Compal Confidential

KAV10 Schematics Document

Intel Diamondville Processor with Calistoga(945GSE) + DDRII + ICH7M

2008-12-30

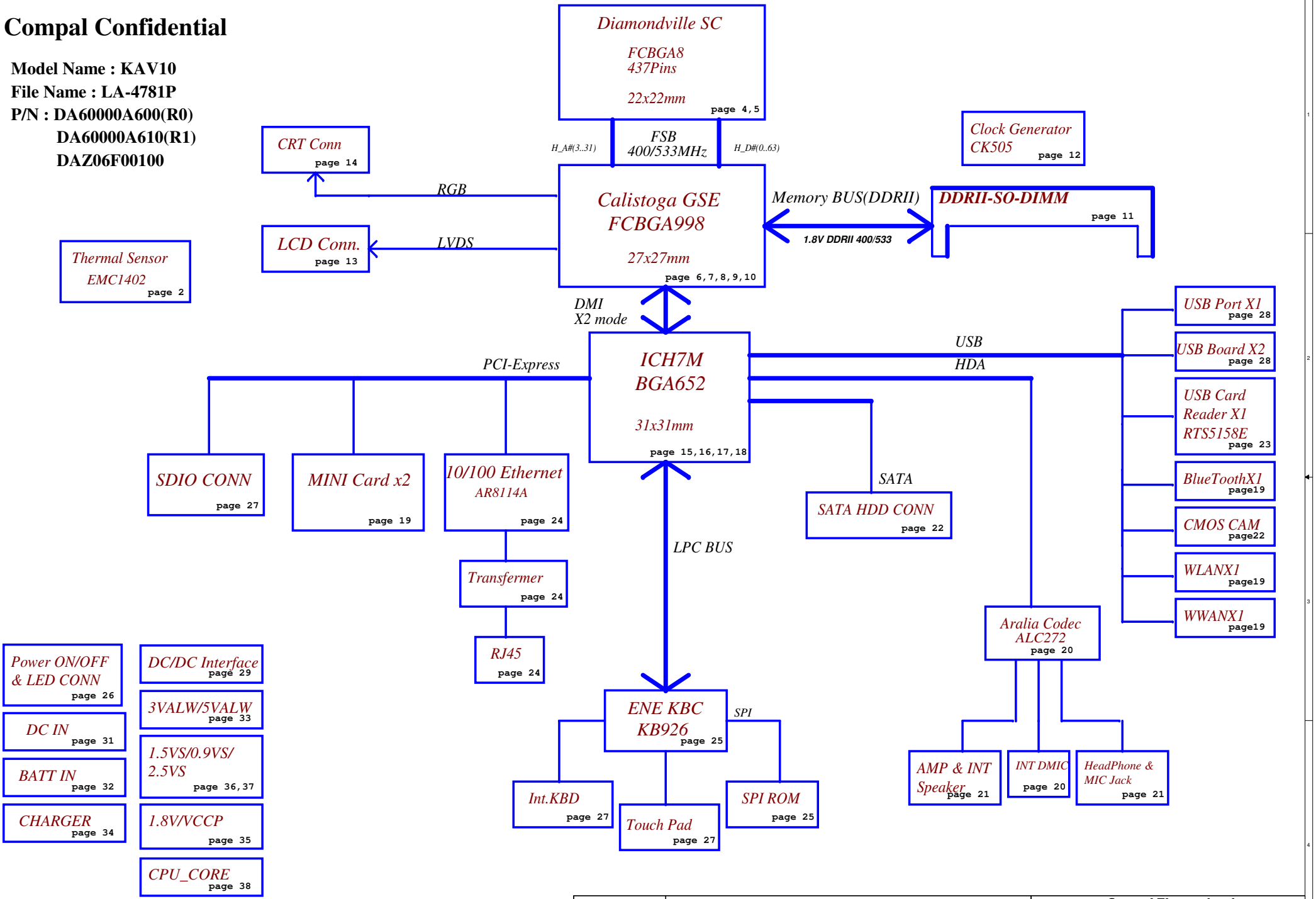
REV: 1.0

Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.		
Title: Cover Page		
Size: B	Document Number: KAV10 LA-4781P	Rev: 1.0
Date: Tuesday, December 30, 2008	Sheet 1 of 40	

Compal Confidential

Model Name : KAV10
File Name : LA-4781P
P/N : DA60000A600(R0)
DA60000A610(R1)
DAZ06F00100



Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Block Diagrams

Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 2 of 40

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
+VCCP	VCCP switched power rail	ON	OFF	OFF
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8V	1.8V power rail for DDR	ON	ON	OFF
+2.5VS	2.5V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+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

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

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

BOARD ID Table(Page 25)

ID	BRD ID	Ra	Rb	Vab
0	R01 (EVT)	NC	0	0V
1	R02 (DVT)	100K	8.2K	0.25V
2	R03 (PVT)	100K	18K	0.50V
3	R10A (MP)	100K	NC	3.3V

External PCI Devices

DEVICE	IDSEL #	REQ/GNT #	PIRQ

No PCI Device

EC SM Bus1 address

Device	Address
Smart Battery	0001 011X b
EEPROM(24C16/02)	1010 000X b

EC SM Bus2 address

Device	Address
EMC1402	1001 100X b

ICH7M SM Bus address

Device	Address
Clock Generator (SLG8SP556VTR)	1101 001Xb
DDR DIMMA	1010 000Xb

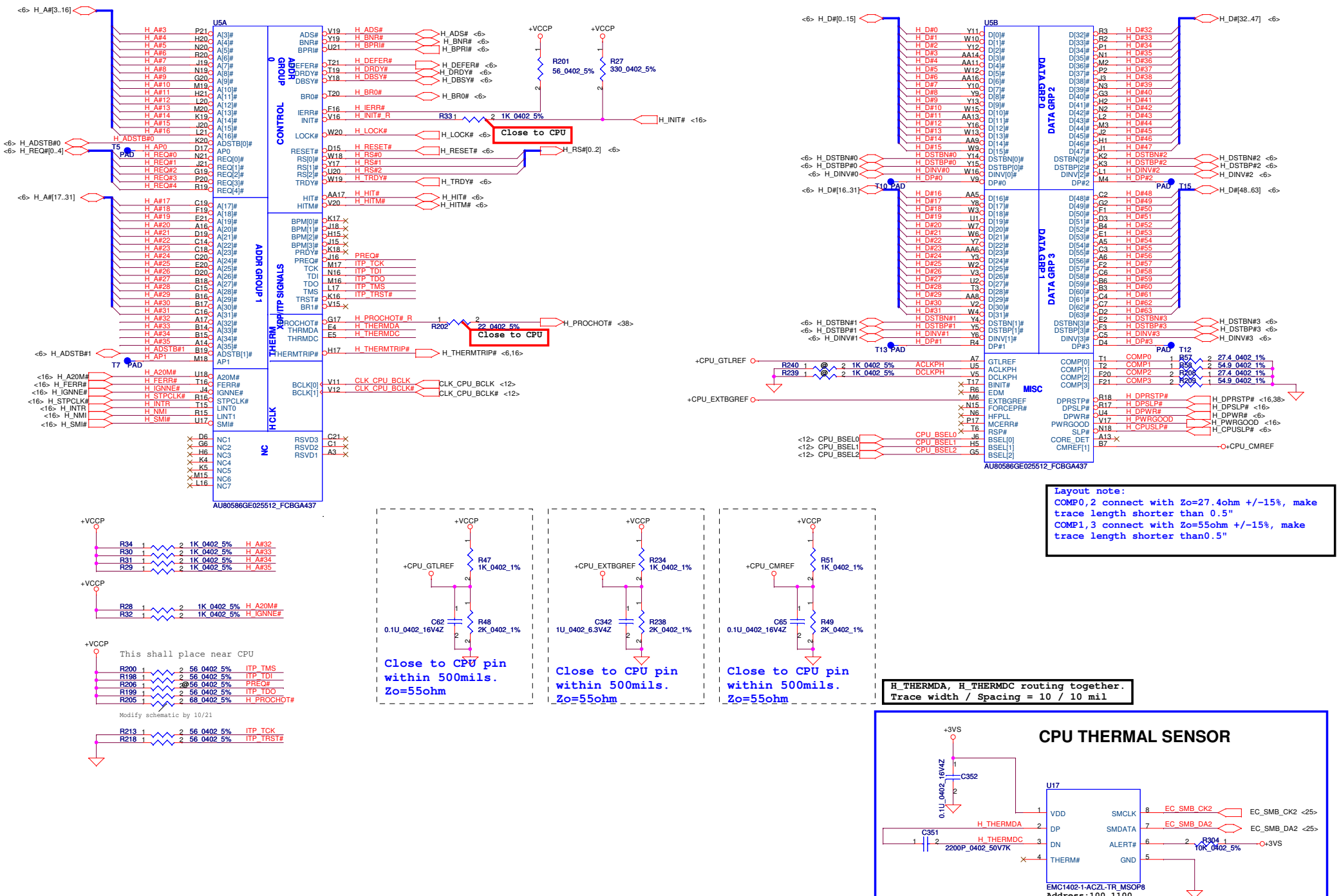
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Notes List

Size: B | Document Number: KAV10 LA-4781P | Rev: 1.0

Date: Tuesday, December 30, 2008 | Sheet 3 of 40



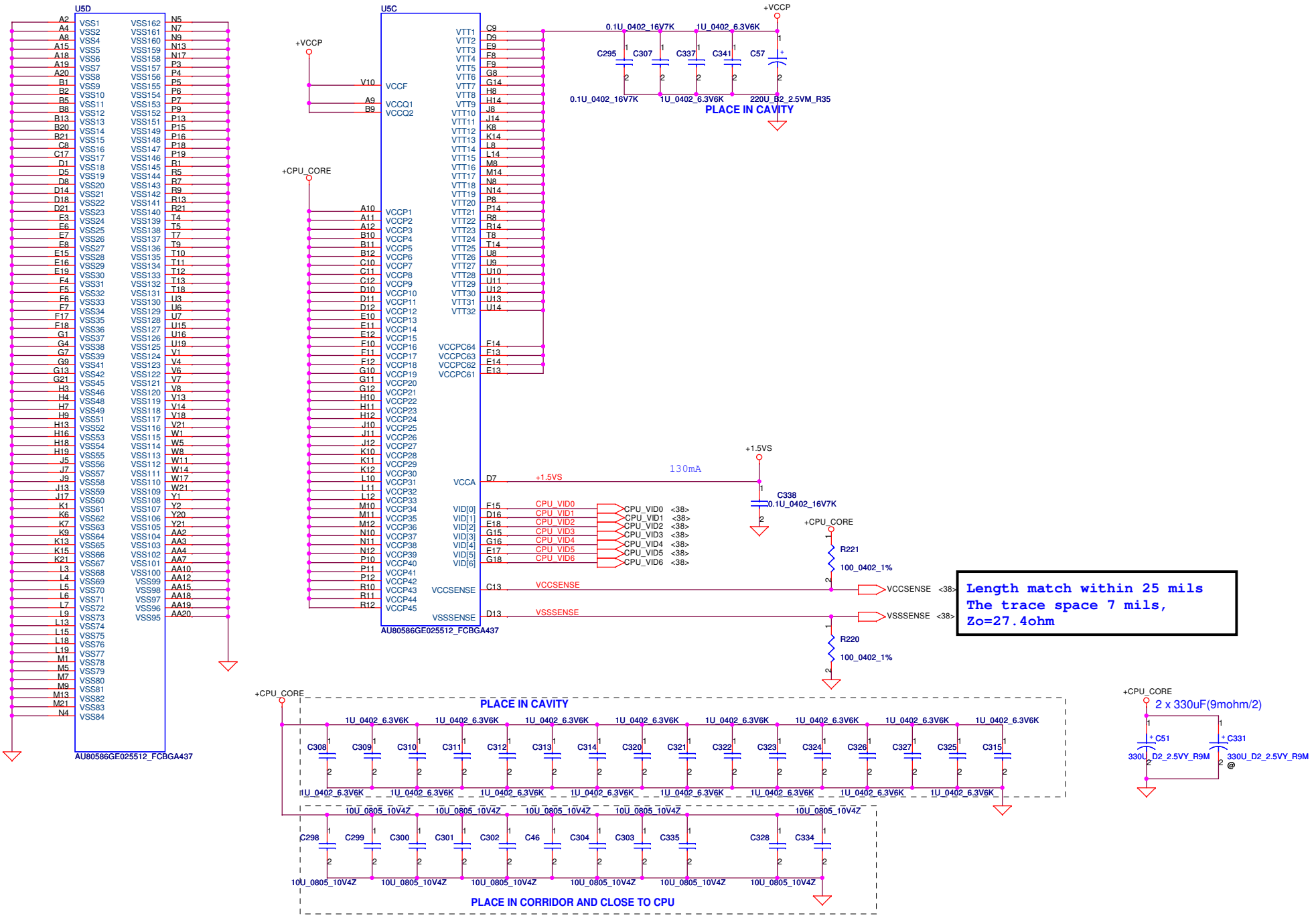
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Diamondville(1/2)

Size: Custom | Document Number: KAV10 LA-4781P | Rev: 1.0

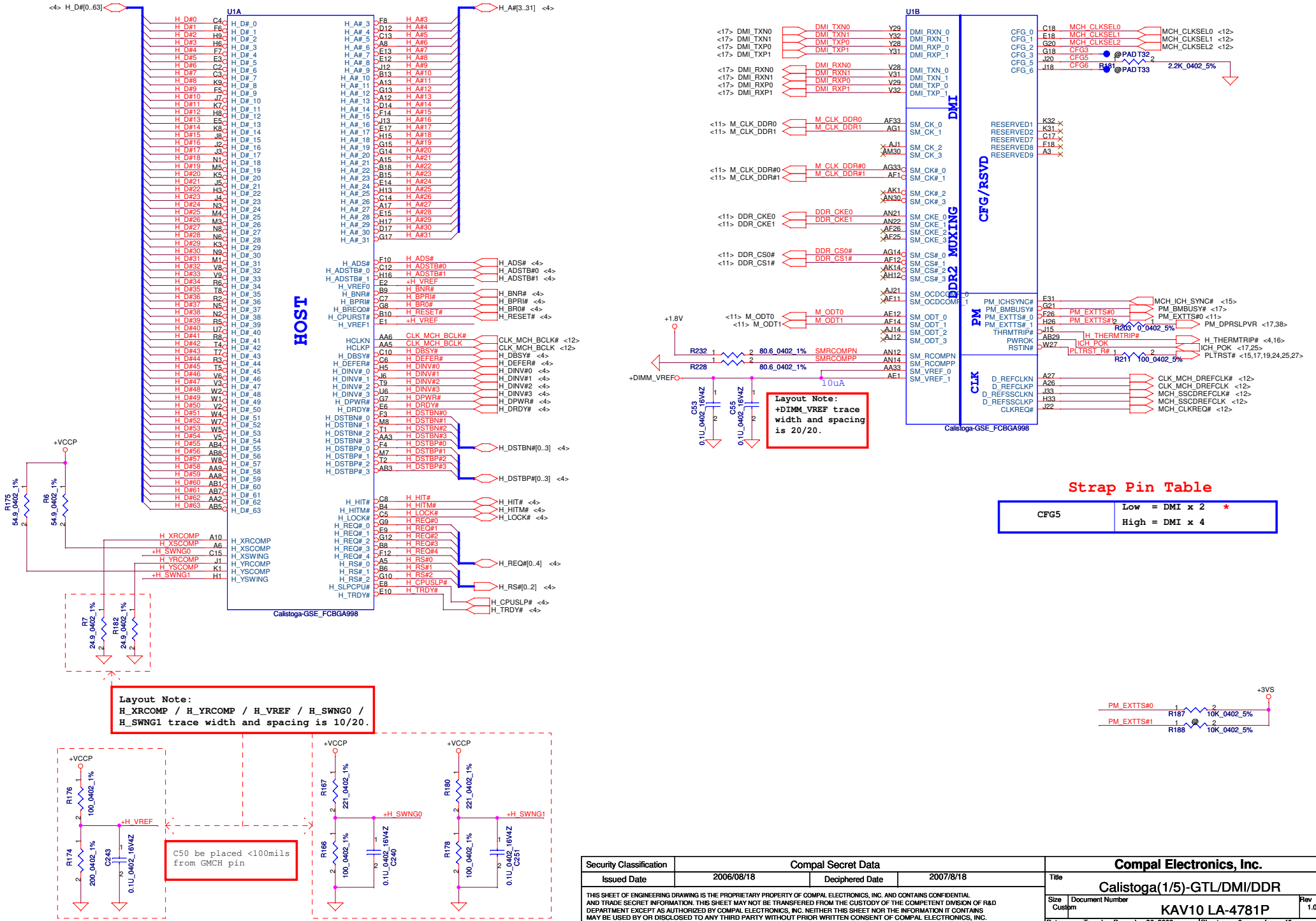
Date: Tuesday, December 30, 2008 | Sheet 4 of 40



Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title	Diamondville(2/2)	
Size B	Document Number KAV10 LA-4781P	Rev 1.0
Date: Tuesday, December 30, 2008	Sheet 5 of 40	



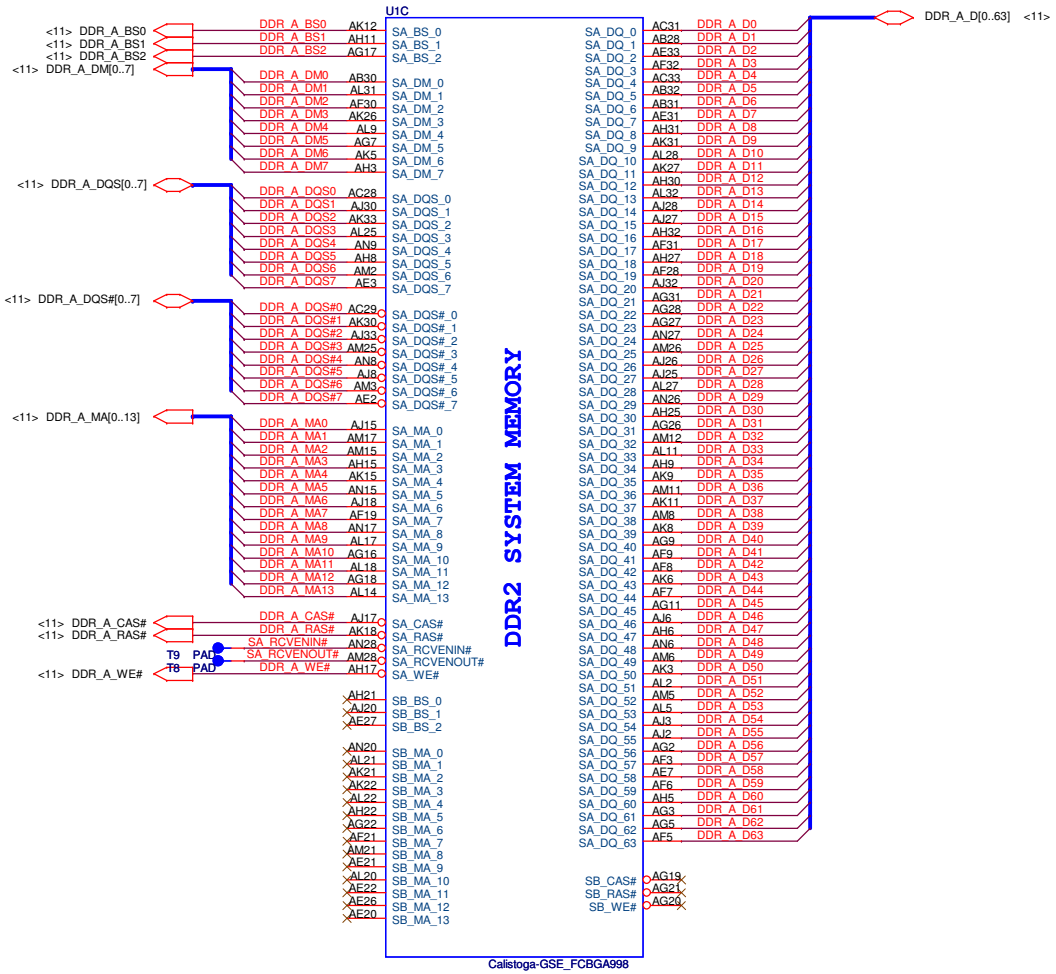
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Calistoga(1/5)-GTL/DMI/DDR

Size	Document Number	Rev
Custom	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 6 of 40



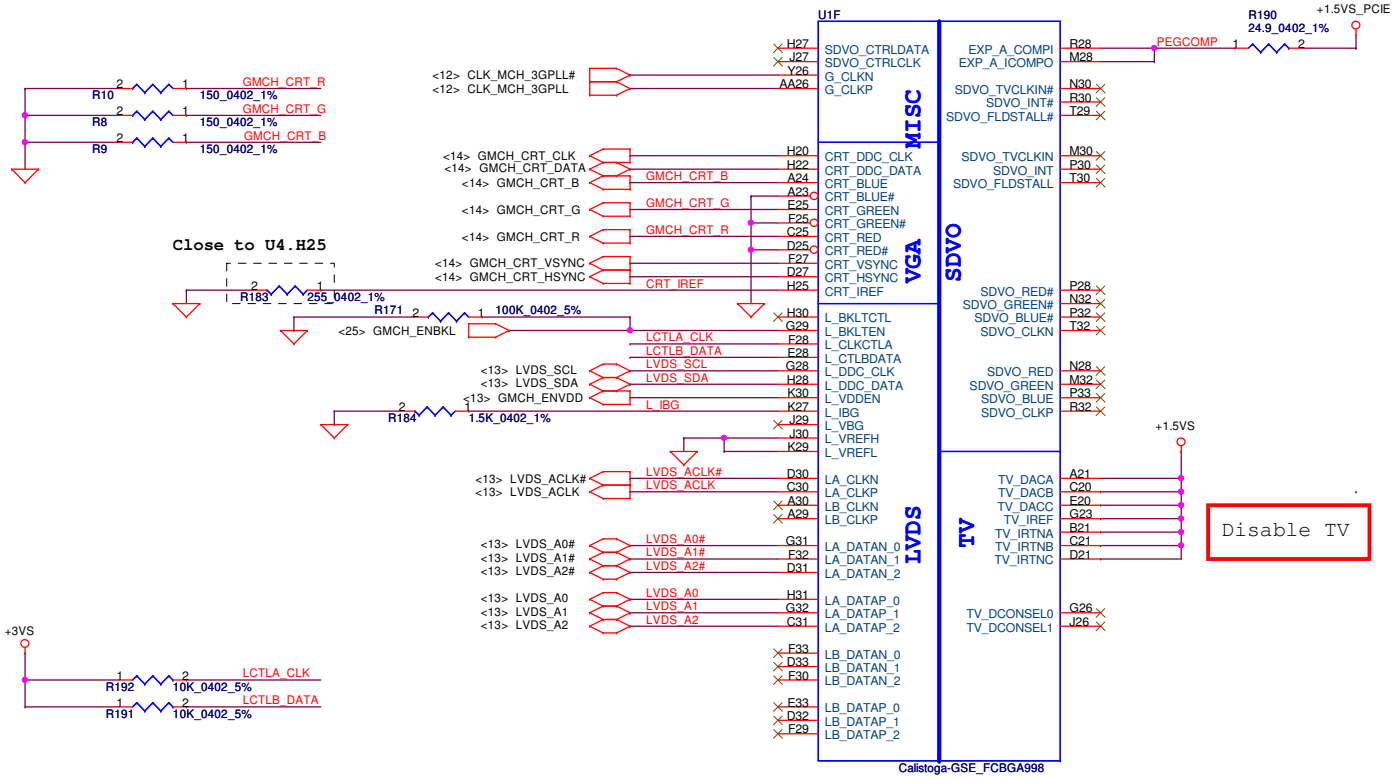
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Calistoga(2/5)-DDR2

Size	Document Number	Rev
Custom	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 7 of 40



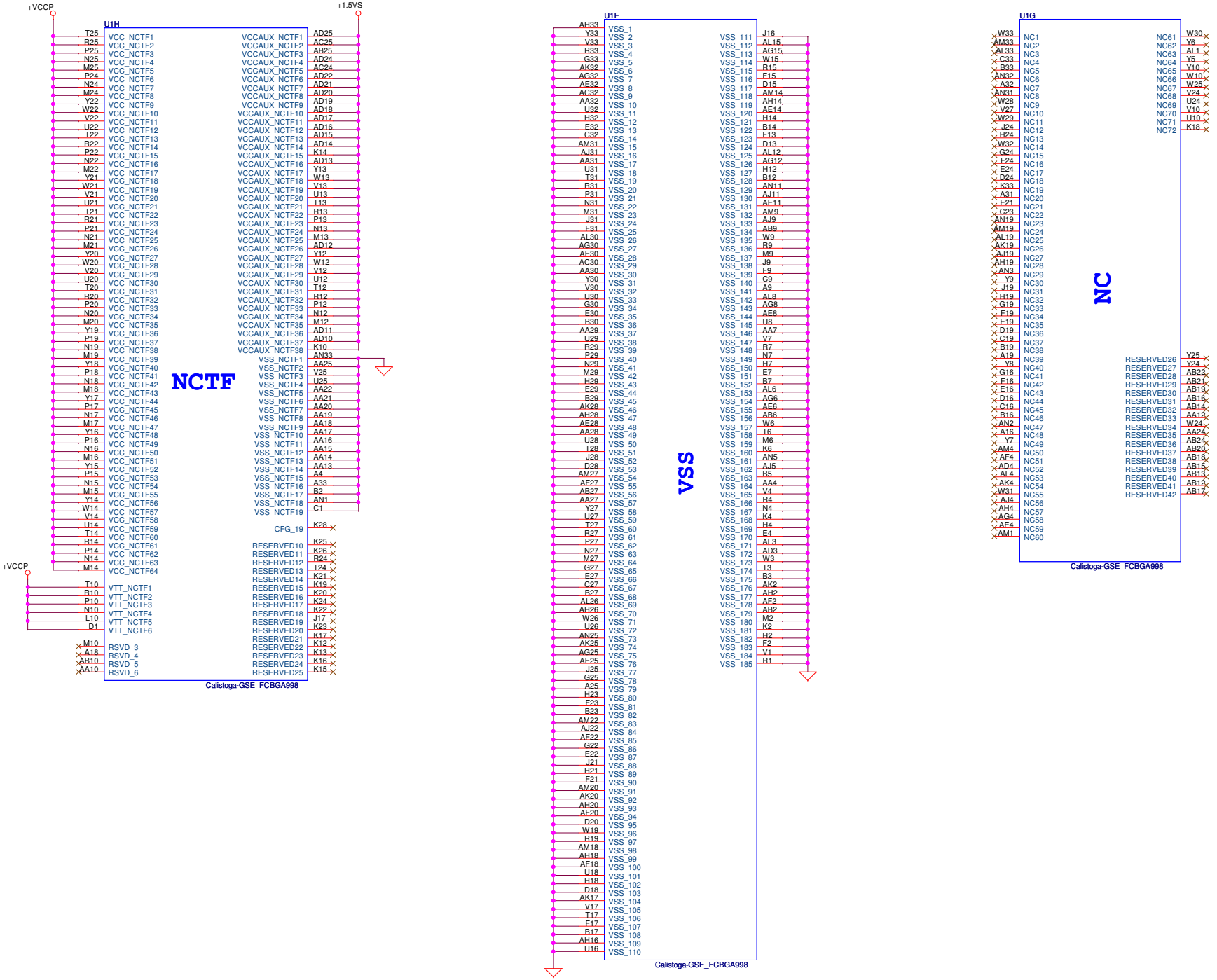
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Calistoga(3/5)-VGA/LVDS/TV

Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 Sheet 8 of 40



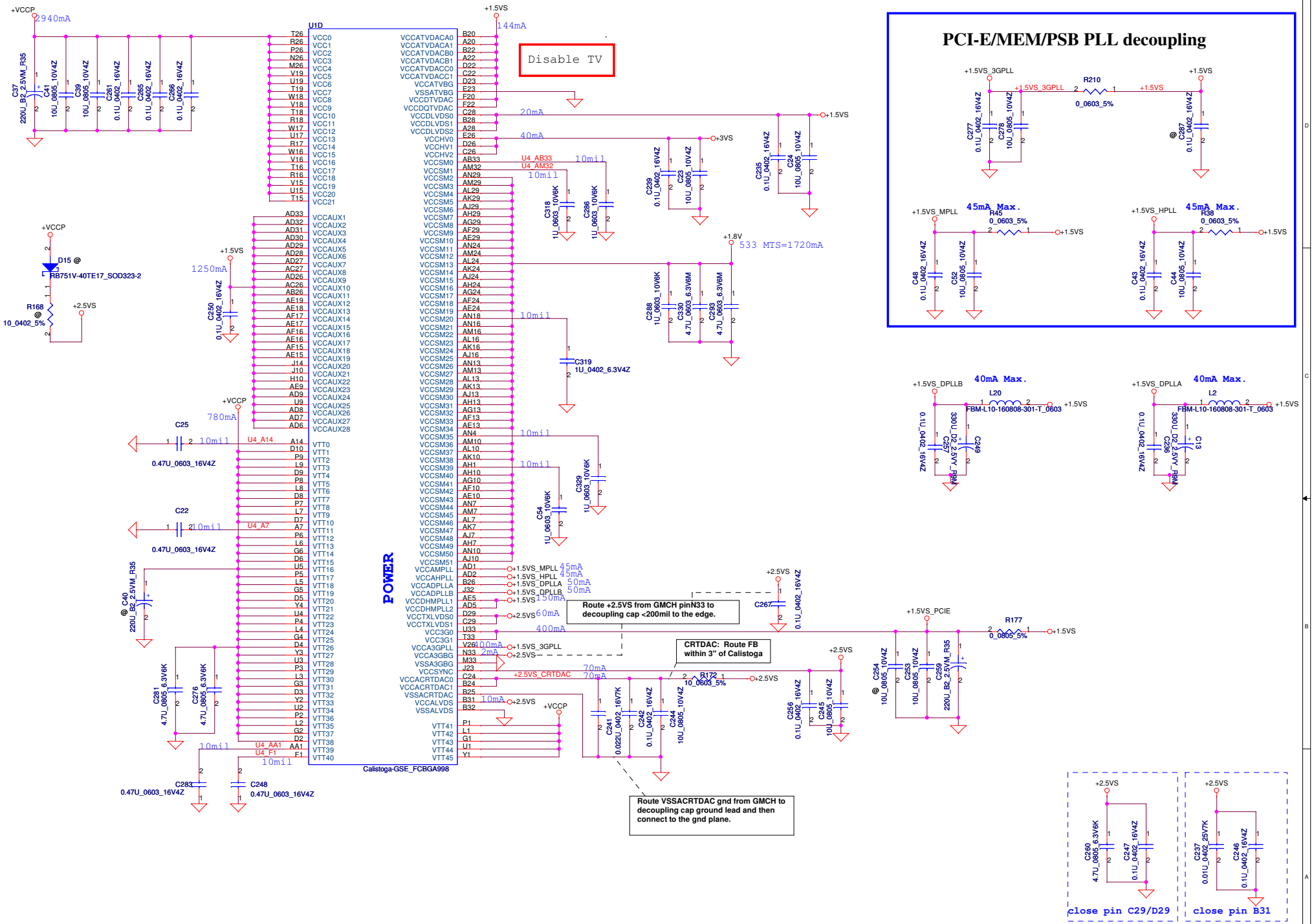
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Calistoga(4/5)-PWR/GND

Size	Document Number	Rev
Custom	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 9 of 40



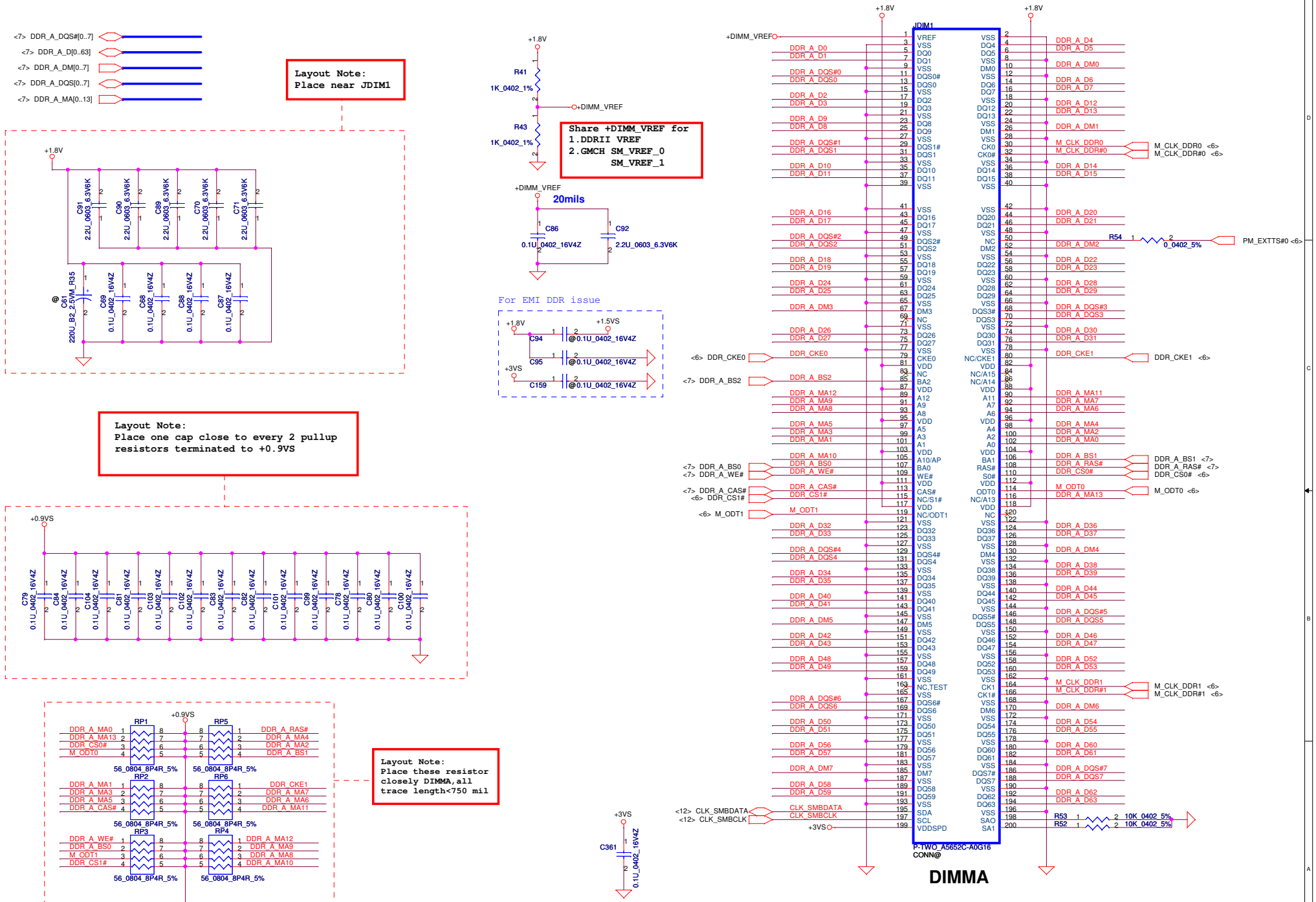
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Calistoga(5/5)-PWR/GND

Size	Document Number	Rev
Custom	KAV10 LA-4781P	1.0

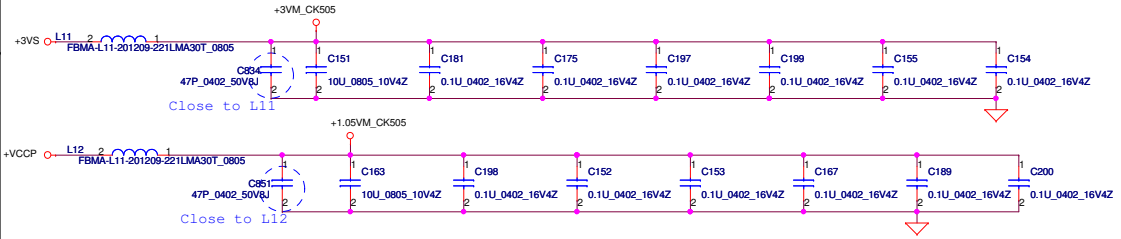
Date: Tuesday, December 30, 2008 | Sheet 10 of 40

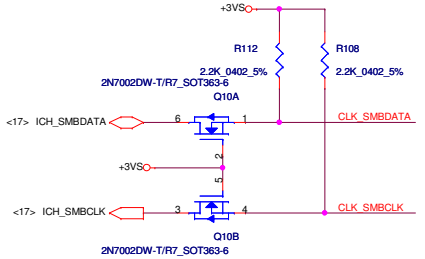


Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.			
Title	DDRII-SODIMMA		
Size B	Document Number	KAV10 LA-4781P	Rev 1.0
Date: Tuesday, December 30, 2008	Sheet 11 of 40		

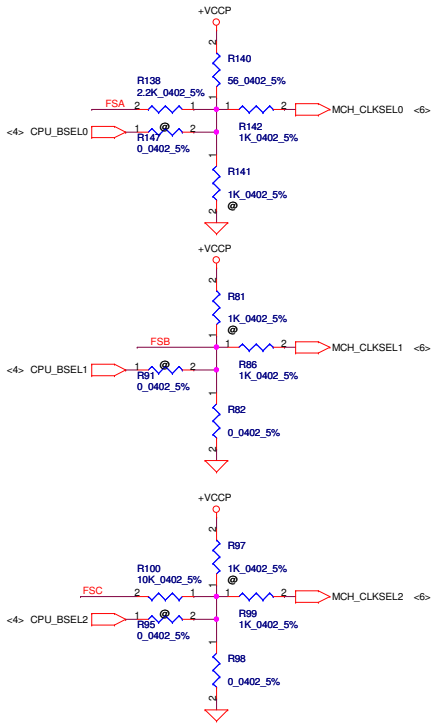
FSC CLKSEL2	FSB CLKSEL1	FSA CLKSEL0	CPU MHz	SRC MHz	PCI MHz	REF MHz	DOT_96 MHz	USB MHz
0	0	0	266	100	33.3	14.318	96.0	48.0
0	0	1	133	100	33.3	14.318	96.0	48.0
0	1	0	200	100	33.3	14.318	96.0	48.0
0	1	1	166	100	33.3	14.318	96.0	48.0
1	0	0	333	100	33.3	14.318	96.0	48.0
1	0	1	100	100	33.3	14.318	96.0	48.0
1	1	0	400	100	33.3	14.318	96.0	48.0
1	1	1	Reserved					

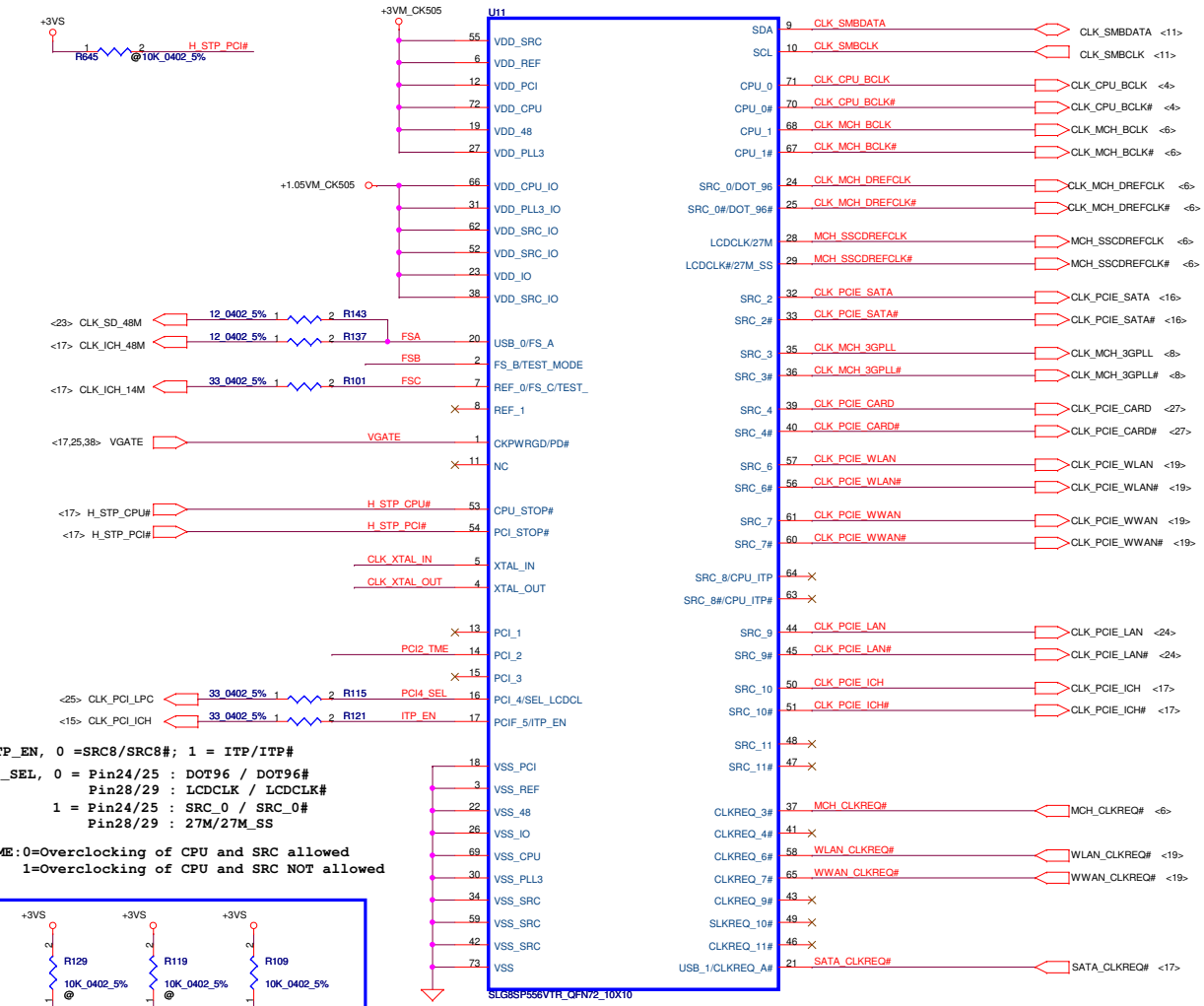


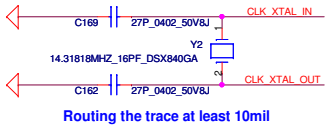


SA000020K00 (Silego : SLG8SP556VTR)

SA000020H10 (ICS : ICS9LPRS387AKLFT)



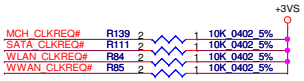




Routing the trace at least 10mil

SRC PORT LIST

PORT	DEVICE
SRC0	MCH_DREFCLK
SRC2	SATA_HDD
SRC3	MCH_3GPLL
SRC4	PCIE_CARDREADER
SRC6	PCIE_WLAN
SRC7	PCIE_WWAN
SRC8	
SRC9	PCIE_LAN
SRC10	PCIE_ICH
SRC11	



REQ PORT LIST

PORT	DEVICE
REQ_3#	MCH_3GPLL
REQ_4#	
REQ_6#	PCIE_WLAN
REQ_7#	PCIE_WWAN
REQ_9#	
REQ_10#	
REQ_11#	
REQ_A#	SATA

Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2007/8/18

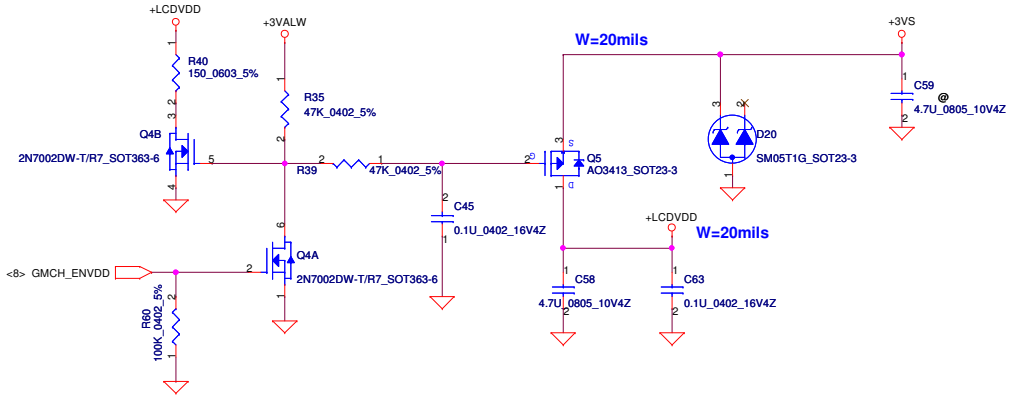
Compal Electronics, Inc.

Title: Clock Generator CK505

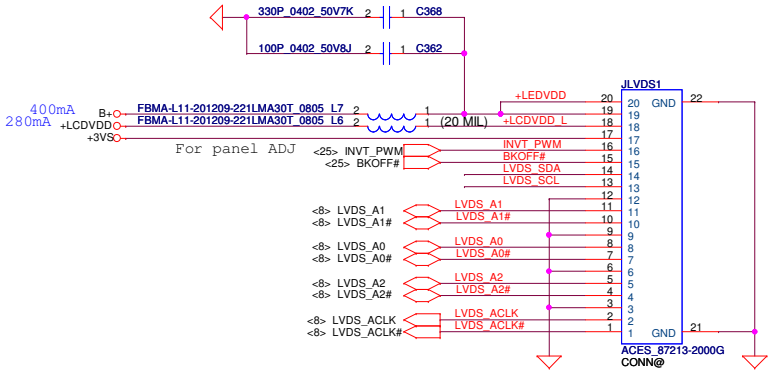
Size | Document Number: KAV10 LA-4781P | Rev: 1.0

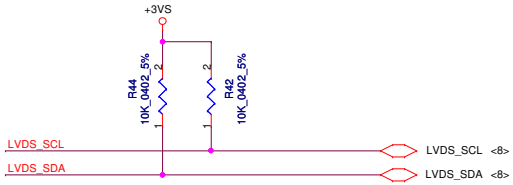
Date: Tuesday, December 30, 2008 | Sheet 12 of 40

LCD POWER CIRCUIT



LCD/PANEL BD. Conn.





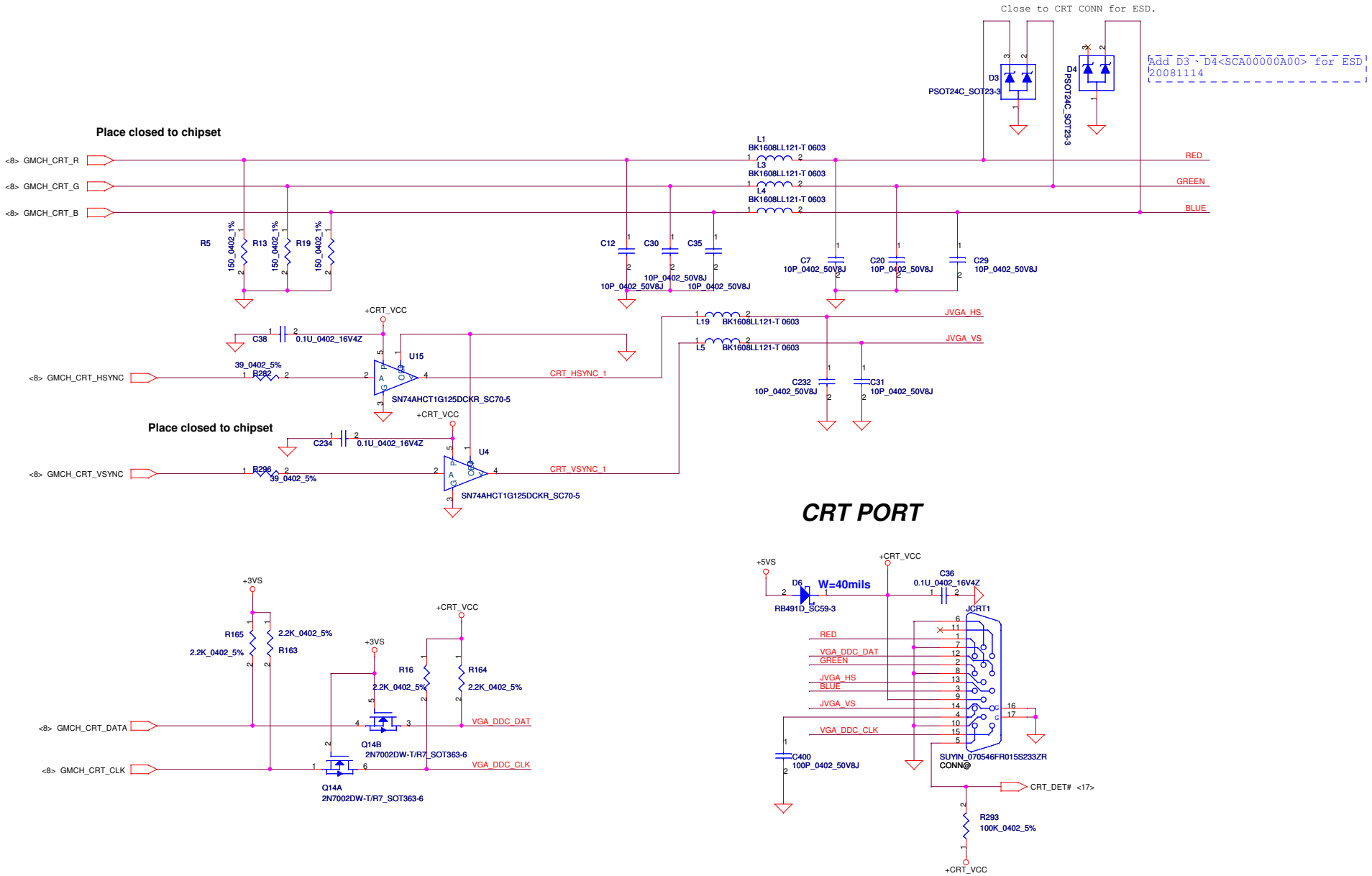
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: LVDS /INVERTER

Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

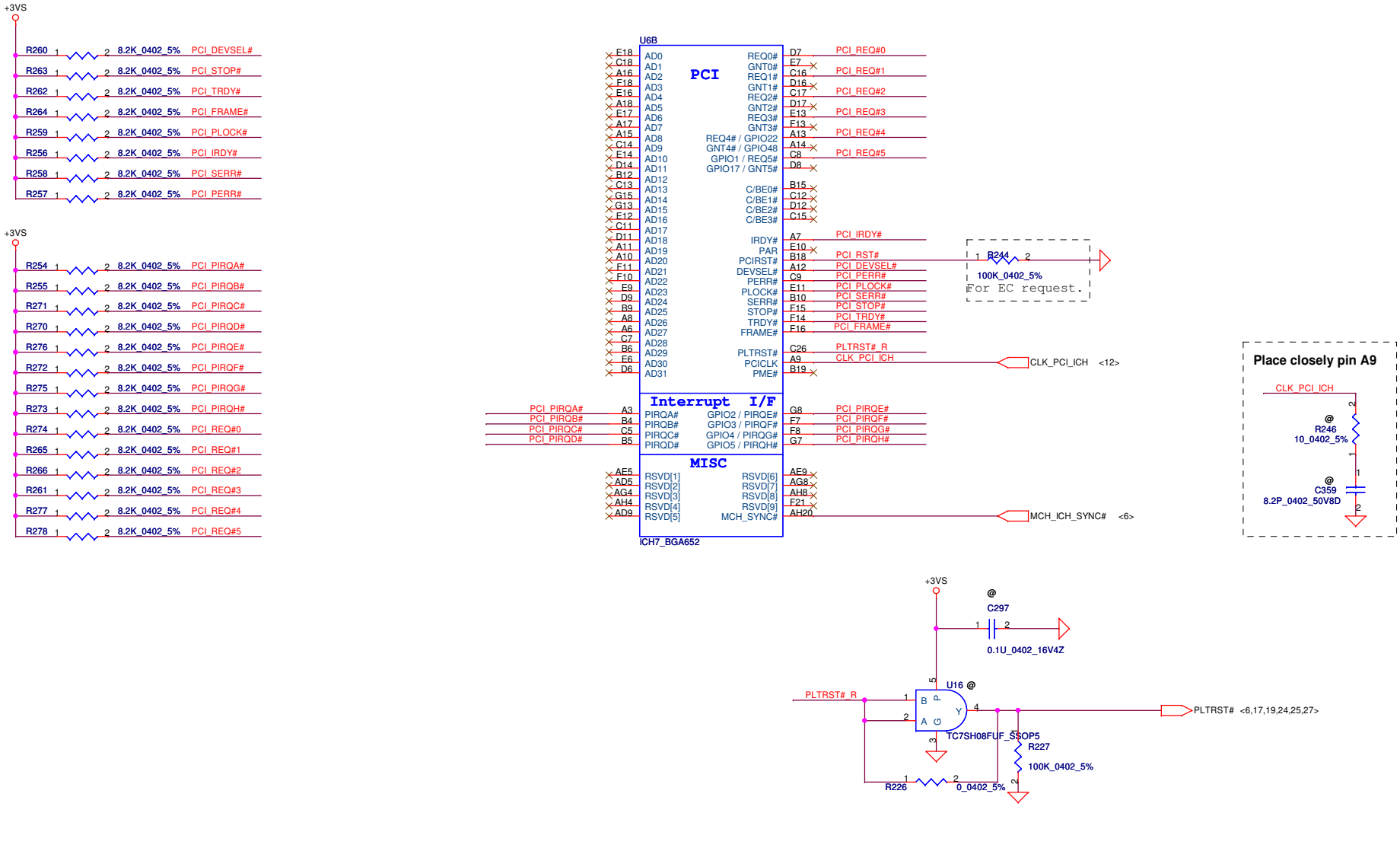
Date: Tuesday, December 30, 2008 | Sheet 13 of 40



Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title	CRT PORT	
Size B	Document Number KAV10 LA-4781P	Rev 1.0
Date: Tuesday, December 30, 2008	Sheet 14 of 40	



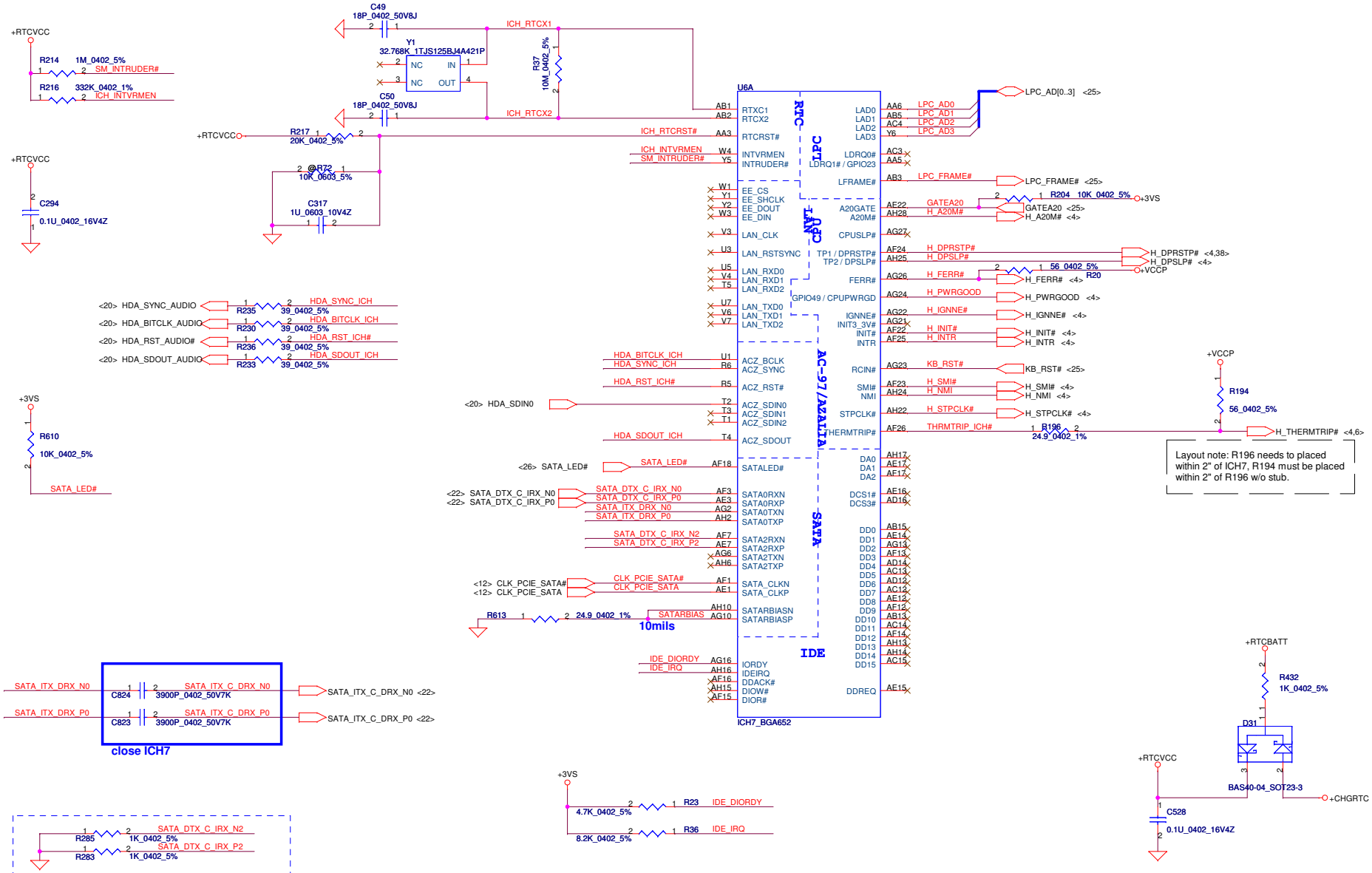
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: ICH7M(1/4)HUB,PCI,HOST

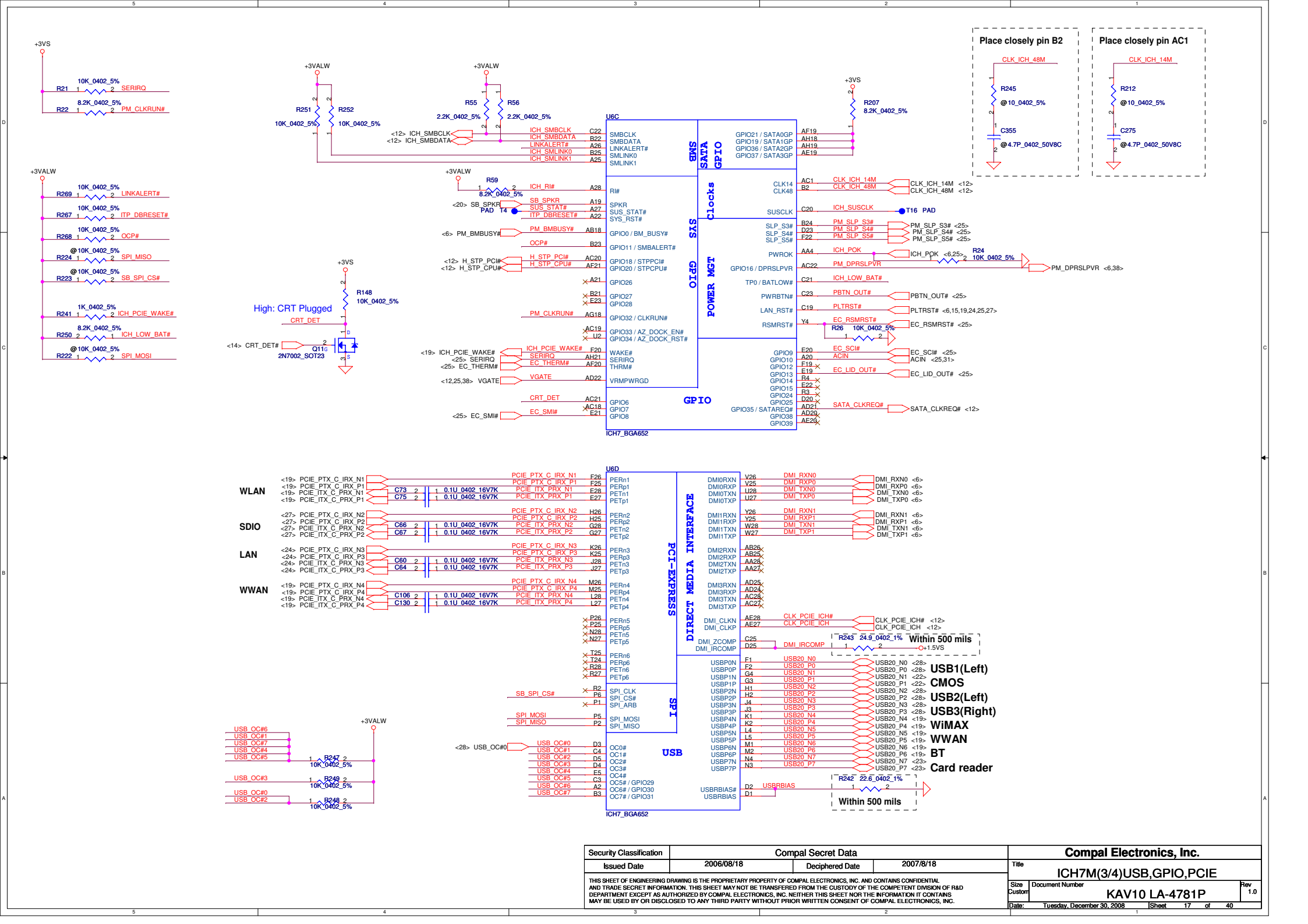
Size	Document Number	Rev
	KAV10 LA-4781P	1.0

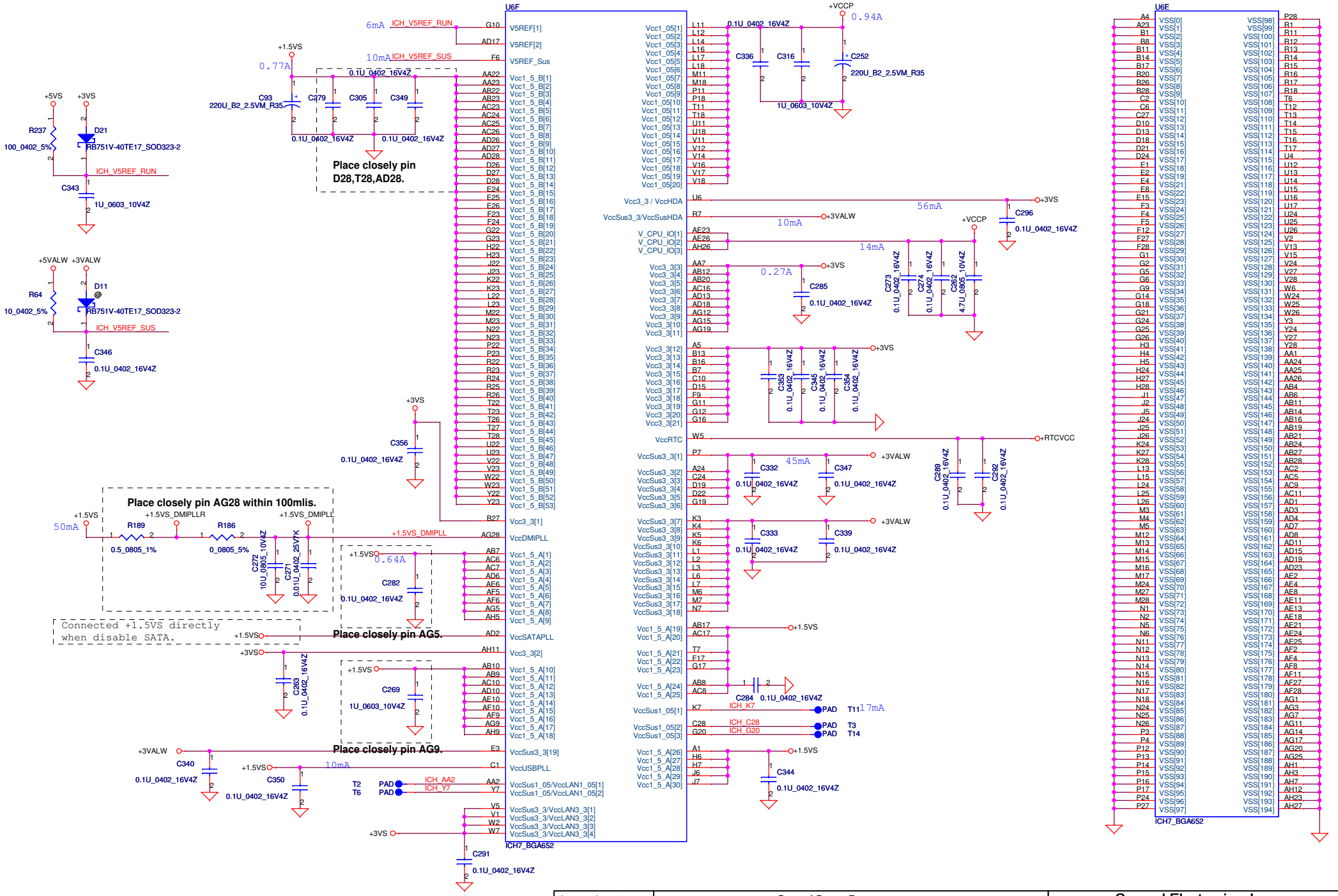
Date: Tuesday, December 30, 2008 Sheet 15 of 40



Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.	
Title	ICH7M(2/4)LAN,ATA,LPC,RTC
Size: Custom	Document Number: KAV10 LA-4781P
Rev	1.0
Date: Tuesday, December 30, 2008	Sheet 16 of 40


Place closely pin B2
Place closely pin AC1
U6C
U6D
ICH7_BGA652
GPIO
SMB
SATA GPIO
Clocks
SYS
POWER MGT
PCI-EXPRESS
DIRECT MEDIA INTERFACE
SPI
USB
WLAN
SDIO
LAN
WWAN
USB1(Left)
CMOS
USB2(Left)
USB3(Right)
WiMAX
WWAN
BT
Card reader
Within 500 mils
Within 500 mils
High: CRT Plugged
2N7002_SOT23
Security Classification
Compal Secret Data
Issued Date
2006/08/18
Deciphered Date
2007/8/18
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC.
Compal Electronics, Inc.
Title
ICH7M(3/4)USB,GPIO,PCIE
Size
Custom
Document Number
KAV10 LA-4781P
Rev
1.0
Date:
Tuesday, December 30, 2008
Sheet
17
of
40



Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

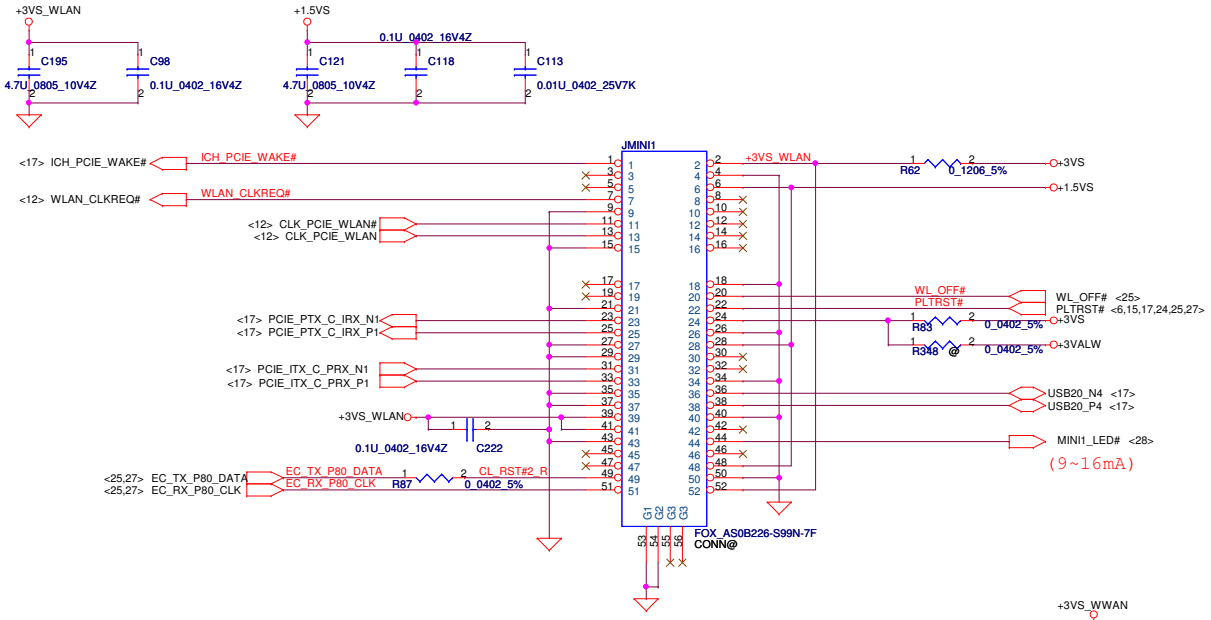
Compal Electronics, Inc.

Title: ICH7M(4/4)POWER/GND

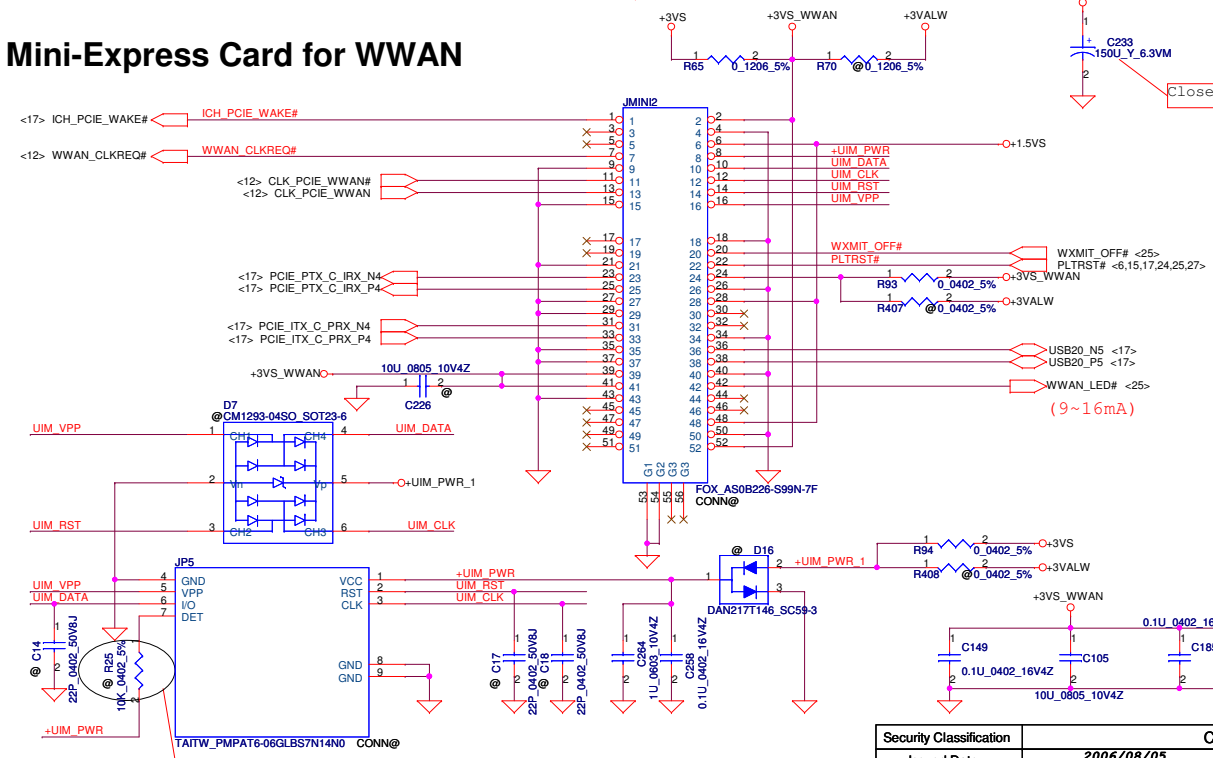
Size: Custom | Document Number: KAV10 LA-4781P | Rev: 1.0

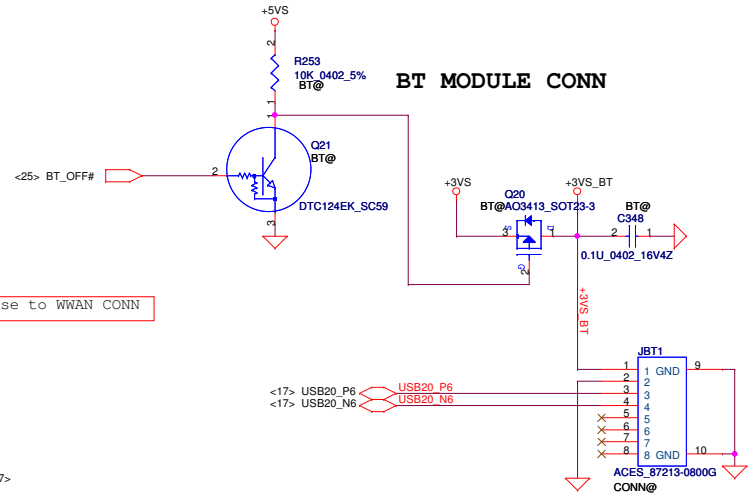
Date: Tuesday, December 30, 2008 | Sheet 18 of 40

Mini-Express Card for WLAN



Mini-Express Card for WWAN





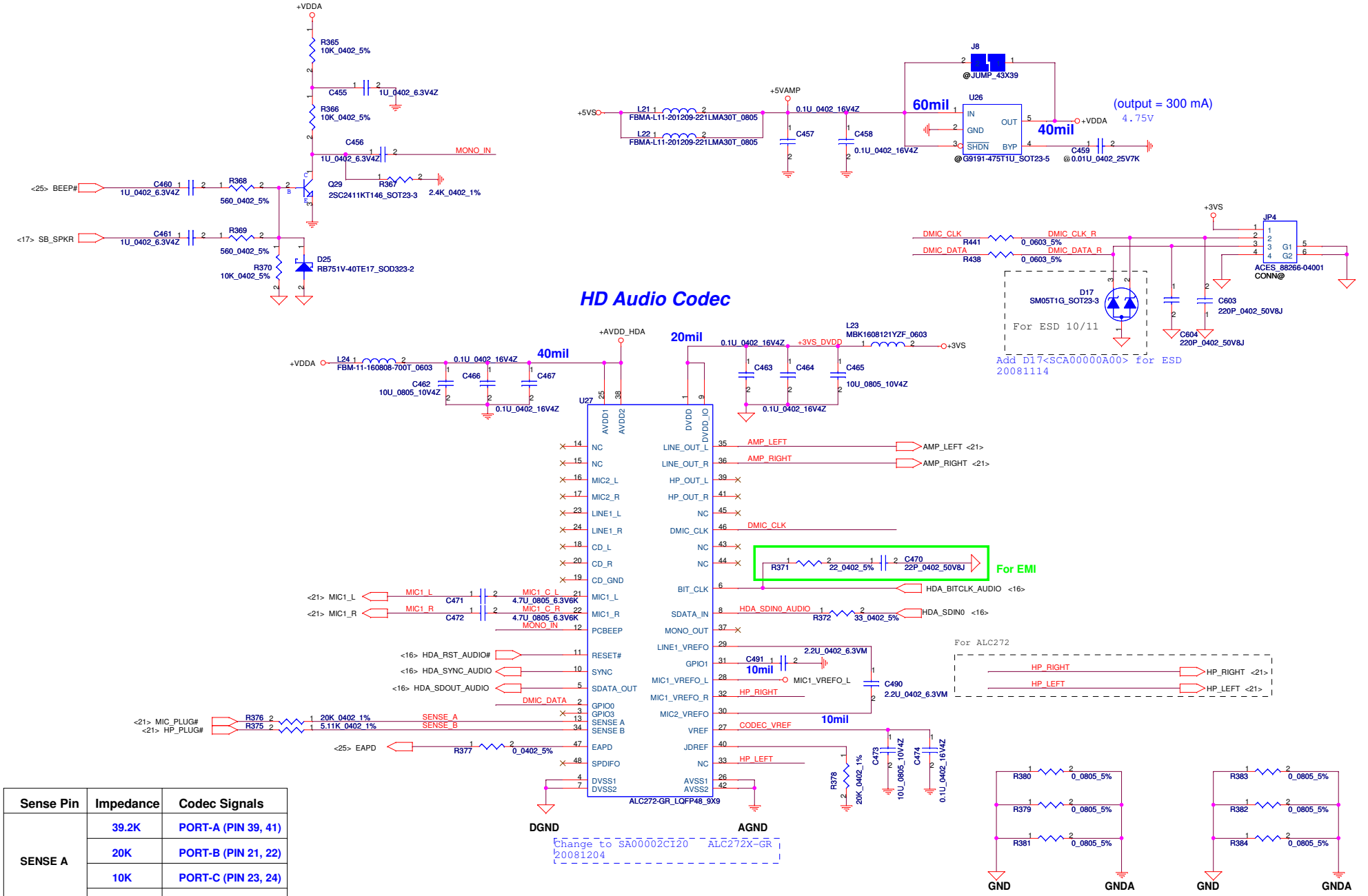
Security Classification	Compal Secret Data		
Issued Date	2006/08/05	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: Mini-Card/BT CONN

Size	Document Number	Rev
	KAV10 LA-4781P	1.0

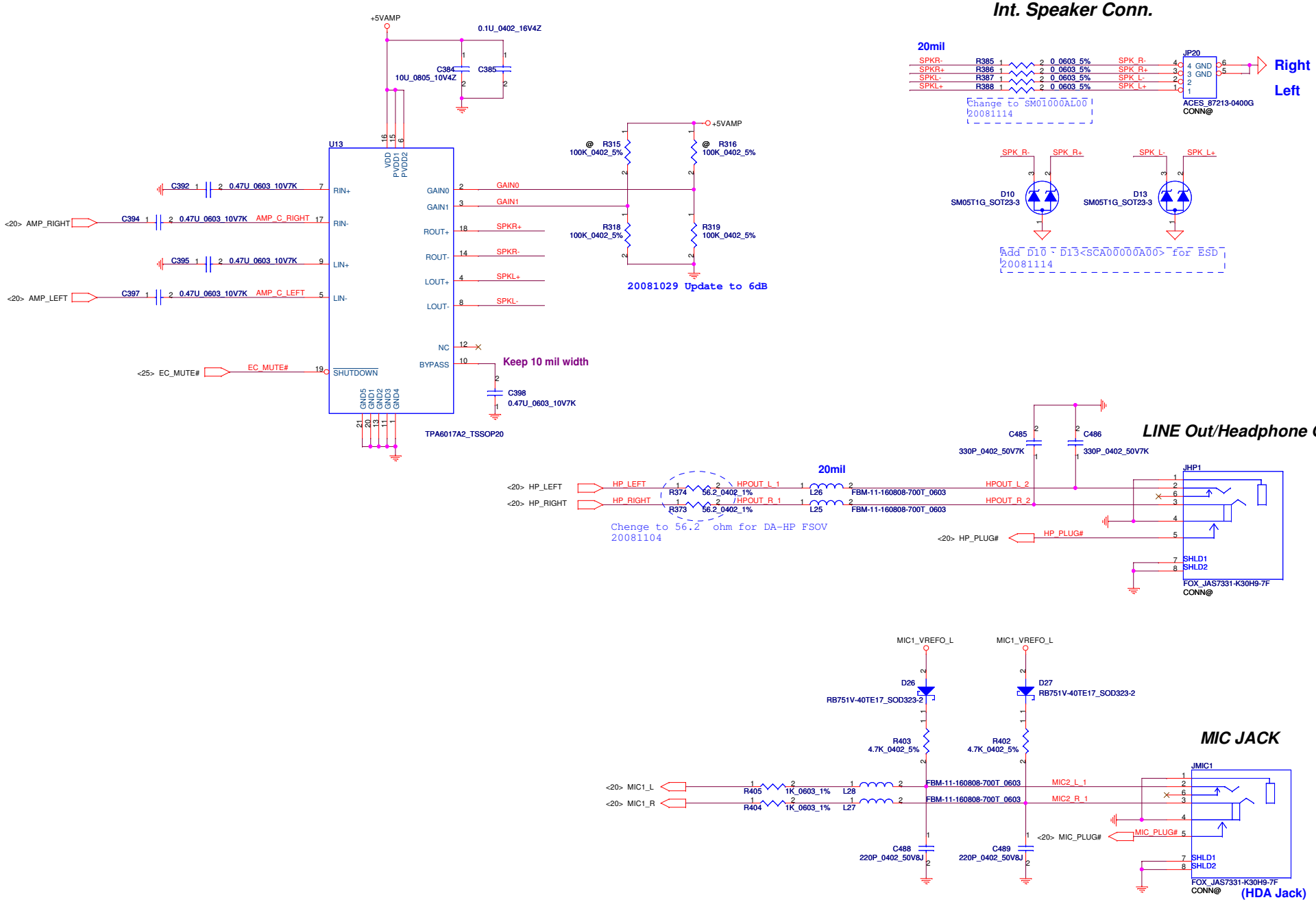
Date: Tuesday, December 30, 2008 | Sheet 19 of 40



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)

Security Classification	Compal Secret Data		
Issued Date	2006/12/25	Deciphered Date	2007/8/18

Compal Electronics, Inc.			
Title	HD Audio Codec ALC272		
Size B	Document Number KAV10 LA-4781P		Rev 1.0
Date: Tuesday, December 30, 2008	Sheet 20 of 40		



Security Classification	Compal Secret Data		
Issued Date	2006/12/25	Deciphered Date	2007/8/18

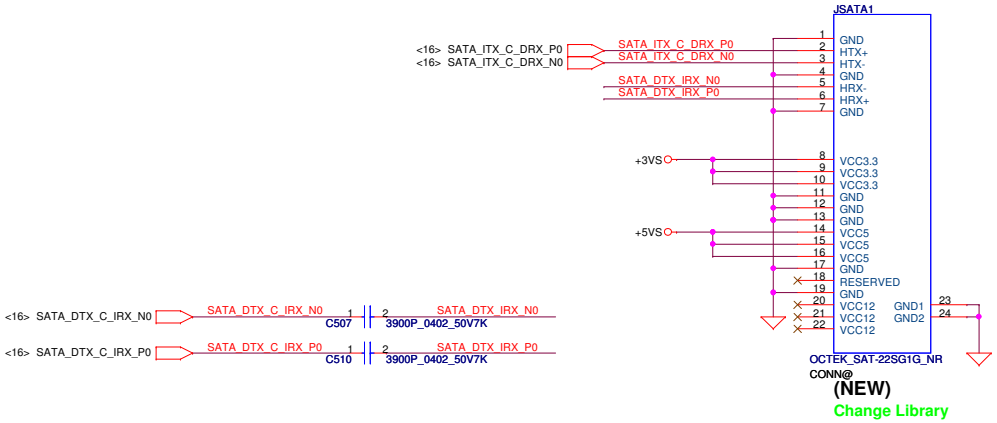
Compal Electronics, Inc.

Title: Amplifier & Audio Jack

Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 Sheet 21 of 40

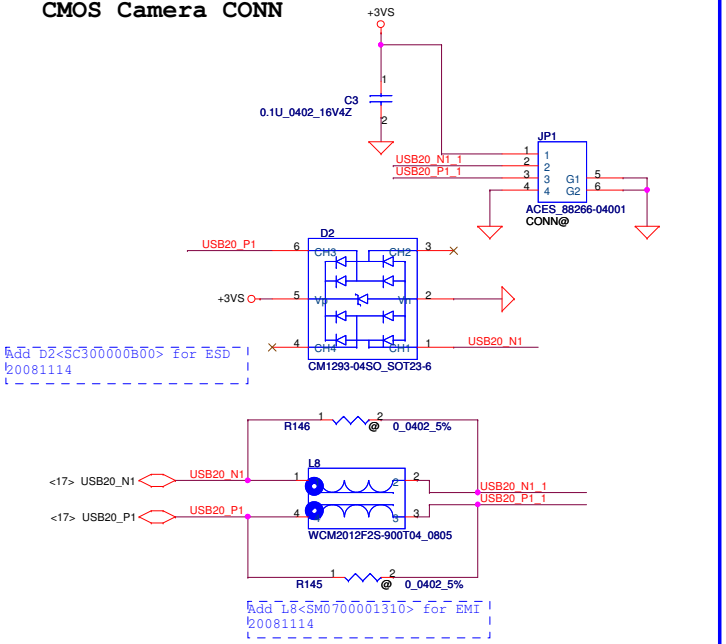
SATA HDD Conn.



(NEW)

Change Library

CMOS Camera CONN



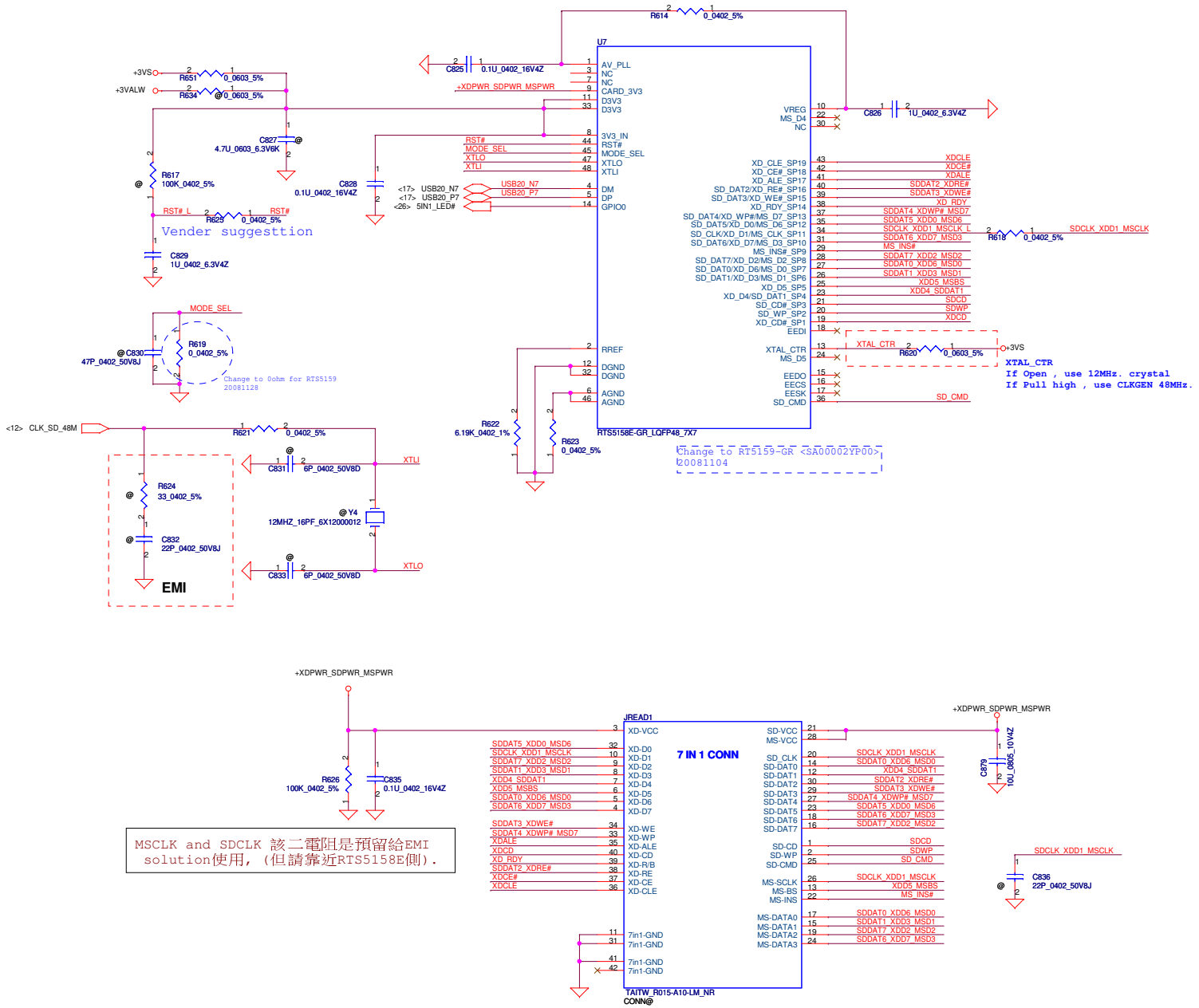
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: SATA HDD/SSD

Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 22 of 40



Security Classification	Compal Secret Data		
Issued Date	2006/08/04	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: **5 in 1 Card reader**

Size	Document Number	Rev
Custom	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 23 of 40

AR8114A: remove L1,C881,C885,R643. C841=1uF
AR8132:remove R644,R645. C841=0.1uF

R644 8114@0_0603_5% +1.8_VDD/LX
L10 8132@4.7UH_1008HC-472EJFS-A_5%_1008
+AVDD_CEN R643 8132@0_0603_5% +2.5V_VDDH/VDD17 R646 8114@0_0603_5% +2.5V_VDDH
C855 4.7U_0805_10V4Z 8132@
C881 0.1U_0402_16V4Z 8132@

+3V_LAN +3V_LAN
C837 0.1U_0402_16V4Z
R627 4.7K_0402_1%
R628 4.7K_0402_1%
U12
A0 A1 A2 GND VCC WP SCL SDA
TWSI_SCL TWSI_SDA
AT24C02BN-SH-T_SO8
@

Place Close to Chip
LAN_MDI0+ R629 49.9_0402_1%
LAN_MDI0- R630 49.9_0402_1%
LAN_MDI1+ R631 49.9_0402_1%
LAN_MDI1- R632 49.9_0402_1%
C839 0.1U_0402_16V4Z
C838 0.1U_0402_16V4Z

U14
VDD18O +1.8_VDD/LX
VDD33 +3V_LAN
VDDHO +2.5V_VDDH/VDD17
CTR12
PERSTn <6,15,17,19,25,27> PLTRST#
WAKEn <25> LAN_WAKE#
VBG1P18V
REFCLKP <12> CLK_PCIE_LAN
REFCLKN <12> CLK_PCIE_LAN#
RX_P <17> PCIE_ITX_C_PRX_P3
RX_N <17> PCIE_ITX_C_PRX_N3
TX_P PCIE_PTX_IRX_P3
TX_N PCIE_PTX_IRX_N3
XTLO LAN_X1
XTLI LAN_X2
SMCLK
SMDATA
RBIAS R635 2.37K_0402_1%
TESTMODE
GND
TWSI_CLK TWSI_SCL
TWSI_DATA TWSI_SDA
LED_ACTn LAN_ACTIVITY#
LED_10_100n LAN_SK_LAN_LINK#
LED_DUPLEXn
TRXP0 LAN_MDI0+
TRXN0 LAN_MDI0-
TRXP1 LAN_MDI1+
TRXN1 LAN_MDI1-
AVDDL_REG AVDDVCO1
AVDDL/AVDDL_REG AVDDVCO2
DVDDL0 DVDDL1 DVDDL2 DVDDL3 +1.2_DVDDL
AVDDL0 AVDDL1 AVDDL2 AVDDL3 AVDDL4 +1.2_AVDDL
AVDDH0 AVDDH1 AVDDH2 +2.5V_VDDH
NC_0 NC_1 NC_2 NC_3 NC_4 NC_5
Atheros
AR8114A 10/100 LAN
AR8114-AL1E_QFN48_6X6

R633 4.7K_0402_5% +3V_LAN
C842 1000P_0402_50V7K 8114@
C843 0.1U_0402_16V7K
C844 0.1U_0402_16V7K
C845 0.1U_0402_16V7K
C850 0.1U_0402_16V7K
Place Close to Chip

Y5
LAN_X1 LAN_X2
25MHZ_20P
C852 27P_0402_50V8J
C853 27P_0402_50V8J

J7
+3VALW @JUMP_43X39 +3V_LAN
C846 4.7U_0805_10V4Z

Layout Notice : Place as close chip as possible.

+3V_LAN
C847 0.1U_0402_16V4Z
C848 0.1U_0402_16V4Z
C849 0.1U_0402_16V4Z

+3V_LAN
C854 0.1U_0402_16V4Z 8114@
Q58 MMJT9435T1G_SOT223 8114@
R636 10K_0402_1% 8114@
R634 0_0402_5% 8132@
CTR12
C880 0.1U_0402_16V4Z 8132@
+1.2_AVDDL
C858 10U_0805_10V4Z 8114@
C859 0.1U_0402_16V4Z 8114@

+1.2_AVDDL
L29 FBMA-L11-201209-221LMA30T_0805 8114@ +1.2_DVDDL
R638 0_0603_5% AVDDVCO1
R637 0_0603_5%
C856 1000P_0402_50V7K
C857 1U_0603_10V4Z
L30 FBMA-L11-201209-221LMA30T_0805 AVDDVCO2
C863 0.1U_0402_16V4Z
If overclocking, R638, L30 stuffed and R637 removed.
If not overclocking, R637, L30 suffed and R638 removed.
AR8132:L30=0ohm,C856=0.1uF. remove C857

T1
RD+ RD- CT NC NC CT TD+ TD-
RX+ RX- CT NC NC CT TX+ TX-
LAN_MDI1+ LAN_MDI1- LAN_MDI0+ LAN_MDI0-
RJ45_MIDI1+ RJ45_MIDI1- RJ45_CT0 RJ45_CT1 RJ45_MIDI0+ RJ45_MIDI0-
+AVDD_CEN
C860 0.1U_0402_16V4Z
C861 0.1U_0402_16V4Z
R640 75_0402_5%
R639 75_0402_5%
C862 1000P_1206_2KV7K
350uH_NS0013LF

LAN_ACTIVITY# R649 8114@511_0402_1% LAN_ACTIVITY#_R
R648 5.1K_0402_5% 8114@
C868 100P_0402_50V8J @
R650 0_0402_5% 8114@
R647 8132@0_0402_5%
R641 8132@511_0402_1%
+3V_LAN
For EMI.
C864 470P_0402_50V7K @

JRJ45
Amber LED- Amber LED+
PR4- PR4+ PR2- PR3- PR3+ PR2+ PR1- PR1+
RJ45_MIDI1- RJ45_MIDI1+ RJ45_MIDI0- RJ45_MIDI0+
SHLD2 SHLD1
Green LED- Green LED+
LAN_SK_LAN_LINK#
C869 100P_0402_50V8J @
R642 511_0402_1% +3V_LAN
FOX_JM3611A-R2125-7F
CONN@
For EMI.
C878 470P_0402_50V7K @

C865 close to Pin46
AR8114A: C865=0.1uF
AR8132:C865=1uF

Place Close to Pin 28、32、45、46
+1.2_DVDDL
C866 0.1U_0402_16V4Z
C867 0.1U_0402_16V4Z
C882 0.1U_0402_16V4Z
C865 0.1U_0402_16V4Z

Place Close to Pin15、19、25
+2.5V_VDDH
C871 0.1U_0402_16V4Z
C872 0.1U_0402_16V4Z
C870 1U_0402_6.3V4Z

Place Close to Pin8、16、22、36、39
+1.2_AVDDL
C874 0.1U_0402_16V4Z
C876 0.1U_0402_16V4Z
C877 0.1U_0402_16V4Z
C873 0.1U_0402_16V4Z
C875 0.1U_0402_16V4Z

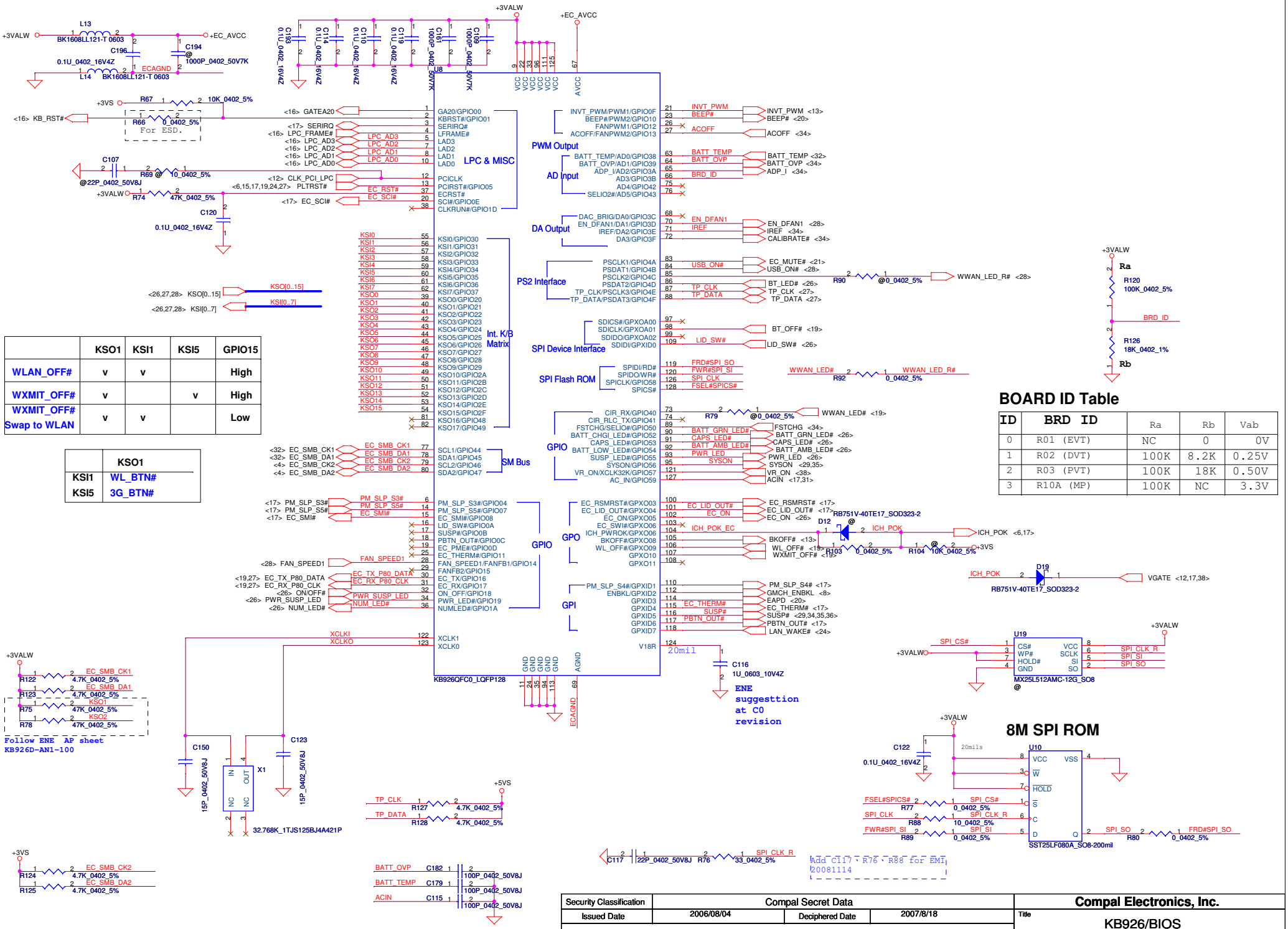
Security Classification	Compal Secret Data		
Issued Date	2006/08/04	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: AR8114

Size: Custom | Document Number: KAV10 LA-4781P | Rev: 1.0

Date: Tuesday, December 30, 2008 | Sheet 24 of 40



	KSO1	KSI1	KSI5	GPIO15
WLAN_OFF#	v	v		High
WXMIT_OFF#	v		v	High
WXMIT_OFF# Swap to WLAN	v	v		Low

	KSO1
KSI1	WL_BTN#
KSI5	3G_BTN#

BOARD ID Table

ID	BRD ID	Ra	Rb	Vab
0	R01 (EVT)	NC	0	0V
1	R02 (DVT)	100K	8.2K	0.25V
2	R03 (PVT)	100K	18K	0.50V
3	R10A (MP)	100K	NC	3.3V

Security Classification	Compal Secret Data		
Issued Date	2006/08/04	Deciphered Date	2007/8/18

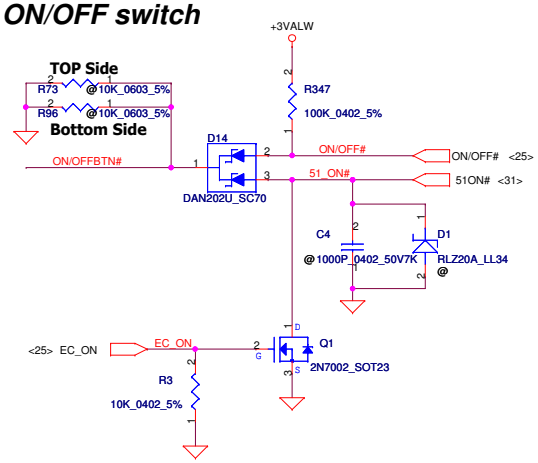
Compal Electronics, Inc.

Title: KB926/BIOS

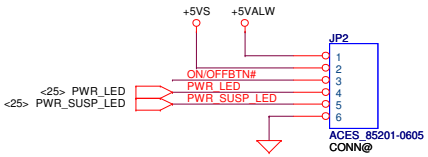
Size	Document Number	Rev
Custom	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 25 of 40

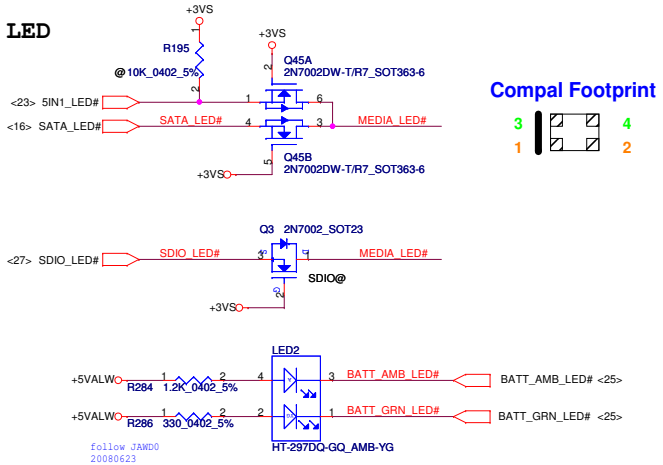
ON/OFF switch



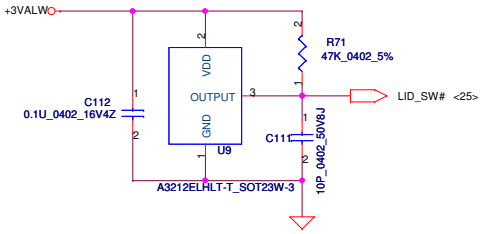
To PWR/B Conn.



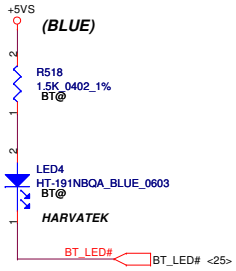
LED



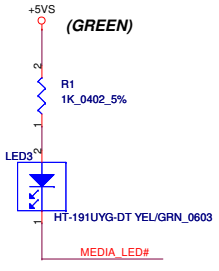
LID Switch



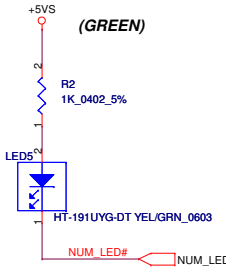
Bluetooth LED



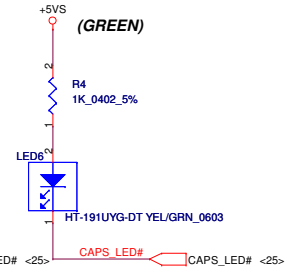
MEDIA_LED



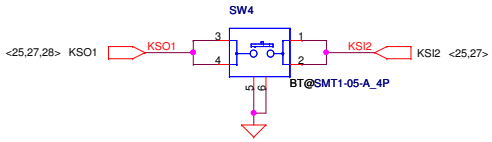
NUM_LED



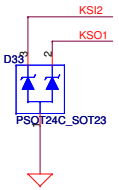
CAPS_LED



Bluetooth Button



	KSO1
KSI2	BT_BTN#



Add D33<SCA00000A00> for ESD
20081114

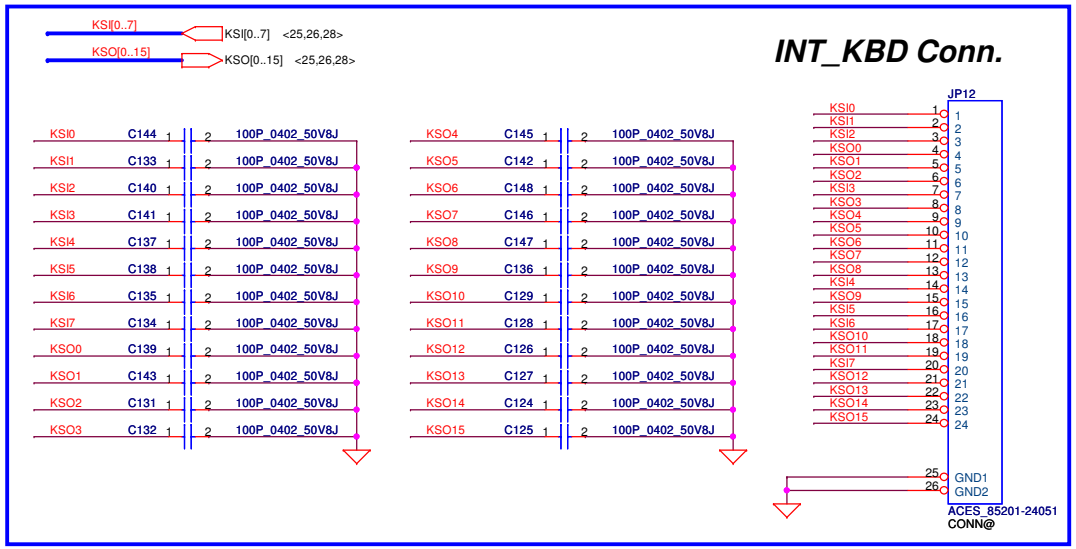
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

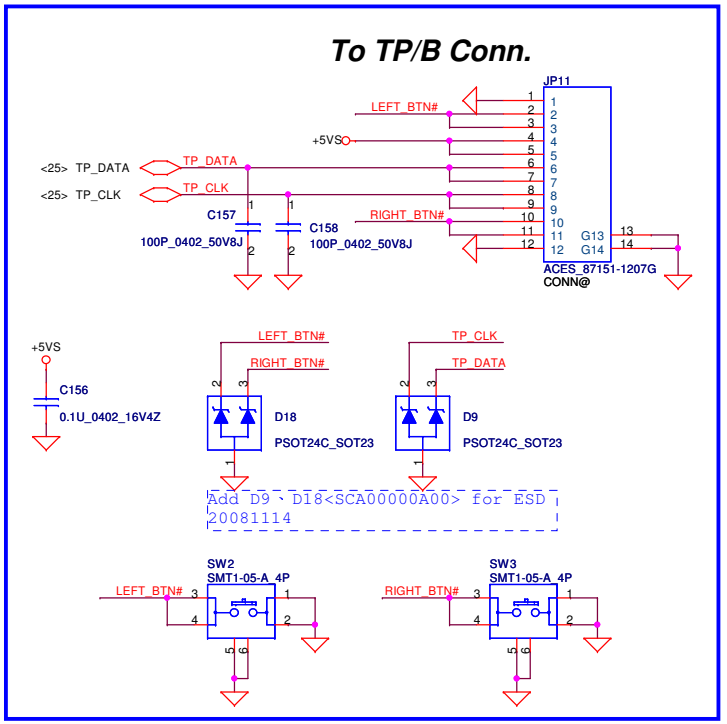
Compal Electronics, Inc.

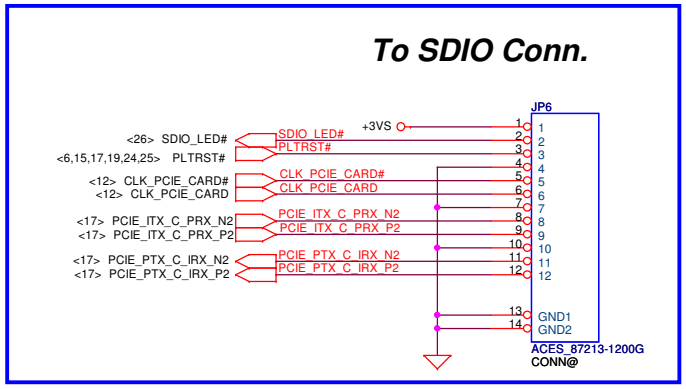
Title: LID SW/LED/CMOS

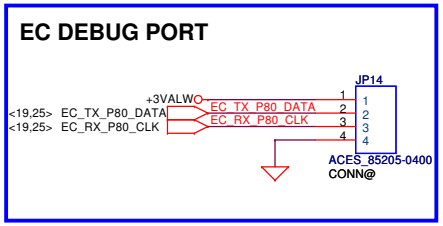
Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 Sheet 26 of 40









Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

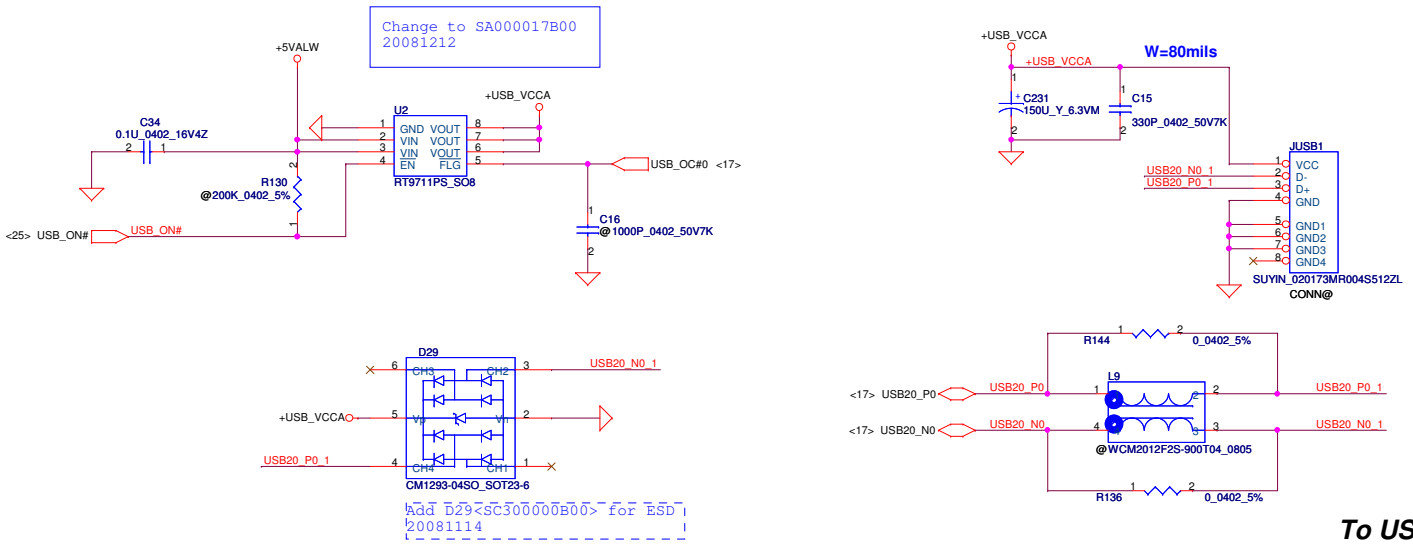
Compal Electronics, Inc.

Title: KB/SDIO/TP/LPC Debug CONN

Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 Sheet 27 of 40

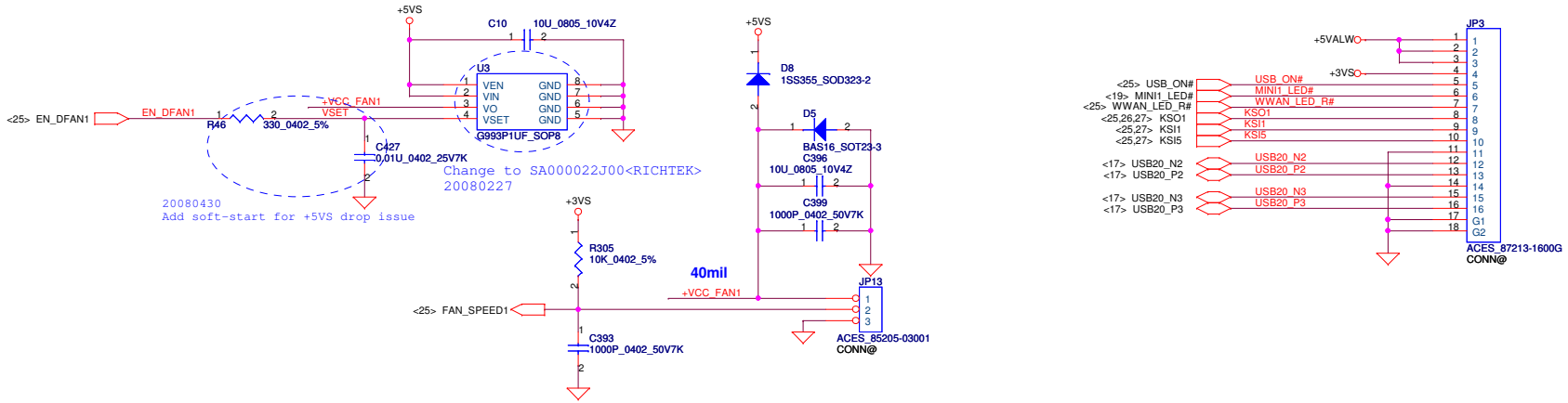
USB CONN. 1



To USB/B Conn.

	KSO1
KSI1	WL_BTN#
KSI5	3G_BTN#

FAN1 Conn



Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

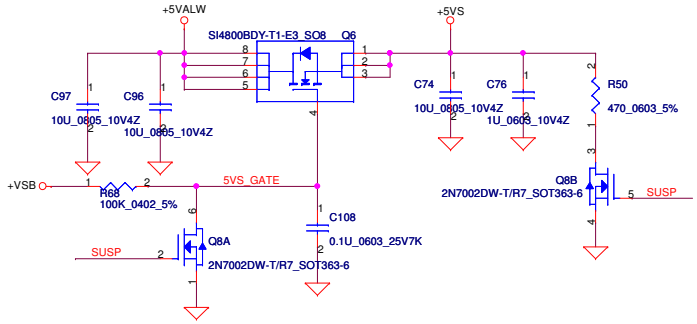
Compal Electronics, Inc.

Title: USB PORTS/FAN

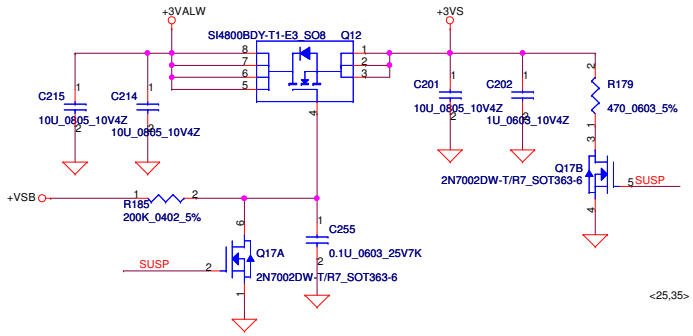
Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

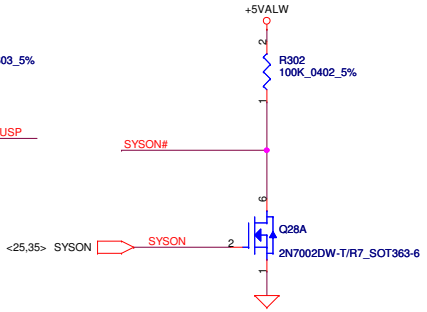
Date: Tuesday, December 30, 2008 | Sheet 28 of 40

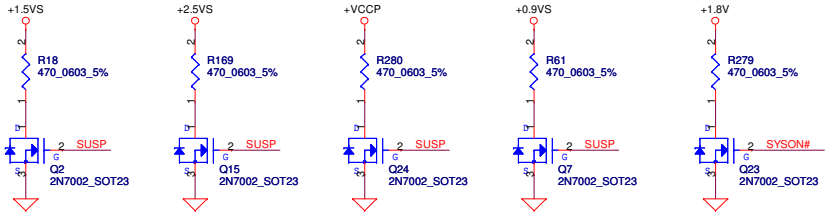
+5VALW TO +5VS

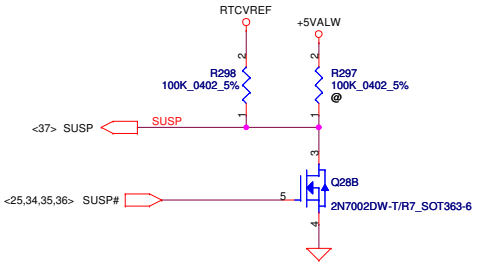


+3VALW TO +3VS









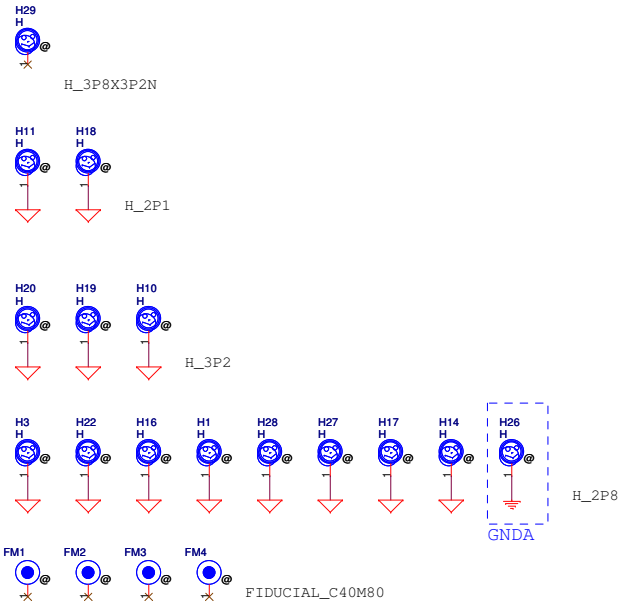
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title: DC INTERFACE

Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 29 of 40



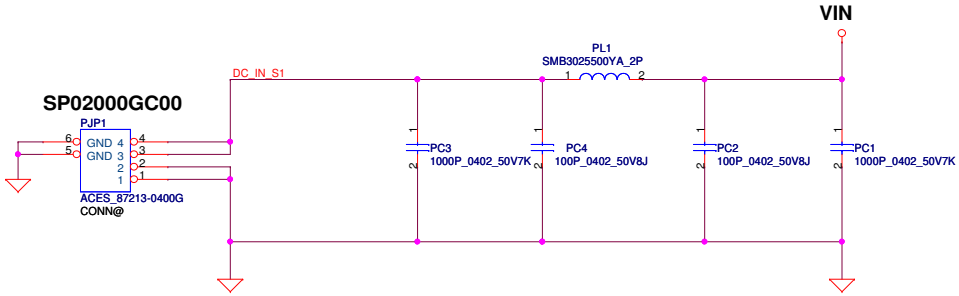
Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

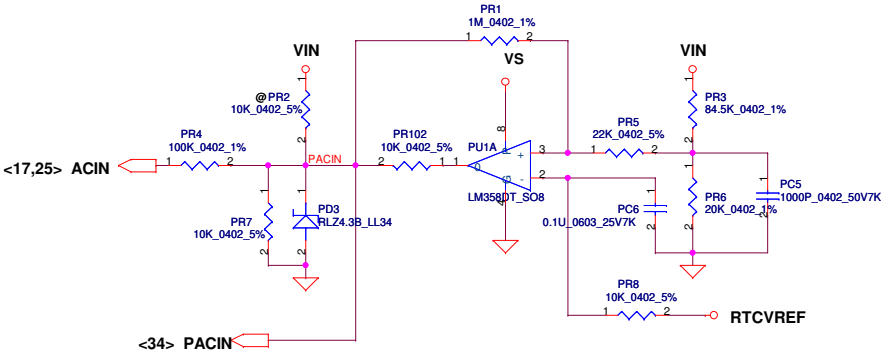
Compal Electronics, Inc.

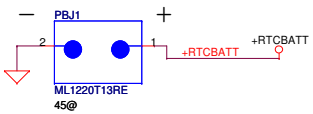
Title: Screw

Size	Document Number	Rev
B	KAV10 LA-4781P	1.0

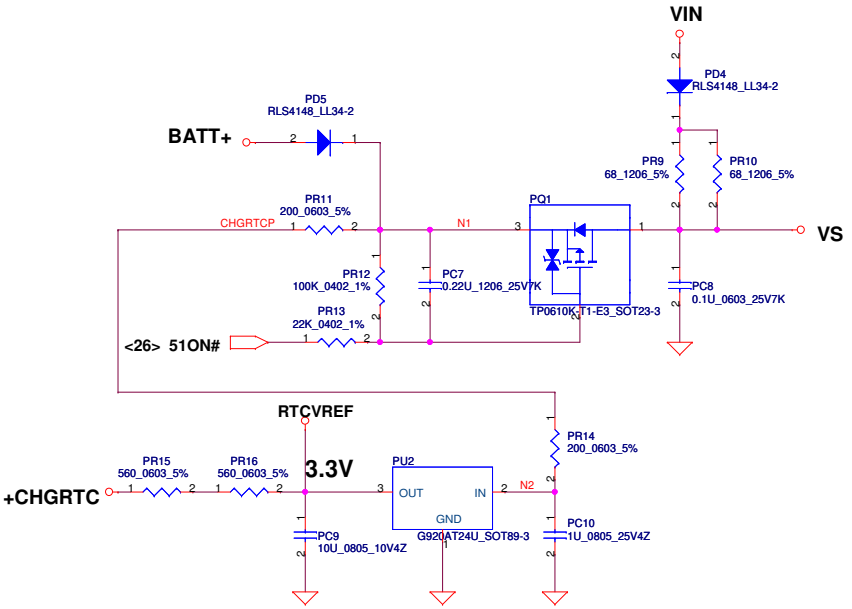
Date: Tuesday, December 30, 2008 | Sheet 30 of 40

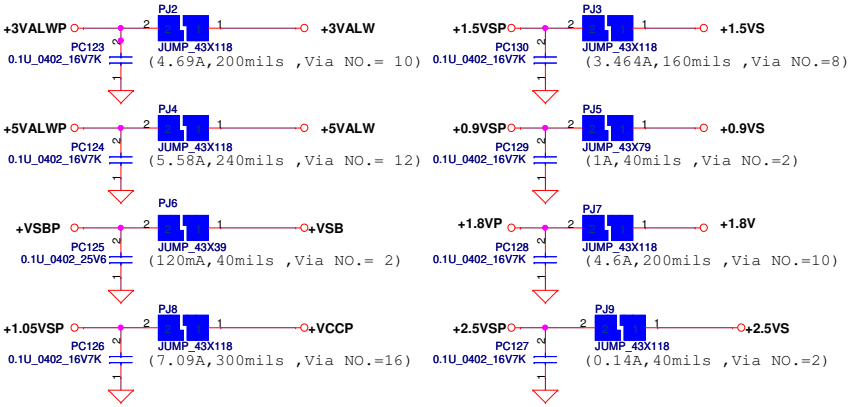






Vin Dectector			
	Min.	Typ	Max.
H-->L	16.976V	17.525V	17.728V
L-->H	17.430V	17.901V	18.384V





Security Classification	Compal Secret Data		
Issued Date	2007/09/20	Deciphered Date	2008/09/20

Compal Electronics, Inc.

Title: DCIN & DETECTOR

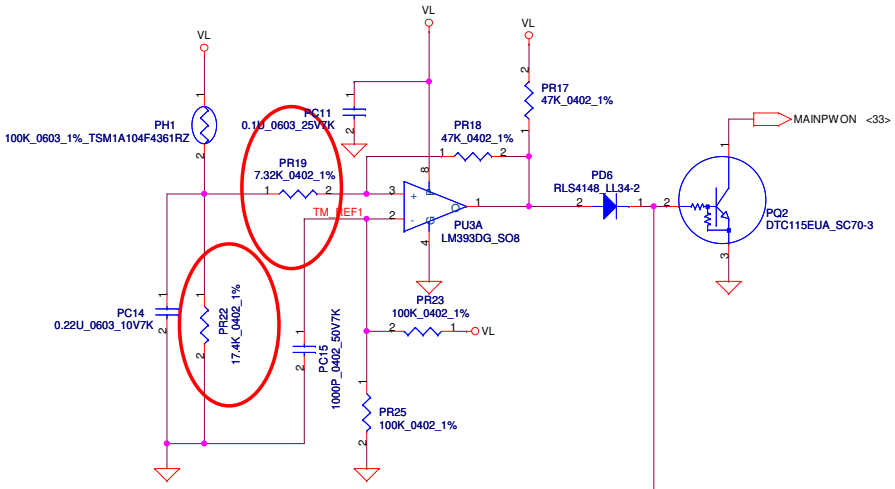
Size	Document Number	Rev
Custom	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 31 of 39

PH1 under CPU botten side :

CPU thermal protection at 92 degree C

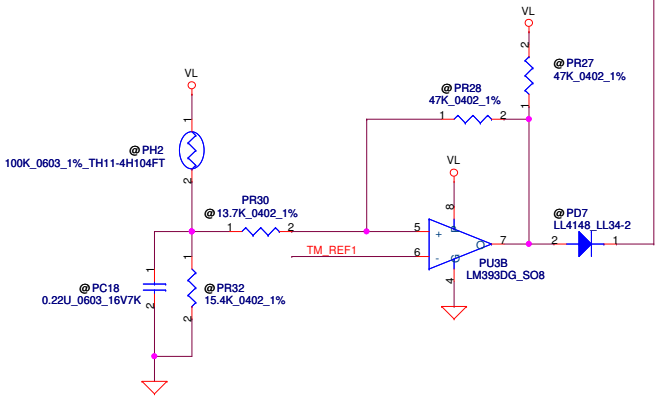
Recovery at 56 degree C

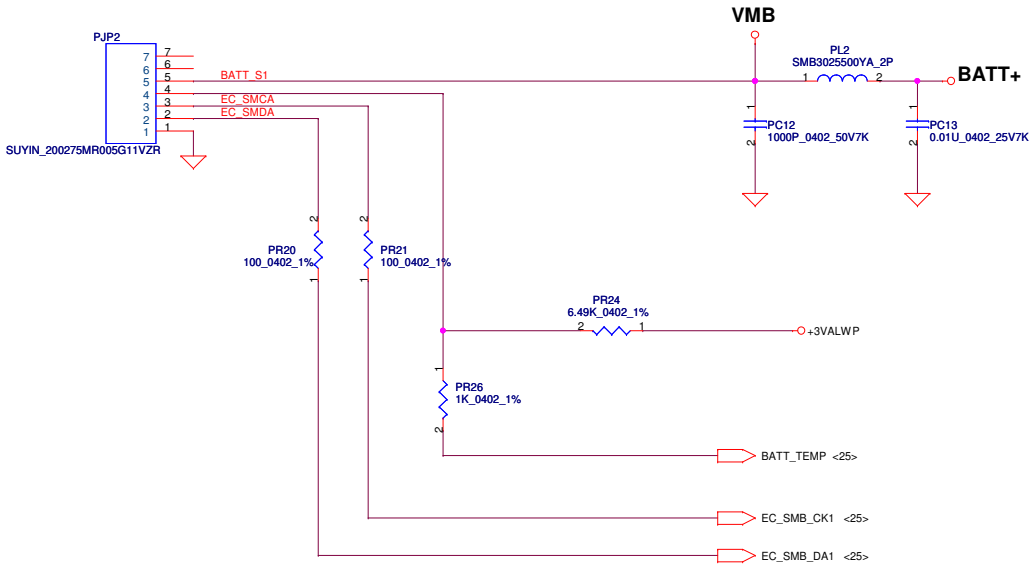


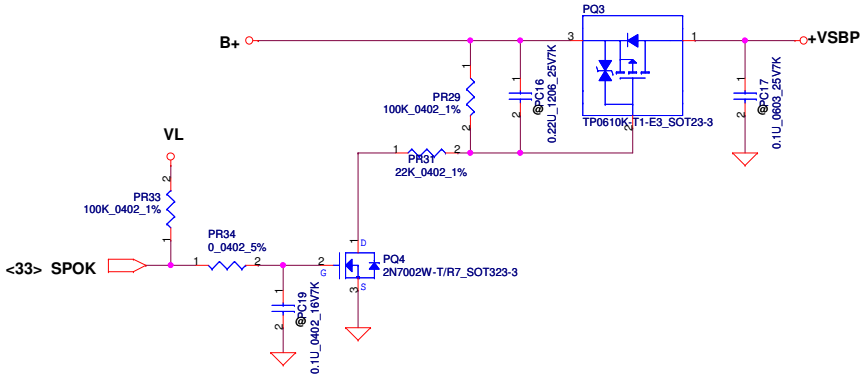
PH2 near main Battery CONN :

BAT. thermal protection at 92 degree C

Recovery at 56 degree C







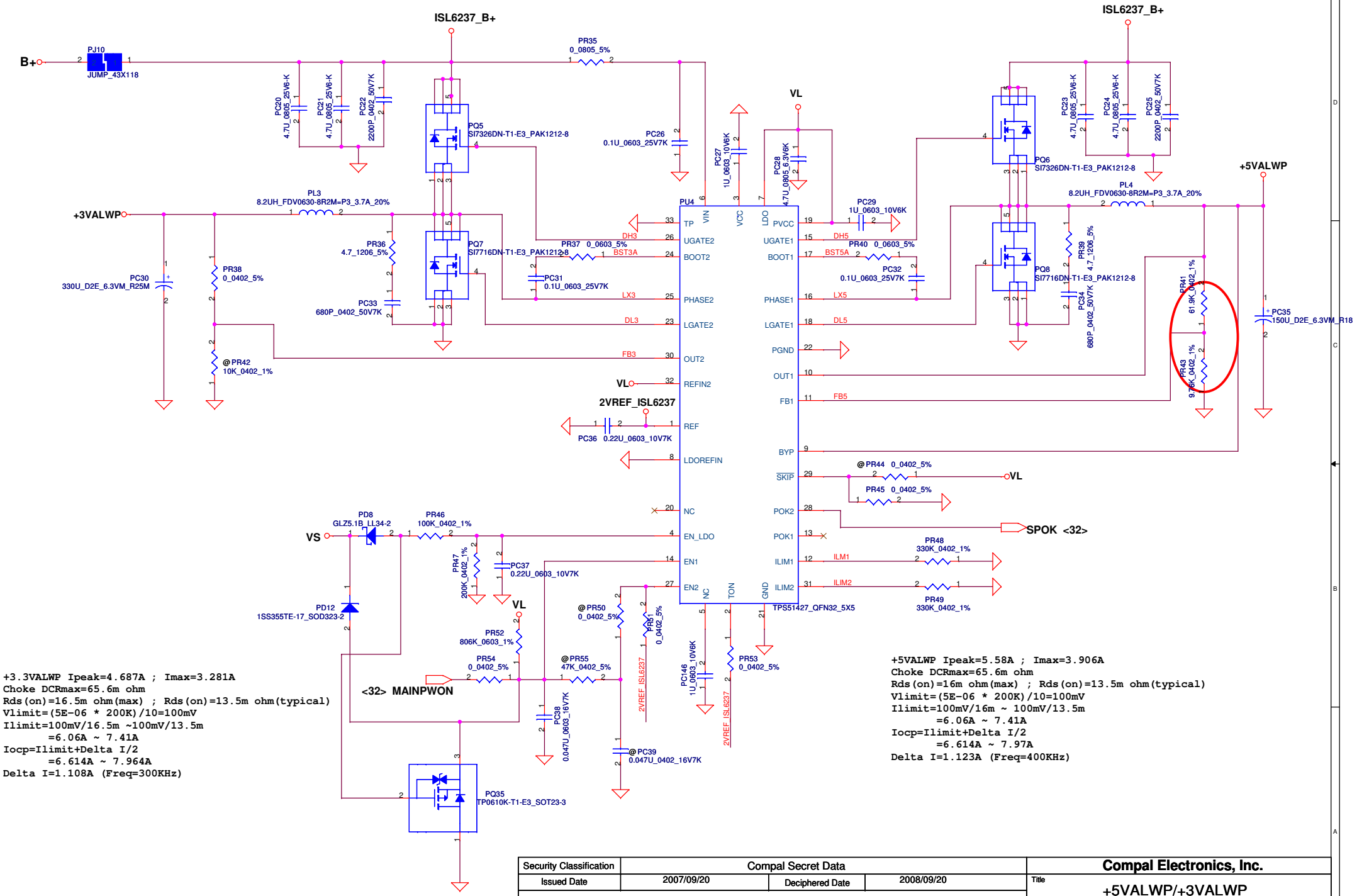
Security Classification	Compal Secret Data		
Issued Date	2007/09/20	Deciphered Date	2008/09/20

Compal Electronics, Inc.

Title: BATTERY CONN / OTP

Size	Document Number	Rev
Custom	KAV10 LA-4781P	1.0

Date: Tuesday, December 30, 2008 | Sheet 32 of 39



+3.3VALWP Ipeak=4.687A ; Imax=3.281A
Choke DCRmax=65.6m ohm
Rds(on)=16.5m ohm(max) ; Rds(on)=13.5m ohm(typical)
Vlimit=(5E-06 * 200K)/10=100mV
Ilimit=100mV/16.5m ~100mV/13.5m
=6.06A ~ 7.41A
Iocp=Ilimit+Delta I/2
=6.614A ~ 7.964A
Delta I=1.108A (Freq=300KHz)

+5VALWP Ipeak=5.58A ; Imax=3.906A
Choke DCRmax=65.6m ohm
Rds(on)=16m ohm(max) ; Rds(on)=13.5m ohm(typical)
Vlimit=(5E-06 * 200K)/10=100mV
Ilimit=100mV/16m ~ 100mV/13.5m
=6.06A ~ 7.41A
Iocp=Ilimit+Delta I/2
=6.614A ~ 7.97A
Delta I=1.123A (Freq=400KHz)

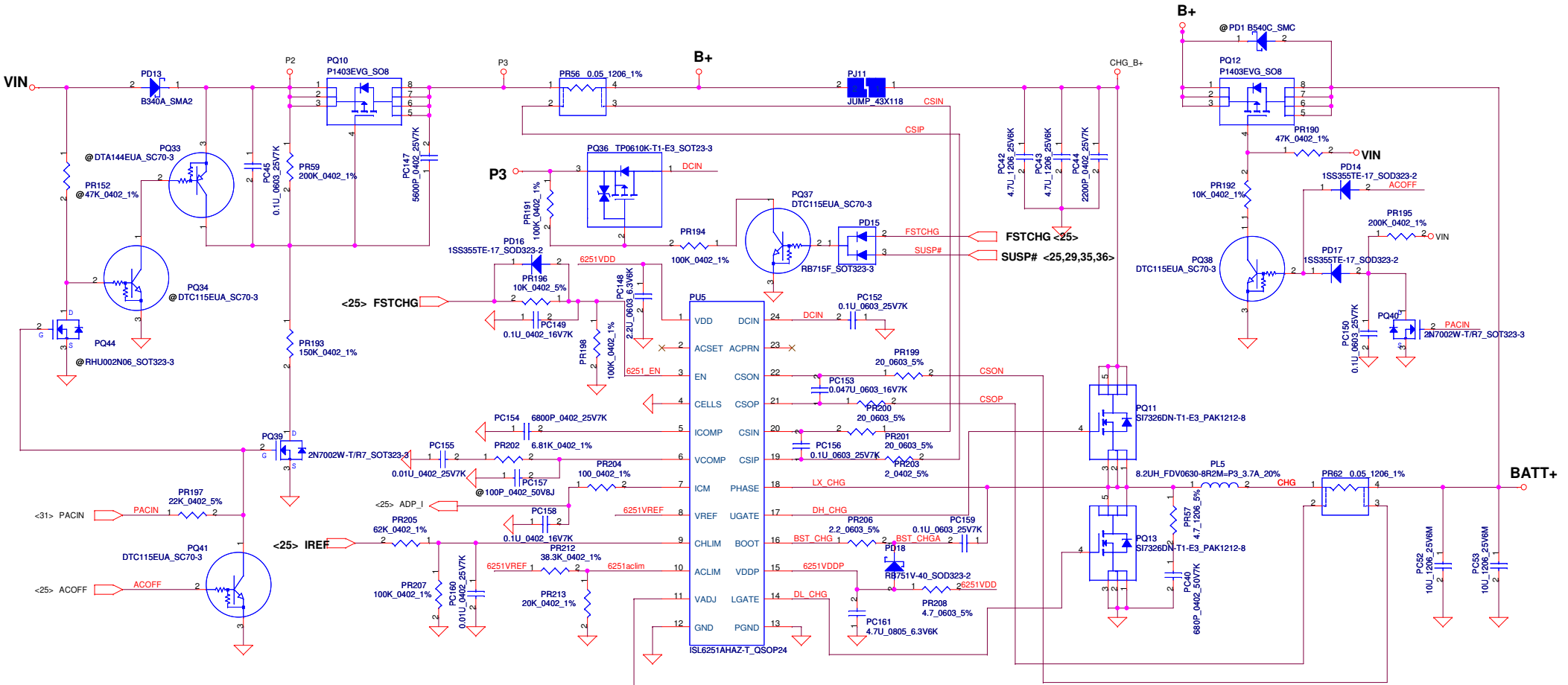
Security Classification	Compal Secret Data		
Issued Date	2007/09/20	Deciphered Date	2008/09/20

Compal Electronics, Inc.

Title: +5VALWP/+3VALWP

Size: Custom | Document Number: KAV10 LA-4781P | Rev: 1.0

Date: Tuesday, December 30, 2008 | Sheet 33 of 39



Iada=0~1.58A(30W) CP = 85%*Iada ; CP = 1.343A

CP mode
Vaclim=2.39*(20K/(20K+38.3K))=0.8199V

Iinput=(1/0.05)((0.05*Vaclm)/2.39+0.05)
where Vaclm=0.8199V, Iinput=1.343A

CC=0.3~1.76A
IREF=1.62*Icharge
IREF=0.486V~2.85V
3.24V==>2A

CALIBRATE#	Pre Cell
H	4.35V
L	3.99V

LI-3S :13.5V----BATT-OVP=1.5012V
BATT-OVP=0.1112*VMB
Per cell=3.5V

BATT Type	Charging Voltage (0x15)	CV mode
Normal 3S LI-ON Cells	12600mV	12.60V

VADJ-->VREF-->4.41V
VADJ--->Ground--->3.39V
Vcell=(0.175*VADJ+3.99)

Charger ADJ	Calibrate#	PR211	PR220
4.2V	N/A	@	@
3.99V	L	301K	499K
4.35V	H	301K	499K

-

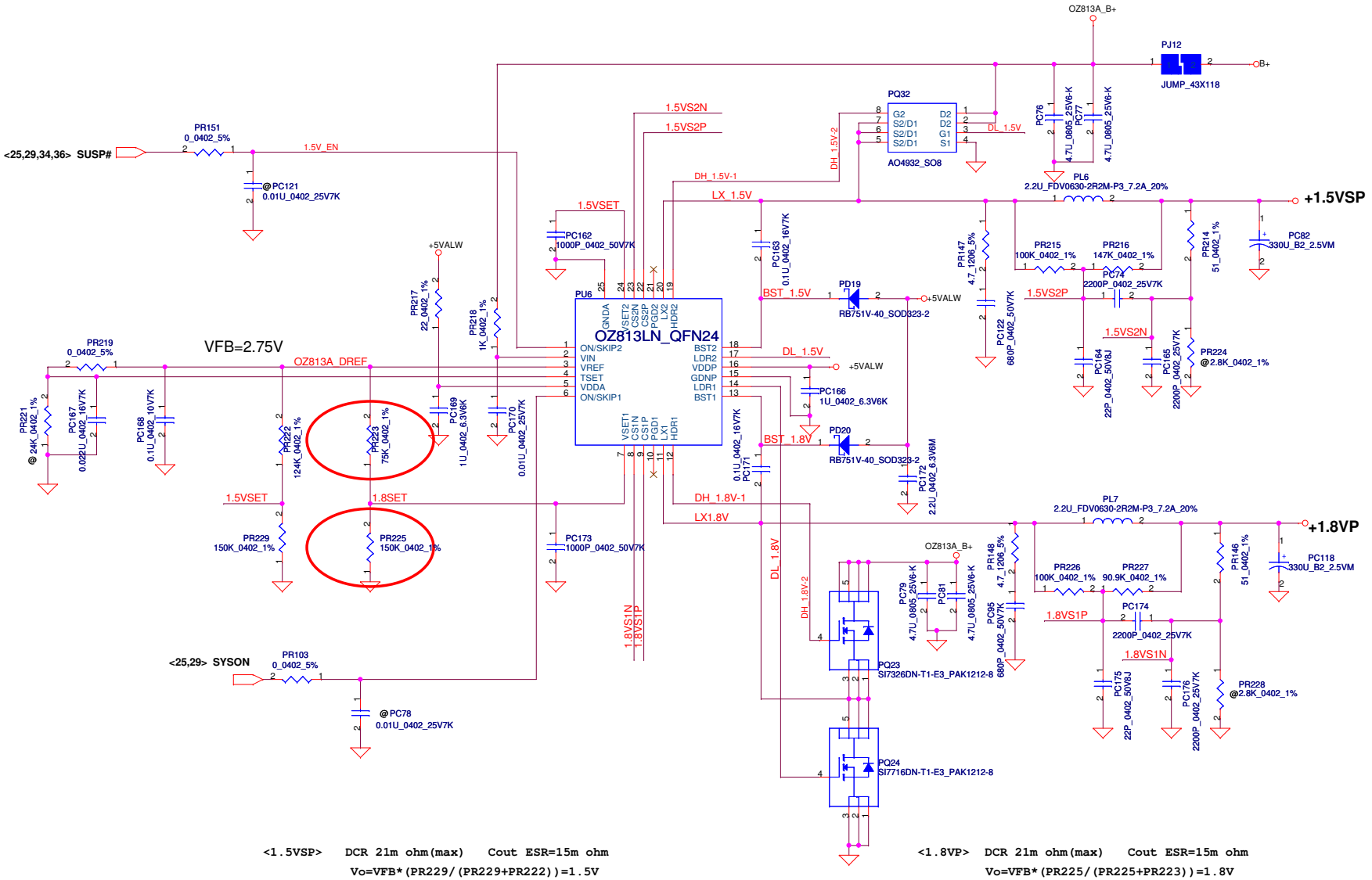
Security Classification	Compal Secret Data		
Issued Date	2007/09/20	Deciphered Date	2008/09/20

Compal Electronics, Inc.

Title: CHARGER

Size: Custom | Document Number: KAV10 LA-4781P | Rev: 1.0

Date: Tuesday, December 30, 2008 | Sheet 34 of 39



<1.5VSP> DCR 21m ohm(max) Cout ESR=15m ohm

Vo=VFB*(PR229/(PR229+PR222))=1.5V

Ipeak=3.464A, Imax=2.425A, Iocp=5A

<1.8VP> DCR 21m ohm(max) Cout ESR=15m ohm

Vo=VFB*(PR225/(PR225+PR223))=1.8V

Ipeak=4.6A, Imax=3.22A, Iocp=6A

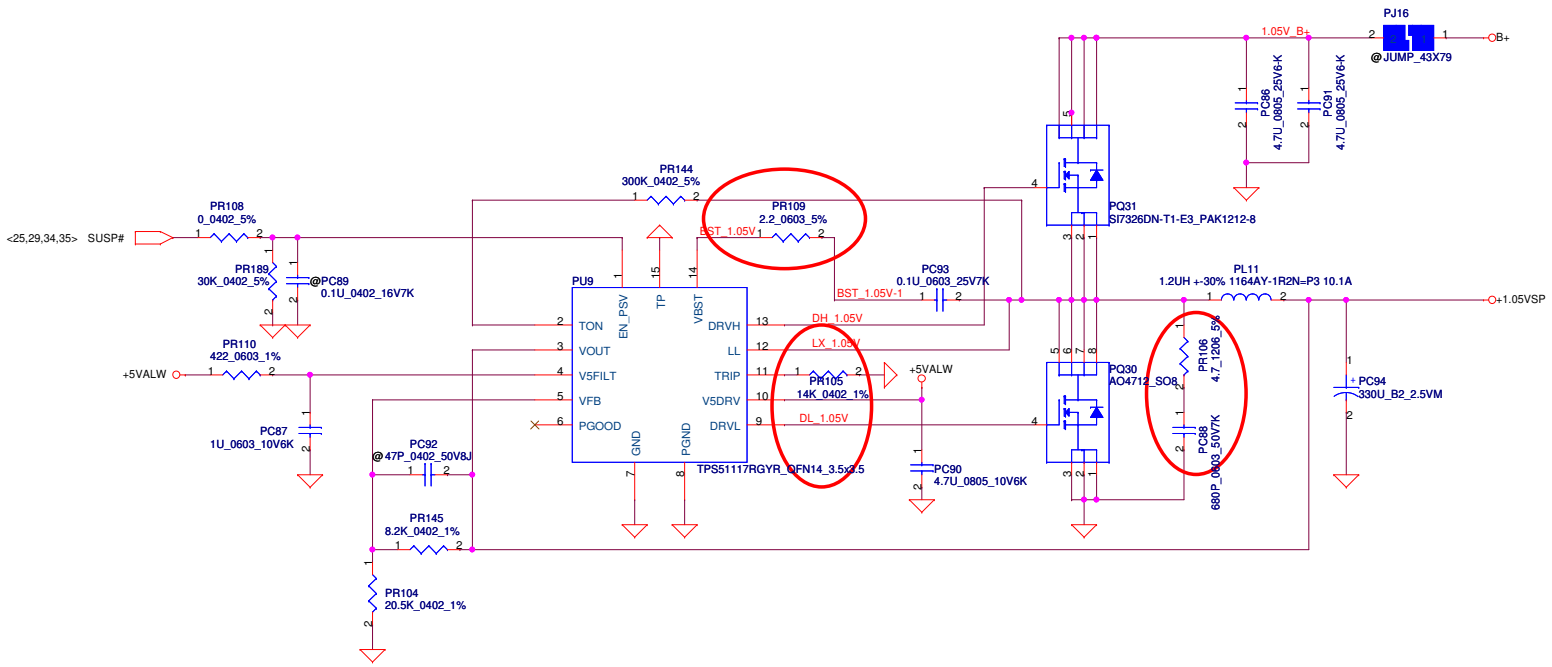
Security Classification	Compal Secret Data		
Issued Date	2007/09/20	Deciphered Date	2008/09/20

Compal Electronics, Inc.

Title: 1.5VSP / 1.8VP

Size: Custom | Document Number: KAV10 LA-4781P | Rev: 1.0

Date: Tuesday, December 30, 2008 | Sheet 35 of 39



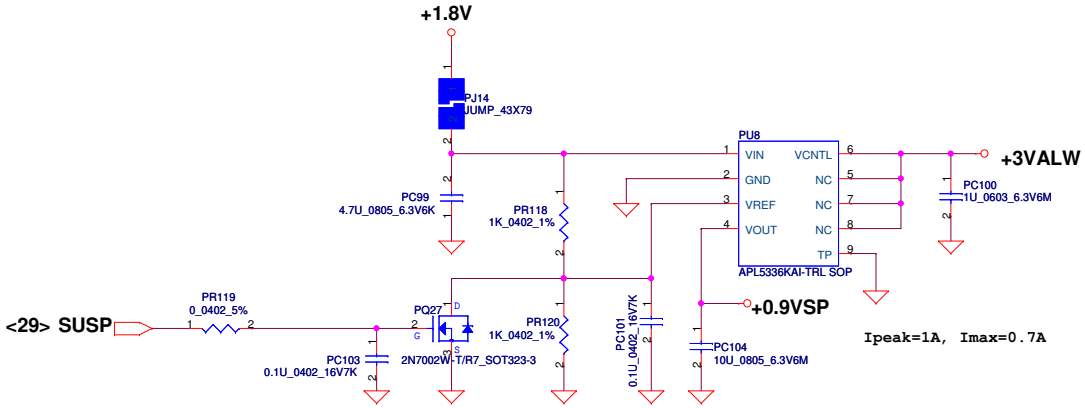
<Vo=1.05V> VFB=0.75V
Vo=VFB*(1+PR145/PR104)=0.75*(1+8.2K/20.5K)=1.05V
Fsw=261KHz

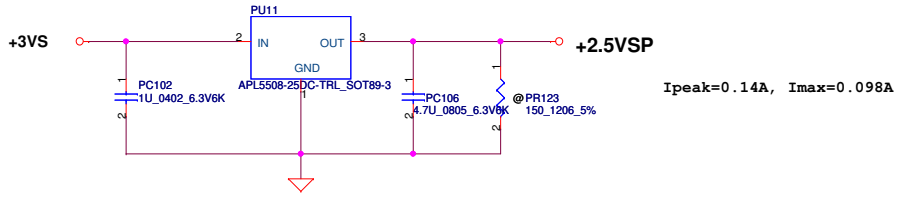
Cout ESR=15m ohm Rdson(max)=16.5m Rdson(typical)=13.5m
Ipeak=7.09A, Imax=4.963A, Iocp=8.51A
Delta I=((19-1.05)*(1.05/19))/(1.5u*261K)=2.53A
=>1/2DeltaI=1.265A
Vtrip=Rtrip*10uA=14K*10uA=0.14V
Iocpmin=Vtrip/(Rdsonmax*1.2)+1.265
=0.14/(0.0165*1.2)+1.265=8.34A
Iocpmax=(0.14/(0.0135*1.2))+1.265A=9.91A
Iocp=8.34A~9.91A

Security Classification	Compal Secret Data		
Issued Date	2007/09/20	Deciphered Date	2008/09/20

Compal Electronics, Inc.

Title	+1.05VSP	
Size: Custom	Document Number: KAV10 LA-4781P	Rev: 1.0
Date: Tuesday, December 30, 2008	Sheet 36 of 39	

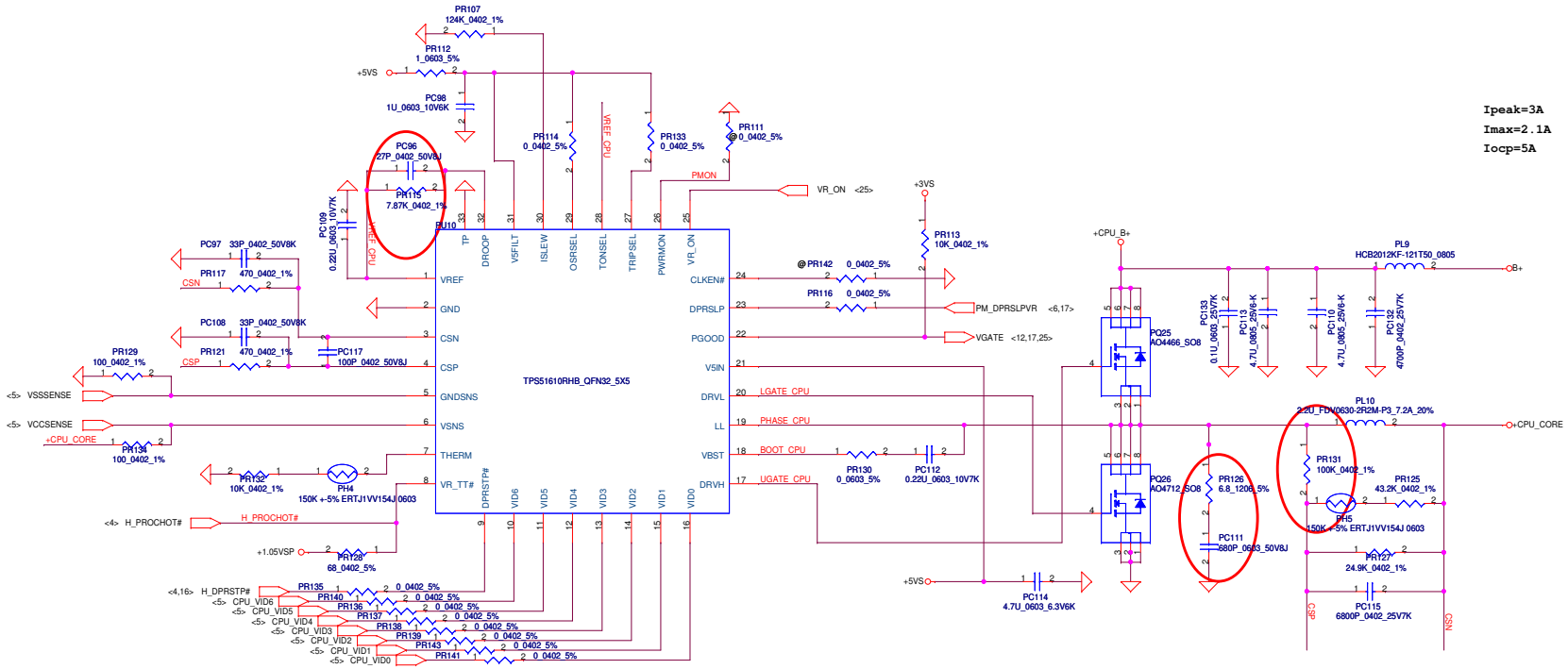




Security Classification	Compal Secret Data		
Issued Date	2007/09/20	Deciphered Date	2008/09/20

Compal Electronics, Inc.

Title	+0.9VSP/+2.5VSP	
Size: Custom	Document Number: KAV10 LA-4781P	Rev: 1.0
Date: Tuesday, December 30, 2008	Sheet 37 of 39	



Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2007/09/20	Deciphered Date	2008/09/20

Title	+CPU_CORE		
Size C	Document Number KAV10 LA-4781P		Rev 1.0
Date: Tuesday, December 30, 2008	Sheet 38 of 39		

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

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1	Modify CPU_CORE VR_TT# circuit	circuit error	0.1	38	Cahnge PR128 to SD028680A80 (S RES 1/16W 68 +-5% 0402)	08/10/27	DVT
2	Diode modify	BOM error	0.1	31	Cahnge PD3 to SC4LZ43B0T4 (S ZEN DIO RLZ4.3B (LL-34))	08/10/27	DVT
3	Diode modify	BOM error	0.1	31	Cahnge PD4 to SC11N414880 (S DIO RLS4148 LL34)	08/10/27	DVT
4	Diode modify	BOM error	0.1	31	Cahnge PD5 to SC11N414880 (S DIO RLS4148 LL34)	08/10/27	DVT
5	Diode modify	BOM error	0.1	32	Cahnge PD6 to SC11N414880 (S DIO RLS4148 LL34)	08/10/27	DVT
6	Add 3/5V,charger,1.8/1.5V snubber	For ESD solution	0.1	33	Add PR36 PR39 PR57 PR147 PR148 to SD001470B80 (S RES 1/4W 4.7 +-5% 1206) Add PC33 PC34 PC40 PC122 PC95 to SE074681K80 (S CER CAP 680P 50V K X7R 0402)	08/10/27	DVT
7	Add CPU snubber	For ESD solution	0.1	33	Add PR126 to SD011680B80 (S RES 1/4W 6.8 +-5% 1206) Add PC111 to SE024681J80 (S CER CAP 680P 50V J NPO 0603)	08/10/27	DVT
8	Add CPU_CORE input capacitance	For ESD solution	0.1	38	Add PC133 SE042104K80 (S CER CAP .1U 25V K X7R 0603) Add PC132 SE074222K80 (S CER CAP 2200P 50V K X7R 0402)	08/10/27	DVT
9	Add CPU_CORE input capacitance	For ESD solution	0.1	31	Add PC123 PC124 PC126 PC127 PC128 PC129 PC130 to SE076104K80 (S CER CAP .1U 16V K X7R 0402) Add PC125 to SE072104K80 (S CER CAP 0.1U 25V K Y5V 0402)	08/10/27	DVT
10	Modify 1.05V LMOS	cost down	0.1	31	change PQ30 to SB00000AJ00 (S TR AO4712 1N SO8)	08/10/27	DVT
11	Modify 1.05V choke	cost down	0.1	31	change PL11 to SH00000FQ00 (S COIL 1.2UH +-30% 1164AY-1R2N=P3 10.1A)	08/10/27	DVT
12	Modify charger input capacitance size	BOM error	0.1	31	change PC42 PC43 to SE142475K80 (S CER CAP 4.7U 25V K X5R 1206 H1.6)	08/10/29	DVT
13	Modify charger VADJ circuit	circuit error					
14	Modify DIODE BOM (remove ROHN)	BOM error					
15	Modify ACIN circuit	EVT issue solution	0.1	31	change PR4 SD02800008 to SD034100380(100K)	08/11/13	DVT
16	Modify 3/5V circuit	Modify 5V voltage for HW request	0.1	33	change PR43 to SD034976180 (S RES 1/16W 9.76K +-1% 0402) add PR41 SD034619280(S RES 1/16W 61.9K +-1% 0402)	08/12/26	PVT
17	Modify 1.8Vcircuit	Modify 1.8V voltage for HW request	0.1	35	change PR223 to SD034750280 (S RES 1/16W 75K +-1% 0402) change PR225 to SD034150380 S RES 1/16W 150K +-1% 0402)	08/12/26	PVT
18	Modify 1.05V circuit	add snubber for SED 3G solution	0.1	36	add PC88 SE025681K80 (S CER CAP 680P 50V K X7R 0603) add PR106 SD001470B80 (S RES 1/4W 4.7 +-5% 1206)	08/12/26	PVT
19	Modify 1.05V circuit	add boost for 1.05v issue	0.1	36	change PR109 to SD013220B80 (S RES 1/10W 2.2 +-5% 0603)	08/12/26	PVT
20							
21							
22							
23							

Compal Electronics, Inc.

Title: PIR (PWR)

Size: Custom | Document Number: KAV10 LA-4781P | Rev: 1.0

Date: Tuesday, December 30, 2008 | Sheet 39 of 39

A-TEST Change

<8/25>
1. Update Power SCH
<8/26>
1. Update Power SCH
2. Change
   D7 SC300000D00 to SC300000O00
3.Change
  C49、C50 SE071180K80 to SE071180J80
<8/27>
1. Updata Power SCH
2. Modify
   RJ45 temp footprint FOX_JM3611A-R4122-7F_12P-T
<8/28>
1. Updata Power SCH
<9/1>
1. Updata Screw
<9/5>
1. SWAP USB20_1 Signal.
<9/10>
1. Remove Mini card pin55、pin56 的GND。
2. Change JREAD1.42、H26 to GNDA。
<9/12>
1. Swap 3G ESD pin neme。
<9/15>
1. Update Audio Jack footprint
2. Chcnge R641、R642 300ohm to 511ohm for Arthros。
3. Update L footprint。
<9/16>
1. Update POWER SCH.
<9/17>
1. Update POWER SCH.
2. ADD R380、R383 for ESD.
<9/18>
1. Update ATHEROS 10/100 LAN <AR8132/AR8114>
<9/24>
1. Change C870 0.1u to 1u.
<9/26>
1. R88 change to 0ohm.

Pre PVT-TEST Change

<10/21>
1.Remove C389 for Audio can't detect issue on page 16
2.Add KSO1/KSO2 PU +3VALW on page25
3.Add R205 for schematic mistake on page 04
4.Change EC RST to PLTRST on page 25
5.Add J8 to cost down Audio LDO on page 20
6.Add R72 to reserve +3VALW for 3G on page 19
7.Reserve C238 for CRTDAC on page 10
8.Add R87 for Debug card on page 19
9.Change C108/C255 to 0.1uF for random hang issue
10.Change JP3 pin assignment on page 28
<10/21>
1. Update Power SCH
<10/29>
1. Audio AMP 10dB update to 6dB
<11/3>
1. Update Power SCH
<11/4>
1. Change R373、R374 to 56.2 ohm for DA-HP FSOV
2. Add C834、C851 for 3G noise
3. Change KB926 C1 to D2
4. Card reader RT5158E change to RT5159-GR
<11/5>
1. Swap D7 pin define
<11/10>
1. EC add R79、R90、R92 for SMS wakeup。

PVT-TEST Change

<11/28>
1. Reserve C40、C46、C47、C233
2. R617 change to 0ohm for RTS5159
3. R68 200K change to 100K for sequence
4. Remove C47
5. Add D30 for LVDS
6. Add C55 0.1U
7. U2 Change to SA000017B00
   -because RT9715 Can't protect

<12/30>
1. Update power MP SCH

Security Classification	Compal Secret Data		
Issued Date	2006/08/18	Deciphered Date	2007/8/18

Compal Electronics, Inc.

Title	PIR-HW	
Size: Custom	Document Number: KAV10 LA-4781P	Rev: 1.0
Date: Tuesday, December 30, 2008	Sheet 40 of 40	