Compal Confidential

Schematics Document

NIWE1

Arrandale

with Intel IBEX PEAK-M core logic

REV:0.3

Security Classification	Compal Secret Data		
Issued Date	2008/03/25	Deciphered Date	2008/04/

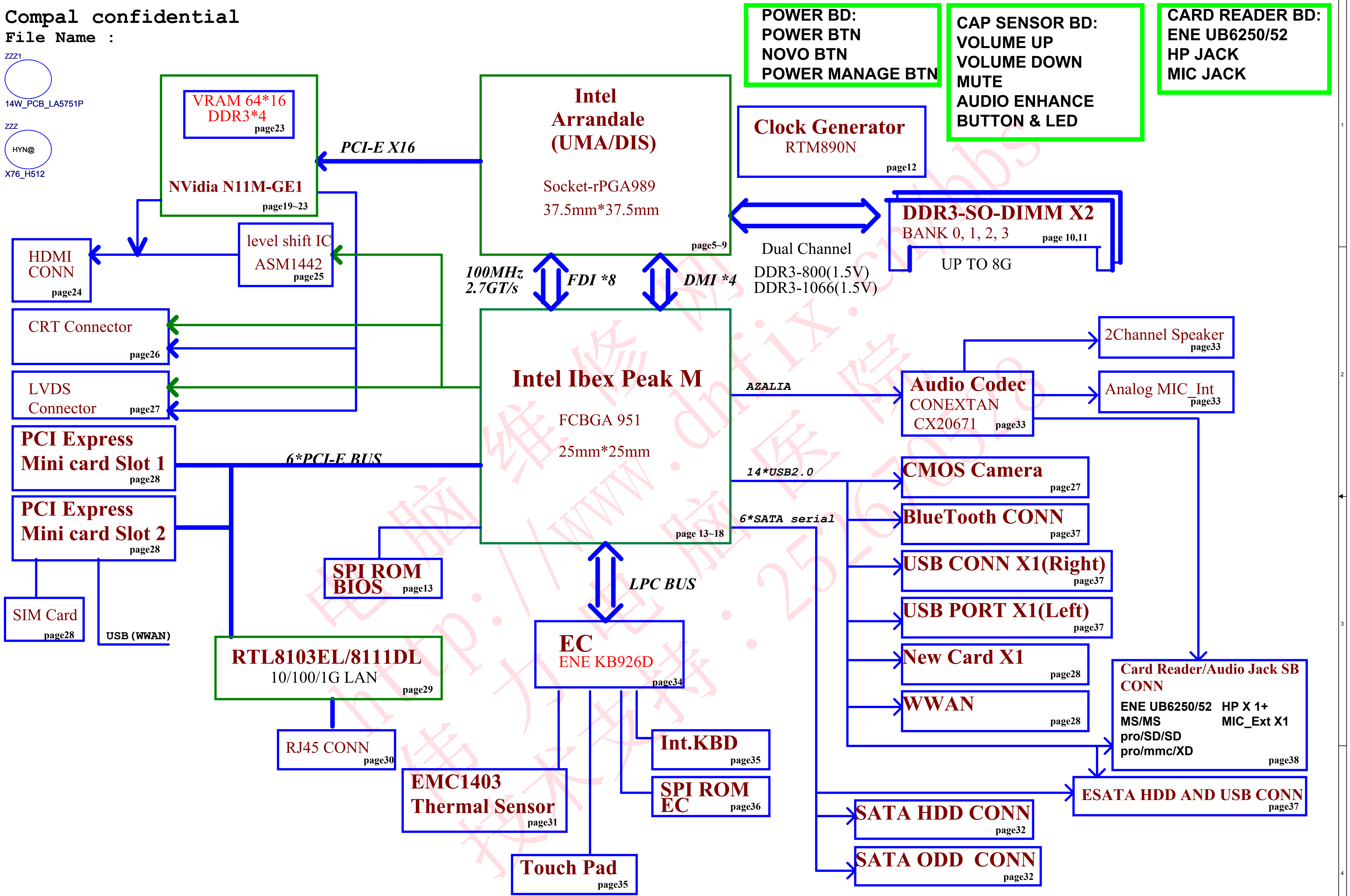
Compal Electronics,Ltd.

Title: **Cover Sheet**

Size	Document Number	Rev
Custom	LA-5751	0.3

Date: Thursday, October 29, 2009 Sheet 1 of 51

Compal confidential
File Name :



ZZZ1
14W_PCB_LA5751P
ZZZ
HYN@
X76_H512
POWER BD:
POWER BTN
NOVO BTN
POWER MANAGE BTN
CAP SENSOR BD:
VOLUME UP
VOLUME DOWN
MUTE
AUDIO ENHANCE
BUTTON & LED
CARD READER BD:
ENE UB6250/52
HP JACK
MIC JACK
VRAM 64*16
DDR3*4
page23
NVidia N11M-GE1
page19~23
PCI-E X16
Intel
Arrandale
(UMA/DIS)
Socket-rPGA989
37.5mm*37.5mm
page5~9
Clock Generator
RTM890N
page12
DDR3-SO-DIMM X2
BANK 0, 1, 2, 3
page 10,11
UP TO 8G
Dual Channel
DDR3-800(1.5V)
DDR3-1066(1.5V)
HDMI
CONN
page24
level shift IC
ASM1442
page25
100MHz
2.7GT/s
FDI *8
DMI *4
CRT Connector
page26
LVDS
Connector
page27
Intel Ibex Peak M
FCBGA 951
25mm*25mm
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AZALIA
Audio Codec
CONEXTAN
CX20671
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2Channel Speaker
page33
Analog MIC_Int
page33
PCI Express
Mini card Slot 1
page28
6*PCI-E BUS
PCI Express
Mini card Slot 2
page28
14*USB2.0
CMOS Camera
page27
6*SATA serial
BlueTooth CONN
page37
USB CONN X1(Right)
page37
USB PORT X1(Left)
page37
New Card X1
page28
WWAN
page28
SPI ROM
BIOS
page13
LPC BUS
SIM Card
page28
USB (WWAN)
RTL8103EL/8111DL
10/100/1G LAN
page29
EC
ENE KB926D
page34
Card Reader/Audio Jack SB
CONN
ENE UB6250/52
HP X 1+
MS/MS
MIC_Ext X1
pro/SD/SD
pro/mmc/XD
page38
RJ45 CONN
page30
Int.KBD
page35
EMC1403
Thermal Sensor
page31
SPI ROM
EC
page36
ESATA HDD AND USB CONN
page37
SATA HDD CONN
page32
SATA ODD CONN
page32
Touch Pad
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Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	2008/03/24	Deciphered Date	2008/04/	Title: MB Block Diagram
				Size: Custom; Document Number: LA-5751; Rev: 0.3
				Date: Thursday, October 29, 2009; Sheet 2 of 51

DDR3 Voltage Rails

power plane / State	+B	+5VALW +3VALW	+1.5V	+5VS +3VS +1.5VS +VCCP +CPU_CORE +VGA_CORE +1.8VS +0.75VS +1.05VS
S0	O	O	O	O
S3	O	O	O	X
S5 S4/AC	O	O	X	X
S5 S4/ Battery only	O	X	X	X
S5 S4/AC & Battery don't exist	X	X	X	X

SMBUS Control Table

	SOURCE	RAM M2	BATT	KE926	SODIMM	CLK CHIP	WLAN WWAN	N10x Thermal Sensor	N10x	Cap sensor board	NEW CARD	PCH
SMB_EC_CK1 SMB_EC_DA1	KB926 +3VALW	X	V +3VALW	X	X	X	X	X	X	X	X	X
SMB_EC_CK2 SMB_EC_DA2	KB926 +3VALW	X	X	X	X	X	X	X	X	X	X	V +3VALW
SMBCLK SMBDATA	PCH +3VALW	V +3VALW	X	X	V +3VS	V +3VS	X	X	X	X	V +3VS	X
SML0CLK SML0DATA	PCH +3VALW	X	X	X	X	X	X	X	X	X	X	X
SML1CLK SML1DATA	PCH +3VALW	X	X	V +3VALW	X	X	X	V +3VS	X	V +3VS	X	X

I2C / SMBUS ADDRESSING

DEVICE	HEX	ADDRESS
DDR SO-DIMM 0	A0	1 0 1 0 0 0 0 0
DDR SO-DIMM 1	A4	1 0 1 0 0 1 0 0
CLOCK GENERATOR (EXT.)	D2	1 1 0 1 0 0 1 0

@ FUNCTION

Structure	Description	NON-USE
45@	45 BOM	
BT@	Blue Tooth function	
3G@	3G function (WWAN)	
CAP@	CAP Sensor function	
CMOS@	CMOS CAMERA function	
ESATA@	E-SATA function	
HDMI@	HDMI function (UMA or DIS)	
UMA_HDMI@	HDMI function (UMA only)	
X76@	X76 BOM	
100@	10/100 LAN function	
GIGA@	GIGA LAN function	
UMA@	UMA only (Arrandale)	
DIS@	DIS only (Arrandale)	

SKU

Arrandale(dGPU) DIS only	DIS@
Arrandale(iGPU) UMA only	UMA@

PCIE PORT LIST

PORT	DEVICE
1	
2	WLAN
3	LAN
4	3G
5	NEW CARD
6	
7	
8	

USB PORT LIST

PORT	DEVICE
0	RIGHT SIDE
1	LEFT SIDE
2	CMOS
3	LEFT SIDE
4	RIGHT SIDE
5	CARD READER
6	
7	
8	WIRELESS
9	
10	NEW CARD
11	BT
12	
13	3G

Security Classification	Compal Secret Data		
Issued Date	2008/03/24	Deciphered Date	2008/04/

Compal Electronics, Inc.

Title: MB Notes List

Size: B | Document Number: LA-5751 | Rev: 0.3

Date: Thursday, October 29, 2009 | Sheet 3 of 51

VGA and DDR3 Voltage Rails (N11x GPIO)

GPIO	I/O	ACTIVE	Function Description
GPIO0	N/A	N/A	
GPIO1	IN	-	Hot plug detect for IFP link C
GPIO2	OUT	H	Panel Back-Light brightness(PWM capable)
GPIO3	OUT	H	Panel Power Enable
GPIO4	OUT	H	Panel Back-Light On/Off (PWM)
GPIO5	OUT	-	GPU VID0
GPIO6	OUT	-	GPU VID1
GPIO7	OUT	N/A	
GPIO8	I/O	N/A	
GPIO9	OUT	N/A	
GPIO10	OUT	N/A	
GPIO11	I/O	-	Reserve 10K pull low.
GPIO12	IN	N/A	
GPIO13	OUT	N/A	
GPIO14	OUT	-	Reserve 10K pull low.
GPIO15	IN	N/A	
GPIO16	OUT	N/A	
GPIO17	IN	-	PAD
GPIO18	IN	N/A	
GPIO19	IN	N/A	

Performance Mode P0 TDP at Tj = 102 C* (DDR3)

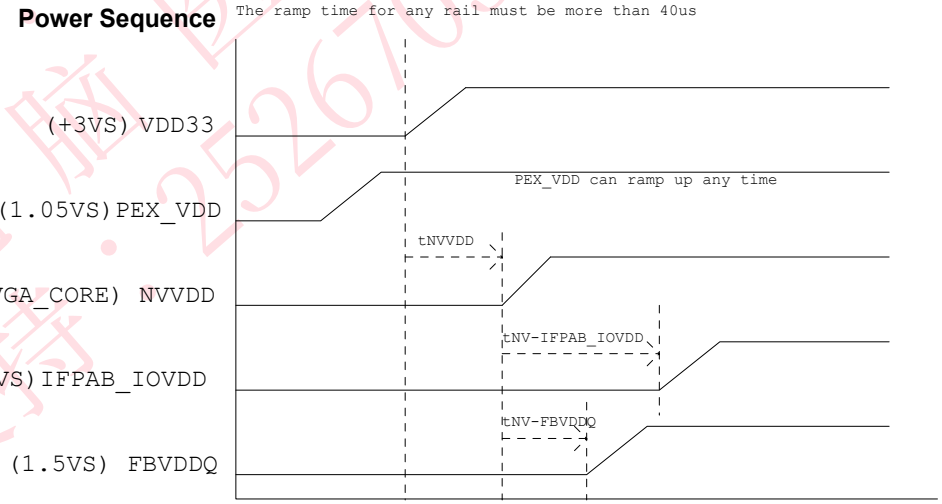
Products	GPU (4) (W)	Mem (1,5) (W)	NVCLK /MCLK (MHz)	NVVDD (V)	NVVDD (A)	NVVDD (W)	FBVDD (1.5V) (A)	FBVDD (1.5V) (W)	FBVDDQ (GPU+Mem) (1.5V) (A)	FBVDDQ (GPU+Mem) (1.5V) (W)	PCI Express (1.05V) (6) (mA)	PCI Express (1.05V) (6) (W)	I/O and PLLVDD (1.8V) (mA)	I/O and PLLVDD (1.8V) (W)	I/O and PLLVDD (1.05V) (mA)	I/O and PLLVDD (1.05V) (W)	Other (3.3V) (mA)	Other (3.3V) (W)
N11M-GE1 64bit 512MB DDR3	14.02	2.16	TBD	TBD	12.9	12.26	0.66	0.99	1.3	1.95	530	0.56	84	0.15	140	0.15	38	0.13

GPIO5 GPIO6

	Device ID
N11M-GE1/LP1 (40nm)	0x0A7D

GPU_VID0	GPU_VID1	VGA_CORE	P-State
0	0	0.8V	Deep P12
0	1	0.85V	P8
1	1	1.03V	P0

Power Sequence



Security Classification	Compal Secret Data		
Issued Date	2009/03/16	Deciphered Date	2010/03/15

Compal Electronics, Inc.

Title: VGA Notes List

Size: B | Document Number: LA-5751 | Rev: 0.3

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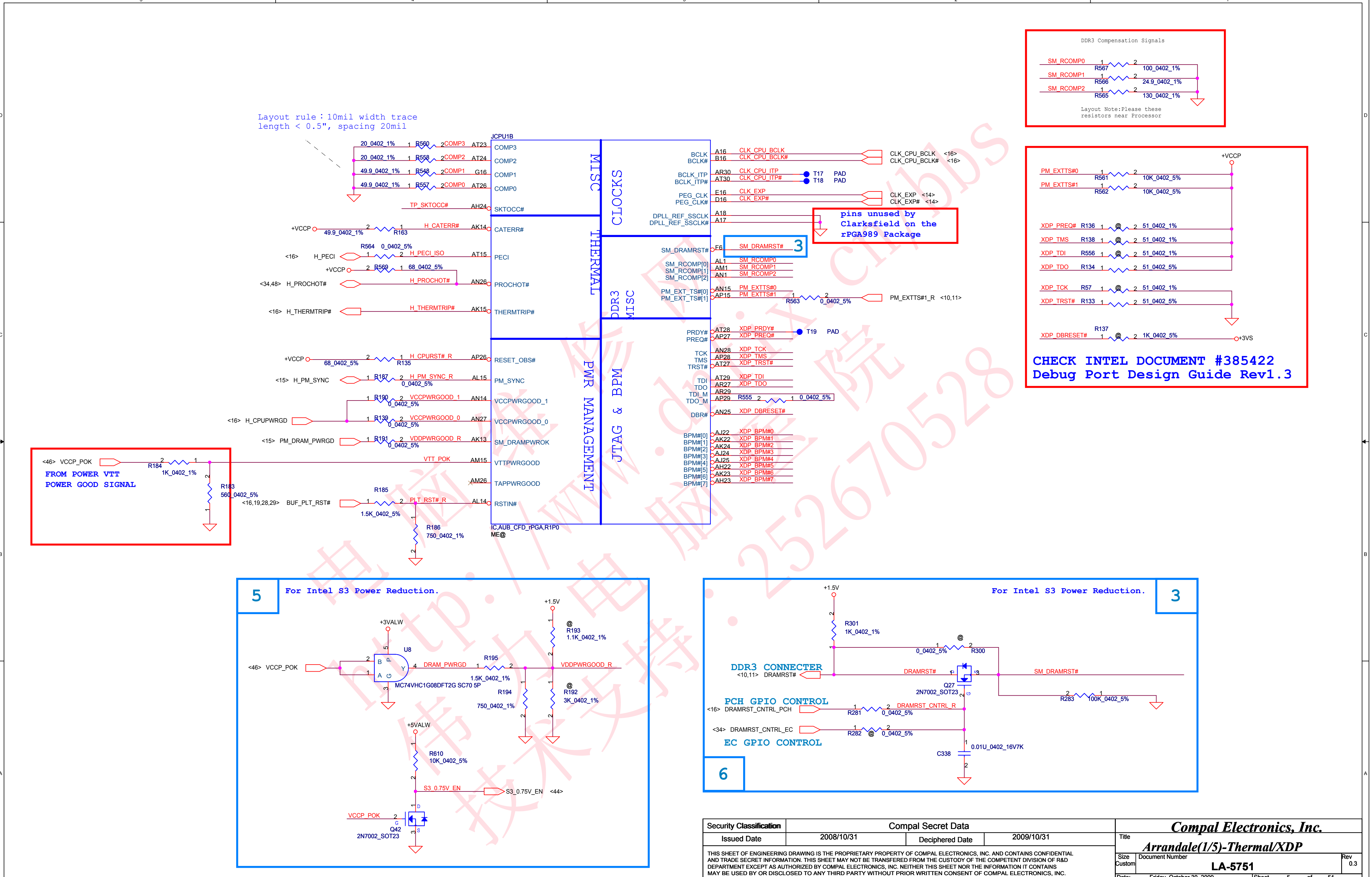

Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: *Arrandale(1/5)-Thermal/XDP*

Size: Custom | Document Number: LA-5751 | Rev: 0.3

Layout rule：trace length < 0.5"

JCPU1A

DMI

PCI EXPRESS -- GRAPHICS

Intel(R) FDI

IC,AUB_CFD_rPGA,R1P0
ME@

PCIE Lane Numbers Reversed
CFG3-PCI Express Static Lane Reversal

DIS@

FOR ES1 SAMPLE ONLY

JCPU1E

RESERVED

IC,AUB_CFD_rPGA,R1P0
ME@

CFG Straps for PROCESSOR

CFG0
R58 3.01K_0402_1%

PCI-Express Configuration Select
CFG0: 1: Single PEG; 0: Bifurcation enabled
Not applicable for Clarksfield Processor

CFG[1:0] 11=1*16 PEG; 10=2*8 PEG

CFG3
R61 3.01K_0402_1%

CFG3-PCI Express Static Lane Reversal
CFG3: 1: Normal Operation; 0: Lane Numbers Reversed; 15 -> 0, 14 ->1, ...

CFG4
R60 3.01K_0402_1%

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

Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: Arrandale(2/5)-DMI/PEG/FDI

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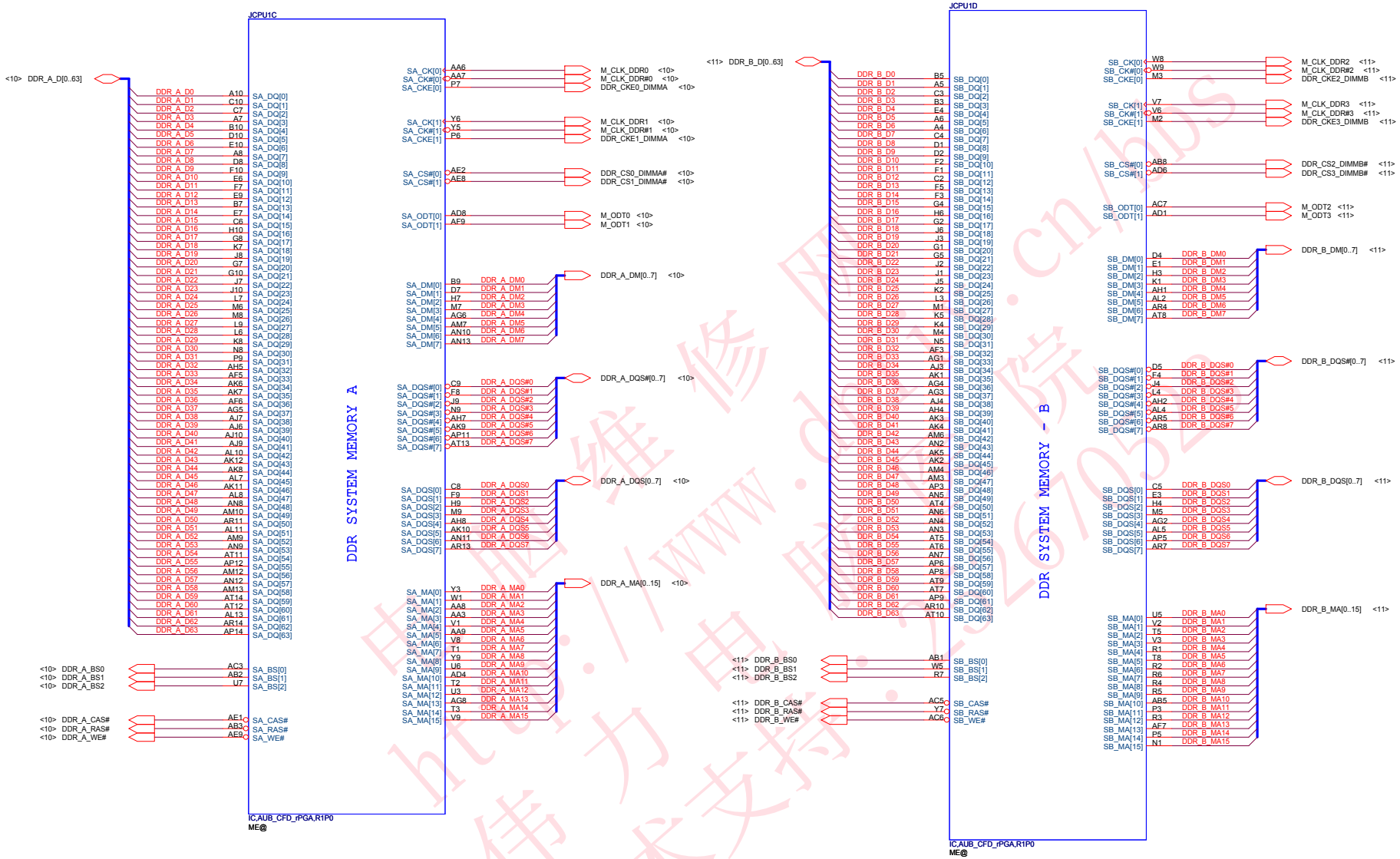
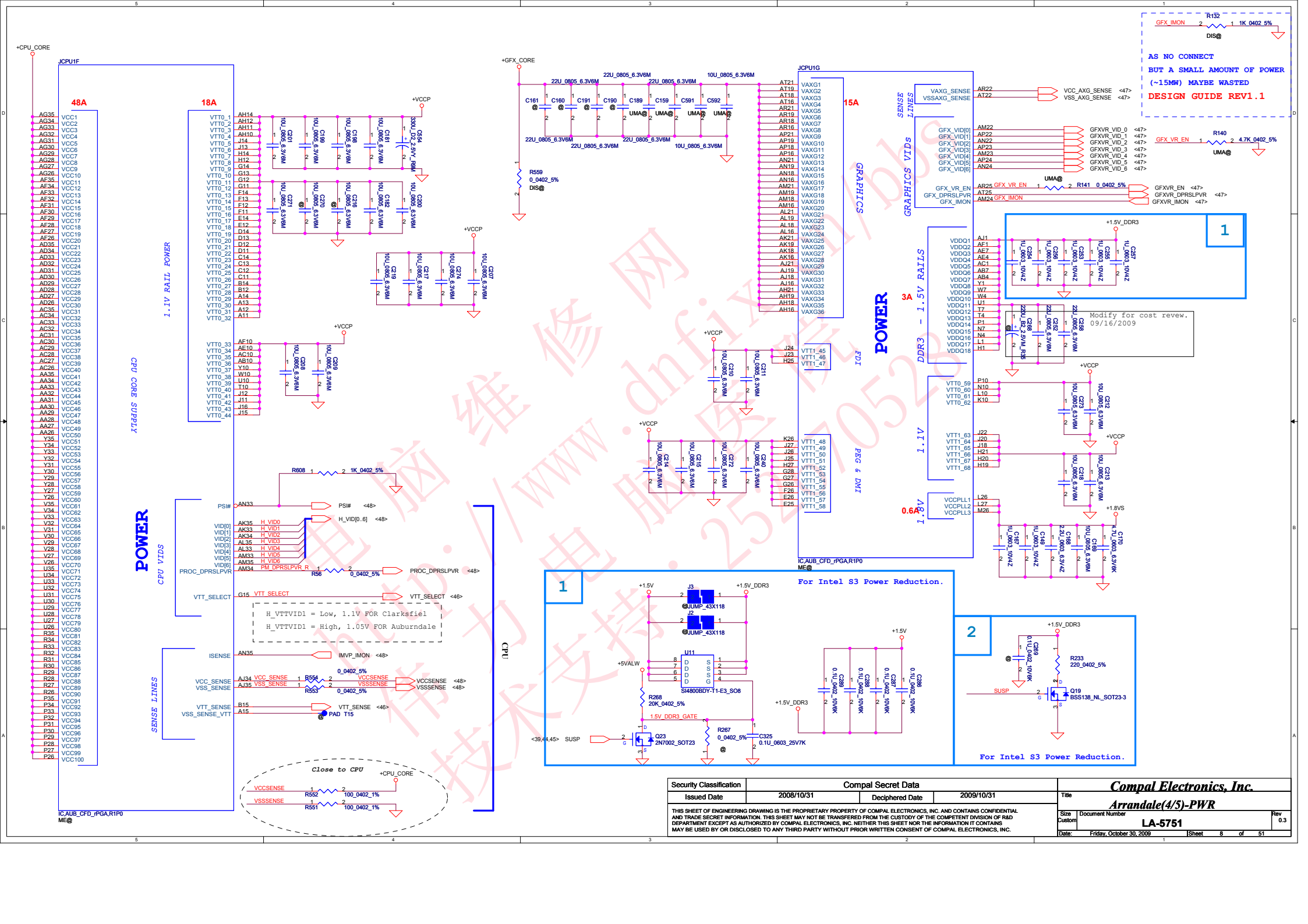
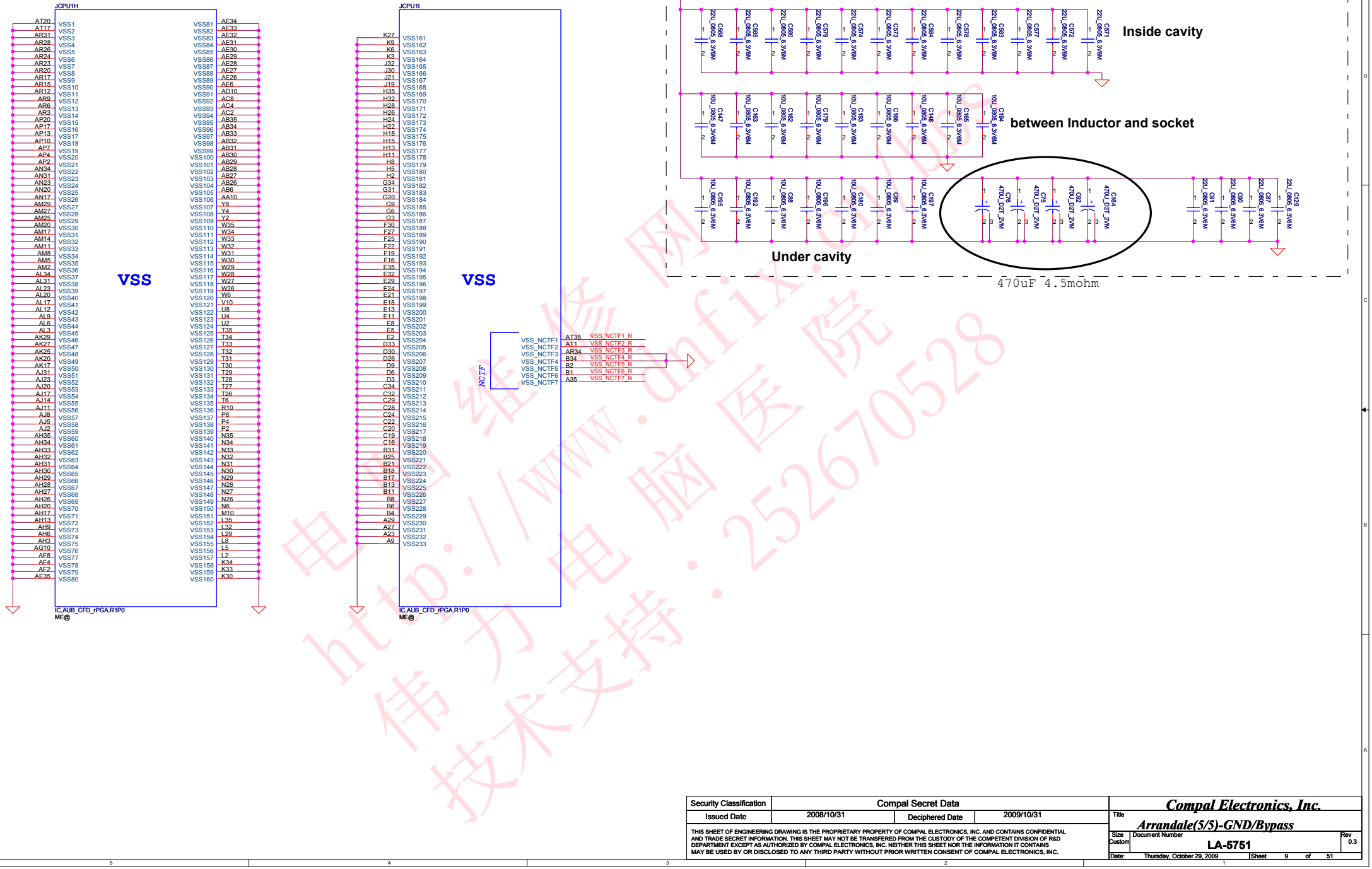


Compal Electronics, Inc.		
Title: Arrandale(3/5)-DDR III		
Size: Custom	Document Number: LA-5751	Rev: 0.3
Date: Friday, October 30, 2009	Sheet 7 of 51	



Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.			
Title: Arrandale(4/5)-PWR			
Size: Custom	Document Number: LA-5751		Rev: 0.3
Date: Friday, October 30, 2009	Sheet 8 of 51		



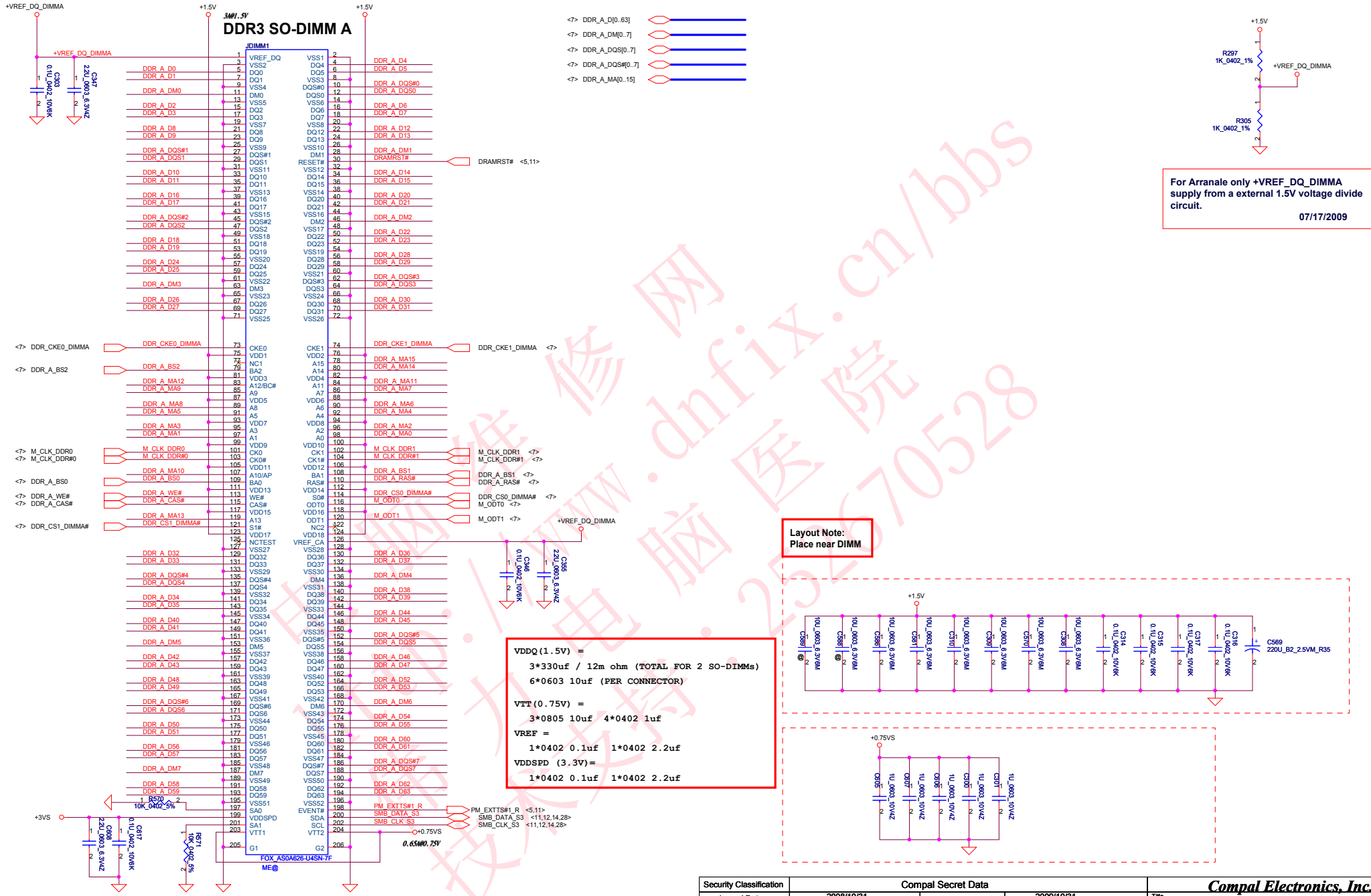
Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: **Arrandale(5/5)-GND/Bypass**

Size	Document Number	Rev
Custom	LA-5751	0.3

Date: Thursday, October 29, 2009 | Sheet 9 of 51



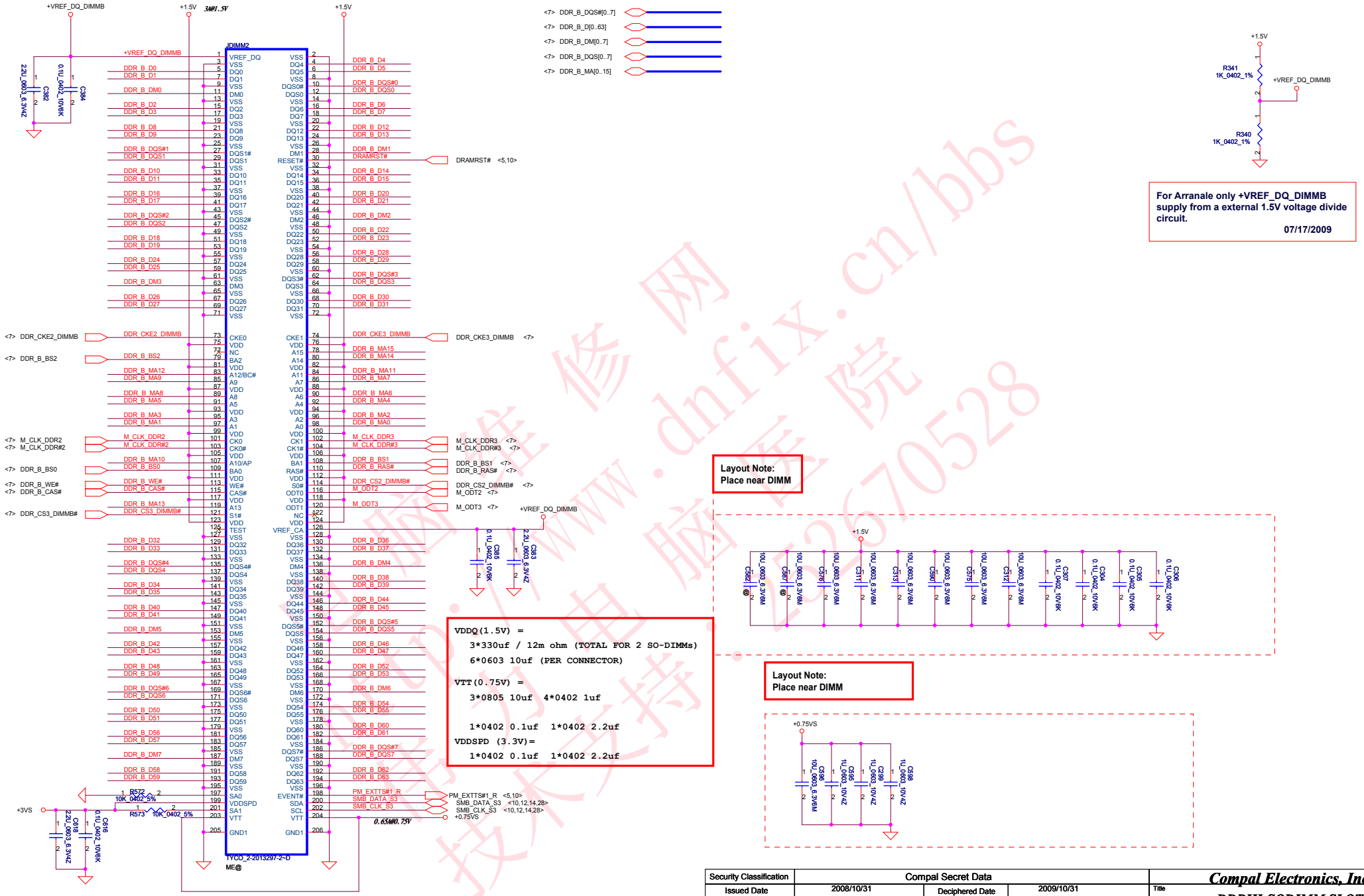
Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: DDRIII-SODIMM SLOT1

Size: Custom | Document Number: LA-5751 | Rev: 0.3

Date: Friday, October 30, 2009 | Sheet 10 of 51



Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: **DDRIII-SODIMM SLOT2**

Size	Document Number	Rev
	LA-5751	0.3

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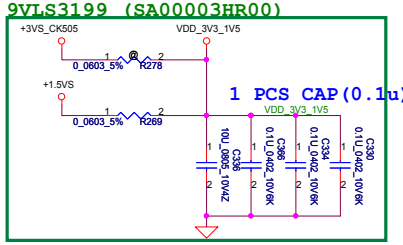
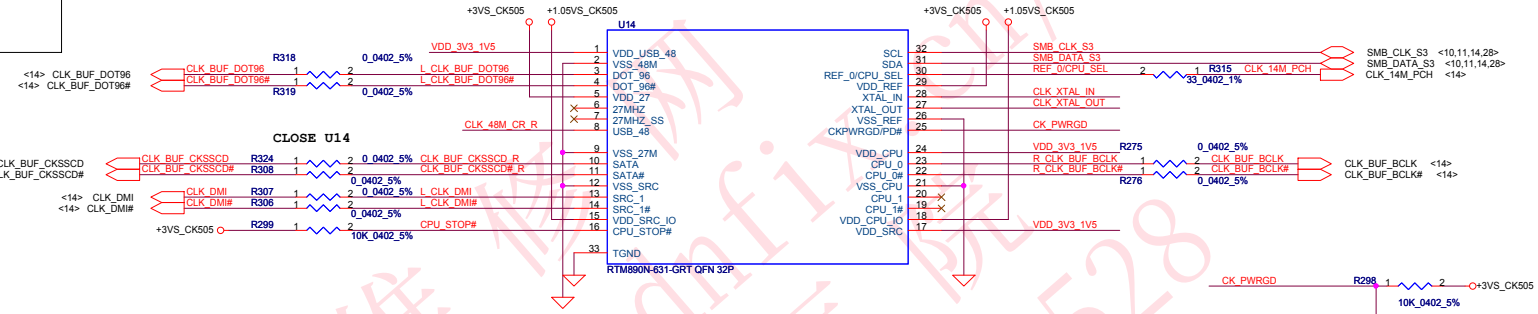
Reserve for Low Power CLK GEN.
RTM890N-631(SA00003HQ00)
SLG8LV597VTR
9VLS3199 (SA00003HR00)



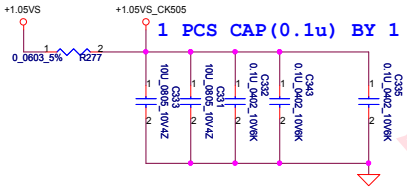
1 PCS CAP(0.1u) BY 1 INPUT PIN

CLK GEN TO PCH
1. CLK_DMI
2. CLK_BUF_BCLK
3. CLK_BUF_CKSSCD
4. CLK_BUF_DOT96
5. CLK_14M_PCH

CLK GEN TO VGA
Unused
1. 27M_CLK
1. 27M_CLK_SS

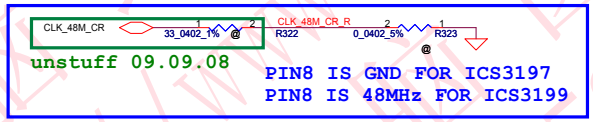


CLOSE U14



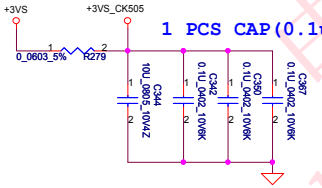
1 PCS CAP(0.1u) BY 1 INPUT PIN

S IC SLG8SP587VTR QFN 32P CLK GEN (SA00002XY00)
S IC ICS9LRS3199AKLFT MLF 32P CLK GEN (SA000030P00)

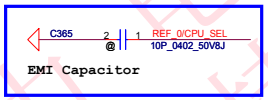


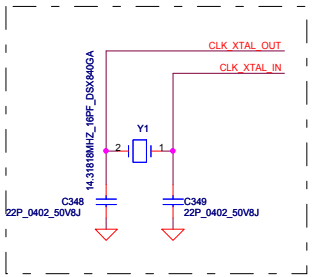
unstuff 09.09.08

PIN8 IS GND FOR ICS3197
PIN8 IS 48MHz FOR ICS3199

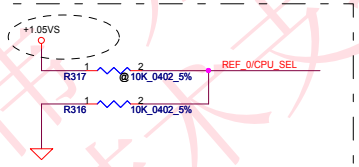


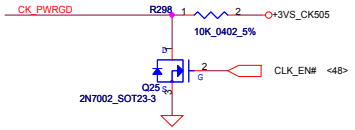
1 PCS CAP(0.1u) BY 1 INPUT PIN





PIN 30	CPU_0	CPU_1
0 (Default)	133MHz	133MHz
1	100MHz	100MHz





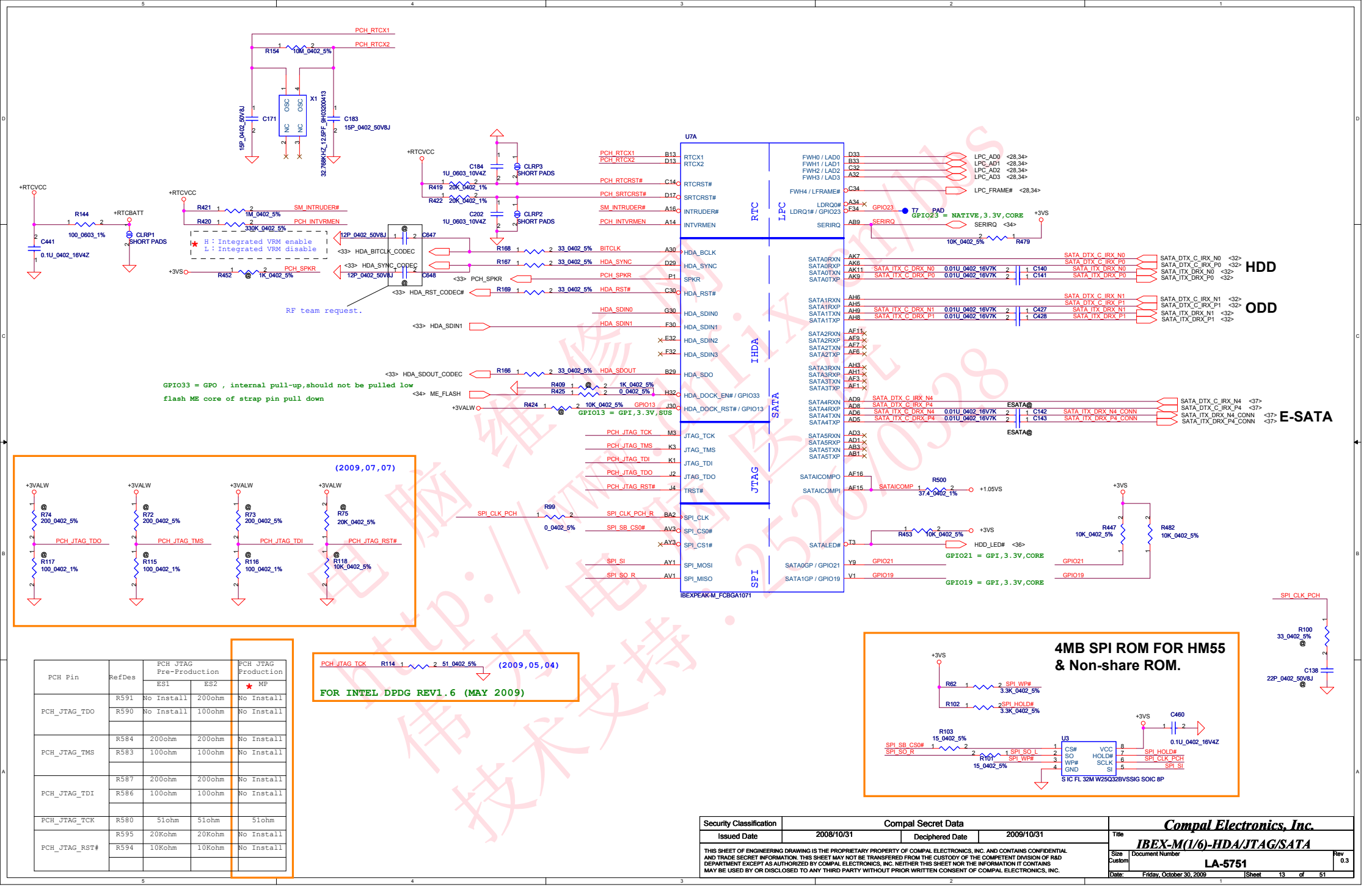
Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: CLOCK GENERATOR

Size: | Document Number: LA-5751 | Rev: 0.3

Date: Friday, October 30, 2009 | Sheet 12 of 51



PCH Pin	RefDes	PCH JTAG Pre-Production ES1	PCH JTAG Pre-Production ES2	PCH JTAG Production * MP
PCH_JTAG_TDO	R591	No Install	200ohm	No Install
	R590	No Install	100ohm	No Install
PCH_JTAG_TMS	R584	200ohm	200ohm	No Install
	R583	100ohm	100ohm	No Install
PCH_JTAG_TDI	R587	200ohm	200ohm	No Install
	R586	100ohm	100ohm	No Install
PCH_JTAG_TCK	R580	51ohm	51ohm	51ohm
PCH_JTAG_RST#	R595	20Kohm	20Kohm	No Install
	R594	10Kohm	10Kohm	No Install

Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: IBEX-M(1/6)-HDA/JTAG/SATA

Size	Document Number	Rev
Custom	LA-5751	0.3

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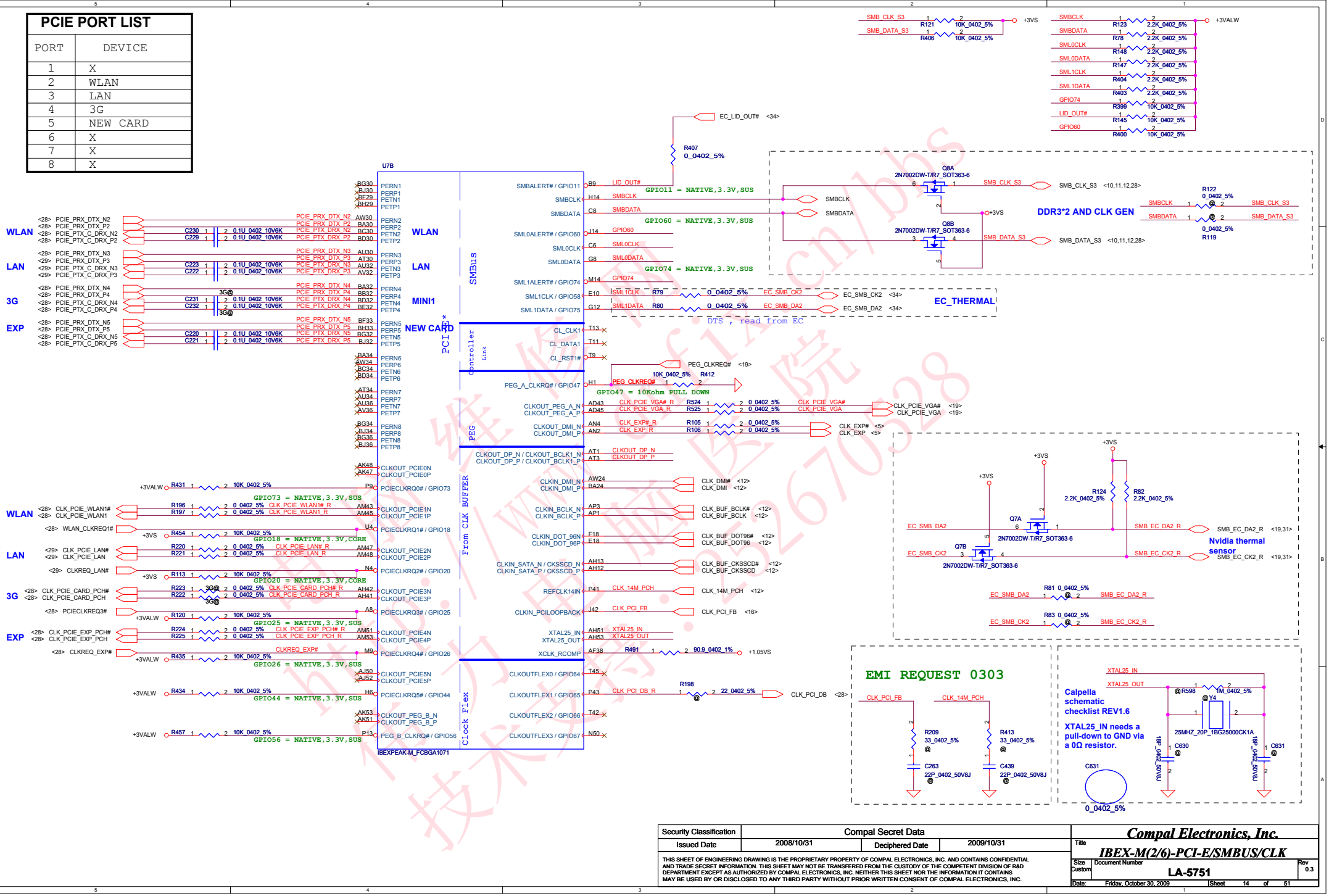
PCIE PORT LIST

PORT	DEVICE
1	X
2	WLAN
3	LAN
4	3G
5	NEW CARD
6	X
7	X
8	X



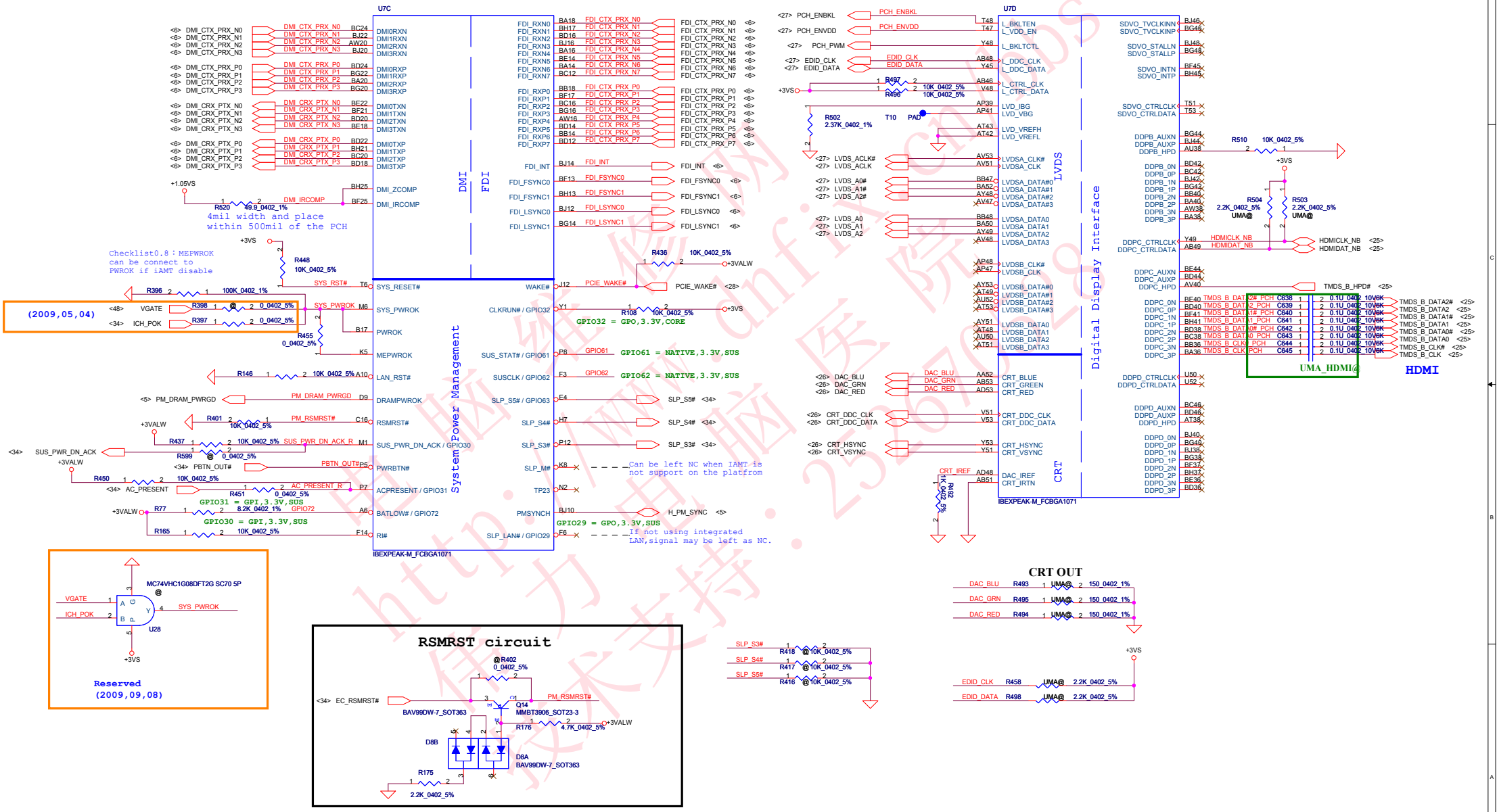
Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: **IBEX-M(2/6)-PCI-E/SMBUS/CLK**

Size	Document Number	Rev
Custom	LA-5751	0.3

Date: Friday, October 30, 2009 | Sheet 14 of 51



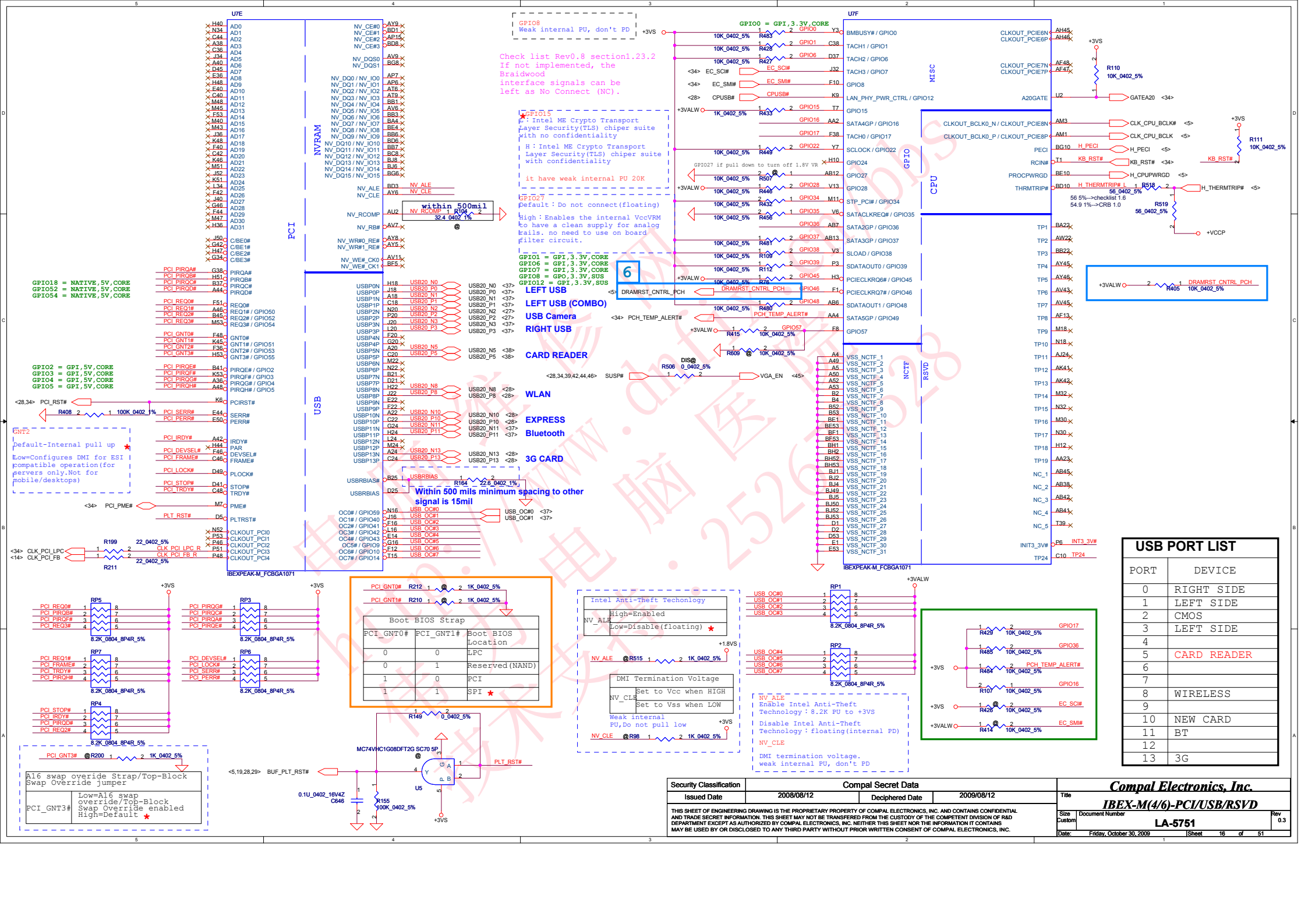
Security Classification	Compal Secret Data		
Issued Date	2008/10/31	Deciphered Date	2009/10/31

Compal Electronics, Inc.

Title: IBEX-M(3/6)-DMI/GPIO/LVDS

Size	Document Number	Rev
Custom	LA-5751	0.3

Date: Friday, October 30, 2009 | Sheet 15 of 51



USB PORT LIST

PORT	DEVICE
0	RIGHT SIDE
1	LEFT SIDE
2	CMOS
3	LEFT SIDE
4	
5	CARD READER
6	
7	
8	WIRELESS
9	
10	NEW CARD
11	BT
12	
13	3G

Security Classification	Compal Secret Data		
Issued Date	2008/08/12	Deciphered Date	2009/08/12

Compal Electronics, Inc.

Title: IBEX-M(4/6)-PCI/USB/RSVD

Size: Custom | Document Number: LA-5751 | Rev: 0.3

Date: Friday, October 30, 2009 | Sheet 16 of 51

DG1.1 no M3 support and not Intel LAN, VCCLAN Source=>GND

U7J

POWER

Clock and Miscellaneous

USB

PCI/GPIO/LPC

SATA

CPU

RTC

HDA

UPDATE 0210

lsolate AF32,AF34,AH34 from AH35,AJ35 for Intel request 09.09.08

IBEXPEAK-M_FCBGA1071

U7G

POWER

VCC CORE

CRT

LVDS

HVCMOS

DMI

PCI E*

NAND / SPI

FDI

IBEXPEAK-M_FCBGA1071

C447 changed to 1u 09/04/2009
check list Rev2.0 update.

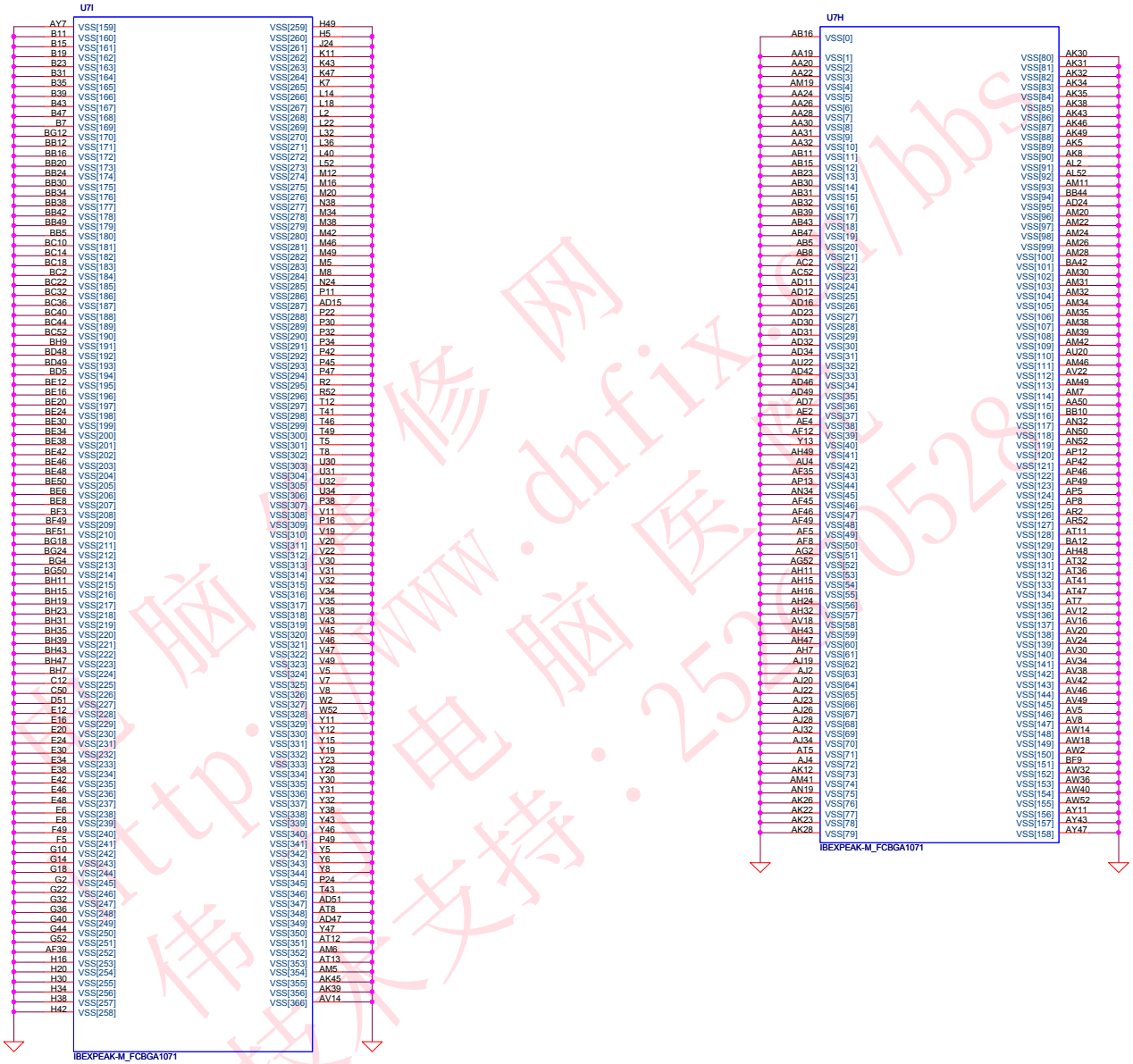
Security Classification	Compal Secret Data		
Issued Date	2008/08/12	Deciphered Date	2009/08/12

Compal Electronics, Inc.

Title: IBEX-M(5/6)-PWR

Size: Custom | Document Number: LA-5751 | Rev: 0.3

Date: Thursday, October 29, 2009 | Sheet 17 of 51

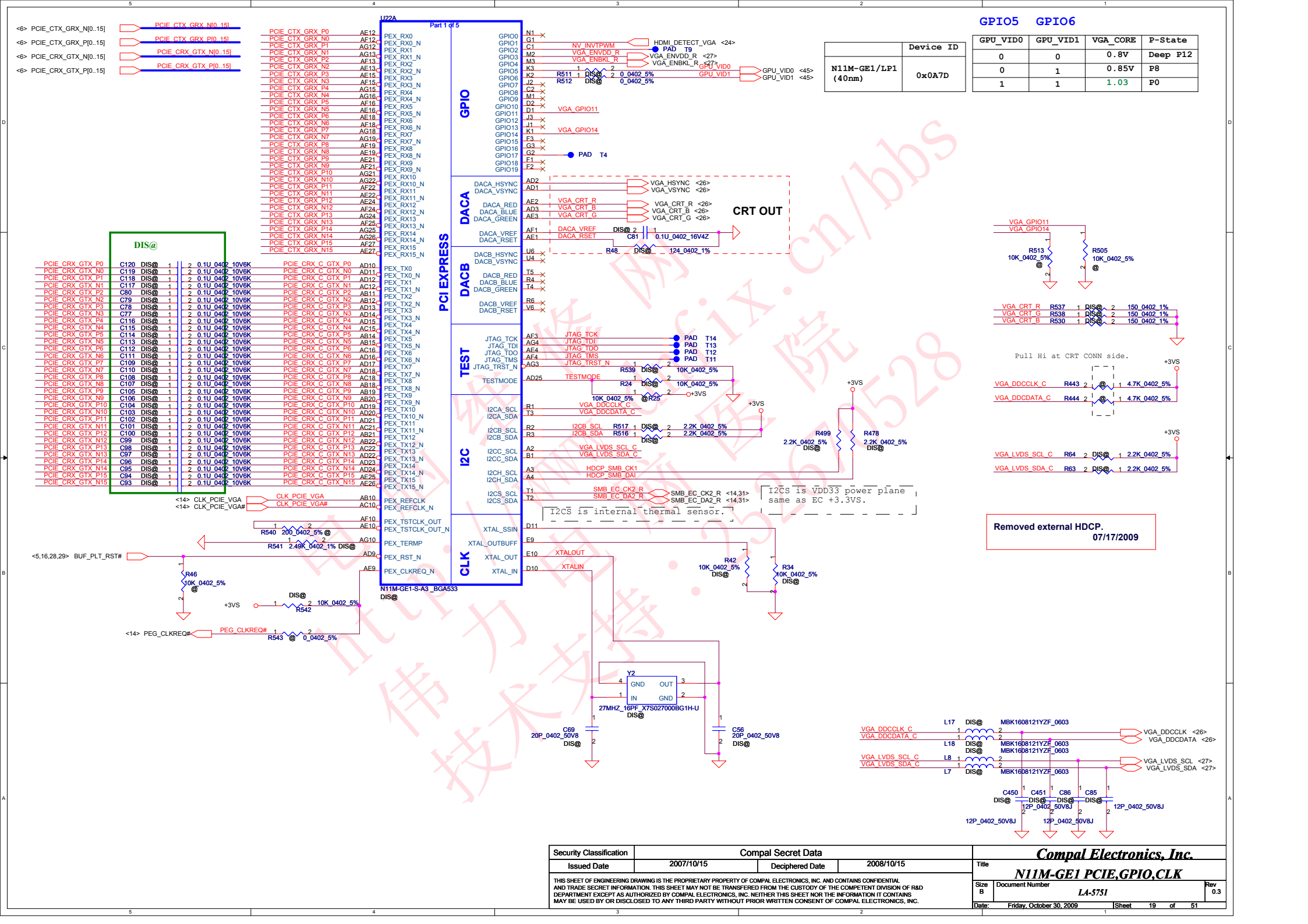


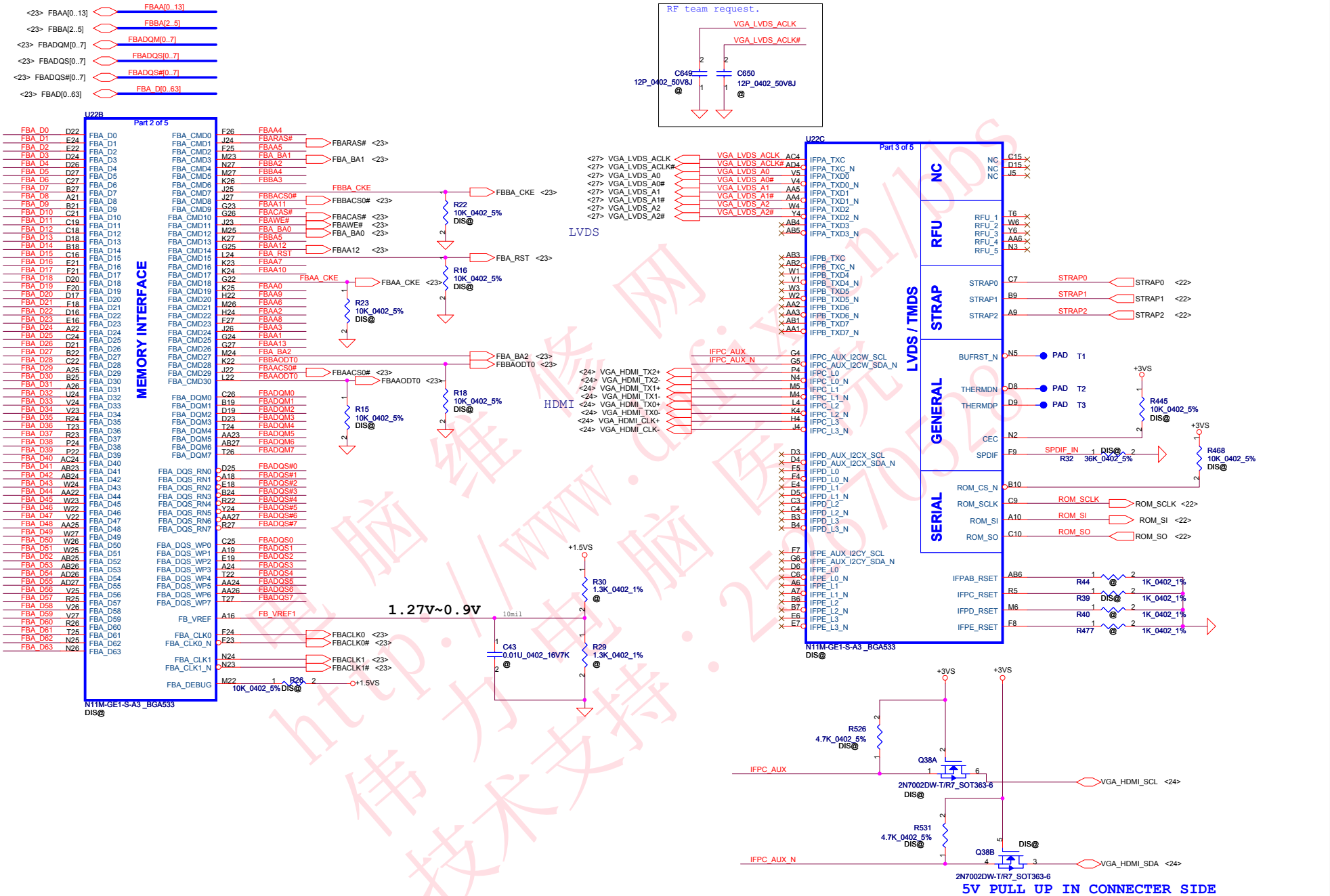
Compal Electronics, Inc.

Title: **IBEX-M(6/6)-GND**

Size	Document Number	Rev
Custom	LA-5751	0.3

Date: Thursday, October 29, 2009 | Sheet 18 of 51


GPIO5 GPIO6
Device ID
N11M-GE1/LP1 (40nm)
0x0A7D
GPU_VID0 GPU_VID1 P-State
0 0 0.8V Deep P12
0 1 0.85V P8
1 1 1.03 P0
U22A
Part 1 of 5
PCI EXPRESS
GPIO
DACA
DACB
TEST
I2C
CLK
N11M-GE1-S-A3_BGA533
CRT OUT
DIS@
I2CS is internal thermal sensor.
I2CS is VDD33 power plane same as EC +3.3VS.
Removed external HDCP.
07/17/2009
Pull Hi at CRT CONN side.
27MHZ_16PF_X7S027000BG1H-U
MBK1608121YZF_0603
Compal Secret Data
Issued Date 2007/10/15
Deciphered Date 2008/10/15
Compal Electronics, Inc.
N11M-GE1 PCIE,GPIO,CLK
LA-5751
Rev 0.3
Friday, October 30, 2009
Sheet 19 of 51



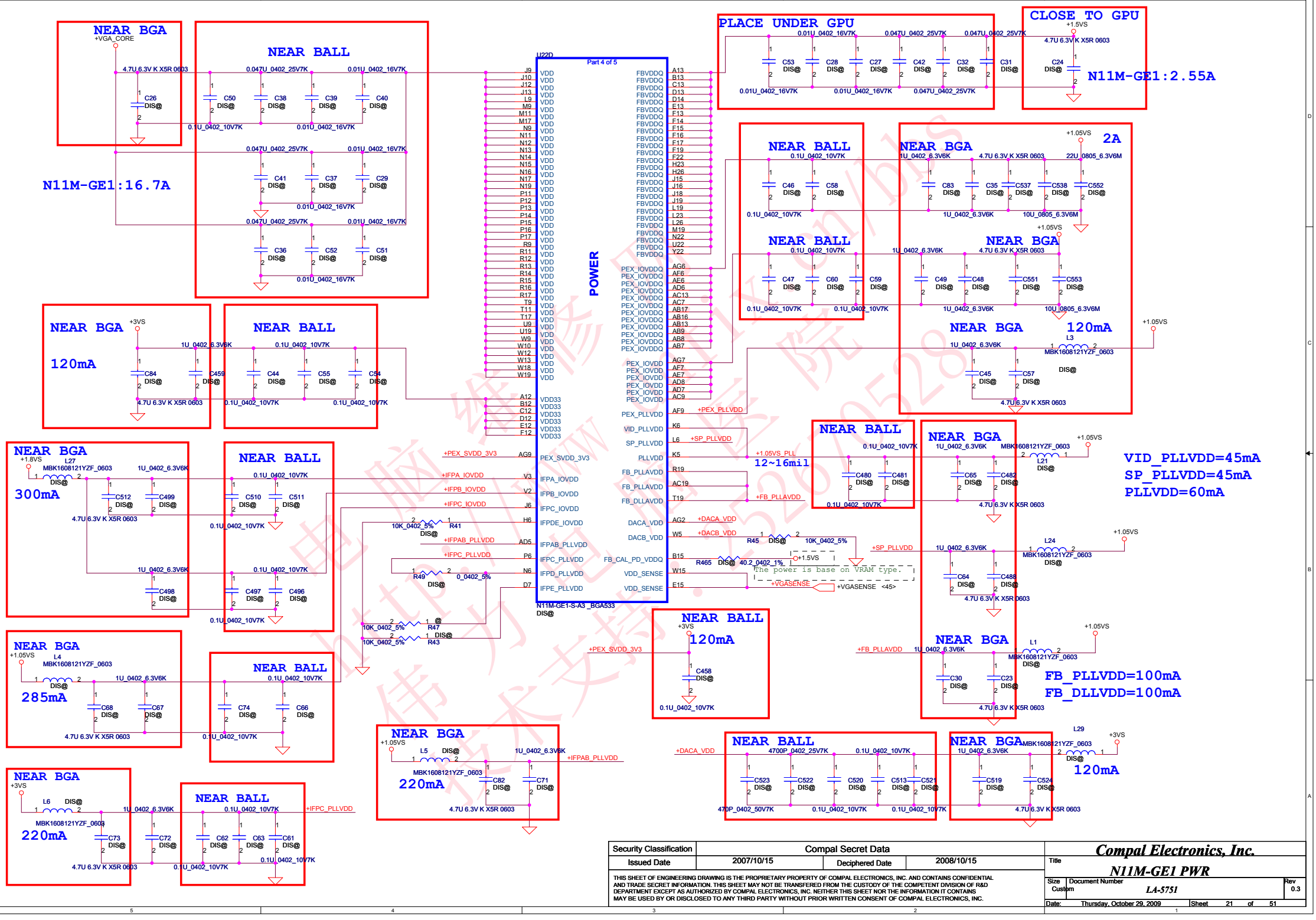
Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

Compal Electronics, Inc.

Title: N11M-GE1 LVDS,Memory Bus

Size	Document Number	Rev
B	LA-5751	0.3

Date: Friday, October 30, 2009 Sheet 20 of 51



Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

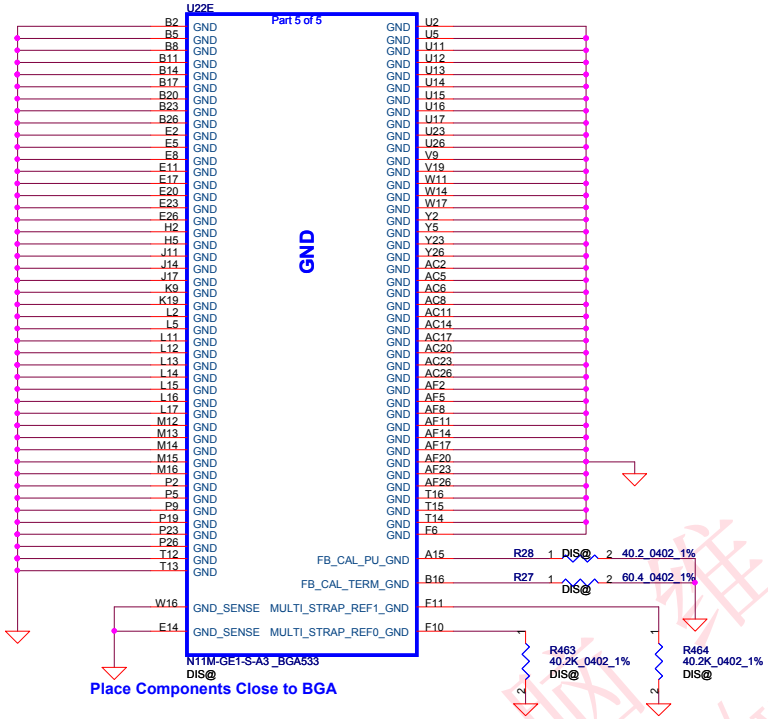
Compal Electronics, Inc.

Title: **N11M-GE1 PWR**

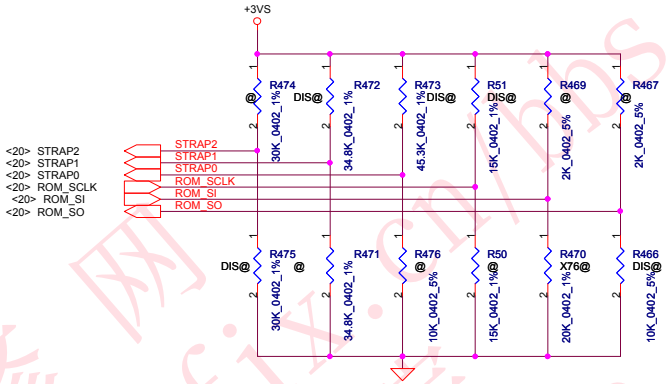
Size	Document Number	Rev
Custom	LA-5751	0.3

Date: Thursday, October 29, 2009 | Sheet 21 of 51

A total of 8 signals are required for GB1 strapping this includes
2 reference signals
6 physical strapping pins
4 logical strapping bits
A total of 24 logical strapping bits are available



Place Components Close to BGA



STRAP1 use for 3GIO_PADCFG to set 35K pull up.
(PUN-04335-001_V10 HW9 update)

N11M-GE1 LP1	Memory/PKG	FBVDDQ	FB_CAL_PU_GND	FBCAL_PD_VDDQ	FBCAL_TERM_GND
	DDR3	+1.5VS	40.2 ohm	40.2 ohm	40.2/60.4 ohm

Must be used 1% resister for driver calibration

DG-04642-001-V01(May 22, 2009)

GPU	FB Memory (DDR3)		ROM_SO	ROM_SCLK	ROM_SI	STRAP2	STRAP1	STRAP0
N11M-GE1 LP1 (0x0A7D) 40nm	Samsung 800MHz (defaul)	K4W1G1646E-HC12						
		64Mx16	PD 10K	PU 15K	PD 20K	PD 30K	PU 35K	PU 45K
	Hynix 800MHz	H5TQ1G63BFR-12C						
		64Mx16	PD 10K	PU 15K	PD 15K	PD 30K	PU 35K	PU 45K
					X76			

Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

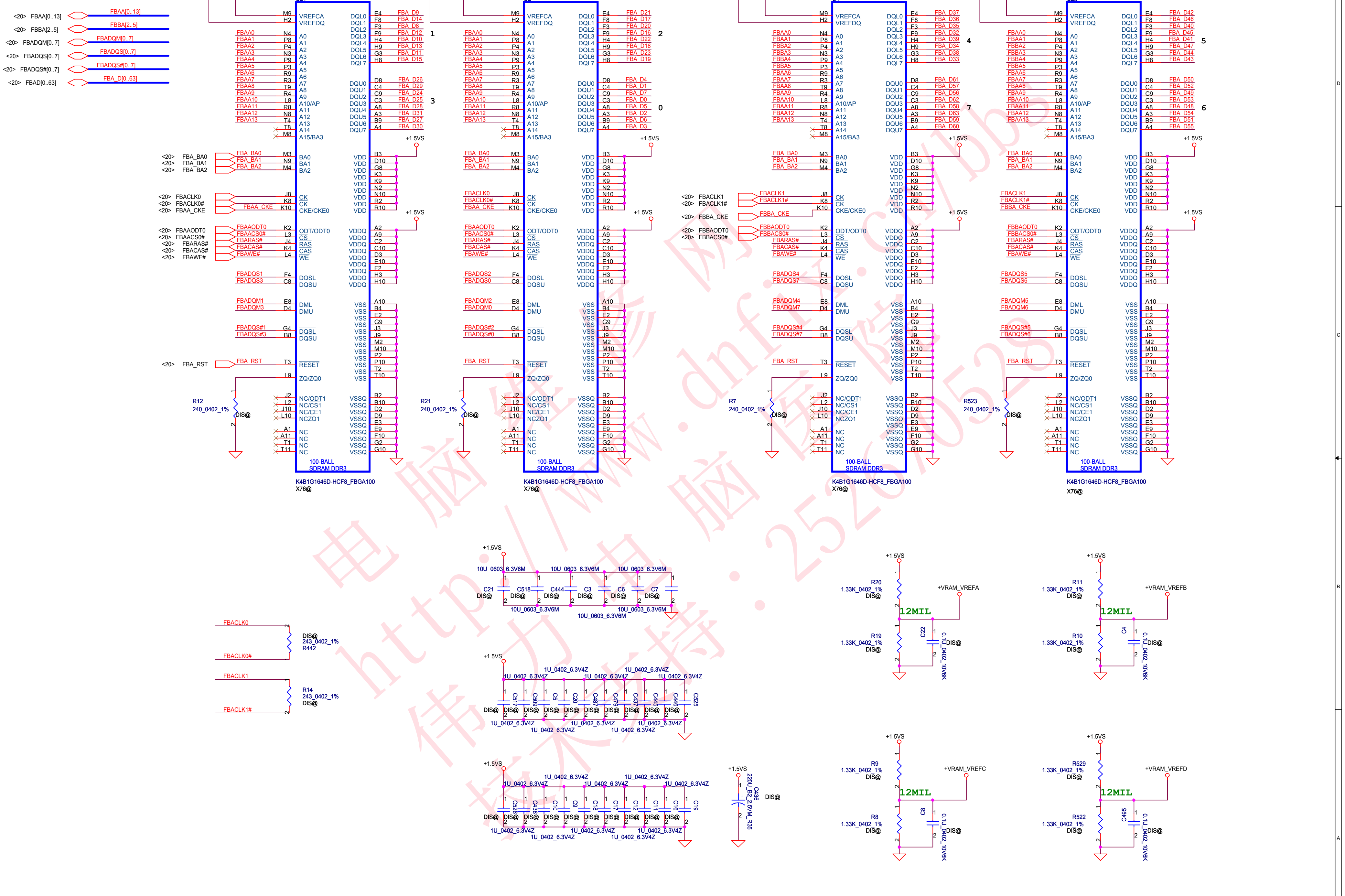
Compal Electronics, Inc.

Title: N11M-GE1 GND & STRAP

Size	Document Number	Rev
B	LA-5751	0.3

Date: Thursday, October 29, 2009 Sheet 22 of 51

N11x 40nm DDR3 MAPPING
NVIDIA COCUMENT FOR DA-3978-001



Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2007/10/15	Deciphered Date 2008/10/15	Title: VRAM DDR3
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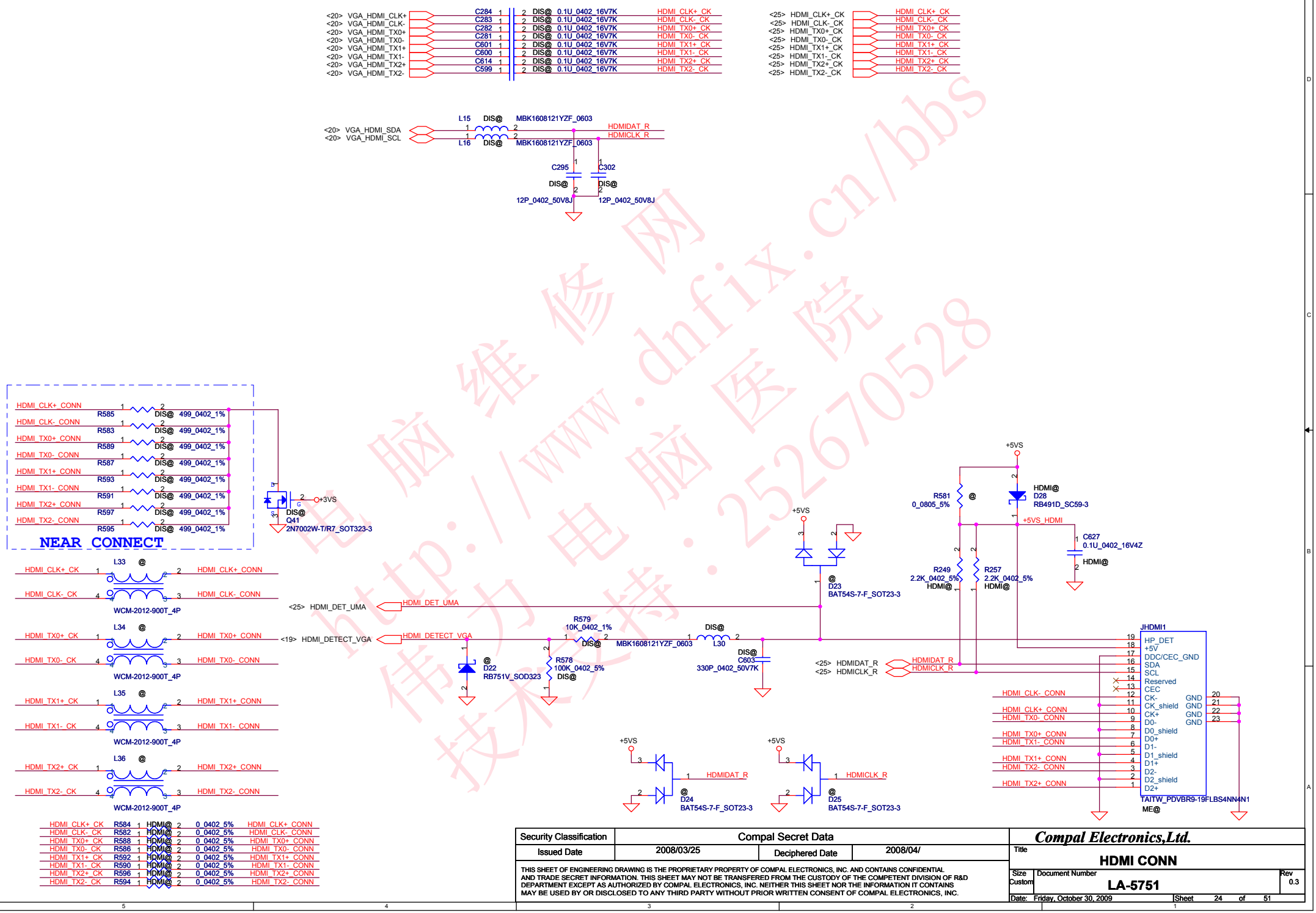
			Date: Thursday, October 29, 2009; Sheet 23 of 51



Security Classification	Compal Secret Data		
Issued Date	2008/03/25	Deciphered Date	2008/04/

Compal Electronics,Ltd.

Title: HDMI CONN

Size	Document Number	Rev
Custom	LA-5751	0.3

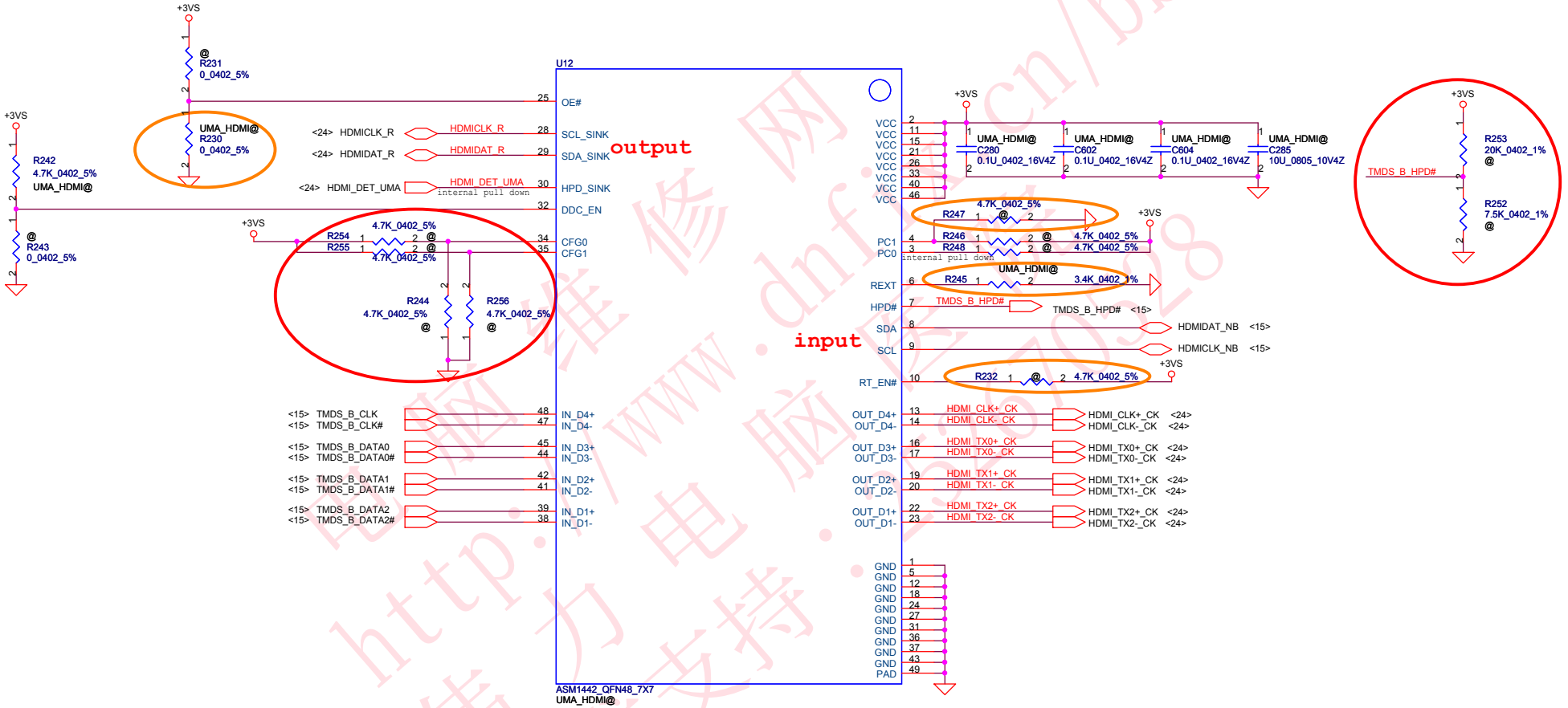
Date: Friday, October 30, 2009 Sheet 24 of 51

P/N:SA00003GT00 (ASM1442)

FOR asmedia R230 STUFF
RESERVE THE R232 PULL UP TO 3VS
RESERVE THE R247 PULL DOWN TO GND
CHANGE R245 FROM 499 TO 3.4K OHM

P/N:SA00002D700 (8101T)
P/N:SA00001U900 (CH7318A)

FOR 7318C PIN6 PULL DOWN 1.2Kohm
PIN7 PULL DOWN 7.5Kohm
PIN7 PULL UP 20Kohm



Security Classification	Compal Secret Data		
Issued Date	2008/03/25	Deciphered Date	2008/04/

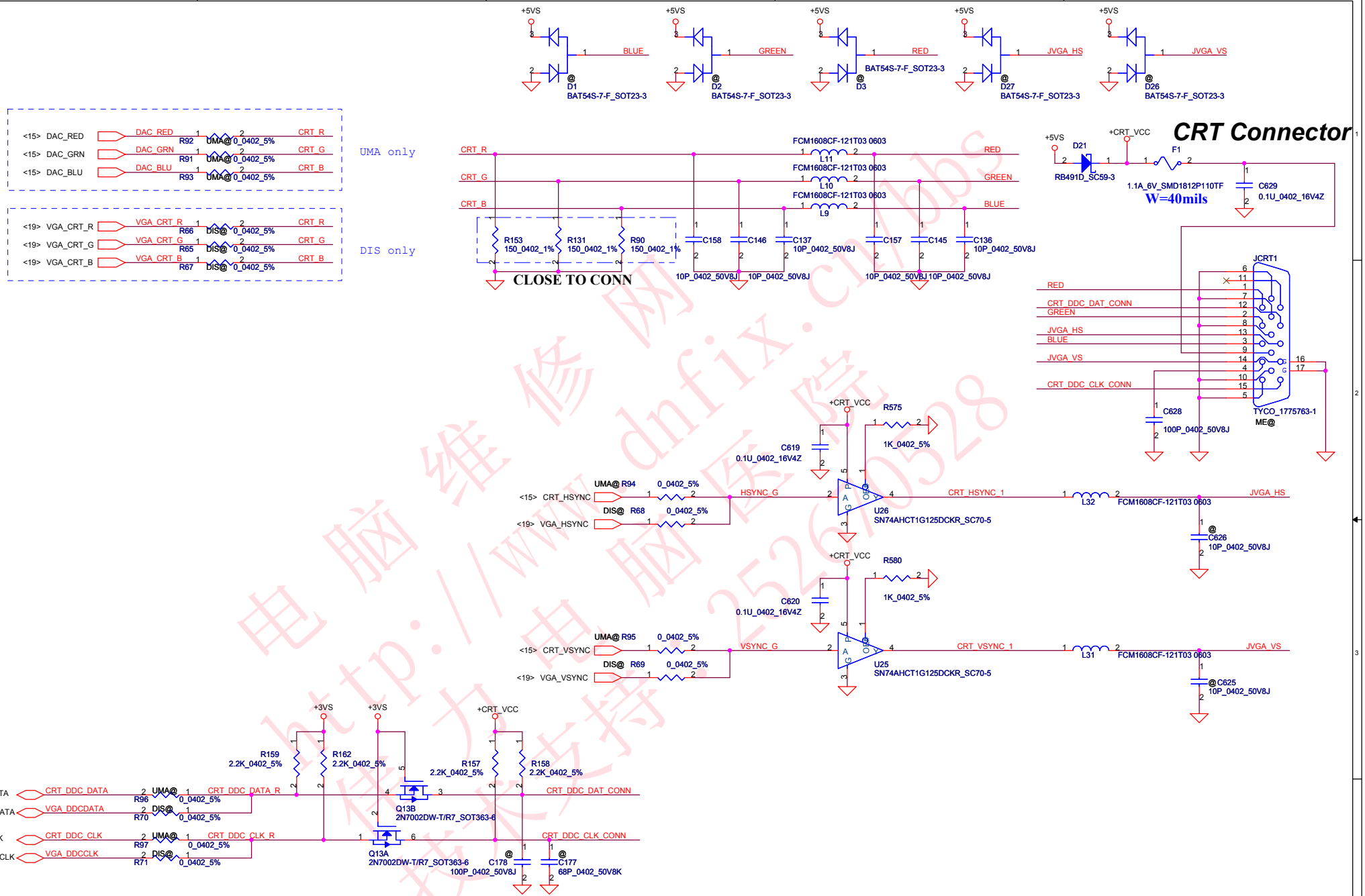
Compal Electronics,Ltd.

Title: Level Shiftter_ASM1442

Size: Custom | Document Number: LA-5751 | Rev: 0.3

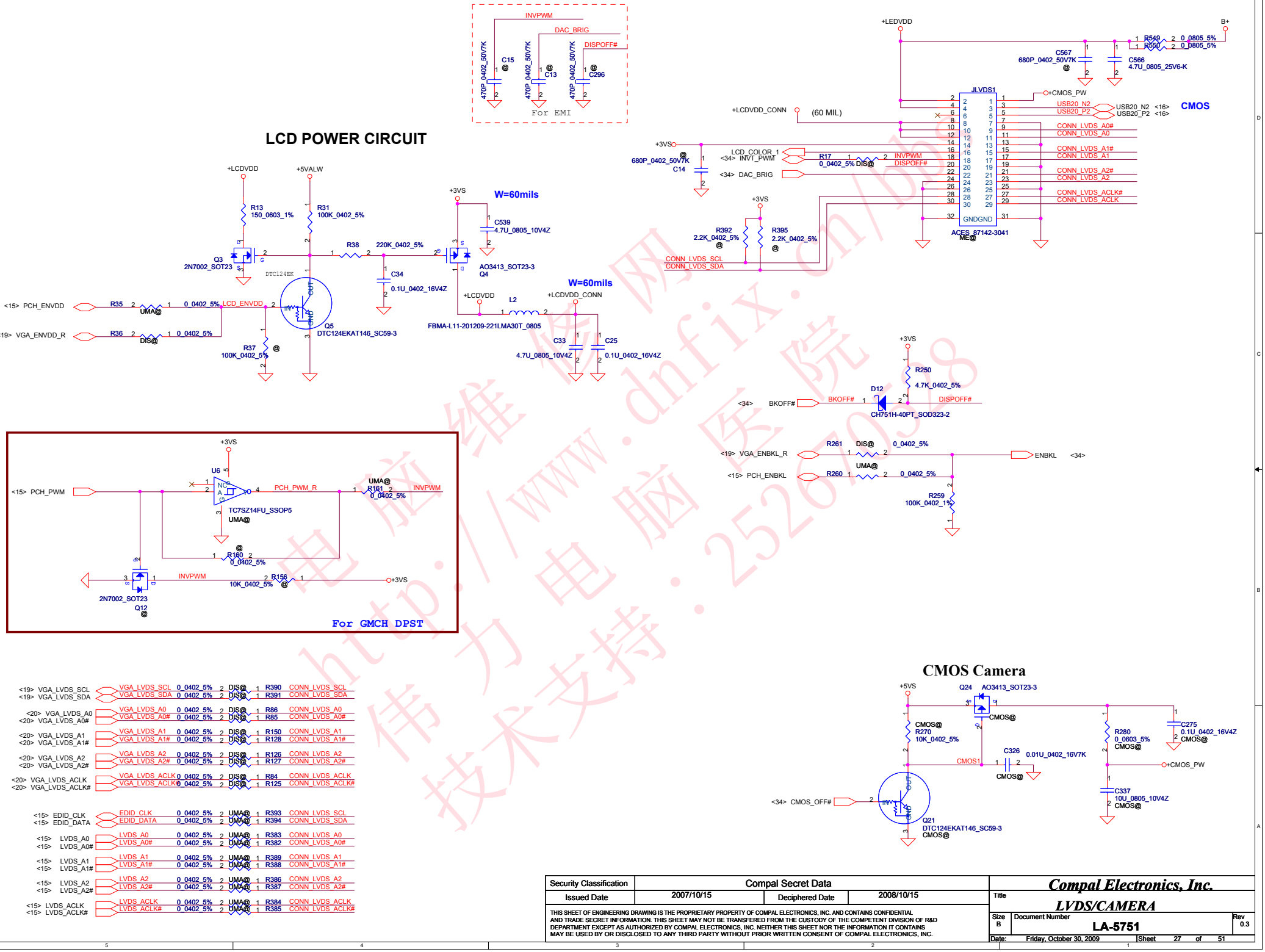
Date: Thursday, October 29, 2009 | Sheet 25 of 51

CRT Connector



Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

Compal Electronics, Inc.			
Title: CRT Connector			
Size: Custom	Document Number: LA-5751		Rev: 0.3
Date: Thursday, October 29, 2009	Sheet 26 of 51		

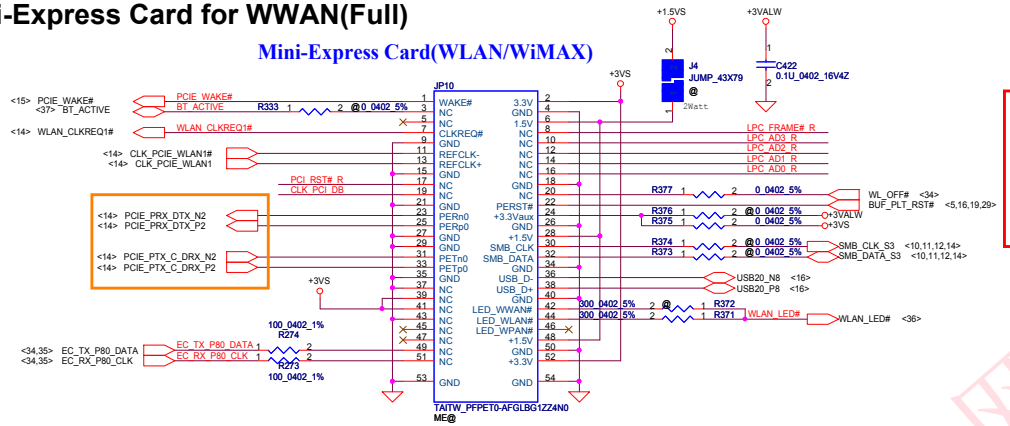


Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

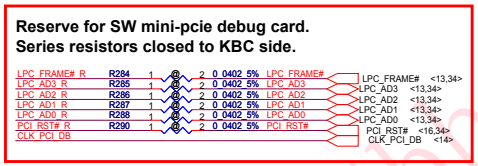
Compal Electronics, Inc.			
Title: LVDS/CAMERA			
Size: B	Document Number: LA-5751		Rev: 0.3
Date: Friday, October 30, 2009	Sheet 27 of 51		

Mini-Express Card for WLAN/WiMAX(Half)
Mini-Express Card for WWAN(Full)

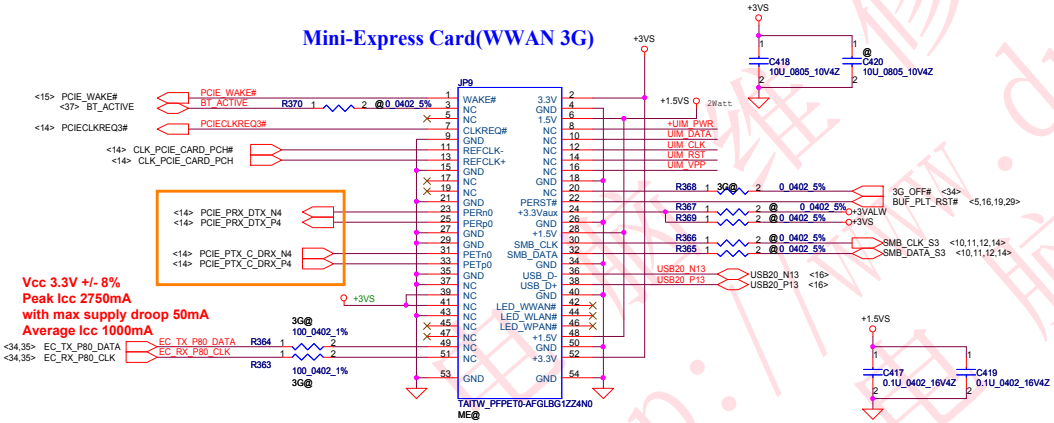
Mini-Express Card(WLAN/WiMAX)

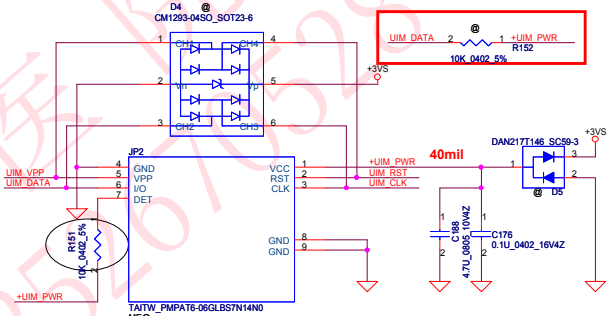


Reserve for SW mini-pcie debug card.
Series resistors closed to KBC side.

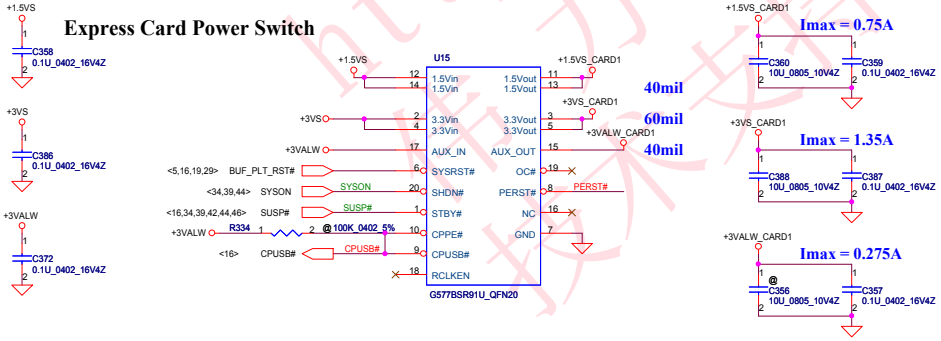


Mini-Express Card(WWAN 3G)

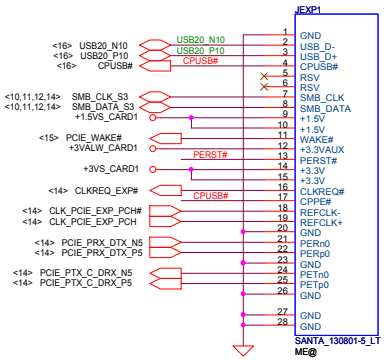




Express Card Power Switch



New Card 34mm Socket (Left/TOP)



Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

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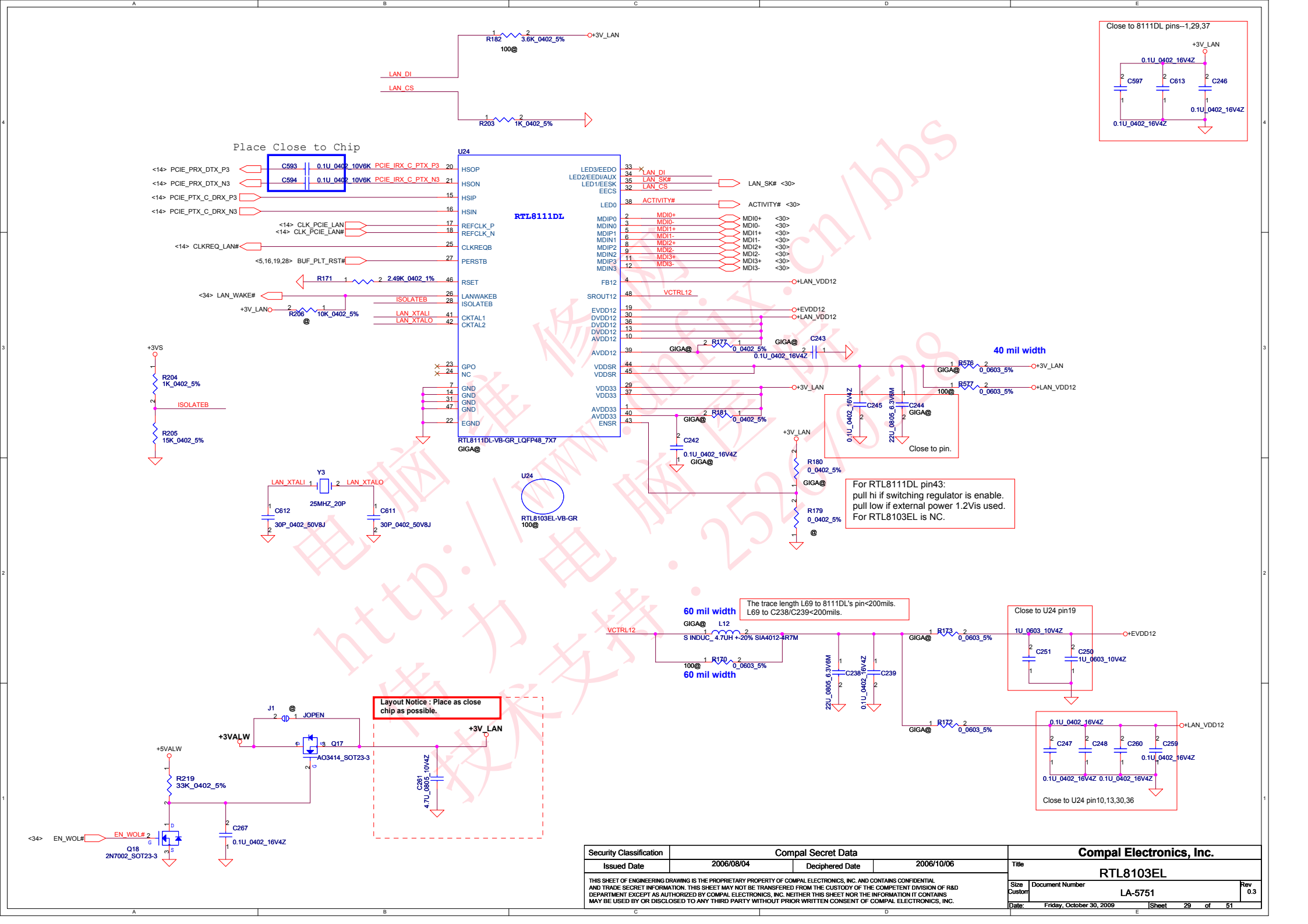
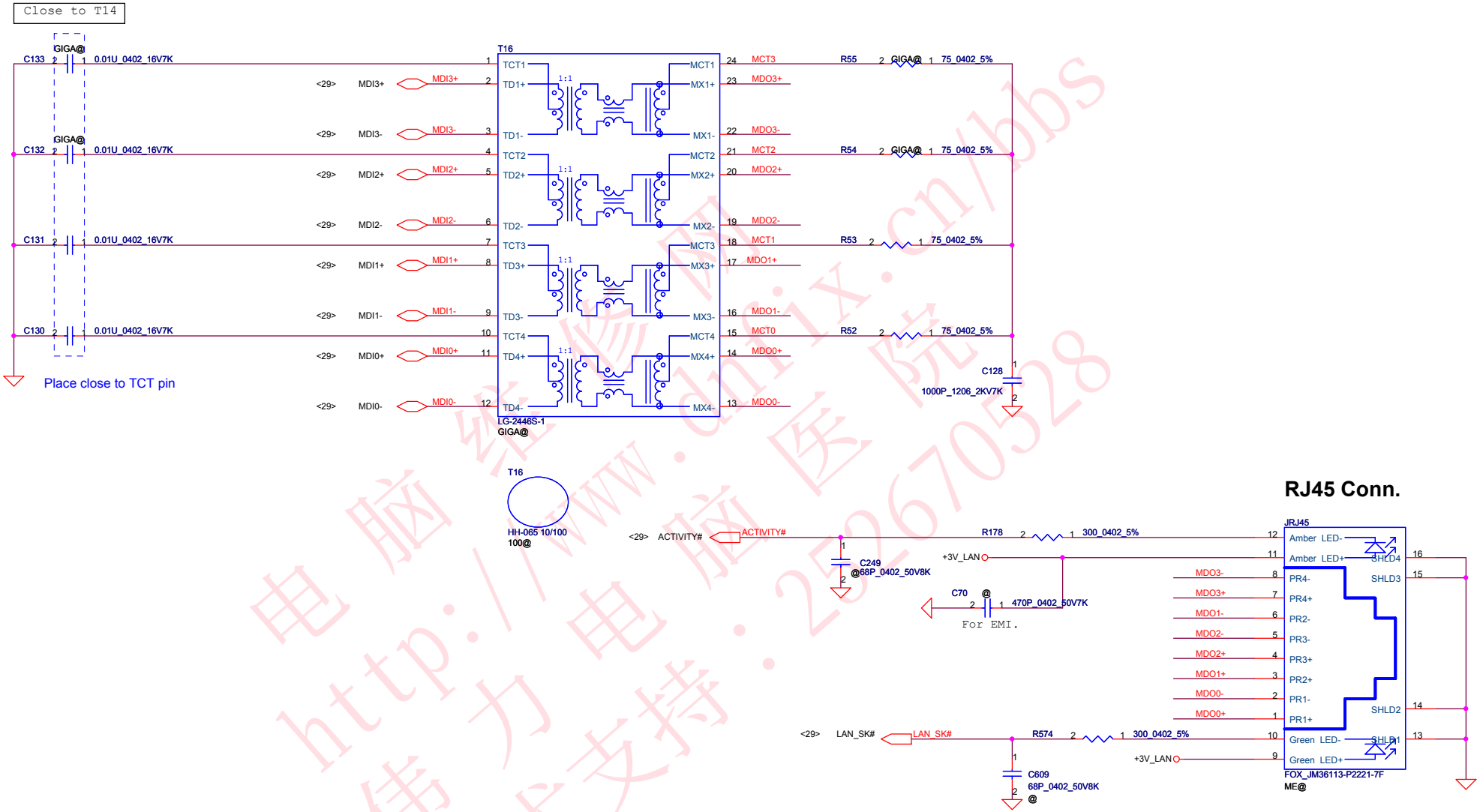
Compal Electronics, Inc.			
Title: Mini-Card/Nwe Card/SIM			
Size	Document Number: LA-5751		Rev: 0.3
Date: Friday, October 30, 2009	Sheet 28 of 51		



Security Classification	Compal Secret Data		
Issued Date	2006/08/04	Deciphered Date	2006/10/06

Compal Electronics, Inc.

Title	RTL8103EL	
Size: Custom	Document Number: LA-5751	Rev: 0.3
Date: Friday, October 30, 2009	Sheet 29 of 51	



Security Classification	Compal Secret Data		
Issued Date	2009/03/20	Deciphered Date	2010/03/20

Compal Electronics, Inc.

Title: **LAN_Transformer**

Size	Document Number	Rev
Custom	LA-5751	0.3

Date: Friday, October 30, 2009 Sheet 30 of 51

R430 1403@

0_0402_5%

1403:
@C508/@C324=100p

SMSC thermal sensor placed near by VRAM

+3VS

2103@ R430 68_0402_5%

2103@ R459 6.8K_0402_5%

2103@ R460 10K_0402_5%

2103@ R462 10K_0402_5%

2103@ R440 10K_0402_5%@

2103@ R461 10K_0402_5%

2103@ R441 10K_0402_5%

C443 0.1U_0402_16V4Z

<14,19> SMB_EC_CK2_R

SMB_EC_CK2_R

SMB_EC_DA2_R

SMB_EC_DA2_R <14,19>

VDD

FAN_PWM

SHDN_SEL

ALERT#

TACH

TRIP_SET

REMOTE2+

REMOTE2-

U20 2103@

EMC2103-2-AP-TR_QFN16_4X4

1	DN1	DP1	2
3	VDD	GPIO1	4
5	GPIO2	ALERT#	6
7	SYS_SHDN#	SMDATA	8
9	SMCLK	TACH	10
11	PWM	GND	12
13	SHDN_SEL	TRIP_SET	14
15	DN2 / DP3	DP2 / DN3	16
		GPAD	17

R439 1.5K_0402_1% @

FAN_PWM & TACH for PWM FAN

Address 0101_110xb

internal pull up 1.2K to 1.5V
R for initial thermal
shutdown temp

Close to DDR

REMOTE1+

C508@ 1000P_0402_50V7K

Q39 MMST3904-7-F_SOT323-3

REMOTE1-

Under WWAN

REMOTE2+

C324@ 1000P_0402_50V7K

Q22 MMST3904-7-F_SOT323-3

REMOTE2-

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

Close U20

1403@ C449 2200P_0402_50V7K

REMOTE1+

REMOTE1-

C651 2200P_0402_50V7K

REMOTE2+

REMOTE2-

2103@ R622 0_0402_5%

2103@ R623 0_0402_5%

REMOTE2+ REMOTE1-

REMOTE2- REMOTE1+

TACH R617@ 0_0402_5%

FAN_PWM R618@ 0_0402_5%

<34> EC_TACH R619 0_0402_5% TACH_R

<34> EC_FAN_PWM R620 0_0402_5% FAN_PWM_R

+3VS

R624 10K_0402_5%@

U29 1403@

EMC1403-2-AIZL-TR_MSOP10

VDD	1	SMCLK	10
REMOTE1+	2	SMDATA	9
REMOTE1-	3	ALERT#	8
REMOTE2+	4	THERM#	7
REMOTE2-	5	GND	6

SMB_EC_CK2_R

SMB_EC_DA2_R

ALERT#

Address 1001_101xb

FAN1 Conn

+5VS

C490 10U_0805_10V4Z

JP12

TACH_R	1
FAN_PWM_R	2
	3
	4
	5
	6
	G5
	G6

ACES_85205-04001
ME@

Shutdown Temp	TRIP_SET R439 (1%)
93	953ohm
94	1020ohm
95	1100ohm
96	1150ohm
97	1240ohm
98	1330ohm
99	1400ohm
100	1500ohm
101	1580ohm
102	1690ohm
103	1820ohm
104	1960ohm
105	2050ohm

Security Classification	Compal Secret Data		
Issued Date	2008/03/25	Deciphered Date	2008/04/

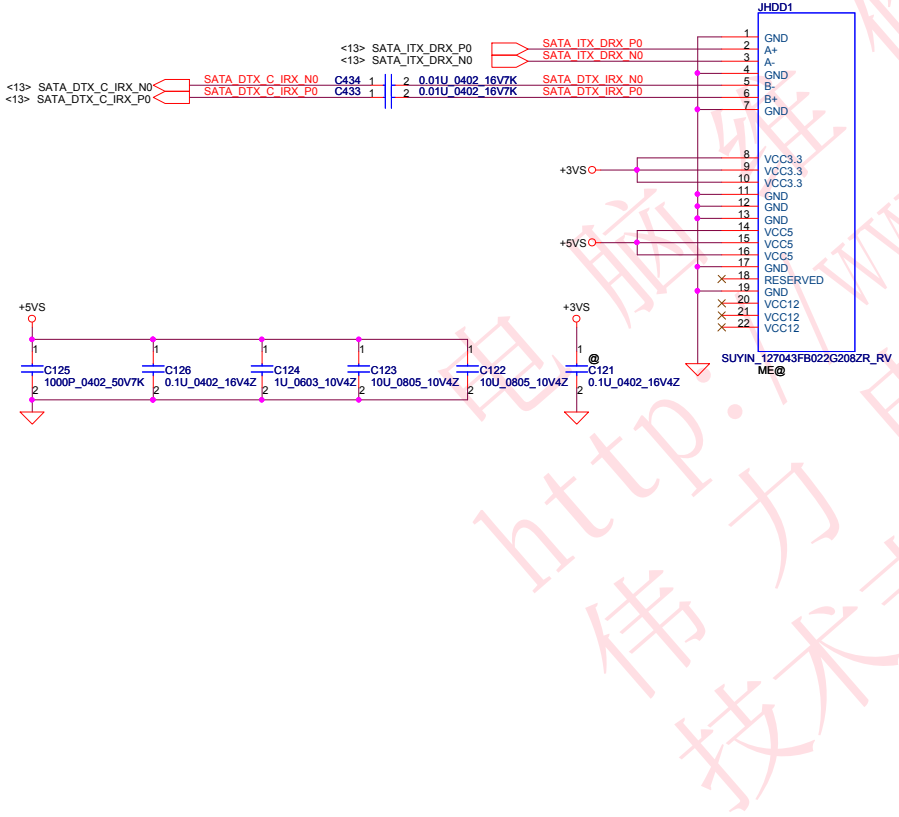
Compal Electronics,Ltd.

Title: EMC2103/1403_Thermal sensor/FAN

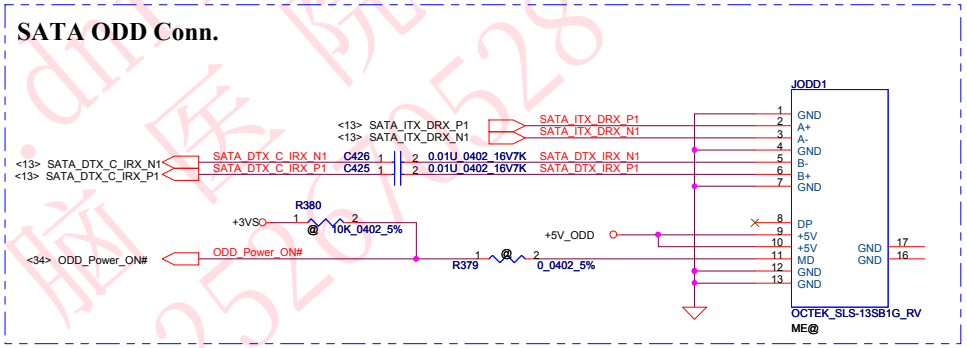
Size	Document Number	Rev
Custom	LA-5751	0.3

Date: Friday, October 30, 2009 Sheet 31 of 51

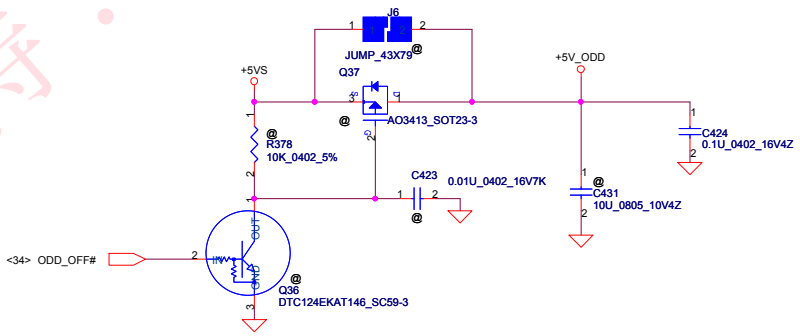
SATA HDD Conn.



SATA ODD Conn.



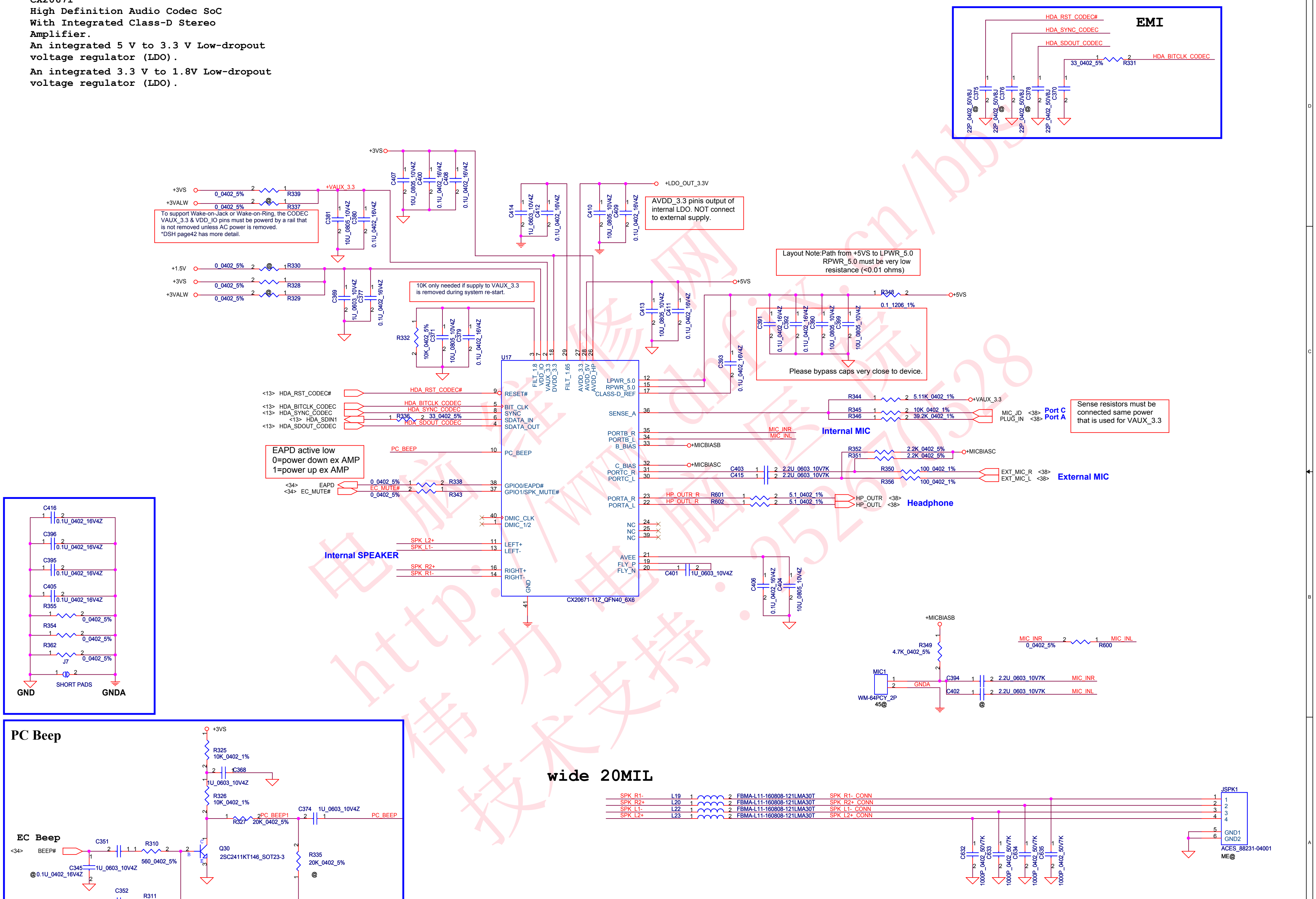
ODD Power Control



Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

Compal Electronics, Inc.			
Title: HDD/ODD Connector			
Size: B	Document Number: LA-5751		Rev: 0.3
Date: Friday, October 30, 2009	Sheet 32 of 51		

CX20671
High Definition Audio Codec SoC
With Integrated Class-D Stereo
Amplifier.
An integrated 5 V to 3.3 V Low-dropout
voltage regulator (LDO).
An integrated 3.3 V to 1.8V Low-dropout
voltage regulator (LDO).

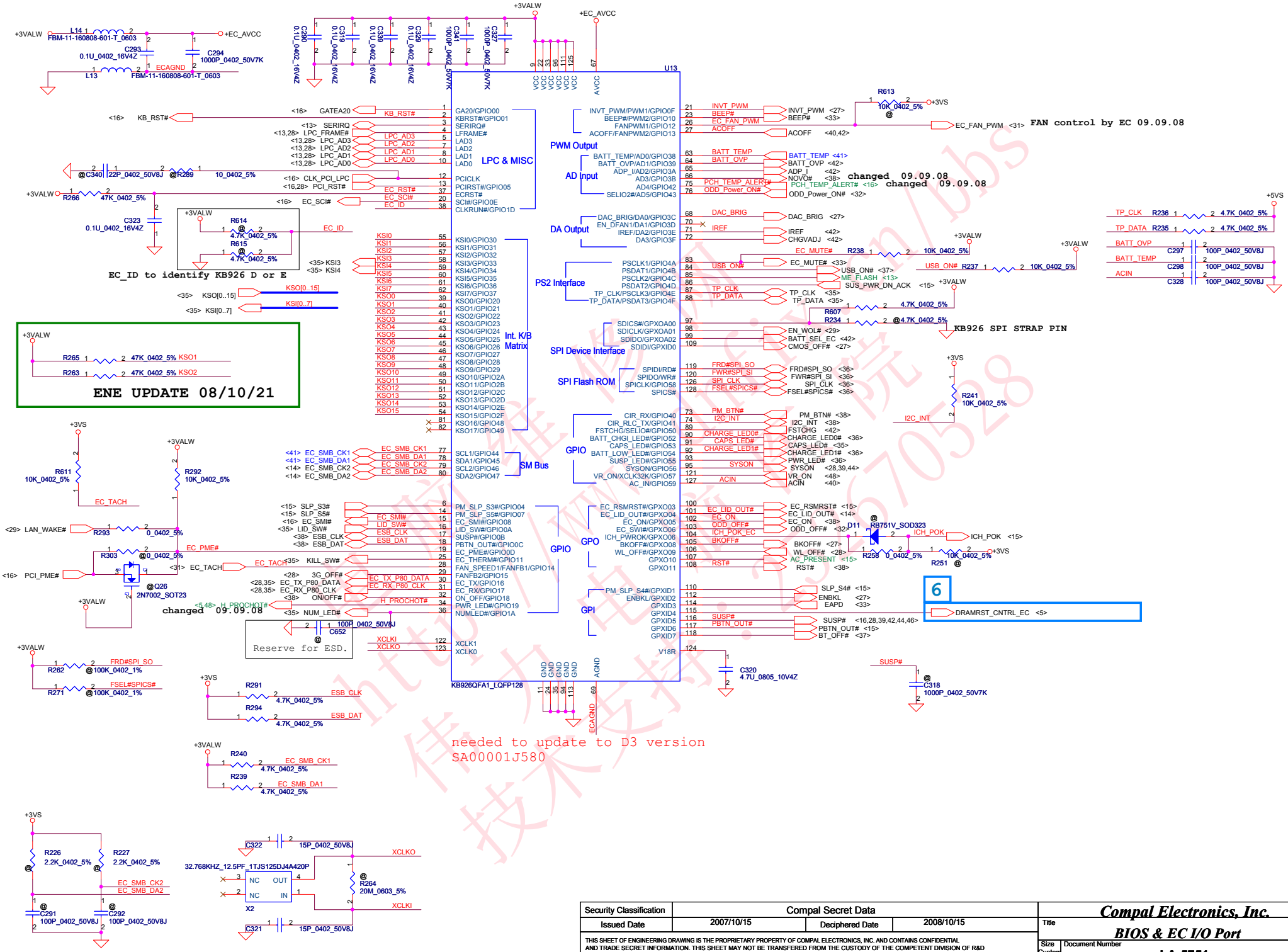


Security Classification	Compal Secret Data		
Issued Date	2008/03/25	Deciphered Date	2008/04/

Compal Electronics,Ltd.

Title: CX20671 Codec

Size: C | Document Number: LA-5751 | Rev: 0.3



Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

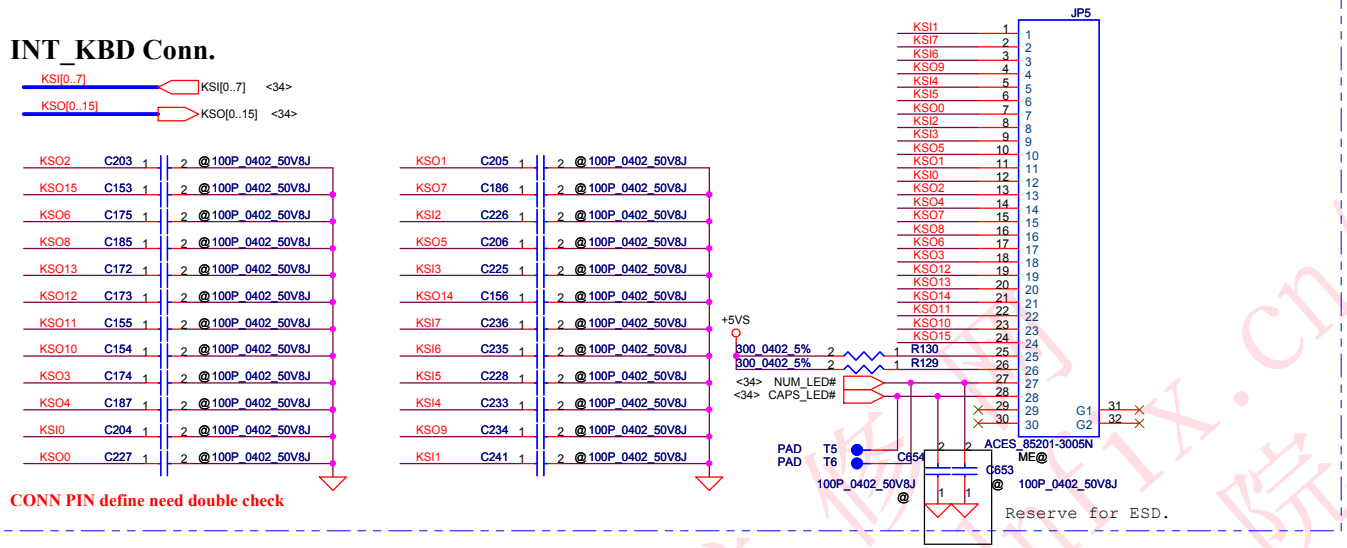
Compal Electronics, Inc.

Title: **BIOS & EC I/O Port**

Size	Document Number	Rev
Custom	LA-5751	0.3

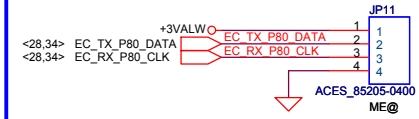
Date: Friday, October 30, 2009 | Sheet 34 of 51

INT_KBD Conn.

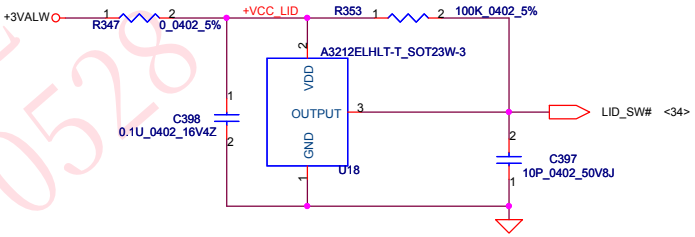


CONN PIN define need double check

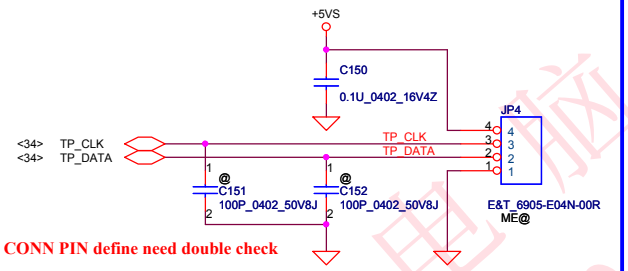
EC DEBUG PORT



Lid Switch

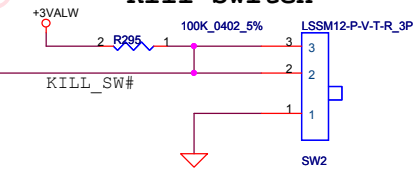


To TP/B Conn.



CONN PIN define need double check

Kill Switch



Kill

STATUS	
1,2(LOW)	OFF
2,3(HI)	ON

Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

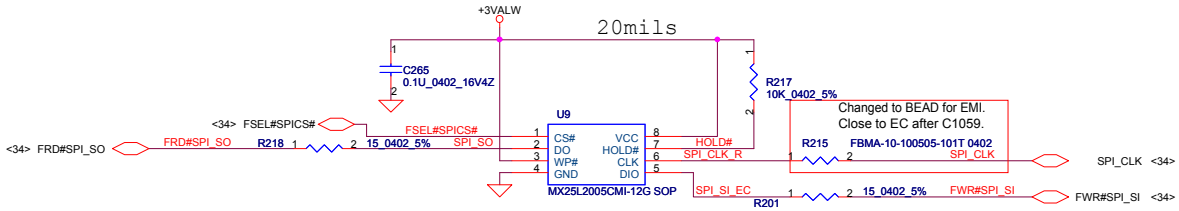
Compal Electronics, Inc.

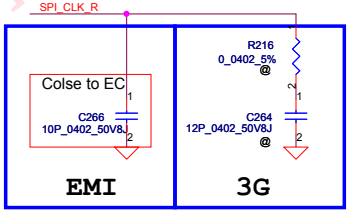
Title: KB /SW /LPC Debug Conn.

Size	Document Number	Rev
B	LA-5751	0.3

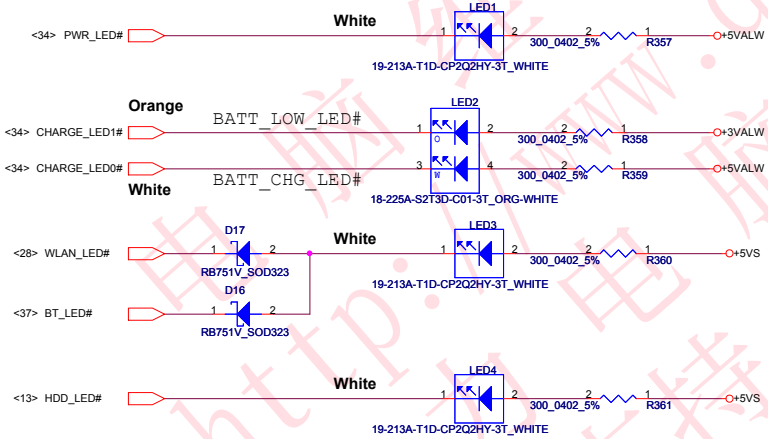
Date: Friday, October 30, 2009 Sheet 35 of 51

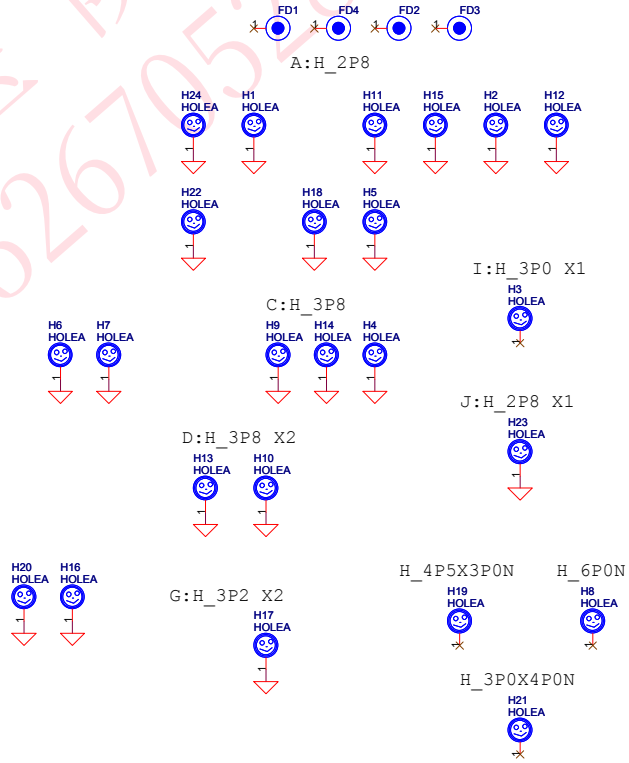
FOR EC 256KB SPI ROM
(150mil PACKAGE)





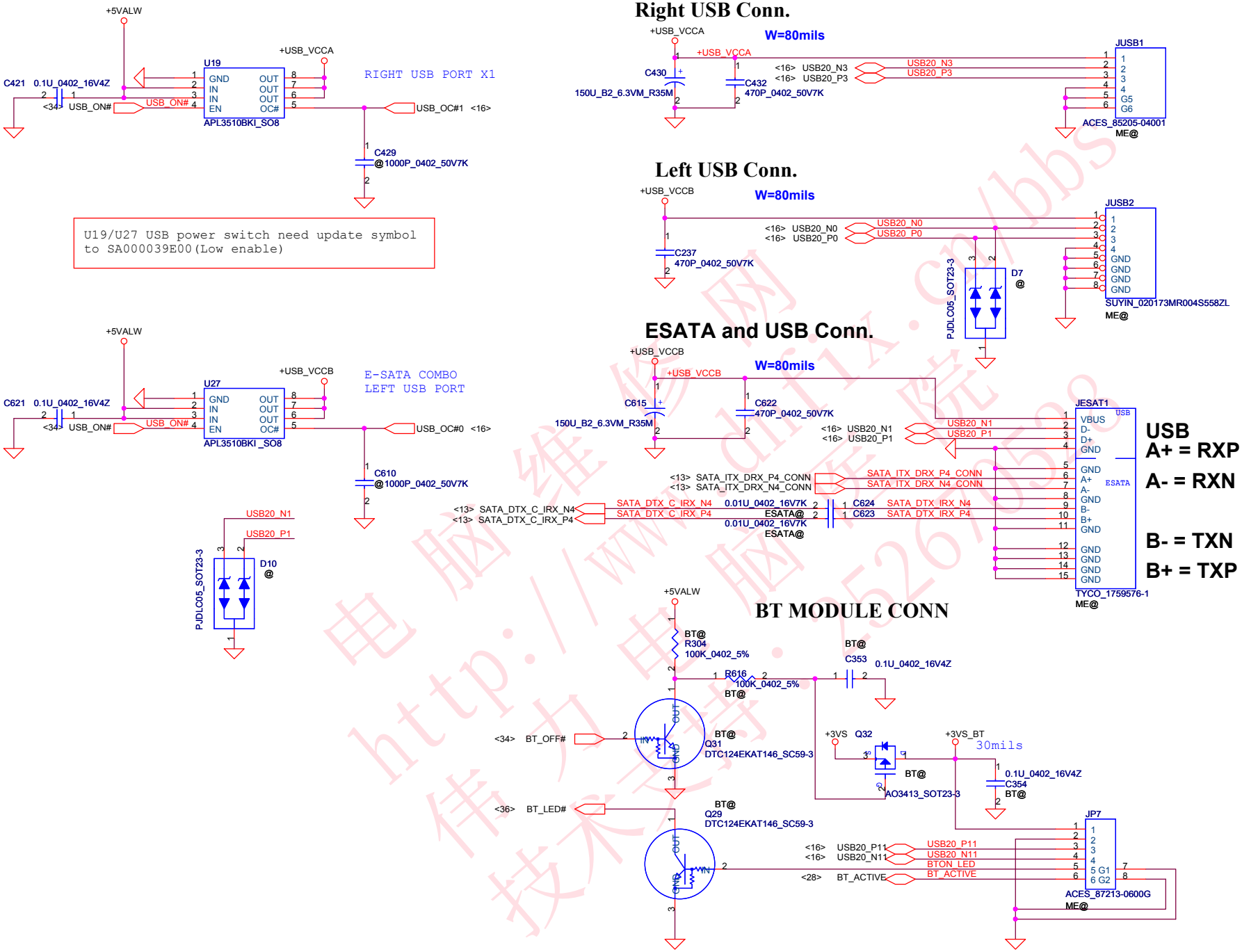
LED





Security Classification	Compal Secret Data		
Issued Date	2007/10/15	Deciphered Date	2008/10/15

Compal Electronics, Inc.			
Title	LED/EC SPI ROM		
Size B	Document Number LA-5751		Rev 0.3
Date: Friday, October 30, 2009	Sheet 36 of 51		



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

Compal Electronics, Inc.

Title: USB ports/BT/E-SATA

Size	Document Number	Rev
Custom	LA-5751	0.3

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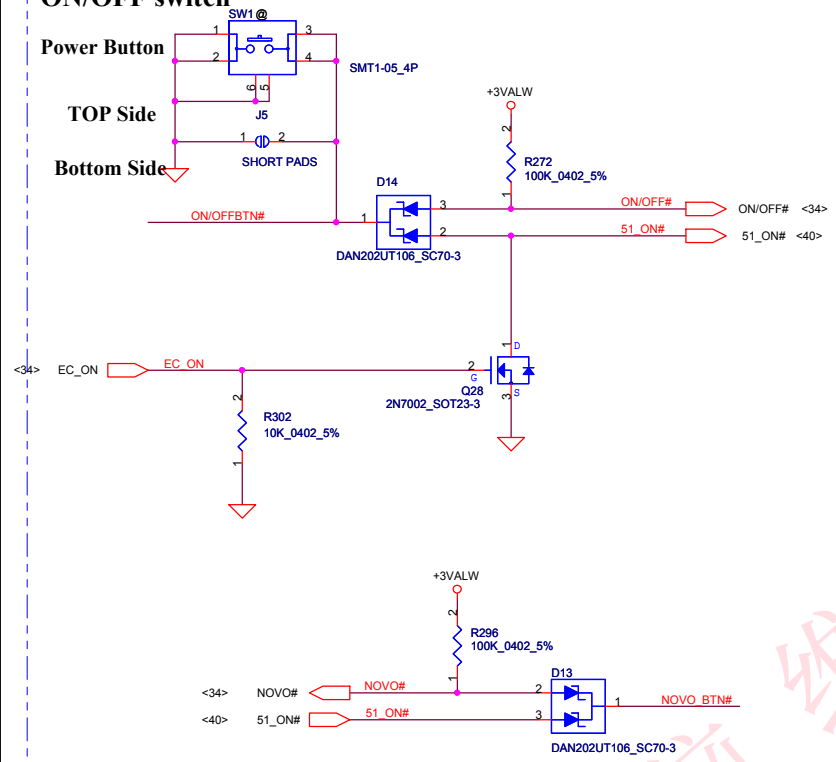
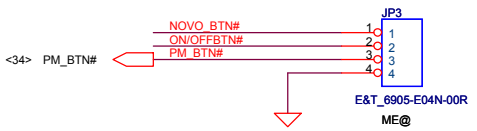
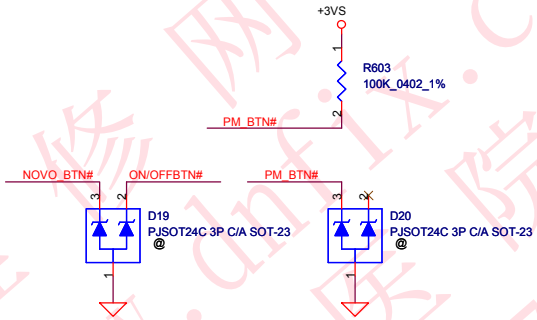
ON/OFF switch



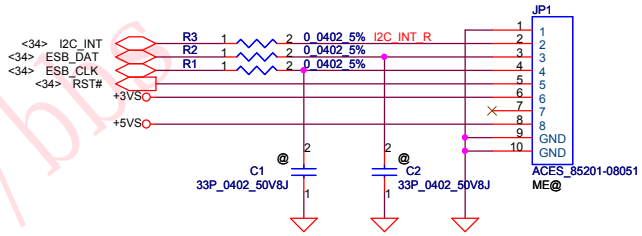
Power Bottom Board Conn. 4pin



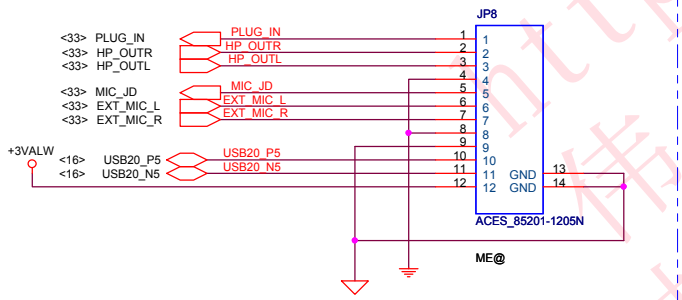


EMI REQUEST 1ST = SCA00000E00
2ST = SCA00000R00

Cap Sensor Board Conn. 6pin
ENE SB3534



Card Reader/Audio Jack SB CONN



Security Classification	Compal Secret Data		
Issued Date	2008/03/25	Deciphered Date	2008/04/

Compal Electronics,Ltd.

Title: **Audio Jack & SW connector**

Size	Document Number	Rev
Custom	LA-5751	0.3

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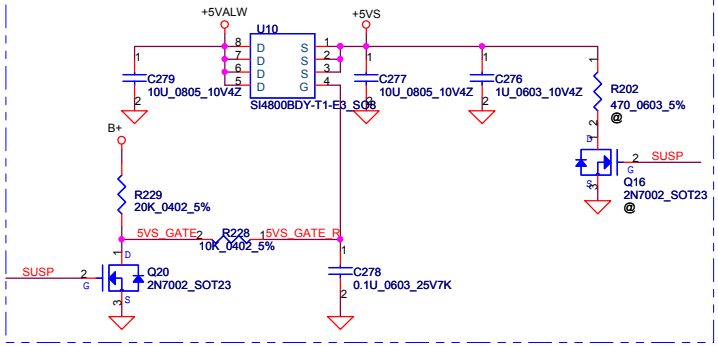
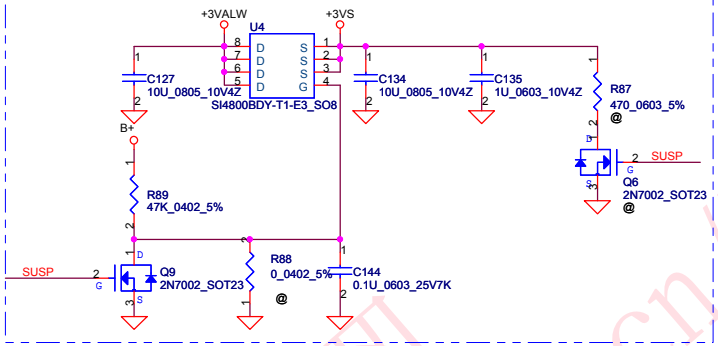
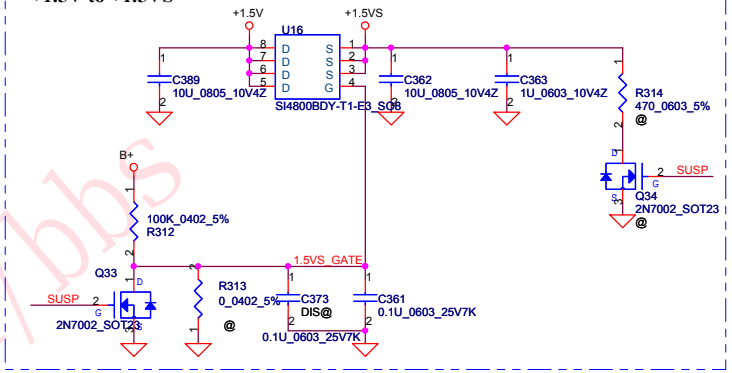
+5VALW TO +5VS

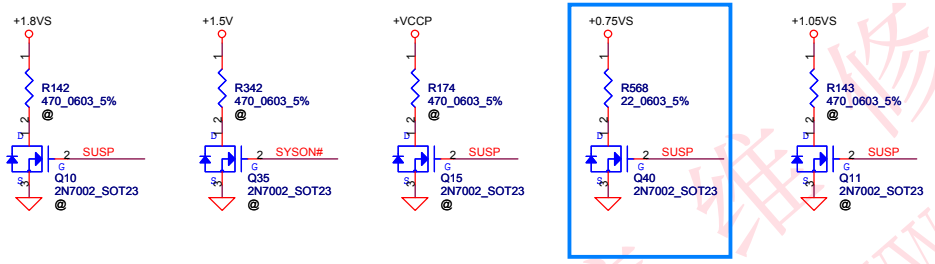


+3VALW TO +3VS

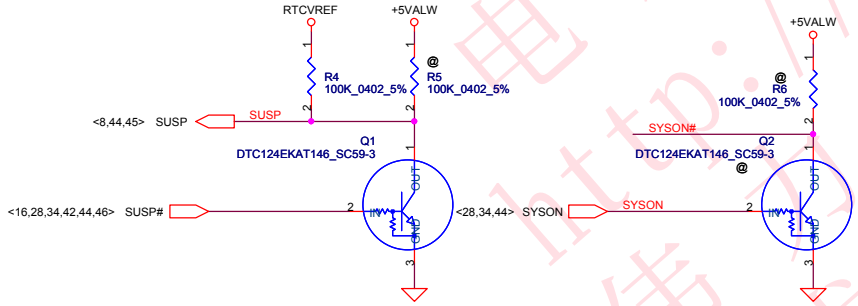


+1.5V to +1.5VS





For Intel S3 Power Reduction.



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
Custom	LA-5751	0.3

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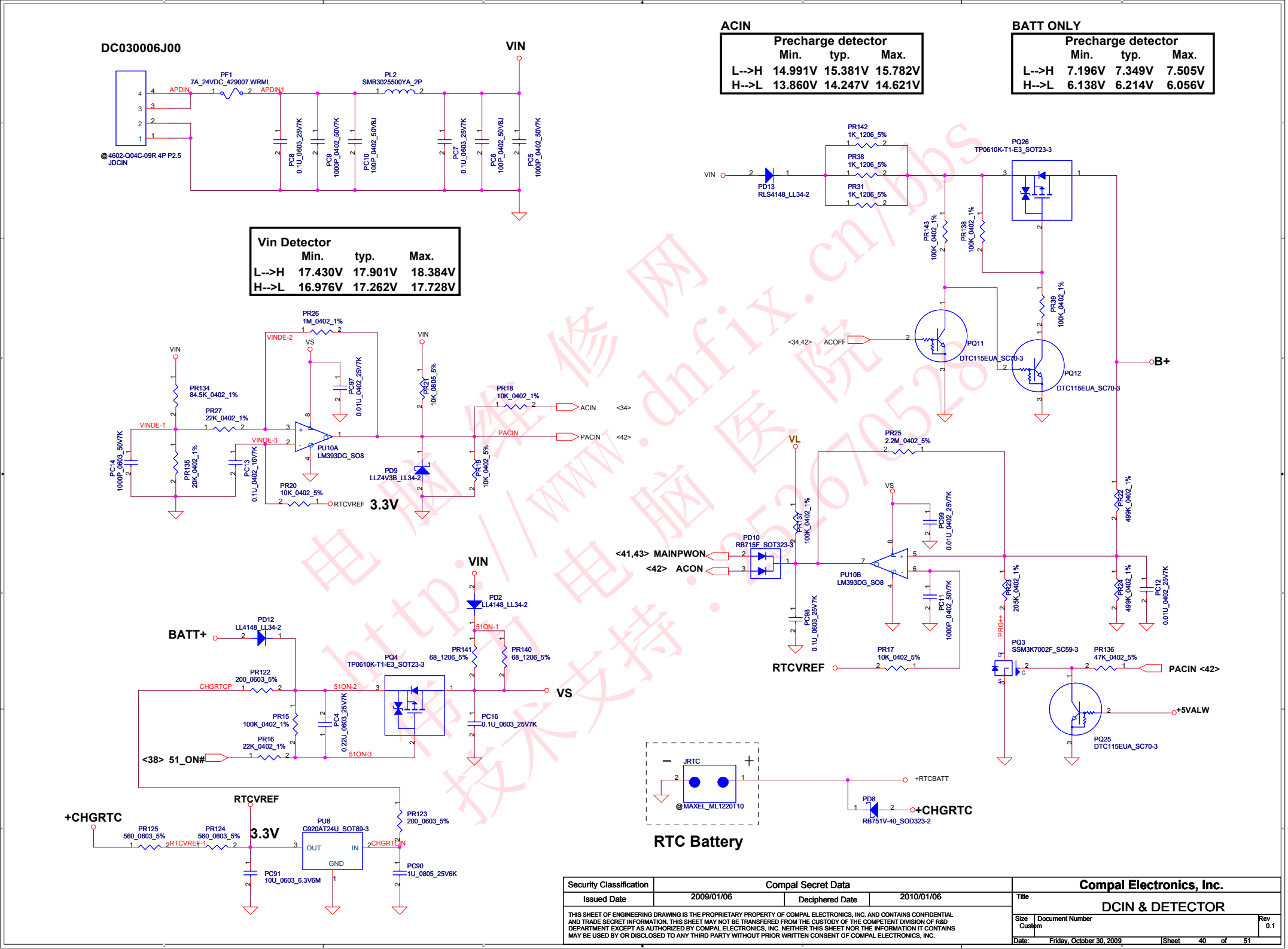

Security Classification	Compal Secret Data		
Issued Date	2009/01/06	Deciphered Date	2010/01/06

Compal Electronics, Inc.

Title: DCIN & DETECTOR

Size: Custom | Document Number | Rev: 0.1

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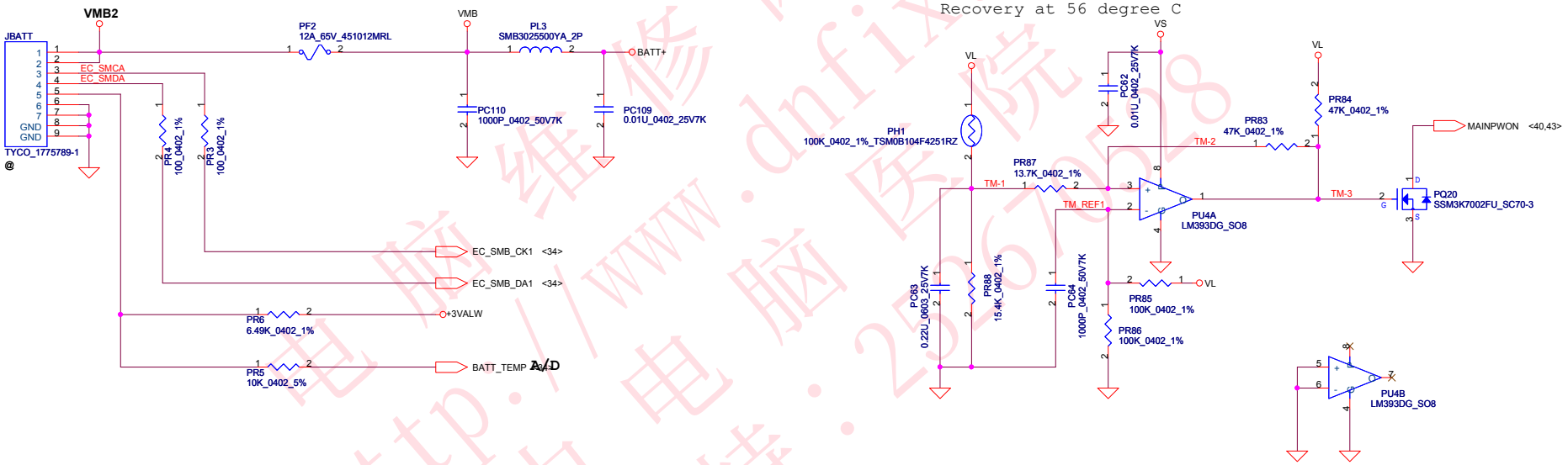


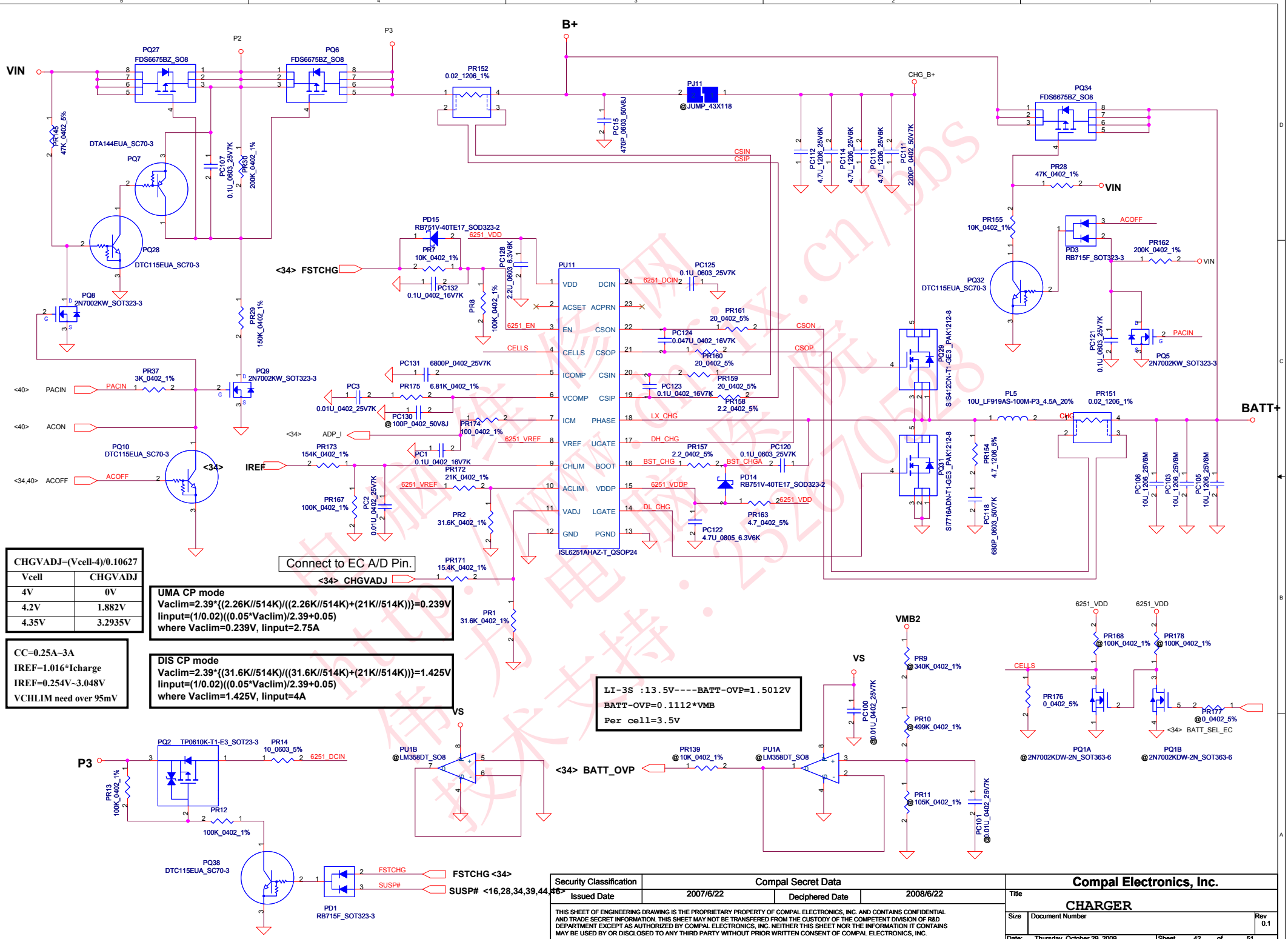
Security Classification	Compal Secret Data		
Issued Date	2009/01/06	Deciphered Date	2010/01/06

Compal Electronics, Inc.

Title: BATTERY CONN / OTP

Size	Document Number	Rev
		0.1

Date: Thursday, October 29, 2009 | Sheet 41 of 51

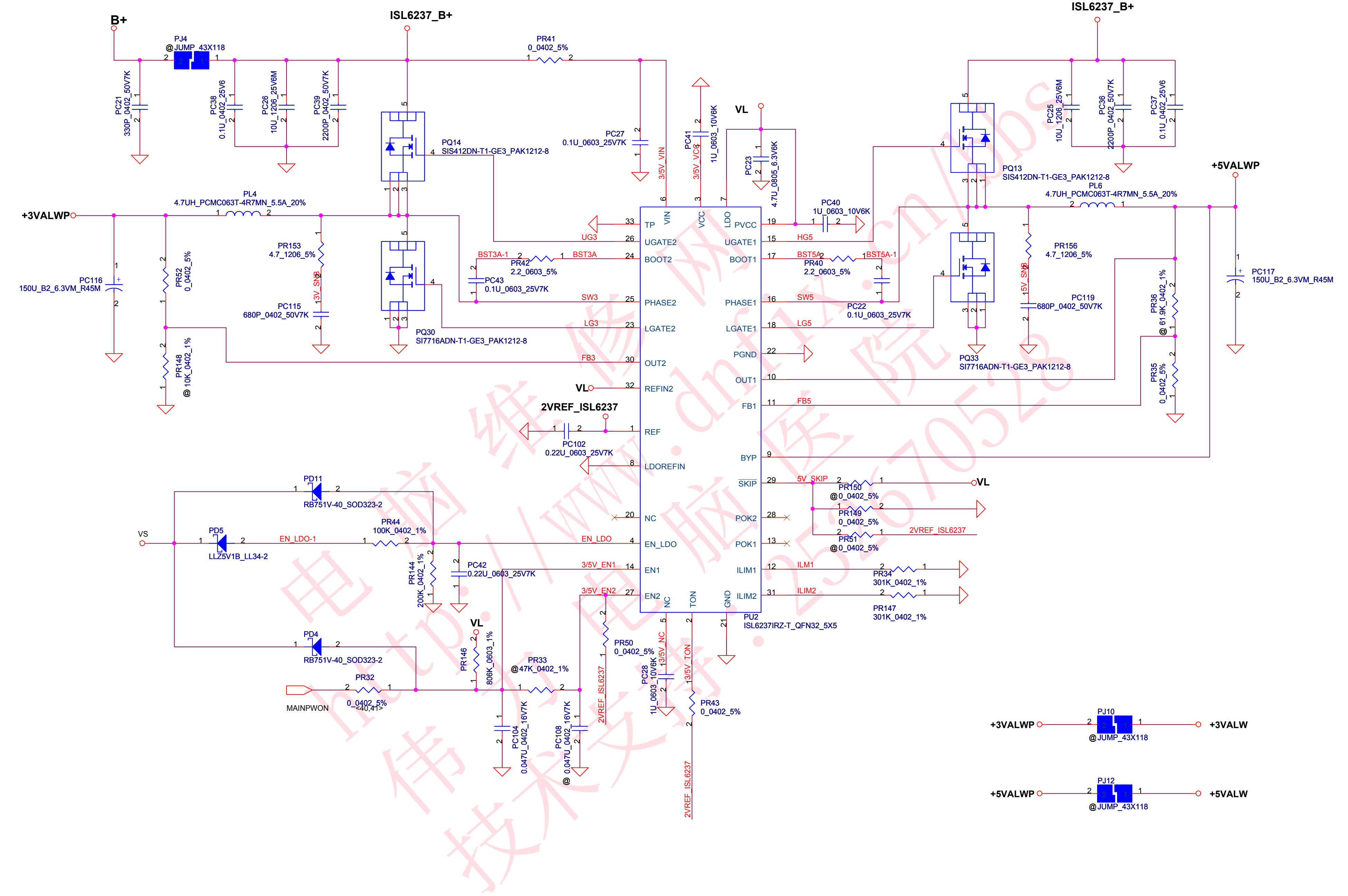


Compal Electronics, Inc.

Title: CHARGER

Size | Document Number | Rev 0.1

Date: Thursday, October 29, 2009 | Sheet 42 of 51



Security Classification	Compal Secret Data			Compal Electronics, Inc.
Issued Date	2009/01/06	Deciphered Date	2010/01/06	Title 3VALW/5VALW
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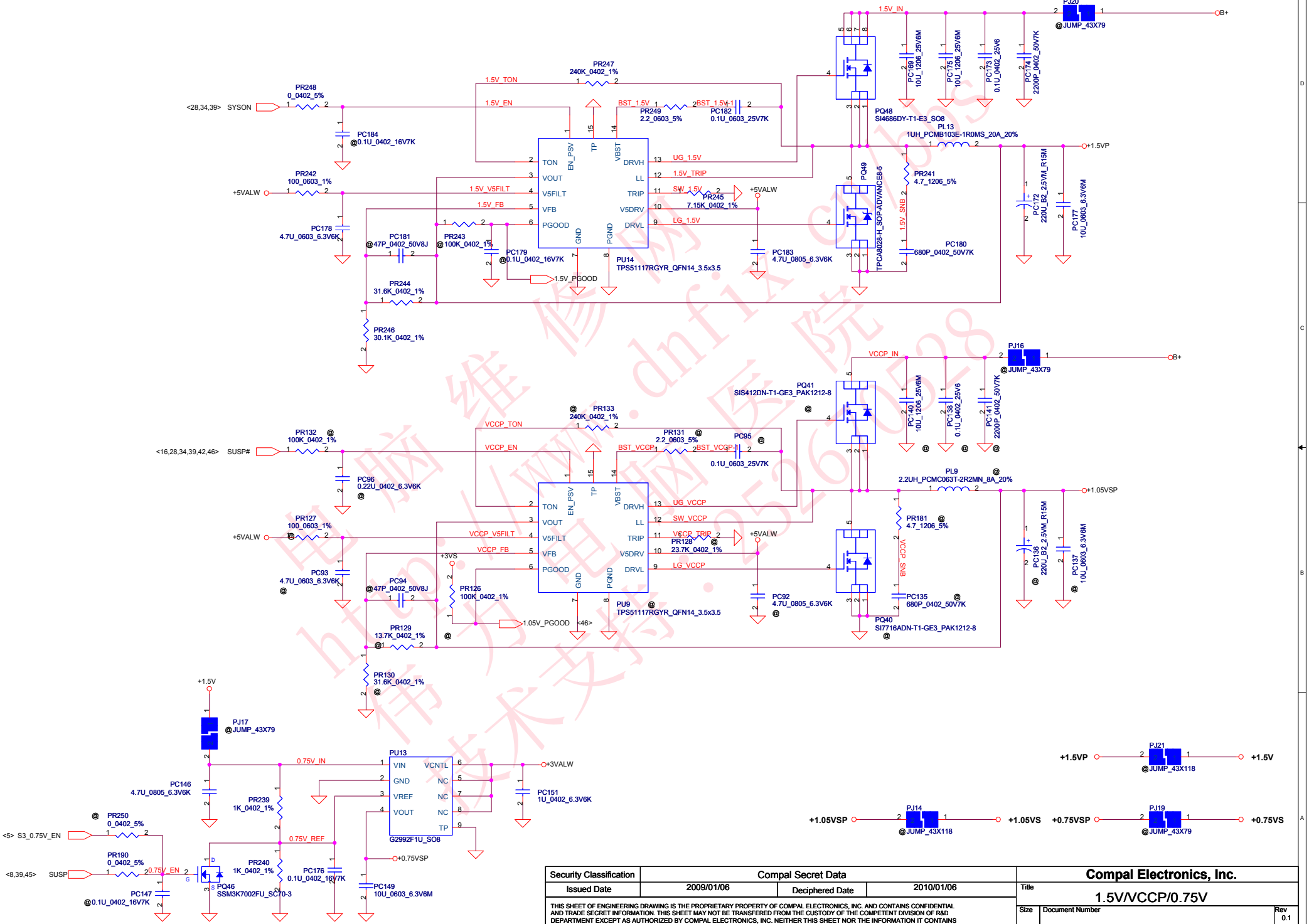
				Date: Thursday, October 29, 2009; Sheet 43 of 51



Security Classification	Compal Secret Data		
Issued Date	2009/01/06	Deciphered Date	2010/01/06

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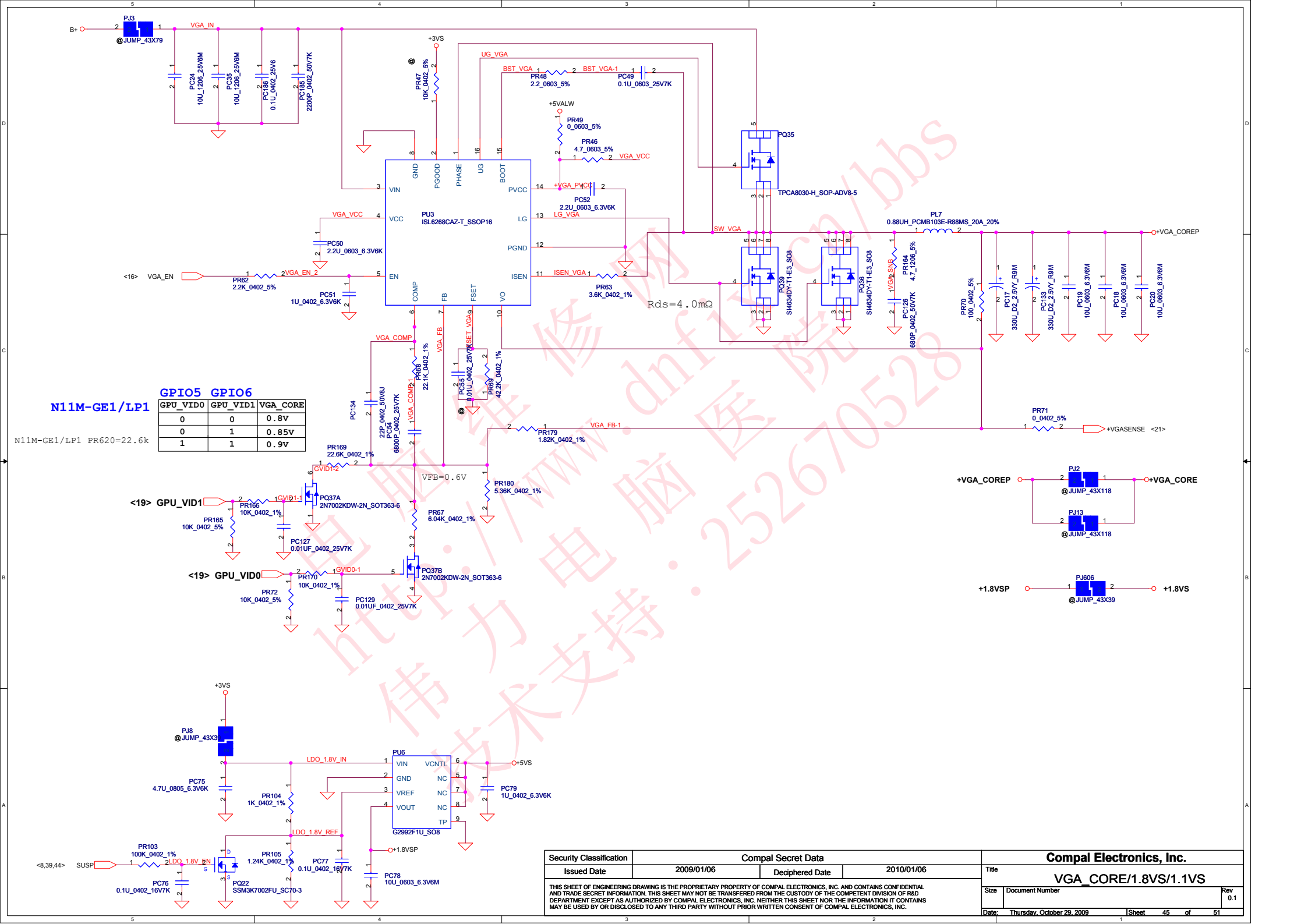
Compal Electronics, Inc.

Title: 1.5V/VCCP/0.75V

Size	Document Number	Rev
		0.1

Date: Friday, October 30, 2009 | Sheet 44 of 51



N11M-GE1/LP1

N11M-GE1/LP1 PR620=22.6k

GPIO5 GPIO6

GPU_VID0	GPU_VID1	VGA_CORE
0	0	0.8V
0	1	0.85V
1	1	0.9V

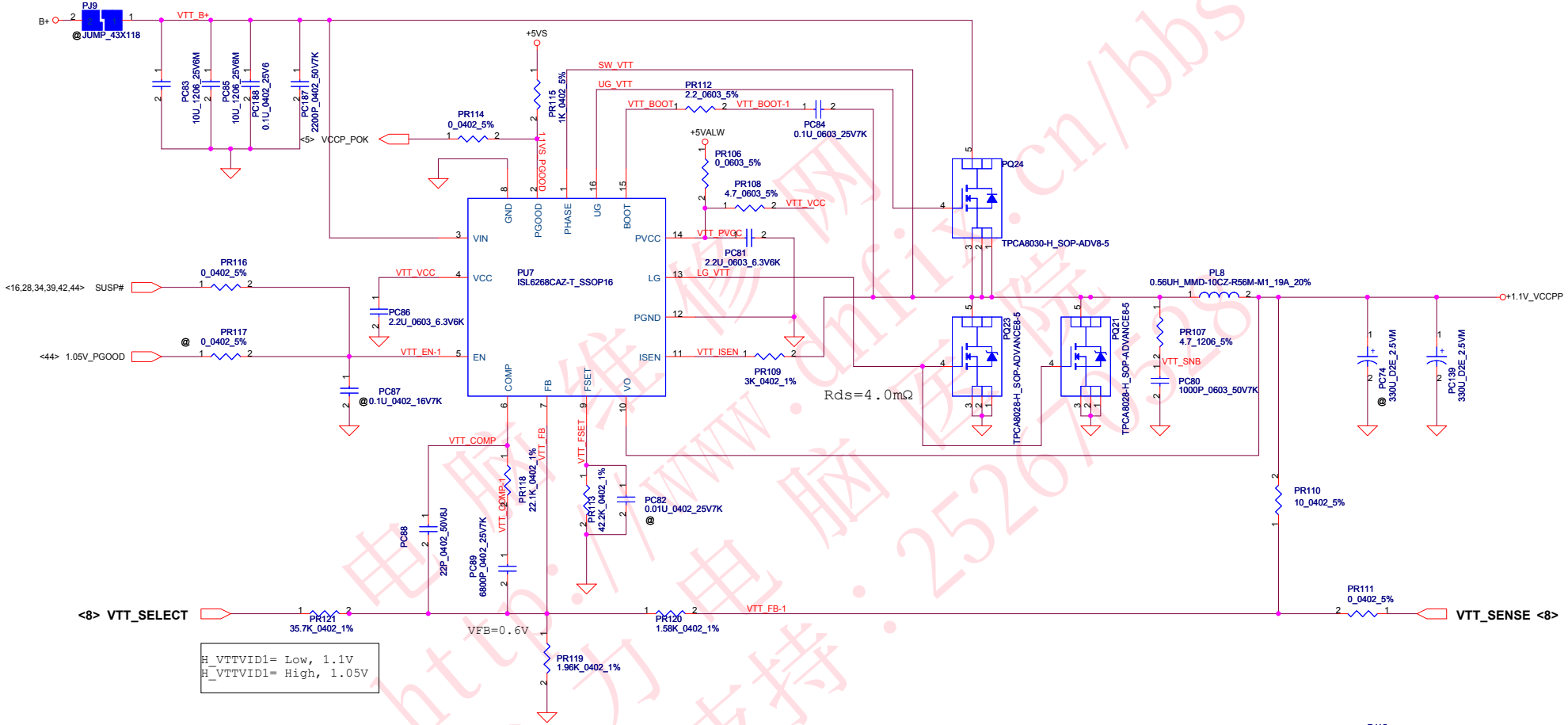
Security Classification	Compal Secret Data		
Issued Date	2009/01/06	Deciphered Date	2010/01/06

Compal Electronics, Inc.

Title: VGA_CORE/1.8VS/1.1VS

Size | Document Number | Rev 0.1

Date: Thursday, October 29, 2009 | Sheet 45 of 51



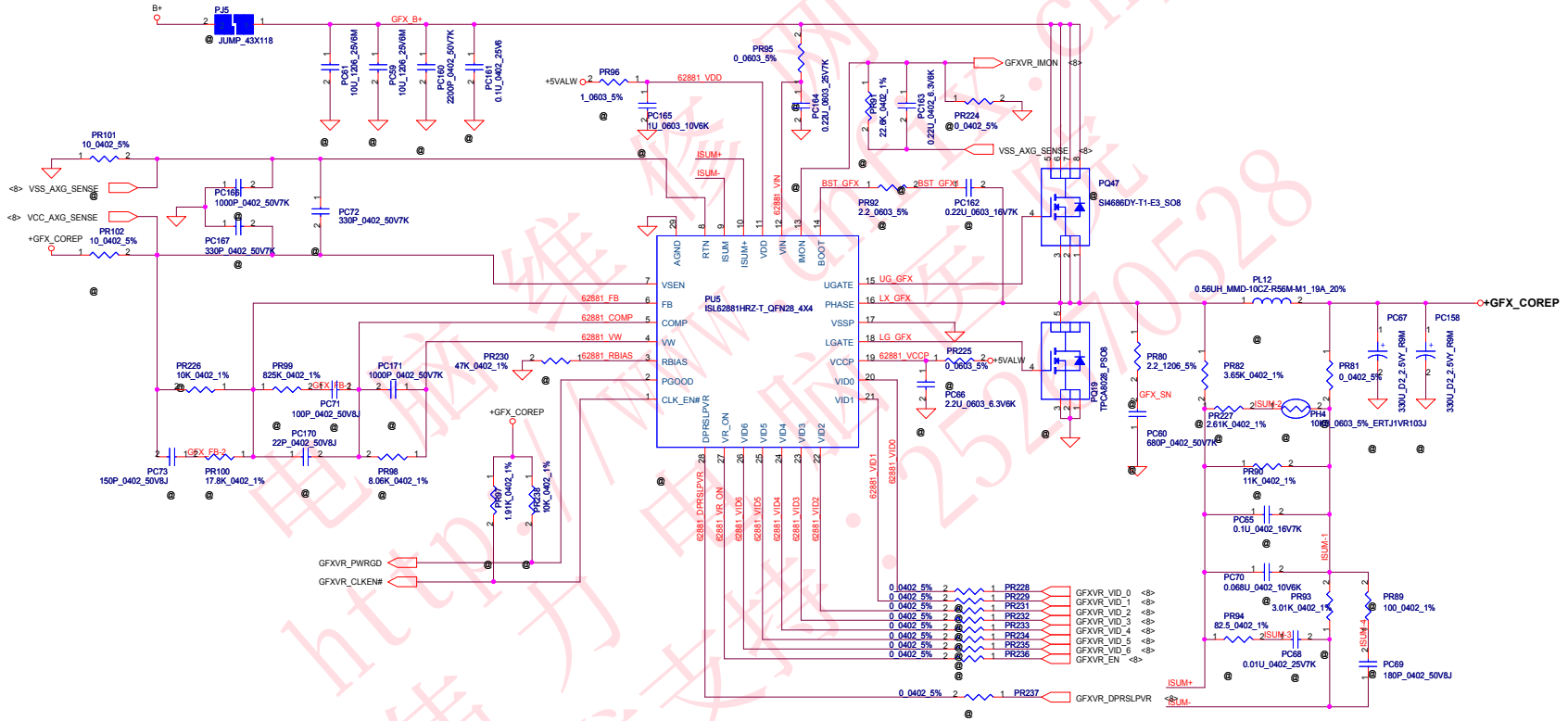
Security Classification	Compal Secret Data		
Issued Date	2009/01/06	Deciphered Date	2010/01/06

Compal Electronics, Inc.

Title: +1.1VS_VTT

Size	Document Number	Rev
Custom		0.1

Date: Thursday, October 29, 2009 | Sheet 46 of 51



(15A,600mils ,Via NO.= 30)

Security Classification	Compal Secret Data		
Issued Date	2009/01/06	Deciphered Date	2010/01/06

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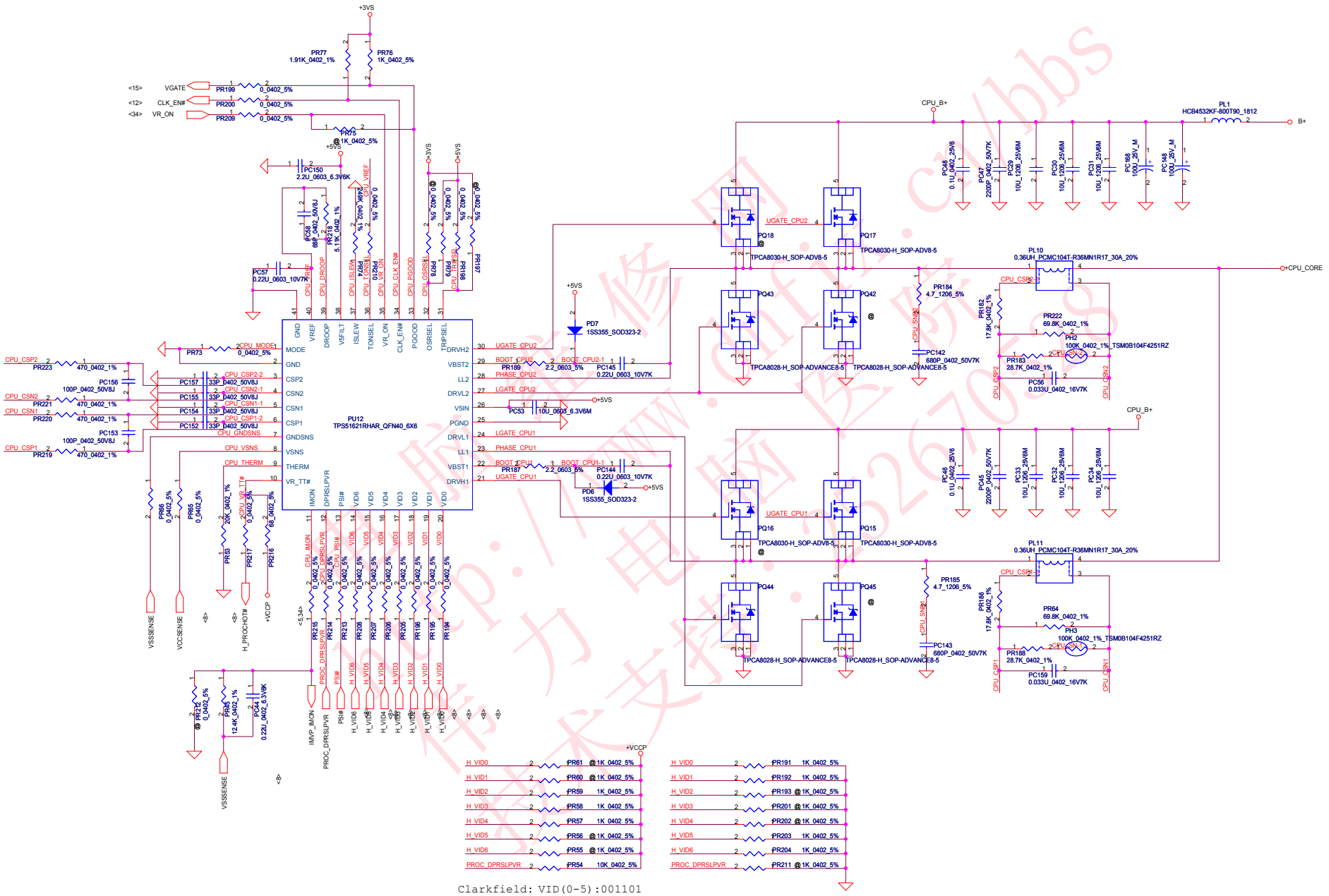
Compal Electronics, Inc.

Title: **GFX_CORE**

Size	Document Number	Rev
		0.1

Date: Friday, October 30, 2009 | Sheet 47 of 51



Security Classification	Compal Secret Data		
Issued Date	2009/01/06	Deciphered Date	2010/01/06

Compal Electronics, Inc.			
Title	CPU_CORE		
Size	Document Number		Rev 0.1
Date: Thursday, October 29, 2009	Sheet 48 of 51		

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

Item	Reason for change	PG#	Modify List	Date	Phase
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17				20081022	

Security Classification	Compal Secret Data		
Issued Date	2009/01/06	Deciphered Date	2009/01/06

Compal Electronics, Inc.

Title: PIR (PWR)

Size	Document Number	Rev
Custom	<Doc>	0.1

Date: Thursday, October 29, 2009 | Sheet 49 of 51

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
				EVT TO DVT
1		P15	Add C638~C645	For UMA HDMI
2		P05	Add test point for BCLK_ITP,BCLK_ITP#,PRDY#	For XDP connector
3		P32,P28	Change J6 size & unstuff ODD power control components Change J4 size	Disable ODD power control circuit
4		P17	Stuff C262	For UMA CRT
5		P34	Change R291,R294 from +3VALW to +3VS	
6		P38	Add R603 pull high to +3VS	For PM_BTN#
7		P38	Change JP1 from 6 pin to 8 pin , Change JP8 from 14 pin to 12 pin , unstuff R322	For LED color changed Remove CLK_48M_CR
8		P29,P34	Change EN_WOL to EN_WOL#	For identify clearly
9		P34	EC pin26-> EC_FAN_PWM , pin75->PCH_TEMP_ALERT , pin34->PROCHOT# , pin66->NOVO#	EC GPIO arrangement
10		P31	Change JP12 pin define	For EC FAN control
11		P16	Change U5 pin3,pin5	POWER , GND reversed
12		P15	Add U28 for ICH_POK & VGATE	Reserved
13		P12	Unstuff R278,stuff R269 and change U14 to SA00003HQ00	For low power CLK GEN
14		P13	Change U3 from 2MBytes to 4MBytes	For 4MBytes SPI ROM for PCH
15		P29	Correct Q17 to P/N:SB000007600	For +3V_LAN power
16		P16	Add C646 for BUF_PLT_RST#	Reserved for BUF_PLT_RST# overshoot problem
17		P36	Change U9 from 2MBytes to 256KBytes	For 256KBytes SPI ROM for EC
18		P03	UMA_HDMI@ , HDMI@ , BT@ , 3G@ , ESATA@ , CMOS@	New BOM structure
19		P08	Add R608	For PSI# pull down
20		P37	Delete D18	
21		P16	Unstuff R210,R212	Set Boot BIOS Strap to SPI
22		P22	Change & stuff R475 to 30K,R51 to 15K Unstuff R474,R50	For N11M-GE1 QS sample
23		P25	Unstuff R246	Level shift default setting
24		P39	Change C373 to DIS@	for DIS power sequence
25		P15,P16,P17	Change R436 from 1K to 10K Change C447 from 0.1u to 1u Delete R514 Unstuff C493,C494 Reserve R609	Check list Rev2.0 update
27		P34	Add R607	Reserved for KB926 SPI STRAP PIN
28		P36	Change LED1,LED3,LED4 to white color LED2 to orang\white color and orage connect to +3VALW	
29		P14	Change exp-card from PCIE port 1 to port 5	SW BIOS request
30		P38	Unstuff SW1	
31		P13,P34	Change X1,X2 footprint	
32		P12	Change C348 to 22p,C349 to 22p	For Crystal matching
33		P13,P20	Add C647~C650 12p, stuff C370->22p, R331->33	Reserved for RF team
34		P36	Delete JP6	SPI ROM socket
35		P37	Change C430,C615 footprint to B2 type	
36		P27,P32,P37	Change Q4,Q24,Q32,Q37 footprint to AO3413	

Compal Electronics, Inc.			
Title: HW PIR			
Size: B	Document Number: LA-5751		Rev: 0.3
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NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
				EVT TO DVT
37		P34	Change C320 to 0805 type	
38		P08	Unstuff C268 Change C252,C258 from 10u to 22u	For CPU VDDQ (DDR3 1.5V rails)
39		P34	Change ODD_power_on# from U13 pin28 to pin 76 Add EC_TACH on U13 pin28 to JP12	EC GPIO arrangement
40		P31	Change U20 to EMC1403, add C651	Change thermal sensor solution to EMC1403
41		P05	Add Q42,R610	Reserve for +0.75V enable option
42		P34,P35	Add C652,C653,C654	Reserve for NUM_LED#,CAPS_LED# ESD request
43		P34	Add R611,R612,R613	For EC_FAN_PWM, EC_TACH

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
				DVT TO PVT
1		P34	Reseve R614,R615.	EC_ID to identify KB926 D or E
2		P34	Stuff R607	KB926 SPI STRAP PIN
3		P33	Stuff C632~C635	EMI request
4		P16	Stuff C646	For PLT_RST# singnal quality
5		P37	Add R616 100K, change R304 to 100K, C353 to 0.1u	For +3VS_BT power on rising time
6		P37	Changed R304 pin1 from +5VS to +5VALW	For +3VS_BT power on leakage
7		P5	Stuff R283, C338 0.01u	For S3 power reduction
8		P31	Add U29	Colay EMC2103/EMC1403 thermal sensor

Compal Electronics, Inc.		
Title: HW PIR		
Size: B	Document Number: LA-5751	Rev: 0.3
Date: Thursday, October 29, 2009	Sheet 51 of 51	