Lenovo G470 / G570
Compal PIWG1 / PIWG2

DIS+UMA+Muxless M/B Schematics Document

Intel Sandy Bridge Processor with DDRIII + Cougar Point PCH
ATI Robson/PX3.0,PX4.0

2010-10-22

LA-6751P / LA-6753P

REV:0.3

Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

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Title: Cover Page		
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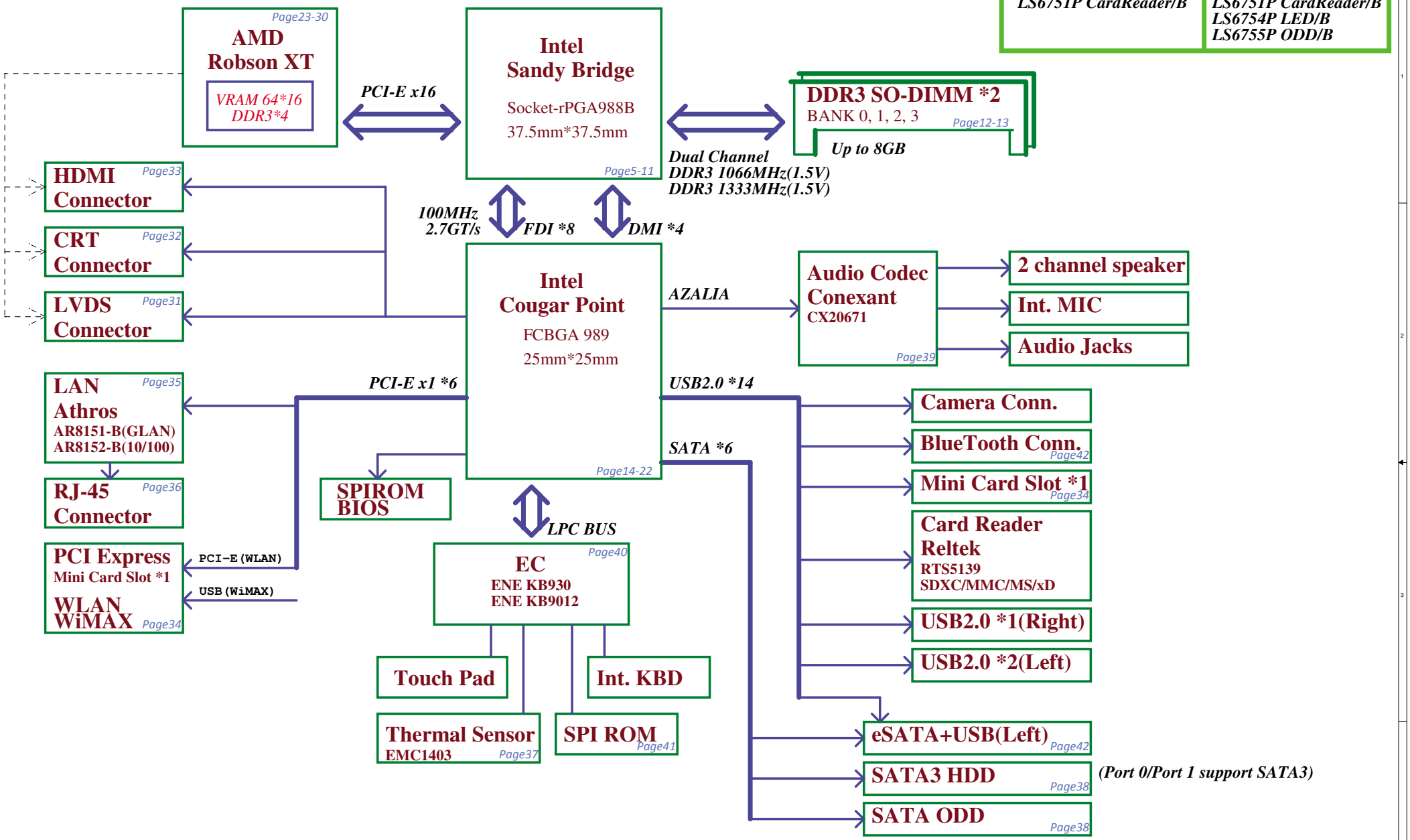
For 14"(Page 4x)	For 15"(Page 4x+1)
LS6753P PWR/B	LS6753P PWR/B
LS6751P CardReader/B	LS6751P CardReader/B
	LS6754P LED/B
	LS6755P ODD/B



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.			
Title	Block Diagram		
Size: Custom	Document Number: LA-6751P		Rev: 0.2
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Voltage Rails

power plane / State	+B	+5VALW +3VALW	+1.5V	+5VS +3VS +1.5VS +VCCP +CPU_CORE +VGA_CORE +GFX_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

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 Table

Board ID	PCB Revision
0	0.1
1	
2	
3	
4	
5	
6	
7	

Board ID / SKU ID Table for AD channel

Vcc	3.3V +/- 5%
Ra/Rc/Re	100K +/- 5%

Board ID	Rb / Rd / Rf	V_{AD_BID} min	V_{AD_BID} typ	V_{AD_BID} max	
0	0	0 V	0 V	0 V	EVT
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V	DVT
2	18K +/- 5%	0.436 V	0.503 V	0.538 V	PVT
3	33K +/- 5%	0.712 V	0.819 V	0.875 V	MP
4	56K +/- 5%	1.036 V	1.185 V	1.264 V	
5	100K +/- 5%	1.453 V	1.650 V	1.759 V	
6	200K +/- 5%	1.935 V	2.200 V	2.341 V	
7	NC	2.500 V	3.300 V	3.300 V	

EC SM Bus1 address

Device	Address
Smart Battery	0001 011X b

EC SM Bus2 address

Device	Address
Thermal Sensor EMC1403-2	1001_101xb
Thermal Sensor EMC1402-1	100_1100 b

PCH SM Bus address

Device	Address
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 010Xb

USB Port Table

USB 2.0	USB 1.1	Port	3 External USB Port
EHCI1	UHCI0	0	USB/B (Right Side)
		1	USB Port (Left Side)
	UHCI1	2	USB Port (Left Side)
		3	USB Port (Left Side)
	UHCI2	4	
		5	Camera
	UHCI3	6	
		7	
EHCI2	UHCI4	8	Mini Card(WLAN)
		9	
	UHCI5	10	
		11	Card Reader
	UHCI6	12	
		13	Blue Tooth

BOM Structure Table

BTO Item	BOM Structure
UMA and PX bus	PX@
Discrete Only	DIS@
PX3.0 only, not for BACO	PX3@
BACO	BACO@
COMMON HDMI	HDMI@
UMA HDMI	UMA_HDMI@
Discrete HDMI	VGA_HDMI@
eSATA	ESATA@
Blue Tooth	BT@
Connector	ME@
45 LEVEL	45@
10/100 LAN	8152@
GIGA LAN	GIGA@
Cameara	CMOS@
Unpop	@

SMBUS Control Table

	SOURCE	VGA	BATT	KE930	SODIMM	WLAN WWAN	Thermal Sensor	PCH
SMB_EC_CK1 SMB_EC_DA1	KB930 +3VALW	X	V +3VALW	X	X	X	X	X
SMB_EC_CK2 SMB_EC_DA2	KB930 +3VALW	X	X	X	X	X	X	V +3VS
SMBCLK SMBDATA	PCH +3VALW	X	X	X	V +3VS	V +3VS	X	X
SML0CLK SML0DATA	PCH +3VALW	X	X	X	X	X	X	X
SML1CLK SML1DATA	PCH +3VALW	V +3VS	X	V +3VS	X	X	V +3VS	X

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Title: Notes List

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Power-Up/Down Sequence

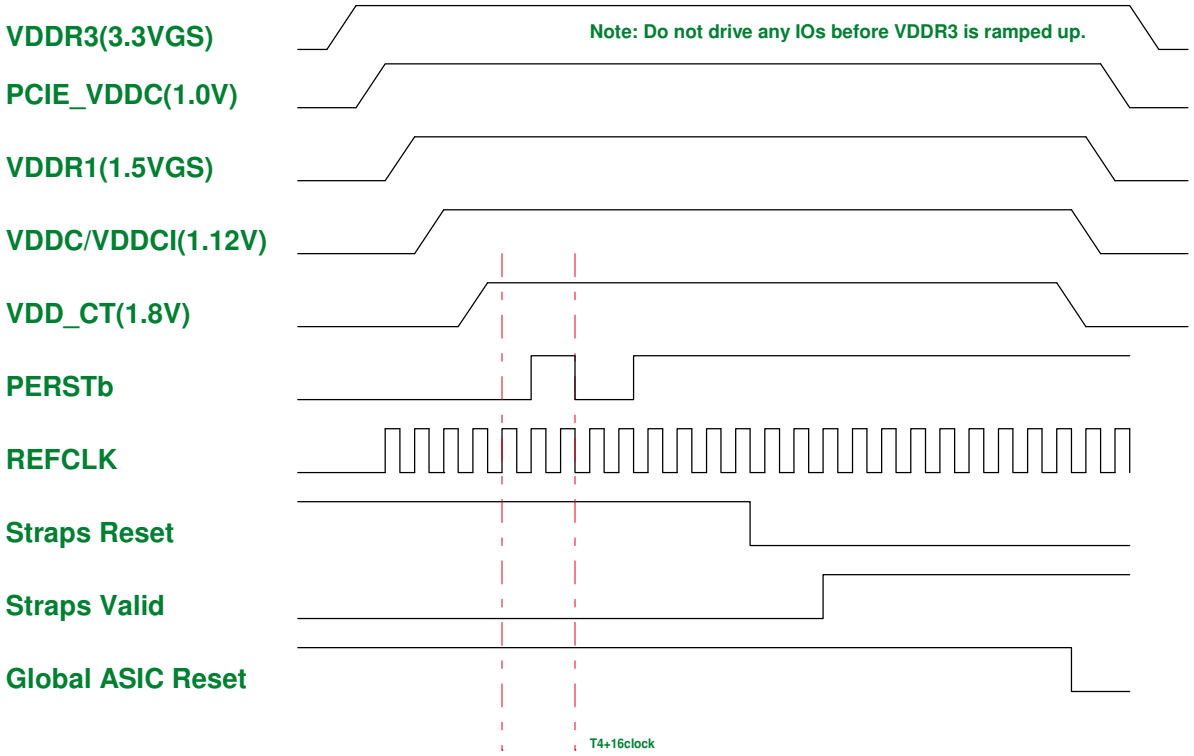
1. All the ASIC supplies must fully reach their respective nominal voltages within 20 ms of the start of the ramp-up sequence, though a shorter ramp-up duration is preferred.

2. VDDR3 should ramp-up before or simultaneously with VDDC.

3. For LVDS, DPx_VDD10 should ramp-up before DPx_VDD18 and the PCIe Reference clock should begin before DPx_VDD18. For power-down, DPx_VDD18 should ramp-down before DPx_VDD10.

4. The external pull-ups on the DDC/AUX signals (if applicable) should ramp-up before or after both VDDC and VDD_CT have ramped up.

5.VDDC and VDD_CT should not ramp-up simultaneously. (e.g., VDDC should reach 90% before VDD_CT starts to ramp-up (or vice versa).)



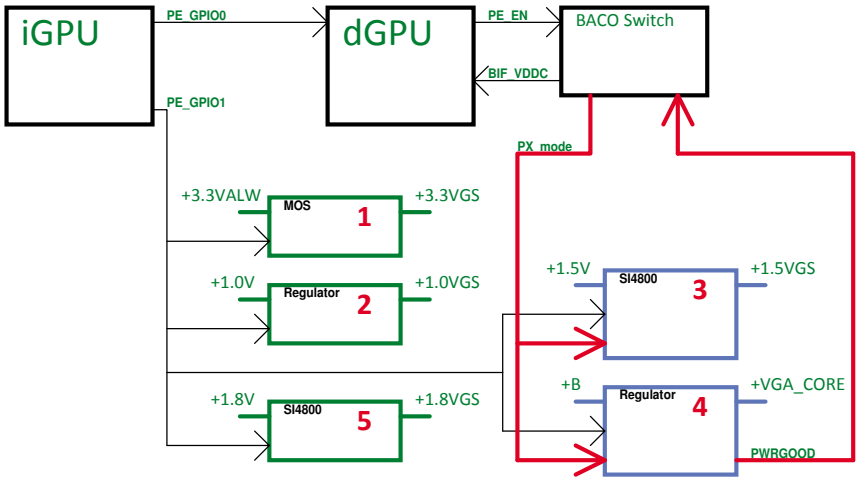
Without BACO option :

PE_GPIO0 : Low -> Reset dGPU ; High ->Normal operation
PE_GPIO1 : Low -> dGPU Power OFF ; High -> dGPU Power ON

BACO option :

PE_GPIO0 : High ->Normal operation (dGPU is not reseton BACO mode)
PE_GPIO1 : Low -> dGPU Power OFF ; High -> dGPU Power ON (always High)

dGPU Power Pins	Voltage	PX 3.0	BACO Mode	Max current
PCIE_PVDD, PCIE_VDDR, TSVDD, VDDR4, VDD_CT, DPE_PVDD, DP[F:E]_VDD18, DP[D:A]_PVDD, DP[D:A]_VDD18, AVDD, VDD1DI, A2VDDQ, VDD2DI, DPLL_PVDD, MPV18, and SPV18	1.8V	OFF	ON	1679mA
DP[F:E]_VDD10, DP[D:A]_VDD10, DPLL_VDDC, and SPV10	1.0V	OFF	ON	575mA
PCIE_VDDC	1.0V	OFF	ON	2A
VDDR3 , and A2VDD	3.3V	OFF	ON	190mA
BIF_VDDC (current consumption = 55mA@1.0V, in BACO mode)	Same as VDDC	OFF	ON Same as PCIE_VDDC	70mA
VDDR1	1.5V	OFF	OFF	2.8A
VDDC/VDDCI	1.12V	OFF	OFF	12.9A



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Title: dGPU Block Diagram

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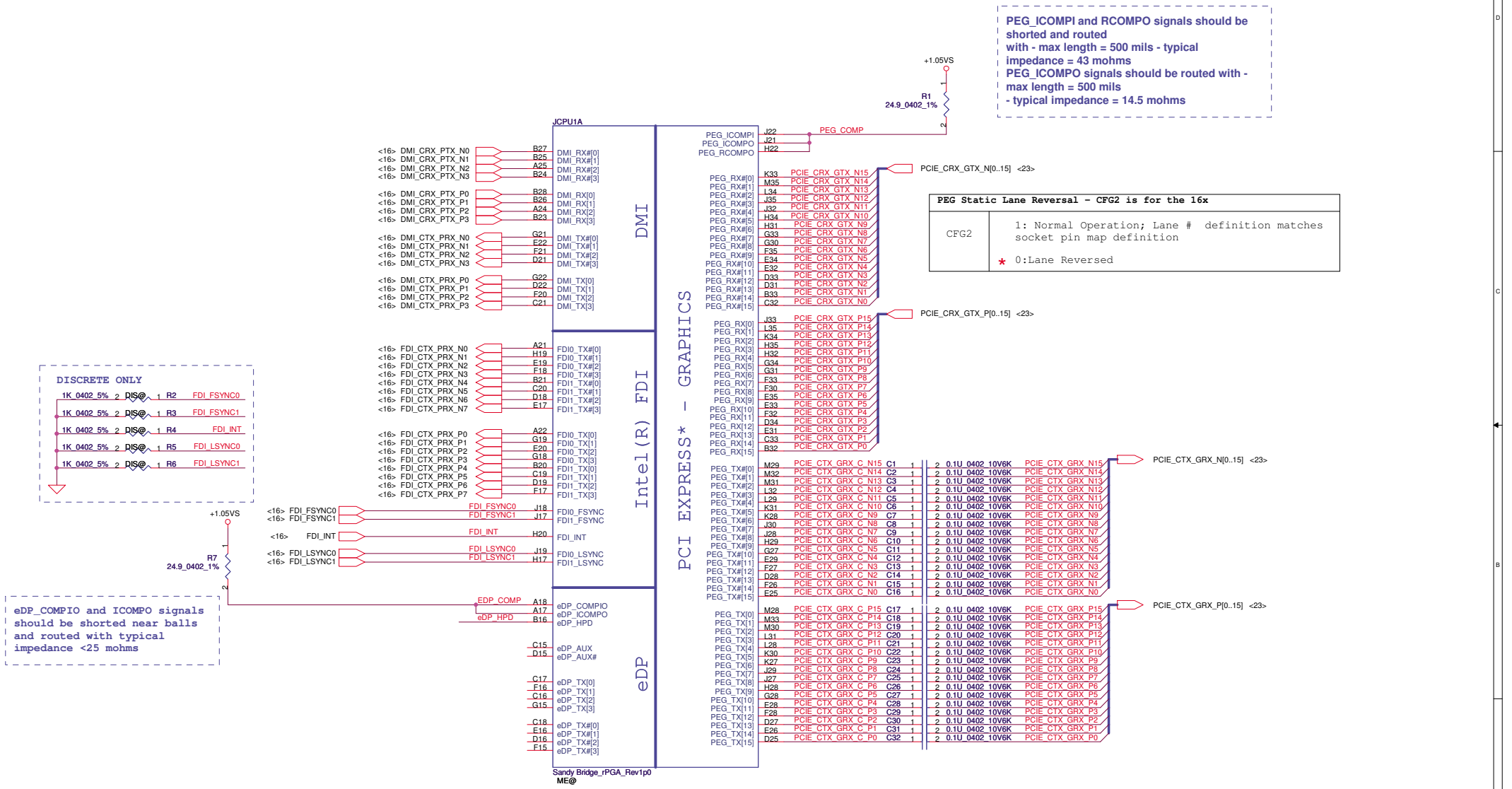

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Compal Electronics, Inc.

Title: PROCESSOR(1/7) DMI,FDI,PEG

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Custom	LA-6751P	0.2

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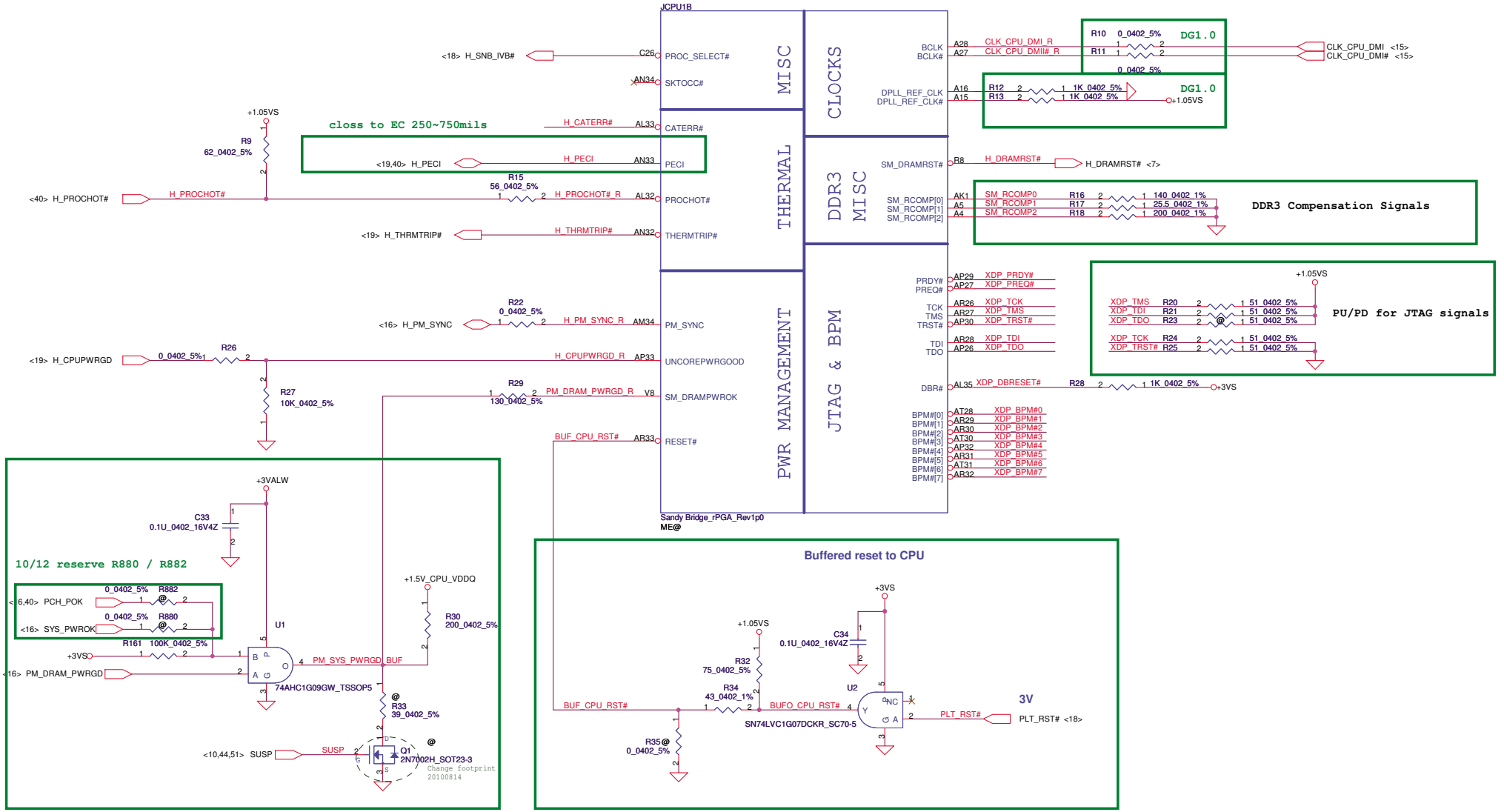

Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.			
Title	PROCESSOR(2/7) PM,XDP,CLK		
Size: Custom	Document Number: LA-6751P		Rev: 0.2
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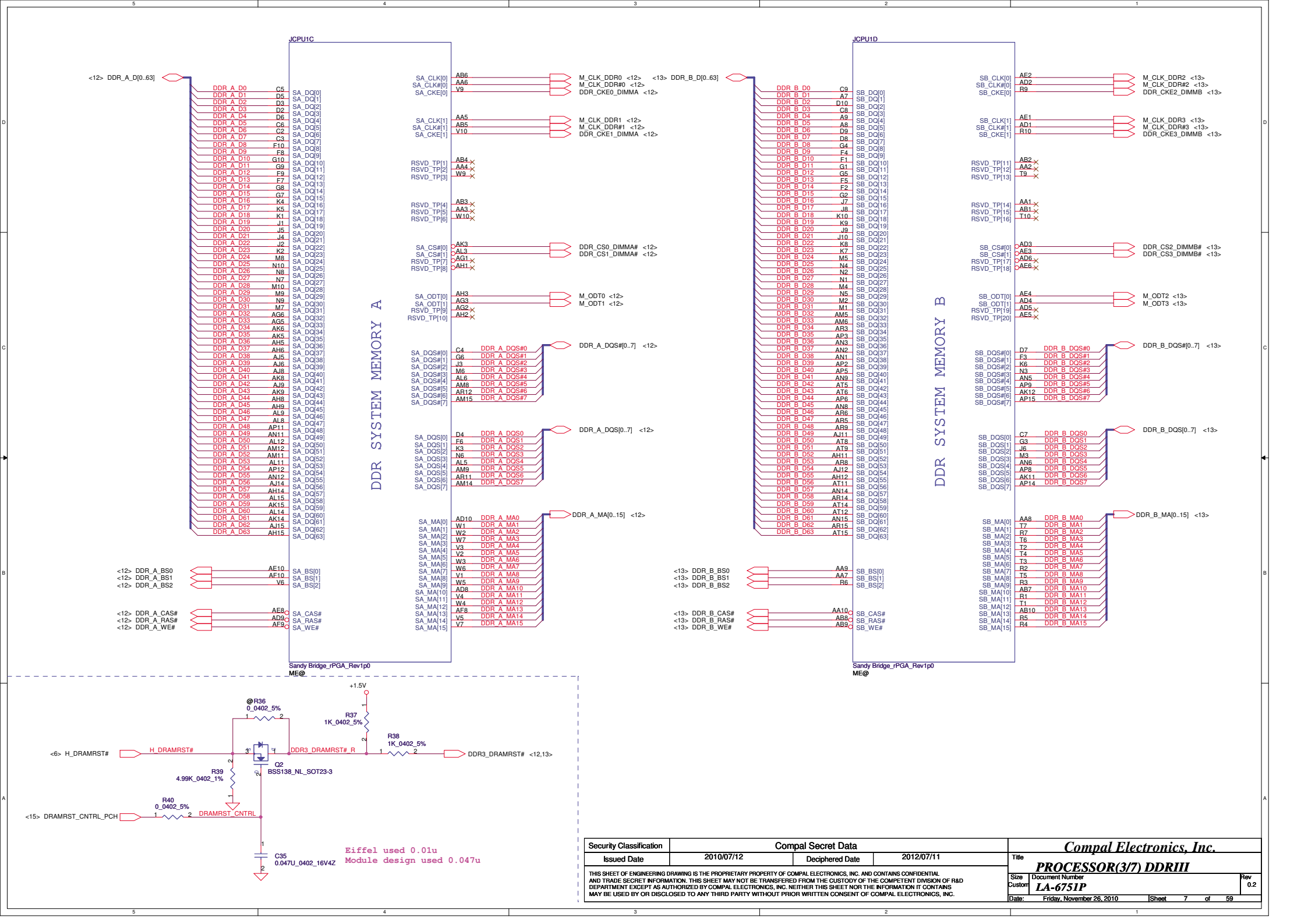

Security Classification	Compal Secret Data		
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Compal Electronics, Inc.

Title: PROCESSOR(3/7) DDRIII

Size	Document Number	Rev
Custom	LA-6751P	0.2

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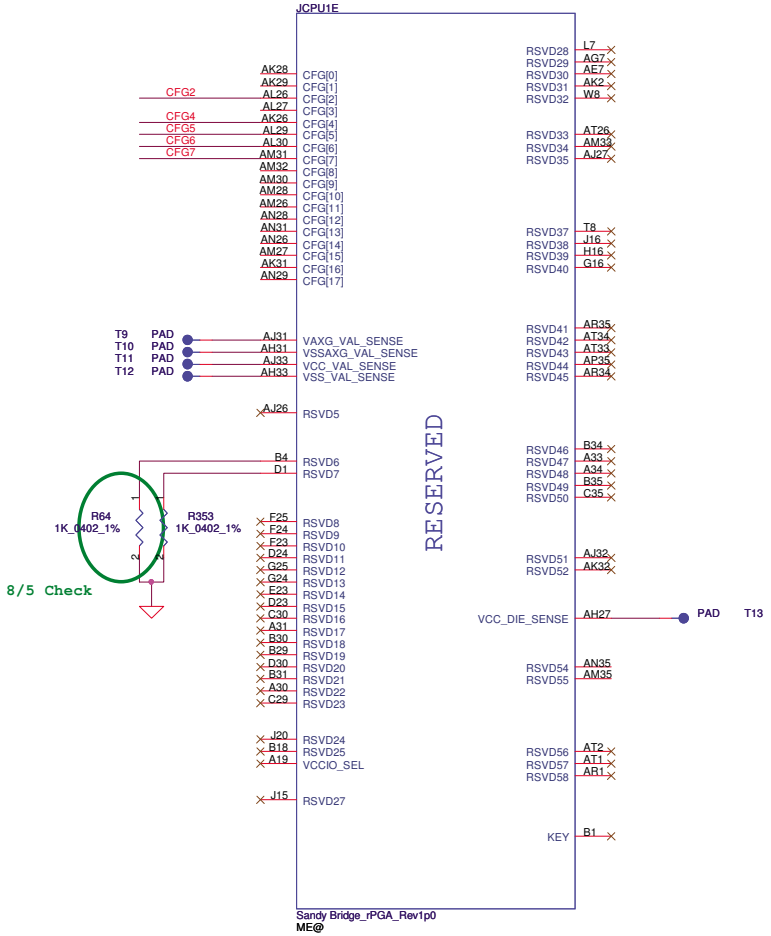
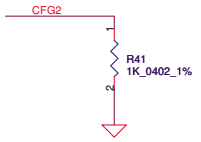
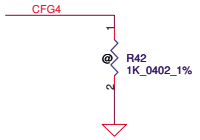
CFG Straps for Processor

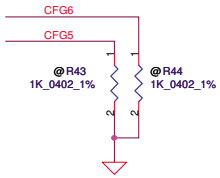




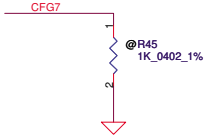
PEG Static Lane Reversal – CFG2 is for the 16x	
CFG2	1: Normal Operation; Lane # definition matches socket pin map definition * 0:Lane Reversed



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



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



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

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Title: PROCESSOR(4/7) RSVD,CFG

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POWER

JCPU1F

PEG AND DDR

CORE SUPPLY

SVID

SENSE LINES

+CPU_CORE

(6/16 change 10uF_0603_6.3V)*5

QC=94A

DC=53A

C36 10U_0805_6.3V6M
C37 10U_0805_6.3V6M
C38 10U_0805_6.3V6M
C39 10U_0805_6.3V6M
C40 10U_0805_6.3V6M
C48 10U_0603_6.3V6M
C49 10U_0603_6.3V6M
C50 10U_0603_6.3V6M
C51 10U_0603_6.3V6M @
C52 10U_0603_6.3V6M
C53 10U_0603_6.3V6M

+CPU_CORE

(22uF_0805_6.3V)*16

C66 22U_0805_6.3V6M @
C67 22U_0805_6.3V6M
C68 22U_0805_6.3V6M
C70 22U_0805_6.3V6M
C71 22U_0805_6.3V6M
C74 22U_0805_6.3V6M
C75 22U_0805_6.3V6M
C76 22U_0805_6.3V6M
C77 22U_0805_6.3V6M
C78 22U_0805_6.3V6M
C79 22U_0805_6.3V6M
C80 22U_0805_6.3V6M
C81 22U_0805_6.3V6M @
C82 22U_0805_6.3V6M @
C83 22U_0805_6.3V6M
C84 22U_0805_6.3V6M
C85 22U_0805_6.3V6M
C86 22U_0805_6.3V6M
C87 22U_0805_6.3V6M

+CPU_CORE

(330uF)*4

C88 330U_X_2VM_R6M @
C89 330U_X_2VM_R6M @
C90 330U_X_2VM_R6M
C91 330U_X_2VM_R6M
C394 330U_X_2VM_R6M @
C397 330U_X_2VM_R6M
C400 330U_X_2VM_R6M
330U_X_2VM_R6M

10/21 modify

VCC1 AG35
VCC2 AG34
VCC3 AG33
VCC4 AG32
VCC5 AG31
VCC6 AG30
VCC7 AG29
VCC8 AG28
VCC9 AG27
VCC10 AG26
VCC11 AF35
VCC12 AF34
VCC13 AF33
VCC14 AF32
VCC15 AF31
VCC16 AF30
VCC17 AF29
VCC18 AF28
VCC19 AF27
VCC20 AF26
VCC21 AD35
VCC22 AD34
VCC23 AD33
VCC24 AD32
VCC25 AD31
VCC26 AD30
VCC27 AD29
VCC28 AD28
VCC29 AD27
VCC30 AD26
VCC31 AC35
VCC32 AC34
VCC33 AC33
VCC34 AC32
VCC35 AC31
VCC36 AC30
VCC37 AC29
VCC38 AC28
VCC39 AC27
VCC40 AC26
VCC41 AA35
VCC42 AA34
VCC43 AA33
VCC44 AA32
VCC45 AA31
VCC46 AA30
VCC47 AA29
VCC48 AA28
VCC49 AA27
VCC50 AA26
VCC51 Y35
VCC52 Y34
VCC53 Y33
VCC54 Y32
VCC55 Y31
VCC56 Y30
VCC57 Y29
VCC58 Y28
VCC59 Y27
VCC60 Y26
VCC61 V35
VCC62 V34
VCC63 V33
VCC64 V32
VCC65 V31
VCC66 V30
VCC67 V29
VCC68 V28
VCC69 V27
VCC70 V26
VCC71 U35
VCC72 U34
VCC73 U33
VCC74 U32
VCC75 U31
VCC76 U30
VCC77 U29
VCC78 U28
VCC79 U27
VCC80 U26
VCC81 R35
VCC82 R34
VCC83 R33
VCC84 R32
VCC85 R31
VCC86 R30
VCC87 R29
VCC88 R28
VCC89 R27
VCC90 R26
VCC91 P35
VCC92 P34
VCC93 P33
VCC94 P32
VCC95 P31
VCC96 P30
VCC97 P29
VCC98 P28
VCC99 P27
VCC100 P26

Sandy Bridge_rPGA_Rev1p0
ME@

Cap quantity follow HR_PDDG_Rev07
22uF*7 NO-STUFF

18A

OSCAN(22uF_0805_6.3V)*13

+1.05VS

VCCIO1 AH13
VCCIO2 AH10
VCCIO3 AG10
VCCIO4 AC10
VCCIO5 Y10
VCCIO6 U10
VCCIO7 P10
VCCIO8 L10
VCCIO9 J14
VCCIO10 J13
VCCIO11 J12
VCCIO12 J11
VCCIO13 H14
VCCIO14 H12
VCCIO15 H11
VCCIO16 G14
VCCIO17 G13
VCCIO18 G12
VCCIO19 F14
VCCIO20 F13
VCCIO21 F12
VCCIO22 F11
VCCIO23 E14
VCCIO24 E12
VCCIO25 E11
VCCIO26 D14
VCCIO27 D13
VCCIO28 D12
VCCIO29 D11
VCCIO30 C14
VCCIO31 C13
VCCIO32 C12
VCCIO33 C11
VCCIO34 B14
VCCIO35 B12
VCCIO36 A14
VCCIO37 A13
VCCIO38 A12
VCCIO39 A11
VCCIO40 J23

C41 22U_0805_6.3V6M
C42 22U_0805_6.3V6M
C43 22U_0805_6.3V6M
C44 22U_0805_6.3V6M
C54 22U_0805_6.3V6M
C45 22U_0805_6.3V6M
C46 22U_0805_6.3V6M
C55 22U_0805_6.3V6M
C56 22U_0805_6.3V6M
C47 22U_0805_6.3V6M
C57 22U_0805_6.3V6M
C58 22U_0805_6.3V6M
C59 22U_0805_6.3V6M @
C60 22U_0805_6.3V6M @
C61 22U_0805_6.3V6M @
C62 22U_0805_6.3V6M @
C63 22U_0805_6.3V6M @
C64 22U_0805_6.3V6M @
C65 22U_0805_6.3V6M @

C69 220U_6.3V_M
C72 220U_6.3V_M
C73 330U_D2_2.5VY_R9M @

OSCAN
(220uF_6.3V_4.2L_ESR17m)*2=(SF000002Y00)

+1.05VS

R46 75_0402_5%

VR_SVID_CLK series-resistors close to VR

VIDALERT# AJ29 H_CPU_SVIDALRT# R47 43_0402_5% VR_SVID_ALRT# <53>
VIDSCLK AJ30 H_CPU_SVIDCLK R48 0_0402_5% VR_SVID_CLK <53>
VIDSOUT AJ28 H_CPU_SVIDDAT R49 0_0402_5% VR_SVID_DAT <53>

R50 130_0402_5% +1.05VS

VCC_SENCE 100ohm +-1% pull-up to VCC near processor

+CPU_CORE

R51 100_0402_1%

VCC_SENSE AJ35 VCCSENSE_R R52 0_0402_5% VCCSENSE <53>
VSS_SENSE AJ34 VSSSENSE_R R53 0_0402_5% VSSSENSE <53>

R54 100_0402_1%

VCCIO_SENSE B10 VCCIO_SENSE <51>
VSSIO_SENSE A10 R74 0_0402_5% @ VSSIO_SENSE R75 0_0402_5% @

VSS_SENCE 100ohm +-1% pull-down to GND near processor

8/12 Modify, need follow diffential routing
R74 close CPU,R75 close PWR

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Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PROCESSOR(5/7) PWR,BYPASS

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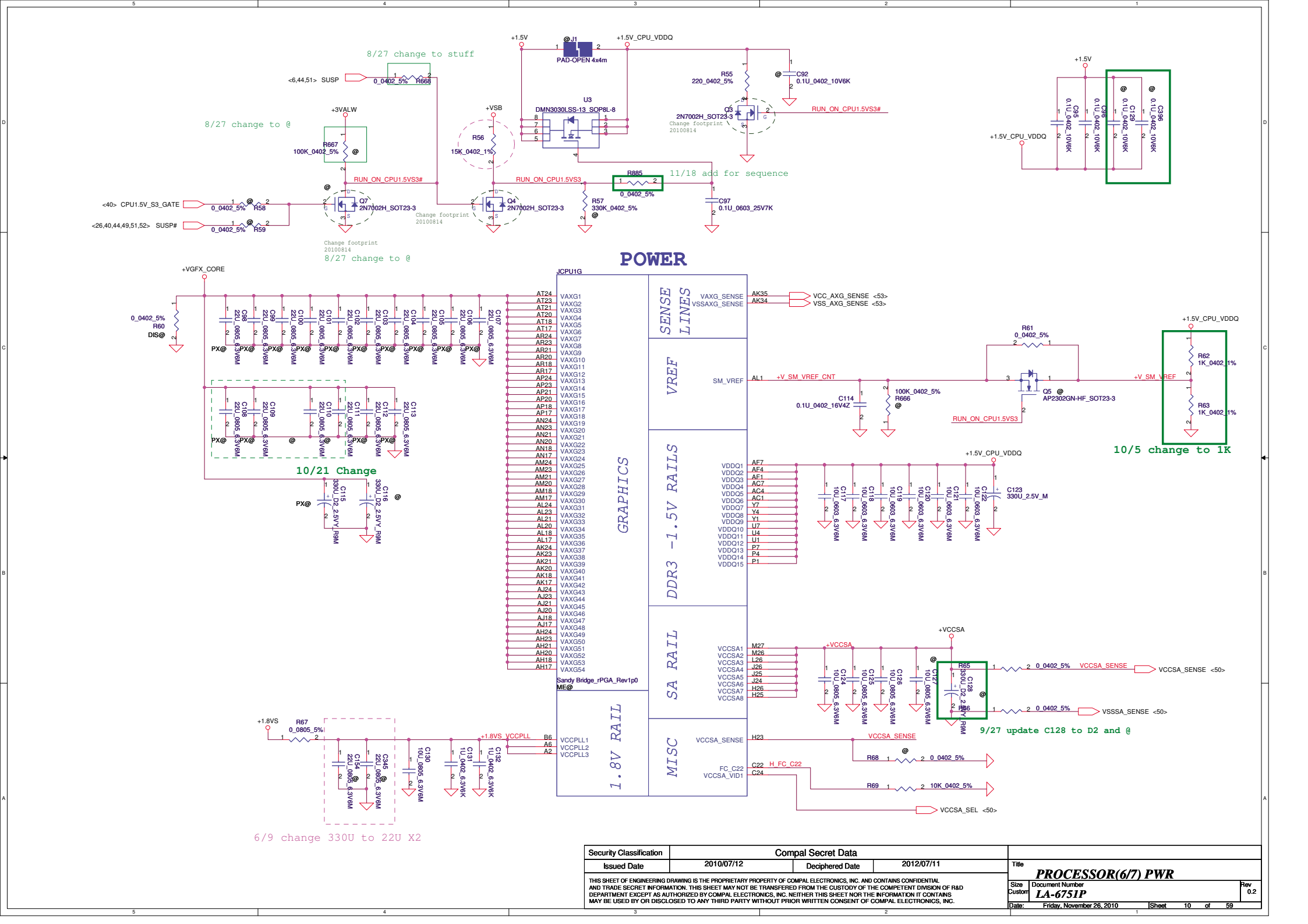

Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Title: **PROCESSOR(6/7) PWR**

Size	Document Number	Rev
Custom	LA-6751P	0.2

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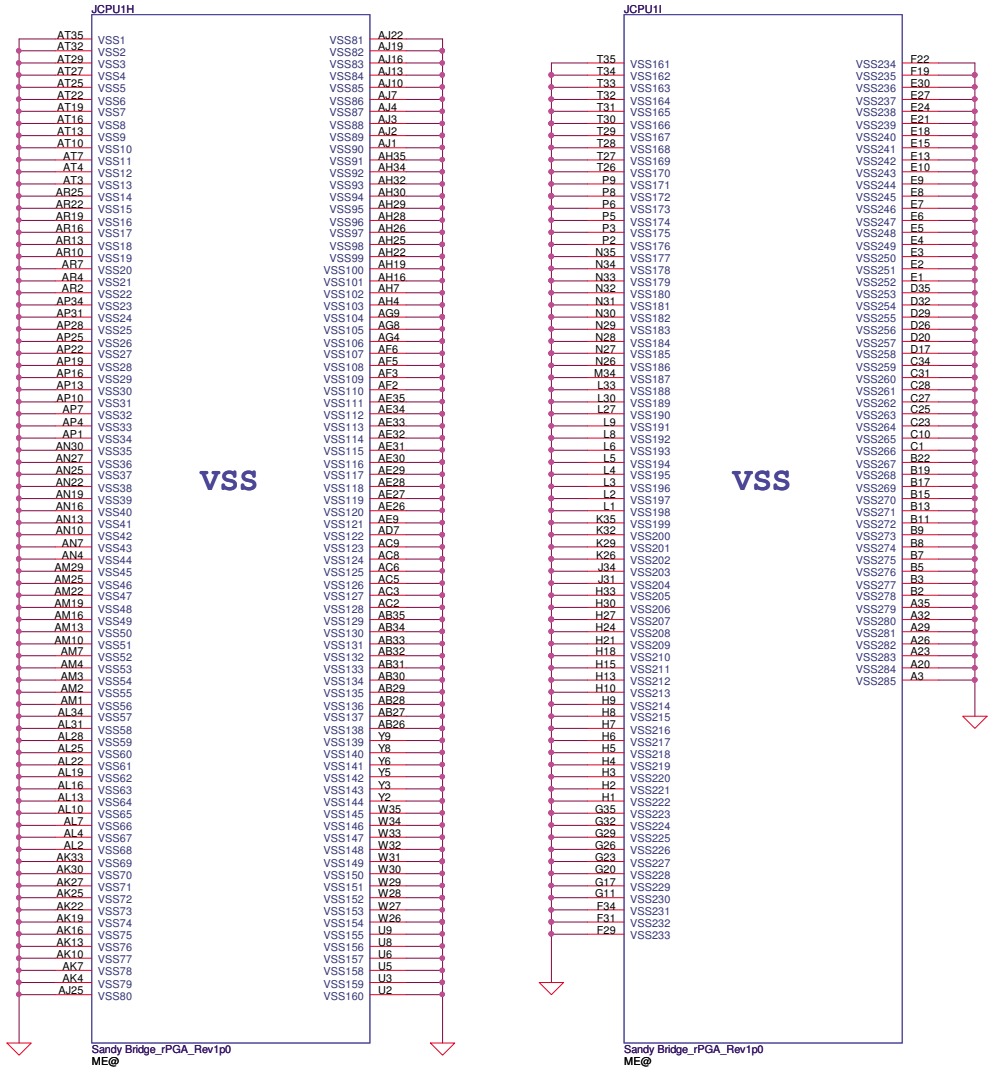

Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PROCESSOR(7/7) VSS

Size	Document Number	Rev
Custom	LA-6751P	0.2

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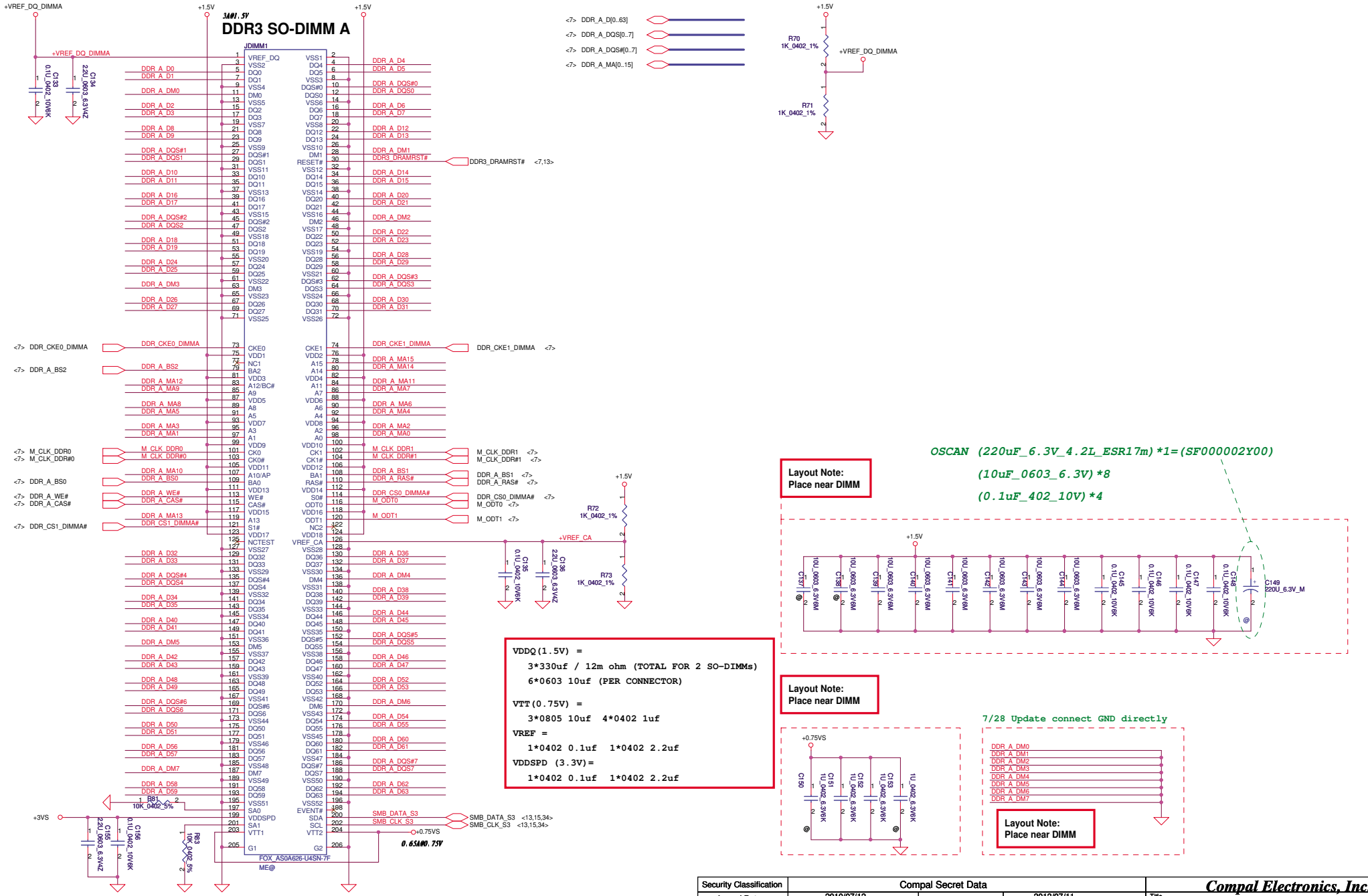

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Issued Date	2010/07/12	Deciphered Date	2012/07/11

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Title: DDRIII-SODIMM SLOT1

Size: Custom | Document Number: LA-6751P | Rev: 0.2

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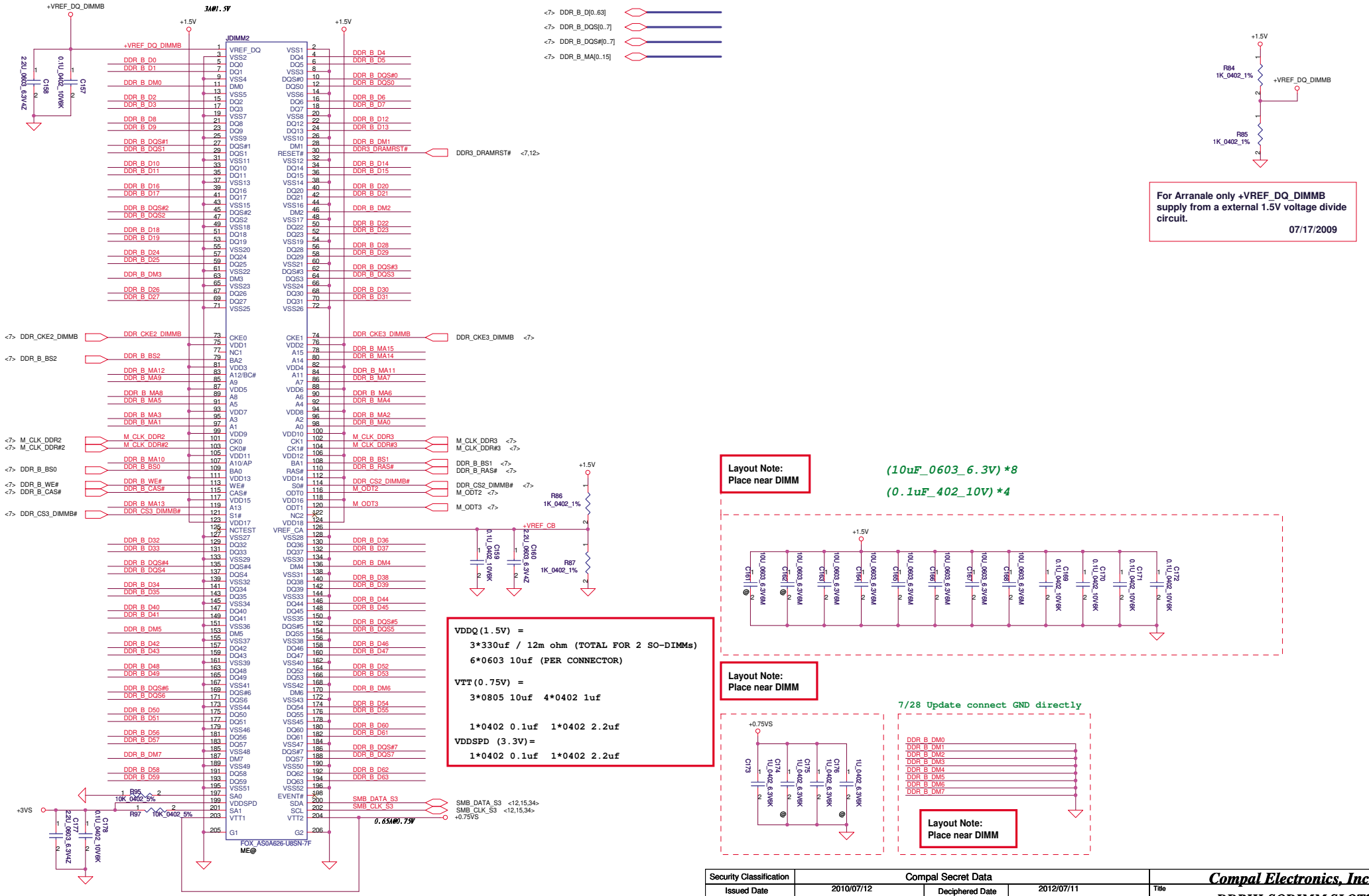


For Arranale only +VREF_DQ_DIMMB supply from a external 1.5V voltage divide circuit.

07/17/2009

Layout Note:
Place near DIMM

(10uF_0603_6.3V)*8

(0.1uF_402_10V)*4

Layout Note:
Place near DIMM

7/28 Update connect GND directly

Layout Note:
Place near DIMM

VDDQ(1.5V) =
3*330uf / 12m ohm (TOTAL FOR 2 SO-DIMMs)
6*0603 10uf (PER CONNECTOR)

VTT(0.75V) =
3*0805 10uf 4*0402 1uf

1*0402 0.1uf 1*0402 2.2uf

VDDSPD (3.3V)=
1*0402 0.1uf 1*0402 2.2uf

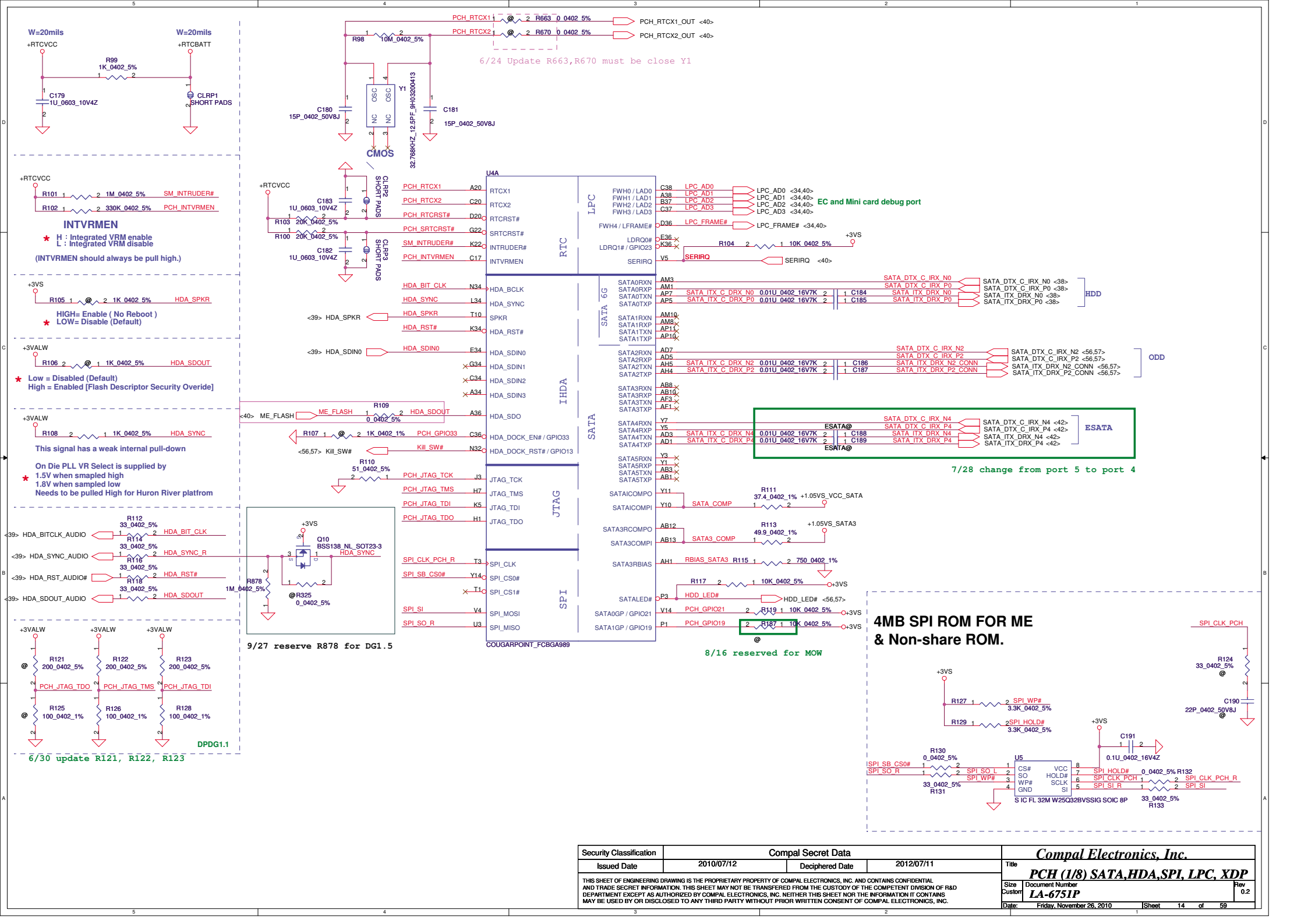
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: DDRIII-SODIMM SLOT2

Size	Document Number	Rev
	LA-6751P	0.2

Date: Friday, November 26, 2010 Sheet 13 of 59



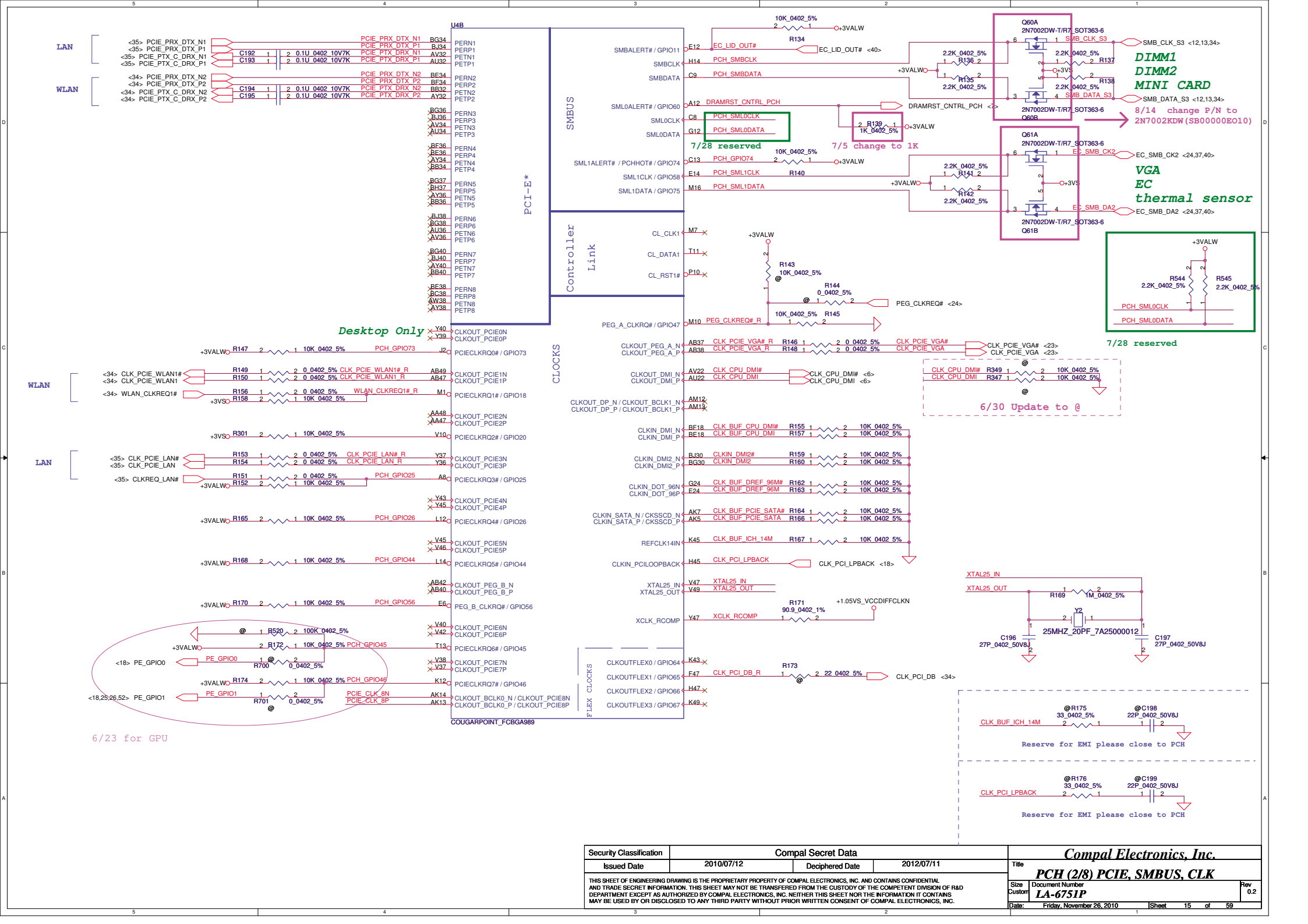
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PCH (1/8) SATA,HDA,SPI, LPC, XDP

Size	Document Number	Rev
Custom	LA-6751P	0.2

Date: Friday, November 26, 2010 | Sheet 14 of 59



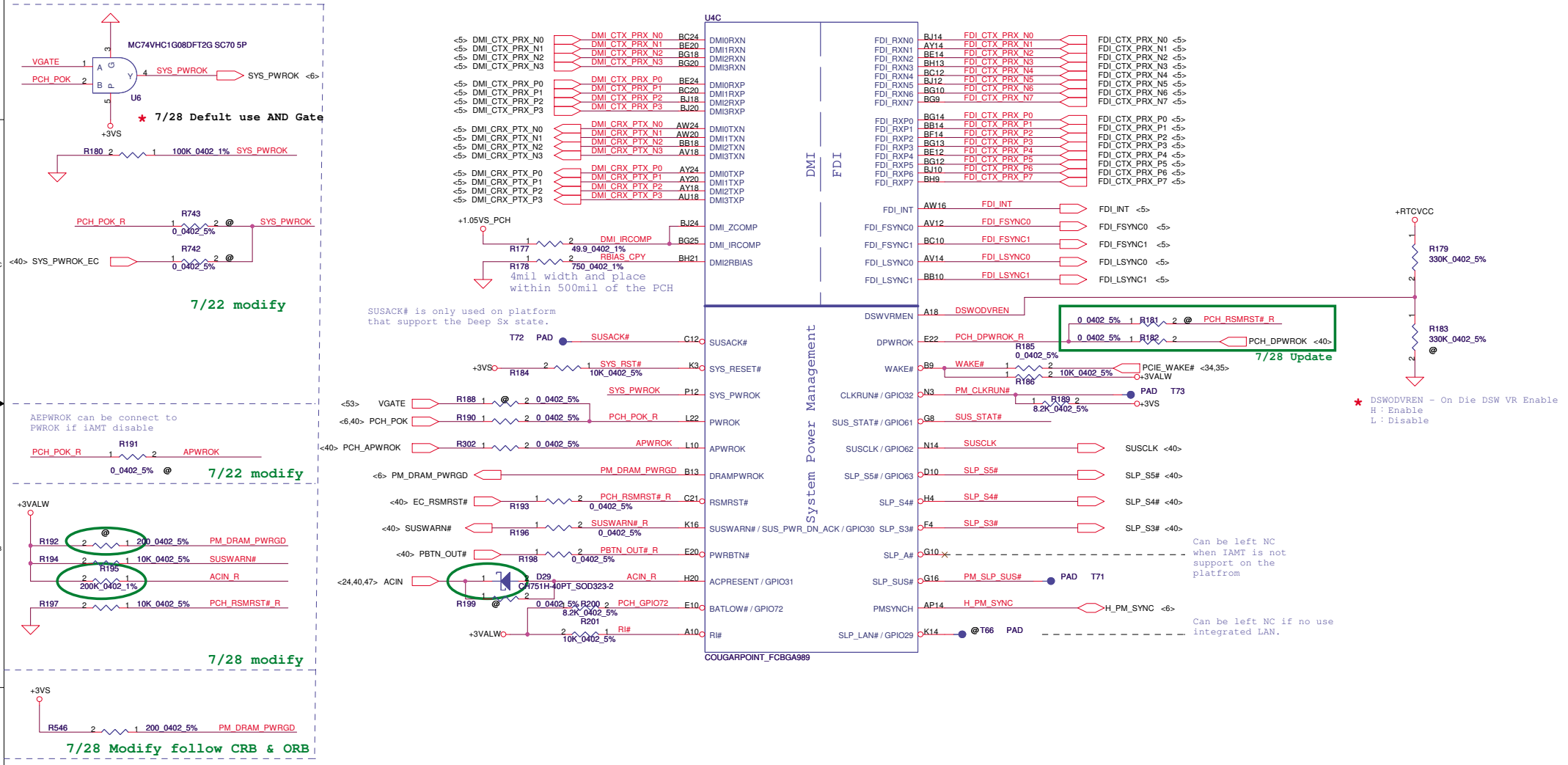
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PCH (2/8) PCIE, SMBUS, CLK

Size	Document Number	Rev
Custom	LA-6751P	0.2

Date: Friday, November 26, 2010 Sheet 15 of 59



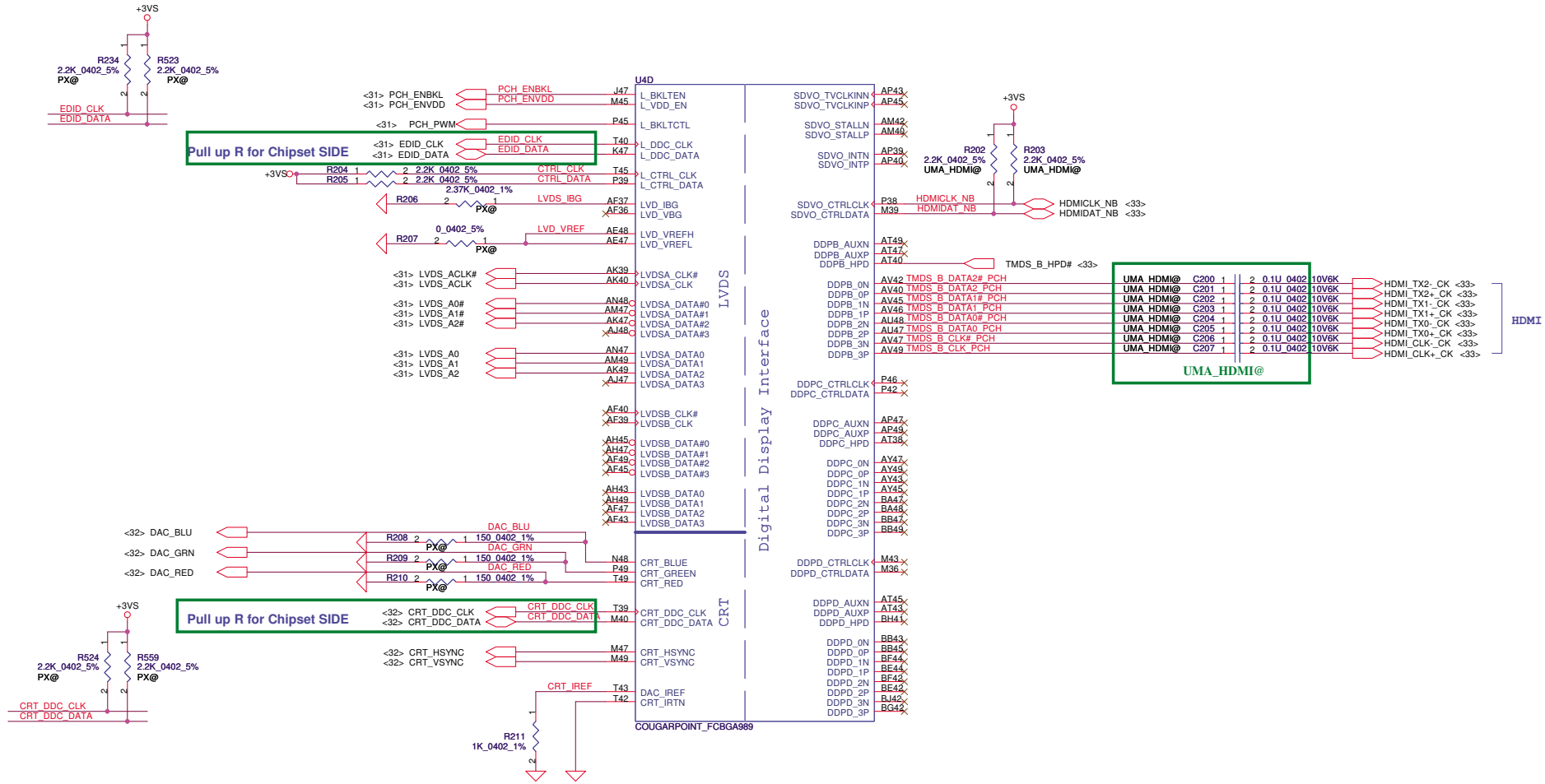
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PCH (3/8) DMI,FDI,PM,

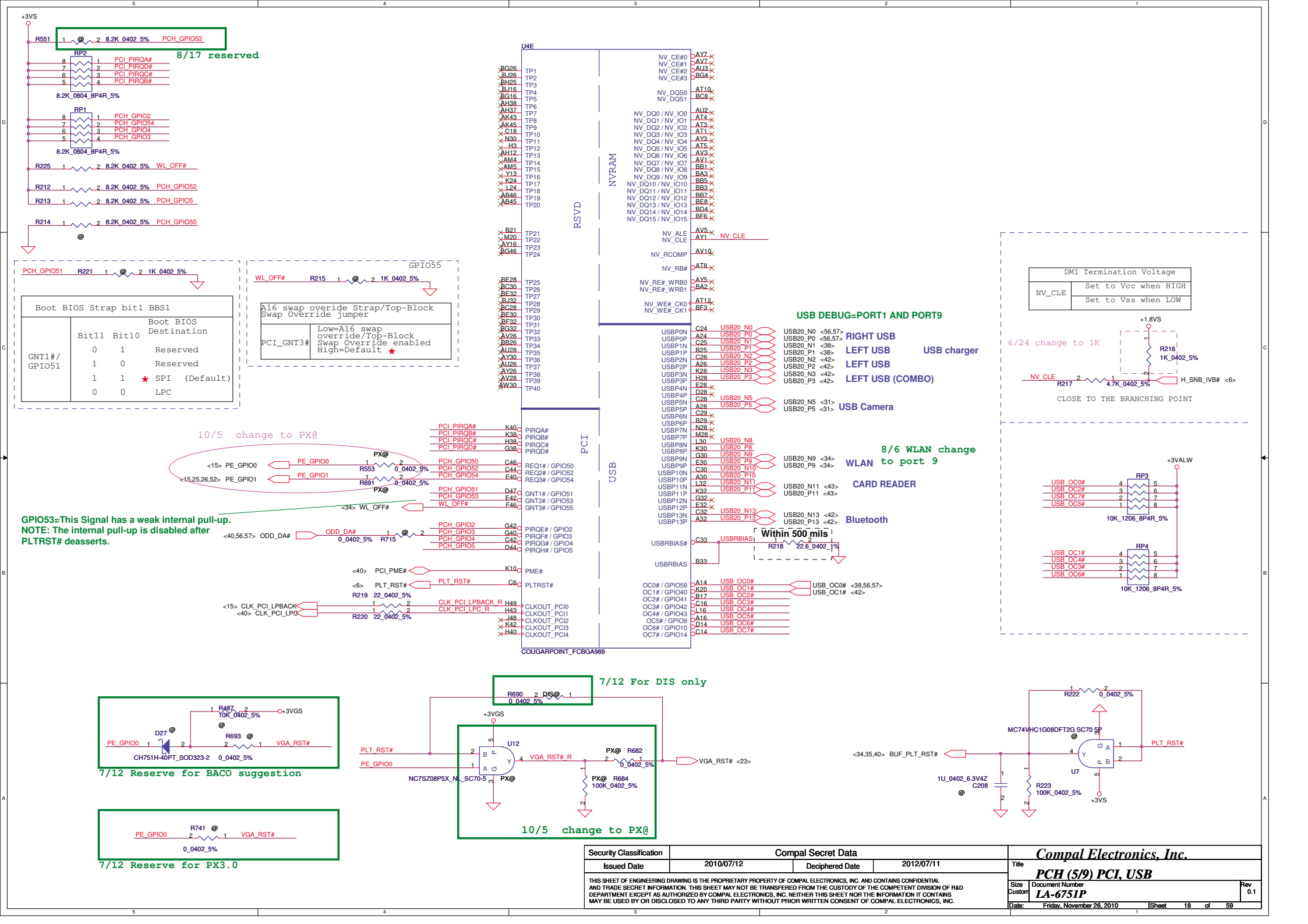
Size	Document Number	Rev
Custom	LA-6751P	0.2

Date: Friday, November 26, 2010 Sheet 16 of 59



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.		
Title	PCH (4/9) LVDS,CRT,DP,HDMI	
Size: Custom	Document Number: LA-6751P	Rev: 0.2
Date: Friday, November 26, 2010	Sheet 17 of 59	



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

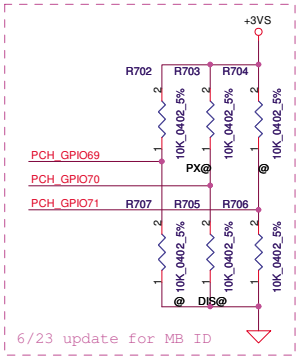
Compal Electronics, Inc.

Title: PCH (5/9) PCI, USB

Size: Custom | Document Number: LA-6751P | Rev: 0.1

Date: Friday, November 26, 2010 | Sheet 18 of 59

PCH_GPIO69	PCH_GPIO70	PCH_GPIO71	Function
0	0	0	UMA
1	0	0	DIS
0	1	0	PX3.0
1	1	0	PX4.0*



ICC_EN#
Integrated Clock Chip Enable
H ; Disable
L ; Enable
R235 @ 1K_0402_5% EC_SMI#
Weak internal pull-high

GPIO28
On-Die PLL Voltage Regulator
This signal has a weak internal pull up
H : On-Die voltage regulator enable
L : On-Die PLL Voltage Regulator disable
R240 @ 1K_0402_5% PCH_GPIO28

PCH_GPIO27 (Have internal Pull-High)
High: VCCVRM VR Enable
Low: VCCVRM VR Disable
R245 @ 10K_0402_5% PCH_GPIO27

+3VS R250 @ 10K_0402_5% PCH_GPIO36
R547 10K_0402_5%
8/5 update to pull down

R881 10K_0402_5% PCH_GPIO37
10/8 update to pull down for checklist Rev1.2

7/22 update to reserve only

7/22 update to used intel function

+3VS R233 10K_0402_5% PCH_GPIO0
ESATA_DET# @ R303 0_0402_5%
R227 10K_0402_5%
+3VS R228 10K_0402_5% PCH_GPIO6
<40> EC_SCI# EC_SCI#
<40> EC_SMI# EC_SMI#
+3VALW R229 @ 10K_0402_5% CPUSB#
R230 1K_0402_5% PCH_GPIO15
+3VS R231 10K_0402_5% PCH_GPIO16
<42> ESATA_DET# R542 @ 0_0402_5%
+3VS R232 10K_0402_1% GPIO17
+3VS R238 10K_0402_5% PCH_GPIO22
+3VALW <38> ODD_EN ODD_EN
PCH_GPIO27
R241 10K_0402_5% PCH_GPIO28
<42> BT_OFF# +3VS @ 10K_0402_5% BT_OFF#
R242
R243 10K_0402_5% PCH_GPIO35
PCH_GPIO36
+3VS R244 @ 10K_0402_5% PCH_GPIO37
R246 10K_0402_5% PCH_GPIO38
R247 10K_0402_5% PCH_GPIO39
R248 10K_0402_5% PCH_GPIO48
+3VS R249 10K_0402_5% ESATA_DET#_R
PCH_GPIO57
+3VALW R251 10K_0402_5%

U4F

T7	BMBUSY# / GPIO0	TACH4 / GPIO68	C40 PCH_GPIO68
A42	TACH1 / GPIO1	TACH5 / GPIO69	B41 PCH_GPIO69
H36	TACH2 / GPIO6	TACH6 / GPIO70	C41 PCH_GPIO70
E38	TACH3 / GPIO7	TACH7 / GPIO71	A40 PCH_GPIO71
C10	GPIO8		
C4	LAN_PHY_PWR_CTRL / GPIO12		
G2	GPIO15		
U2	SATA4GP / GPIO16		
D40	TACH0 / GPIO17		
T5	SCLOCK / GPIO22		
E8	GPIO24 / MEM_LED		
E16	GPIO27		
P8	GPIO28		
K1	STP_PCI# / GPIO34		
K4	GPIO35		
V8	SATA2GP / GPIO36		
M5	SATA3GP / GPIO37		
N2	SLOAD / GPIO38		
M3	SDATAOUT0 / GPIO39		
V13	SDATAOUT1 / GPIO48		
V3	SATA5GP / GPIO49		
D6	GPIO57		
		A20GATE	P4
		PECI	AU16 PCH_PECI_R 0_0402_5% R237 H_PECI <6,40>
		RCIN#	P5 KB_RST# KB_RST# <40>
		PROCPWRGD	AY11 H_CPUPWRGD <6>
		THRMTRIP#	AY10 PCH_THRMTRIP#_R R239 390_0402_5% H_THRMTRIP# H_THRMTRIP# <6>
		INIT3_3V#	T14
		NC_1	AH8
		NC_2	AK11
		NC_3	AH10
		NC_4	AK10
		NC_5	P37
A4	VSS_NCTF_1	VSS_NCTF_15	BG2 @T15 PAD
A44	VSS_NCTF_2	VSS_NCTF_16	BG48 @T16 PAD
A45	VSS_NCTF_3	VSS_NCTF_17	BH3 @T17 PAD
A46	VSS_NCTF_4	VSS_NCTF_18	BH47 @T18 PAD
A5	VSS_NCTF_5	VSS_NCTF_19	BJ4 @T20 PAD
A6	VSS_NCTF_6	VSS_NCTF_20	BJ44 @T22 PAD
B3	VSS_NCTF_7	VSS_NCTF_21	BJ45 @T24 PAD
B47	VSS_NCTF_8	VSS_NCTF_22	BJ46 @T26 PAD
BD1	VSS_NCTF_9	VSS_NCTF_23	BJ5 @T28 PAD
BD49	VSS_NCTF_10	VSS_NCTF_24	BJ6 @T30 PAD
BE1	VSS_NCTF_11	VSS_NCTF_25	C2 @T32 PAD
BE49	VSS_NCTF_12	VSS_NCTF_26	C48 @T34 PAD
BF1	VSS_NCTF_13	VSS_NCTF_27	D1 @T36 PAD
BF49	VSS_NCTF_14	VSS_NCTF_28	D49 @T38 PAD
		VSS_NCTF_29	E1 @T40 PAD
		VSS_NCTF_30	E49 @T42 PAD
		VSS_NCTF_31	F1 @T44 PAD
		VSS_NCTF_32	F49 @T46 PAD

PAD T19 @ PAD T21 @ PAD T23 @ PAD T25 @ PAD T27 @ PAD T29 @ PAD T31 @ PAD T33 @ PAD T35 @ PAD T37 @ PAD T39 @ PAD T41 @ PAD T43 @ PAD T45 @

GPIO
CPU/MISC
NCTF

COUGARPOINT_FCBGA989

+3VS R236 10K_0402_5% GATEA20 <40>

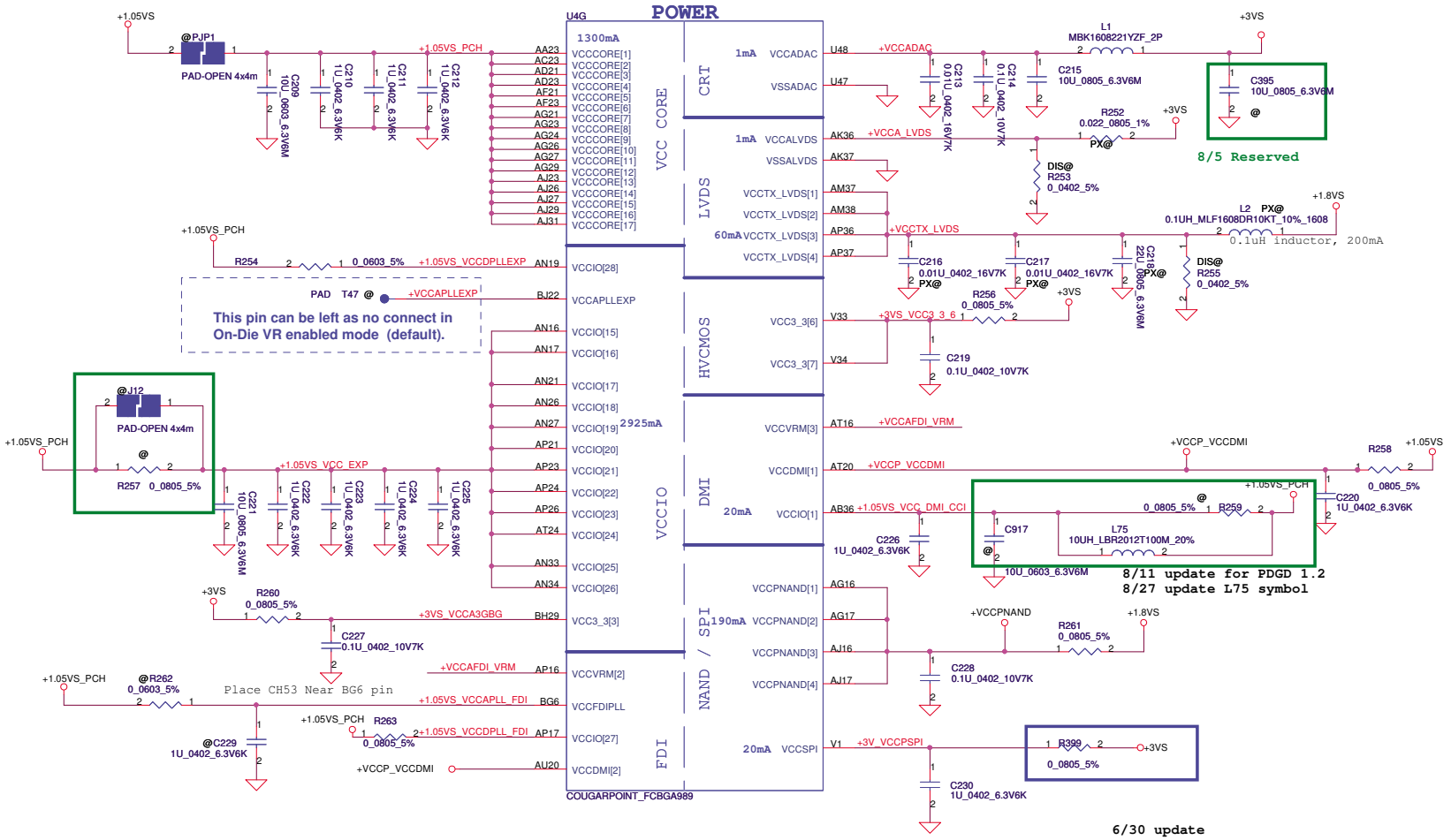
PCH_GPIO68 R224 10K_0402_5%
KB_RST# R226 10K_0402_5%

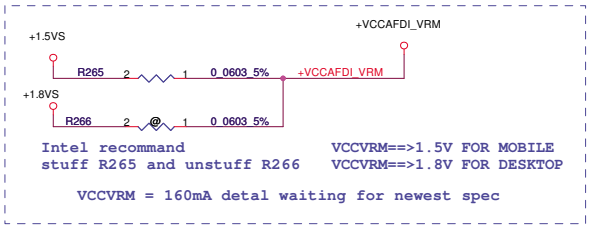
INIT3_3V
This signal has weak internal PU, can't pull low

Intel schematic reviwe recommand.

Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.
Title: PCH (6/9) GPIO, CPU, MISC
Size: Custom | Document Number: LA-6751P | Rev: 0.2
Date: Friday, November 26, 2010 | Sheet 19 of 59





PCH Power Rail Table

Voltage Rail	Voltage	S0 Iccmax Current (A)
V_PROC_IO	1.05	0.001
V5REF	5	0.001
V5REF_Sus	5	0.001
Vcc3_3	3.3	0.266
VccADAC	3.3	0.001
VccADPLLA	1.05	0.08
VccADPLLB	1.05	0.08
VccCore	1.05	1.3
VccDMI	1.05	0.042
VccIO	1.05	2.925
VccASW	1.05	1.01
VccSPI	3.3	0.02
VccDSW	3.3	0.003
VccpNAND	1.8	0.19
VccRTC	3.3	6 uA
VccSus3_3	3.3	0.119
VccSusHDA	3.3 / 1.5	0.01
VccVRM	1.8 / 1.5	0.16
VccCLKDMI	1.05	0.02
VccSSC	1.05	0.095
VccDIFFCLKN	1.05	0.055
VccALVDS	3.3	0.001
VccTX_LVDS	1.8	0.06

Compal Electronics, Inc.

Title: PCH (7/9) PWR

Size: Custom | Document Number: LA-6751P | Rev: 0.2

Date: Friday, November 26, 2010 | Sheet 20 of 59

Have internal VRM

VCC3_3 = 266mA detal waiting for newest spec
VCCDMI = 42mA detal waiting for newest spec

7/1 update to @

U4J

POWER

COUGARPOINT_FCBGA989

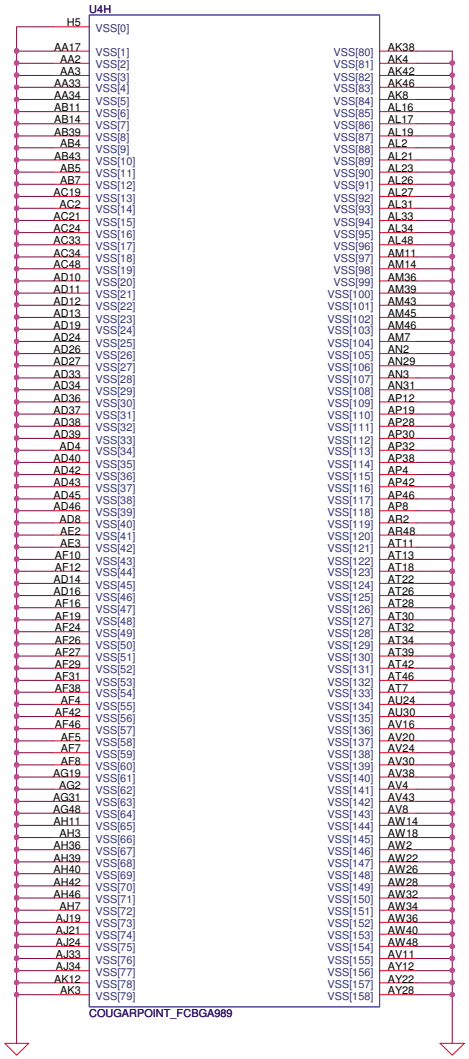
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

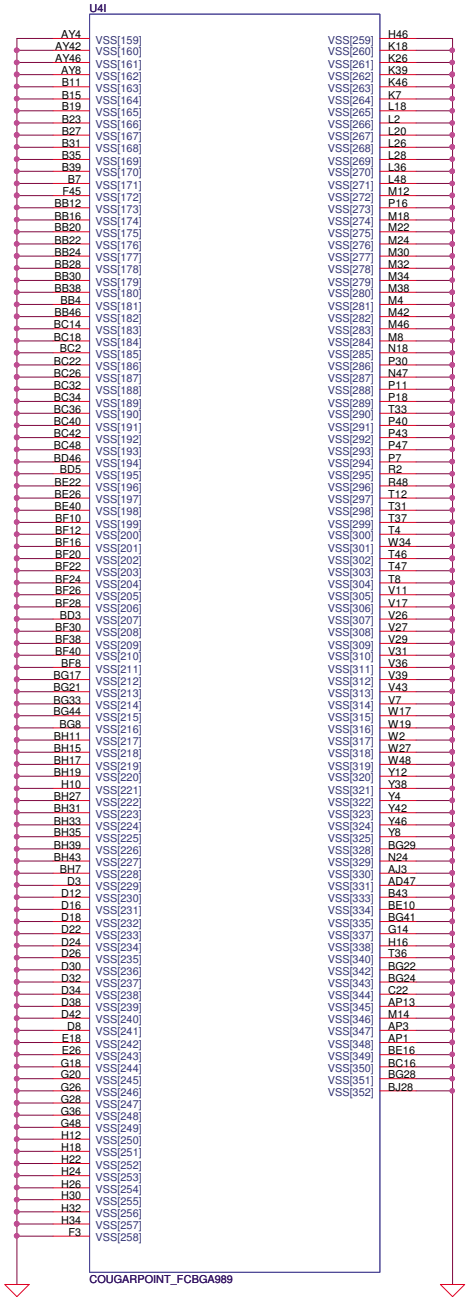
Compal Electronics, Inc.

Title: PCH (8/9) PWR

Size: Custom | Document Number: LA-6751P | Rev: 0.2

Date: Friday, November 26, 2010 | Sheet 21 of 59





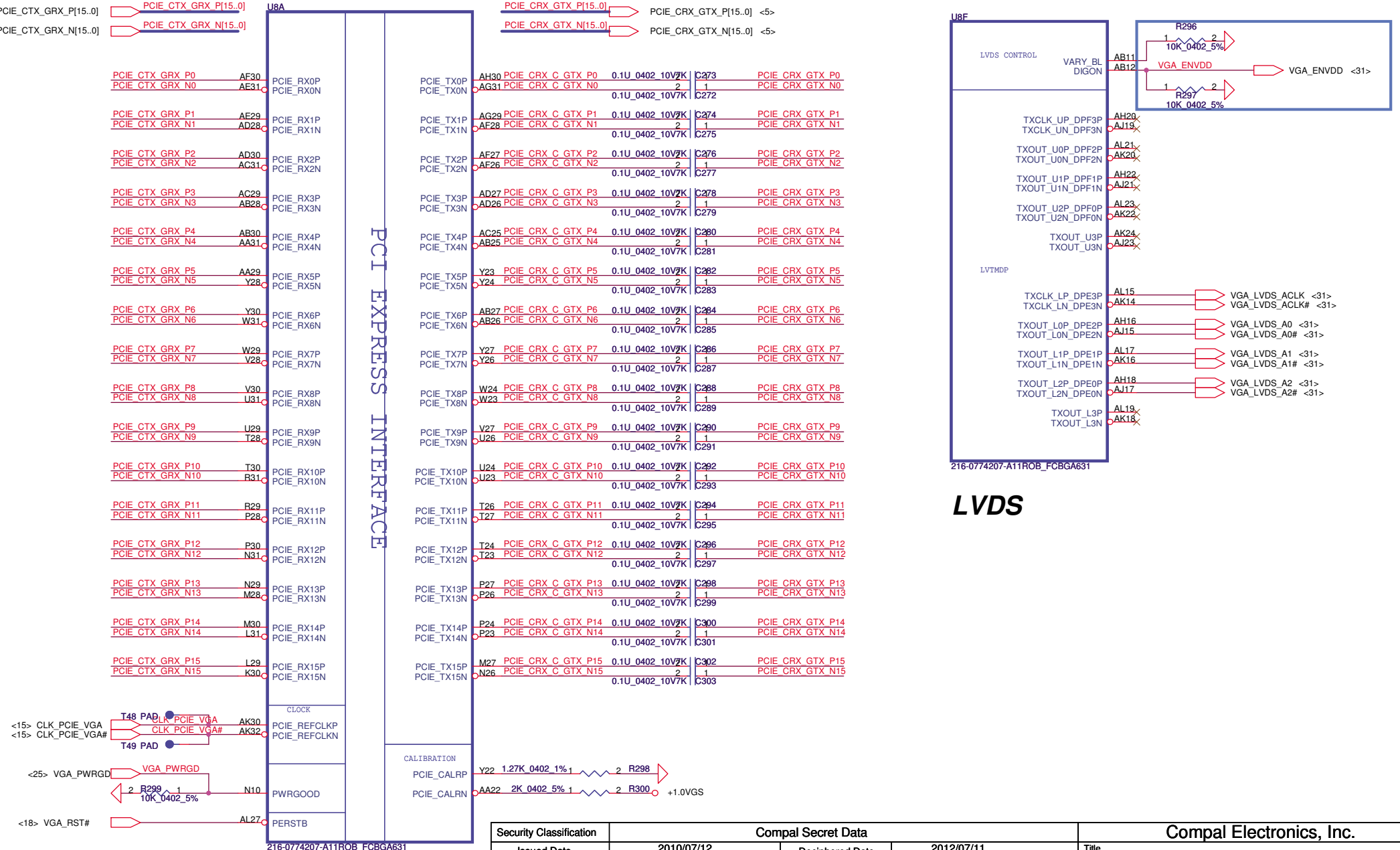
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PCH (9/9) VSS

Size	Document Number	Rev
Custom	LA-6751P	0.2

Date: Friday, November 26, 2010 Sheet 22 of 59



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: RobsonXT-S3 PCIE/LVDS

Size	Document Number	Rev
B		0.1

Date: Friday, November 26, 2010 Sheet 23 of 59

TX_PWRS_ENB	GPIO0	Transmitter Power Saving Enable 0: 50% Tx output swing for mobile mode 1: full Tx output swing (Default setting for Desktop)
TX_DEEMPH_EN	GPIO1	PCI Express Transmitter De-emphasis Enable 0: Tx de-emphasis diabled for mobile mode 1: Tx de-emphasis enabled (Defailt setting for desktop)

CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

RECOMMENDED SETTINGS
0= DO NOT INSTALL RESISTOR
1 = INSTALL 10K RESISTOR
X = DESIGN DEPENDANT
NA = NOT APPLICABLE

STRAPS	PIN	DESCRIPTION OF DEFAULT SETTINGS	RECOMMENDED SETTINGS
TX_PWRS_ENB	GPIO0	PCIE FULL TX OUTPUT SWING	X
TX_DEEMPH_EN	GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLED	X
RSVD	GPIO2	RESERVED	0
RSVD	GPIO8	RESERVED	0
BIF_VGA DIS	GPIO9	VGA ENABLED	0
RSVD	GPIO21	RESERVED	0
BIOS_ROM_EN	GPIO_22_ROMCSB	ENABLE EXTERNAL BIOS ROM	X
ROMIDCFG(2:0)	GPIO[13:11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT	XXX
VIP_DEVICE_STRAP_ENA	V2SYNC	IGNORE VIP DEVICE STRAPS	0
RSVD	H2SYNC		0
RSVD	GENERICC		0
AUD[1] AUD[0]	HSYNC VSYNC	AUD[1] AUD[0] 0 0 No audio function 0 1 Audio for DisplayPort and HDMI if dongle is detected 1 0 Audio for DisplayPort only 1 1 Audio for both DisplayPort and HDMI	11

AMD RESERVED CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS BUT DO NOT INSTALL RESISTOR. IF THESE GPIOS ARE USED, THEY MUST KEEP "LOW" AND NOT CONFLICT DURING RESET

GPIO21 H2SYNC GENERICC GPIO2 GPIO8

STRAPS

8/5 Add For DIS HDMI audio strap

8/14 change P/N to DMN66D0LDW-7_SOT363-6 (SB00000DH00)

VGA Thermal Sensor EMC1402-1

Closed to GPU

EMC1412-A (SA00003YA00)
Address 1111_100xb
S IC EMC1412-A-AC2L-TR MSOP 8P SENSOR

8/13 update to @

Change to 0 ohm P/N

0.60 V level, Please VREFG Divider ans cap close to ASIC

XTALIN Voltage Swing: 1.8 V

0_0603 5%
SD013000080

216-0774207-A11ROB_FC8GA631

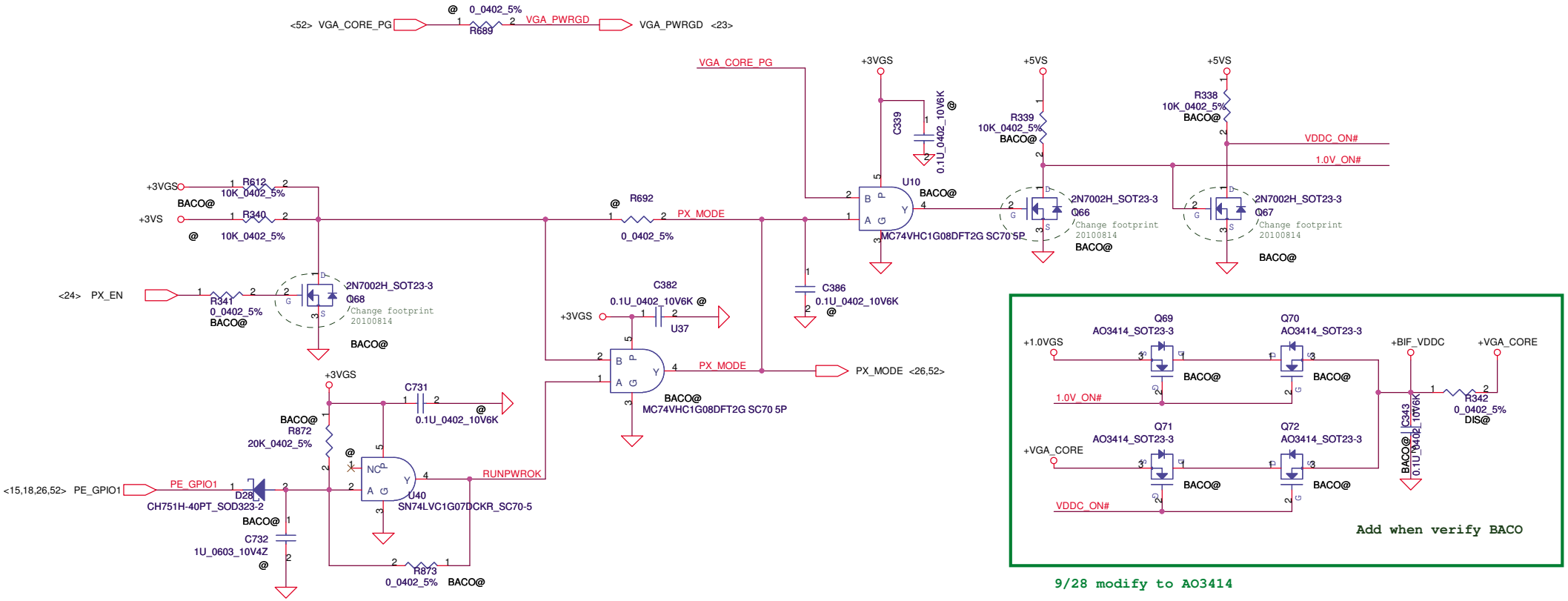
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: RobsonXT-S3 Main Generic/MSIC

Size: C | Document Number | Rev: 0.2

Date: Friday, November 26, 2010 | Sheet 24 of 59



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

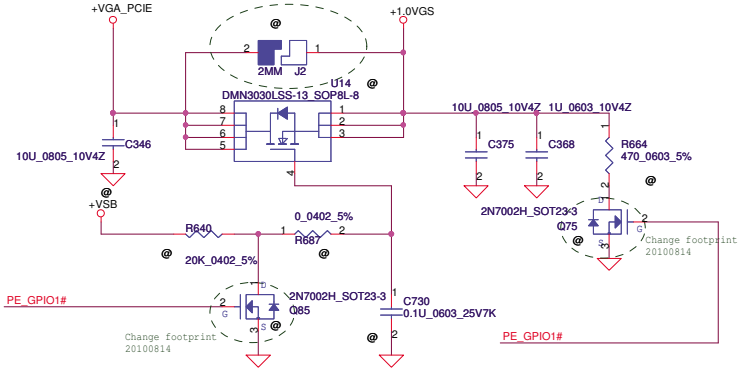
Title: PARK-S3 Main Generic/MSIC

Size	Document Number	Rev
B	LA-6751P	0.1

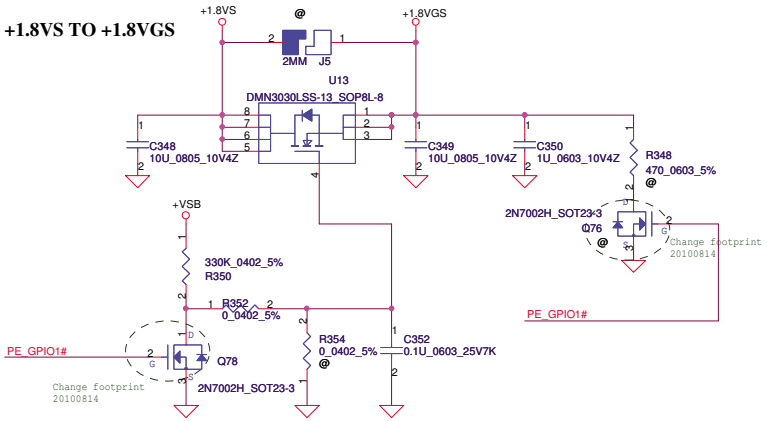
Date: Friday, November 26, 2010 Sheet 25 of 59

Short J2 for control sequence at PWM

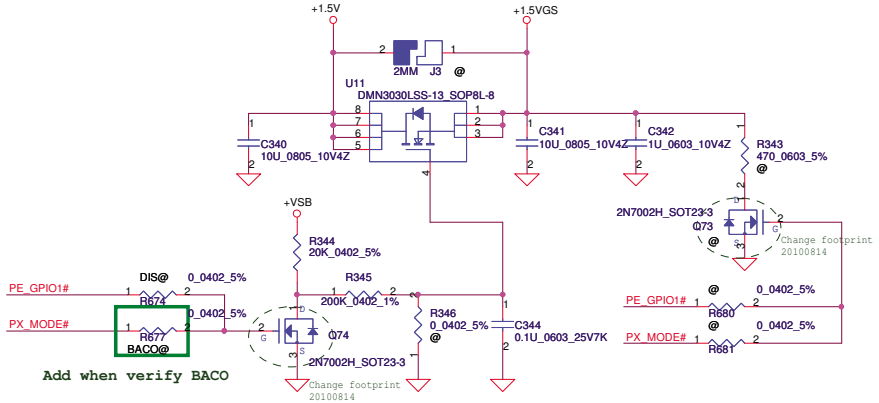
+VGA_PCIE TO +1.0VGS



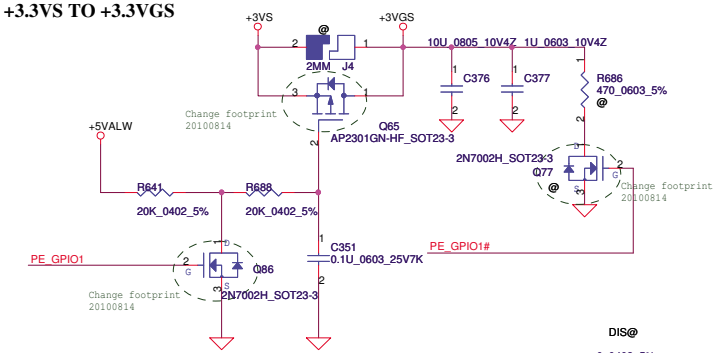
+1.8VS TO +1.8VGS

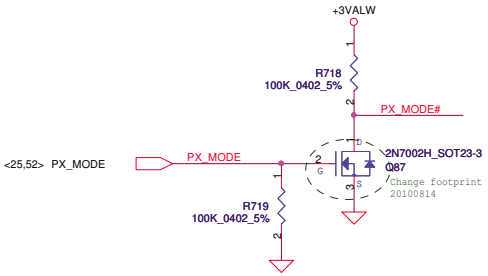


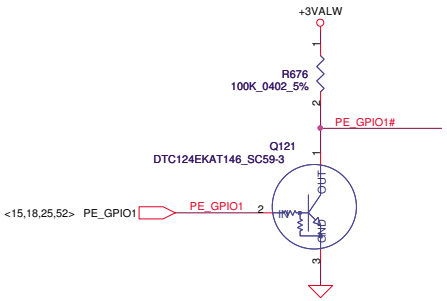
+1.5VS TO +1.5VGS



+3.3VS TO +3.3VGS







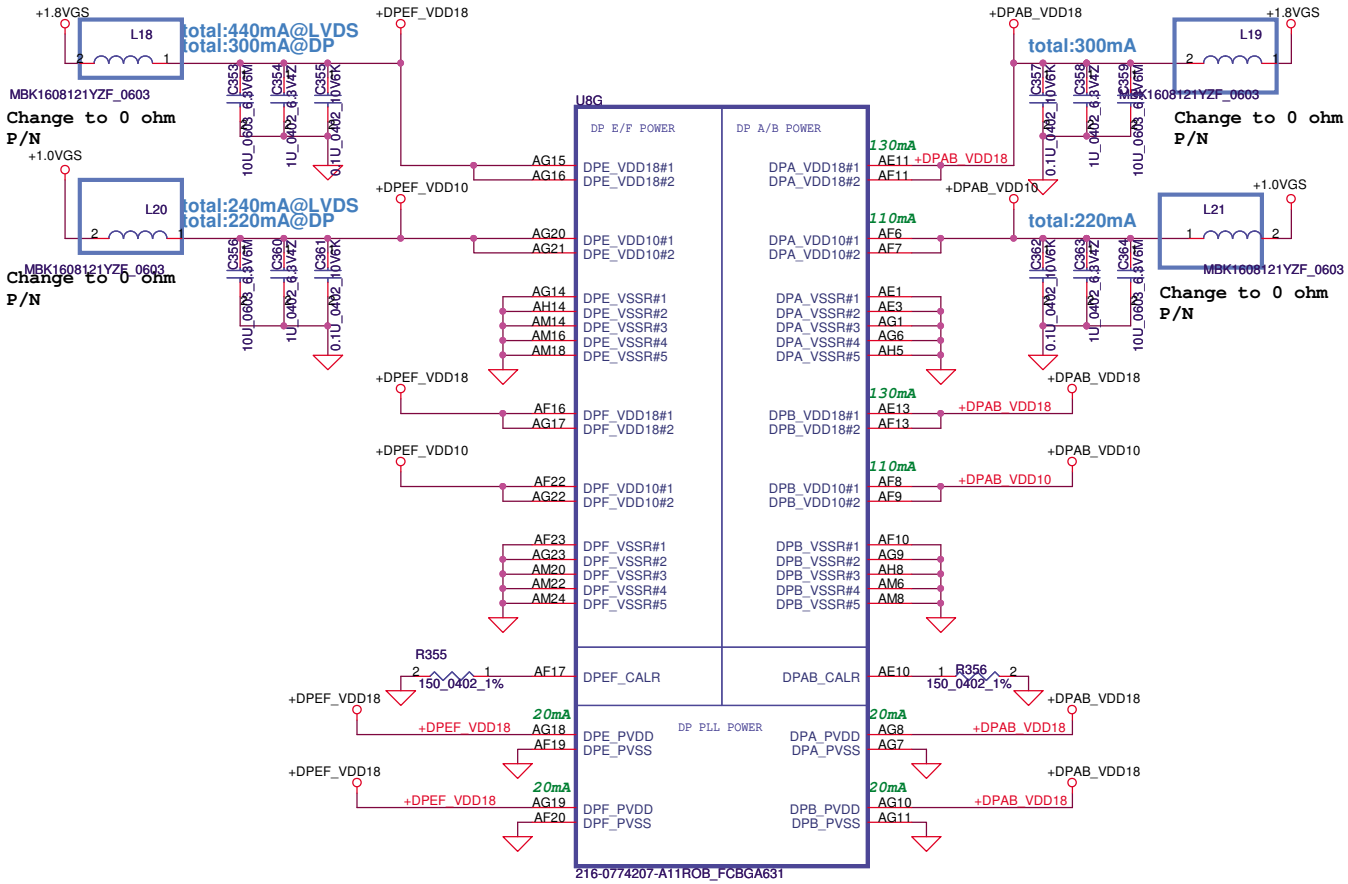
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PARK-S3 Main Generic/MSIC

Size: Custom | Document Number: LA-6751P | Rev: 0.1

Date: Friday, November 26, 2010 | Sheet 26 of 59



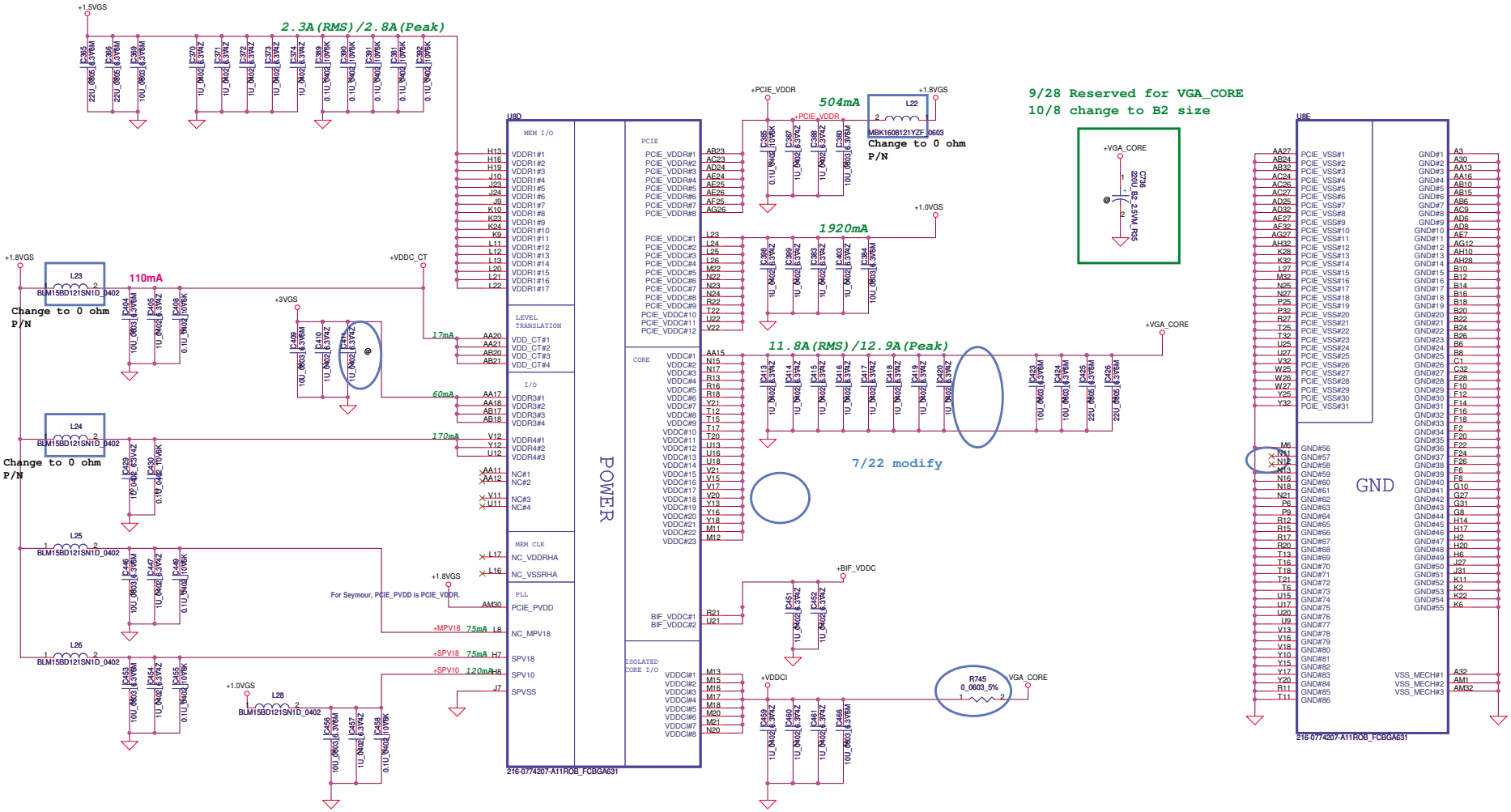
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: RobsonXT-S3 DP PWR

Size	Document Number	Rev
B		0.1

Date: Friday, November 26, 2010 Sheet 27 of 59



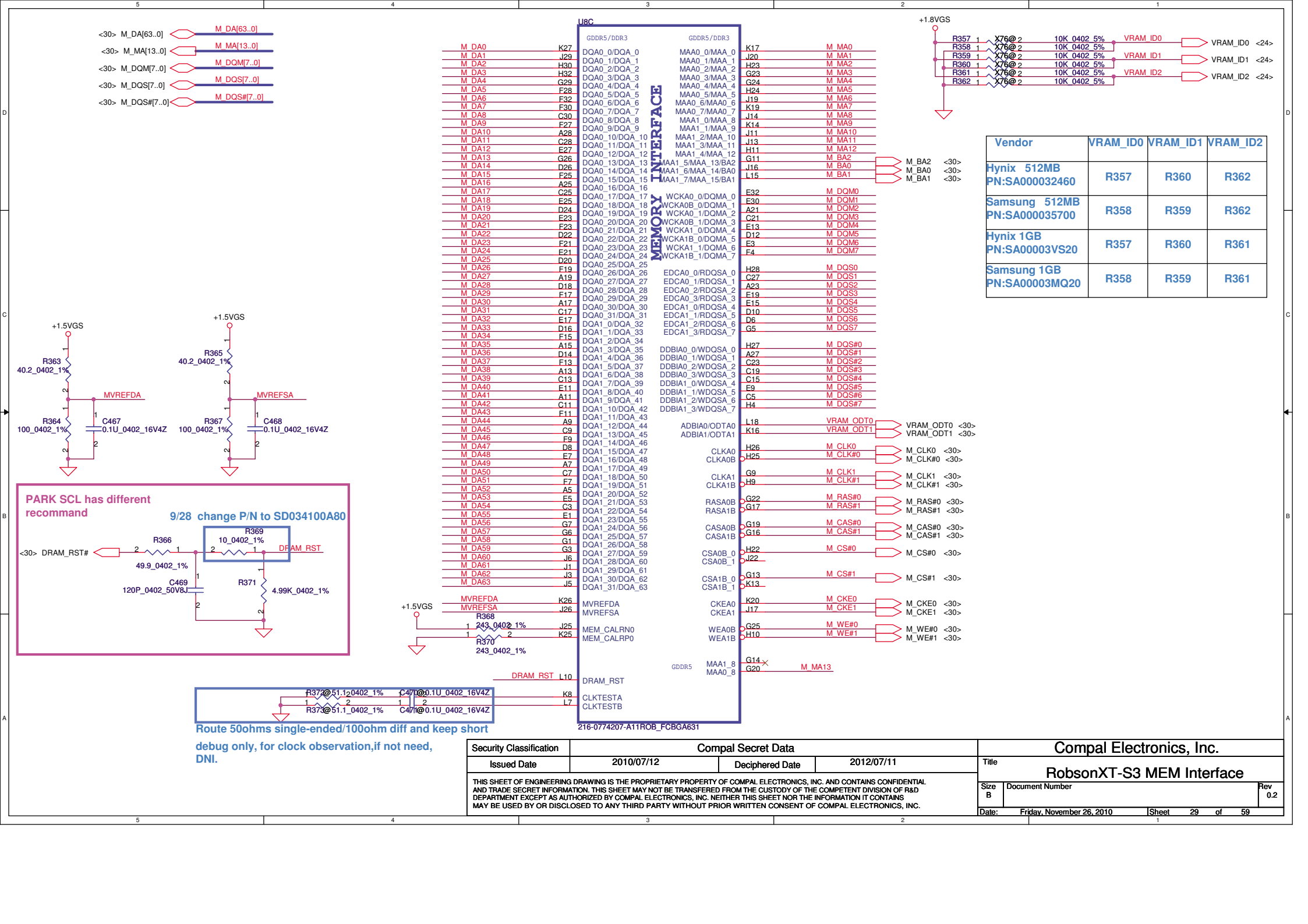
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: RobsonXT-S3 PWR/GND

Size	Document Number	Rev
C		0.2

Date: Friday, November 26, 2010 | Sheet 28 of 59



Vendor	VRAM_ID0	VRAM_ID1	VRAM_ID2
Hynix 512MB PN:SA000032460	R357	R360	R362
Samsung 512MB PN:SA000035700	R358	R359	R362
Hynix 1GB PN:SA00003VS20	R357	R360	R361
Samsung 1GB PN:SA00003MQ20	R358	R359	R361

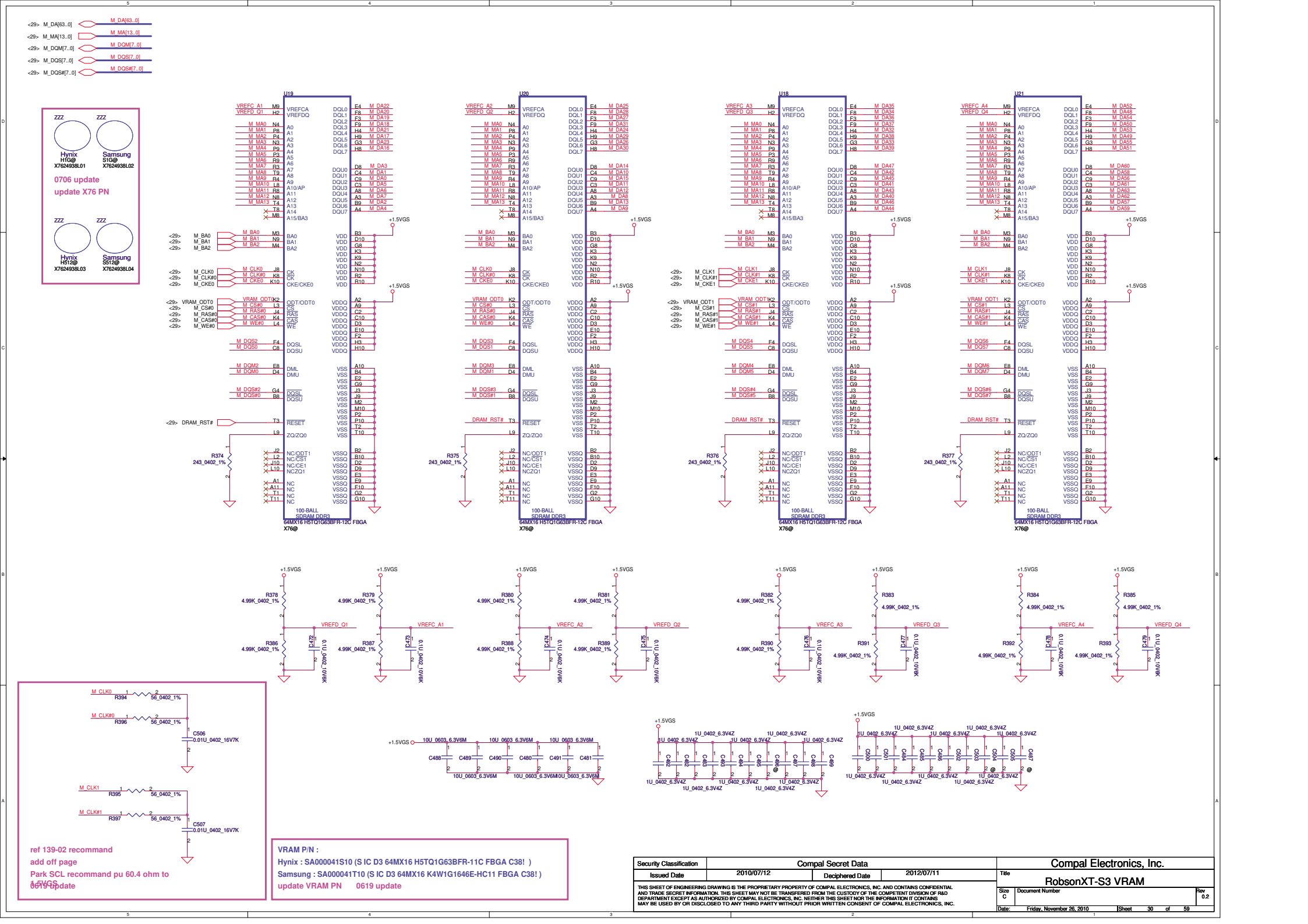
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: RobsonXT-S3 MEM Interface

Size	Document Number	Rev
B		0.2

Date: Friday, November 26, 2010 Sheet 29 of 59


M_DA[63..0]
M_MA[13..0]
M_DQM[7..0]
M_DQS[7..0]
M_DQS#[7..0]
Hynix H1G@ X7624938L01
Samsung S1G@ X7624938L02
0706 update
update X76 PN
Hynix H5I2@ X7624938L03
Samsung S5I2@ X7624938L04
U19
U20
U18
U21
100-BALL SDRAM DDR3
64MX16 H5TQT63BFR-12C FBGA
X76@
+1.5VGS
DRAM_RST#
R374 243_0402_1%
R375 243_0402_1%
R376 243_0402_1%
R377 243_0402_1%
R378 4.99K_0402_1%
R379 4.99K_0402_1%
R380 4.99K_0402_1%
R381 4.99K_0402_1%
R382 4.99K_0402_1%
R383 4.99K_0402_1%
R384 4.99K_0402_1%
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R391 4.99K_0402_1%
R392 4.99K_0402_1%
R393 4.99K_0402_1%
VREFD_Q1
VREFC_A1
VREFC_A2
VREFD_Q2
VREFC_A3
VREFD_Q3
VREFC_A4
VREFD_Q4
0.1U_0402_10V6K
M_CLK0
M_CLK#0
M_CLK1
M_CLK#1
R394 56_0402_1%
R396 56_0402_1%
R395 56_0402_1%
R397 56_0402_1%
C506 0.01U_0402_16V7K
C507 0.01U_0402_16V7K
10U_0603_6.3V6M
1U_0402_6.3V4Z
ref 139-02 recommand
add off page
Park SCL recommand pu 60.4 ohm to 1.5VGS
0619 update
VRAM P/N :
Hynix : SA000041S10 (S IC D3 64MX16 H5TQ1G63BFR-11C FBGA C38!)
Samsung : SA000041T10 (S IC D3 64MX16 K4W1G1646E-HC11 FBGA C38!)
update VRAM PN 0619 update
Security Classification
Compal Secret Data
Issued Date
2010/07/12
Deciphered Date
2012/07/11
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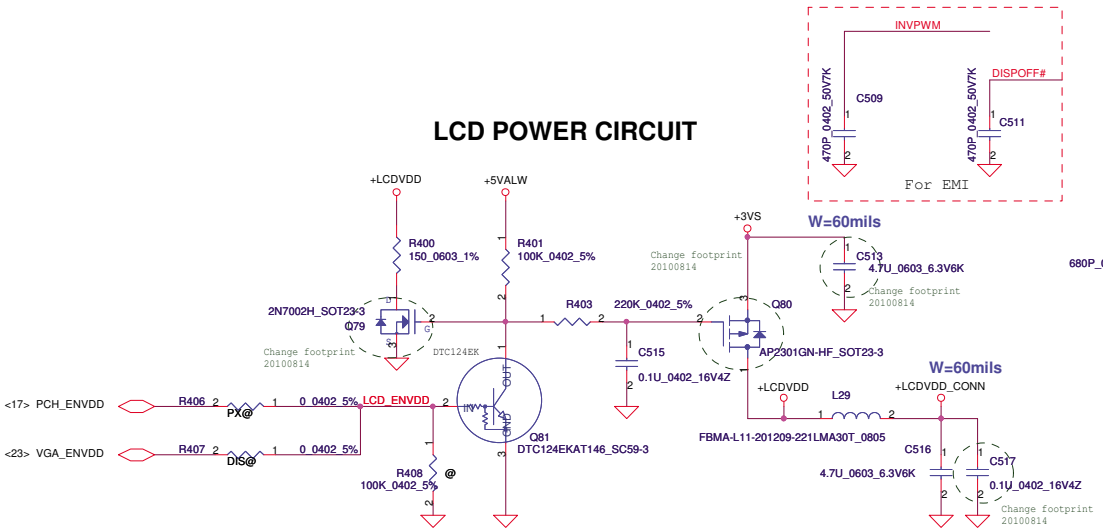
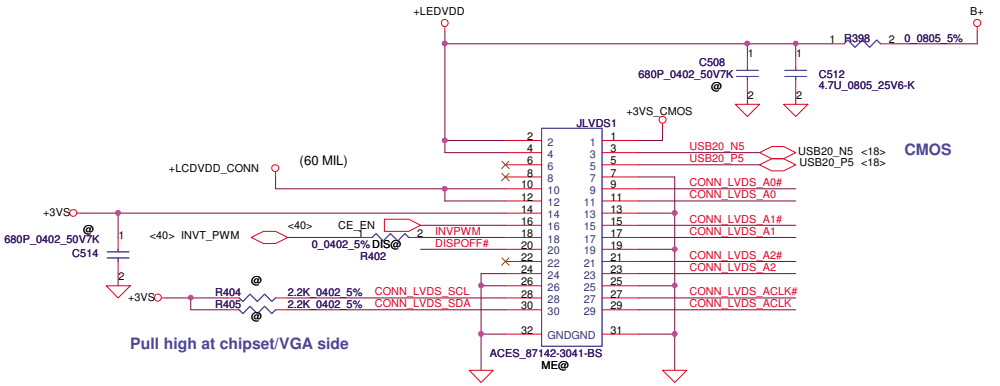
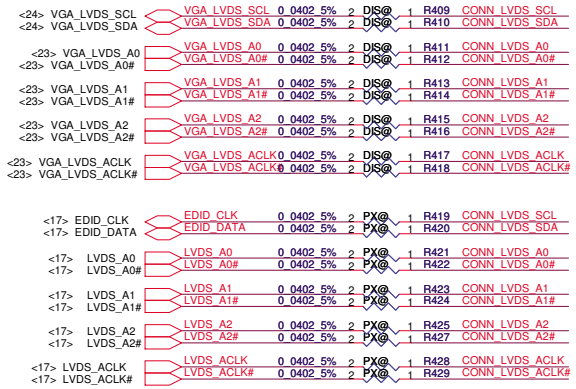
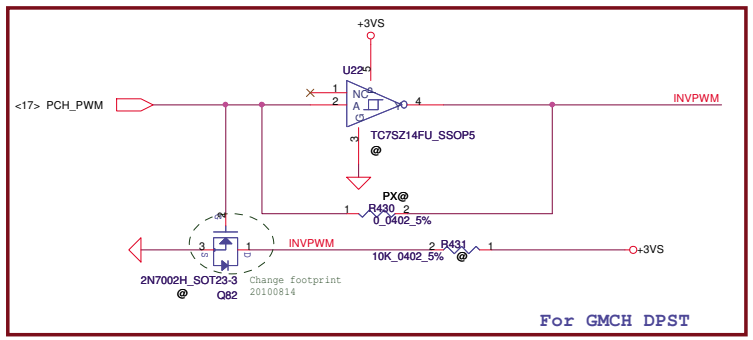
Compal Electronics, Inc.
Title
RobsonXT-S3 VRAM
Size C
Document Number
Rev 0.2
Date: Friday, November 26, 2010
Sheet 30 of 59

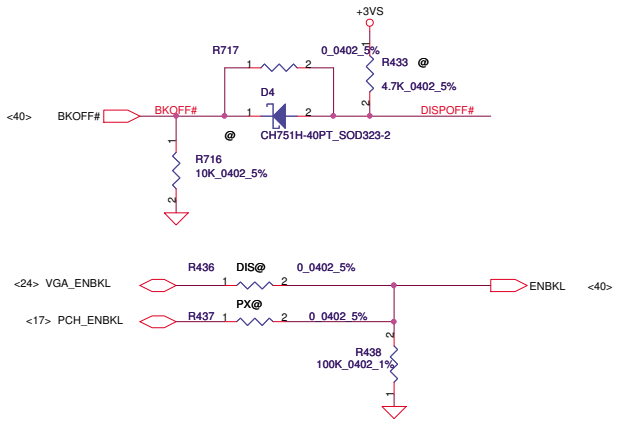
LCD POWER CIRCUIT

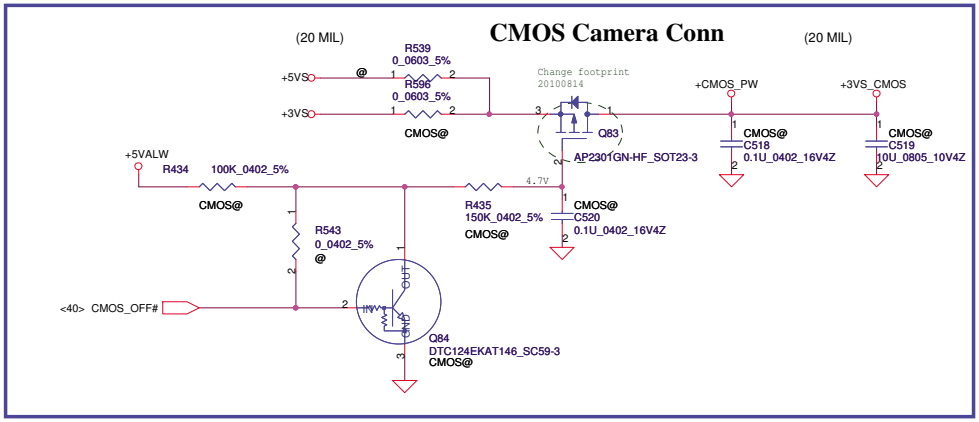








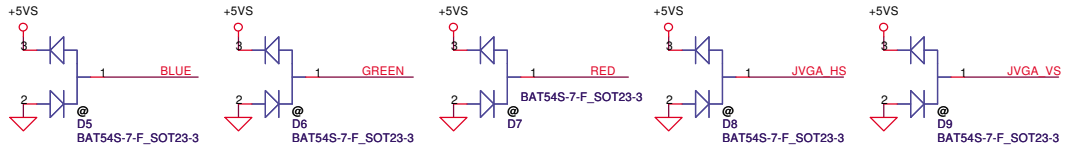




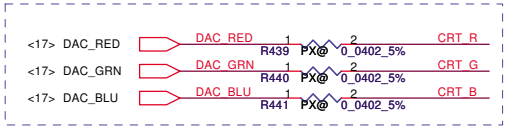
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.			
Title: LVDS/CAMERA			
Size: B	Document Number: LA-6751P		Rev: 0.2
Date: Friday, November 26, 2010	Sheet 31 of 59		

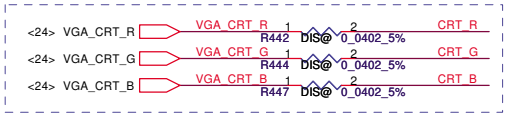
CRT Connector

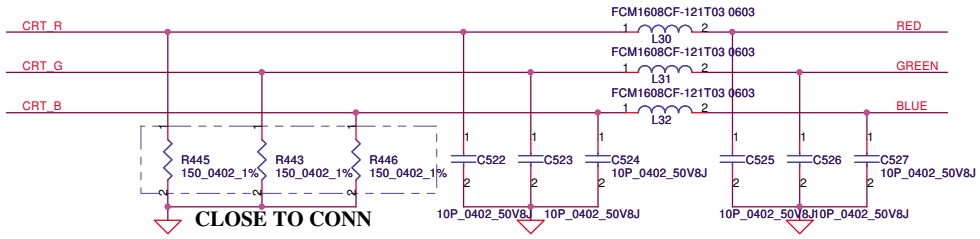


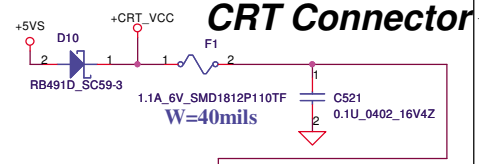
UMA only

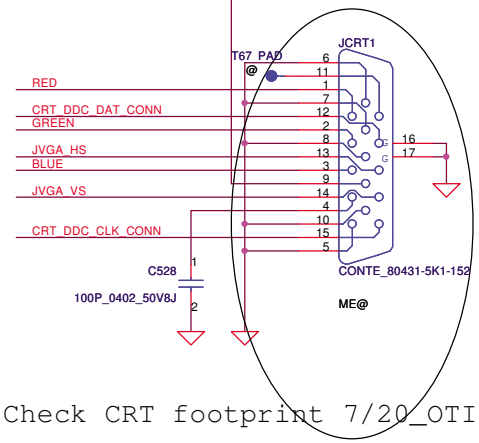


DIS only

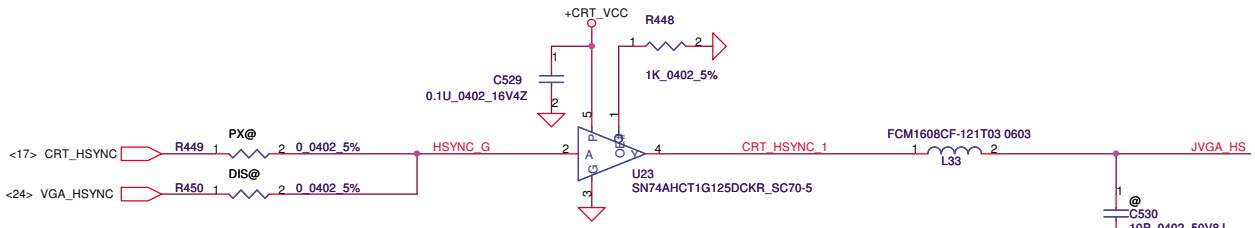


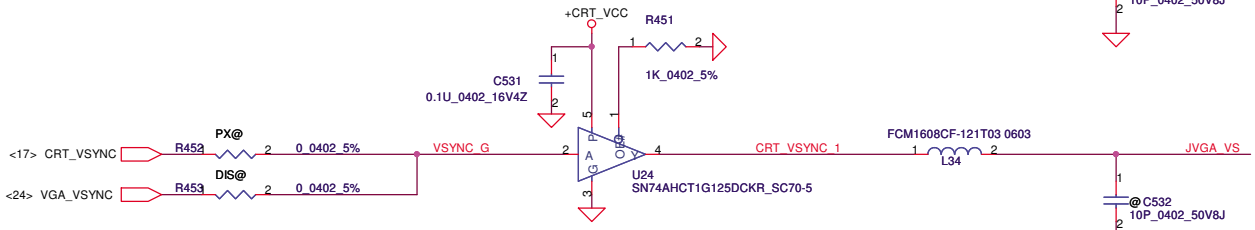






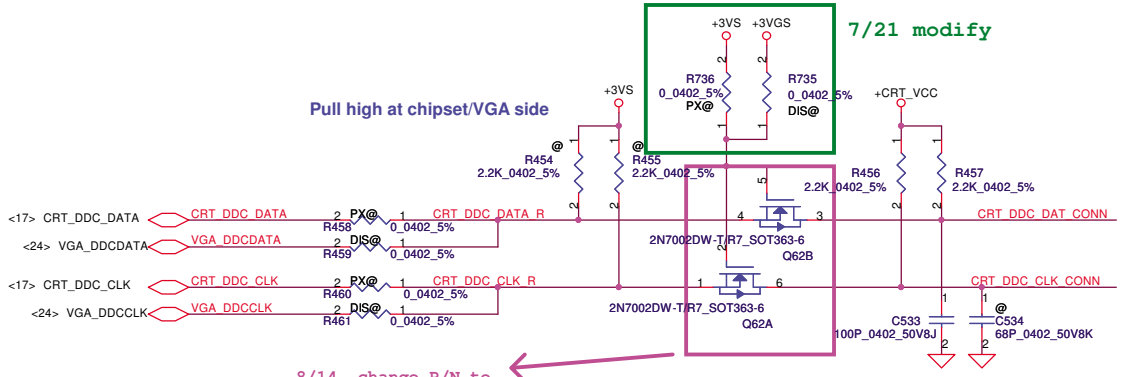
Check CRT footprint 7/20_OTIS





7/21 modify

Pull high at chipset/VGA side



8/14 change P/N to DMN66D0LDW-7_SOT363-6 (SB00000DH00)

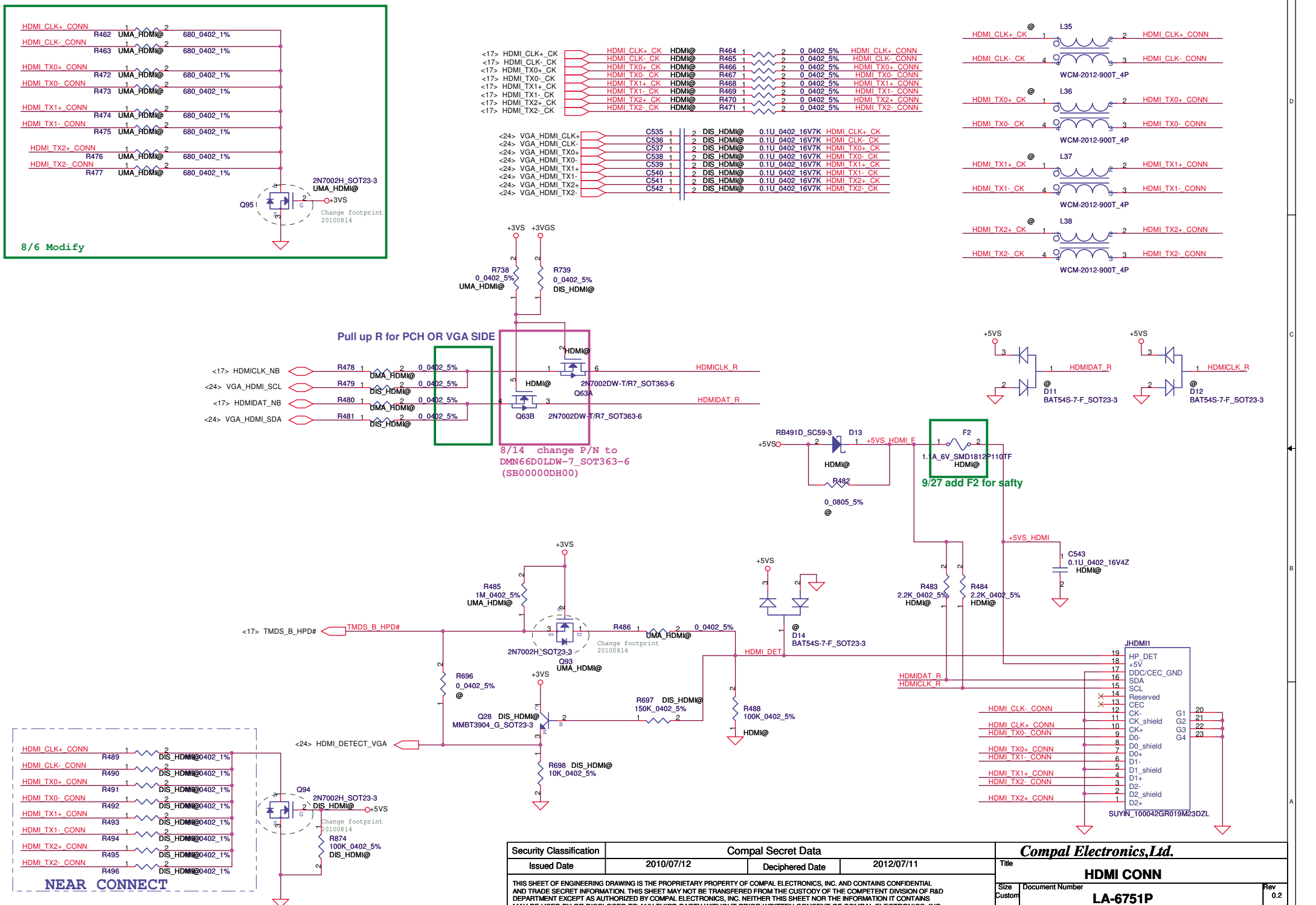
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

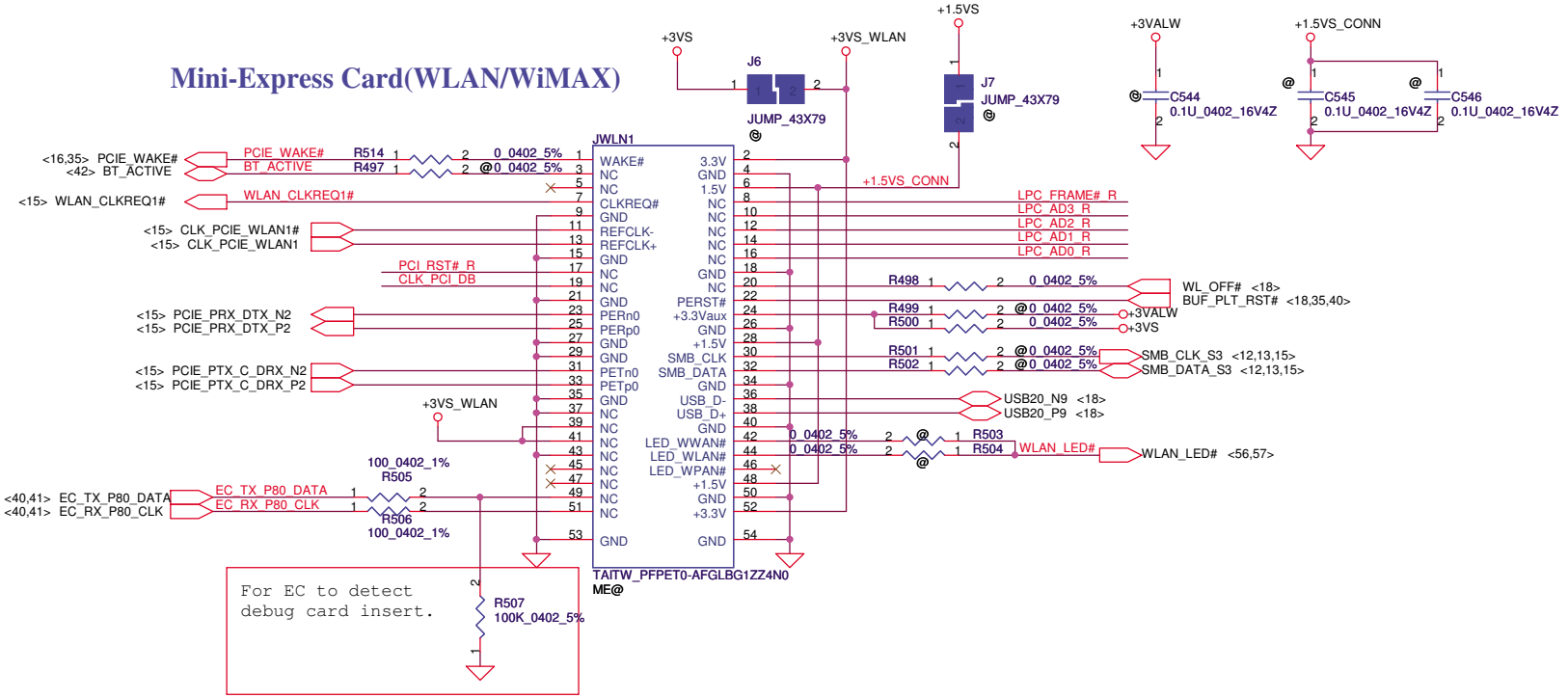
Title: CRT Connector

Size: Custom | Document Number: LA-6751P | Rev: 0.2

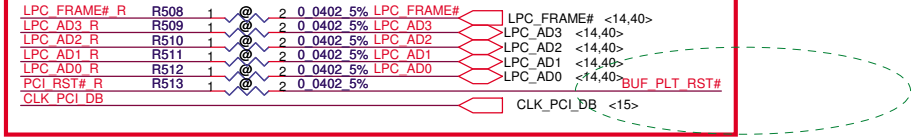
Date: Friday, November 26, 2010 | Sheet 32 of 59


8/6 Modify
Pull up R for PCH OR VGA SIDE
8/14 change P/N to DMN66D0LDW-7_SOT363-6 (SB00000DH00)
9/27 add F2 for safty
NEAR CONNECT
Compal Secret Data
Compal Electronics,Ltd.
HDMI CONN
LA-6751P
Issued Date 2010/07/12
Deciphered Date 2012/07/11
Date: Friday, November 26, 2010
Sheet 33 of 59

Mini-Express Card for WLAN/WiMAX(Half)



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



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: **Mini-Card/NEW Card/SIM**

Size	Document Number	Rev
	LA-6751P	0.2

Date: Friday, November 26, 2010 | Sheet 34 of 59

+3VALW

+3V_LAN

Layout Notice : Place as close chip as possible.

J8 JUMP_43X79

Atheros request can't disable LAN power

+1.7_VDDCT +1.7_LX Close together

L39 4.7UH_SIA4012-4R7M_20%

C549 1000P_0402_50V7K @ C548 0.1U_0402_16V4Z C547 10U_0805_10V4Z

Note: Place Close to LAN chip
L39 DCR< 0.15 ohm
Rate current > 1A

Close to Pin40

Power On strapping

Pin	Description	Chip Default
LED0	H:Over Clock Enable L:Over Clock Disable *	H
LED2	H:SWR Switch mode regulator Select * AR8151 Pin23=LED2. AR8152, Pin23 is CLKREQ	--

U26 8152@

S IC AR8152-AL1E QFN 40P E-LAN CTRL

Place Close to Chip

U26 LED0,1,2 intel Pull UP

Atheros 8151-AL1A

<15> PCIE_PRX_DTX_N1 C553 0.1U_0402_16V7K PCIE_PRX_C_DTX_N 29 TX_N
<15> PCIE_PRX_DTX_P1 C552 0.1U_0402_16V7K PCIE_PRX_C_DTX_P 30 TX_P
<15> PCIE_PTX_C_DRX_N1 36 RX_N
<15> PCIE_PTX_C_DRX_P1 35 RX_P
<15> CLK_PCIE_LAN# R517 0_0402_5% CLK_PCIE_LAN#_C 32 REFCLK_N
<15> CLK_PCIE_LAN R518 0_0402_5% CLK_PCIE_LAN_C 33 REFCLK_P
<18,34,40> BUF_PLT_RST# BUF_PLT_RST# 2 PERST#
<16,34> PCIE_WAKE# R519 @0_0402_5% PCIE_WAKE#_R 3 WAKE#
<40> LAN_WAKE# R521 0_0402_5%
25 SMCLK
26 SMDATA
28 TEST_RST
27 TESTMODE
C559 8152@ 0.1U_0402_16V4Z LAN_XTALO LAN_XTALI 7 XTLO 8 XTLI
<15> CLKREQ_LAN# R525 GIGA@ 0_0402_5% CLKREQ_LAN#_R 4 CLKREQ#
+1.1_AVDDL 13 AVDDL
+1.1_AVDDL 19 AVDDL
+1.1_AVDDL 31 AVDDL
+1.1_AVDDL 34 AVDDL
+1.1_AVDDL 6 AVDDL_REG
41 GND
AR8151-AL1A_QFN40_5X5
GIGA@

C564 GIGA@ 0.1U_0402_16V4Z Near Pin13
C565 GIGA@ 0.1U_0402_16V4Z Near Pin19
C566 0.1U_0402_16V4Z Near Pin31
C567 0.1U_0402_16V4Z Near Pin34
C568 1U_0402_6.3V4Z C569 0.1U_0402_16V4Z Near Pin6

LAN_XTALI LAN_XTALO Y4 25MHZ_20PF_7A25000012
C578 27P_0402_50V8J C579 27P_0402_50V8J

LED_0 38 ACTIVITY
LED_1 39 LAN_LINK#
LED_2 23

no overclocking
PD 5.1K
R515 5.1K_0402_5%

ACTIVITY <36>
LAN_LINK# <36> CLKREQ_LAN#
1 8152@ 2 R516 0_0402_5%

TRXN0 12 MDI0- <36>
TRXP0 11 MDI0+ <36>
TRXN1 15 MDI1- <36>
TRXP1 14 MDI1+ <36>
TRXN2 18 MDI2- <36>
TRXP2 17 MDI2+ <36>
TRXN3 21 MDI3- <36>
TRXP3 20 MDI3+ <36>

RBIAS 10 LAN_RBIAS R522 2.37K_0402_1%

Close Pin 10
C554 & C555 Close pin1 < 200mil
C557 & C558 Close pin < 400mil

VDD33 1 +3V_LAN
LX 40 +1.7_LX
VDDCT 5 +1.7_VDDCT C561 0.1U_0402_16V4Z
DVDDL 24 +1.1_DVDDL
DVDDL_REG 37 +1.1_DVDDL
AVDDH 16 +2.7_AVDDH
AVDDH 22 +2.7_AVDDH
AVDDH_REG 9 +2.7_AVDDH

C571 0.1U_0402_16V4Z C570 1U_0402_6.3V4Z C572 0.1U_0402_16V4Z Near Pin9
C573 GIGA@ 0.1U_0402_16V4Z Near Pin22
C563 0.1U_0402_16V4Z C582 1U_0402_6.3V4Z Near Pin16
C580 0.1U_0402_16V4Z Near Pin37
Near Pin24

+3V_LAN
C554 0.1U_0402_16V4Z C555 1U_0402_6.3V4Z C557 10U_0805_10V4Z C558 @ 10U_0805_10V4Z

Place Close to LAN chip

MDI0+ R526 49.9_0402_1% 49.9_0402_1% C574 1000P_0402_50V7K
MDI0- R527 49.9_0402_1% 49.9_0402_1% C575 0.1U_0402_16V4Z
MDI1+ R528 49.9_0402_1% 49.9_0402_1% C576 1000P_0402_50V7K
MDI1- R529 49.9_0402_1% 49.9_0402_1% C577 0.1U_0402_16V4Z
MDI2+ R530 GIGA@ 49.9_0402_1% 49.9_0402_1% C580 1000P_0402_50V7K
MDI2- R531 GIGA@ 49.9_0402_1% 49.9_0402_1% C581 0.1U_0402_16V4Z GIGA@
MDI3+ R532 GIGA@ 49.9_0402_1% 49.9_0402_1% C582 1000P_0402_50V7K
MDI3- R533 GIGA@ 49.9_0402_1% 49.9_0402_1% C583 0.1U_0402_16V4Z GIGA@

Note 1 : 8152 no mount MDI3+, MDI3-, MDI2-, MDI2+ resister and cap

Note 2 : C574, C576, C580, C582, reserved for EMI.

	Pin4	Configure R525	Configure C559		Pin23	Configure R516
AR8152	VDDCT_REG		*		CLKREQn	*
AR8151	CLKREQn	*			LED[2]	

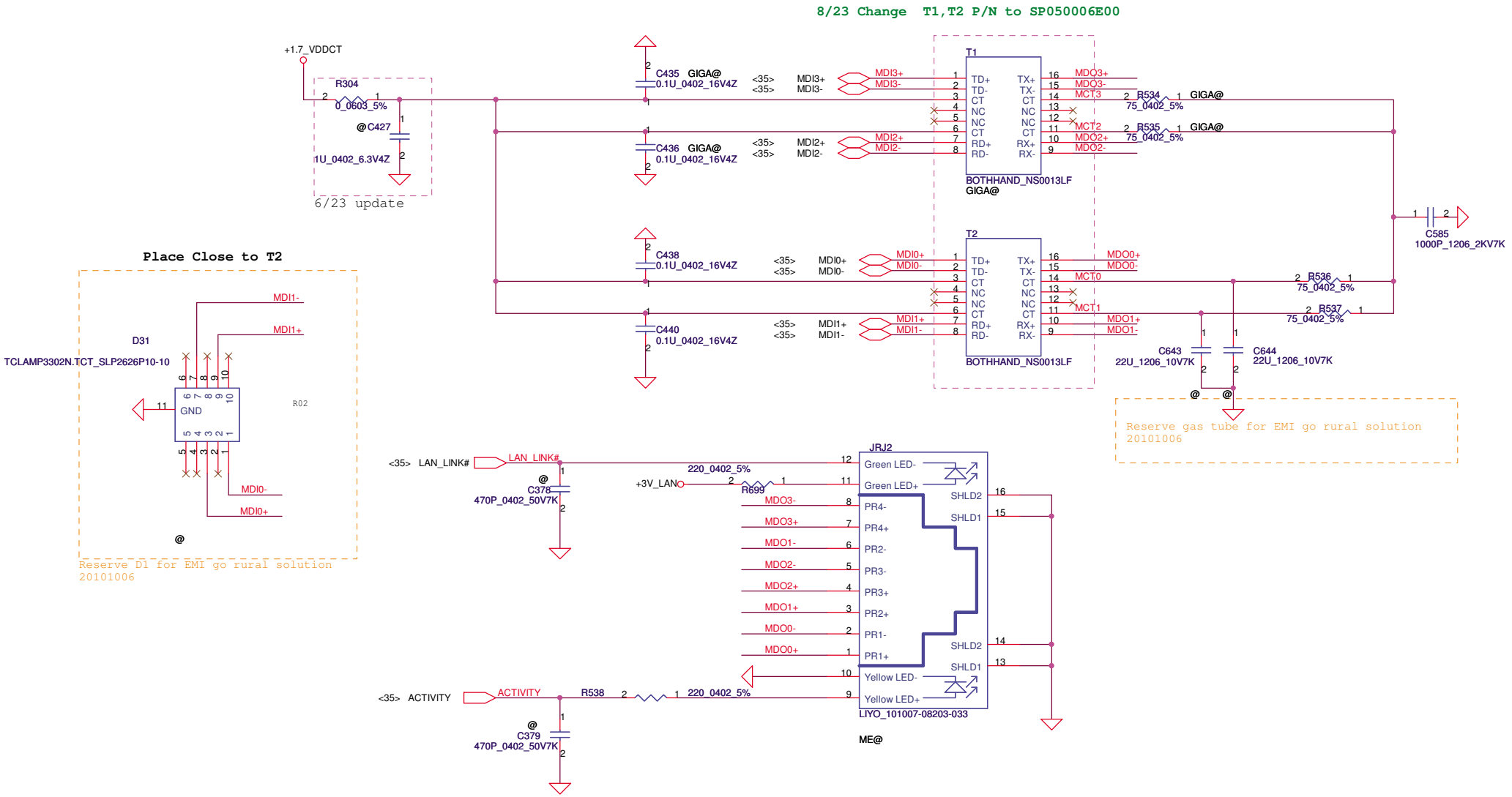
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: LAN-AR8151/8152

Size: Custom | Document Number: LA-6751P | Rev: 0.1

Date: Friday, November 26, 2010 | Sheet 35 of 59



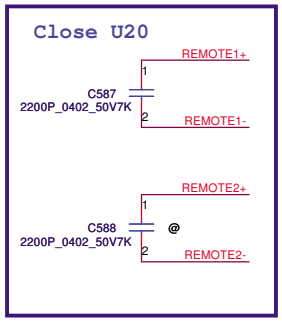
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

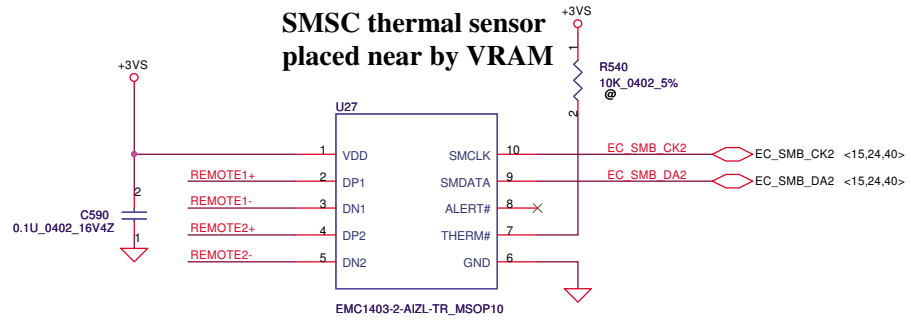
Compal Electronics, Inc.

Title: **LAN_Transformer**

Size	Document Number	Rev
B	LA-6751P	0.2

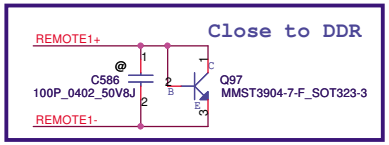
Date: Friday, November 26, 2010 Sheet 36 of 59

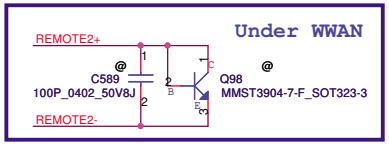




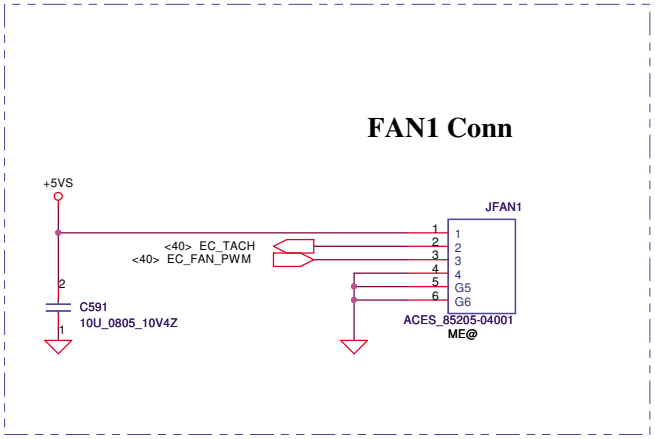
Address 1001_101xb

10/5 change P/N to SA000046C00





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



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

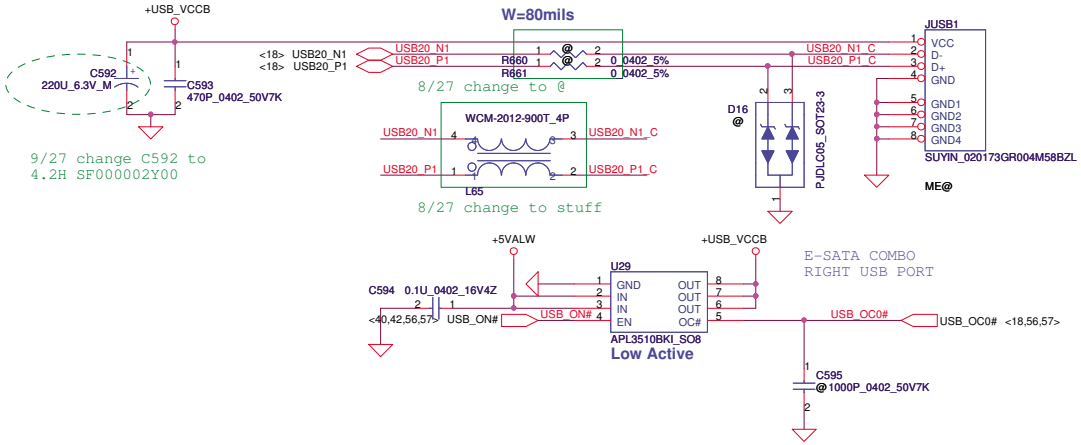
Compal Electronics,Ltd.

Title: **EMC1403_Thermal sensor/FAN**

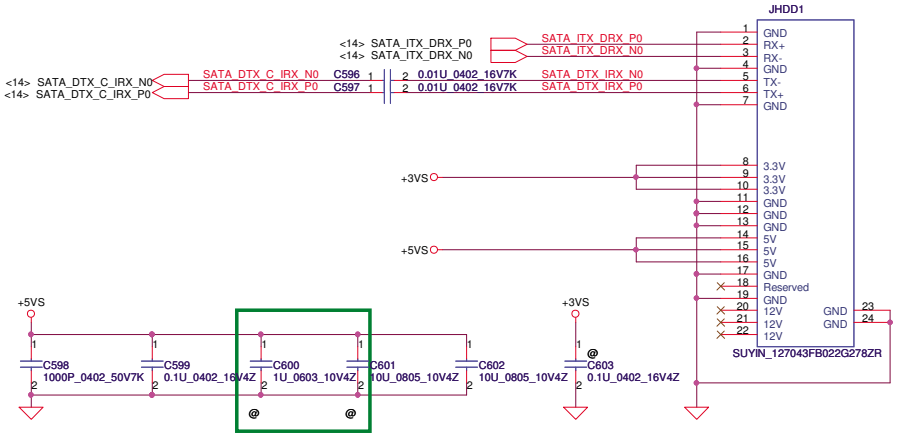
Size	Document Number	Rev
Custom	LA-6751P	0.2

Date: Friday, November 26, 2010 Sheet 37 of 59

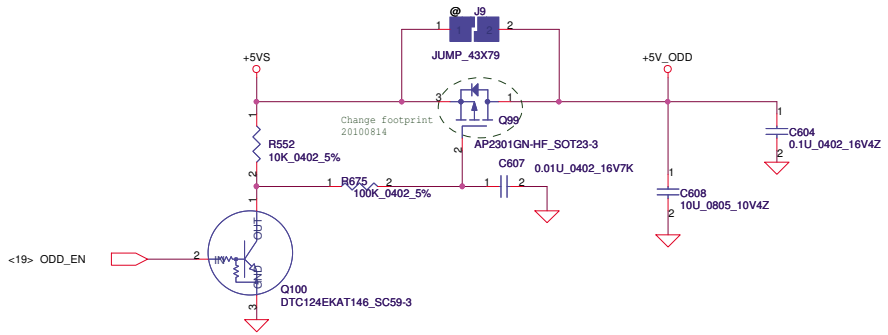
Left USB Conn.



SATA HDD Conn.



ODD Power Control



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: **HDD/ODD Connector**

Size	Document Number	Rev
B	LA-6751P	0.2

Date: Friday, November 26, 2010 | Sheet 38 of 59

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).

9/27 Update U30 P/N to SA00003K410

EMI

HDA_RST_AUDIO#
HDA_SYNC_AUDIO
HDA_SDOUT_AUDIO_R
33_0402_5% R556
HDA_BITCLK_AUDIO
22P_0402_50V8J C309
22P_0402_50V8J C310
22P_0402_50V8J C311
22P_0402_50V8J C312

6/24 change +3VS

To support Wake-on-Jack or Wake-on-Ring, the CODEC VAUX_3.3 & VDD_IO pins must be powered by a rail that is not removed unless AC power is removed.
*DSH page42 has more detail.

AVDD_3.3 pinis output of internal LDO. NOT connect to external supply.

9/28 Change to R879 for 21Z

Layout Note:Path from +5VS to LPWR_5.0 RPWR_5.0 must be very low resistance (<0.01 ohms)

Please bypass caps very close to device.

10K only needed if supply to VAUX_3.3 is removed during system re-start.

8/10 update

U30
CX20671-21Z_QFN40_6X6

Internal MIC
External MIC
Headphone
Internal SPEAKER

Sense resistors must be connected same power that is used for VAUX_3.3

Changed from 5.1ohm to 15ohm for "zi zi"noise.

EAPD active low
0=power down ex AMP
1=power up ex AMP

8/10 update for vendor suggestion

wide 20MIL

8/24 update

EC Beep
ICH Beep
PC Beep
10/08 update

FBMA-L11-160808-121LMA30T

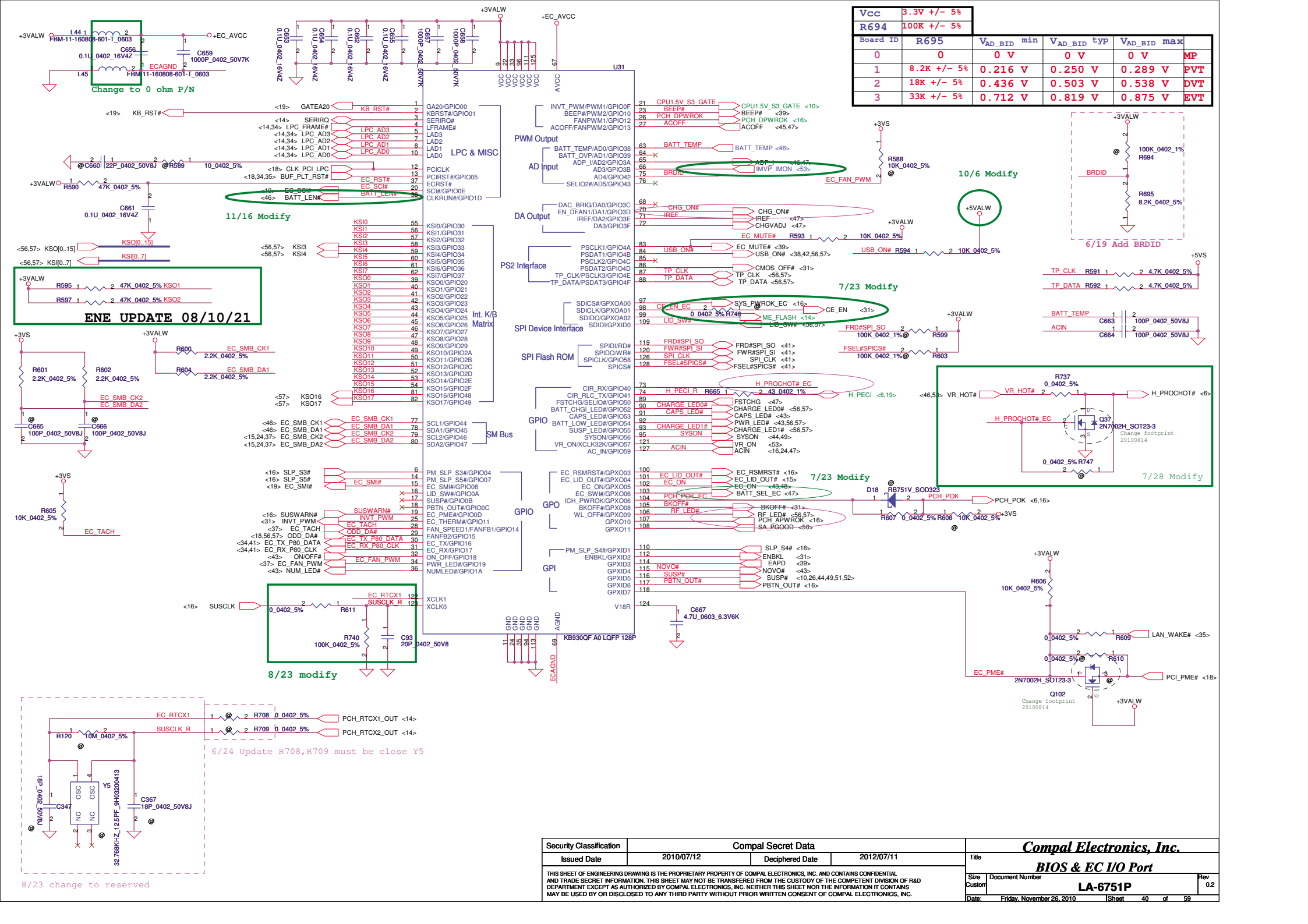
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics,Ltd.

Title: CX20671 Codec

Size: C | Document Number: LA-6751P | Rev: 0.1

Date: Friday, November 26, 2010 | Sheet 39 of 59


Vcc 3.3V +/- 5%
R694 100K +/- 5%
Board ID | R695 | VAD_BID min | VAD_BID typ | VAD_BID max
0 | 0 | 0 V | 0 V | 0 V | MP
1 | 8.2K +/- 5% | 0.216 V | 0.250 V | 0.289 V | PVT
2 | 18K +/- 5% | 0.436 V | 0.503 V | 0.538 V | DVT
3 | 33K +/- 5% | 0.712 V | 0.819 V | 0.875 V | EVT
Change to 0 ohm P/N
11/16 Modify
ENE UPDATE 08/10/21
8/23 modify
10/6 Modify
6/19 Add BRDID
7/23 Modify
7/28 Modify
6/24 Update R708,R709 must be close Y5
8/23 change to reserved
U31
KB930QF A0 LQFP 128P
LPC & MISC
PWM Output
AD Input
DA Output
PS2 Interface
Int. K/B Matrix
SPI Device Interface
SPI Flash ROM
GPIO
SM Bus
GPO
GPI
Security Classification: Compal Secret Data
Issued Date: 2010/07/12
Deciphered Date: 2012/07/11
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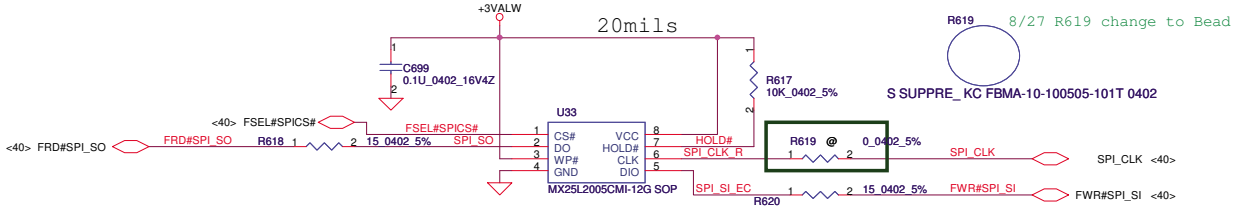
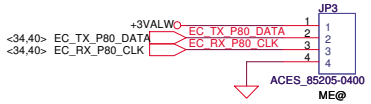
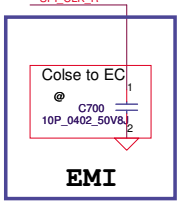
Compal Electronics, Inc.
Title: BIOS & EC I/O Port
Size: Custom
Document Number: LA-6751P
Rev: 0.2
Date: Friday, November 26, 2010
Sheet 40 of 59

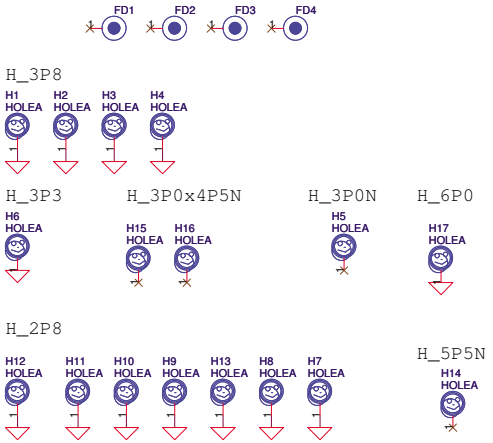
FOR EC 128KB SPI ROM
(150mil PACKAGE)
SA00003FL10
SA00003JD00



EC DEBUG PORT

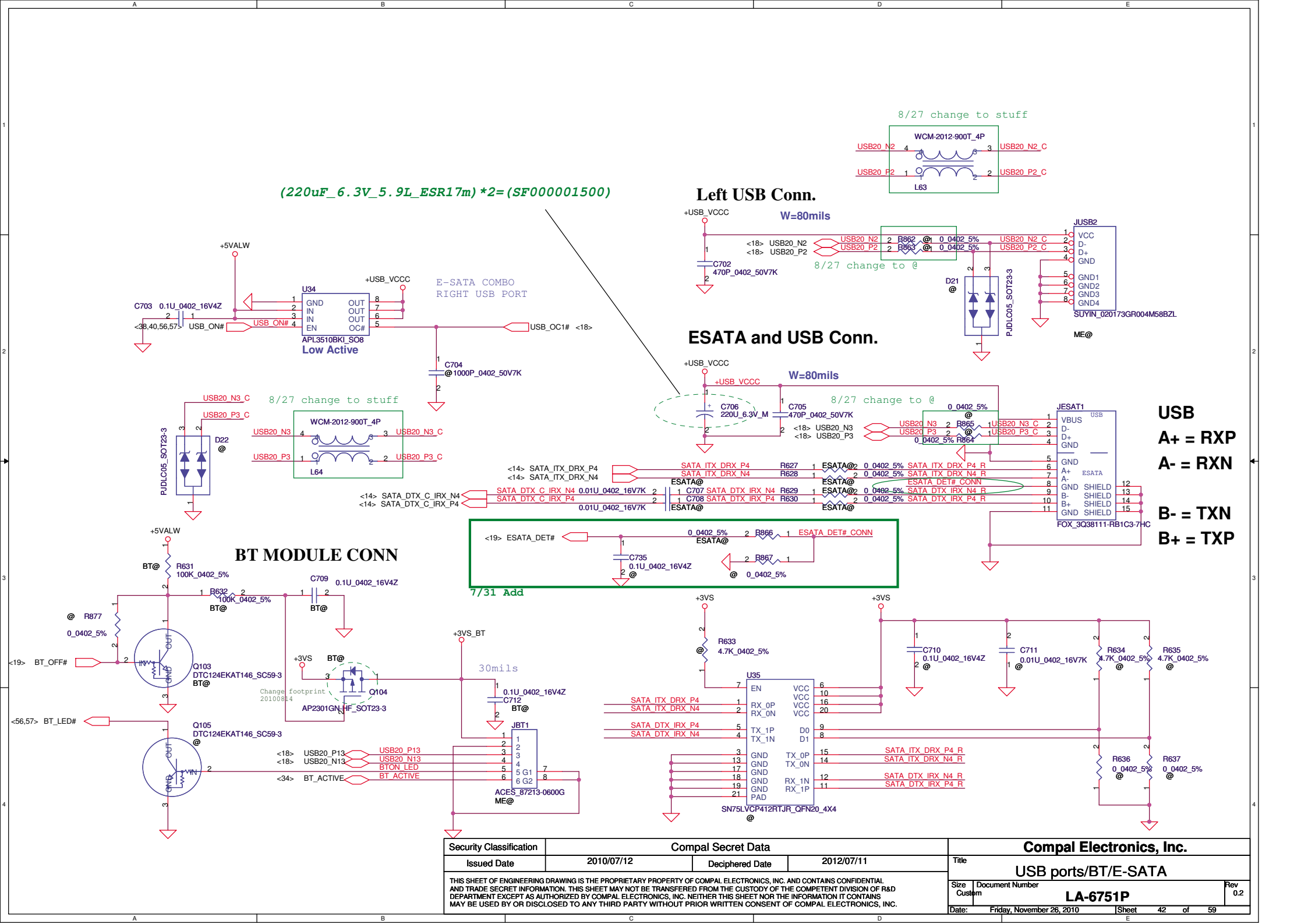






Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.			
Title	LED/EC SPI ROM		
Size B	Document Number LA-6751P		Rev 0.2
Date: Friday, November 26, 2010	Sheet 41 of 59		



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

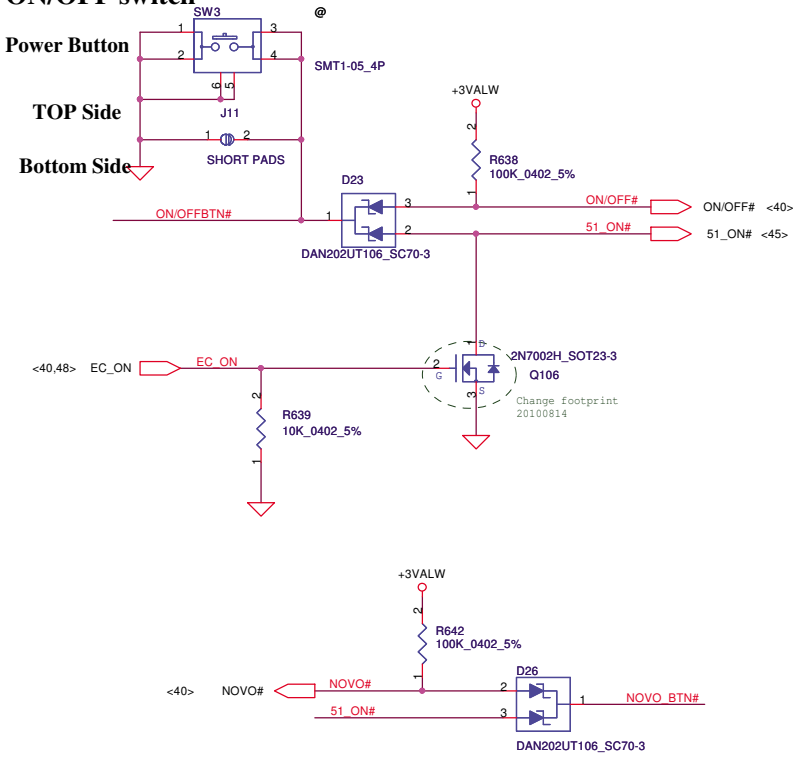
Compal Electronics, Inc.

Title: USB ports/BT/E-SATA

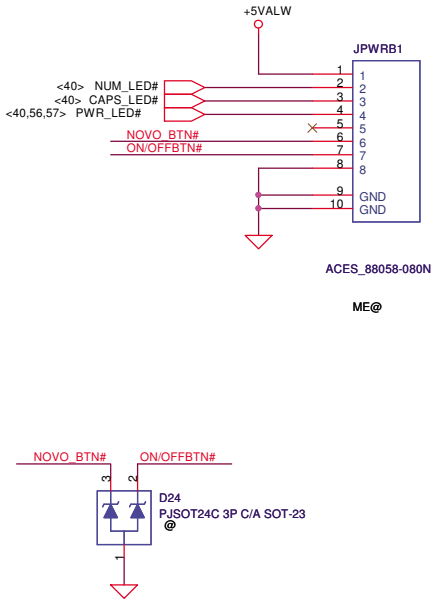
Size	Document Number	Rev
Custom	LA-6751P	0.2

Date: Friday, November 26, 2010 | Sheet 42 of 59

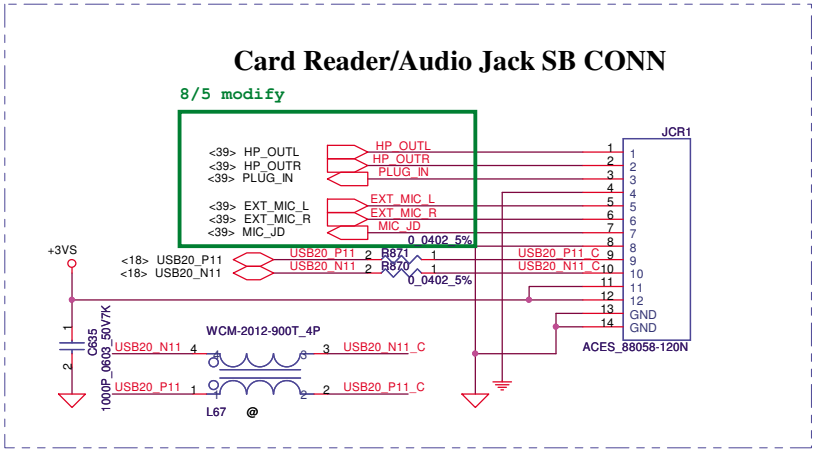
ON/OFF switch



Power Bottom Board Conn. 8pin



Card Reader/Audio Jack SB CONN



EMI REQUEST 1ST = SCA00000E00
2ST = SCA00000R00

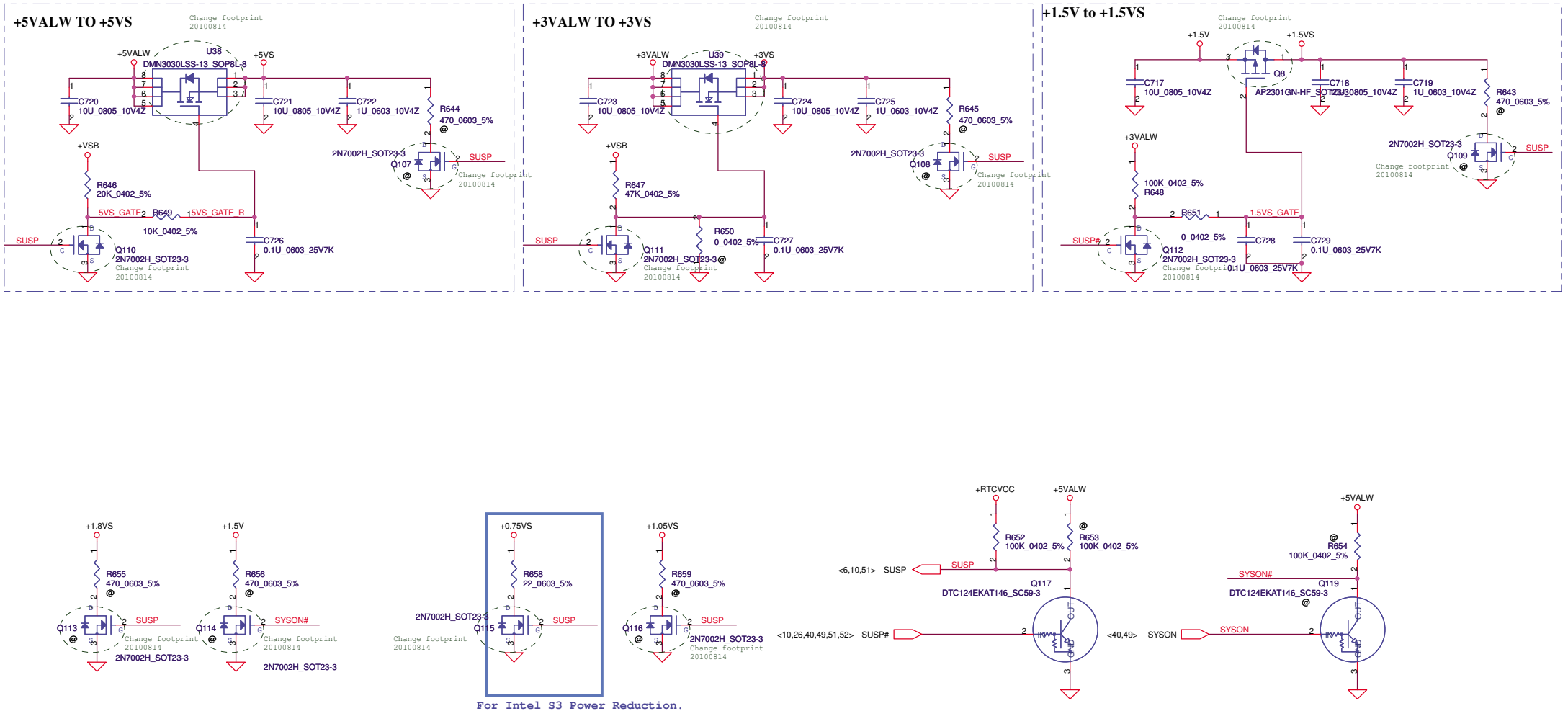
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics,Ltd.

Title: **other IO connector**

Size	Document Number	Rev
Custom	LA-6751P	0.2

Date: Friday, November 26, 2010 | Sheet 43 of 59



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

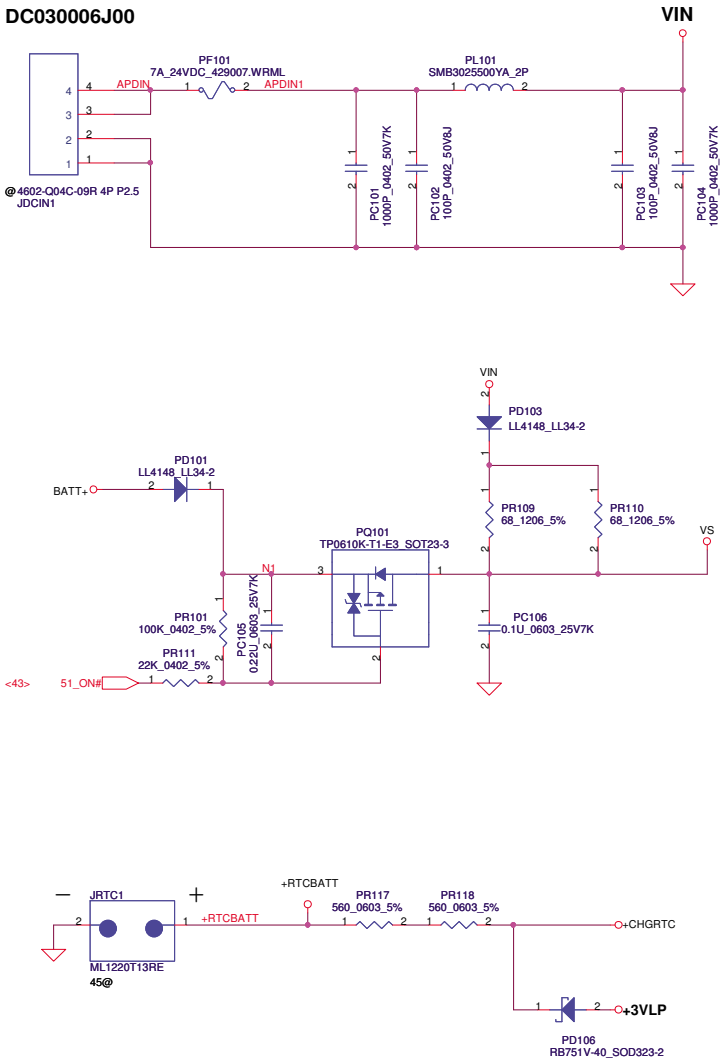
Compal Electronics, Inc.

Title: DC Interface

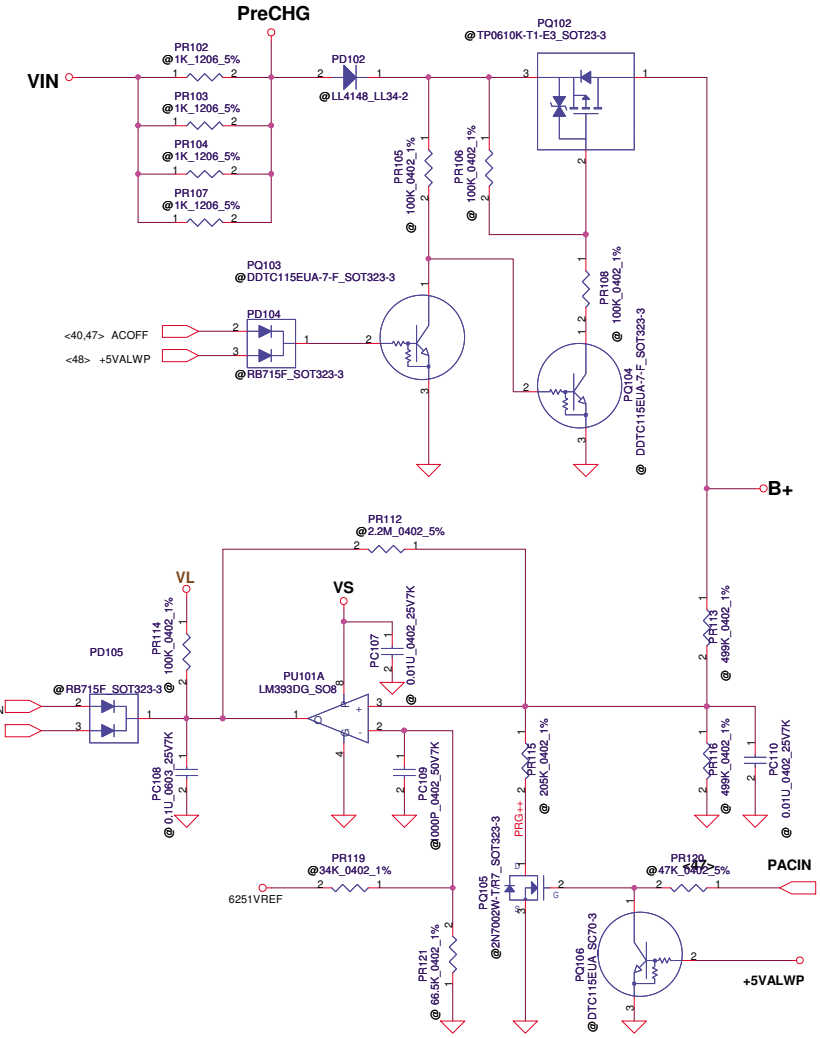
Size	Document Number	Rev
Custom	LA-6751P	0.2

Date: Friday, November 26, 2010 Sheet 44 of 59

DC030006J00



Precharge detector
15.97V/14.84V FOR ADAPTOR



ACIN

Precharge detector	Min.	typ.	Max.
L-->H	14.991V	15.381V	15.782V
H-->L	13.860V	14.247V	14.621V

BATT ONLY

Precharge detector	Min.	typ.	Max.
L-->H	7.196V	7.349V	7.505V
H-->L	6.138V	6.214V	6.056V

Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2010/12/31

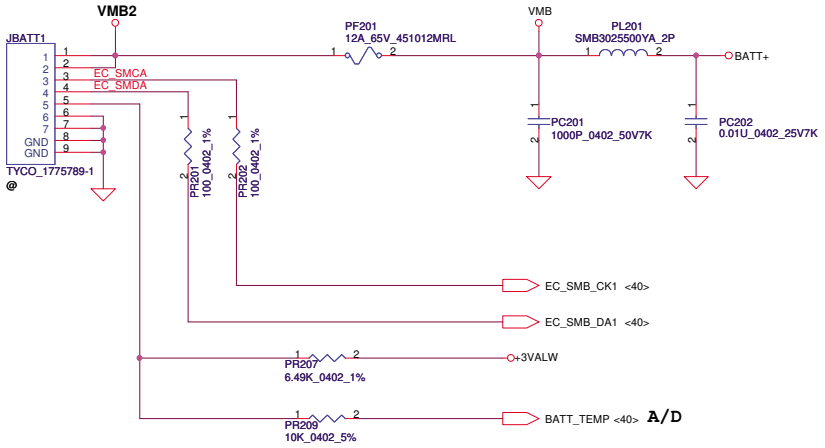
Compal Electronics, Inc.

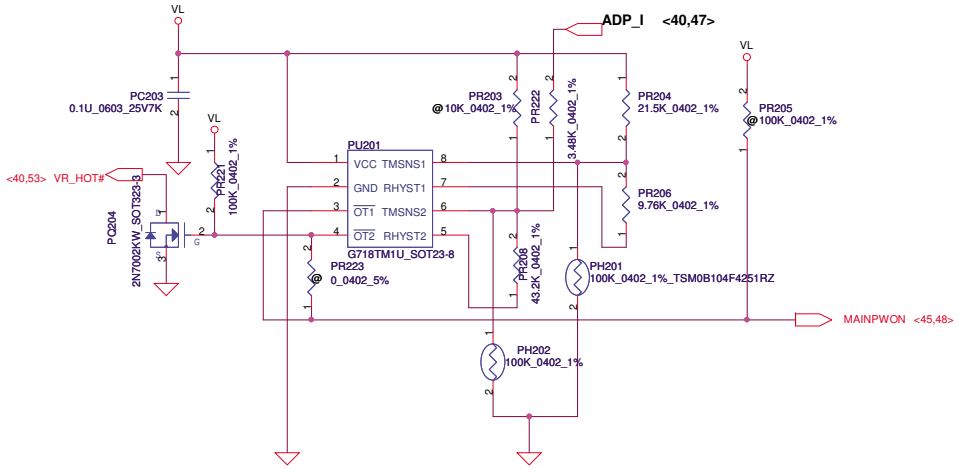
Title: PWR DCIN / Vin Detector /Pre-charge

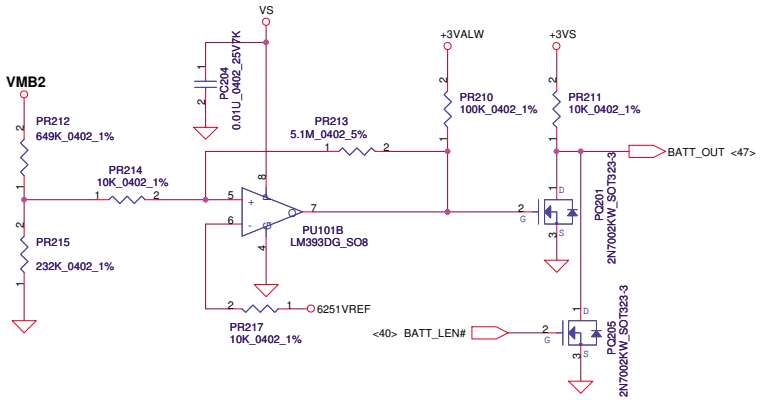
Size: Custom | Document Number: PIWG1/G2(LA-6751P/LA-6753P) | Rev: 0.1

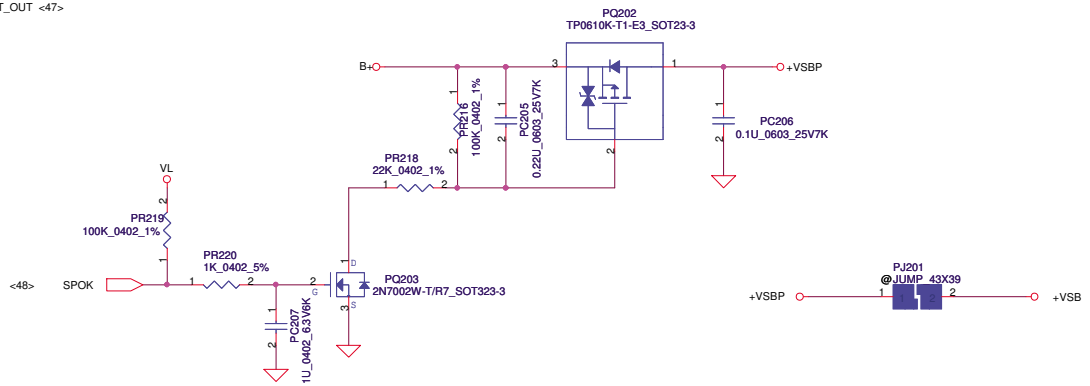
Date: Friday, November 26, 2010 | Sheet 45 of 54

PH201 under CPU botten side :
CPU thermal protection at 92 degree C
Recovery at 56 degree C









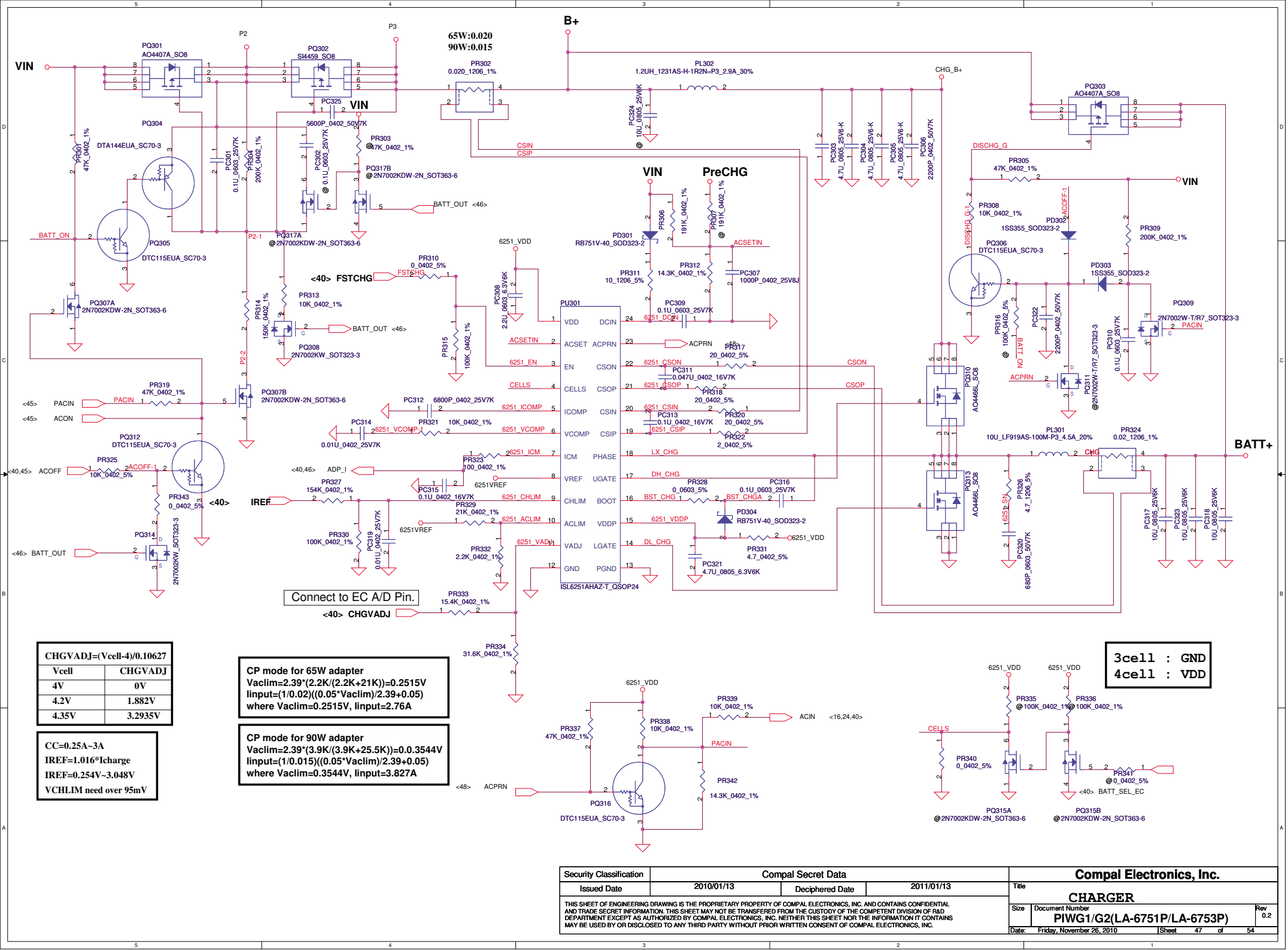
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2010/12/31

Compal Electronics, Inc.

Title: PWR-BATTERY CONN/OTP

Size: Custom | Document Number: PIWG1/G2(LA-6751P/LA-6753P) | Rev: 0.1

Date: Friday, November 26, 2010 | Sheet 46 of 54



CHGVADJ=(Vcell-4)/0.10627	
Vcell	CHGVADJ
4V	0V
4.2V	1.882V
4.35V	3.2935V

CC=0.25A~3A
IREF=1.016*Icharge
IREF=0.254V~3.048V
VCHLIM need over 95mV

CP mode for 65W adapter
Vaclim=2.39*(2.2K/(2.2K+21K))=0.2515V
linput=(1/0.02)((0.05*Vaclim)/2.39+0.05)
where Vaclim=0.2515V, linput=2.76A

CP mode for 90W adapter
Vaclim=2.39*(3.9K/(3.9K+25.5K))=0.0.3544V
linput=(1/0.015)((0.05*Vaclim)/2.39+0.05)
where Vaclim=0.3544V, linput=3.827A

Security Classification	Compal Secret Data		
Issued Date	2010/01/13	Deciphered Date	2011/01/13

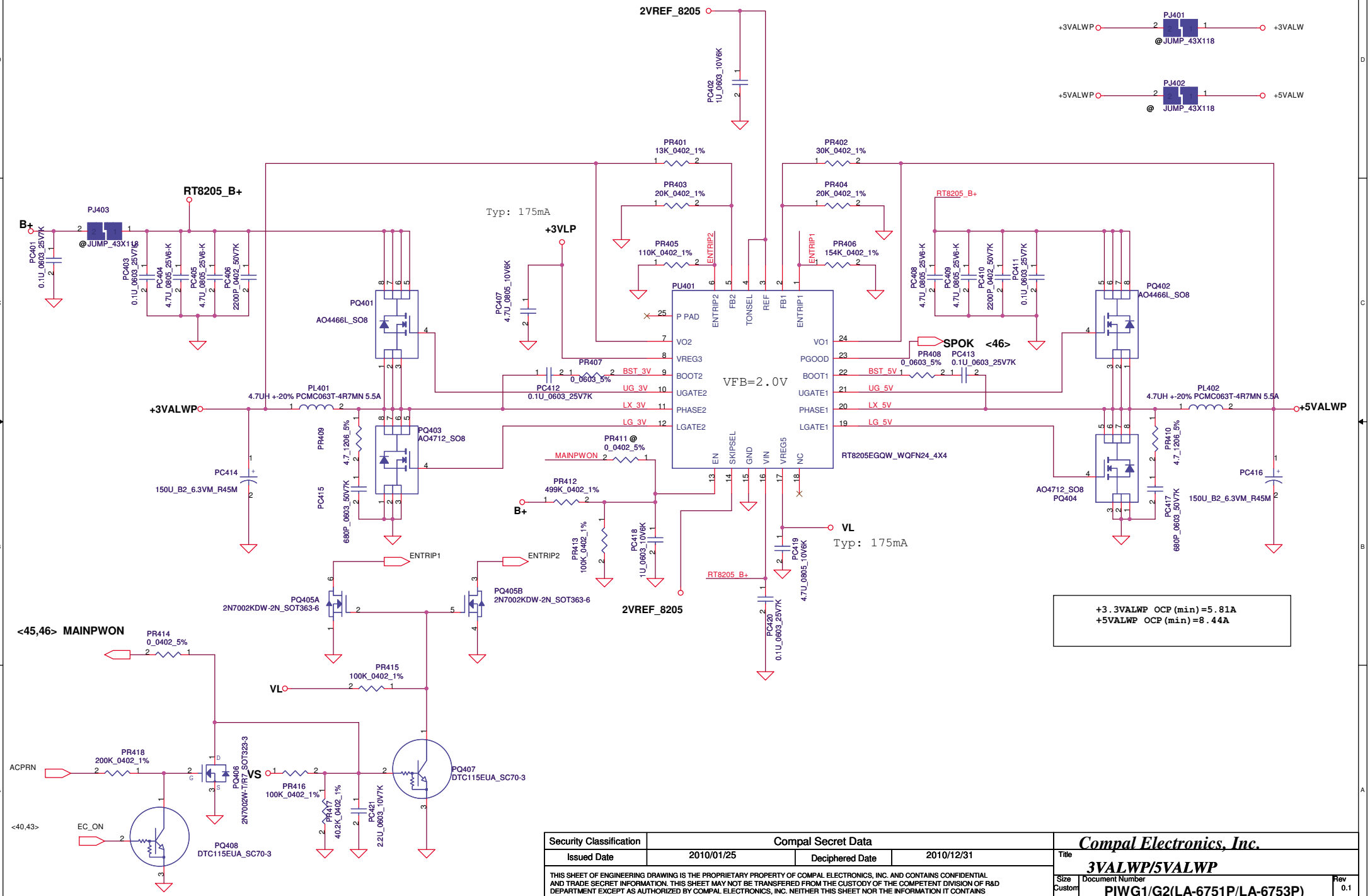
Compal Electronics, Inc.

Title: CHARGER

Size | Document Number: PIWG1/G2(LA-6751P/LA-6753P) | Rev: 0.2

Date: Friday, November 26, 2010 | Sheet 47 of 54

Note:
Use TPS51125 IC can remove RTC refernece LDO
Use TPS51427 IC must keep RTC refernece LDO



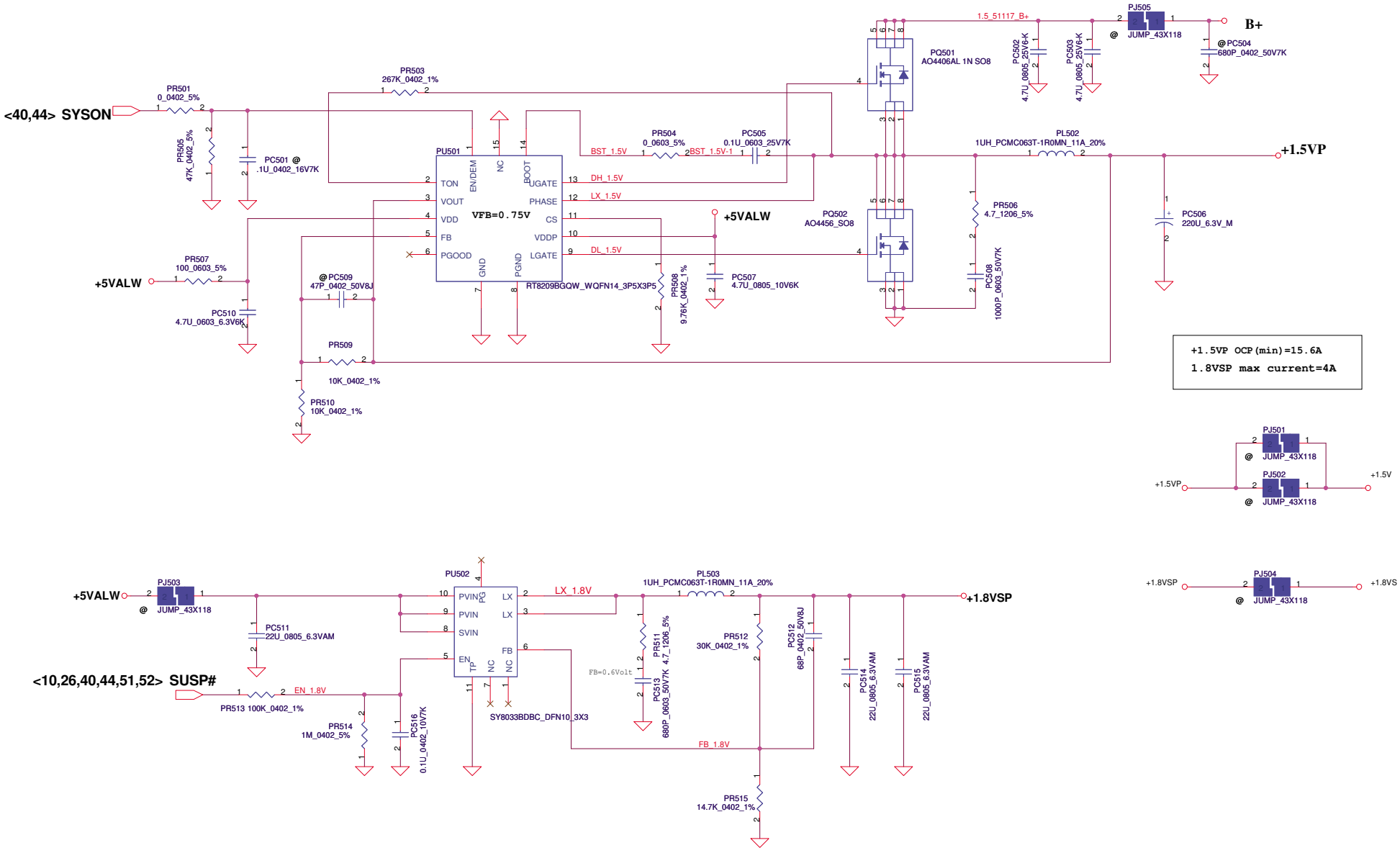
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2010/12/31

Compal Electronics, Inc.

Title: 3VALWP/5VALWP

Size	Document Number	Rev
Custom	PIWG1/G2(LA-6751P/LA-6753P)	0.1

Date: Friday, November 26, 2010 Sheet 48 of 54



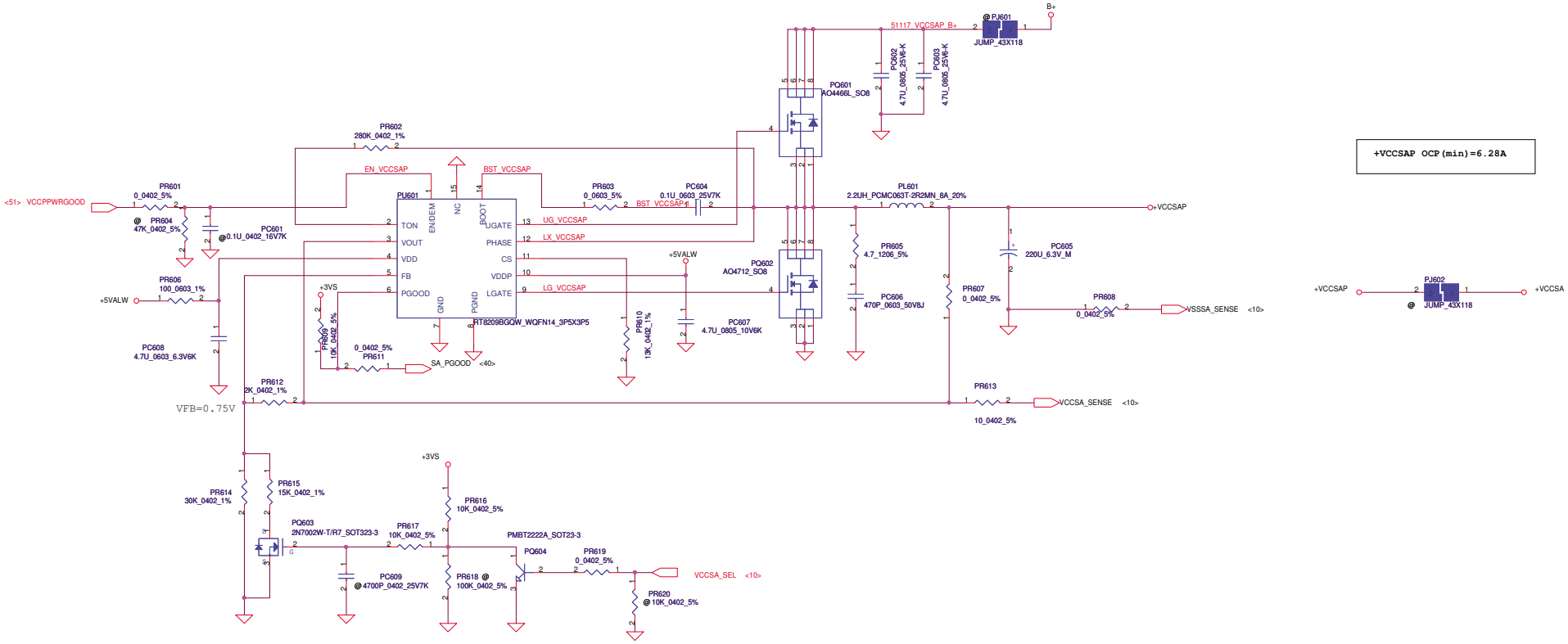
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2010/12/31

Compal Electronics, Inc.

Title: ***PWR-+1.5VP/+1.8VSP***

Size	Document Number	Rev
Custom	PIWG1/G2(LA-6751P/LA-6753P)	0.1

Date: Friday, November 26, 2010 | Sheet 49 of 54



VID[0]	VID[1]	VCCSA Vout	Require on 2011/ 2012 Required
0	0	0.9 V	Yes/Yes
0	1	0.8 V	Yes/Yes
1	1	0.725V	No/Yes
1	1	0.675V	No/Yes

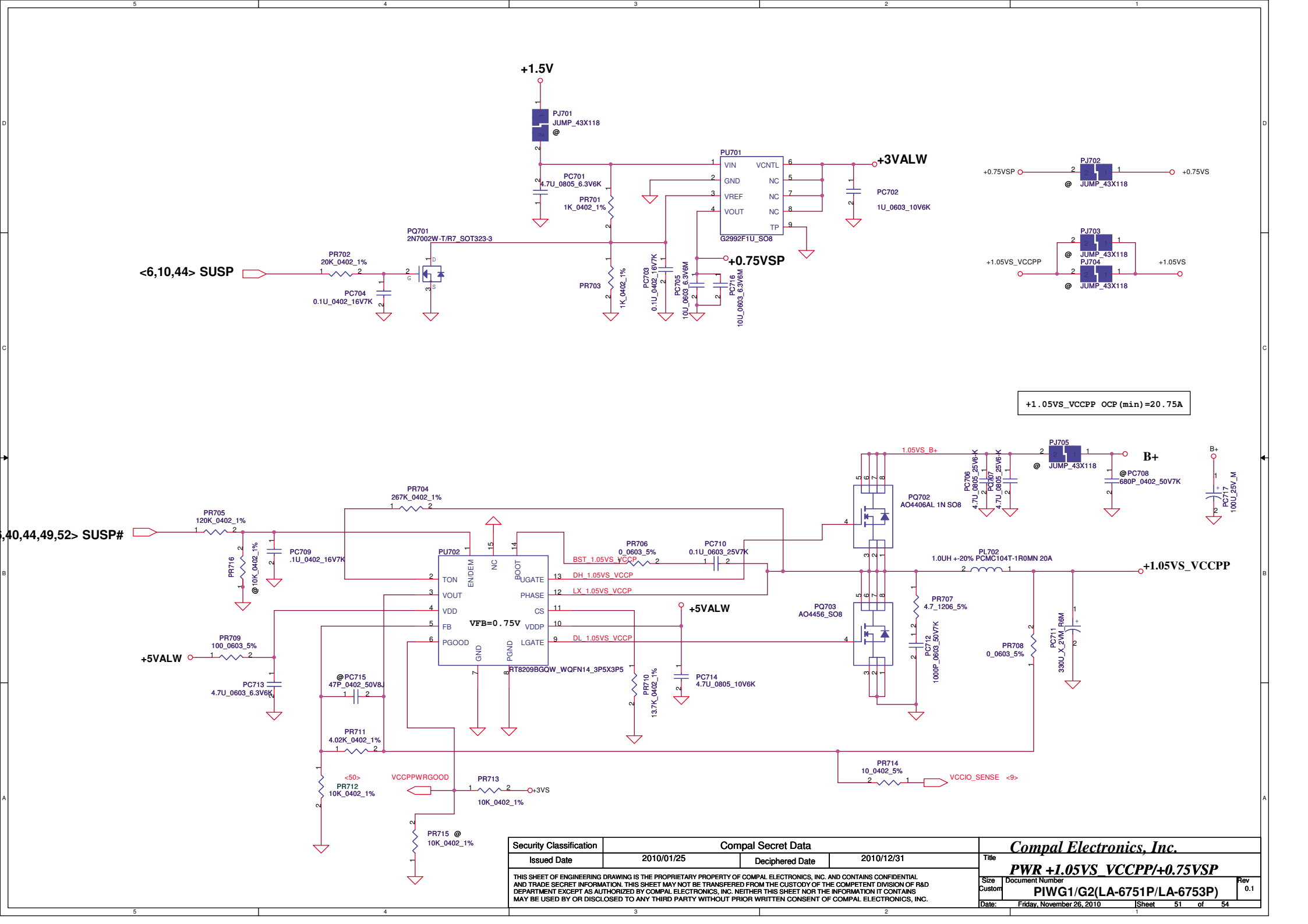
Note:Use VCCSA_SEL to switch High & Low Level for VID[1]
(ie. VCCSA_SEL) due to the VID[0] is don't care for this setting.

Compal Electronics, Inc.

Title: PWR +VCCSAP

Size: C | Document Number: PIWG1/G2(LA-6751P/LA-6753P) | Rev: 0.1

Date: Friday, November 26, 2010 | Sheet 50 of 54


+1.5V
PJ701
JUMP_43X118
@
PU701
VIN
GND
VREF
VOUT
VCNTL
NC
NC
NC
TP
G2992F1U_SO8
+3VALW
PC701
4.7U_0805_6.3V6K
PR701
1K_0402_1%
PC702
1U_0603_10V6K
PQ701
2N7002W-T/R7_SOT323-3
+0.75VSP
<6,10,44> SUSP
PR702
20K_0402_1%
PC704
0.1U_0402_16V7K
PR703
1K_0402_1%
PC703
0.1U_0402_16V7K
PC705
10U_0603_6.3V6M
PC716
10U_0603_6.3V6M
+0.75VSP
PJ702
JUMP_43X118
+0.75VSP
+0.75VS
PJ703
JUMP_43X118
+1.05VS_VCCPP
PJ704
JUMP_43X118
+1.05VS
+1.05VS_VCCPP OCP(min)=20.75A
1.05VS_B+
PJ705
JUMP_43X118
B+
@PC708
680P_0402_50V7K
B+
PC717
100U_25V_M
PC706
4.7U_0805_25V6-K
PC707
4.7U_0805_25V6-K
PQ702
AO4406AL 1N SO8
PR704
267K_0402_1%
PR705
120K_0402_1%
<6,40,44,49,52> SUSP#
PR716
@10K_0402_1%
PC709
.1U_0402_16V7K
PU702
TON
VOUT
VDD
FB
PGOOD
EN/DEM
NC
BOOT
UGATE
PHASE
CS
VDDP
LGATE
GND
PGND
VFB=0.75V
RT8209BGQW_WQFN14_3P5X3P5
PR706
0_0603_5%
PC710
0.1U_0603_25V7K
BST_1.05VS_VCCP
DH_1.05VS_VCCP
LX_1.05VS_VCCP
DL_1.05VS_VCCP
PL702
1.0UH +-20% PCMC104T-1R0MN 20A
+1.05VS_VCCPP
PQ703
AO4456_SO8
PR707
4.7_1206_5%
PC712
1000P_0603_50V7K
PR708
0_0603_5%
PC711
330U_X_2VM_R6M
+5VALW
PR709
100_0603_5%
PC713
4.7U_0603_6.3V6K
@PC715
47P_0402_50V8J
PR710
13.7K_0402_1%
PC714
4.7U_0805_10V6K
PR711
4.02K_0402_1%
PR712
10K_0402_1%
<50>
VCCPPWRGOOD
PR713
10K_0402_1%
+3VS
PR715 @
10K_0402_1%
PR714
10_0402_5%
VCCIO_SENSE
<9>
Security Classification
Compal Secret Data
Issued Date
2010/01/25
Deciphered Date
2010/12/31
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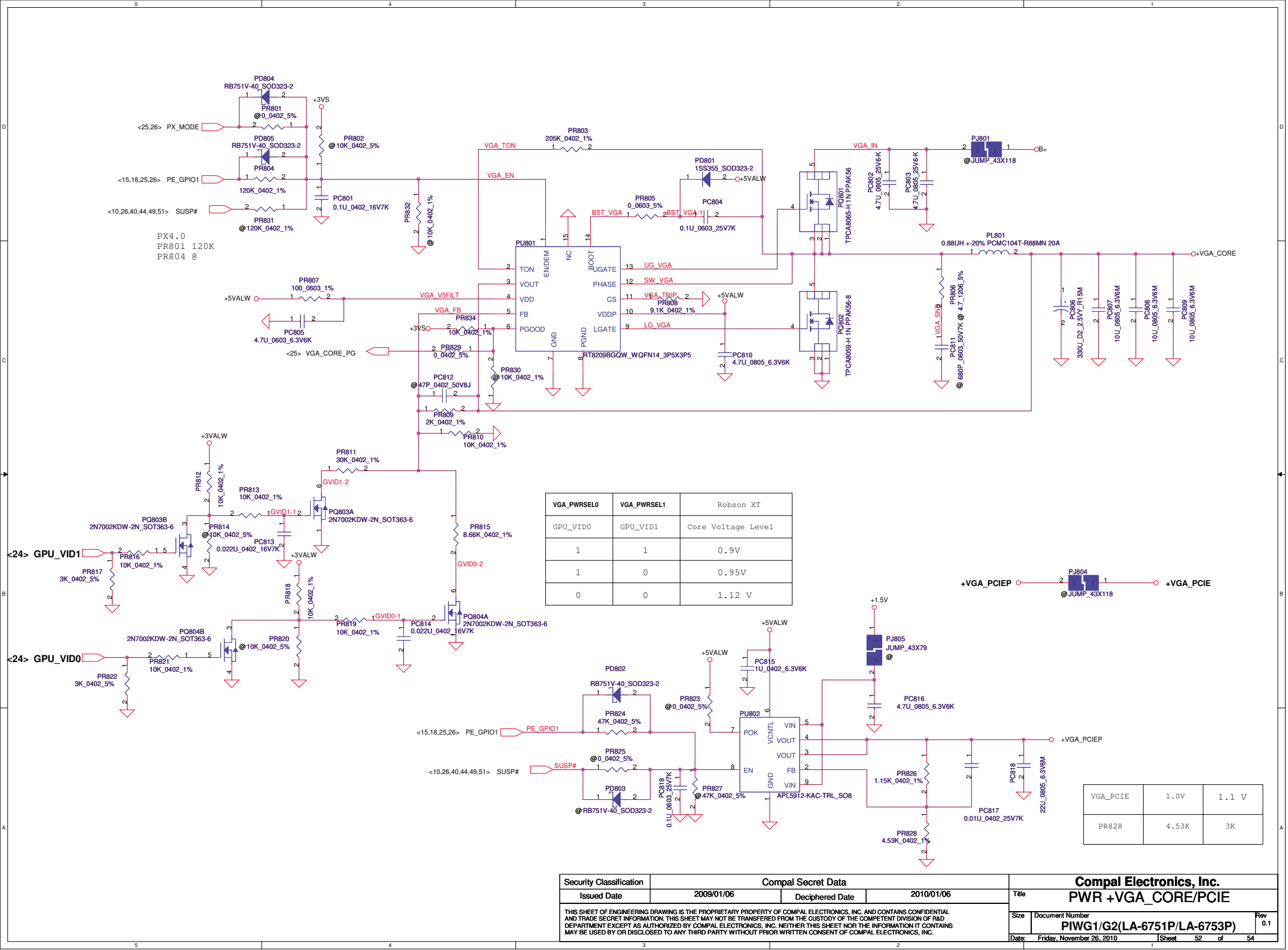
Compal Electronics, Inc.
Title
PWR +1.05VS_VCCPP/+0.75VSP
Size
Custom
Document Number
PIWG1/G2(LA-6751P/LA-6753P)
Rev
0.1
Date:
Friday, November 26, 2010
Sheet
51
of
54



VGA_PWRSEL0	VGA_PWRSEL1	Robson XT
GPU_VID0	GPU_VID1	Core Voltage Level
1	1	0.9V
1	0	0.95V
0	0	1.12 V

VGA_PCIE	1.0V	1.1 V
PR828	4.53K	3K

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

Compal Electronics, Inc.		
Title	PWR +VGA_CORE/PCIE	
Size	Document Number	Rev
	PIWG1/G2(LA-6751P/LA-6753P)	0.1
Date: Friday, November 26, 2010	Sheet 52 of 54	

Alert# PU resister need close CPU,
so the PU resister in HW schematic.
but DAT and CLK need close PWM-IC,
so the PU resister in POWER schematic.

Parallel and tune length

change from 43P to 47P
for shortage problem
2010-03-15

*Iccmax in Turbo Mode for SV (35W) is 53A

+CPU_CORE

Icc-max=53A
Rdson=3.6~4.5m ohm
DCR=1.1m ohm
HW output cap:
(1)10U_0805_4V *10
(2)22U_0805_6.3V *15
(3)470U_D2_2V *4(ESR=4.5m ohm)

*OCP setting value=71.5A

+VGFX_COREP

Ipeak=26A , Imax=18.2A , 1.2Ipeak=31.2A
Rdson=3.6~4.5m ohm
DCR=1.1m ohm
HW output cap:
(1)22U_0805_6.3V *12
(2)470U_D2_2V *2(ESR=4.5m ohm)

*OCP setting value=37A

Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2010/12/31

Compal Electronics, Inc.

Title: PWR +CPU_CORE/+VGFX_CORE

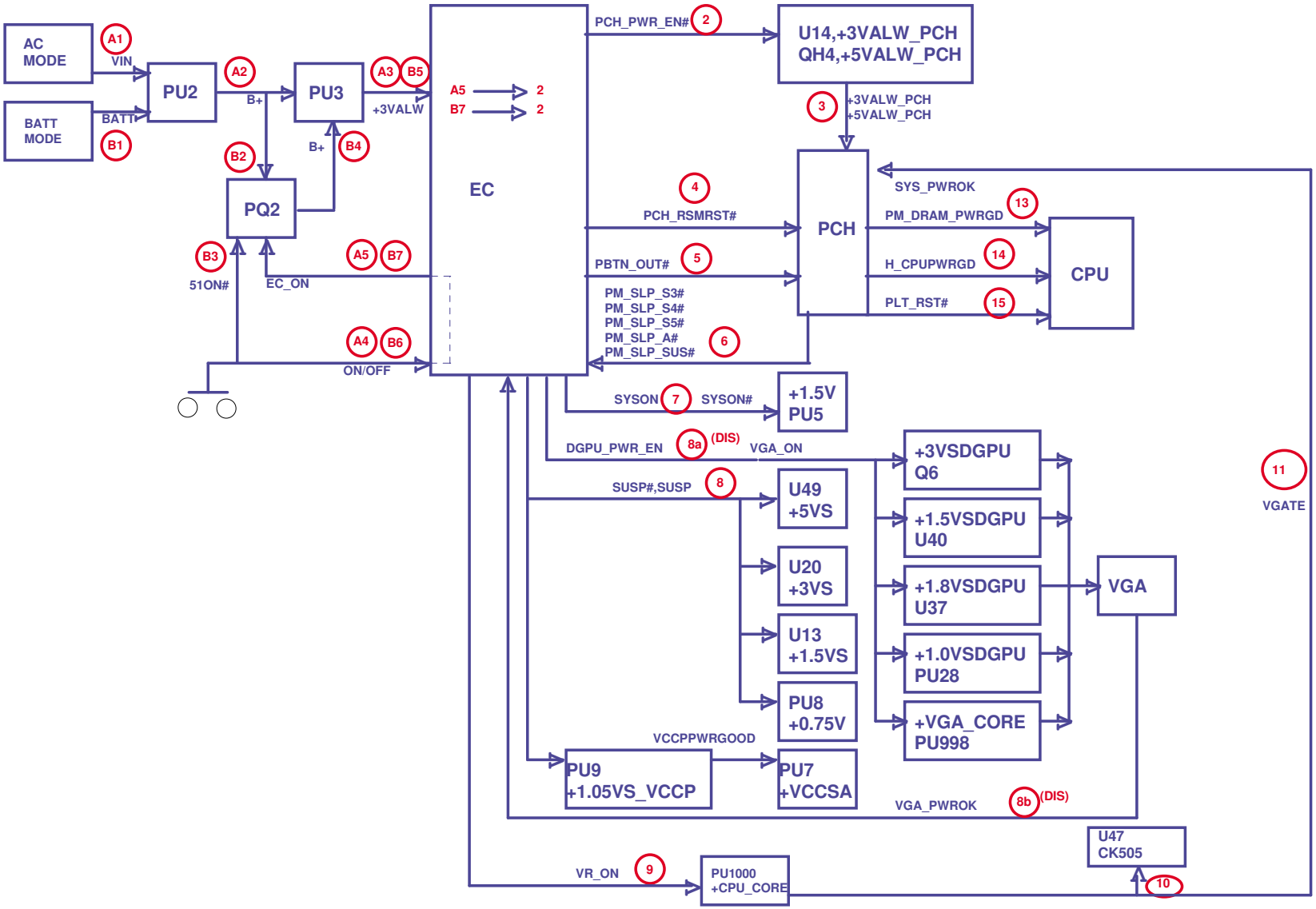
Size: Custom | Document Number: PIWG1/G2(LA-6751P/LA-6753P) | Rev: 0.1

Date: Friday, November 26, 2010 | Sheet 53 of 54

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

Item	Reason for change	PG#	Modify List	Date	Phase
1	To reduce charger ripple	47	Add PC323	2010.08.15	DVT
2	HW request for power sequence	51	Change +VGA_PCIE enable signal from PX_MODE to PE_GPIO1 PR804:120K PR831,PR801,PR825 UN-POP PR824:47K PC819:0.2uF	2010.08.15	DVT
3	Change Vboot setting	52	Change PR942 as 4.32K	2010.08.15	DVT
4	Change OCP setting	52	Change PR958 as 1.47K	2010.08.15	DVT
5	Add PC955 for loadline adjust	52	Add PC955	2010.08.15	DVT
6	Reserve pull low resistor	51	Add PR718,PR832	2010.09.29	PVT
7	Remove jump	51	Remove PJ802,PJ803	2010.09.29	PVT
8	Adapter protect circuit	46	Pop PR222,PR208,PH202,PR221,PQ204 Un-Pop PR223,PR203	2010.09.29	PVT
9	EMI Request	47	Remove PJ301 Add PL302 and reserve PC324	2010.09.29	PVT
10					
11					
12					
13					
14					
15					
16					
17					

Compal Electronics, Inc.
Title: PIR (PWR)
Size: Custom | Document Number: PIWG1/G2 | Rev: 0.1
Date: Friday, November 26, 2010 | Sheet 54 of 54



Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.			
Title: Power sequence			
Size: Custom	Document Number: LA-6751P		Rev: 0.2
Date: Friday, November 26, 2010	Sheet 55 of 59		

INT_KBD Conn.

KSI[0..7] KSI[0..7] <40,57>
KSO[0..15] KSO[0..15] <40,57>

KSO2	C668	@100P_0402_50V8J	KSO1	C669	@100P_0402_50V8J
KSO15	C670	@100P_0402_50V8J	KSO7	C671	@100P_0402_50V8J
KSO6	C672	@100P_0402_50V8J	KSI2	C673	@100P_0402_50V8J
KSO8	C674	@100P_0402_50V8J	KSO5	C675	@100P_0402_50V8J
KSO13	C676	@100P_0402_50V8J	KSI3	C677	@100P_0402_50V8J
KSO12	C678	@100P_0402_50V8J	KSO14	C679	@100P_0402_50V8J
KSO11	C680	@100P_0402_50V8J	KSI7	C681	@100P_0402_50V8J
KSO10	C682	@100P_0402_50V8J	KSI6	C683	@100P_0402_50V8J
KSO3	C684	@100P_0402_50V8J	KSI5	C685	@100P_0402_50V8J
KSO4	C686	@100P_0402_50V8J	KSI4	C687	@100P_0402_50V8J
KSI0	C688	@100P_0402_50V8J	KSO9	C689	@100P_0402_50V8J
KSO0	C690	@100P_0402_50V8J	KSI1	C691	@100P_0402_50V8J

Reserve for ESD.

ME@
ACES_88514-2401
GND2 GND1
KSI1 KSI7 KSI6 KSO9 KSI4 KSI5 KSO0 KSI2 KSI3 KSO5 KSO1 KSI0 KSO2 KSO4 KSO7 KSO8 KSO6 KSO3 KSO12 KSO13 KSO14 KSO11 KSO10 KSO15
JKB1

CONN PIN define need double check

To TP/B Conn.

+5VS
C696 0.1U_0402_16V4Z
ACES_88058-060N
GND GND
<40,57> TP_CLK
<40,57> TP_DATA
TP_CLK TP_DATA SW/L SW/R
C697 100P_0402_50V8J @
C698 100P_0402_50V8J @
JTP1

SW/L
SMT1-05_4P
SW4

SW/R
SMT1-05_4P
SW5

TP_CLK
TP_DATA
D15
PSOT24C_SOT23-3 @

CONN PIN define need double check

ZZZ
DAZ0GL00100

ZZZ1	ZZZ2	ZZZ3
PCB	PCB	PCB
DA80000KF10	DA40000VV10	DA40000VS10
DA8@	DA4@	DA4@

+5VALW
C713 0.1U_0402_16V4Z
<38,40,42,57> USB_ON#
USB_ON# 4
U36
GND IN IN EN OUT OUT OUT OC#
APL3510BKI_SO8
+USB_VCCA
USB_OC0# <18,38,57>
C716 @1000P_0402_50V7K

RIGHT USB PORT X1

SATA ODD Conn.

<14,57> SATA_ITX_DRX_P2_CONN
<14,57> SATA_ITX_DRX_N2_CONN
SATA_ITX_DRX_P2_CONN
SATA_ITX_DRX_N2_CONN
<14,57> SATA_DTX_C_IRX_N2
<14,57> SATA_DTX_C_IRX_P2
SATA_DTX_C_IRX_N2 C605 0.01U_0402_16V7K SATA_DTX_IRX_N2
SATA_DTX_C_IRX_P2 C606 0.01U_0402_16V7K SATA_DTX_IRX_P2
ODD_DETECT# R710 0_0402_5%
+5V_ODD
<18,40,57> ODD_DA#
ODD_DA# R554 0_0402_5%
R555 10K_0402_5%
+3VS
JODD1
GND A+ A- GND B- B+ GND DP +5V +5V MD GND GND GND GND
ALLTO_C18518-11305-L
ME@

8/13 update JODD1 symbol

+3VALW
R614 0_0402_5%
+VCC_LID
R615 100K_0402_5%
S-5711ACDL-M3T1S_SOT23-3
C694 0.1U_0402_16V4Z
VDD OUTPUT GND
U32
LID_SW# <40,57>
C695 10P_0402_50V8J

Lid Switch

Kill

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

Kill Switch

+3VALW
R616 100K_0402_5%
LSSM12-P-V-T-R_3P
<14,57> KILL_SW#
KILL_SW#
SW2

8/23 Change LED1/LED3/LED4 P/N to SC50000A300

LED

<40,43,57> PWR_LED# White LED1 19-213A-T1D-CP2Q2HY-3T_WHITE 300_0402_5% R622 +5VALW

Orange
<40,57> CHARGE_LED1# BATT_LOW_LED# LED2 HT-191UD5_AMBER 470_0402_5% R764 +3VALW

Left --> White
Right --> Orange

Change design to two LED 20101005

<40,57> CHARGE_LED0# BATT_CHG_LED# LED5 19-213A-T1D-CP2Q2HY-3T_WHITE 300_0402_5% R765 +5VALW
White

<34,57> WLAN_LED# @ D19 RB751V_SOD323 White LED3 19-213A-T1D-CP2Q2HY-3T_WHITE 300_0402_5% R625 +5VS
<42,57> BT_LED# @ D20 RB751V_SOD323
<40,57> RF_LED# R679 0_0402_5%
<14,57> HDD_LED# White LED4 19-213A-T1D-CP2Q2HY-3T_WHITE 300_0402_5% R626 +5VS

Right USB Conn.

+USB_VCCA
W=80mils
8/27 change to @
<18,57> USB20_N0
<18,57> USB20_P0
USB20_N0 R868 @ 0_0402_5% USB20_N0_C
USB20_P0 R869 @ 0_0402_5% USB20_P0_C
JUSB3
ACES_85205-04001
ME@
C714 150U_B2_6.3VM_R35M
C715 470P_0402_50V7K

8/23 change C714 P/N to SGA00002N80

8/27 change to stuff
WCM-2012-900T_4P
L66
PJDLC05_SOT23-3
D25 @

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INT_KBD Conn.

KSI[0..7] <40,56>
KSO[0..17] KSO[0..17] <40,56>

KSO2 C668 @100P_0402_50V8J
KSO15 C670 @100P_0402_50V8J
KSO6 C672 @100P_0402_50V8J
KSO8 C674 @100P_0402_50V8J
KSO13 C676 @100P_0402_50V8J
KSO12 C678 @100P_0402_50V8J
KSO11 C680 @100P_0402_50V8J
KSO10 C682 @100P_0402_50V8J
KSO3 C684 @100P_0402_50V8J
KSO4 C686 @100P_0402_50V8J
KSI0 C688 @100P_0402_50V8J
KSO0 C690 @100P_0402_50V8J

KSO16 C693 @100P_0402_50V8J
KSO17 C692 @100P_0402_50V8J
KSO1 C669 @100P_0402_50V8J
KSO7 C671 @100P_0402_50V8J
KSI2 C673 @100P_0402_50V8J
KSO5 C675 @100P_0402_50V8J
KSI3 C677 @100P_0402_50V8J
KSO14 C679 @100P_0402_50V8J
KSI7 C681 @100P_0402_50V8J
KSI6 C683 @100P_0402_50V8J
KSI5 C685 @100P_0402_50V8J
KSI4 C687 @100P_0402_50V8J
KSO9 C689 @100P_0402_50V8J
KSI1 C691 @100P_0402_50V8J

<40> KSO16
<40> KSO17

JKB1
KSI1 KSI7 KSI6 KSO9 KSI4 KSI5 KSO0 KSI2 KSI3 KSO5 KSO1 KSI0 KSO2 KSO4 KSO7 KSO8 KSO6 KSO3 KSO12 KSO13 KSO14 KSO11 KSO10 KSO15 KSO16 KSO17
GND 31
GND 32
ACES_88514-3001
ME@

CONN PIN define need double check

Reserve for ESD.

ZZZ DAZ0GM00100
ZZZ1 PCB DA80000KG10 DA8@
ZZZ2 PCB DA40000VV10 DA4@
ZZZ3 PCB DA40000VS10 DA4@
ZZZ4 PCB DA40000VT10 DA4@
ZZZ5 PCB DA40000VU10 DA4@

+5VALW
C713 0.1U_0402_16V4Z
<38,40,42,56> USB_ON#
USB_ON#
U36
GND OUT 8
IN OUT 7
IN OUT 6
EN OC# 5
APL3510BKI_SO8
+USB_VCCA
RIGHT USB PORT X1
USB_OC0# <18,38,56>
C716 @1000P_0402_50V7K

To TP/B Conn.

+5VS
C696 0.1U_0402_16V4Z
JTP1
<40,56> TP_CLK
<40,56> TP_DATA
TP_CLK
TP_DATA
SW/L
SW/R
C697 @ 100P_0402_50V8J
C698 @ 100P_0402_50V8J
GND
GND
ACES_88058-060N
ME@

SW/L
SMT1-05_4P
SW4
SW/R
SMT1-05_4P
SW5

TP_CLK
TP_DATA
D15 @ PSOT24C_SOT23-3

CONN PIN define need double check

Right USB Conn.

+USB_VCCA
W=80mils
8/27 change to @
C714 220U_6.3V_M
C715 470P_0402_50V7K
<18,56> USB20_N0
<18,56> USB20_P0
USB20_N0 R868 @ 0_0402_5% USB20_N0_C
USB20_P0 R869 @ 0_0402_5% USB20_P0_C
JUSB3
G5
G6
ACES_85205-04001
ME@

8/14 change to OSCAN 220U
(220uF_6.3V_4.2L_ESR17m)*1=(SF000002Y00)

8/27 change to stuff
WCM-2012-900T_4P
L66
PJDLC05_SOT23-3
D25 @

SATA ODD FFC Conn.

<14,56> SATA_ITX_DRX_P2_CONN
<14,56> SATA_ITX_DRX_N2_CONN
SATA_ITX_DRX_P2_CONN
SATA_ITX_DRX_N2_CONN
<14,56> SATA_DTX_C_IRX_N2
<14,56> SATA_DTX_C_IRX_P2
SATA_DTX_C_IRX_N2 C605 0.01U_0402_16V7K SATA_DTX_IRX_N2
SATA_DTX_C_IRX_P2 C606 0.01U_0402_16V7K SATA_DTX_IRX_P2
ODD_DETECT# R710 0_0402_5%
+5V_ODD
<18,40,56> ODD_DA#
ODD_DA# R554 0_0402_5%
R555 10K_0402_5%
+3VS
JP2
GND
GND
ACES_87056-01001-001
ME@

<34,56> WLAN_LED#
<42,56> BT_LED#
<40,56> RF_LED#
D19 @ White
D20 @
RB751V_SOD323
RF_LED# R
R679 0_0402_5%

For 15" M/B to LED/B

KILL_SW# R884 @ 100K_0402_5%
11/16modify

+3VALW R615 100K_0402_5%
LID_SW#
7/22 modify

JP13
+5VALW
+3VALW
+5VS
<40,56> LID_SW#
<40,43,56> PWR_LED#
<40,56> CHARGE_LED1#
<40,56> CHARGE_LED0#
RF_LED# R
<14,56> HDD_LED#
<14,56> KILL_SW#
GND1
GND2
ACES_88514-01201-071
ME@

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PHASE	PAGE	Modification list	PURPOSE
0.2	P31	Change CRT Symbol	For CRT footprint issue
0.2	P31	Del C510	For Non-used part
0.2	P39	change C610 pin 1 net name	change C610 pin 1 net name to correct
0.2	P35	U25 change to U26	For co-lay 10/100 and GIGA
0.2	P32	Add R735,R736	For DIS only SMBus pull high
0.2	P33	Add R738,R739	For DIS only SMBus pull high
0.2	P33	Change Q63 BOM structure to HDMI@	For DIS HDMI function
0.2	P40	Add R740, C93	For EC request
0.2	P18	Change R215 pin1 net name	Change R215 pinl net name to correct
0.2	P18	Add R741	Add R741 for Reserved PE_GPIO0
0.2	P16	Add R742, R743	For PCH power sequence
0.2	P38	Del U28, R542~R551 , J12	Del USB charger circuit
0.2	P40	Add EC pin 97,98,103	Add EC pin 97 for SYS_PWROK_EC , pin 98 for CE_EN , pin 103 for BATT_SEL_EC
0.2	P24	Change R662 pin 2 net name	Change R662 pin 2 net name to correct
0.2	P28	Del C421,C422,C431,C432,C433, L27, Add R745, U8 pin N11,N12 change to NC	For AMD new document suggestion
0.2	P26	Add R744	Add R744 for control PE_GPIO1 from SUSP#
0.2	P39	Change J10 footprint and Add J13	Change J10 footprint by DFx request and Add J13 by vendor suggestion
0.2	P39	Change PC_Beep circuit	Change PC_Beep circuit
0.2	P6	Add R161, R182, R192 BOM structure hange to @	Follow ORB circuit
0.2	P58/59	Add R615 in 15" and 17" page	Pull high LID_SW# at M/B side
0.2	P31	Add Q83 pin 1 power net name +CMOS_PW	For power trace net
0.2	P56/57/58	Change JP21 to JKB1	Change connector to standard name
0.2	P56/57/58	Change JP4 to JTP1	Change connector to standard name
0.2	P43/60	Change JP6 to JPWRB1	Change connector to standard name
0.2	P34	Change JP1 to JWLN1	Change connector to standard name
0.2	P42	Change JP5 to JBT1	Change connector to standard name
0.2	P43/60	Change JP7 to JCR1	Change connector to standard name
0.2	P19	Add R542	For ESATA detect function
0.2	P42	Add R886, R887 , C735	For ESATA detect function
0.2	P31	Add R543	For reserve EC control directly
0.2	P39	Change J10 footprint, Del C635, C636	Change J10 for DFx and Del component for layout
0.2	P42	Add R877	For reserve EC control directly
0.2	P42	SW3 BOM structure change to @	For ME ASSY concern
0.2	P24	R324 BOM structure change, del @	For AMD update
0.2	P25	Change Q69,Q70,Q71,Q72 to BSS138, change Q66,Q67 pin 1 net name, D28 change to @	For Change BACO part follow AMD reference DATA ,D28 change to @ for leakage
0.2	P42	Change ESATA from port 5 to port 4	For intel risk
0.2	P15	Add R544,R545	For Pull high SMBus
0.2	P12/13	Del R74~R80,R82 R88~R94,R96	For DDR3 DM Bus to GND
0.2	P16	Add R182,R546	Add 186 for reserve sequence, Add R546 for follow CRB & ORB
0.2	P20	Del Add J12, R257 change to @	For voltage drop
0.2	P26	R161 Change Q6 to U14	Change SI2301 to SI4800 for loading current
0.2	P6	R161 change to 100K	Follow CRB
0.2	P19	Add R547 , R250 change to @	Follow Module and CRB
0.2	P18	WLAN USB port for port8 to port9	For debug port
0.2	P25	AND Gate power change to +3VGS	For VGA circuit
0.2	P24	Add R548, R549	For DIS HDMI audio strap
0.2	P39	Del J13	For layout space
0.2	P20,39,42	Add C395 , R581 , R583 , R584 , R586 , R587	For customer request reserved
0.2	P20	Add C129, C396 , Del R264	For reserved
0.2	P40	Add PIN 66 , R740,C93 change to @	Add IMVP_IMON
0.2	P9	Add R74	For VCCIO_SENSE / VSSIO_SENSE differential routing

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PHASE	PAGE	Modification list	PURPOSE
0.2	P33	Del RQ51 ~ Q54 Add Q95	For DIS HDMI
0.2	P39	Del J10, C637,C640,R576,R577,R579 change to @ , L40~L43 change to R720~R723	For Vendor suggestion and EMI
		Del C643, R578 , MIC_INR connect MIC_INL , Add R578	Del C653, R578 connect MIC_INR/L for vendor suggestion , Add R578 for EMI
0.2	P20	Add L75 , R264 , C917, R259 C226 change to @	For intel PDDG update
0.2	P20	Change JCR1 pin define , MIC change with HP	For correct ID
0.2	P9	Add C394, C397 ,C400 ,Add R75	For CPU_CORE power reserved at Bottom side, Add R75 for reserved at cpu side and pwr side
0.2	P26	Add R688 change to 20k, R345 change to 200k , R350 change to 330k , Q65 stuff	For VGA power sequence
0.2	P42	Change C706 P/N to SF000001500	Change to H=6 OSCAN
0.2	P10	Change C128 to @	For Reserved
0.2	P26	Change D3 change to @	For VGA leakage
0.2	P25	Change BIF_VDDC control pin net name	For correct behavior
0.2	P56	Update JODD1 symbol	For ME update drawing
0.2	P16	D29 change to @	For AC detect issue
0.2	P24	R548,R549 change to DIS@	For AC detect issue
0.2	P10	C128 change to stuff	For test on DVT
0.2	P44	Del Q118, R657	For not need
0.2	P57	Change 15" C714 to OSCAN	For ME Space ok
0.2		Change R513, R516 ,R667 P/N and from 0805 to 0603	For common part
0.2		Change C633, C634 , C642	For common part
0.2		Change D3, D29 P/N and symbol	For common part
0.2		Change U3,U11,U13,U14,U38,U39 P/N and symbol	For common part
0.2		Change U3,U11,U13,U14,U38,U39 P/N and symbol	For common part
0.2		Change Q8,Q65,Q80,Q83,Q99,Q104 P/N and symbol	For common part
0.2		Change Q1,Q37,Q93 P/N and symbol	For common part
0.2		Change Q94, Q95 P/N and symbol	For common part
0.2		Change Q3,Q4,Q7,Q9,Q66,Q67,Q68,Q73,Q74,Q75,Q76,Q77,Q78, Q79,Q82,Q85,Q86,Q87,Q102,Q106,Q107,Q108,Q109,Q110,Q111,Q112,Q113,Q114,Q115,Q116 P/N and symbol	For common part
0.2	P43	Change C635 part and change to @	For EMI
0.2	P18	Reserved R551	Reserved
0.2	P9	Change C53,C85,C86,C87 ,C394,C397,C400 to stuff and change C48,C80,C81,C82,C89,C90,C91 to @	For CPU_CORE
0.2	P10	Change C110,C111,C112,C113 to stuff	For VGFX_CORE
0.2	P56	Change LED1/LED3/LED4 P/N to SC50000A300	Change P/N
0.2	P36	Change T1,T2 P/N to SP050003N00	For test pass part
0.2	P40	Change R611,R740,C93 to stuff and change Y5,C347,C367 to @	For SUS_CLK
		Change R695 to 18K, Q37 change to @, R747 change to stuff,	R695 for Board ID, Q37, R747 for VR_HOT
0.2	P41	Change U33 P/N to SA00003FL10	For BIOS ROM
0.2		Change C509,C511,C635 to stuff	For EMI request
0.2	P56	Change 14" C714 P/N to SGA00002N80	For Sourcer request
0.2	P39	Change R720,R721,R722,R723 P/N to SM01000BZ00(Bead), and Change C647,C649,C650,C651 to Stuff	For EMI request
0.2	P19	Change R303 to Stuff, and change R542 to @	For BIOS ESATA detect function
0.2	P56	Change U32 P/N to SA000031C00	For common part
0.2	P36	Change T1,T2 P/N to SP050006E00	For correct part
0.2	P10	R688 change to stuff , R687 ,Q7 change to @	For S3 power reduction
0.2		Change R660,R661,R862,R863,R864,R865,R868,R869 to @ , change L63,L64,L65,L66 to stuff , change R619 to Bead (SM01000DI00)	For EMI
0.2	P20	Change L75 symbol	For common part

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0.3	P10	Update Q5 symbol	For update symbol
0.3	P33	Add F2	For safty request
0.3	P39	Update U30 P/N to SA00003K410 and Add R879	For Audio update to 21Z
0.3	P10	Change C128 to D2 size and @	Change size for M/E issue
0.3	P14	Add reserve R878	For Intel DG 1.5
0.3	P37	C592 change P/N to SF000001500 (H=6)	For ME Z high ok
0.3	P25	Update Q69~Q72 to AO3414 ,D28 R873 change to BACO@ , U40 change to @	For PX4.0
0.3	P28	Add reserve C94	For reserve VGA_CORE
0.3	P29	R369 P/N change to SD034100A80	For GP part
0.3	P18	R553,R691,R684,R682,U12 change to PX@	For PX 4.0
0.3	P6	Reserved R880 to SYS_PWROK	Follow ORB
0.3	P10	R62,R63 change to 1K	Follow CRB
0.3	P19	R303 change to @, Change M/B ID to PX4.0	For ESATA and PX4.0
0.3	P25	Q69~Q72 change to BACO @	For PX4.0
0.3	P26	R719 change to stuff, R744 change to @ , R677 change to BACO@	For PX4.0
0.3	P33	R483,R484 change connect to +5V_HDMI_F	For Add F2
0.3	P37	Change U27 P/N to SA000046C00	For Fintek
0.3	P40	Change R594 pull high to +5VALW	For leakage issue
0.3	P19	R881 change to Dtuff, R244 change to @	For intel MRC Rev0.9
0.3	P14	R878 change to stuff	For intel DG 1.5
0.3	P31	Del R432	For non-used part
0.3	P36	Reserved D31 , C643 , C644	For reserved EMI parts
0.3	P37	Del R581	For non-used part
0.3	P38	Del R550	For non-used part
0.3	P38	Change C592 P/N to SF000002Y00	For M/E Z high limlt
0.3	P39	Del R584, R586 , R587	For non-used part
0.3	P40	Change R600, R604 to 2.2K Change R695 to 8.2k	Change R600, R604 for Battery SMBus, R695 for Board ID
0.3	P42	Del R583	For non-used part
0.3	P6	Reserved R882 connect to PCH_PWROK	Reserved for intel
0.3	P56	R765 change to 300 ohm	For LED
0.3	P25	R324, R744 , R674 change DIS@	For DIS only sku

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