

Compal Confidential

KAL90 M/B Schematics Document

Intel Penryn Processor with Cantiga + DDRII + ICH9M

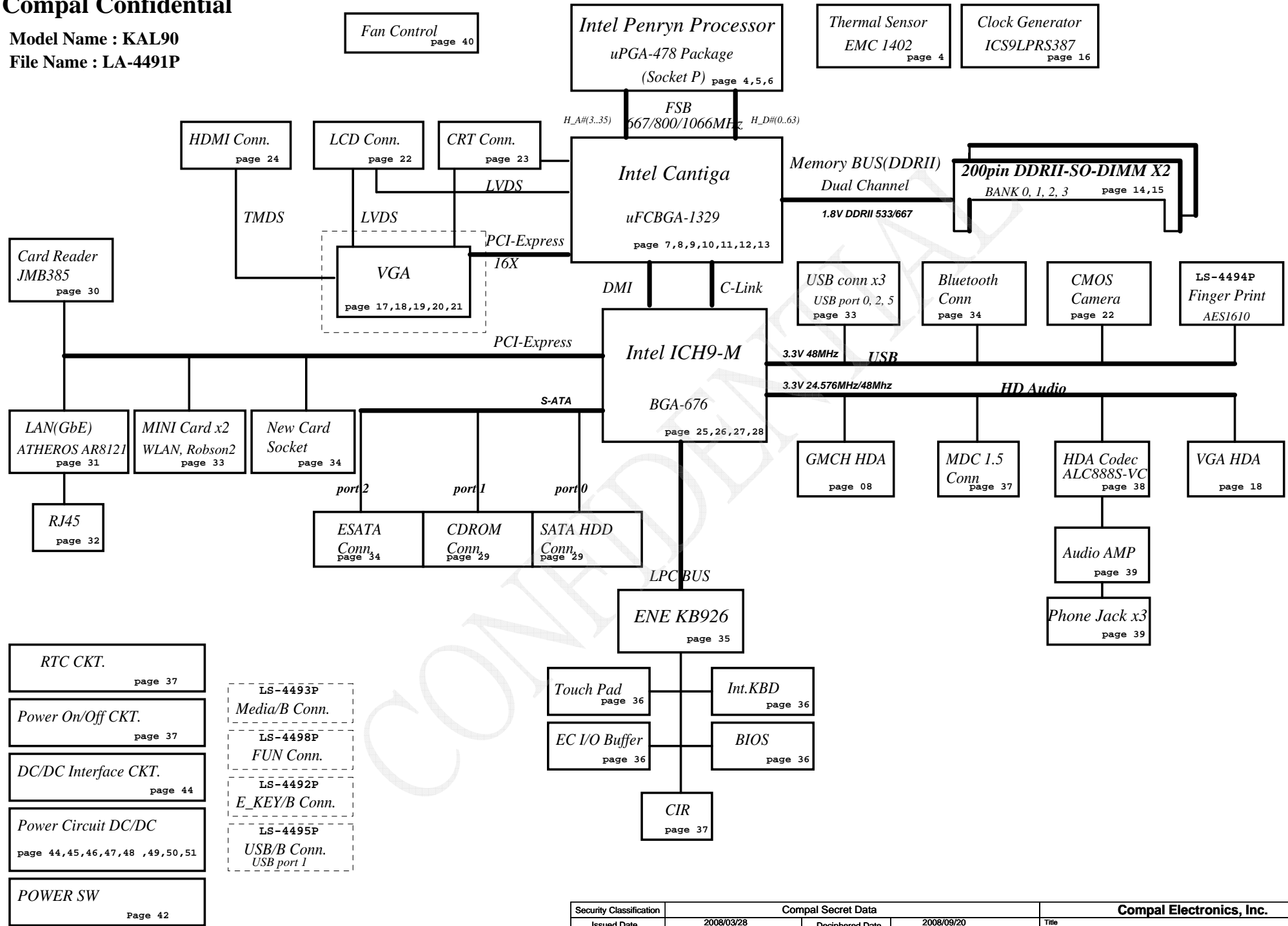
2008-10-30

REV:1.0

Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	SCHEMATIC,A4491	
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	401597	Rev C
				Date:	Thursday, October 30, 2008	Sheet 1 of 52

Compal Confidential

Model Name : KAL90
File Name : LA-4491P



Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	SCHEMATIC,A4491	
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	401597	Rev C
				Date:	Thursday, October 30, 2008	Sheet 2 of 52

Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	N/A	N/A	N/A
B+	AC or battery power rail for power circuit.	N/A	N/A	N/A
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+0.9VS	0.9V switched power rail for DDR terminator	ON	OFF	OFF
+1.05VS	1.05V switched power rail	ON	OFF	OFF
+1.25VS	1.25V switched power rail	ON	OFF	OFF
+1.5V	1.5V power rail for HDA	ON	ON	OFF
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8V	1.8V power rail for DDR	ON	ON	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+1.1VS	1.1V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V	3.3V power rail for SB	ON	ON	X
+3V_LAN	3.3V power rail for LAN	ON	ON	X
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5VS	5V switched power rail	ON	OFF	OFF
+VSB	VSB always on power rail	ON	ON	ON*
+RTCVCC	RTC power	ON	ON	ON
+VGA_CORE	Core voltage for GPU	ON	OFF	OFF

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

External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts

EC SM Bus1 address

Device	Address
Smart Battery	0001 011X b
MEDIA CONSOLE	1010 000X b

EC SM Bus2 address

Device	Address
ADI ADT7421	1001 100X b
NB9M THERMAL SENSOR	

ICH9M SM Bus address

Device	Address
Clock Generator (ICS9LPRS367, SLG8SP556V)	1101 001Xb
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 010Xb

STATE	SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON		HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)		LOW	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)		LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)		LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)		LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

Board ID / SKU ID Table for AD channel

Vcc	3.3V +/- 5%			
Ra/Rc/Re	100K +/- 5%			
Board ID	Rb / Rd / Rf	VAD_BID min	VAD_BID typ	VAD_BID max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

BOARD ID Table

Board ID	PCB Revision
0	0.1
1	0.2
2	0.3
3	1.0
4	1A
5	
6	
7	

BTO Option Table

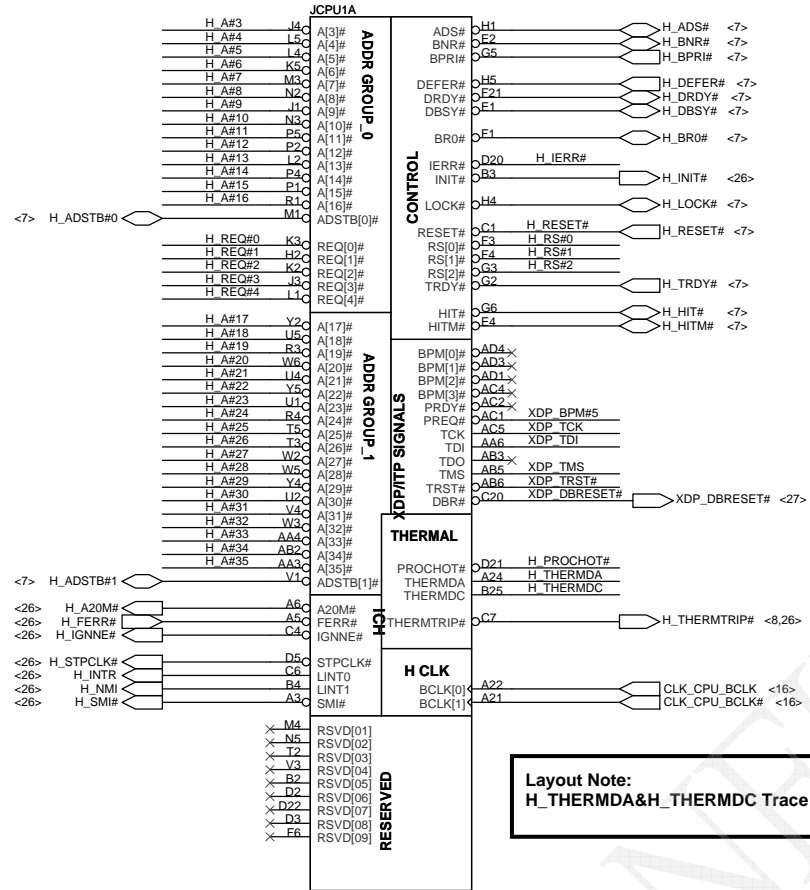
BTO Item	BOM Structure
JAL90	JAL90@
JAW50	JAW50@
UMA	GM@
JAL90-UMA	JAL90GM@
JAW50	GLPM@
Discrete	PM@
Discrete	PM@
ALC888VC	888VC@
ALC888VB	888VB@
AR8121	8121@
AR8112	8112@
ALC268	268@

BOM Configuration Table

Project	BOM Configuration
KAL90-UMA	XXXXXXXXXX:JAL90GM@/JAL90@/GM@/888VC@/8121@/ESATA@
KAL90-Dis	XXXXXXXXXX:PM@/JAL90@/GLPM@/888VC@/8121@/ESATA@

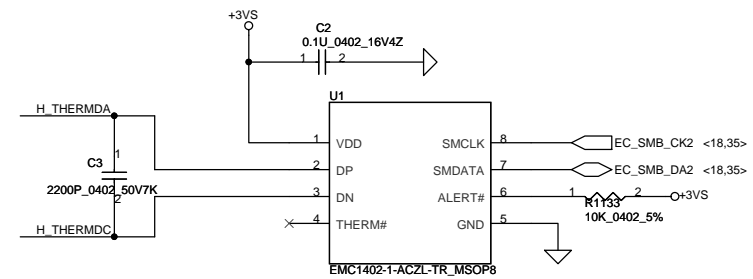
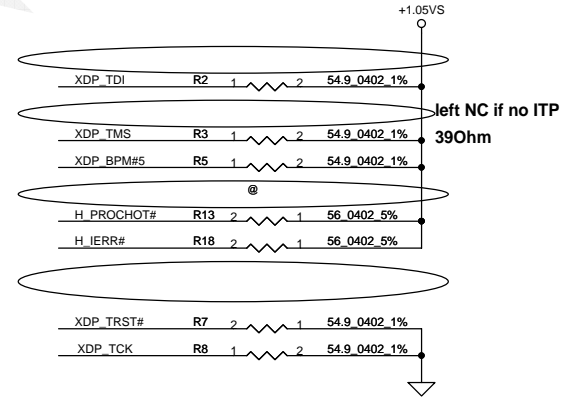
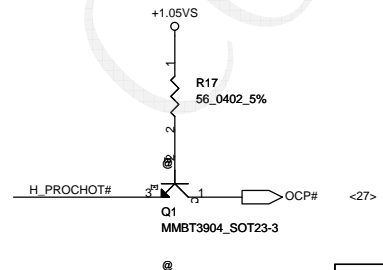
Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title		
				SCHEMATIC,A4491		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS 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	401597	Rev C
				Date:	Thursday, October 30, 2008	Sheet 3 of 52

<7> H_A#[3..35] H_A#[3..35]
 <7> H_REQ#[0..4] H_REQ#[0..4]
 <7> H_RS#[0..2] H_RS#[0..2]

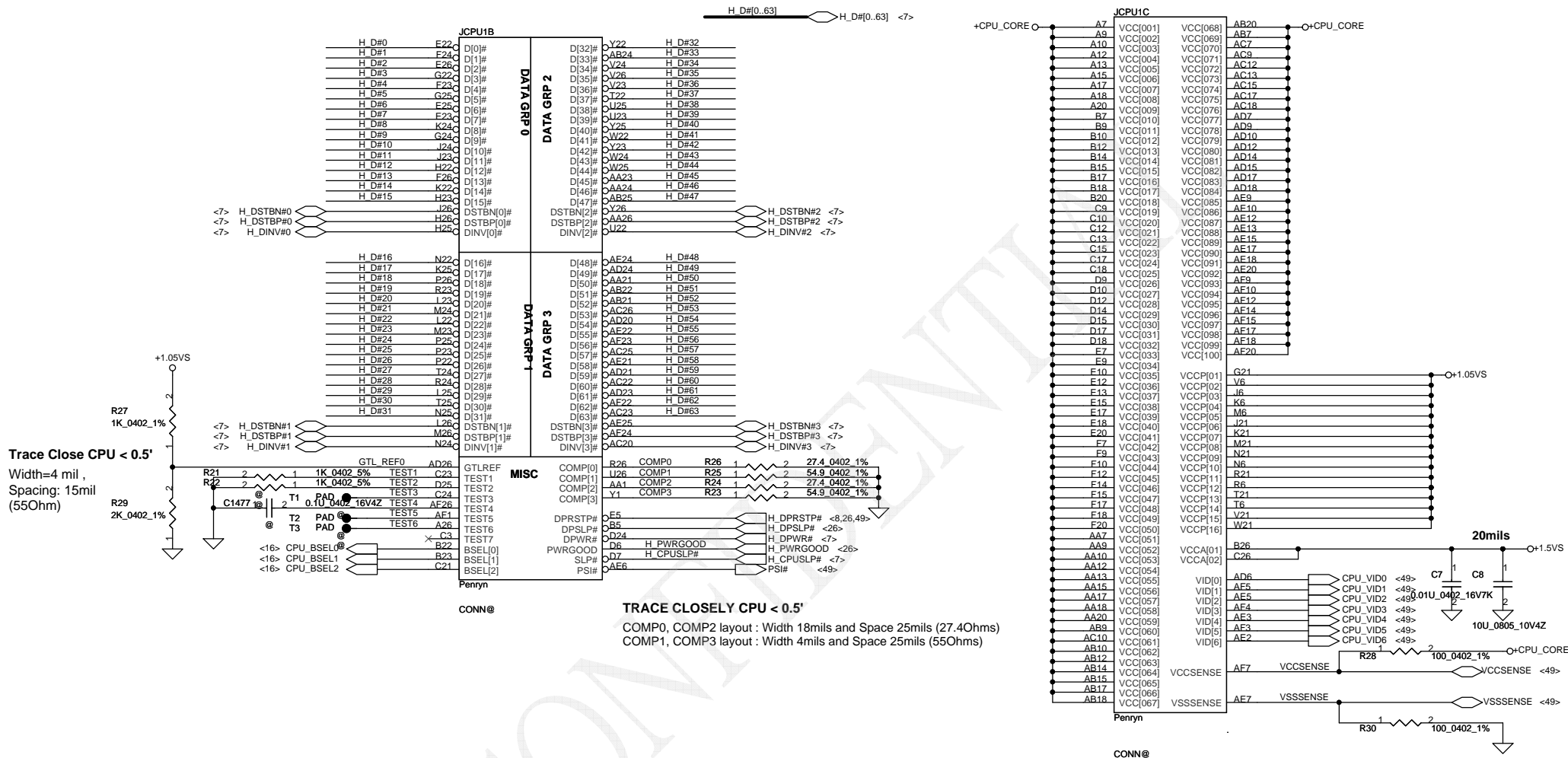


Layout Note:
 H_THERMDA&H_THERMDC Trace / Space = 10 / 10 mil

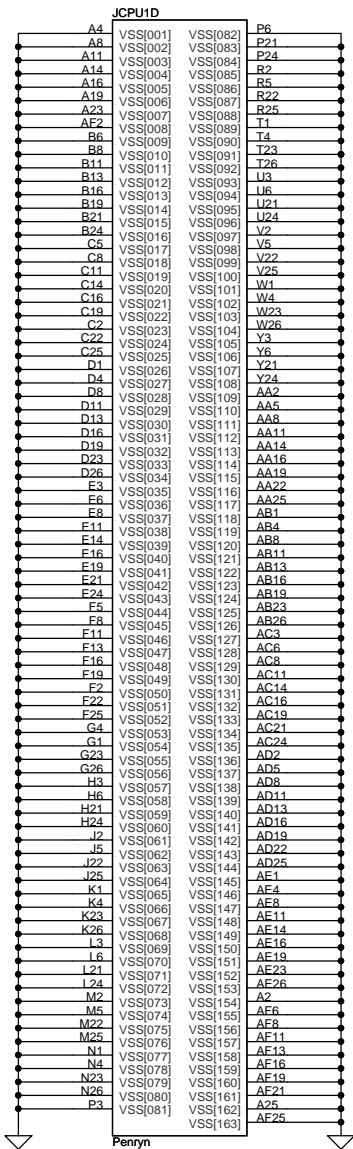
BSEL2	BSEL1	BSEL0	BCLK
0	0	0	266
0	1	0	200
0	1	1	166



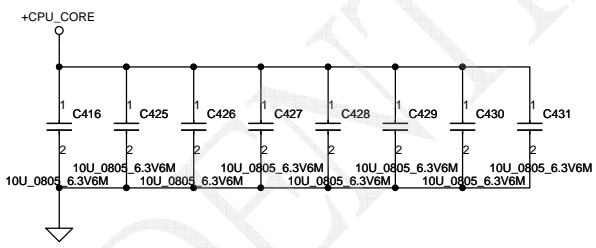
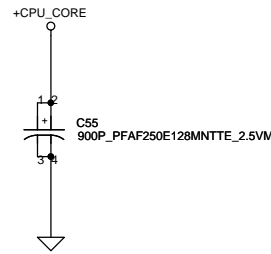
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				B	401597
				Date:	Thursday, October 30, 2008
				Sheet	4 of 52



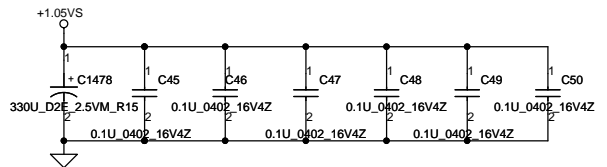
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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
				401597	C
Date: Thursday, October 30, 2008				Sheet	5 of 52



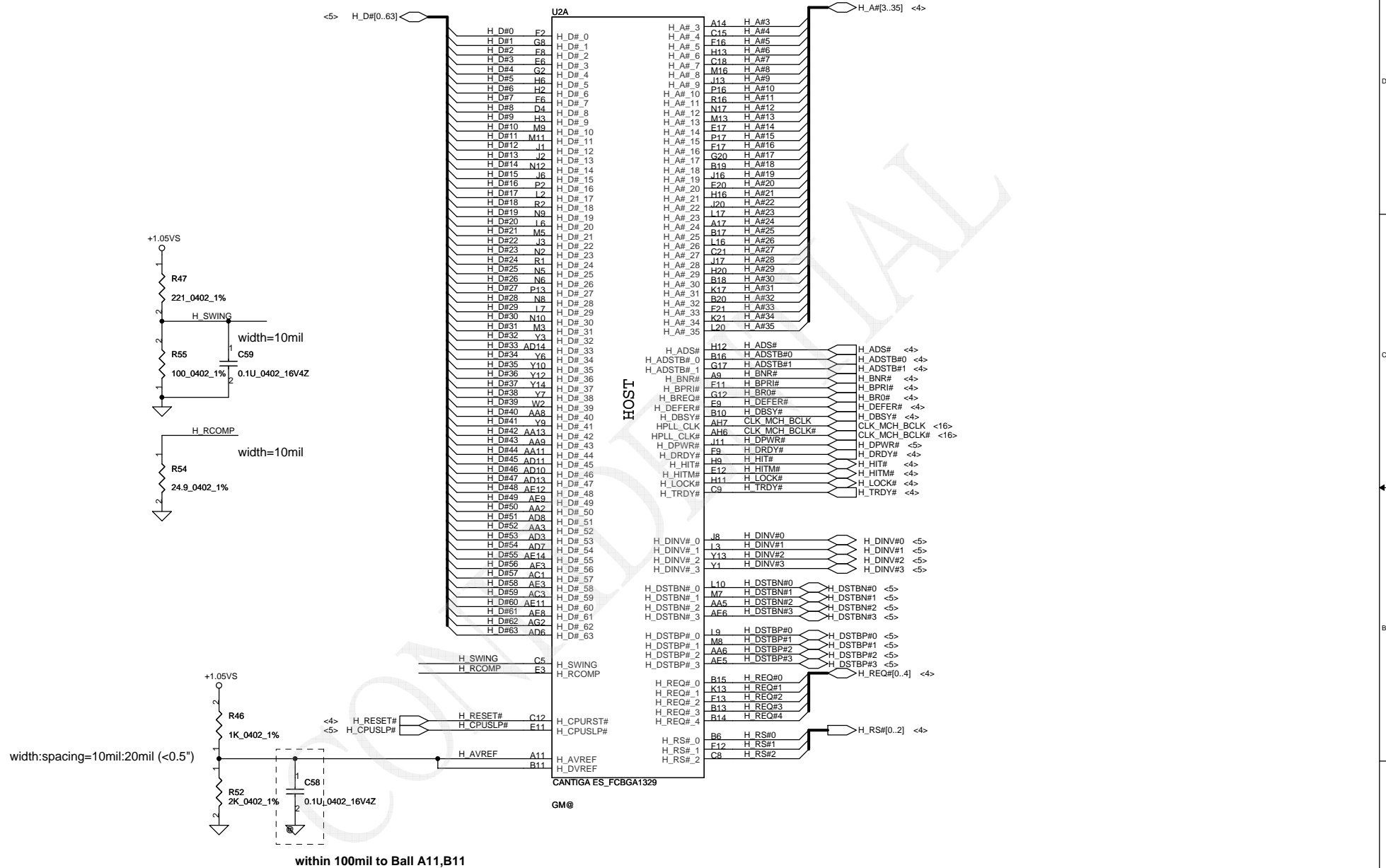
Penryn
CONN@



+CPU-CORE Decoupling	C,uF	ESR, mohm	ESL,nH
SPCAP, Polymer	4X330uF	6m ohm/4	1.8nH/6
MLCC 0805 X5R	32X22uF	3m ohm/32	0.6nH/32
	32X10uF	3m ohm/32	0.6nH/32

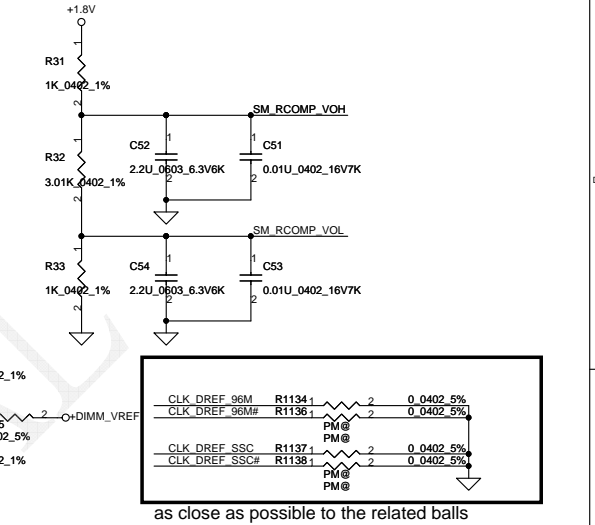
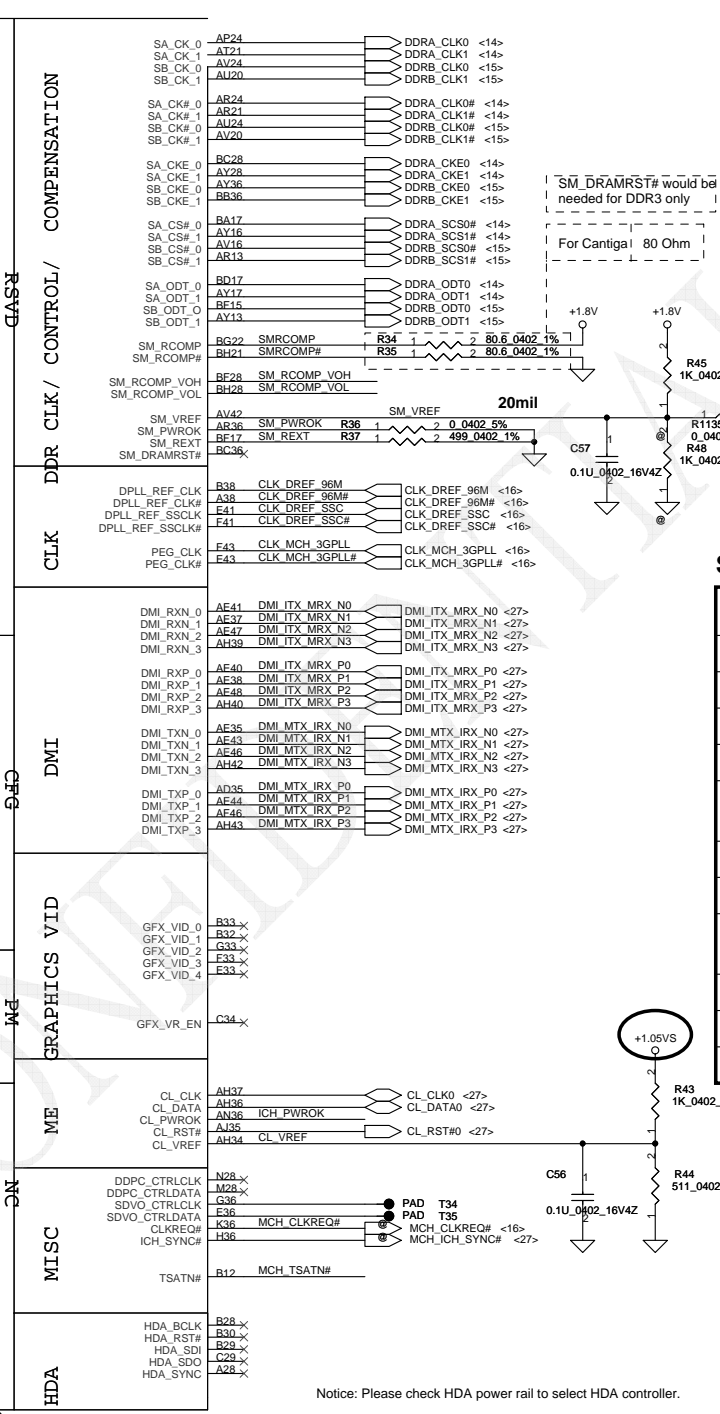
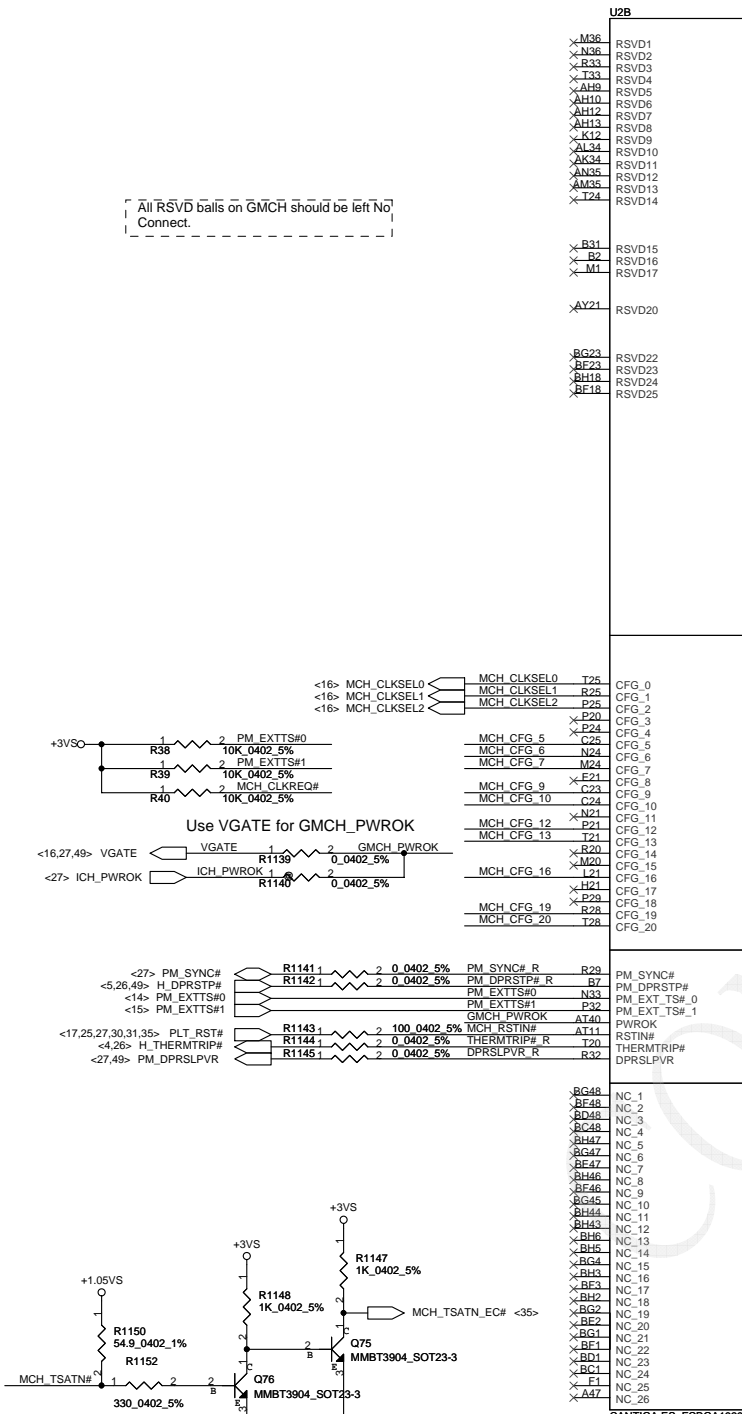


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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 C
				401597	
Date: Thursday, October 30, 2008				Sheet	6 of 52



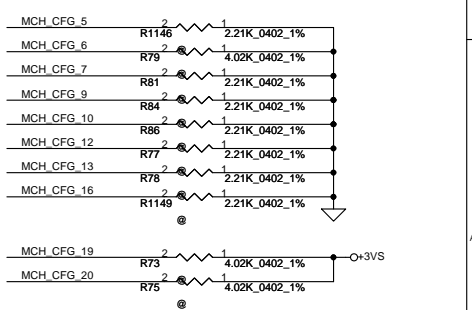
within 100mil to Ball A11,B11

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	SCHMATIC,A4491
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size	B	Document Number	401597	Rev	C
Date:	Thursday, October 30, 2008	Sheet	7	of	52



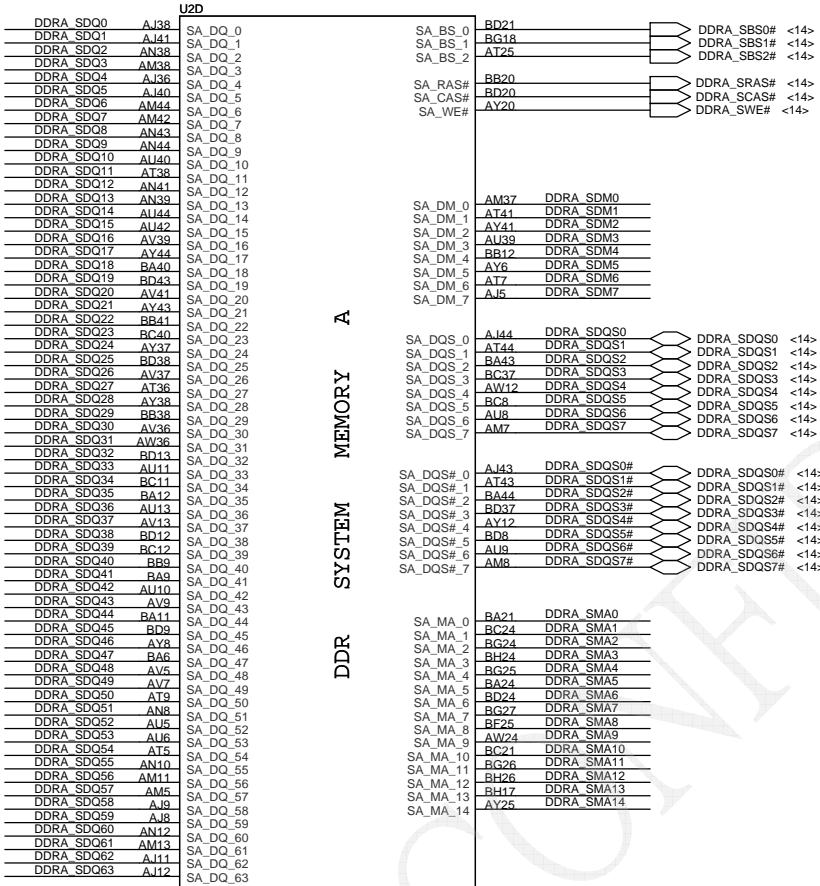
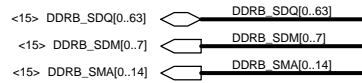
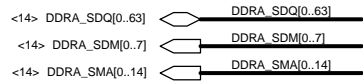
Strap Pin Table

CFG[2:0]	011 = FSB667 010 = FSB800 000 = FSB1067
CFG5	0 = DMI x 2 1 = DMI x 4 * (Default)
CFG6	0 = iTPM Host Interface is enabled 1 = iTPM Host Interface is Disabled * (Default)
CFG9	0 = Lane Reversal Enable 1 = Normal Operation * (Default)
CFG10	0 = PCIe Loopback Enable 1 = Disable * (Default)
CFG[13:12]	00 = Reserved 01 = XOR Mode Enabled 10 = All Z Mode Enabled 11 = Normal Operation * (Default)
CFG16	0 = Dynamic ODT Disabled 1 = Dynamic ODT Enabled * (Default)
CFG19	0 = Normal Operation * (Default) 1 = DMI Lane Reversal Enable
CFG20 (PCIe/SDVO select)	0 = Only PCIe or SDVO is operational. (Default) 1 = PCIe/SDVO are operating simu.
SDVO_CTRLDATA	0 = No SDVO Card Present * (Default) 1 = SDVO Card Present
L_DDC_DATA	0 = LFP Disable 1 = LFP Card Present; PCIe disable * (Default)
DDPC_CTRLDATA	0 = Digital DisplayPort Disable * (Default) 1 = Digital DisplayPort Device Present

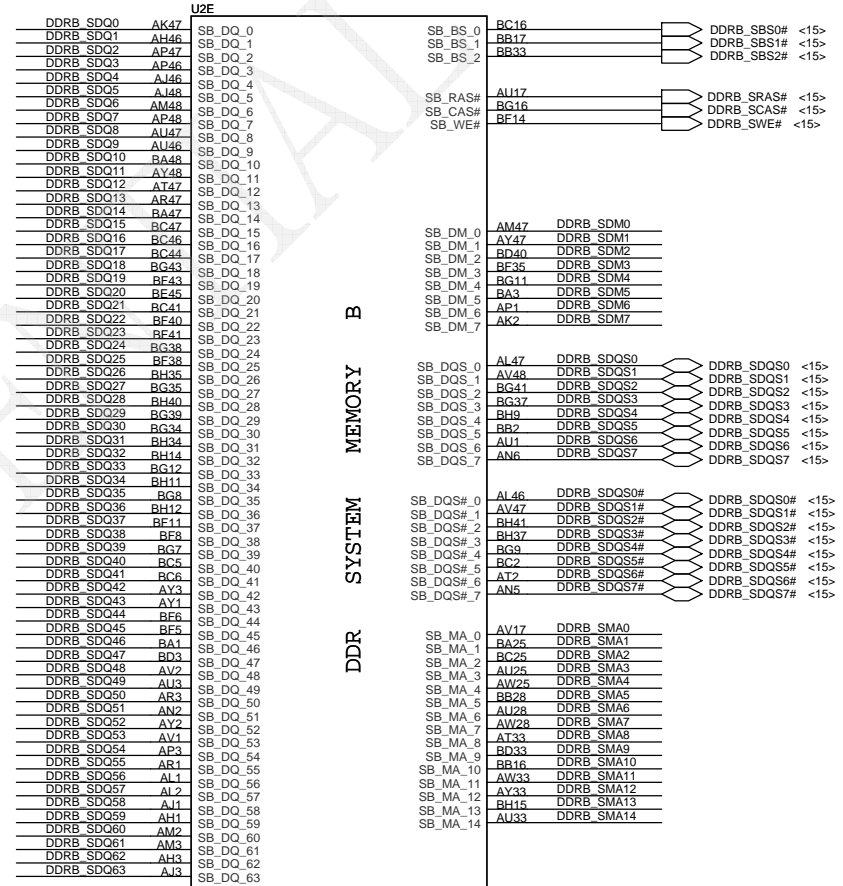


Notice: Please check HDA power rail to select HDA controller.

Security Classification	Compal Secret Data		Title	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	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 REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION 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 401597
				Rev C
				Date: Thursday, October 30, 2008
				Sheet 8 of 52

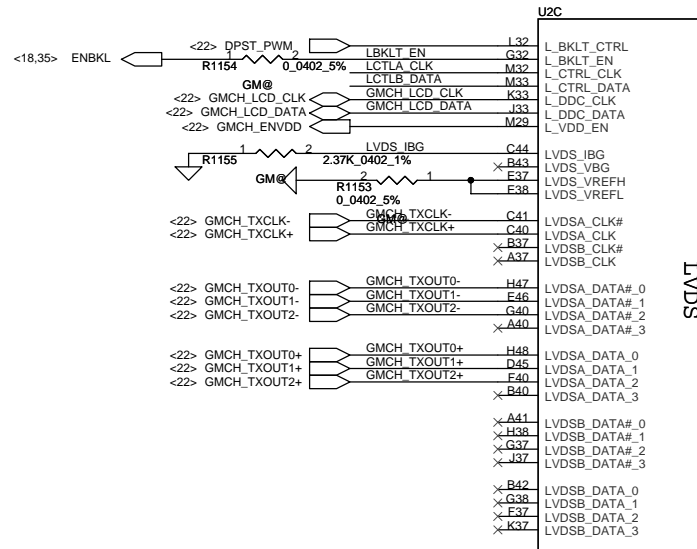


CANTIGA ES_FCBGA1329
GM@

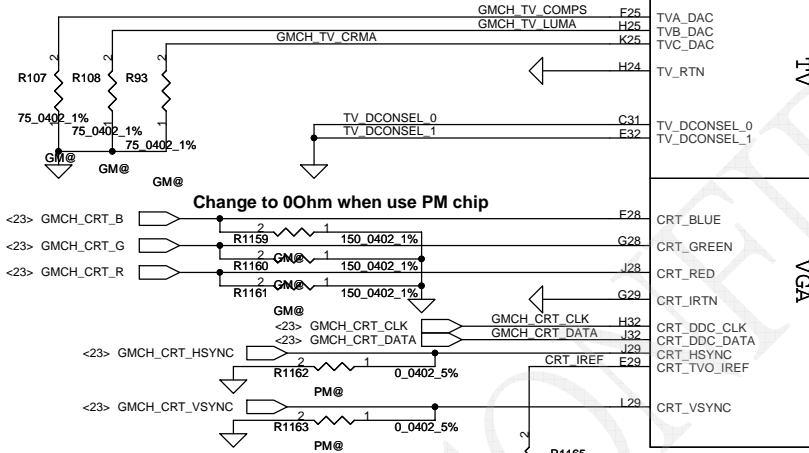


CANTIGA ES_FCBGA1329
GM@

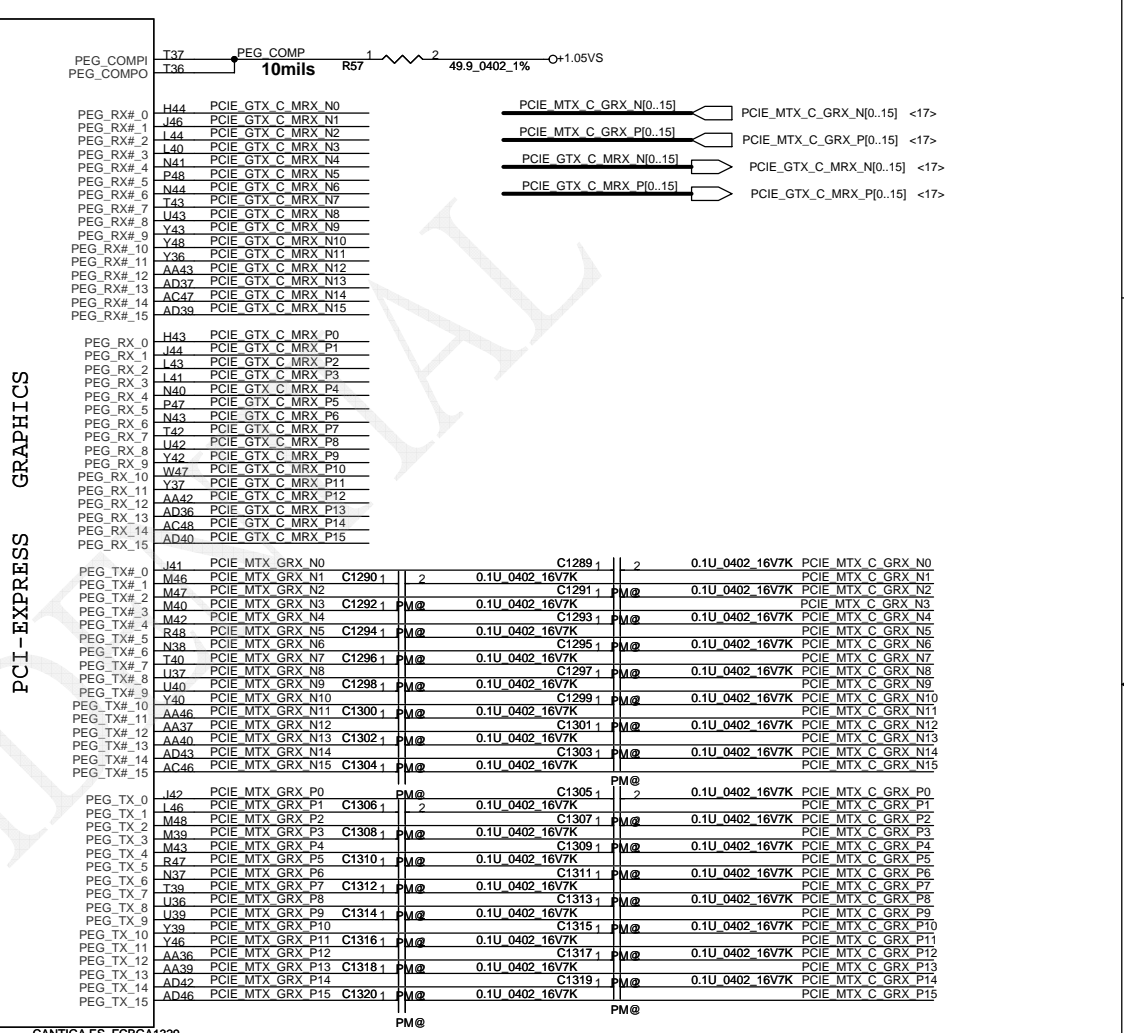
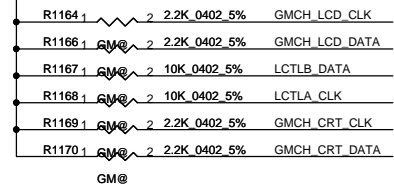
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
				SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size	B	Document Number	401597	Rev	C
Date:	Thursday, October 30, 2008	Sheet	9	of	52



Change to 00hm when use PM chip



Change to 00hm when use PM chip



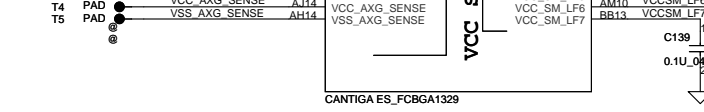
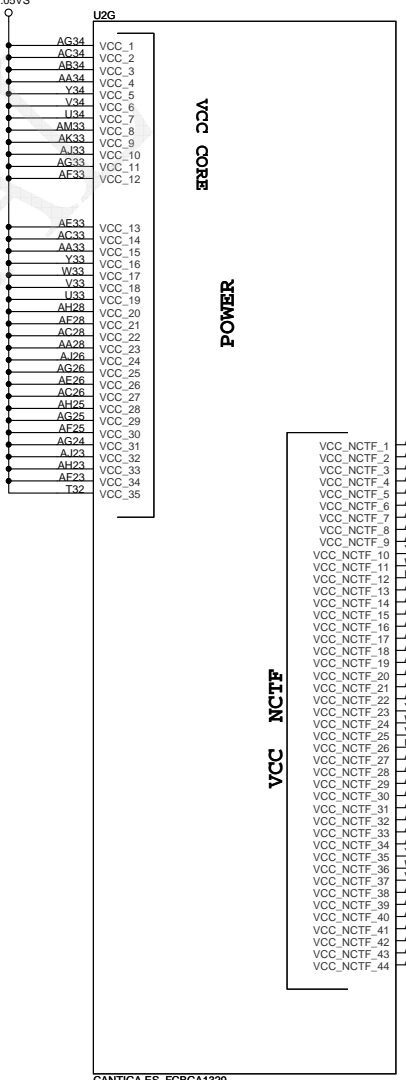
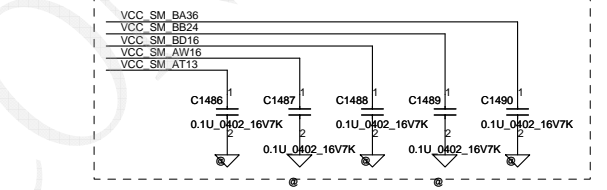
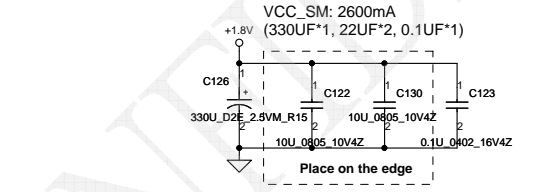
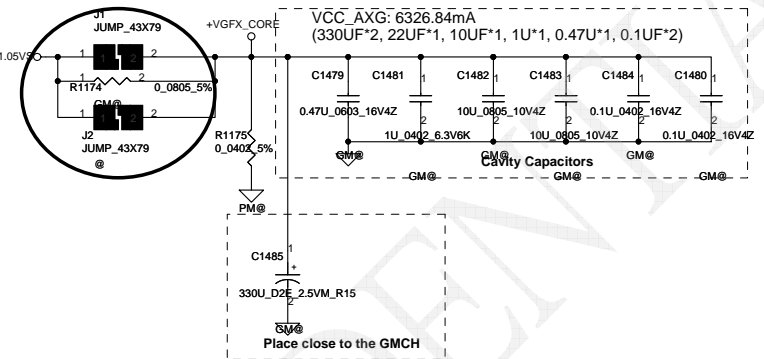
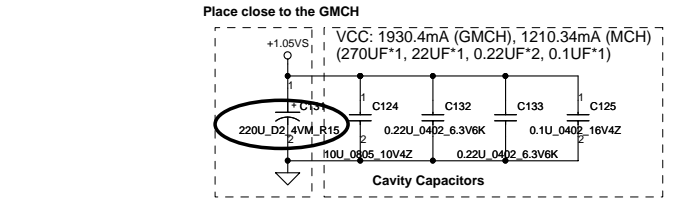
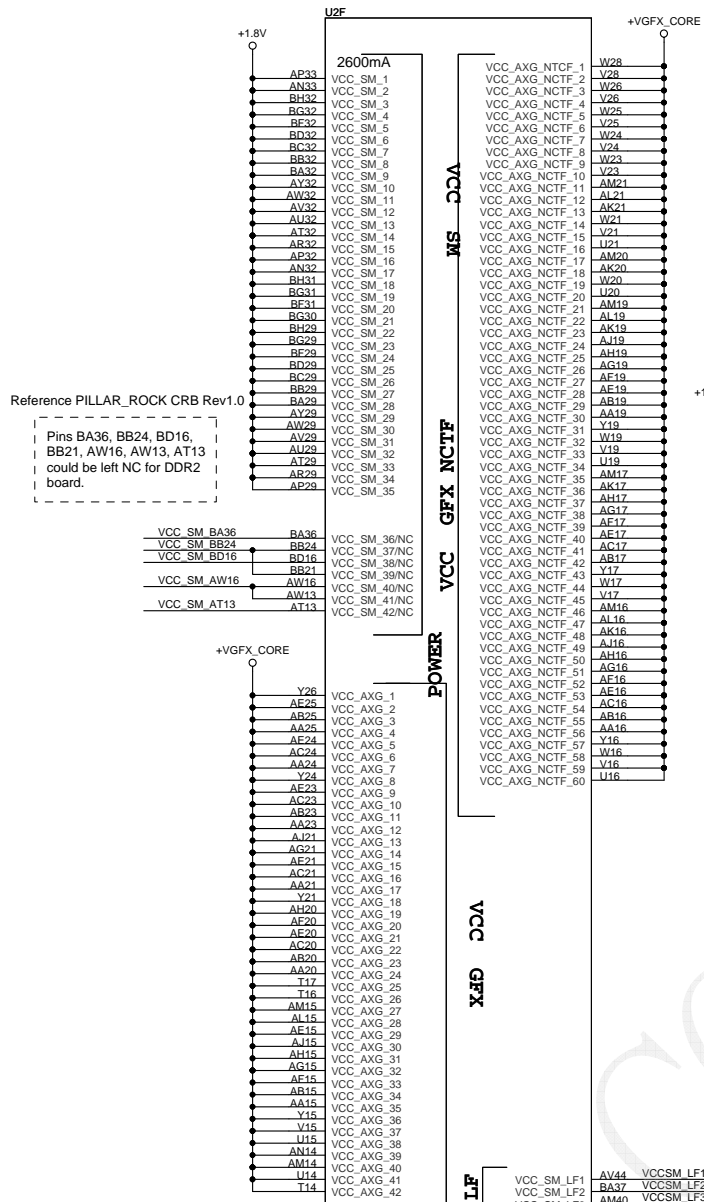
PCI EXPRESS

VGA

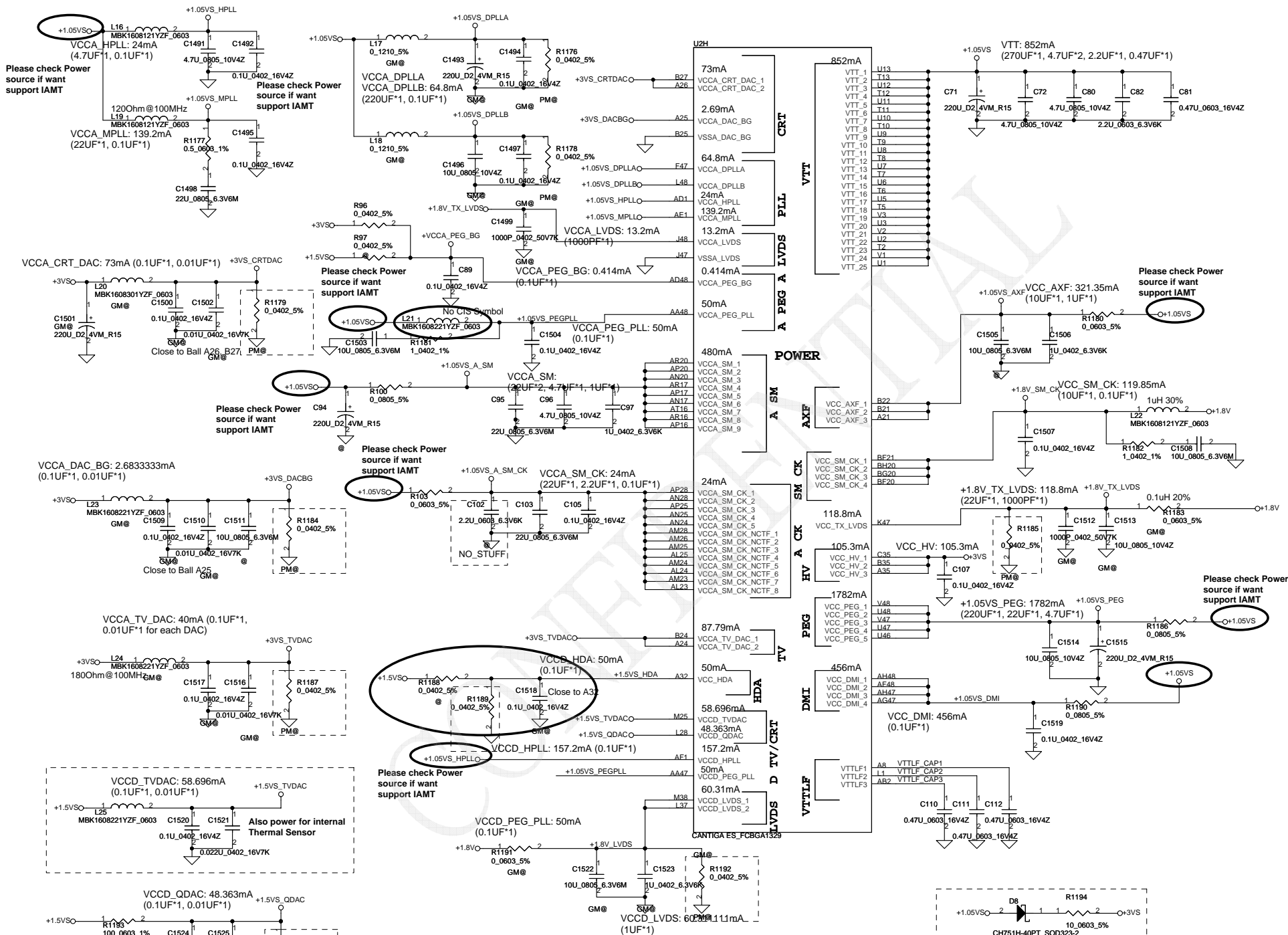
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				Customer	C
				Date	Thursday, October 30, 2008
				Sheet	10 of 52

SCHEMATIC_A4491

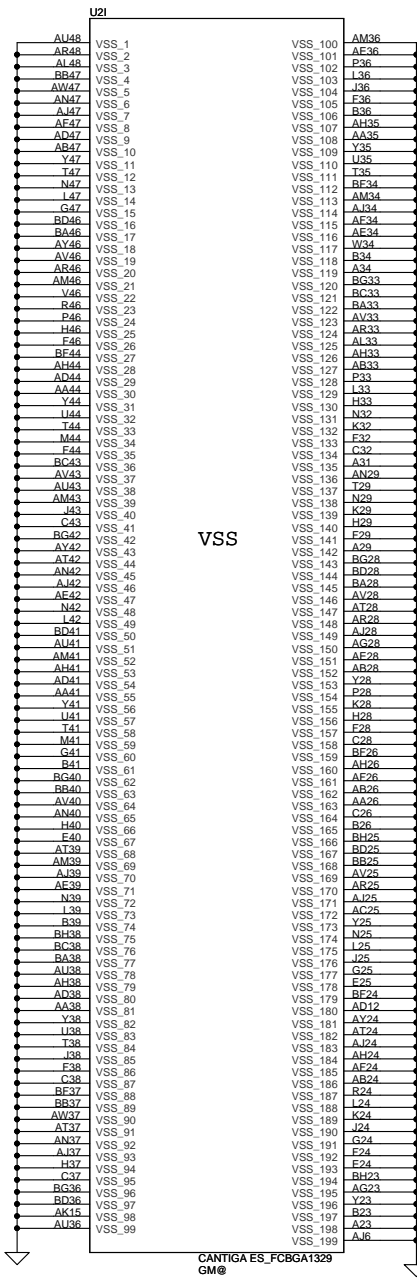
401597



Security Classification		Compal Secret Data		Title	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	SCHEMATIC.A4491	
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
				401597	C
Date: Thursday, October 30, 2008				Sheet	11 of 52

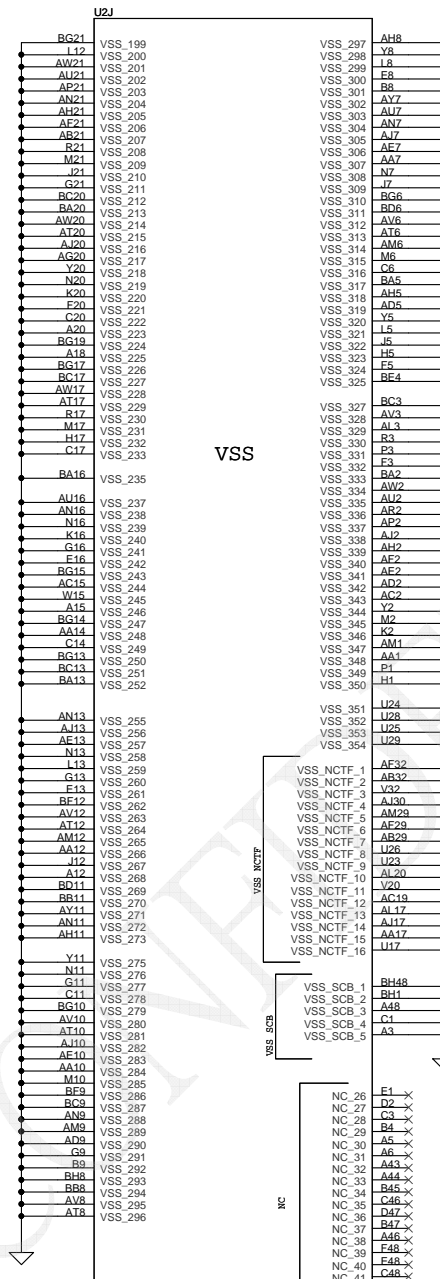


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
				SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RA2225 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
				401597	C
				Date: Thursday, October 30, 2008	Sheet 12 of 52



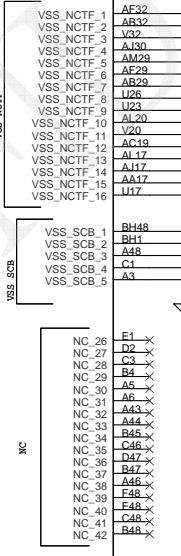
VSS

CANTIGA ES, FCBG1329
GM®



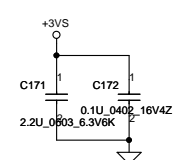
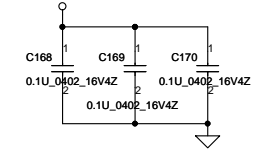
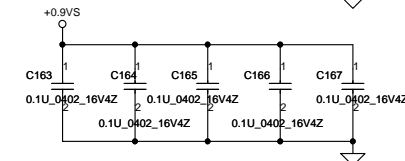
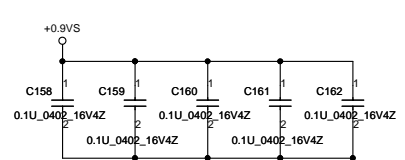
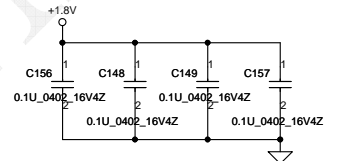
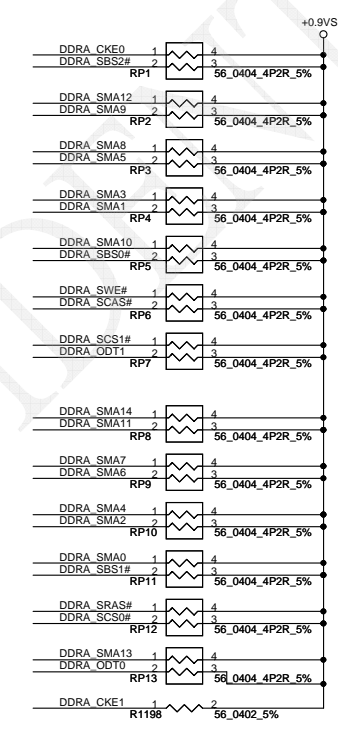
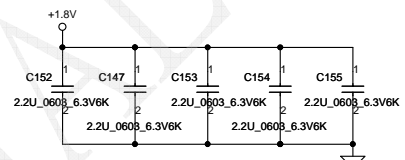
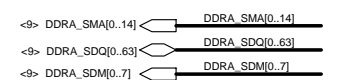
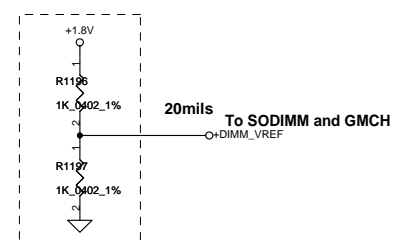
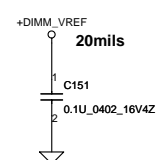
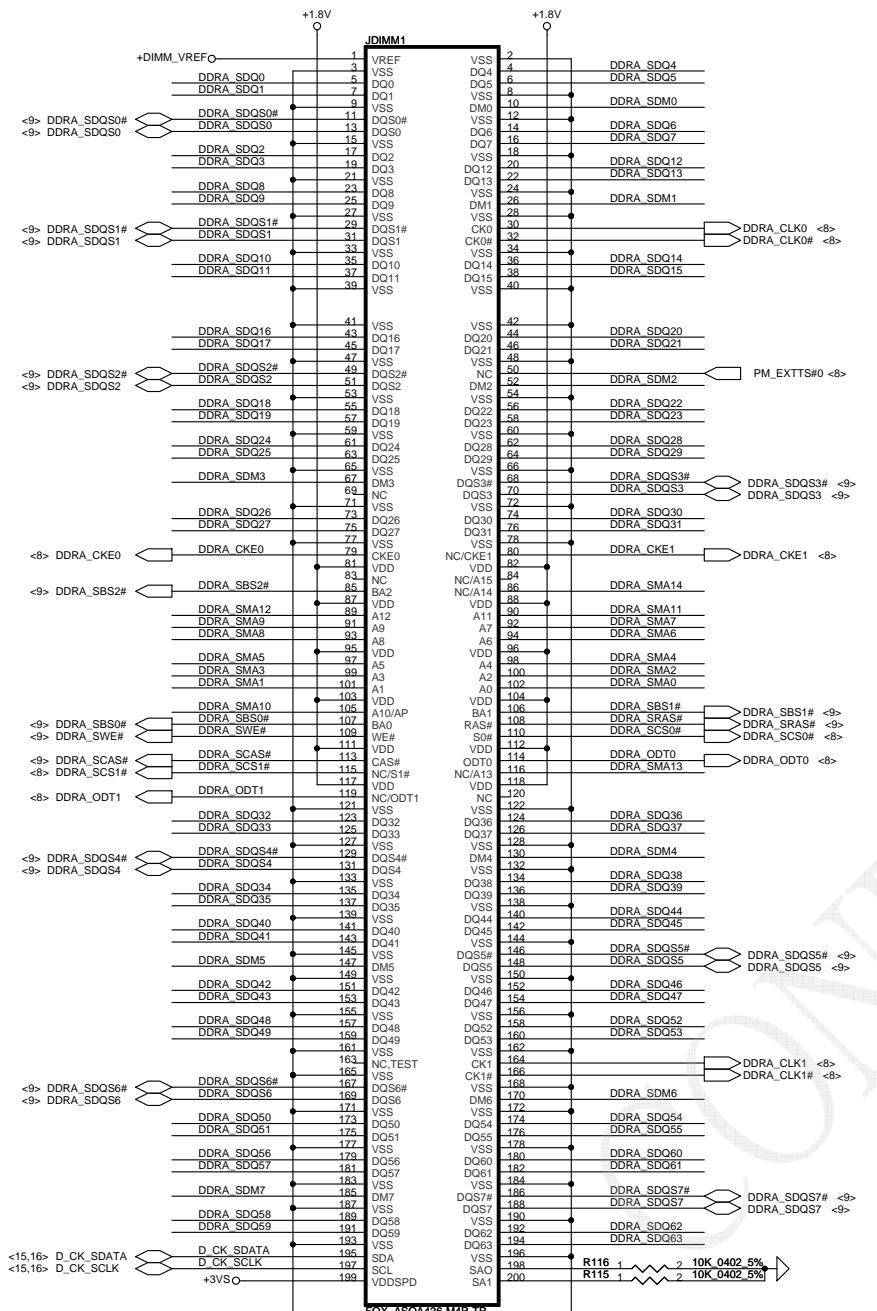
VSS

CANTIGA ES, FCBG1329
GM®



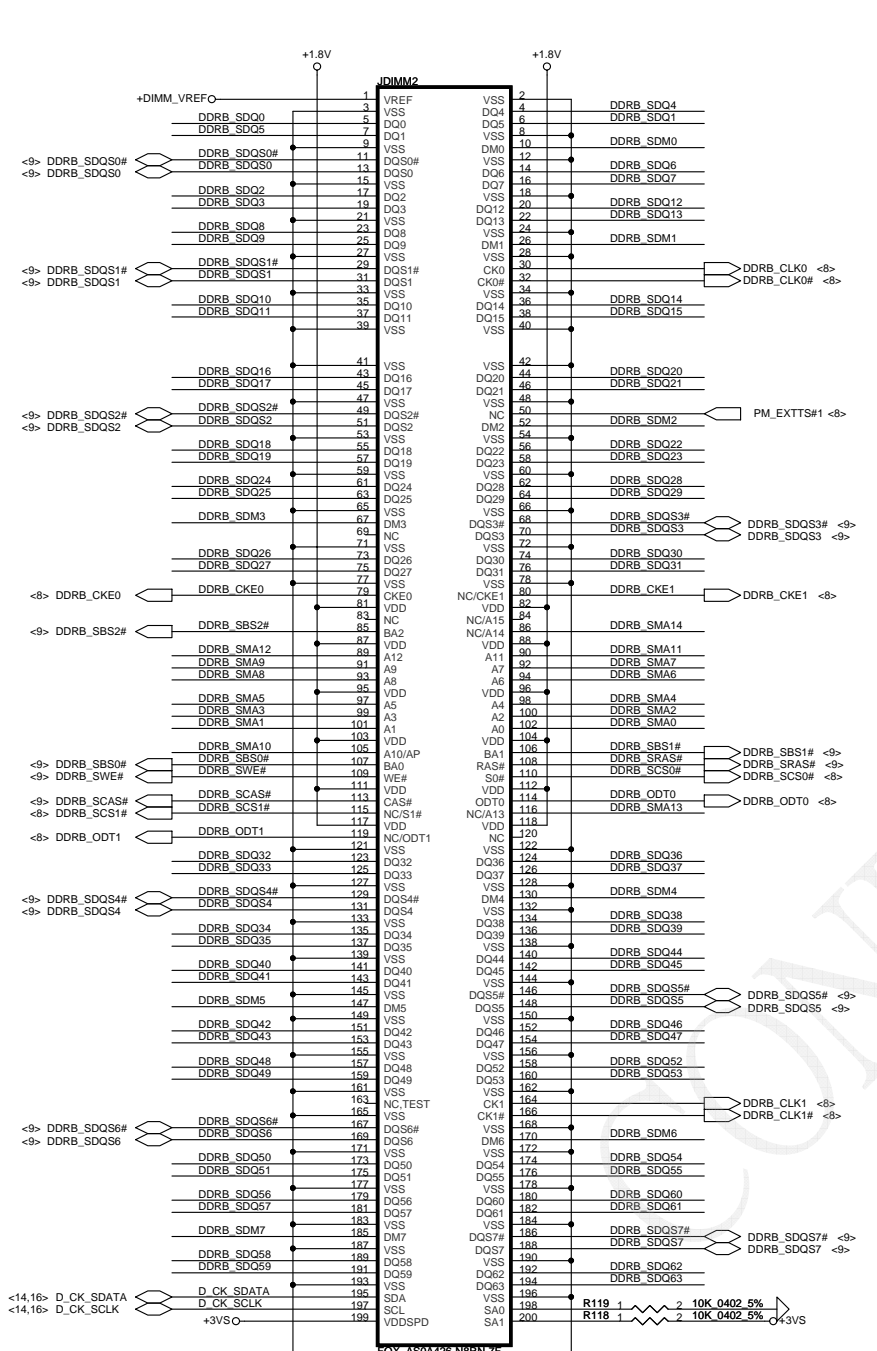
Security Classification		Compal Secret Data	
Issued Date	2008/03/28	Deciphered Date	2008/09/20
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT 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	SCHMATIC, A4491
Document Number	401597
Date	Thursday, October 30, 2008
Sheet	13 of 52

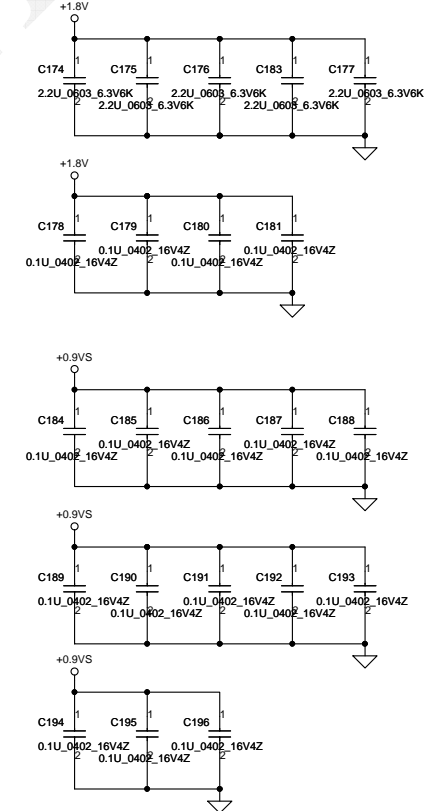
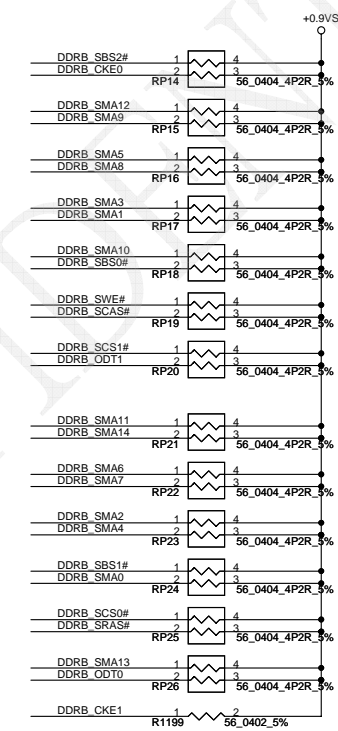
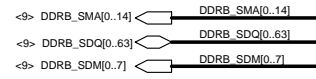
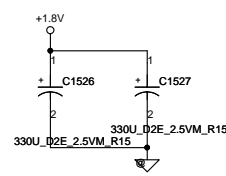
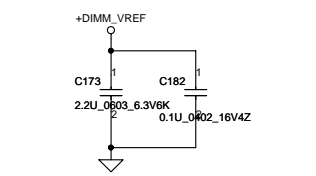


DIMM0 REV H:10.1mm (BOT)

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	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 401597
				Rev C
Date: Thursday, October 30, 2008				Sheet 14 of 52



DIMM1 REV H:5.6mm (BOT)



<14,16> D_CK_SDATA
<14,16> D_CK_SCLK
+3VS

FOX_AS0A426-N8RN-7F

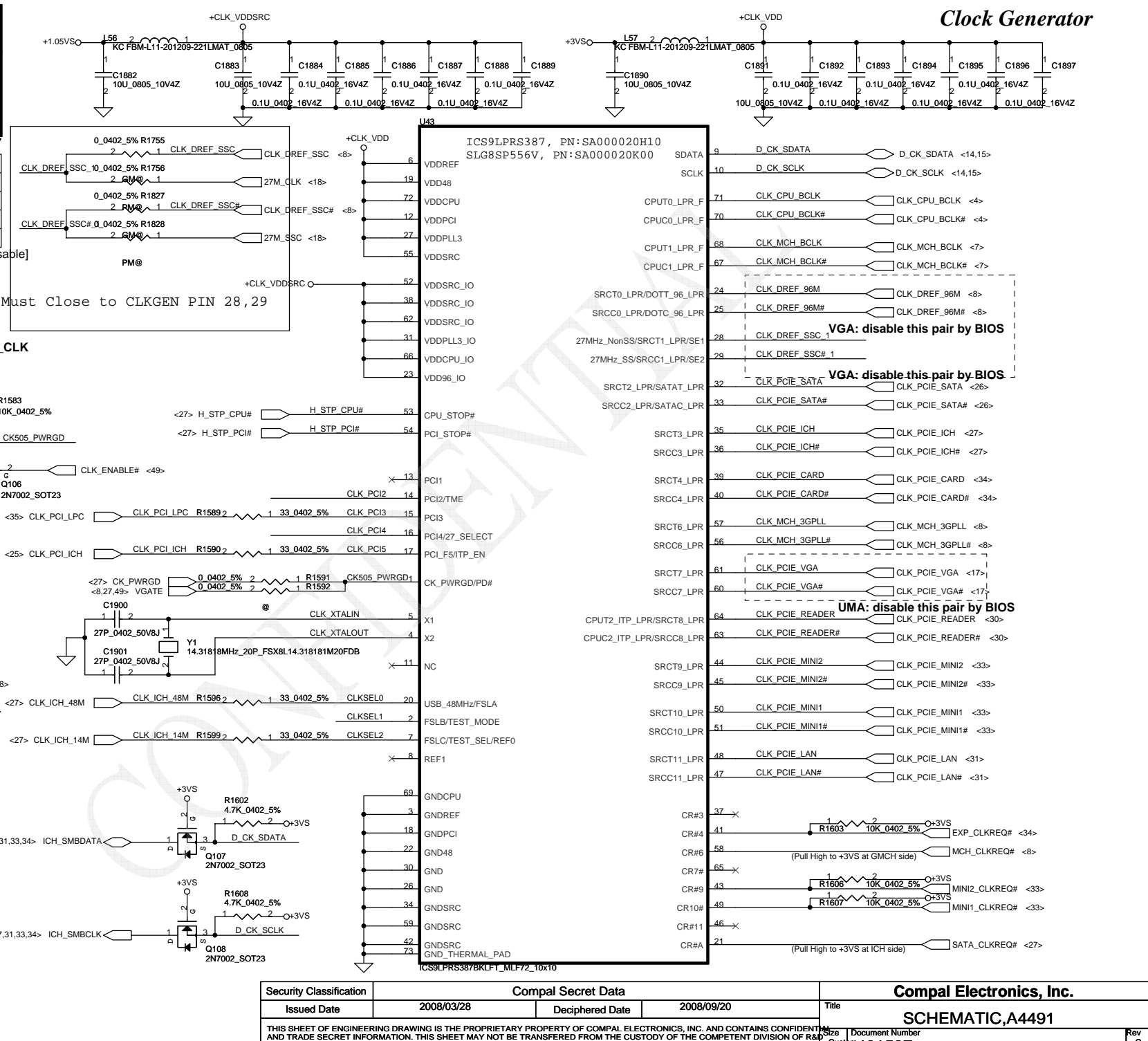
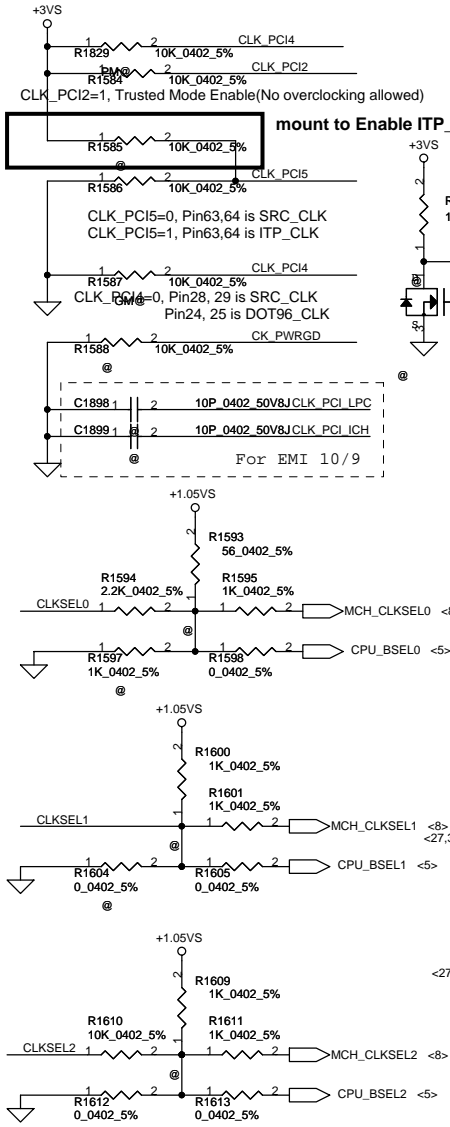
Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	SCHEMATIC_A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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		
401597			C		
Date: Thursday, October 30, 2008			Sheet 15 of 52		

FSLC	FSLB	FSLA	CPU	SRC	PCI
CLKSEL2	CLKSEL1	CLKSEL0	MHz	MHz	MHz
0	0	0	266	100	33.3
0	1	0	200	100	33.3
0	1	1	166	100	33.3

Table : ICS9LPRS387

CLK_REQ#	Control	Free-Run
CR#_10(WLAN)	PCIEX10	PCIEX0
CR#_6(MCH)	PCIEX6	PCIEX1
CR#_4(NEW CARD)	PCIEX4	
CR#_9(MINI CARDII)	PCIEX9	

SRC7(VGA_CLK): Discrete VGA[Enable] UMA[Disable]

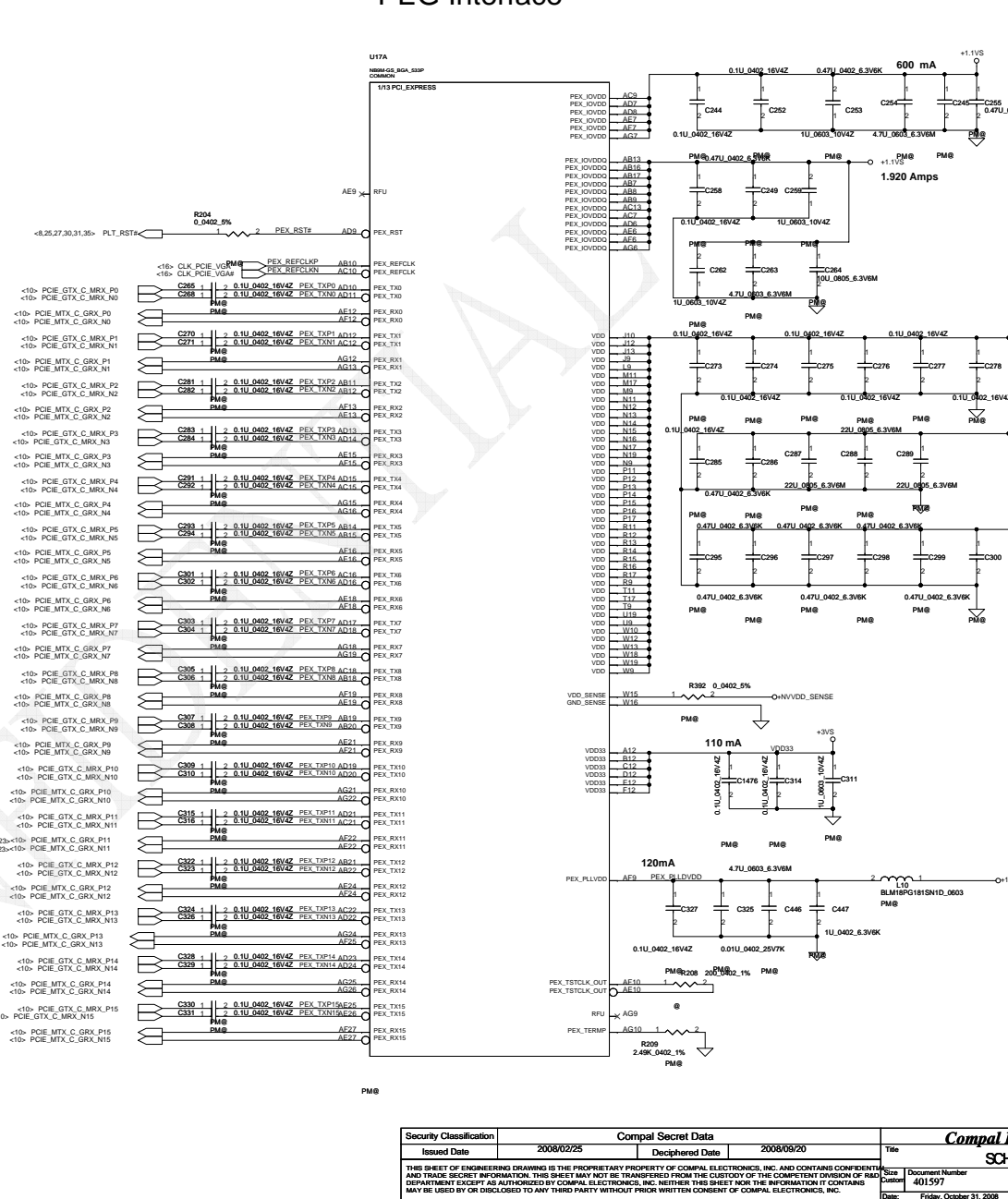
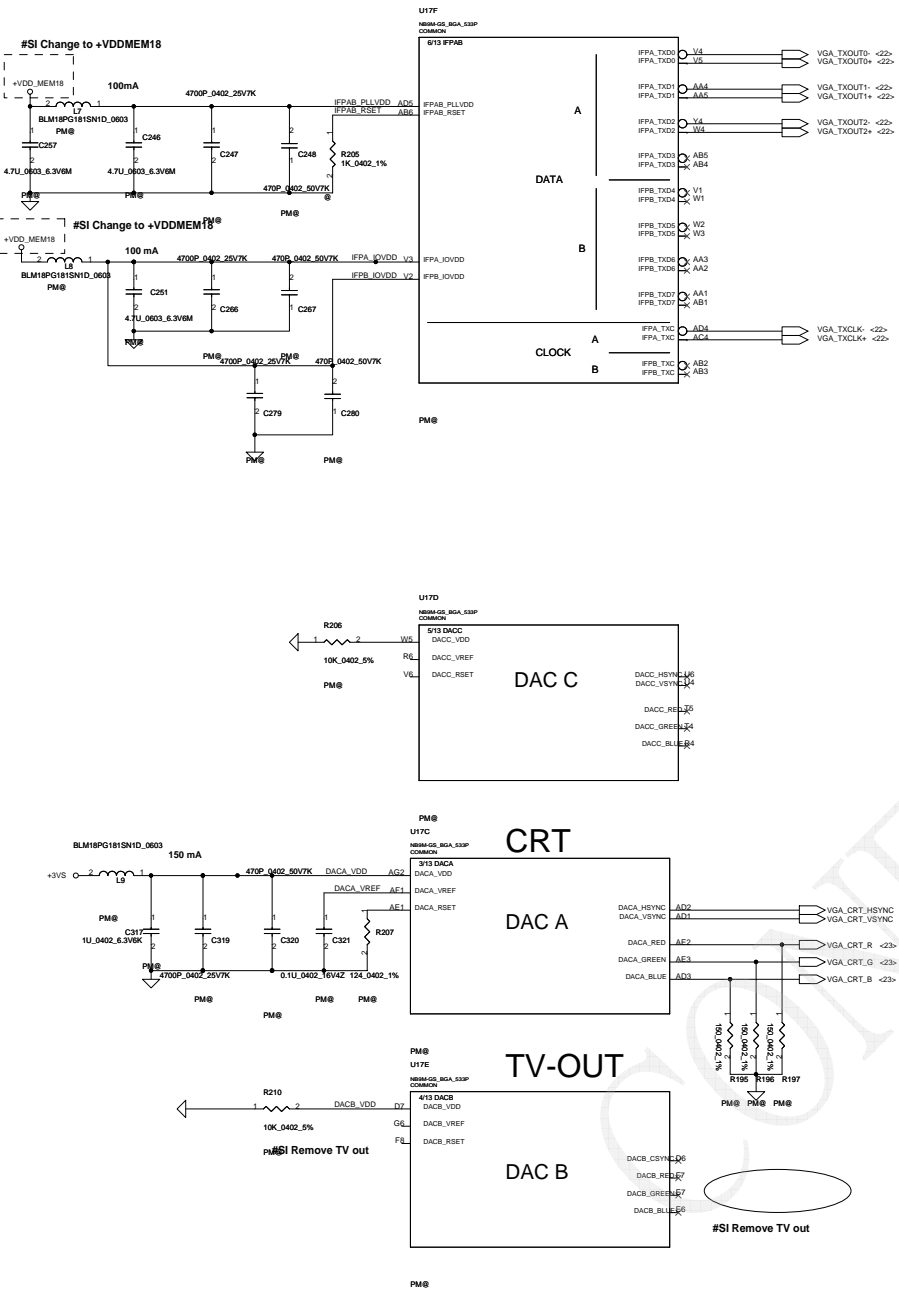


Clock Generator

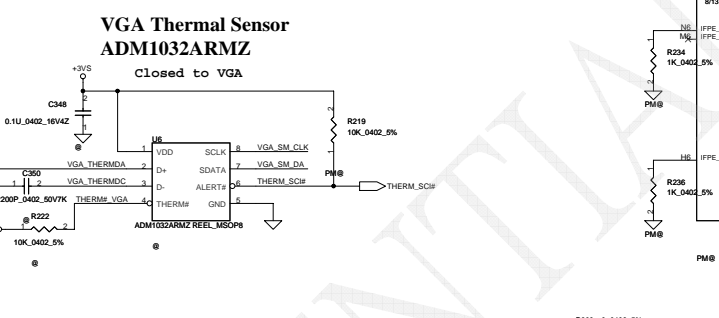
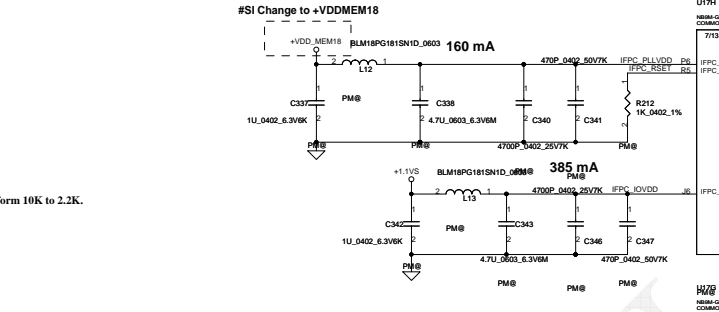
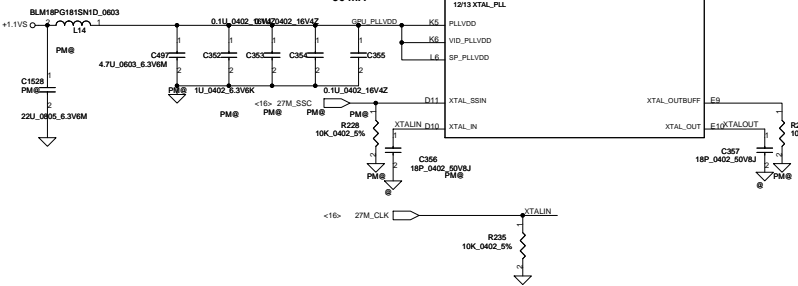
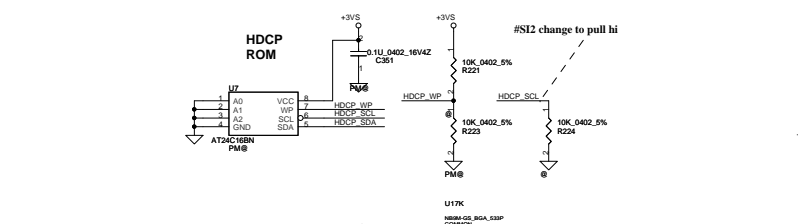
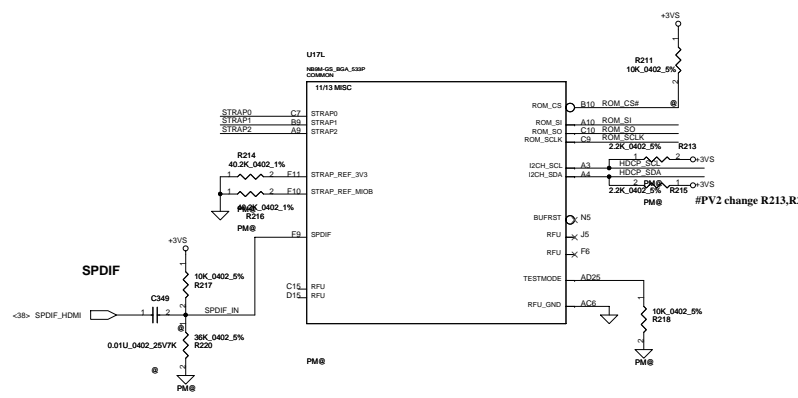
Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		2008/09/20	
2008/03/28		2008/09/20		SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE 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	Customer	Date	Sheet	Rev
	401597		Thursday, October 30, 2008	16 of 52	C

LVDS & DAC Interface

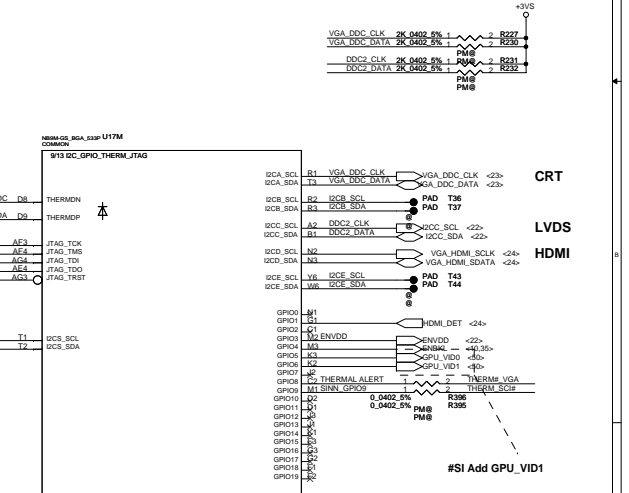
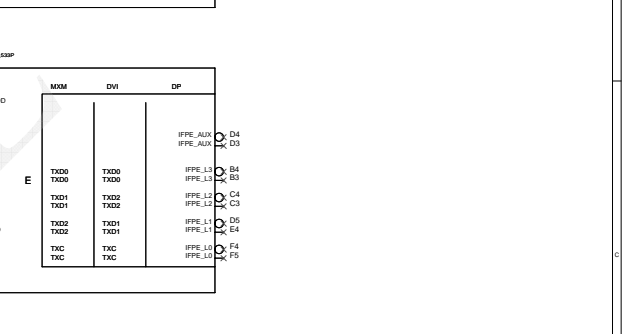
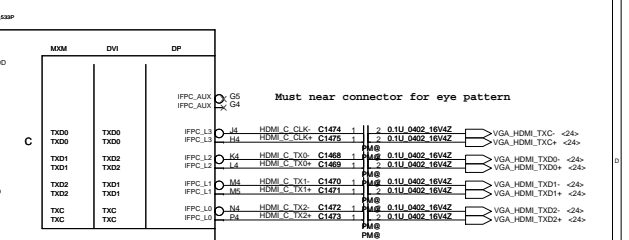
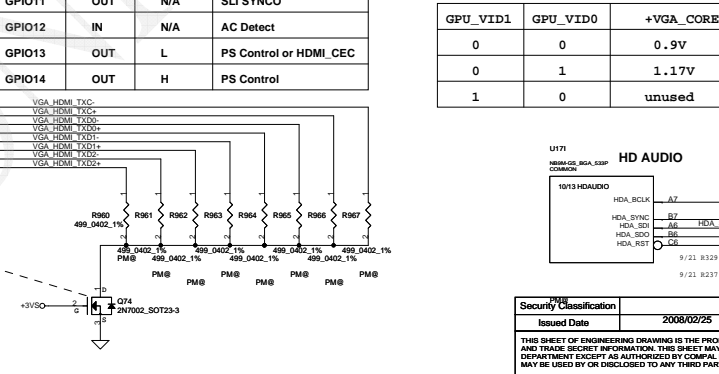
PEG Interface



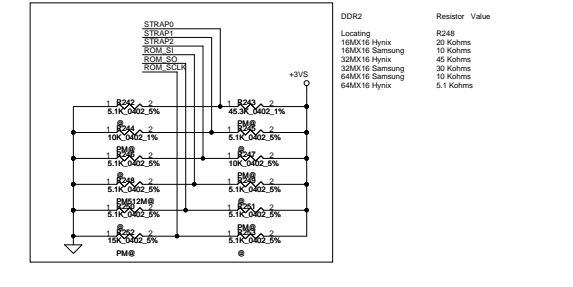
Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.
Issued Date	2008/02/25	Deciphered Date	2008/09/20	Doc Number
			401597	Schematic_A4491
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPANY OR DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				
Date	Friday, October 31, 2008	Sheet	17	of



GPIO	I/O	ACTIVE	USAGE
GPIO0	IN	N/A	Primary DVI Hot-plug
GPIO1	IN	N/A	2nd DVI Hot-plug
GPIO2	OUT	H	Panel Back-Light PWM
GPIO3	OUT	H	Panel Power Enable
GPIO4	OUT	H	Panel Back-Light Enable
GPIO5	OUT	N/A	NVDD VID0
GPIO6	OUT	N/A	NVDD VID1
GPIO7	OUT	N/A	FBVDD VID0
GPIO8	IN	L	Thermal Alert
GPIO9	OUT	L	FAN PWM
GPIO10	OUT	N/A	FBVref Select
GPIO11	OUT	N/A	SLI SYNC
GPIO12	IN	N/A	AC Detect
GPIO13	OUT	L	PS Control or HDMI_CEC
GPIO14	OUT	H	PS Control



Straps
MULTI LEVEL STRAPS



GPU_VID1	GPU_VID0	+VGA_CORE
0	0	0.9V
0	1	1.17V
1	0	unused

Security Classification **Compal Secret Data**

Issued Date: 2008/02/25 Deciphered Date: 2008/08/20

Title: **SCHEMATIC_A4491**

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 C
Date: Friday, October 31, 2008 18 of 52

VRAM Interface

- <2> MDA[15..0] MDA[15..0]
- <2> MDA[31..16] MDA[31..16]
- <21> MDA[47..32] MDA[47..32]
- <21> MDA[63..48] MDA[63..48]

U178
N9M-GE, RGA, 53P
COMMERCIAL

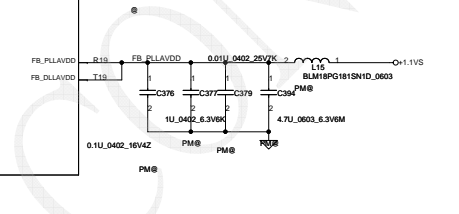
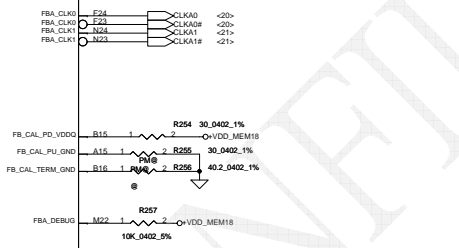
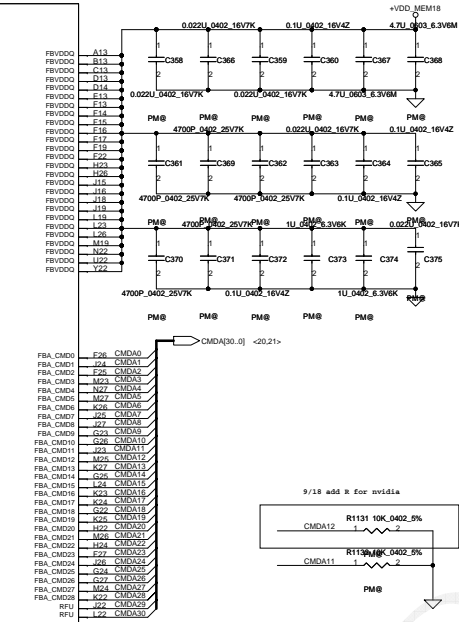
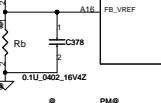
3713 FRAME BUFFER

MDA0	D21	FBA_D0
MDA1	D22	FBA_D1
MDA2	B22	FBA_D2
MDA3	A22	FBA_D3
MDA4	A22	FBA_D4
MDA5	B22	FBA_D5
MDA6	A22	FBA_D6
MDA7	A26	FBA_D7
MDA8	D22	FBA_D8
MDA9	E22	FBA_D9
MDA10	E24	FBA_D10
MDA11	D24	FBA_D11
MDA12	D24	FBA_D12
MDA13	D27	FBA_D13
MDA14	E27	FBA_D14
MDA15	B27	FBA_D15
MDA16	D16	FBA_D16
MDA17	E16	FBA_D17
MDA18	D17	FBA_D18
MDA19	E16	FBA_D19
MDA20	D20	FBA_D20
MDA21	E21	FBA_D21
MDA22	E21	FBA_D22
MDA23	F21	FBA_D23
MDA24	C16	FBA_D24
MDA25	B18	FBA_D25
MDA26	C18	FBA_D26
MDA27	D18	FBA_D27
MDA28	C18	FBA_D28
MDA29	C21	FBA_D29
MDA30	B21	FBA_D30
MDA31	A21	FBA_D31
MDA32	E22	FBA_D32
MDA33	E24	FBA_D33
MDA34	B24	FBA_D34
MDA35	B24	FBA_D35
MDA36	T24	FBA_D36
MDA37	L24	FBA_D37
MDA38	V24	FBA_D38
MDA39	V24	FBA_D39
MDA40	N26	FBA_D40
MDA41	N26	FBA_D41
MDA42	R26	FBA_D42
MDA43	E26	FBA_D43
MDA44	T26	FBA_D44
MDA45	V26	FBA_D45
MDA46	V26	FBA_D46
MDA47	V27	FBA_D47
MDA48	V27	FBA_D48
MDA49	W22	FBA_D49
MDA50	W21	FBA_D50
MDA51	W24	FBA_D51
MDA52	A24	FBA_D52
MDA53	A23	FBA_D53
MDA54	A24	FBA_D54
MDA55	A24	FBA_D55
MDA56	W21	FBA_D56
MDA57	W26	FBA_D57
MDA58	W21	FBA_D58
MDA59	A24	FBA_D59
MDA60	A24	FBA_D60
MDA61	A24	FBA_D61
MDA62	A26	FBA_D62
MDA63	A27	FBA_D63

<2> DQMA[3..0]	DQMA0	D23	FBA_DQMA0
<21> DQMA[7..4]	DQMA1	C24	FBA_DQMA1
	DQMA2	D19	FBA_DQMA2
	DQMA3	B19	FBA_DQMA3
	DQMA4	T24	FBA_DQMA4
	DQMA5	T24	FBA_DQMA5
	DQMA6	A23	FBA_DQMA6
	DQMA7	A27	FBA_DQMA7

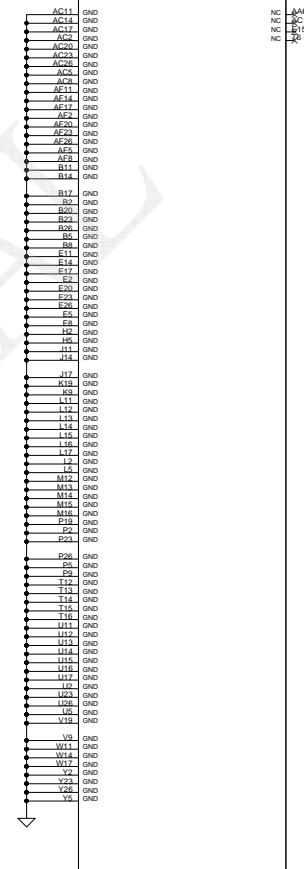
<2> QSA[3..0]	QSA0	A24	FBA_DQS_WP0
	QSA1	C26	FBA_DQS_WP1
	QSA2	E10	FBA_DQS_WP2
<21> QSA[7..4]	QSA3	A18	FBA_DQS_WP3
	QSA4	T21	FBA_DQS_WP4
	QSA5	T27	FBA_DQS_WP5
	QSA6	A23	FBA_DQS_WP6
	QSA7	A27	FBA_DQS_WP7

<2> QSA[3..0]	QSA8	B24	FBA_DQS_RN0
	QSA9	D25	FBA_DQS_RN1
	QSA10	E18	FBA_DQS_RN2
	QSA11	A10	FBA_DQS_RN3
	QSA12	R22	FBA_DQS_RN4
	QSA13	B27	FBA_DQS_RN5
<21> QSA[7..4]	QSA14	V24	FBA_DQS_RN6
	QSA15	A27	FBA_DQS_RN7



U17J
N9M-GE, RGA, 53P
COMMERCIAL

17013 GND_NC



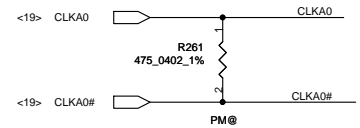
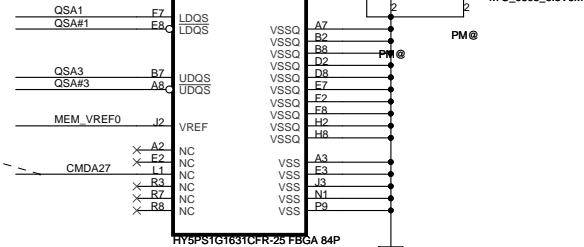
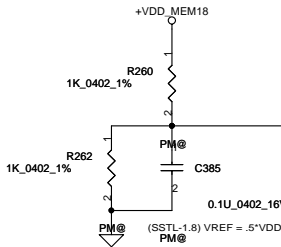
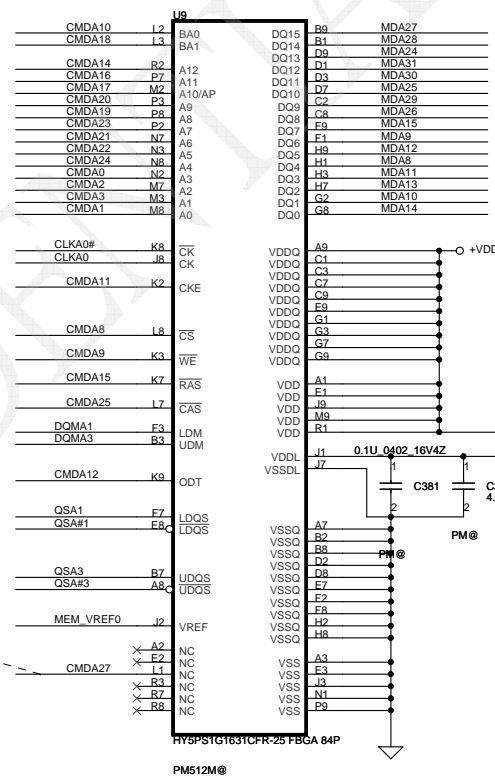
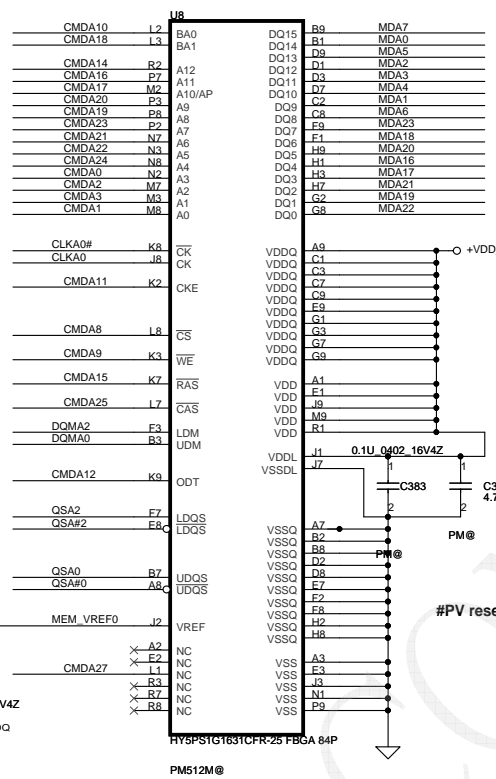
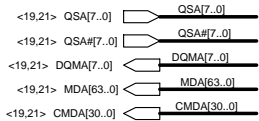
Security Classification	Compal Secret Data		Title		Compal Electronics, Inc.	
Issued Date	2008/02/25	Deciphered Date	2008/09/20	Revision	SCHEMATIC_A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. WITHIN THIS SHEET FOR THE INFORMATION IT CONTAINS.						
Customer	401597		For	C		
Date	Friday, October 31, 2008		Sheet	19 of 62		

VRAM DDR2 chips (256MB & 512MB)

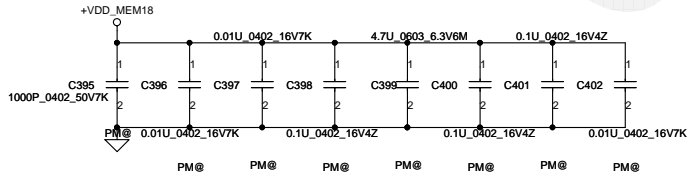
32Mx16 DDR2 400MHz *4==>256MB

64Mx16 DDR2 400MHz*4==>512MB

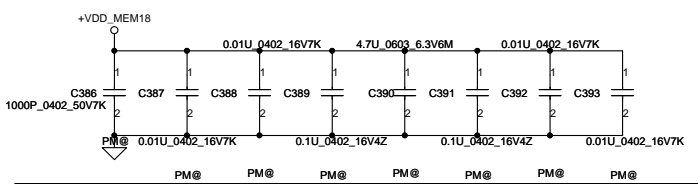
Address	DATA Bus	
	0..31	32..63
CMD0	A3	
CMD1	A0	A0
CMD2	A2	
CMD3	A1	A1
CMD4		A3
CMD5		A4
CMD6		A5
CMD7		
CMD8	CS#	CS#
CMD9	WE#	WE#
CMD10	BA0	BA0
CMD11	CKE	CKE
CMD12	ODT	ODT
CMD13		
CMD14	A12	A12
CMD15	RAS#	RAS#
CMD16	A11	A11
CMD17	A10	A10
CMD18	BA1	BA1
CMD19	A8	A8
CMD20	A9	A9
CMD21	A6	A6
CMD22	A5	
CMD23	A7	A7
CMD24	A4	
CMD25	CAS#	CAS#
CMD26	A13	A13
CMD27	BA2	BA2
CMD28		
CMD29		
CMD30		



DDR2 BGA MEMORY



DDR BGA MEMORY



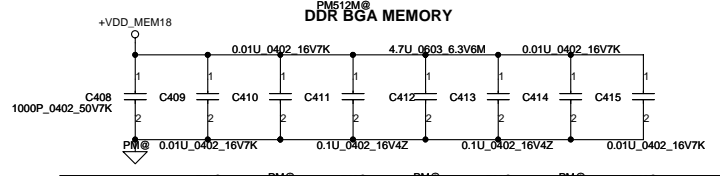
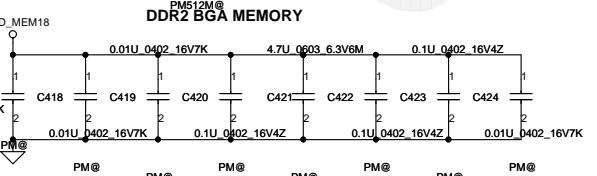
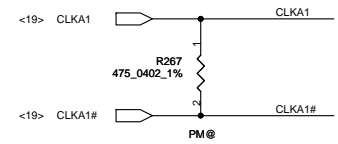
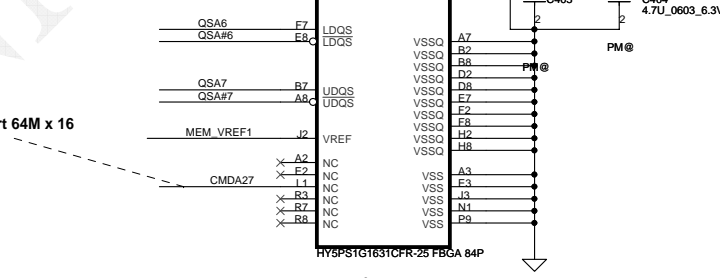
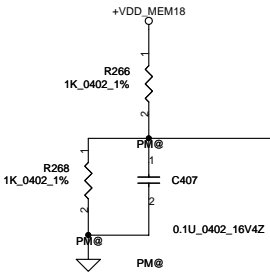
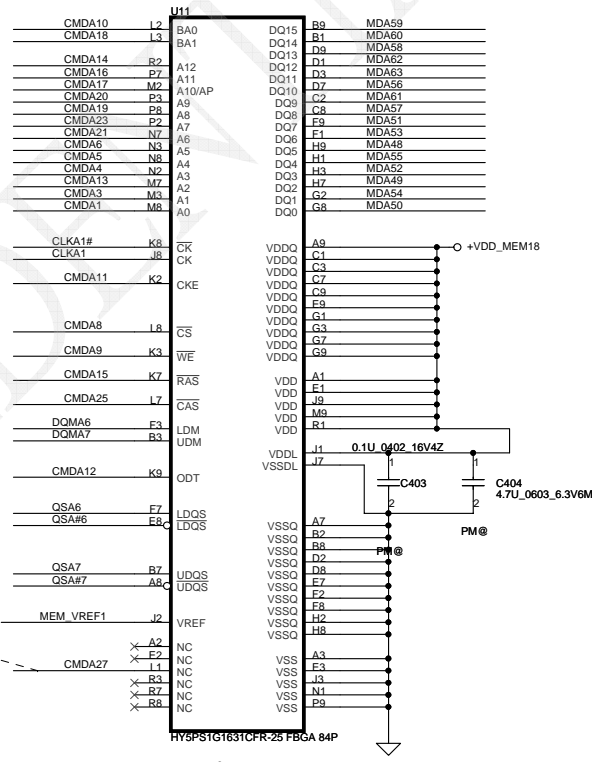
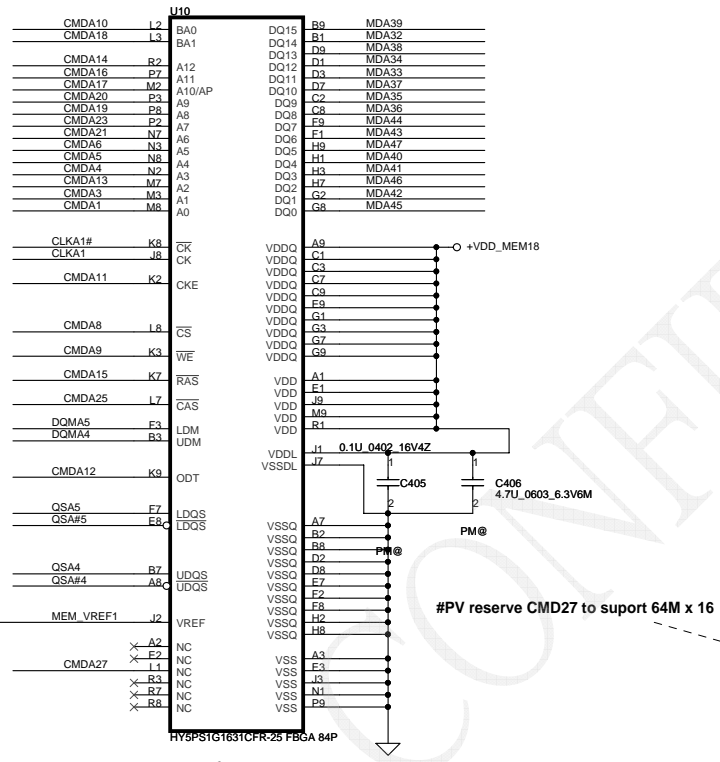
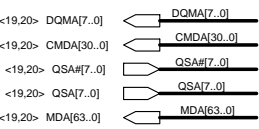
Security Classification	Compal Secret Data		Title Compal Electronics, Inc.
Issued Date	2008/02/25	Deciphered Date	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			Document Number 401597 Date: Thursday, October 30, 2008 Sheet 20 of 52

VRAM DDR2 chips (256MB & 512MB)

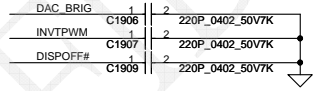
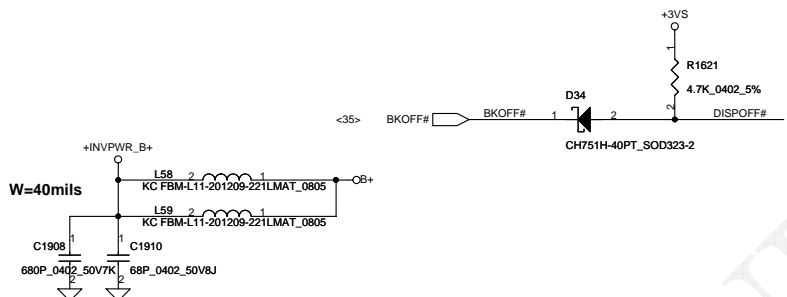
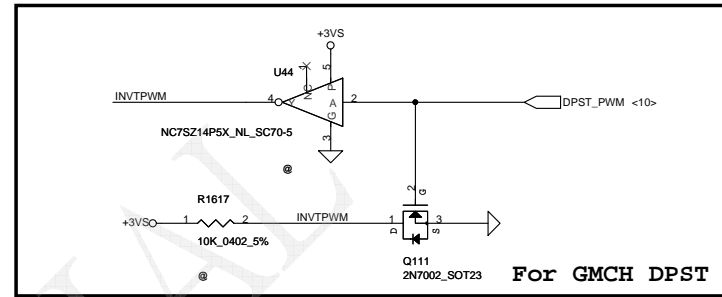
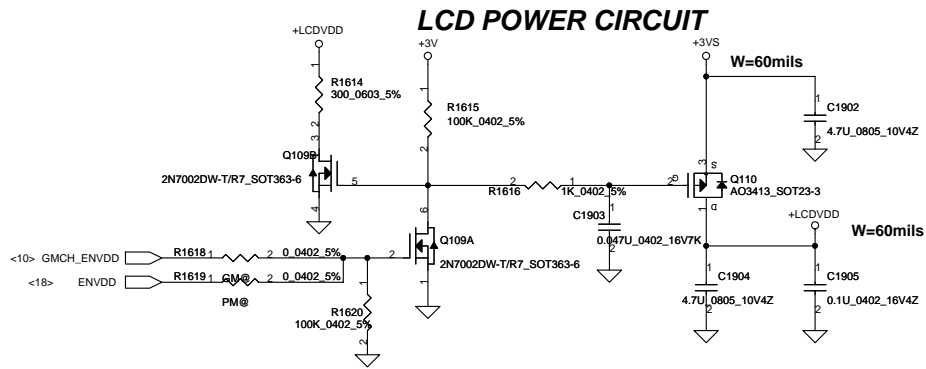
32Mx16 DDR2 400MHz *4==>256MB

64Mx16 DDR2 400MHz*4==>512MB

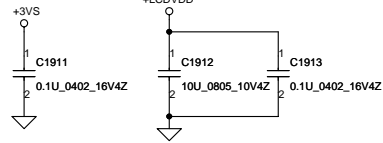
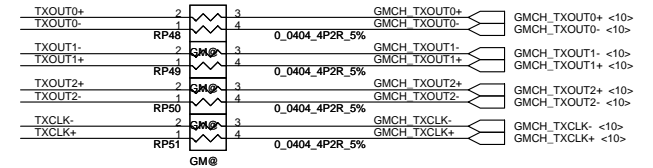
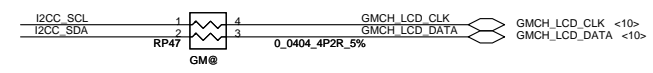
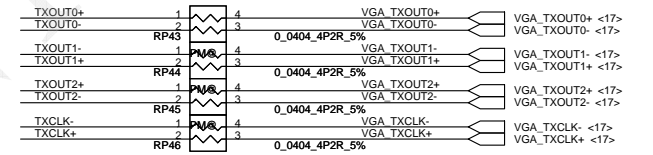
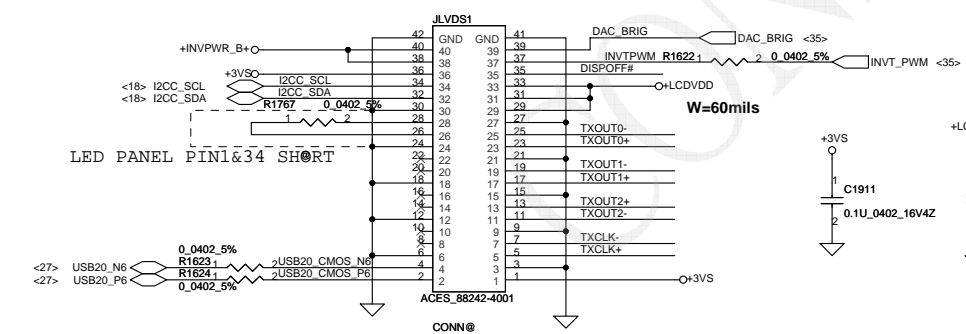
DATA Bus		
Address	0..31	32..63
CMD0	A3	
CMD1	A0	A0
CMD2	A2	
CMD3	A1	A1
CMD4		A3
CMD5		A4
CMD6		A5
CMD7		
CMD8	CS#	CS#
CMD9	WE#	WE#
CMD10	BA0	BA0
CMD11	CKE	CKE
CMD12	ODT	ODT
CMD13		
CMD14	A12	A12
CMD15	RAS#	RAS#
CMD16	A11	A11
CMD17	A10	A10
CMD18	BA1	BA1
CMD19	A8	A8
CMD20	A9	A9
CMD21	A6	A6
CMD22	A5	
CMD23	A7	A7
CMD24	A4	
CMD25	CAS#	CAS#
CMD26	A13	A13
CMD27	BA2	BA2
CMD28		
CMD29		
CMD30		



Security Classification	PM@ PM@ PM@ PM@ PM@ PM@	Compal Secret Data	
Issued Date	2008/02/25	Deciphered Date	2008/09/20
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 SCHEMATIC,A4491 Document Number 401597 Date: Friday, October 31, 2008 Sheet 21 of 52

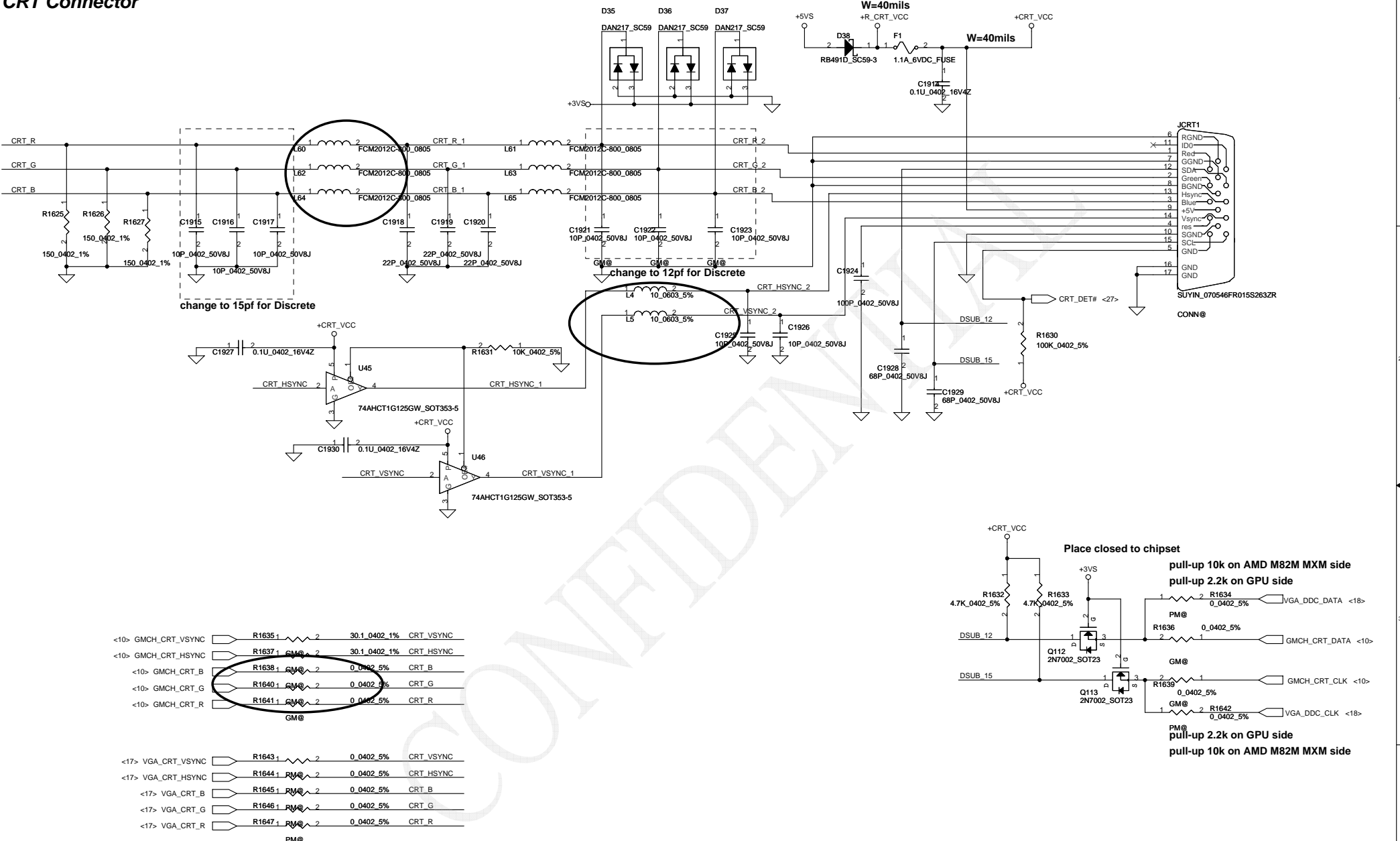


LCD/PANEL BD. Conn.

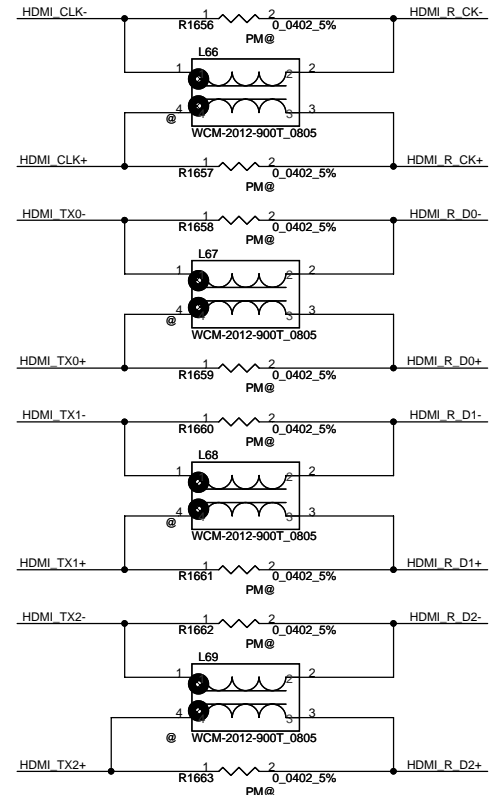
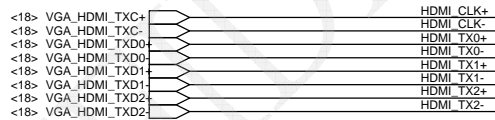
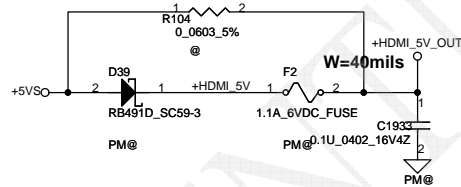
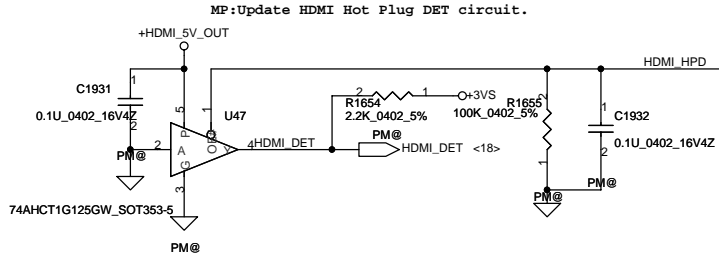
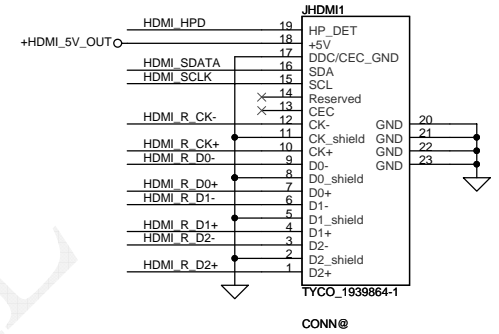
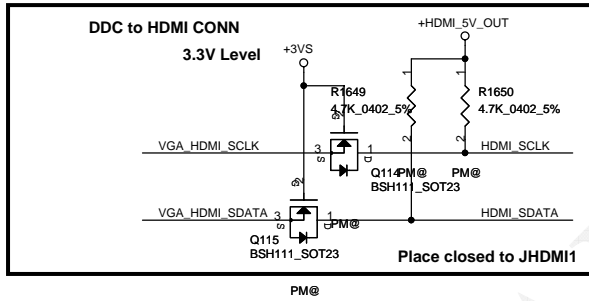
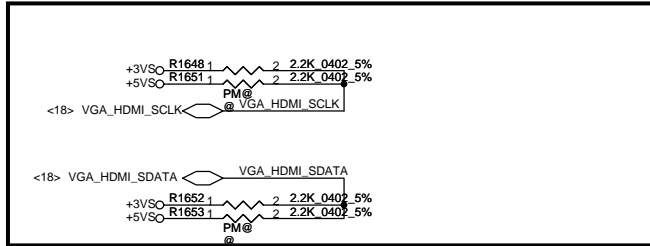


Security Classification		Compal Secret Data		Title	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM 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
				401597	C
Date:				Thursday, October 30, 2008	Sheet 22 of 52

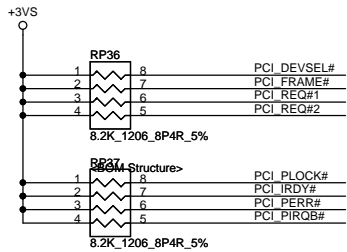
CRT Connector



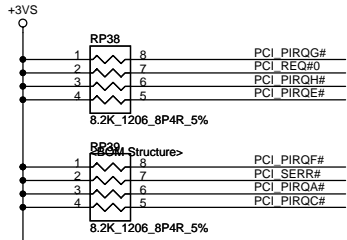
Security Classification		Compal Secret Data		Title	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Compal Electronics, Inc.	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				401597	C
Date: Thursday, October 30, 2008				Sheet	23 of 52



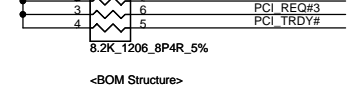
Security Classification		Compal Secret Data		Title	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Compal Electronics, Inc.	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				401597	C
Date: Thursday, October 30, 2008				Sheet	24 of 52



<BOM Structure>

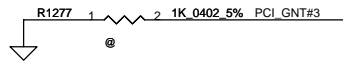


<BOM Structure>

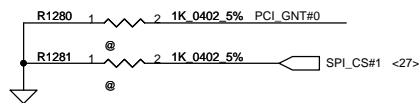


<BOM Structure>

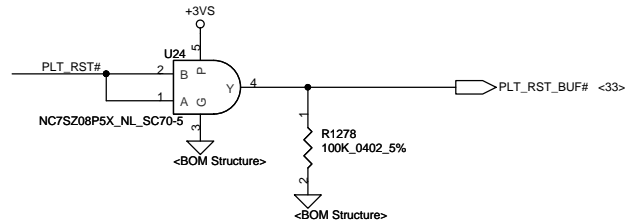
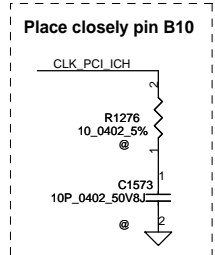
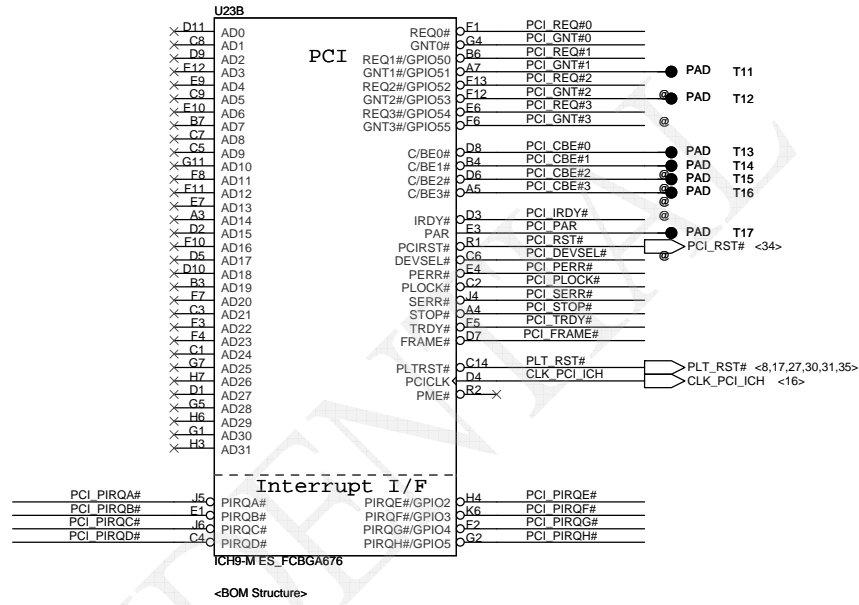
A16 Swap Override Strap	
PCI_GNT#3	Low= A16 swap override Enable High= Default*



Boot BIOS Strap		
PCI_GNT#0	SPI_CS#1	Boot BIOS Location
0	1	SPI
1	0	PCI
1	1	LPC*



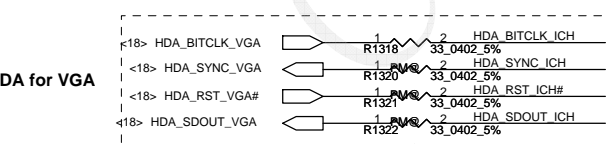
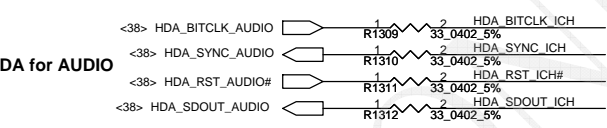
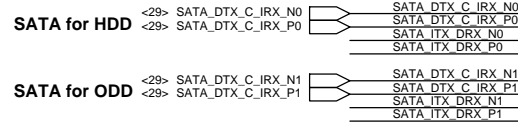
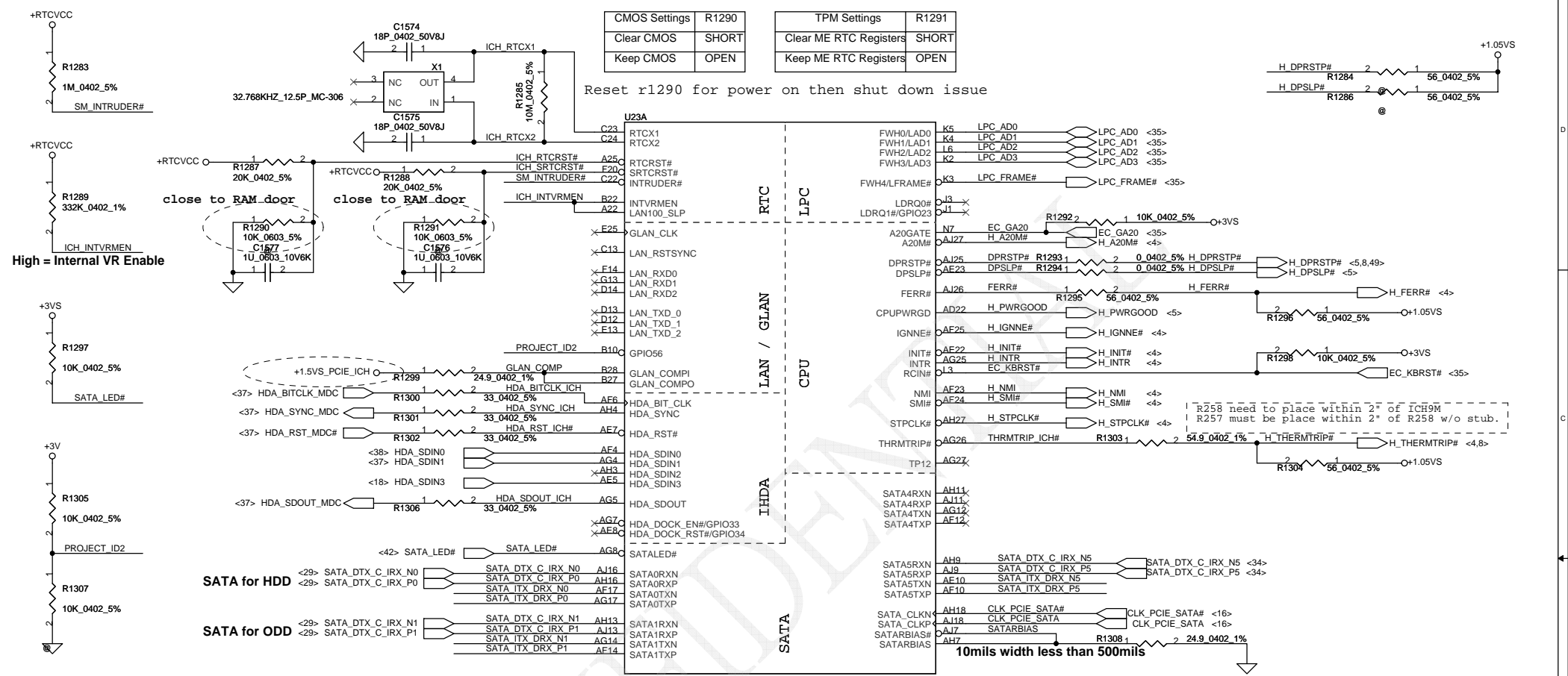
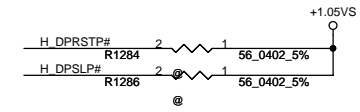
DMI for ESI-compatible operation	
PCI_GNT#1	Low= DMI for ESI-compatible operation High= Default* (Internal pull-up)



CMOS Settings		R1290	
Clear CMOS	SHORT		
Keep CMOS	OPEN		

TPM Settings		R1291	
Clear ME RTC Registers	SHORT		
Keep ME RTC Registers	OPEN		

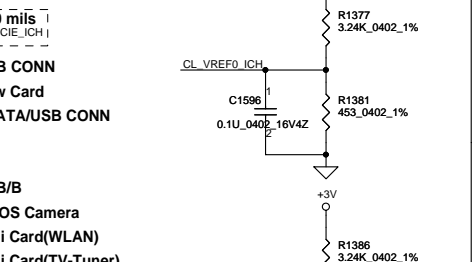
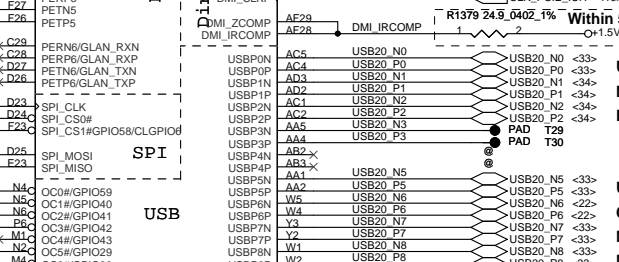
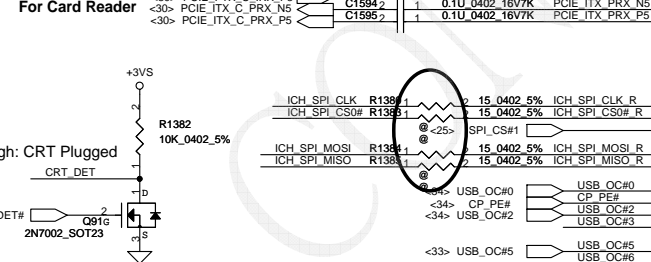
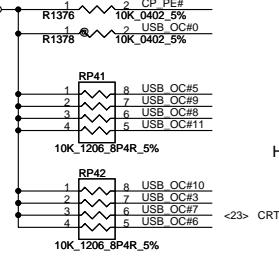
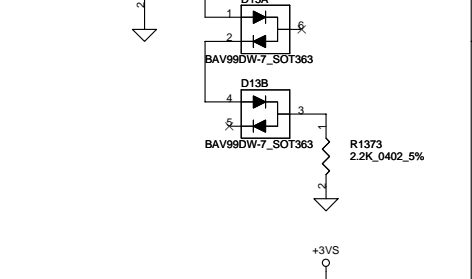
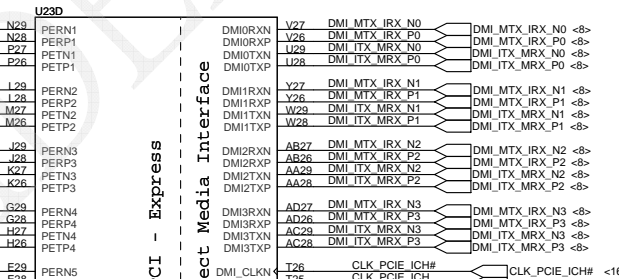
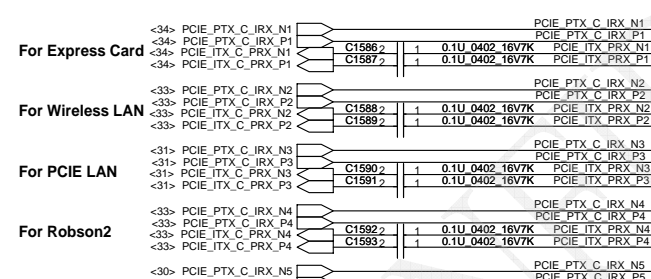
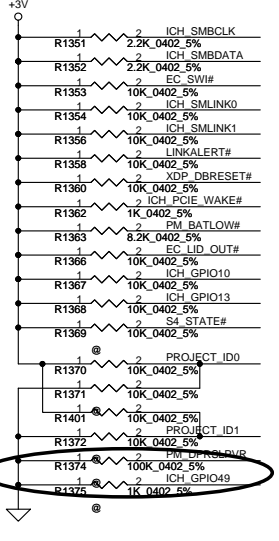
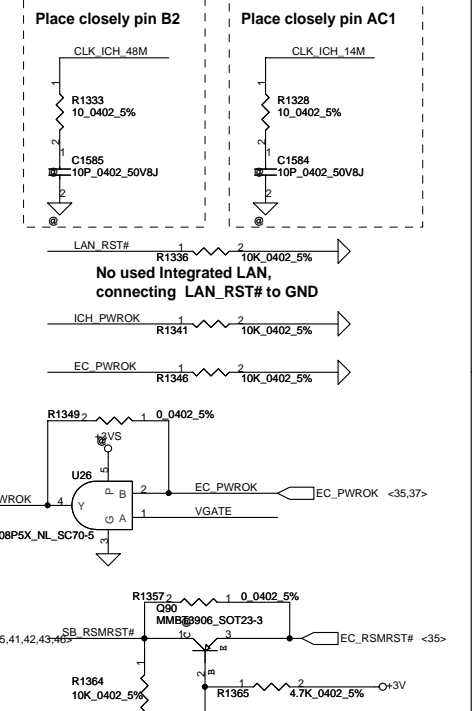
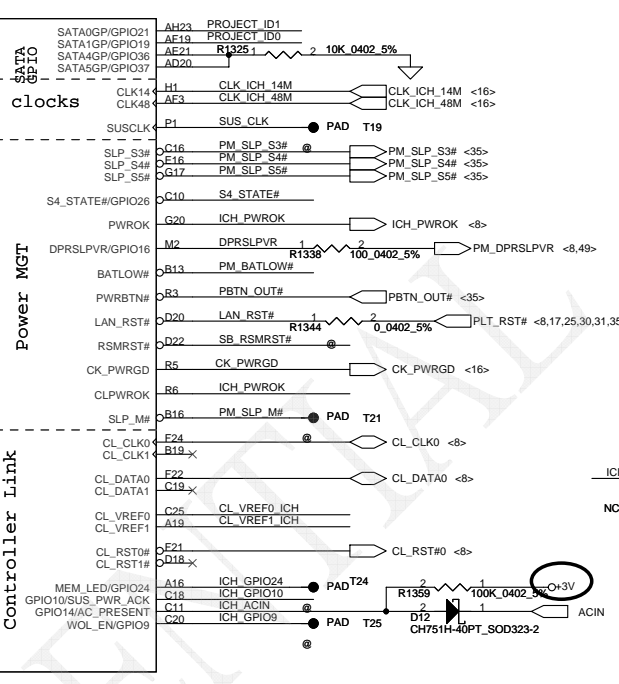
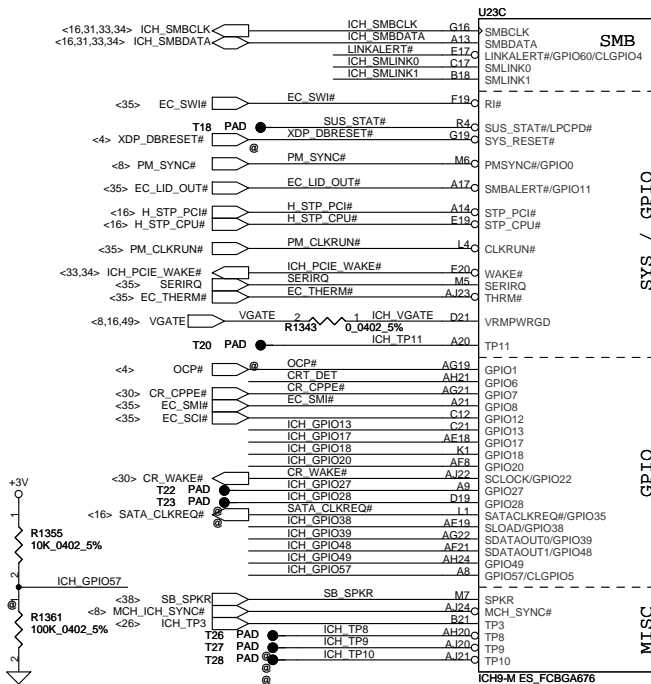
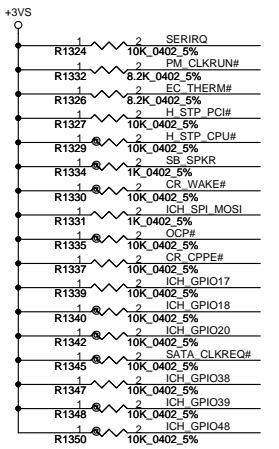
Reset r1290 for power on then shut down issue



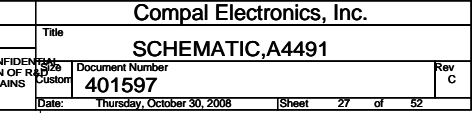
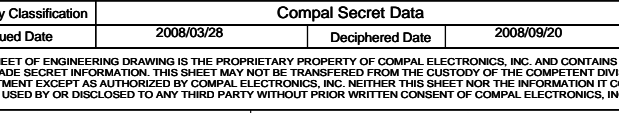
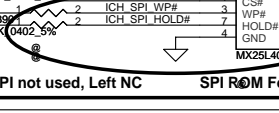
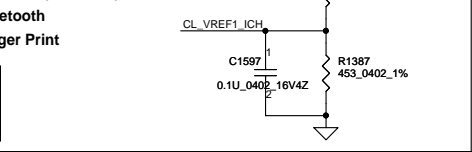
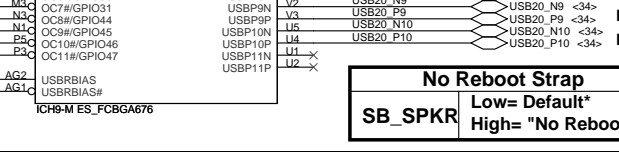
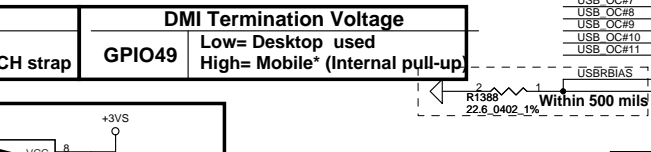
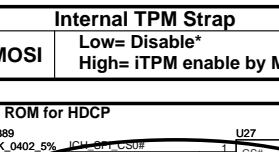
XOR Chain Entrance Strap		
ICH_TP3	HDA_SDOUT	Description
0	0	RSVD
0	1	Enter XOR Chain
1	0	Normal Operation
1	1	Set PCIe port config bit 1

Flash Descriptor Security Override Strap
GPIO33 Low= Descriptor Security override
 High= Default* (Internal pull-up)

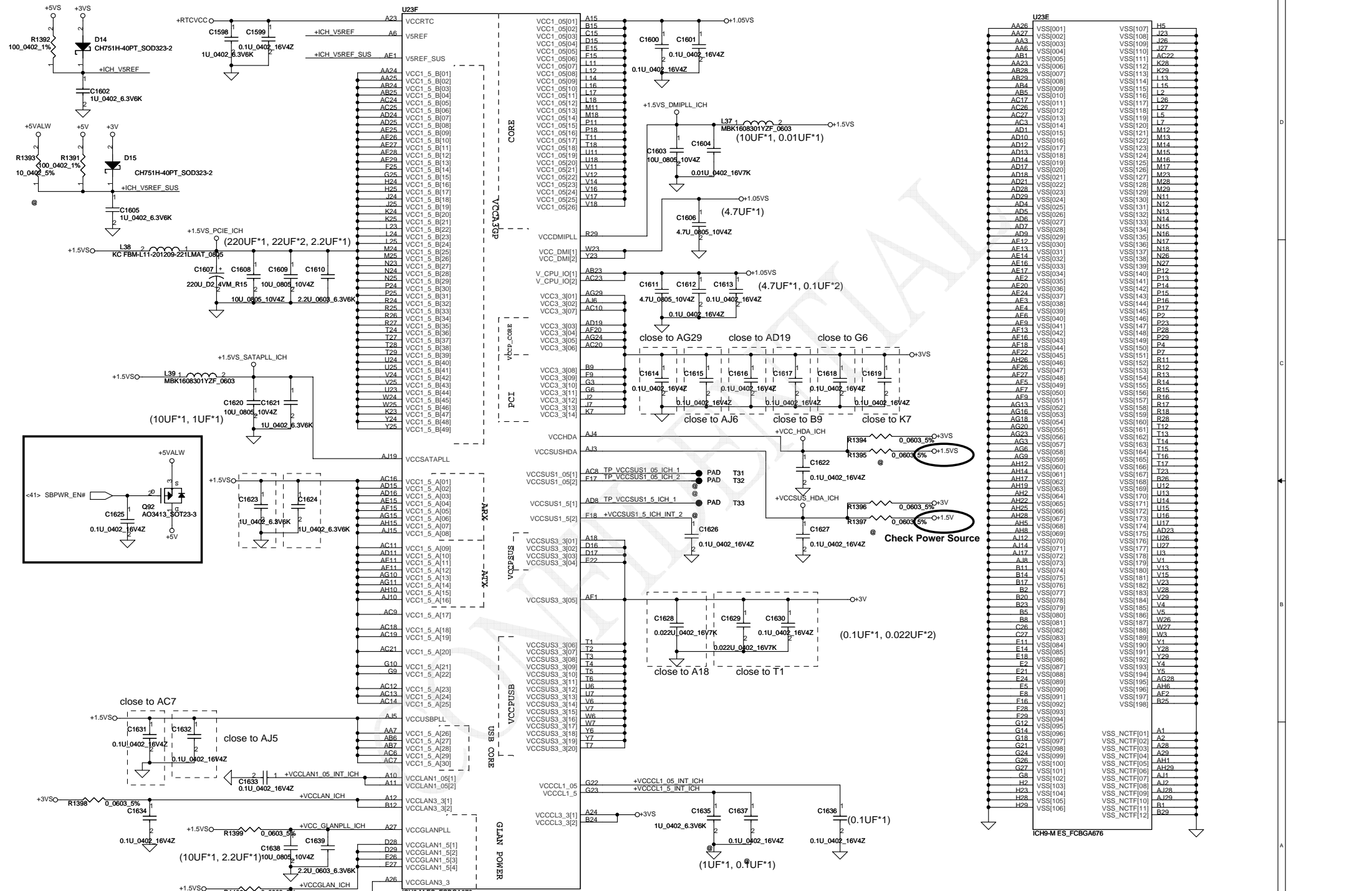
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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 C
				Customer	401597
				Date:	Thursday, October 30, 2008
				Sheet	26 of 52



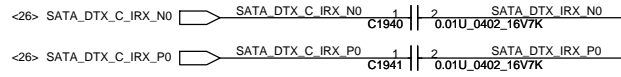
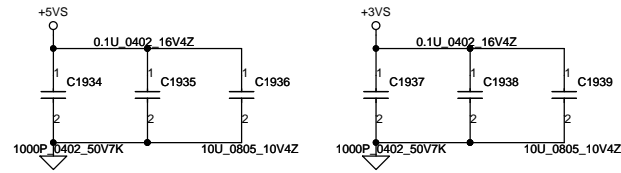
Internal TPM Strap SPI_MOSI Low= Disable* High= iTPM enable by MCH strap		DMI Termination Voltage GPIO49 Low= Desktop used High= Mobile* (Internal pull-up)	
ICH SPI ROM for HDCCP If ICH SPI not used, Left NC SPI ROM Footprint 150mil		No Reboot Strap SB_SPKR Low= Default* High= "No Reboot"	



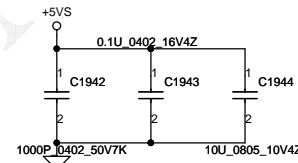
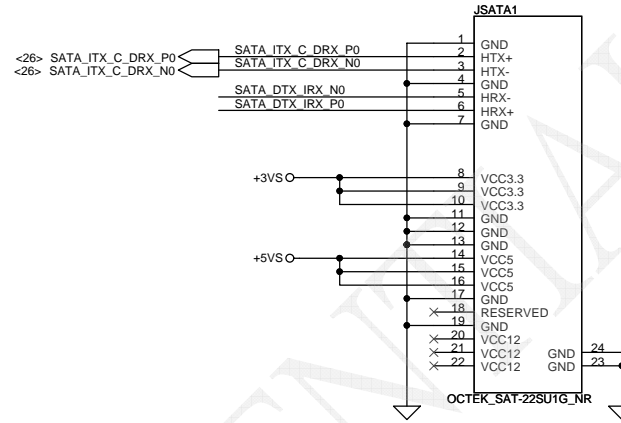
Security Classification	2008/03/28	Compal Secret Data	2008/09/20
Issued Date	2008/03/28	Deciphered Date	2008/09/20
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE 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 SCHEMATIC.A4491			Document Number 401597
Date: Thursday, October 30, 2008			Sheet 27 of 52



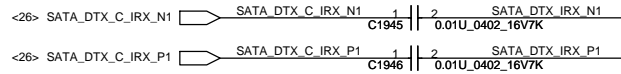
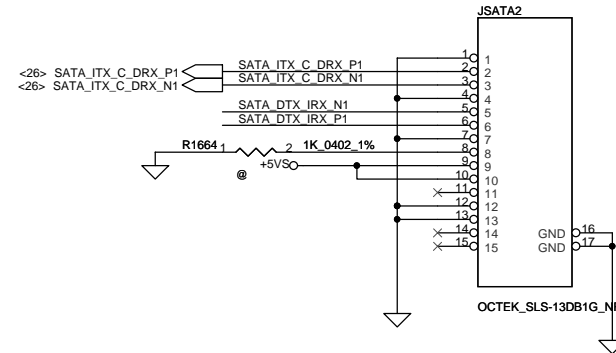
Security Classification	Compal Secret Data		Title	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				SHEMATIC_A4491 Size: 401597 Document Number: 401597 Date: Thursday, October 30, 2008
Sheet 28 of 52 Rev C				



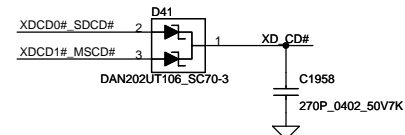
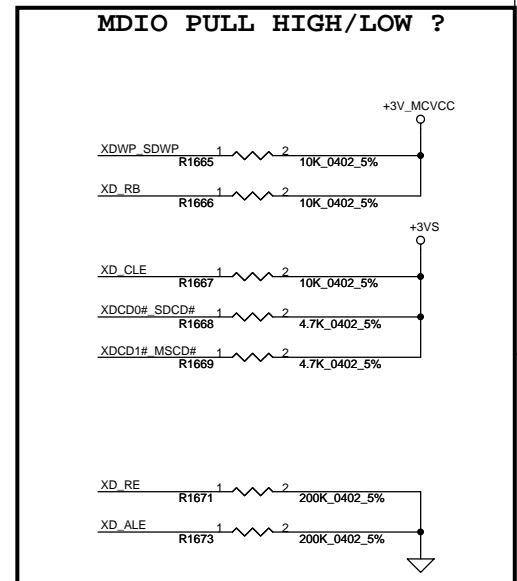
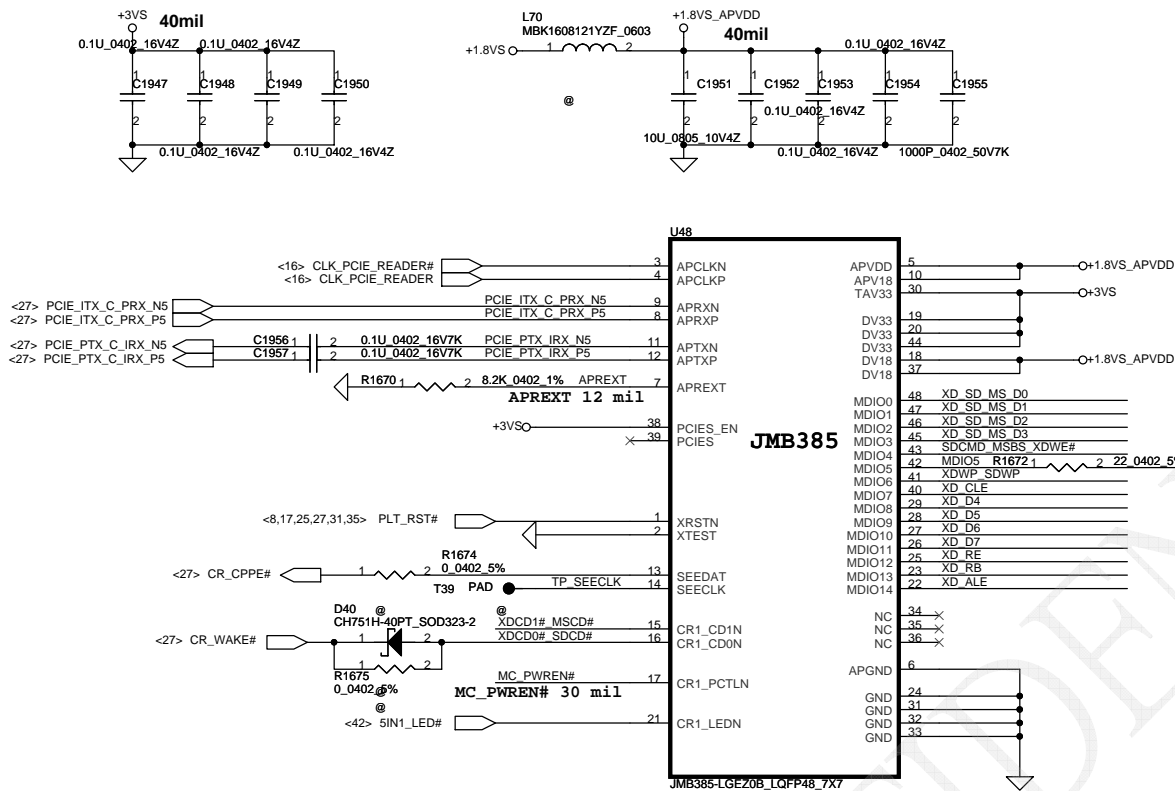
SATA HDD Conn.



SATA ODD Conn.

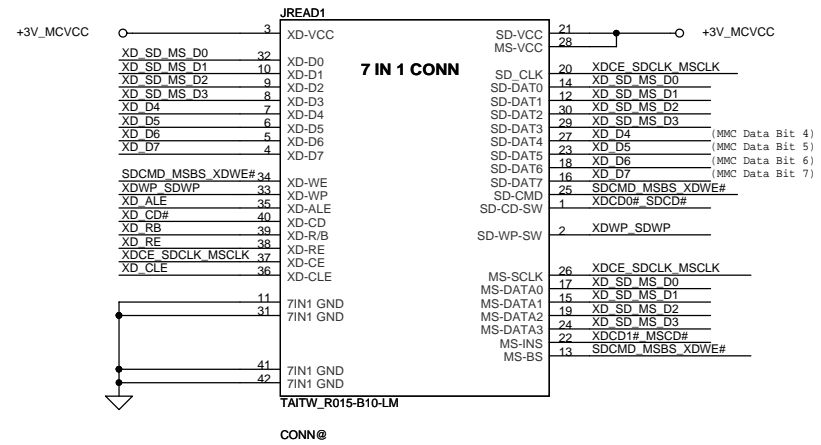
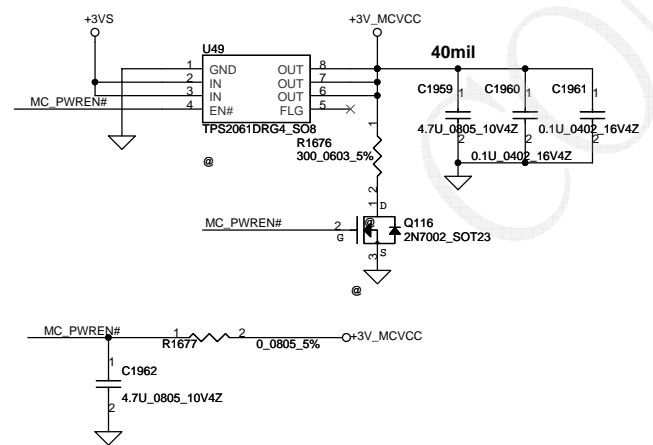


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
				SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size	Document Number	Rev			
Custom	401597	C			
Date:	Thursday, October 30, 2008	Sheet	29	of	52



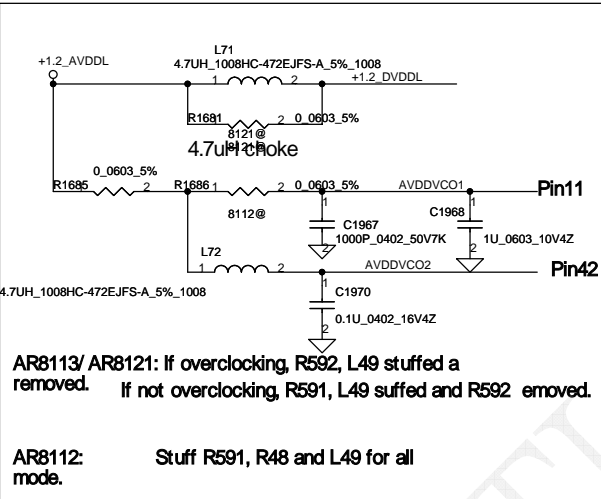
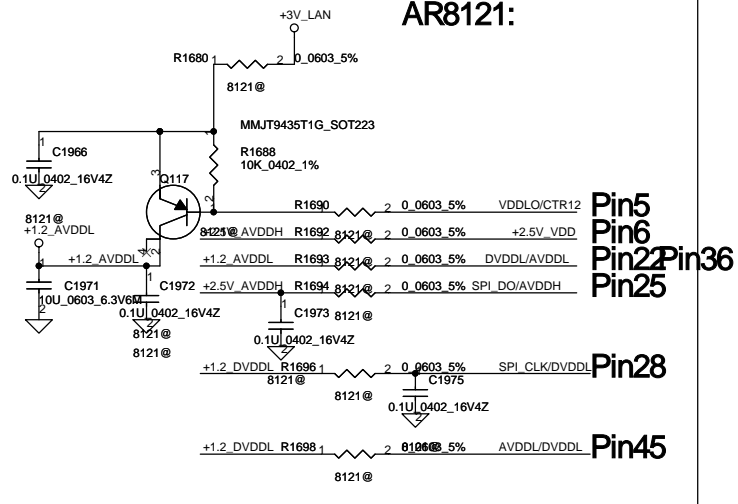
4 IN 1 Socket Push Type(New)

Memory Card Power Switch

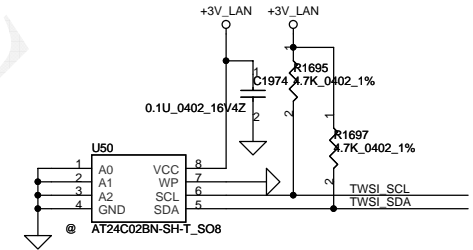
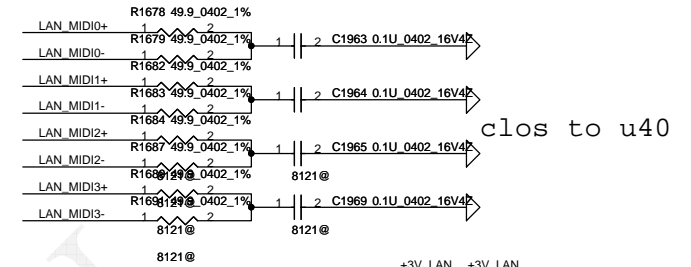


Security Classification		Compal Secret Data		Title	
Issued Date		Deciphered Date		SCHEMATIC_A4491	
2008/03/28		2008/09/20		Compal Electronics, Inc.	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size	Document Number	Customer	Date	Sheet	Rev
	401597		Thursday, October 30, 2008	30 of 52	C

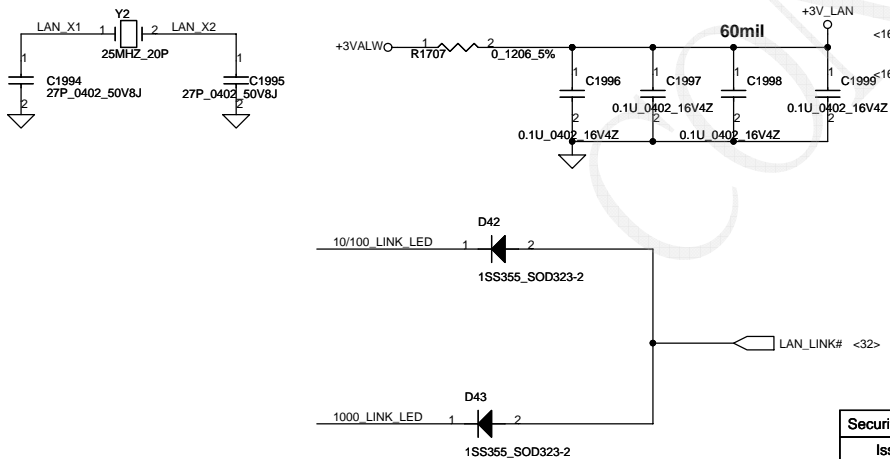
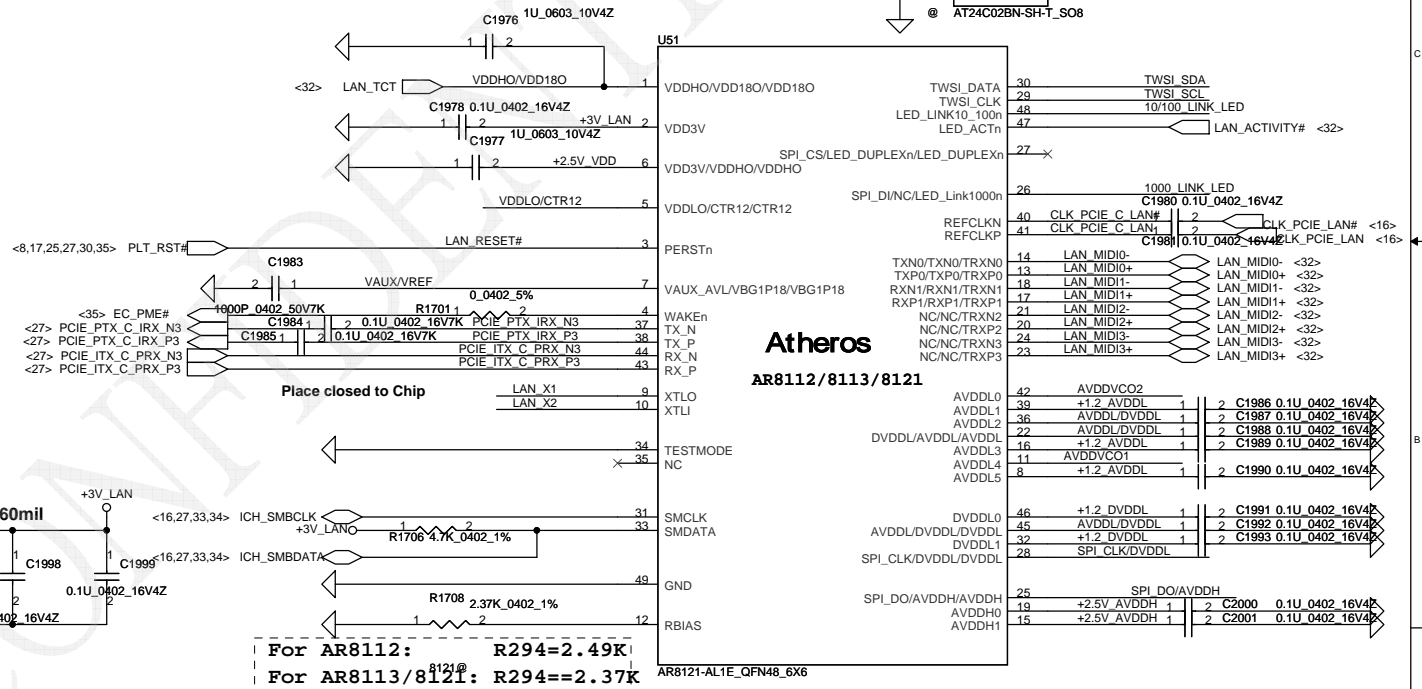
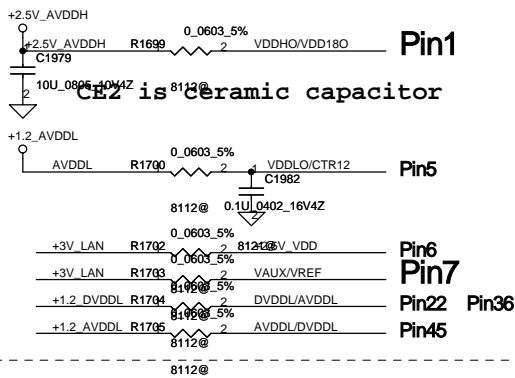
AR8121:



LAN AR8121/8112

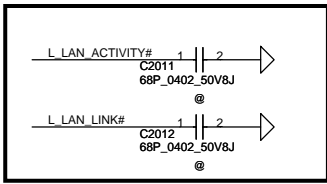
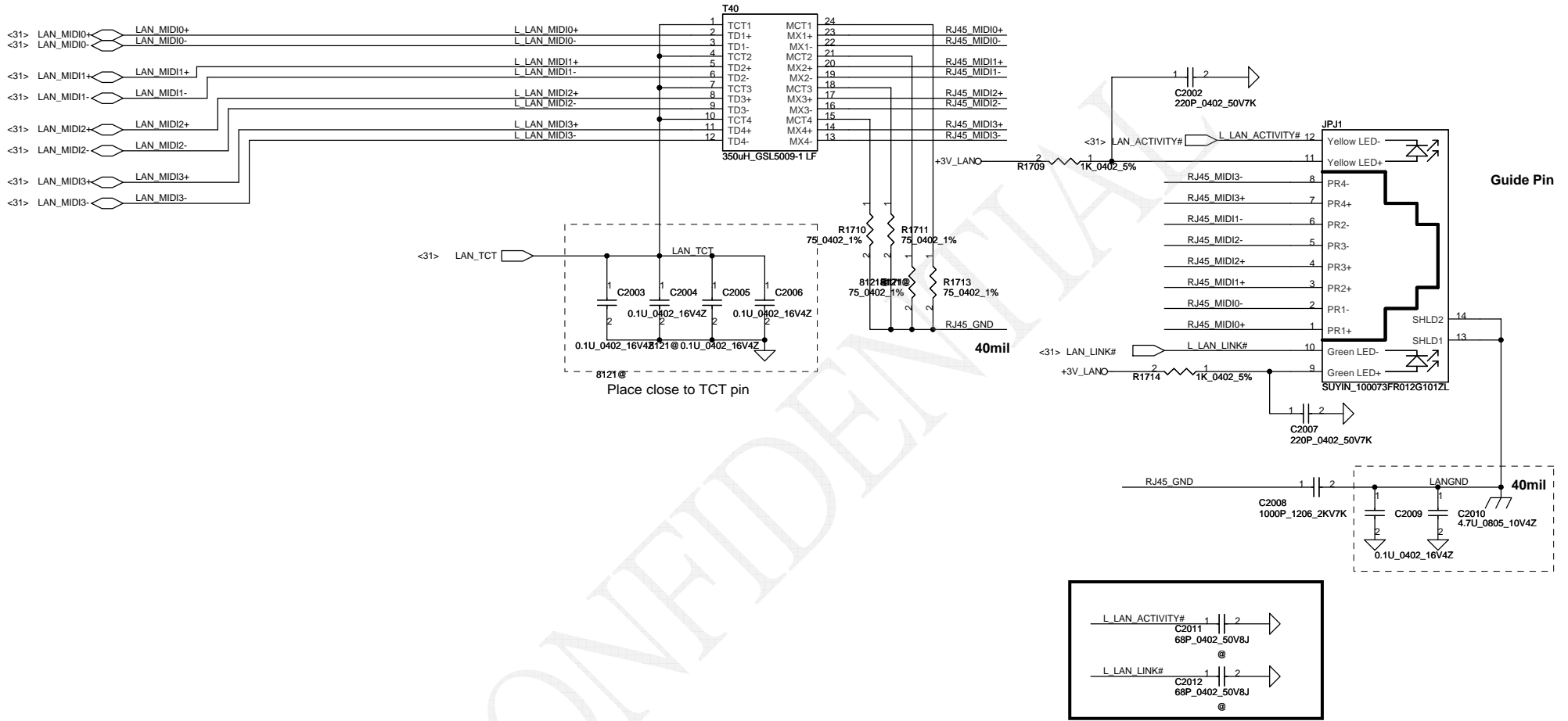


AR8112:



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	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
				401597	C
Date: Thursday, October 30, 2008				Sheet	31 of 52

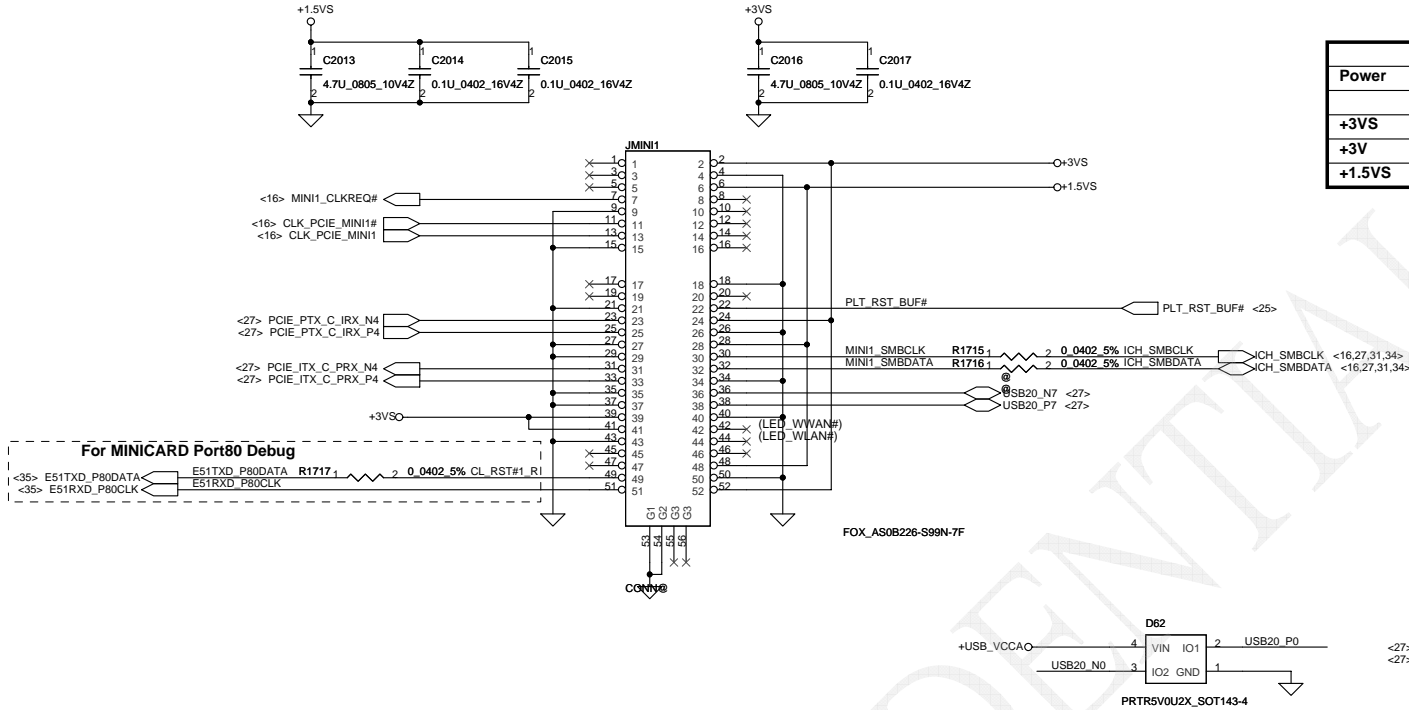
LAN AR8121/8112



For EMI

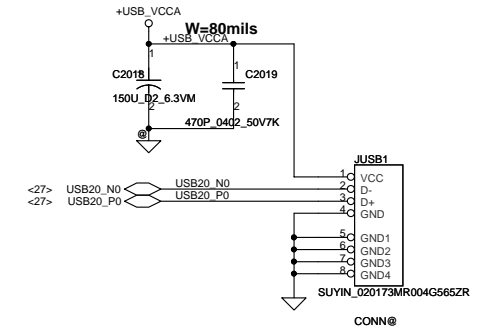
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	SCHMATIC,A4491
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size	B	Document Number	401597	Date	Thursday, October 30, 2008
Rev	C	Sheet	32	of	52

For Robson2

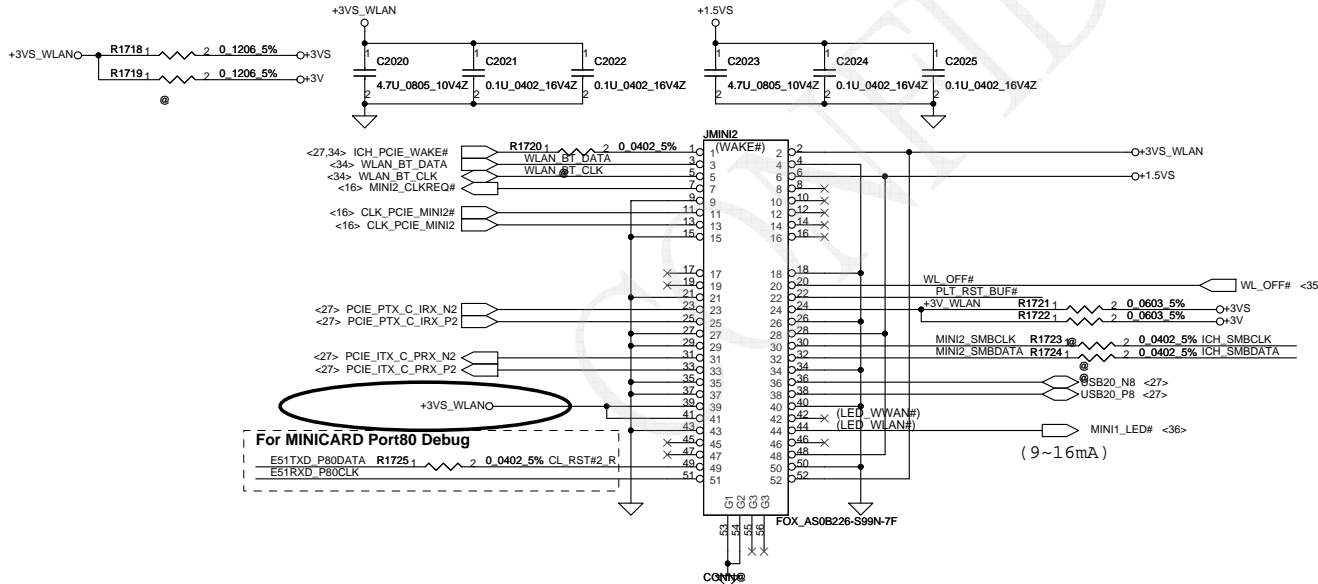


Mini Card Power Rating			
Power	Primary Power (mA)		Auxiliary Power (mA)
	Peak	Normal	Normal
+3VS	1000	750	
+3V	330	250	250 (wake enable)
+1.5VS	500	375	5 (Not wake enable)

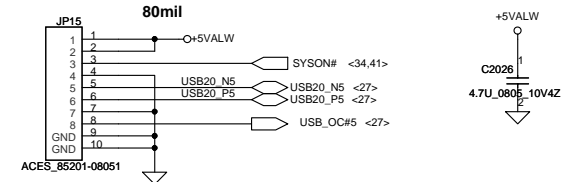
USB CONN.



For Wireless LAN

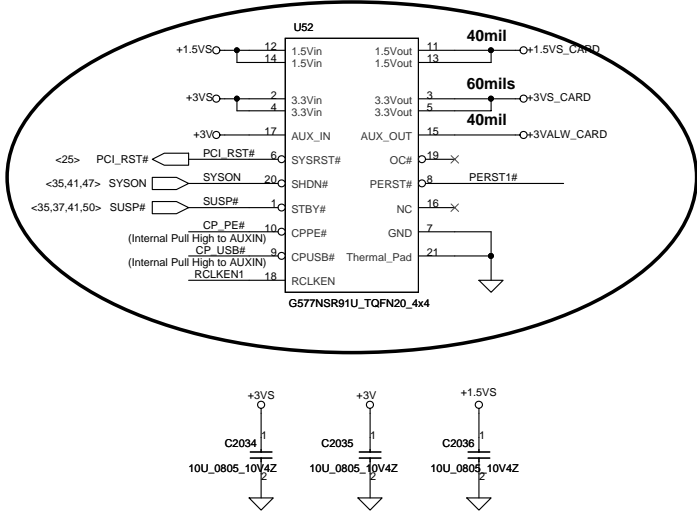


To USB/B Connector

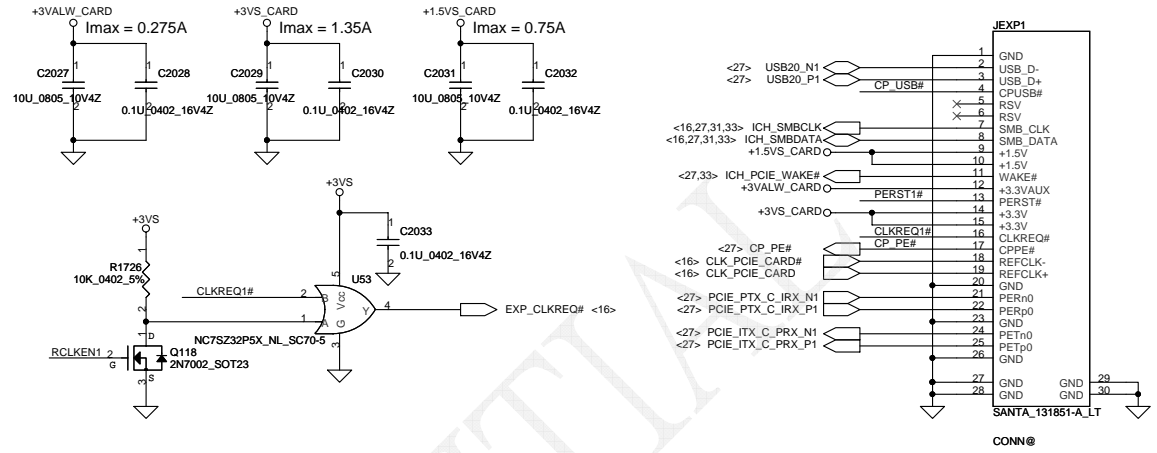


Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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	C	
				Document Number	401597	
				Date:	Thursday, October 30, 2008	
				Sheet	33 of 52	

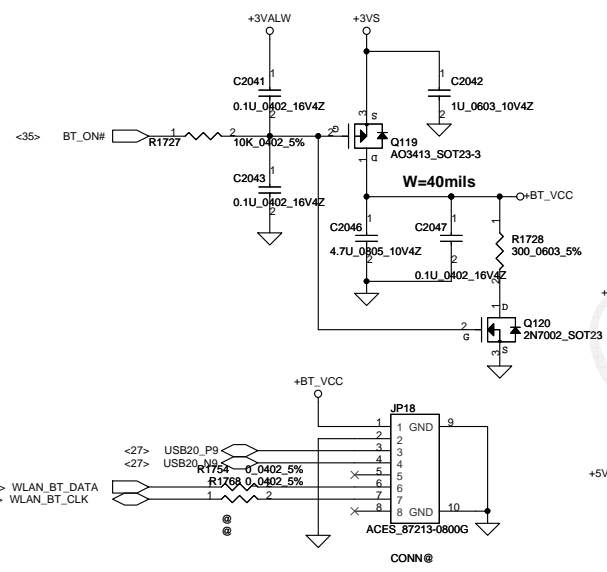
New Card Power Switch



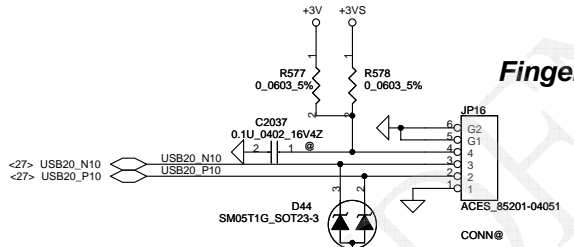
New Card Socket (Left/TOP)



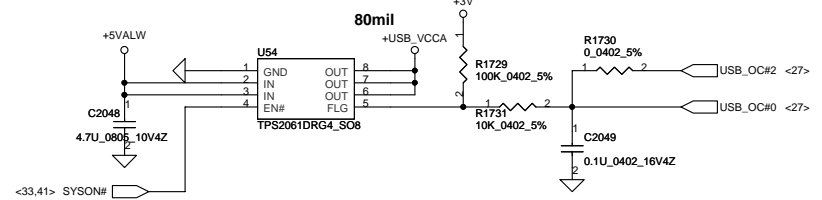
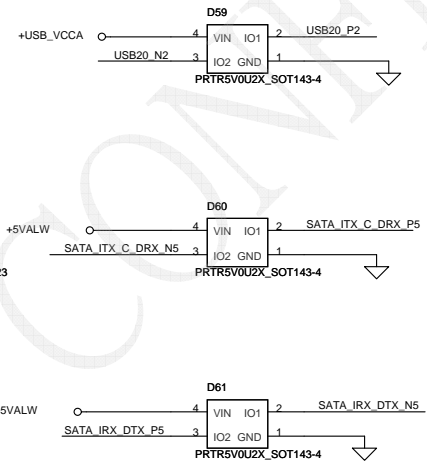
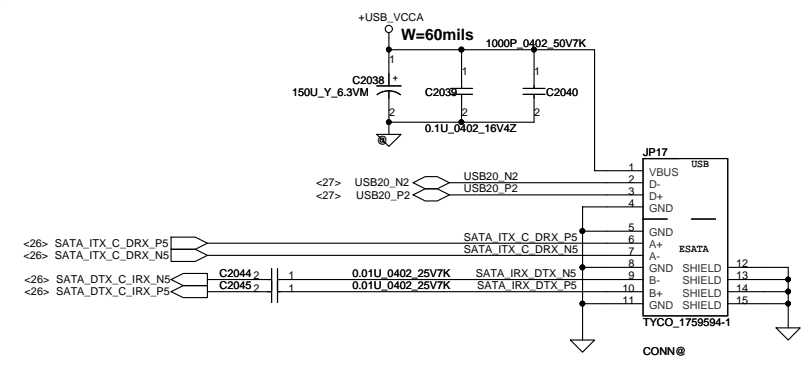
Bluetooth Conn.



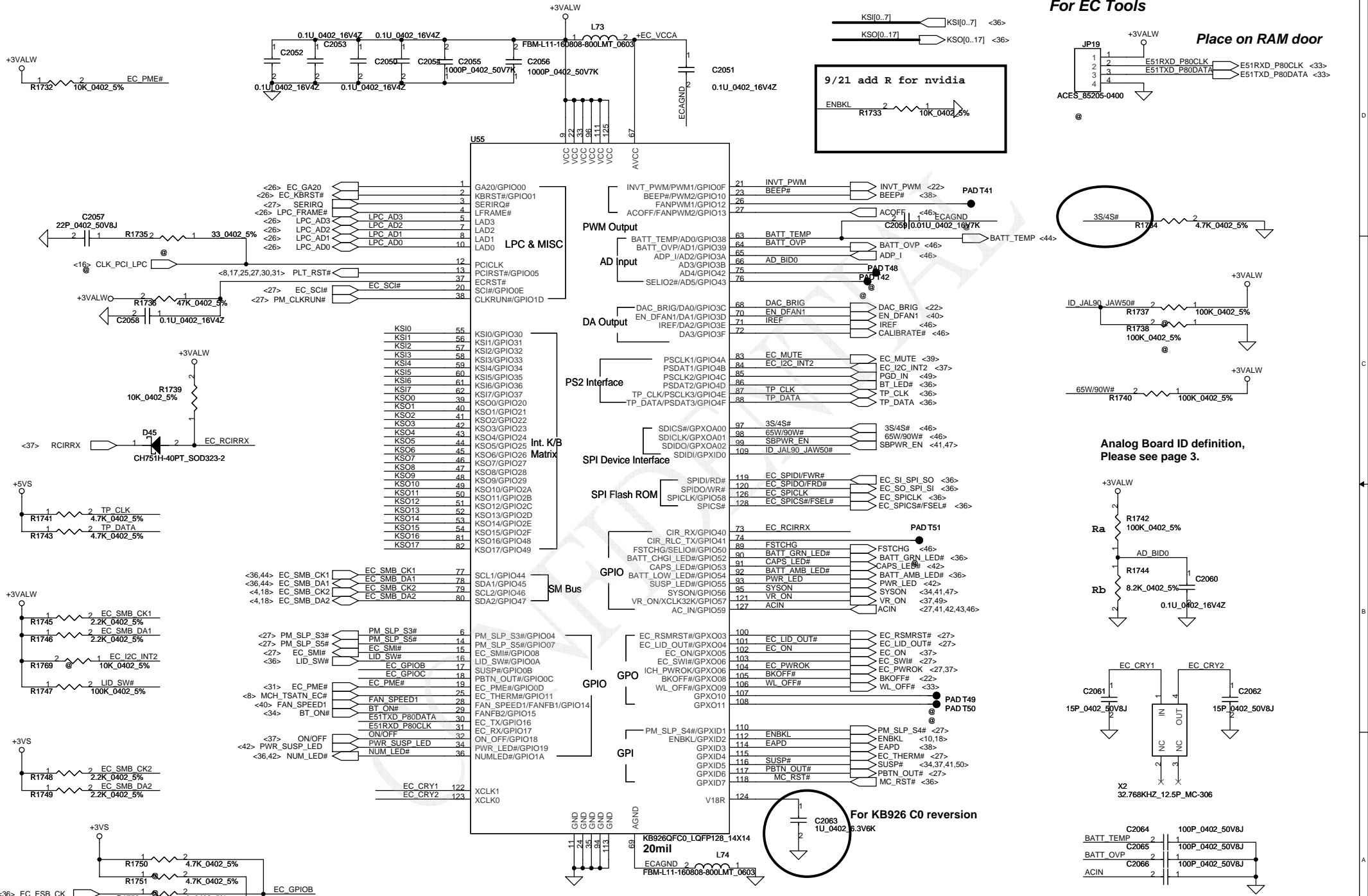
Finger Print Conn.



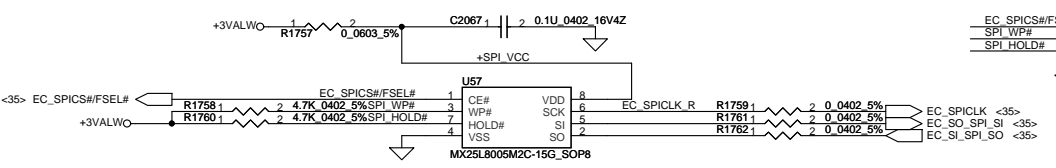
ESATA CONN



Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Date: Thursday, October 30, 2008				Document Number	Rev
				401597	C
Sheet 34 of 52					

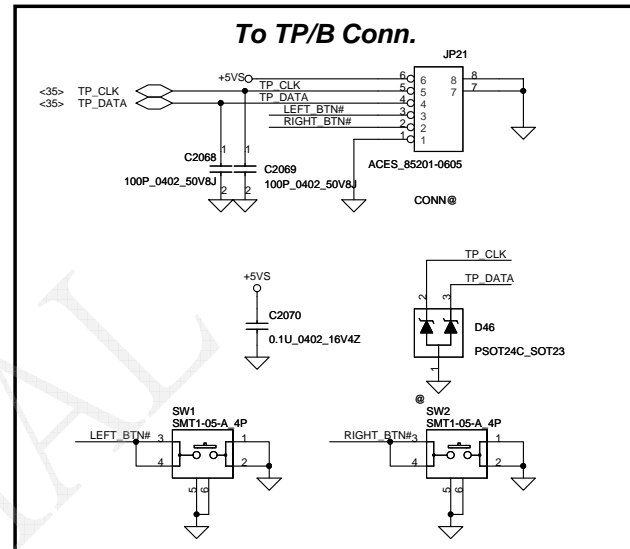


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT INFORMATION 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 C
				401597	
Date: Thursday, October 30, 2008				Sheet	35 of 52

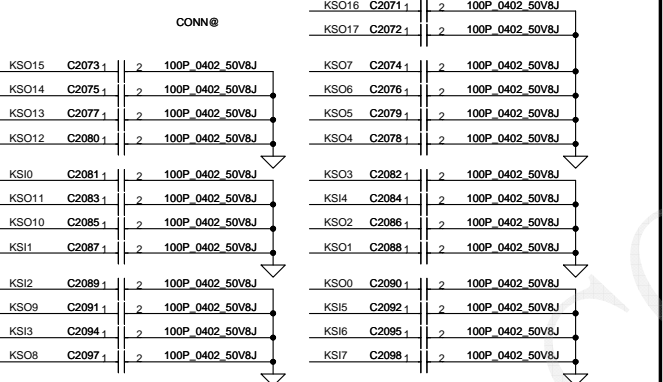
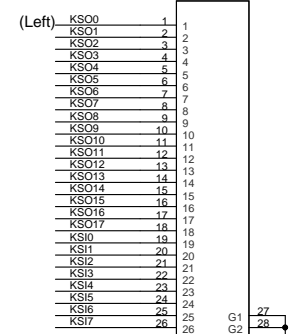
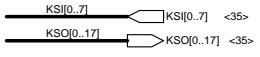


ENE suggestion SPI Frequency over 66MHz
 SST: 50MHz
 MXIC: 70MHz
 ST: 40MHz

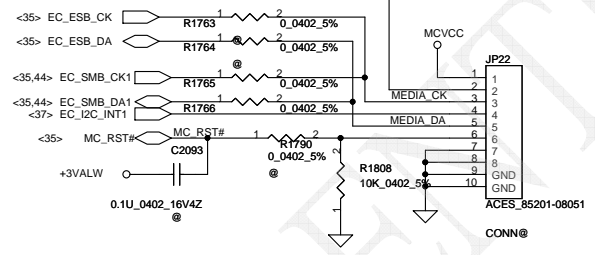
Reserved for BIOS simulator.
 Footprint S08



INT_KBD Conn.

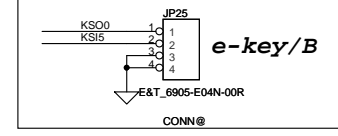


To Media/B Conn.

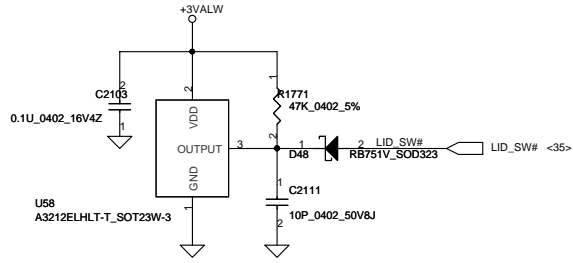


To BTN/B Conn.

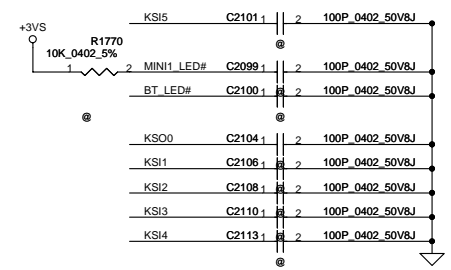
KSI	KSO0
KSI1	WL_BTN#
KSI2	BT_BTN#
KSI3	EMAIL_BTN#
KSI4	IE_BTN#
KSI5	E-KEY_BTN#



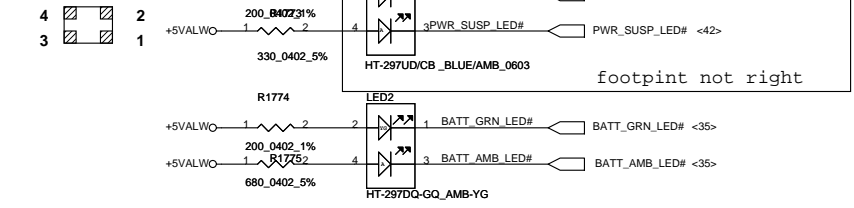
Lid Switch (Hall Effect Switch)



FOR EMI

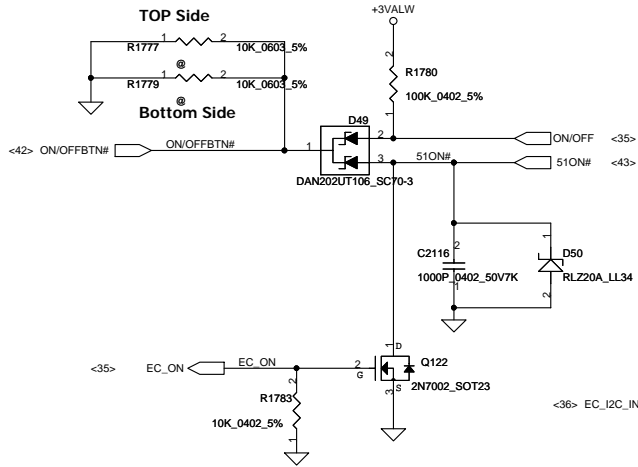


Compal Footprint

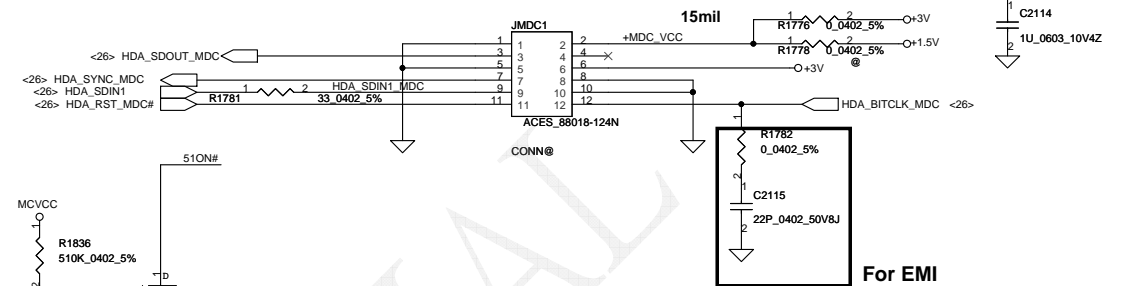


Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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
				401597
				Rev C
Date: Thursday, October 30, 2008				Sheet 36 of 52

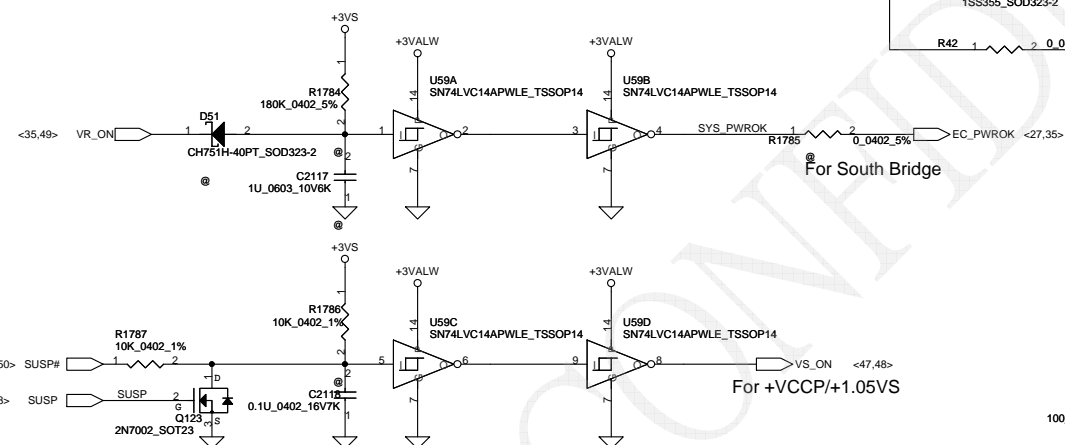
Power Button



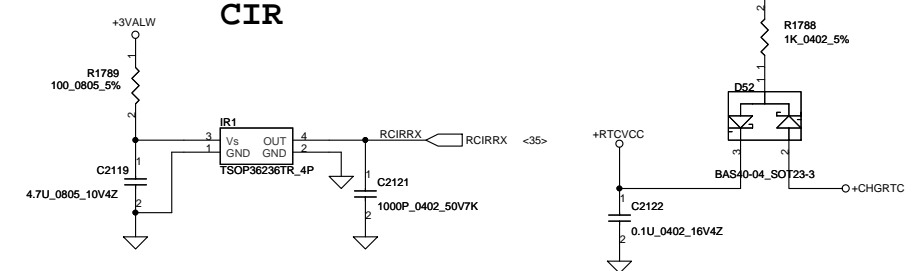
HDA MDC Conn.



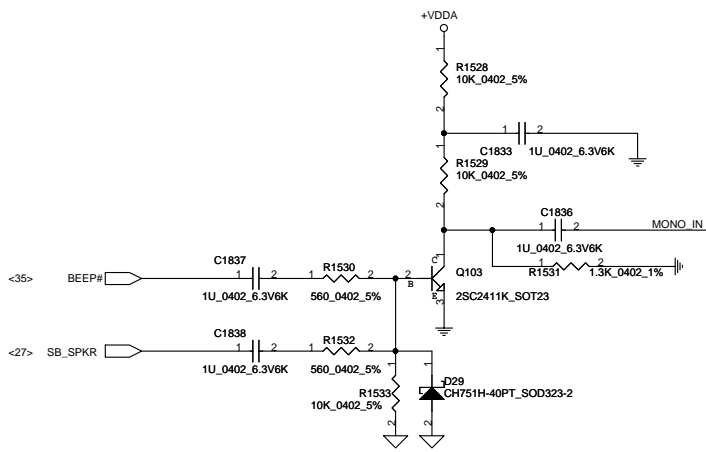
Power ON Circuit



CIR

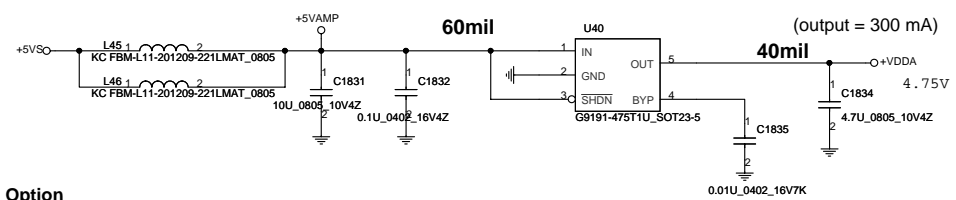


Security Classification	Compal Secret Data			Compal Electronics, Inc.		
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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	401597			Rev	C	
Date:	Thursday, October 30, 2008			Sheet	37 of 52	

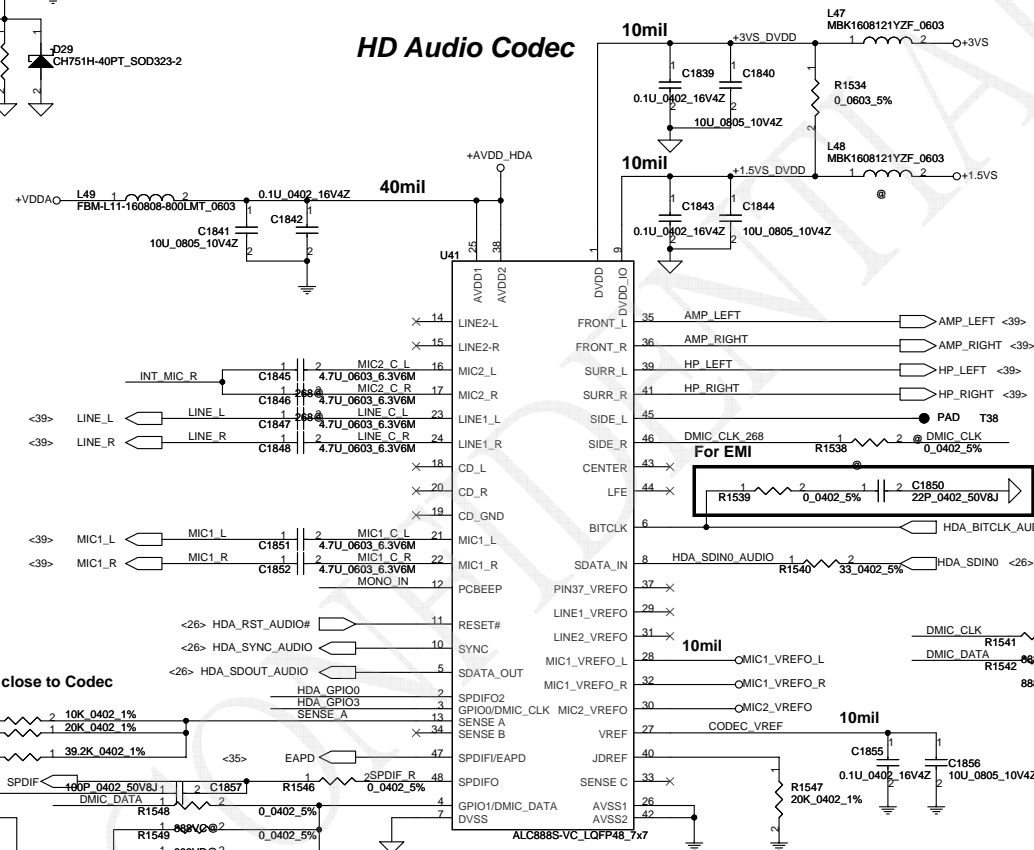


BOM Option

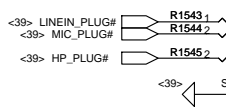
ALC268	268@
ALC888S-VB	888VB@
ALC888S-VC	888VC@



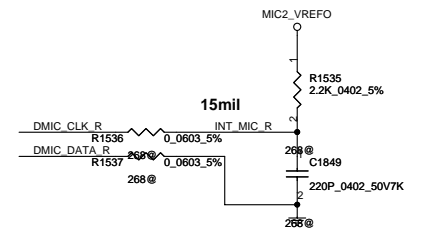
HD Audio Codec



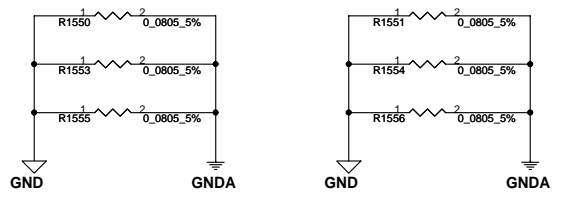
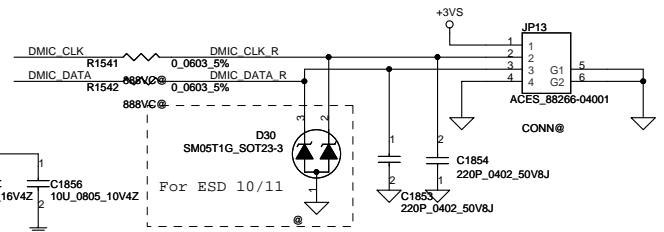
Place close to Codec



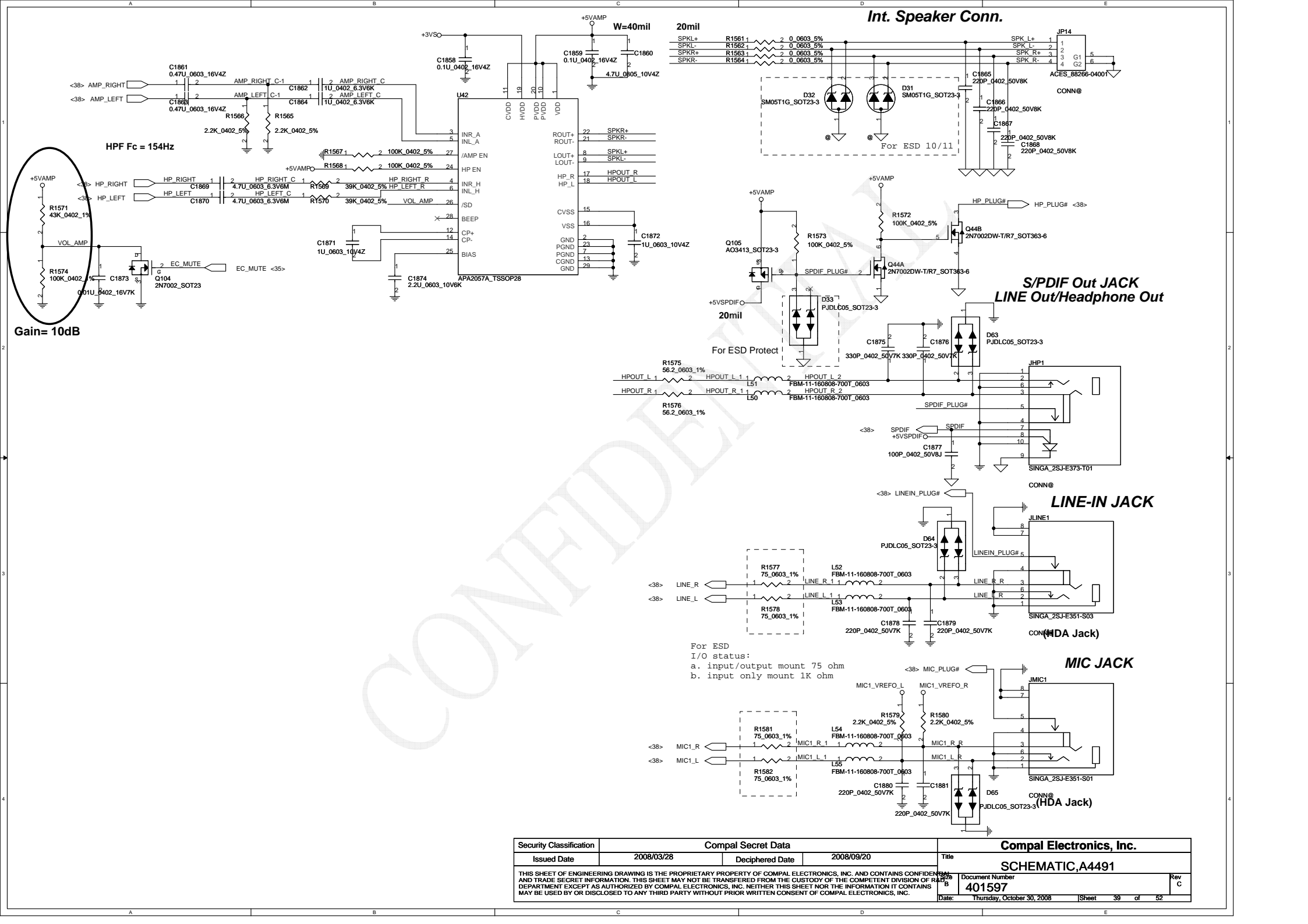
Sense Pin	Impedance	Codec Signals
SENSE A	39.2K	PORT-A (PIN 39, 41)
	20K	PORT-B (PIN 21, 22)
	10K	PORT-C (PIN 23, 24)
SENSE B	5.1K	PORT-D (PIN 35, 36)
	39.2K	PORT-E (PIN 14, 15)
	20K	PORT-F (PIN 16, 17)
	10K	PORT-G (PIN 43, 44)
5.1K	PORT-H (PIN 45, 46)	



Digital MIC

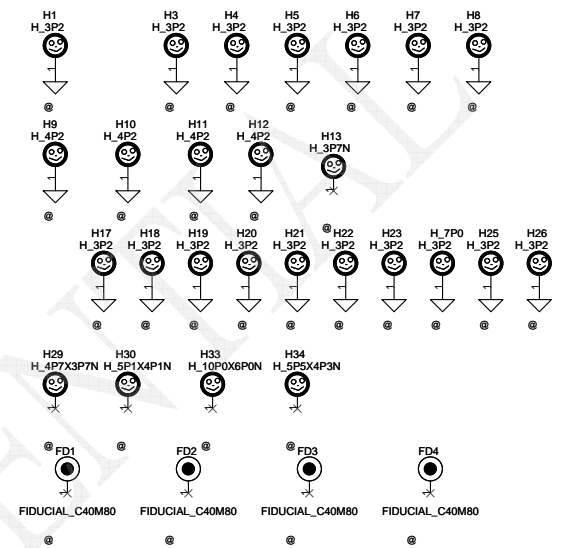
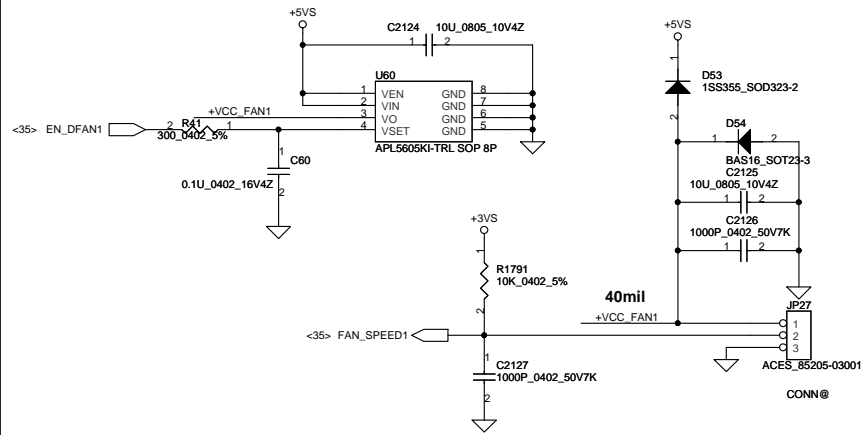


Security Classification	Compal Secret Data		Title	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF COMPAL ELECTRONICS, INC. DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				<p>SCHEMATIC, A4491</p> <p>Document Number 401597</p> <p>Date: Thursday, October 30, 2008</p>
			Sheet	38 of 52



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	SCHEMATIC,A4491
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	401597
				Date:	Thursday, October 30, 2008
				Sheet	39 of 52

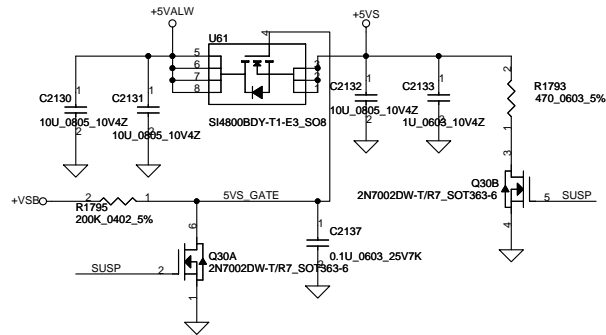
FAN1 Conn



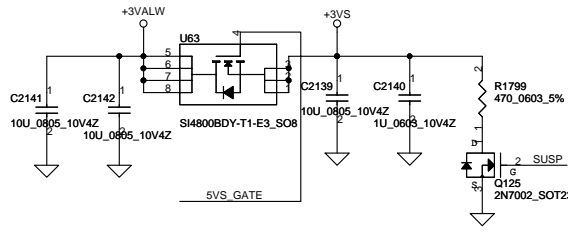
CONFIDENTIAL

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	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.				SCHEMATIC,A4491	
				Document Number	Rev
				401597	C
				Date:	Sheet
				Thursday, October 30, 2008	40 of 52

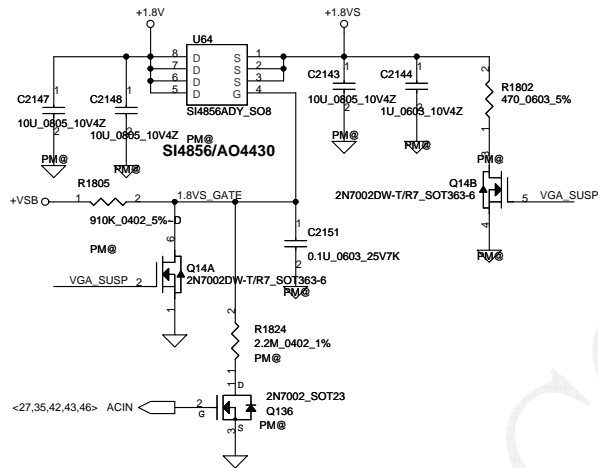
+5VALW TO +5VS



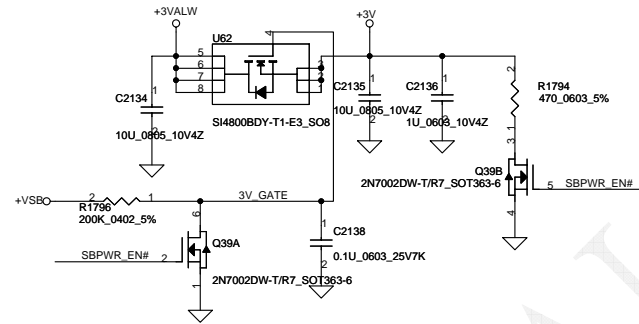
+3VALW TO +3VS



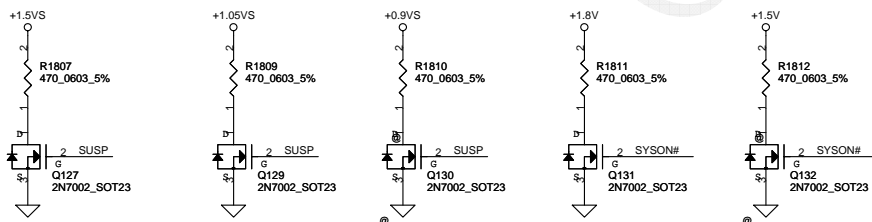
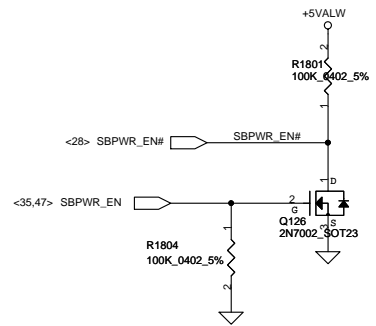
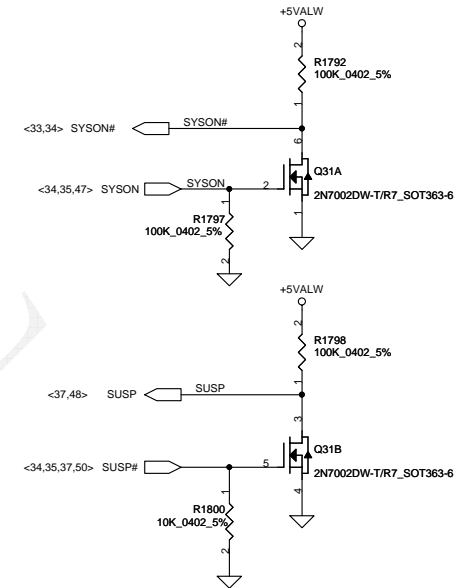
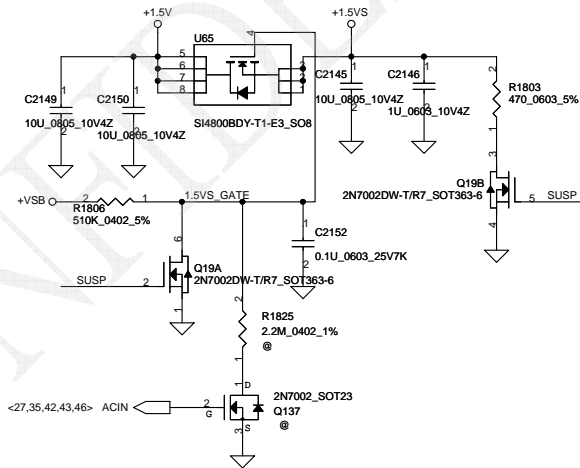
+1.8V to +1.8VS



+3VALW TO +3V_SB(ICH8M AUX Power)

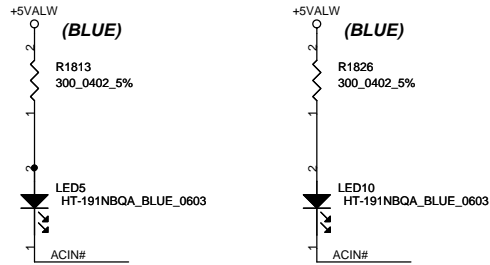


+1.5V to +1.5VS

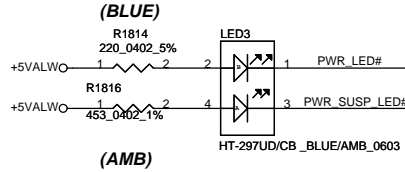


Security Classification		Compal Secret Data		Title	
Issued Date	2008/03/14	Deciphered Date	2008/09/20	SCHEMATIC,A4491	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM 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
				401597	C
Date:				Thursday, October 30, 2008	Sheet 41 of 52

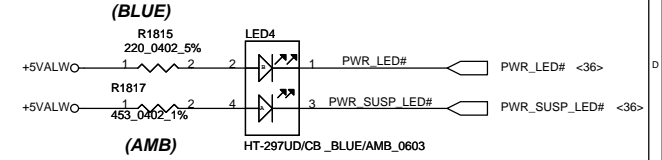
Enlightener LED



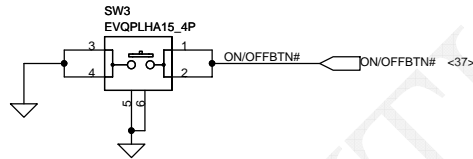
ON/OFF LED LEFT



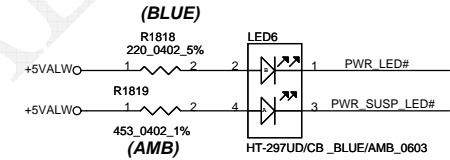
ON/OFF LED RIGHT



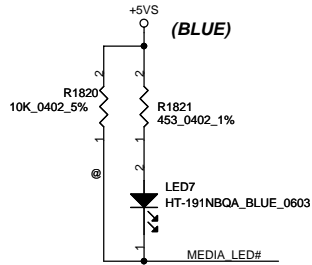
ON/OFF Button



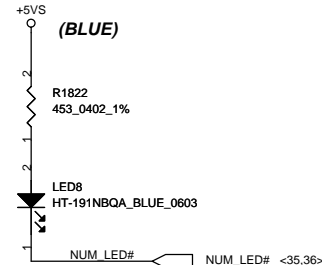
ON/OFF LED DOWN



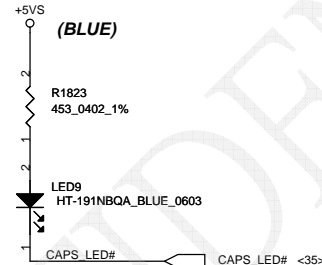
MEDIA_LED



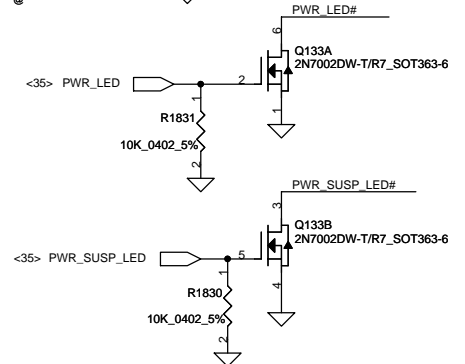
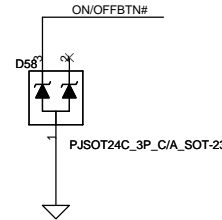
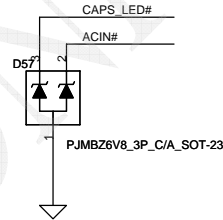
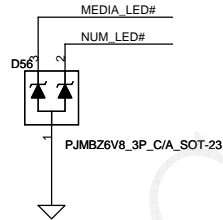
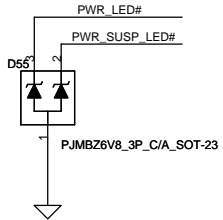
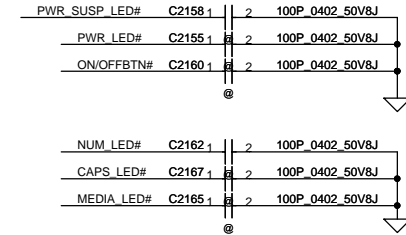
NUM_LED



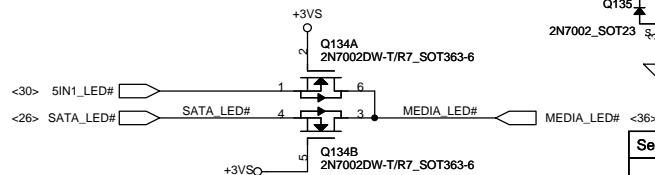
CAPS_LED



FOR EMI



**D1 D2 D3 USE PANJIT PJMBZ6V8
SCA0000I00
6.8V**

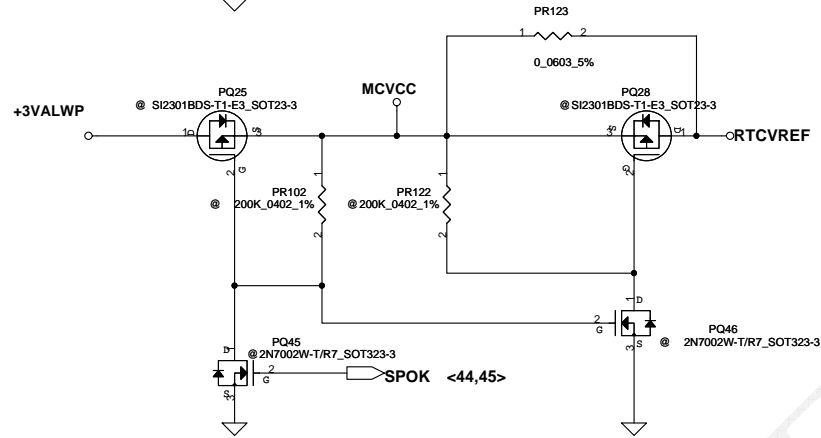
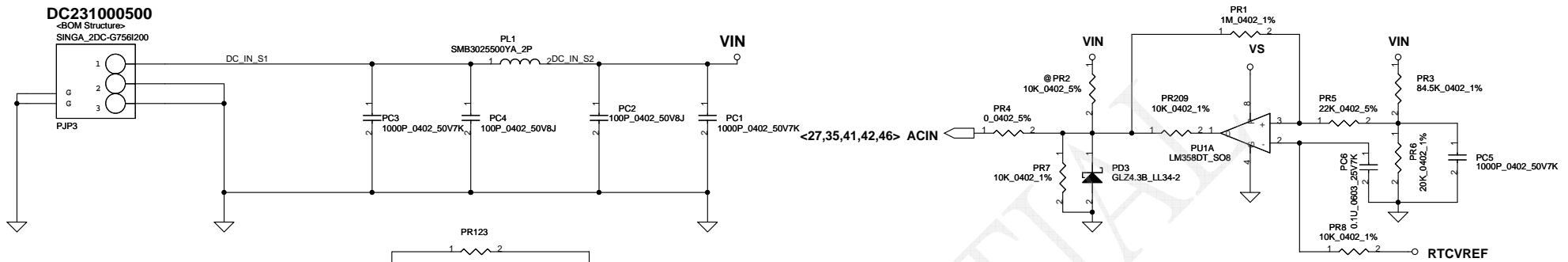


**D4 USE
PJSOT24C 3P C/A SOT-23
SCA0000E00
24V**

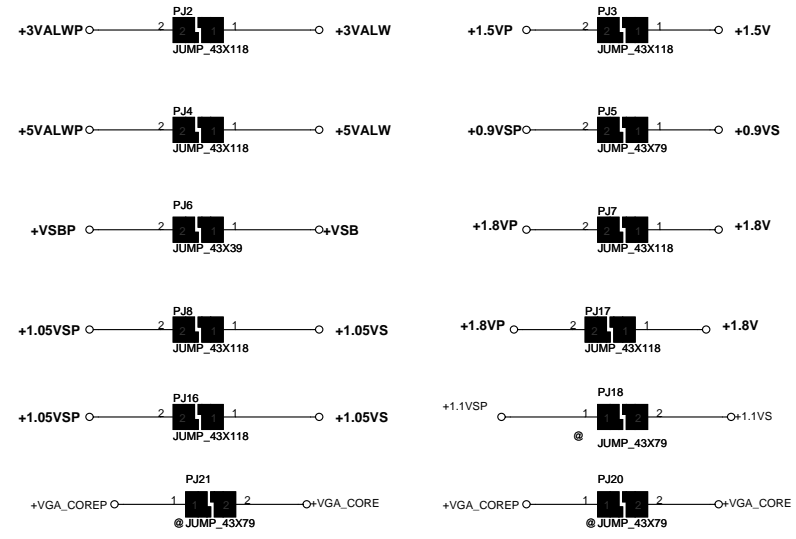
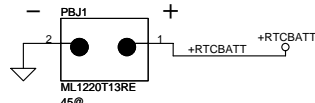
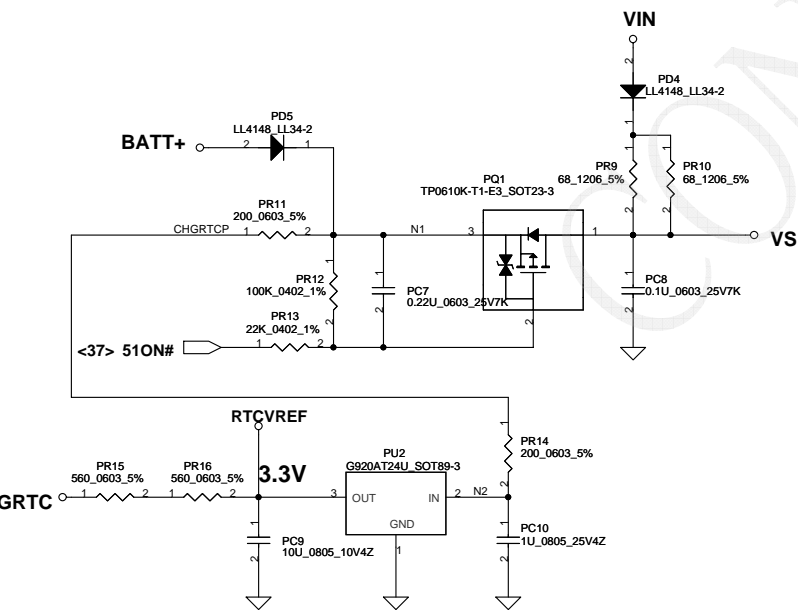
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/3/8	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				401597	C
Date: Thursday, October 30, 2008				Sheet	42 of 52

DC231000500

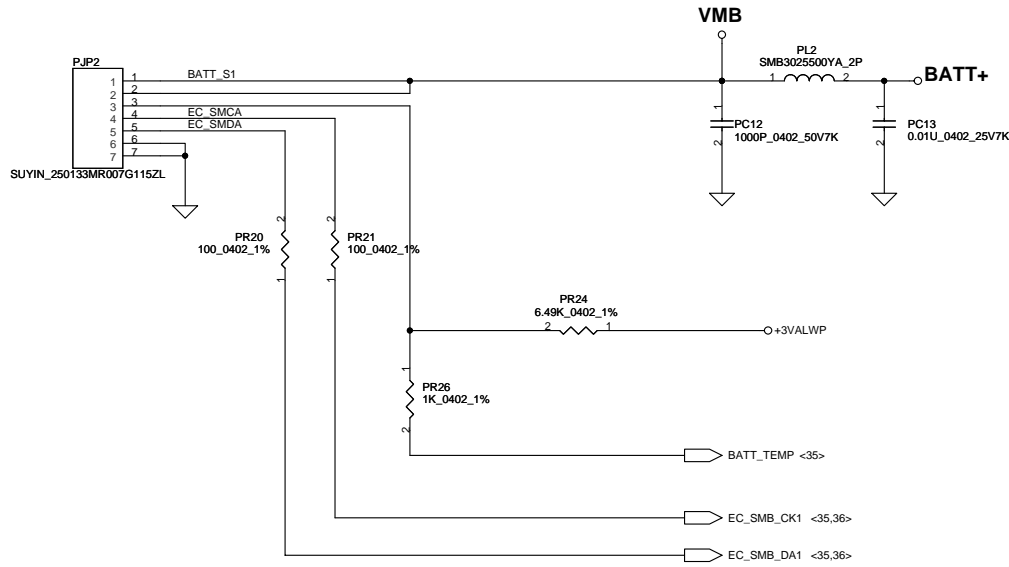
<BOM Structure>
SINGA_2DC-G756I200



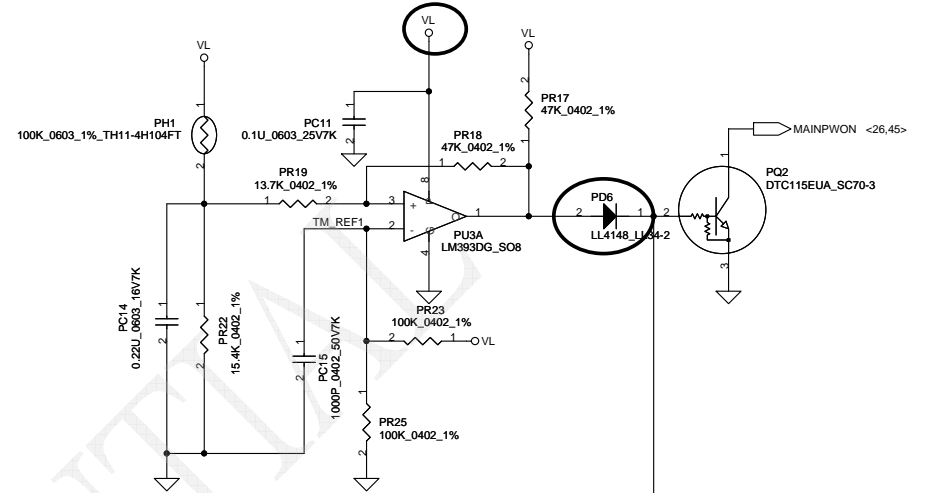
Vin Dectector			
	Min.	Typ	Max.
H-->L	16.976V	17.525V	17.728V
L-->H	17.430V	17.901V	18.384V



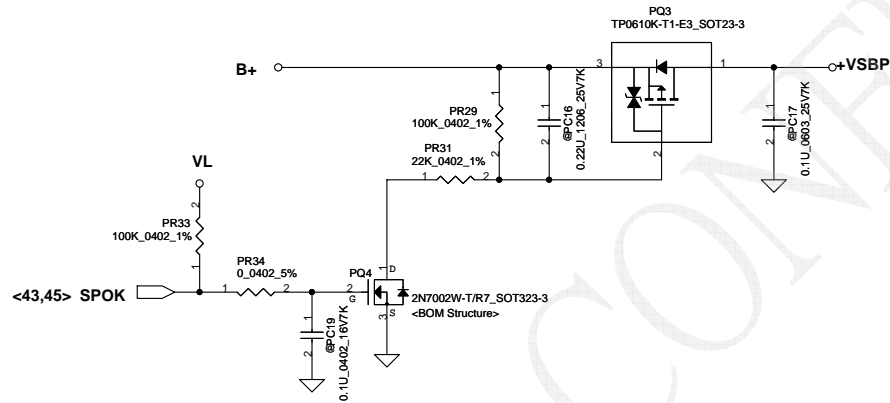
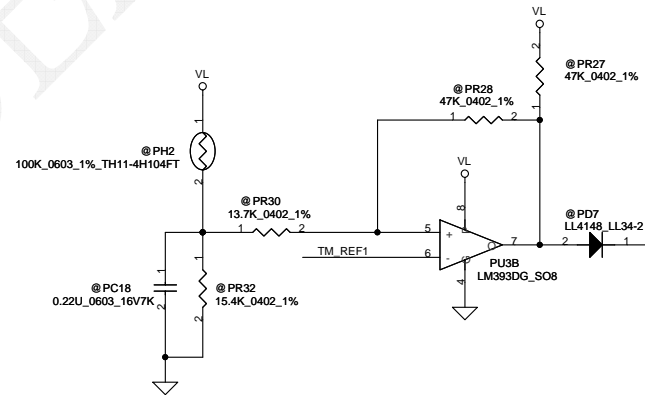
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	SCHEMATIC,A4491
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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	401597
Date:	Thursday, October 30, 2008	Sheet	43	of	52



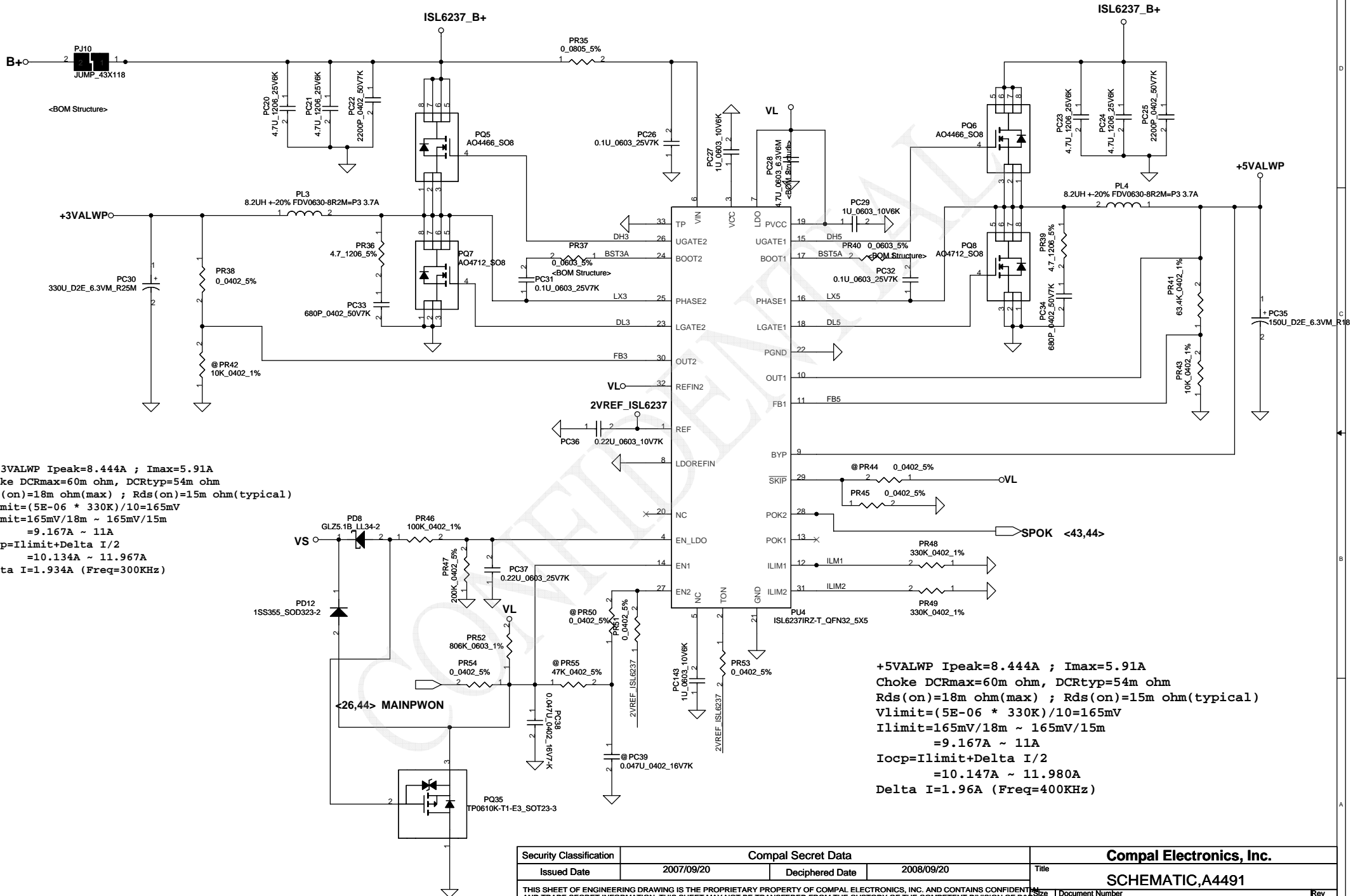
PH1 under CPU botten side :
 CPU thermal protection at 96 degree C
 Recovery at 60 degree C



PH2 near main Battery CONN :
 BAT. thermal protection at 79 degree C
 Recovery at 47 degree C



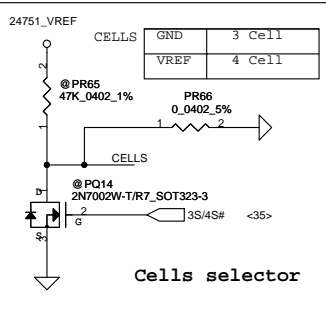
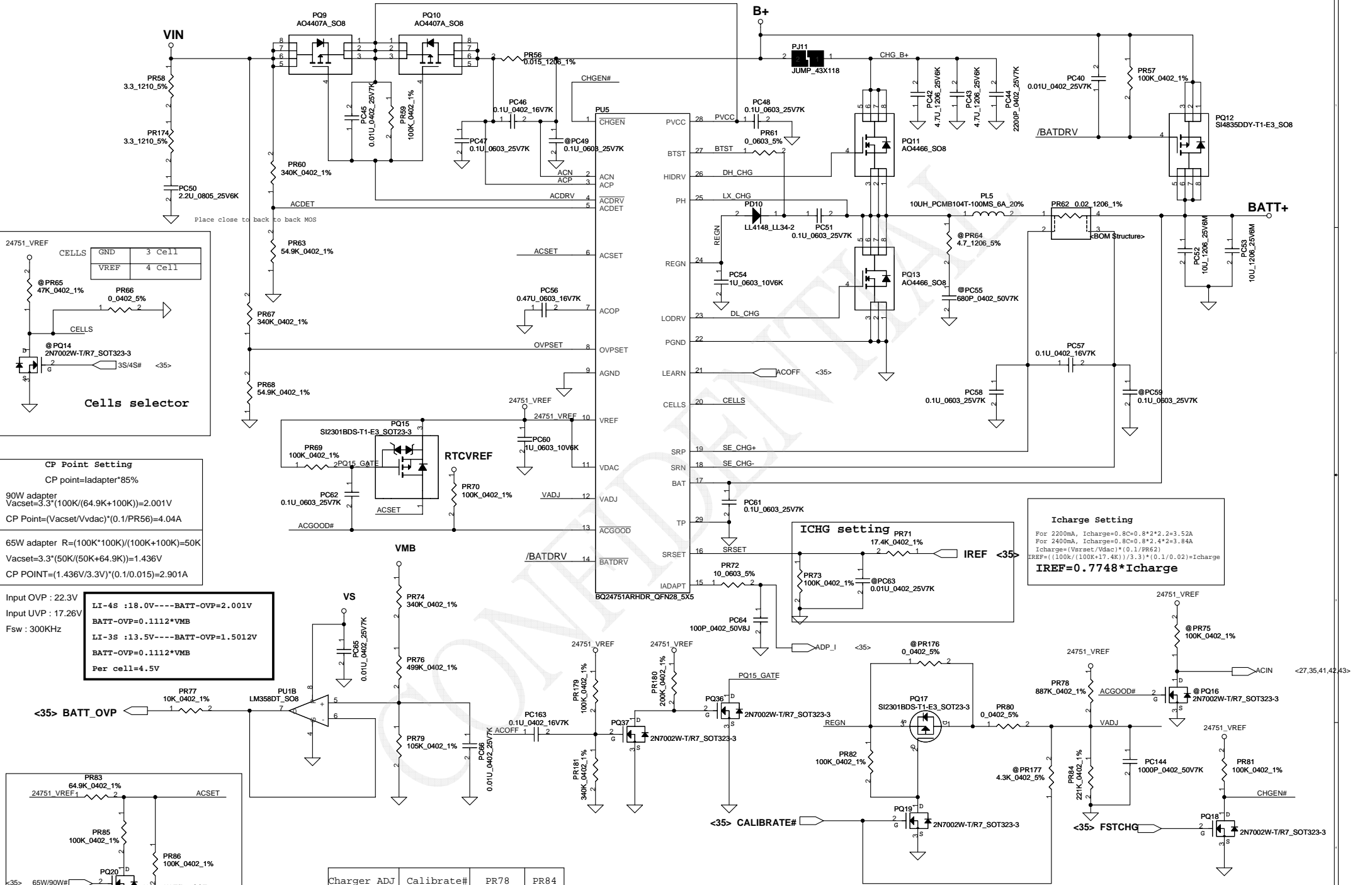
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	SCHMATIC,A4491
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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	401597	Rev	C	Date:	Thursday, October 30, 2008
Sheet	44	of	52		



+3.3VALWP Ipeak=8.444A ; Imax=5.91A
 Choke DCRmax=60m ohm, DCRtyp=54m ohm
 Rds(on)=18m ohm(max) ; Rds(on)=15m ohm(typical)
 Vlimit=(5E-06 * 330K)/10=165mV
 Ilimit=165mV/18m ~ 165mV/15m
 =9.167A ~ 11A
 Iocp=Ilimit+Delta I/2
 =10.134A ~ 11.967A
 Delta I=1.934A (Freq=300KHz)

+5VALWP Ipeak=8.444A ; Imax=5.91A
 Choke DCRmax=60m ohm, DCRtyp=54m ohm
 Rds(on)=18m ohm(max) ; Rds(on)=15m ohm(typical)
 Vlimit=(5E-06 * 330K)/10=165mV
 Ilimit=165mV/18m ~ 165mV/15m
 =9.167A ~ 11A
 Iocp=Ilimit+Delta I/2
 =10.147A ~ 11.980A
 Delta I=1.96A (Freq=400KHz)

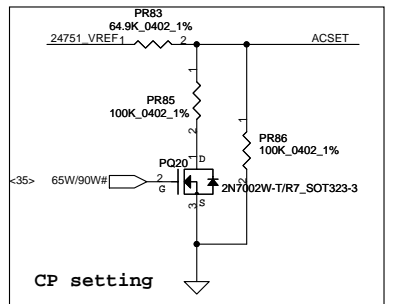
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	SCHMATIC,A4491
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Date:	Thursday, October 30, 2008	Sheet	45	of	52



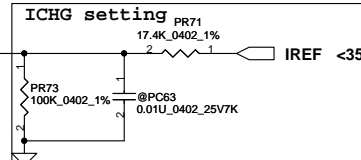
CP Point Setting
 CP point=ladapter*85%
 90W adapter
 $V_{acset}=3.3 \cdot (100K / (64.9K + 100K)) = 2.001V$
 $CP\ Point = (V_{acset} / V_{dacc}) \cdot (0.1 / PR56) = 4.04A$
 65W adapter $R = (100K \cdot 100K) / (100K + 100K) = 50K$
 $V_{acset} = 3.3 \cdot (50K / (50K + 64.9K)) = 1.436V$
 $CP\ POINT = (1.436V / 3.3V) \cdot (0.1 / 0.015) = 2.901A$

Input OVP : 22.3V
 Input UVP : 17.26V
 Fsw : 300KHz

LI-4S : 18.0V --- BATT-OVP=2.001V
 BATT-OVP=0.1112 * VMB
 LI-3S : 13.5V --- BATT-OVP=1.5012V
 BATT-OVP=0.1112 * VMB
 Per cell=4.5V



Charger ADJ	Calibrate#	PR78	PR84
4.0V	L	@	@
4.1V	L	887K	221K
4.2V	H	@	@



Icharge Setting
 For 2200mA, $I_{charge} = 0.8C \cdot 0.8^2 \cdot 2.2 = 3.52A$
 For 2400mA, $I_{charge} = 0.8C \cdot 0.8^2 \cdot 2.4 = 3.84A$
 $I_{charge} = (V_{acset} / V_{dacc}) \cdot (0.1 / PR62)$
 $IREF = ((100K / (100K + 17.4K)) / 3.3) \cdot (0.1 / 0.02) = I_{charge}$
 $IREF = 0.7748 \cdot I_{charge}$

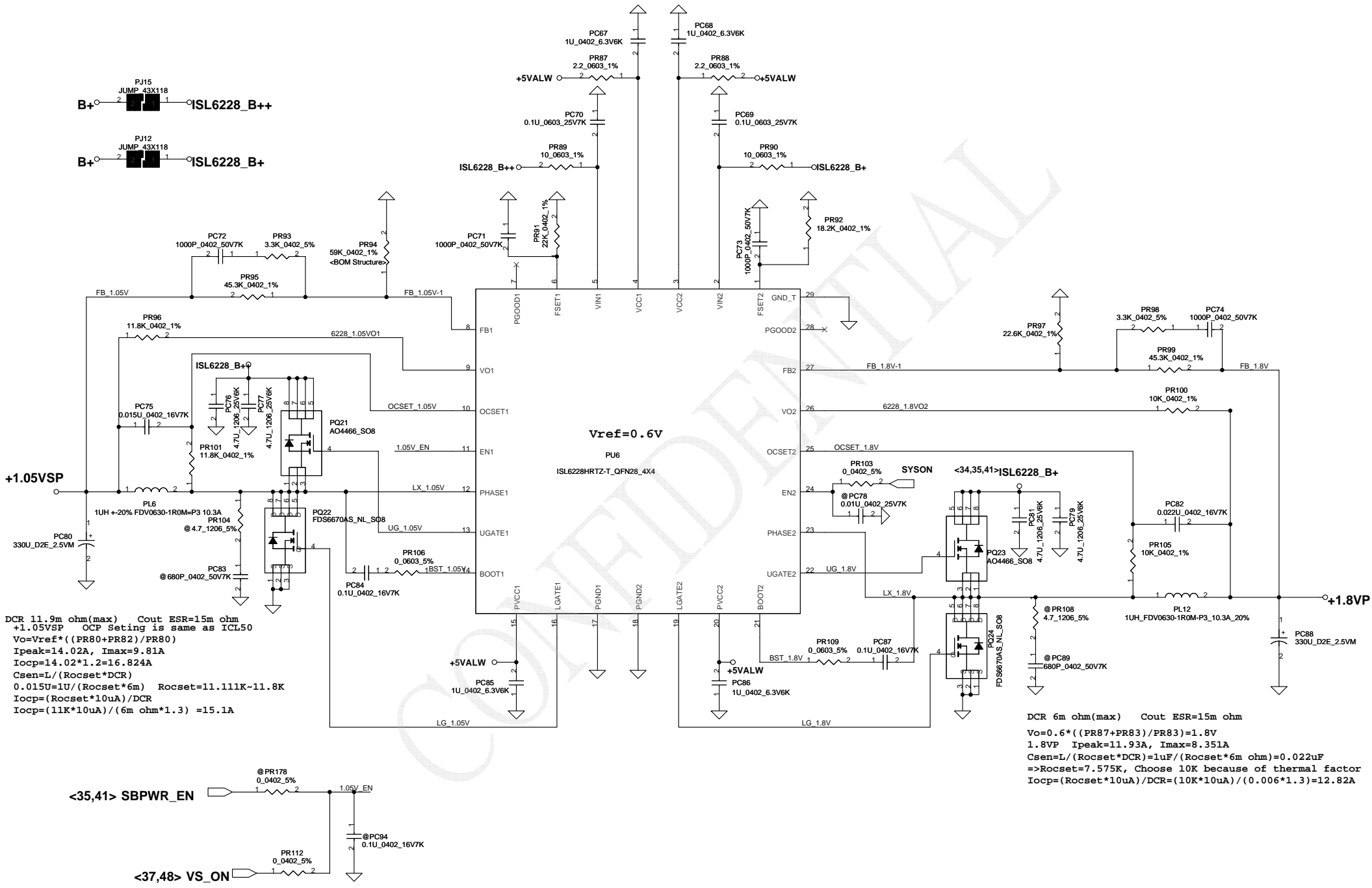
Security Classification
 Issued Date: 2007/09/20
 Deciphered Date: 2008/09/20

Compal Secret Data

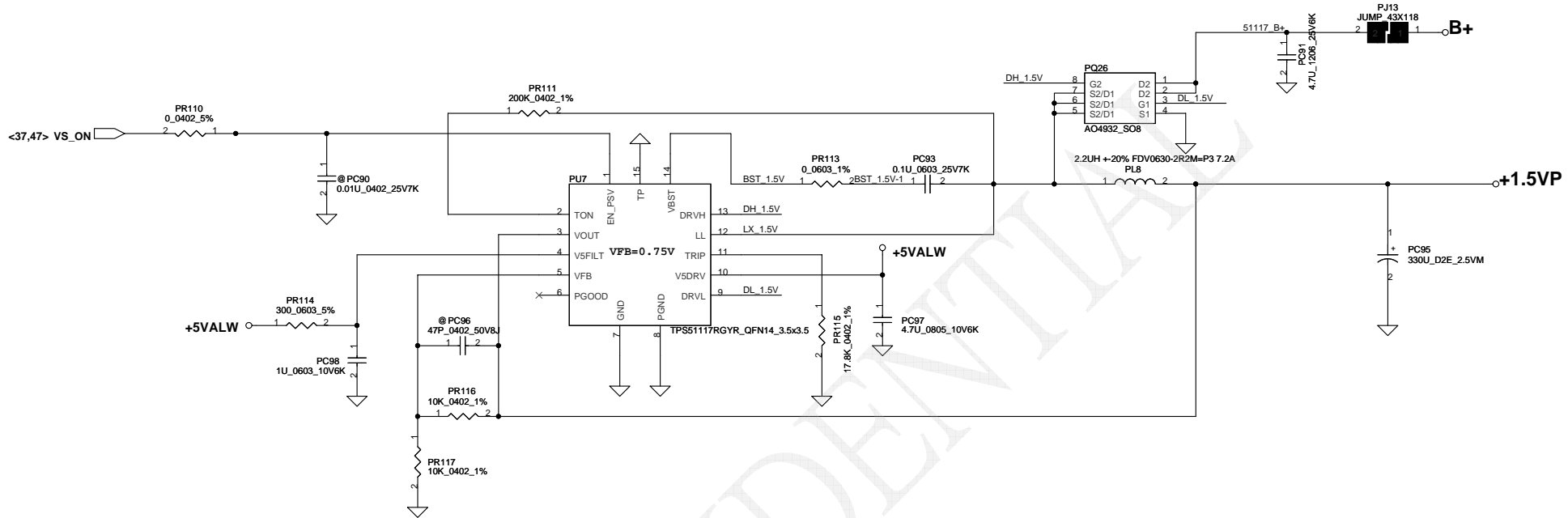
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS 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.
SCHEMATIC_A4491

Document Number: 401597
 Date: Thursday, October 30, 2008
 Sheet: 46 of 52

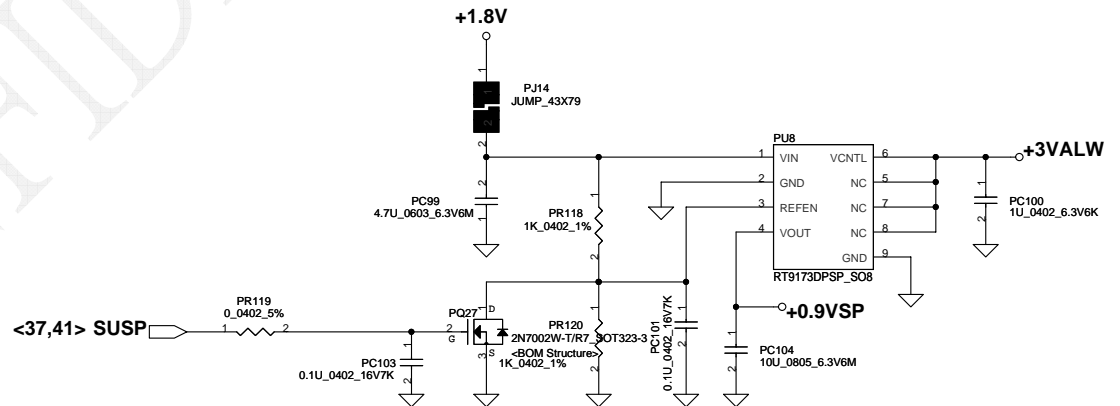


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	SCHEMATIC,A4491
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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	Rev	C		
	401597				
Date:	Thursday, October 30, 2008	Sheet	47	of	52

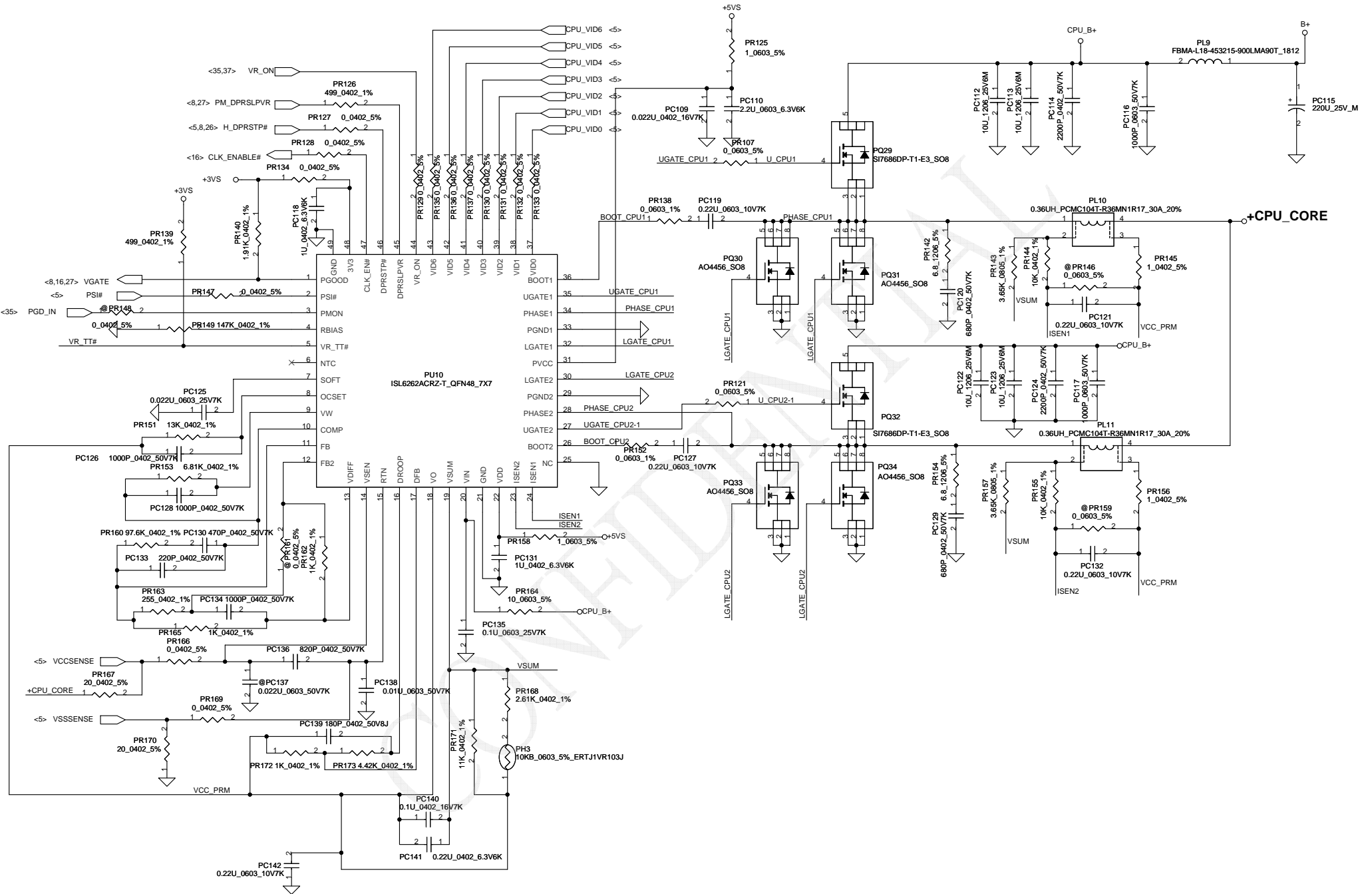


VFB=0.75V
 $V_o = VFB * (1 + PR87 / PR88) = 0.75 * (1 + 4.02K / 10K) = 1.05V$
 $Ton = 200K$
 $Fsw = 400KHz$

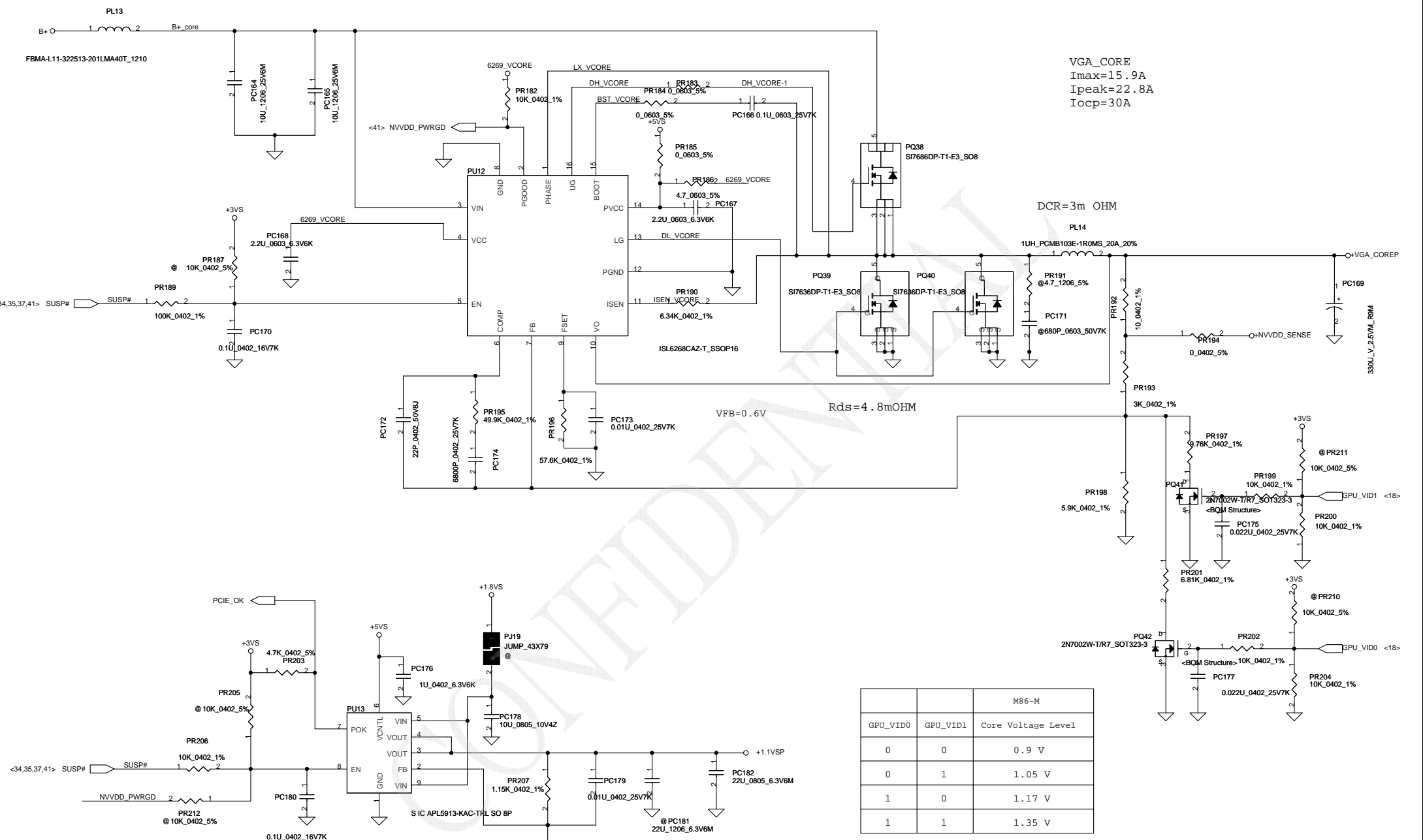
Cout ESR=15m ohm
 $I_{peak} = 14.02A, I_{max} = 9.81A$
 $\Delta I = ((19 - 1.05) * (1.05 / 19)) / (L * Fsw) = 2.4872A$
 $\Rightarrow 1/2 \Delta I = 1.243A$
 $V_{trip} = R_{trip} * I_{0uA} = 17.8K * 10uA = 0.178V$
 $I_{ocpmin} = V_{trip} / R_{dsonmax} * 1.2 + 1.243A = 0.178 / (0.0115 * 1.2) + 1.243 = 12.898A + 1.243A = 14.141A$
 $I_{ocpmax} = (0.178 / (0.009 * 1.1)) + 1.243A = 17.98A + 1.243A = 19.22A$
 $I_{ocp} = 14.141A - 19.22A$



Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	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
				401597
				Rev C
Date: Thursday, October 30, 2008				Sheet 48 of 52



Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date			2008/09/20
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
				401597	C
Date:				Thursday, October 30, 2008	Sheet 49 of 52



VGA_CORE
 I_{max}=15.9A
 I_{peak}=22.8A
 I_{ocp}=30A

		M86-M
GPU_VID0	GPU_VID1	Core Voltage Level
0	0	0.9 V
0	1	1.05 V
1	0	1.17 V
1	1	1.35 V

Security Classification		Compal Secret Data		Title	
Issued Date	2007/12/18	Deciphered Date	2008/12/18	SCHEMATIC,A4491	
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	Rev
				Document Number	C
				401597	
				Date	Friday, October 31, 2008
				Sheet	50 of 52

Version change list (P.I.R. List)

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1	cpu load line fail	Measure cpu load line can't fit spec	0.2	49	change the resistance value of pr173.from 4.42k to 3.83k	2008/08/08	DVT
2	Change resistance size	EMI request	0.2	49	Change pc116 and pc117 size from 0402 to 0603	2008/08/08	DVT
3	Change p-mos part number	Vender change EOL	0.2	46	PQ12 part number from 4835bdy to 483500y	2008/08/08	DVT
4	Change device size	device too large can't fit layout space	0.2	44-50	PQ4,PQ14,PQ16,PQ18,PQ19,PQ20,PQ27,PQ36,PQ37,PQ41,PQ42 change to sot323-3	2008/08/12	DVT
5	Change resistance value	1.05V tranient fail	0.2	47	PR94 from 60.4k to 59k	2008/08/12	DVT
6	change resistance	for hdmi	0.2	45	pr41 change from 61.3k to 63.4k	2008/08/14	DVT

CONFIDENTIAL

7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	SCHMATIC,A4491
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.				Document Number	401597
				Date:	Thursday, October 30, 2008
				Sheet	51 of 52

A --> B Change List

7/16
 Page 41 Update U61,U62,U63,U65 Change SI4800BDY
 Page 41 Change 910K

Page 41 Update R1405,R1403,R1404 with BOM Structure @
 7/23

Page 23 Change C1918,C1919,C120 10P
 Page 23 DEL C1915, C1916,C1917 with BOM Structure PM@
 Page 6, Add C416,C425,C426,C427,C428,C429,C430,C431 10U_0805
 Page 12,Change C1501 22U to 220U
 7/30

Page 36 Add C2071,C2072,C2073,C2074,C2075,C2076,
 C2077,C2078,C2079,C2081,C2082,C2083
 ,C2084,C2085,C2086,C2087,C2088,C2089,
 C2090,C2091,C2092,C2093,C2094,C2095,
 C2096,C2097,C2098

7/30
 Page 28 DEL R1395,R1397
 Page 28 Change R1394,R1396 with BOM Structure

8/7
 Page 38 DEL L48
 Page 38 Update R1534 with BOM Structure
 Page 39 Add D63,D64,D65
 Page 39 Update JHP1 PIN6 AND PIN10 to GND
 Page 39 Update JLINE1 PIN6 to GND
 Page 39 Update JM1C1 PIN6 to GND

8/13
 Page 31 DEL U50
 Page 33 Change JP15 PIN5 (USB20_P5) to PIN6
 Page 33 Change JP15 PIN6 (USB20_N5) to PIN5

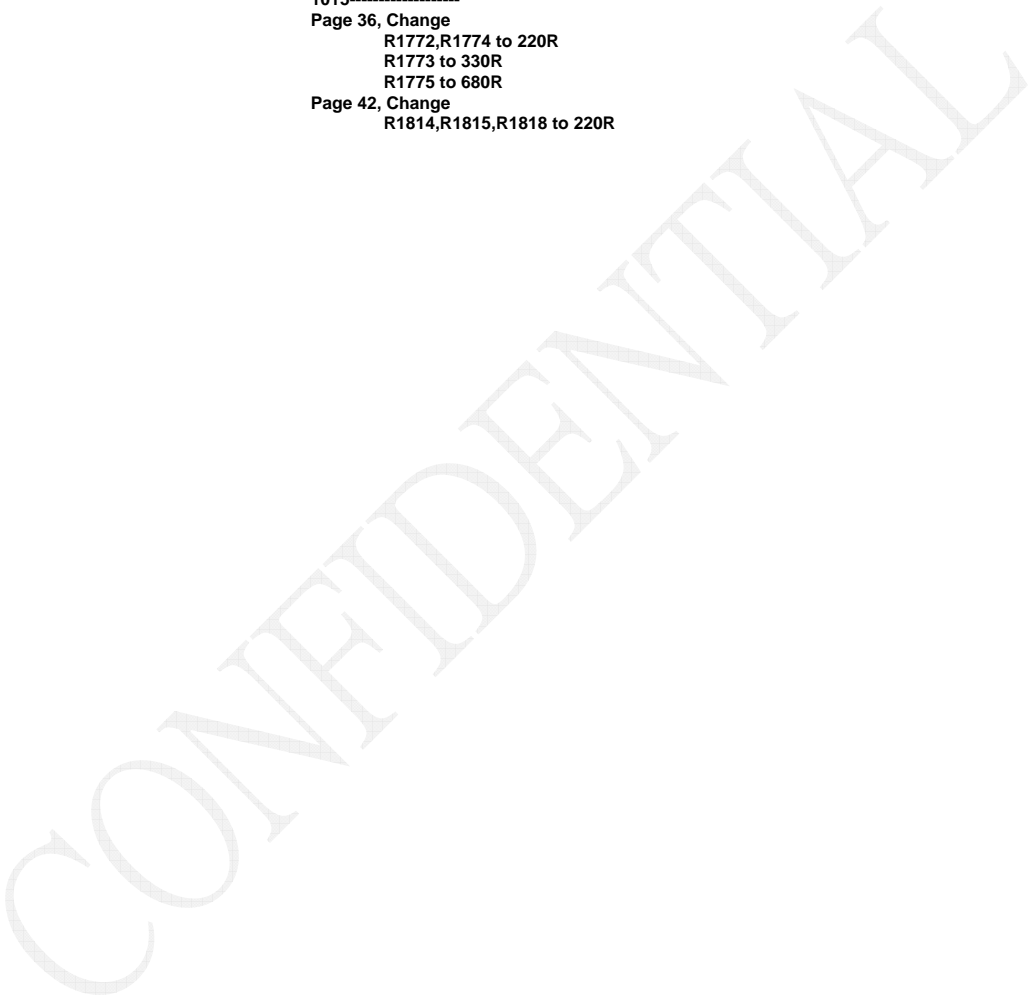
8/14
 Page 37 Add R1776
 Page 37 DEL R1778
 Page 40 DEL H16
 Page 40 Add H34

B--> C Change List

0920-----
 Page 6, Change R1678,R1679,R1682,R1683,R1684,R1687,R1689,R1691 to SD034499A80

1009-----
 Page 37,Add
 R1838,R1837 to 10K
 R1836 to 510k
 Q124,Q138 to 2N7002
 D47 to 1SS355

1015-----
 Page 36, Change
 R1772,R1774 to 220R
 R1773 to 330R
 R1775 to 680R
 Page 42, Change
 R1814,R1815,R1818 to 220R



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title	SCHEMATIC,A4491
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Date:	Thursday, October 30, 2008	Sheet	52	of	52

Document Number: 401597
 Rev: C