

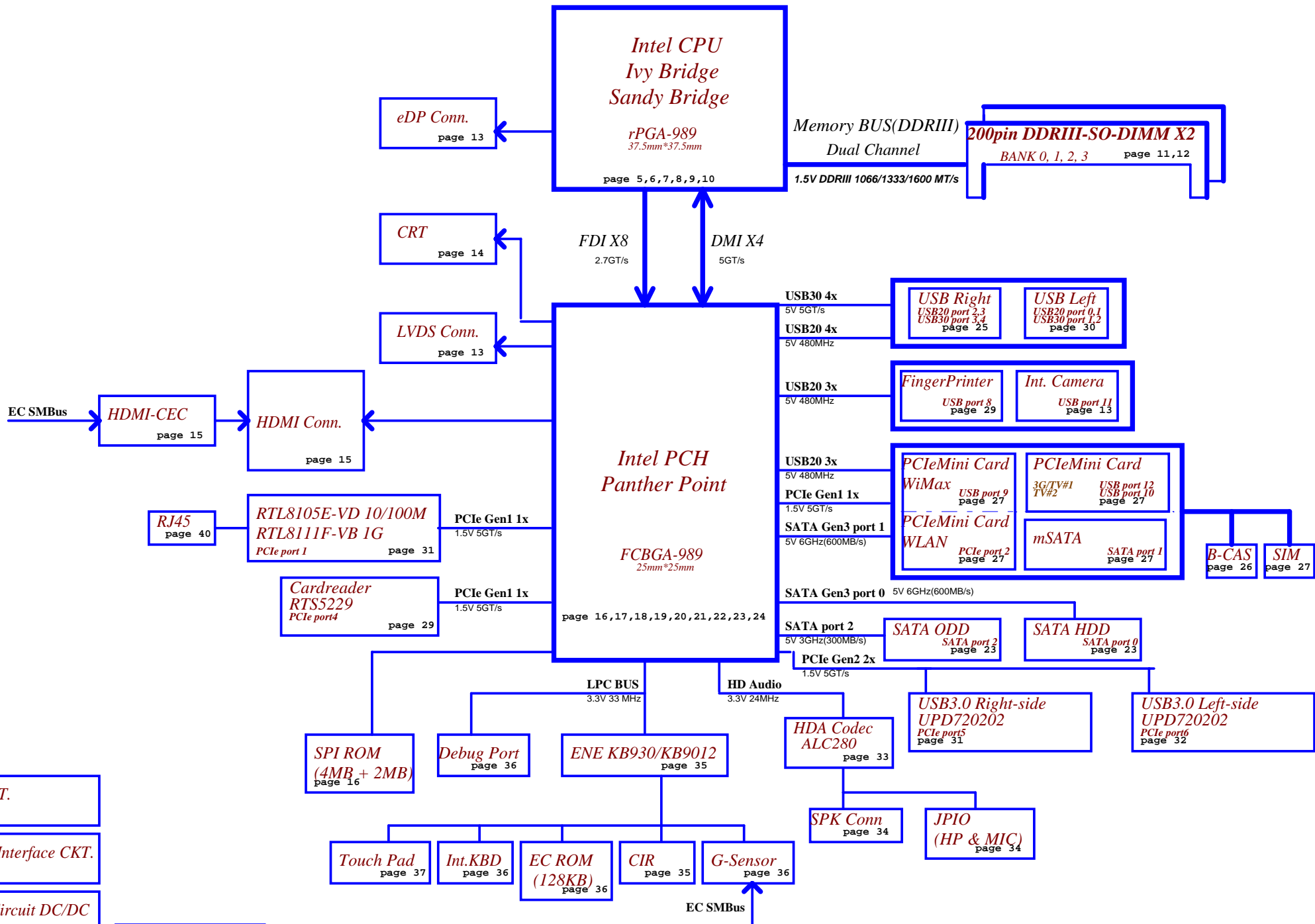
# QFKAA

## Yosemite 10F

# LA-8392P REV 1.0 Schematic

Intel Processor(Ivy Bridge / Sandy Bridge)  
PCH(Panther Point)  
2012-02-06 Rev 1.0

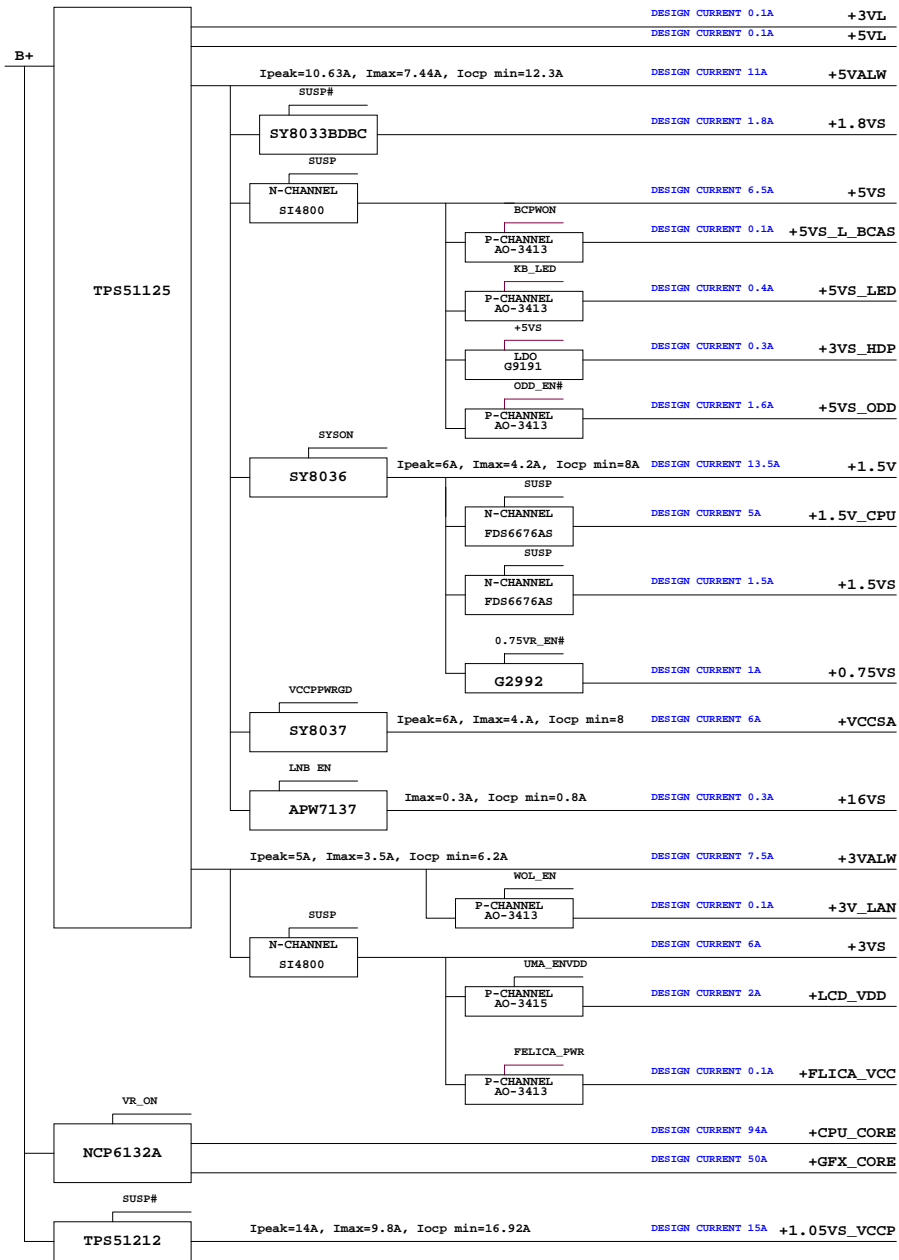
Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	<b>SCHEMATICS, MB A8392</b>
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&amp;D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</small>				Document Number	Rev
				<b>4019HF</b>	<b>B</b>
Date:	Thursday, February 16, 2012	Sheet	1	of	51



- RTC CKT.**  
page 16
- DC/DC Interface CKT.**  
page 38
- Power Circuit DC/DC**  
page 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49
- Power On/Off CKT.**  
page 37

- Finger Printer/B**  
page 26
- Power/B**  
page 37

Security Classification		Compal Secret Data		Title	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Compal Electronics, Inc.	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				4019HF	B
Date: Thursday, February 16, 2012				Sheet	2 of 51



Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number <b>4019HF</b> Date: Thursday, February 16, 2012   Sheet 3 of 51

### Voltage Rails

( O MEANS ON X MEANS OFF )

power plane / State	+RTCVC	B+	+5VL +3VL	+5VALW +3VALW +VSB	+1.5V	+5VS +3VS +1.8VS +1.5VS +1.05VS +0.75VS +CPU_CORE +VGA_CORE +GFX_CORE +VTT +VRAM_1.5VS +3VS_DGPU +1.05VS_DGPU
S0	O	O	O	O	O	O
S1	O	O	O	O	O	O
S3	O	O	O	O	O	X
S5 S4/AC	O	O	O	O	X	X
S5 S4/ Battery only	O	O	O	X	X	X
S5 S4/AC & Battery don't exist	O	X	X	X	X	X

### BTO Option Table

Function	HDMI		Internal Display Port		CPU		KB Light
description	HDMI		Internal Display Port		Sandy Bridge	Ivy Bridge	KB Light
explain	HDMI	CEC	LVDS	EDP	Sandy Bridge	Ivy Bridge	KB Light
BTO	HDMI@	CEC@	LVDS@	IEDP@	SANDY@	IVY@	KBL@

Function	MINI PCI-E SLOT					LAN		Fingerprint	CIR
description	SLOT2				SLOT1	LAN		Fingerprint	CIR
explain	3G	TV Tuner	BCAS	msATA	WIMAX	10/100M	Giga	Fingerprint	CIR
BTO	3G@	TV@	BCAS@	msATA@	WIMAX@	8105ELDO@	8111FVB@	FP@	CIR@

Function	SPI ROM	Green CLK		G-SENSOR	Sleep&Charge		USB 3.0		Camera & Mic
description	SPI ROM	Green CLK		G-SENSOR	Sleep&Charge		USB 3.0		Camera & Mic
explain	WIN8	Green CLK	NOGCLK	G-SENSOR	14600	14617	Internal	External	Camera & Mic
BTO	WIN8@	271@	NOGCLK@	GSENSOR@	14600@	14617@	IUSB30@	EUSB30@	CAM@

Function	USB Repeater			
description	USB Repeater			
explain	TIUR	PRUR		
BTO	TIUR@	PRUR@		

### PCH SM Bus Address

Power	Device	HEX	Address
+3VS	DDR SO-DIMM 0	A0 H	1010 0000 b
+3VS	DDR SO-DIMM 1	A4 H	1010 0100 b
+3VS	New Card		
+3VS	WLAN/WIMAX		
+3VS	Clock Generator		
+3VS	3G		

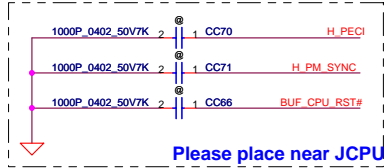
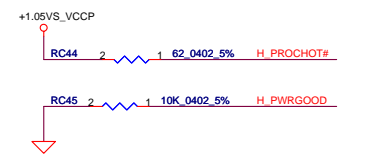
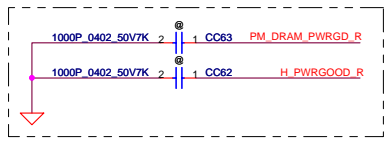
### EC SM Bus1 Address

### EC SM Bus2 Address

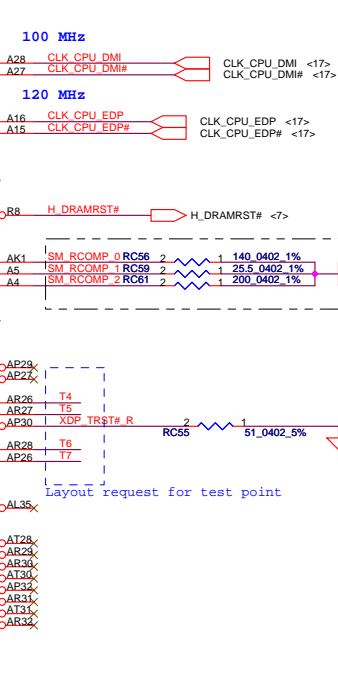
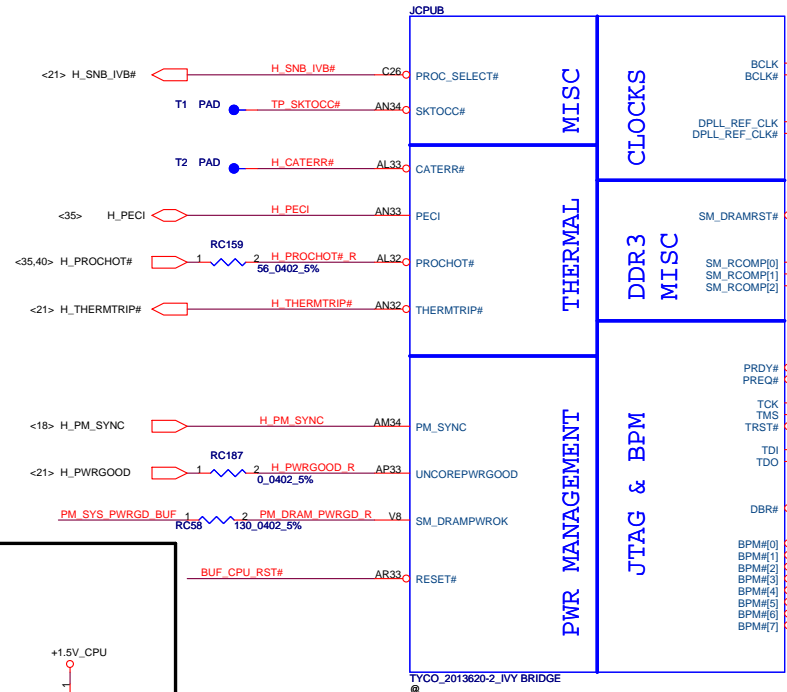
Power	Device	HEX	Address	Power	Device	HEX	Address
+3VL	Smart Battery	16 H	0001 0110 b	+3VS	PCH	96 H	1001 0110 b
+3VL	HDMI-CEC	34 H	0011 0100 b	+3VS	NVIDIA GPU	9A H	1001 1010 b
				+3VS	G-Sensor	40 H	0100 0000 b
Power	Device	HEX	Address				
+3VL	Cap. Sensor		Virtual I2C				

STATE	SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#
Full ON		HIGH	HIGH	HIGH
S1 (Power On Suspend)		HIGH	HIGH	HIGH
S3 (Suspend to RAM)		LOW	HIGH	HIGH
S4 (Suspend to Disk)		LOW	LOW	HIGH
S5 (Soft OFF)		LOW	LOW	LOW
G3		LOW	LOW	LOW

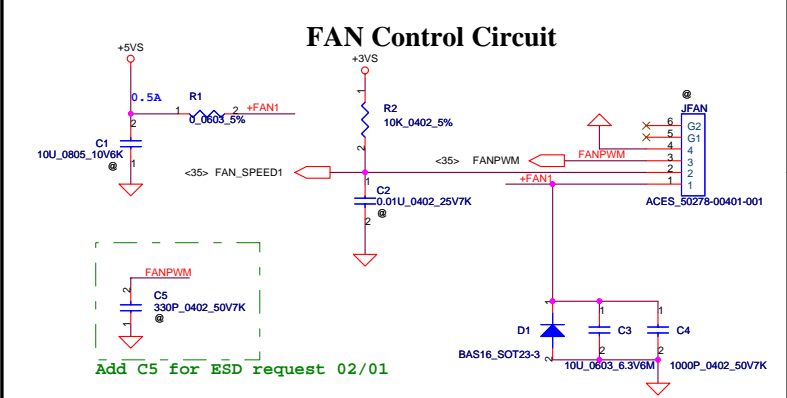
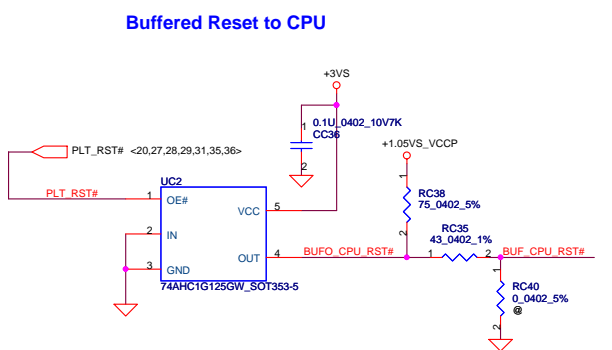
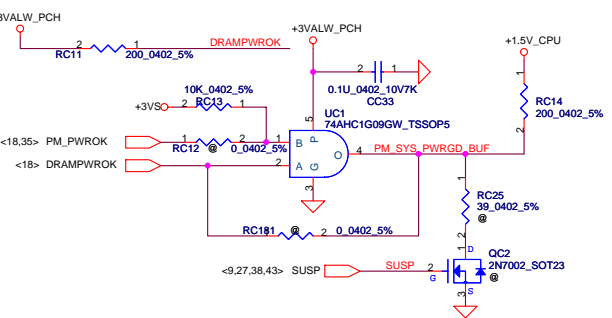
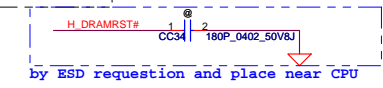
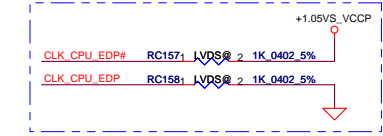
Security Classification	Compal Secret Data			Compal Electronics, Inc.			
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	SCHEMATICS, MB A8392		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS 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	4019HF		
Date:	Thursday, February 16, 2012	Sheet	4	of	51	Rev	B



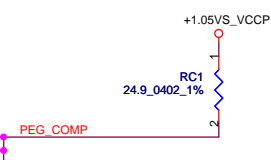
Please place near JCPU



Stuff R41 and R42 if do not support eDP

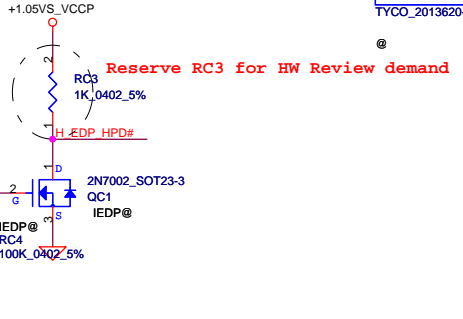
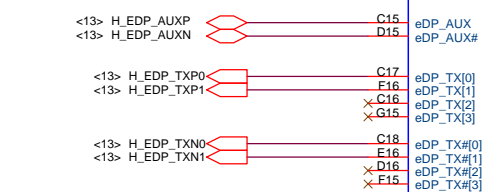


Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	SHEMATICS, MB A8392	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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.			Document Number	4019HF	
Date:	Thursday, February 16, 2012	Sheet	5	of	51

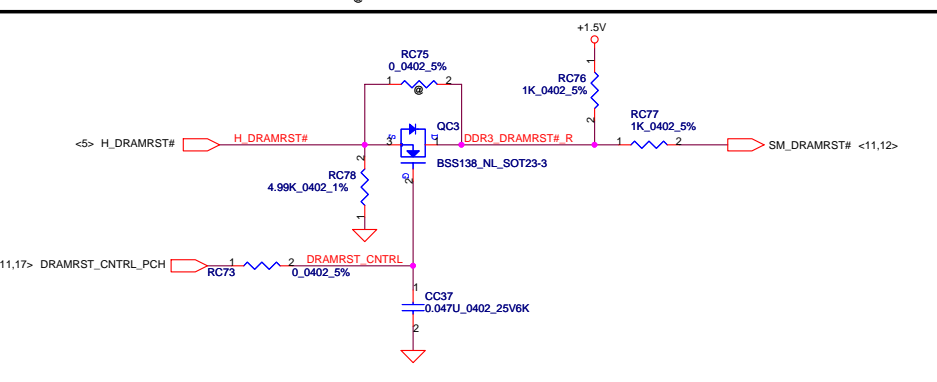
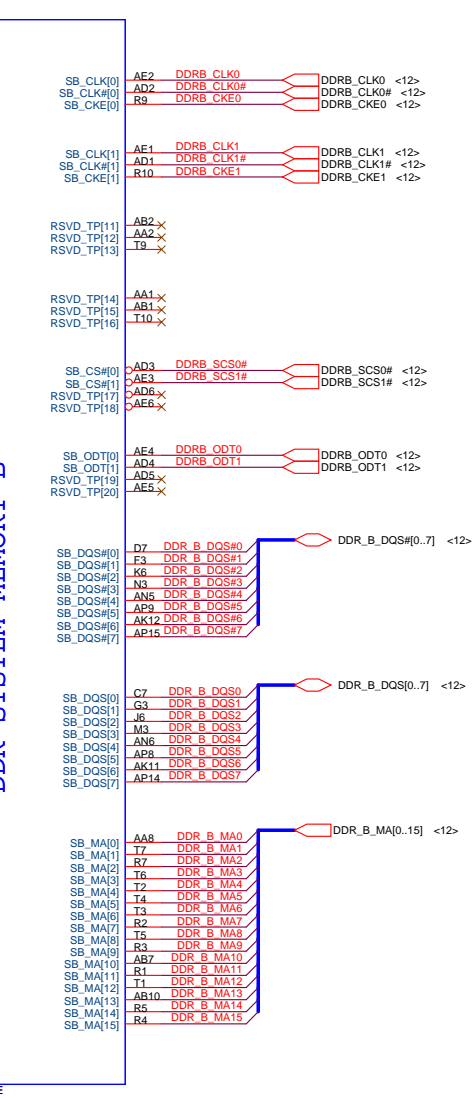
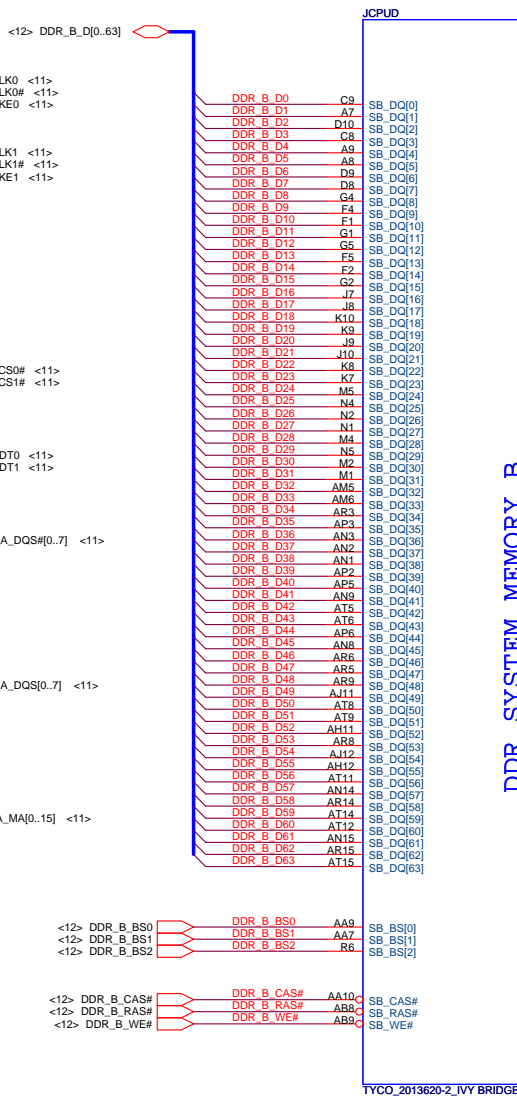
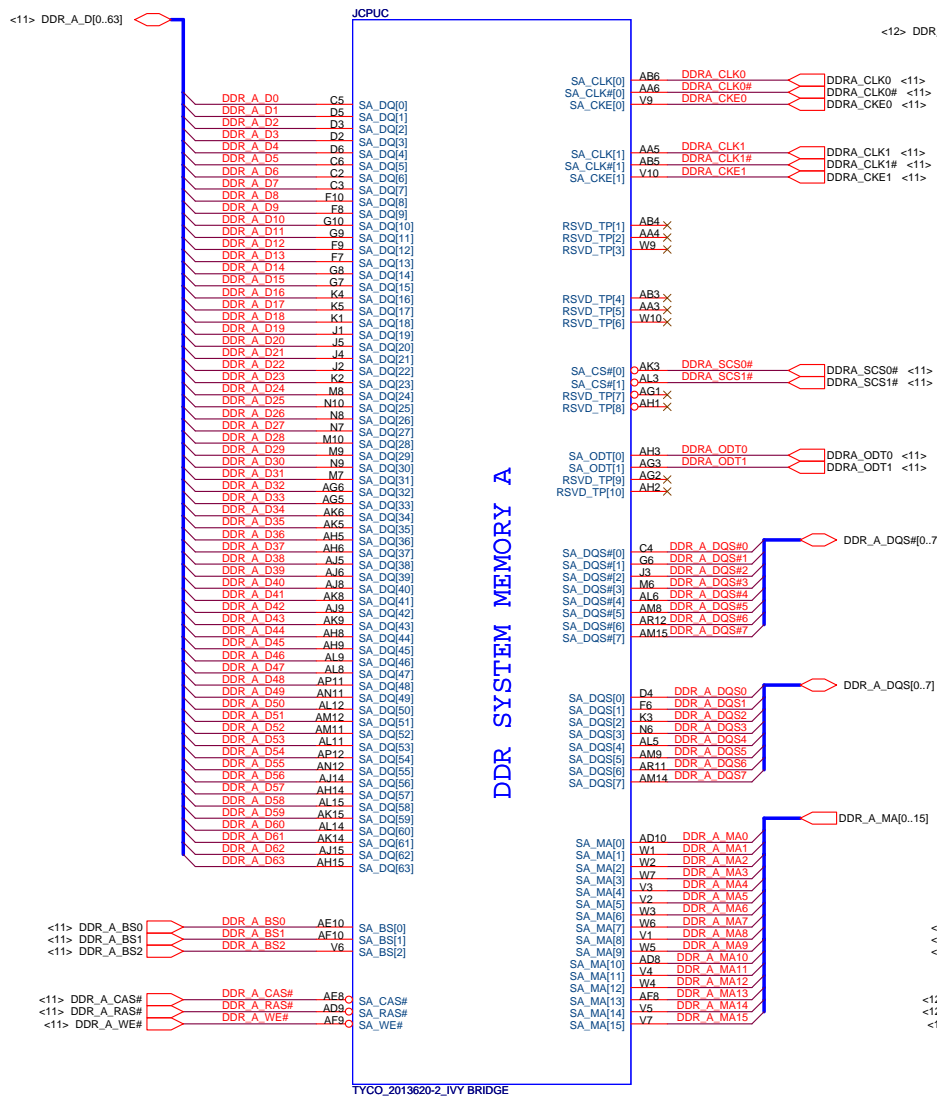


PEG\_ICOMPI and RCOMPO signals should be shorted and routed with - max length = 500 mils - typical impedance = 43 m ohm (4 mils)  
 PEG\_ICOMPO signals should be routed with - max length = 500 mils - typical impedance = 14.5 m ohm (12 mils)

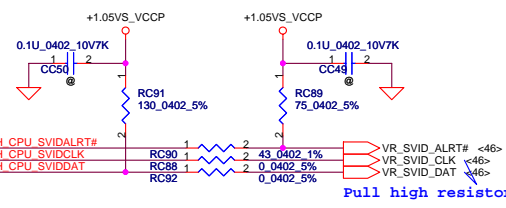
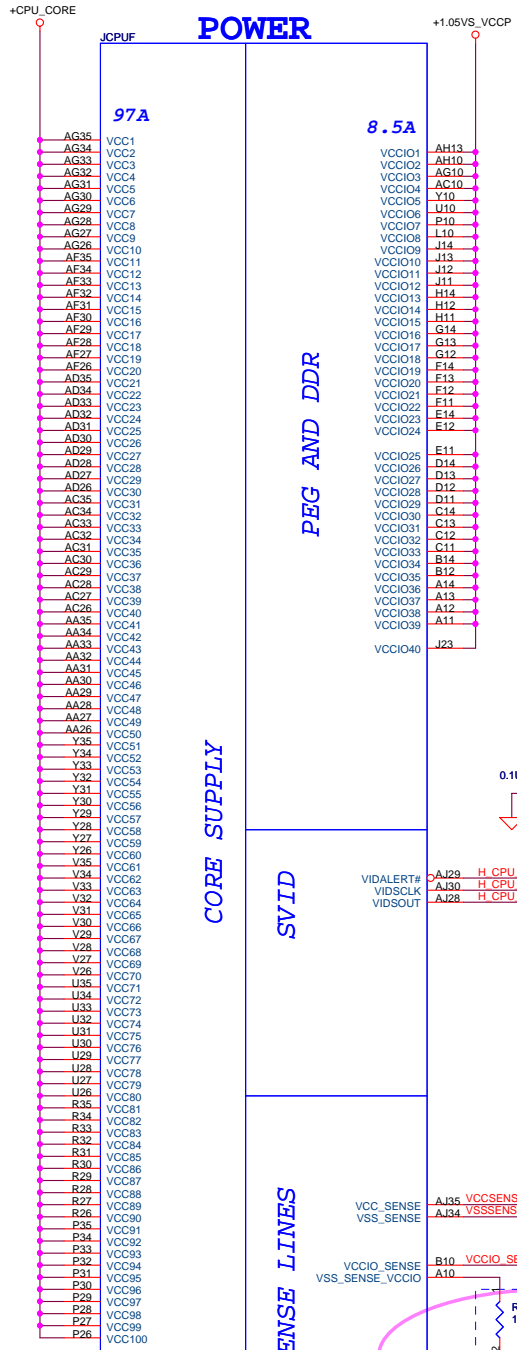
eDP\_COMP signals should be shorted near balls and routed with typical impedance <25m ohm



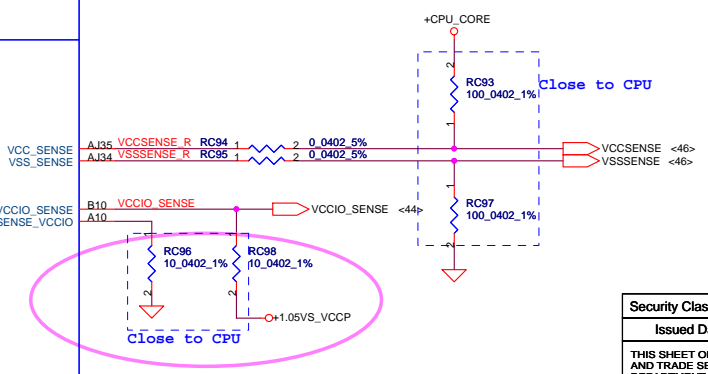
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				4019HF	B
Date: Thursday, February 16, 2012				Sheet	6 of 51



Security Classification	Compal Secret Data		Title	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number <b>4019HF</b> Date: Thursday, February 16, 2012   Sheet 7 of 51



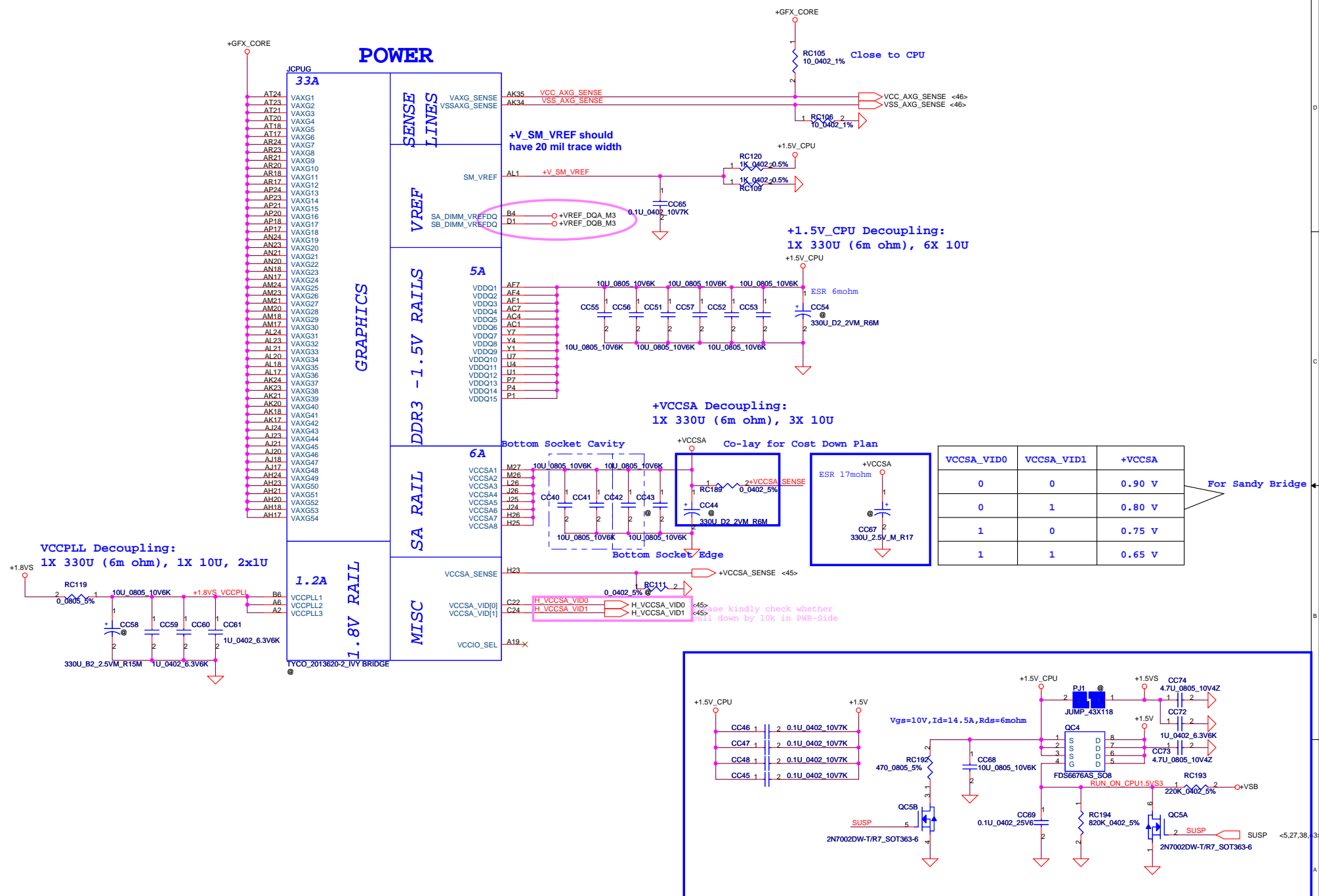
Pull high resistor on VR side



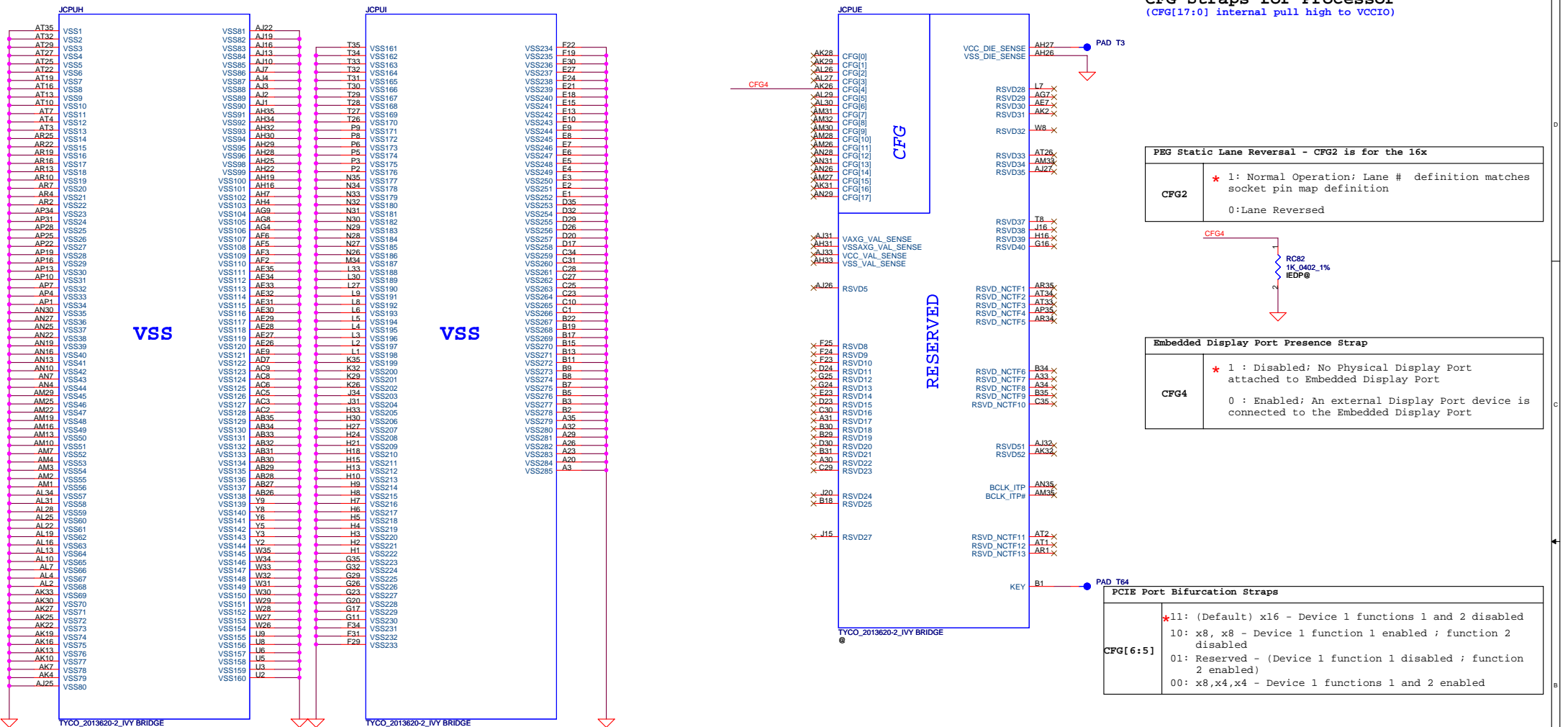
Security Classification		Compal Secret Data	
Issued Date	2011/12/14	Deciphered Date	2012/12/31
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			

Compal Electronics, Inc.		
Title		
SCHEMATICS, MB A8392		
Rev	Document Number	Rev
Custom	4019HF	B
Date:	Thursday, February 16, 2012	Sheet 8 of 51





**CFG Straps for Processor**  
(CFG[17:0] internal pull high to VCCIO)



**PEG Static Lane Reversal - CFG2 is for the 16x**

CFG2	* 1: Normal Operation; Lane # definition matches socket pin map definition 0: Lane Reversed
------	--

**Embedded Display Port Presence Strap**

CFG4	* 1 : Disabled; No Physical Display Port attached to Embedded Display Port 0 : Enabled; An external Display Port device is connected to the Embedded Display Port
------	--

**PCIE Port Bifurcation Straps**

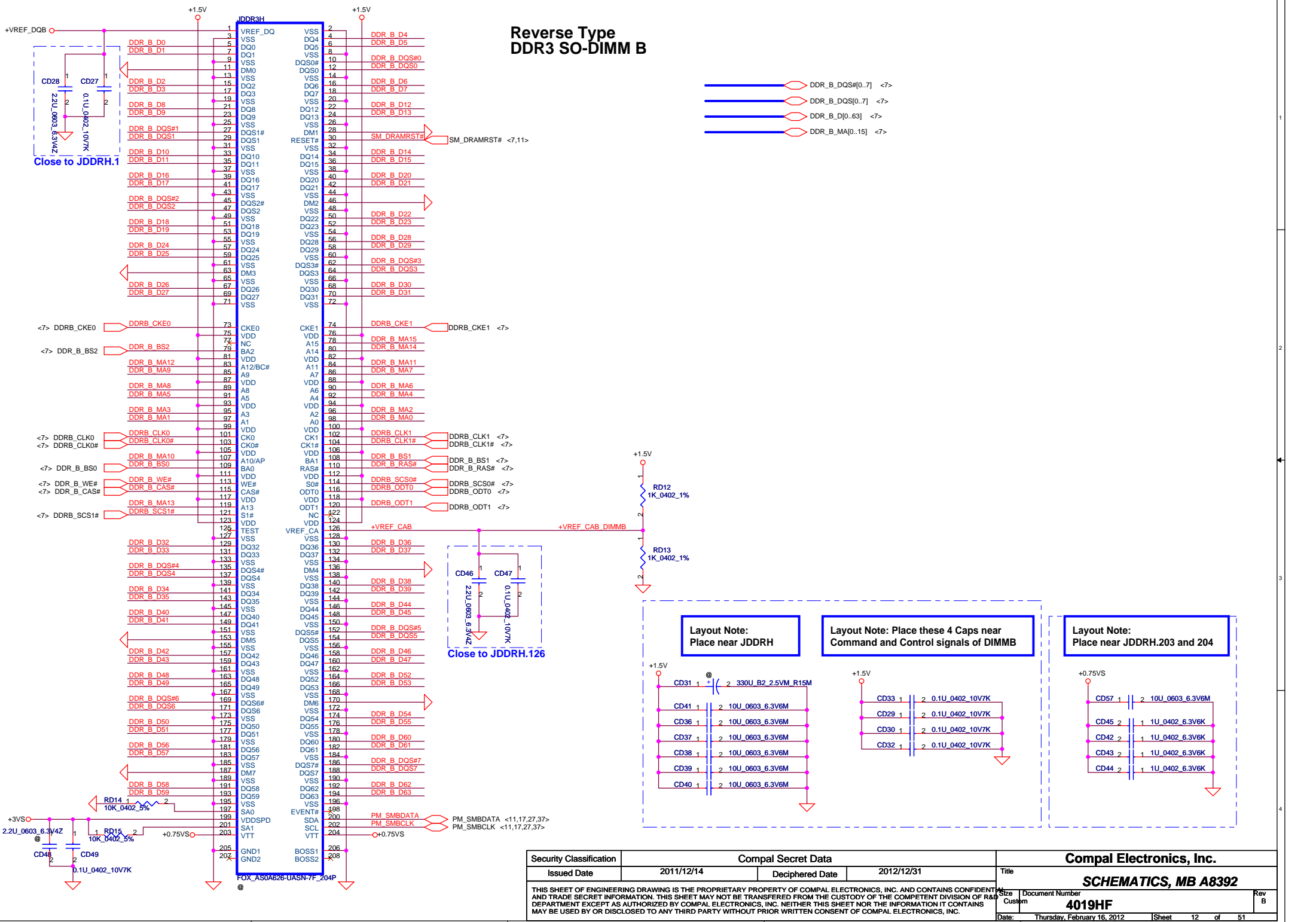
CFG[6:5]	* 11: (Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled
----------	--

**PEG DEFER TRAINING**

CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training
------	---



# Reverse Type DDR3 SO-DIMM B



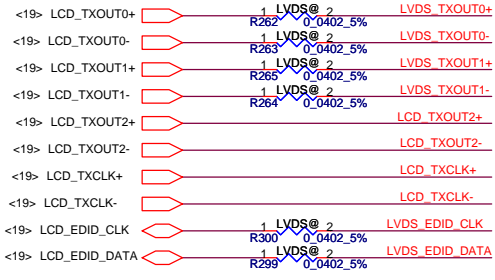
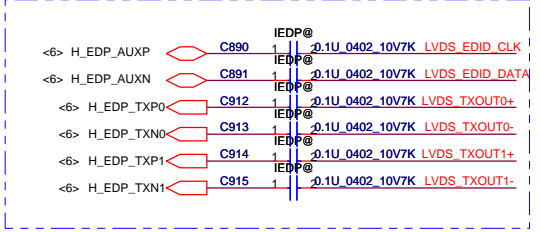
**Layout Note:**  
Place near JDDRH

**Layout Note:** Place these 4 Caps near  
Command and Control signals of DIMMB

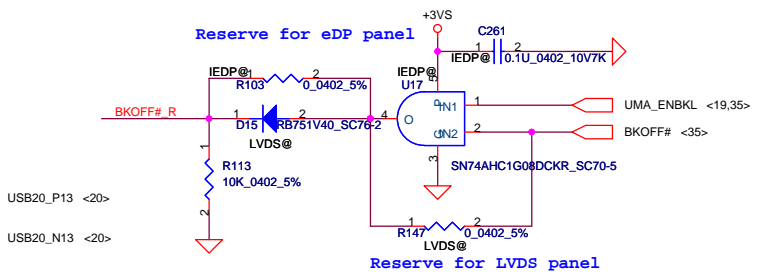
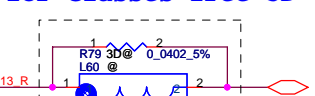
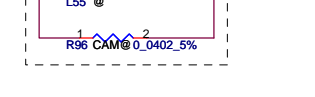
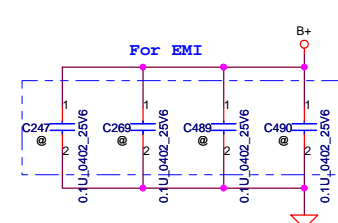
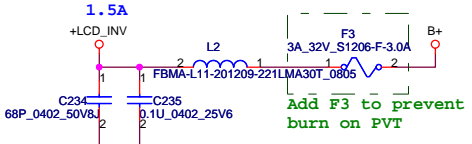
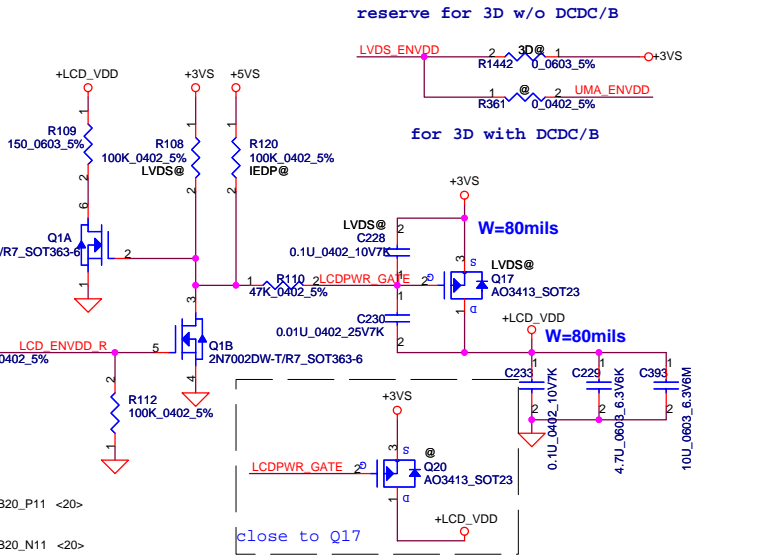
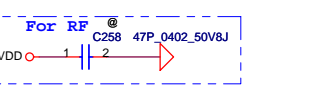
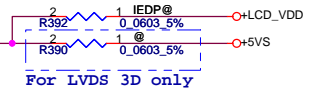
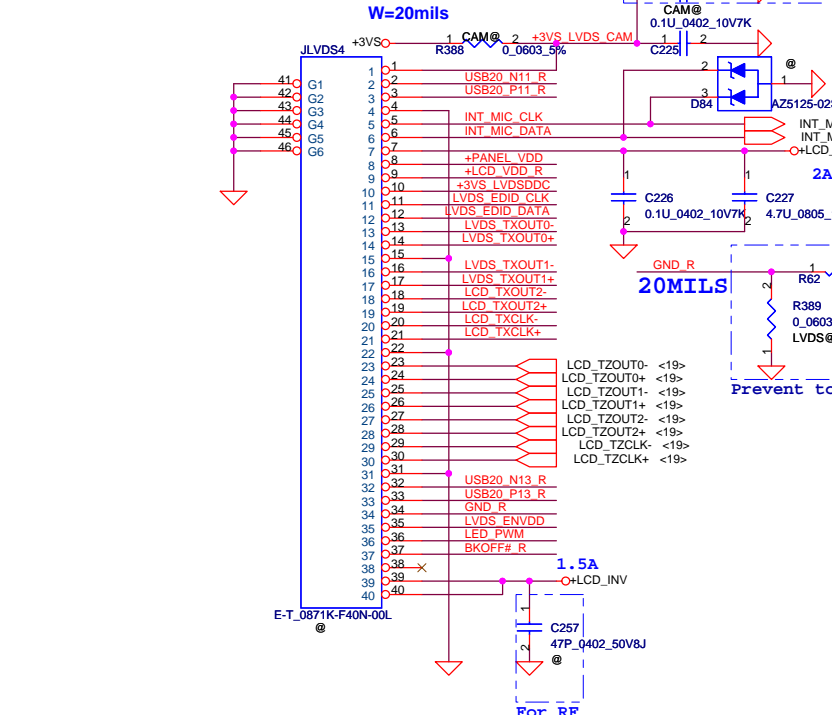
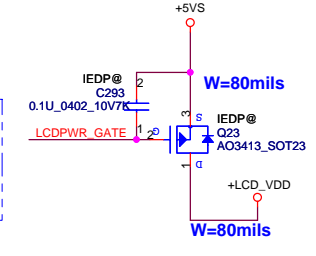
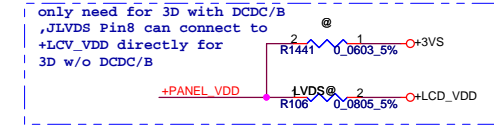
**Layout Note:**  
Place near JDDRH.203 and 204

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title <b>SCHMATICS, MB A8392</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 B	Document Number <b>4019HF</b>
Date:	Thursday, February 16, 2012	Sheet	12	of	51

**OPT for 2D HD eDP Panel**



**LCD/PANEL BD. Conn.**

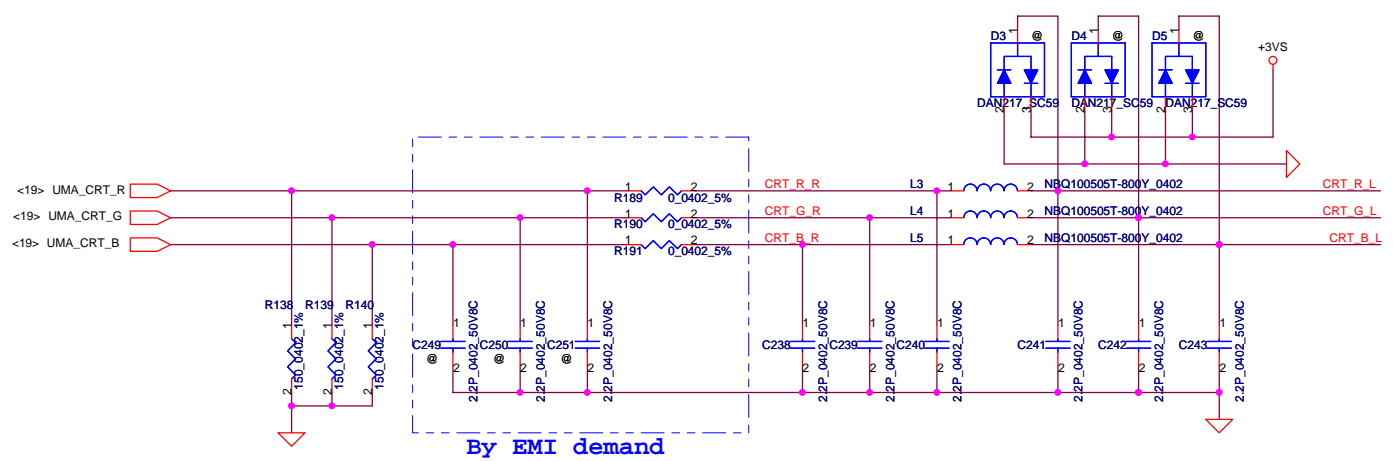


**LVDS & eDP cable pine definition notice.**

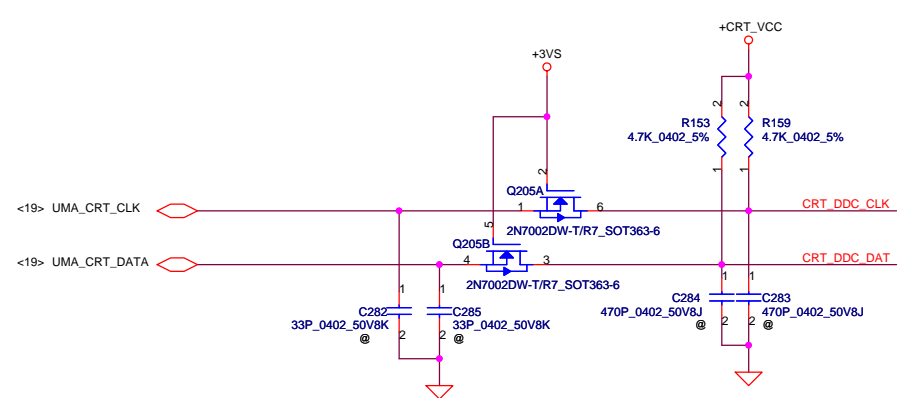
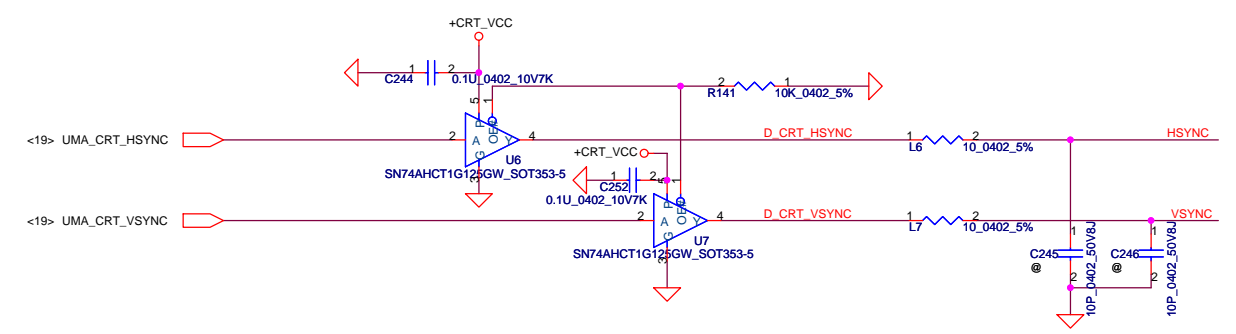
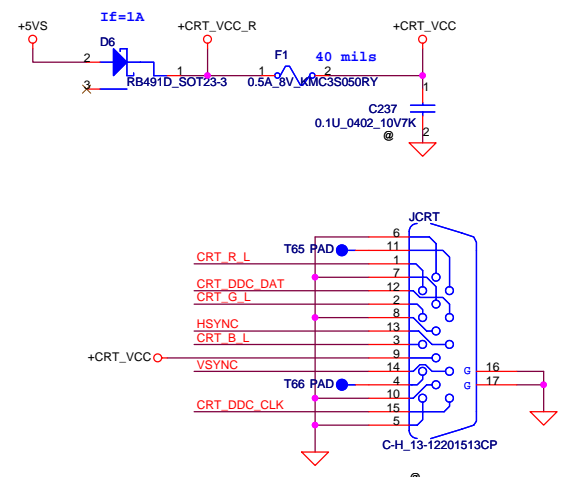
Prevent to use wrong interface panel.

	LVDS cable MB side	eDP cable MB side
	Pin 22	Pin 22
LVDS	GND	
eDP		NC

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number <b>4019HF</b> Date: Thursday, February 16, 2012   Sheet 13 of 51

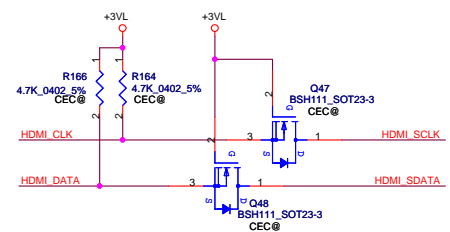
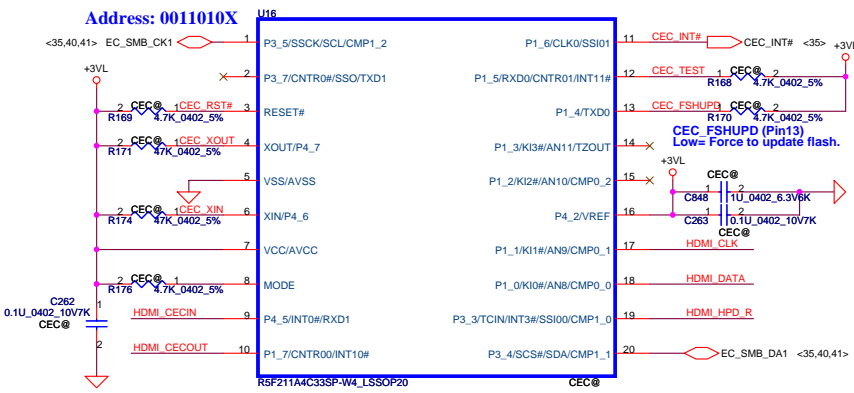
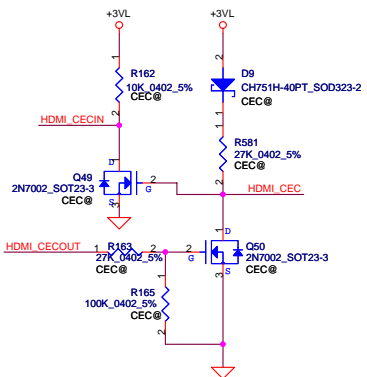


### CRT CONNECTOR



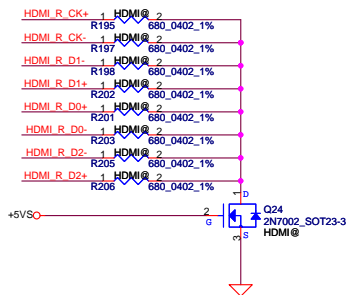
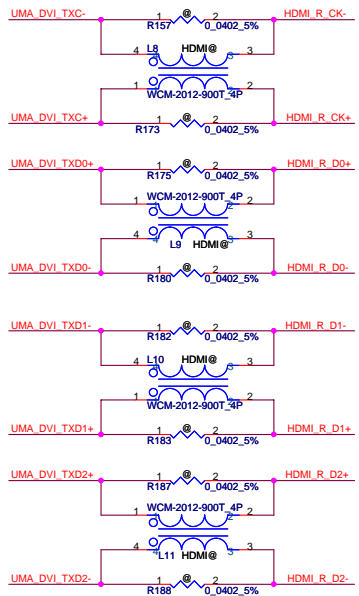
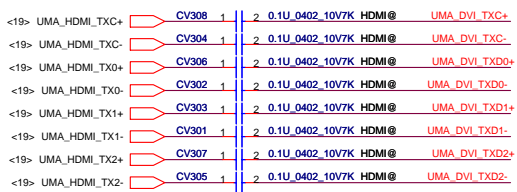
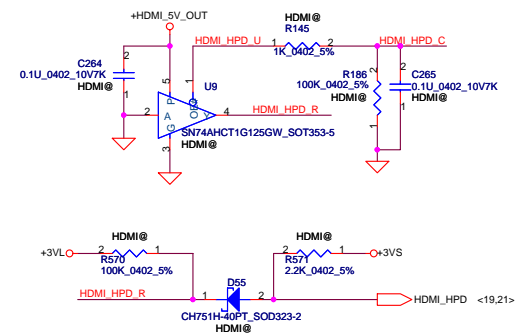
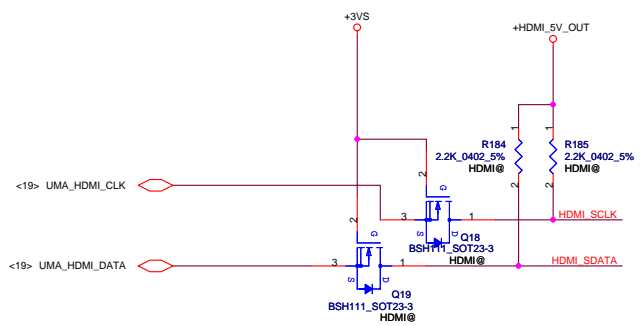
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev B
				4019HF	
Date:		Thursday, February 16, 2012		Sheet	14 of 51

# HDMI CEC Controller

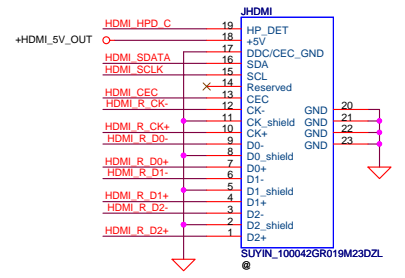


HDMI Royalty  
**RO000003HM**  
 HDMI W/Logo + HDCP

HDMI W/O Logo: RO000001HM  
 HDMI W/Logo: RO000002HM  
 HDMI W/Logo + HDCP: RO000003HM



## HDMI Connector



Security Classification	Compal Secret Data		Title	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	2012/12/31
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				
Compal Electronics, Inc.			SHEMATICS, MB A8392	
Size	Document Number	Rev	B	
	4019HF			
Date:	Thursday, February 16, 2012	Sheet	15	of 51

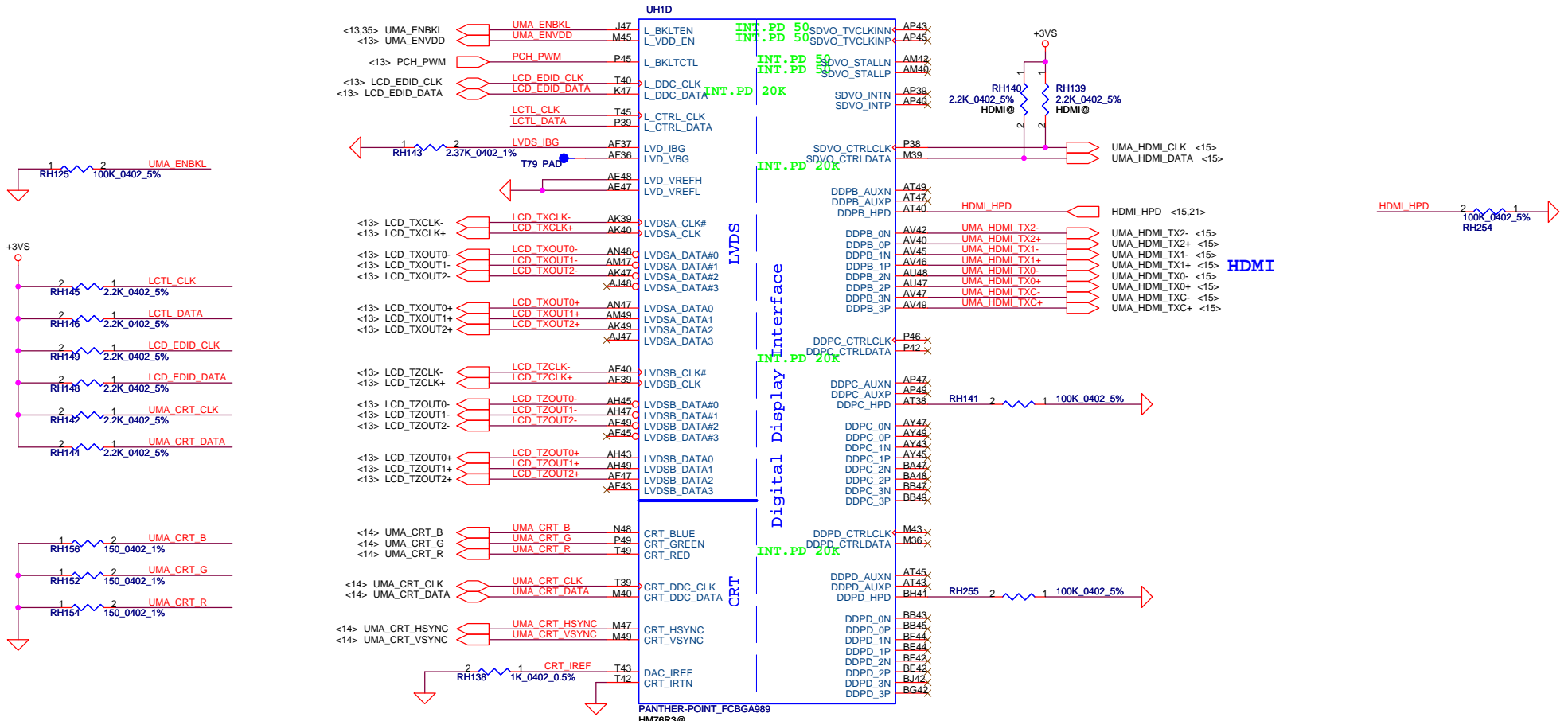








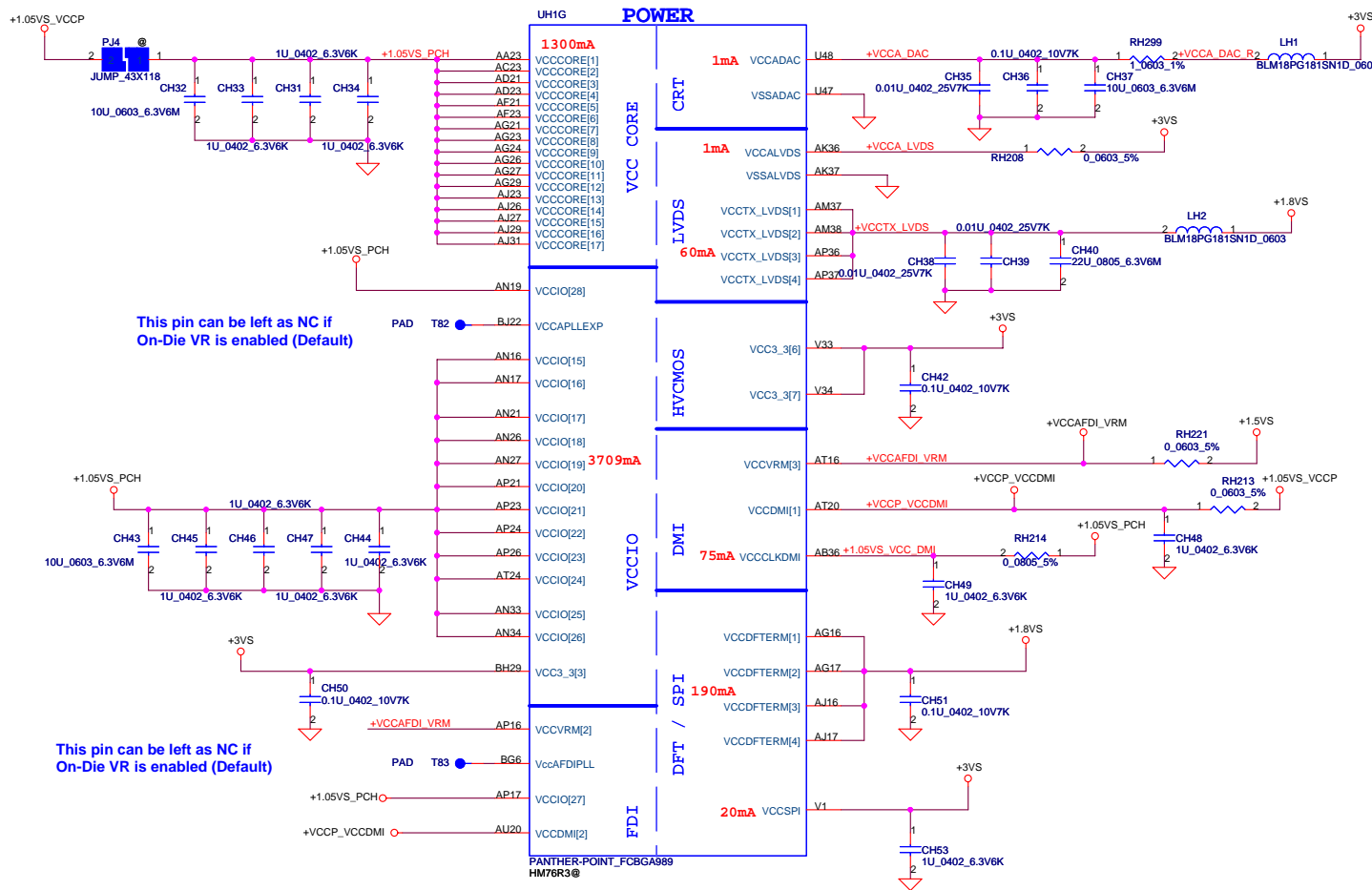




Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	<b>SCHEMATICS, MB A8392</b>
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size	Document Number	Rev	B		
Custom	<b>4019HF</b>	Date:	Thursday, February 16, 2012	Sheet	19 of 51



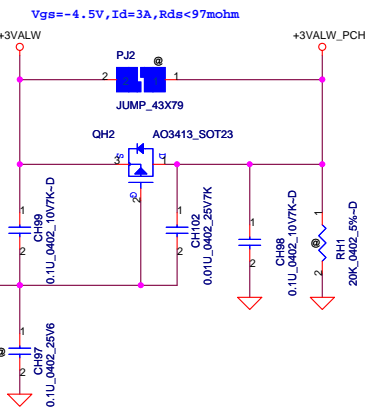




This pin can be left as NC if On-Die VR is enabled (Default)

This pin can be left as NC if On-Die VR is enabled (Default)

### +3VALW to +3V\_PCH



**PCH Power Rail Table**  
Refer to PCH EDS R1.0

Voltage Rail	Voltage	S0 Iccmax Current (A)
V_PROC_IO	1.05	0.001
V5REF	5	0.001
V5REF_Sus	5	0.001
Vcc3_3	3.3	0.228
VccADAC	3.3	0.063
VccADPLLA	1.05	0.08
VccADPLLB	1.05	0.08
VccCore	1.05	1.7
VccDMI	1.1	0.047
VccIO	1.05	3.711
VccASW	1.05	0.903
VccSPI	3.3	0.01
VccDSW	3.3	0.001
VccDFTERM	1.8	0.002
VccRTC	3.3	N/A
VccSus3_3	3.3	0.095
VccSusHDA	3.3	0.01
VccVRM	1.5	0.167
VccCLKDMI	1.05	0.07
VccSSC	1.05	0.095
VccDIFFCLKN	1.05	0.055
VccALVDS	3.3	0.001
VccTX_LVDS	1.8	0.04





UH1H		
HS	VSS[0]	
AA17	VSS[1]	
AA2	VSS[2]	VSS[80] AK38
AA3	VSS[3]	VSS[81] AK4
AA33	VSS[3]	VSS[82] AK42
AA34	VSS[5]	VSS[84] AK46
AB11	VSS[6]	VSS[85] AK8
AB14	VSS[7]	VSS[86] AL16
AB39	VSS[8]	VSS[87] AL19
AB4	VSS[9]	VSS[88] AL2
AB43	VSS[10]	VSS[89] AL21
AB5	VSS[11]	VSS[90] AL22
AB7	VSS[12]	VSS[91] AL26
AC19	VSS[13]	VSS[92] AL27
AC2	VSS[14]	VSS[93] AL31
AC21	VSS[15]	VSS[94] AL33
AC24	VSS[16]	VSS[95] AL34
AC33	VSS[17]	VSS[96] AL48
AC34	VSS[18]	VSS[97] AM11
AC48	VSS[19]	VSS[98] AM14
AD10	VSS[20]	VSS[99] AM38
AD11	VSS[21]	VSS[100] AM39
AD12	VSS[22]	VSS[101] AM43
AD13	VSS[23]	VSS[102] AM45
AD19	VSS[24]	VSS[103] AM46
AD24	VSS[25]	VSS[104] AM7
AD26	VSS[26]	VSS[105] AN2
AD27	VSS[27]	VSS[106] AN29
AD33	VSS[28]	VSS[107] AN3
AD34	VSS[29]	VSS[108] AN31
AD36	VSS[30]	VSS[109] AP12
AD37	VSS[31]	VSS[110] AP19
AD38	VSS[32]	VSS[111] AP28
AD4	VSS[33]	VSS[112] AP30
AD40	VSS[34]	VSS[113] AP32
AD42	VSS[35]	VSS[114] AP38
AD43	VSS[36]	VSS[115] AP4
AD45	VSS[37]	VSS[116] AP42
AD46	VSS[38]	VSS[117] AP46
AD8	VSS[39]	VSS[118] AP8
AE2	VSS[40]	VSS[119] AP2
AE3	VSS[41]	VSS[120] AR48
AF10	VSS[42]	VSS[121] AT11
AF12	VSS[43]	VSS[122] AT13
AF14	VSS[44]	VSS[123] AT18
AD16	VSS[45]	VSS[124] AT22
AF16	VSS[46]	VSS[125] AT26
AF19	VSS[47]	VSS[126] AT28
AF24	VSS[48]	VSS[127] AT30
AF26	VSS[49]	VSS[128] AT32
AF27	VSS[50]	VSS[129] AT34
AF29	VSS[51]	VSS[130] AT39
AF31	VSS[52]	VSS[131] AT42
AF38	VSS[53]	VSS[132] AT46
AF4	VSS[54]	VSS[133] AT7
AF42	VSS[55]	VSS[134] AU24
AF46	VSS[56]	VSS[135] AU30
AF5	VSS[57]	VSS[136] AV16
AF7	VSS[58]	VSS[137] AV20
AF8	VSS[59]	VSS[138] AV24
AG19	VSS[60]	VSS[139] AV38
AG2	VSS[61]	VSS[140] AV43
AG31	VSS[62]	VSS[141] AV4
AG48	VSS[63]	VSS[142] AV8
AH11	VSS[64]	VSS[143] AW14
AH36	VSS[65]	VSS[144] AW18
AH39	VSS[66]	VSS[145] AW2
AH40	VSS[67]	VSS[146] AW22
AH42	VSS[68]	VSS[147] AW26
AH46	VSS[69]	VSS[148] AW32
AH7	VSS[70]	VSS[149] AW36
AJ19	VSS[71]	VSS[150] AW4
AJ21	VSS[72]	VSS[151] AW36
AJ24	VSS[73]	VSS[152] AW42
AJ33	VSS[74]	VSS[153] AW48
AJ34	VSS[75]	VSS[154] AV11
AK12	VSS[76]	VSS[155] AY12
AK3	VSS[77]	VSS[156] AY22
	VSS[78]	VSS[157] AY28
	VSS[79]	VSS[158]

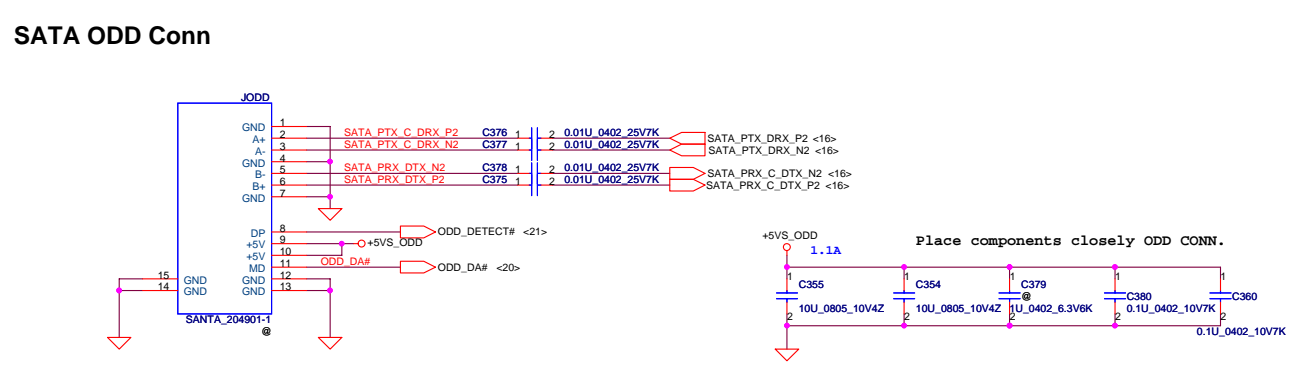
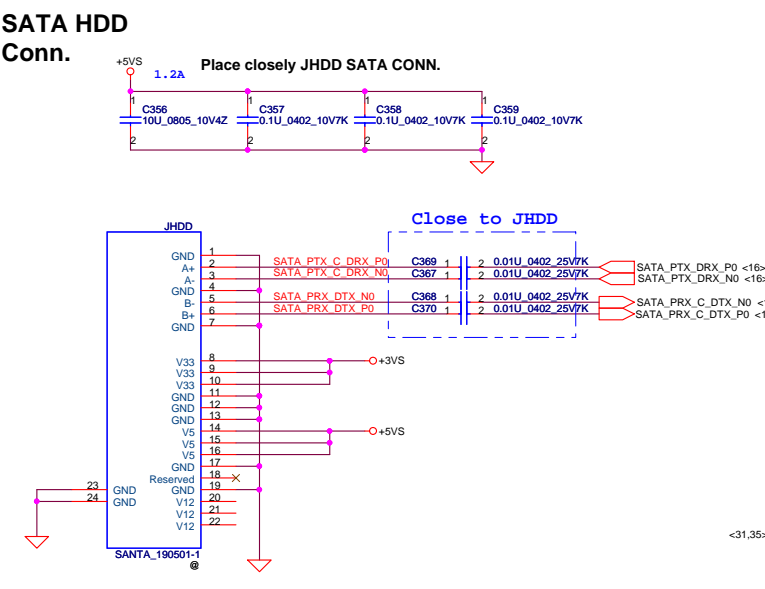
PANTHER-POINT\_FCBGA989  
HM76R3@

UH1		
AY4	VSS[159]	VSS[259] H46
AY42	VSS[160]	VSS[260] K48
AY46	VSS[161]	VSS[261] K28
AY8	VSS[162]	VSS[262] K39
B11	VSS[163]	VSS[263] K46
B15	VSS[164]	VSS[264] K7
B19	VSS[165]	VSS[265] L18
B23	VSS[166]	VSS[266] L2
B27	VSS[167]	VSS[267] L20
B31	VSS[168]	VSS[268] L26
B35	VSS[169]	VSS[269] L28
B39	VSS[170]	VSS[270] L36
B7	VSS[171]	VSS[271] L48
F45	VSS[172]	VSS[272] M12
AL17	VSS[173]	VSS[273] P16
BB16	VSS[174]	VSS[274] M18
BB20	VSS[175]	VSS[275] M22
BB22	VSS[176]	VSS[276] M24
BB24	VSS[177]	VSS[277] M30
BB28	VSS[178]	VSS[278] M32
BB30	VSS[179]	VSS[279] M34
BB38	VSS[180]	VSS[280] M38
BB4	VSS[181]	VSS[281] M4
BB46	VSS[182]	VSS[282] M42
BC14	VSS[183]	VSS[283] M46
BC18	VSS[184]	VSS[284] M8
BC2	VSS[185]	VSS[285] N18
BC26	VSS[186]	VSS[287] P30
BC32	VSS[188]	VSS[288] N47
BC34	VSS[189]	VSS[289] P11
BC38	VSS[190]	VSS[290] P18
BC40	VSS[191]	VSS[291] T33
BC42	VSS[192]	VSS[292] P40
BC48	VSS[193]	VSS[293] P43
BD46	VSS[194]	VSS[294] P47
BD5	VSS[195]	VSS[295] P7
BE22	VSS[196]	VSS[296] R2
BE26	VSS[197]	VSS[297] R48
BE40	VSS[198]	VSS[298] T12
BF10	VSS[199]	VSS[299] T17
BF12	VSS[200]	VSS[299] T4
BF16	VSS[201]	VSS[300] W34
BF20	VSS[202]	VSS[301] T46
BF22	VSS[203]	VSS[302] T47
BF24	VSS[204]	VSS[303] T8
BF26	VSS[205]	VSS[304] V11
BF28	VSS[206]	VSS[305] V17
BD3	VSS[207]	VSS[306] V26
BF30	VSS[208]	VSS[307] V27
BF38	VSS[209]	VSS[308] V29
BF40	VSS[210]	VSS[309] V31
AT22	VSS[211]	VSS[310] V36
BG17	VSS[212]	VSS[311] V39
BG21	VSS[213]	VSS[312] V43
BG33	VSS[214]	VSS[313] V7
BG44	VSS[215]	VSS[314] W17
BG8	VSS[216]	VSS[315] W19
BH11	VSS[217]	VSS[316] W2
BH15	VSS[218]	VSS[317] W27
BH17	VSS[219]	VSS[318] W48
BH19	VSS[220]	VSS[319] X12
H10	VSS[221]	VSS[320] Y38
BH27	VSS[222]	VSS[321] Y4
AV16	VSS[223]	VSS[322] Y42
BH31	VSS[224]	VSS[323] Y46
BH33	VSS[225]	VSS[324] Y8
BH35	VSS[226]	VSS[325] RG29
BH39	VSS[227]	VSS[326] N24
BH43	VSS[228]	VSS[327] AJ3
BH7	VSS[229]	VSS[328] AD47
D3	VSS[230]	VSS[329] B43
D12	VSS[231]	VSS[330] BE10
D16	VSS[232]	VSS[331] BG41
D18	VSS[233]	VSS[332] G14
D22	VSS[234]	VSS[333] H16
D24	VSS[235]	VSS[334] T36
D26	VSS[236]	VSS[335] BG22
D30	VSS[237]	VSS[336] BG24
D32	VSS[238]	VSS[337] C22
D34	VSS[239]	VSS[338] AP13
D38	VSS[240]	VSS[339] M14
D42	VSS[241]	VSS[340] AP3
D6	VSS[242]	VSS[341] AP1
E18	VSS[243]	VSS[342] BE16
E26	VSS[244]	VSS[343] BC16
G18	VSS[245]	VSS[344] BC28
G20	VSS[246]	VSS[345] B128
G26	VSS[247]	
G28	VSS[248]	
G36	VSS[249]	
G48	VSS[250]	
H12	VSS[251]	
H18	VSS[252]	
H22	VSS[253]	
H24	VSS[254]	
H26	VSS[255]	
H30	VSS[256]	
H32	VSS[257]	
H34	VSS[258]	
F3	VSS[259]	

PANTHER-POINT\_FCBGA989  
HM76R3@

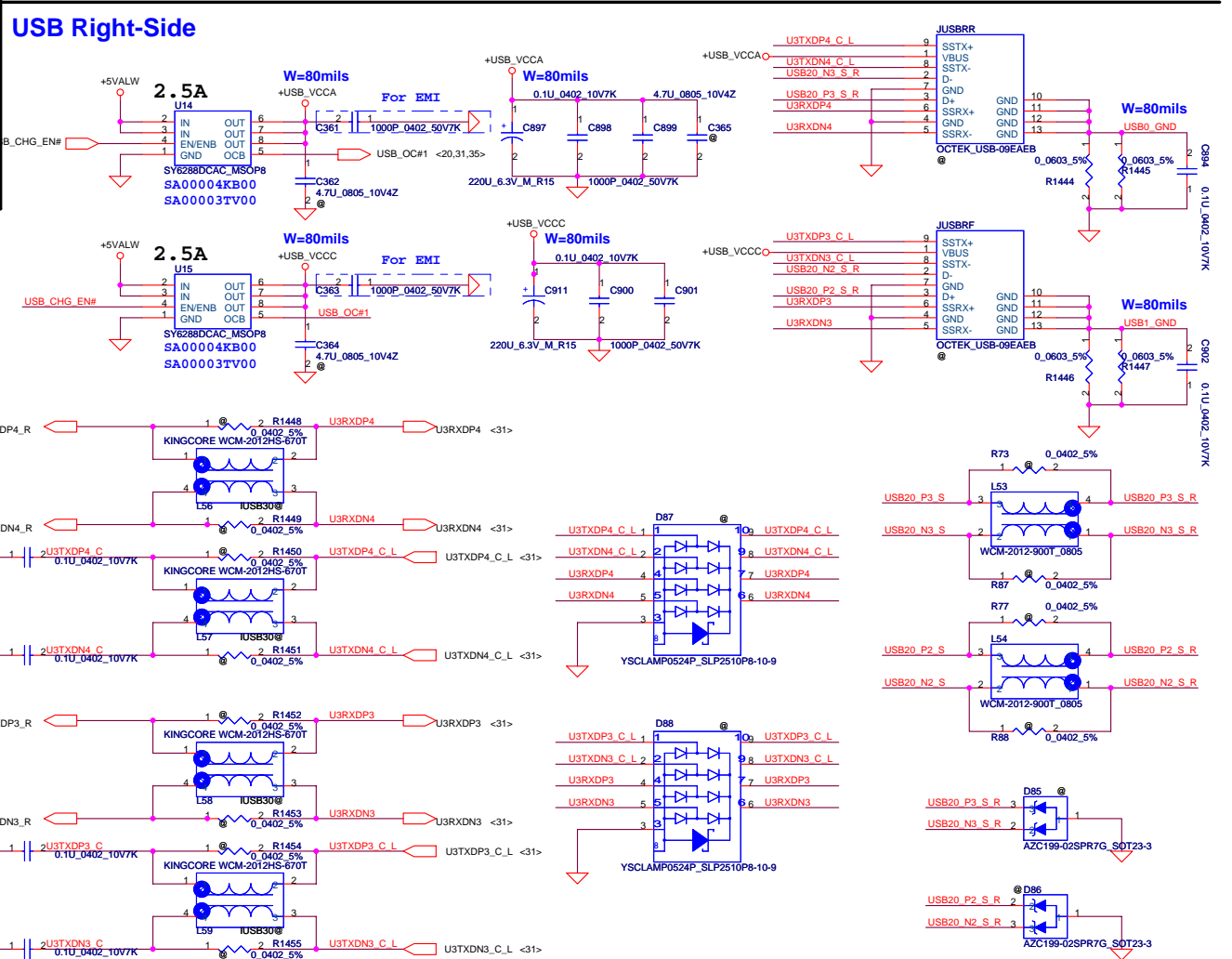
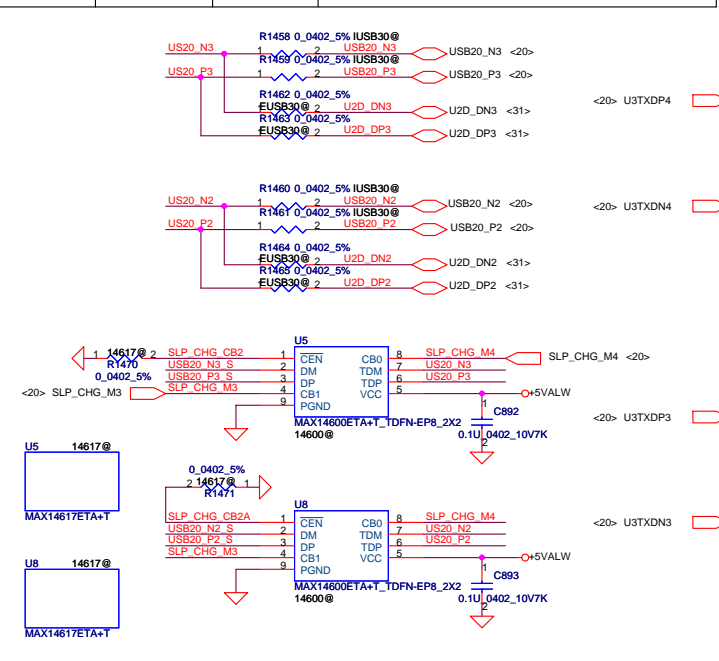
Security Classification	Compal Secret Data		Title	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number <b>4019HF</b> Date: Thursday, February 16, 2012   Sheet 24 of 51





### USB Sleep & Charge Auto-Mode/Mode3

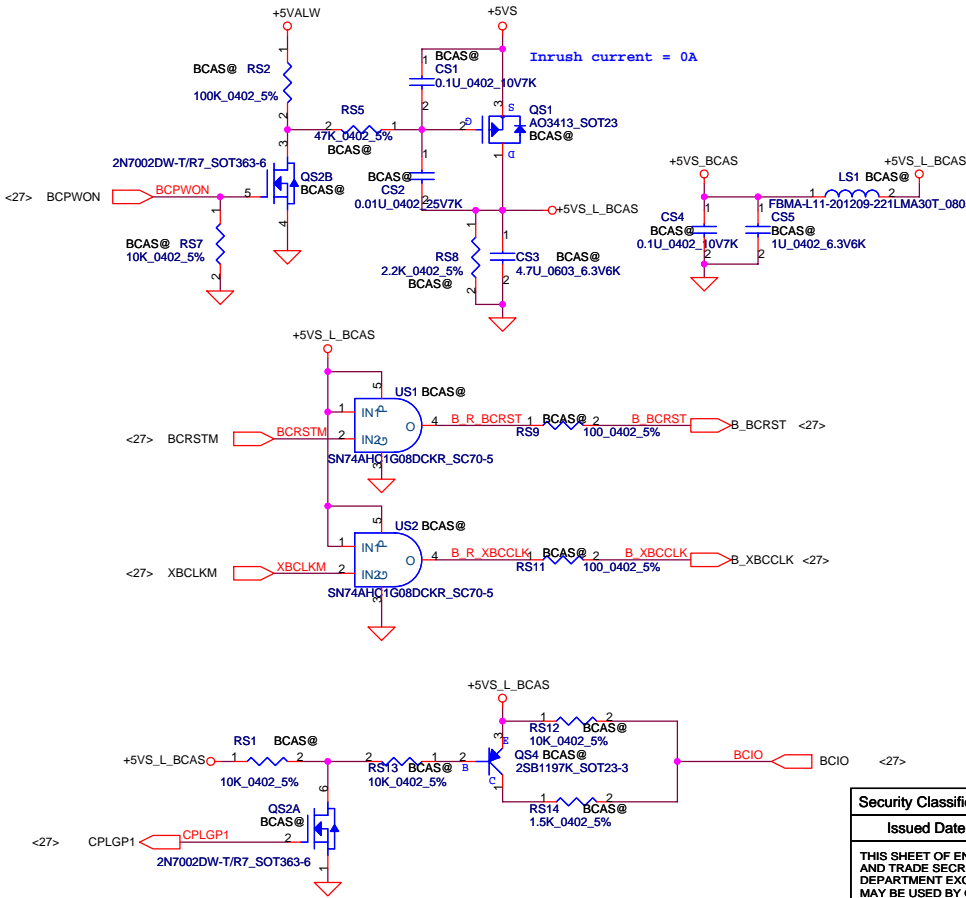
MAX14600 & MAX14617			
CB0 SLP_CHG_M4	CB1 SLP_CHG_M3	CB2 (14617 only)	STATUS
0	0	0	AUTO MODE
0	1	0	Force Dedicated charger mode (MODE3)
1	0	0	Pass-Through (USB) Mode: Connect DP/DM to TDP/TDM
1	1	0	Pass-Through (USB) Mode with CDP Emulation: Auto Connect DP/DM to TDP/TDM depending on CDP status
X	X	1	Force Apple 2A Charger Mode: Apple 2A resistor dividers



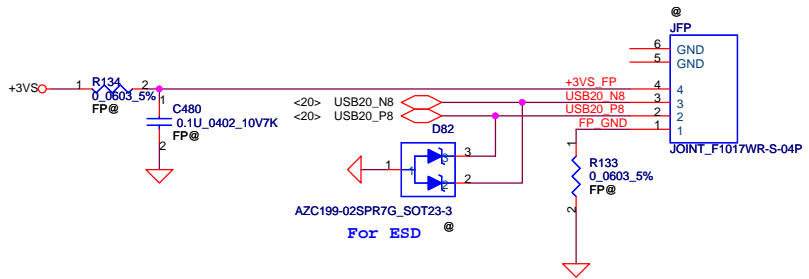
Security Classification	2011/12/14	Compal Secret Data	2012/12/31	Title
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPLETE 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
				4019HF
Date:	Thursday, February 16, 2012	Sheet	25 of 51	Rev B

# Screw cap for ESD request

# B-CAS Circuit



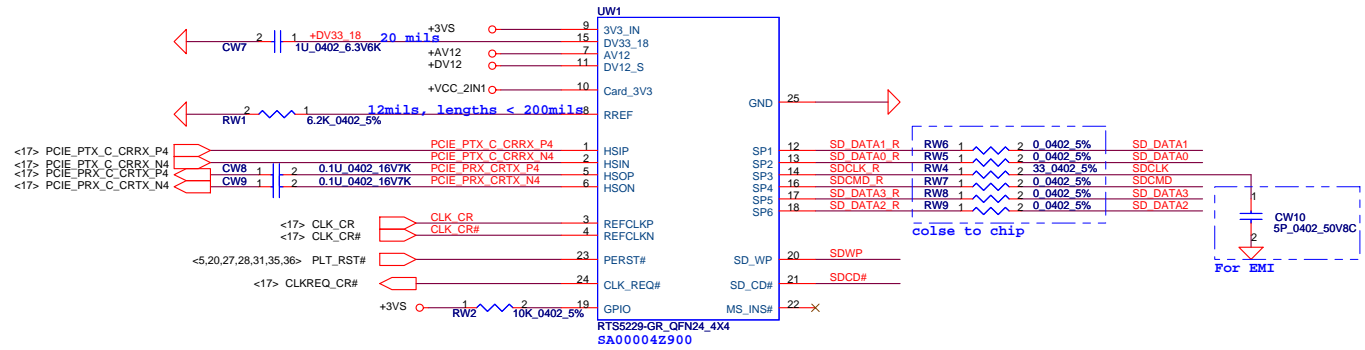
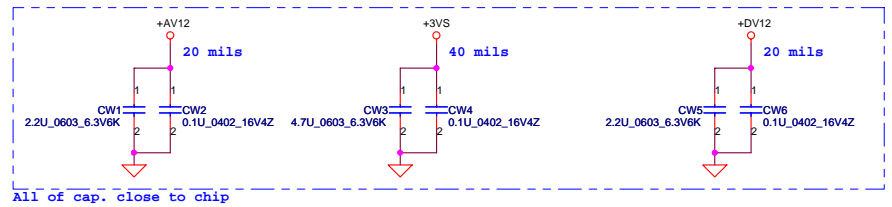
# Finger printer



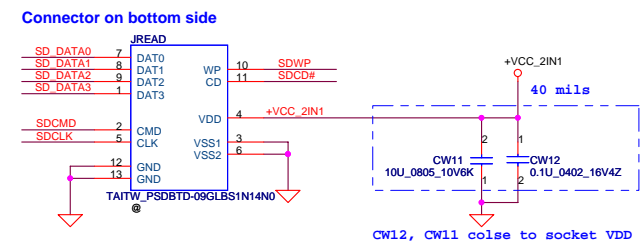
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev B
				4019HF	
Date:	Thursday, February 16, 2012	Sheet	26	of	51



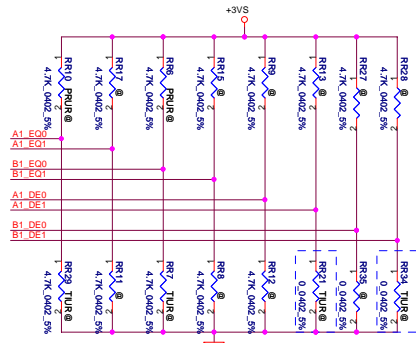




**< 2 in 1 Card Reader >**

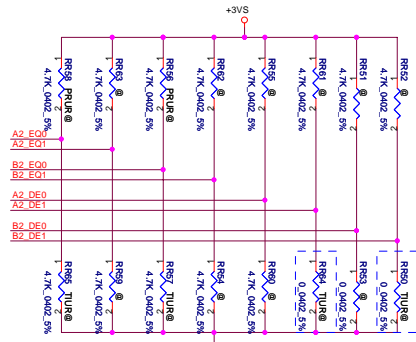


Security Classification		Compal Secret Data		Title	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Compal Electronics, Inc.	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Customer	Document Number
					4019HF
Date: Thursday, February 16, 2012				Sheet	29 of 51



- RR29 4.7K 0.402, 5% PCUR@
- RR7 4.7K 0.402, 5% PCUR@
- RR21 0.402, 5% PCUR@
- RR34 0.402, 5% PCUR@

TI: A\_DE1, B\_DE1 need 0ohm to GND. If use Parade and need control A\_DE1 & B\_DE1 please use 4.7K



- RR65 4.7K 0.402, 5% PCUR@
- RR57 4.7K 0.402, 5% PCUR@
- RR64 0.402, 5% PCUR@
- RR50 0.402, 5% PCUR@

TI: A\_DE1, B\_DE1 need 0ohm to GND. If use Parade and need control A\_DE1 & B\_DE1 please use 4.7K

TI suggest EQ1(Pin2) & EQ2(Pin17) to pull Down use 7dB DE1(Pin3) & DE2(Pin16) NC use 0dB OS1(Pin4) & OS2(Pin15) NC use 1042mV

OSx	TRANSISTION BIT AMPLITUDE (TYP mVpp)	EQx	EQUALIZATION (dB)
NC(default)	1042	NC(default)	0
0	908	0	7
1	1127	1	15

DEx	OSx = NC	OSx = 0	OSx = 1
NC(default)	0 dB	0 dB	0 dB
0	-3.5 dB	-2.2 dB	-4.4 dB
1	-6.0 dB	-5.2 dB	-6.0 dB

BOM Structure

Pericom	PCUR@
TI	TIUR@
Parade	PRUR@
USB3.0	USB30R@

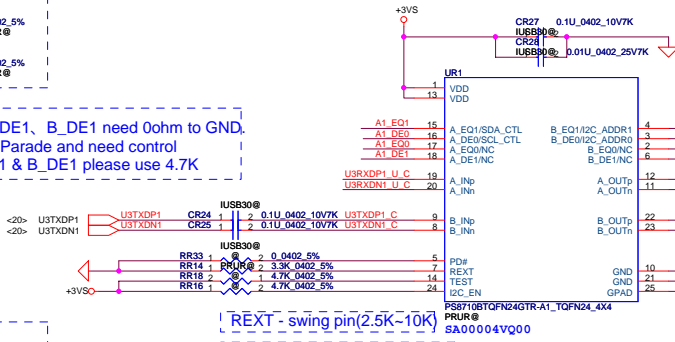
Parade suggest EQ1(Pin2) & EQ2(Pin17) to pull High use 7dB. All control has internally pulled down at ~150kOhm, If add ESD Diode A\_DE0(Pin16) and B\_DE0(Pin3) need pull high to 7dB otherwise 3dB

A_EQ1(Pin15)	A_EQ0(Pin17)	adpative EQ enable	B_EQ1(Pin4)	B_EQ0(Pin2)	adpative EQ enable
L	L	Loss up to 7dB	L	L	Loss up to 7dB
L	H	Loss up to 14.5dB	L	H	Loss up to 14.5dB
H	L	Loss up to 11.5dB	H	L	Loss up to 11.5dB
H	H		H	H	

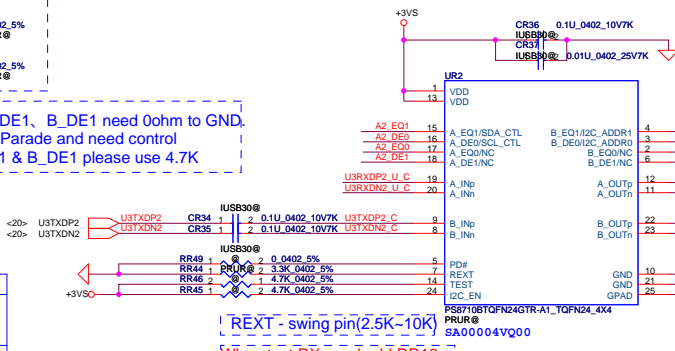
  

A_DE1(Pin18)	A_DE0(Pin16)	3.5dB	B_DE1(Pin6)	B_DE0(Pin3)	3.5dB
L	L	No de-emphasis	L	L	No de-emphasis
L	H	7dB	L	H	7dB
H	L	5dB with boost output swing	H	L	5dB with boost output swing
H	H		H	H	

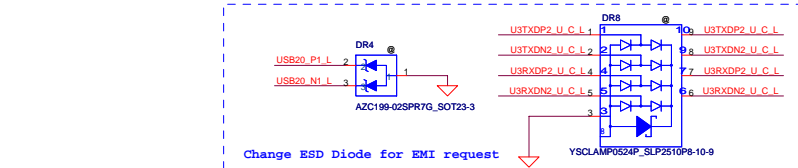
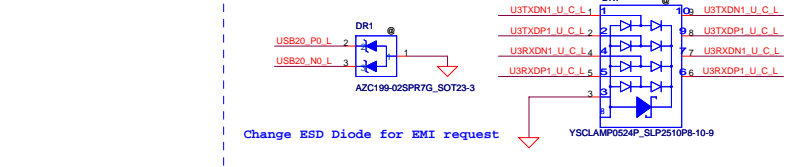
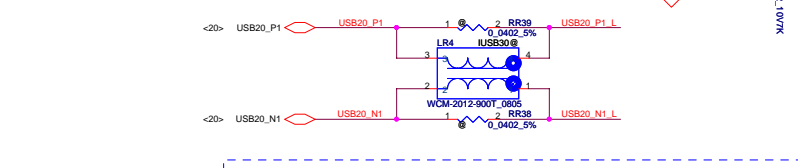
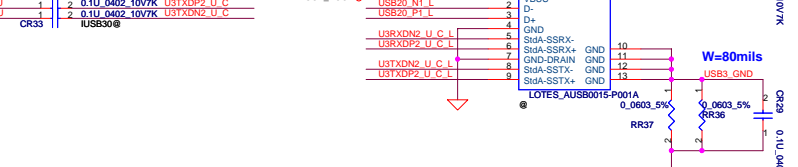
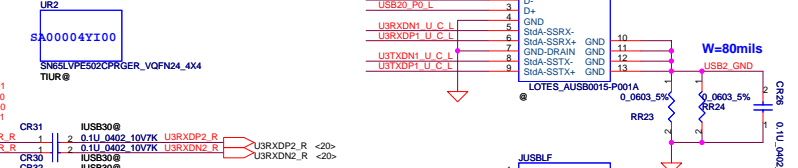
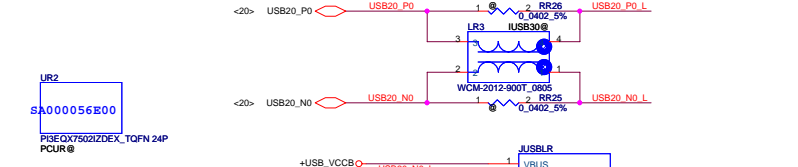
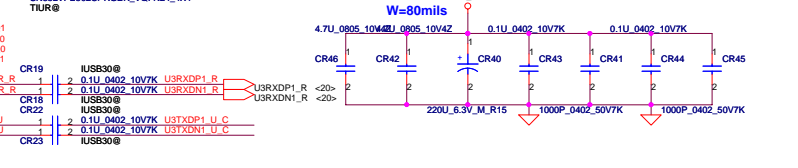
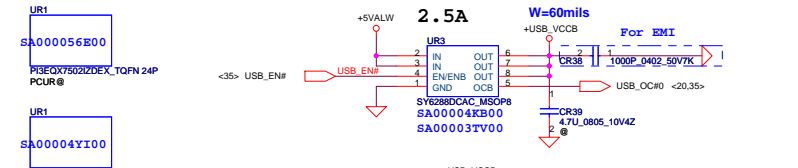
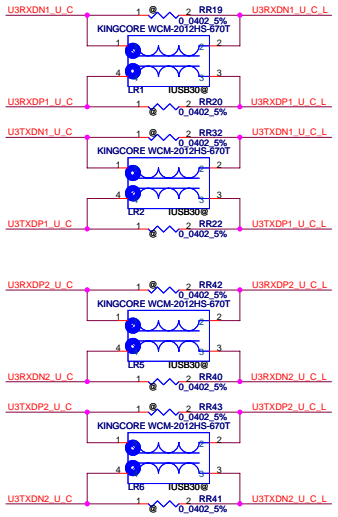
- Note :
- 1) keep differential trace mismatch less than +/- 5mil
  - 2) keep USB3 impedance follow Intel SPEC
  - 3) Power / GND pin trace 10mil

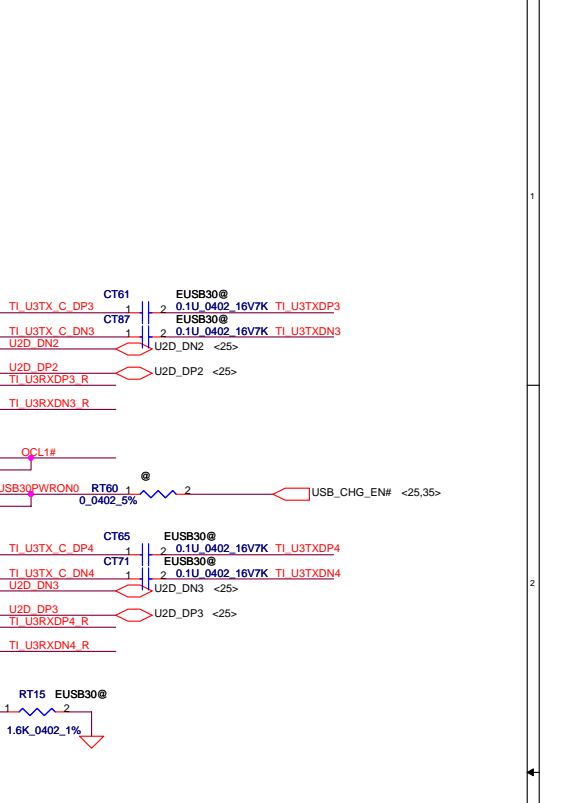
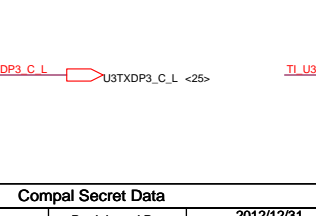
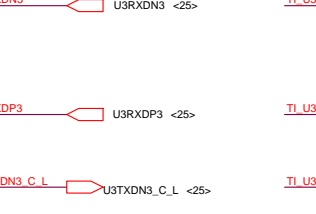
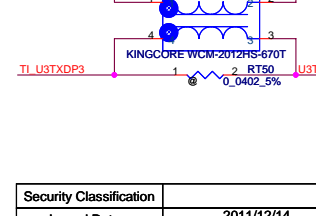
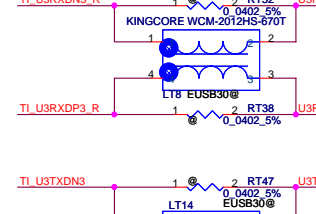
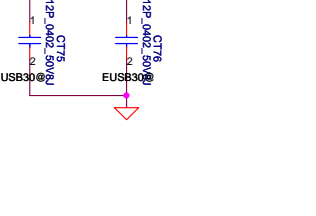
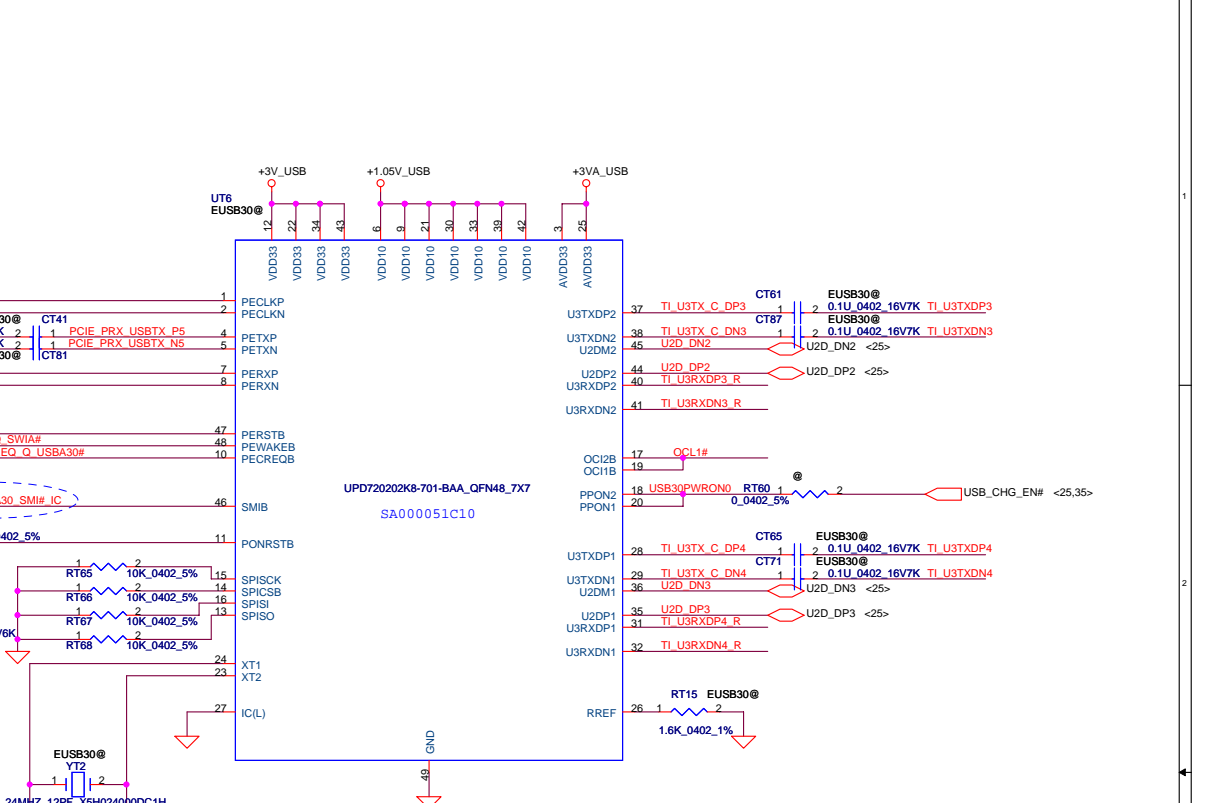
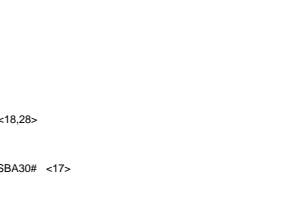
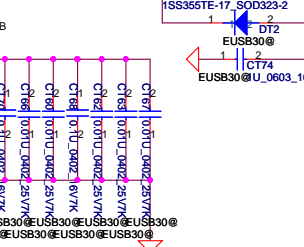
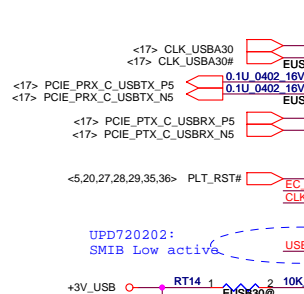
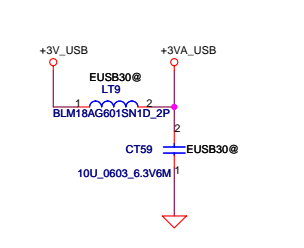
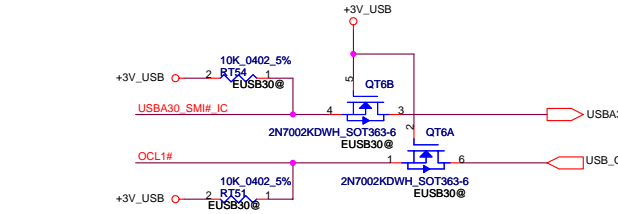
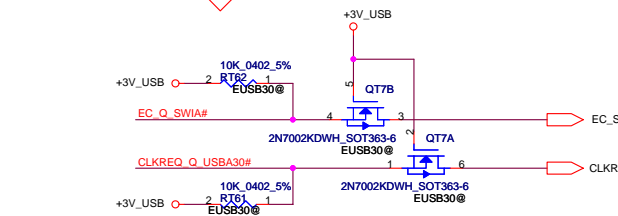
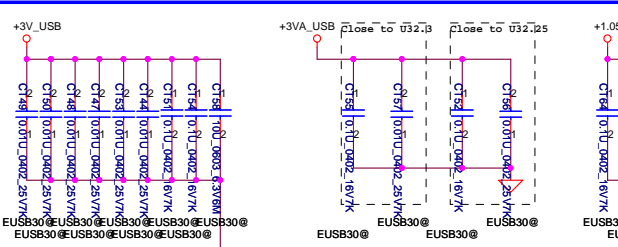
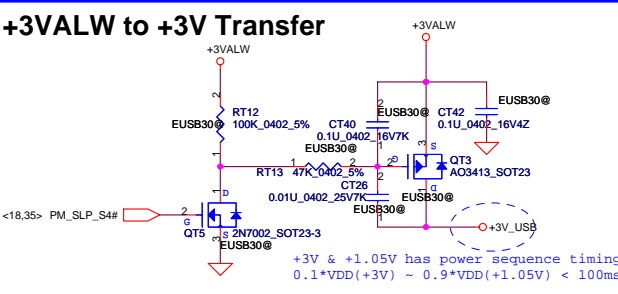
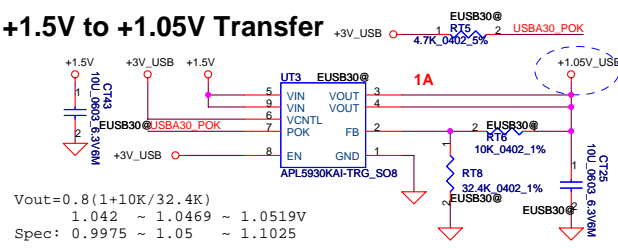


REXT - swing pin(2.5K-10K)  
When test RX need add RR18



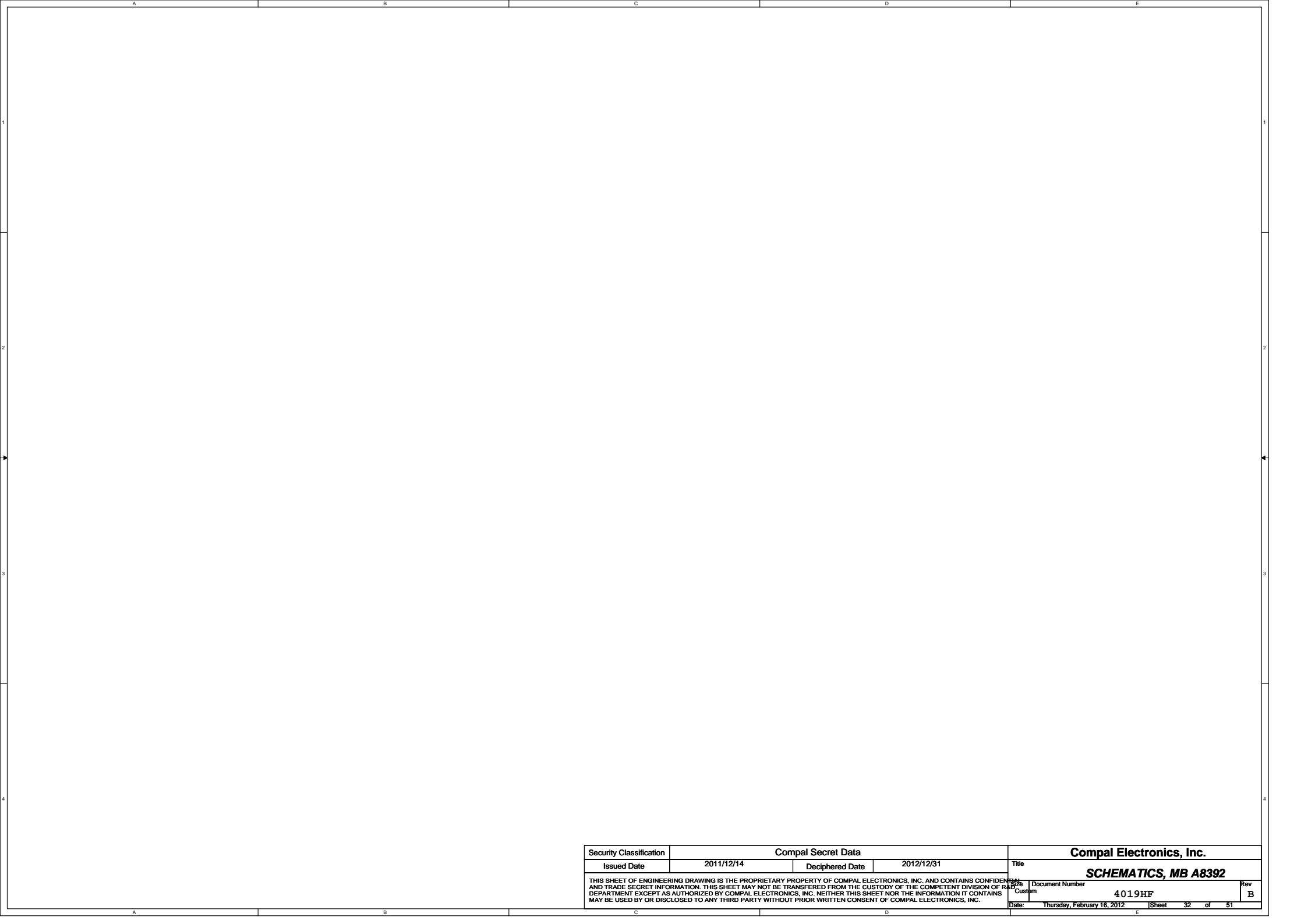
REXT - swing pin(2.5K-10K)  
When test RX need add RR18





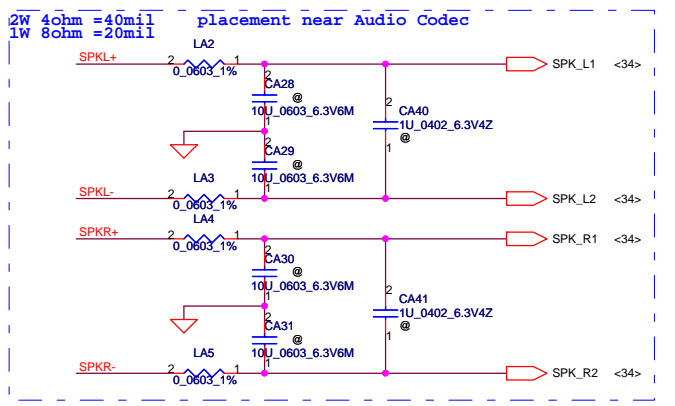
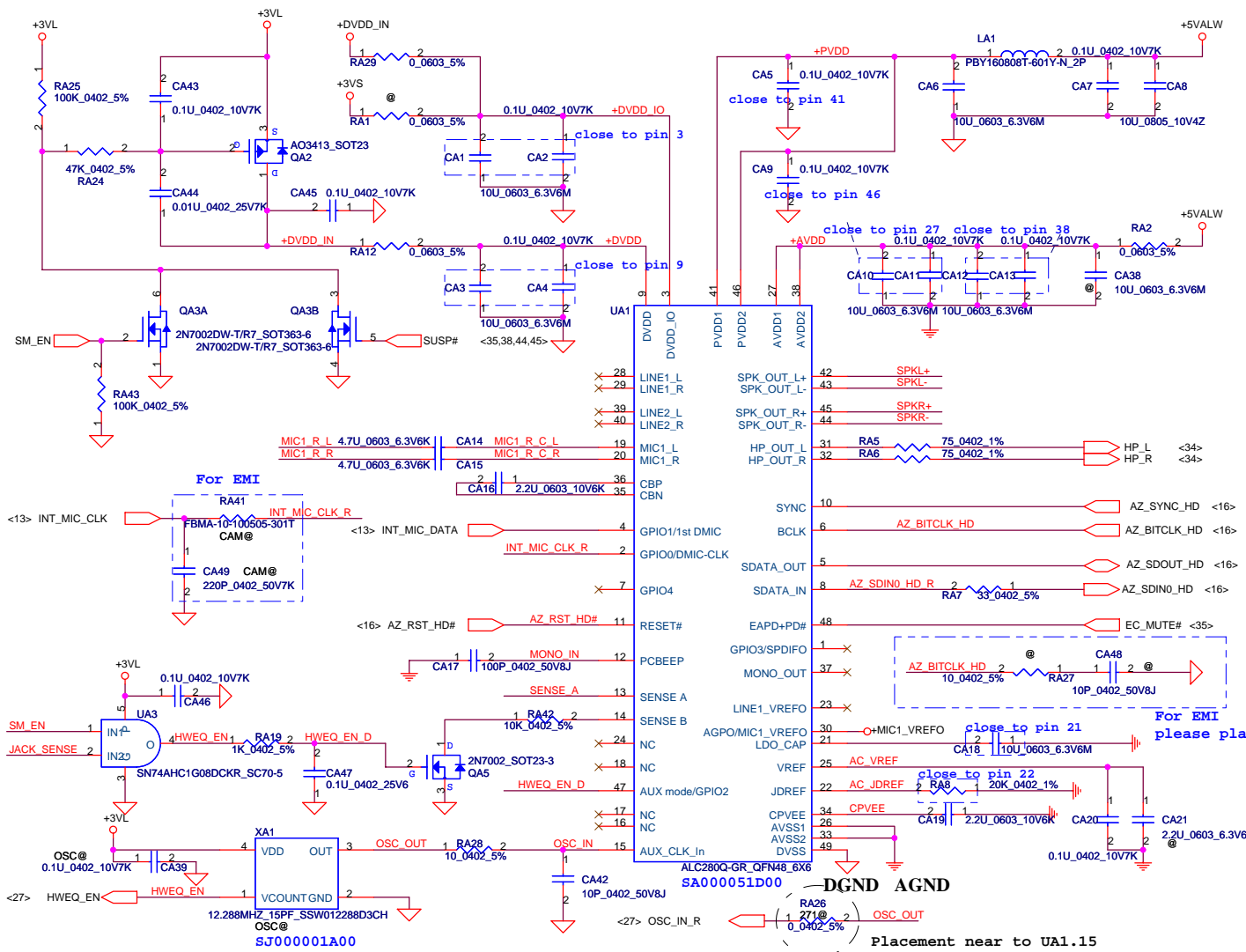
Security Classification		Compal Secret Data		Title	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Compal Electronics, Inc.	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				4019HF	B
				Date: Thursday, February 16, 2012	Sheet 31 of 51





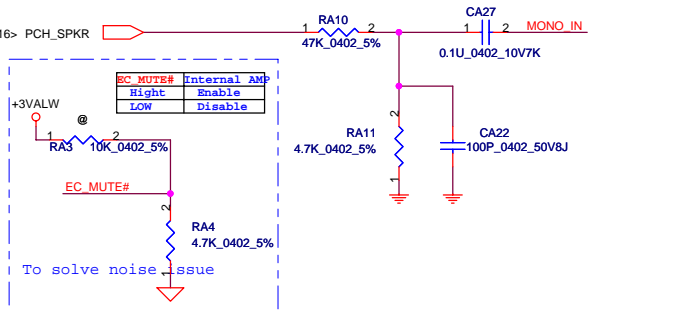
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	<b>SCHEMATICS, MB A8392</b>
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&amp;D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</small>				Rev	B
				Document Number	4019HF





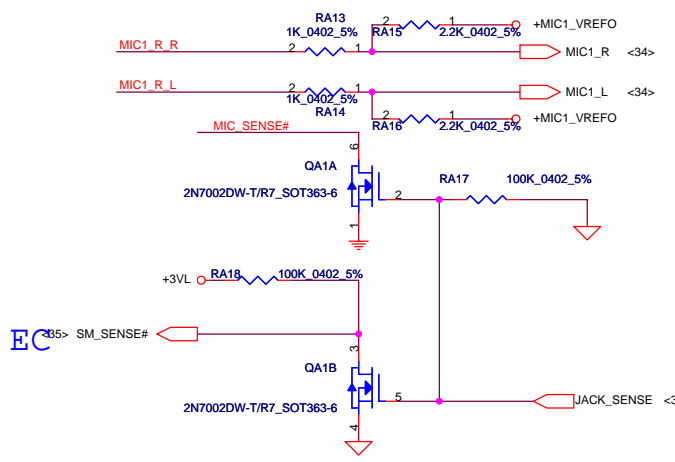
**PCI Beep**

**Beep sound**

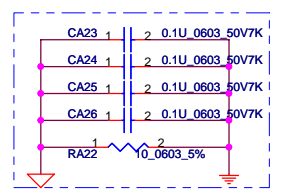
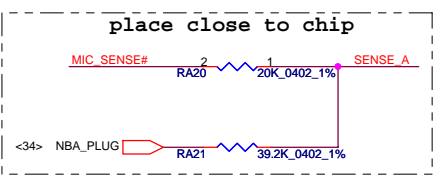


To solve noise issue

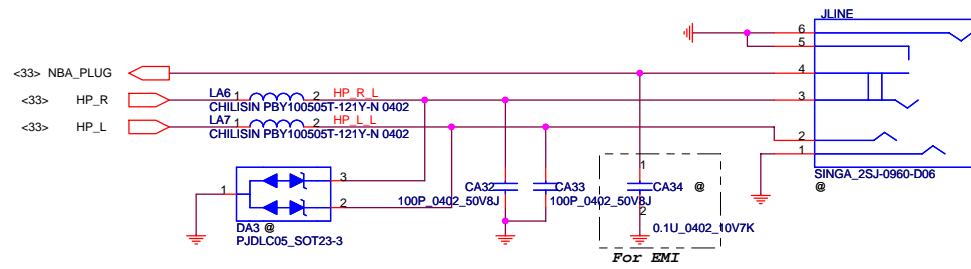
**Ext.MIC/LINE IN JACK**



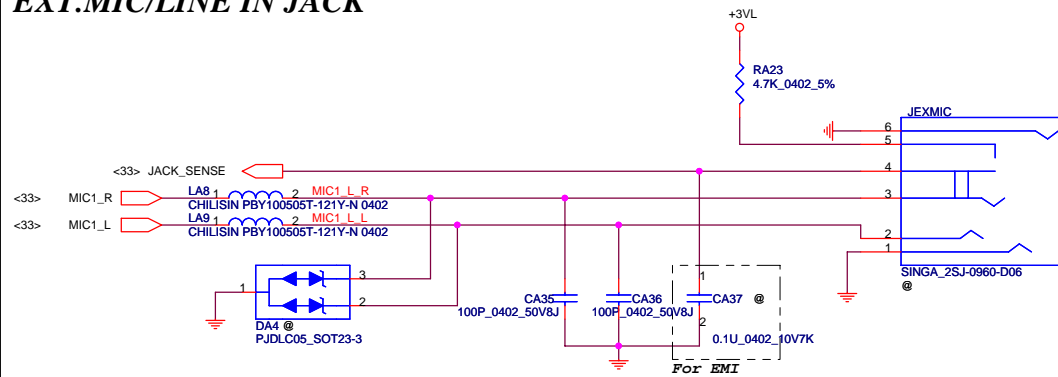
Sense Pin	Impedance	Codec Signals	Function
SENSE A	39.2K	PORT-A (PIN 31, 32)	Headphone out
	20K	PORT-B (PIN 19, 20)	Ext. MIC
	10K	PORT-C (PIN 28, 29)	
	5.1K	PORT-E	
SENSE B	39.2K		
	20K		
	10K		



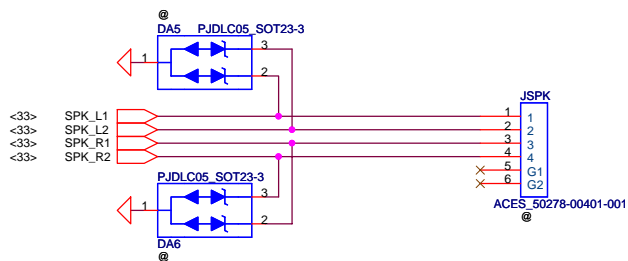
# HeadPhone/LINE OUT JACK



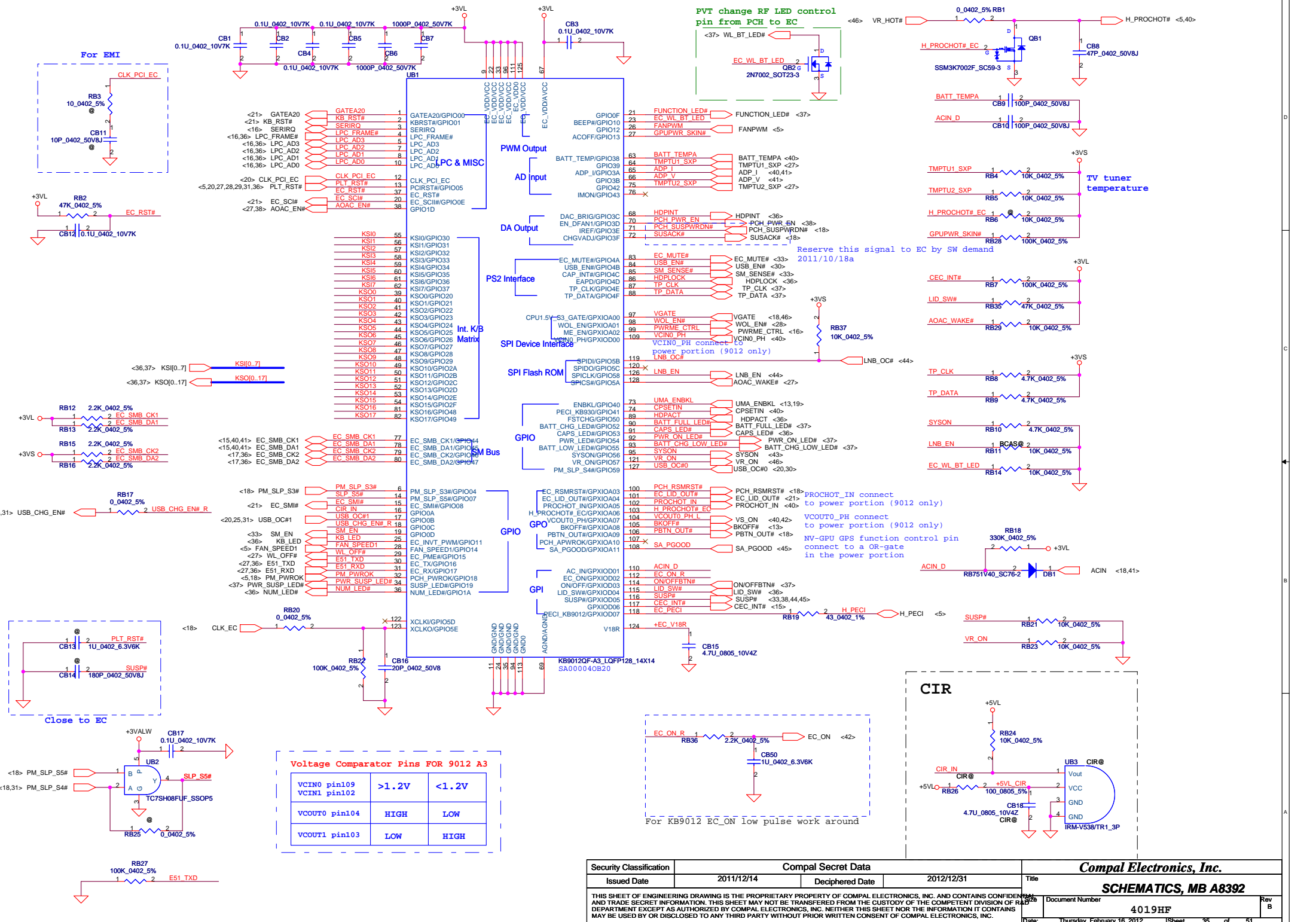
# EXT.MIC/LINE IN JACK



# SPK CONN.



Security Classification	Compal Secret Data		Title	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	SCHEMATICS, MB A8392
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&amp;D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</small>				Document Number <b>4019HF</b>
Date:	Thursday, February 16, 2012	Sheet	34 of 51	Rev B

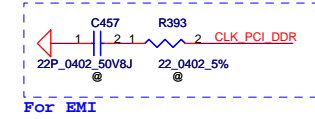
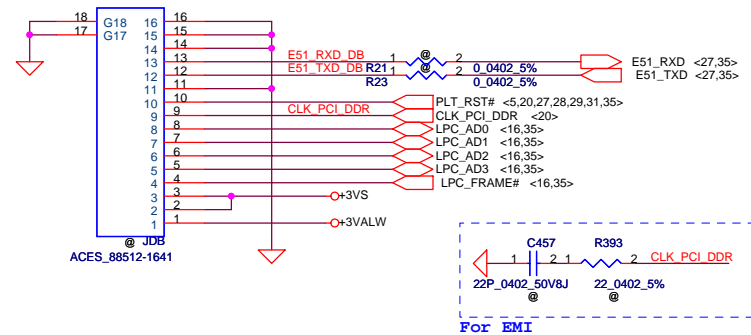
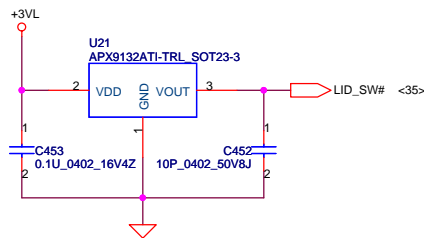


# SPI Flash (128KB)

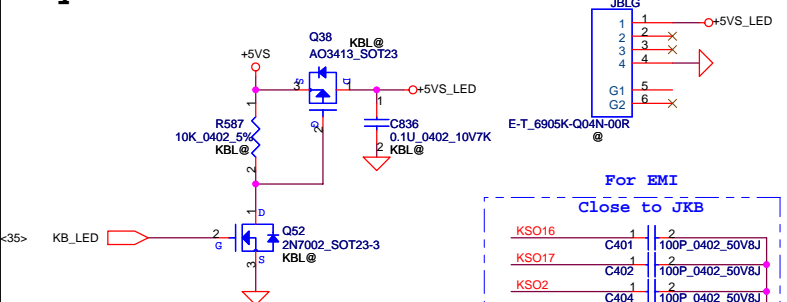
# Lid SW

# LPC Debug Port

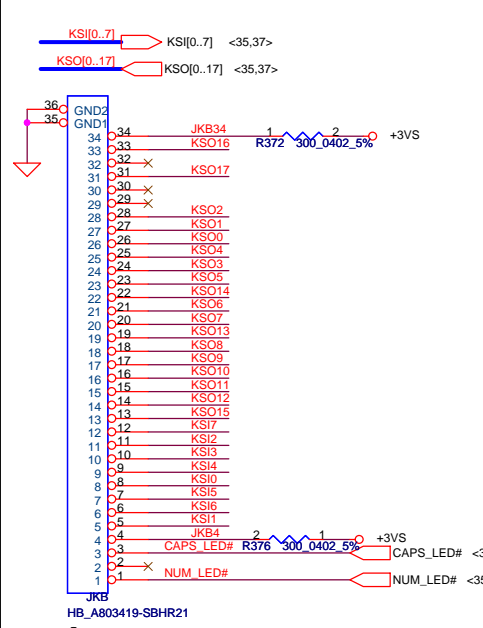
Place the JDB under DDR DIMM.



# Keyboard LED



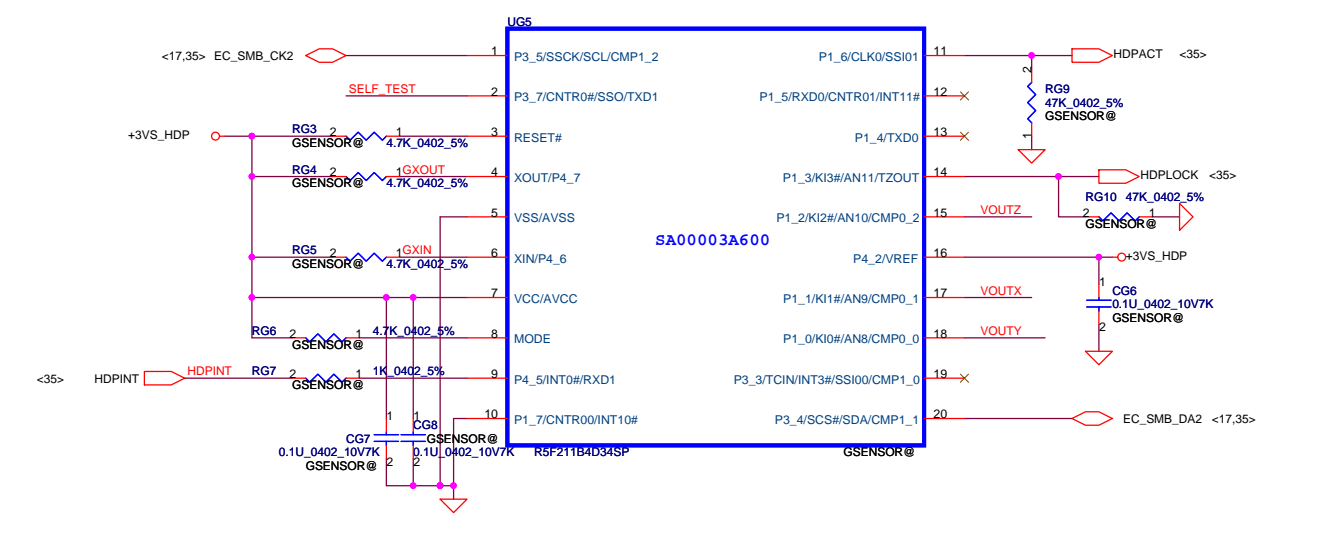
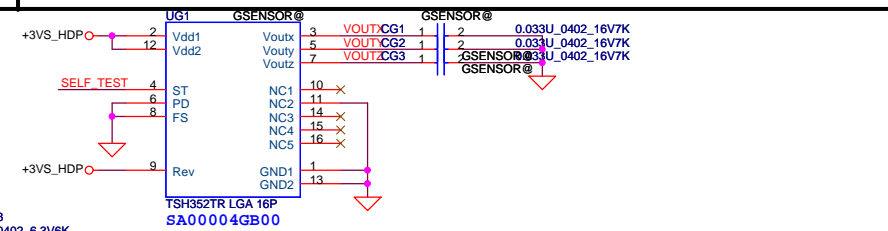
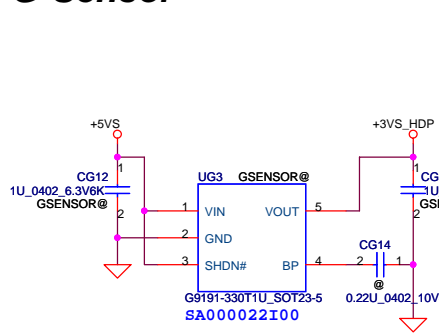
# KEYBOARD CONN.



For EMI  
Close to JKB

KSO16	C401	100P_0402_50V8J
KSO17	C402	100P_0402_50V8J
KSO2	C404	100P_0402_50V8J
KSO1	C405	100P_0402_50V8J
KSO0	C406	100P_0402_50V8J
KSO4	C407	100P_0402_50V8J
KSO3	C408	100P_0402_50V8J
KSO5	C409	100P_0402_50V8J
KSO14	C410	100P_0402_50V8J
KSO6	C411	100P_0402_50V8J
KSO7	C412	100P_0402_50V8J
KSO13	C413	100P_0402_50V8J
KSO8	C415	100P_0402_50V8J
KSO9	C416	100P_0402_50V8J
KSO10	C417	100P_0402_50V8J
KSO11	C418	100P_0402_50V8J
KSO12	C419	100P_0402_50V8J
KSO15	C420	100P_0402_50V8J
KSI7	C421	100P_0402_50V8J
KSI2	C422	100P_0402_50V8J
KSI3	C423	100P_0402_50V8J
KSI4	C424	100P_0402_50V8J
KSI0	C425	100P_0402_50V8J
KSI5	C427	100P_0402_50V8J
KSI6	C429	100P_0402_50V8J
KSI1	C431	100P_0402_50V8J
CAPS_LED#	C433	100P_0402_50V8J
NUM_LED#	C435	100P_0402_50V8J

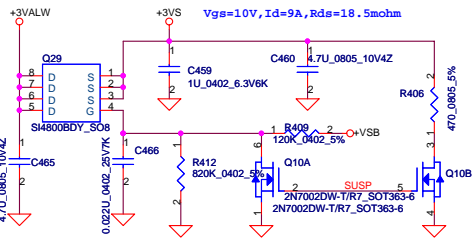
# G-Sensor



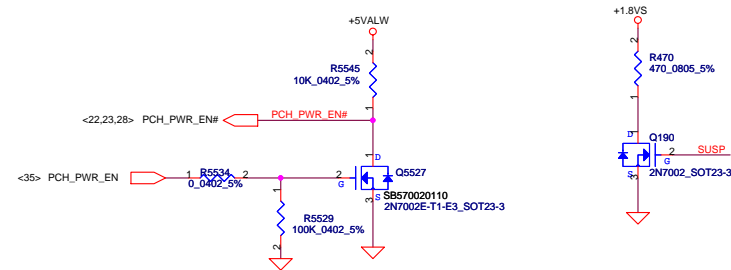
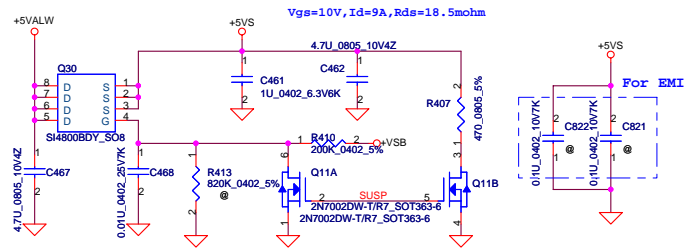
Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				SCHEMATICS, MB A8392 4019HF
Date:	Thursday, February 16, 2012	Sheet	36	of 51



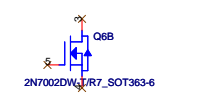
### +3VALW TO +3VS



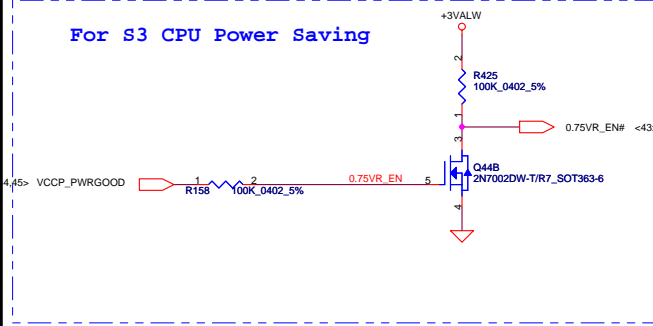
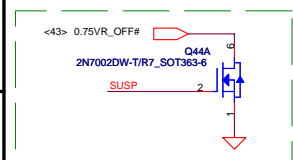
### +5VALW TO +5VS



### Un-used Dual MOS

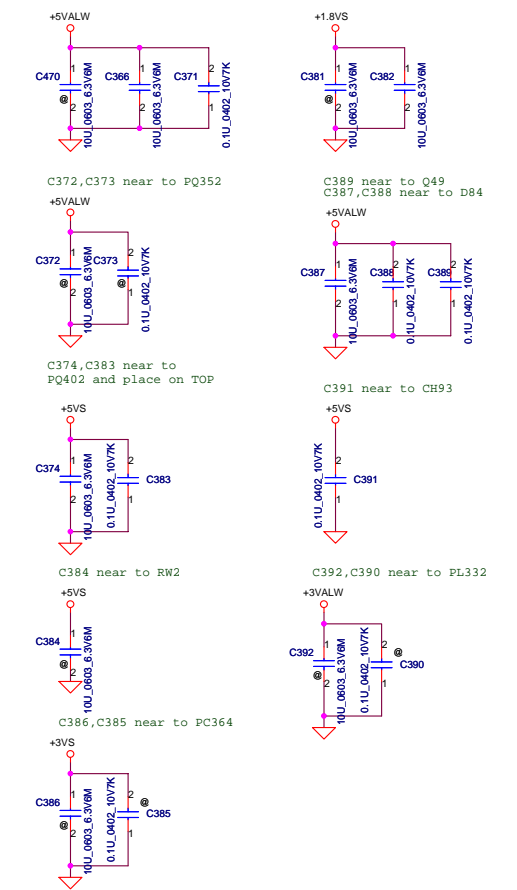


### Add Q41 for S3 resume problem 12/14

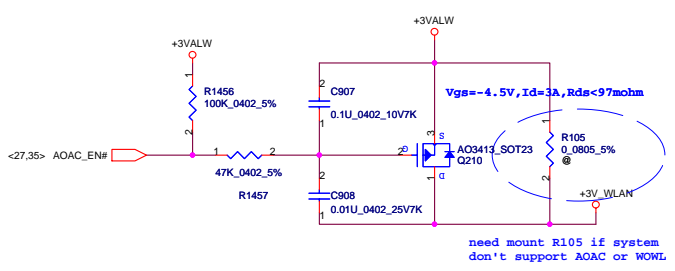


### For filter noise

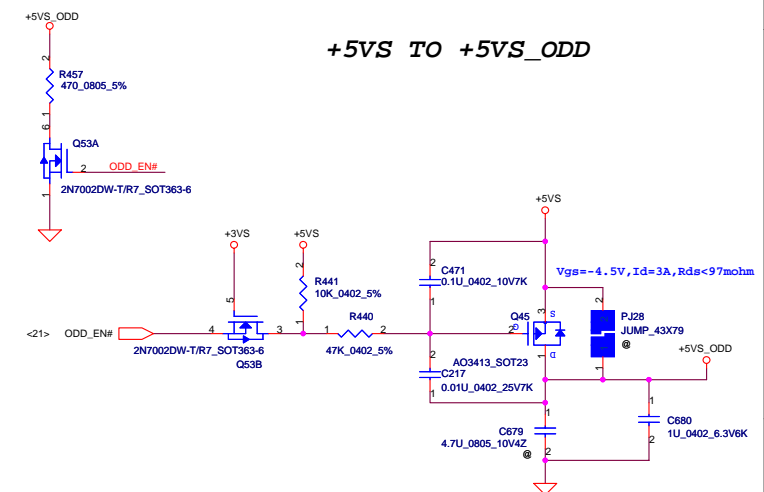
Reserve for SW-node noise place at noise source

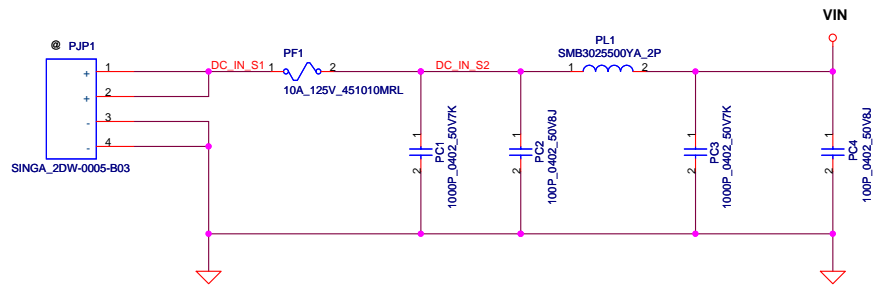


### +3VALW TO +3V\_WLAN for AOAC and WOWL

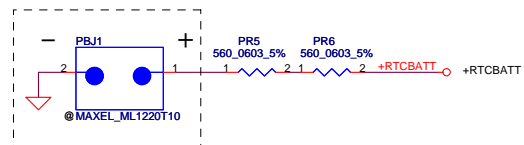


### +5VS TO +5VS\_ODD

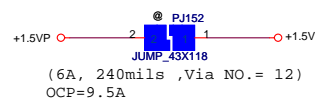
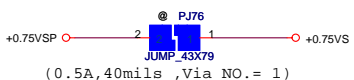
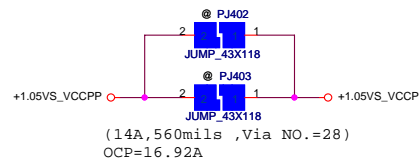
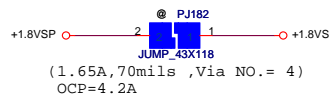
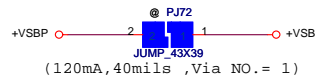
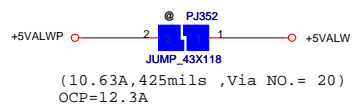
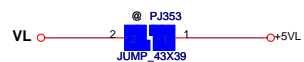
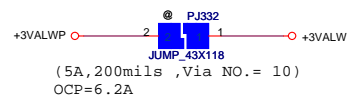
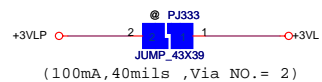




### RTC Battery



SP093MX000



### ACIN

Precharge detector			
	Min.	typ.	Max
H-->L	14.42V	14.74V	15.23V
L-->H	15.39V	15.88V	16.39V

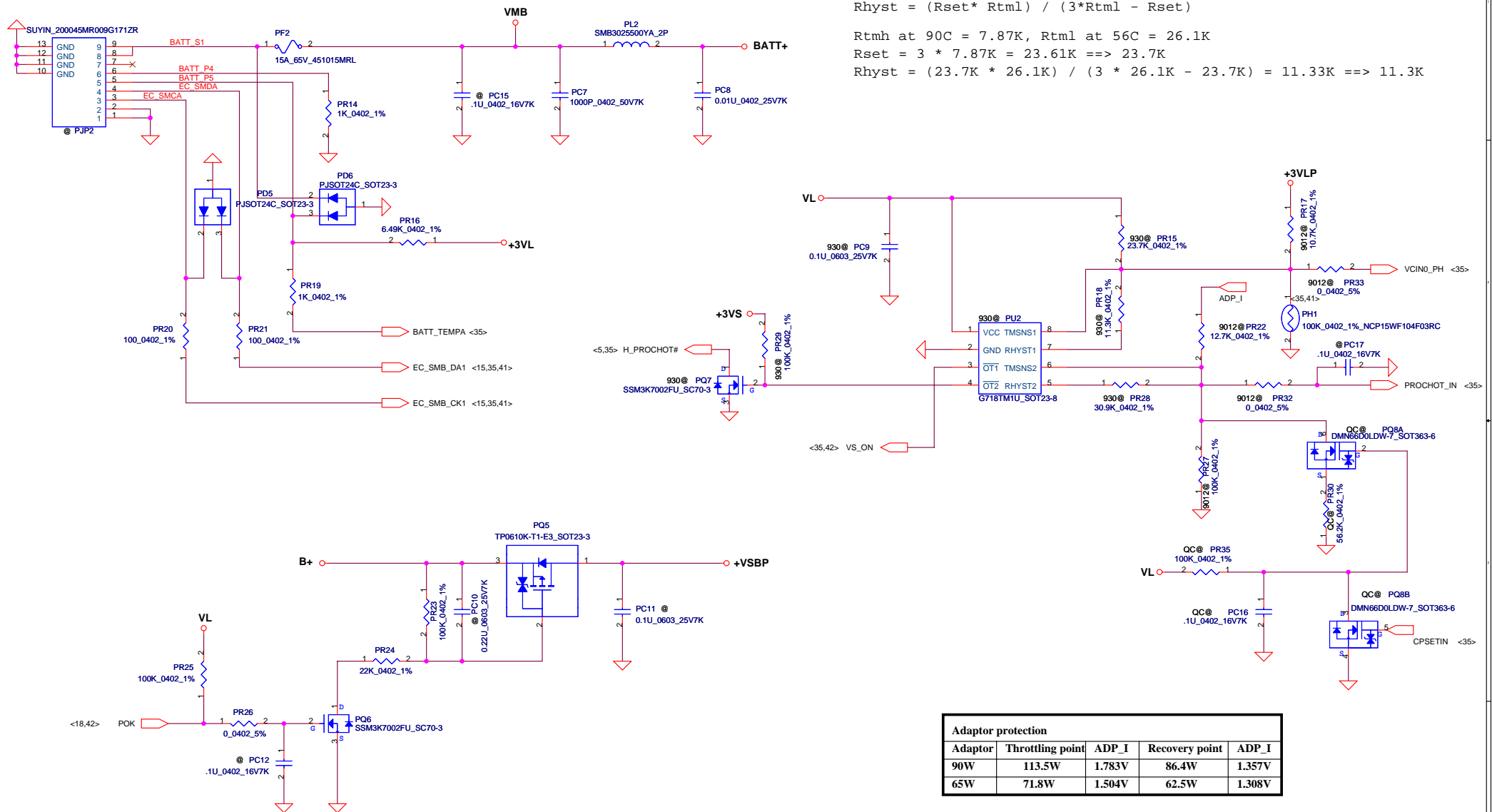
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number	Rev
				4019HF	B
Date: Thursday, February 16, 2012				Sheet	39 of 51

**PH1 under CPU botten side :**  
 CPU thermal protection at 90 degree C  
 Recovery at 56 degree C

$$R_{set} = 3 * R_{tmh}$$

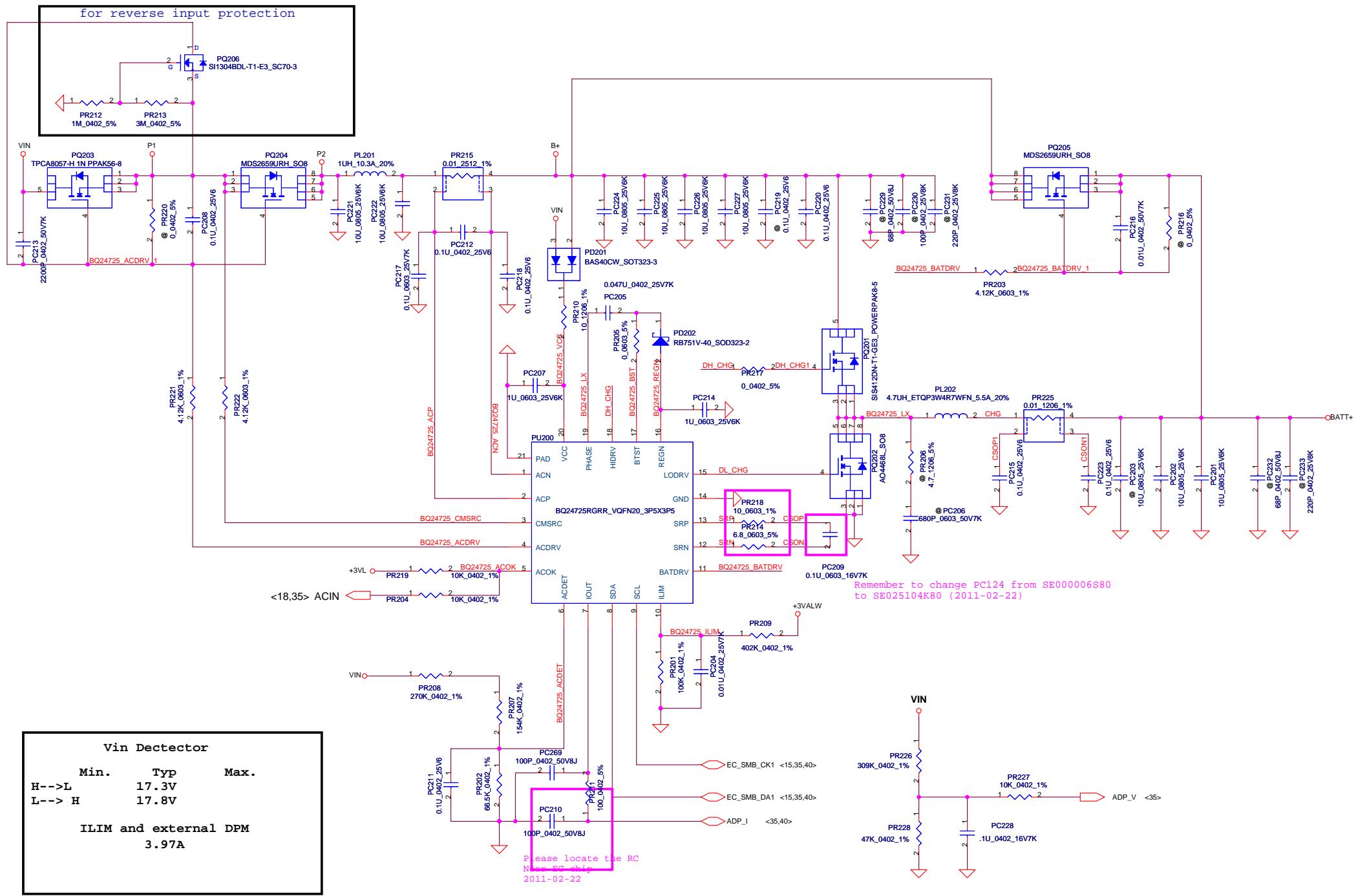
$$R_{hyst} = (R_{set} * R_{tml}) / (3 * R_{tml} - R_{set})$$

$R_{tmh}$  at 90C = 7.87K,  $R_{tml}$  at 56C = 26.1K  
 $R_{set} = 3 * 7.87K = 23.61K \implies 23.7K$   
 $R_{hyst} = (23.7K * 26.1K) / (3 * 26.1K - 23.7K) = 11.33K \implies 11.3K$

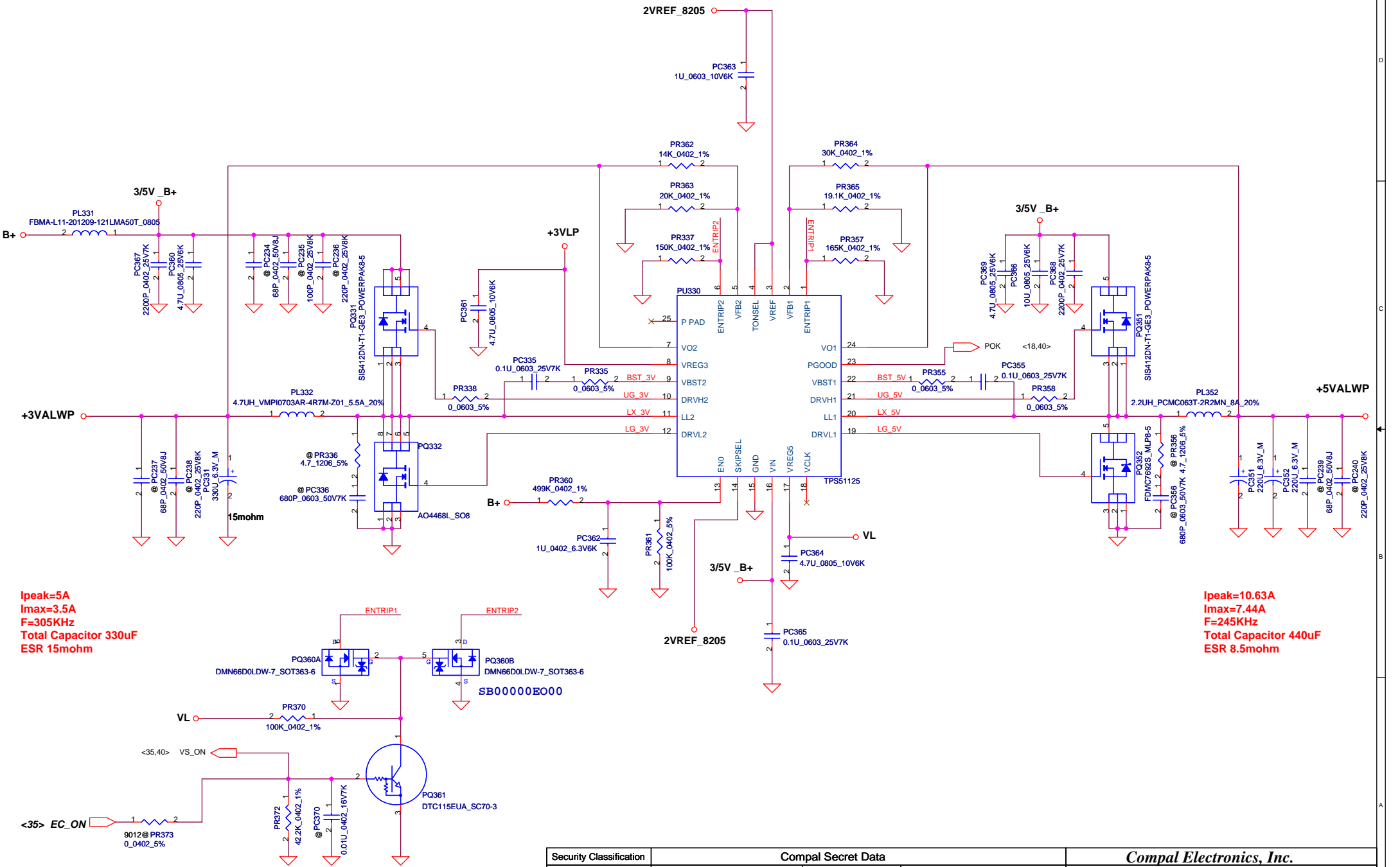


Adaptor protection				
Adaptor	Throttling point	ADP_I	Recovery point	ADP_I
90W	113.5W	1.783V	86.4W	1.357V
65W	71.8W	1.504V	62.5W	1.308V



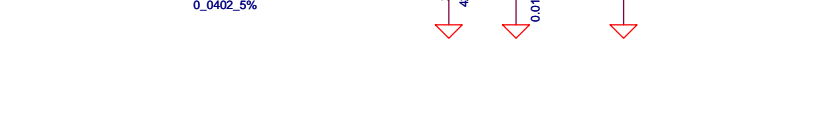


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	SCHEMATICS, MB A8392
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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	4019HF			Rev	B
Date:	Thursday, February 16, 2012	Sheet	41	of	51



**I<sub>peak</sub>=5A**  
**I<sub>max</sub>=3.5A**  
**F=305KHz**  
**Total Capacitor 330uF**  
**ESR 15mohm**

**I<sub>peak</sub>=10.63A**  
**I<sub>max</sub>=7.44A**  
**F=245KHz**  
**Total Capacitor 440uF**  
**ESR 8.5mohm**



Security Classification		Compal Secret Data	
Issued Date	2011/12/14	Deciphered Date	2012/12/31
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RESEARCH AND DEVELOPMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			

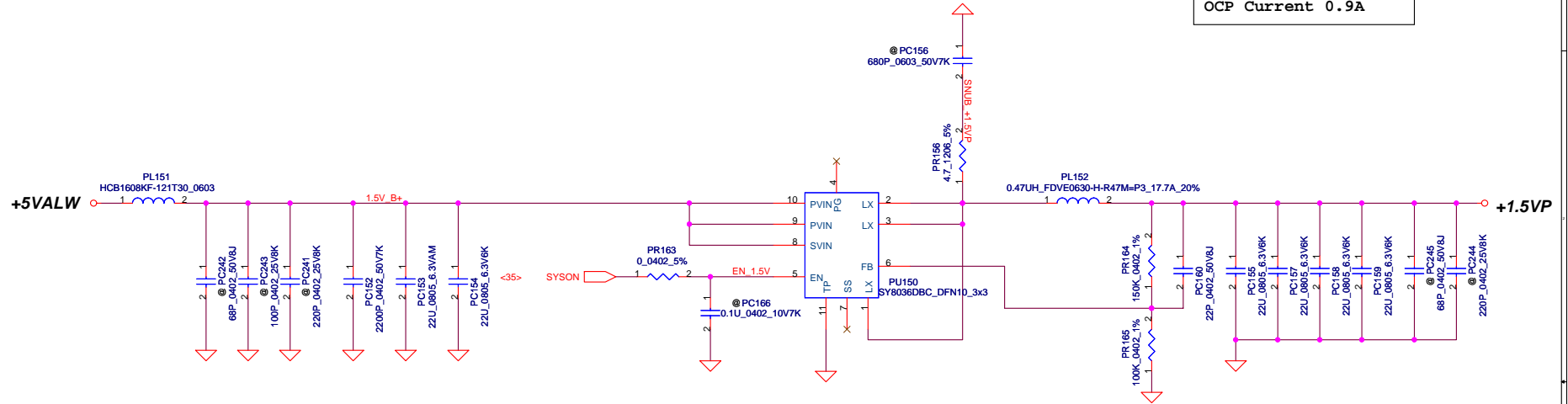
Title		Compal Electronics, Inc.	
Document Number		SCHEMATICS, MB A8392	
Date		Thursday, February 16, 2012	
Sheet		42 of 51	
Rev		B	

HW side:  
 C106 330uF 17m  
 C218 390uF 10m  
 VGA @ CV122 390uF 10m  
 @ C189 330uF 15m

UMA  
 Ipeak=8.5A  
 Imax=5.95A  
 Rtrip=5.9K, OCP=11.338A  
 F=315KHz  
 Total Capacitor 1050uF,  
 ESR 4.43mohm

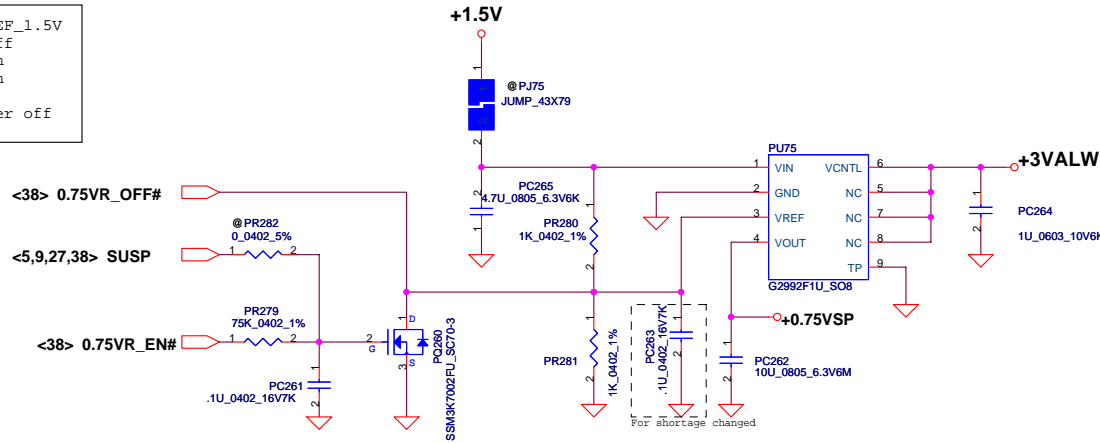
DIS  
 Ipeak=20A  
 Imax=14A  
 Rtrip=14K, OCP=24.136A  
 F=315KHz  
 Total Capacitor 1440uF,  
 ESR 3.07mohm

0.75Volt +/- 5%  
 TDC 0.525A  
 Peak Current 0.75A  
 OCP Current 0.9A

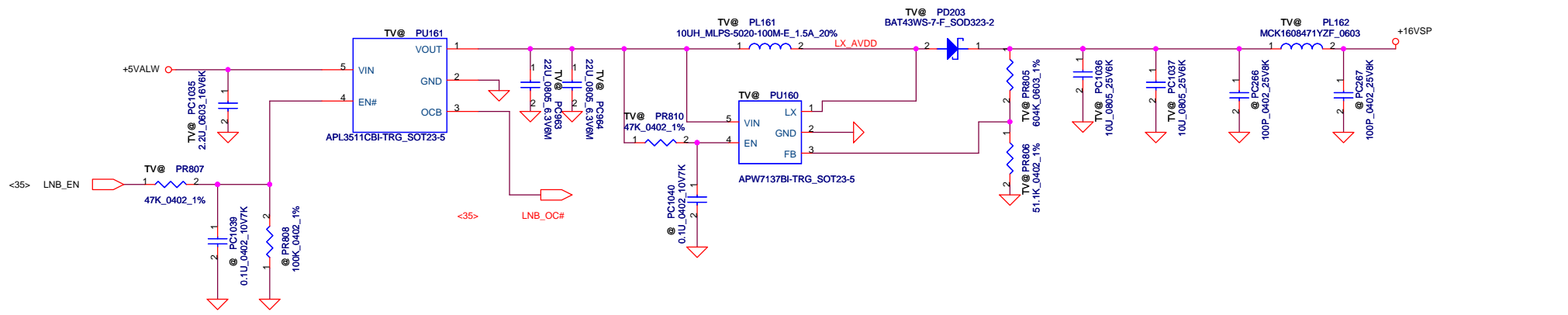
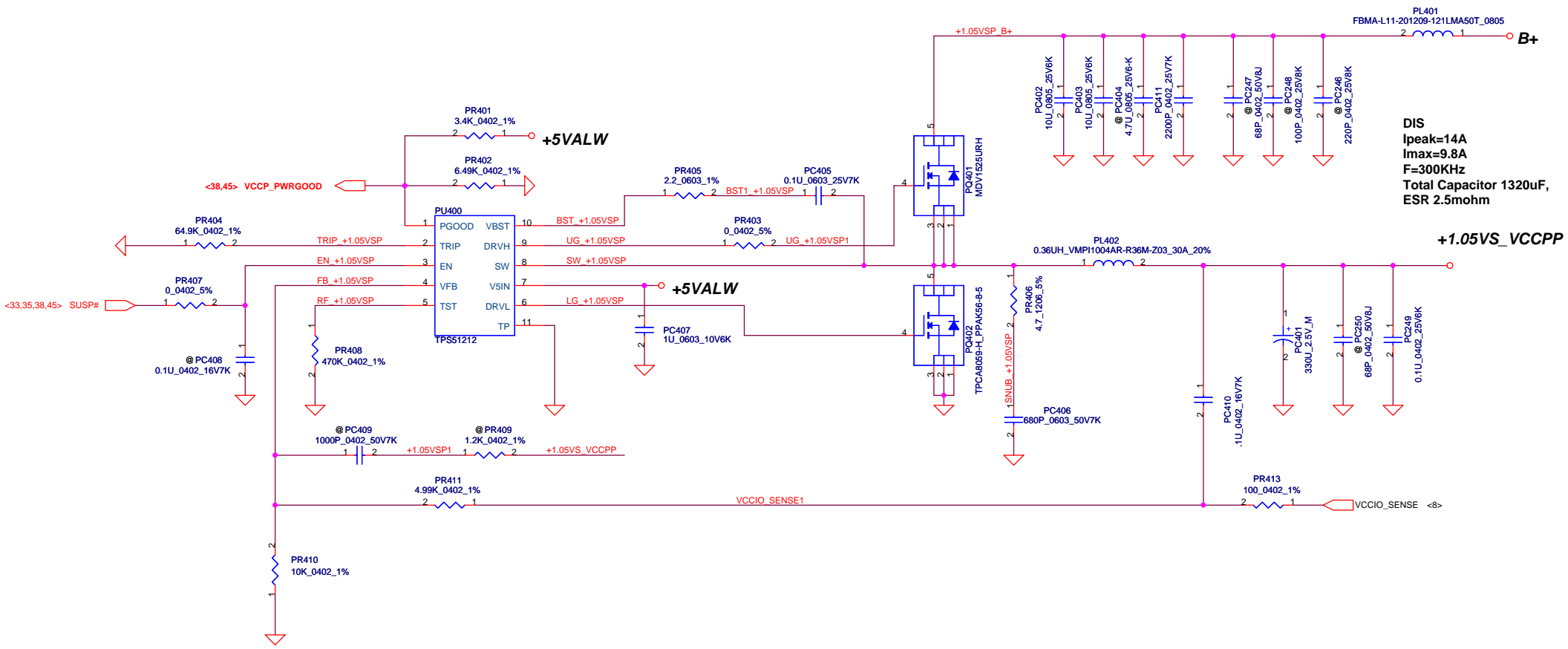


Mode	Level	+0.75VSP	VTTREF_1.5V
S5	L	off	off
S3	L	off	on
S0	H	on	on

Note: S3 - sleep ; S5 - power off



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title	SCHEMATICS, MB A8392
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	4019HF
Date:	Thursday, February 16, 2012	Sheet	43	of	51



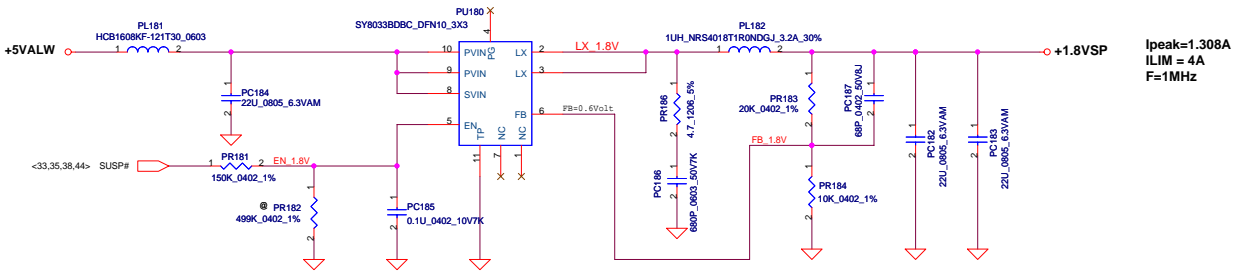
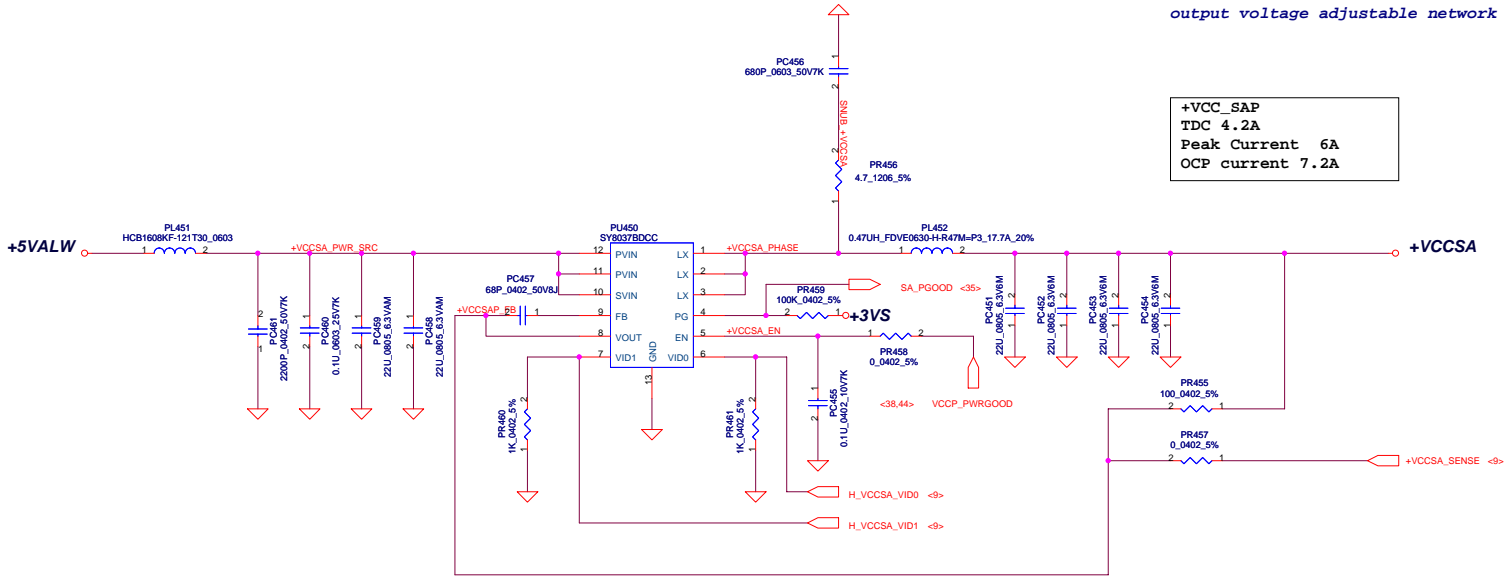
Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		2011/12/14	
2011/12/14		2012/12/31		2012/12/31	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size	Document Number	Rev		B	
Custom	4019HF	4019HF		4019HF	
Date:	Thursday, February 16, 2012	Sheet	44	of	51

The 1k PD on the VCCSA VIDs are empty.  
These should be stuffed to ensure that  
VCCSA VID is 00 prior to VCCIO stability.

VID [0]	VID[1]	VCCSA Vout
0	0	0.9V
0	1	0.8V
1	0	0.725V
1	1	0.675V

output voltage adjustable network

+VCC\_SAP  
TDC 4.2A  
Peak Current 6A  
OCP current 7.2A

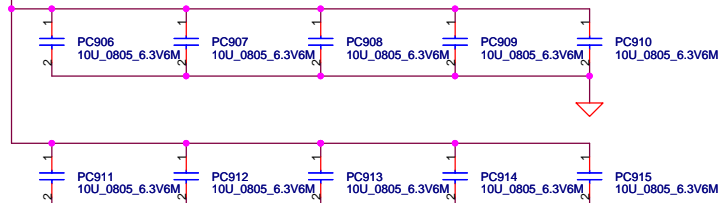


Ipeak=1.308A  
ILIM = 4A  
F=1MHz

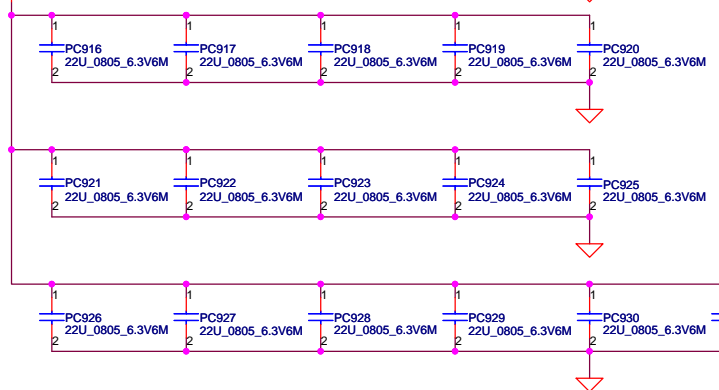




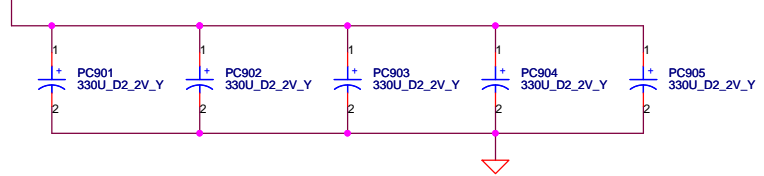
**+CPU\_CORE**



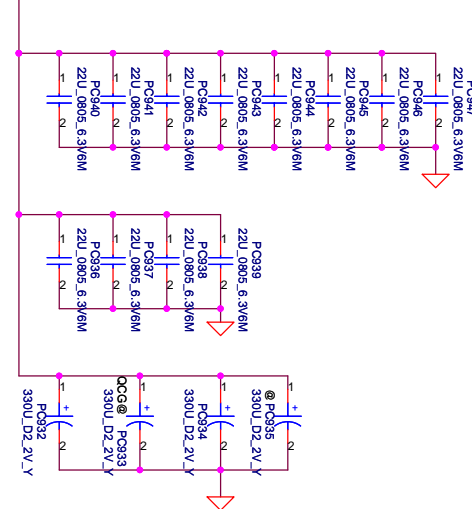
**+CPU\_CORE**



**+CPU\_CORE**



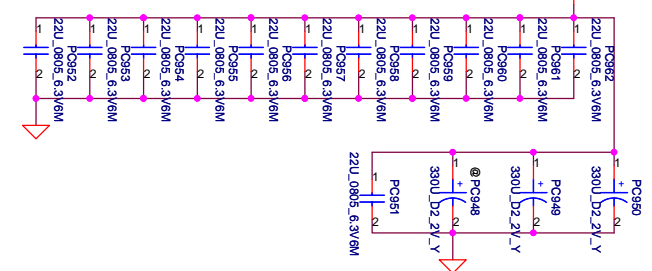
**+GFX\_CORE**



Below is 458544\_CRV\_PDDG\_0.5 Table 5-8.

Socket Bottom	5 x 22 µF (0805) 5 x (0805) no-stuff sites
Socket Top	7 x 22 µF (0805) 2 x (0805) no-stuff sites

**+1.05VS\_VCCP**



	Chief River	330uF*9m	470uF*4.5m	22uF	10uF
8layer for DC CPU		4		16	10
8layer for QC CPU		5		16	10
6layer for DC CPU		5		16	10
6layer for QC CPU		4	1	16	10
GFX_CORE DC		2		12	
GFX_CORE QC		3		12	
1.05V_VCCP		2		12	

Security Classification		Compal Secret Data		Title	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	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.				SHEMATICS, MB A8392	
				4019HF	
				Date:	Thursday, February 16, 2012
				Sheet	48 of 51



NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1.	2011/09/29	P51-PWR_+3VALWP/+5VALWP	Change PU330 to RT8205L	Change source
2.	2011/09/29	P53-PWR_ +1.05VS_VCCP/+16VSP	Change PU400 to RT8237C	Change source
3.	2011/09/29	P54-PWR_+VCCSAP/1.8VSP	Change PU450 to SY8037B	Change source
4.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change HMOS to MDV1525	Change source
5.	2011/09/29	P53-PWR_ +1.05VS_VCCP/+16VSP	Change HMOS to MDV1525	Change source
6.	2011/09/29	P49-PWR_BATTERY CONN / OTP	Change PD5,PD6 to SCA00001G00	ESD team request
7.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change PR589 from 348 to 8.06k	FAE suggestion
8.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change PR590 from 3.65k to 806	FAE suggestion
10.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change PC574 from 680P to 0.033u	FAE suggestion
11.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change PC577 from 4700P to 0.033u	FAE suggestion
12.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change PR548 from 1.21k to 8.06k	FAE suggestion
13.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change PR550 from 10.7k to 806	FAE suggestion
14.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change PC547 from 680P to 0.033u	FAE suggestion
15.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Change PC551 from 4700P to 0.033u	FAE suggestion
16.	2011/09/29	P57-PWR +CPU_CORE DECOUPLING	Add snubber and boost resistor	For 3x3 H-MOS solution
17.	2011/09/29	P49-PWR_BATTERY CONN / OTP	Add PR22 30k,PR27 100k, PR32 0 Ohm	For 120W adapter protect(9012)
18.	2011/09/29	P51-PWR_+3VALWP/+5VALWP	Change PC360 to SE000006R80	Change source
19.	2011/09/29	P49-PWR_BATTERY CONN / OTP	Add PR17 14k, PR33 0 Ohm	For CPU temperature protect(9012)
20.	2011/09/29	P51-PWR_+3VALWP/+5VALWP	Add PR373 0 Ohm	For 3/5V always power on(9012)

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				<b>SCHEMATICS, MB A8392</b> Size Custom Document Number <b>4019HF</b> Date: Thursday, February 16, 2012   Sheet 49 of 51   Rev B

# HW PIR (Product Improve Record)

QFKAA IA-8392P SCHEMATIC CHANGE LIST

REVISION CHANGE: 0.2

GERBER-OUT DATE: 2011/11/11

Item	Page	Date	Request	Solution
1)	13	2011/9/29a	by ESD demand	change D84 to SCAD0001L00
2)	26	2011/9/29a	by ESD demand	change D82 to SCAD0001L00
3)	28	2011/9/29a	by ESD demand	change D92 to SCAD0001L00
4)	05	2011/10/05a	follow HW check list	reserve decoupling cap CC56, CC71, CC70 for H_PM_SYNC & H_PECI, BUF_CPU_RST#
5)	19	2011/10/05a	by Customer demand	add LVDS dual channel signal
6)	13	2011/10/05a	by Customer demand	add LVDS dual channel signal and 0ohm: R267 R268 R269 R270 R283 R329 R333 R337 (OPTFHDE) and R500 R501 R502 R503 R504 R505 R507 R508 (3ds)
7)	17	2011/10/05a	by Customer demand	change RH16 to HD# add RH282 FHD#
8)	35	2011/10/18a	discuss with EC	change Function_LED from EC_GPI04D, PIN86 to EC_GPI011, PIN25 change HDPLCK from EC_GPI011, PIN25 to EC_GPI04D, PIN86 add GPUPWR_SKIN# on EC_GPI013, pin27. add RB28 for GPUPWR_SKIN#
9)	18	2011/10/18a	by SW ME demand.	change HDVACT from EC_GPI043, PIN76 to EC_GPI050, PIN89 reserve SUSACK# and PCH_SUSPWRDN# by SW demand change PCH_SUSPWRDN_R to PCH_SUSPWRDN_R add PCH_SUSPWRDN# to EC and RH132 remove T75 change SUSACK# to SUSACK#_R add RH133 and SUSACK# to EC swap LT2, LE1, DR7 swap LT3, LT2
10)	30	2011/10/31a	by Layout demand	remove RH1, RH174, and change net-name from LNBWR_MONITOR to LNB_OC
11)	32	2011/10/31a	by Layout demand	add JTP connector Pin 5 (PW_SMCCLK), Pin6 (PW_SHEDATA)
12)	20	2011/10/31a	by PWR 16V OC control demand	reserve RA43 for SM_EN 100K pull down reserve
13)	37	2011/11/1a	new touch pad add new function	exchange location of RA28 and CA2
14)	27	2011/11/1a	TV tuner(BCAS) 16V reserve	RA26 pin2 change name from OSC_IN to OSC_OUT
15)	33	2011/11/1a	avoid SM_EN floating	delete DAL, add RA19, QA5, RA42
16)	33	2011/11/1a	for vendor request	delete CH57, E03 then add R05, QH6, CH59, RH228
17)	33	2011/11/1a	for vendor request	add R545, Q5527, R529, R534
18)	33	2011/11/1a	for vendor request, S&M HP need shut down	reserve RH228
19)	23	2011/11/1a	for lot6 0.5W power consumption	change D21 power from +5VL to +5VALW
20)	38	2011/11/2a	for lot6 0.5W power consumption	add CCL10
21)	23	2011/11/2a	for lot6 0.5W power consumption	add CL43, RL29
22)	37	2011/11/2a	for lot6 0.5W power consumption	change RM4 from 0ohm to 33ohm, CW10 from 5pF to 6.8pF
23)	27	2011/11/6a	by EMI demand	change JUSBR to JUSBR, JUSBRP to JUSBRP
24)	28	2011/11/6a	by EMI demand	change JUSBLR to JUSBLR, JUSBLP to JUSBLP
25)	29	2011/11/6a	by EMI demand	change J3GTV to JPCIF
26)	25	2011/11/7a	common with ME define location	change JFUNCTION to JFUN
27)	30	2011/11/7a	common with ME define location	delete CH105, CH106; add QH2, CH97, CH98, RH1, RH3
28)	27	2011/11/7a	common with ME define location	add EC pin 70 for PCH_PWR_EN
29)	37	2011/11/7a	common with ME define location	change PCH version to SA00004N90(B0) and BOM option to SA00005AG10(C0)
30)	22	2011/11/7a	for lot6 0.5W power consumption	change net name from LNB_OC to LNB_OCH; add RH290 to pull high LNB_OCH
31)	35	2011/11/7a	for lot6 0.5W power consumption	delete H4, H8; modify H7, H22, H30 to NPTH
32)	37	2011/11/7b	by proto plan demand	UH1.F46 and RH126 change net name from WL_OFF# to PCH_GPI055
33)	20	2011/11/7b	by PWR 16V OC control demand	change UBI.29 net name from CPSEFIN to WL_OFF#
34)	37	2011/11/7b	by Layout team demand	add RM17 for WL_OFF# pull high to +3V_MLAN
35)	20	2011/11/9a	EC common core for WL_OFF#	CPSEFIN signal change from UBI.29 to UBI.74
36)	35	2011/11/9a	EC common core for WL_OFF#	add RB37 10kohm pull high to +3VS for LNB_OC
37)	27	2011/11/9a	EC common core for WL_OFF#	remove BOM selection IEPS# for R109, R110, C230, C233, Q1
38)	35	2011/11/9a	by PWR 16V OC control demand	change R108, C228, Q17 to LVDS#; change Q1, C230, C233, R109, R110 to always mount
39)	35	2011/11/9a	by PWR 16V OC control demand	add R390, R1442, R1441, R106
40)	13	2011/11/9d	for dual-channel power support	change R105 to LVDS#, R1441 to @, R361 to @, R1442 to 3ds, R390 to @
41)	13	2011/11/9d	for dual-channel power support	add R79, R97, L60
42)	13	2011/11/9d	for dual-channel power support	add R361; change R62 from 100 to 0
43)	13	2011/11/9d	for dual-channel power support	add RH104
44)	13	2011/11/9d	for dual-channel power support	change YCL1 from SJ10000CU00 to SJ10000EP00, CCL4 and CCL5 from 30pF to 15pF
45)	21	2011/11/9d	for dual-channel power support	change CW10 from 6.8pF to 5pF
46)	21	2011/11/9d	for dual-channel power support	change BOM structure of CCL10 from @ to GCLK#
47)	27	2011/11/14a	for vendor recomment	change BOM structure of RL29, CL43 from @ to GCLK#
48)	29	2011/11/15a	by EMI demand	
49)	27	2011/11/15d	by EMI demand	
50)	28	2011/11/15d	by EMI demand	

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			Title	SCHEMATICS, MB A8392
Size	Document Number		Rev	8
Custm	4019HF		Date	Thursday, February 16, 2012
Sheet		80	of 81	

# HW PIR (Product Improve Record)

QFKAA IA-8392P SCHEMATIC CHANGE LIST

REVISION CHANGE: 0.3

GERBER-OUT DATE: 2011/12/22

Item	Page	Date	Request	Solution
1)	18	2011/11/29a	For DIT hang	Add CH23,CH24,CH25 for SW-node noise.
2)	13	2011/11/29a	For ME request	Change location from JLVD5 to JLVD54
3)	38	2011/11/29a	For noise issue	Add C366, C470 at +5VALW power rail; add C381 at +1.8VS power rail
4)	05	2011/12/07a	For leakage	Change from +3VALW to +3VALW_PCH of UCI
5)	38	2011/12/07a	For design change	Add C382 for +1.8VS
6)	33	2011/12/13a	For Codec leakage	Add RA29 for leakage
7)	18	2011/12/13a	For noise issue	Mount CH23,CH24,CH25.
8)	05	2011/12/13a	For leakage	Change pin5 of UCI from +3VALW to +3VALW_PCH
9)	15	2011/12/13a	For leakage issue	Change pin5 of U9 from +5VL to +HDMI_5V_OUT
10)	38	2011/12/13a	For noise issue	Add C372,C373,C374,C383,C384,C385,C386,C387,C388,C389,C390,C391,C392
11)	35	2011/12/13a	For design change LNR_EN	Change LNR_EN from PCH to EC
12)	35	2011/12/13a	For design change RF_LED	Change RF_LED control pin from PCH to EC
13)	38	2011/12/13a	For S3 resume sequence	Add Q41 for S3 sequence
14)	26	2011/12/15a	For ME request	Change JFP/POWER/JTUN from zif to non-zif
15)	31	2011/12/15a	For adjust EXT 3.0 sequence	Change +3V to +3V_USB control pin from syson to PM_SLP_S4#
16)	32	2011/12/15a	For adjust EXT 3.0 sequence	Change +3V to +3V_USB control pin from syson to PM_SLP_S4#
17)	13	2011/12/17a	For prevent LVDS burn issue	Add F3 (Poly fuse to prevent burn issue)
18)	37	2011/12/19a	For ME delete stand-off	Delete H25,H26,H27
19)	37	2011/12/19a	For Wimax flash issue	Change +5VS to +3VS of Wimax LED
20)	37	2011/12/19a	For layout request	Add net name +5VS_FUNC with Function conn power pin
21)	21	2011/12/22a	For ESD request	Reserve C330(1000P) for PCH_THROWTRIP
22)	13	2011/12/22a	For ME request	change C381, C382, C470, C366 from 0805 to 0603 size

QFKAA IA-8392P SCHEMATIC CHANGE LIST

REVISION CHANGE: 1.0

GERBER-OUT DATE: 2012/02/02

Item	Page	Date	Request	Solution
1)	27	2012/01/12a	For GLCK	Add CCL130,1u1 for +3VALW
2)	27	2012/01/12a	For MSATA pin define.	Add RM30 (MSATA) define that pin22 is reserve, so other function need to add PLT_RST#).
3)	27	2012/01/18a	For GLCK	Change CCL13 from +3VLAW to +3VALW_GCLK
4)	27	2012/01/30a	For TV tuner use PCIE interface	Add RM31-RM35 and QM2
5)	17	2012/01/30a	For TV tuner use PCIE interface	Change PCIE 6 from USB to TV tuner
6)	17	2012/01/30a	For TV tuner use PCIE interface	Change CLK_USB30 to CLK_TV and CLKREQ_USB30# to CLKREQ_TV#
7)	37	2012/01/30a	For MP	Unmount SW3
8)	11	2012/01/30a	For MI only	Unmount RC117/RC118/QC7/QC8
9)	32	2012/01/30a	For Internal USB30 only	Delete Page 32
10)	37	2012/02/01a	For ESD request	Add C469, C472-C479, C481-C488, C491

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2011/12/14	Deciphered Date	2012/12/31	Title
				<b>SCHEMATICS, MB A8392</b>
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size Custom
				Document Number <b>4019HF</b>
				Rev B
				Date: Thursday, February 16, 2012   Sheet 81 of 81