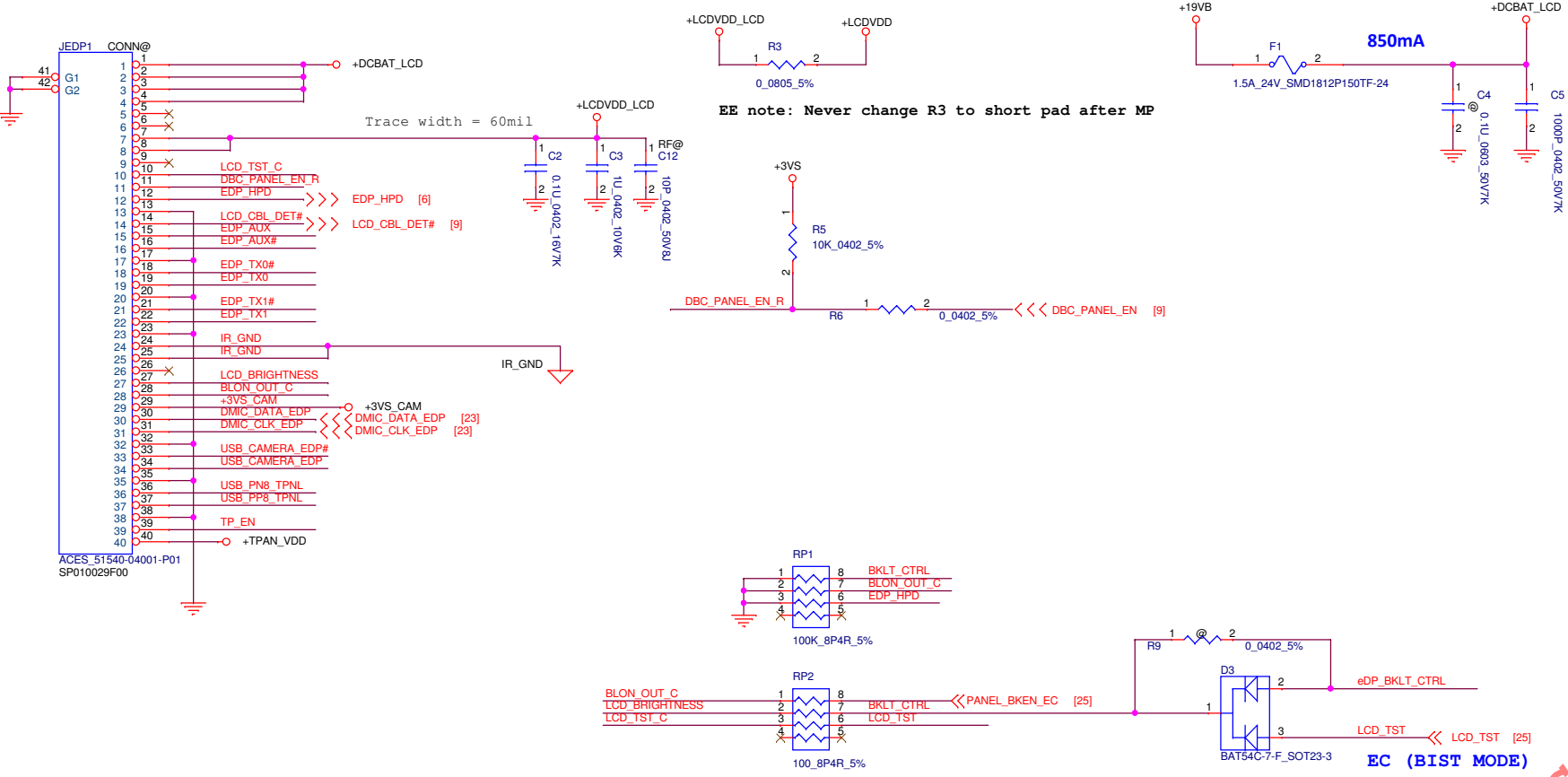


Main Func = Finger Printer

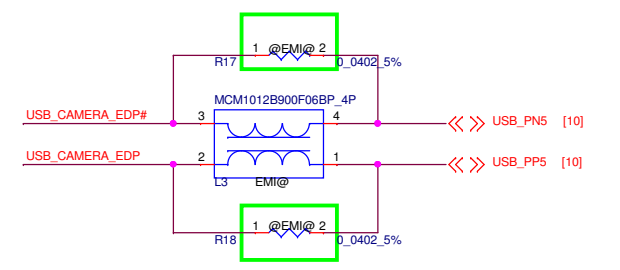
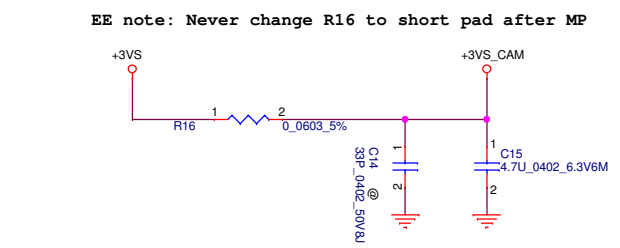


Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.			Document Number	Rev
			LA-F114P	A00
			Date: Wednesday, July 26, 2017	Sheet 27 of 54

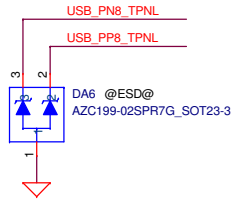
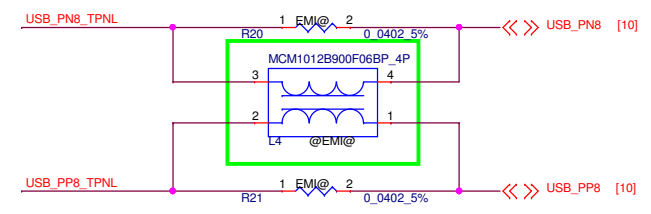
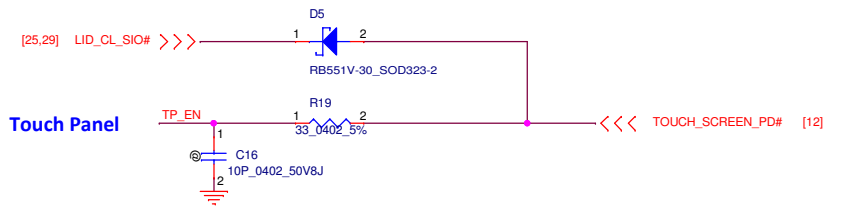
Main Func = LCD



Main Func = CAM

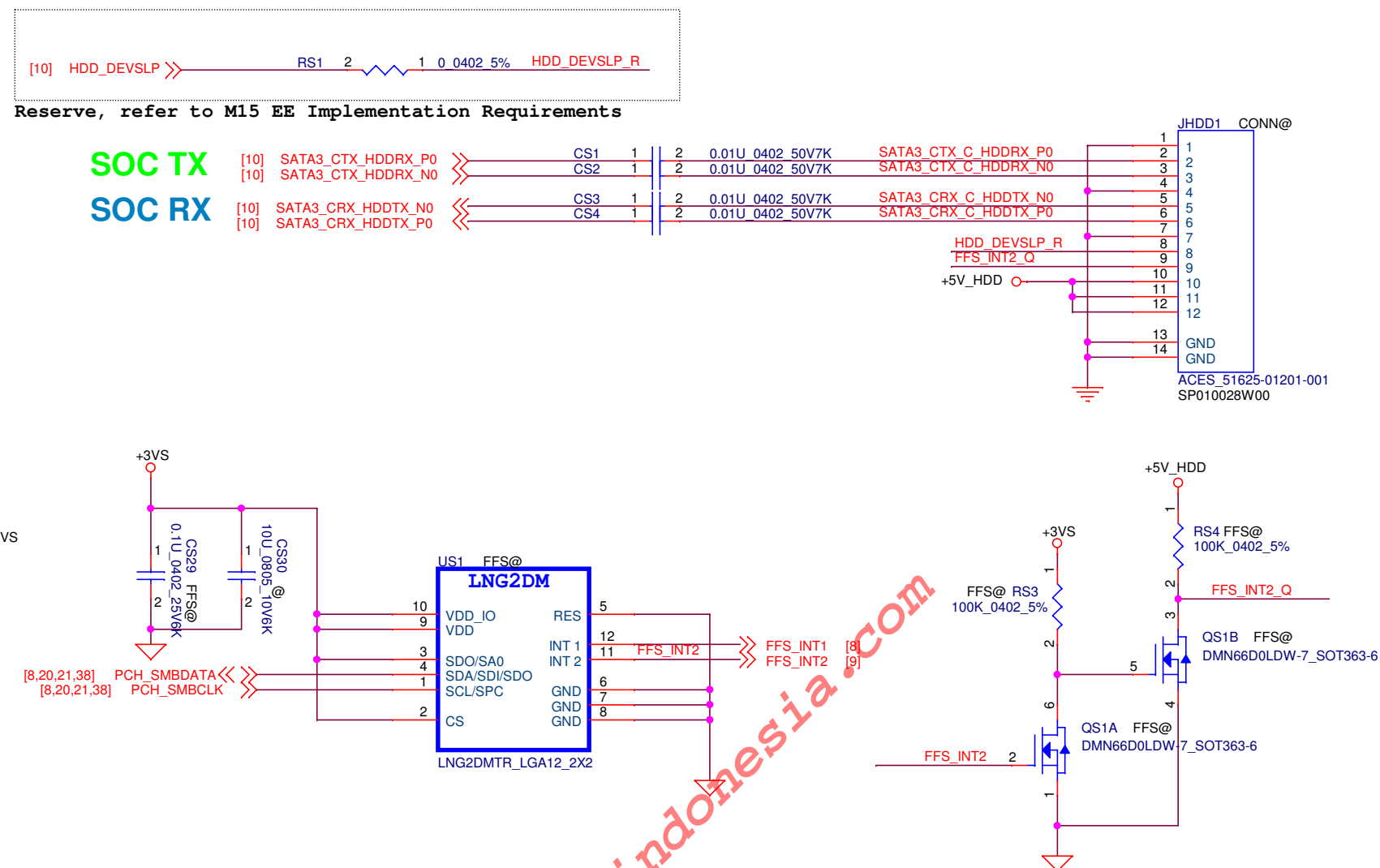
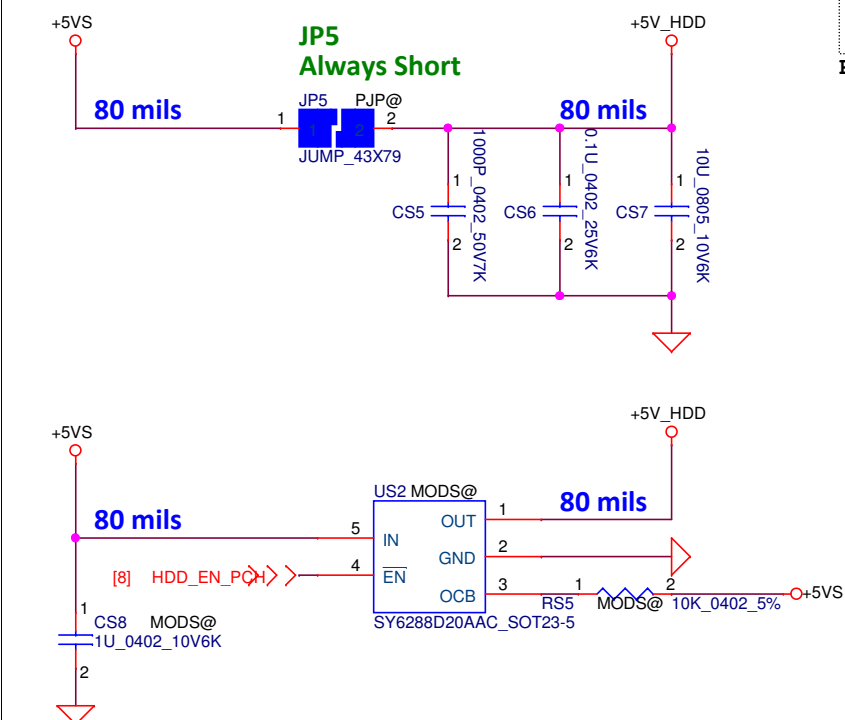


Main Func = TS



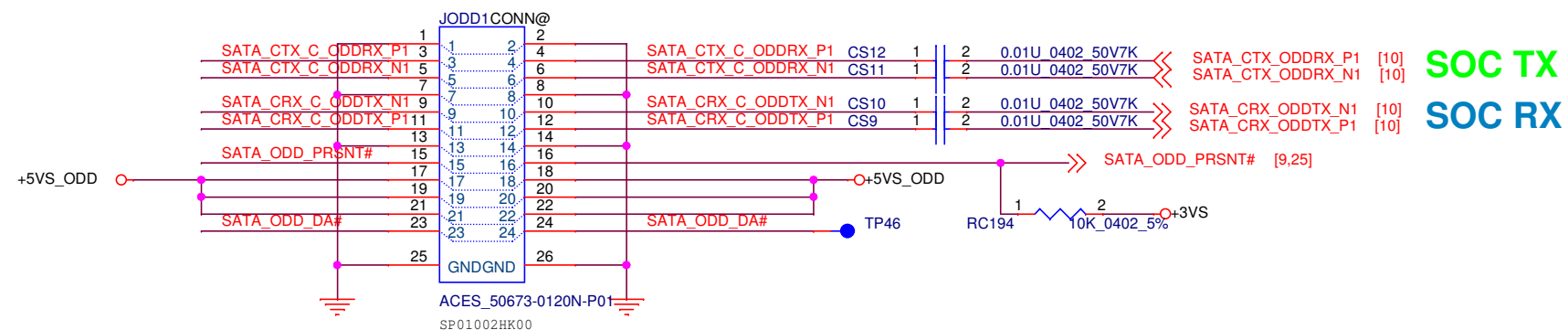
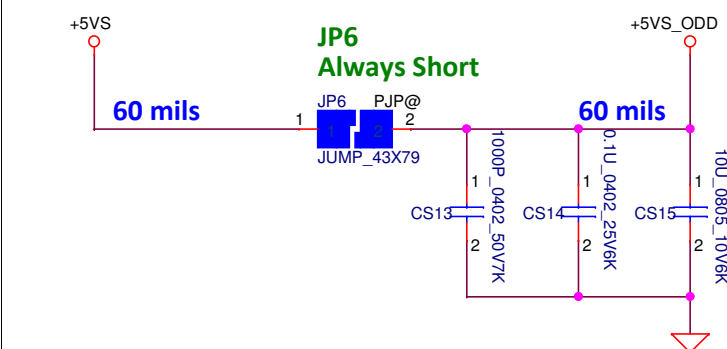
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Document Number	Rev
				LA-F114P	A00
				Date	Wednesday, July 26, 2017
				Sheet	28 of 54

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	
5V	P7	10
5V	P8	11
5V	P9	12
GND	P10	
Device Activity	P11	

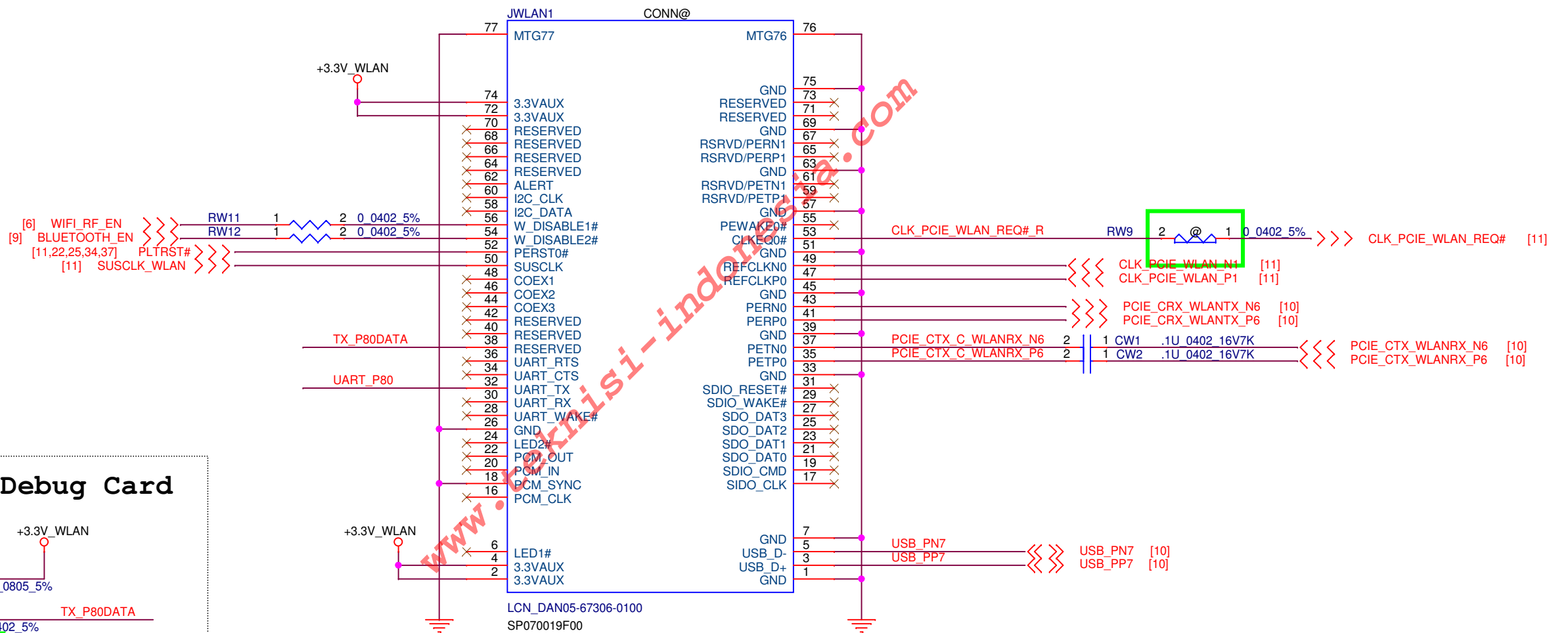
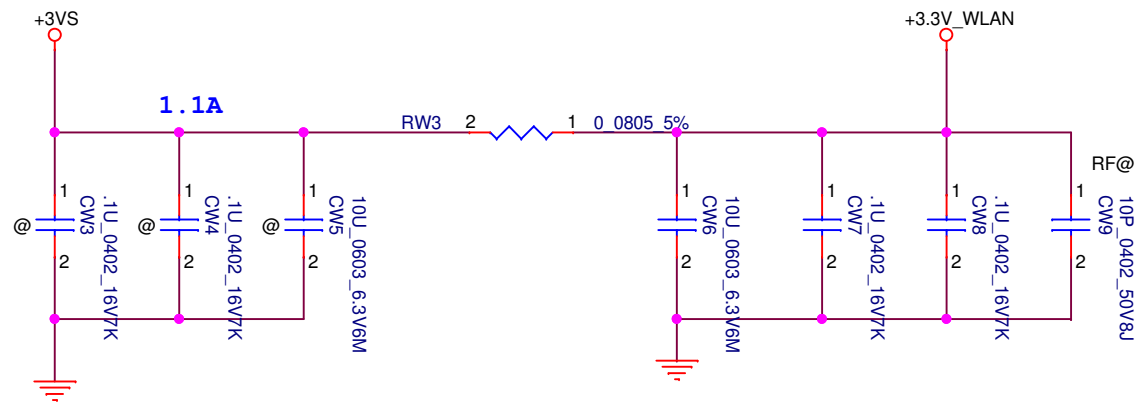
Main Func = ODD



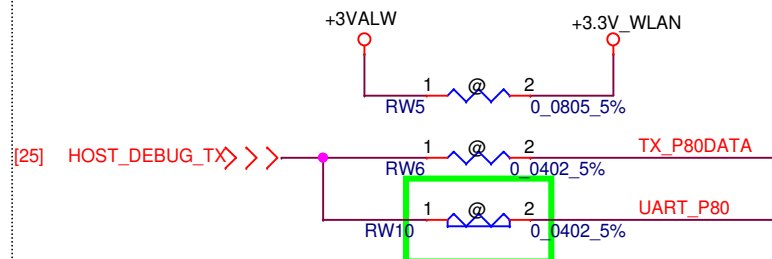
CONN		FFC
GND	S1	1
A+	S2	2
A-	S3	3
GND	S4	4
B-	S5	5
B+	S6	6
GND	S7	7
PRSENT	P1	8
5V	P2	9
5V	P3	10 11
Attention	P4	12
GND	P5	
GND	P6	

Security Classification	Compal Secret Data			Compal Electronics, Inc. HDD/FFS/ODD		
Issued Date	2016/12/01	Deciphered Date	2017/12/01			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE 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		
				Size	Document Number	Rev
				Custom	LA-F114P	A0
				Date:	Wednesday, July 26, 2017	Sheet 31 of 54

Main Func = WLAN A Key CONN

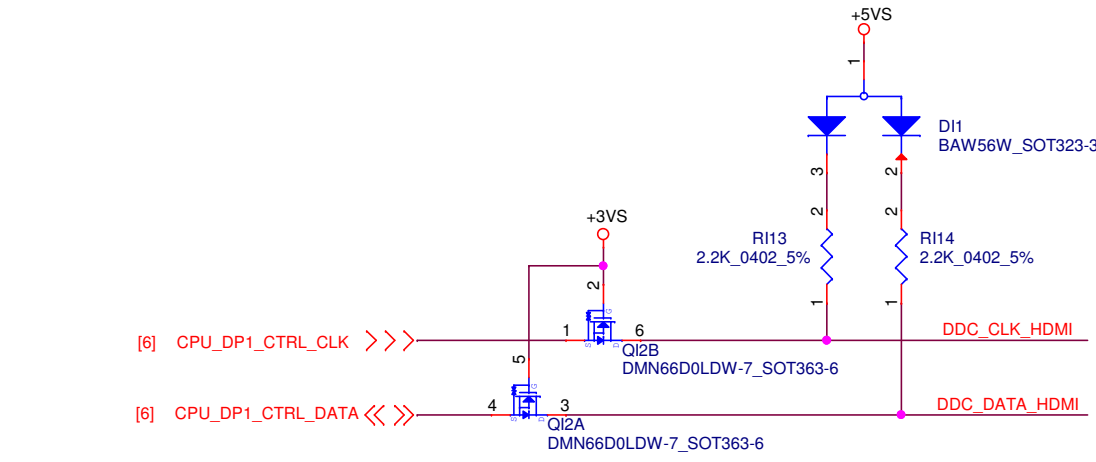
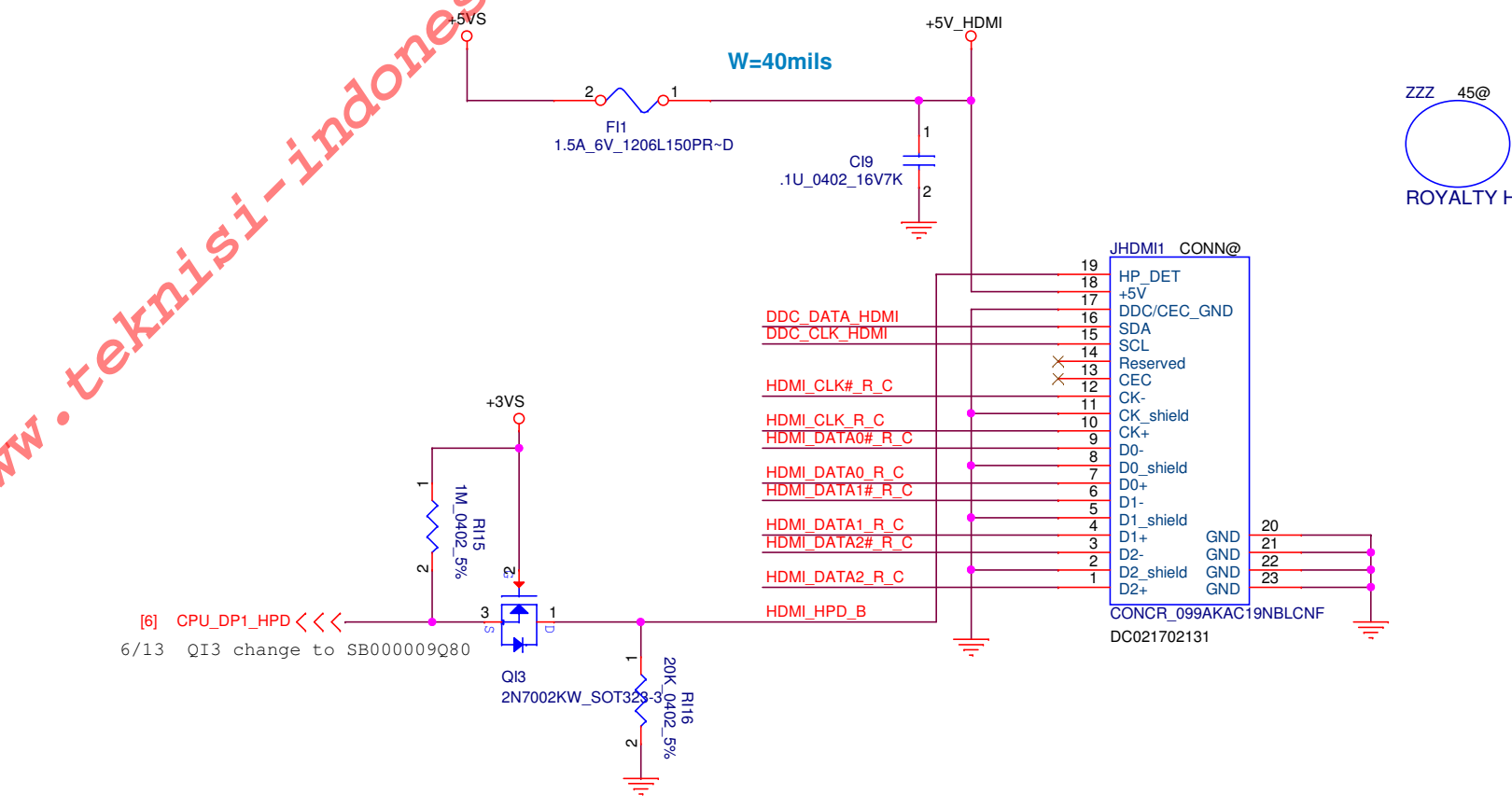
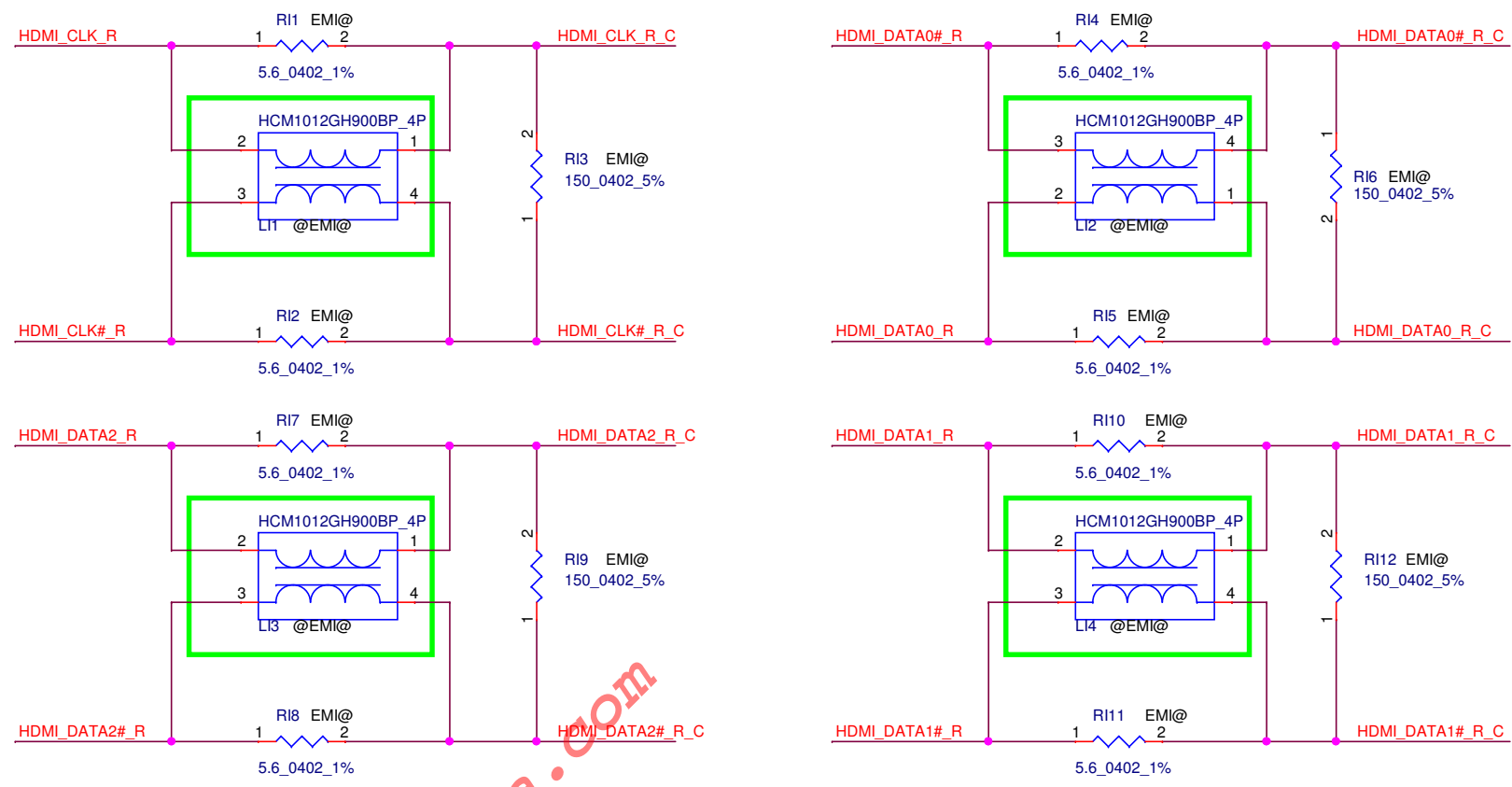
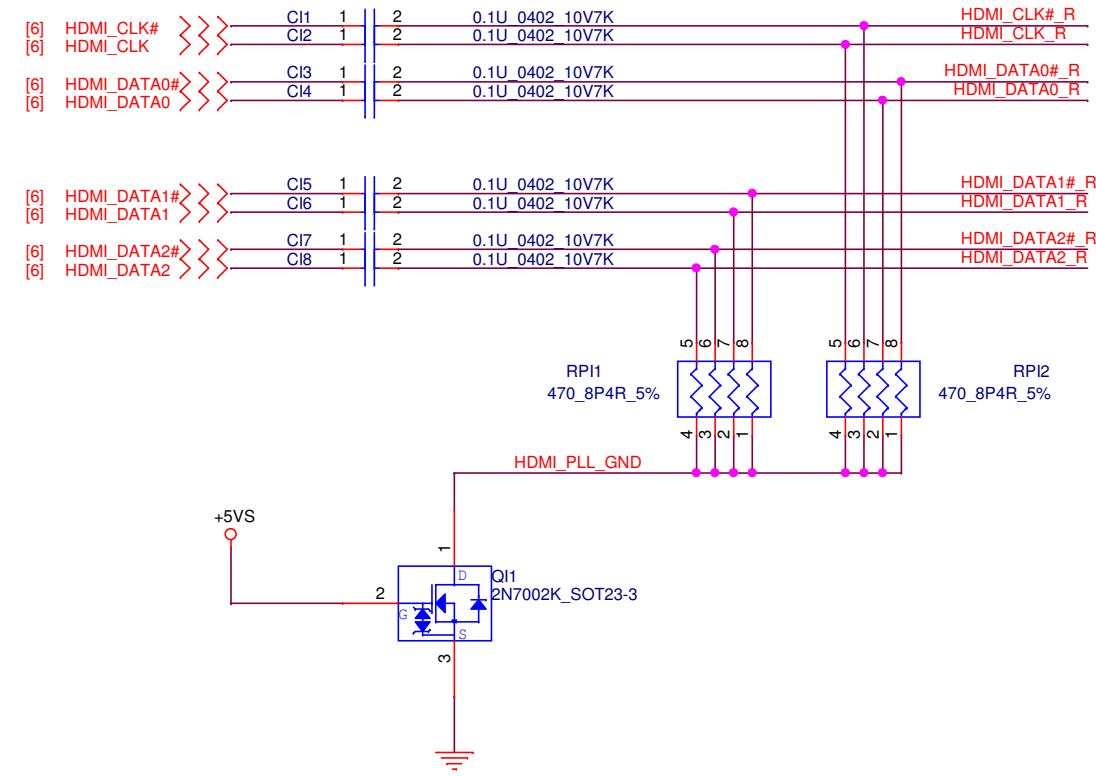


Reserved for NGFF Debug Card



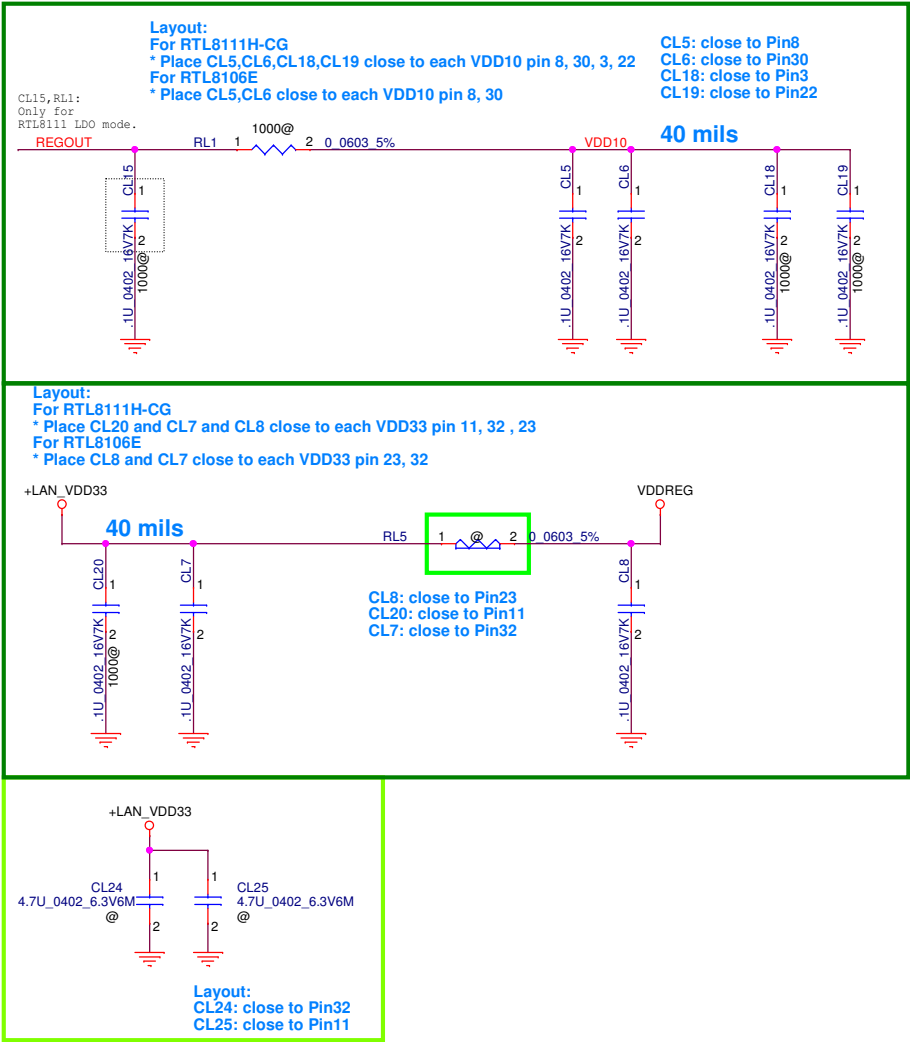
Security Classification		Compal Secret Data				Compal Electronics, Inc.					
Issued Date		2016/12/01		Deciphered Date		2017/12/01		Title			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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.						NGFF WLAN CONN					
						Size B	Document Number			Rev A00	
						LA-F114P					
						Date:	Wednesday, July 26, 2017		Sheet	32	of

Main Func = HDMI



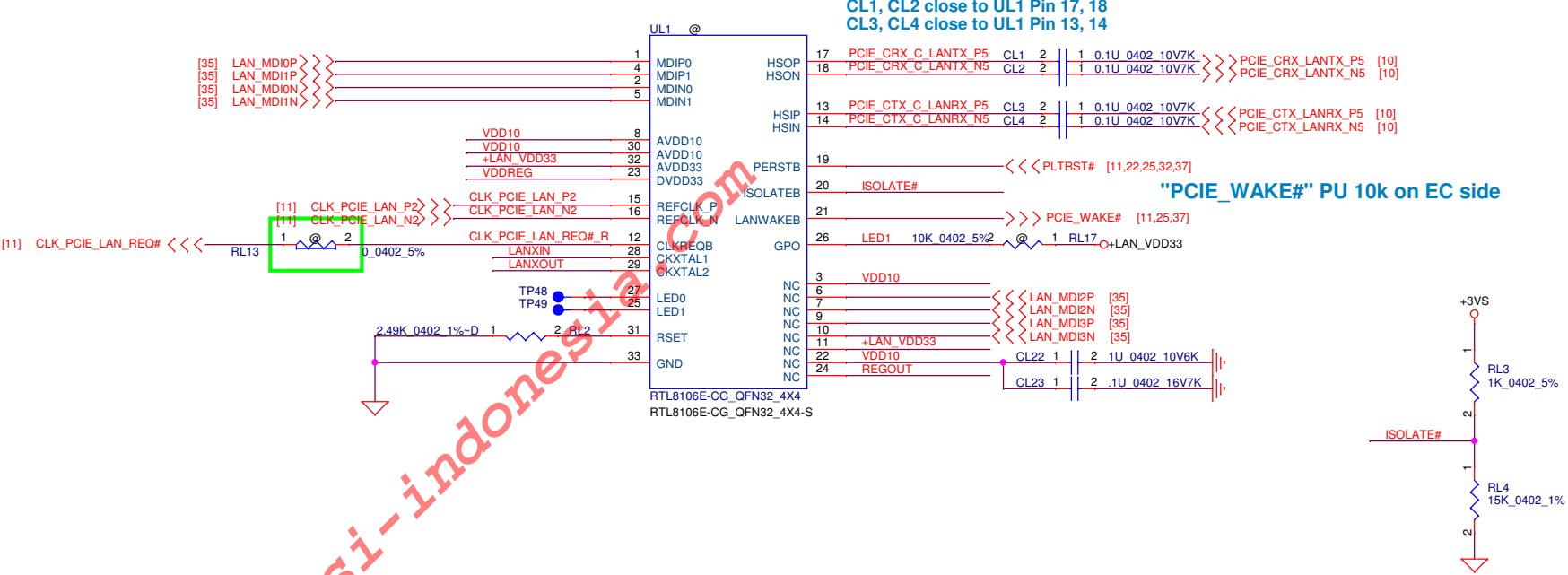
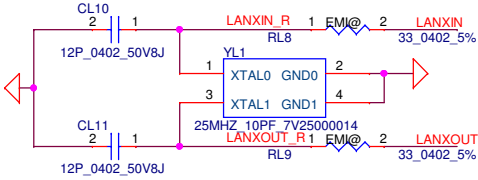
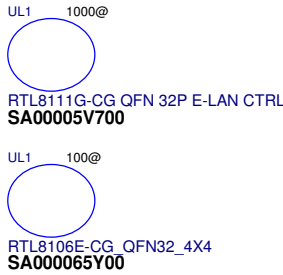
Security Classification	Compal Secret Data			Title	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	HDMI L.Shifter/Conn	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Document Number	Rev
				LA-F114P	A00
				Date	Wednesday, July 26, 2017
				Sheet	33 of 54

Main Func = LAN



LAN CHIP 10/100/1000

RTL8111H-CG	RTL8106E-CG
SA000080P00	SA000065Y00
LDO mode	LDO mode
10/100/1000M	10/100M

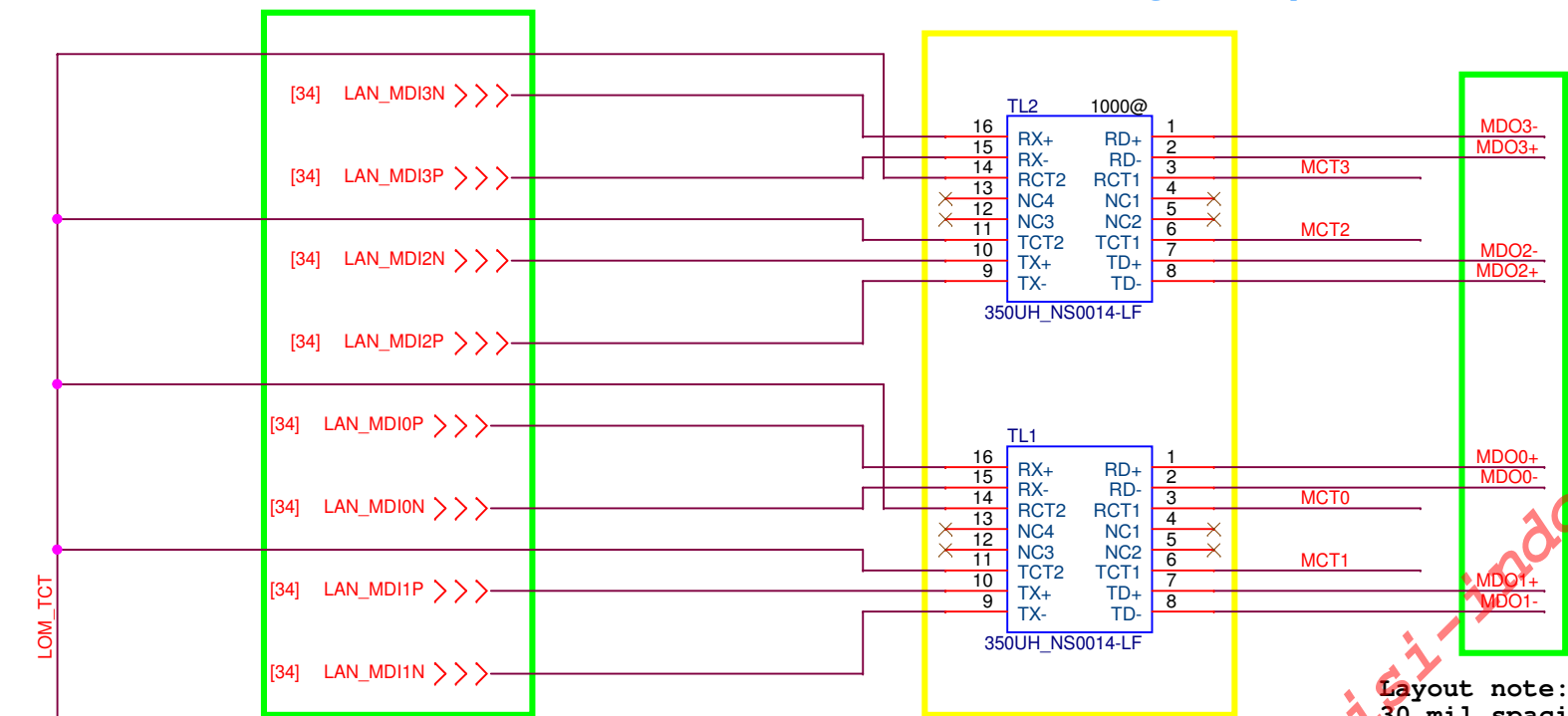


+LAN_VDD33 Rising time (10%~90%) need
>0.5mS and <100mS.

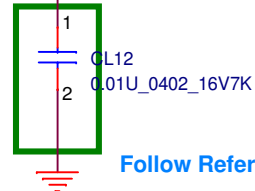
	1.0V Source	RL1	CL15	CL18	CL19	CL20	CL8
RTL8111H-CG RTL8111G-CGT (71.08111.U03)	LDO	O	O	O	O	O	X
RTL8106E-CG (071.08106.0003)	LDO	X	X	X	X	X	O

Main Func = LAN LAN Transformer 10/100M x2

TL1 TOP, TL2 BOT
2/24 change footprint



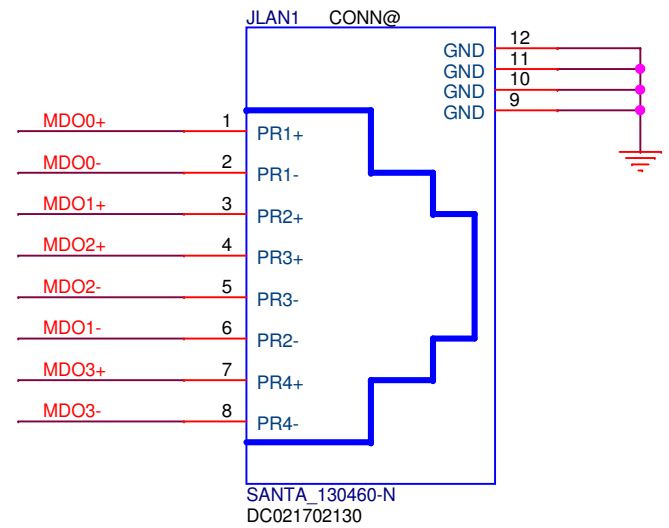
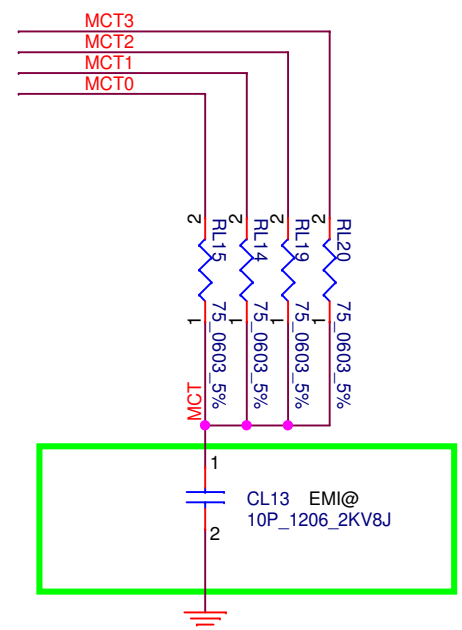
Layout note:
30 mil spacing between MDI differential pairs.



Follow Reference Schematic 0.01uF~0.4uF

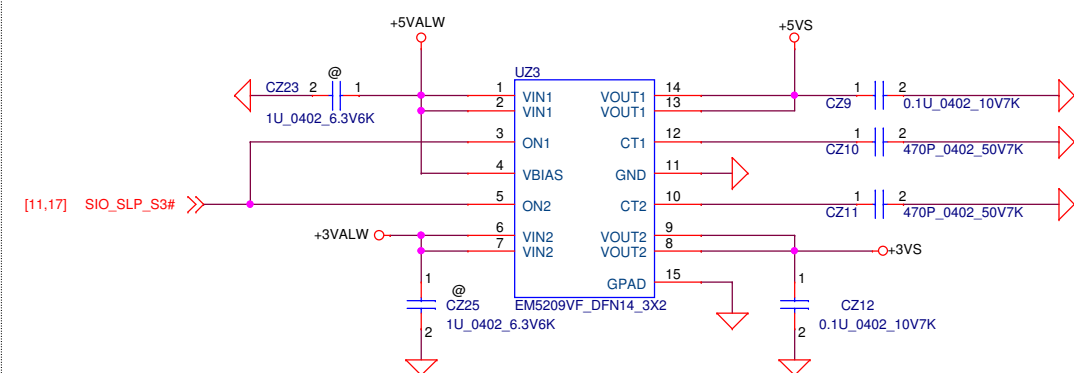
Main:
SP050006H00, S X'FORM_ NS0014 LF LAN
2nd:
SP050006W00, S X'FORM_ HD-245 10/100 PC CARD LAN

Layout note:
30 mil spacing between MDI differential pairs.

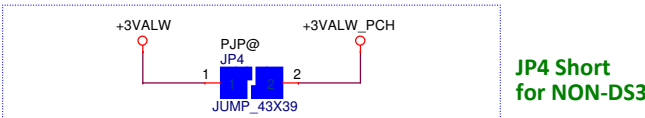


Security Classification		Compal Secret Data		Title Compal Electronics, Inc. XFOM&RJ45	
Issued Date	2016/12/01	Deciphered Date	2017/12/01		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE 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-F114P
				Date: Wednesday, July 26, 2017	Rev A00
				Sheet 35	of 54

+5VS/+3VS for System



+3VALW_PCH for System

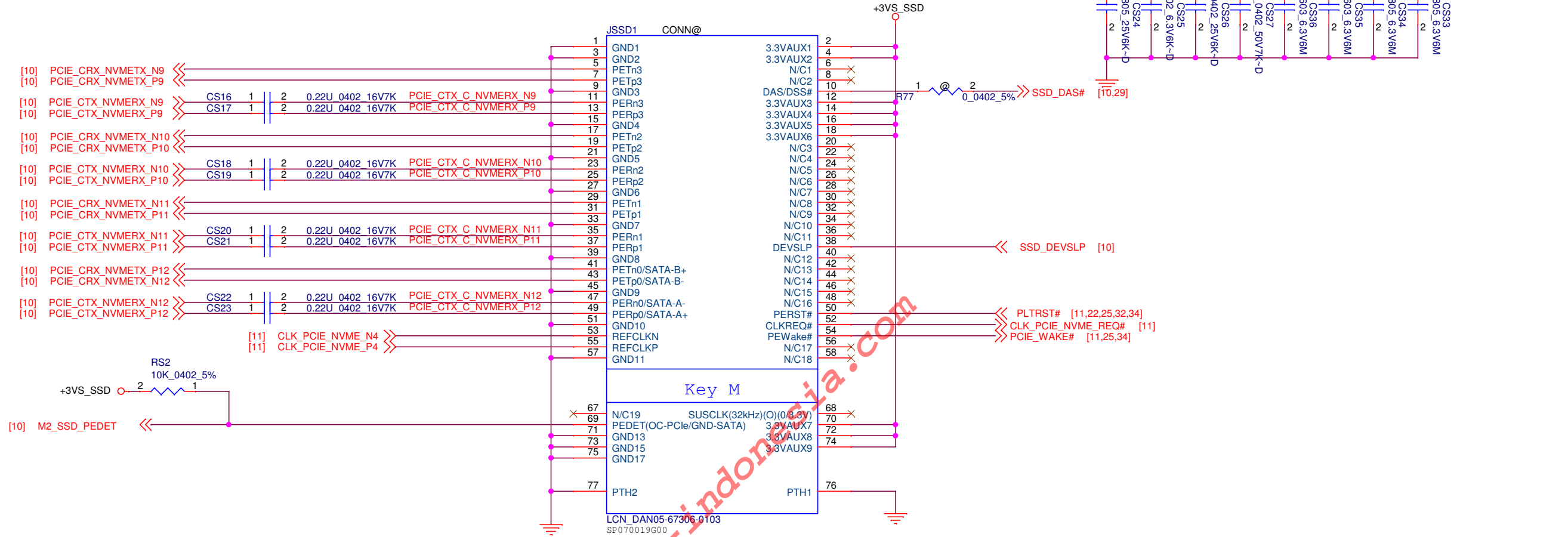


www.teknisi-indonesia.com

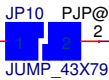
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title	DC/DC	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE 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
				Custom	LA-F114P	A00
				Date:	Wednesday, July 26, 2017	Sheet 36 of 54

Main Func = SSD M Key CONN

NGFF Key M

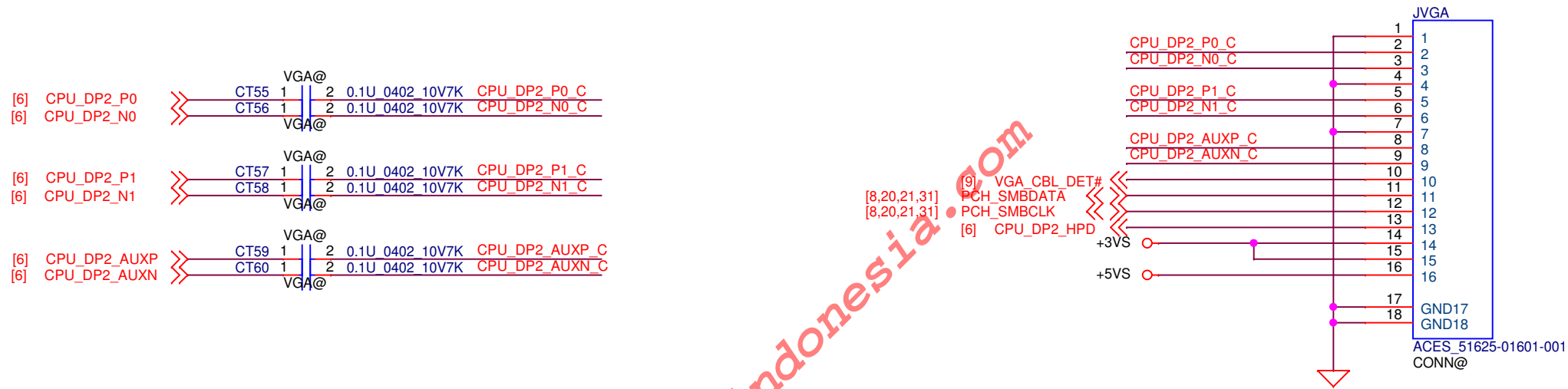


JP10 Always Short

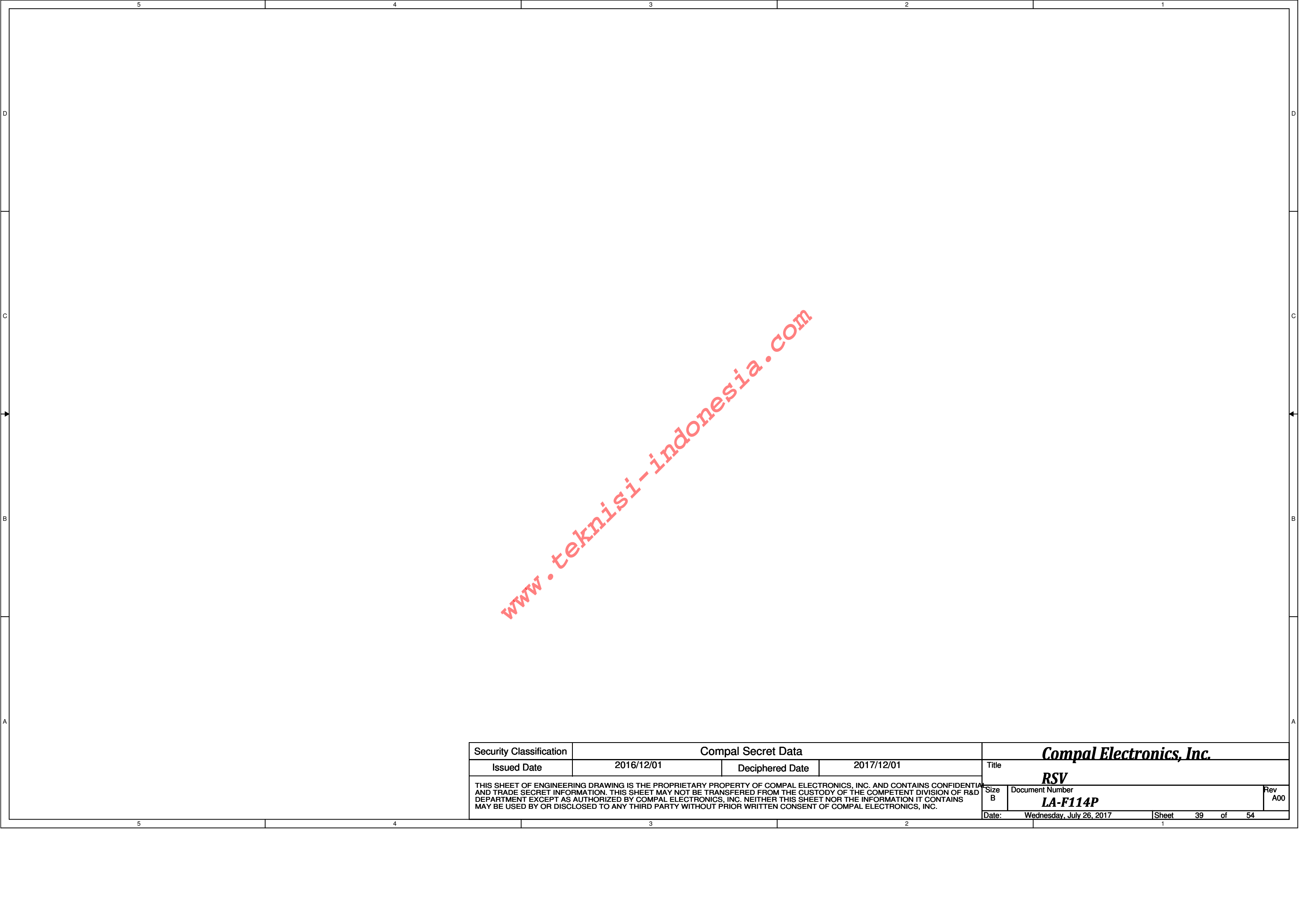


PEDET	Module Type
0	SATA
1	PCIE

Main Func = VGA/B

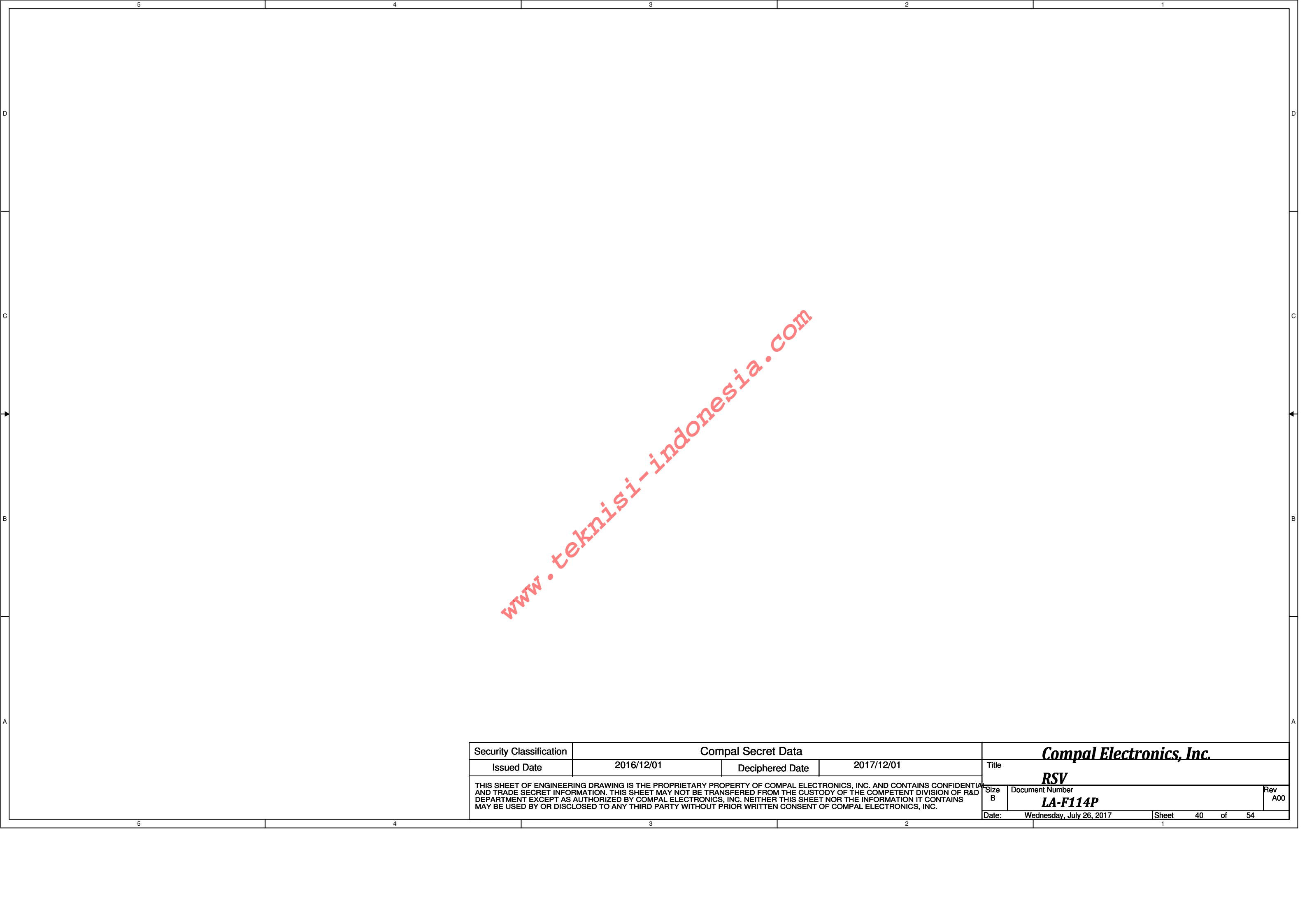


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date		2016/12/01	Deciphered Date	2017/12/01	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.		VGA CONN			Rev
		LA-F114P			A00
Date:		Wednesday, July 26, 2017		Sheet	38 of 54



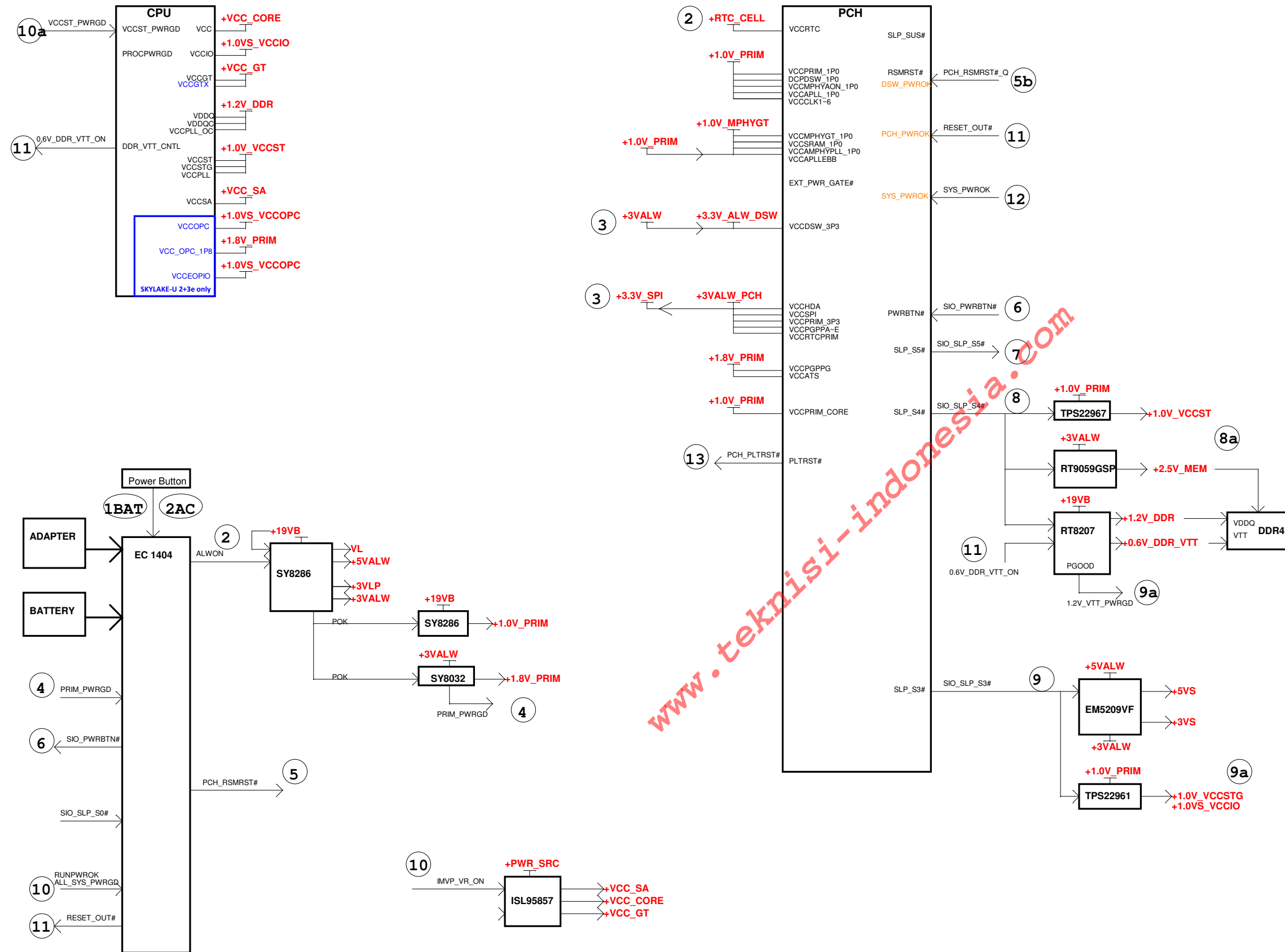
www.teknisi-indonesia.com

Security Classification		Compal Secret Data		Compal Electronics, Inc.		
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title RSV		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size B	Document Number LA-F114P	Rev A00
				Date:	Wednesday, July 26, 2017	Sheet 39 of 54



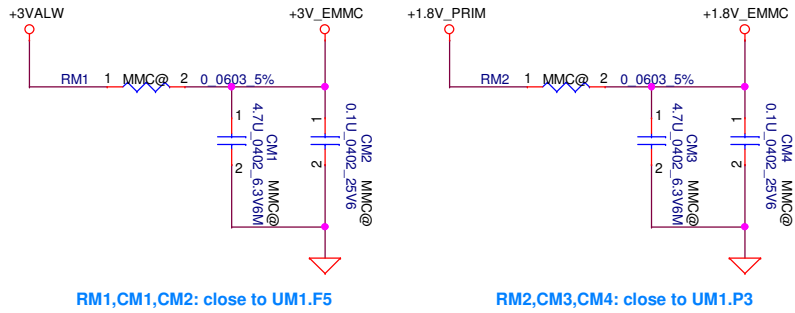
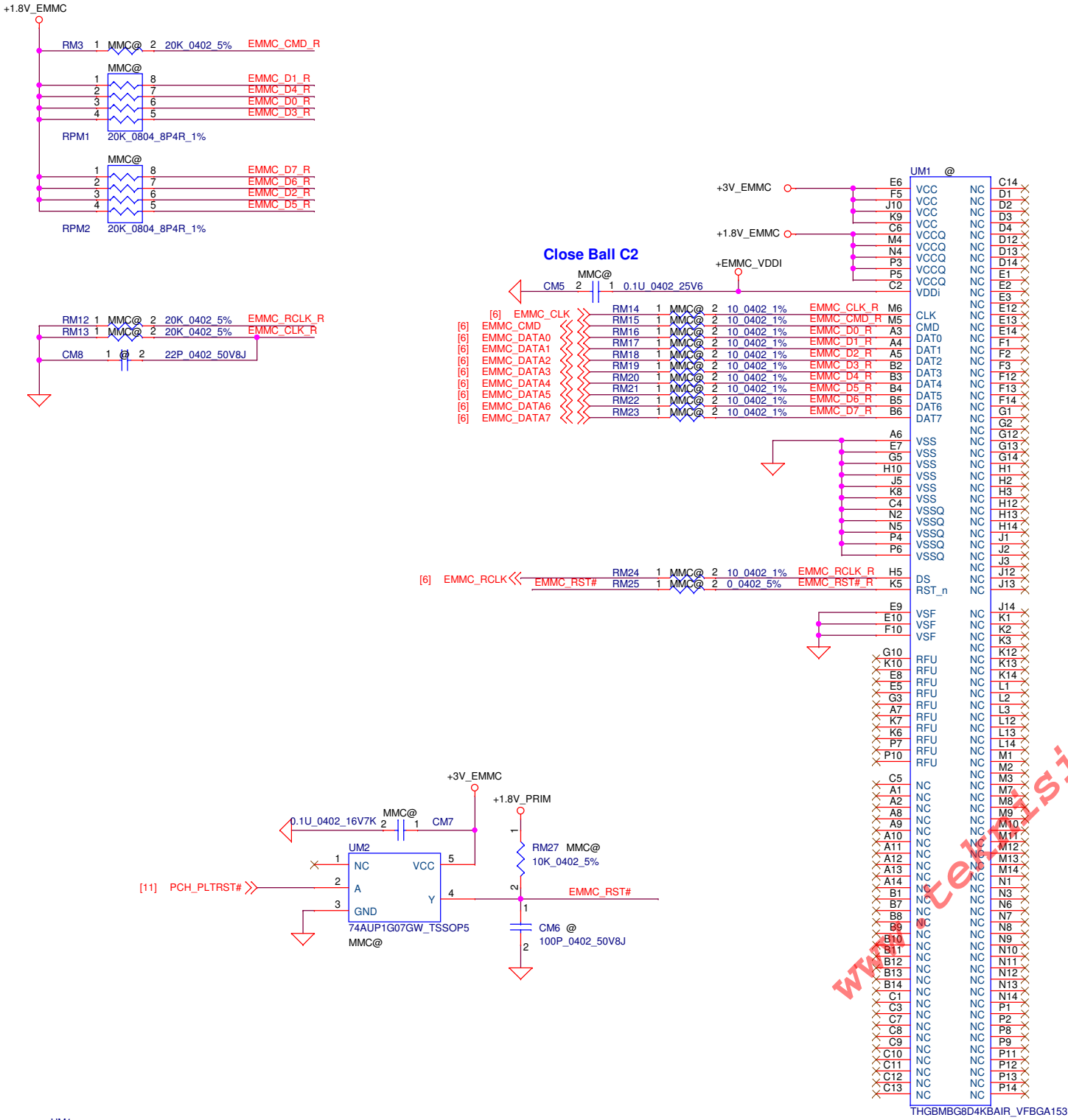
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title RSV	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size B	Document Number LA-F114P
				Date: Wednesday, July 26, 2017	Rev A00
				Date: Wednesday, July 26, 2017	Sheet 40 of 54

Timing Diagram for S5 to S0 mode



Security Classification	Compal Secret Data			Compal Electronics, Inc.				
Issued Date	2016/12/01	Deciphered Date	2017/12/01	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.				Platform Power Sequence				
				Size	Document Number			
				Custom	LA-F114P			A
				Date:	Wednesday, July 26, 2017		Sheet	41 of 54

Main Func = eMMC



UM1
HYNIX
SA00009N50L
HYNIX_128G@
S IC FL 128G H26M88002AMR FBGA 153P

UM1
SANDISK
SA00009ML0L
SANDISK_128G@
S IC FL 128G SDINADF4-128G-859 TFBGA

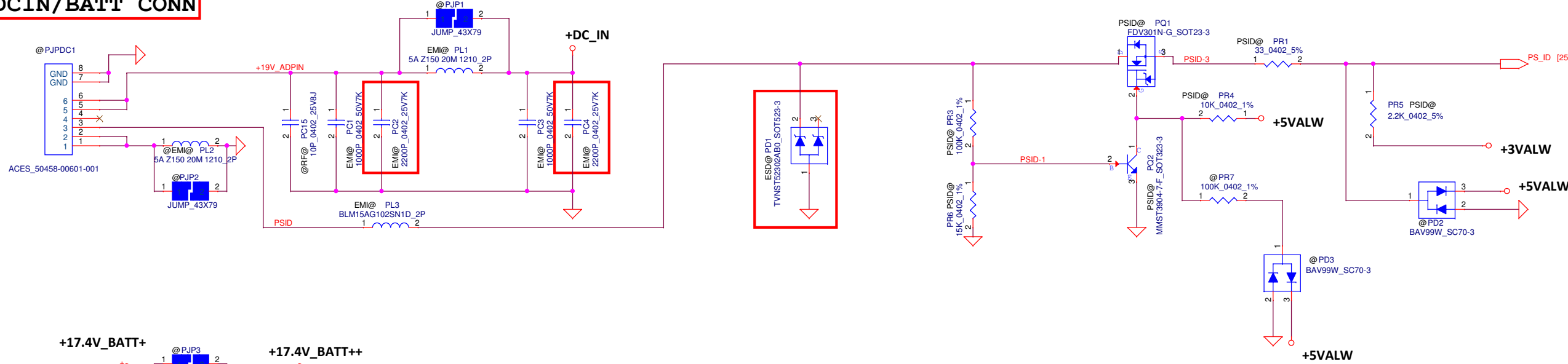
Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				Custom
				Document Number
				LA-F114P
				Rev
				A00
Date: Wednesday, July 26, 2017		Sheet 42 of 54		

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

www.teknisi-indonesia.com

Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		EE Change list	
2016/12/01		2017/12/01		LA-F114P	
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: Wednesday, July 26, 2017	
Size Custom				Sheet 43 of 53	

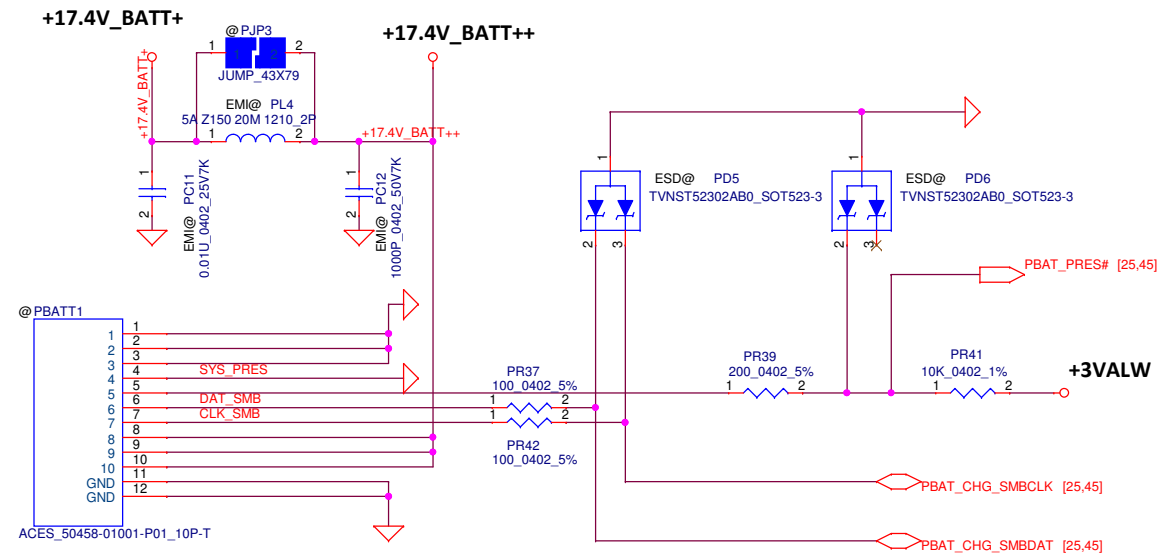
Main Func = DCIN/BATT CONN



Battery Bot Side

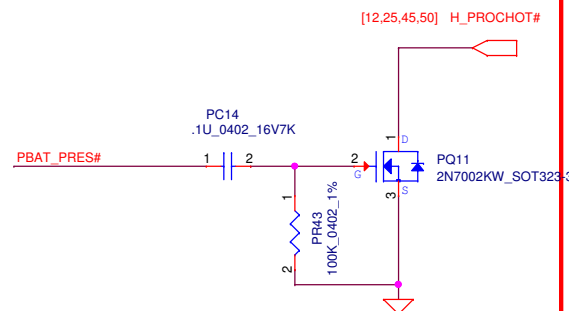
PIN1 GND
PIN2 GND
PIN3 GND
PIN4 SYS_PRES
PIN5 BATT_PRS
PIN6 DAT_SMB
PIN7 CLK_SMB
PIN8 Batt+
PIN9 Batt+
PIN10 Batt+
SP021412220

ACES_50458-01001-P01_10P-T



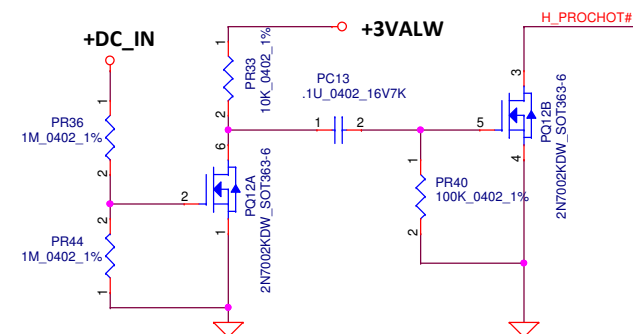
Adapter protection:

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

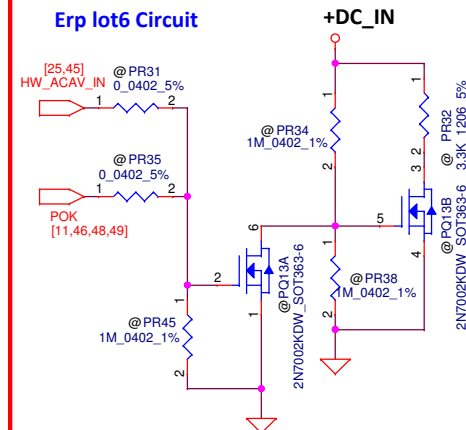


Battery protection:

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



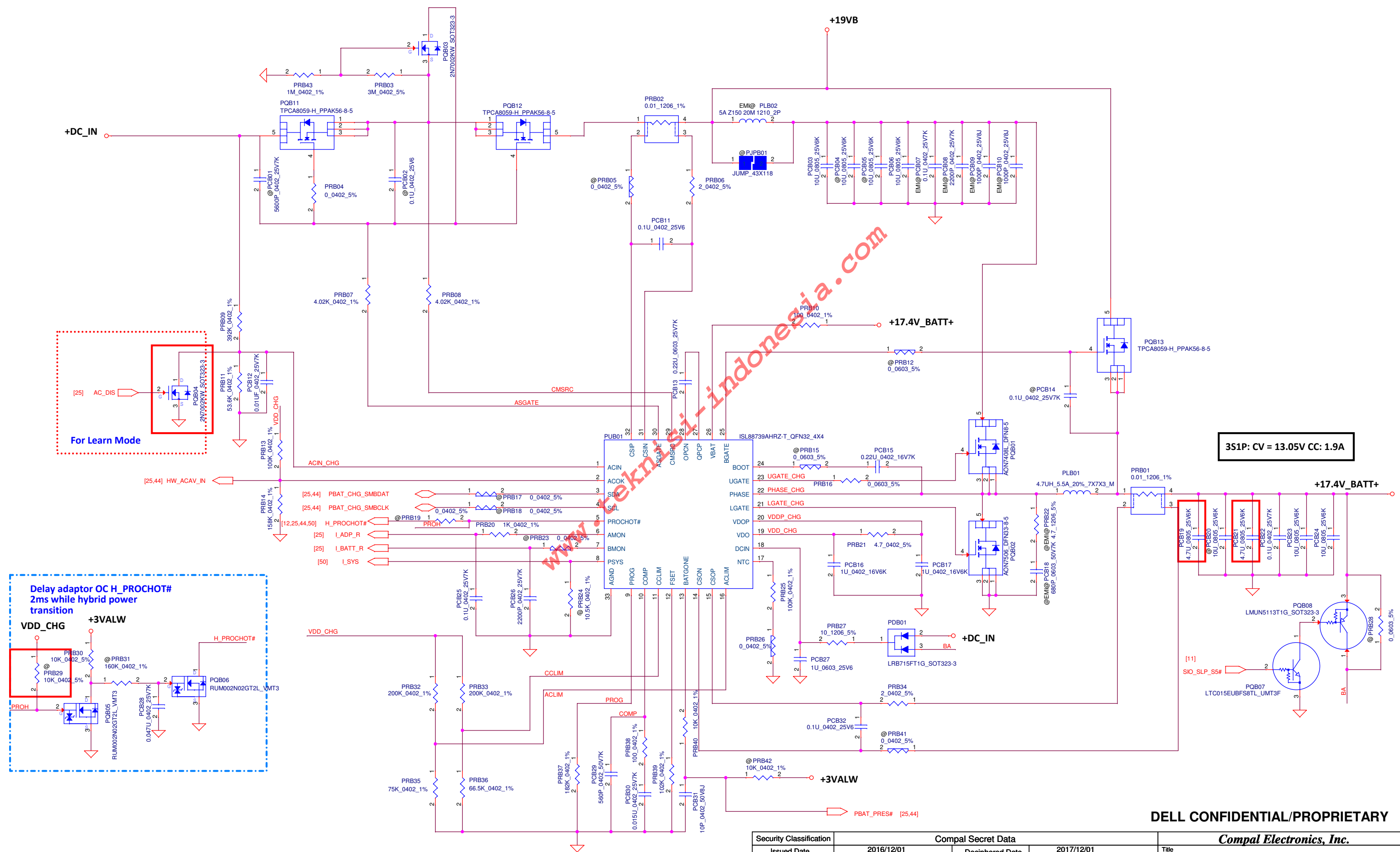
Erp lot6 Circuit



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

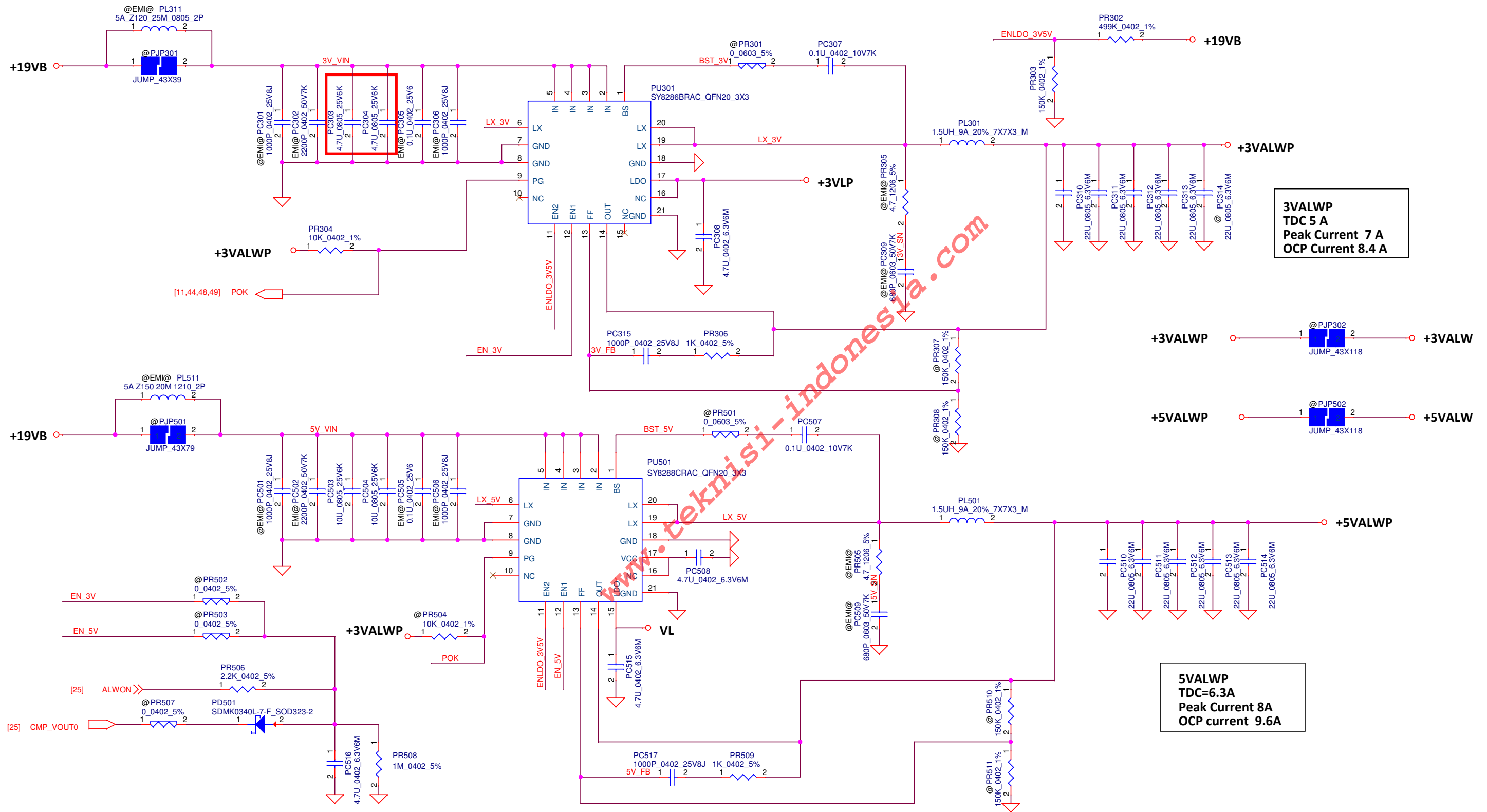
Security Classification	Compal Secret Data		Title	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	PWR DCIN/BATT CONN
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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 X00
Date:	Wednesday, July 26, 2017	Sheet	44	of 53



DELL CONFIDENTIAL/PROPRIETARY

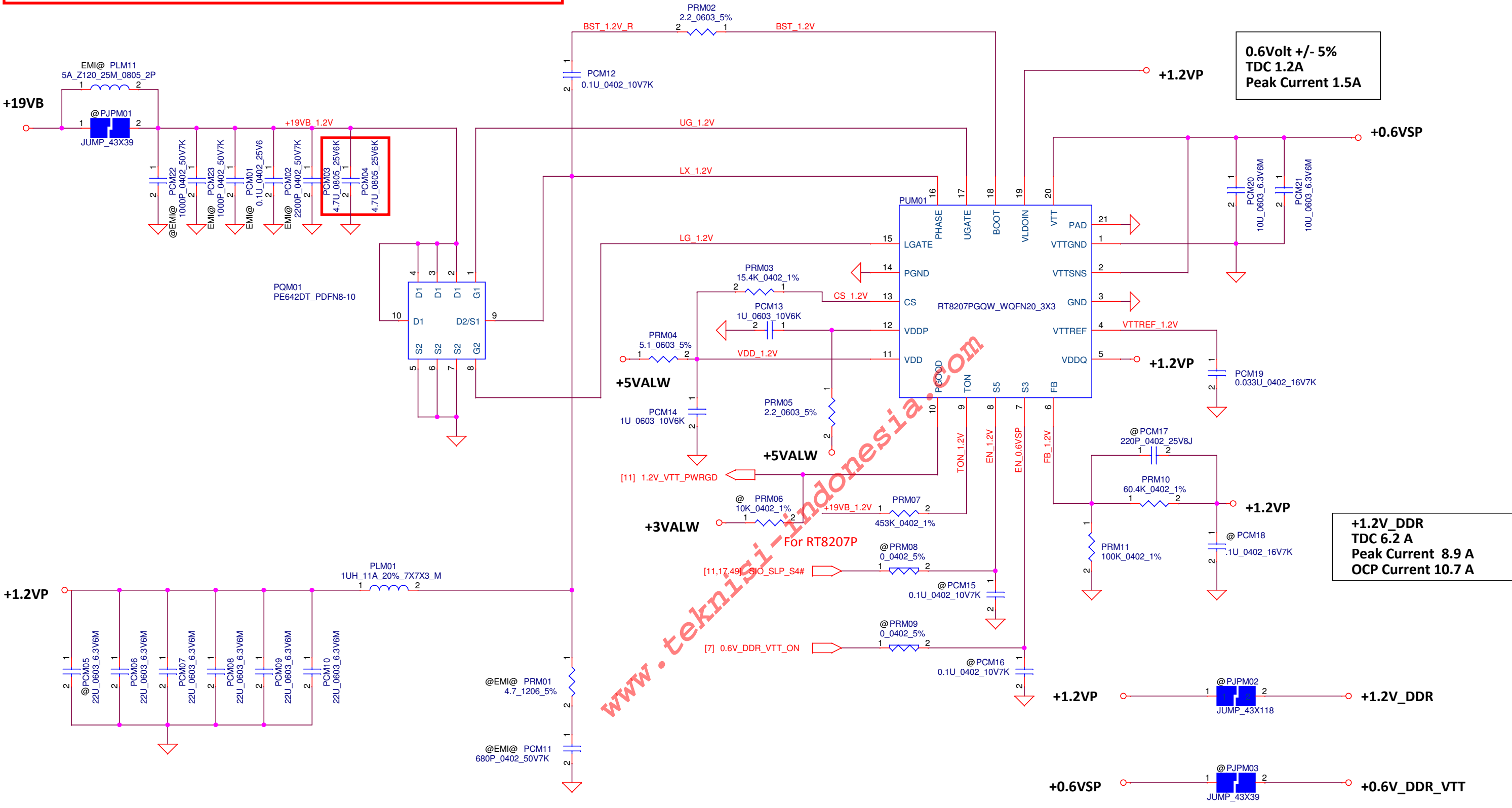
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title	PWR CHARGER
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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		X00	
Date	Wednesday, July 26, 2017	Sheet	45	of 53	

Main Func = 3.3VALWP/5VALWP



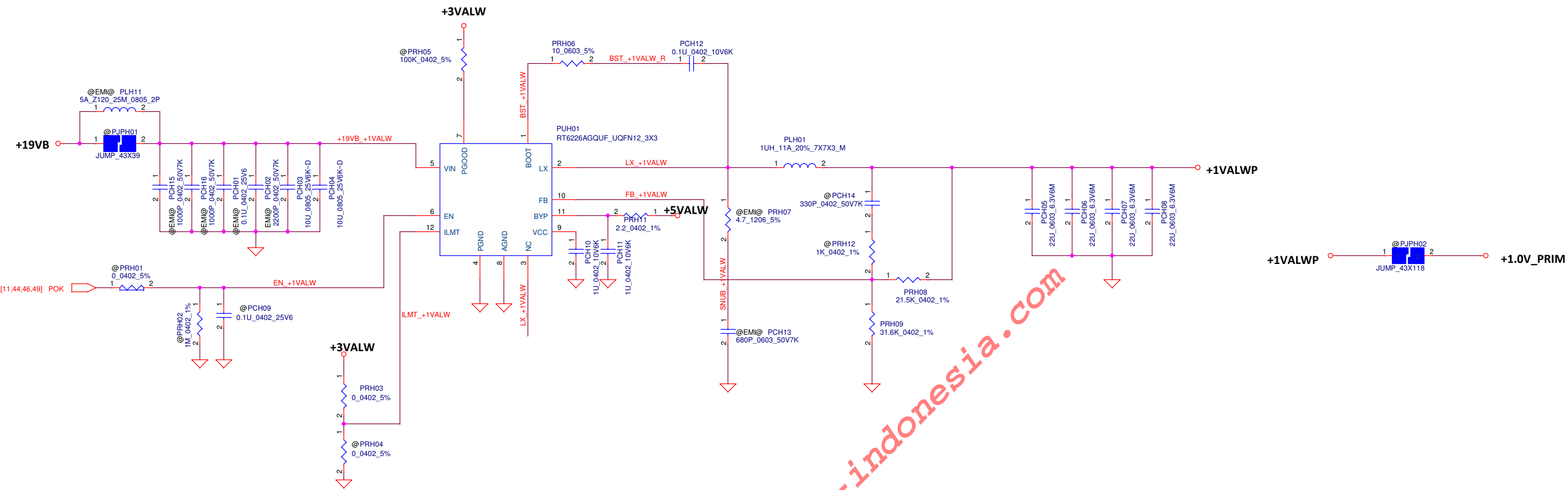
Security Classification		Compal Secret Data		<i>Compal Electronics, Inc.</i>		
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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.				<i>PWR 3.3VALWP/5VALWP</i>		
				Part Size	Document Number	Rev 0. (X00)
				Date:	Wednesday, July 26, 2017	Sheet 46 of 53

Main Func = +1.2V_DDR/+0.6V_DDR_VTT



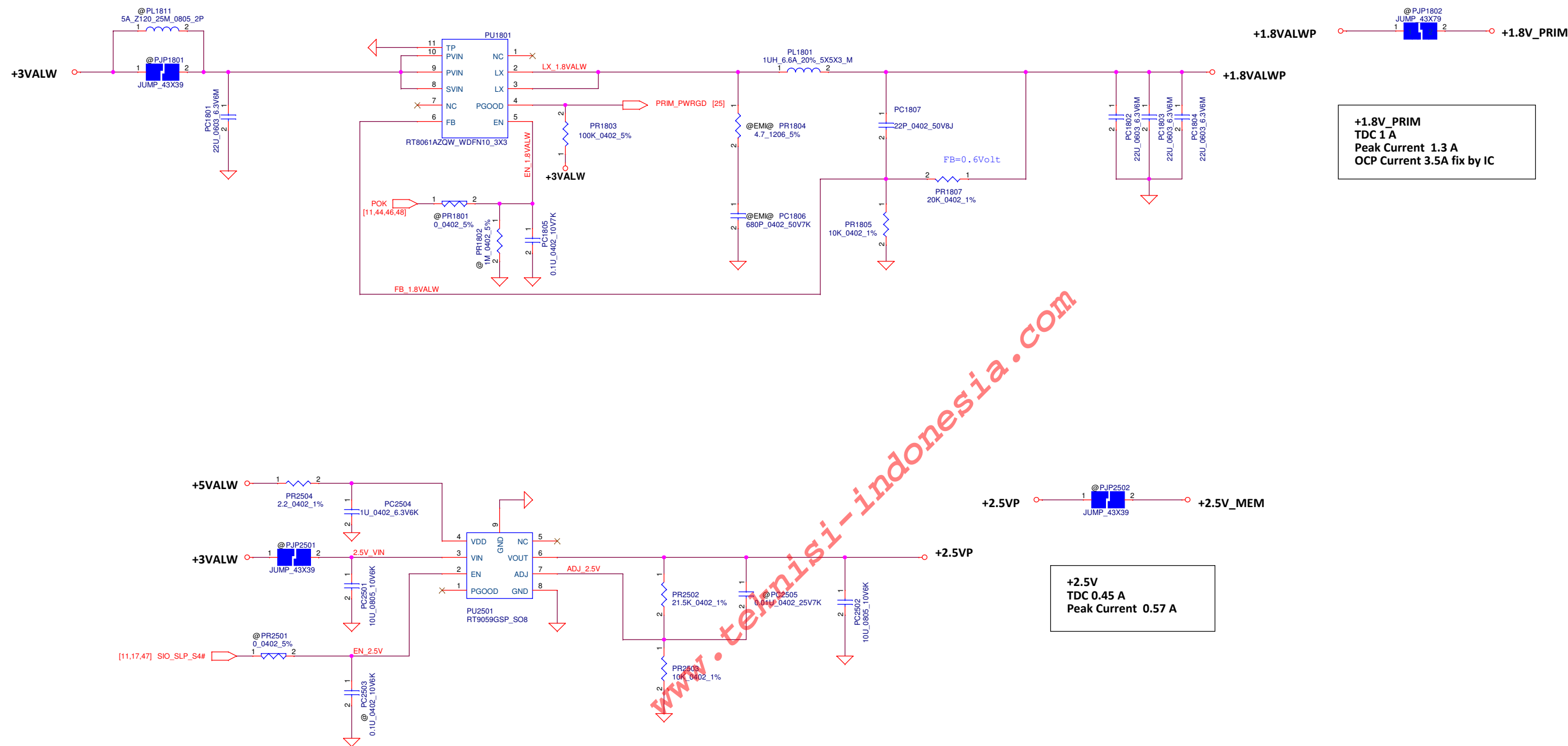
Main Func = +1VALWP

+1.0V_PRIM
TDC 5.2 A
Peak Current 6.5 A
OCP Current 9 A Fix by IC



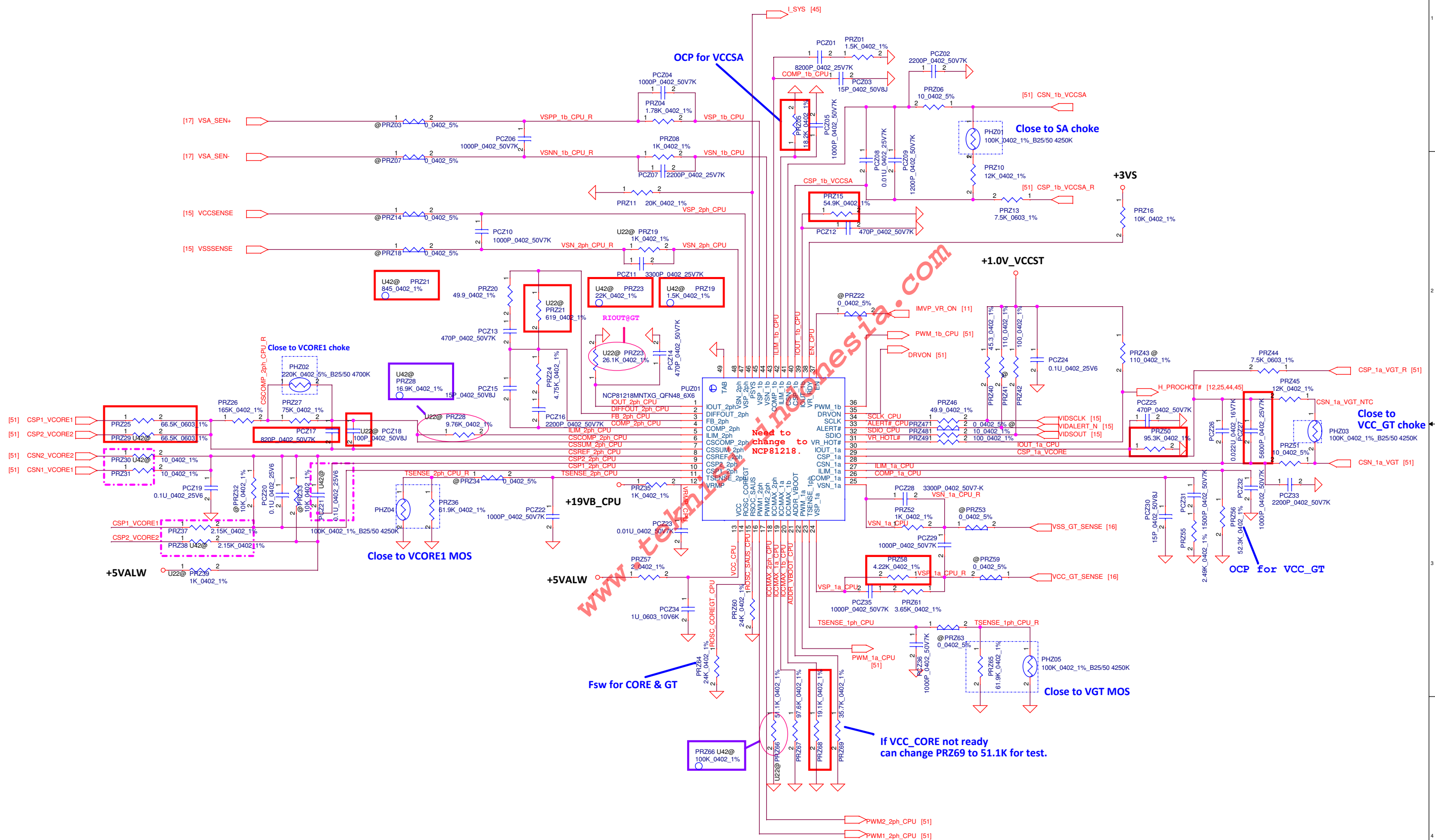
Security Classification		Compal Secret Data		Title	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	PWR_+1VALWP	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE 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	Rev X00
Date: Wednesday, July 26, 2017		Sheet 48 of 53			

Main Func = +1.8VALWP / +2.5VP



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title	PWR +1.8VALWP / +2.5VP
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 C	Document Number
				Date: Wednesday, July 26, 2017	Sheet 49 of 53

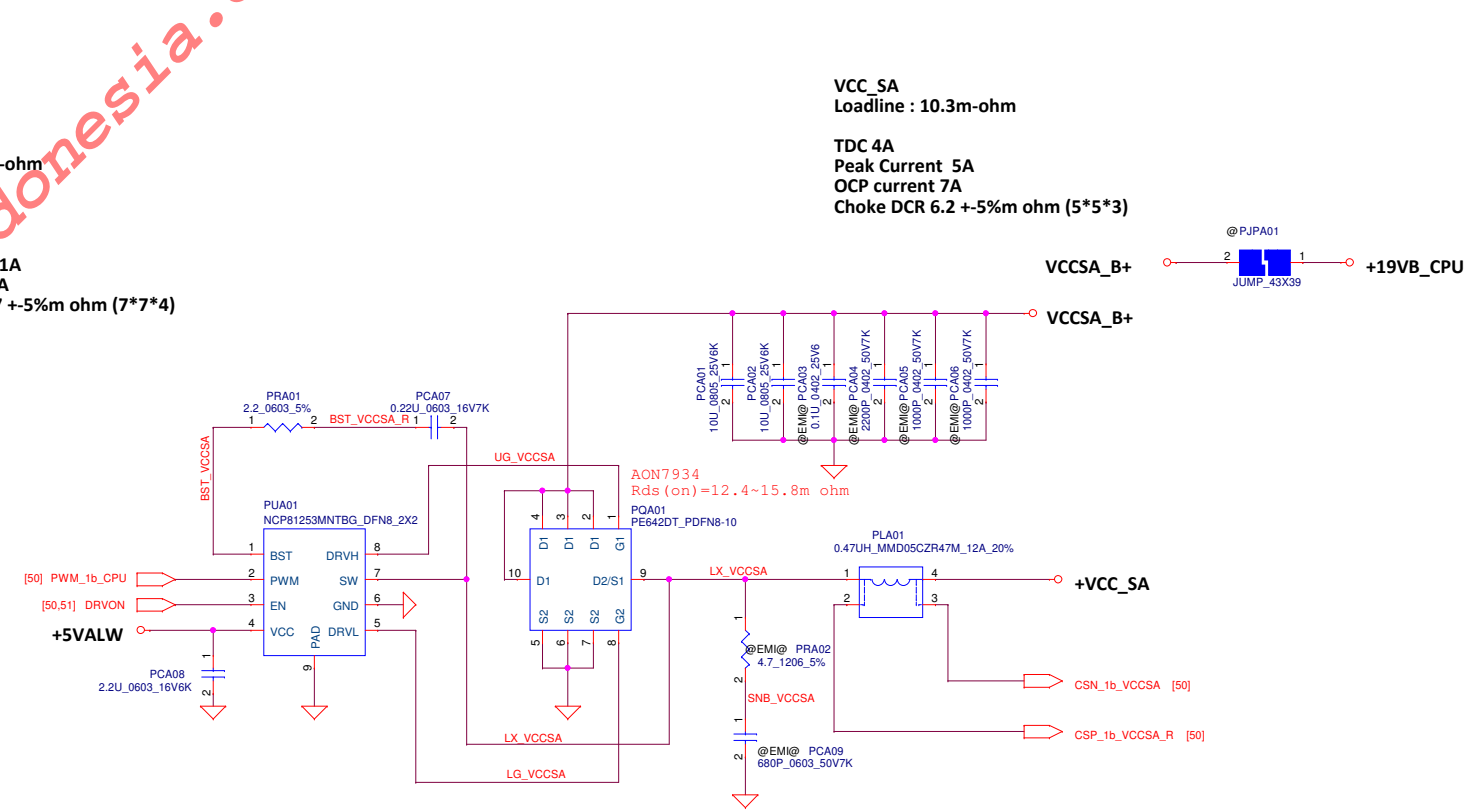
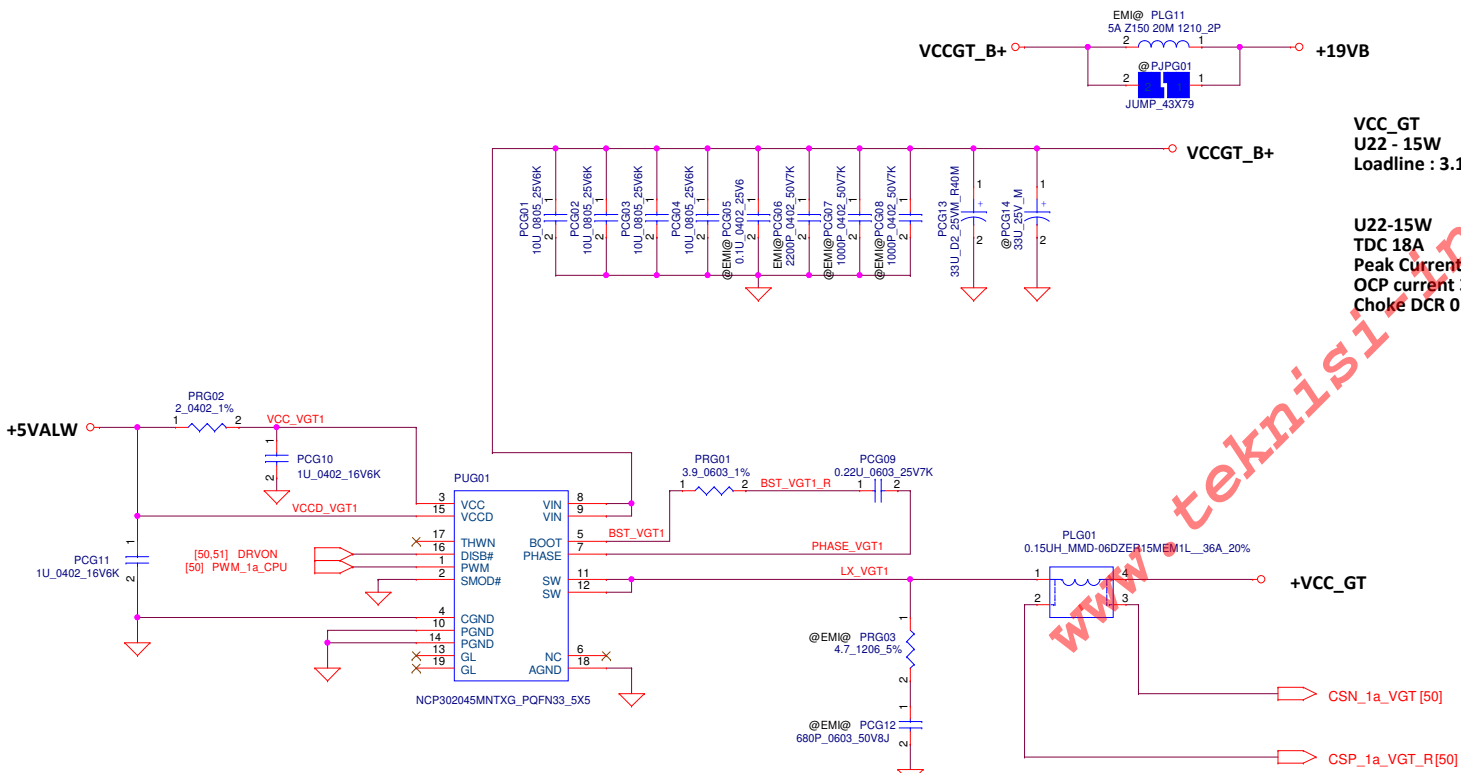
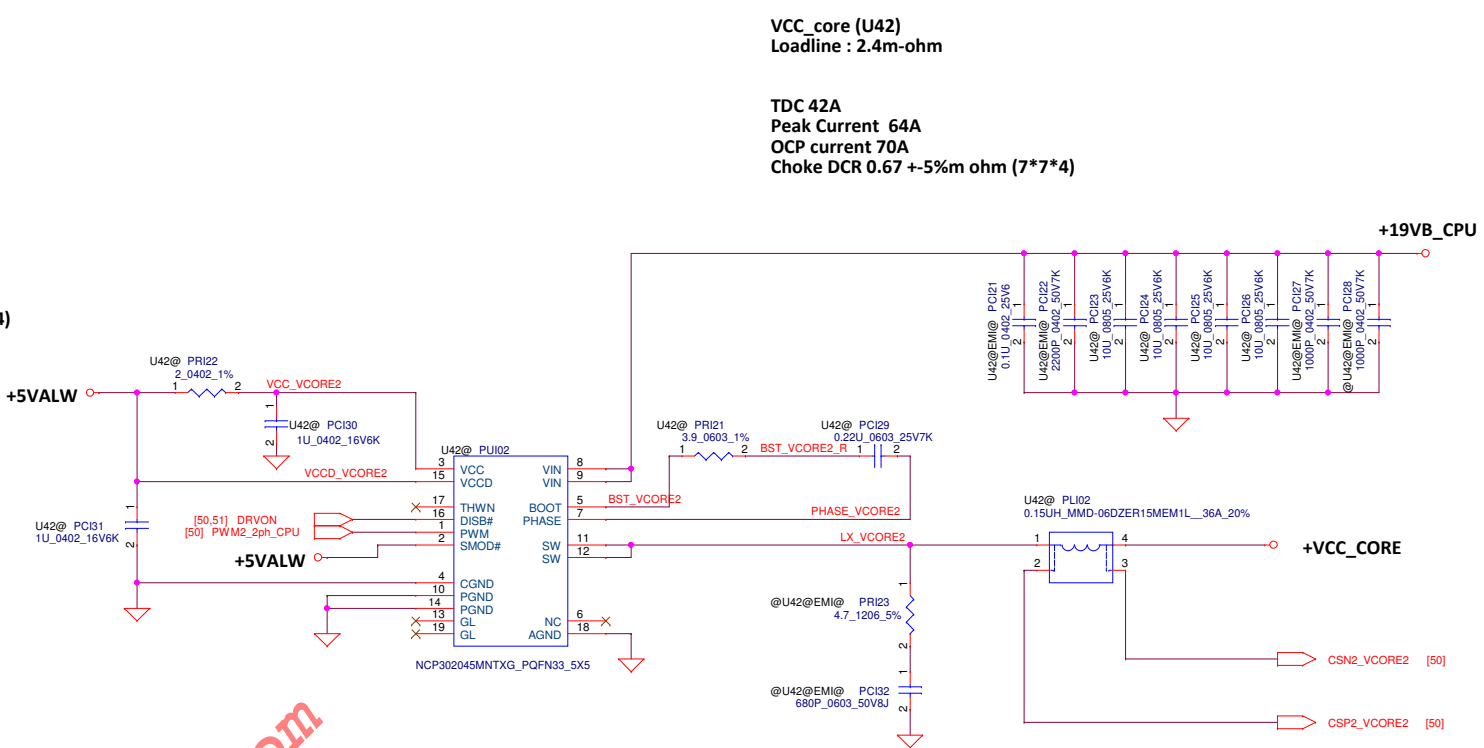
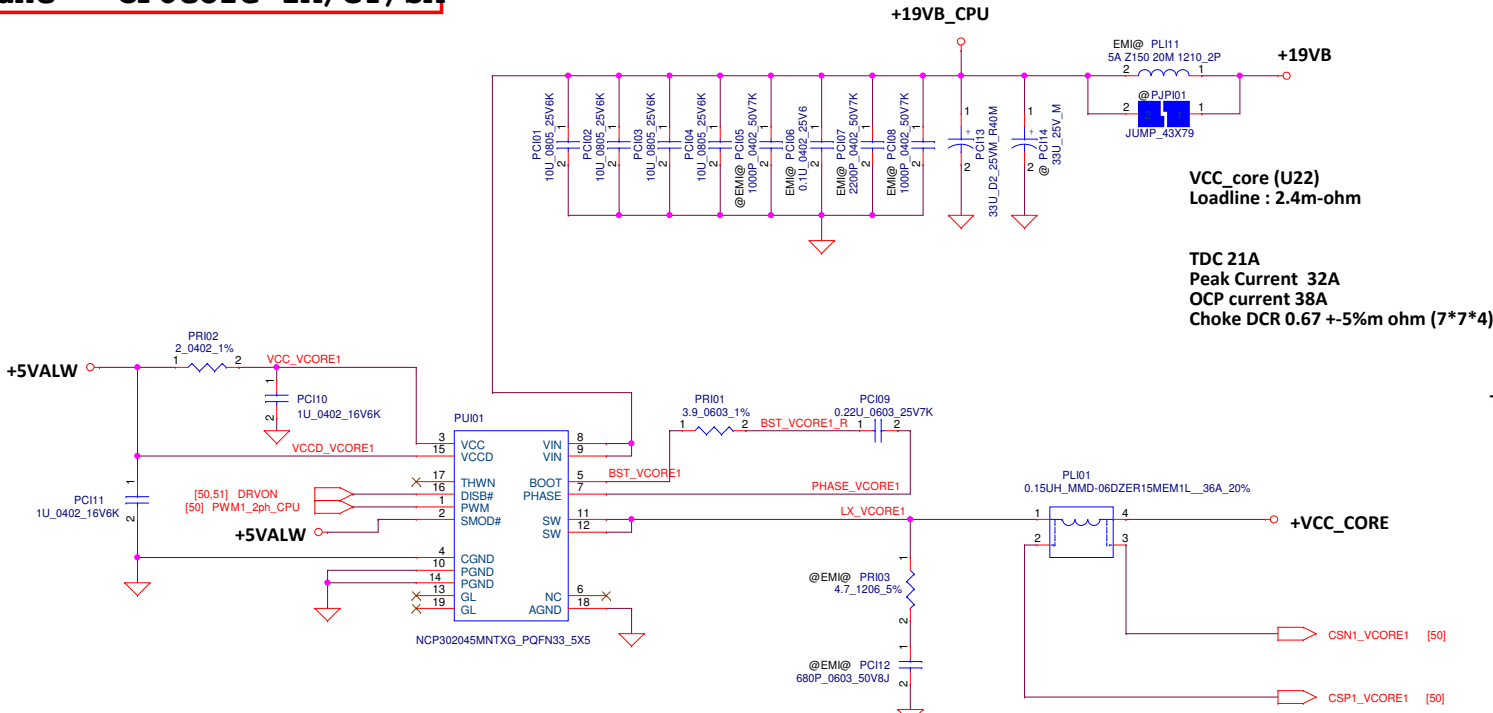
Main Func = CPU



DELL CONFIDENTIAL/PROPRIETARY

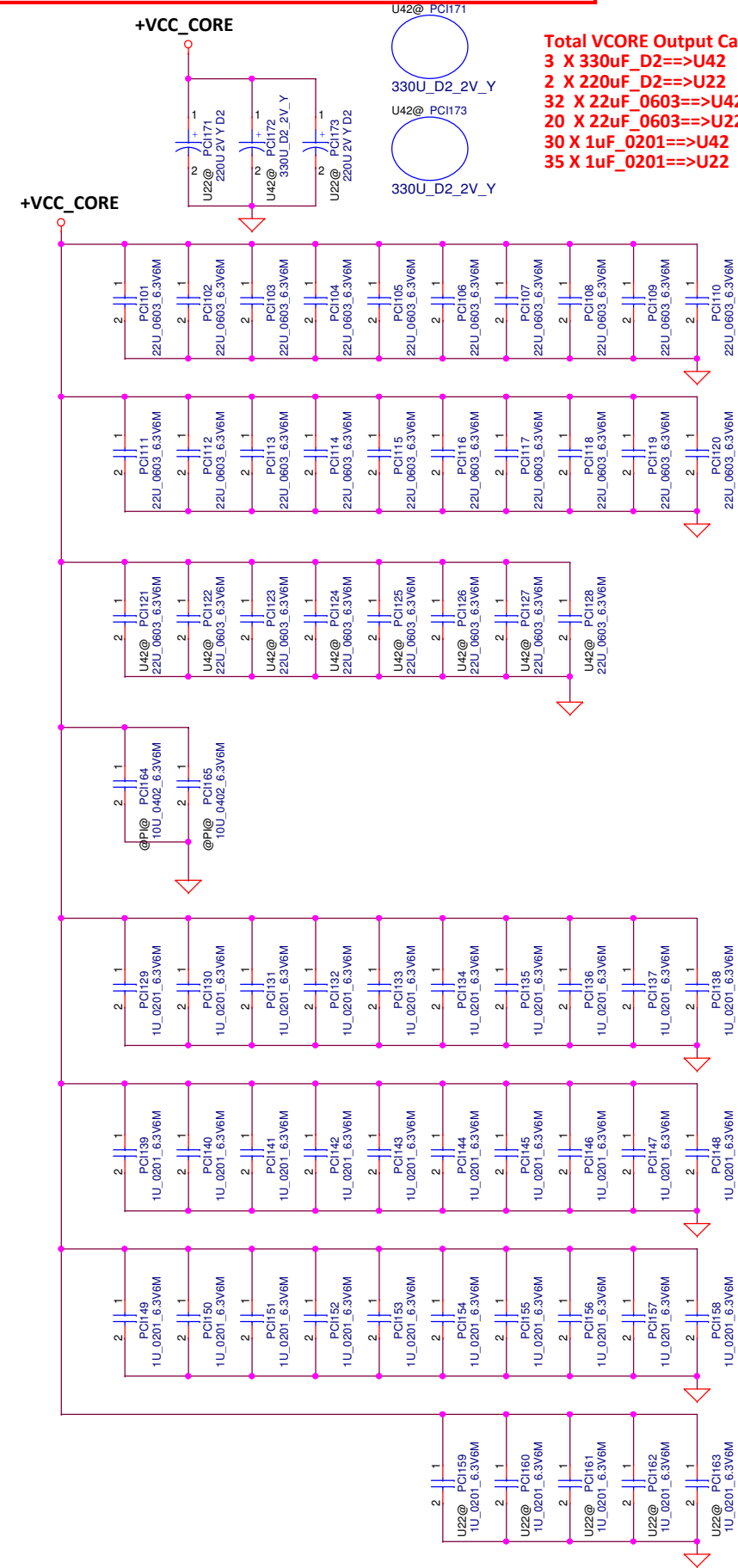
Security Classification		Compal Secret Data		Compal Electronics, Inc.		
Issued Date	2016/12/01	Deciphered Date	2017/12/01	Title PWR CPU		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF P&E 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	Document Number	Rev X00
				Date:	Wednesday, July 26, 2017	Sheet 50 of 53

Main Func = CPUcore IA/GT/SA

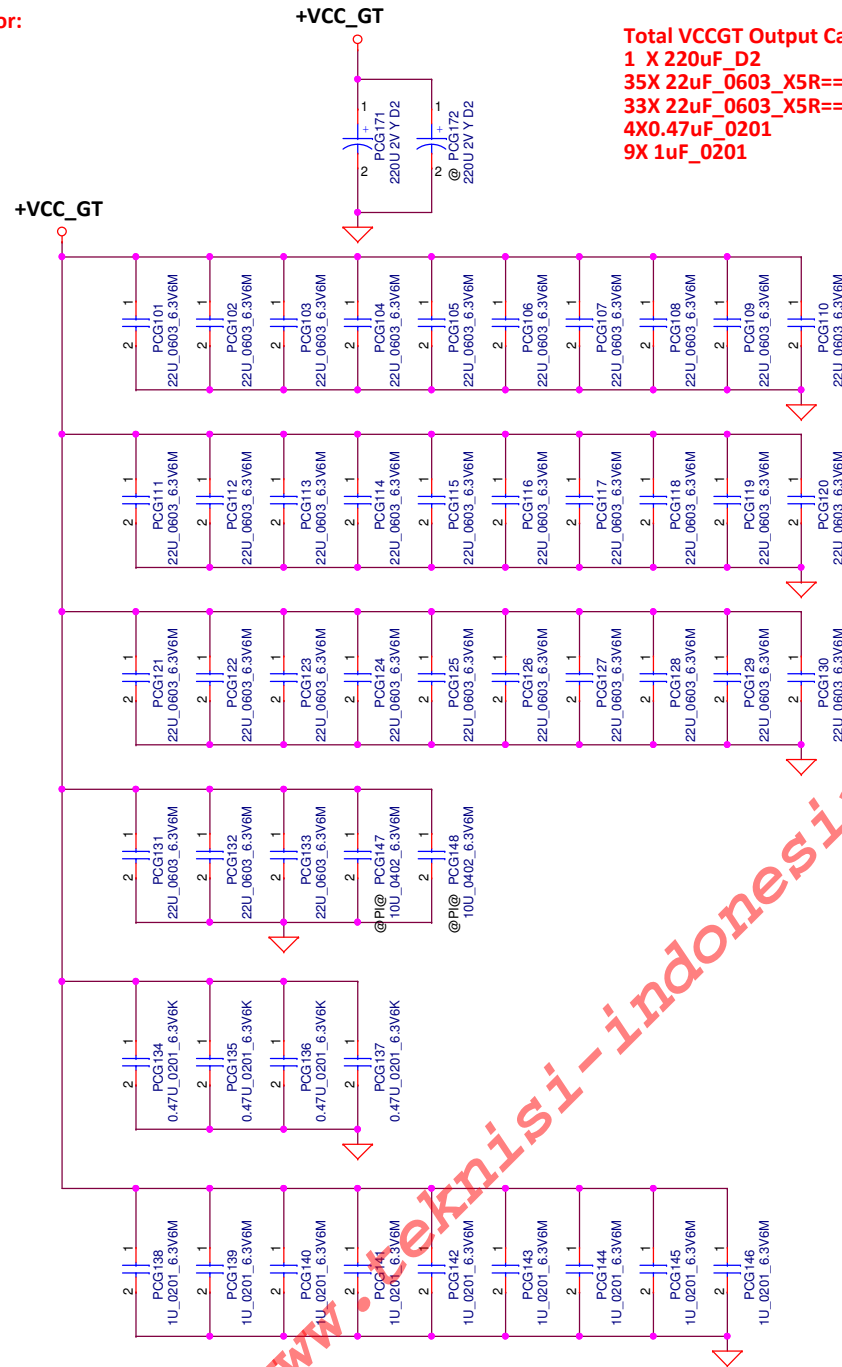


Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2015/12/07	Deciphered Date	2017/01/31	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				PWR CPUcore IA/GT/SA
Size	Document Number	Rev	X00	
Date:	Wednesday, July 26, 2017	Sheet	51	of 53

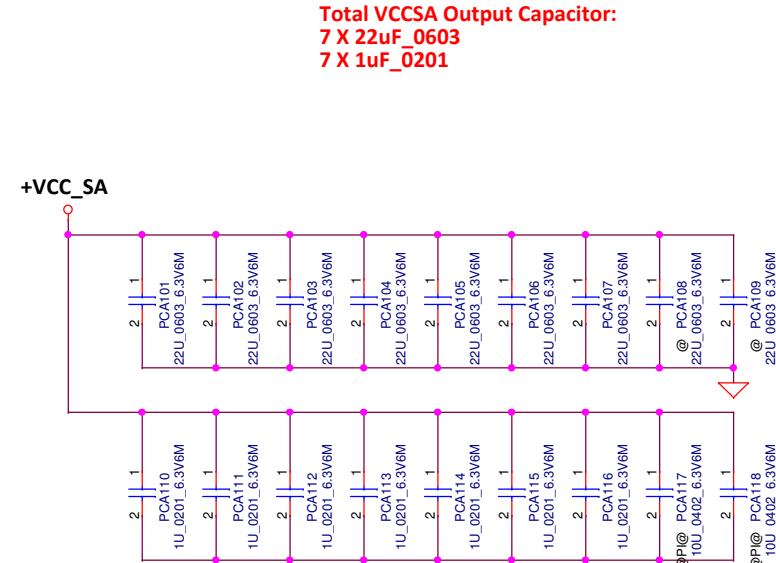
Main Func = CPU/ VGA / SA MLCC



Total VCORE Output Capacitor:
3 X 330uF_D2==>U42
2 X 220uF_D2==>U22
32 X 22uF_0603==>U22
20 X 22uF_0603==>U22
30 X 1uF_0201==>U42
35 X 1uF_0201==>U22

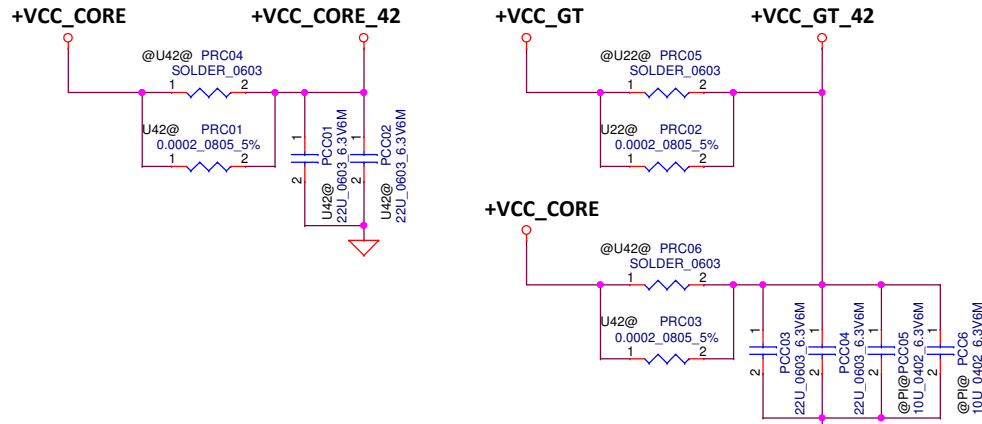


Total VCCGT Output Capacitor:
1 X 220uF_D2
35X 22uF_0603_X5R==>U22
33X 22uF_0603_X5R==>U42
4X0.47uF_0201
9X 1uF_0201



Total VCCSA Output Capacitor:
1 X 220uF_D2
7 X 22uF_0603
7 X 1uF_0201

VCC_CORE_42,VCC_GT_42 for KBL-R 4+2
VCC_GT_42 colay GT and CORE



Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2016/12/01	Deciphered Date	2017/12/01	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
			Date:	Wednesday, July 26, 2017
			Sheet	52 of 53
			Rev	X00

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	P51	PWR	20160321	COMPAL			0.1 (X00)
2							
3							
4							
5							
6							
7							
8							