

MODEL NAME : *BCV00/BCV10*

PCB NO : *LA-D991P*

BOM P/N :

Dell/Compal Confidential

Schematic Document

SKYLAKE-H

2016-06-25

Rev: 1.0 (A00)

@ : Nopop Component

CONN@ : Connector Component

R1@ / R3@ : R1/R3 CPN for CPU, GPU, PCB

EMC@ : Pop of EMI parts

M2G@ : Micron GDDR5 2G for GPU

H2G@ : Hynix GDDR5 2G for GPU

S4G@ : Samsung GDDR5 4G for GPU

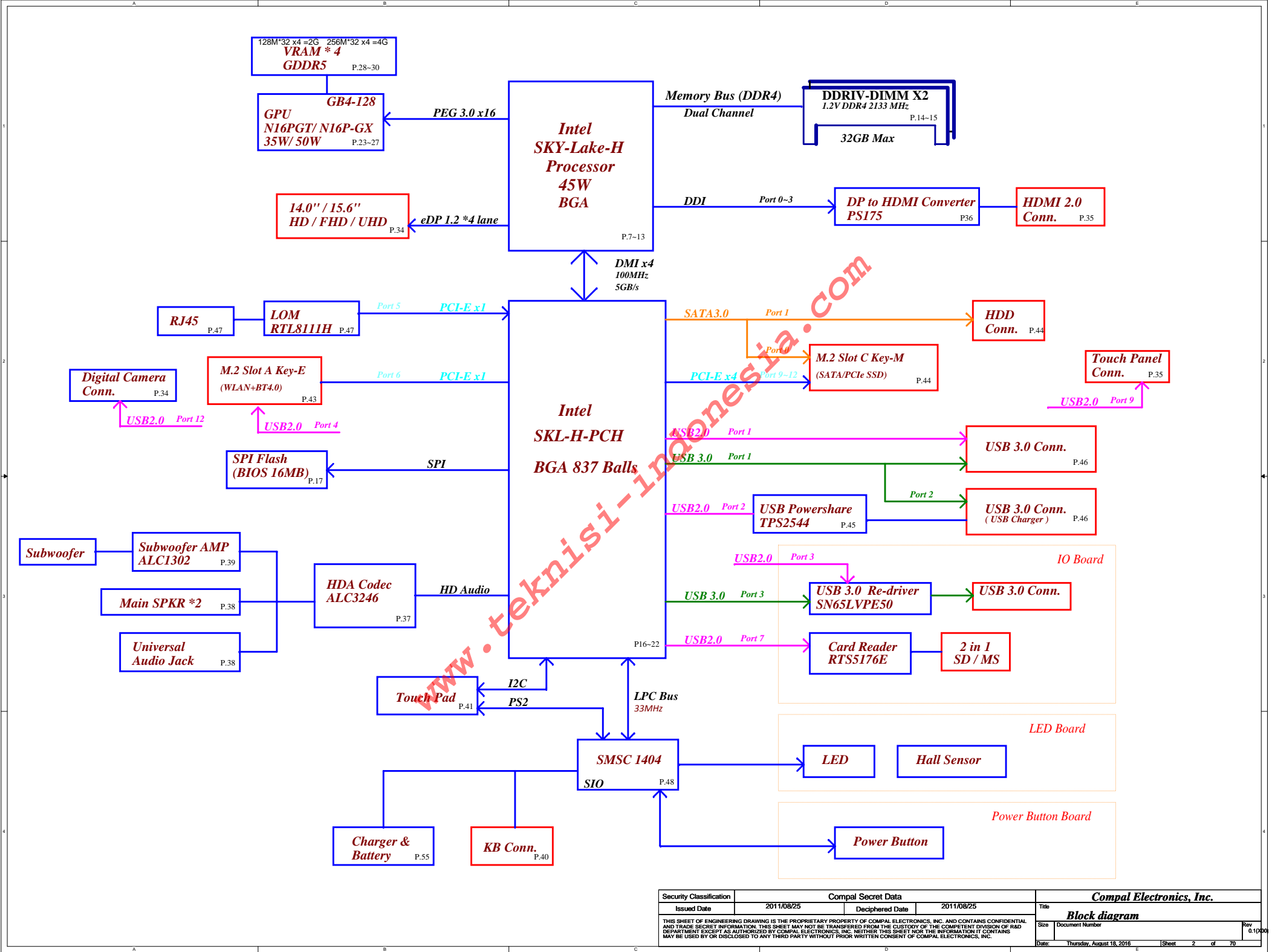
M4G@ : Micron GDDR5 4G for GPU

BreakDown@ : For measure power consumption

14GT@ : 14" GPU N16P-GT

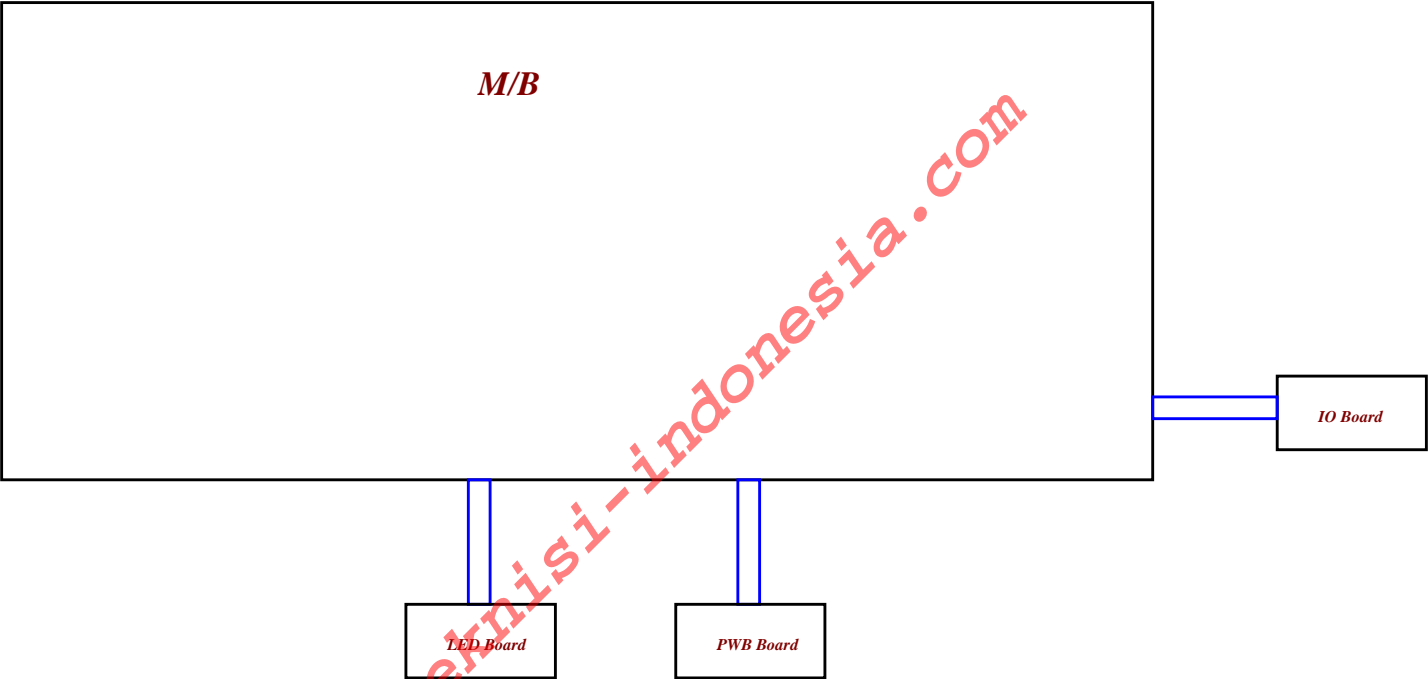
15GX@ : 15" GPU N16P-GX

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/08/25	Deciphered Date	2011/08/25	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
Date: Thursday, August 18, 2016				Rev: 0.1000
Sheet 1 of 70				



Compal Confidential

Project Code :
File Name :



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2011/08/25	Deciphered Date	2012/07/25	Title	DB 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	Rev
				Date	Thursday, August 18, 2016	Sheet 3 of 70

Board ID	Resistor
X00	10K
X01	13.7K
X02	17.8K
X03	
A00	22.1K

USB3	DESTINATION
1	USB Conn 1
2	USB Conn 2
3	USB Conn 3 (IO Board)
4	None
5	None
6	None

USB 2.0	DESTINATION
1	USB Conn 1
2	USB Conn 2
3	USB Conn 3 (IO Board)
4	NGFF1- WLAN
5	None
6	None
7	Card Reader
8	None
9	Touch screen
10	None
11	None
12	CAMERA

DDI	DESTINATION
1	Converter
2	Converter
3	Converter

PCI EXPRESS	DESTINATION	USB3	DESTINATION
Lane 1	None	7	None
Lane 2	None	8	None
Lane 3	None	9	None
Lane 4	None	10	None
Lane 5	LAN		
Lane 6	WLAN		
Lane 7	None		
Lane 8	None	SATA	DESTINATION
Lane 9	SSD	0A	SSD
Lane 10	SSD	1A	SSD
Lane 11	SSD	N/A	N/A
Lane 12	SSD	N/A	N/A
Lane 13	None	0B	None
Lane 14	None	1B	HDD
Lane 15	None	2	None
Lane 16	None	3	None

LPC	DESTINATION
LPC0	MEC1404
LPC1	DEBUG PORT

CLKOUT_PCIE	DESTINATION	CLKOUT_PCIE	DESTINATION
0	None	10	None
1	None	11	None
2	LAN	12	GPU
3	NGFF-1 WLAN	13	None
4	None	14	None
5	None	15	None
6	NGFF-2 SSD		
7	None		
8	None		
9	None		

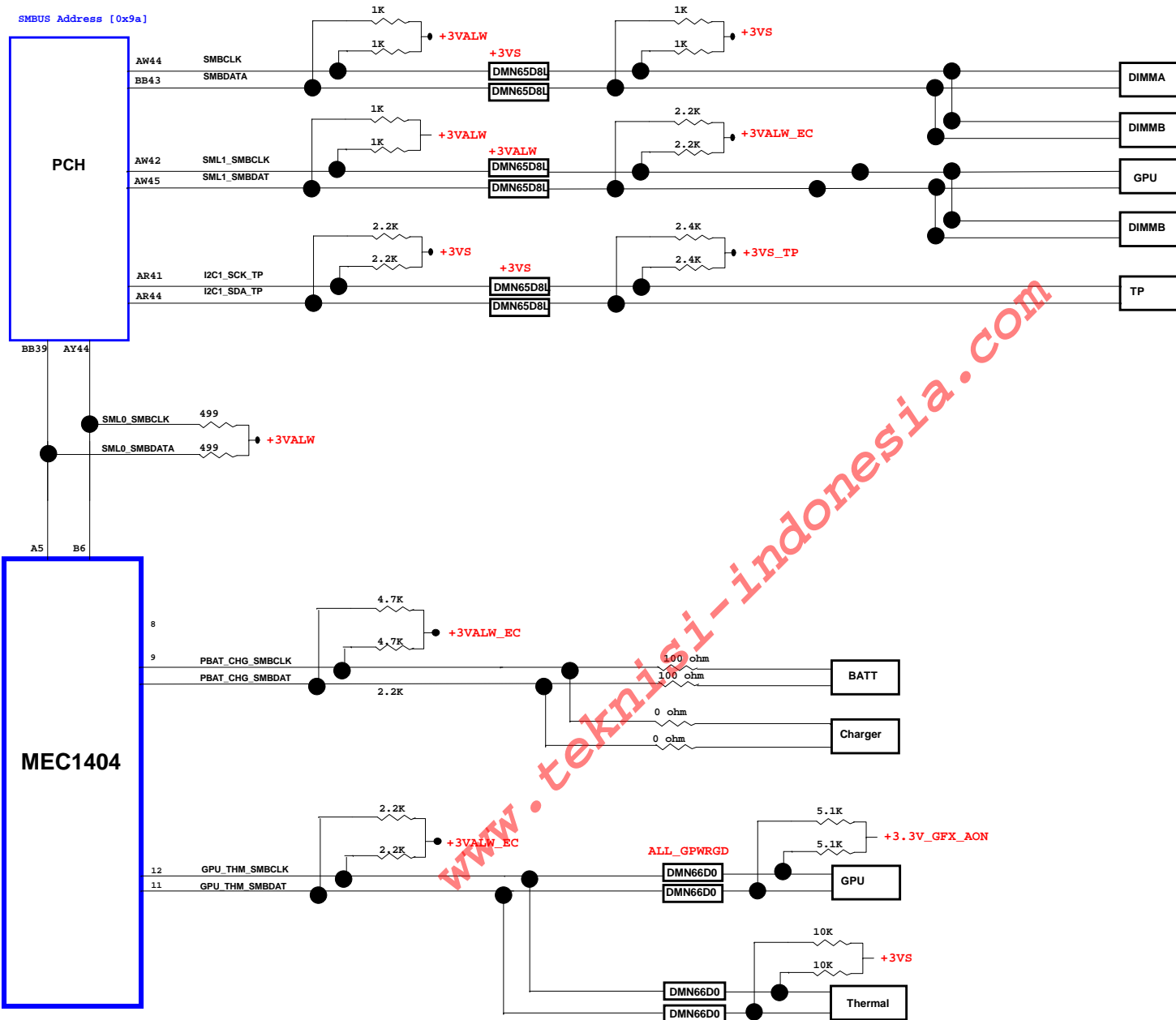
Symbol Note :

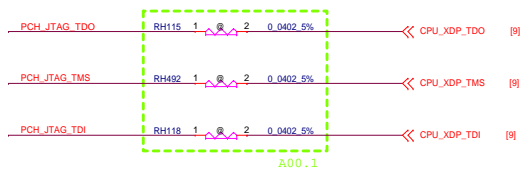
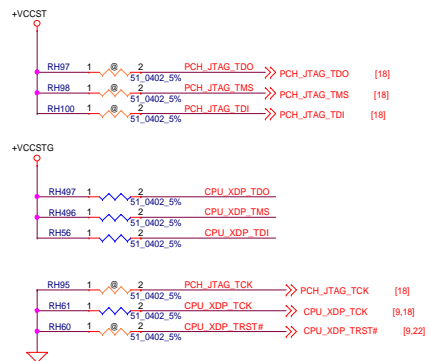


: means Digital Ground



: means Analog Ground

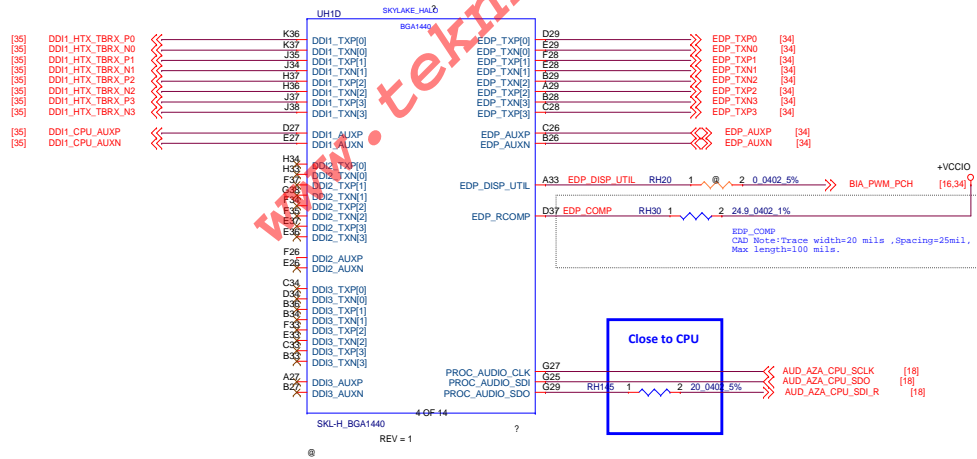
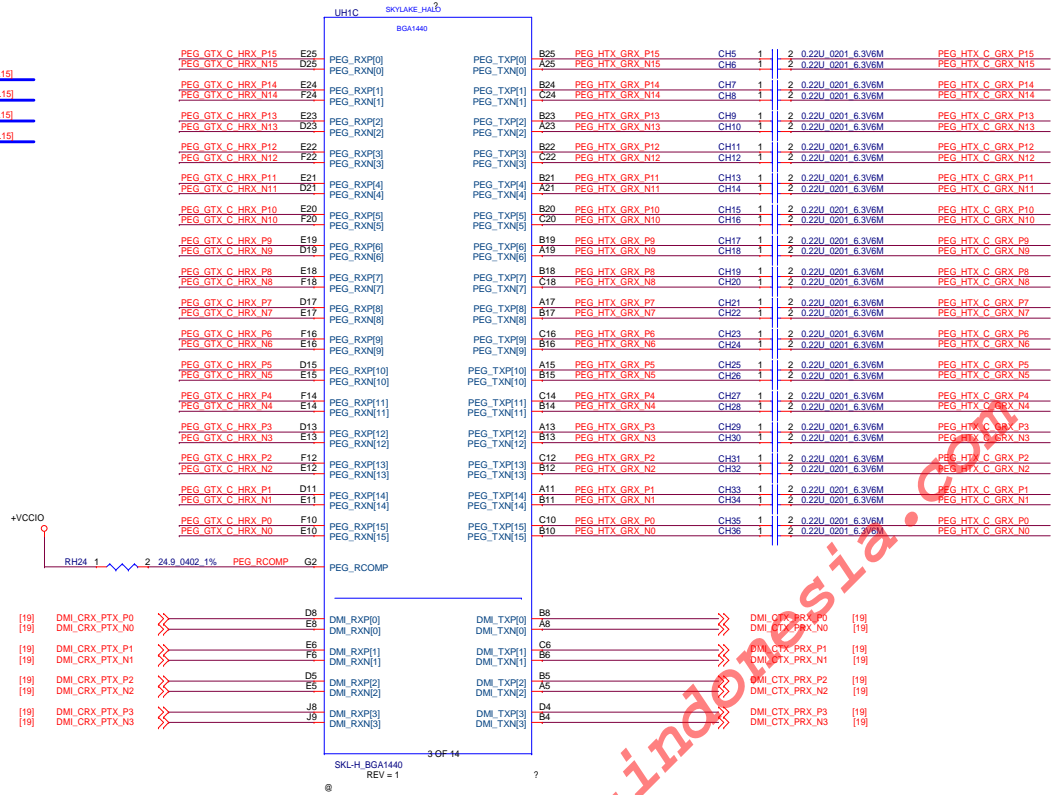




www.teknisi-indonesia.com

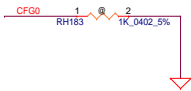
Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	Title	XDP CONN
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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
				Date:	Thursday, August 18, 2016
				Sheet	6 of 70
				Rev	0.1/200

[23] PEG_HTX_C_GRX_P0..15] << PEG_HTX_C_GRX_P0..15]
[23] PEG_HTX_C_GRX_N0..15] << PEG_HTX_C_GRX_N0..15]
[23] PEG_GTX_C_HRX_P0..15] >> PEG_GTX_C_HRX_P0..15]
[23] PEG_GTX_C_HRX_N0..15] >> PEG_GTX_C_HRX_N0..15]

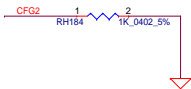


CFG Straps for Processor

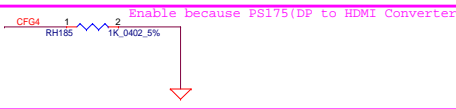
Stall reset sequence after CPU PLL lock until de-asserted	
CFG0	<p>* 1 = (Default) Normal Operation; No stall.</p> <p>0 = Stall.</p>



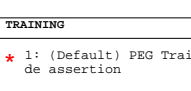
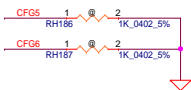
PCI EXPRESS STATIC LANE REVERSAL FOR ALL PEG PORTS	
CFG2	<p>1: Normal Operation; Lane # definition matches socket pin map definition</p> <p>* 0: Lane Reversed</p>



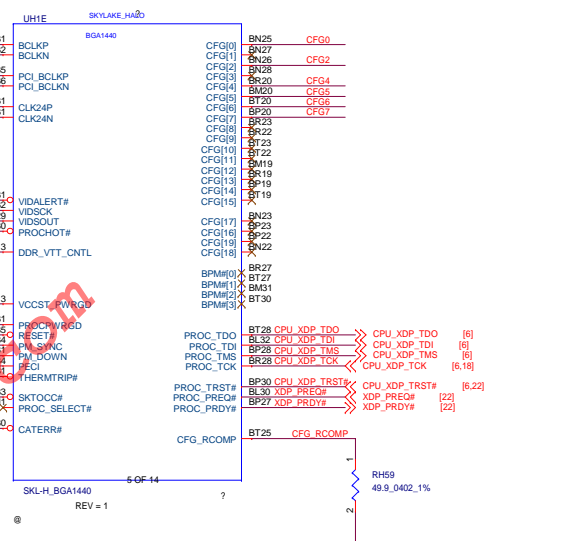
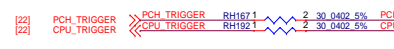
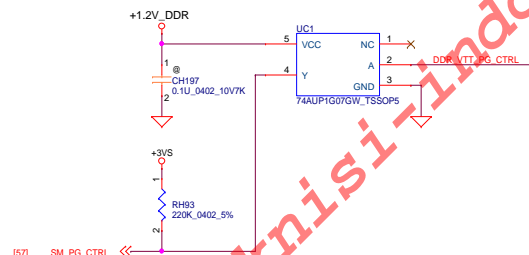
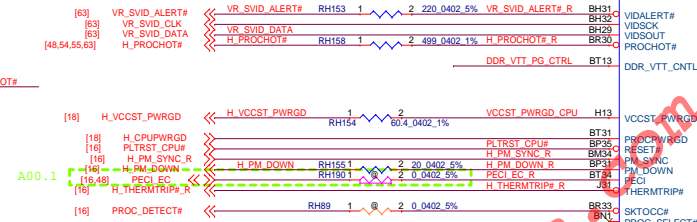
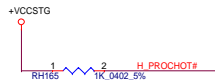
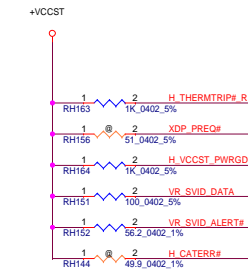
Display Port Presence Strap	
CFG4	<p>1 : Disabled; No Physical Display Port attached to Embedded Display Port</p> <p>* 0 : Enabled; An external Display Port device is connected to the Embedded Display Port</p>

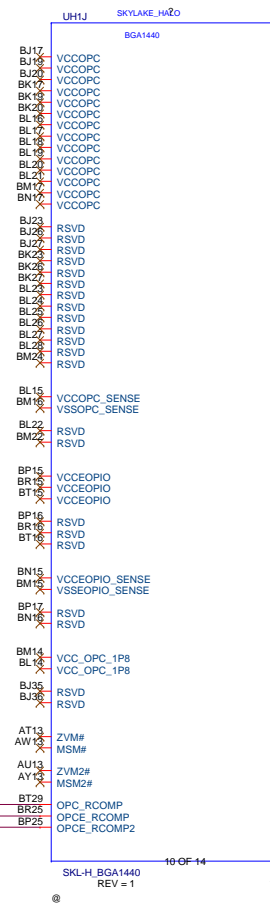
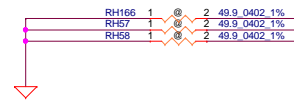
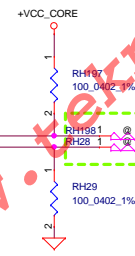
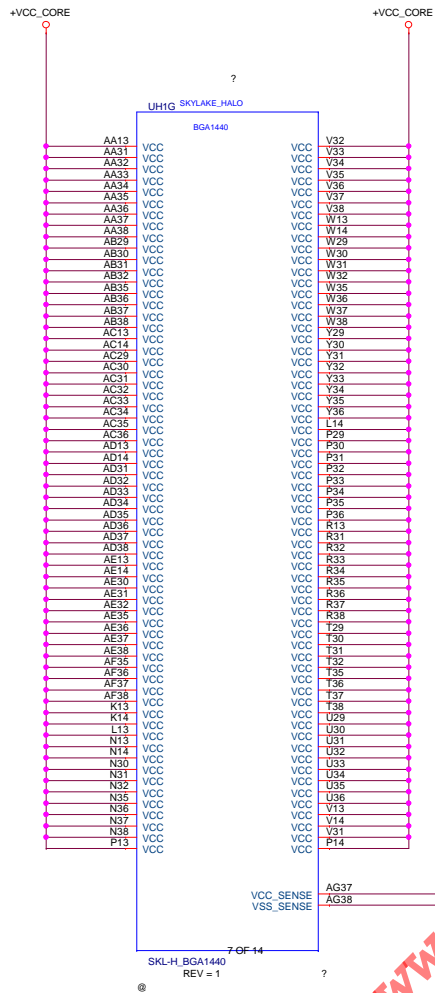


PCIe Port Bifurcation Straps	
CFG[6:5]	<p>* 11: (Default) x16 - Device 1 functions 1 and 2 disabled</p> <p>10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled</p> <p>01: Reserved - (Device 1 function 1 disabled ; function 2 enabled)</p> <p>00: x8,x4,x4 - Device 1 functions 1 and 2 enabled</p>



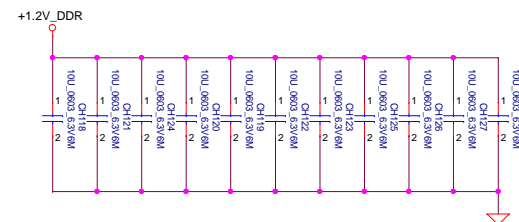
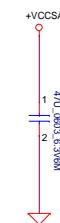
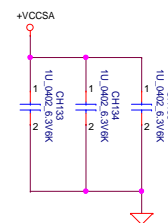
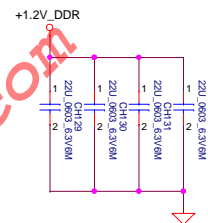
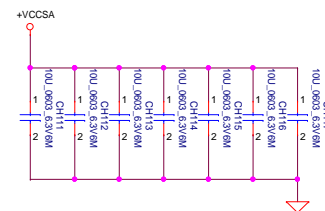
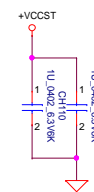
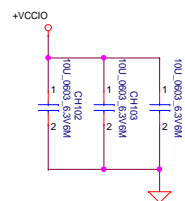
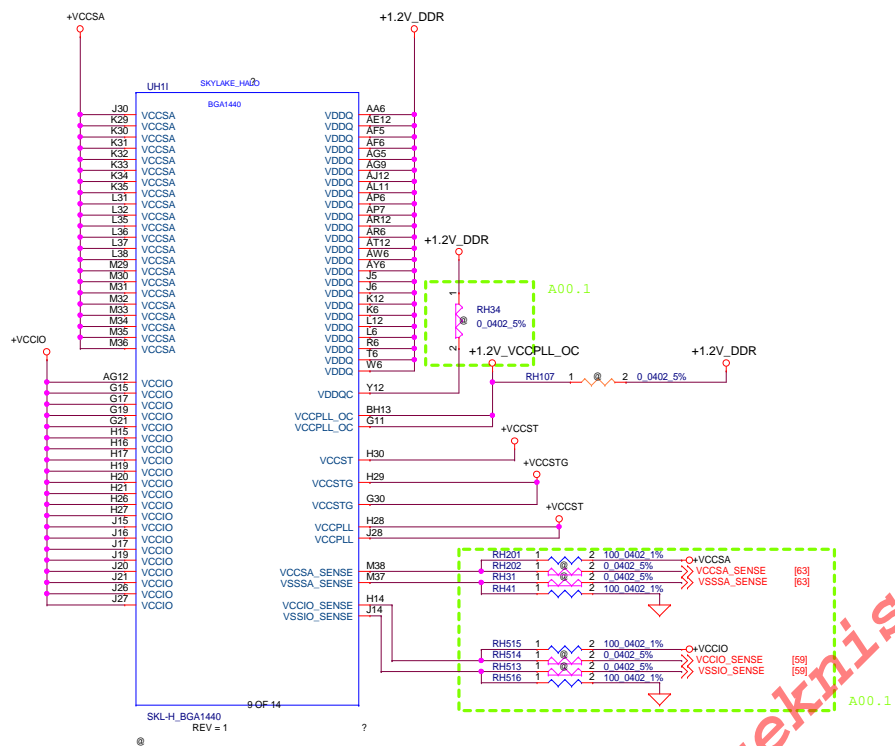
PEG DEFER TRAINING	
CFG7	<p>* 1: (Default) PEG Train immediately following xxRESETB de assertion</p> <p>0: PEG Wait for BIOS for training</p>



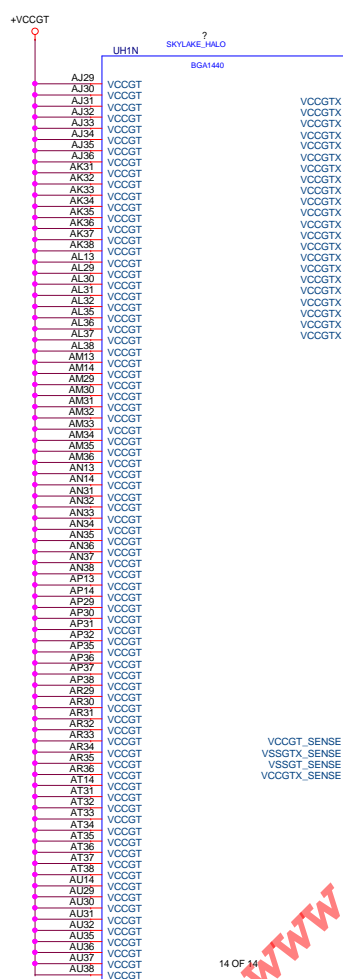
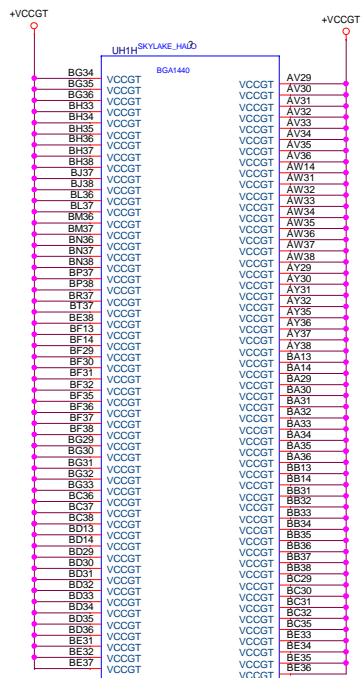


www.kernisi-indonesia.com

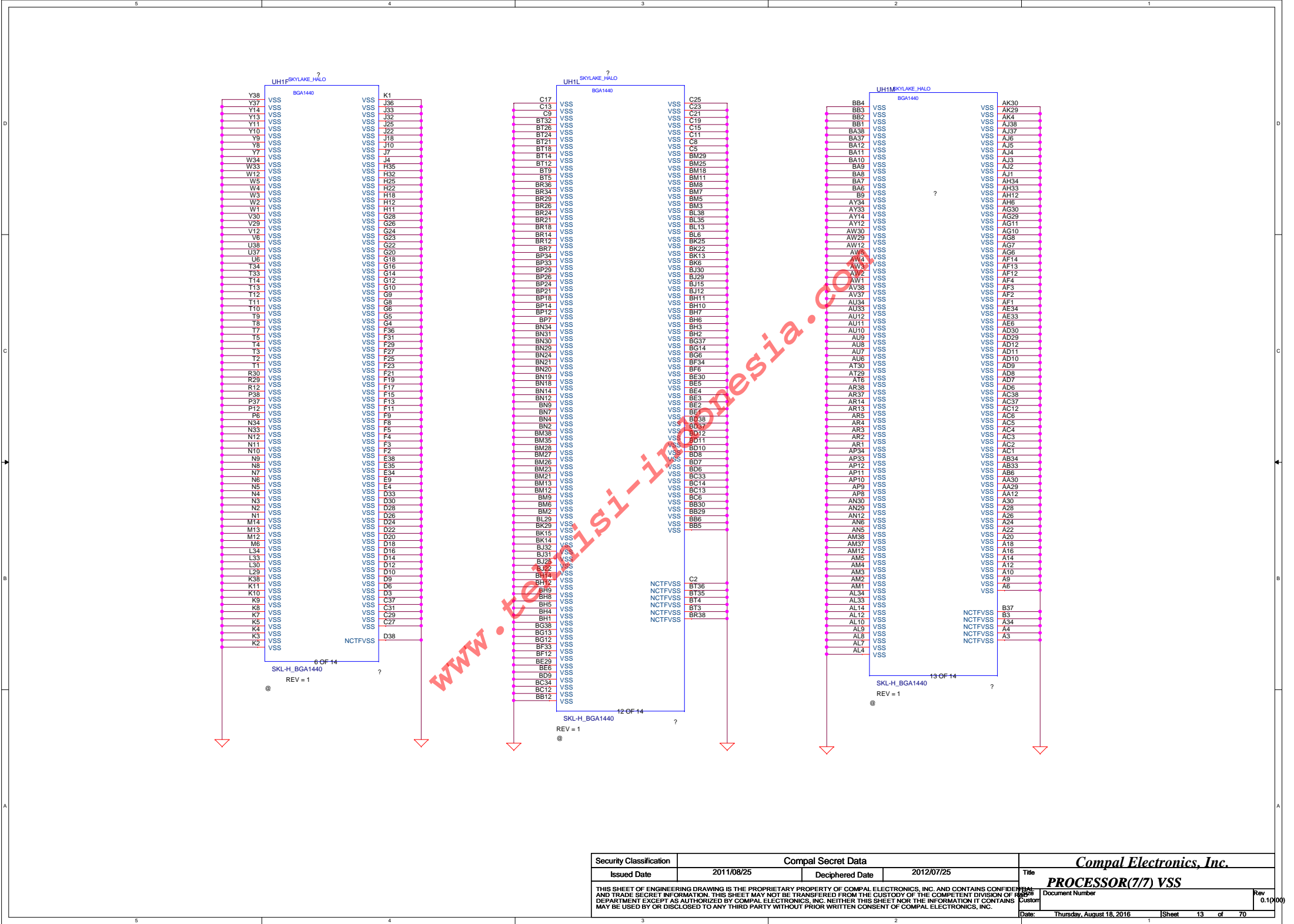
Security Classification	Compal Secret Data			Title	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	PROCESSOR(5/7) PWR,BYPASS	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
Date: Thursday, August 18, 2016				Sheet	0.10/000
				10	70



Security Classification	Compal Secret Data		Title	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	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.				PROCESSOR(6/7) PWR
Size	Custom	Document Number	Rev	0.10400
Date	Thursday, August 18, 2016	Sheet	11 of 70	

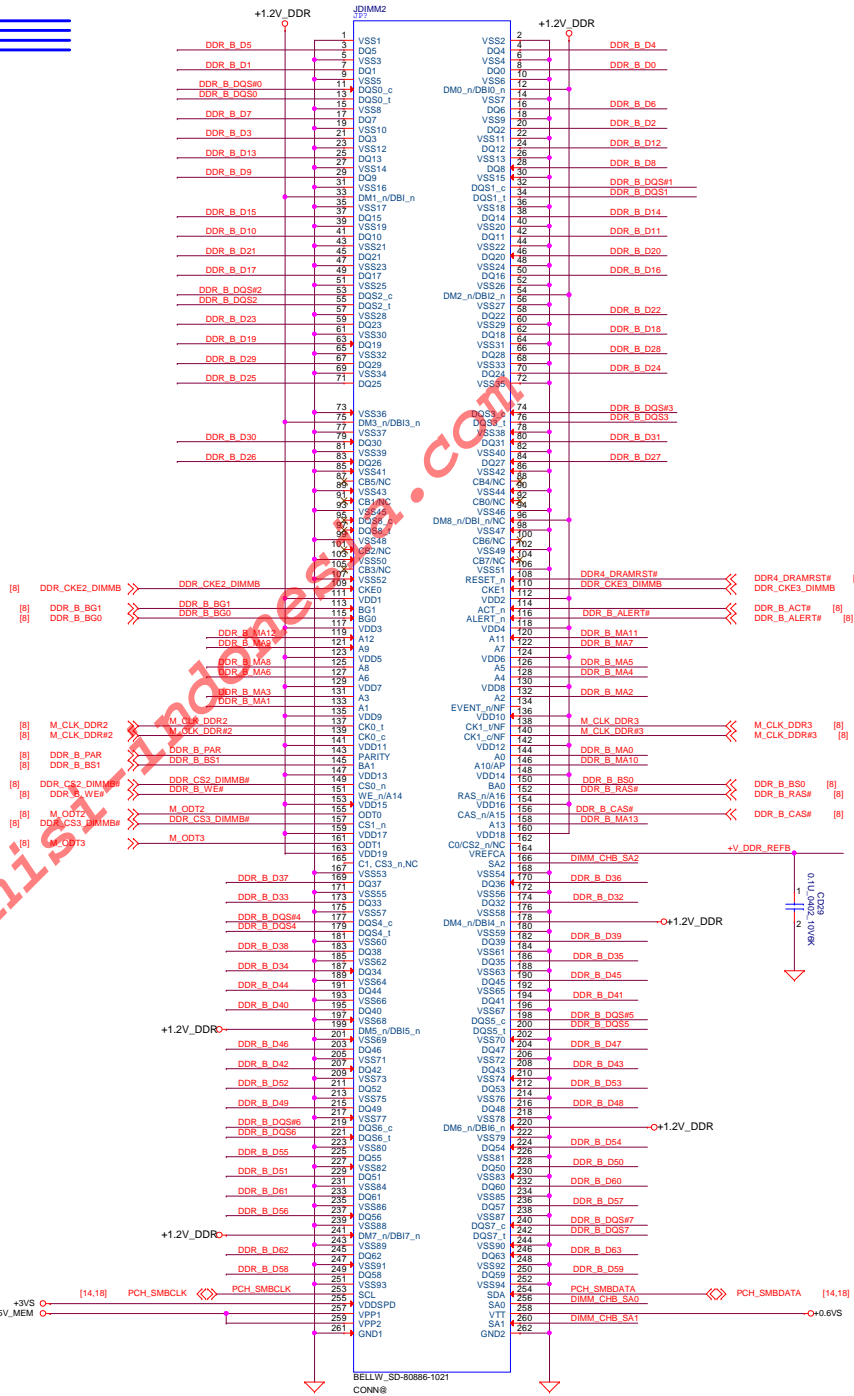
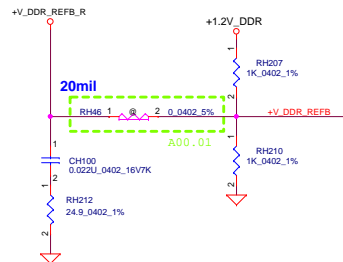
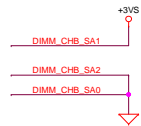


Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				PROCESSOR(2/7) PM,XDP,CLK
Date: Thursday, August 18, 2016				Rev 0.10
Sheet 12 of 70				



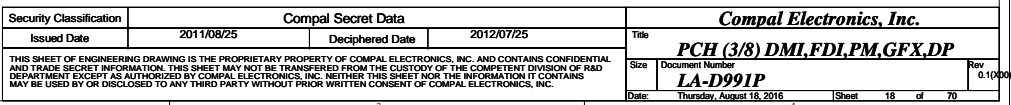
The circuit diagram shows a 5V regulator with a 100 ohm resistor in series with the input. The input is connected to a +5.0V source. The output is connected to a load. There are four 10uF capacitors: one at the input, one at the output, and two in parallel between the input and output. The capacitors are labeled 10U 0603 6.3V6M.

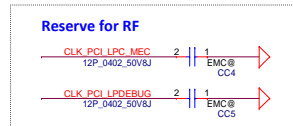
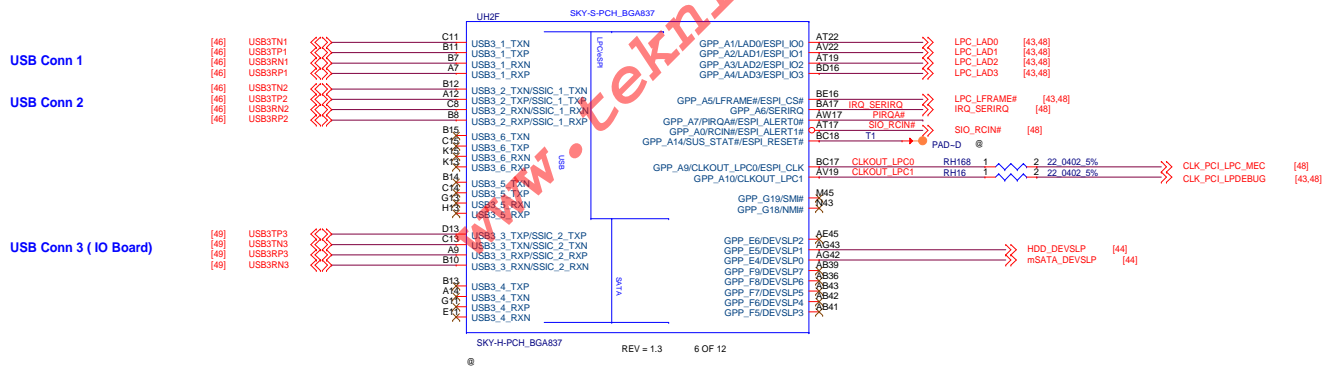
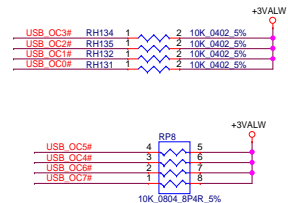
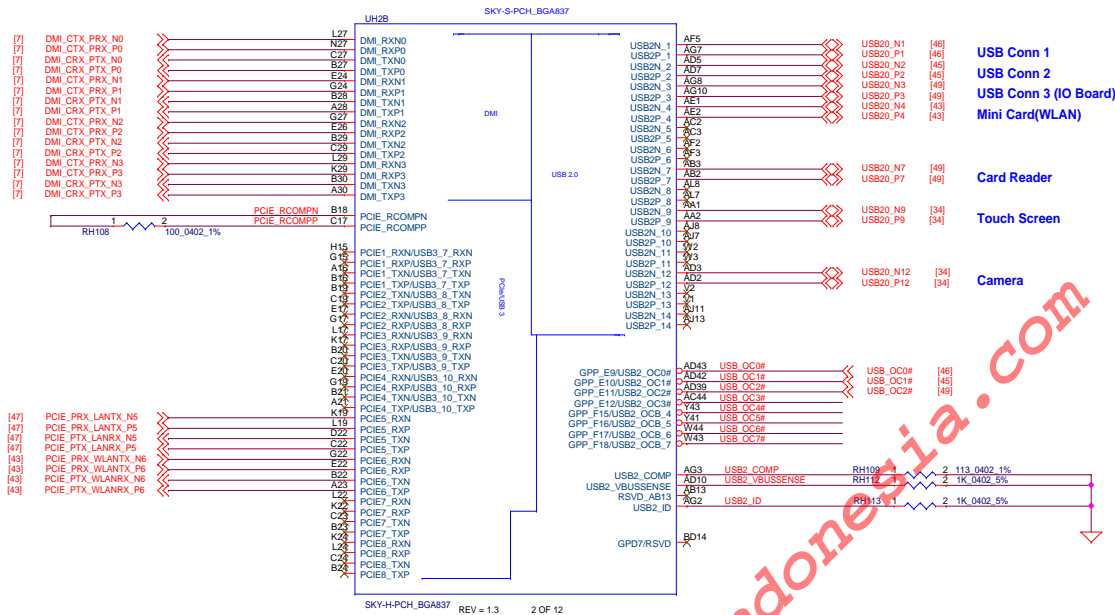
The schematic diagram illustrates a 16-channel DDR3 memory module. It is organized into two symmetrical 8-channel banks. The top bank is powered by a +1.2V DDR supply. Each channel in this bank consists of a 1Gbit DDR3 SDRAM chip (labeled C1201 through C1208) and a 100 ohm termination resistor (labeled C1209 through C1216). The bottom bank is also powered by a +1.2V DDR supply. Each channel in this bank consists of a 1Gbit DDR3 SDRAM chip (labeled C1217 through C1224) and a 100 ohm termination resistor (labeled C1225 through C1232). A 330 ohm resistor (labeled C1233) is connected to the bottom bank's supply line. The diagram shows the electrical connections between the supply rails, the memory chips, and the termination resistors.



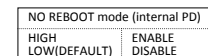
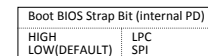
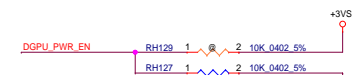
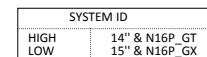
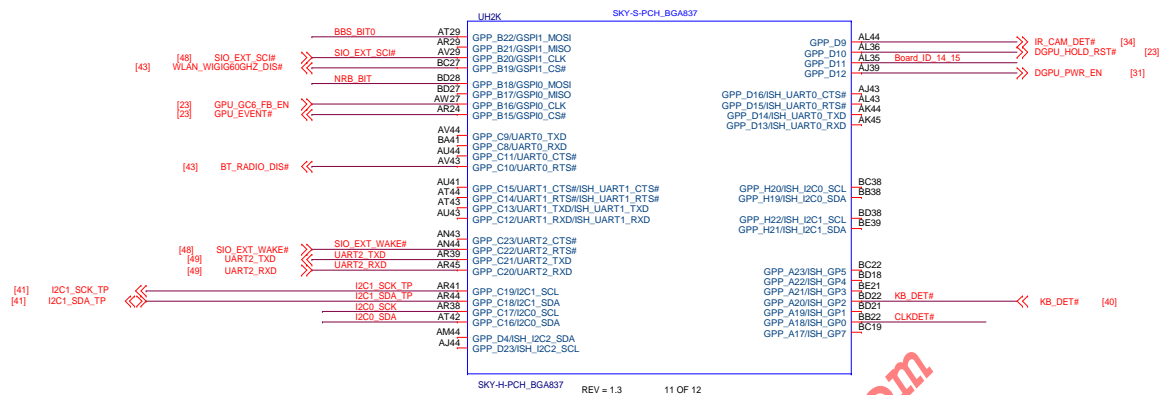
All VREF traces should
have 10 mil trace width

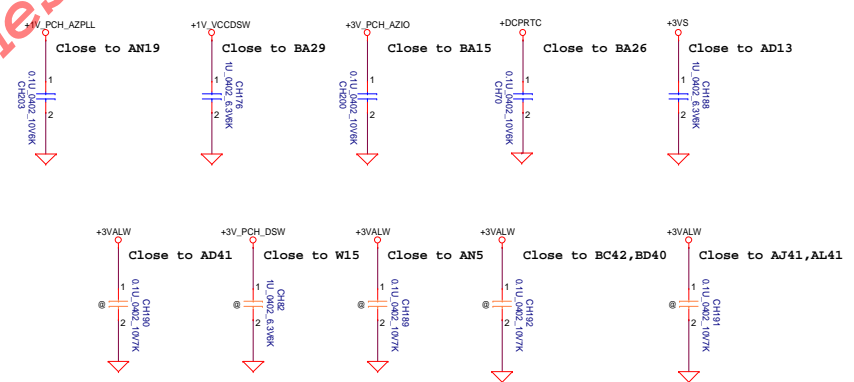
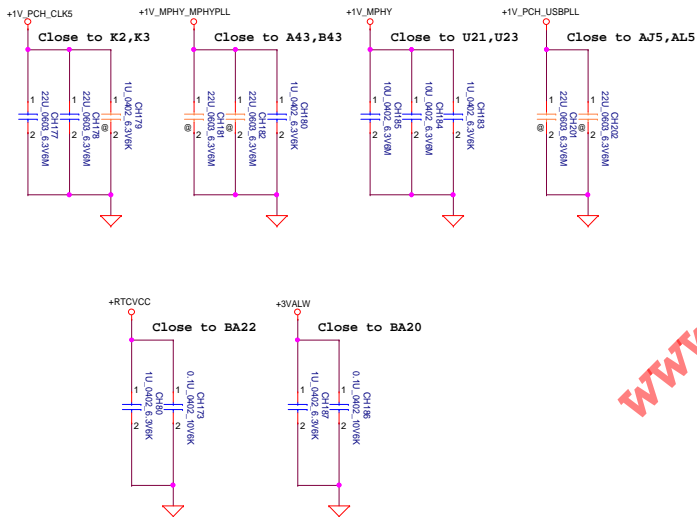
Security Classification	Compal Secret Data		Title	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	DDRIII DIMMB
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. THIS INFORMATION IS NOT TO BE TRANSMITTED OUTSIDE THE CUSTODY OF THE COMPETENT DIVISION OF RAJESWARI 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 0.100
			LA-D991P	
			Date: Thursday, August 18, 2016	Sheet 15 of 70



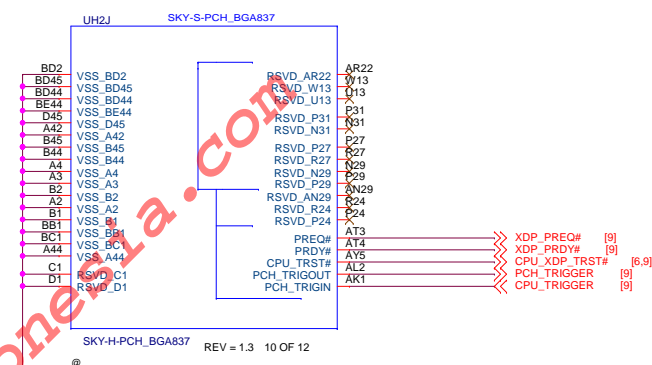
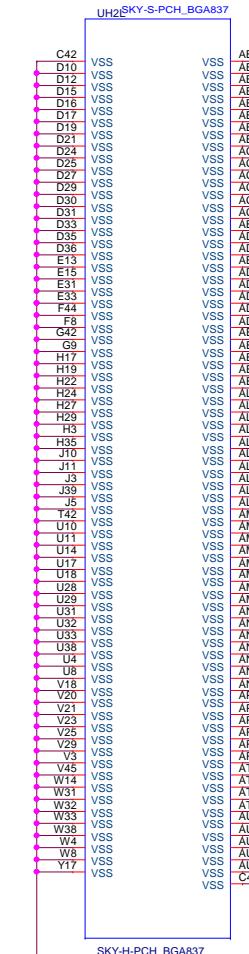
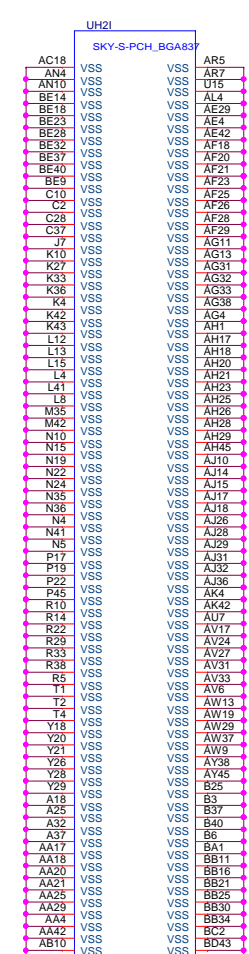


Security Classification		Compal Secret Data		Compal Electronics, Inc.			
Issued Date		2011/08/25		Deciphered Date			
		2012/07/25		Title			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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.				PCH (4/8) PCI, USB			
				Size		Document Number	
				LA-D991P		Rev	
				0.1/000			
Date:				Thursday, August 18, 2016			
				Sheet 19 of 70			

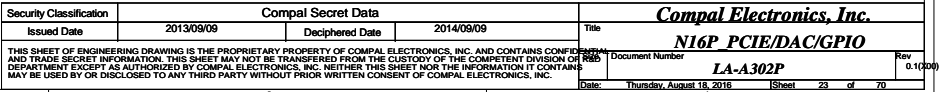


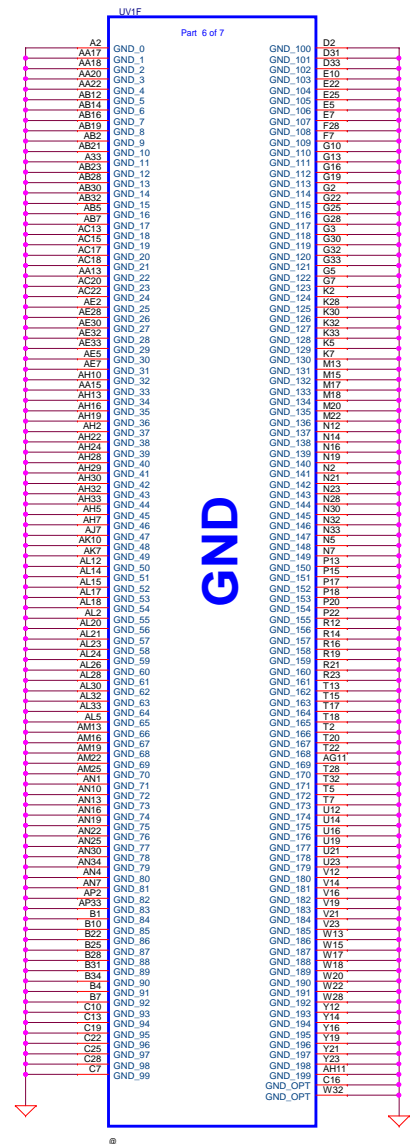
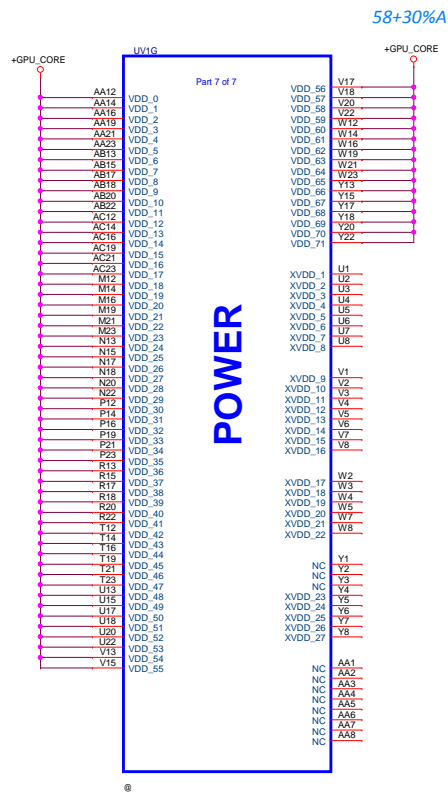


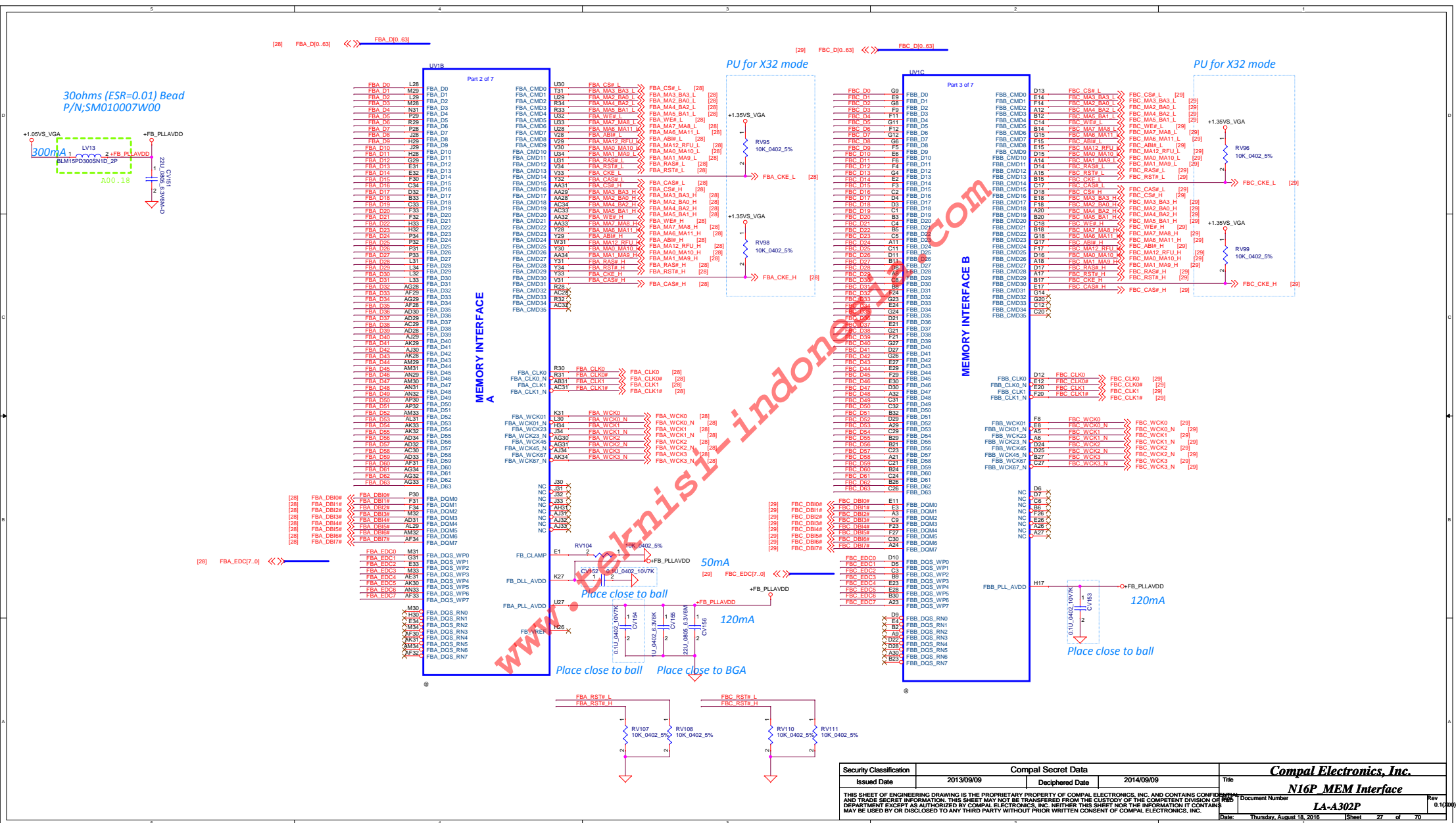
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				PCH (6/8) PWR	
				Size	Document Number
				LA-D991P	
				Date:	Thursday, August 18, 2016
				Sheet	21 of 70
				Rev	0.1(000)



www.teknisi-indonesia.com

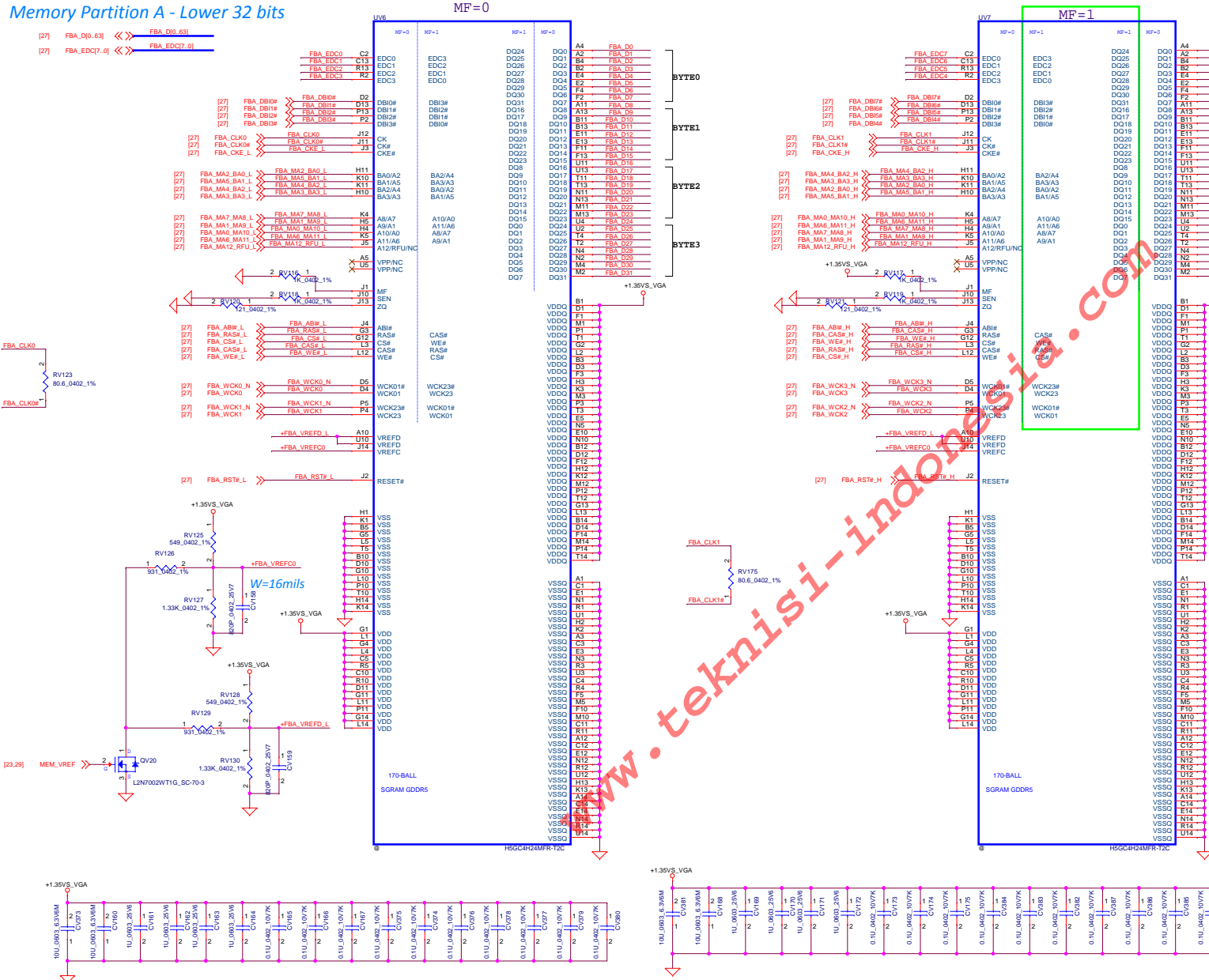






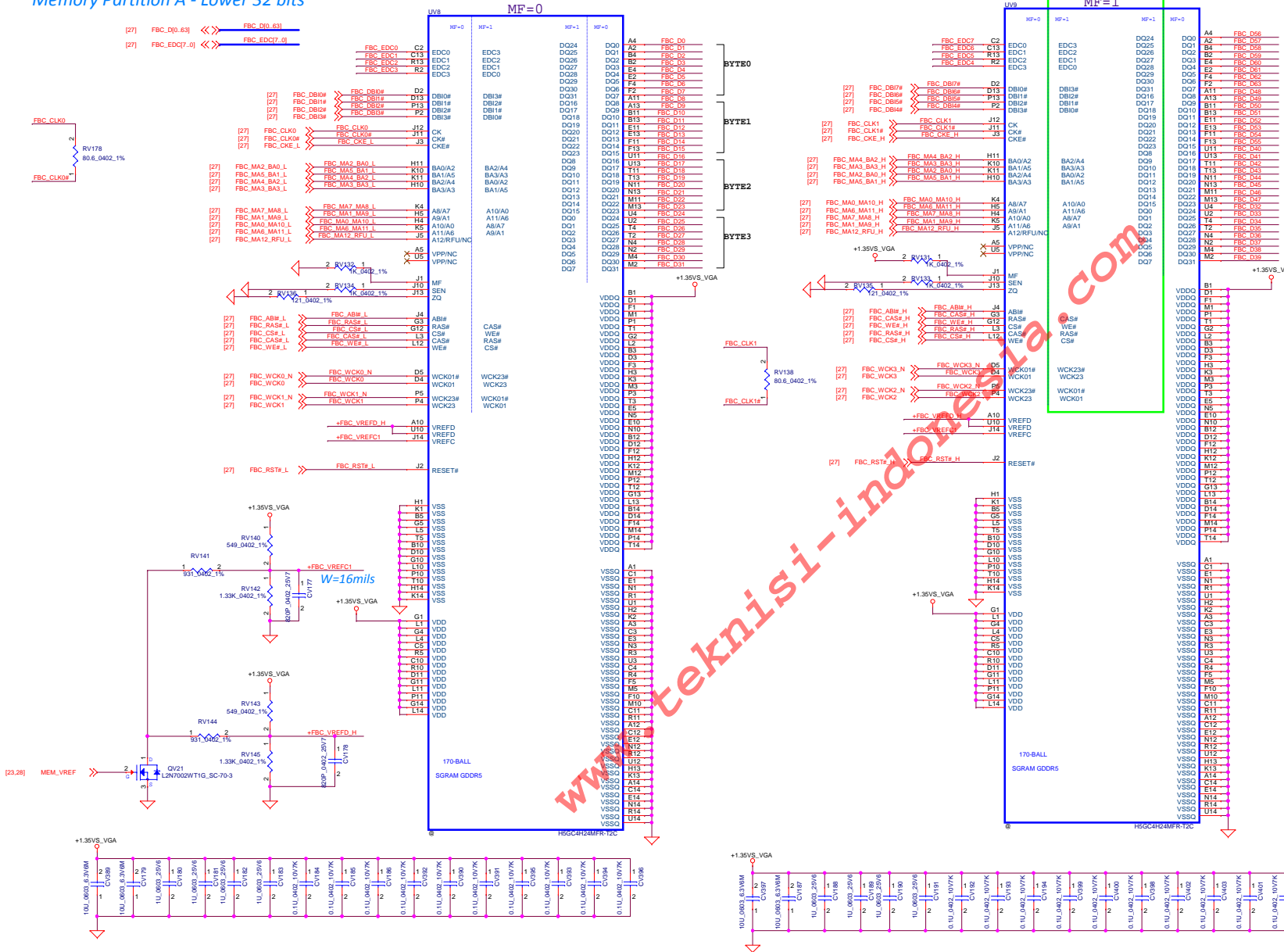
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2013/09/09	Deciphered Date	2014/09/09	Title	N16P MEM Interface	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OR 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-A302P	Rev
						01/000
				Date:	Thursday, August 18, 2016	Sheet 27 of 70

Memory Partition A - Lower 32 bits

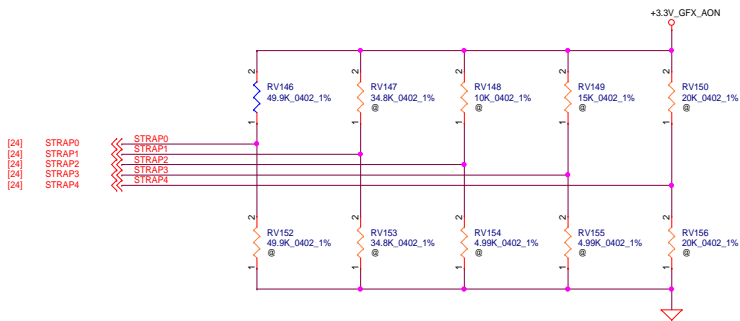
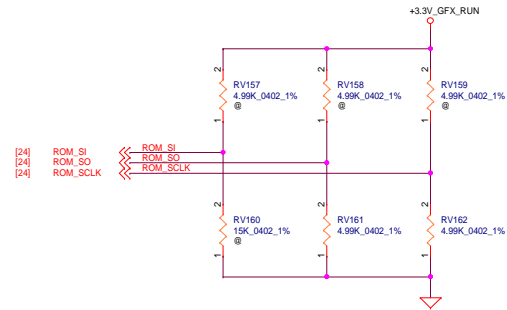


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2013/09/09	Deciphered Date	2014/09/09	Title	N16P GDDR5 A
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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-A302P	
				Date	Thursday, August 18, 2016
				Sheet	28 of 70

Memory Partition A - Lower 32 bits



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2013/09/09	Deciphered Date	2014/09/09	Title	N16P GDDR5 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.					Rev 0.1000
Size Document Number					LA-A302P
Date Thursday, August 18, 2016 10:58:29					29 of 70



4Gb G5	Vendor PN	Die Revision	Strap
Hynix	H5GC4H24AJR- R0C	A-die	0x6
Micron	EDW4032BABG- 70-F	A-die	0x4
8Gb G5	Vendor PN	Die Revision	Strap
Samsung	K4G80325FB- HC28	B-die	0x8
Micron	MT51J256M32HF- 70:A	A-die	0x9

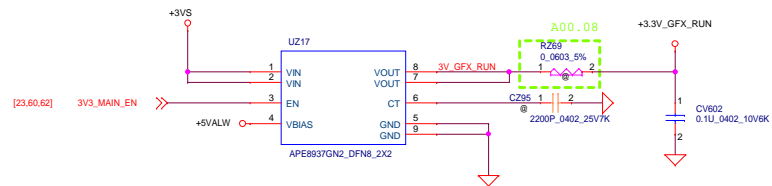
Table 15-2. Resistance Mapping to Hex Values

Resistor Values	Pull-Up to 3V3_MAIN	Pull-Down to GND
4.99 kΩ	1000	0000
10.0 kΩ	1001	0001
15.0 kΩ	1010	0010
20.0 kΩ	1011	0011
24.9 kΩ	1100	0100
30.1 kΩ	1101	0101
34.8 kΩ	1110	0110
45.3 kΩ	1111	0111

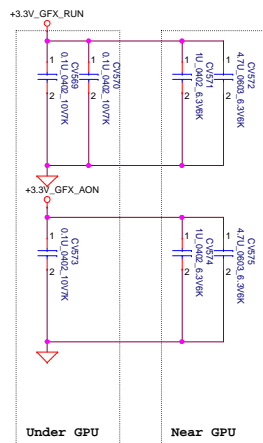
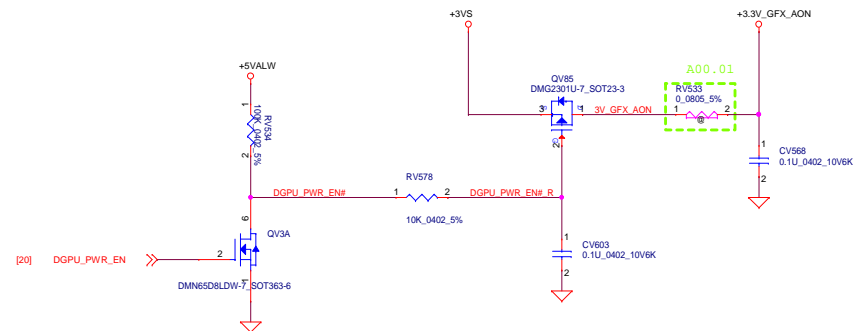
Table 15-3. GB2B-64, GB4B-128 and GB3B-256 Multi-level Mode Strapping

Strap Pin Name	Logical Strapping Bit 3	Logical Strapping Bit 2	Logical Strapping Bit 1	Logical Strapping Bit 0
ROM_SCLK	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
ROM_SI	RAM_CFG[3]	RAM_CFG[2]	RAM_CFG[1]	RAM_CFG[0]
ROM_SO	DEVID_SEL	PCIE_CFG	SMB_ALT_ADDR	VGA_DEVICE
STRAP0	Keep foot print for pull-up to 3V3_AON and pull-down to GND. Stuff 49.9 kΩ pull-up.			
STRAP1	Keep foot print for pull-up to 3V3_AON and pull-down to GND. Do not stuff.			
STRAP2				
STRAP3				
STRAP4				

+3.3V_GFX_RUN



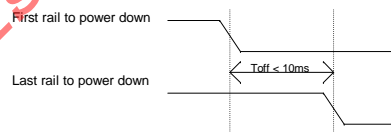
+3VALW to +3.3V_GFX_AON



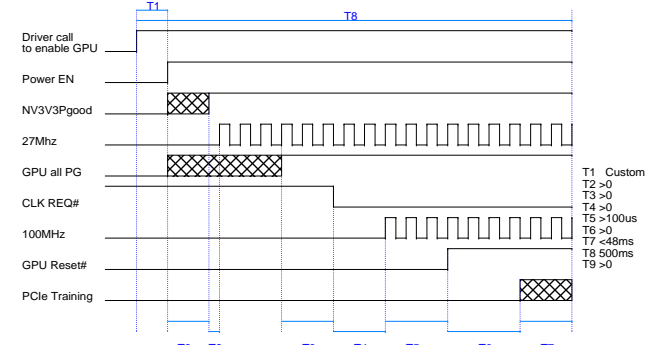
GPU Power Up Power Rail Sequence



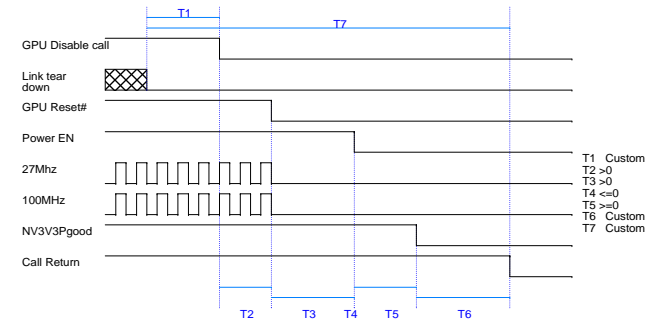
GPU Power Down Sequence



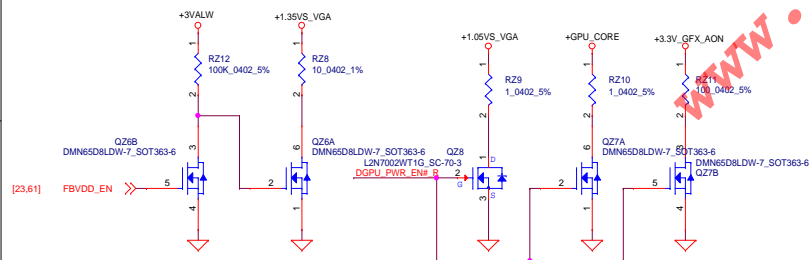
GPU Power Up Sub-system Sequence



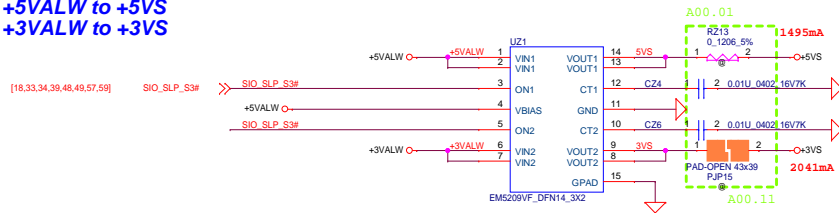
GPU Power Down Sub-system Sequence



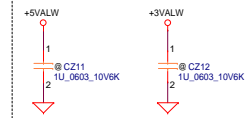
Discharge



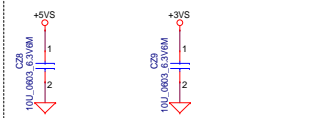
+5VALW to +5VS
+3VALW to +3VS



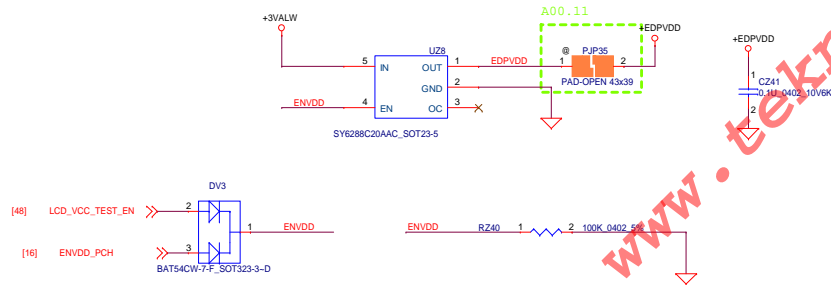
Close UZ1



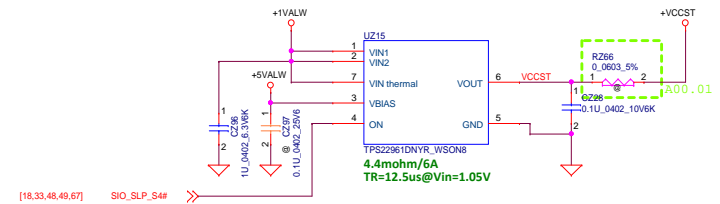
Close UZ1



eDP & Camera Load Switch

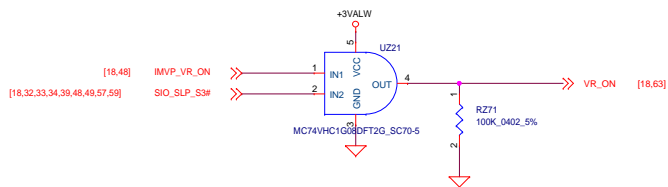
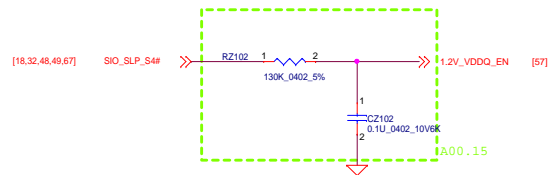


+VCCST Load Switch

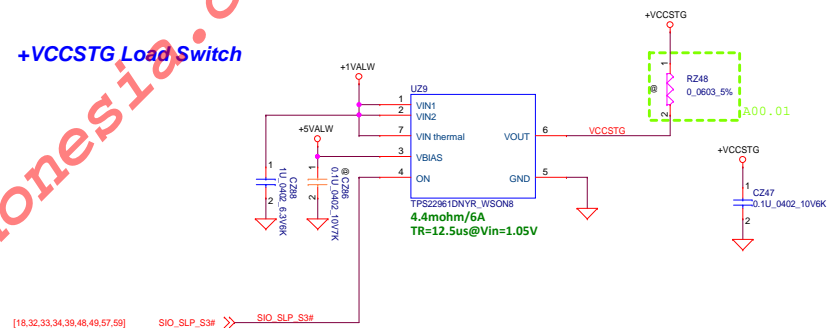


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	Title	SYS DC/DC Interface
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				Rev	0.1/200
				Date:	Thursday, August 18, 2016
				Sheet	32 of 70

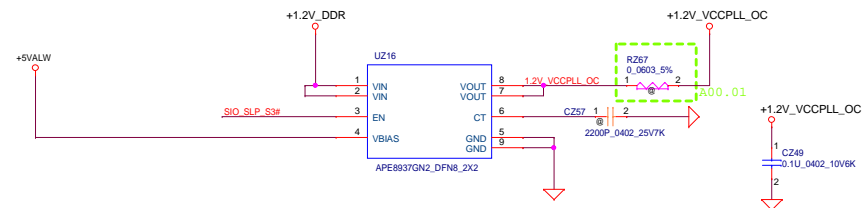
+1.2V_DDR Enable



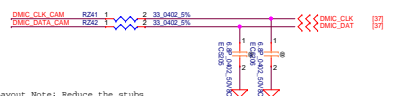
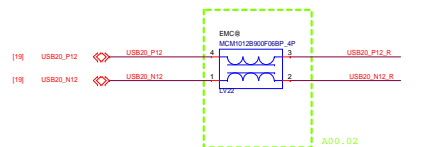
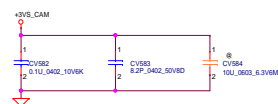
+VCCSTG Load Switch



+VCCPLL_OC Load Switch

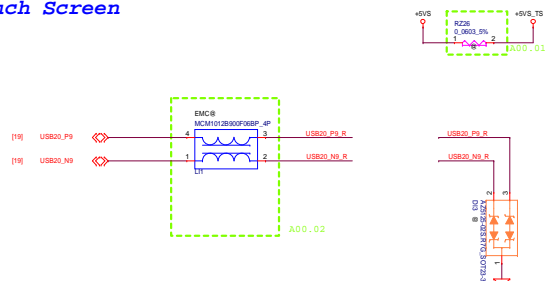


CCD +DMIC Conn.

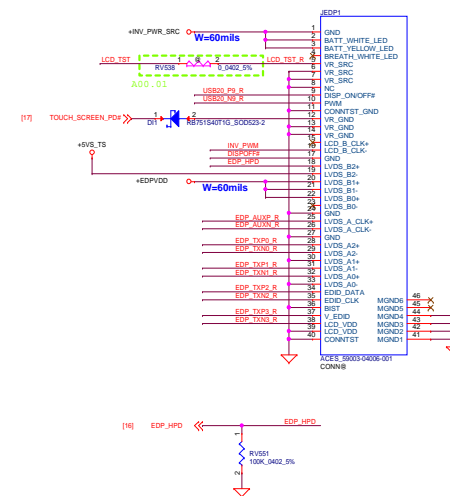
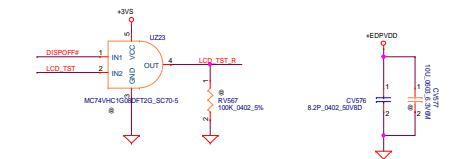
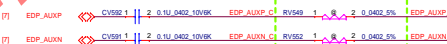
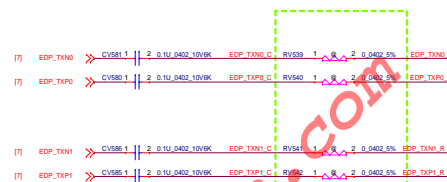
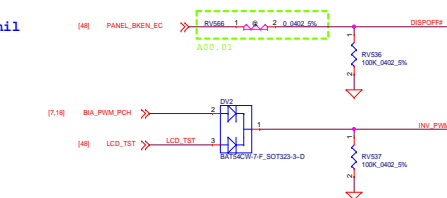


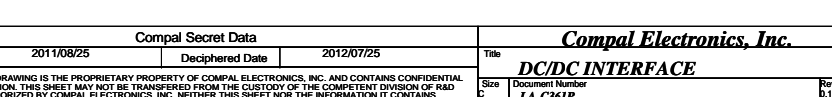
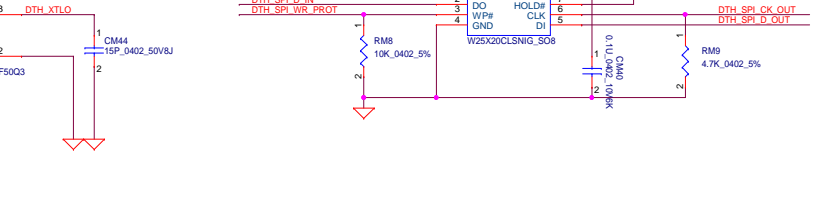
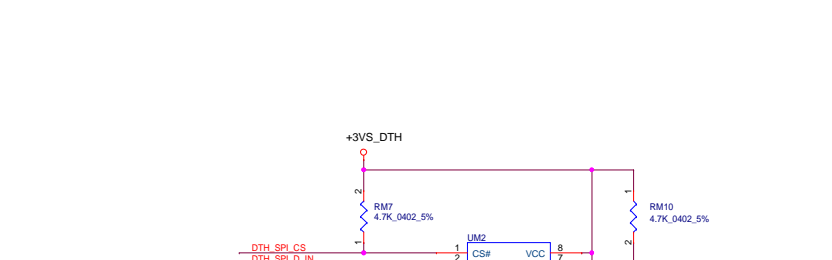
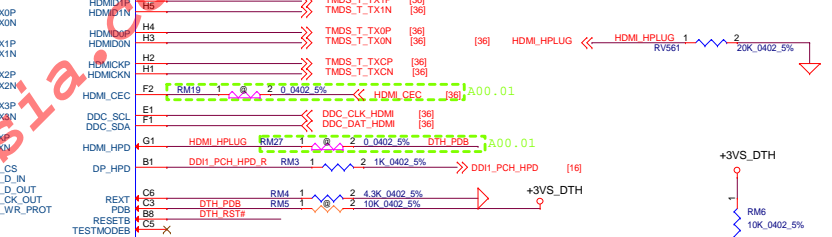
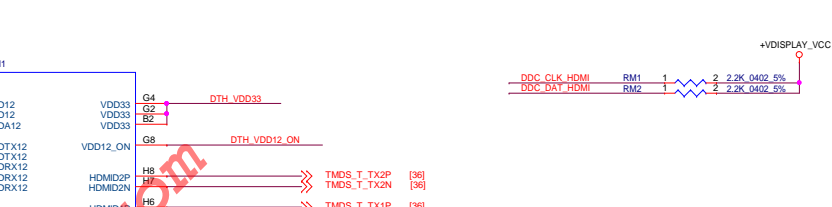
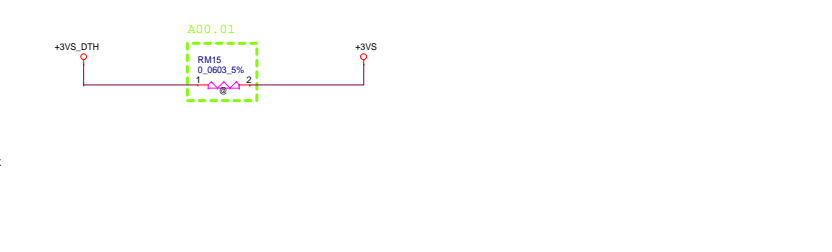
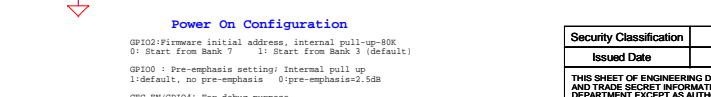
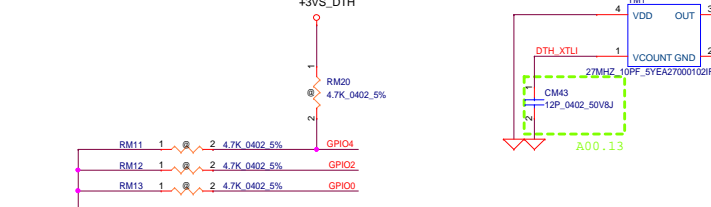
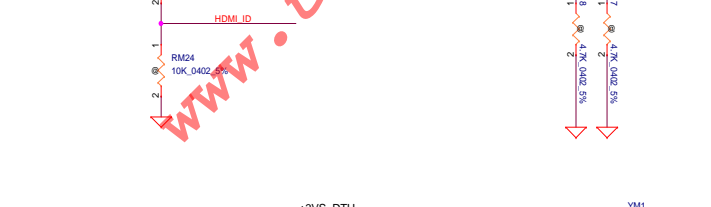
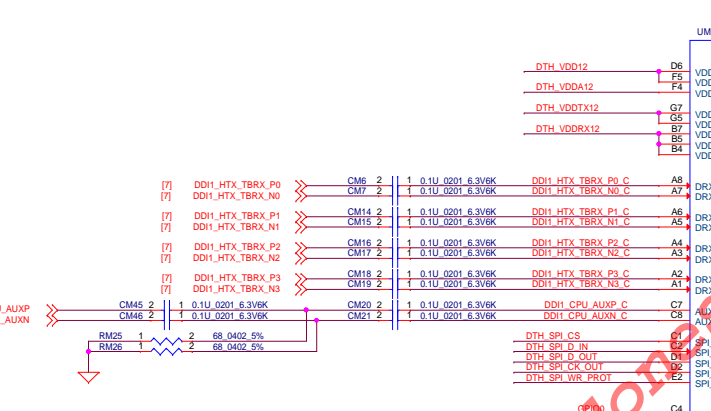
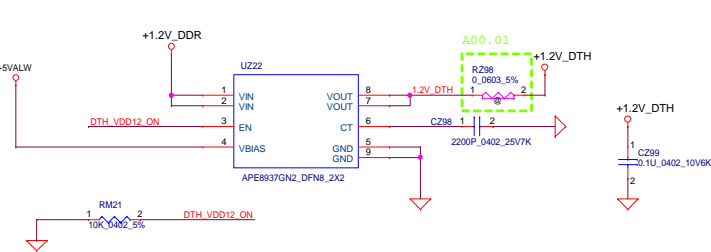
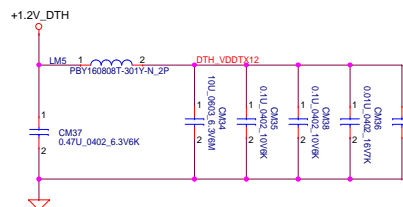
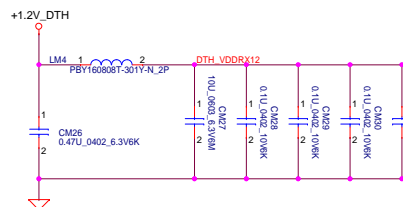
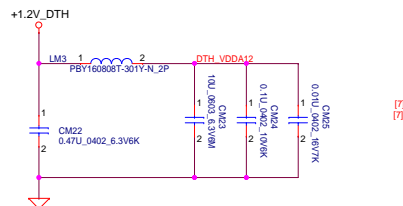
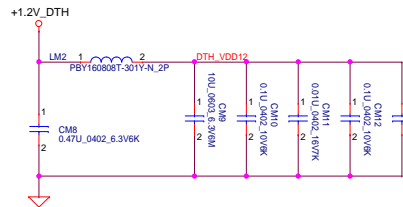
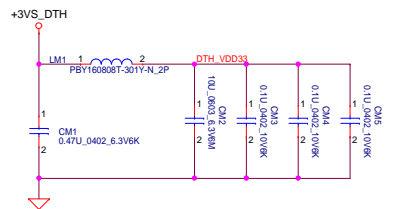
Layout Note: Reduce the stubs.

Touch Screen



60mil





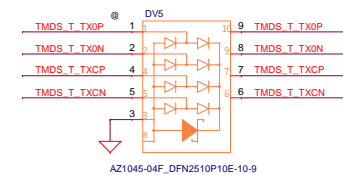
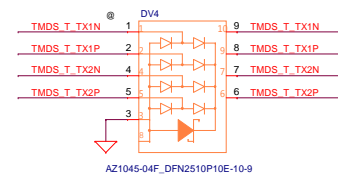
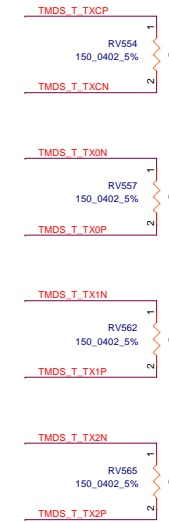
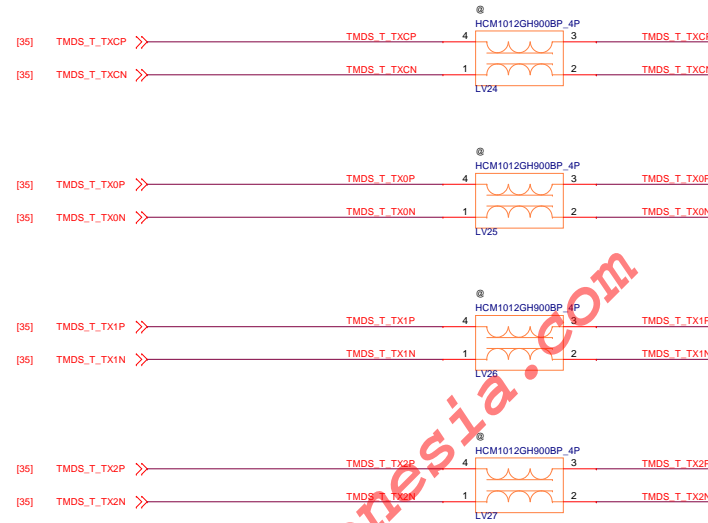
Power On Configuration

GPIO2: Firmware initial address, internal pull-up=80K
 0: Start from Bank 7 1: Start from Bank 3 (default)
 GPIO0: Pre-emphasis setting; Internal pull up
 1: default, no pre-emphasis 0: pre-emphasis=2.5dB
 CEC_EN/GPIO4: For debug purpose

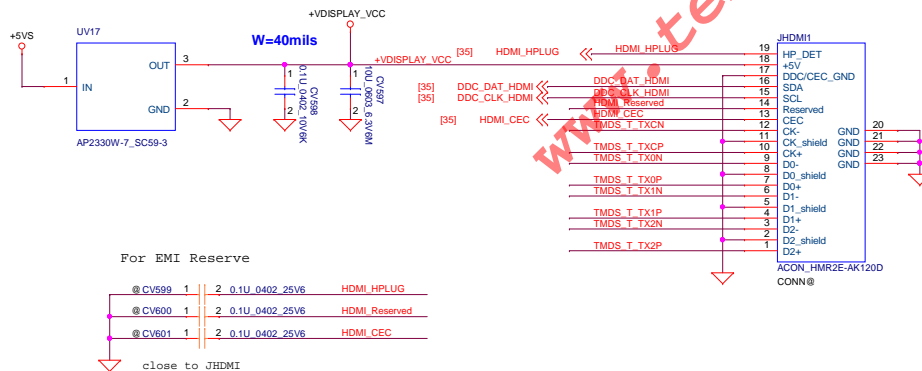
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2011/08/25	Deciphered Date	2012/07/25	Title	DC/DC INTERFACE	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RAD 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

Place close to JHDMI1

Place between ESD and CM-Choke



HDMI conn



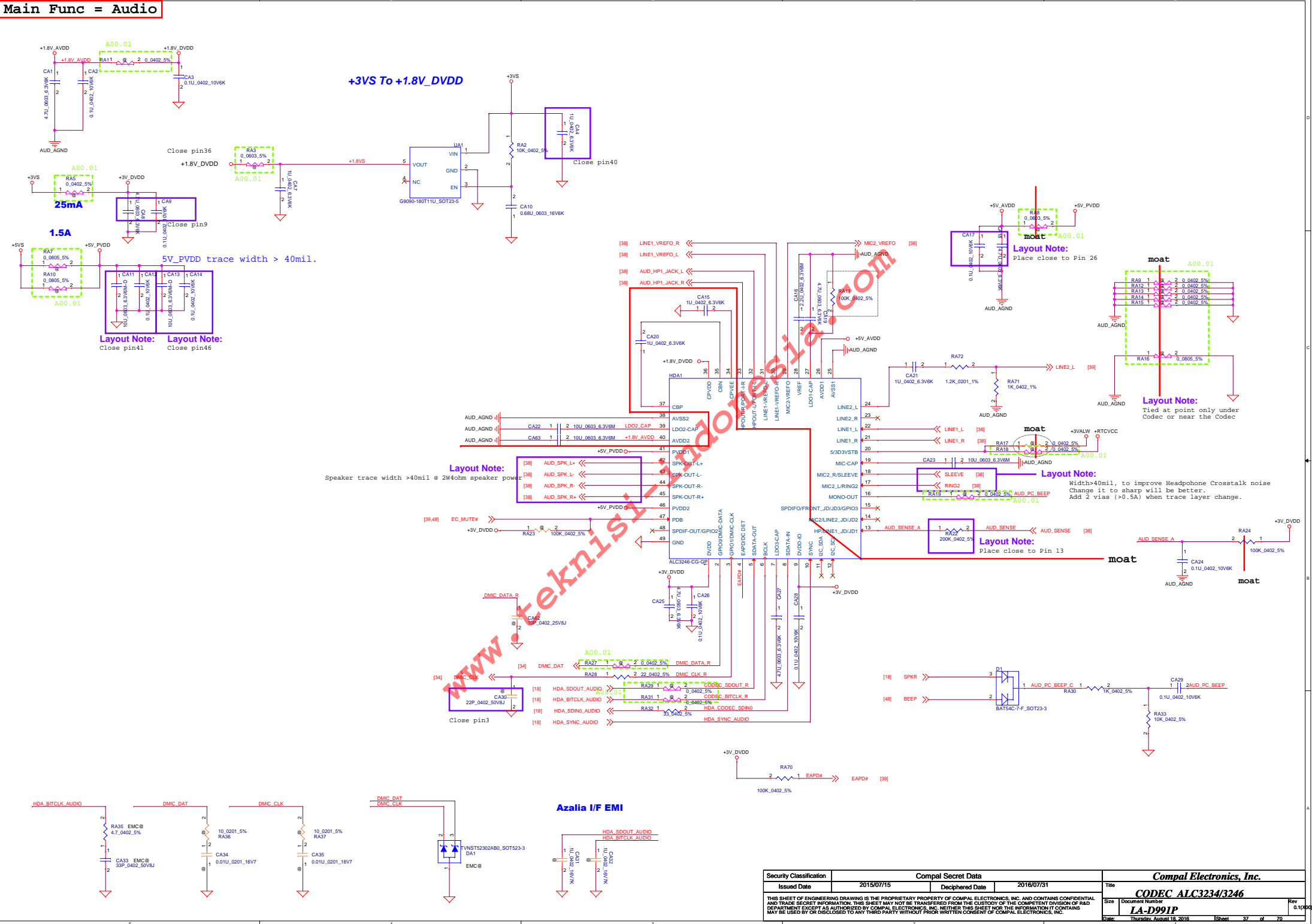
For EMI Reserve

@ CV599	1	2	0.1U 0402 25V6	HDMI_HPLUG
@ CV600	1	2	0.1U 0402 25V6	HDMI_Reserved
@ CV601	1	2	0.1U 0402 25V6	HDMI_CEC

close to JHDMI

Security Classification	Compal Secret Data			Title	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	HDMI	
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 RAD 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-C361P
Date: Thursday, August 18, 2016				Sheet	36 of 70

Main Func = Audio

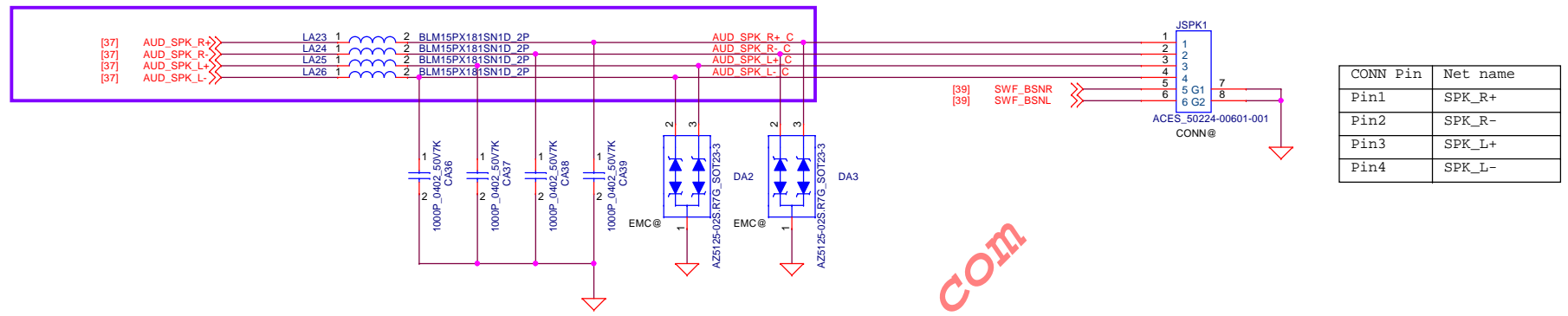


Main Func = Audio

Layout Note:

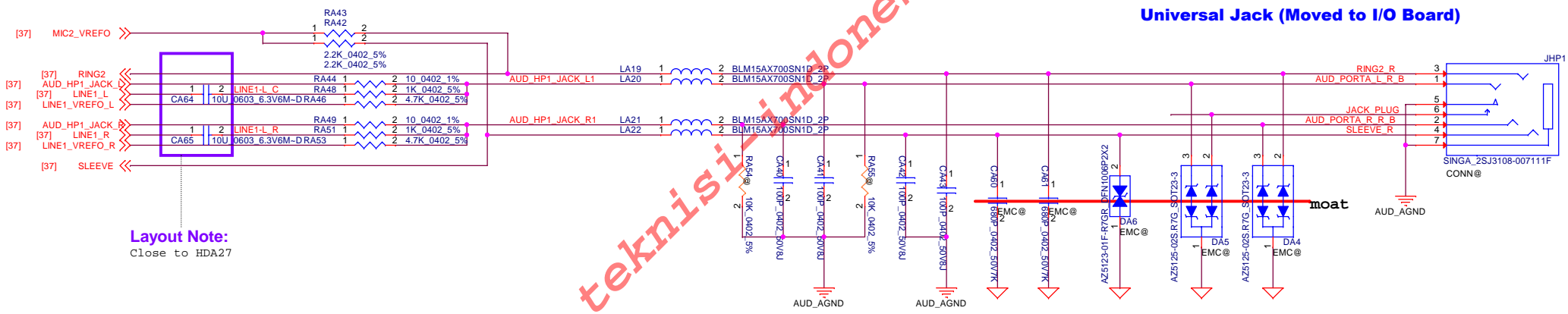
Speaker trace width >40mil @ 2W4ohm speaker power

Speaker

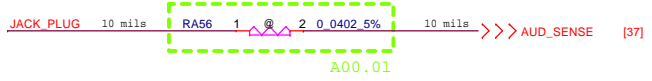


CONN Pin	Net name
Pin1	SPK_R+
Pin2	SPK_R-
Pin3	SPK_L+
Pin4	SPK_L-

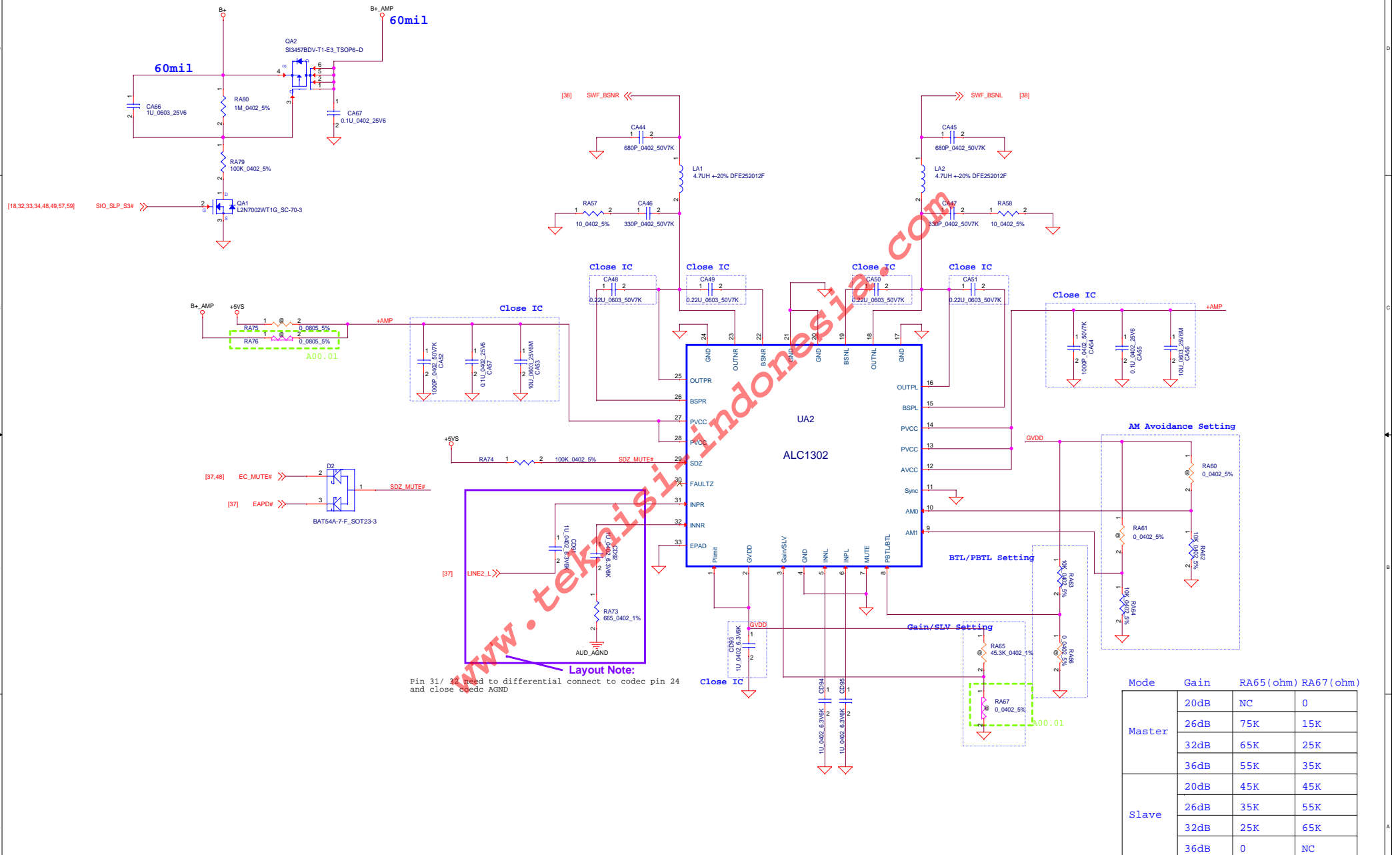
Universal Jack (Moved to I/O Board)



Layout Note:
Close to HDA27

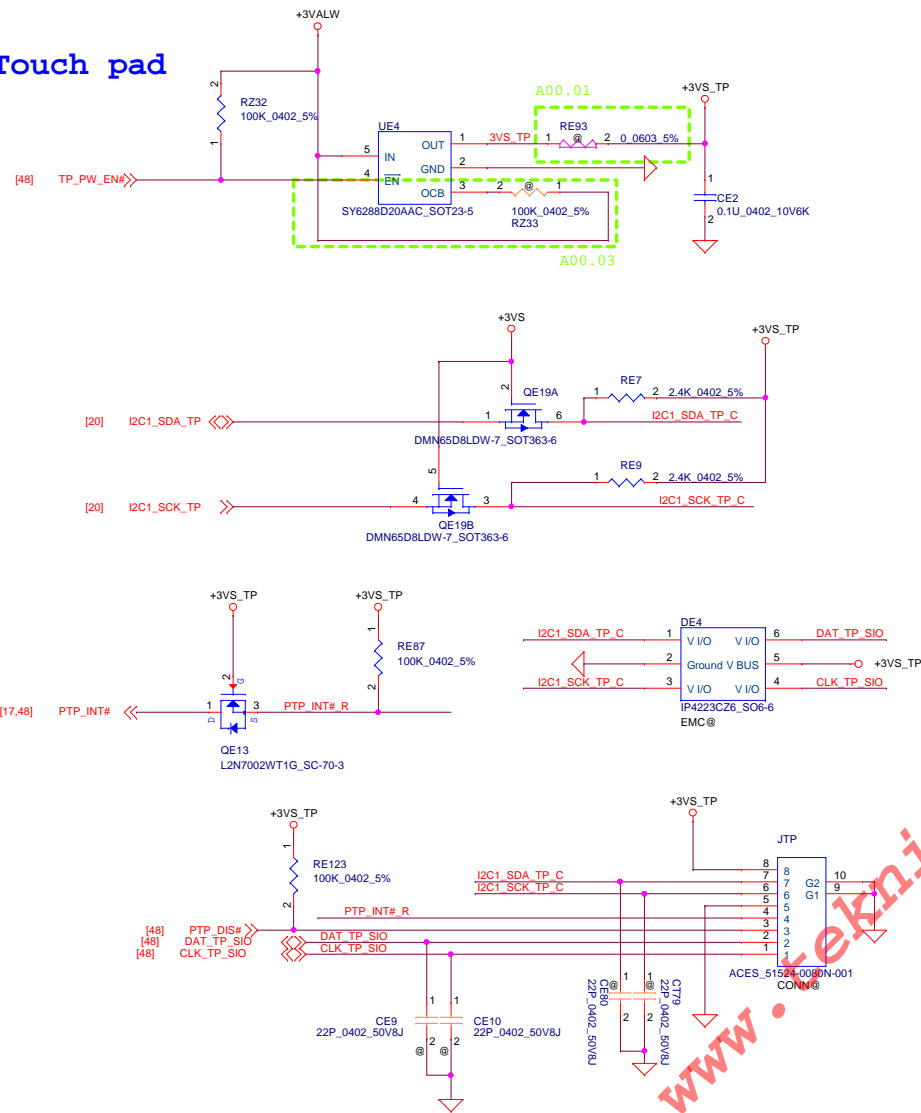


Subwoofer AMP



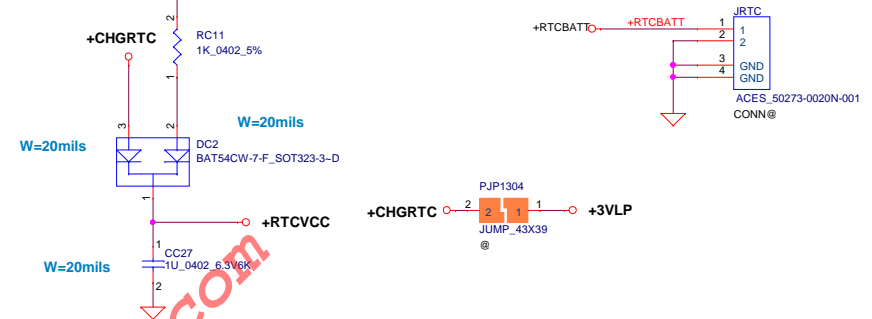
Security Classification		Compal Secret Data		<i>Compal Electronics, Inc.</i>	
Issued Date	2011/06/02	Deciphered Date	2013/10/28	Title	<i>P03-KB Controller</i>
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. 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
				<i>LA-D991P</i>	
				Date:	Thursday, August 18, 2016
				Sheet	40 of 70

Touch pad

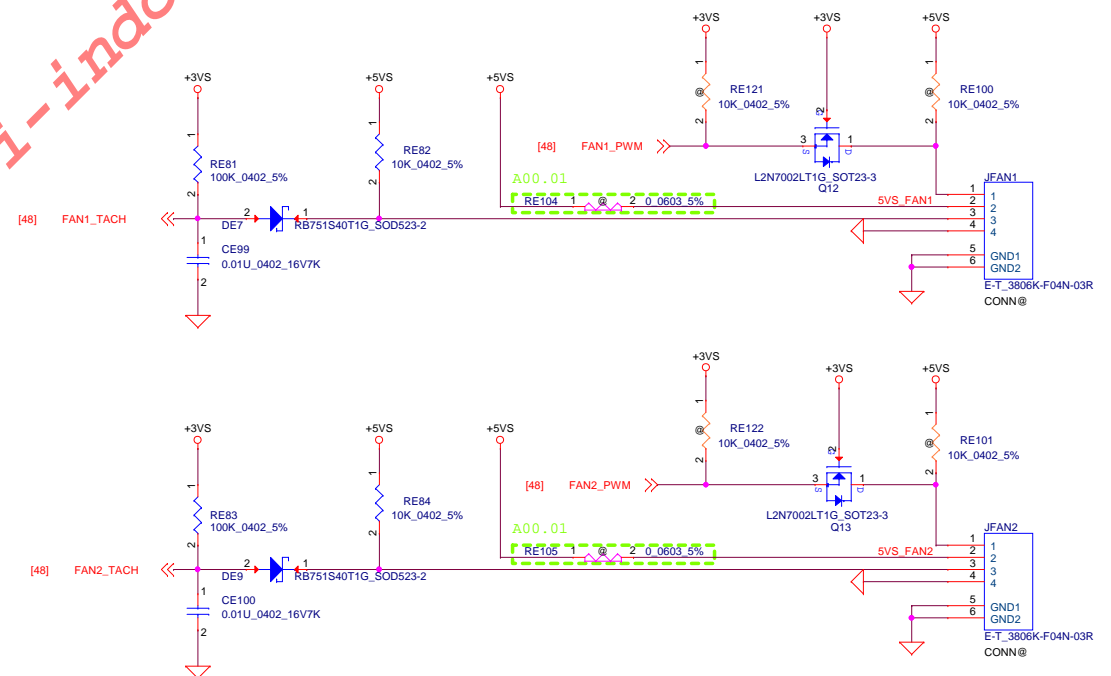


RTC Battery non- Charge Function

RTC Battery +RTCBATT

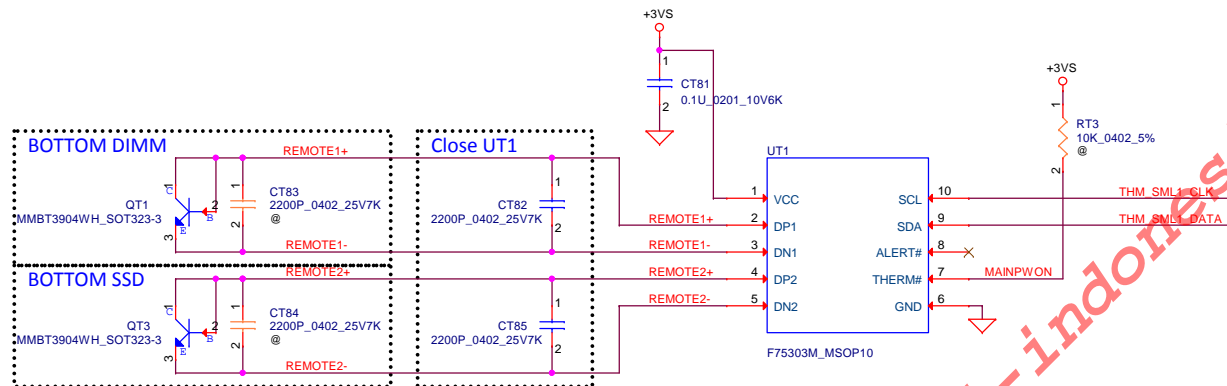


PWM FAN



Security Classification		Compal Secret Data		Title	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	FAN/TP/KB/PWR SW	
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. WITHOUT THE WRITTEN CONSENT 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.				Document Number	Rev
				LA-D991P	0.1(X00)
Date:		Thursday, August 18, 2016		Sheet	41 of 70

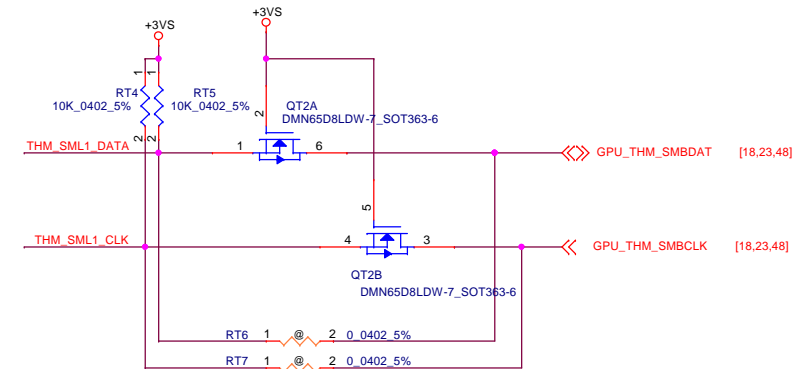
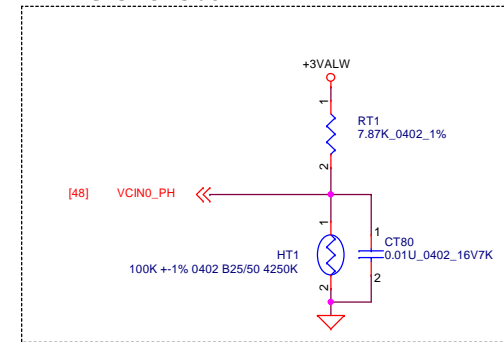
Fintek thermal sensor
placed TOP near between GPU & CPU



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

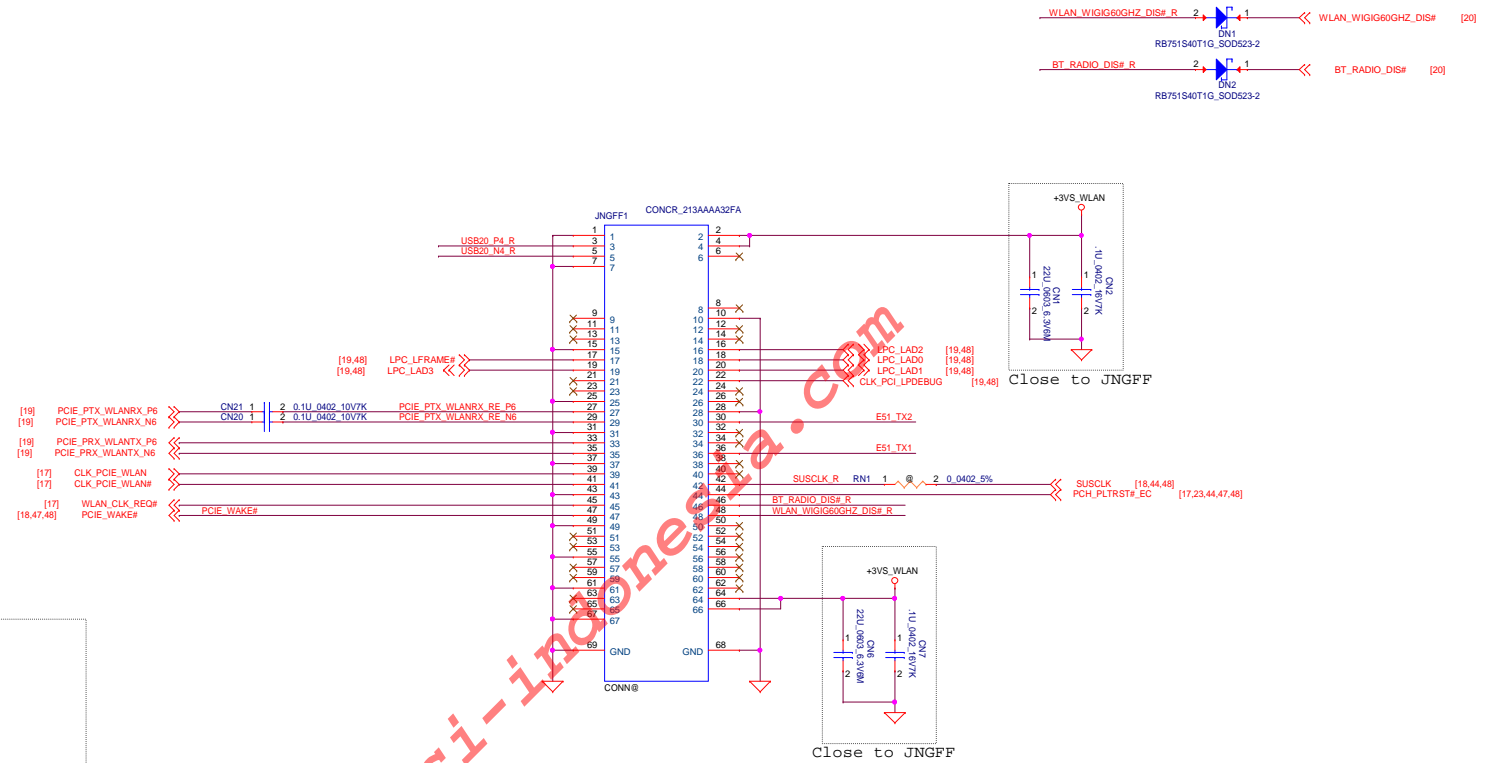
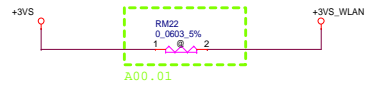
Address 1001_101xb

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

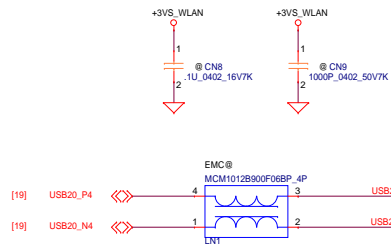


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2014/04/01	Deciphered Date	2015/04/30	Title	Thermal Sensor
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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	Thursday, August 18, 2016
				Sheet	42 of 70
				Rev	0.10(00)
				LA-D991P	

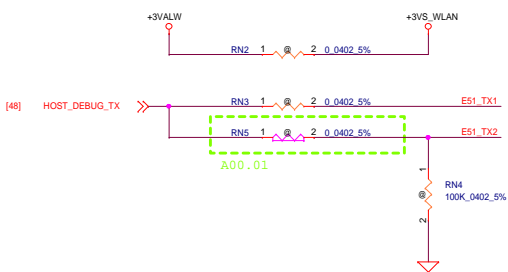
M.2 Slot-A Key-A (WLAN + BT)



Reserve for EMI

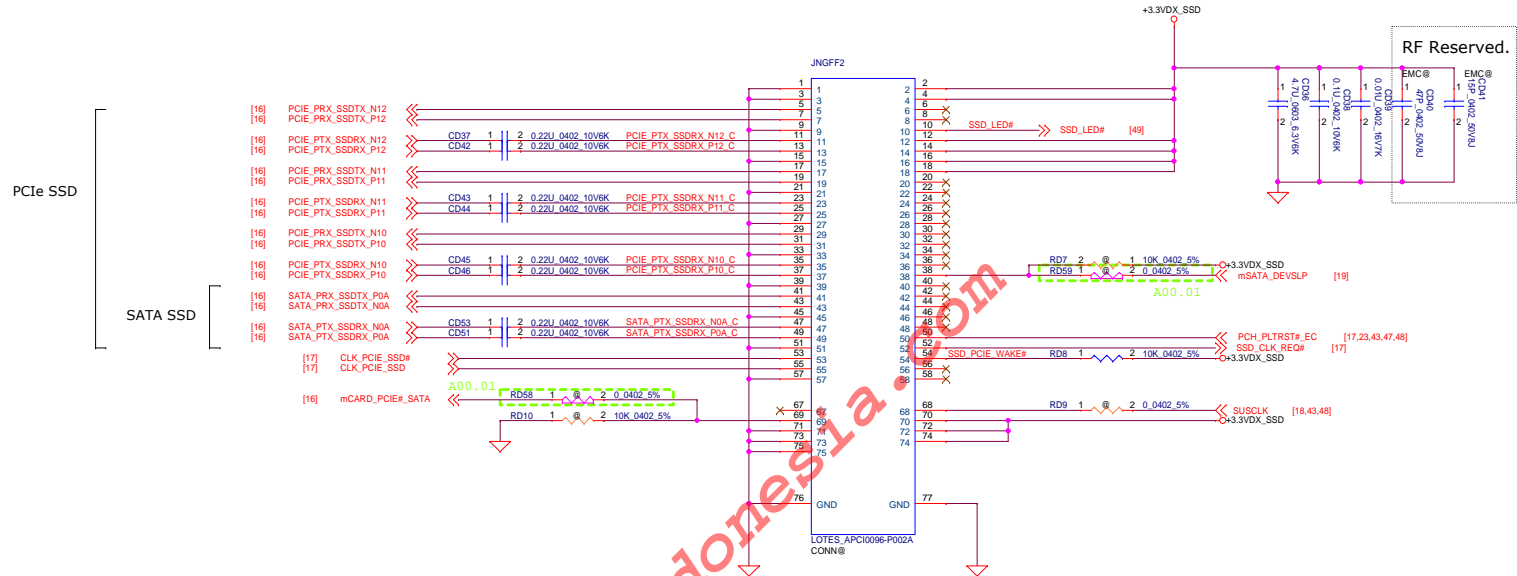
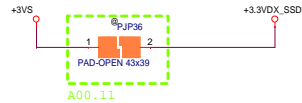


Reserve for NGFF Debug Card

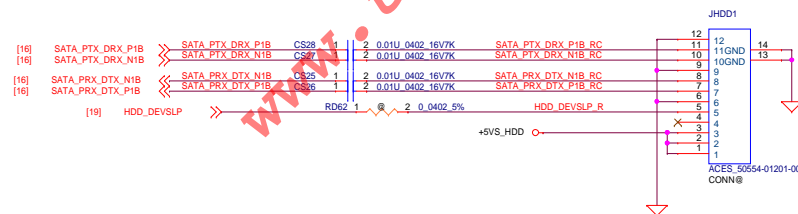
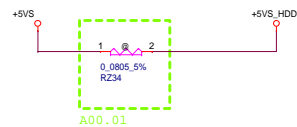


Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
Size	C	Document Number	LA-D991P	Rev
Date:	Thursday, August 18, 2016	Sheet	43	of 70

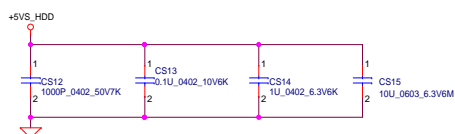
M.2 Slot-C Key-M (SSD)



HDD CONN



Place near HDD CONN (JHDD1)

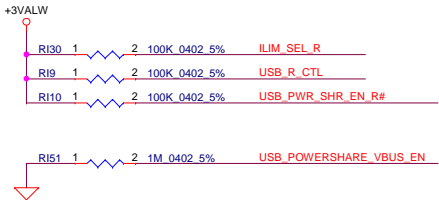


Security Classification	Compal Secret Data	Document Number	SSD
Issued Date	2011/08/25	Deciphered Date	2012/07/25
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE 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	LA-D991P
Date	Thursday, August 18, 2016	Sheet	44 of 70

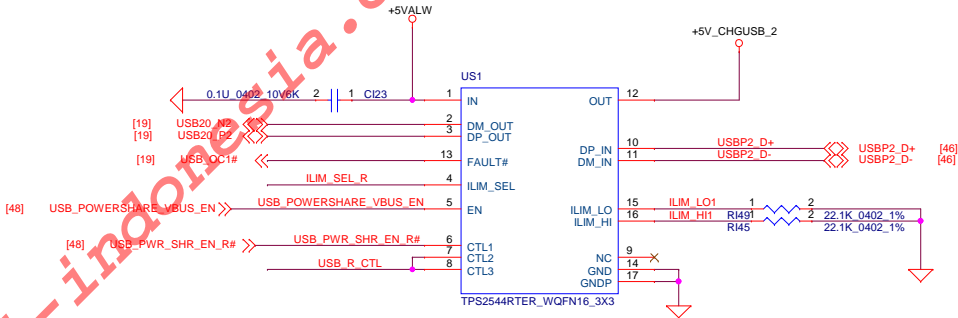
USB Powershare

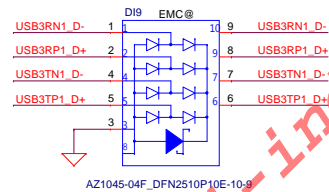
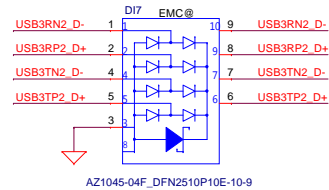
Device Control Pins				Flow Line Condition
CTL1	CTL2	CTL3	ILIM_SEL	
0	1	1	X	DCP AUTO
1	1	1	0	SDP
1	1	1	1	CDP

Suspend mode	CTL1 = 0 : Enable Power Share DCP mode in Suspend mode
	CTL1 = 1 : Disable Power Share in Suspend mode (For Support USB wake)
S0 mode	ILIM_SEL = 0 : SDP mode (0.9A by ILIM_LO setting)
	ILIM_SEL = 1 : CDP mode (STATUS# trigger by ILIM_HI =2.2A)

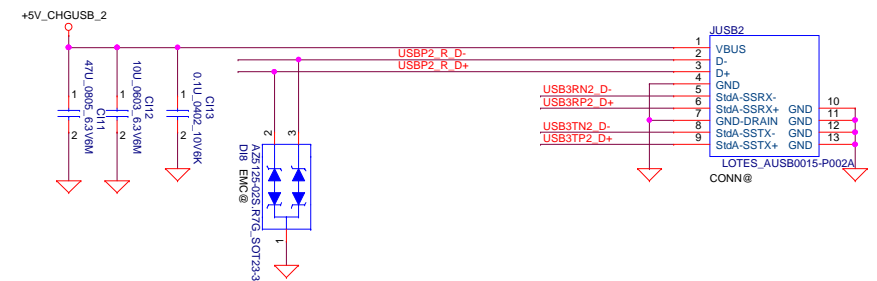


USB3.0 / USB2.0 Port1

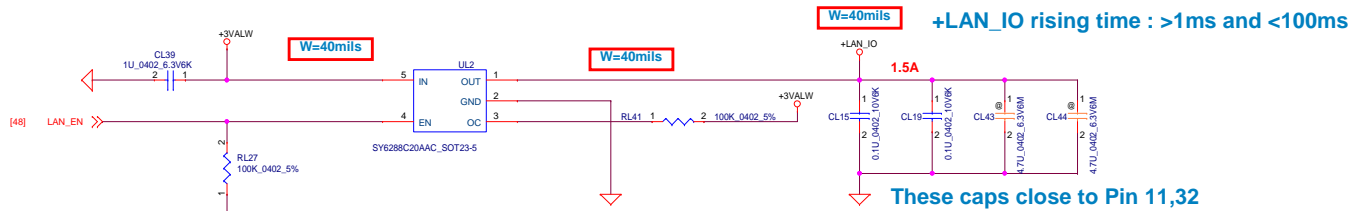


[illegible]

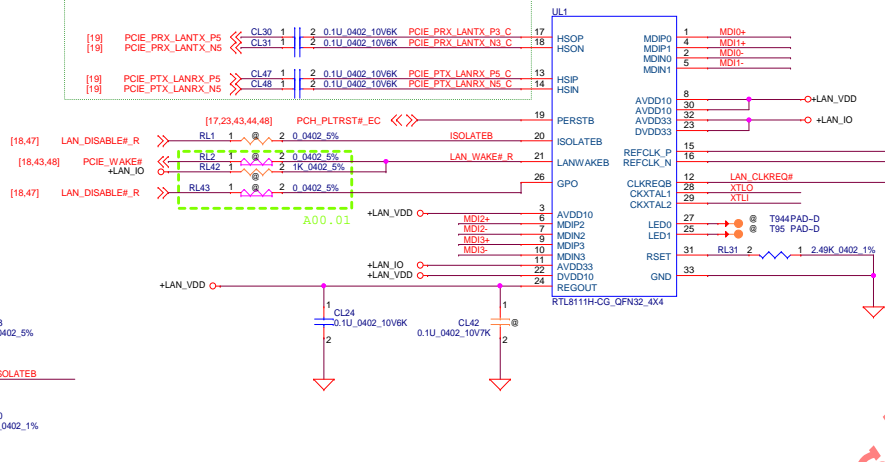
USB3.0 / USB2.0 Port2 (Power share)



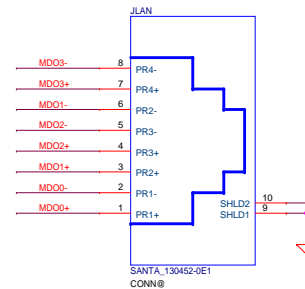
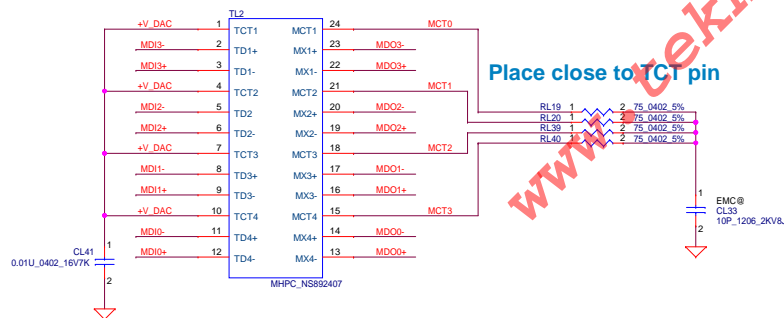
Rev		
0.1(X100)		

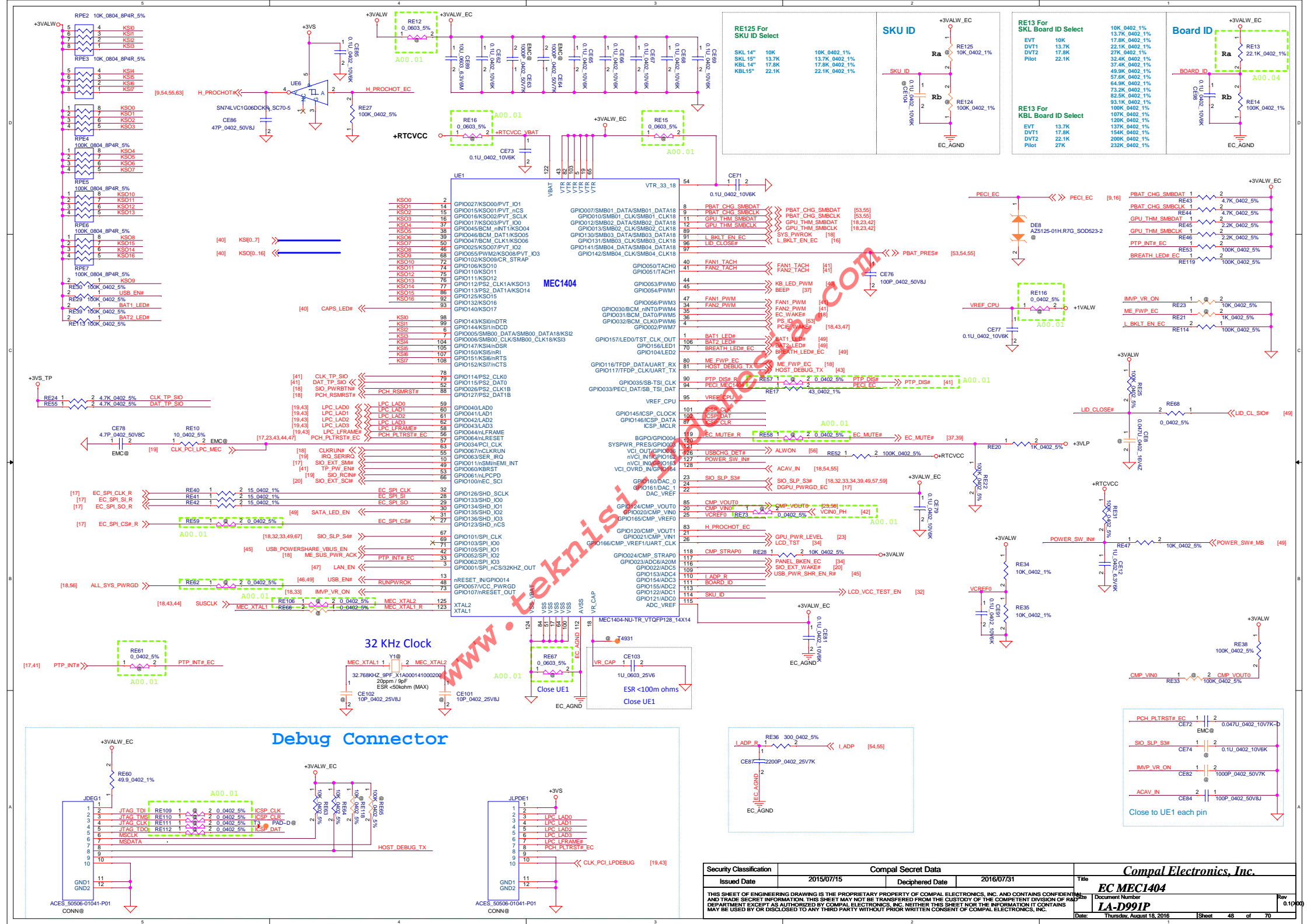


These caps close to Pin 17,18/ 13,14

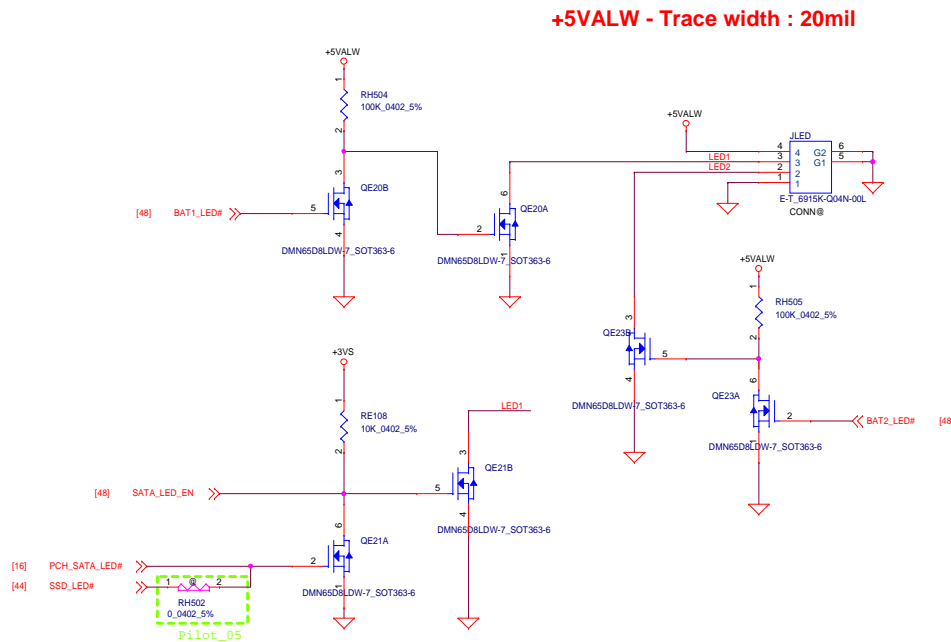


These caps close to Pin 23 These caps close to Pin 22 These caps close to Pin 3,8,30

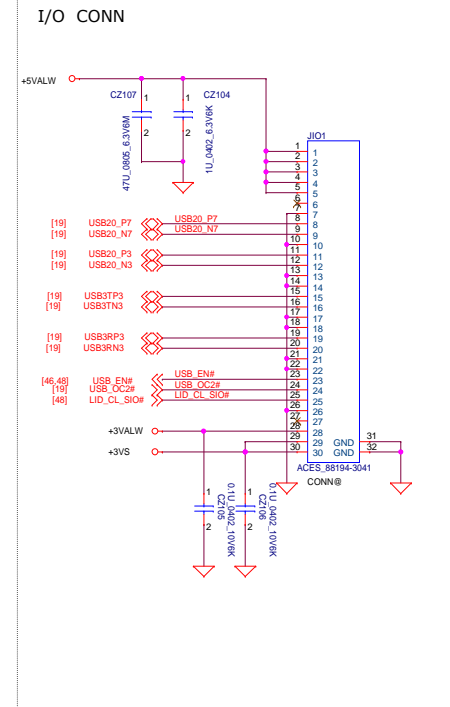
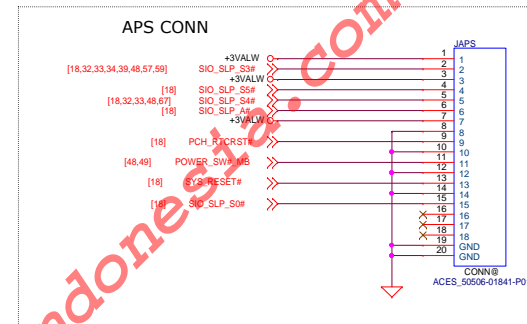
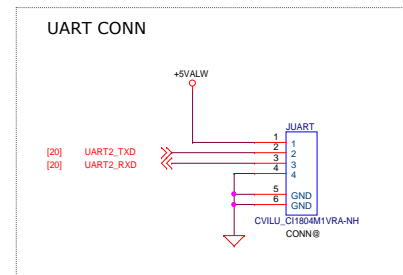




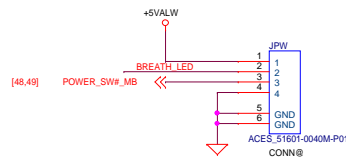
LED Board Connector



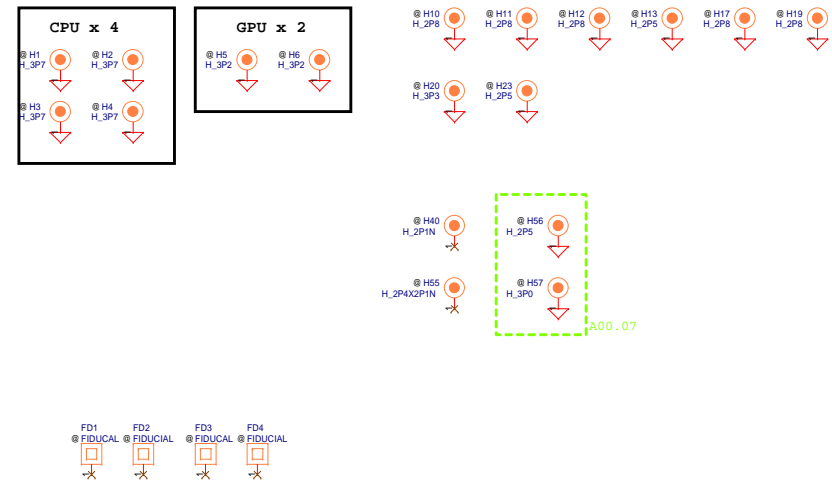
I/O & APS & UART CONN



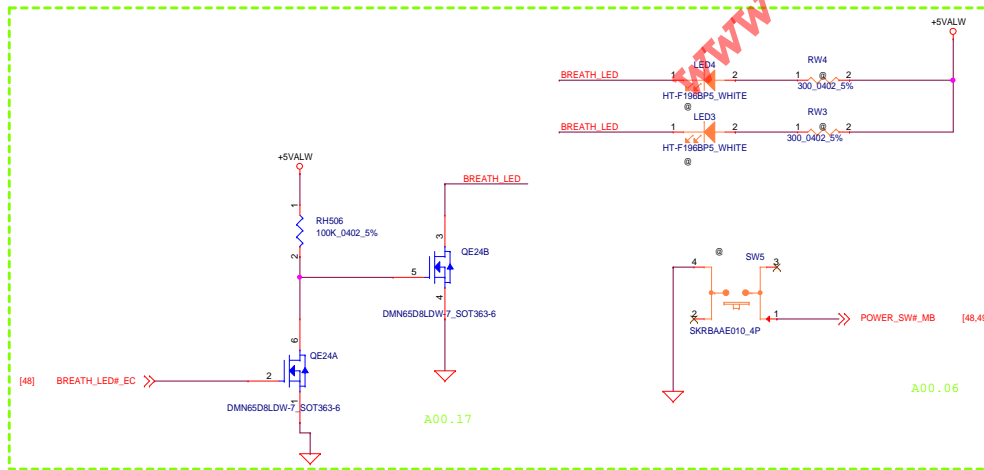
TO PWR BOARD



Screw Hole



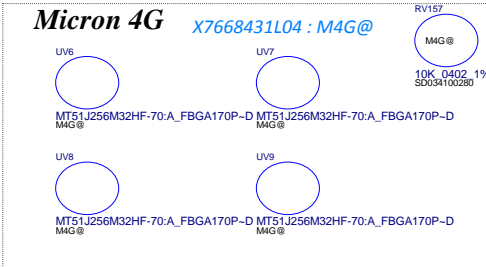
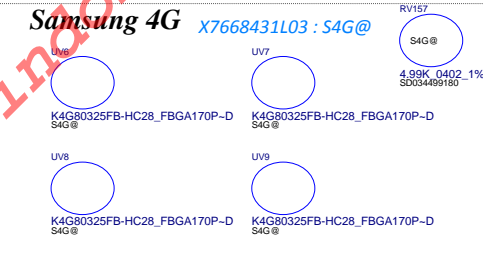
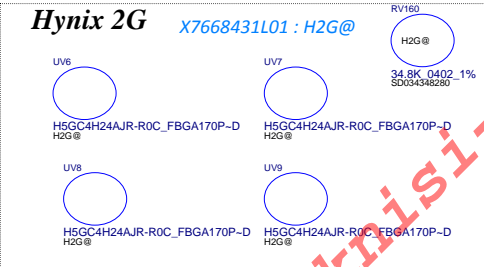
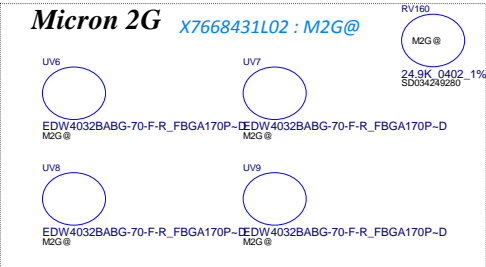
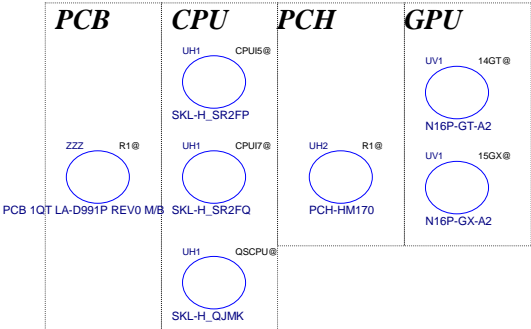
Power Button & LED (Reserve)



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date		2011/08/25		Deciphered Date	
				2012/07/25	
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	
				TPM/BTB conn.	
				Size	Document Number
				Rev	
				0.1(00)	
Date:				Tuesday, November 01, 2016	
Sheet				49 of 70	

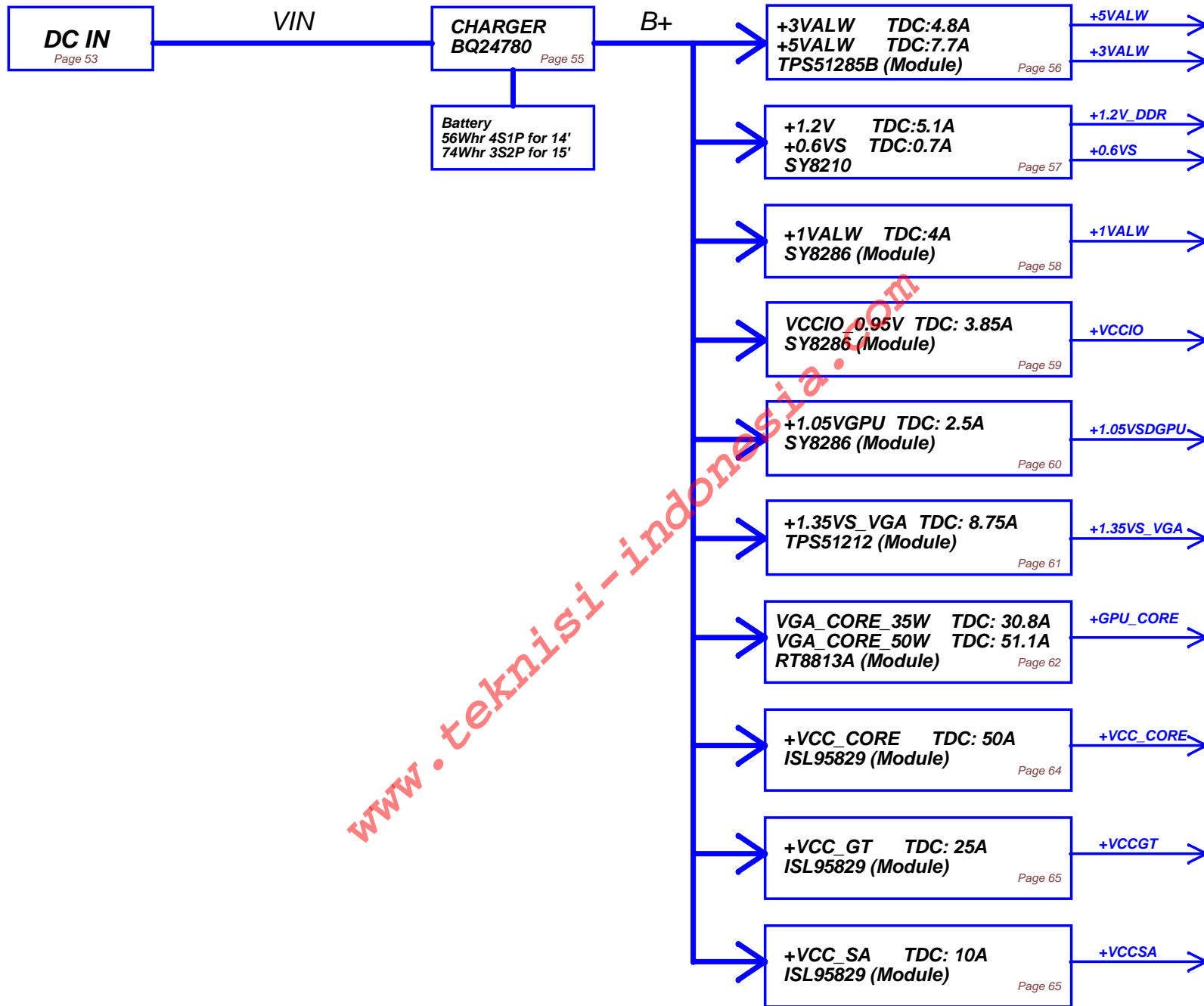
MODEL NAME : *BCV00/ BCV10*
PCB NO : *LA-D991P*

Bom Structure



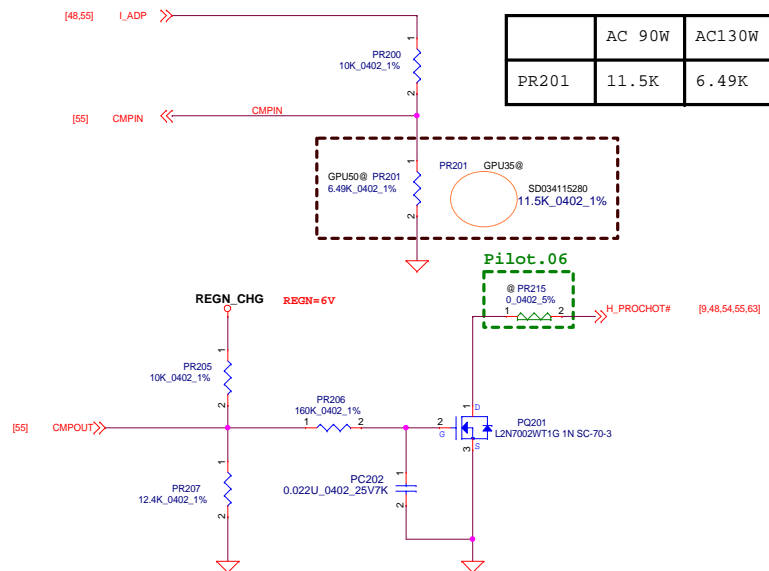
www.teknisi-indonesia.com

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2013/04/10	Deciphered Date	2014/05/01	Title	NOTE
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-D991P	0.1000
				Date: Thursday, August 18, 2016	Sheet 51 of 70

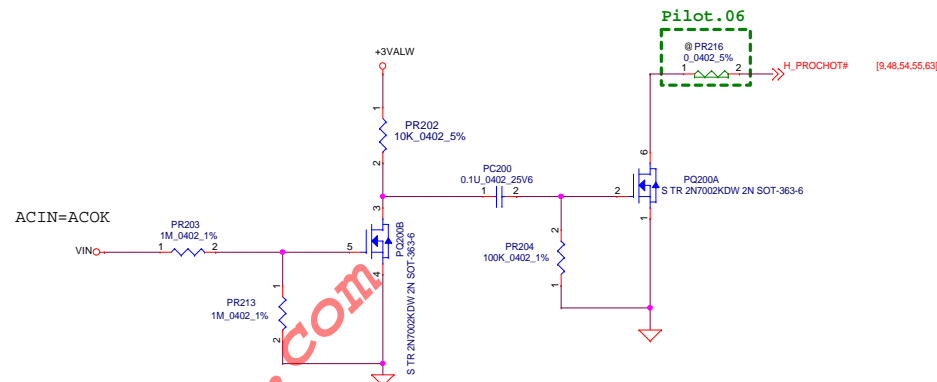


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/08/25	Deciphered Date	2012/07/25	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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	Thursday, August 18, 2016
				Sheet	52 of 70
				Rev	0.1(000)

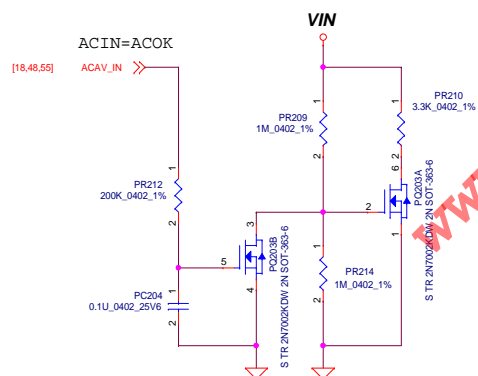
When CMPIN> Vref(2.3V/1.3V)
CMPOUT=floating



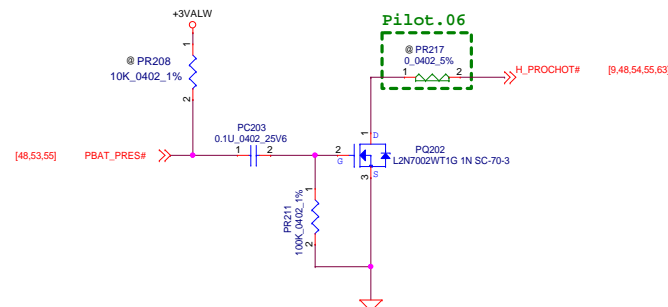
ENG0012879 Circuit-1
Delay Adapter OC H_PROCHOT# 2ms while
Hybrid power transition



Ref ENG0012879 Circuit-2
HW Asserts H_PROCHOT# when ac adapter
is being unplugged and keep low for 10ms
until SW proshot# is issued by EC

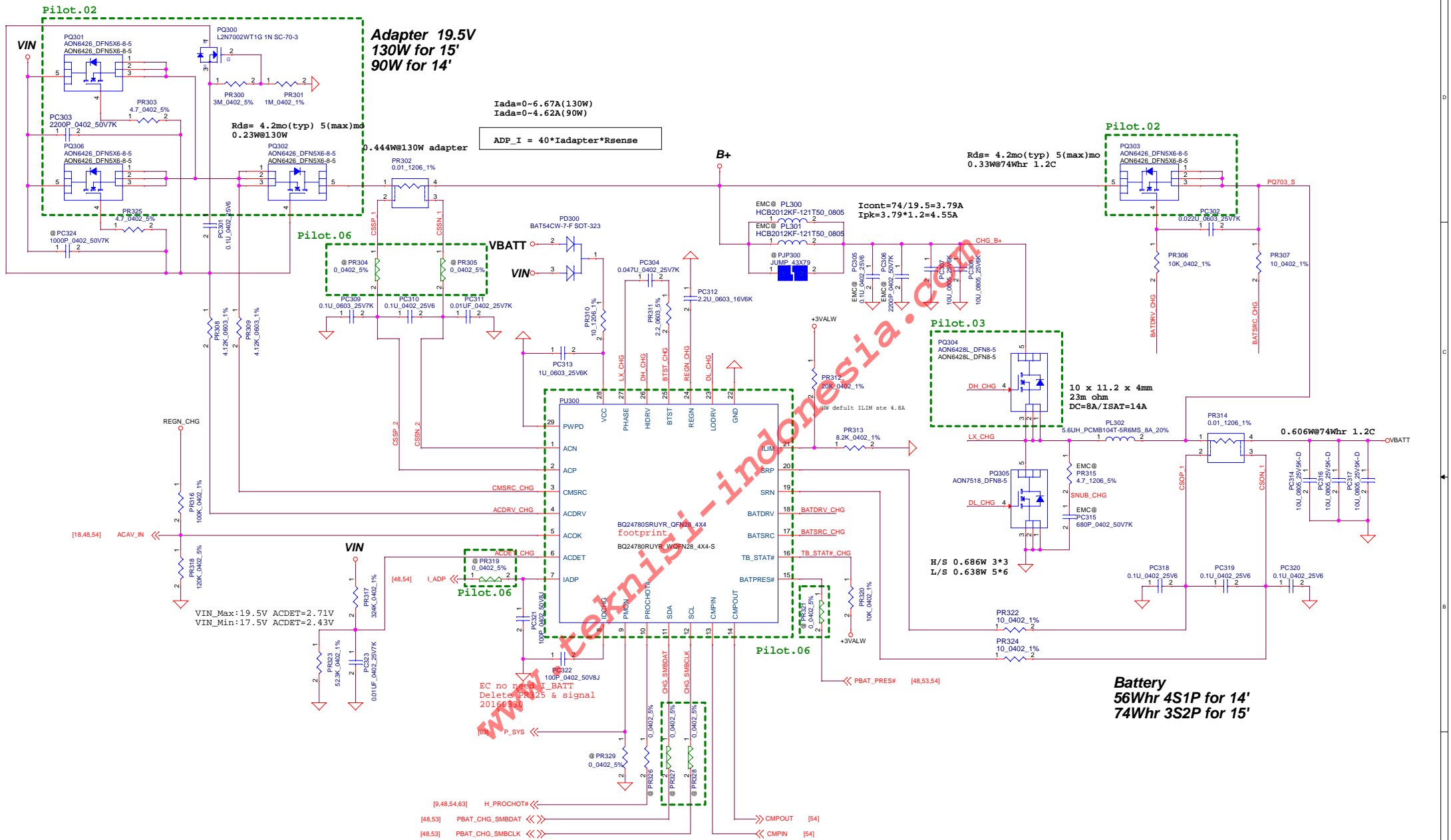


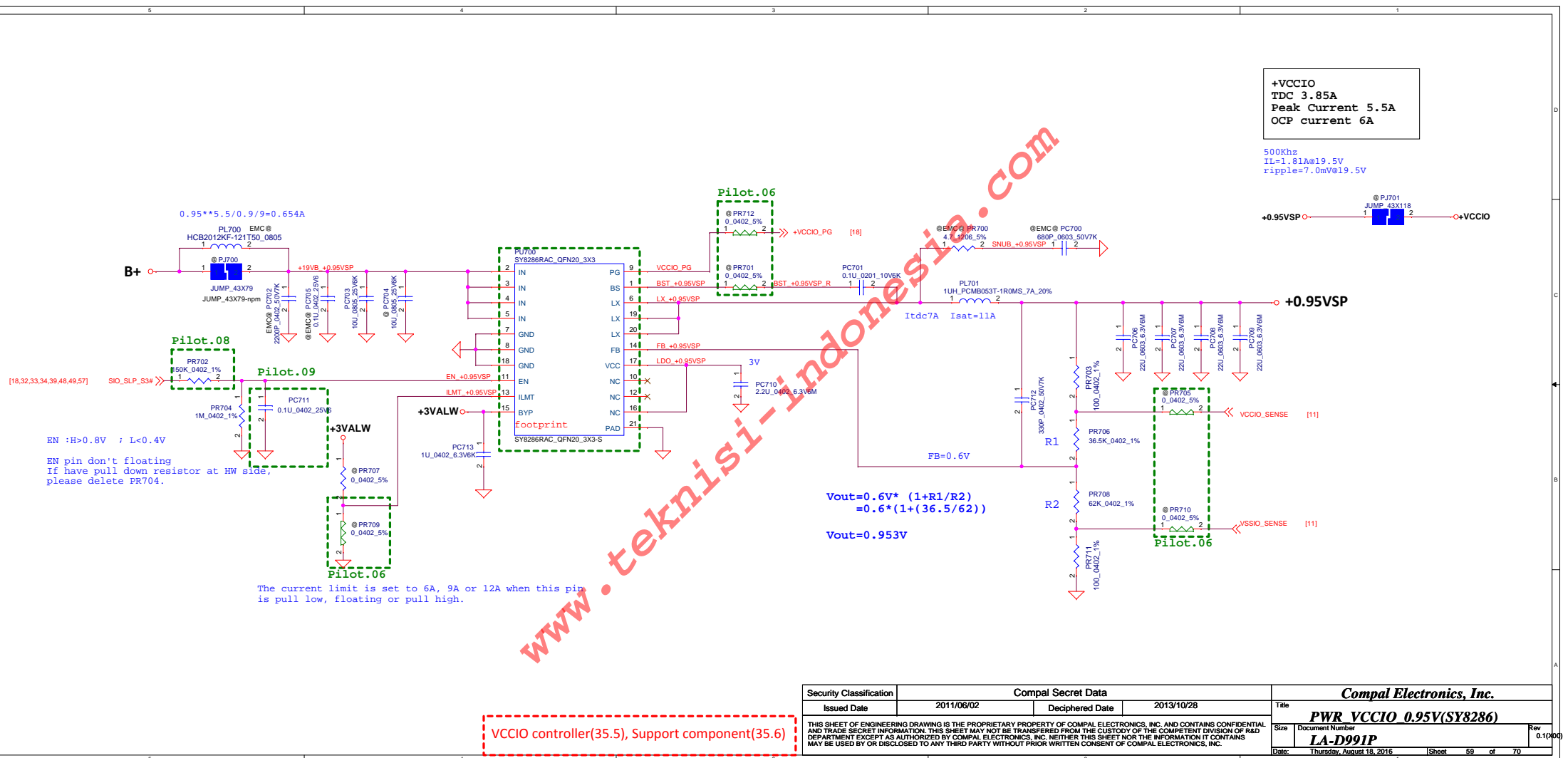
Erp lot 6 circuit



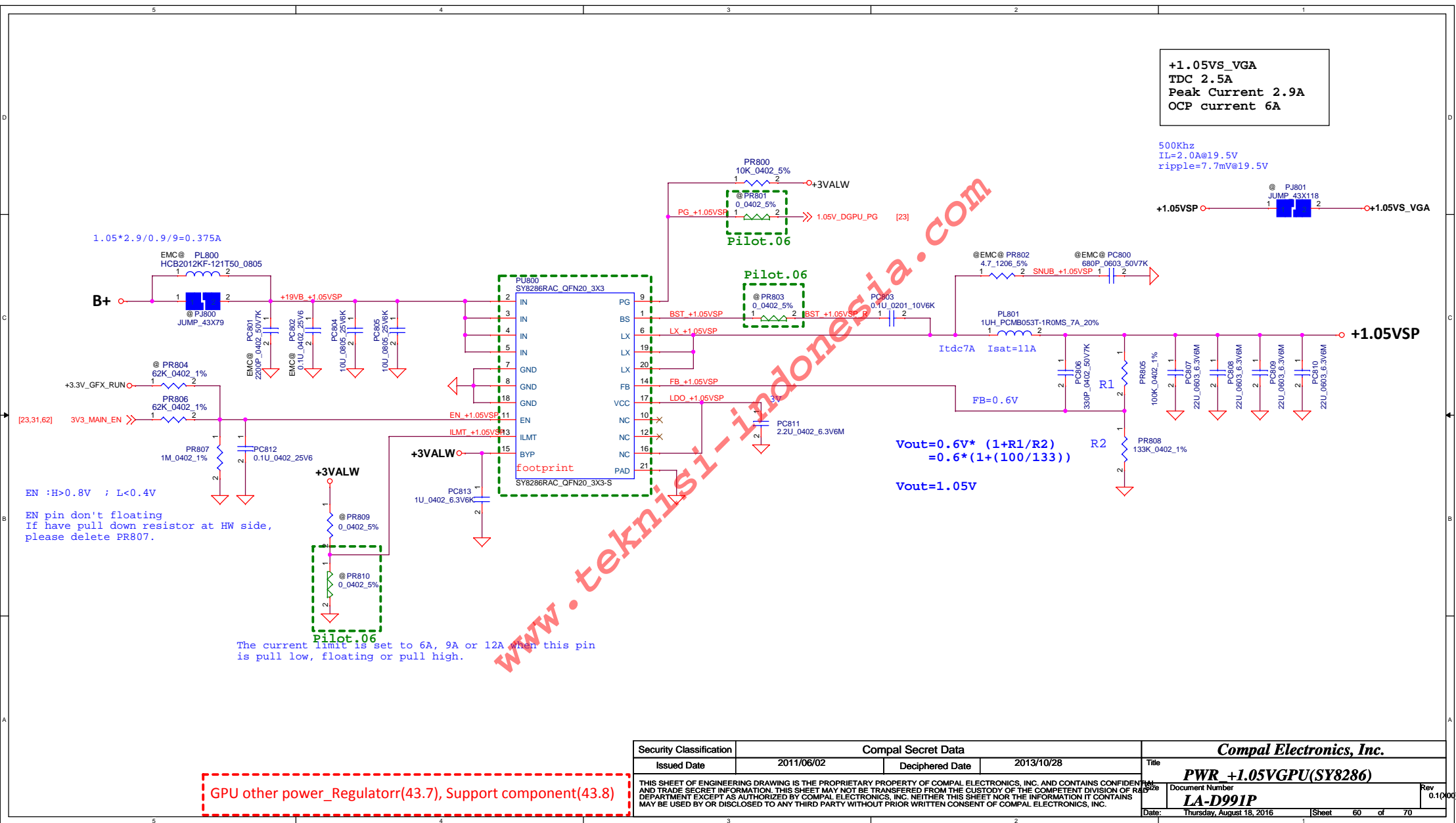
Ref ENG0012879 Circuit-4
HW Asserts H_PROCHOT# when battery
is being unplugged and keep low for 10ms
until SW proshot# is issued by EC

Rest of support elements (37.1)



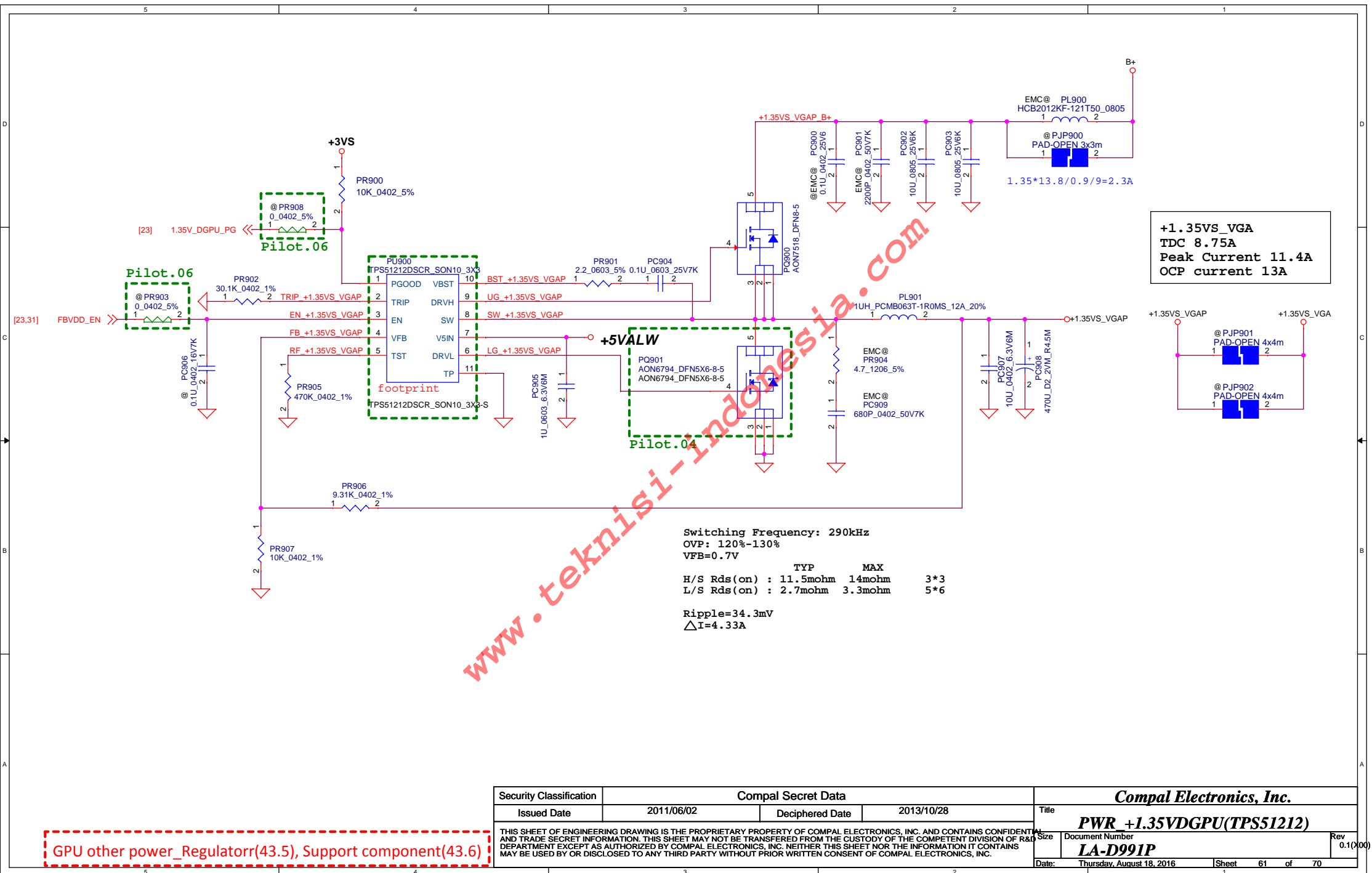


Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		Size	
2011/06/02		2013/10/28		Document Number	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RAD 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 VCCIO 0.95V(SY8286)		Rev	
Date: Thursday, August 18, 2016		Sheet 59 of 70		LA-D991P	



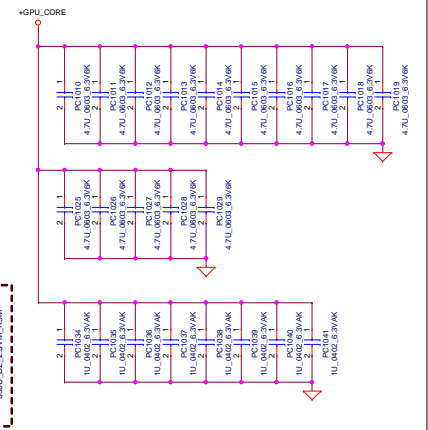
GPU other power_Regulatorr(43.7), Support component(43.8)

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/06/02	Deciphered Date	2013/10/28	Title	PWR +1.05VGPU(SY8286)
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 RADEPARTMENT 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-D991P
				Date	Thursday, August 18, 2016
				Sheet	60 of 70

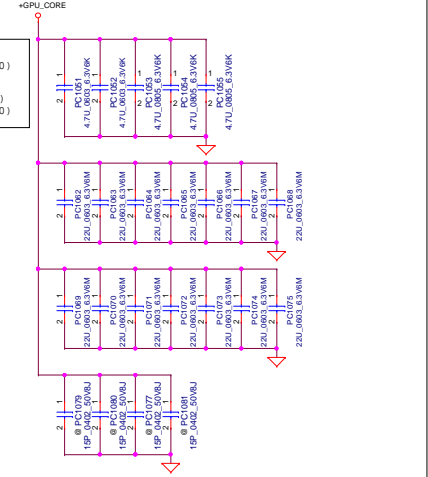


GPU_CORE (0.95V)	GPU_CORE (0.95V)
N16P-GT GDDR5_30W	N16P-GT GDDR5_50W
TDC 30.8A	TDC 51.1A
Peak Current 53.6A	Peak Current 87A
OCF current 80A	OCF current 130A
DCR 0.82mohm +/- 5%	DCR 0.82mohm +/- 5%
	TYP MAX
H/S Rds(on) : 6.8mohm	H/S Rds(on) : 8.6mohm
L/S Rds(on) : 2.0mohm	L/S Rds(on) : 2.5mohm

+GPU_CORE (place under GPU)



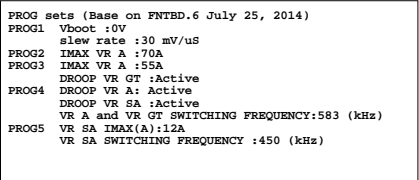
+GPU_CORE (place near GPU)



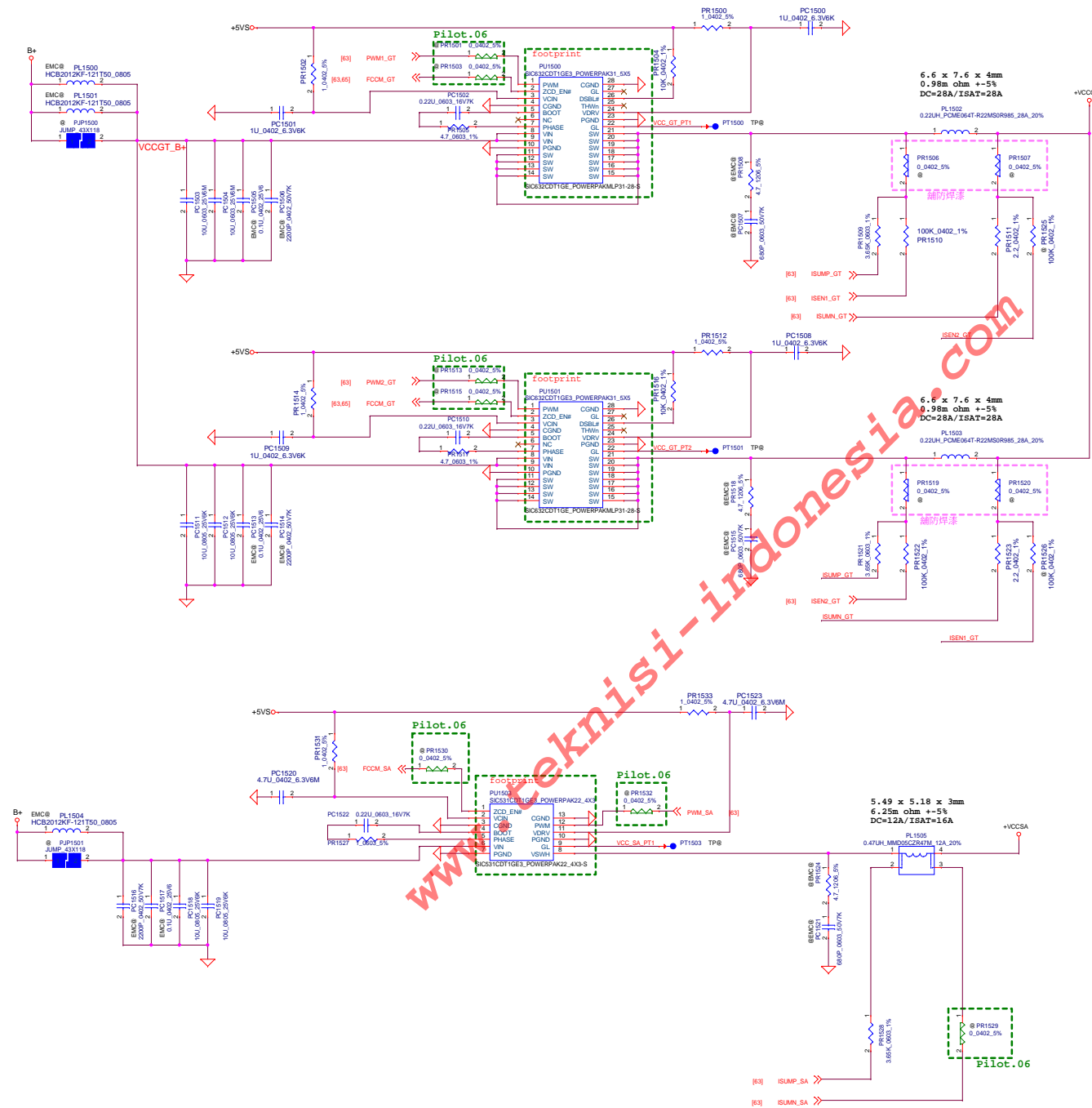
Under:
1. 4.7uF*15 (SE0000008L80)
2. 1uF*8 (SE000000WV00)
Next:
1. 4.7uF*5 (SE093475K80)
2. 22uF*14 (SE000001120)

VGA_CORE controller(43.1), Support component(43.2)
VGA_CORE Drivers (43.3), GPU Core Output CAP (43.9)

Security Classification	Compal Secret Data		Title	
Issued Date	2011/06/02	Deciphered Date	2013/10/28	PWR +1.35VDGPU(TPSS1212)
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 COMPETITIVE DESIGN OR MANUFACTURING DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Rev 0.10/00
LA-D991P				Sheet 65 of 70



Security Classification	Compal Secret Data		Title	
Issued Date	2011/06/02	Deciphered Date	2013/10/28	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND/OR SECRET INFORMATION. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			Compal Electronics, Inc. PWR-VCORE ES195829 LA-D991P	
Doc Number	Sheet		Rev	
20110602	63		01000	
Date	Sheet		Rev	
Thursday, August 18, 2016	63		01000	



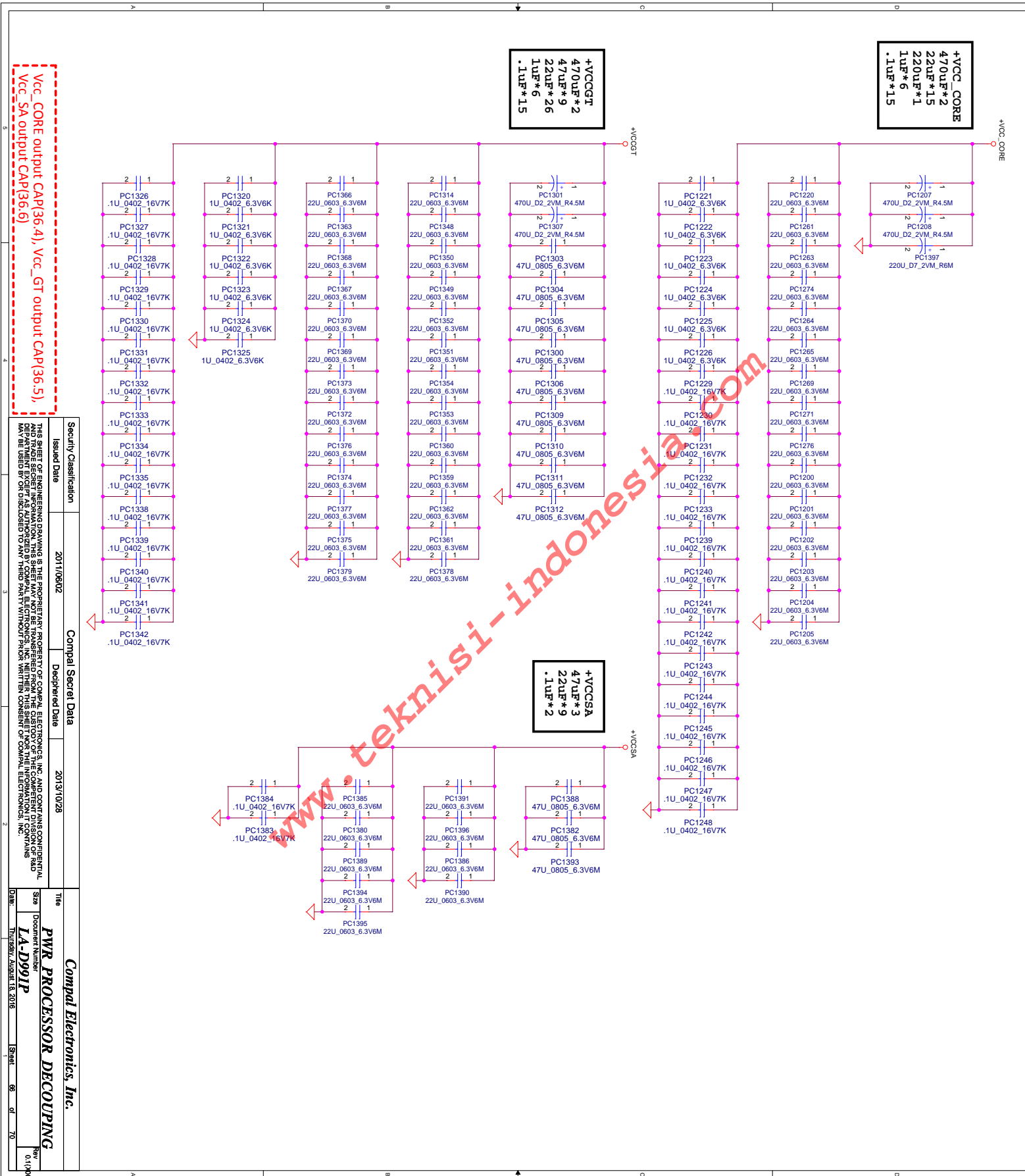
VCCGT (Base on PDDG rev 0.7)
 PL2 TDC_default):TB
 PL2 TDC_max (40Sec):25A
 Max Current 55A
 DC Load line -2.65mV/A
 AC Load line -2.65mV/A
 OCP Current 66.7A
 DCR 0.97mohm +/-5%

6.6 x 7.4 x 4mm
 0.98mohm/DC=28A/ISAT=28A

VCCSA (Base on PDDG rev 0.7)
 PL2 TDC_default):TBD
 PL2 TDC_max (40Sec):10A
 Max Current 11A
 DC Load line -9.1mV/A
 AC Load line -9.1mV/A
 OCP Current 20A

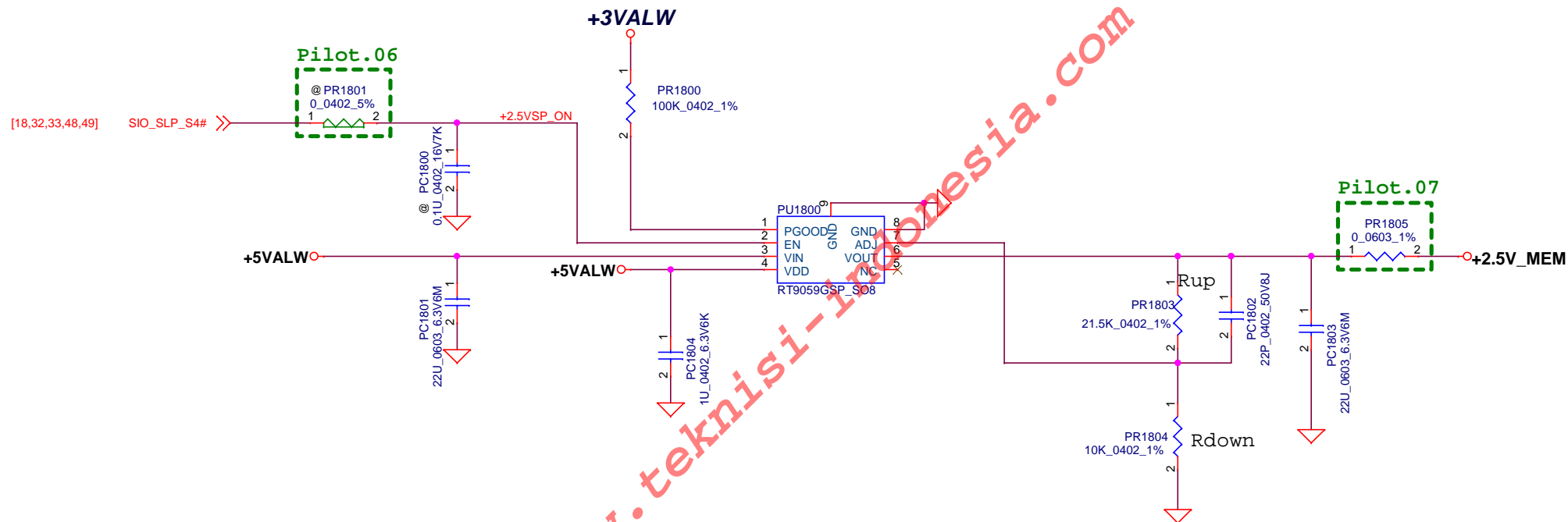
CPU Vcore controller(36.1), Drivers(36.2), Support component(36.3),
 GFX output CAP(36.5)

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/06/02	Deciphered Date	2013/10/28	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMITTED 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
				PWR VCORE VGT.VSA	
				LA-D99IP	
				Date	Thursday, August 18, 2016
				Sheet	65 of 70

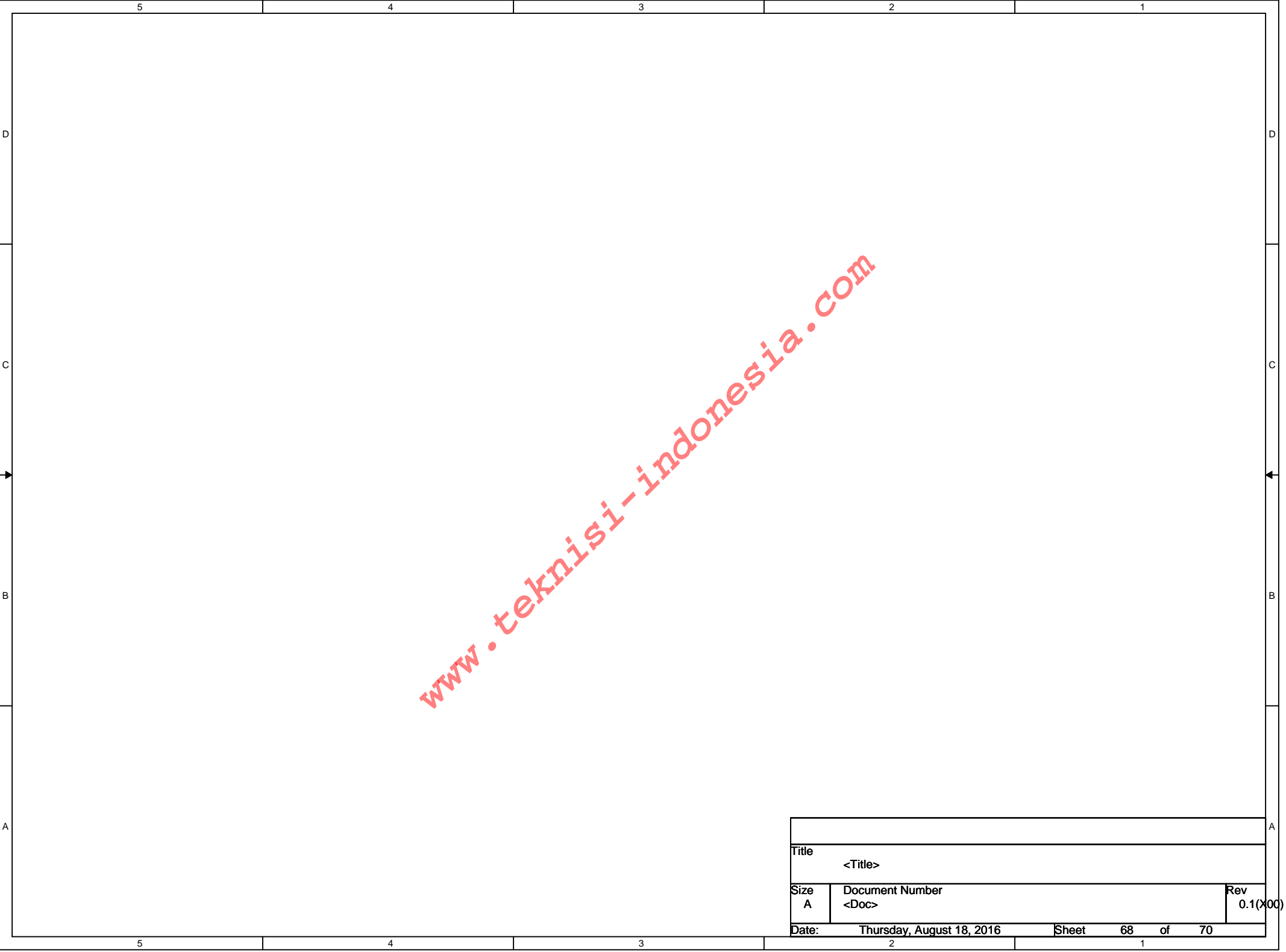


2.5V_MEM controller(35.13), Support component(35.14)

+2.5V_MEM
TDC 0.63A
Peak Current 0.9A
OCP Current 3.5A



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2015/09/18	Deciphered Date	2016/09/18	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 +2.5V MEM		
				Document Number	LA-D991P	Rev 0.1(X00)
				Date:	Thursday, August 18, 2016	Sheet 67 of 70



www.teknisi-indonesia.com

Title <Title>			
Size A	Document Number <Doc>		Rev 0.1(X00)
Date:	Thursday, August 18, 2016		Sheet 68 of 70

[illegible]

D

C

B

A

D

C

B

A

www.teknisi-indonesia.com

Title <Title>		
Size A	Document Number <Doc>	Rev <Rev Code>
Date: Thursday, August 18, 2016		Sheet 70 of 70