

Compal Confidential

KALG1 M/B Schematics Document

Intel Penryn Processor with Cantiga + DDRIII + ICH9M

2009-03-02

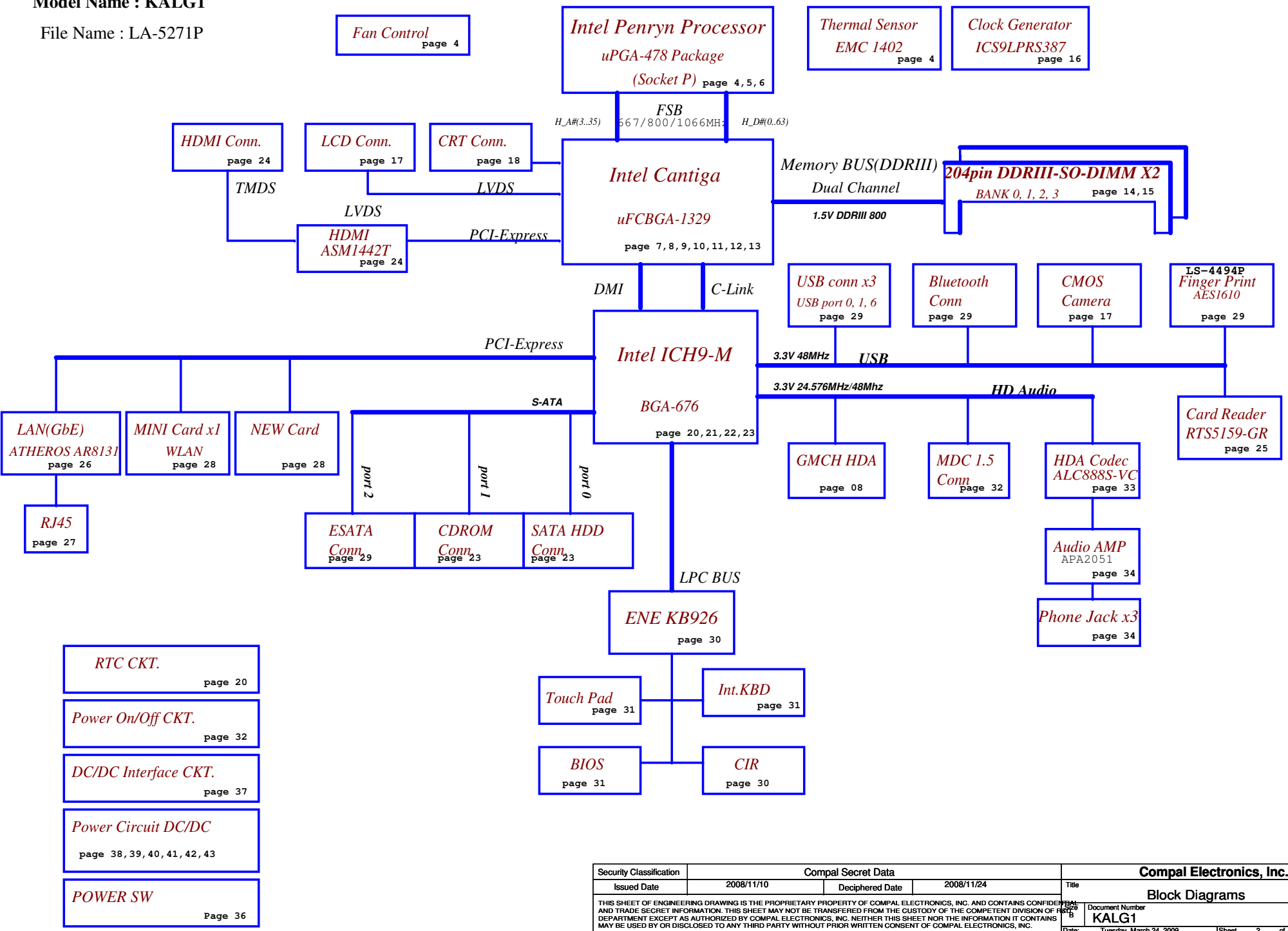
REV 02

Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title	Cover Page
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FIELD 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
				KALG1	0.1
				Date: Tuesday, March 24, 2009	Sheet 1 of 45

Compal Confidential

Model Name : KALG1

File Name : LA-5271P



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	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 PRODUCT 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	Rev
				KALG1	0.1
				Date: Tuesday, March 24, 2009	Sheet 2 of 45

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
+0.75VS	0.75VS power rail for DDR3 terminator	ON	OFF	OFF
+1.05VS	1.05V 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 NB(LVDS)	ON	ON	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V_LAN	3.3V power rail for LAN	ON	ON	ON
+3V	3.3V power rail for SB	ON	ON	OFF
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5V	5V power rail for SB	ON	ON	OFF
+5VS	5V switched power rail	ON	OFF	OFF
+VSB	VSB always on power rail	ON	ON	ON*
+RTCVCC	RTC power	ON	ON	ON

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	Device	Address
Smart Battery	0001 011X b	EMC1402	1001 100X b

EC SM Bus2 address

ICH9M SM Bus address

Device	Address
Clock Generator (ICS9LPRS367, SLG8SP556V)	1101 001Xb
DDR3 DIMMA	1001 000Xb
DDR3 DIMMB	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				
2				
3				
4				
5				
6				
7				

BOARD ID Table

Board ID	PCB Revision
0	PCB 08Y LA-5271P REV0 M/B
1	
2	
3	
4	
5	
6	
7	

BTO Option Table

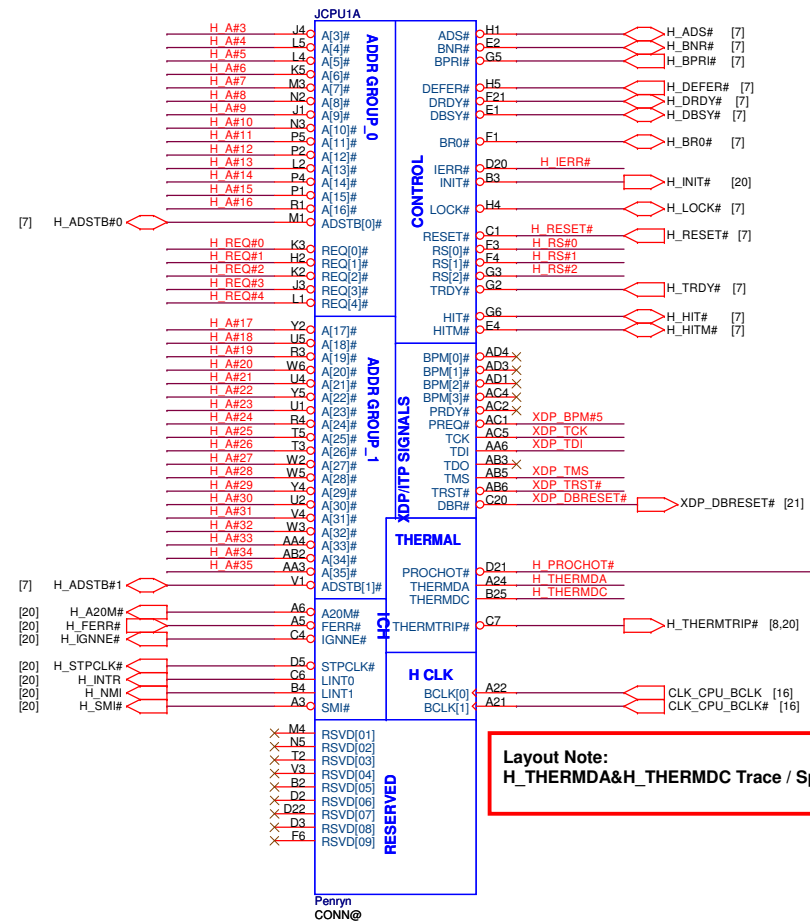
BTO Item	BOM Structure
GL40	GL40@
GM45	GM45@

BOM Configuration Table

Project	BOM Configuration
KALG1-GM45	GM45@/KALG1@/KAL90_G0_90+@
KALG1-GL40	GL40@/KALG1@/KAL90_G0_90+@

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	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 PRODUCT DEVELOPMENT DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Notes List
Date: Tuesday, March 24, 2009			Document Number	Rev
			KALG1	0.1
			Sheet 3 of 45	

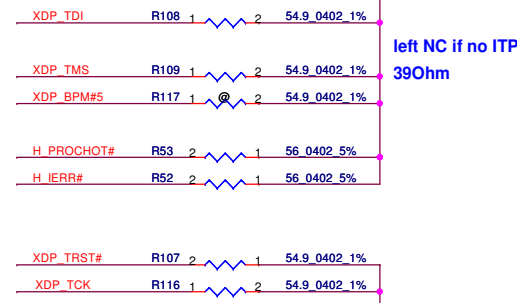
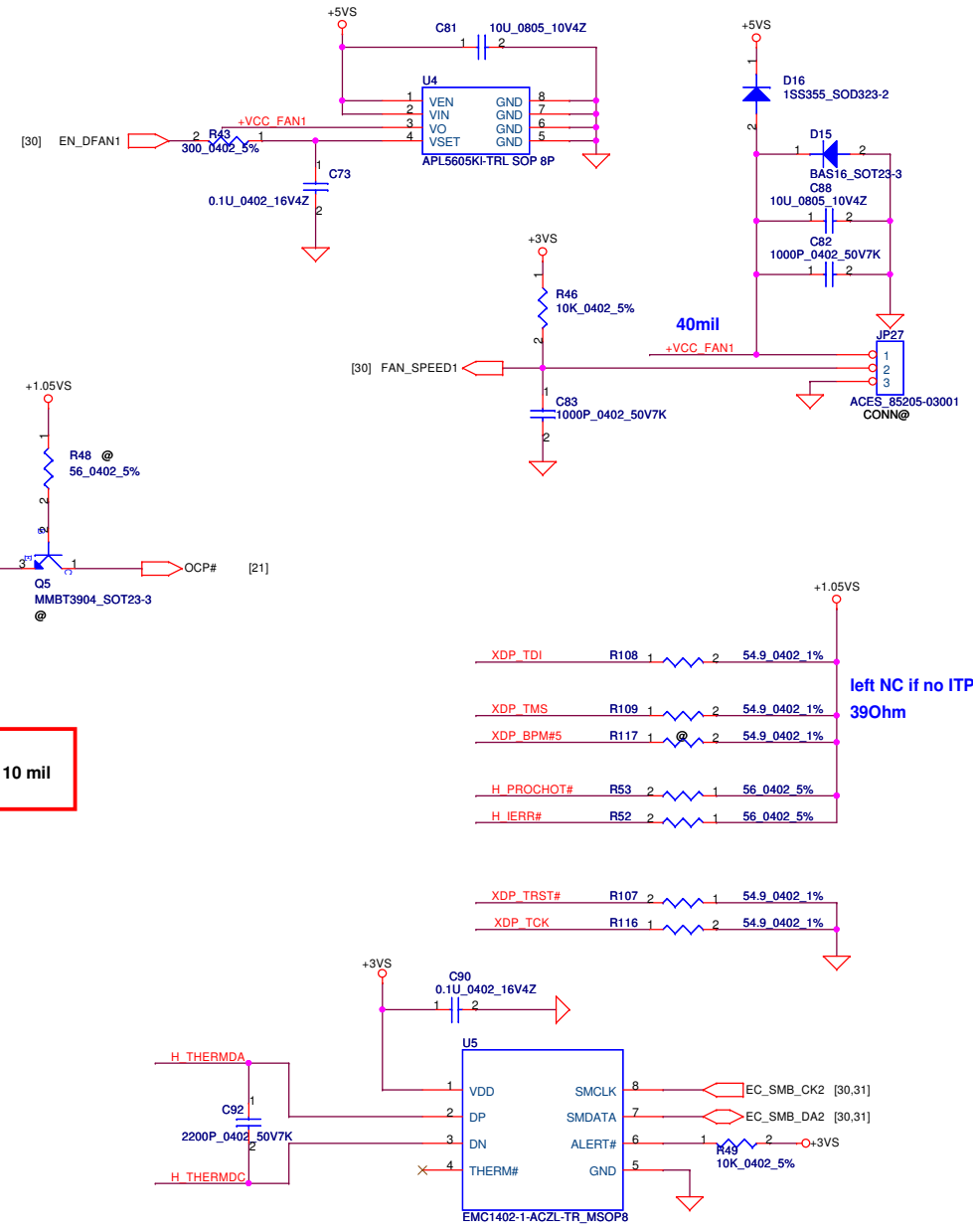
- [7] H_A#[3..35]
- [7] H_REQ#[0..4]
- [7] H_RS#[0..2]



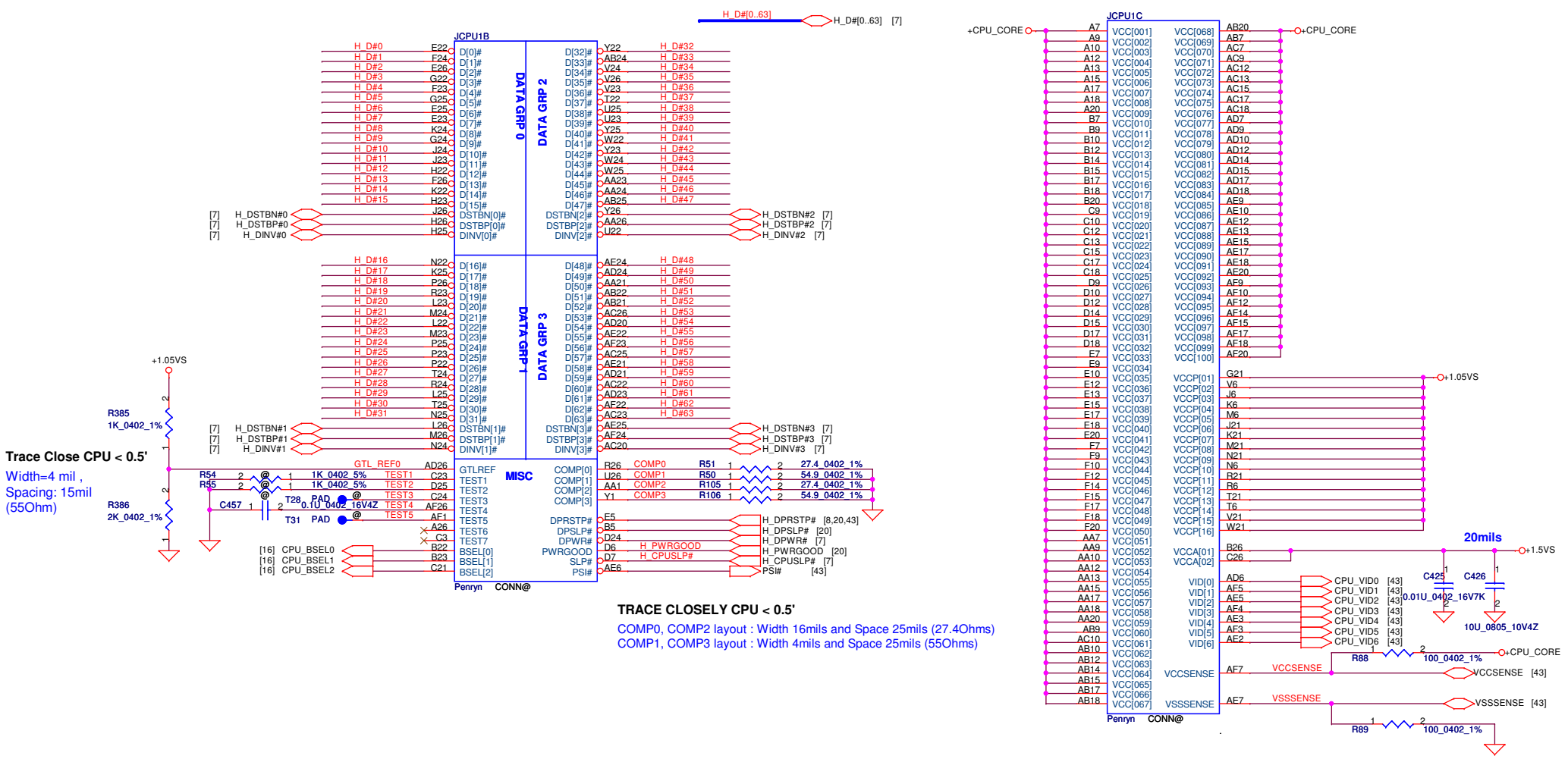
Layout Note:
H_THERMDA&H_THERMDC Trace / Space = 10 / 10 mil

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

FAN1 Conn



Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title	
				Penryn (1/3) & FAN Conn	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size	B	Document Number	KALG1		Rev
Date:	Tuesday, March 24, 2009	Sheet	4	of	45



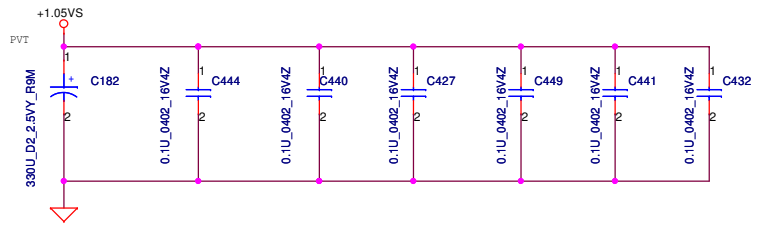
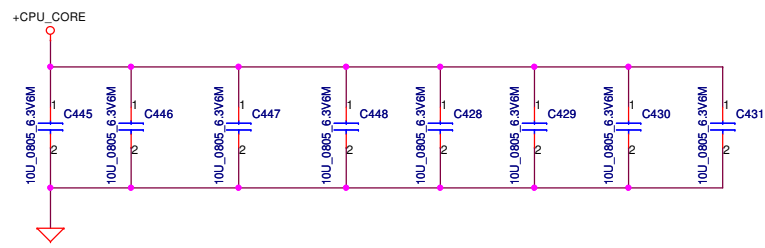
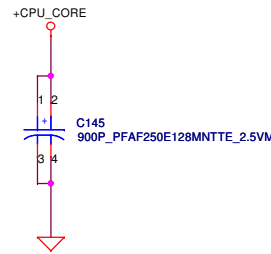
Trace Close CPU < 0.5'
 Width=4 mil,
 Spacing: 15mil
 (55Ohm)

TRACE CLOSELY CPU < 0.5'
 COMP0, COMP2 layout : Width 16mils and Space 25mils (27.4Ohms)
 COMP1, COMP3 layout : Width 4mils and Space 25mils (55Ohms)

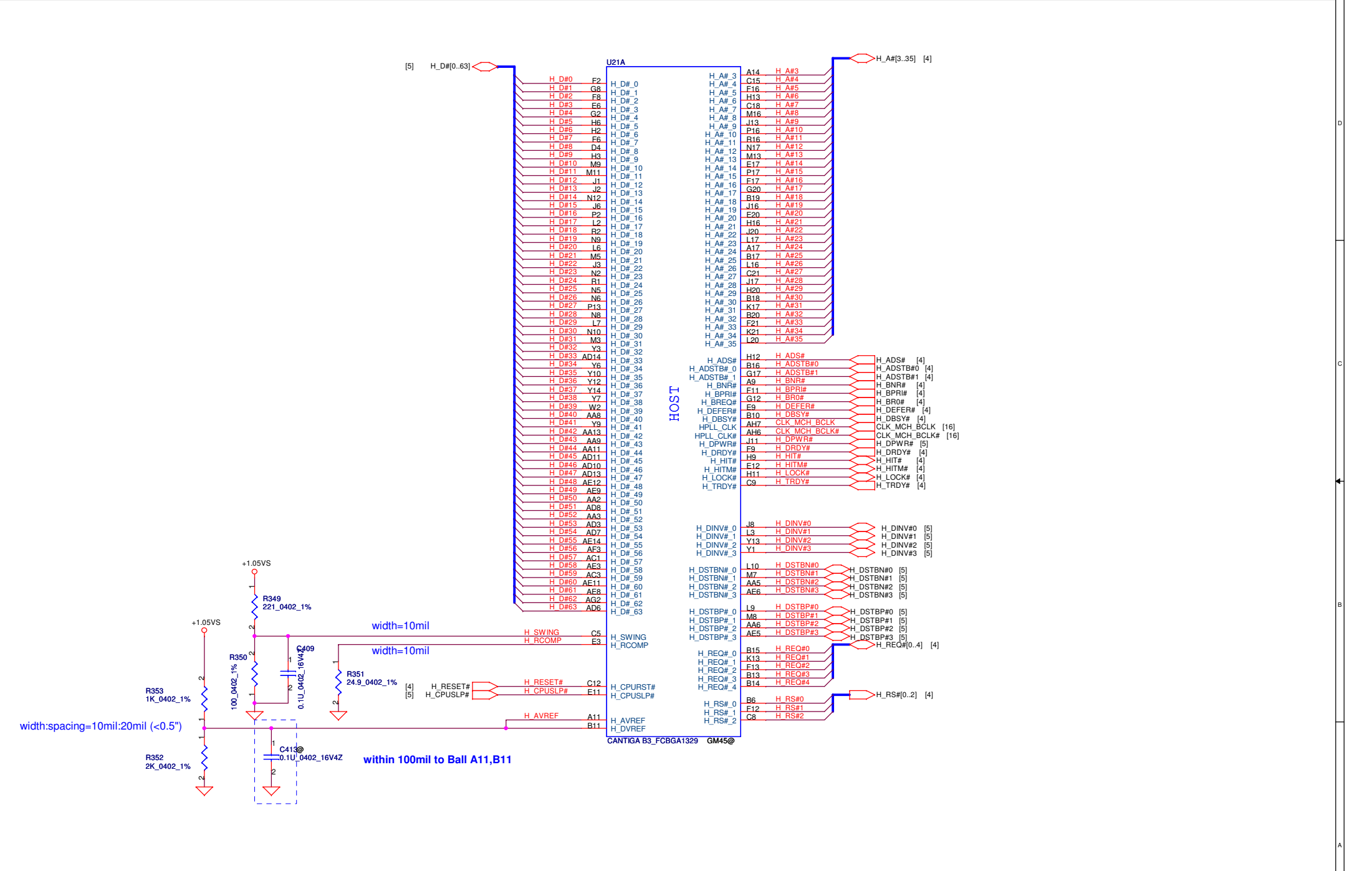
Security Classification		Compal Secret Data		Title	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Penryn (2/3)	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM 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	Date		Sheet	Rev
	KALG1	Tuesday, March 24, 2009		5	0.1

JCPUID		
A4	VSSJ001	VSSJ082
A8	VSSJ002	VSSJ083
A11	VSSJ003	VSSJ084
A14	VSSJ004	VSSJ085
A16	VSSJ005	VSSJ086
A19	VSSJ006	VSSJ087
A23	VSSJ007	VSSJ088
AF2	VSSJ008	VSSJ089
B6	VSSJ009	VSSJ090
B8	VSSJ010	VSSJ091
B11	VSSJ011	VSSJ092
B13	VSSJ012	VSSJ093
B16	VSSJ013	VSSJ094
B19	VSSJ014	VSSJ095
B21	VSSJ015	VSSJ096
B24	VSSJ016	VSSJ097
C5	VSSJ017	VSSJ098
C8	VSSJ018	VSSJ099
C11	VSSJ019	VSSJ100
C14	VSSJ020	VSSJ101
C16	VSSJ021	VSSJ102
C19	VSSJ022	VSSJ103
C2	VSSJ023	VSSJ104
C22	VSSJ024	VSSJ105
C25	VSSJ025	VSSJ106
D1	VSSJ026	VSSJ107
D4	VSSJ027	VSSJ108
D8	VSSJ028	VSSJ109
D11	VSSJ029	VSSJ110
D13	VSSJ030	VSSJ111
D16	VSSJ031	VSSJ112
D19	VSSJ032	VSSJ113
D23	VSSJ033	VSSJ114
D26	VSSJ034	VSSJ115
E3	VSSJ035	VSSJ116
E6	VSSJ036	VSSJ117
E8	VSSJ037	VSSJ118
E11	VSSJ038	VSSJ119
E14	VSSJ039	VSSJ120
E16	VSSJ040	VSSJ121
E19	VSSJ041	VSSJ122
E21	VSSJ042	VSSJ123
E24	VSSJ043	VSSJ124
F5	VSSJ044	VSSJ125
F8	VSSJ045	VSSJ126
F11	VSSJ046	VSSJ127
F13	VSSJ047	VSSJ128
F16	VSSJ048	VSSJ129
F19	VSSJ049	VSSJ130
F2	VSSJ050	VSSJ131
F22	VSSJ051	VSSJ132
F25	VSSJ052	VSSJ133
G4	VSSJ053	VSSJ134
G1	VSSJ054	VSSJ135
G23	VSSJ055	VSSJ136
G26	VSSJ056	VSSJ137
H3	VSSJ057	VSSJ138
H6	VSSJ058	VSSJ139
H21	VSSJ059	VSSJ140
H24	VSSJ060	VSSJ141
J2	VSSJ061	VSSJ142
J5	VSSJ062	VSSJ143
J22	VSSJ063	VSSJ144
J25	VSSJ064	VSSJ145
K1	VSSJ065	VSSJ146
K4	VSSJ066	VSSJ147
K23	VSSJ067	VSSJ148
K26	VSSJ068	VSSJ149
L3	VSSJ069	VSSJ150
L6	VSSJ070	VSSJ151
L21	VSSJ071	VSSJ152
L24	VSSJ072	VSSJ153
M2	VSSJ073	VSSJ154
M5	VSSJ074	VSSJ155
M22	VSSJ075	VSSJ156
M25	VSSJ076	VSSJ157
N1	VSSJ077	VSSJ158
N4	VSSJ078	VSSJ159
N23	VSSJ079	VSSJ160
N26	VSSJ080	VSSJ161
P3	VSSJ081	VSSJ162
		VSSJ163

Penryn CONN@

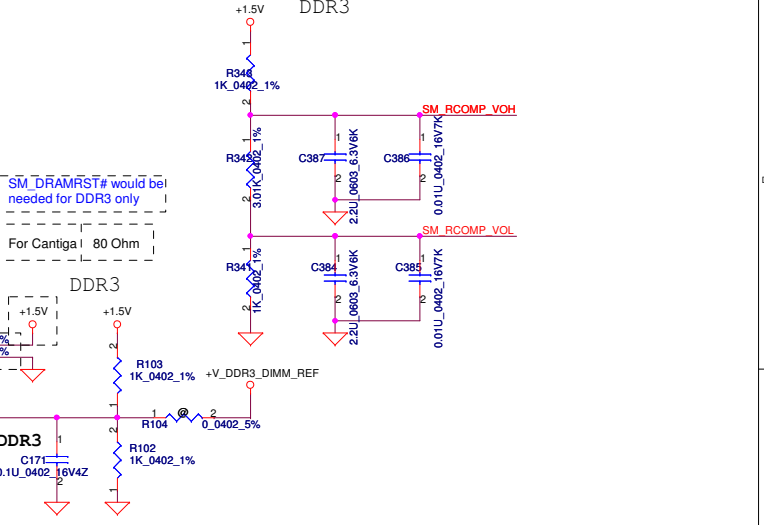
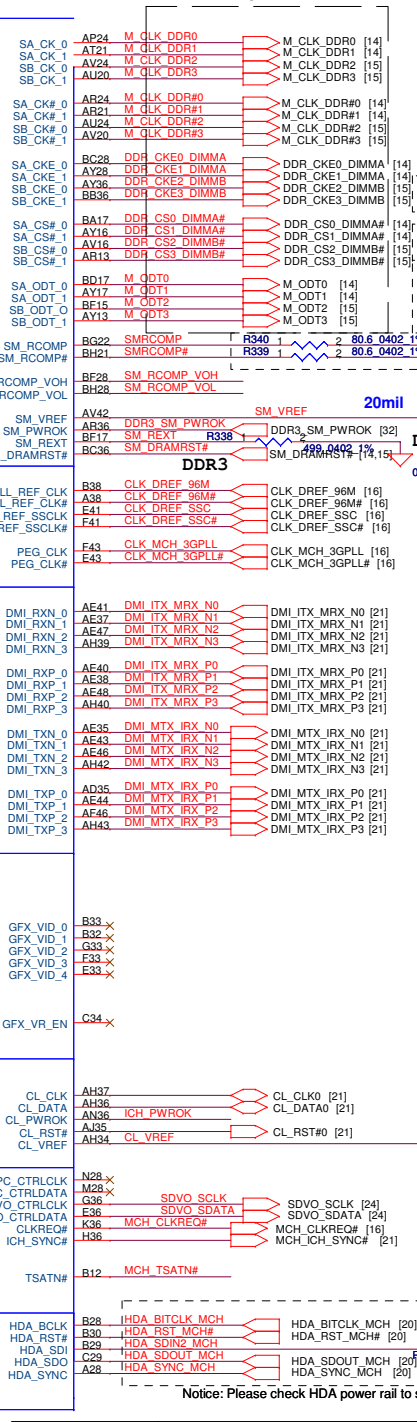
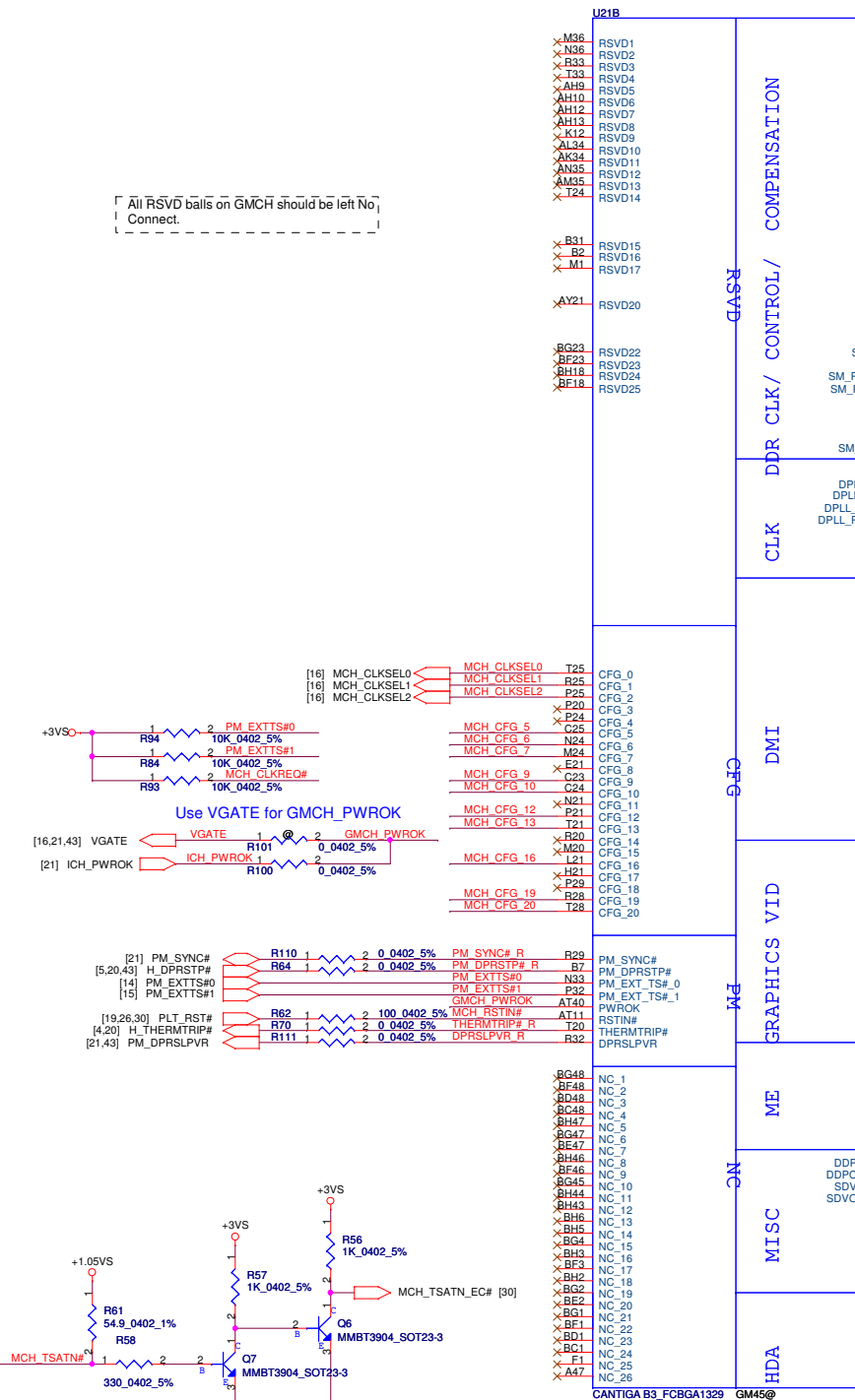


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Penryn (3/3)	
Size B	Document Number	Date		Rev	
	KALG1	Tuesday, March 24, 2009		0.1	
			Sheet	6	of 45



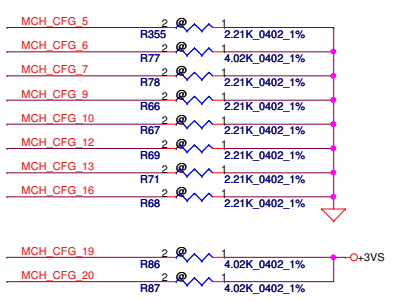
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Cantiga GMCH(1/7)-GTL	
Size	Document Number			Rev	0.1
B	KALG1			Date:	Tuesday, March 24, 2009
				Sheet	7 of 45

All RSVD balls on GMCH should be left No Connect.



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 1 = DMI Lane Reversal Enable * (Default)
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 1 = Digital DisplayPort Device Present * (Default)



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

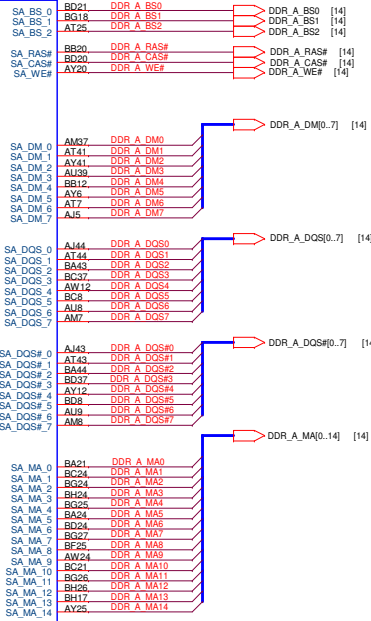
Security Classification	Compal Secret Data	Title	
Issued Date	2008/11/10	Deciphered Date	2008/11/24
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.			
Document Number		KALG1	
Date		Tuesday, March 24, 2009	
Page		8 of 45	

[14] DDR_A_D[0..63]

DDR A	Part	SA
DDR A D0	AI38	SA DO,0
DDR A D1	AJ41	SA DO,1
DDR A D2	AJ40	SA BS,1
DDR A D3	AM68	SA DO,2
DDR A D4	AJ36	SA DO,3
DDR A D5	AJ46	SA DO,4
DDR A D6	AM44	SA DO,5
DDR A D7	AM42	SA DO,6
DDR A D8	AN53	SA DO,7
DDR A D9	AN44	SA DO,8
DDR A D10	AI40	SA DO,9
DDR A D11	AT38	SA DO,10
DDR A D12	AN41	SA DO,11
DDR A D13	AN39	SA DO,12
DDR A D14	AI44	SA DO,13
DDR A D15	AI42	SA DO,14
DDR A D16	AV39	SA DM,1
DDR A D17	AY44	SA DM,2
DDR A D18	BA40	SA DM,3
DDR A D19	BD43	SA DM,4
DDR A D20	AV41	SA DM,5
DDR A D21	AY43	SA DM,6
DDR A D22	BB41	SA DM,7
DDR A D23	BC40	SA DO,22
DDR A D24	AV37	SA DO,23
DDR A D25	BC38	SA DO,24
DDR A D26	AV37	SA DO,25
DDR A D27	AT36	SA DO,26
DDR A D28	AV38	SA DO,27
DDR A D29	BC38	SA DO,28
DDR A D30	AV36	SA DO,29
DDR A D31	AV38	SA DO,30
DDR A D32	BD13	SA DO,31
DDR A D33	AI11	SA DO,32
DDR A D34	BC11	SA DO,33
DDR A D35	BA12	SA DO,34
DDR A D36	AI13	SA DO,35
DDR A D37	AI13	SA DO,36
DDR A D38	BD12	SA DO,37
DDR A D39	BC12	SA DO,38
DDR A D40	BB9	SA DO,39
DDR A D41	BA9	SA DO,40
DDR A D42	AI10	SA DO,41
DDR A D43	AV9	SA DO,42
DDR A D44	BA11	SA DO,43
DDR A D45	BD9	SA DO,44
DDR A D46	AV9	SA DO,45
DDR A D47	BA6	SA DO,46
DDR A D48	AV5	SA DO,47
DDR A D49	AV5	SA DO,48
DDR A D50	AT9	SA DO,49
DDR A D51	AN8	SA DO,50
DDR A D52	AUS	SA DO,51
DDR A D53	AUS	SA DO,52
DDR A D54	AT5	SA DO,53
DDR A D55	AN10	SA DO,54
DDR A D56	AM11	SA DO,55
DDR A D57	AMS	SA DO,56
DDR A D58	AJ9	SA DO,57
DDR A D59	AJ8	SA DO,58
DDR A D60	AN12	SA DO,59
DDR A D61	AM13	SA DO,60
DDR A D62	AI11	SA DO,61
DDR A D63	AI12	SA DO,62
DDR A D64	AI12	SA DO,63

CANTIGA B3_FCBGA1329 GM45@

DDR SYSTEM MEMORY A

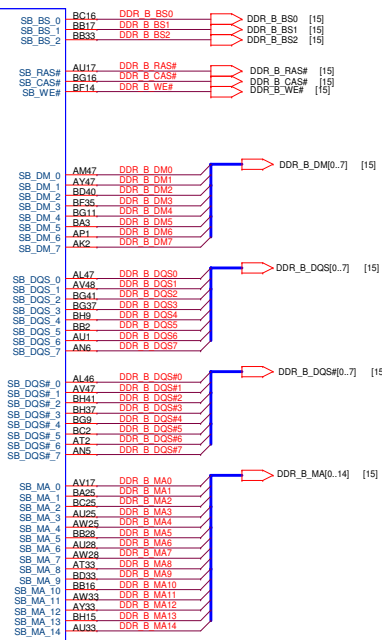


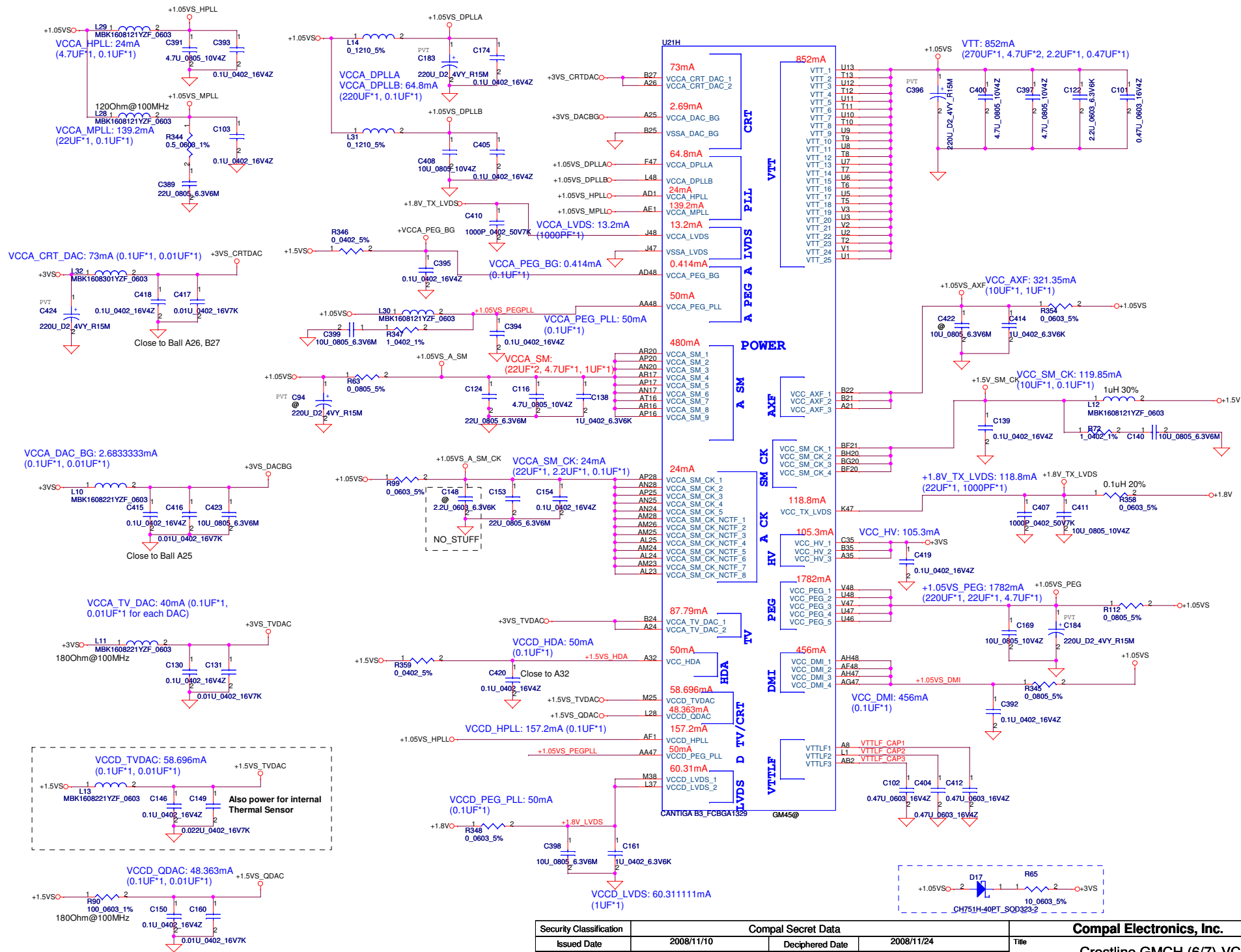
[15] DDR_B_D[0..63]

DDR B	Part	SB
DDR B D0	AK47	SB DO,0
DDR B D1	AH46	SB DO,1
DDR B D2	AP47	SB DO,2
DDR B D3	AI46	SB DO,3
DDR B D4	AI46	SB DO,4
DDR B D5	AI48	SB DO,5
DDR B D6	AM48	SB DO,6
DDR B D7	AP48	SB DO,7
DDR B D8	AI47	SB DO,8
DDR B D9	AI46	SB DO,9
DDR B D10	BA48	SB DO,10
DDR B D11	AY48	SB DO,11
DDR B D12	AT47	SB DO,12
DDR B D13	AA47	SB DO,13
DDR B D14	BA47	SB DO,14
DDR B D15	BC47	SB DO,15
DDR B D16	BC46	SB DO,16
DDR B D17	BC44	SB DO,17
DDR B D18	BC43	SB DO,18
DDR B D19	BE43	SB DO,19
DDR B D20	BE45	SB DO,20
DDR B D21	BC41	SB DO,21
DDR B D22	BE40	SB DO,22
DDR B D23	BE41	SB DO,23
DDR B D24	BC38	SB DO,24
DDR B D25	BF38	SB DO,25
DDR B D26	BC35	SB DO,26
DDR B D27	BC35	SB DO,27
DDR B D28	BH40	SB DO,28
DDR B D29	BC39	SB DO,29
DDR B D30	BQ34	SB DO,30
DDR B D31	BH34	SB DO,31
DDR B D32	BH44	SB DO,32
DDR B D33	BQ12	SB DO,33
DDR B D34	BH11	SB DO,34
DDR B D35	BQ8	SB DO,35
DDR B D36	BH12	SB DO,36
DDR B D37	BE11	SB DO,37
DDR B D38	BF8	SB DO,38
DDR B D39	BG7	SB DO,39
DDR B D40	BC5	SB DO,40
DDR B D41	CG6	SB DO,41
DDR B D42	AY3	SB DO,42
DDR B D43	AY1	SB DO,43
DDR B D44	BE5	SB DO,44
DDR B D45	BE5	SB DO,45
DDR B D46	BA1	SB DO,46
DDR B D47	BA3	SB DO,47
DDR B D48	AV2	SB DO,48
DDR B D49	AV3	SB DO,49
DDR B D50	AU3	SB DO,50
DDR B D51	AN2	SB DO,51
DDR B D52	AY2	SB DO,52
DDR B D53	AV1	SB DO,53
DDR B D54	AP3	SB DO,54
DDR B D55	AR1	SB DO,55
DDR B D56	AL1	SB DO,56
DDR B D57	AL2	SB DO,57
DDR B D58	AJ1	SB DO,58
DDR B D59	AH1	SB DO,59
DDR B D60	AM2	SB DO,60
DDR B D61	AM3	SB DO,61
DDR B D62	AH3	SB DO,62
DDR B D63	AJ3	SB DO,63

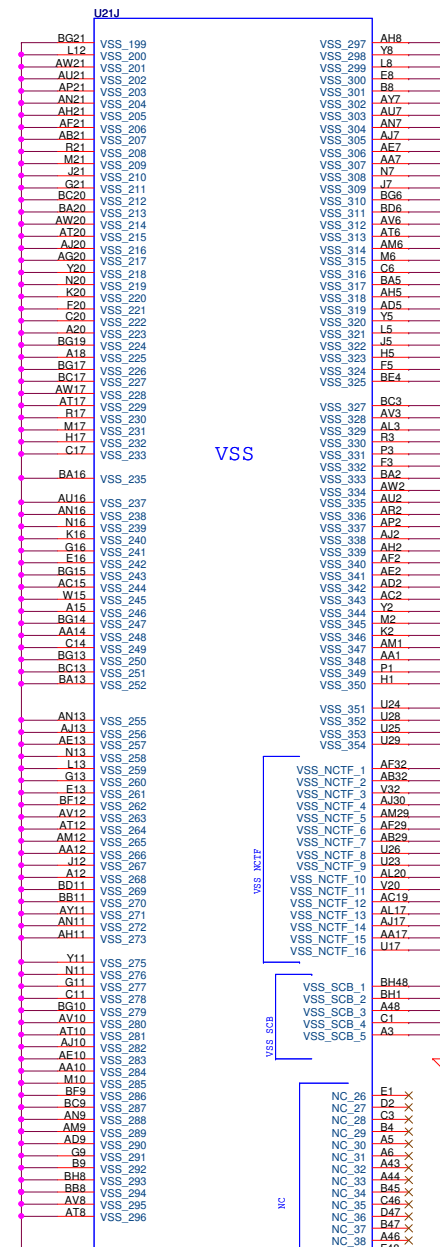
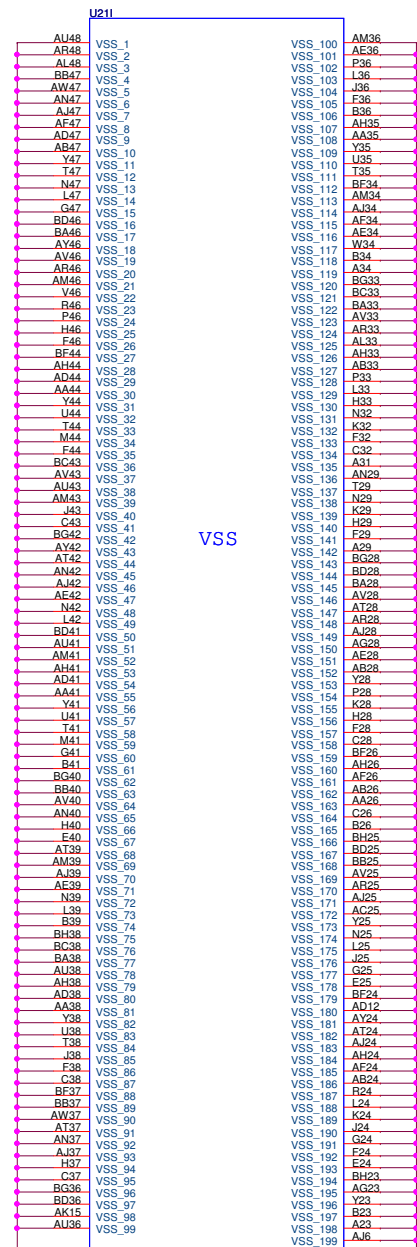
CANTIGA B3_FCBGA1329 GM45@

DDR SYSTEM MEMORY B

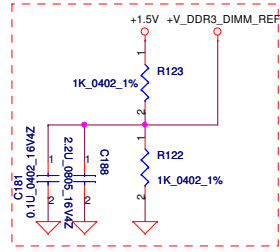
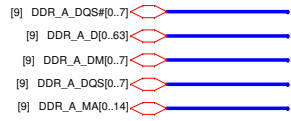




Security Classification		Compal Secret Data		Title	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Crestline GMCH (6/7)-VCC	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPANY OR ANY OTHER 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	KALG1	Revision	0.1	Date	Tuesday, March 24, 2009
				Sheet	12 of 45

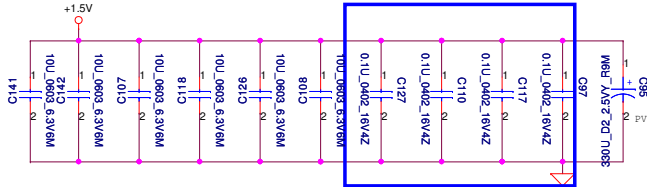


Security Classification	Compal Secret Data		Title	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT WITHOUT THE WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number KALG1
Date:	Tuesday, March 24, 2009	Sheet	13 of 45	Rev 0.1

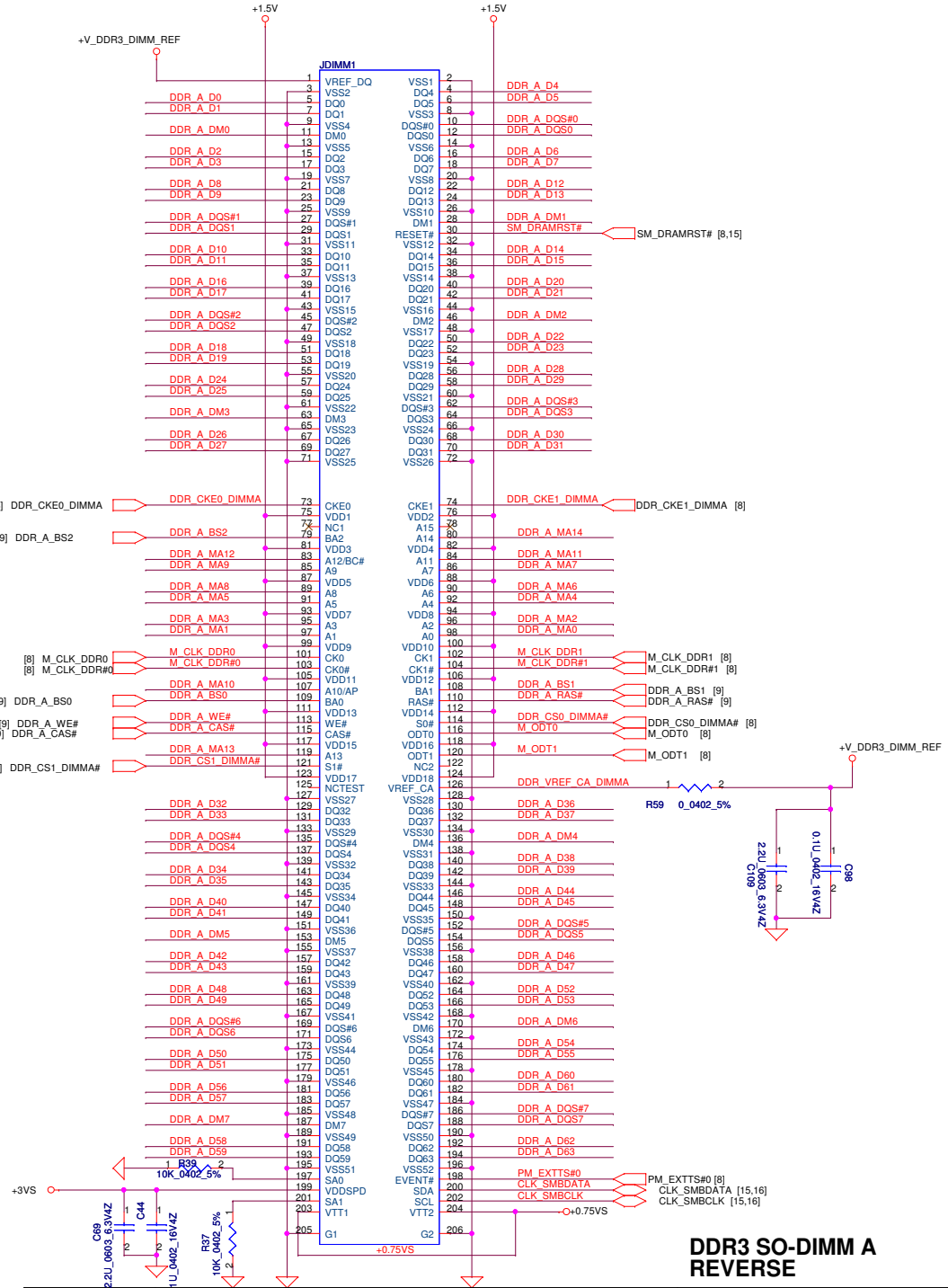
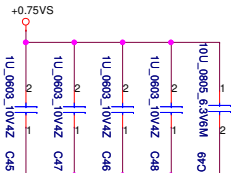


Layout Note:
Place near JP4

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



Layout Note:
Place near JP4.203 & JP4.204

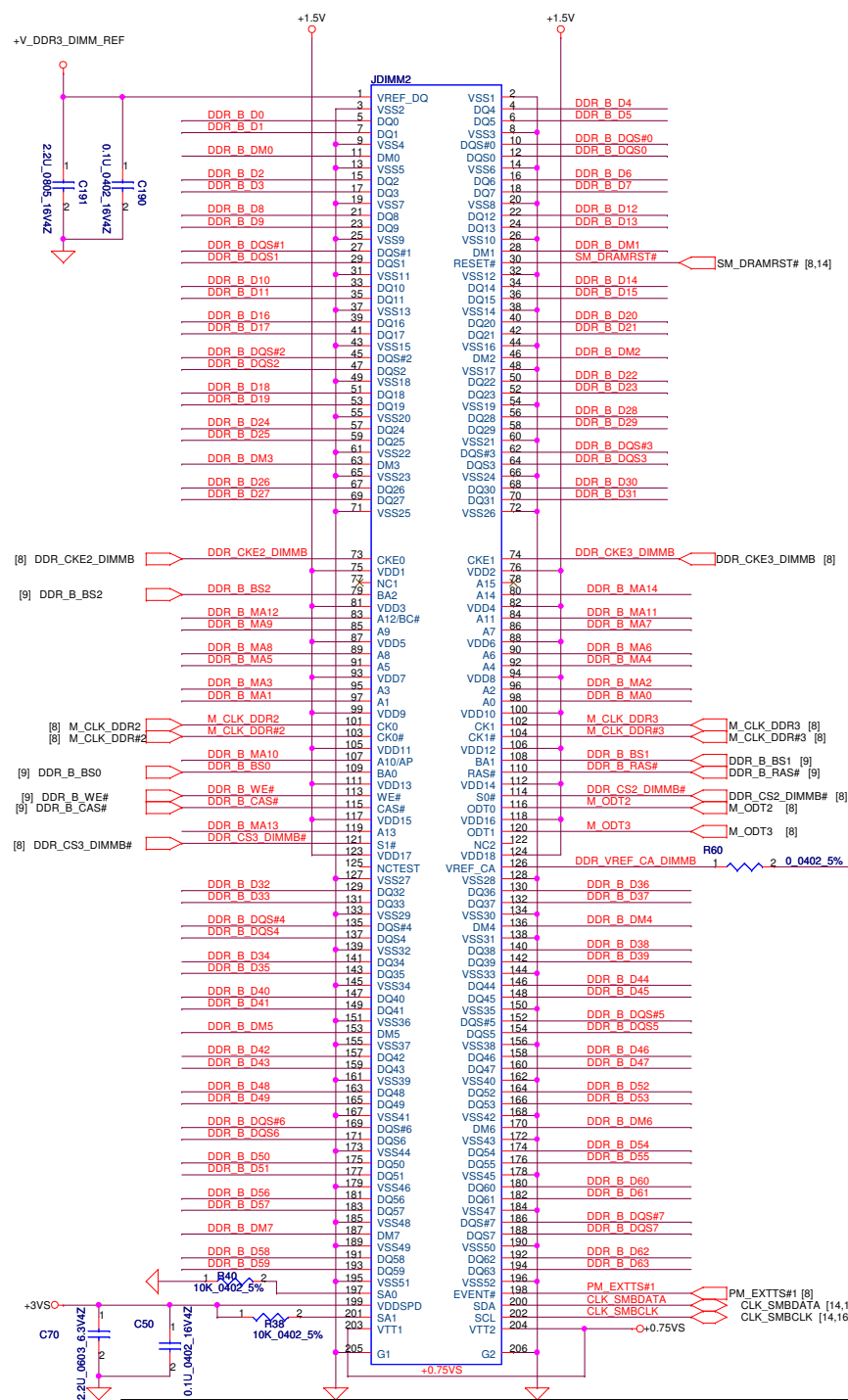
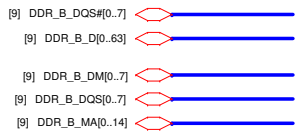


DDR3 SO-DIMM A REVERSE

Security Classification	Compal Secret Data	
Issued Date	2007/09/29	Deciphered Date
		2008/11/24

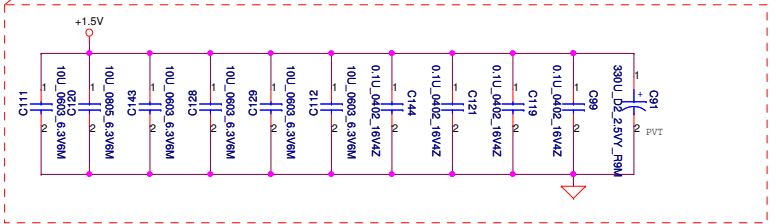
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY BE TRANSMITTED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. 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		
Compal Electronics, Inc.		
DDR3-SODIMM SLOT1		
File No.	Document Number	Rev
	KALGI	0.1
Date:	Tuesday, March 24, 2009	Sheet 14 of 45

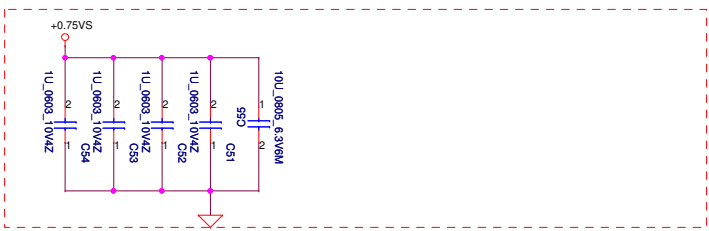


Layout Note:
Place near JP5

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



Layout Note:
Place near JP5.203 & JP5.204



DDR3 SO-DIMM B REVERSE

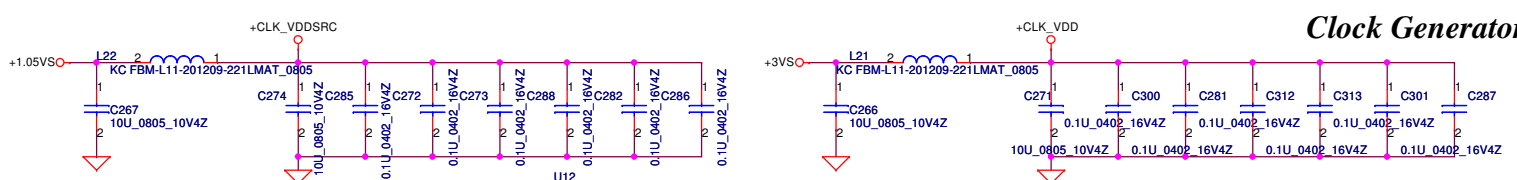
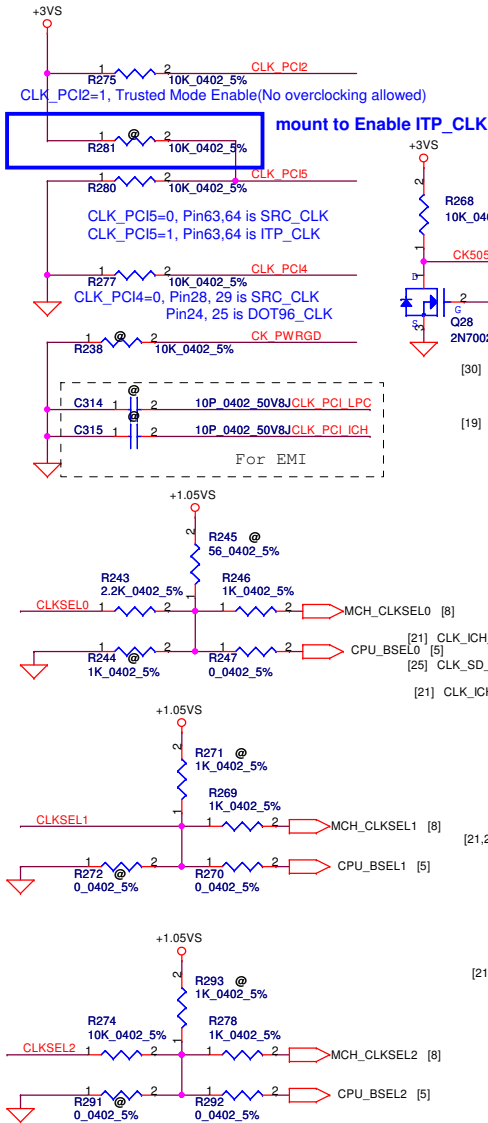
Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.	
Issued Date	2007/09/29	Deciphered Date	2008/11/24	DDR III-SODIMM SLOT2	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET IS NOT TO BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT 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	KALGI	Rev 0.1
Date:	Tuesday, March 24, 2009	Sheet	15	of 45	

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

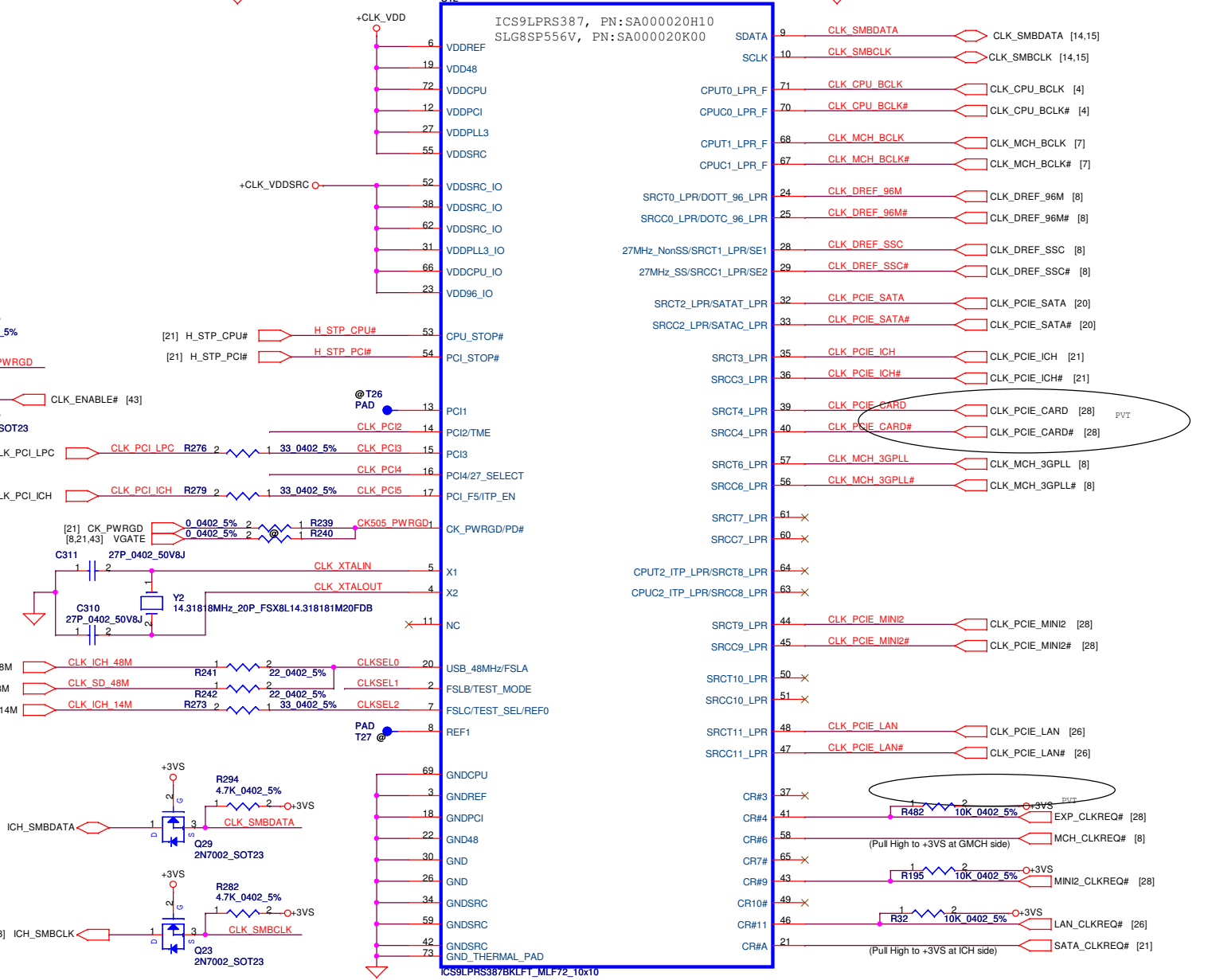
Table : ICS9LPRS387

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]

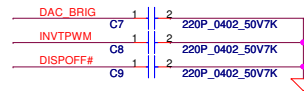
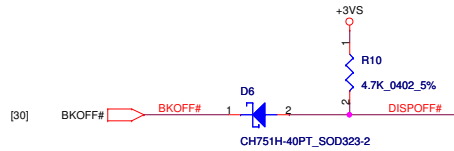
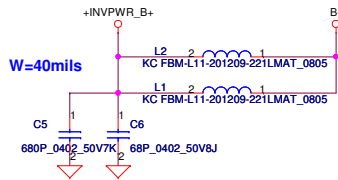
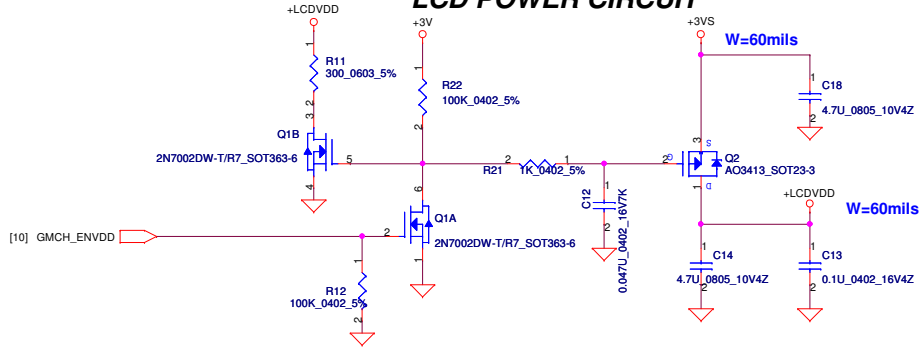


Clock Generator

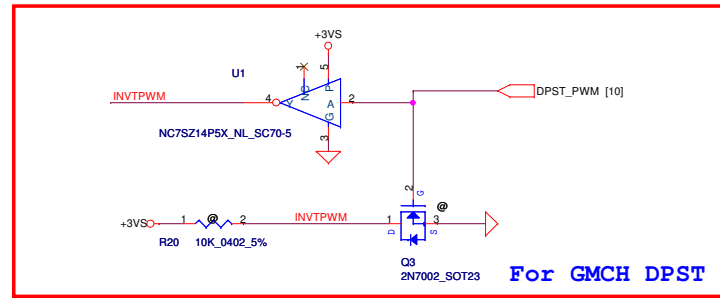
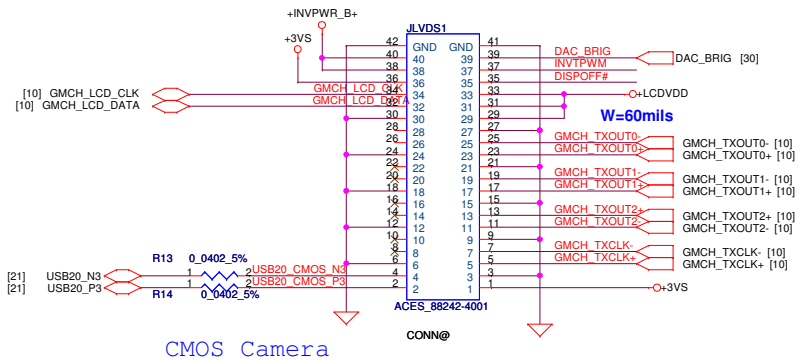


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Clock Generator (CK505)	
Size	Document Number	Date		Sheet	Rev
Custom	KALG1	Tuesday, March 24, 2009		16	0.1
				of	45

LCD POWER CIRCUIT

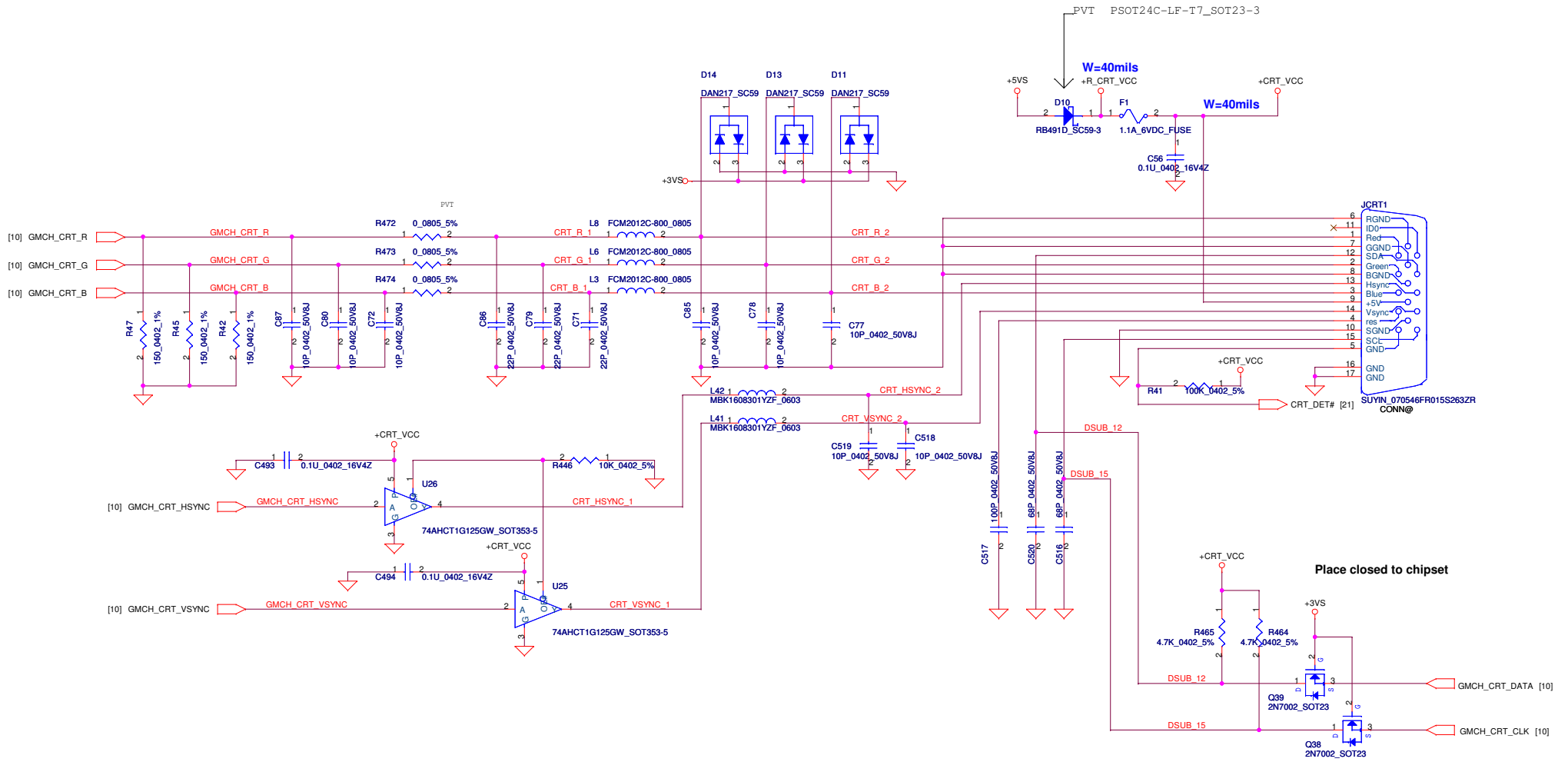


LCD/PANEL BD. Conn.

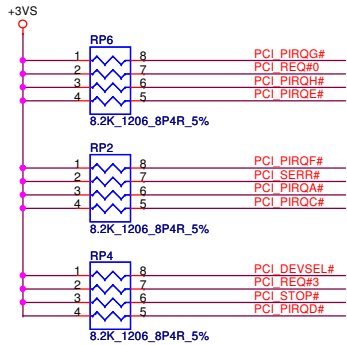
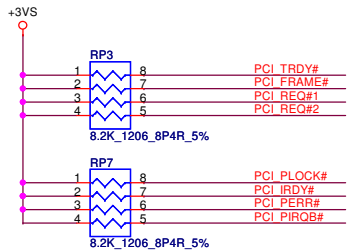


Security Classification	Compal Secret Data		Title	
Issued Date	2008/11/24	Deciphered Date	2008/11/28	Document Number
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT 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.				Rev 0.1
Date: Tuesday, March 24, 2009			Sheet 17	of 45

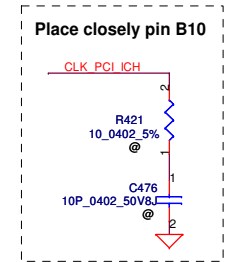
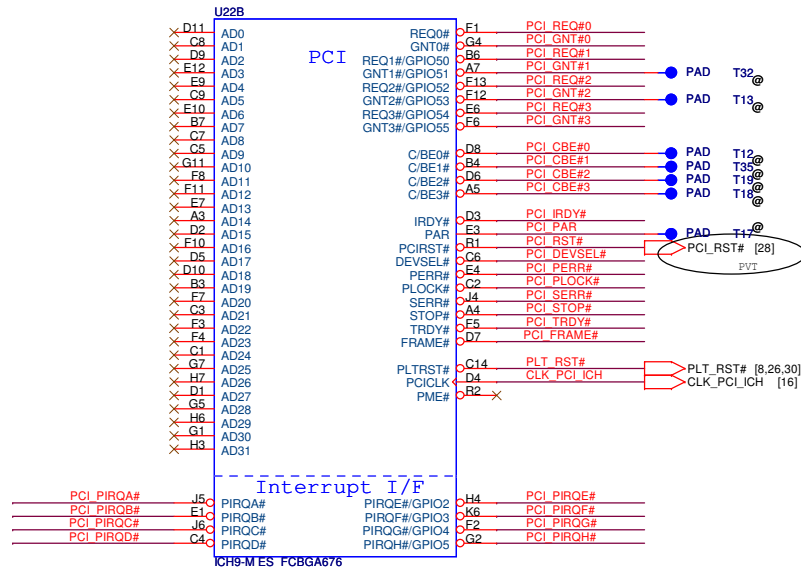
CRT Connector



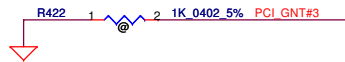
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				KALG1	0.1
Date: Tuesday, March 24, 2009				Sheet	18 of 45



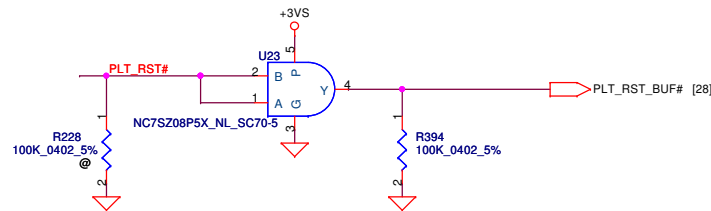
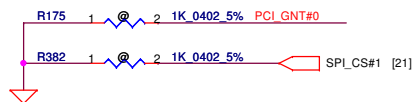
DMI for ESI-compatible operation
PCI_GNT#1 Low= DMI for ESI-compatible operation
 High= Default* (Internal pull-up)

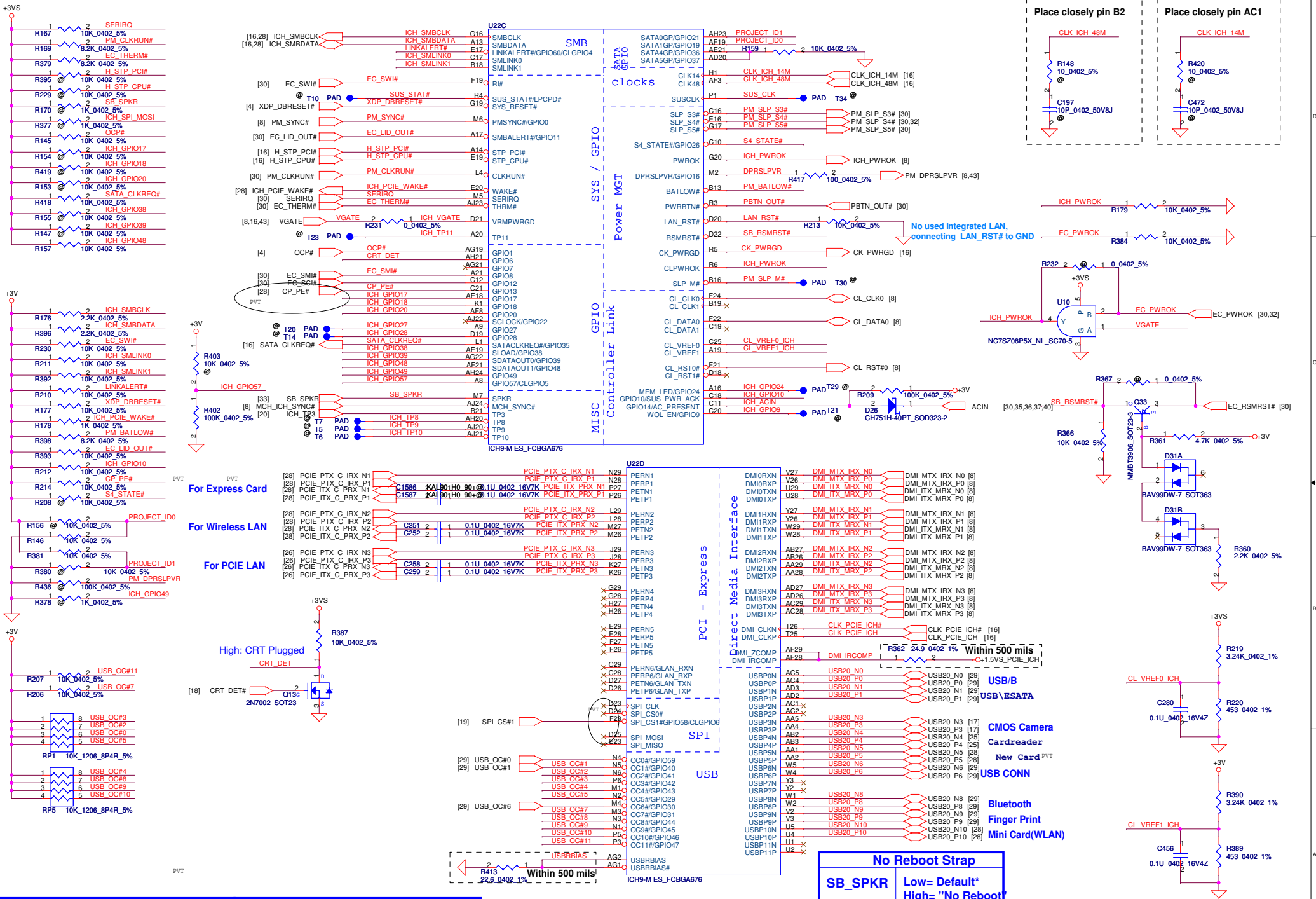


A16 Swap Override Strap
PCI_GNT#3 Low= A16 swap override Enable
 High= Default*



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

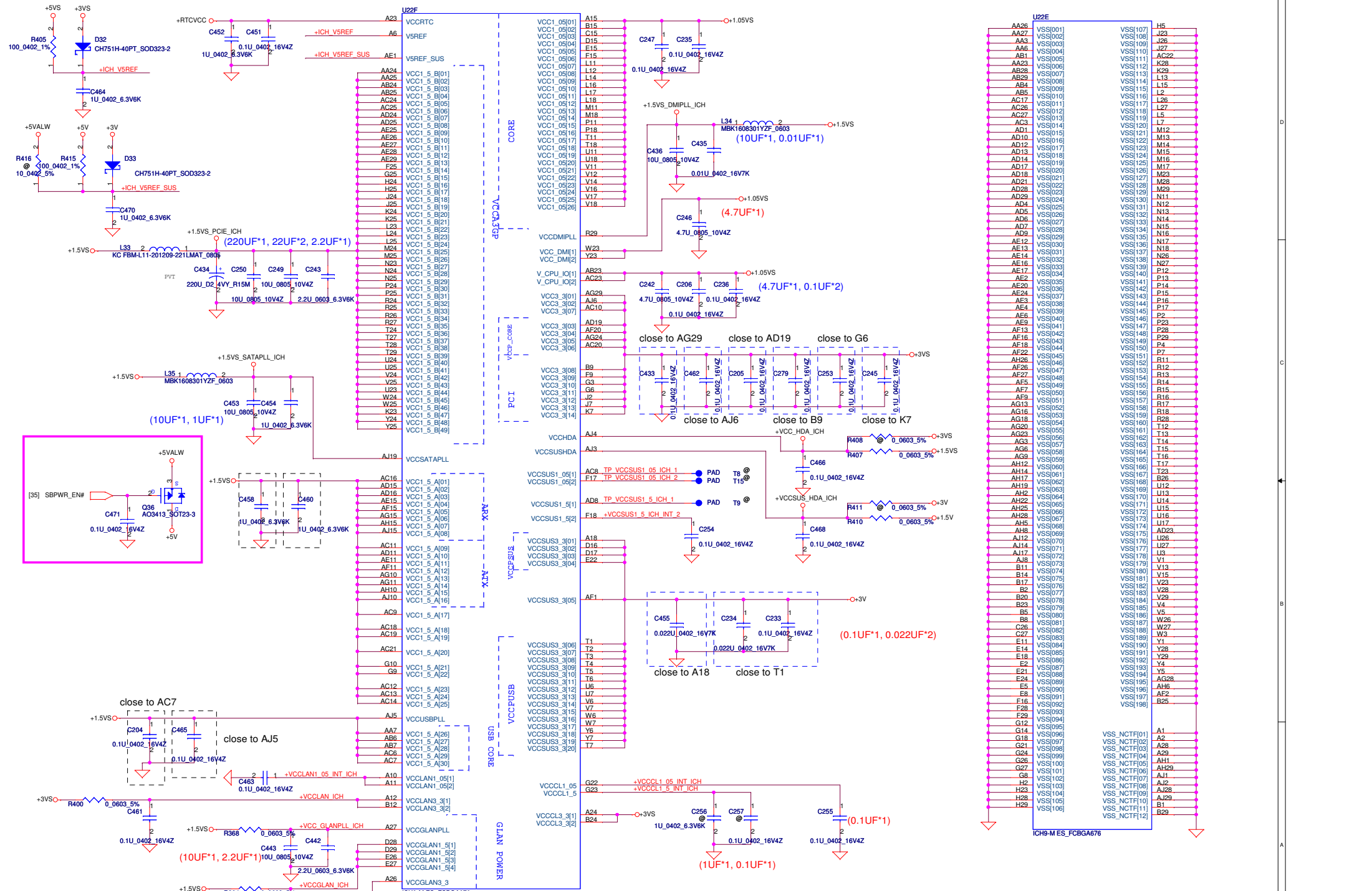




Internal TPM Strap	DMI Termination Voltage
SPI_MOSI	GPIO49
Low= Disable*	Low= Desktop used
High= iTPM enable by MCH strap	High= Mobile* (Internal pull-up)

No Reboot Strap
 SB_SPKR Low= Default*
 High= "No Reboot"

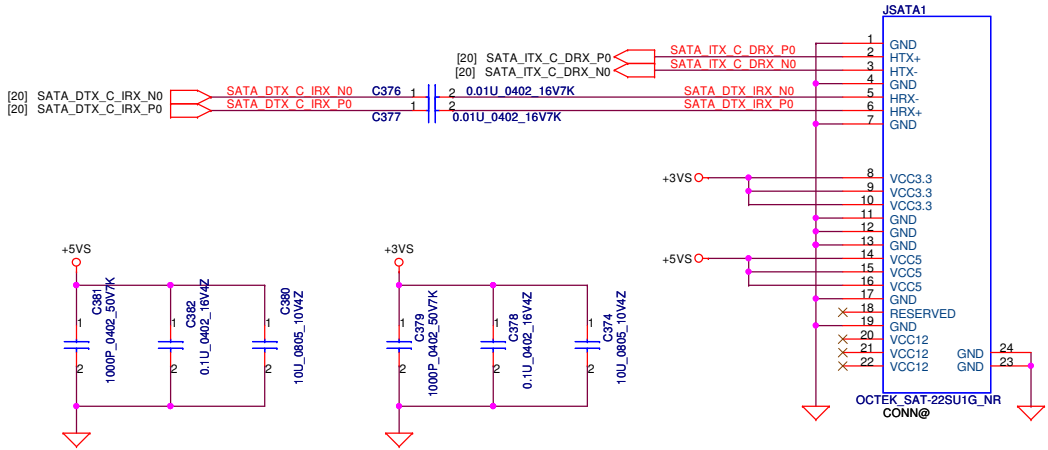
Security Classification	Compal Secret Data	Title
Issued Date	Deciphered Date	ICH9M(3/4)-USB,GPIO,PCIE
2008/11/10	2008/11/24	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FACTORY 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	Docment Number	Rev
KALG1	KALG1	0.1
Date: Tuesday, March 24, 2009	Sheet	21 of 45



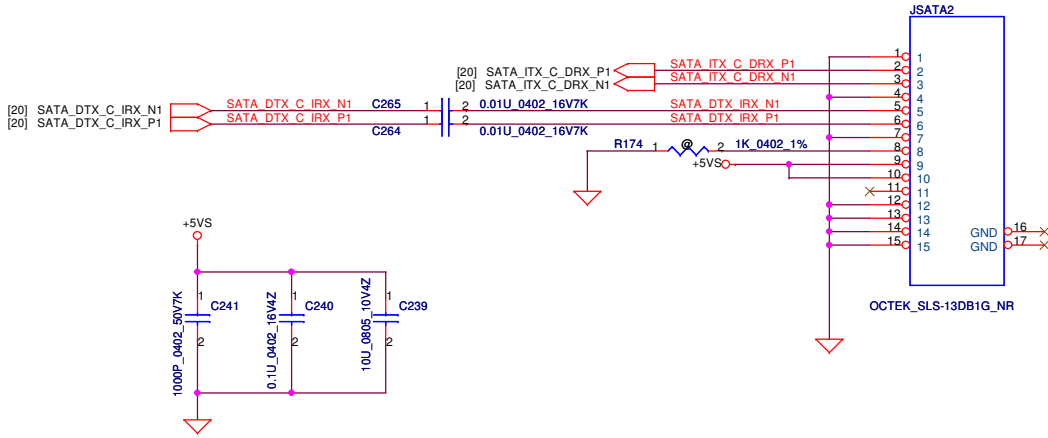
Security Classification	Compal Secret Data			
Issued Date	2008/11/10	Deciphered Date	2008/11/24	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE 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			
ICH9M(4/4)-POWER&GND			
Size	Document Number	Rev	
Custom	KALG1	0.1	
Date:	Tuesday, March 24, 2009	Sheet	22 of 45

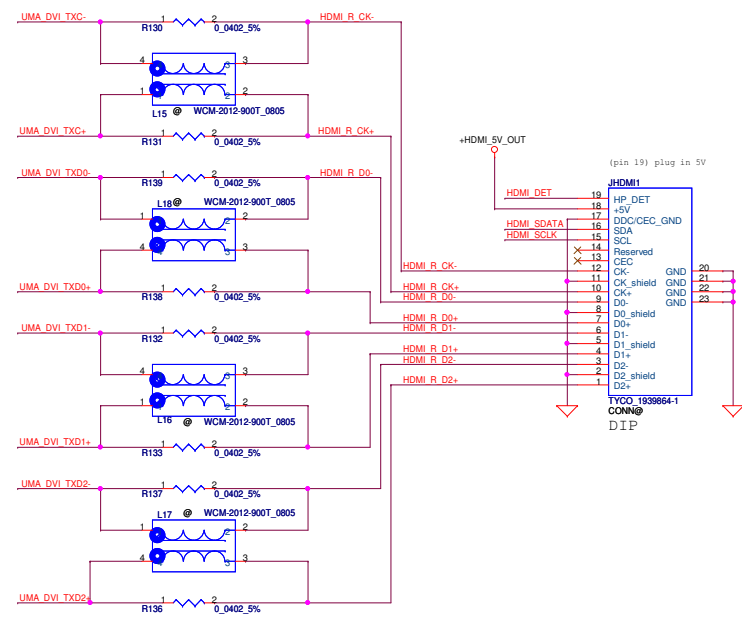
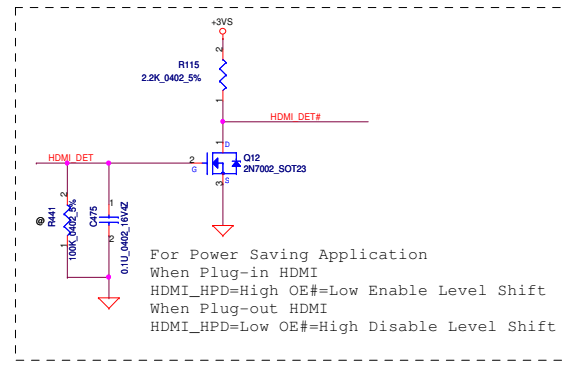
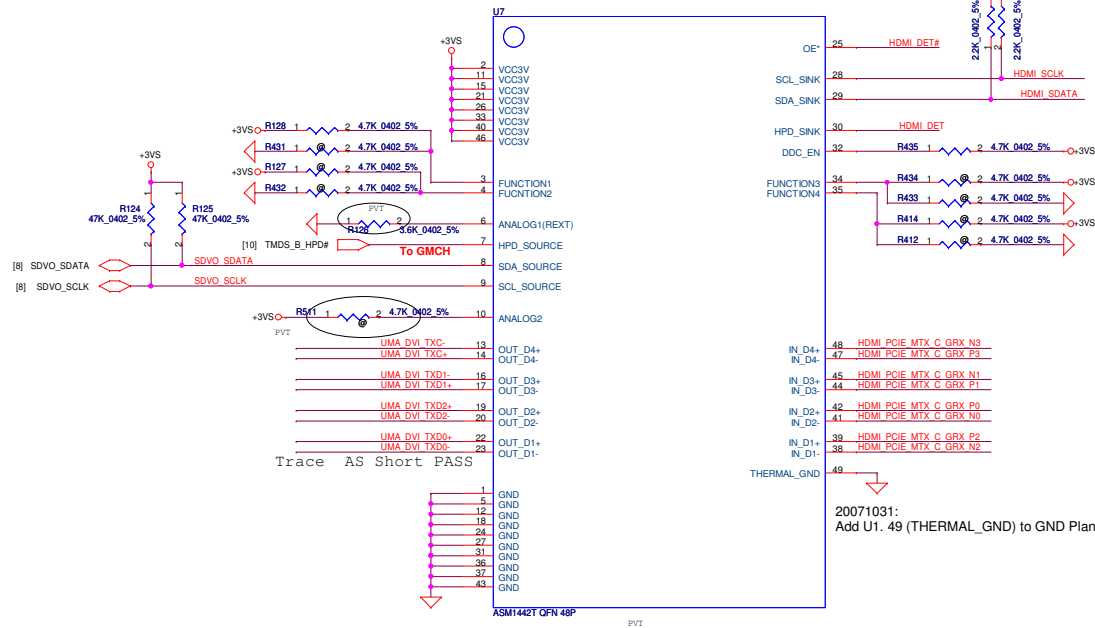
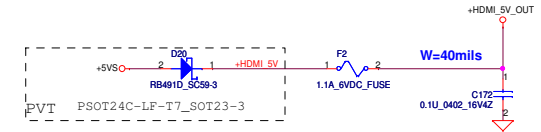
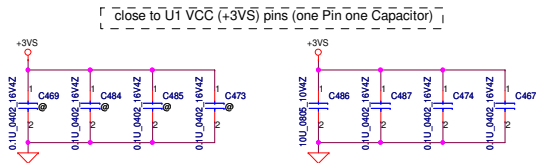
SATA HDD Conn.



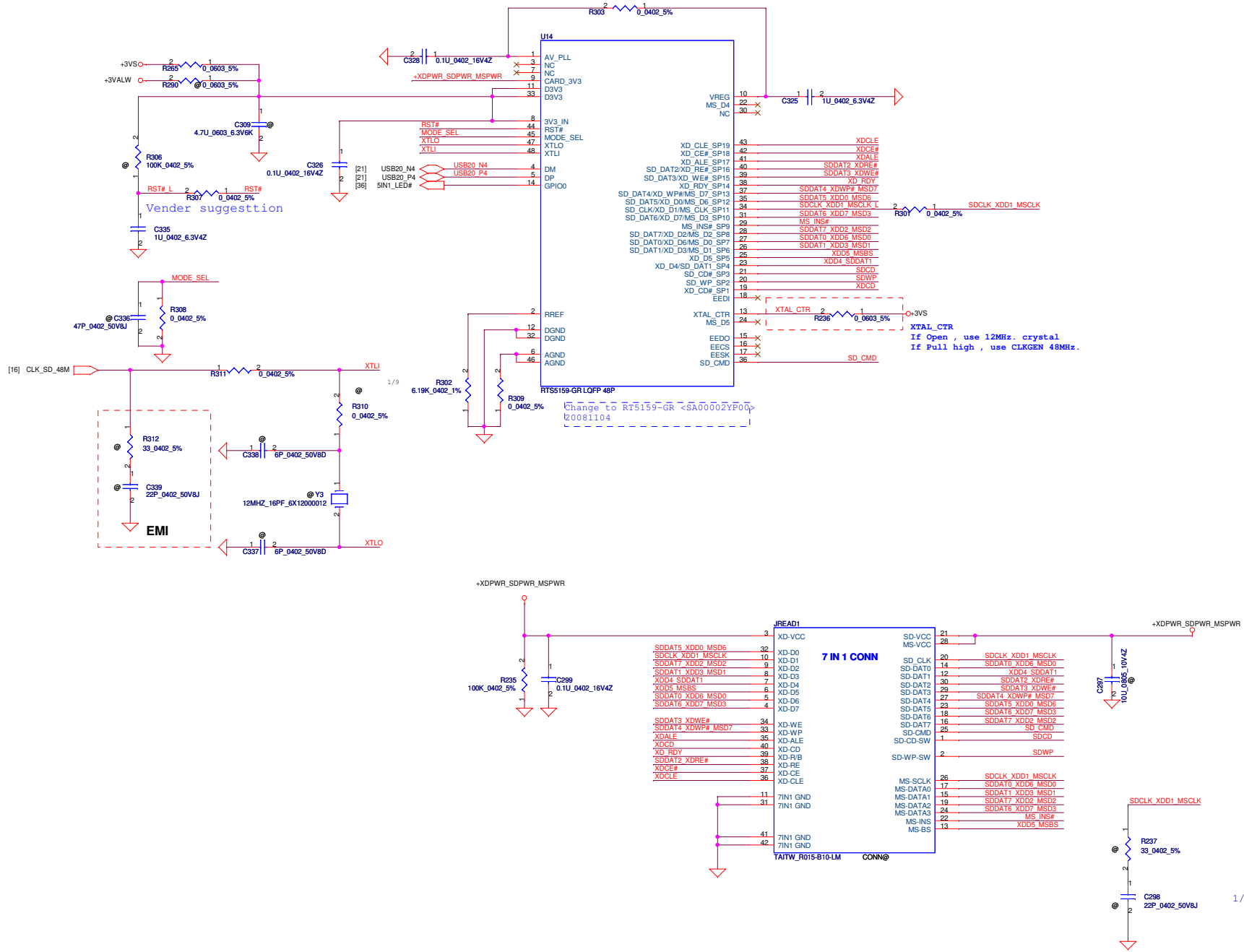
SATA ODD Conn.



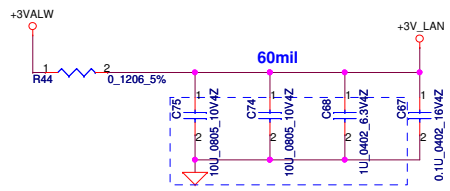
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title HDD & ODD Connector	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Size Custom	Document Number KALG1	Date Tuesday, March 24, 2009		Sheet 23	Rev 0.1



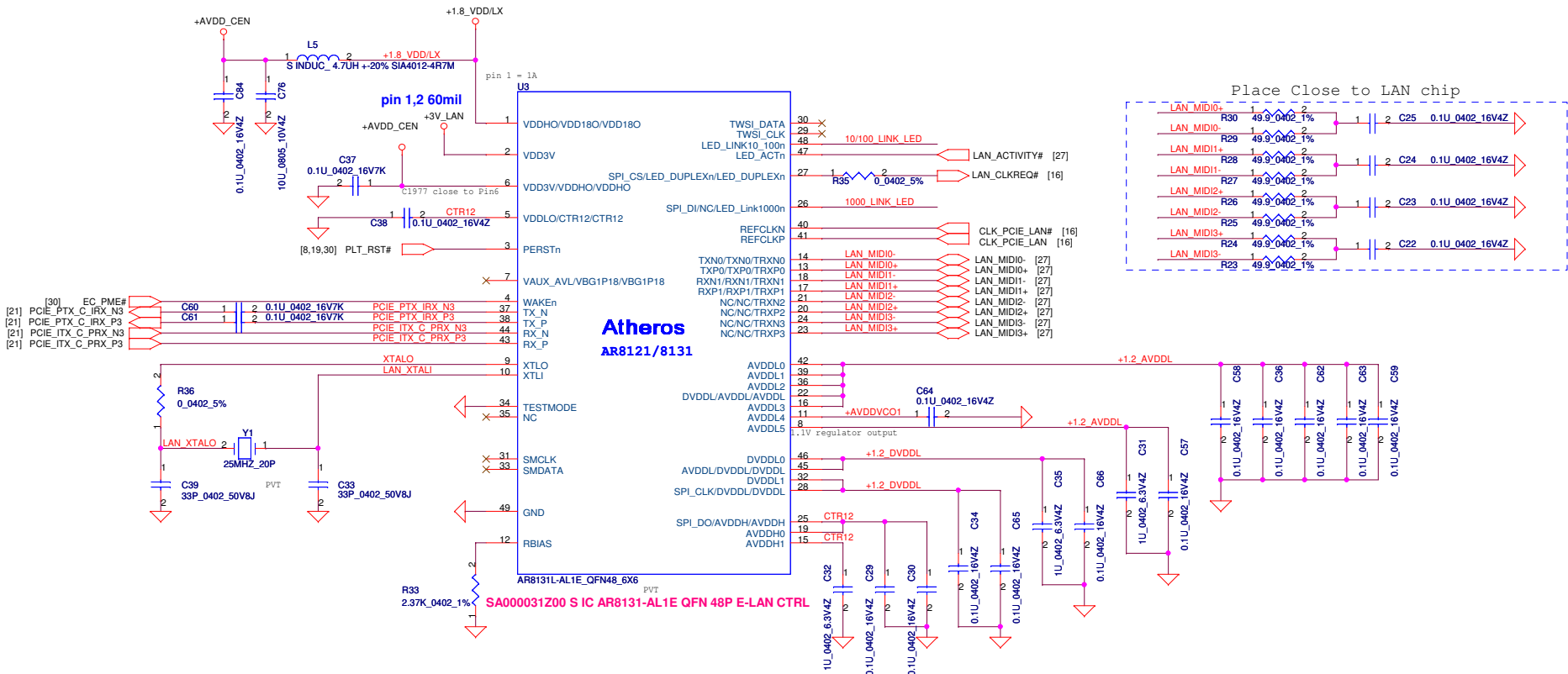
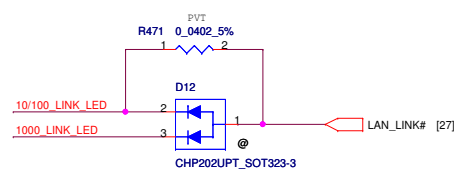
Intel Cantiga TMDS Pin Definition	
TMDS_B_CLK	PEG_TXP_3
TMDS_B_CLK#	PEG_TXN_3
TMDS_B_DATA0	PEG_TXP_2
TMDS_B_DATA0#	PEG_TXN_2
TMDS_B_DATA1	PEG_TXP_1
TMDS_B_DATA1#	PEG_TXN_1
TMDS_B_DATA2	PEG_TXP_0
TMDS_B_DATA2#	PEG_TXN_0
TMDS_B_HPD#	PEG_RXP_3



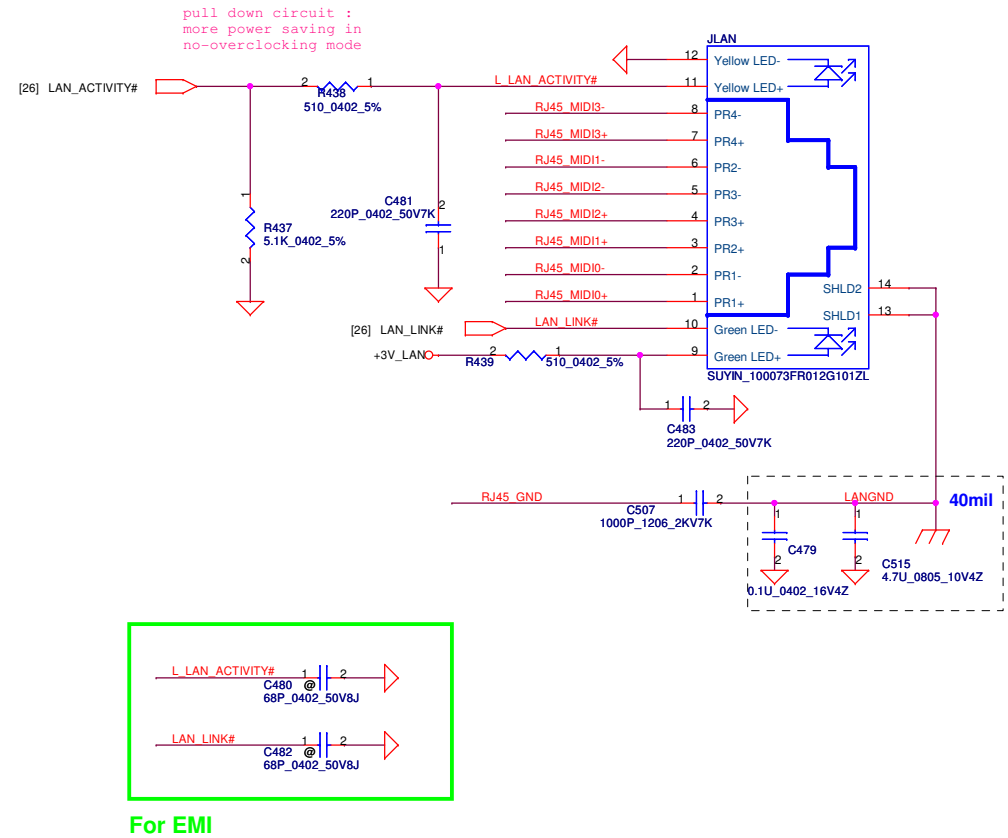
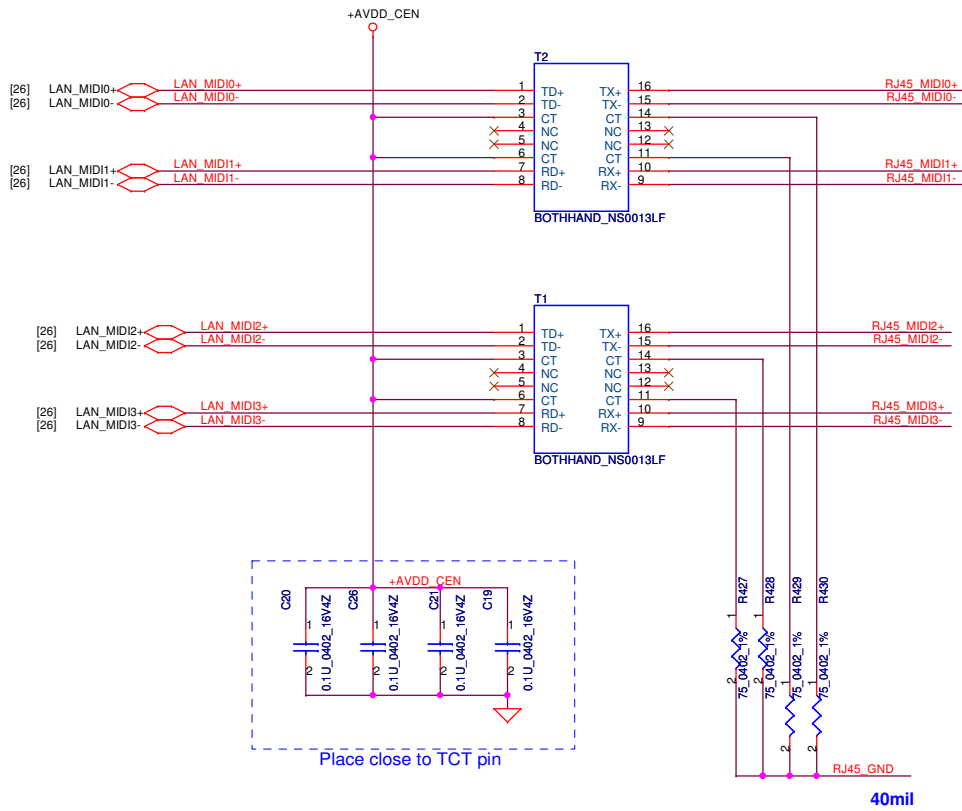
Security Classification	Compal Secret Data		Title	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Card Reader Realtek5159
Size	Document Number	Rev		0.1
Quantity	KALG1	Date:		Tuesday, March 24, 2009
Date:		Sheet	25	of 45



Place Close to Pin 2

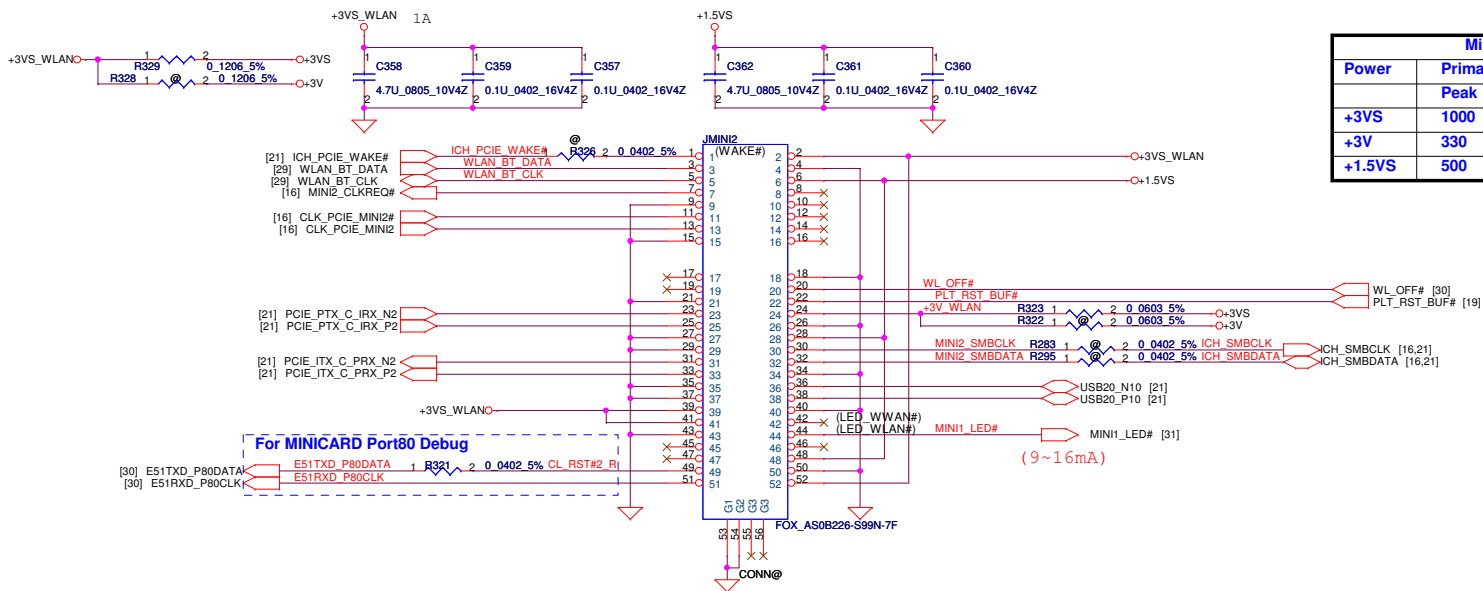


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/04/16	Deciphered Date	2008/11/24	Title	Atheros AR8131
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				Custom	KALG1
				Date:	Tuesday, March 24, 2009
				Sheet	26 of 45
				Rev	0.1



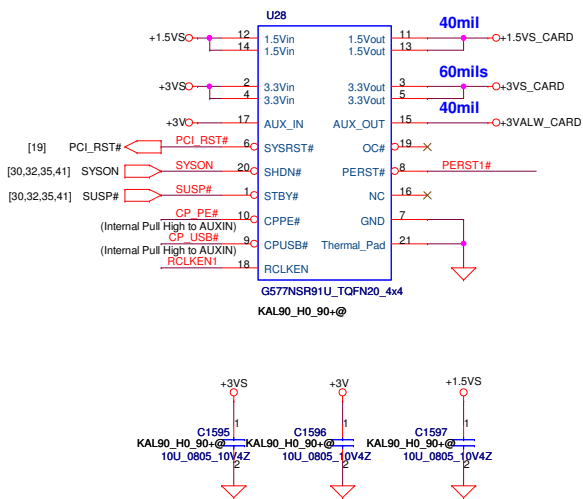
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title LAN Magnetic & RJ45	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET 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 KALG1
				Date: Tuesday, March 24, 2009	Rev 0.1
				Sheet 27	of 45

For Wireless LAN

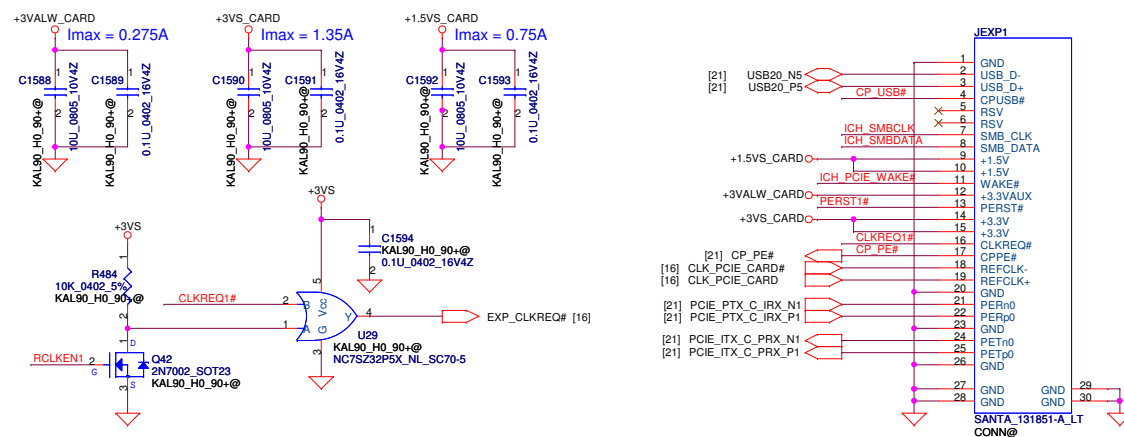


Mini Card Power Rating			
Power	Primary Power (mA)		Auxiliary Power (mA)
	Peak	Normal	Normal
+3VS	1000	750	
+3V	330	250	250 (wake enable)
+1.5VS	500	375	5 (Not wake enable)

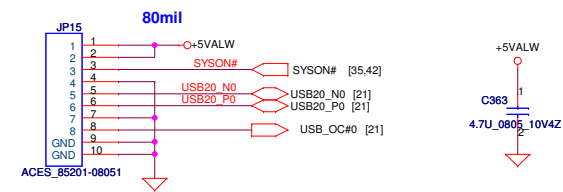
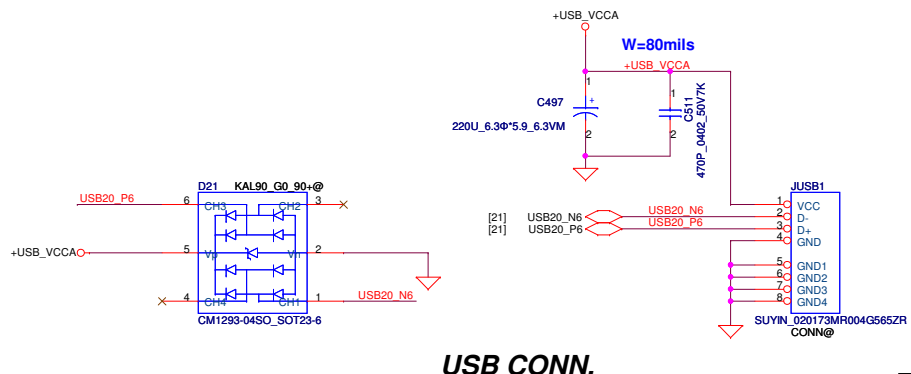
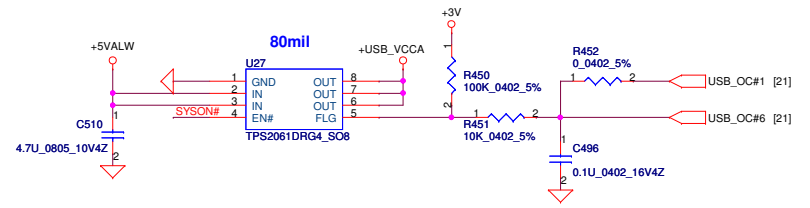
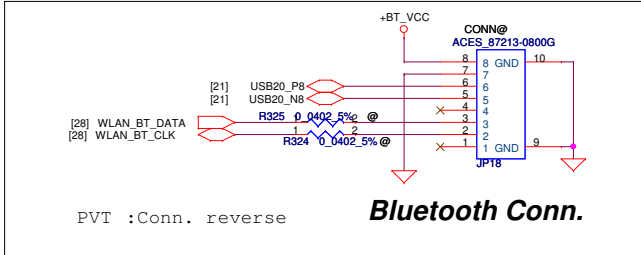
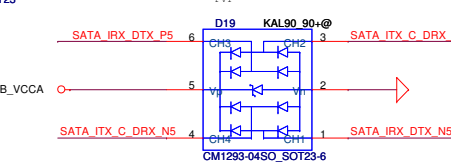
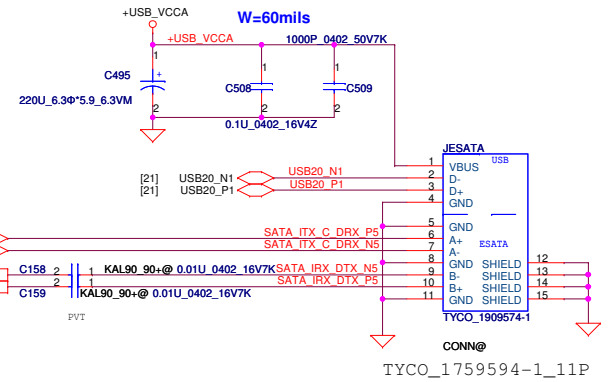
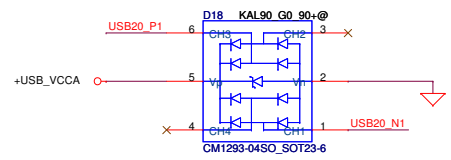
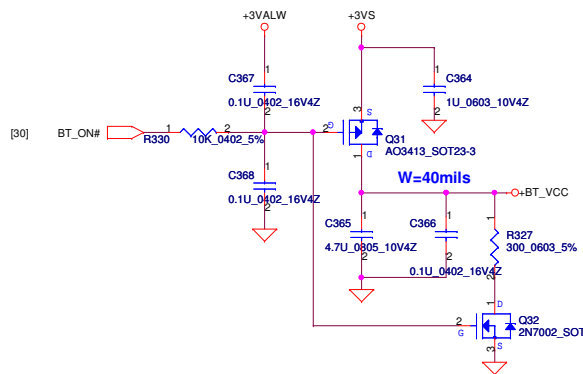
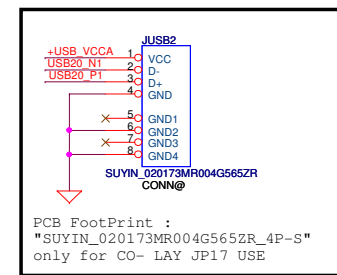
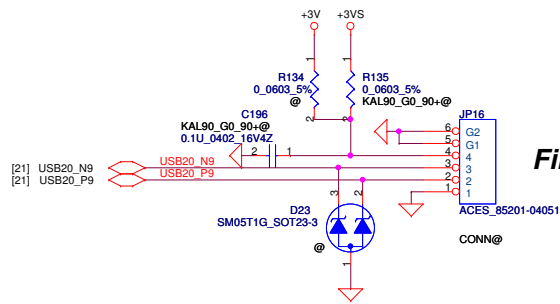
New Card Power Switch



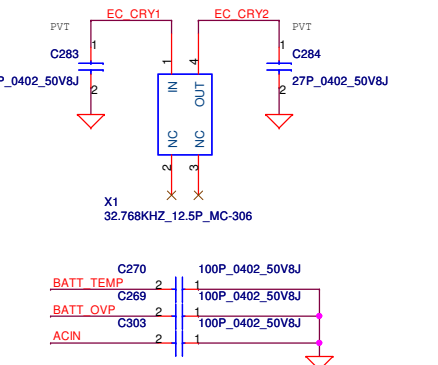
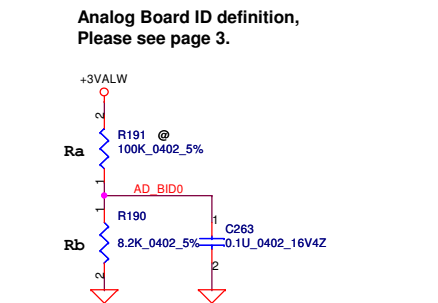
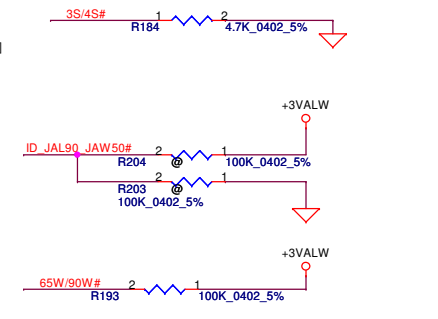
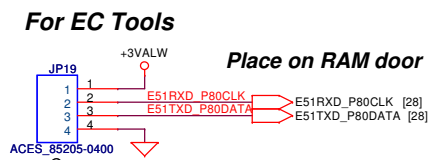
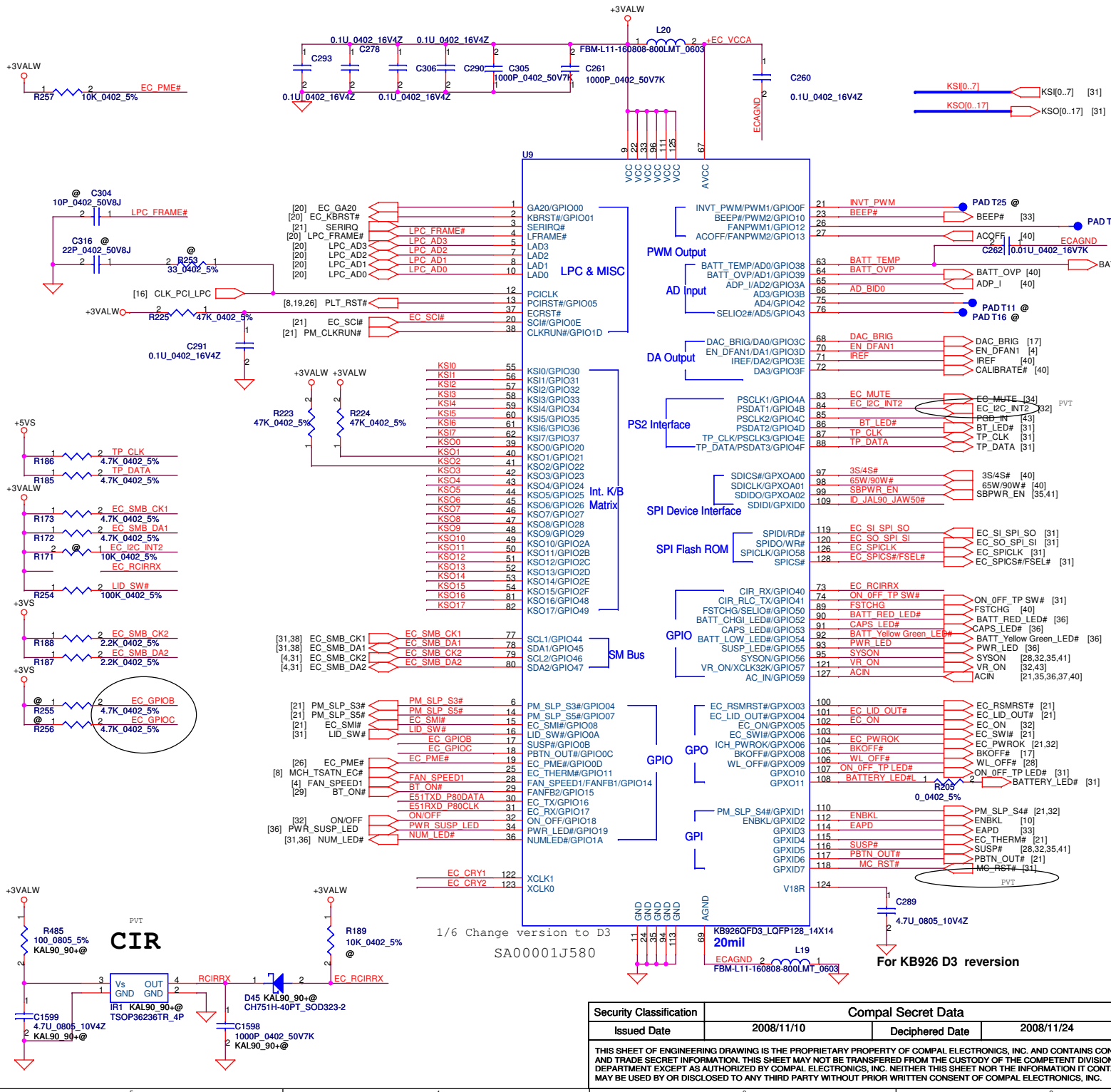
New Card Socket (Left/TOP)



Security Classification	Compal Secret Data		Title	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	NEW CARD & MINI CARD-WLAN
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.</small>				Document Number KALG1 Date: Tuesday, March 24, 2009
				Rev 0.1 Sheet 28 of 45

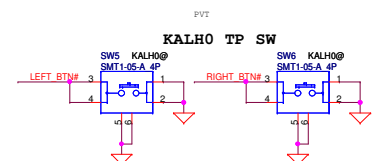
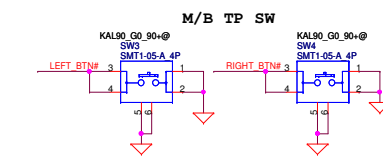
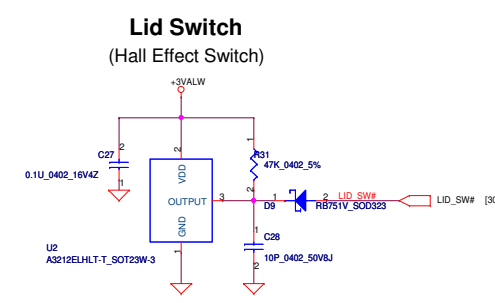
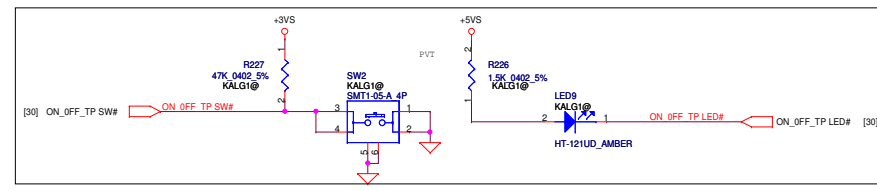
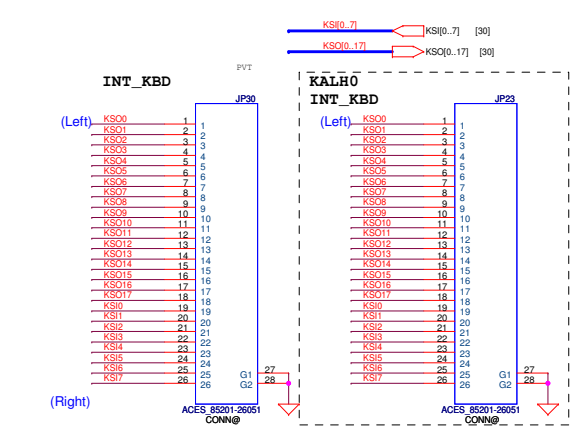
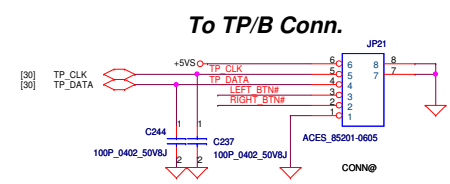
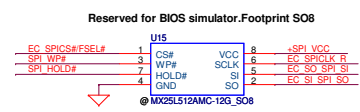
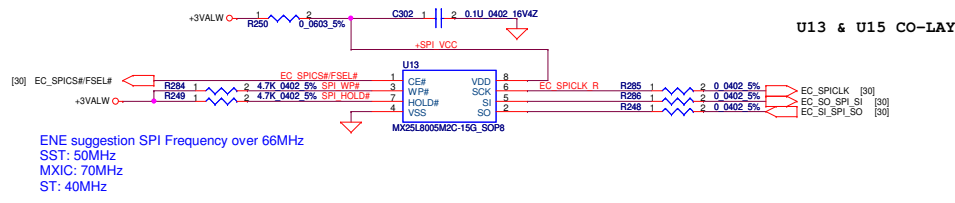


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title	BT & Finger Print & eSATA & USB Conn
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
Date	Tuesday, March 24, 2009	Sheet	29	of	45



Security Classification	Compal Secret Data	
Issued Date	2008/11/10	Deciphered Date
		2008/11/24
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.		

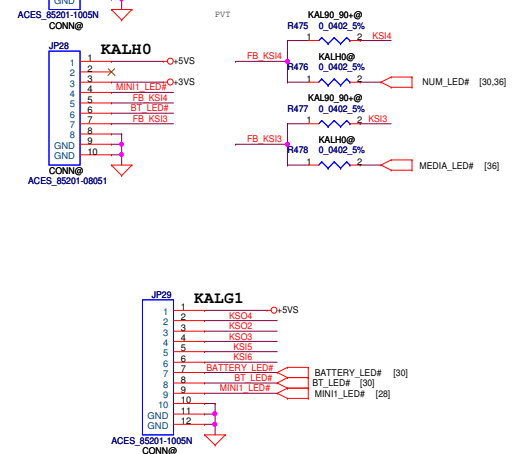
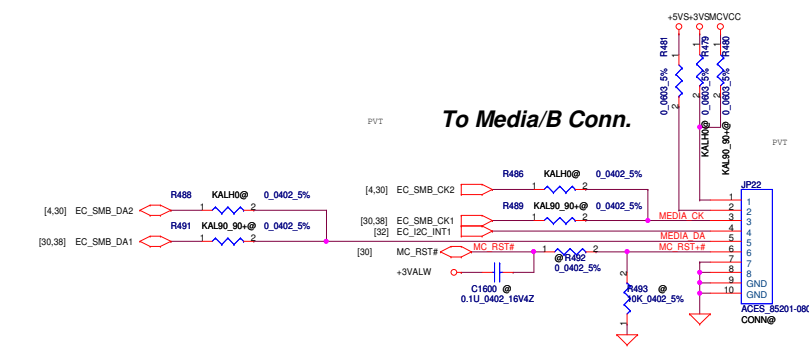
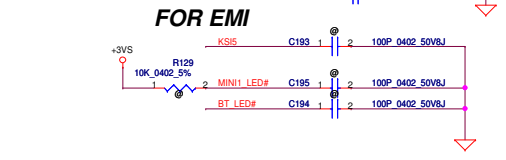
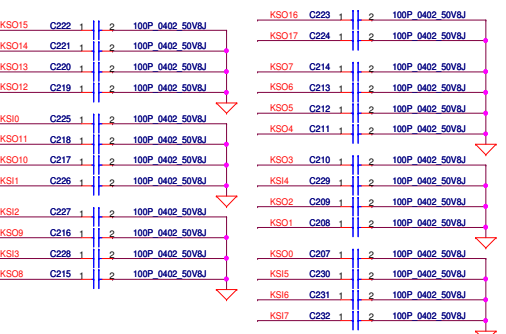
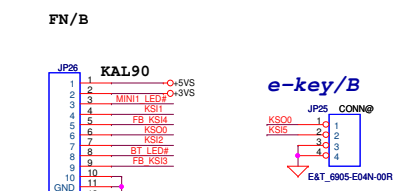
Title		
EC ENE KB926/CIR		
Size	Document Number	Rev
B	KALG1	0.1
Date:	Tuesday, March 24, 2009	Sheet 30 of 45



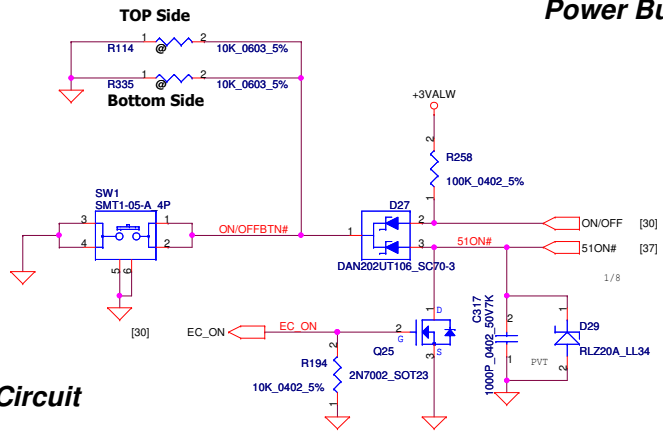
To BTN/B Conn.

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

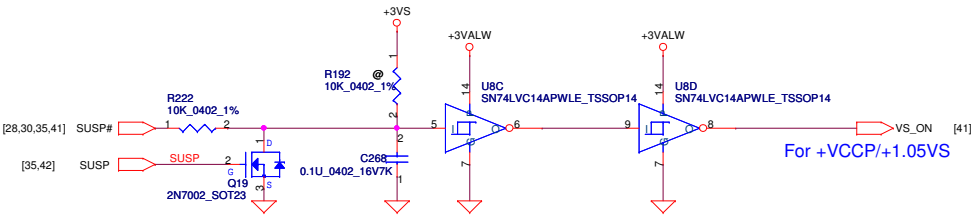
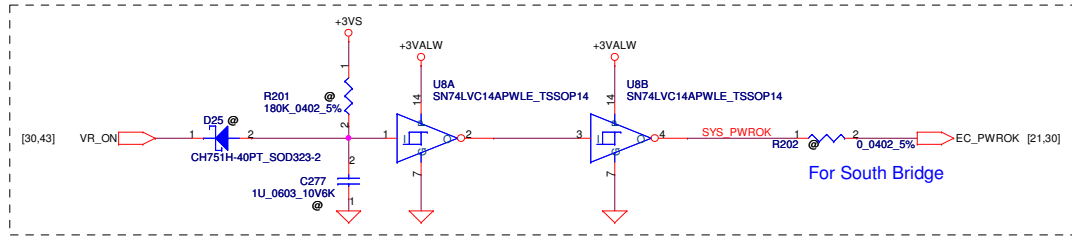
	KSO4	KSO2	KSO3
KSI5	WL_BTN#	Volume Down	Back Up
KSI6	BT_BTN#	Volume Up	Program (KBLG0) Battery (KALG0)



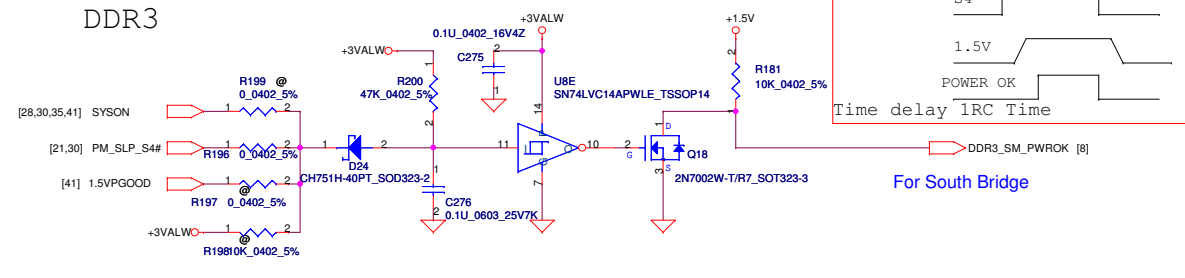
Power Button



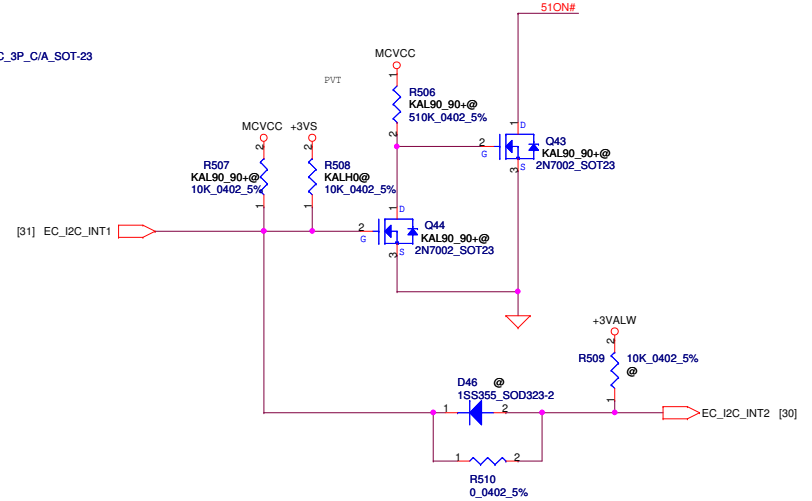
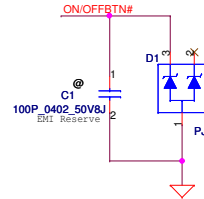
Power ON Circuit



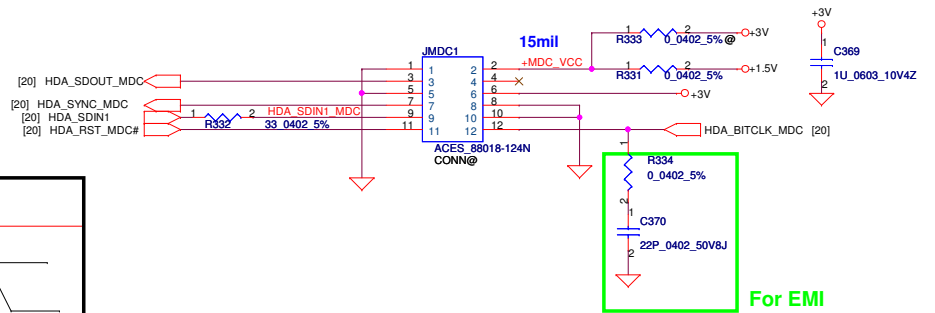
DDR3



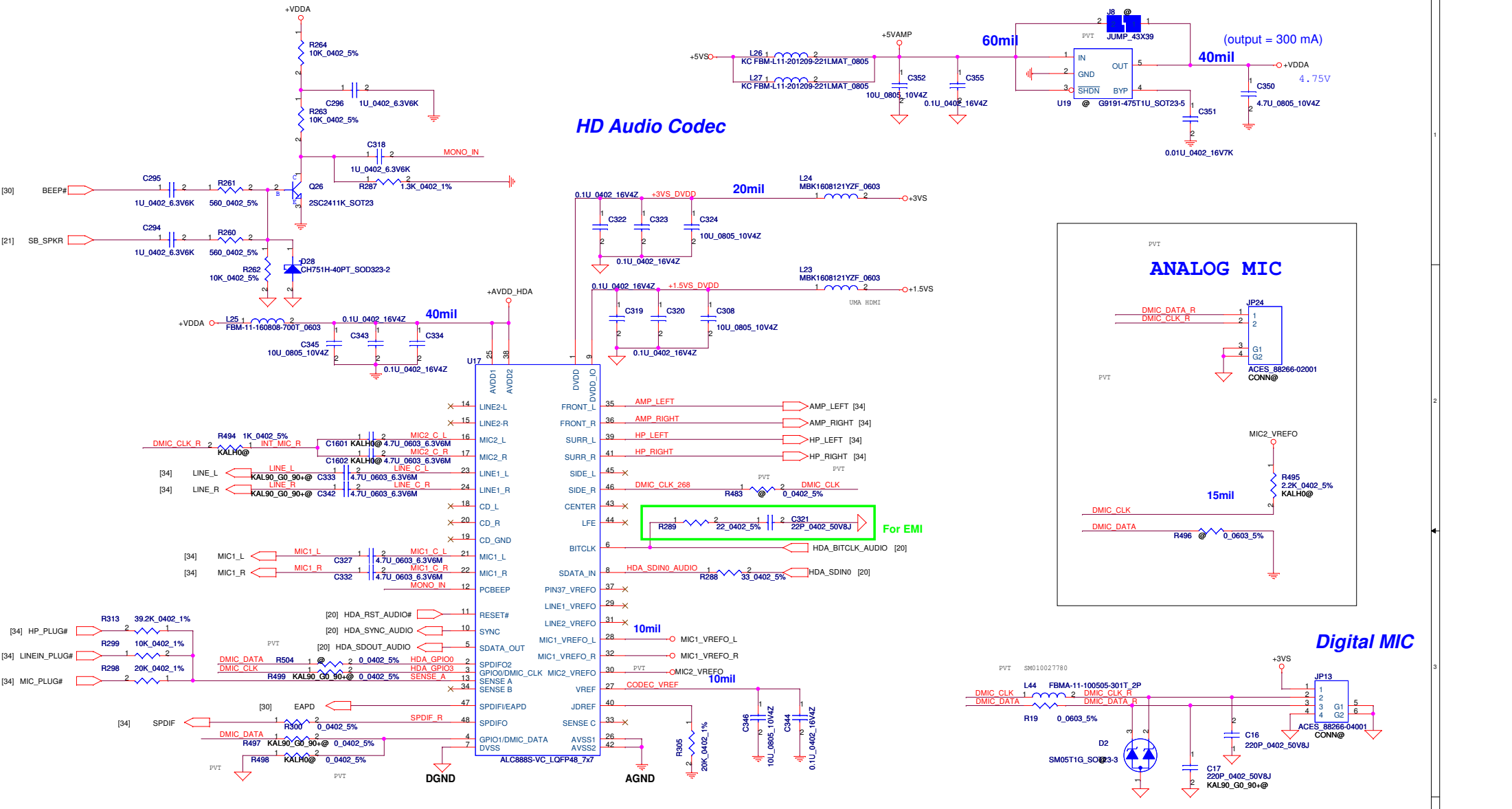
D58 USE PJSOT24C 3P C/A SOT-23 SCA00000E00 24V



HDA MDC Conn.

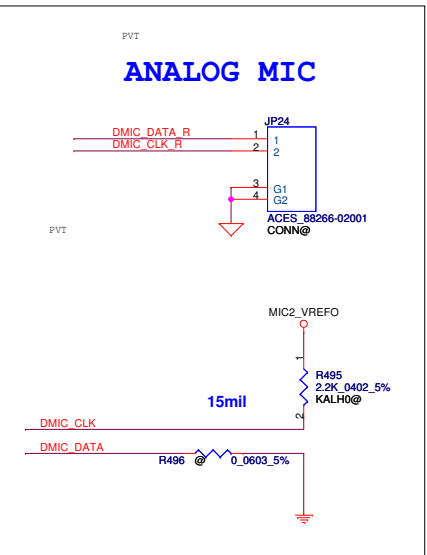


Security Classification	Compal Secret Data		Title	Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Power OK, Reset, MDC	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PRODUCT DEVELOPMENT DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.					
File No.	Document Number	Rev	Date: Tuesday, March 24, 2009 Sheet 32 of 45		
	KALG1	0.1			

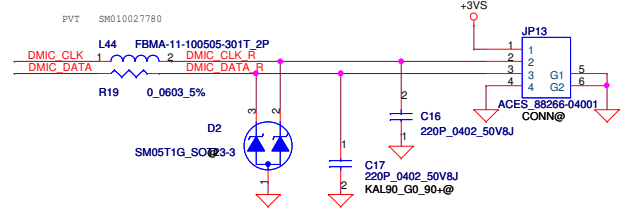


HD Audio Codec

ANALOG MIC



Digital MIC



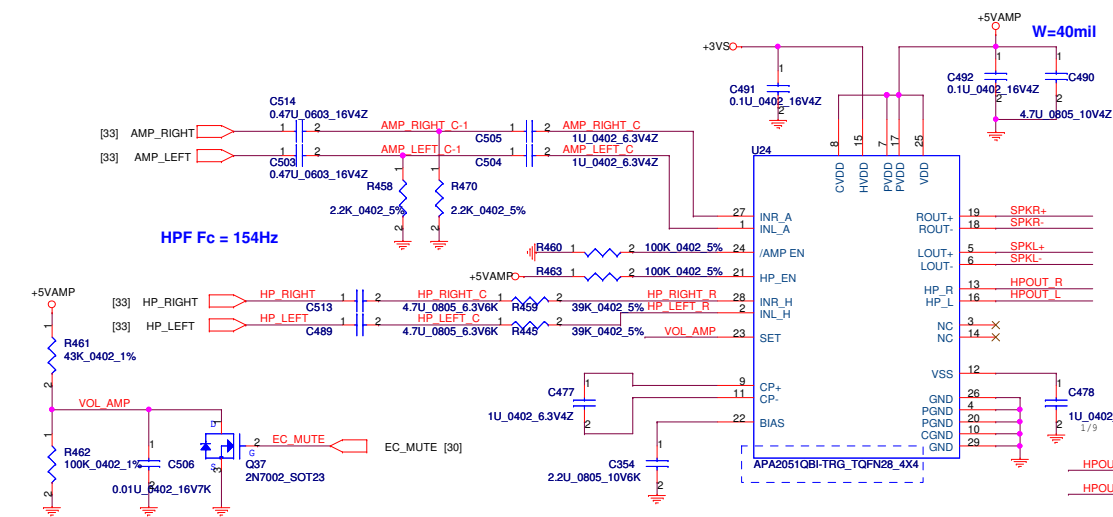
Sense Pin	Impedance	Codec Signals
SENSE A	39.2K	PORT-A (PIN 39, 41)
	20K	PORT-B (PIN 21, 22)
	10K	PORT-C (PIN 23, 24)
	5.1K	PORT-D (PIN 35, 36)
SENSE B	39.2K	PORT-E (PIN 14, 15)
	20K	PORT-F (PIN 16, 17)
	10K	PORT-G (PIN 43, 44)
	5.1K	PORT-H (PIN 45, 46)

SVID=1025
SSID=0260
FOR KALG1 and KALG0.

BOM Option

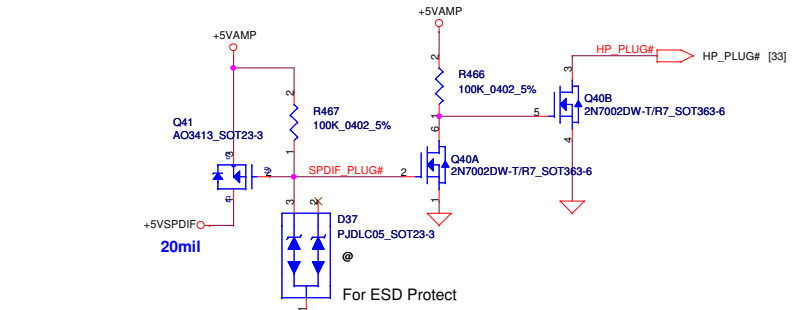
ALC268	268@
ALC888S-VC	888@

Security Classification	Compal Secret Data		Title	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	HD Audio Codec ALC888S-VC
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 KALG1
Date: Tuesday, March 24, 2009				Rev 0.1
Sheet 33 of 45				

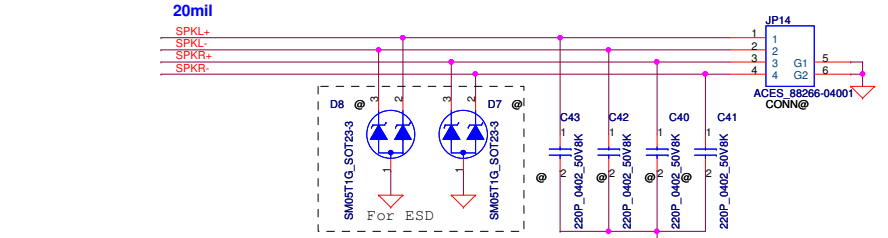


HPF Fc = 154Hz

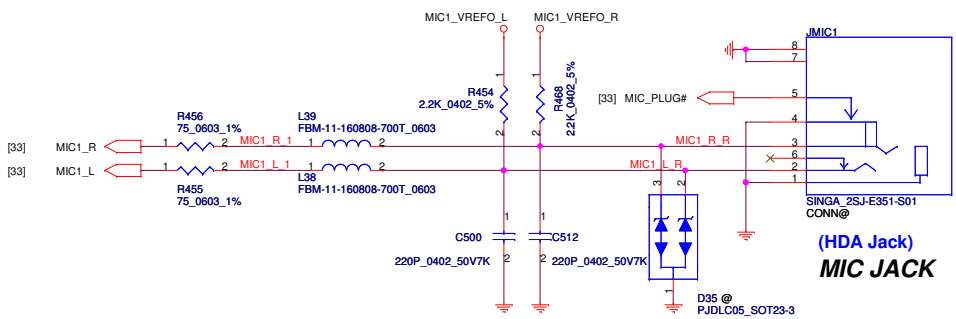
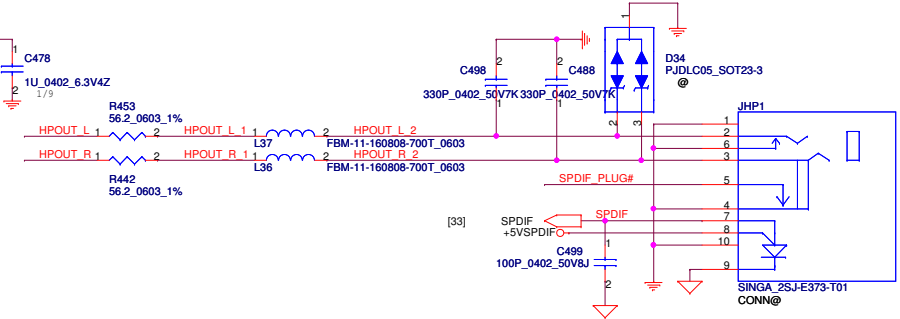
Gain= 10dB



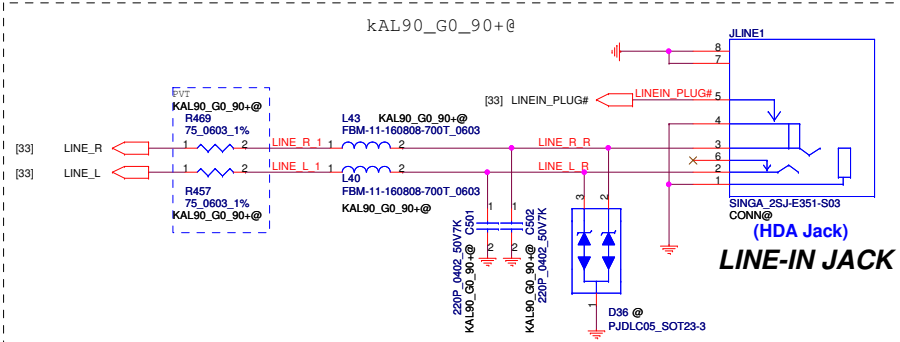
Int. Speaker Conn.



S/PDIF Out JACK
LINE Out/Headphone Out



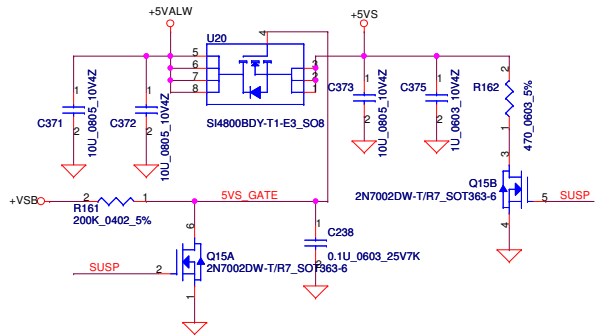
MIC JACK



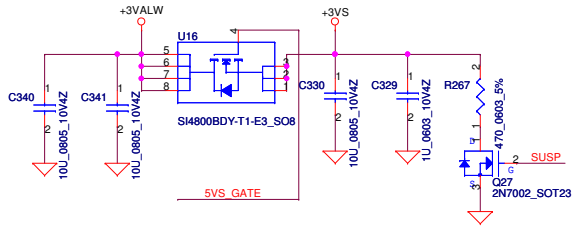
LINE-IN JACK

Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	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 RESEARCH AND DEVELOPMENT DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Document Number
Date: Tuesday, March 24, 2009				Rev 0.1
Sheet 34 of 45				

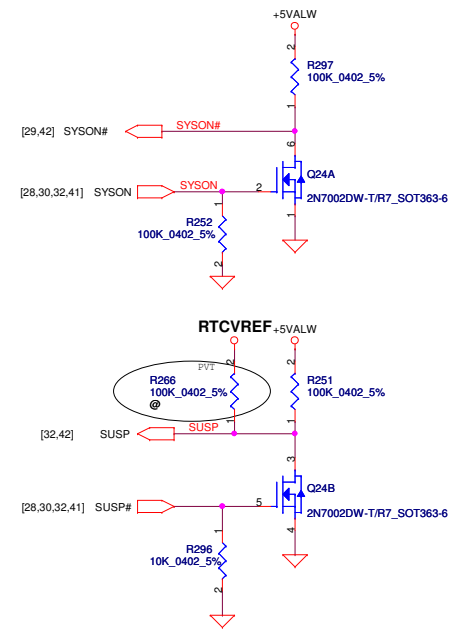
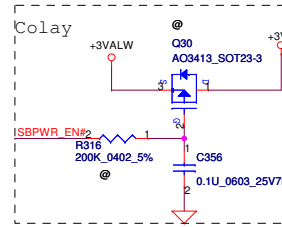
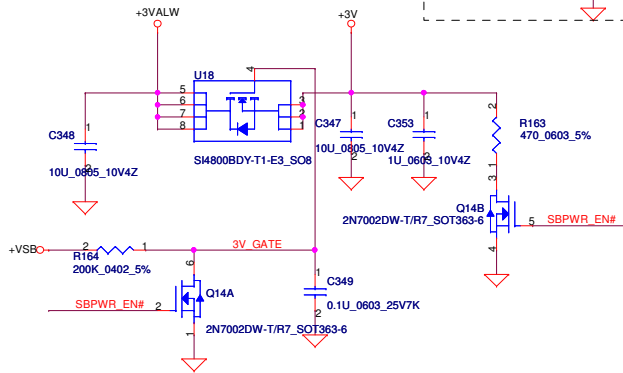
+5VALW TO +5VS



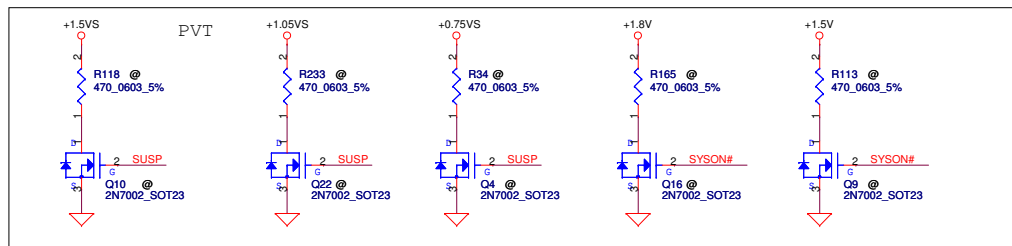
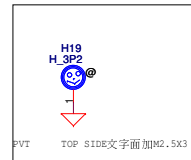
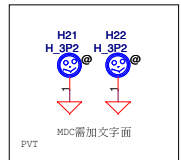
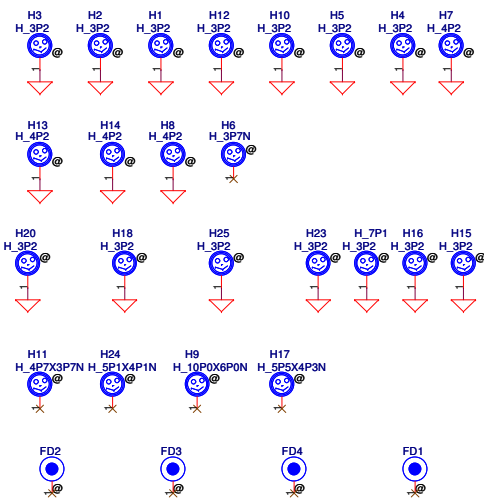
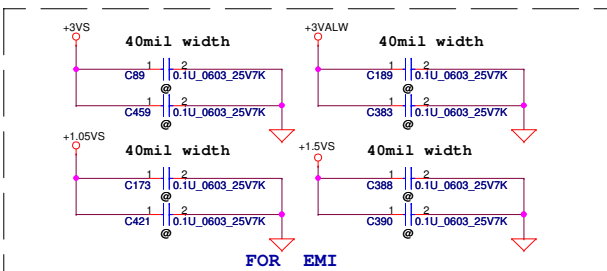
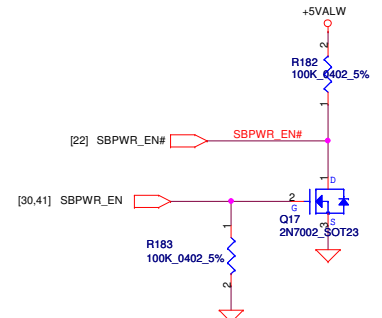
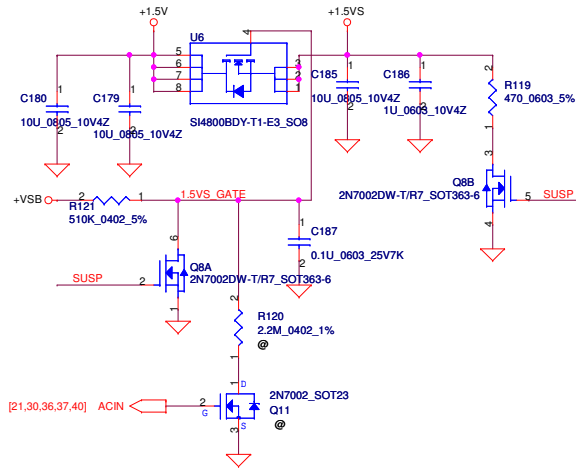
+3VALW TO +3VS



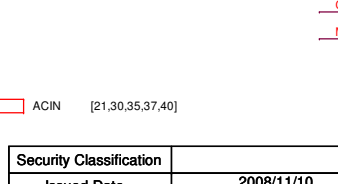
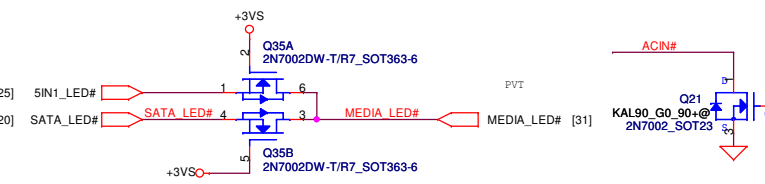
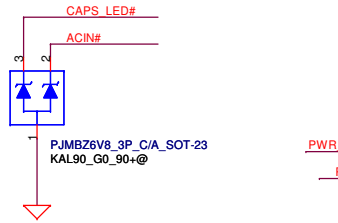
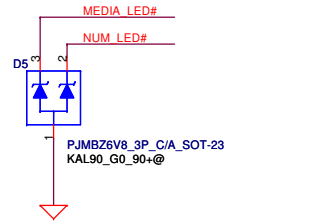
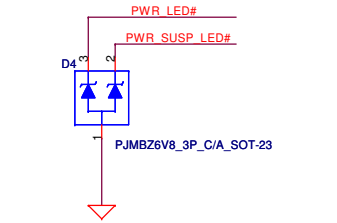
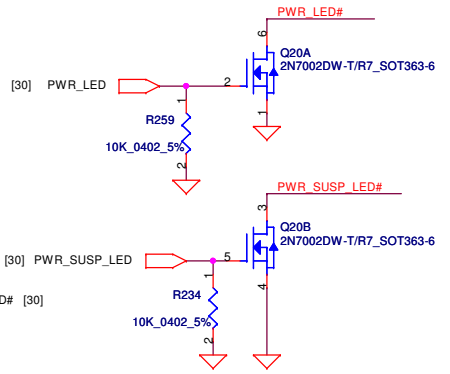
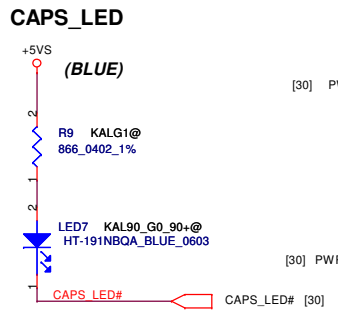
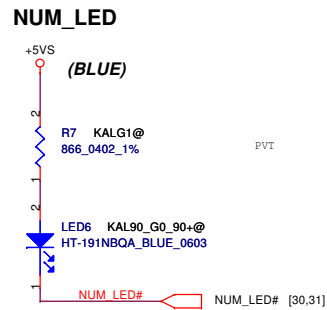
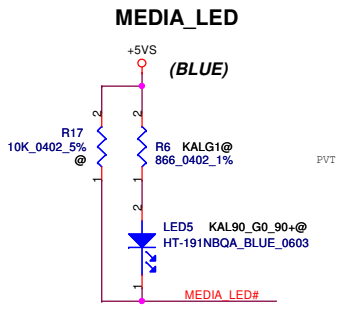
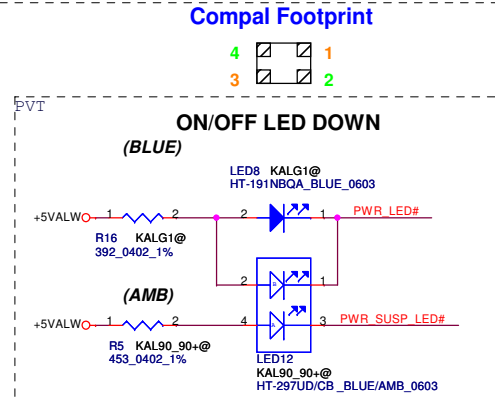
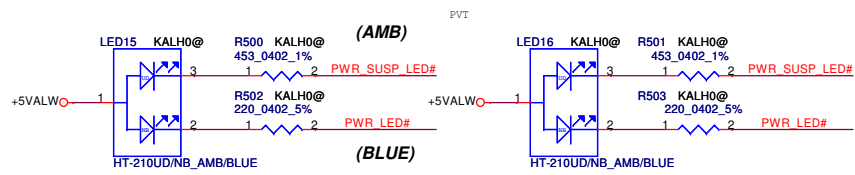
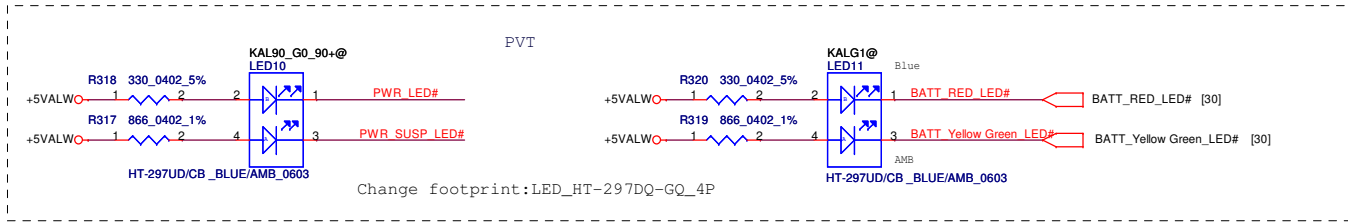
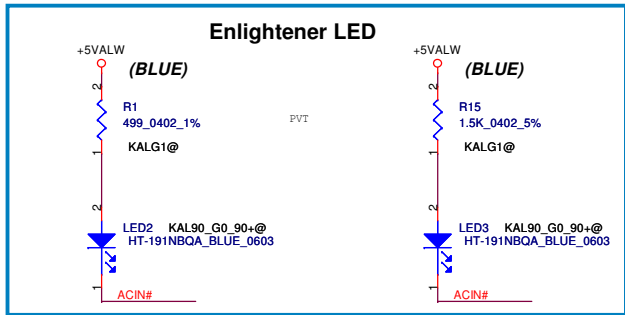
+3VALW TO +3V_SB(ICH8M AUX Power)



+1.5V to +1.5VS

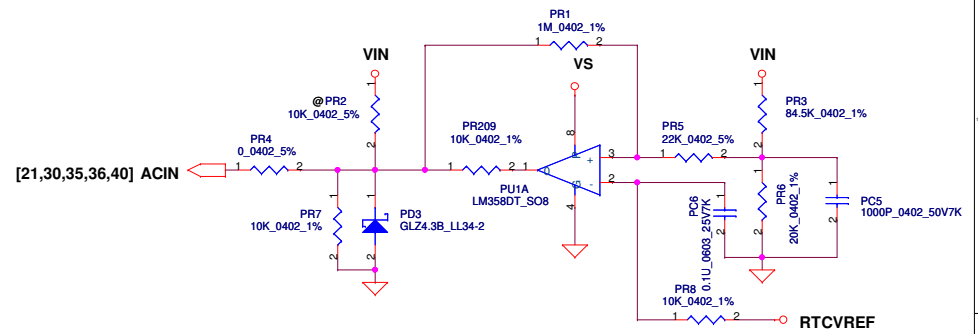
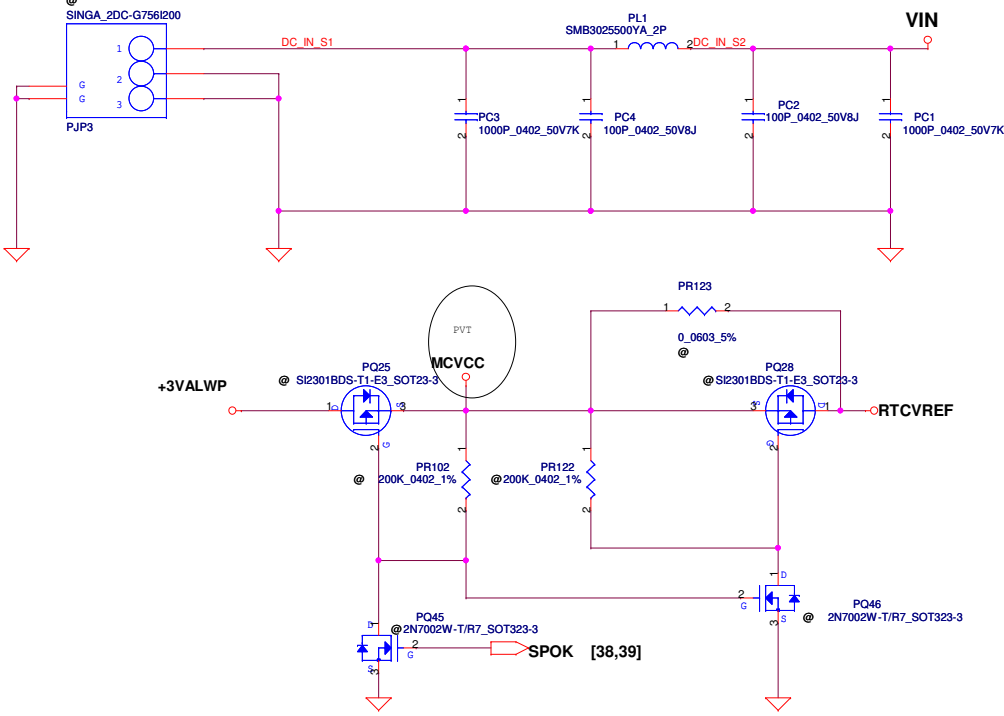


Security Classification	Compal Secret Data		Title	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Compal Electronics, Inc.
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FIDUCIAL 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.				DC Interface & Screw Hole
KALG1			Rev 0.1	Date: Tuesday, March 24, 2009
			Sheet 35	of 45



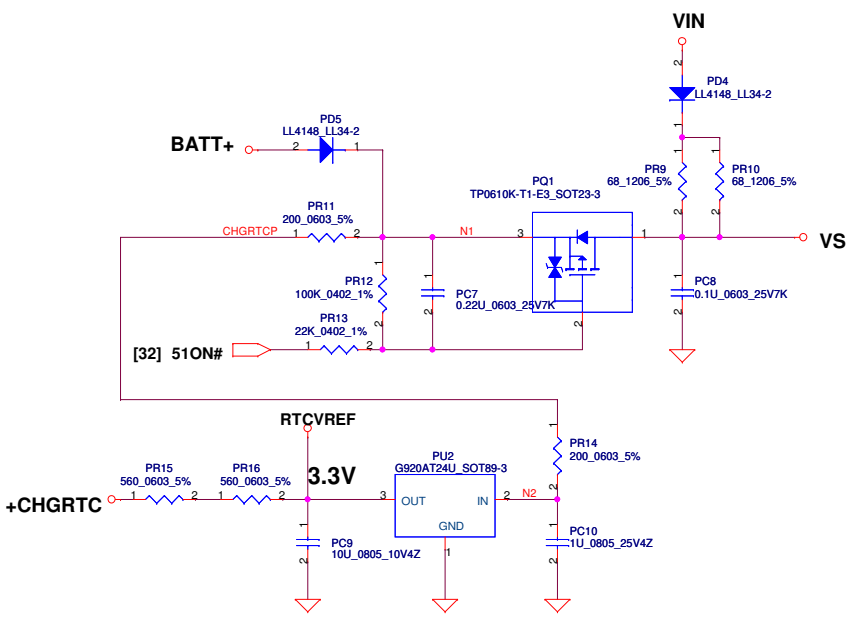
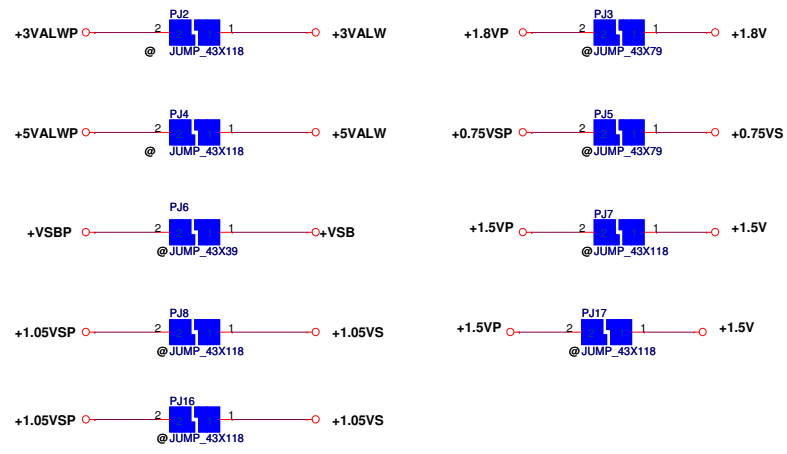
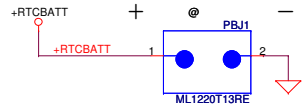
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2008/11/10	Deciphered Date	2008/11/24	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				PWR/B	
Size	Document Number	Rev		0.1	
Custom	KALG1				
Date:	Tuesday, March 24, 2009	Sheet	36	of	45

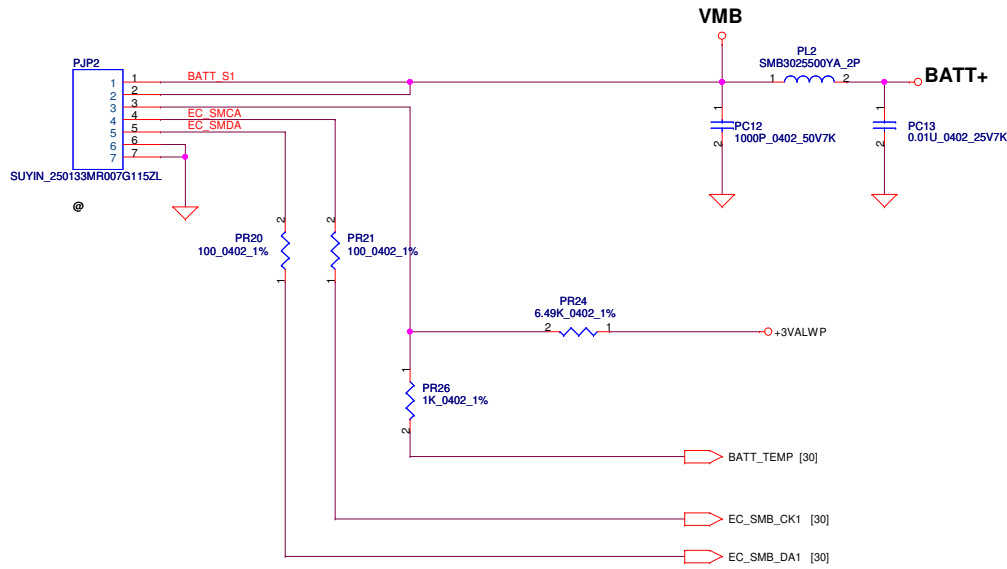
DC231000500



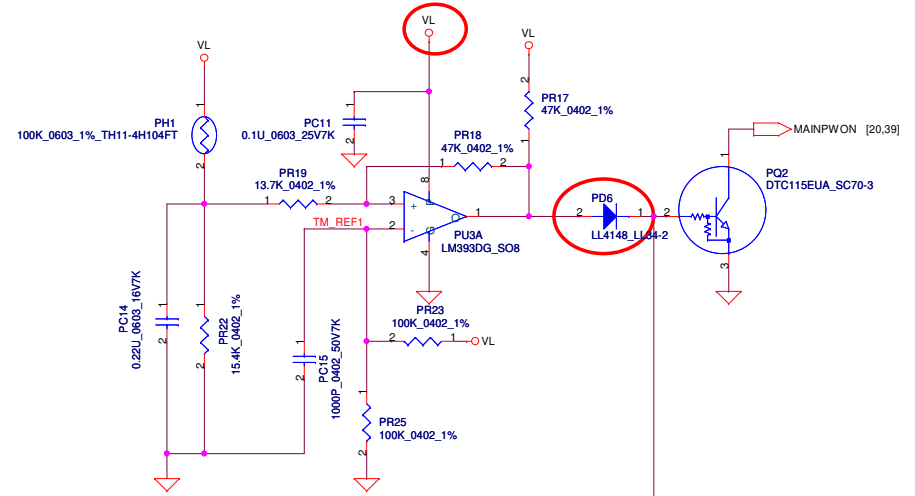
Vin Detector			
	Min.	Typ	Max.
H-->L	16.976V	17.525V	17.728V
L-->H	17.430V	17.901V	18.384V

RTC Conn

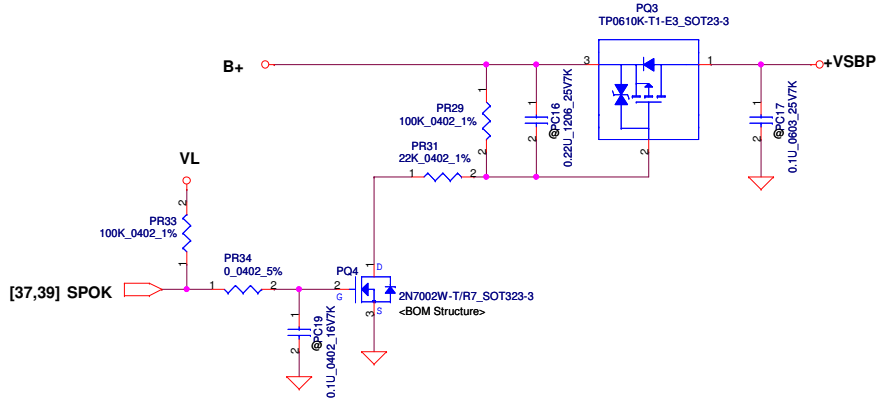
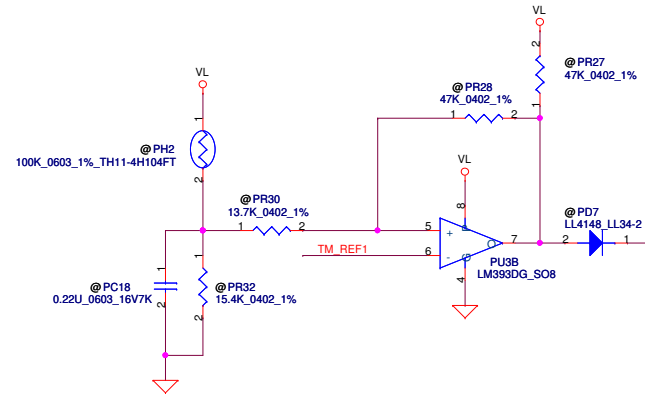




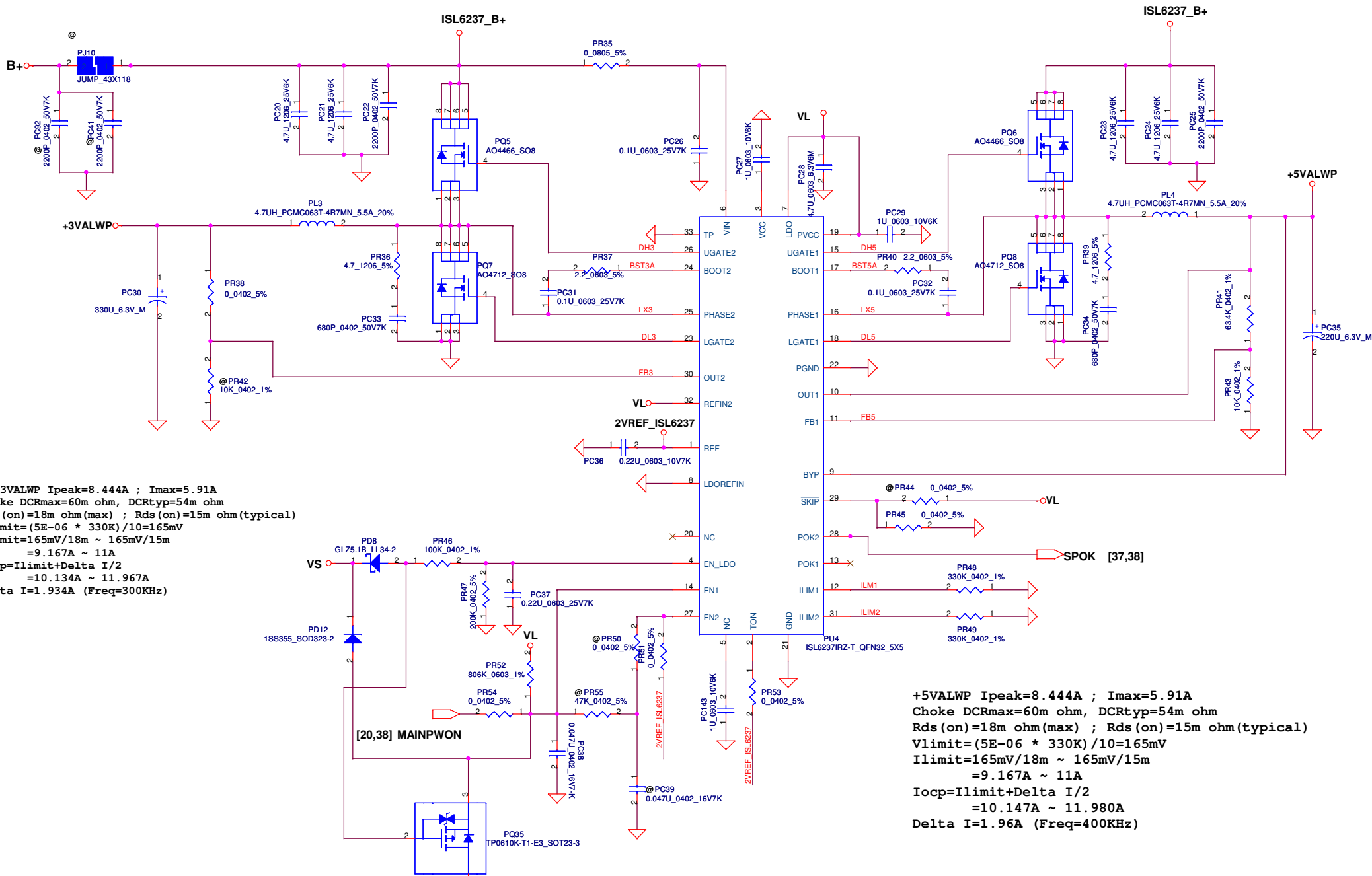
PH1 under CPU botten side :
 CPU thermal protection at 96 degree C
 Recovery at 60 degree C



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



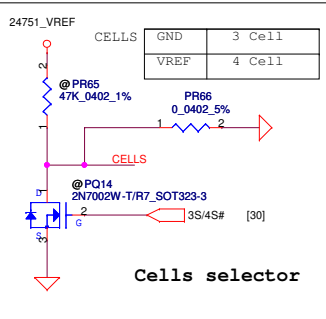
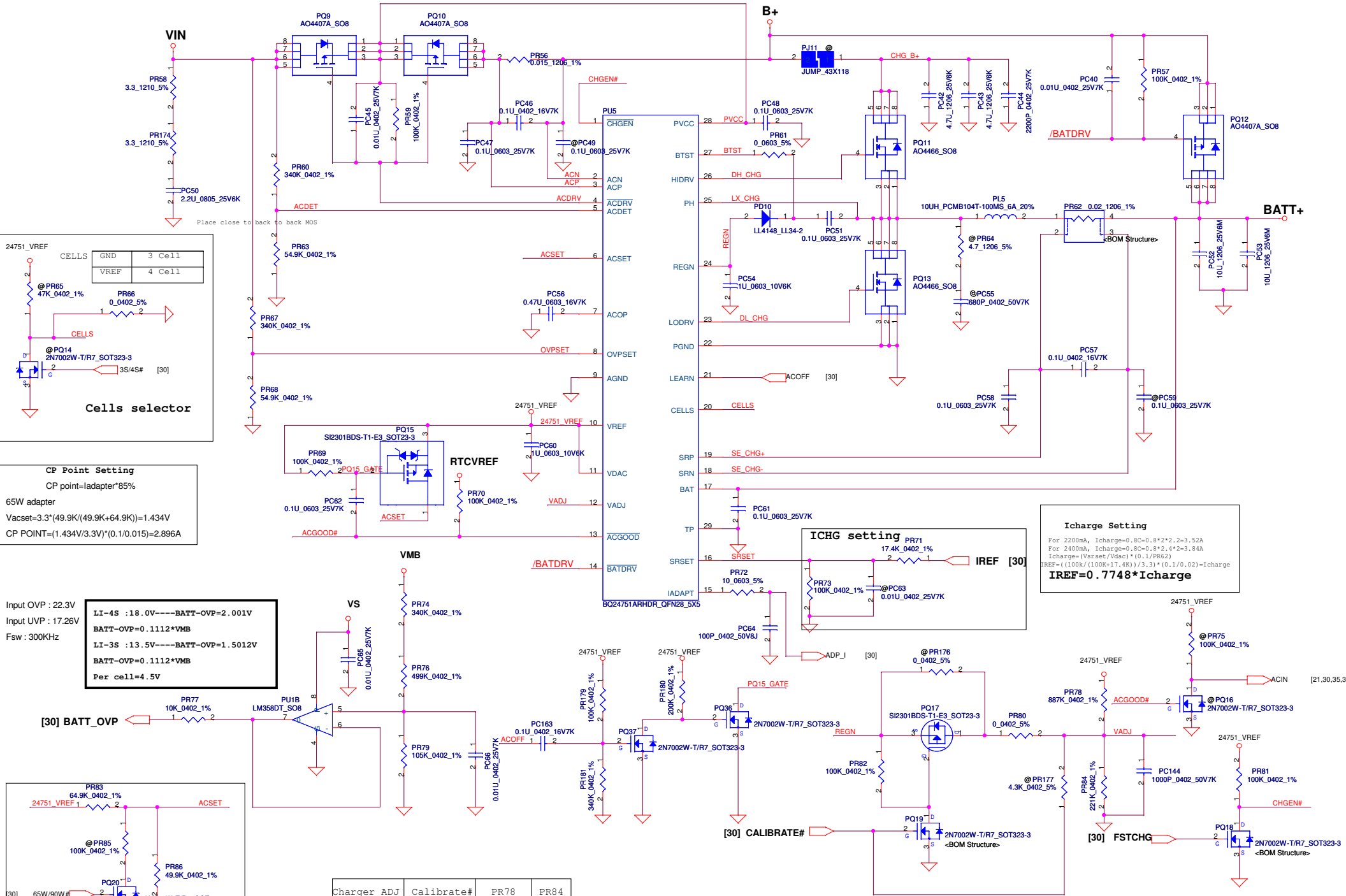
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				BATTERY CONN / OTP	
Size	Document Number	Rev		Date	
Custom	KALG1	0.1		Tuesday, March 24, 2009	
Date		Sheet		of	
Tuesday, March 24, 2009		38		46	



+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)

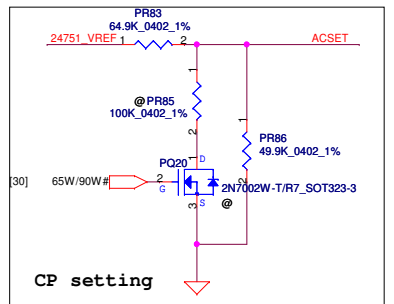
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				+5VALWP/+3VALWP	
Size	Document Number	Date		Sheet	Rev
Custom	KALG1	Tuesday, March 24, 2009		39	0.1
				of	46



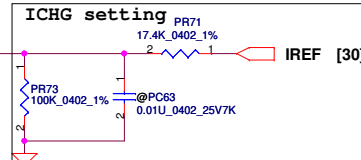
CP Point Setting
 CP point=ladapter*85%
 65W adapter
 $V_{acset} = 3.3 * (49.9K / (49.9K + 64.9K)) = 1.434V$
 $CP\ POINT = (1.434V / 3.3V) * (0.1 / 0.015) = 2.896A$

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



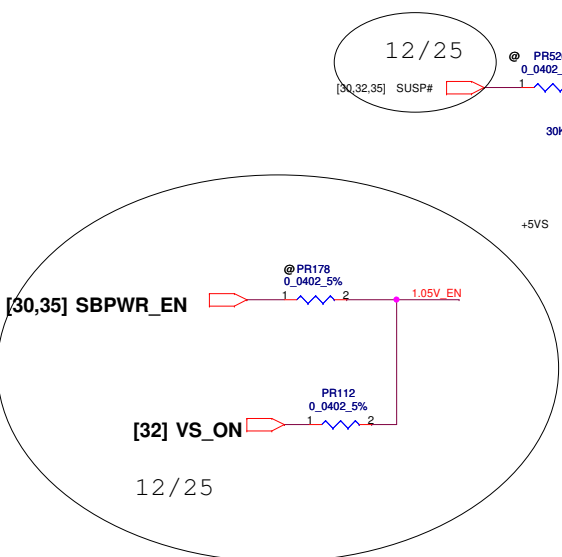
Charger ADJ	Calibrate#	PR78	PR84
4.0V	L	@	@
4.1V	L	887K	221K
4.2V	H	@	@



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

Security Classification		Compal Secret Data	
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.			

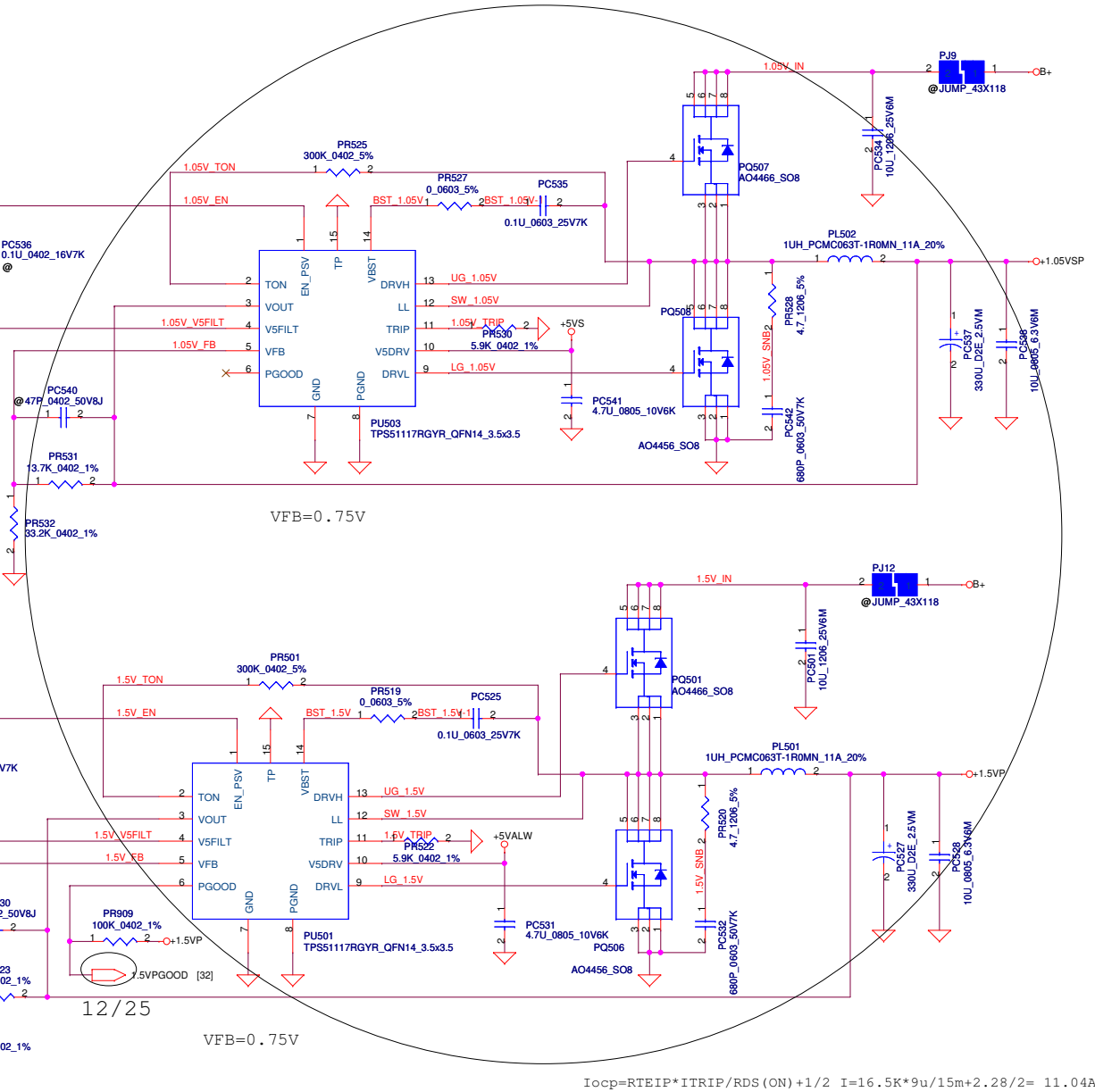
Compal Electronics, Inc.			
CHARGER			
Size	Document Number	Rev	
Custom	KALG1	0.1	
Date:	Tuesday, March 24, 2009	Sheet	40 of 46



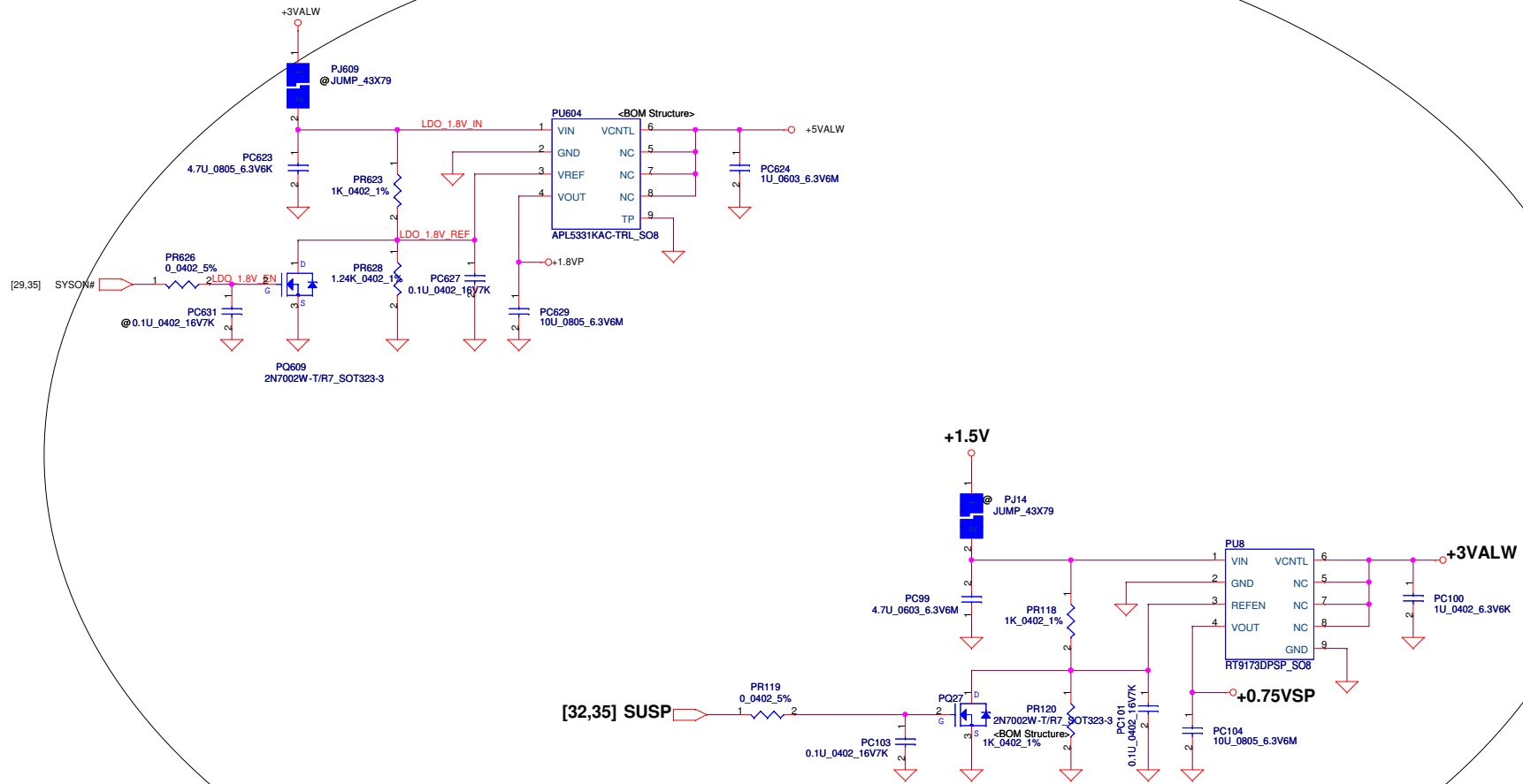
12/25

12/25

12/25

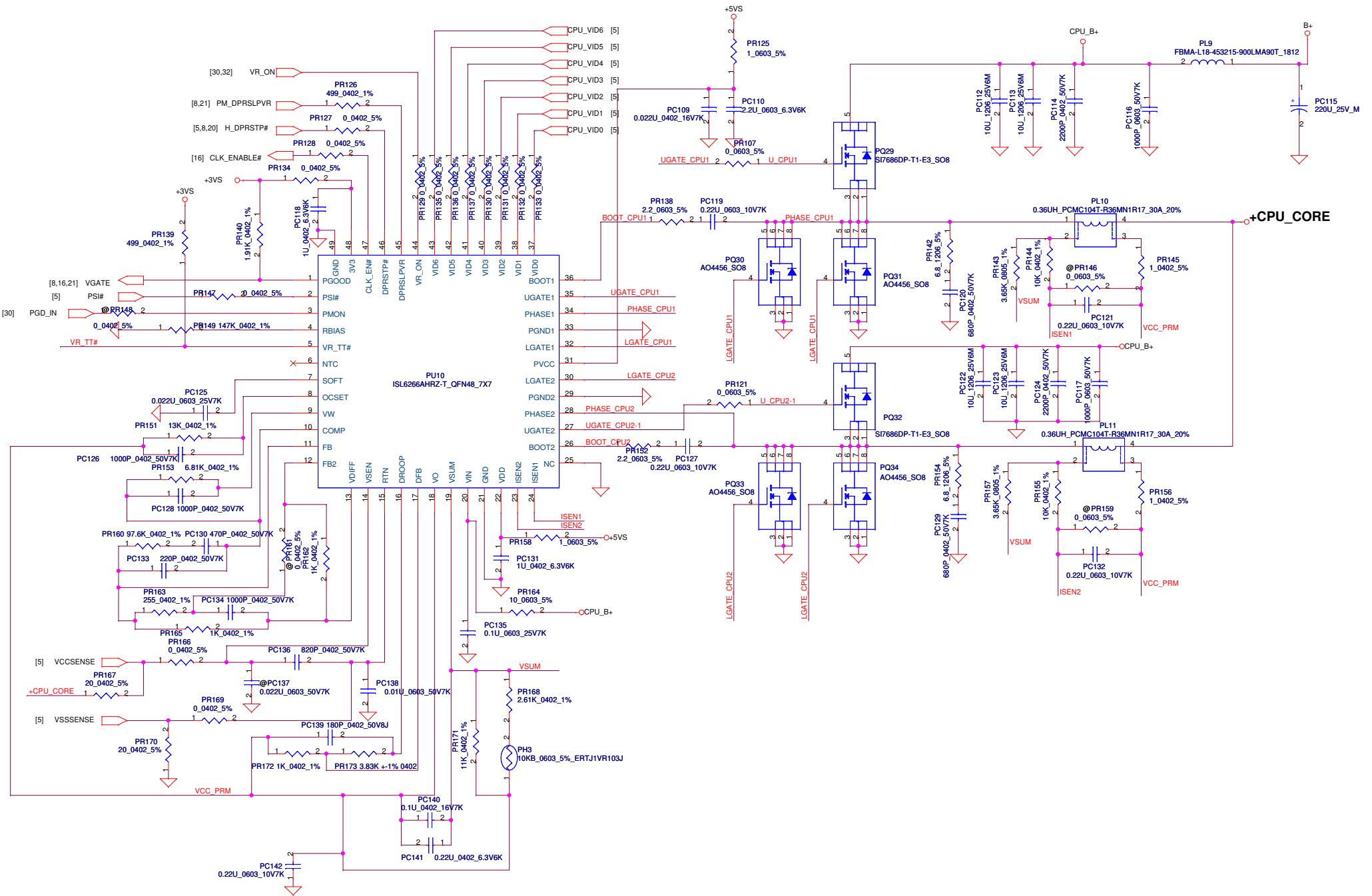


Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Size	Document Number
				Customer	KALG1
				Rev	0.1
				Date:	Tuesday, March 24, 2009
				Sheet	41 of 46



12/25

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.				+1.8VP/+0.75VSP Document Number KALG1 Date: Tuesday, March 24, 2009 Sheet 42 of 46
Size	Customer	Rev	0.1	

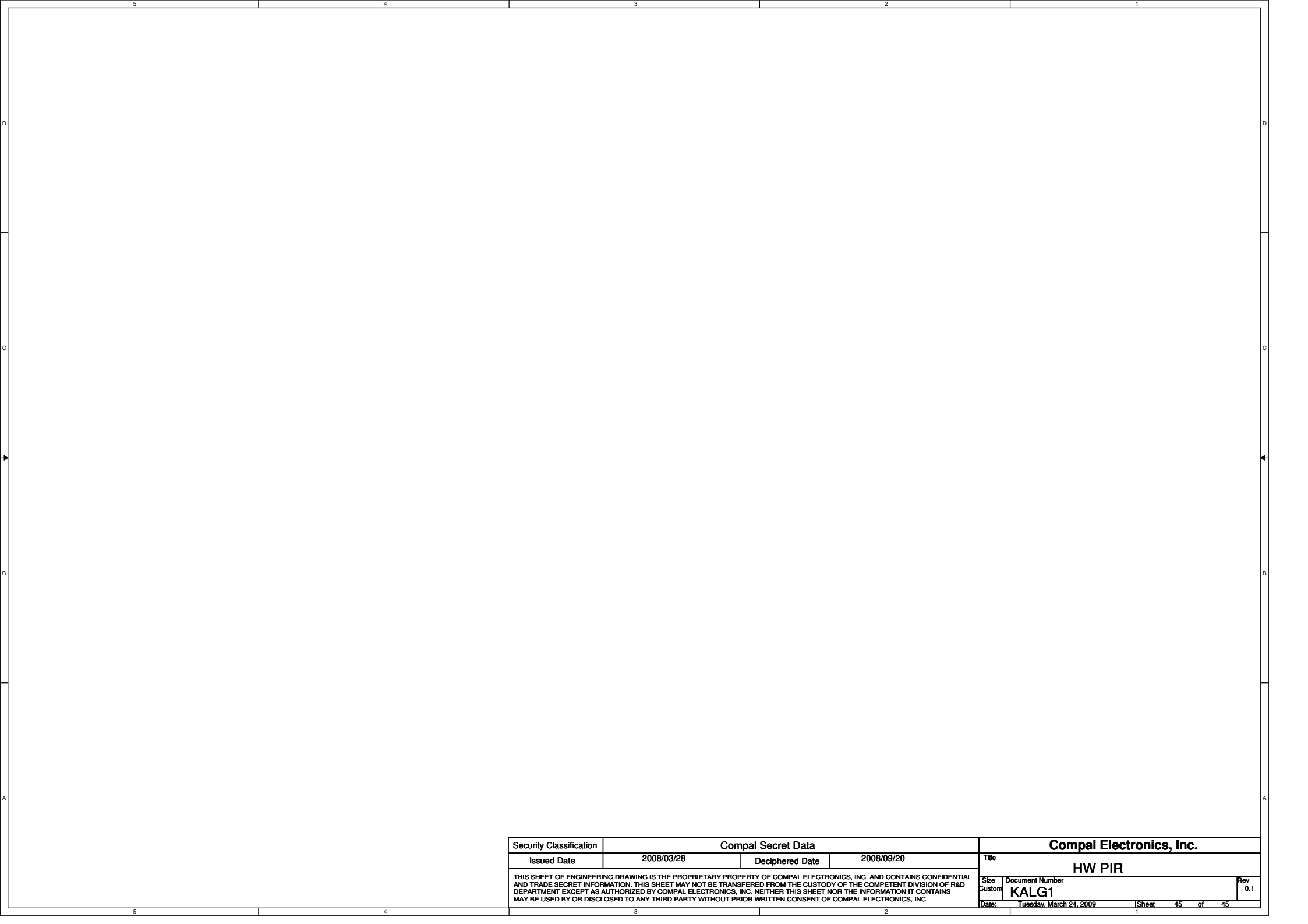


Security Classification	Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/09/20	Title
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
Size	Custom	Document Number	KALG1	
Date:	Tuesday, March 24, 2009	Sheet	43	of 46

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

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1		Add 3/5V boost resister for EMI request			Change PR37 and PR40 to 2.2 OHM		
2		Modify 1.5V and 1.05V choke to cyntec for eff.			PL501 & PL502		
3		Modify 1.5V and 1.05V frequnce from 336K to 264K for eff.			Change PR525 & PR501 from 240K to 300K		
4		Modify 1.5V and 1.05V low side mos for eff.			Change PQ506 & PQ508 from FDS6670 to A04456		
5		Add CPU_core boost resister for EMI request			Change PR138 and PR158 to 2.2 OHM		
6		Modify 1.5V & 1.05V OCP to 14A			Change PR530 & PR522 to 5.9K		
7		Modify 3V & 5V choke to 4.7UH for eff.			Change PL3 & PL4 from 8.2UH to 4.7UH		
8		Modify 5V output cap to OS-CON for costdown			Change PC35		
9		Modify 3V output cap to OS-CON for costdown			Change PC30		
10		Modify dischager mos to AO4407A for rating risk			Change PQ12		
11		Add 30K OHM to TPS51117 EN pin , Disable SMPS mode			ADD PR910 & PR911		
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	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size	Document Number
				Custom	KALG1
Date:				Tuesday, March 24, 2009	Sheet 44 of 46



Security Classification		Compal Secret Data		Compal Electronics, Inc.		
Issued Date	2008/03/28	Deciphered Date	2008/09/20	Title HW PIR		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Size Custom	Document Number KALG1	Rev 0.1
				Date	Tuesday, March 24, 2009	Sheet

PCB

ZZZ



LA-5271P MB Rev0: DA60000C500

PCB 08Y LA-5271P REV0 M/B

North Bridge

U21

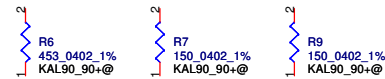


PVT

GL40: SA00002Q8N0

S IC AC82GL40 SLGGM A1 FCBGA1329 GL ABO
GL40@

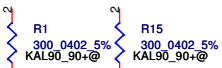
MEDIA_LED NUM_LED CAPS_LED



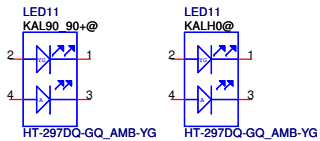
ON/OFF LED Risiter



Enlightener LED



Page 36



Security Classification	Compal Secret Data			Compal Electronics, Inc.	
Issued Date	2007/09/20	Deciphered Date	2008/08/18	Title	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.				Option Component	
				Size Custom	Document Number
				Date:	Tuesday, March 24, 2009
				Sheet	46 of 46