Compal Confidential

Model Name : VIUS3/S4
File Name : LA-8951PR01
BOM P/N:43

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VIUS3/S4 M/B Schematics Document

Intel Ivy Bridge ULV Processor + Panther Point PCH
AMD Seymour XT

2011-12-28

REV:0.1

Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

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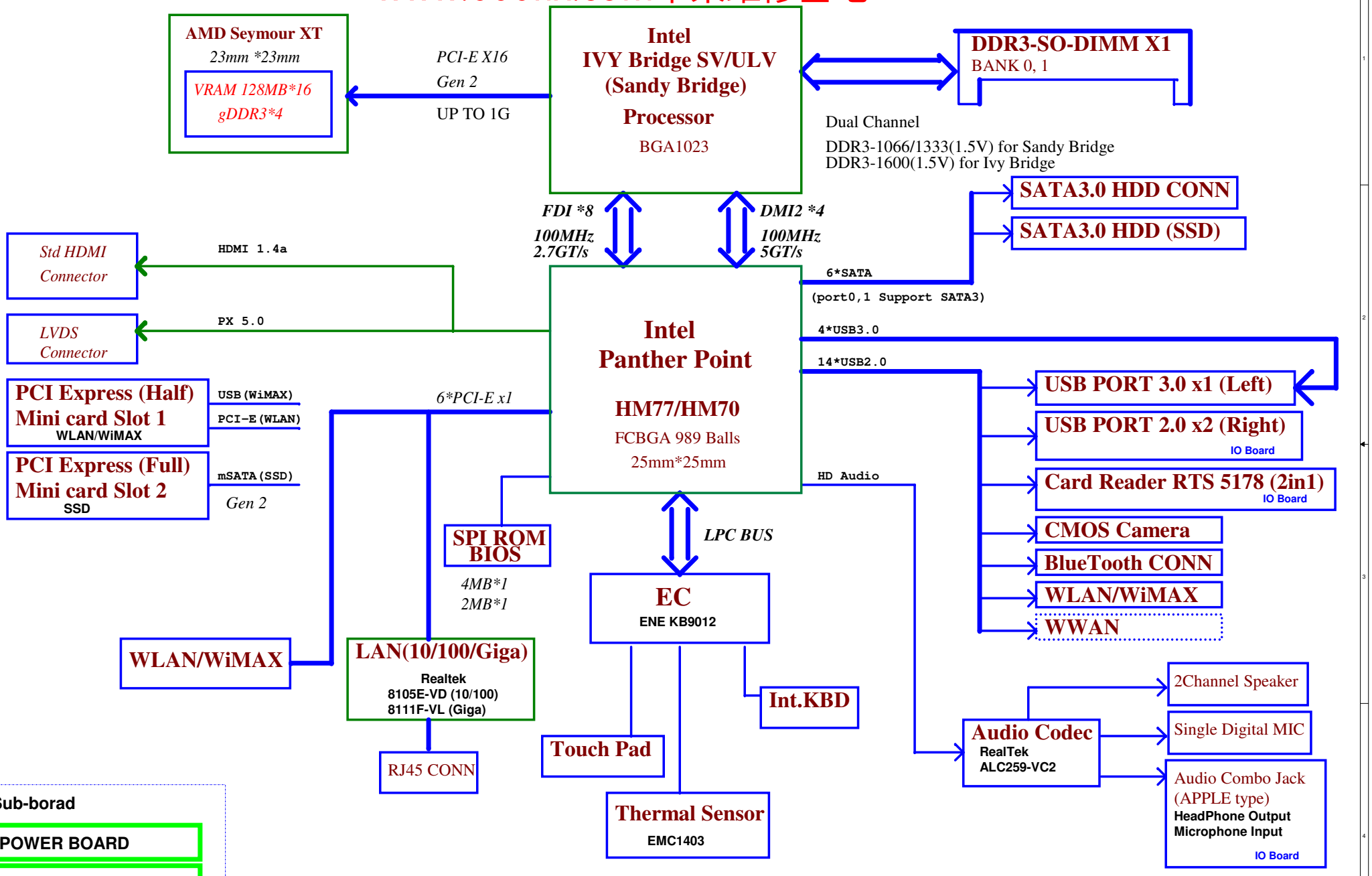
Title: *Cover Page*

Size: Custom | Document Number: *Sherry and Royal* | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 1 of 55

Chief River



Security Classification	Compal Secret Data		
Issued Date	2011/07/21	Deciphered Date	2012/12/31

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Title: MB Block Diagram

Size: Custom | Document Number | Rev 0.2

Date: Thursday, February 02, 2012 | Sheet 2 of 55

Voltage Rails

State \ power plane	+B	+5VALW +3VALW	+1.5V +1.5V_IO	+5VS +3VS +1.5VS +1.05VS_VTT +CPU_CORE +VGA_CORE +VCC_GFXCORE_AXG +1.8VS +0.75VS
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	Porject	Phase
0	0	0 V	0 V	0 V	G-series	MP
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V	G-series	PVT
2	18K +/- 5%	0.436 V	0.503 V	0.538 V	G-series	DVT
3	33K +/- 5%	0.712 V	0.819 V	0.875 V	G-series	EVT
4	56K +/- 5%	1.036 V	1.185 V	1.264 V	Y-series	EVT
5	100K +/- 5%	1.453 V	1.650 V	1.759 V	Y-series	DVT
6	200K +/- 5%	1.935 V	2.200 V	2.341 V	Y-series	PVT
7	NC	2.500 V	3.300 V	3.300 V	Y-series	MP

EC SM Bus1 address

Address

Device	
Smart Battery	0001 011X b

EC SM Bus2 address

Device	Address
Thermal Sensor F75303M	1001_101xb

PCH SM Bus address

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

AMD-GPU SM Bus address

Device	Address
Internal thermal sensor	1001 111Xb (0x9E)

SMBUS Control Table

	SOURCE	VGA	BATT	KB9012	SODIMM	WLAN WWAN	Thermal Sensor	PCH
SMB_EC_CK1 SMB_EC_DA1	KB9012 +3VALW	X	V +3VALW	X	X	X	X	X
SMB_EC_CK2 SMB_EC_DA2	KB9012 +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

USB Port Table

USB 3.0	USB 2.0		Port	3 External USB Port
xHCI1	EHCI1	UHCI0	0	
xHCI2			1	USB 3.0 Port (Left Side)
xHCI3		UHCI1	2	Mini Card(WLAN)
xHCI4			3	
		UHCI2	4	X (USB PORT disabled on HM70)
			5	X (USB PORT disabled on HM70)
		UHCI3	6	X (USB PORT disabled on HM70)
			7	X (USB PORT disabled on HM70)
	EHCI2	UHCI4	8	USB/B (Right Side USB-BD)
			9	USB/B (Right Side USB-BD)
		UHCI5	10	USB Port (Right Side CR-BD)
			11	Camera (LVDS)
		UHCI6	12	X (USB PORT disabled on HM70)
			13	X (USB PORT disabled on HM70)

HM70 Disable xHCI3,xHCI4

BOM Structure Table

BTO Item	BOM Structure
INTEL UMA only	UMA@
GPU:Seymour XT	PX@ PX5@
HDMI	HDMI@
HDD1 (HM77 SATA 3.0)	HDD1@
HDD2 (HM70 SATA 2.0)	HDD2@
Interna-Intel-USB3.0	IU3@
Interna-Intel-USB2.0	IU2@
Blue Tooth	BT@
10/100 LAN	8105E@
GIGA LAN	8111F@
Connector	ME@
45 LEVEL	45@
Unpop	@

SATA Port Table

	HM77	HM70	
SATA P0	GEN3/2/1	GEN3/2/1	SSD
SATA P1	GEN3/2/1	Disable	HDD (HM77)
SATA P2	GEN2/1	GEN2/1	HDD (HM70)
SATA P3	GEN2/1	Disable	
SATA P4	GEN2/1	GEN2/1	
SATA P5	GEN2/1	GEN2/1	

HM70 Disable P1,P3

PCIe Port Table

	HM77	HM70	
PCIe P1	Enable	Enable	LAN
PCIe P2	Enable	Enable	WLAN
PCIe P3	Enable	Enable	
PCIe P4	Enable	Enable	
PCIe P5	Enable	Disable	
PCIe P6	Enable	Disable	
PCIe P7	Enable	Disable	
PCIe P8	Enable	Disable	

HM70 Disable P5,P6,P7,P8

Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2011/06/15	Deciphered Date 2012/07/11	Title: Notes List

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Power-Up/Down Sequence

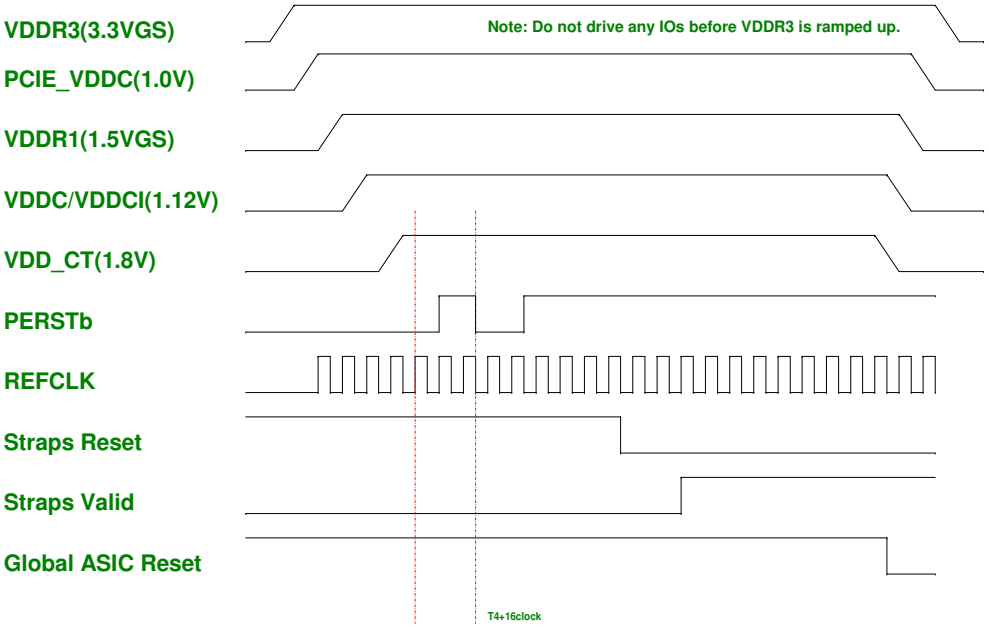
1. All the ASIC supplies must fully reach their respective nominal voltages within 20 ms of the start of the ramp-up sequence, though a shorter ramp-up duration is preferred.

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).)



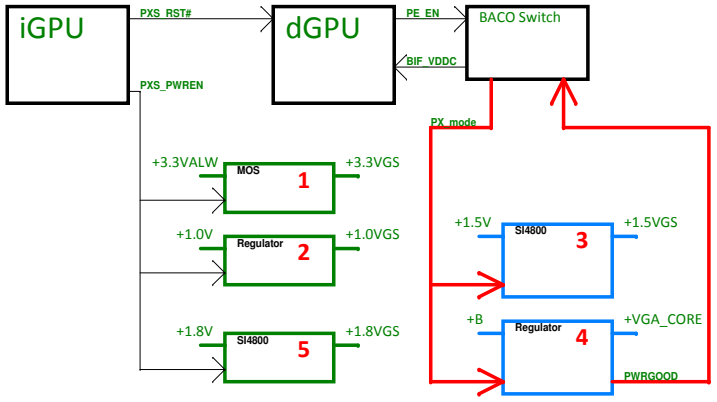
Without BACO option :

PXS_RST# : Low -> Reset dGPU ; High ->Normal operation
PXS_PWREN : Low -> dGPU Power OFF ; High -> dGPU Power ON

BACO option :

PXS_RST# : High ->Normal operation (dGPU is not reset on BACO mode)
PXS_PWREN : 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) BIF_VDDC=VGA_CORE When GPU enable BIF_VDDC=1.0V When BACO	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



CPU part

UCPU1 CPU1@ — I3_3217 1.8G — SA00005L510
UCPU1 CPU2@ — I5_3427 1.8G — SA00005L900
UCPU1 CPU3@ — I5_2557 1.4G — SA00004VZ00
UCPU1 CPU4@ — 977_1.4G — SA00005BJ40

PCB part

ZZZ5 — PCB 0R LA-8951P REV0 M/B — DA60000TO00

ZZZ2 — Hynix S512@ — X7641338L01
ZZZ1 — Hynix H512@ — X7641338L02
ZZZ3 — Hynix S1G@ — X7641338L03
ZZZ4 — Hynix H1G@ — X7641338L04

Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2011/06/15	Deciphered Date 2012/07/11	Title: VGA Notes List
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PEG_ICOMPI and RCOMPO signals should be shorted and routed
with - max length = 500 mils - typical impedance = 43 mohms
PEG_ICOMPO signals should be routed with - max length = 500 mils
- typical impedance = 14.5 mohms

Layout placement: Place close to U8 (GPU)

+1.05VS_VTT

R249 24.9_0402_1%

W=12mil L=500mil S=15mil

PEG_COMP

UCPU1A

PEG_ICOMPI
PEG_ICOMPO
PEG_RCOMPO

DMI

FDI (x) FDI

PCI EXPRESS -- GRAPHICS

eDP

IVY-BRIDGE_BGA1023

PEG_GTX_HRX_N[0..15] [22]
PEG_GTX_HRX_P[0..15] [22]
PEG_HTX_C_GRX_N[0..15] [22]
PEG_HTX_C_GRX_P[0..15] [22]

eDP_COMPIO and ICOMPO signals should be shorted near balls and routed with typical impedance <25 mohms
can't be left floating
,even if disable eDP function...

+1.05VS_VTT

R247 24.9_0402_1%

W=12mil L=500mil S=15mil

EDP_COMP

Typ- suggest 220nF. The change in AC capacitor value from 100nF to 220nF is to enable compatibility with future platforms having PCIE Gen3 (8GT/s)

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Compal Electronics, Inc.

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

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PCH->CPU
UNCOREPWRGOOD:非CORE外的電OK
SM_DRAMPWROK:DRAM power ok
RESET#:部ok後請CPU做reset

Follow DG 1.5& Tacoma_Fall2 1.0

reserve

C614 2 @ 1 0.1U_0402_16V4Z H_CPUPWRGD_R

R292 2 1 10K_0402_5%

PROC_SELECT#
PH VCPLL and connect to PCH DF_TVS

偵測CPU有無安裝

XBOX 三紅功能

follow Checklist 1.5

+1.05VS_VTT R534 2 1 62_0402_5%

[37,42] H_PROCHOT# R533 56_0402_5%

UCPU1B

[17] H_SNB_IVB# F49 PROC_SELECT#
C57 PROC_DETECT#
T33 PAD @ H_CATERR# C49 CATERR#
[18,37] H_PECI A48 PECI
H_PROCHOT# C45 PROCHOT#
[18] H_THERMTRIP# D45 THERMTRIP#

MISC THERMAL

[15] H_PM_SYNC C48 PM_SYNC
[18] H_CPUPWRGD R305 2 H_CPUPWRGD_R B46 UNCOREPWRGOOD
R237 130_0402_1% VDDPWRGOOD_R BE45 SM_DRAMPWROK
BUF_CPU_RST# D44 RESET#

PWR MANAGEMENT

UNCOREPWRGOOD:非CORE外的電OK

SM_DRAMPWROK:DRAM power ok

IVY-BRIDGE_BGA1023

CLOCKS

BCLK J3 CLK_CPU_DMI [14]
BCLK# H2 CLK_CPU_DMI# [14]
DPLL_REF_CLK AG3 CLK_CPU_DPLL
DPLL_REF_CLK# AG1 CLK_CPU_DPLL#

SM_RCOMP0,SM_RCOMP1
W=20mil L=500mil S=13mil

SM_RCOMP2
W=15mil L=500mil S=13mil

DDR3 MISC

SM_DRAMRST# AT30 SM_DRAMRST# SM_DRAMRST# [7]
SM_RCOMP[0] BF44 SM_RCOMP0 R272 2 1 140_0402_1%
SM_RCOMP[1] BE43 SM_RCOMP1 R273 2 1 25.5_0402_1%
SM_RCOMP[2] BG43 SM_RCOMP2 R267 2 1 200_0402_1%

DDR3 Compensation Signals

@ C82 1 2 100P_0402_50V8J

ESD
C Reserve

JTAG & BPM

PRDY# N53
PREQ# N55
TCK L56 XDP_TCK
TMS L55 XDP_TMS
TRST# J58 XDP_TRST#
TDI M60 XDP_TDI
TDO L59 XDP_TDO
DBR# K58 XDP_DBRESET#
BPM#[0] G58
BPM#[1] E55
BPM#[2] E59
BPM#[3] G55
BPM#[4] G59
BPM#[5] H60
BPM#[6] J59
BPM#[7] J61

XDP_DBRESET# R312 2 1 1K_0402_5% +3VS

Tacoma_Fall2 1.0 PH 1K +3VS
Check list 1.5 PH 1K +3VS
Debug port DG1.1-1.3 50~5K ohm

PU/PD for JTAG signals

XDP_TMS R20 2 1 51_0402_5%
XDP_TDI R39 2 1 51_0402_5%
XDP_TDO R37 2 1 51_0402_5%
XDP_TCK R40 2 1 51_0402_5%
XDP_TRST# R28 2 1 51_0402_5%

+1.05VS_VTT

CLK_CPU_DPLL# R517 2 1 1K_0402_5%
CLK_CPU_DPLL R516 2 1 1K_0402_5%

Checklist1.5 P.67 Graphis Disable Guide
DIS only SKU eDP disable
DPLL_REF_SSCLK PD 1K_5% to GND
DPLL_REF_SSCLK# PH 1K_5% to +1.05VS_VTT

+3VALW +3VS +1.5V_CPU_VDDQ

R34 10K_0402_5%
R35 @ 10K_0402_5%
C228 0.1U_0402_16V4Z
U22
[15] SYS_PWROK
[15] PM_DRAM_PWRGD
4PM_SYS_PWRGD_BUF
74AHC1G09GW_TSSOP5
R238 200_0402_5%
@ R38 39_0402_5%
[10] RUN_ON_CPU1.5VS3#
RUN_ON_CPU1.5VS3#
Q4 2N7002K_SOT23-3

Buffered reset to CPU

+3VS +1.05VS_VTT
C617 0.1U_0402_16V4Z
R546 75_0402_5%
R544 43_0402_5%
U45
BUF_CPU_RST#
BUFO_CPU_RST# 4
2PCH_PLTRST#
PCH_PLTRST# [17]
SN74LVC1G07DCKR_SC70-5
C43 0.1U_0402_16V4Z @

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Compal Electronics, Inc.

Title: PROCESSOR(3/7) DDRIII

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

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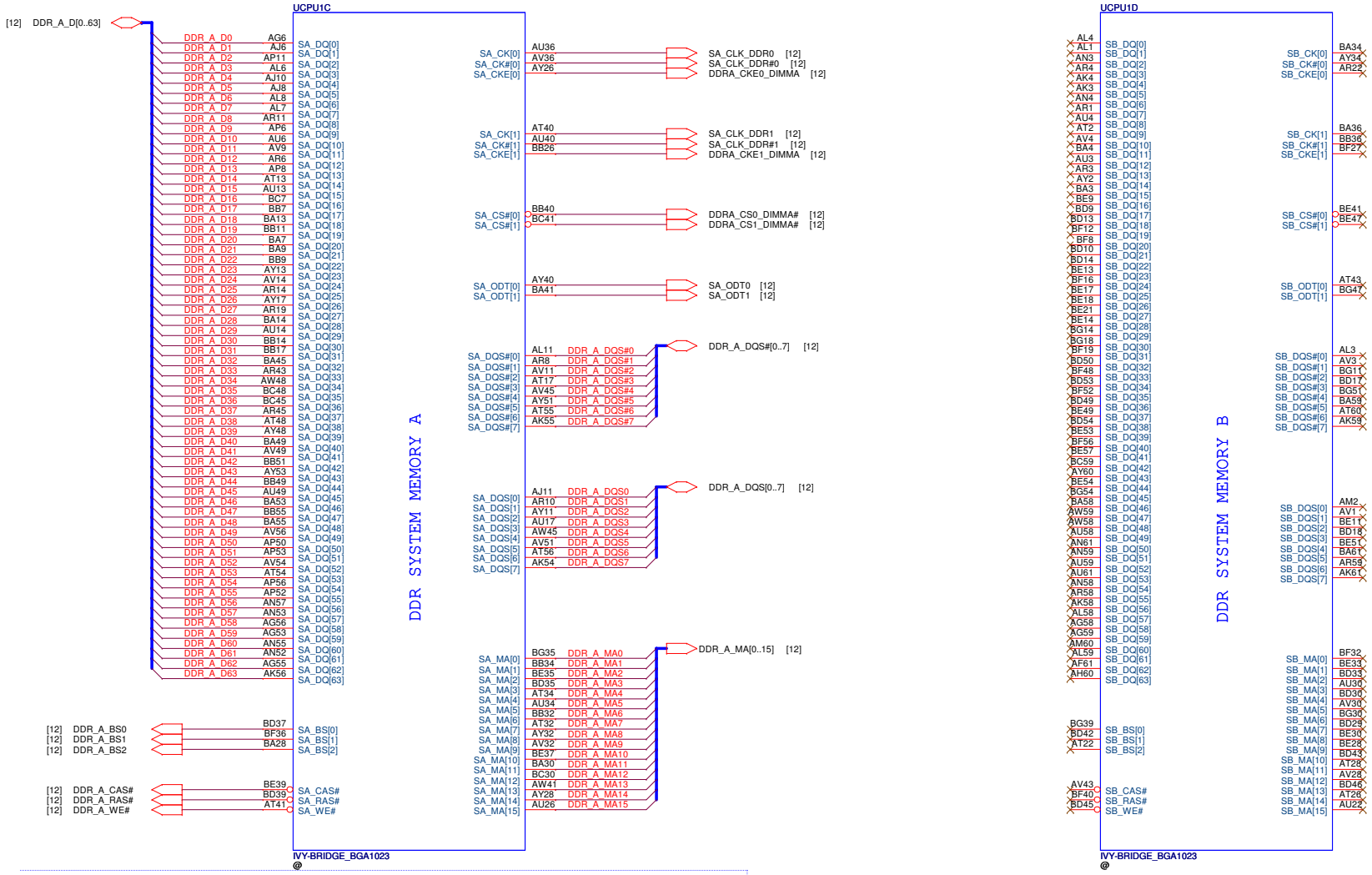

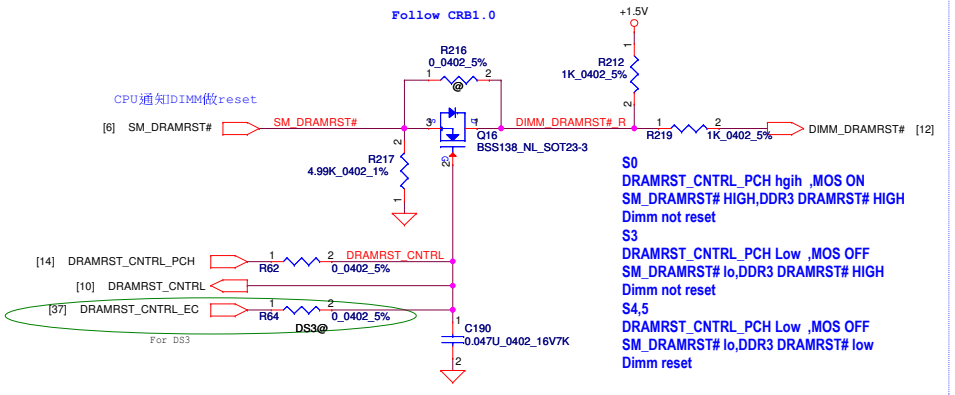

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Title: PROCESSOR(3/7) DDRIII

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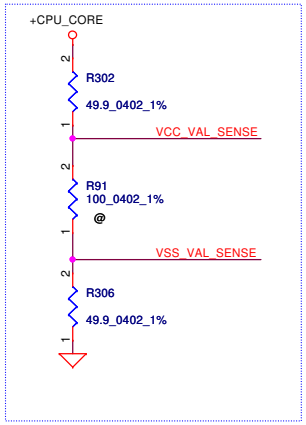
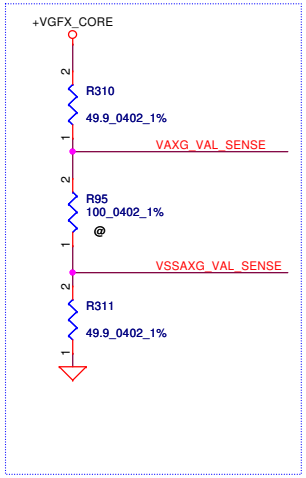
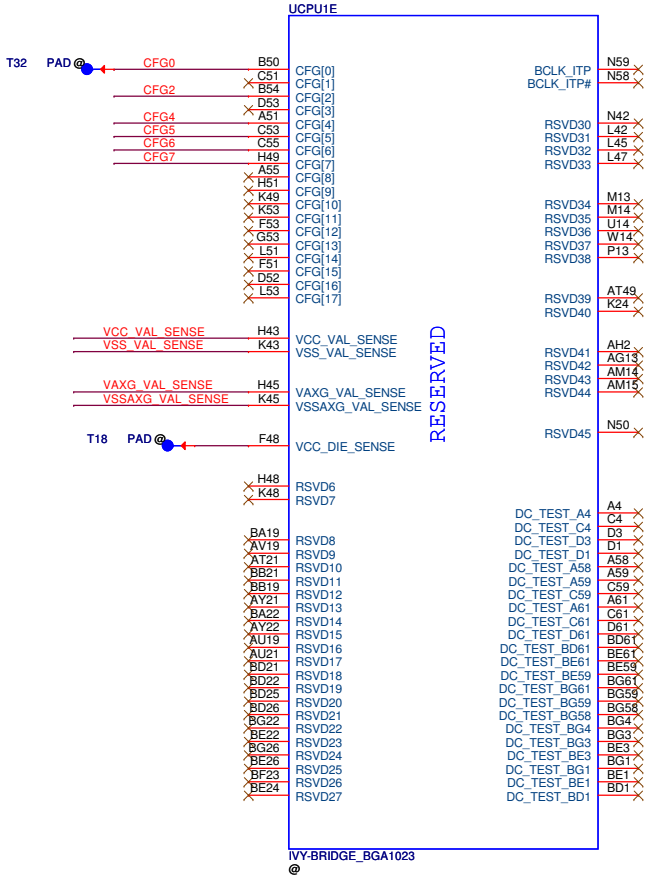
Date: Thursday, February 02, 2012 | Sheet 7 of 55

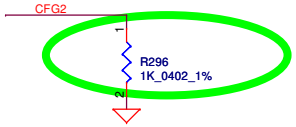




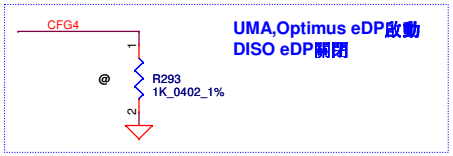


These pins are for solder joint reliability and non-critical to function. For BGA only.

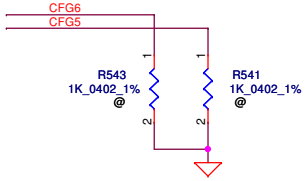
CFG Straps for Processor



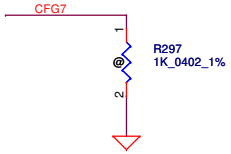
PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1: Normal Operation; Lane # definition matches socket pin map definition * 0:Lane Reversed



eDP enable	
CFG4	* 1:Disable 0:Enable



PCIE Port Bifurcation Straps	
CFG[6:5]	*11: (Default) 1x16 PCI Express 10: 2x8 PCI Express 01: Reserved 00: 1x8,2x4 PCI Express



PEG DEFER TRAINING	Tacoma_Fall2 1.0 P.12
CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training

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Compal Electronics, Inc.

Title: PROCESSOR(4/7) RSVD,CFG

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

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POWER

ULV type
DC 33A

8.5A

UCPU1F

+CPU_CORE

INTEL Recommend VCC
4*470UF,12*22uF(0805) and 35*2.2uF(0402)
PD0.8
CAP at Power side

CORE SUPPLY

VCC[1] A26
VCC[2] A29
VCC[3] A31
VCC[4] A34
VCC[5] A35
VCC[6] A38
VCC[7] A39
VCC[8] A42
VCC[9] C26
VCC[10] C27
VCC[11] C32
VCC[12] C34
VCC[13] C37
VCC[14] C39
VCC[15] C42
VCC[16] D27
VCC[17] D32
VCC[18] D34
VCC[19] D37
VCC[20] D39
VCC[21] D42
VCC[22] E26
VCC[23] E28
VCC[24] E32
VCC[25] E34
VCC[26] E37
VCC[27] E38
VCC[28] F25
VCC[29] F26
VCC[30] F28
VCC[31] F32
VCC[32] F34
VCC[33] F37
VCC[34] F38
VCC[35] F42
VCC[36] G42
VCC[37] H25
VCC[38] H26
VCC[39] H28
VCC[40] H29
VCC[41] H32
VCC[42] H34
VCC[43] H35
VCC[44] H37
VCC[45] H38
VCC[46] H40
VCC[47] J25
VCC[48] J26
VCC[49] J28
VCC[50] J29
VCC[51] J32
VCC[52] J34
VCC[53] J35
VCC[54] J37
VCC[55] J38
VCC[56] J40
VCC[57] J42
VCC[58] K26
VCC[59] K27
VCC[60] K29
VCC[61] K32
VCC[62] K34
VCC[63] K35
VCC[64] K37
VCC[66] K39
VCC[67] K42
VCC[68] L25
VCC[69] L28
VCC[70] L33
VCC[71] L36
VCC[72] L40
VCC[73] N26
VCC[74] N30
VCC[75] N34
VCC[76] N38

PEG IO AND DDR IO

+1.05VS_VTT

For DDR

VCCIO[1] AF46
VCCIO[3] AG48
VCCIO[4] AG50
VCCIO[5] AG51
VCCIO[6] AJ17
VCCIO[7] AJ21
VCCIO[8] AJ25
VCCIO[9] AJ43
VCCIO[10] AJ47
VCCIO[11] AK50
VCCIO[12] AK51
VCCIO[13] AL14
VCCIO[14] AL15
VCCIO[15] AL16
VCCIO[16] AL20
VCCIO[17] AL22
VCCIO[18] AL26
VCCIO[19] AL45
VCCIO[20] AL48
VCCIO[21] AM16
VCCIO[22] AM17
VCCIO[23] AM21
VCCIO[24] AM43
VCCIO[25] AM47
VCCIO[26] AN20
VCCIO[27] AN42
VCCIO[28] AN45
VCCIO[29] AN48

INTEL Recommend VCCIO
2*330UF,10*10uF(0603) and 26*1uF(0402)
PD0.8
CAP at Power side

For PEG

VCCIO[30] AA14
VCCIO[31] AA15
VCCIO[32] AB17
VCCIO[33] AB20
VCCIO[34] AC13
VCCIO[35] AD16
VCCIO[36] AD18
VCCIO[37] AD21
VCCIO[38] AE14
VCCIO[39] AE15
VCCIO[40] AF16
VCCIO[41] AF18
VCCIO[42] AF20
VCCIO[43] AG15
VCCIO[44] AG16
VCCIO[45] AG17
VCCIO[46] AG20
VCCIO[47] AG21
VCCIO[48] AJ14
VCCIO[49] AJ15

+1.05VS_VTT

VCCIO50 W16
VCCIO51 W17

+3VS

R521 10K_0402_5%

VCCIO_SEL

R522 10K_0402_5% @

VCCIO_SEL after Ivy bridge ES2 Voltage support		
BC22	*	1/NC : (Default) +1.05VS_VTT 0: +1.0VS_VTT

VCCIO_SEL BC22 VCCIO_SEL

QUIET RAILS

+1.05VS_VTT

VCCPQE[1] AM25
VCCPQE[2] AN22

C553 1U_0402_6.3V6K

+1.05VS_VTT

R531 130_0402_5%

+1.05VS_VTT

R529 75_0402_5%

Place the PU resistors close to CPU

SVID

VIDALERT# A44 H_CPU_SVIDALRT#
VIDSCLK B43 H_CPU_SVIDCLK
VIDSOUT C44 H_CPU_SVIDDAT

R528 43_0402_1%
R527 0_0402_5%
R530 0_0402_5%

VR_SVID_ALRT# [50]
VR_SVID_CLK [50]
VR_SVID_DAT [50]

+CPU_CORE

Place the PU resistors close to VR

R79 100_0402_1% @

R281 100_0402_1%

SENSE LINES

VCC_SENSE F43 VCCSENSE_R
VSS_SENSE G43 VSSSENSE_R

R282 0_0402_5%
R289 0_0402_5%

VCCSENSE [50]
VSSSENSE [50]

R513 10_0402_5%

+1.05VS_VTT

VCCIO_SENSE AN16
VSS_SENSE_VCCIO AN17

VCCIO_SENSE [47]
VSSIO_SENSE_L [47]

R512 10_0402_5%

R288 100_0402_1%

Should change to connect form power circuit & layout differential with VCCIO_SENSE.

Check list 1.5

IVY-BRIDGE_BGA1023
@

Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: PROCESSOR(5/7) PWR,BYPASS

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POWER

M3 Support

SA_DIMM_VREFDQ → R86 0_0402_5% → +VREF_DQ_DIMMA
Q2204 BSS138_NL_SOT23-3
DRAMRST_CNTRL_PCH → DRAMRST_CNTRL [7]

+V_SM_VREF_CNT should have 20 mil trace width

+1.5V_CPU_VDDQ → R113 1K_0402_1% → +V_SM_VREF_CNT
R117 0_0402_5% → Q11 AO3414_SOT23-3 → +V_SM_VREF
RUN_ON_CPU1.5VS3 → R519 1K_0402_1% / R518 1K_0402_1%
C117 0.1U_0402_16V4Z
+1.5V → R76 1K_0402_1% / R116 1K_0402_1%

SA_DIMM_VREFDQ
SB_DIMM_VREFDQ
Check list1.5 P18 M1 default M3 no stuff

INTEL Recommend VDDQ
1*330uF,8*10uF(0603) ,10*1uF(0402)
PD0.8

INTEL Recommend VAXG
2*470uF,6*22uF(0805) and 6*10uF(0603)
11*1U(0402)
PD0.8

INTEL Recommend VCCPLL
1*330uF,2*1uF(0402)
PD0.8

INTEL Recommend VCCSA
1*330uF,5*10uF(0603) ,5*1uF(0402)
PD0.8

CR CheckList Rev1.5

SGA20331E10 S POLY C 330U 2V Y D2 LESR9M EEFSX H1.9

B phase Cost down proposal

CPU EDS1.3 P.93
VCCSA_VID0 Must PD

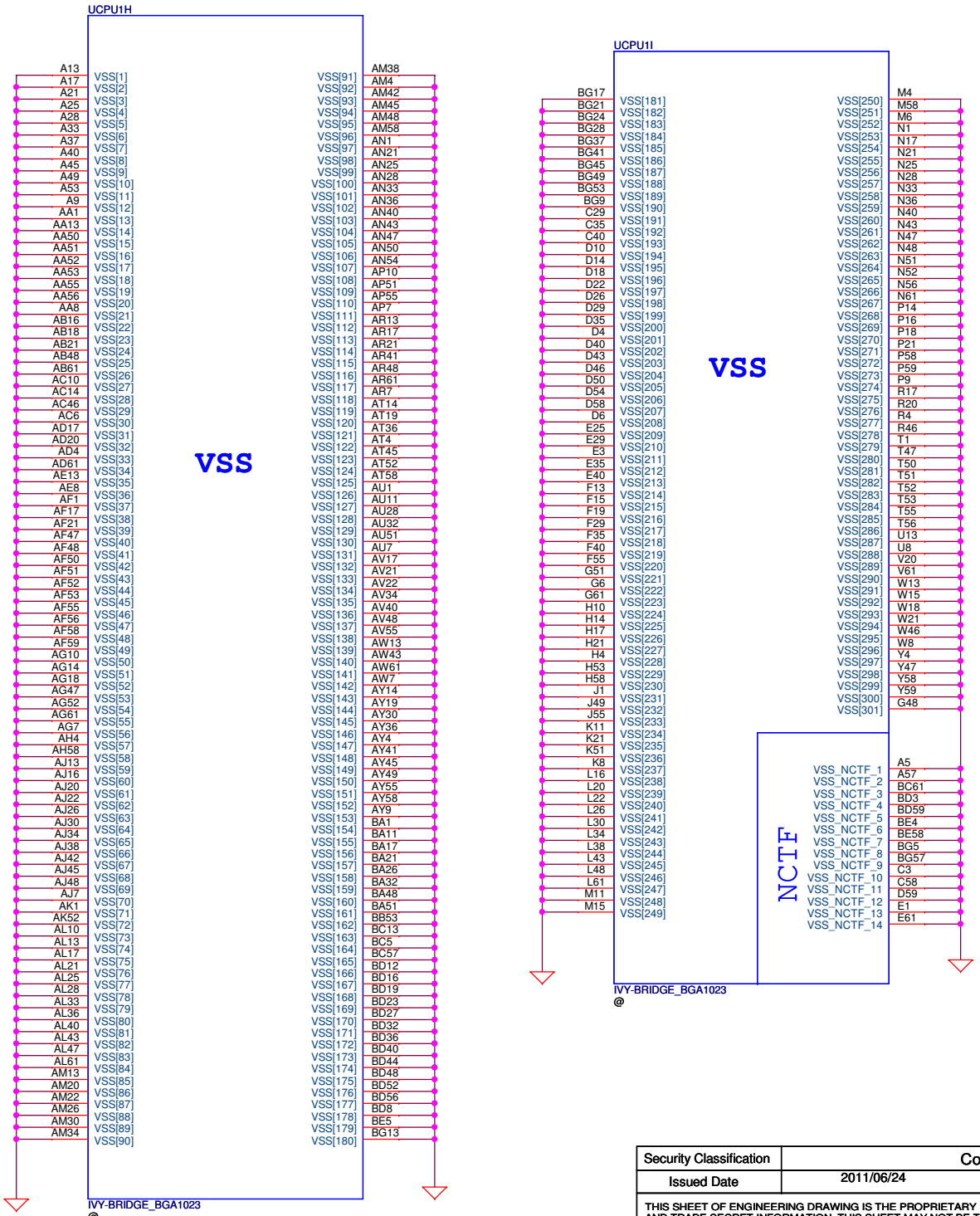
VCCSA ULV				
VID0	VID1	Vout	HR	CR
0	0	0.9V	V	V
0	1	0.85V	V	V
1	0	0.775V	X	V
1	1	0.75V	X	V

IVY-BRIDGE_BGA1023

Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2011/06/24	2012/07/12	Title: PROCESSOR(6/7) PWR

Size	Document Number	Rev	0.1
Date: Thursday, February 02, 2012	Sheet 10 of 55		

Sherry and Royal



Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: PROCESSOR(7/7) VSS

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 11 of 55

All VREF traces should have 10 mil trace width

DDR_A_DQS#[0..7] [7]
DDR_A_DQS[0..7] [7]
DDR_A_D[0..63] [7]
DDR_A_MA[0..15] [7]

Layout Note:
Place near JDIMM1

Layout Note:
Place near JDIMM1.203,204

JDIMM1
TYCO_2-2013022-1
ME@

<Address: SA1:SA0=00>

Channel A

DIMM_1 Standard H:4.0mm

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Issued Date	2011/06/24	Deciphered Date	2012/07/12

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Compal Electronics, Inc.

Title: DDRIII DIMMB

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 12 of 55

RTCRST close to RAM door

+RTCBATT
C439 1U_0402_6.3V6K
R501 0_0603_5%
R356 20K_0402_5%
R357 20K_0402_5%
R372 0_0603_5%
C440 1U_0402_6.3V6K
PCH_RTCRST#
PCH_SRTCRST#

+RTCBATT
R358 1M_0402_5% SM_INTRUDER#
R355 330K_0402_5% PCH_INTVRMEN

INTVRMEN
★ H : Integrated VRM enable
L : Integrated VRM disable
(INTVRMEN should always be pull high.)

+3VS
R109 1K_0402_5% HDA_SPKR
HIGH= Enable (No Reboot)Disable TCO timer system reboot feature
★ LOW= Disable (Default internal PD)

+3V_PCH
R46 1K_0402_5%
R73 0_0402_5%
[37] ME_FLASH
HDA_SDOUT_PCH

HDA_SDO
ME debug mode,this signal has a weak internal PD
★ Low = Disabled (Default)
High = Enabled [Flash Descriptor Security Overide]

+3V_PCH
R47 1K_0402_5% HDA_SYNC_PCH
This signal has a weak internal pull-down

On Die PLL VR Select is supplied by
★1.5V when sampled high
1.8V when sampled low
Needs to be pulled High for Huron River platfrom

[36] HDA_BITCLK_AUDIO R75 33_0402_5% HDA_BITCLK_PCH
[36] HDA_SYNC_AUDIO R30 33_0402_5% HDA_SYNC_PCH_R
[36] HDA_RST_AUDIO# R74 33_0402_5% HDA_RST_PCH#
[36] HDA_SDOUT_AUDIO R72 33_0402_5% HDA_SDOUT_PCH

+3V_PCH
R134 200_0402_5% PCH_JTAG_TDO
R143 200_0402_5% PCH_JTAG_TMS
R137 200_0402_5% PCH_JTAG_TDI
R141 100_0402_1%
R140 100_0402_1%
R142 100_0402_1%

PCH_RTCX1
R406 10M_0402_5% PCH_RTCX2
Y2 32.768KHZ_12.5PF_9H032000019
C452 18P_0402_50V8J
C451 18P_0402_50V8J

Prevent back drive issue.

+5VS
Q3 BSS138_NL_SOT23-3
R48 0_0402_5%
R29 1M_0402_5%
HDA_SYNC_PCH_R
[36] HDA_SPKR
[36] HDA_SDIN0

U13A
PANTHER_FCBGA989
<BOM Structure>

RTC: PCH_RTCX1 A20 RTCX1; PCH_RTCX2 C20 RTCX2; PCH_RTCRST# D20 RTCRST#; PCH_SRTCRST# G22 SRTCRST#; SM_INTRUDER# K22 INTRUDER#; PCH_INTVRMEN C17 INTVRMEN

IHDA: HDA_BITCLK_PCH N34 HDA_BCLK; HDA_SYNC_PCH L34 HDA_SYNC; HDA_SPKR T10 SPKR; HDA_RST_PCH# K34 HDA_RST#; HDA_SDIN0 E34 HDA_SDIN0; G34 HDA_SDIN1; C34 HDA_SDIN2; A34 HDA_SDIN3; HDA_SDOUT_PCH A36 HDA_SDO; PCH_GPIO33 C36 HDA_DOCK_EN# / GPIO33; PCH_GPIO13 N32 HDA_DOCK_RST# / GPIO13

JTAG: PCH_JTAG_TCK J3 JTAG_TCK; PCH_JTAG_TMS H7 JTAG_TMS; PCH_JTAG_TDI K5 JTAG_TDI; PCH_JTAG_TDO H1 JTAG_TDO

SPI: SPI_CLK_PCH_R T3 SPI_CLK; SPI_SB_CS0# Y14 SPI_CS0#; SPI_SB_CS1# T1 SPI_CS1#; SPI_SI V4 SPI_MOSI; SPI_SO_R U3 SPI_MISO

LPC: FWH0 / LAD0 C38 LPC_AD0; FWH1 / LAD1 A38 LPC_AD1; FWH2 / LAD2 B37 LPC_AD2; FWH3 / LAD3 C37 LPC_AD3; FWH4 / LFRAME# D36 LPC_FRAME#; LDRQ0# E36; LDRQ1# / GPIO23 K36; SERIRQ V5 SERIRQ

SATA 6G: SATA0RXN AM3; SATA0RXP AM1; SATA0TXN AP7 SATA_PTX_DRX_C_N0; SATA0TXP AP5 SATA_PTX_DRX_C_P0; SATA1RXN AM10 SATA_DTX_C_R_PRX_N1; SATA1RXP AM8 SATA_DTX_C_R_PRX_P1; SATA1TXN AP11 SATA_PTX_DRX_N1; SATA1TXP AP10 SATA_PTX_DRX_P1; SATA2RXN AD7 SATA_DTX_C_R_PRX_N2; SATA2RXP AD5 SATA_DTX_C_R_PRX_P2; SATA2TXN AH5 SATA_PTX_DRX_N2; SATA2TXP AH4 SATA_PTX_DRX_P2; SATA3RXN AB8; SATA3RXP AB10; SATA3TXN AF3; SATA3TXP AF1; SATA4RXN Y7; SATA4RXP Y5; SATA4TXN AD3; SATA4TXP AD1; SATA5RXN Y3; SATA5RXP Y1; SATA5TXN AB3; SATA5TXP AB1

SATA: SATAICOMPO Y11; SATAICOMPI Y10 SATA_COMP; SATA3RCOMPO AB12; SATA3COMPI AB13 SATA3_COMP; SATA3RBIAS AH1 RBIAS_SATA3; SATALED# P3 PCH_SATALED#; SATA0GP / GPIO21 V14 PCH_GPIO21; SATA1GP / GPIO19 P1 BBS_BIT0_R

C1185 0.01U_0402_16V7K SATA_PRX_DTX_C_N0 [31] / SATA_PRX_DTX_C_P0 [31]
C1208 0.01U_0402_16V7K SATA_PTX_DRX_N0 [31] / SATA_PTX_DRX_P0 [31]

SSD

R148 HDD1@ 0_0402_5% SATA_DTX_C_PRX_N1 [35]
R149 HDD1@ 0_0402_5% SATA_DTX_C_PRX_P1 [35]
R150 HDD1@ 0_0402_5% SATA_PTX_R_DRX_N1 [35]
R151 HDD1@ 0_0402_5% SATA_PTX_R_DRX_P1 [35]
C1209 0.01U_0402_16V7K
C1223 0.01U_0402_16V7K
HDD0 w/ HM77
Disable w/ HM70

R154 HDD2@ 0_0402_5% SATA_DTX_C_PRX_N1
R157 HDD2@ 0_0402_5% SATA_DTX_C_PRX_P1
R160 HDD2@ 0_0402_5% SATA_PTX_R_DRX_N1_CO
R161 HDD2@ 0_0402_5% SATA_PTX_R_DRX_P1_CO
HDD1 w/ HM70

Disable w/ HM70

L=500mil S=15mil
R121 SATA_COMP 37.4_0402_1%
+1.05VS_VTT

L=500mil S=15mil
R126 SATA3_COMP 49.9_0402_1%
+1.05VS_VTT

R440 RBIAS_SATA3 750_0402_1%

No use PH 10K +3VS

SERIRQ R118 10K_0402_5% +3VS

GPIO19 has internal Pull up
GPIO21 Debug Port DG 1.2 PH 4.7K +3VS
+3VS
BBS_BIT0_R R466 10K_0402_5%
PCH_SATALED# R429 10K_0402_5%
PCH_GPIO21 R136 10K_0402_5%

Boot BIOS Strap		
Boot BIOS	GPIO51	GPIO19
LPC	0	0
Reserved	0	1
–	1	0
★ SPI	1	1

8MB SPI ROM FOR ME
& Non-share ROM.

+3VS
R266 2_SPI_WP#1 3.3K_0402_5%
R221 2SPI_HOLD#1 3.3K_0402_5%
R127 2_SPI_WP# 3.3K_0402_5%
R171 2SPI_HOLD# 3.3K_0402_5%

R172 0_0402_5%
SPI_SB_CS1# SPI_SO_R
R188 33_0402_5%
U46 16M W25Q16BVSSIG SOIC 8P
CS# SO WP# GND VCC HOLD# SCLK SI
SPI_SO1 SPI_WP#1 SPI_HOLD#1 SPI_CLK1 SPI_SI1
R199 0_0402_5% SPI_CLK_PCH_R
R196 33_0402_5% SPI_SI

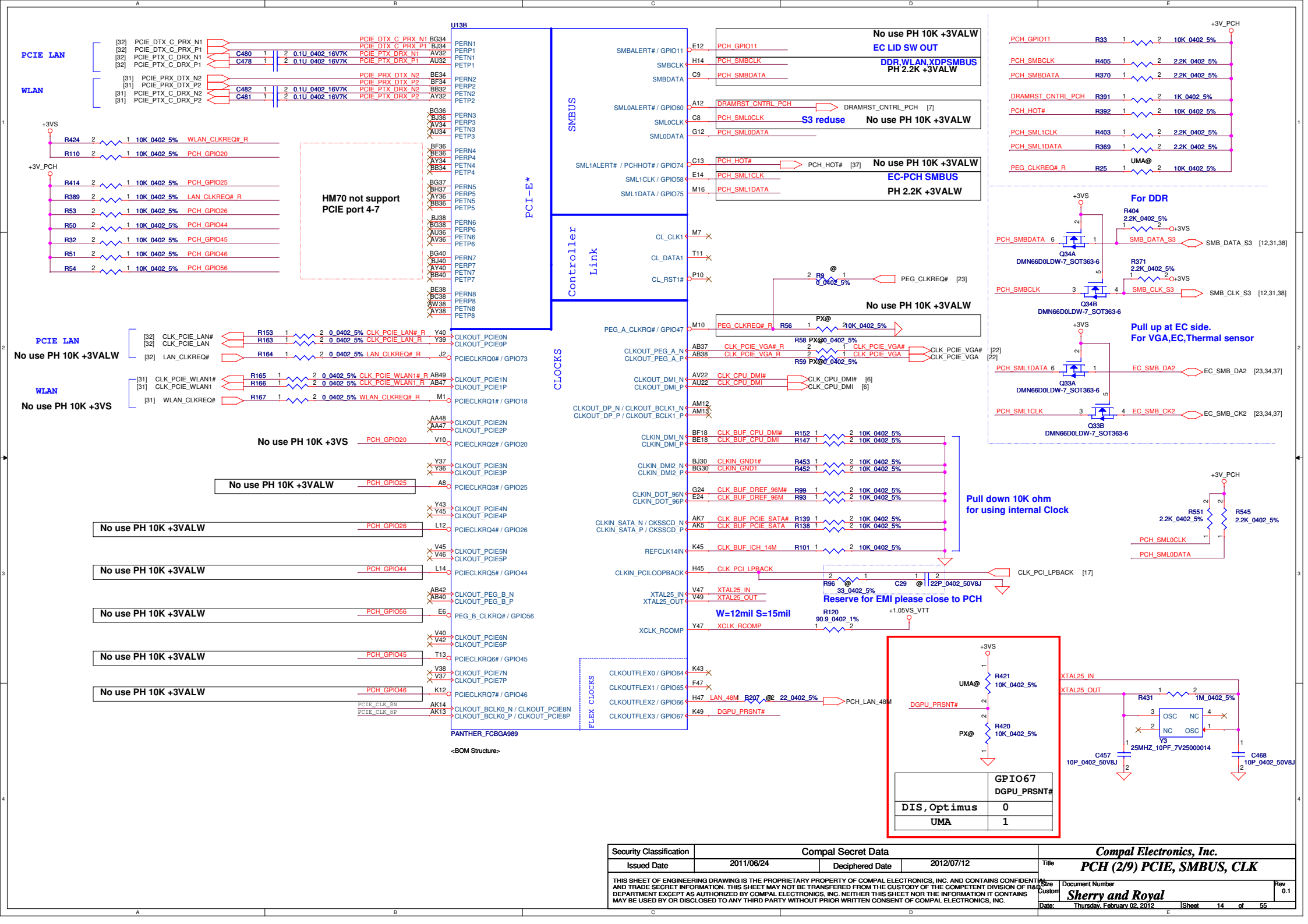
Reserve for EMI
C459 10P_0402_50V8J
R434 SPI_CLK_PCH_R 33_0402_5%

U6 Rersver 4M+2M Solution

R173 0_0402_5%
SPI_SB_CS0#2 SPI_SO_R
R169 33_0402_5%
U44 32M W25Q32BVSSIG SOIC 8P
CS# SO WP# GND VCC HOLD# SCLK SI
SPI_SO_L SPI_WP# SPI_HOLD# SPI_CLK_PCH SPI_SI_R
C191 0.1U_0402_16V4Z
R168 0_0402_5% SPI_CLK_PCH_R
R170 33_0402_5% SPI_SI

Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.
Title: PCH (1/9) SATA,HDA,SPI, LPC, XDP
Size: Custom | Document Number: Sherry and Royal | Rev: 0.1
Date: Thursday, February 02, 2012 | Sheet 13 of 55



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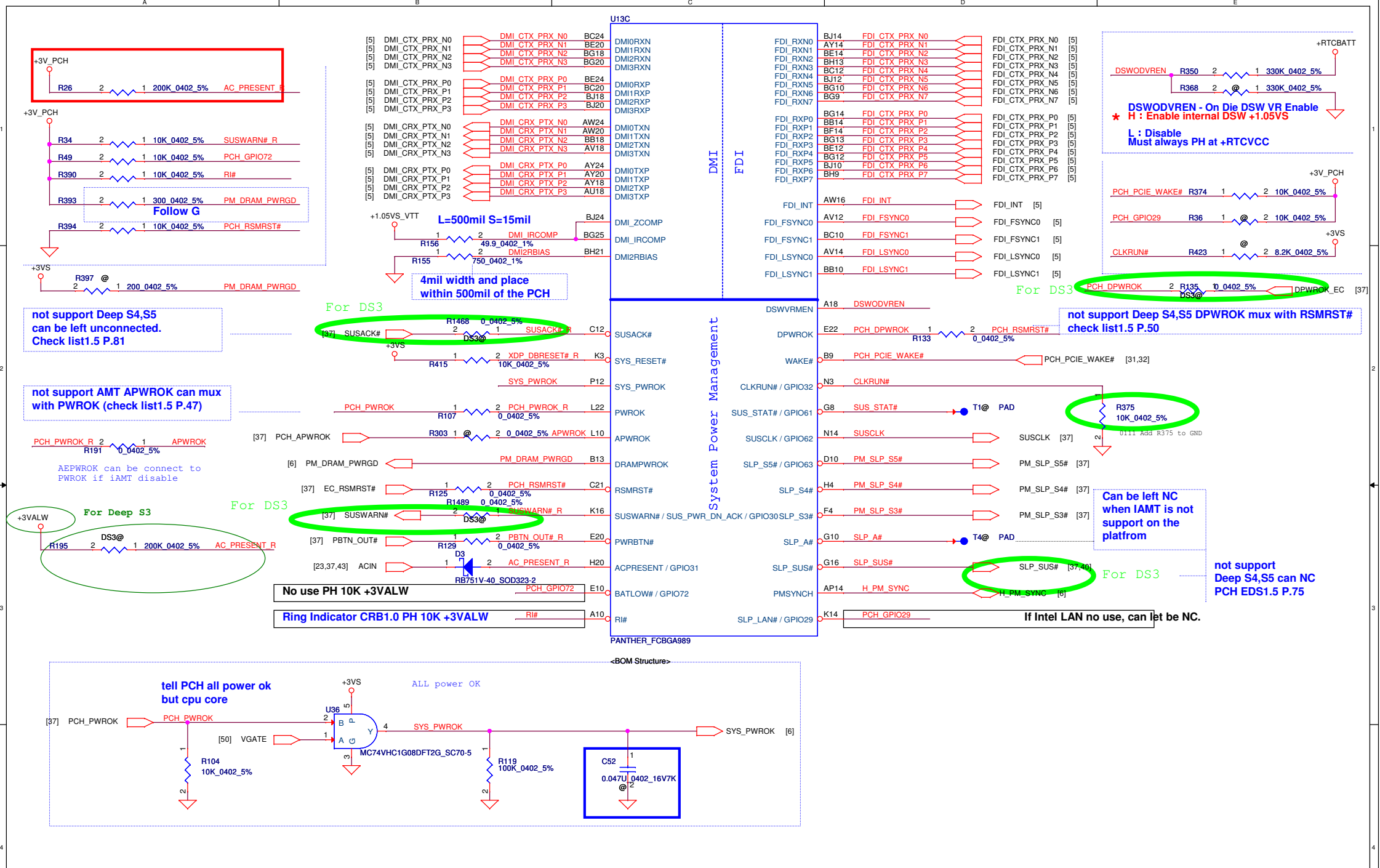
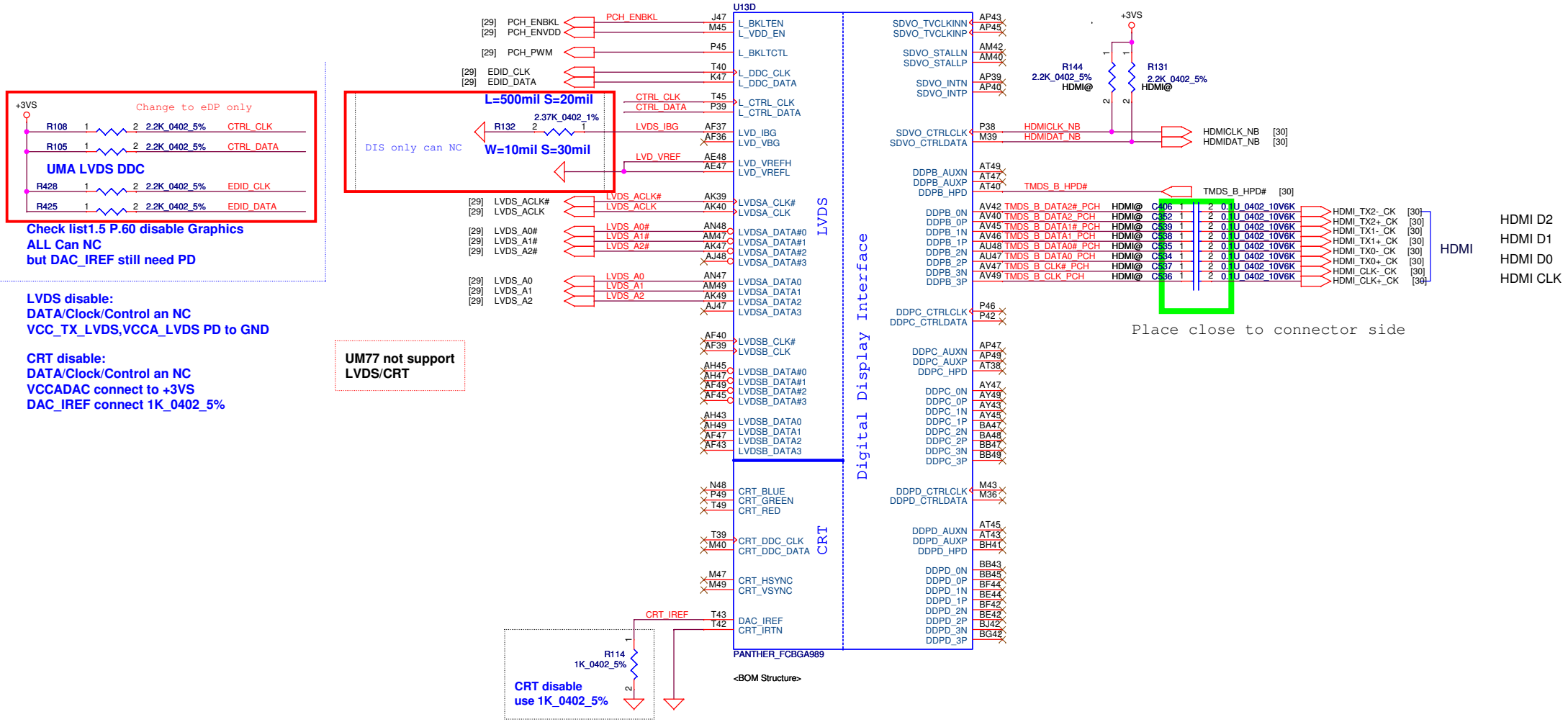


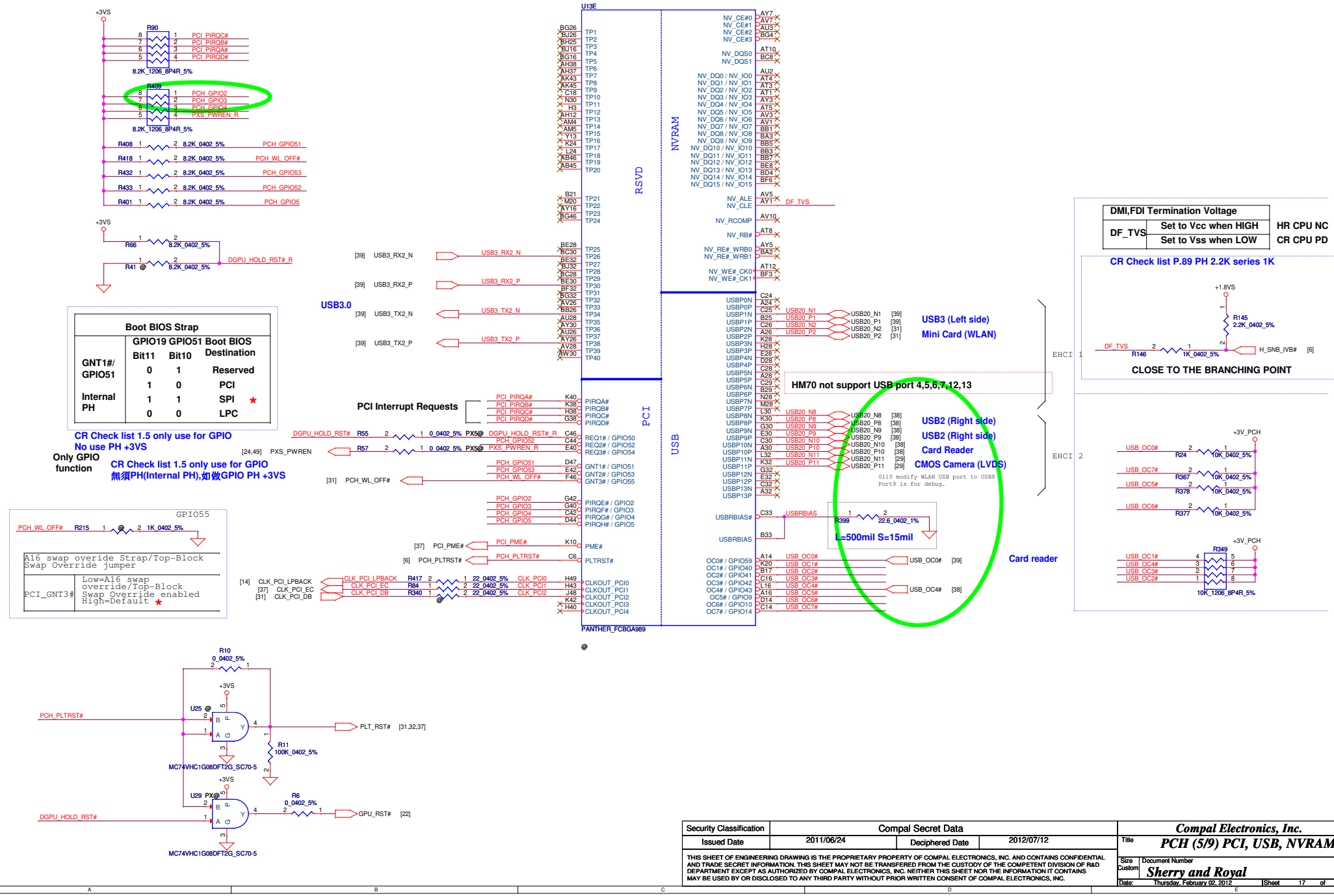
Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.			
Title: PCH (3/9) DMI,FDI,PM			
Size: Custom	Document Number: Sherry and Royal		Rev: 0.1
Date: Thursday, February 02, 2012	Sheet 15 of 55		



Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.			
Title	PCH (4/9) LVDS,CRT,DP,HDMI		
Size: Custom	Document Number: Sherry and Royal		Rev: 0.1
Date: Thursday, February 02, 2012	Sheet 16 of 55		



Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.	
Title	PCH (5/9) PCI, USB, NVRAM
Size: Custom	Document Number: Sherry and Royal
Rev: 0.1	
Date: Thursday, February 02, 2012	Sheet 17 of 55

HDA_SYNC PH(PLL =+1.5VS)

GPIO28

On-Die PLL Voltage Regulator

This signal has a weak internal pull up

★ H : On-Die PLL voltage regulator enable
L : On-Die PLL Voltage Regulator disable

+3V_PCH
R411 10K_0402_5%
PCH_GPIO28
R413 1K_0402_5%
Debug Port DG 1.2 PH 4.7K +3VALW_PCH

Deep S4,S5 wake event signal
RTC alarm,Power BTN,GPIO27
PCH_GPIO27 (Have internal Pull-High)
Deep S4,S5 wake event signal

+3VALW
For DS3
R208 DS3@ 10K_0402_5%
R83 @ 10K_0402_5%
PCH_GPIO27

+3V_PCH
R261 @ 1K_0402_5% EC_SMI#

SATA2GP/GPIO36 & SATA3GP/GPIO37
Sampled at Rising edge of PWROK.
Weak internal pull-down.
(weak internal pull-down is disabled
after PLTRST# de-asserts)
NOTE: This signal should NOT be
pulled high when strap is sampled

+3VS
R112 10K_0402_5% PCH_GPIO0
R402 10K_0402_5% PCH_GPIO1
R70 10K_0402_5% PCH_GPIO6
R115 10K_0402_5% MSATA_DET#
R71 10K_0402_5% VGA_PWRGD_R
R419 10K_0402_5% PCH_GPIO39
R97 10K_0402_5% BT_DISABLE
R416 10K_0402_5% PCH_BT_ON#
R128 10K_0402_5% PCH_GPIO48
R111 10K_0402_5% PCH_GPIO49

+3V_PCH
R376 10K_0402_5% PCH_GPIO12
R412 1K_0402_5% PCH_GPIO15
R52 10K_0402_5% PCH_GPIO57
R92 10K_0402_5% PCH_GPIO24
For DDR3L control
[46] DDR3L_EN# R63 @ 0_0402_5% PCH_GPIO24

GPIO24 Unmultiplexed
NOTE: GPIO24 configuration
register bits are not cleared by
CF9h reset event.
CRB1.0 PH10K to +3VALW

Fan Tachometer Inputs
TACH1~7 only on server
can insted to GPIO

No use PH 10K +3VS PCH_GPIO0 T7
No use PH 10K +3VS PCH_GPIO1 A42
No use PH 10K +3VS PCH_GPIO6 H36
No use PH 10K +3VS [37] EC_SCI# EC_SCI# E38
No use PH 10K +3VALW [37] EC_SMI# EC_SMI# C10
No use PH +3VALW PCH_GPIO12 C4
No use PH +3VALW [37] EC_LID_OUT# EC_LID_OUT# @ R60 0_0402_5% PCH_GPIO15 G2
No use PH +3VS [31] mSATA_DET# mSATA_DET# U2
No use PH +3VS [22,49] VGA_PWRGD R45 0_0402_5% VGA_PWRGD_R D40
No use PH 10K +3VS Blue Booth [31] BT_DISABLE BT_DISABLE T5
No use PH +3VALW DDR3 PCH_GPIO24 E8
No use PD 10K to GND EC_LID_OUT# R61 0_0402_5% PCH_GPIO27 E16
No use PH 10K +3VALW PCH_GPIO28 P8
No use PH 10K +3VS BT ON/OFF [31] PCH_BT_ON# PCH_BT_ON# K1
No use can NC R243 10K_0402_5% PCH_GPIO35 K4
Can't PH PCH_GPIO36 V8
Can't PH PCH_GPIO37 M5
No use PH 10K +3VS Optimus(L)/ non optimus(H) OPTIMUS_EN# N2
No use PH 10K +3VS PCH_GPIO39 M3
No use PH 10K +3VS PCH_GPIO48 V13
SATA5GP&TEMP_ALERT# CRB PH 10K +3VS PCH_GPIO49 V3
No use PH +3VALW PCH_GPIO57 D6

U13F

BMBUSY# / GPIO0 T7
TACH1 / GPIO1 A42
TACH2 / GPIO6 H36
TACH3 / GPIO7 E38
GPIO8 C10
LAN_PHY_PWR_CTRL / GPIO12 C4
GPIO15 G2
SATA4GP / GPIO16 U2
TACH0 / GPIO17 D40
SCLOCK / GPIO22 T5
GPIO24 / MEM_LED E8
GPIO27 E16
GPIO28 P8
STP_PCI# / GPIO34 K1
GPIO35 K4
SATA2GP / GPIO36 V8
SATA3GP / GPIO37 M5
SLOAD / GPIO38 N2
SDATAOUT0 / GPIO39 M3
SDATAOUT1 / GPIO48 V13
SATA5GP / GPIO49 V3
GPIO57 D6

GPIO

TACH4 / GPIO68 C40 PCH_GPIO68
TACH5 / GPIO69 B41 PCH_GPIO69
TACH6 / GPIO70 C41 PCH_GPIO70
TACH7 / GPIO71 A40 PCH_GPIO71

CPU/MISC

A20GATE P4 GATEA20 [37]
PECI AU16 PCH_PECI_R 0_0402_5% R158 H_PECI [37,6]
RCIN# P5 EC_KBRST# KBRST# [37]
PROCPWRGD AY11 H_CPUPWRGD [6]
THRMTRIP# AY10 PCH_THRMTRIP#_R R159 390_0402_5% H_THERMTRIP# H_THERMTRIP# [6]
INIT3_3V# T14

NC_1 AH8
NC_2 AK11
NC_3 AH10
NC_4 AK10
NC_5 P37

NCTF

VSS_NCTF_1 A4
VSS_NCTF_2 A44
VSS_NCTF_3 A45
VSS_NCTF_4 A46
VSS_NCTF_5 A5
VSS_NCTF_6 A6
VSS_NCTF_7 B3
VSS_NCTF_8 B47
VSS_NCTF_9 BD1
VSS_NCTF_10 BD49
VSS_NCTF_11 BE1
VSS_NCTF_12 BE49
VSS_NCTF_13 BF1
VSS_NCTF_14 BF49

VSS_NCTF_15 BG2
VSS_NCTF_16 BG48
VSS_NCTF_17 BH3
VSS_NCTF_18 BH47
VSS_NCTF_19 BJ4
VSS_NCTF_20 BJ44
VSS_NCTF_21 BJ45
VSS_NCTF_22 BJ46
VSS_NCTF_23 BJ5
VSS_NCTF_24 BJ6
VSS_NCTF_25 C2
VSS_NCTF_26 C48
VSS_NCTF_27 D1
VSS_NCTF_28 D49
VSS_NCTF_29 E1
VSS_NCTF_30 E49
VSS_NCTF_31 F1
VSS_NCTF_32 F49

PANTHER_FCBGA989

<BOM Structure>

9/15 Layout request remove Test point They will route by itself

9/15 Layout request remove Test point They will route by itself

INIT3_3V Checklist1.5 P.69
This signal has weak internal PU, can't pull low,leave NC

TS_VSS1~4 PD to GND

+3VS
UMA@ R427 10K_0402_5% OPTIMUS_EN#
PX@ R426 10K_0402_5%

	GPIO38 OPTIMUS_EN#
* Muxless	0
nonMuxless	1

+3VS
R244 10K_0402_5% @ PCH_GPIO37
R245 10K_0402_5% @ PCH_GPIO36
R881 10K_0402_5%
R552 10K_0402_5%

GPIO36/GPIO37 is Strap functionality
that requires internal pull down to be sampled at rising PWROK.
When uses as SATA2GP/SATA3GP for mechanical presence detect
-use a external pull up 150K-200K ohm to Vcc3_3
When used as GP input
-ensure GPI is not driven high during strap sampling window
When Unused as GPIO or SATA*GP
-use 8.2K-10K pull-down
check list page 47

+3VS
R67 @ 10K_0402_5% PCH_GPIO69
R69 10K_0402_5% @ PCH_GPIO70
R42 @ 10K_0402_5%
R44 200K_0402_5%

PCH_GPIO70	Function
0	13/14"
1	NA
PCH_GPIO71	
0	USB3.0 by PCH
1	USB3.0 by NEC

Need?

+3VS
R68 10K_0402_5% @ PCH_GPIO71
R43 200K_0402_5%

+3VS
R106 10K_0402_5%

PECI CPU-EC
CTRL+ALT+DEL
non CPU power ok
130c shut down

+3VS
EC_KBRST# R103 10K_0402_5%
PCH_GPIO68 R400 10K_0402_5%

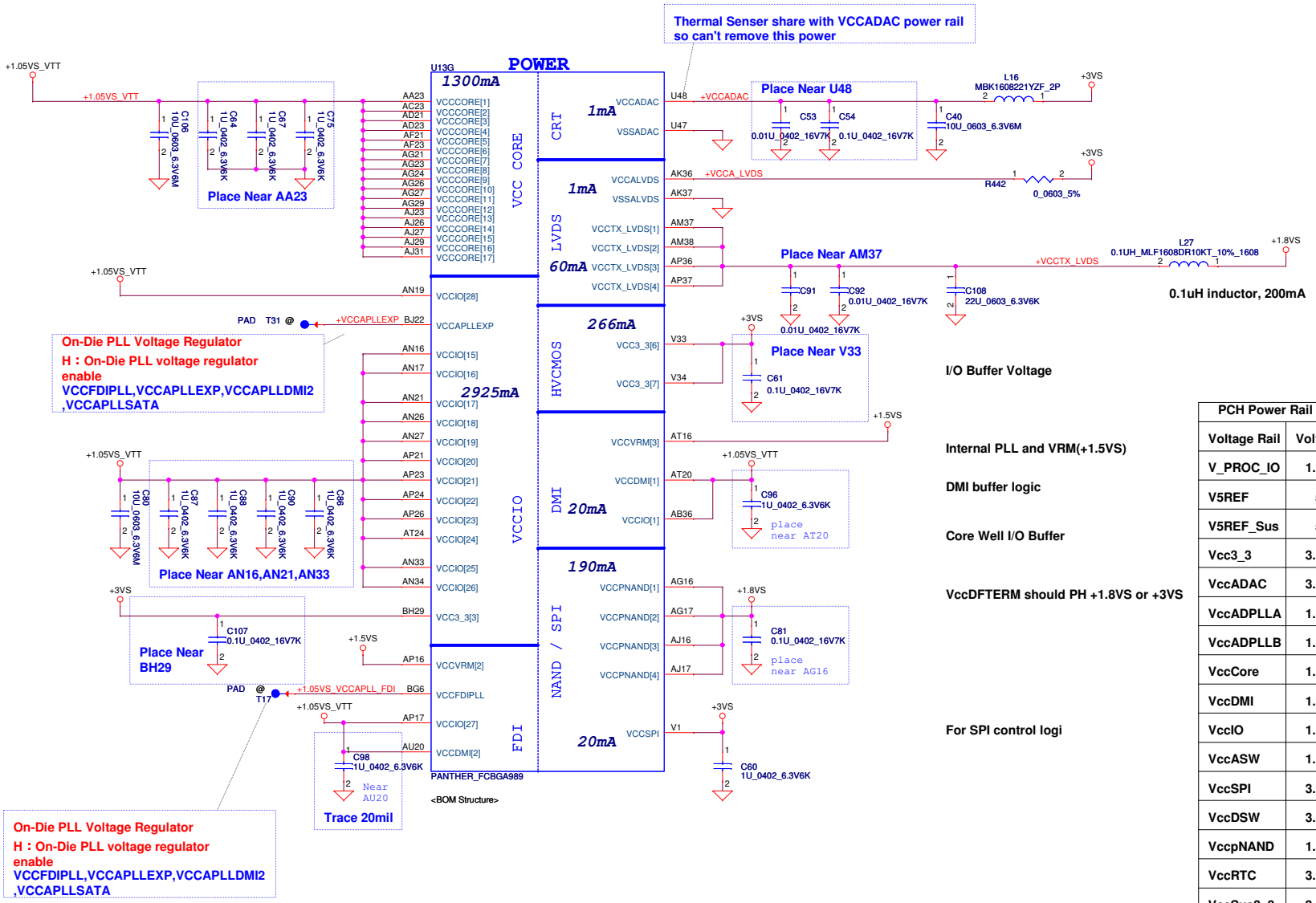
Security Classification	Compal Secret Data	
Issued Date	2011/06/24	Deciphered Date 2012/07/12

Compal Electronics, Inc.

Title: PCH (6/9) GPIO, CPU, MISC

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 18 of 55



PCH Power Rail Table

Voltage Rail	Voltage	S0 Iccmax Current(A)	
V_PROC_IO	1.05	0.001	Processor I/F
V5REF	5	0.001	PCH Core Well Reference Voltage
V5REF_Sus	5	0.001	Suspend Well Reference Voltag
Vcc3_3	3.3	0.266	I/O Buffer Voltage
VccADAC	3.3	0.001	Display DAC Analog Power. This power is supplied by the core well.
VccADPLLA	1.05	0.08	Display PLL A power
VccADPLLB	1.05	0.08	Display PLL B power
VccCore	1.05	1.3	Internal Logic Voltage
VccDMI	1.05	0.042	DMI Buffer Voltage
VccIO	1.05	2.925	Core Well I/O buffers
VccASW	1.05	1.01	1.05 V Supply for Intel R Management Engine and Integrated LAN
VccSPI	3.3	0.02	3.3 V Supply for SPI Controller Logic
VccDSW	3.3	0.003	3.3v supply for Deep S4/S5 well
VccpNAND	1.8	0.19	1.8V power supply for DF_TVS
VccRTC	3.3	6 uA	Battery Voltage
VccSus3_3	3.3	0.266	Suspend Well I/O Buffer Voltage
VccSusHDA	3.3 / 1.5	0.01	High Definition Audio Controller Suspend Voltage
VccVRM	1.8 / 1.5	0.16	1.8 V Internal PLL and VRMs (1.8 V for Desktop)
VccCLKDMI	1.05	0.02	DMI Clock Buffer Voltage
VccSSC	1.05	0.095	Spread Modulators Power Supply
VccDIFFCLKN	1.05	0.055	Differential Clock Buffers Power Supply
VccALVDS	3.3	0.001	Analog power supply for LVDS (Mobile Only)
VccTX_LVDS	1.8	0.06	Analog power supply for LVDS (Mobile Only)

Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: PCH (7/9) PWR

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 19 of 55

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

+1.05V analog internal clock PLL Can NC

Not support Deep S4,S5 connect to +3VALW

suppied by internal 1.05V VR must NC

GPIO28
On-Die PLL Voltage Regulator
H : On-Die PLL voltage regulator enable
VCCFDIPLL,VCCAPLLEXP,VCCAPLLDMI2 ,VCCAPLLSATA

suppied by internal 1.05V VR Must NC

Place near AG33

Place near AF33, AF34,AG34

isolation between SSC (AG33) and DIFFCLKN(AF33,AF34,AG34)
18mil width(DIFFCLKN)
10mil (SSC)

Need +3VALW and 0.1U close PCH

POWER

U13J

PANTHER_FCBGA989

<BOM Structure>

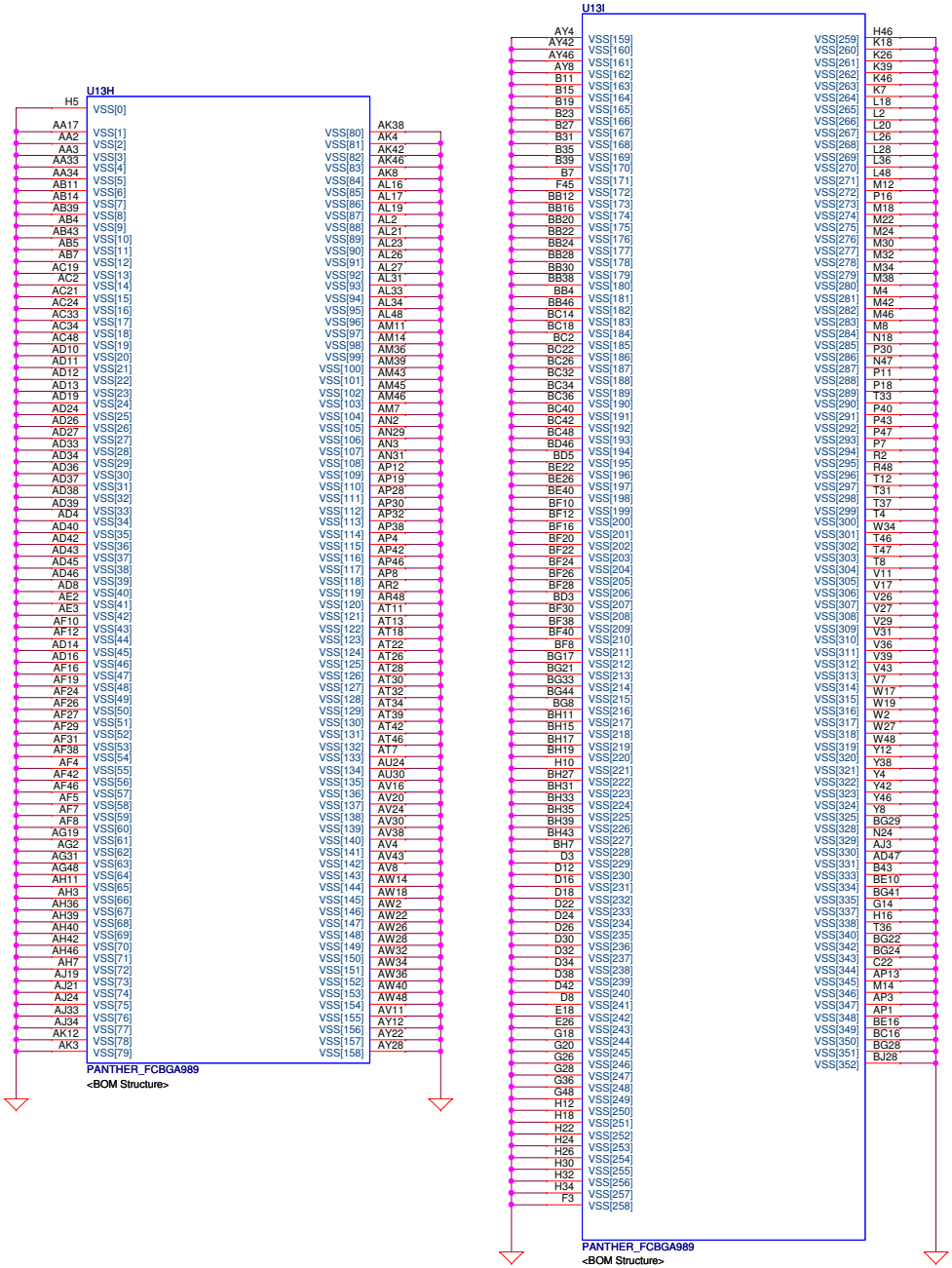
Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: PCH (8/9) PWR

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 20 of 55



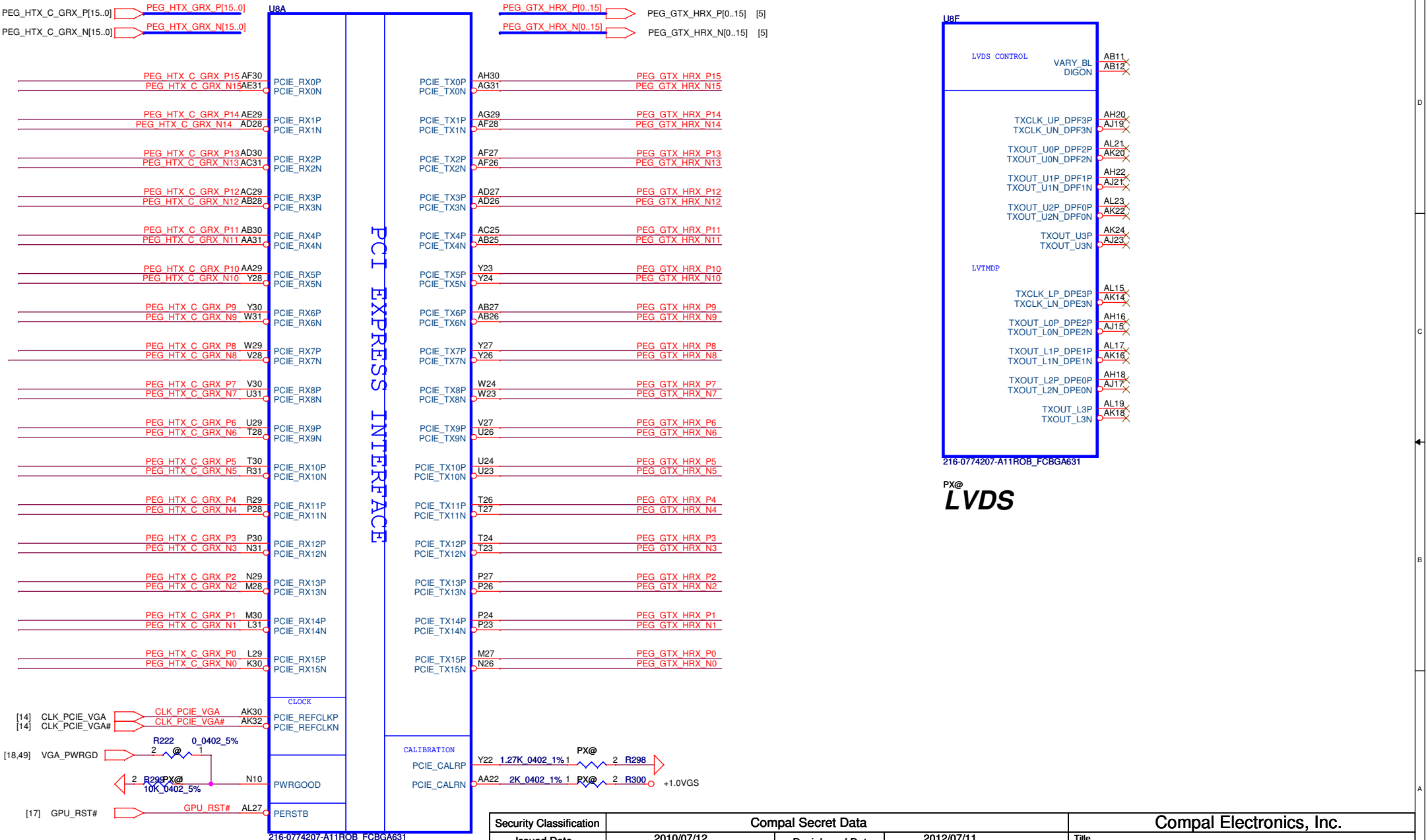
Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: PCH (9/9) VSS

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 21 of 55



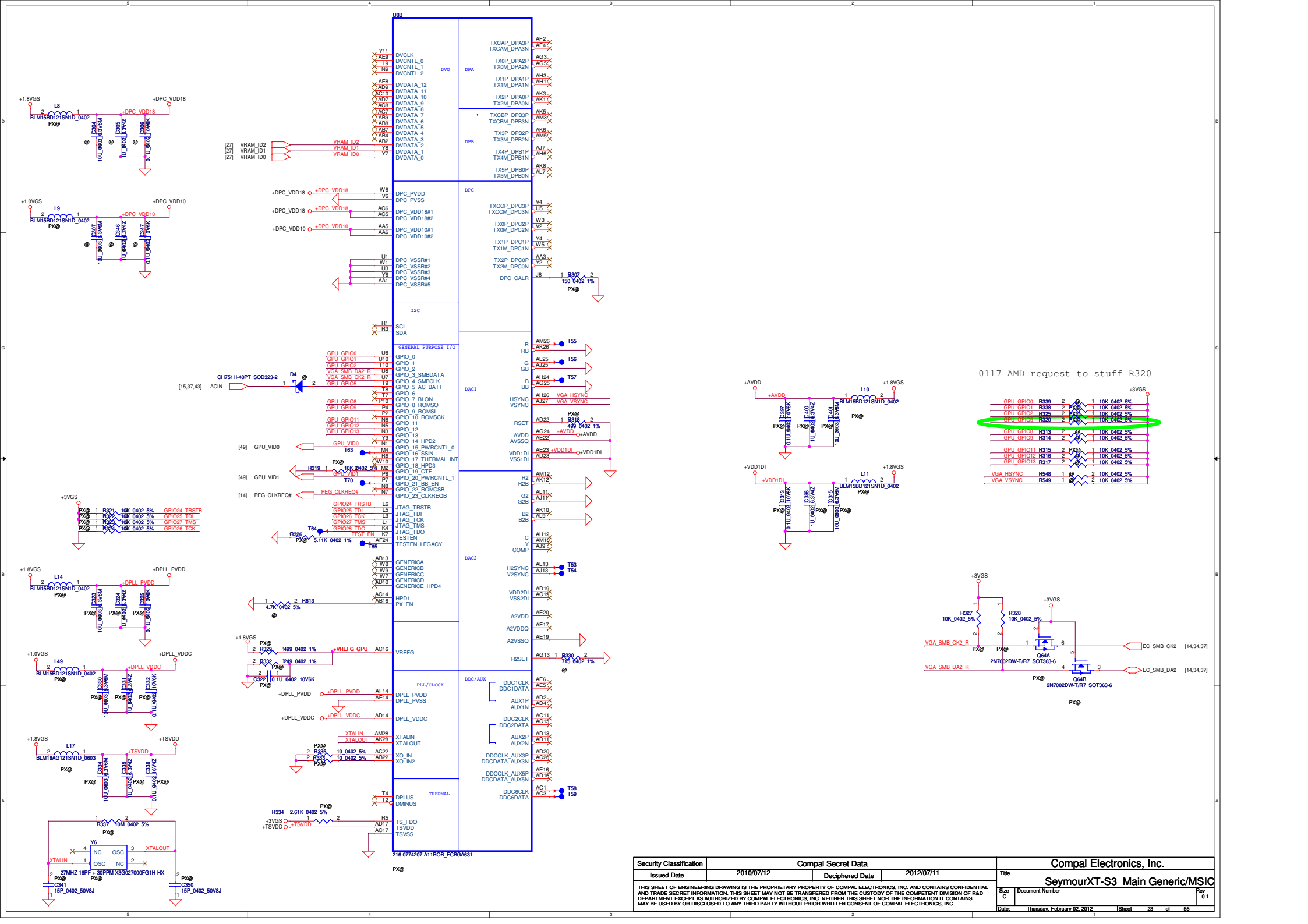
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: SeymourXT-S3 PCIE/LVDS

Size	Document Number	Rev
B		0.1

Date: Thursday, February 02, 2012 Sheet 22 of 55



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

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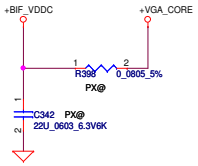
Compal Electronics, Inc.

Title: SeymourXT-S3 Main Generic/MSIC

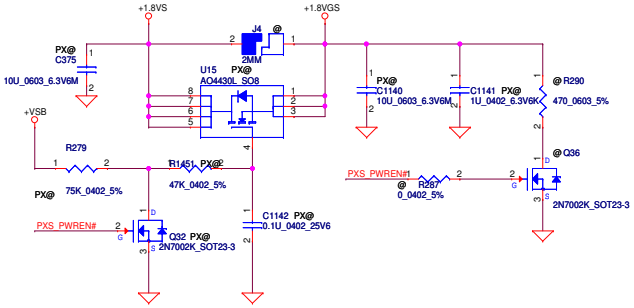
Size	Document Number	Rev
C		0.1

Date: Thursday, February 02, 2012 | Sheet 23 of 55

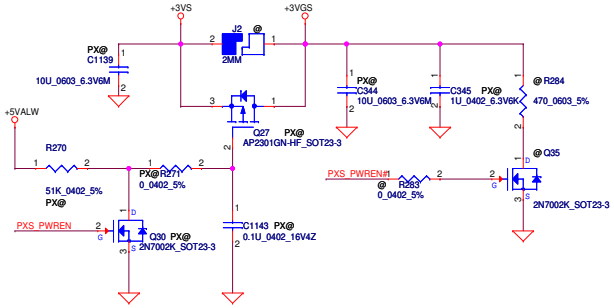
55mA@1.0V, in BACO mode

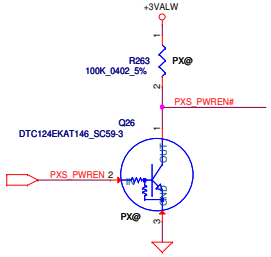


+1.8VS TO +1.8VGS

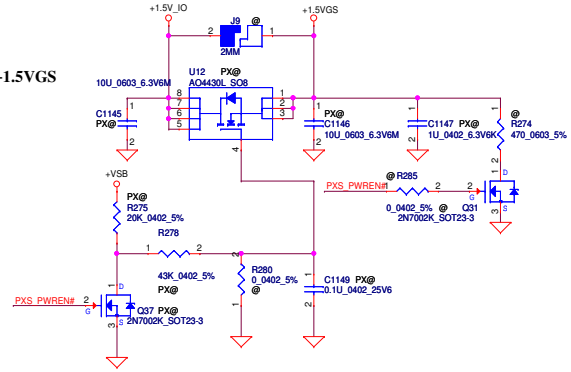


+3.3VS TO +3.3VGS





+1.5V TO +1.5VGS



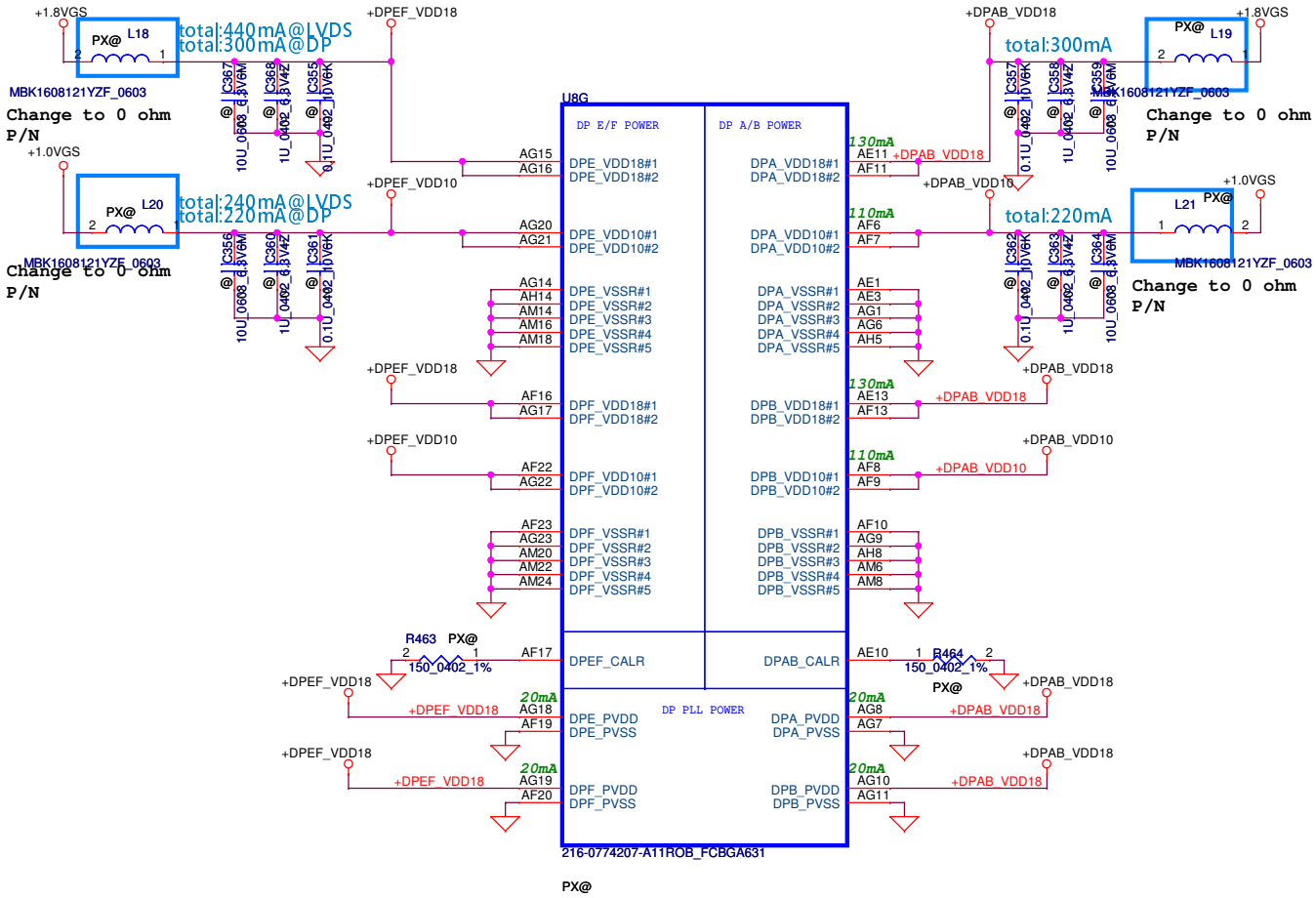
Security Classification	Compal Secret Data		
Issued Date	2011/10/12	Deciphered Date	2013/10/12

Compal Electronics, Inc.

Title: SeymourXT_S3_BACO POWER

Size	Document Number	Rev
C	Sherry and Royal	0.1

Date: Thursday, February 02, 2012 Sheet 24 of 55



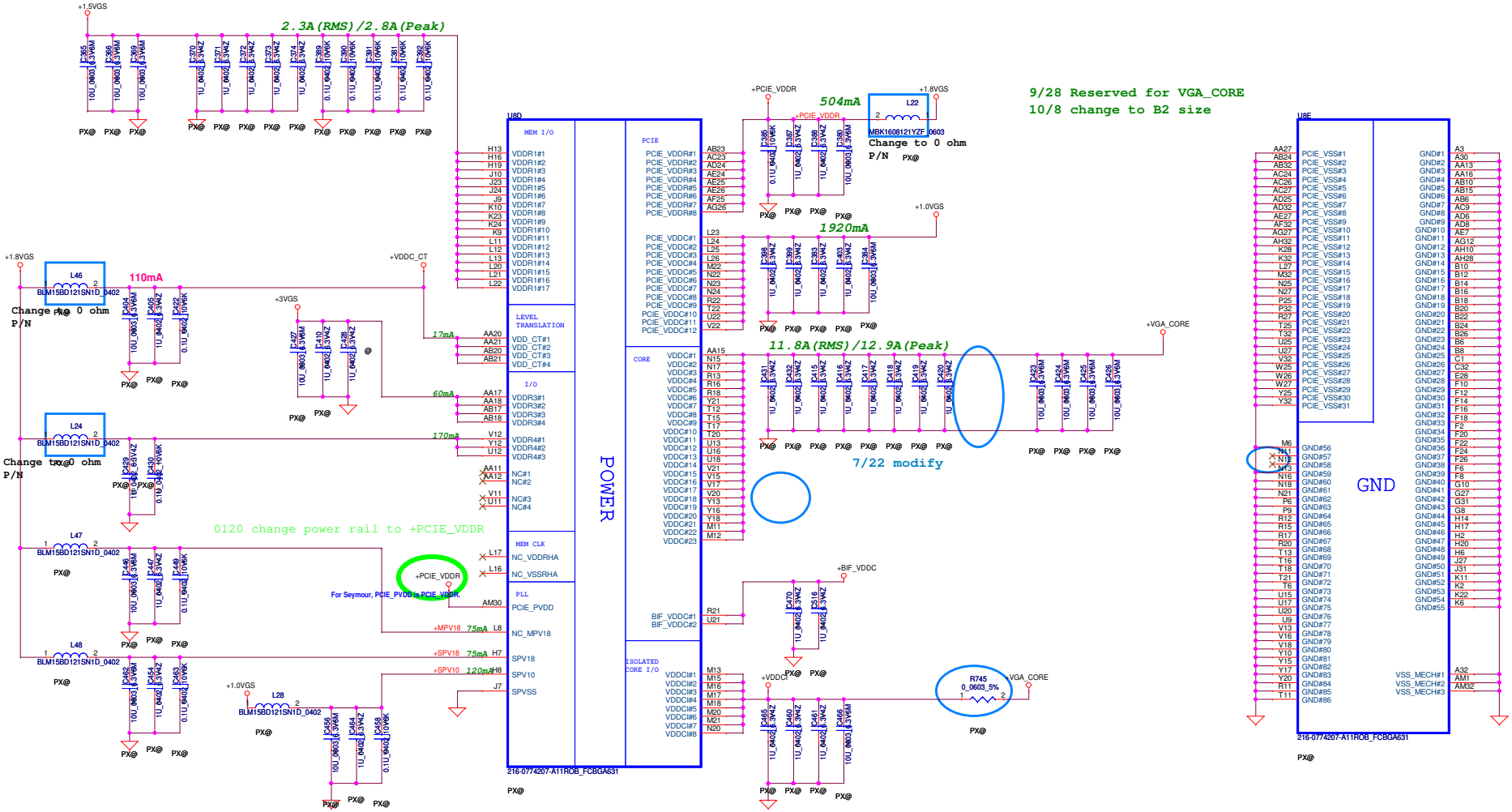
Security Classification	Compal Secret Data		
Issued Date	2010/07/12	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: SeymourXT-S3 DP PWR

Size	Document Number	Rev
B		0.1

Date: Thursday, February 02, 2012 Sheet 25 of 55



Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2010/07/12	Deciphered Date	2012/07/11
Title	SeymourXT-S3 PWR/GND		
Size C	Document Number		Rev 0.1
Date: Thursday, February 02, 2012	Sheet 26 of 55		

[28] M_DA[63..0] — M_DA[63..0]
[28] M_MA[13..0] — M_MA[13..0]
[28] M_DQM[7..0] — M_DQM[7..0]
[28] M_DQS[7..0] — M_DQS[7..0]
[28] M_DQS#[7..0] — M_DQS#[7..0]

PARK SCL has different recommand

9/28 change P/N to SD034100A80

[28] DRAM_RST# — R366 51.1_0402_1% PX@ — R455 10_0402_1% — DRAM_RST
C469 120P_0402_50V8J PX@ — R456 4.99K_0402_1% PX@ — PX@

+1.5VGS — R363 40.2_0402_1% — +MVREFDA — R364 100_0402_1% PX@ — C467 0.1U_0402_16V4Z PX@ — PX@

+1.5VGS — R365 40.2_0402_1% — +MVREFSA — R457 100_0402_1% PX@ — C514 0.1U_0402_16V4Z PX@ — PX@

U8C

MEMORY INTERFACE

M_DA0	K27	DQA0_0/DQA_0	MAA0_0/MAA_0	K17	M_MA0
M_DA1	J29	DQA0_1/DQA_1	MAA0_1/MAA_1	J20	M_MA1
M_DA2	H30	DQA0_2/DQA_2	MAA0_2/MAA_2	H23	M_MA2
M_DA3	H32	DQA0_3/DQA_3	MAA0_3/MAA_3	G23	M_MA3
M_DA4	G29	DQA0_4/DQA_4	MAA0_4/MAA_4	G24	M_MA4
M_DA5	F28	DQA0_5/DQA_5	MAA0_5/MAA_5	H24	M_MA5
M_DA6	F32	DQA0_6/DQA_6	MAA0_6/MAA0_6	J19	M_MA6
M_DA7	F30	DQA0_7/DQA_7	MAA0_7/MAA0_7	K19	M_MA7
M_DA8	C30	DQA0_8/DQA_8	MAA1_0/MAA_8	J14	M_MA8
M_DA9	F27	DQA0_9/DQA_9	MAA1_1/MAA_9	K14	M_MA9
M_DA10	A28	DQA0_10/DQA_10	MAA1_2/MAA_10	J11	M_MA10
M_DA11	C28	DQA0_11/DQA_11	MAA1_3/MAA_11	J13	M_MA11
M_DA12	E27	DQA0_12/DQA_12	MAA1_4/MAA_12	H11	M_MA12
M_DA13	G26	DQA0_13/DQA_13	MAA1_5/MAA_13/BA2	G11	M_BA2 [28]
M_DA14	D26	DQA0_14/DQA_14	MAA1_6/MAA_14/BA0	J16	M_BA0 [28]
M_DA15	F25	DQA0_15/DQA_15	MAA1_7/MAA_15/BA1	L15	M_BA1 [28]
M_DA16	A25	DQA0_16/DQA_16			
M_DA17	C25	DQA0_17/DQA_17	WCKA0_0/DQMA_0	E32	M_DQM0
M_DA18	E25	DQA0_18/DQA_18	WCKA0B_0/DQMA_1	E30	M_DQM1
M_DA19	D24	DQA0_19/DQA_19	WCKA0_1/DQMA_2	A21	M_DQM2
M_DA20	E23	DQA0_20/DQA_20	WCKA0B_1/DQMA_3	C21	M_DQM3
M_DA21	F23	DQA0_21/DQA_21	WCKA1_0/DQMA_4	E13	M_DQM4
M_DA22	D22	DQA0_22/DQA_22	WCKA1B_0/DQMA_5	D12	M_DQM5
M_DA23	F21	DQA0_23/DQA_23	WCKA1_1/DQMA_6	E3	M_DQM6
M_DA24	E21	DQA0_24/DQA_24	WCKA1B_1/DQMA_7	F4	M_DQM7
M_DA25	D20	DQA0_25/DQA_25			
M_DA26	F19	DQA0_26/DQA_26		H28	M_DQS0
M_DA27	A19	DQA0_27/DQA_27	EDCA0_0/RDQSA_0	C27	M_DQS1
M_DA28	D18	DQA0_28/DQA_28	EDCA0_1/RDQSA_1	A23	M_DQS2
M_DA29	F17	DQA0_29/DQA_29	EDCA0_2/RDQSA_2	E19	M_DQS3
M_DA30	A17	DQA0_30/DQA_30	EDCA0_3/RDQSA_3	E15	M_DQS4
M_DA31	C17	DQA0_31/DQA_31	EDCA1_0/RDQSA_4	D10	M_DQS5
M_DA32	E17	DQA1_0/DQA_32	EDCA1_1/RDQSA_5	D6	M_DQS6
M_DA33	D16	DQA1_1/DQA_33	EDCA1_2/RDQSA_6	G5	M_DQS7
M_DA34	F15	DQA1_2/DQA_34	EDCA1_3/RDQSA_7		
M_DA35	A15	DQA1_3/DQA_35		H27	M_DQS#0
M_DA36	D14	DQA1_4/DQA_36	DDBIA0_0/WDQSA_0	A27	M_DQS#1
M_DA37	F13	DQA1_5/DQA_37	DDBIA0_1/WDQSA_1	C23	M_DQS#2
M_DA38	A13	DQA1_6/DQA_38	DDBIA0_2/WDQSA_2	C19	M_DQS#3
M_DA39	C13	DQA1_7/DQA_39	DDBIA0_3/WDQSA_3	C15	M_DQS#4
M_DA40	E11	DQA1_8/DQA_40	DDBIA1_0/WDQSA_4	E9	M_DQS#5
M_DA41	A11	DQA1_9/DQA_41	DDBIA1_1/WDQSA_5	C5	M_DQS#6
M_DA42	C11	DQA1_10/DQA_42	DDBIA1_2/WDQSA_6	H4	M_DQS#7
M_DA43	F11	DQA1_11/DQA_43	DDBIA1_3/WDQSA_7		
M_DA44	A9	DQA1_12/DQA_44	ADBIA0/ODTA0	L18	VRAM_ODT0 — VRAM_ODT0 [28]
M_DA45	C9	DQA1_13/DQA_45	ADBIA1/ODTA1	K16	VRAM_ODT1 — VRAM_ODT1 [28]
M_DA46	F9	DQA1_14/DQA_46			
M_DA47	D8	DQA1_15/DQA_47	CLKA0	H26	M_CLK0 — M_CLK0 [28]
M_DA48	E7	DQA1_16/DQA_48	CLKA0B	H25	M_CLK#0 — M_CLK#0 [28]
M_DA49	A7	DQA1_17/DQA_49			
M_DA50	C7	DQA1_18/DQA_50	CLKA1	G9	M_CLK1 — M_CLK1 [28]
M_DA51	F7	DQA1_19/DQA_51	CLKA1B	H9	M_CLK#1 — M_CLK#1 [28]
M_DA52	A5	DQA1_20/DQA_52			
M_DA53	E5	DQA1_21/DQA_53	RASA0B	G22	M_RAS#0 — M_RAS#0 [28]
M_DA54	C3	DQA1_22/DQA_54	RASA1B	G17	M_RAS#1 — M_RAS#1 [28]
M_DA55	E1	DQA1_23/DQA_55			
M_DA56	G7	DQA1_24/DQA_56	CASA0B	G19	M_CAS#0 — M_CAS#0 [28]
M_DA57	G6	DQA1_25/DQA_57	CASA1B	G16	M_CAS#1 — M_CAS#1 [28]
M_DA58	G1	DQA1_26/DQA_58			
M_DA59	G3	DQA1_27/DQA_59	CSA0B_0	H22	M_CS#0 — M_CS#0 [28]
M_DA60	J6	DQA1_28/DQA_60	CSA0B_1	J22	
M_DA61	J1	DQA1_29/DQA_61			
M_DA62	J3	DQA1_30/DQA_62	CSA1B_0	G13	M_CS#1 — M_CS#1 [28]
M_DA63	J5	DQA1_31/DQA_63	CSA1B_1	K13	
+MVREFDA	K26	MVREFDA	CKEA0	K20	M_CKE0 — M_CKE0 [28]
+MVREFSA	J26	MVREFSA	CKEA1	J17	M_CKE1 — M_CKE1 [28]
				G25	M_WE#0 — M_WE#0 [28]
MEM_CALRN0			WEA0B	H10	M_WE#1 — M_WE#1 [28]
MEM_CALRP0			WEA1B		
			GDDR5 MAA1_8 MAA0_8	G14 G20	M_MA13
DRAM_RST	L10	DRAM_RST			
	K8	CLKTESTA			
	L7	CLKTESTB			

216-0774207-A11ROB_FCBGA631

+1.5VGS — R458 240_0402_1% PX@ — R459 240_0402_1% PX@

R460@ 51.1_0402_1% — C515@ 0.1U_0402_16V4Z
R373@ 51.1_0402_1% — C517@ 0.1U_0402_16V4Z

Route 50ohms single-ended/100ohm diff and keep short

debug only, for clock observation,if not need, DNI.

+1.8VGS

R461	X76@	10K_0402_5%	VRAM_ID0	VRAM_ID0 [23]
R462	X76@	10K_0402_5%		
R359	X76@	10K_0402_5%	VRAM_ID1	VRAM_ID1 [23]
R360	X76@	10K_0402_5%		
R361	X76@	10K_0402_5%	VRAM_ID2	VRAM_ID2 [23]
R362	X76@	10K_0402_5%		

64MX16 (512MB)
64MX16 (512MB)
128M16 (1GB)
128M16 (1GB)

Vendor	VRAM_ID0	VRAM_ID1	VRAM_ID2
K4W1G1646G-BC11 Samsung 128MB PN:SA00004GS00	R461 1	R360 0	R362 0
H5TQ1G63DFR-11C Hynix 128MB PN:SA000041S20	R462 0	R359 1	R362 0
K4W2G1646C-HC11 Samsung 256MB PN:SA000047O00	R461 1	R360 0	R361 1
H5TQ2G63BFR-11C/H5TQ2G63DFR-11C Hynix 256MB PN:SA00003YO10/ SA00003YOA0	R462 0	R359 1	R361 1

ZZZ
Hynix H1G@
X7639238L02

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

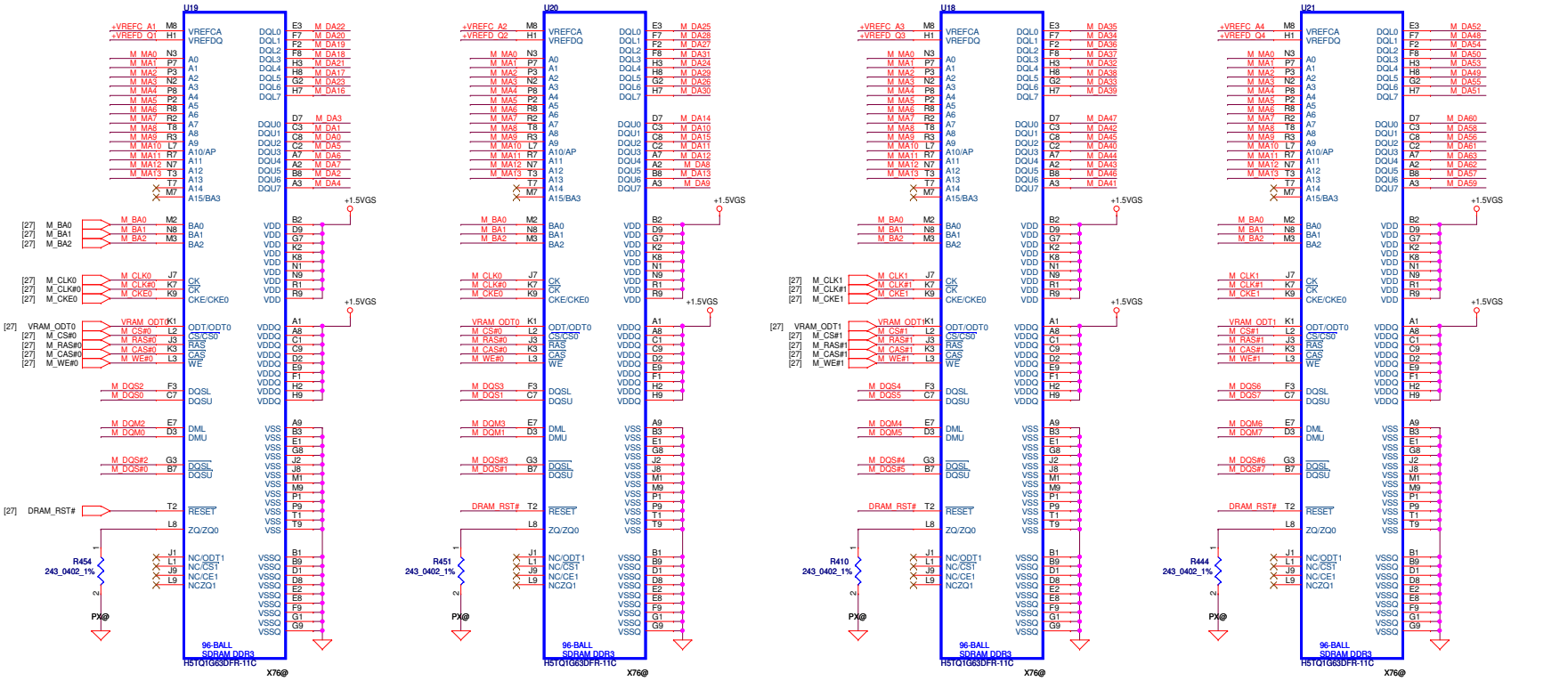
Compal Electronics, Inc.

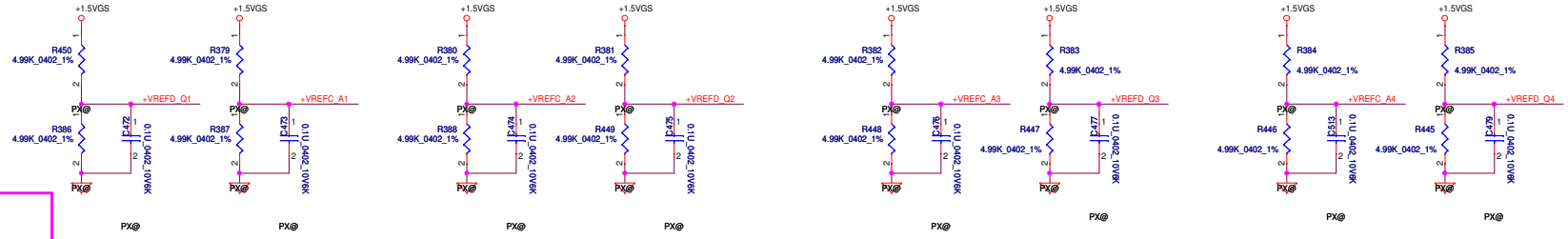
Title: SeymourXT-S3 MEM Interface

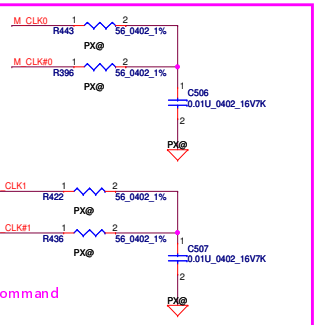
Size: B | Document Number | Rev: 0.1

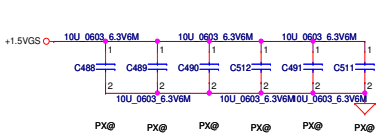
Date: Thursday, February 02, 2012 | Sheet 27 of 55

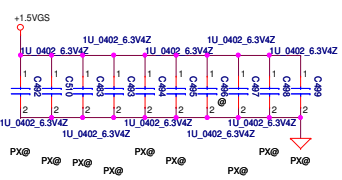
[27] M_DA[63..0] — M_DA[63..0]
[27] M_MA[13..0] — M_MA[13..0]
[27] M_DQM[7..0] — M_DQM[7..0]
[27] M_DQS[7..0] — M_DQS[7..0]
[27] M_DQS#[7..0] — M_DQS#[7..0]

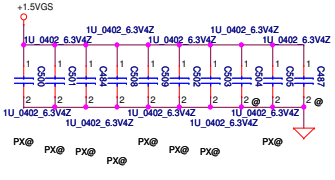












ref 139-02 recommand
add off page
Park SCL recommand pu 60.4 ohm
to +1.5VGS
0619 update

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

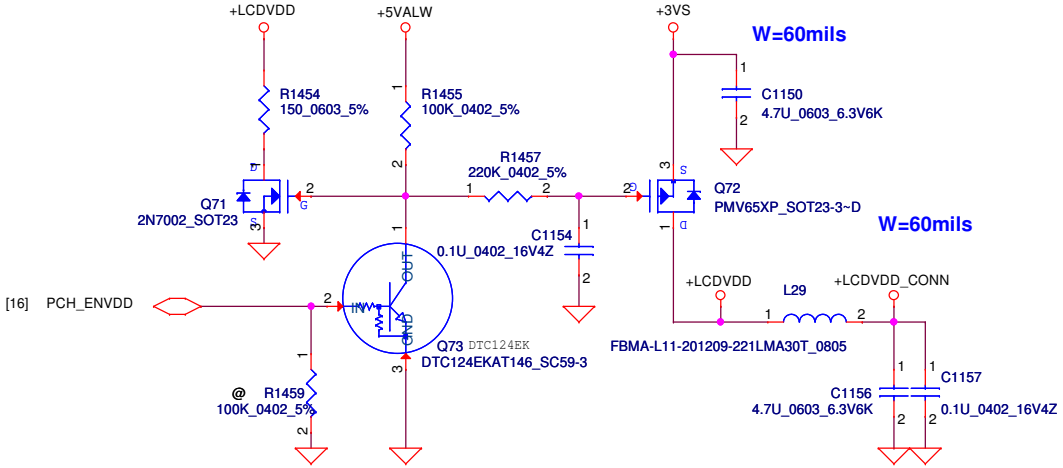
Compal Electronics, Inc.

Title: SeymourXT-S3 VRAM

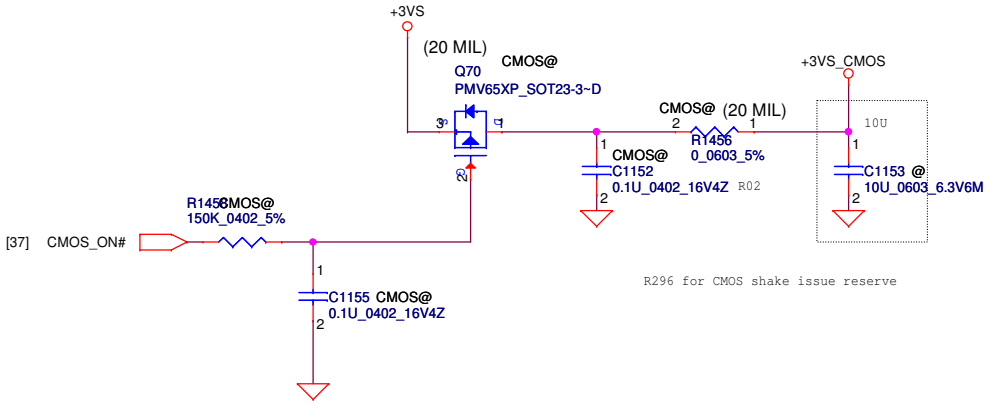
Size	Document Number	Rev
C		0.1

Date: Thursday, February 02, 2012 Sheet 28 of 55

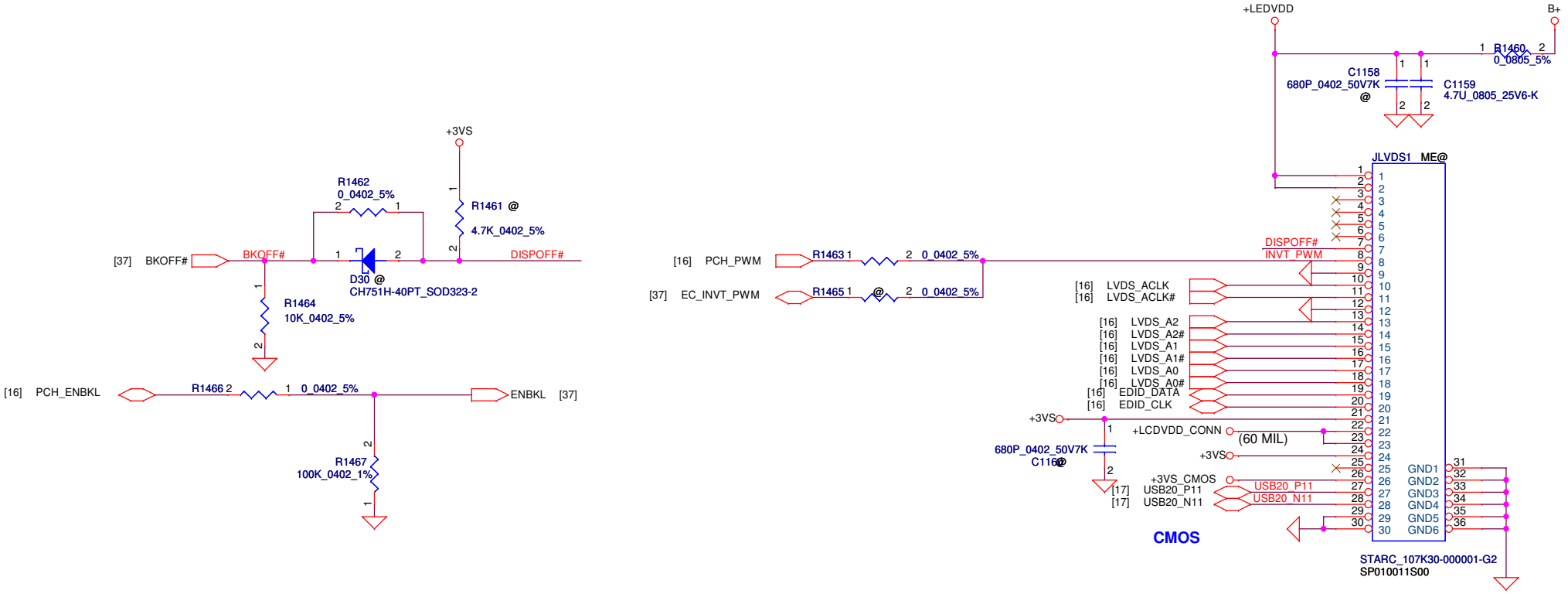
LCD POWER CIRCUIT



CMOS Camera



VGA LCD/PANEL BD. Conn.



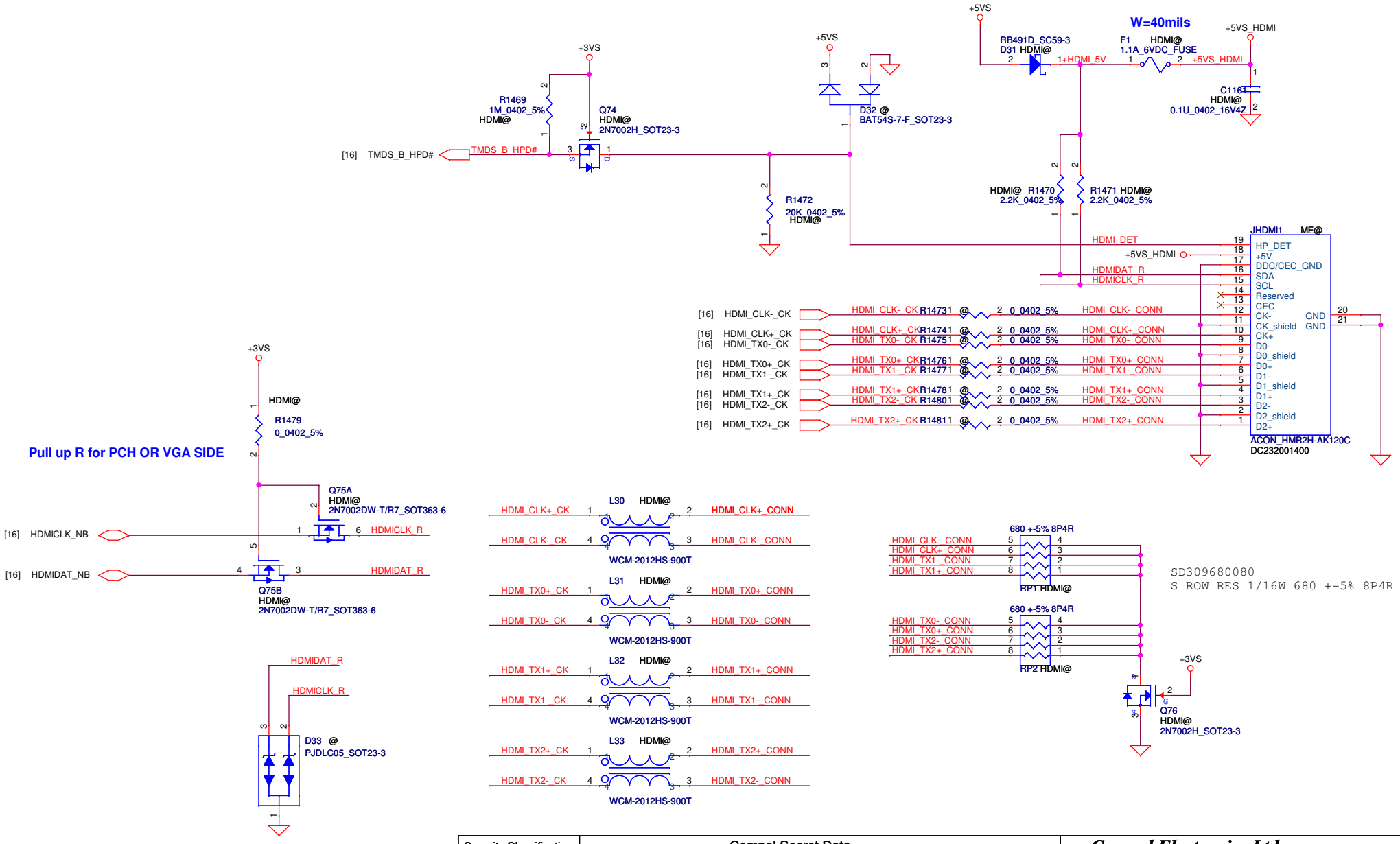
Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: **LVDS/CAMERA**

Size	Document Number	Rev
Custom	Sherry and Royal	0.1

Date: Thursday, February 02, 2012 | Sheet 29 of 55



Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

Compal Electronics, Ltd.

Title: **HDMI CONN**

Size: B | Document Number: **Sherry and Royal** | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 30 of 55

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

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

LPC_FRAME# R	R1482	1	@	2	0_0402_5%	LPC_FRAME#
LPC_AD3 R	R1483	1	@	2	0_0402_5%	LPC_AD3
LPC_AD2 R	R1484	1	@	2	0_0402_5%	LPC_AD2
LPC_AD1 R	R1485	1	@	2	0_0402_5%	LPC_AD1
LPC_AD0 R	R1486	1	@	2	0_0402_5%	LPC_AD0
PCI_RST# R	R1487	1	@	2	0_0402_5%	PLT_RST#

LPC_FRAME# [13,37]
LPC_AD3 [13,37]
LPC_AD2 [13,37]
LPC_AD1 [13,37]
LPC_AD0 [13,37]
CLK_PCI_DB [17]

Mini-Express Card(WLAN/WiMAX)

9/18 JP1 Pin2,24,52 contact to +3VS_WLAN for AOAC function

[37] EC_WL_WAKE# — R1505 0_0402_5% — EC_WL_WAKE#_R — R1520 @ 0_0402_5% — PCH_PCIE_WAKE# [15,32]

[18] PCH_BT_ON# — R1490 @ 0_0402_5%
[18] BT_DISABLE — R1491 0_0402_5%
BT_DISABLE_R
WLAN_CLKREQ# — [14] WLAN_CLKREQ#

[14] CLK_PCIE_WLAN1#
[14] CLK_PCIE_WLAN1
PCI_RST# R
CLK_PCI_DB

[14] PCIE_PRX_DTX_N2
[14] PCIE_PRX_DTX_P2
[14] PCIE_PTX_C_DRX_N2
[14] PCIE_PTX_C_DRX_P2

[37] EC_TX — EC_TX — R1498 100_0402_1%
[37] EC_RX — EC_RX — R1499 100_0402_1%

For EC to detect debug card insert.
R1501 100K_0402_5%

+1.5VS — R1488 0_0603_5%
+3VS_WLAN

JWLAN1 ME@

1	WAKE#	3.3V	2	4	
3	NC	GND	6		
5	NC	1.5V	8		+1.5VS_WLAN
7	CLKREQ#	NC	10		
9	GND	NC	12		LPC_FRAME# R
11	REFCLK-	NC	14		LPC_AD3 R
13	REFCLK+	NC	16		LPC_AD2 R
15	GND	NC	18		LPC_AD1 R
17	NC	GND	20		LPC_AD0 R
19	NC	NC	22		
21	GND	PERST#	24		R1492 0_0402_5% WL_RST# — PCH_WL_OFF# [17]
23	PERn0	+3.3Vaux	26		R1494 @ 0_0402_5% +3VALW; R1495 0_0402_5% +3VS_WLAN
25	PERp0	GND	28		
27	GND	+1.5V	30		R1496 0_0402_5% @ SMB_CLK_S3 — SMB_CLK_S3 [12,14,38]
29	GND	SMB_CLK	32		R1497 0_0402_5% @ SMB_DATA_S3 — SMB_DATA_S3 [12,14,38]
31	PETn0	SMB_DATA	34		
33	PETp0	GND	36		USB20_N2_WLAN
35	GND	USB_D-	38		USB20_P2_WLAN
37	NC	USB_D+	40		
39	NC	GND	42		
41	NC	LED_WWAN#	44		
43	NC	LED_WLAN#	46		
45	NC	LED_WPAN#	48		
47	NC	+1.5V	50		
49	NC	GND	52		
51	NC	+3.3V	54		
53	GND	GND			

BELLW_80019-1021
DC040004X00

+1.5VS_WLAN
C1172 0.1U_0402_16V4Z
C1173 0.1U_0402_16V4Z

R1503 0_0402_5%
R1504 0_0402_5%
USB20_N2_WLAN — USB20_N2
USB20_P2_WLAN — USB20_P2

+3VALW
C1273 @ 0.1U_0402_16V4Z
U1 @ TS3USB31RSER_QFN8_1P5X1P5
NC VCC
D- HSD-
D+ HSD+
GND OE#
USB20_N2_WLAN — USB20_N2 — USB20_N2 [17]
USB20_P2_WLAN — USB20_P2 — USB20_P2 [17]
WLAN_USB_ON# [37]
R1519 @ 0_0402_5%

+3VS — R1518 nonAOAC@ 0_0603_5% — +3VS_WLAN — R1500 AOAC@ 0_0603_5% — +3VS_WLAN_AOAC
C1170 0.1U_0402_16V4Z
C1171 @ 10U_0603_6.3V6M

+3VALW
Q77 AO3413_SOT23-3
AOAC@
C1174 AOAC@ 0.1U_0402_16V4Z
[37] AOAC_ON# — R1502 150K_0402_5% AOAC@
C1175 AOAC@ 0.1U_0402_16V4Z

9/18 Increase for Intel AOAC function

Mini-Express Card(SSD)

SSD Active:4.5W(1.5A)

+3VS_SSD
0.1U_0402_16V4Z — C1176
C1177
C1178
10U_0603_6.3V6M — C1179
0.01U_0402_16V7K
11/07 Change type to 0603

+3VS — J14 JUMP_43X79 — +3VS_SSD

JSSD1 ME@

1	WAKE#	3.3V	2	4	
3	NC	GND	6		
5	NC	1.5V	8		
7	CLKREQ#	NC	10		
9	GND	NC	12		
11	REFCLK-	NC	14		
13	REFCLK+	NC	16		
15	GND	NC	18		
17	NC	GND	20		
19	NC	NC	22		
21	GND	PERST#	24		
23	PERn0	+3.3Vaux	26		
25	PERp0	GND	28		
27	GND	+1.5V	30		
29	GND	SMB_CLK	32		
31	PETn0	SMB_DATA	34		
33	PETp0	GND	36		
35	GND	USB_D-	38		
37	NC	USB_D+	40		
39	NC	GND	42		
41	NC	LED_WWAN#	44		
43	NC	LED_WLAN#	46		
45	NC	LED_WPAN#	48		
47	NC	+1.5V	50		
49	NC	GND	52		
51	NC	+3.3V	54		
53	GND	GND			

BELLW_80019-1021
DC040004X00

0.01U_0402_16V7K — C1181
[13] SATA_PRX_DTX_C_P0 — SATA_PRX_DTX_C_P0 — SATA_DTX_IRX_P0
[13] SATA_PRX_DTX_C_N0 — SATA_PRX_DTX_C_N0 — SATA_DTX_IRX_N0
0.01U_0402_16V7K — C1180

[13] SATA_PTX_DRX_N0 — SATA_PTX_DRX_N0
[13] SATA_PTX_DRX_P0 — SATA_PTX_DRX_P0

+3VS_SSD
[18] mSATA_DET# — R553 @ 0_0402_5% — mSATA_DET#_R
For SSD use:

Security Classification	Compal Secret Data		
Issued Date	2011/07/21	Deciphered Date	2012/12/31

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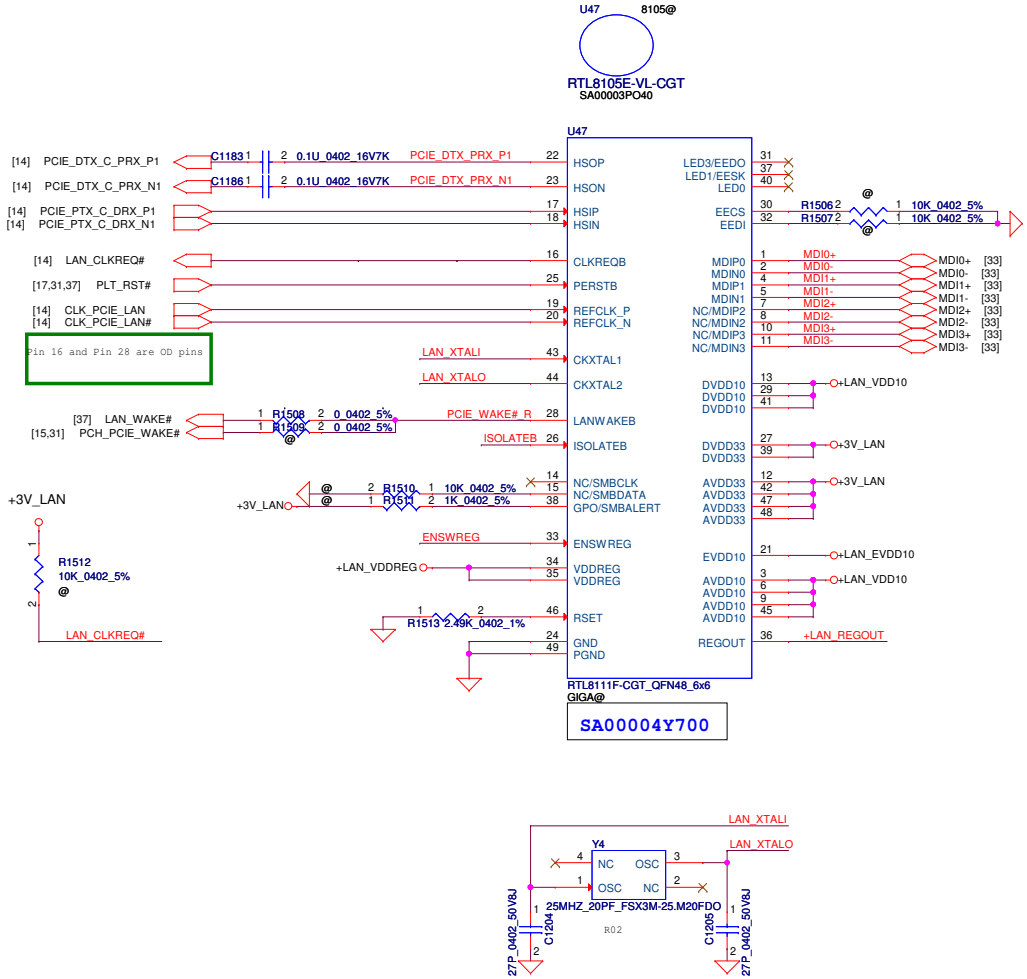
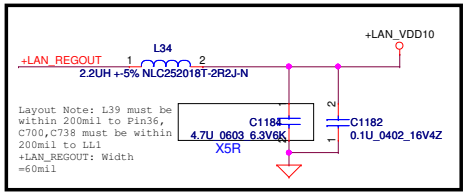
Compal Electronics, Inc.

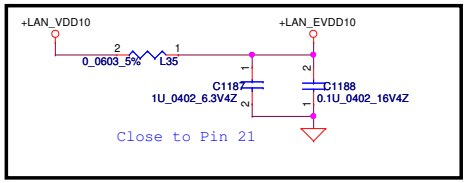
Title: **Mini-Card**

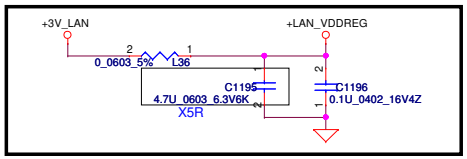
Size	Document Number	Rev
	Sherry and Royal	0.1

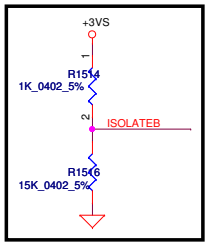
Date: Thursday, February 02, 2012 Sheet 31 of 55

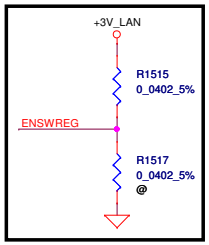






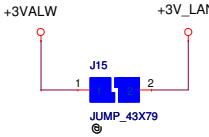






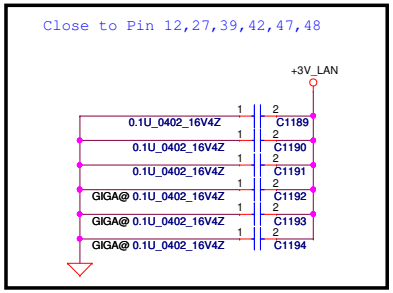
H: Enable internal Regular
L: Disable

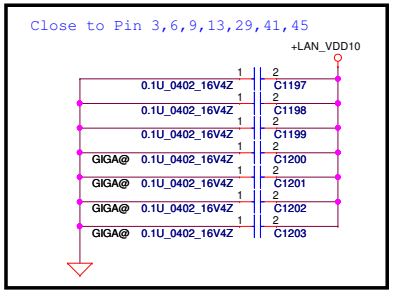
Layout Notice : Place as close chip as possible.



Layout Notice : Place as close chip as possible.

Rising time (10%~90%)1mS <Rising time <100mS





Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: LAN-RTL8111F/8105E

Size: Custom | Document Number: Sherry and Royal | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 32 of 55

Reserve gas tube for EMI go rural solution

@
D34
AZC099-04S.R7G_SOT23-6
MDI2+ 1 I/O1 I/O3 4 MDI3+
2 GND VBD 5
MDI3- 3 I/O2 I/O4 6 MDI2-

Place Close to T71

@
D35
AZC099-04S.R7G_SOT23-6
MDI1+ 1 I/O1 I/O3 4 MDI0+
2 GND VBD 5
MDI0- 3 I/O2 I/O4 6 MDI1-

Place Close to T72

D34/D35
1'S PN:SC300001G00
2'S PN:SC300002E00

T71
[32] MDI3+ MDI3+ 1 TD+ TX+ 16 MDO3+
[32] MDI3- MDI3- 2 TD- TX- 15 MDO3-
3 CT CT 14 MCT3
4 NC NC 13
5 NC NC 12
6 CT CT 11 MCT2
[32] MDI2+ MDI2+ 7 RD+ RX+ 10 MDO2+
[32] MDI2- MDI2- 8 RD- RX- 9 MDO2-
BOTHHAND_NS0013LF
GIGA@

R02

T72
[32] MDI0+ MDI0+ 1 TD+ TX+ 16 MDO0+
[32] MDI0- MDI0- 2 TD- TX- 15 MDO0-
3 CT CT 14 MCT0
4 NC NC 13
5 NC NC 12
6 NC NC 11 MCT1
[32] MDI1+ MDI1+ 7 RD+ RX+ 10 MDO1+
[32] MDI1- MDI1- 8 RD- RX- 9 MDO1-
BOTHHAND_NS0013LF

C1207
0.01U_0402_16V7K

Place Close to T1,T2

J17 @
1 2 CHASSIS1_GND
Spark Gap
JUMP_48X40
R1521
1 2 75_0805_5%
1 2 C1206
10P_0603_50V8-J

2 1 CHASSIS2_GND
LSE-200NX3216TRLF_1206-2
DL2 @

J18 @
1 2 CHASSIS1_GND
Spark Gap
JUMP_48X40

J19 @
1 2
Spark Gap
JUMP_48X40

JRJ1 ME@
MDO0+ 1 PR1+ GND 12
MDO0- 2 PR1- GND 11
MDO1+ 3 PR2+ GND 10
MDO2+ 4 PR3+ GND 9
MDO2- 5 PR3-
MDO1- 6 PR2-
MDO3+ 7 PR4+
MDO3- 8 PR4-
CHASSIS2_GND
CHASSIS1_GND
SANTA_130460-3
DC231112261

Reserve for EMI go rural solution

Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

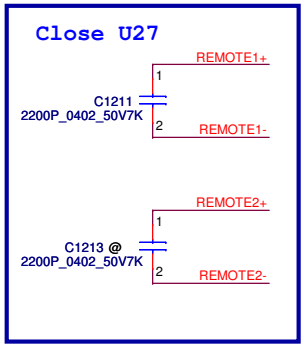
Compal Electronics, Inc.

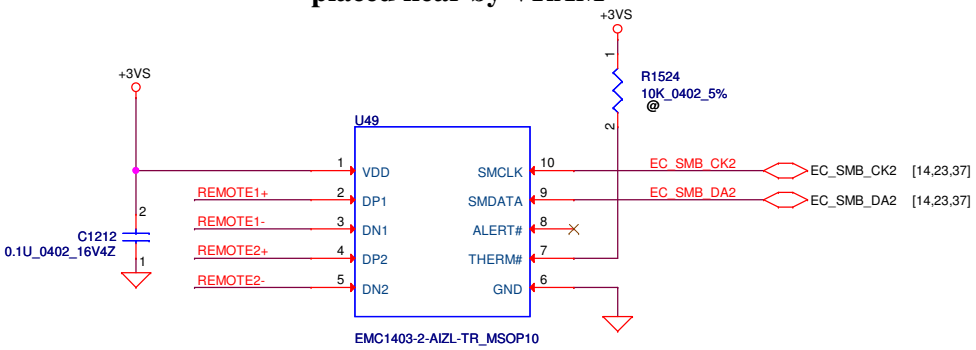
Title: LAN_Transformer

Size: B | Document Number: Sherry and Royal | Rev: 0.1

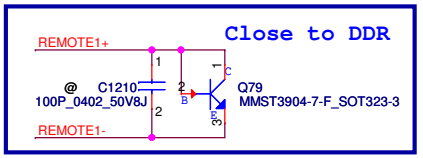
Date: Thursday, February 02, 2012 | Sheet 33 of 55

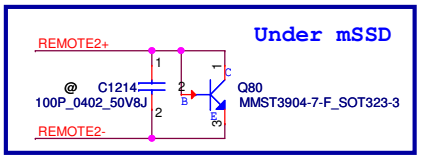
SMSC thermal sensor placed near by VRAM





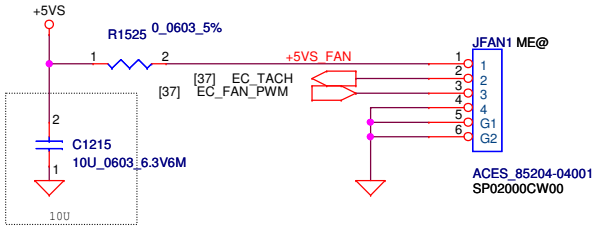
Address 1001_101xb





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

FAN1 Conn



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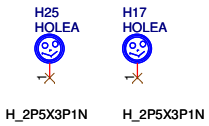
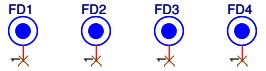


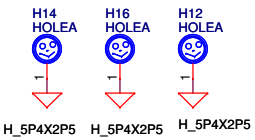
E

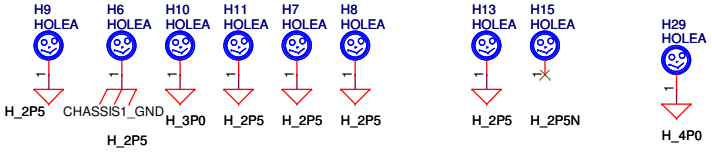


M/B 橢圓孔

M/B KB 橢圓孔

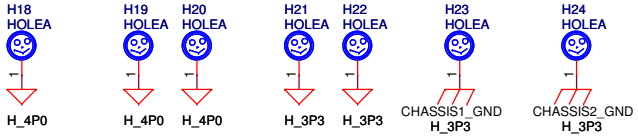
R





A

2P5 * 9 pcd



B CPU C GPU D LAN

F G

Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

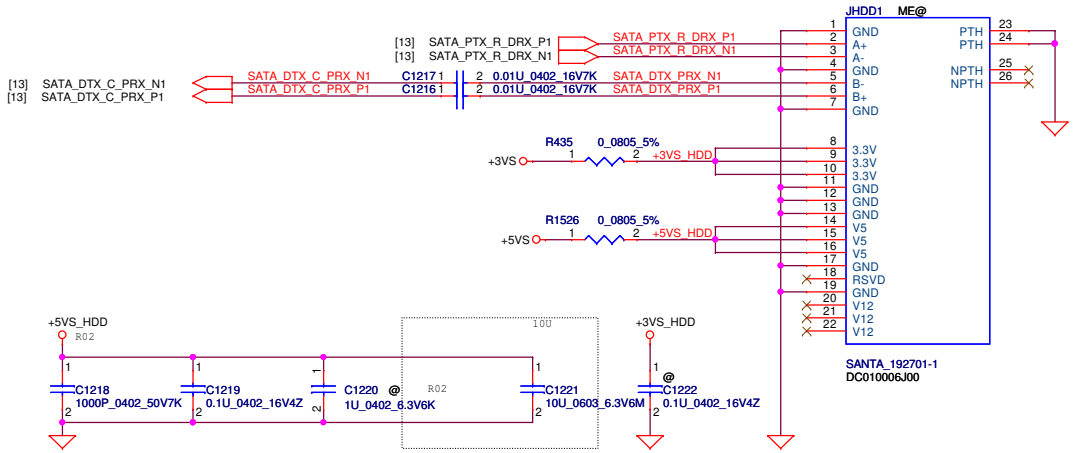
Compal Electronics,Ltd.

Title: Fintek-Thermal IC/FAN/screw

Size: B | Document Number: Sherry and Royal | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 34 of 55

SATA HDD Conn.



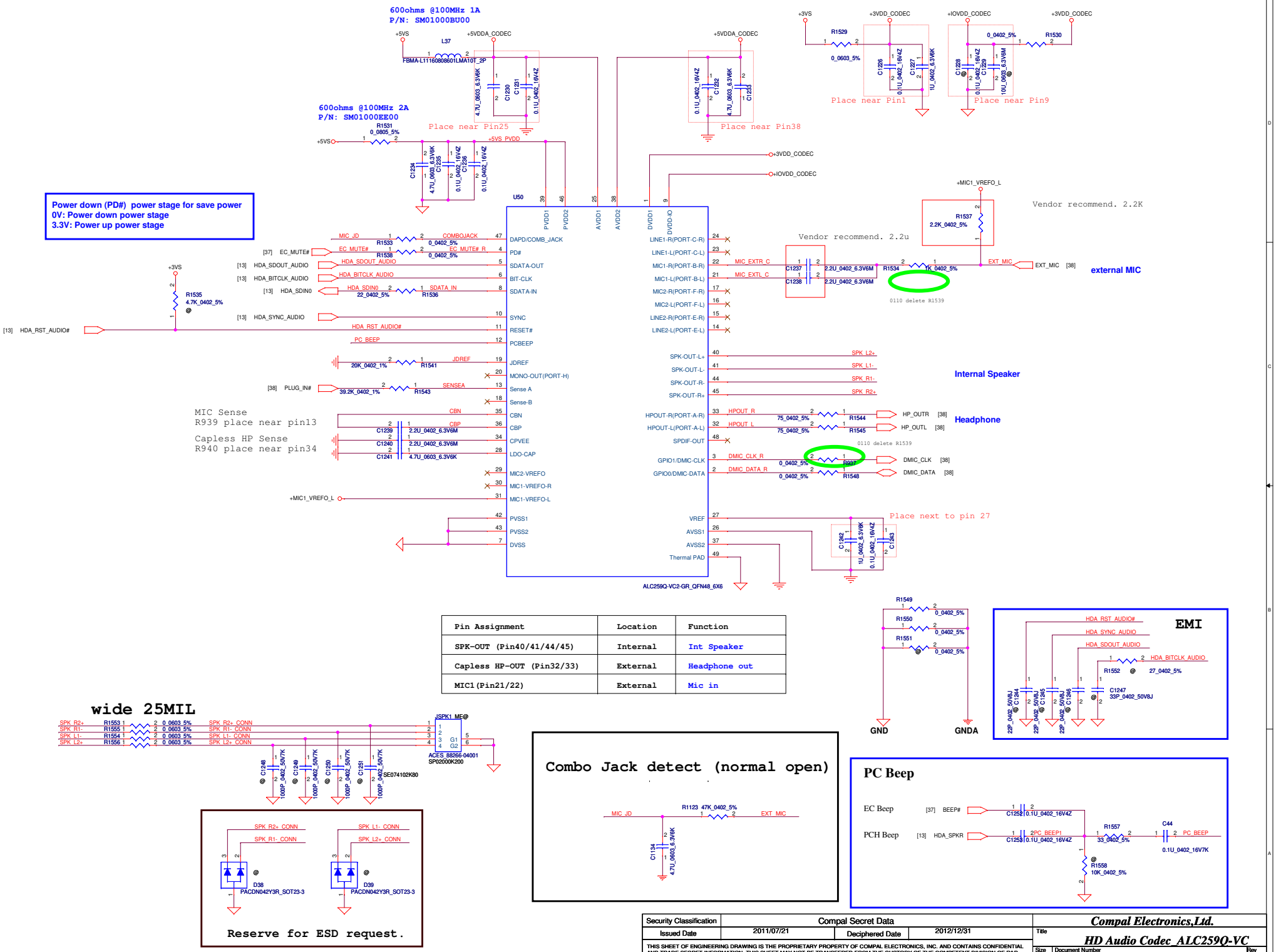
Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: **HDD/ODD/BT Connector**

Size	Document Number	Rev
Custom	Sherry and Royal	0.1

Date: Thursday, February 02, 2012 | Sheet 35 of 55



Pin Assignment	Location	Function
SPK-OUT (Pin40/41/44/45)	Internal	Int Speaker
Capless HP-OUT (Pin32/33)	External	Headphone out
MIC1(Pin21/22)	External	Mic in

Security Classification	Compal Secret Data		
Issued Date	2011/07/21	Deciphered Date	2012/12/31

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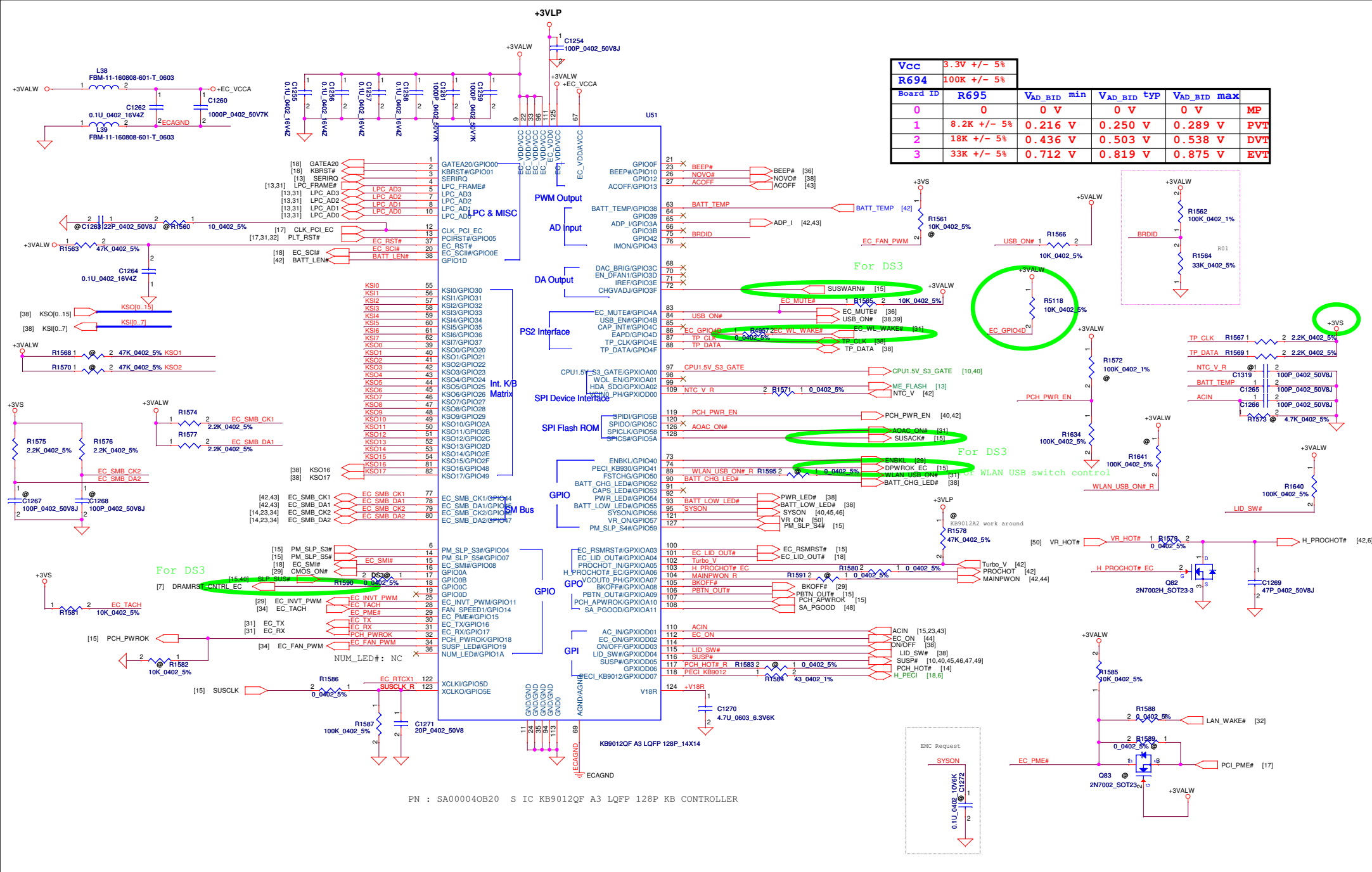
Compal Electronics,Ltd.

Title: HD Audio Codec_ALC259Q-VC

Size: C | Document Number: Sherry and Royal | Rev: 0.1

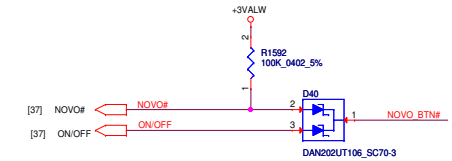
Date: Thursday, February 02, 2012 | Sheet 36 of 55

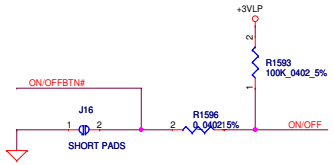


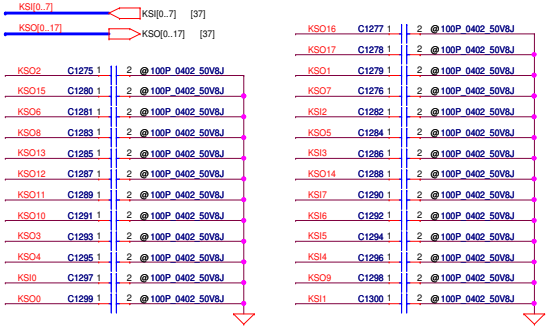
Vcc	3.3V +/- 5%				
R694	100K +/- 5%				
Board ID	R695	V_{AD_BID} min	V_{AD_BID} typ	V_{AD_BID} max	
0	0	0 V	0 V	0 V	MP
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V	PVT
2	18K +/- 5%	0.436 V	0.503 V	0.538 V	DVT
3	33K +/- 5%	0.712 V	0.819 V	0.875 V	EVT

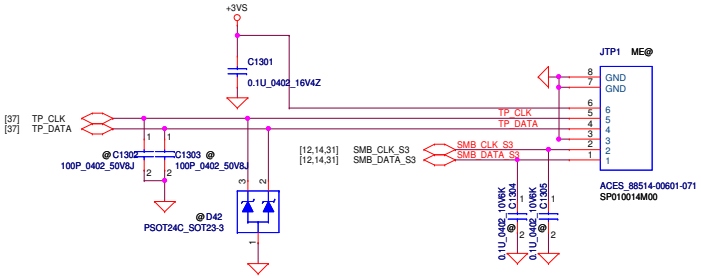
Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

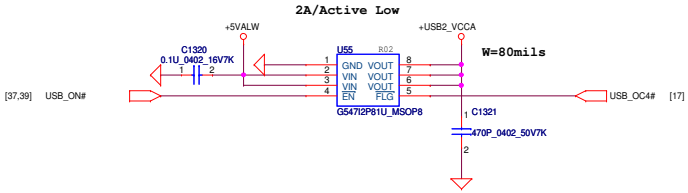
Compal Electronics, Inc.			
Title: BIOS & EC I/O Port			
Size: Custom	Document Number: Sherry and Royal		Rev: 0.1
Date: Thursday, February 02, 2012	Sheet 37 of 55		

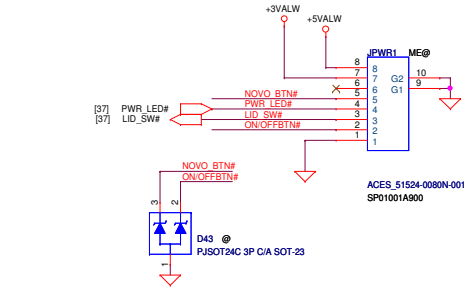


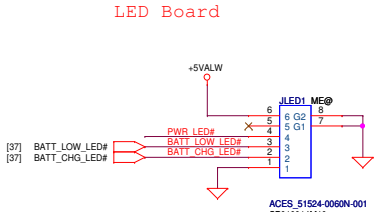


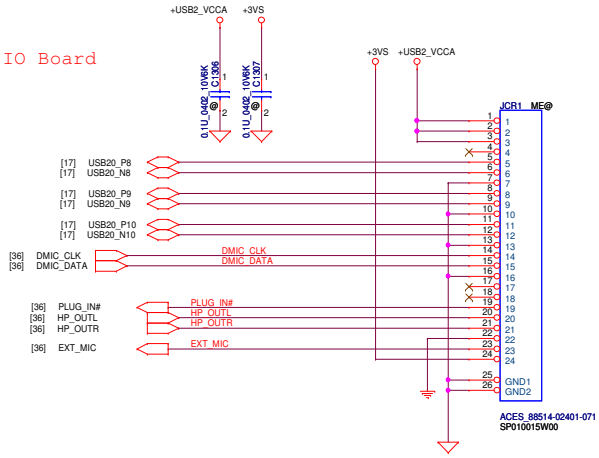






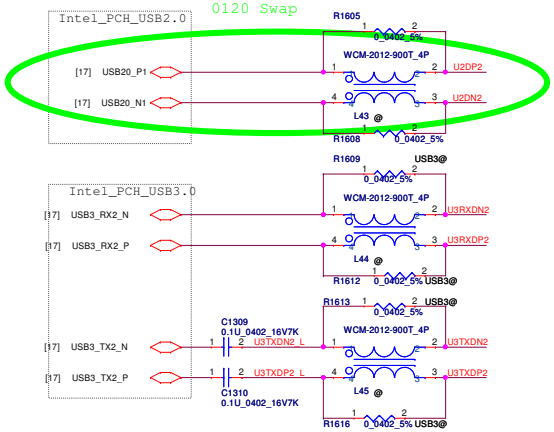




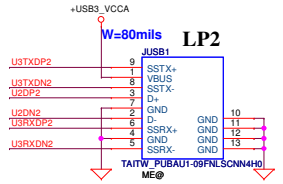


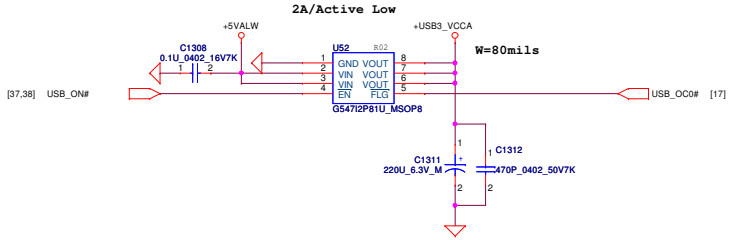
Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

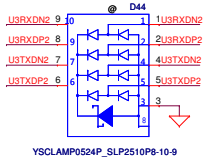
Compal Electronics, Inc.			
Title	ROM/KBD/PWR/CR/LED/TP Conn.		
Size C	Document Number	Sherry and Royal	Rev 0.1
Date: Thursday, February 02, 2012	Sheet 38 of 55		

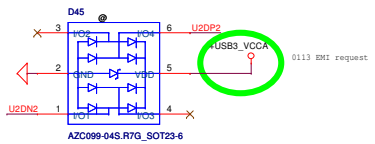


Place TX AC coupling Cap (C843~C850). Close to connector









For EMI request

Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

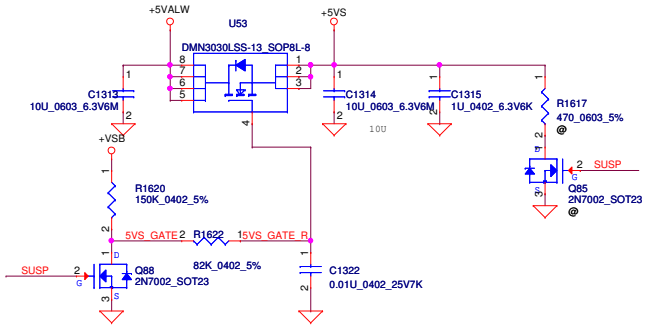
Compal Electronics, Inc.

Title: USB3.0/Left USB Ports

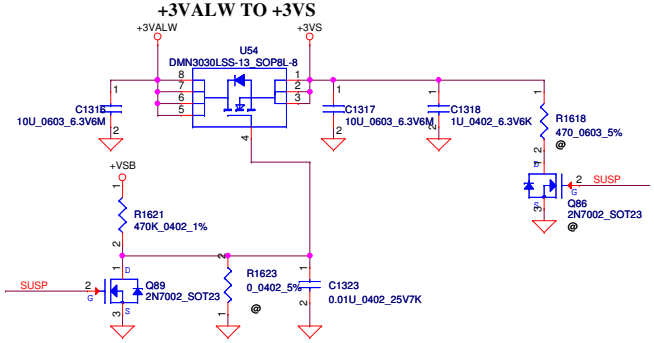
Size	Document Number	Rev
Custom		0.1

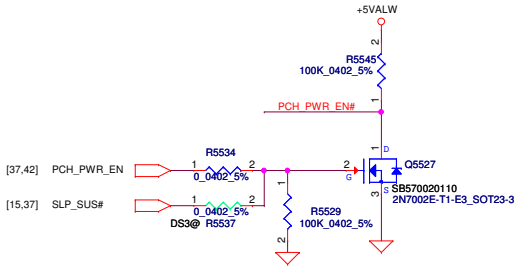
Date: Thursday, February 02, 2012 Sheet 39 of 55

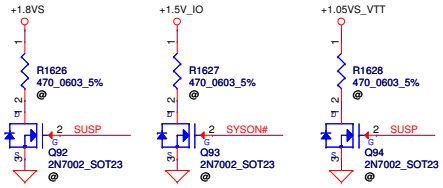
+5VALW TO +5VS

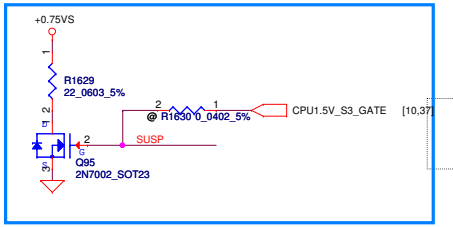


+3VALW TO +3VS



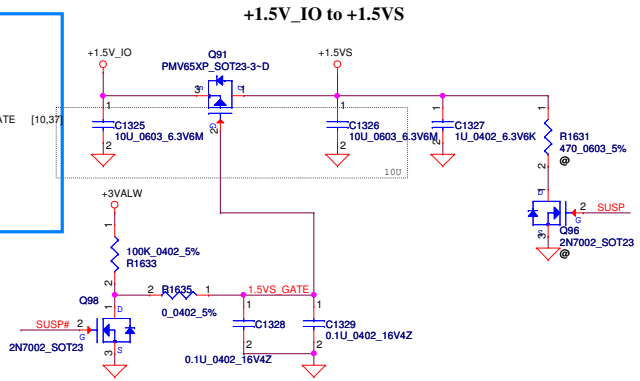


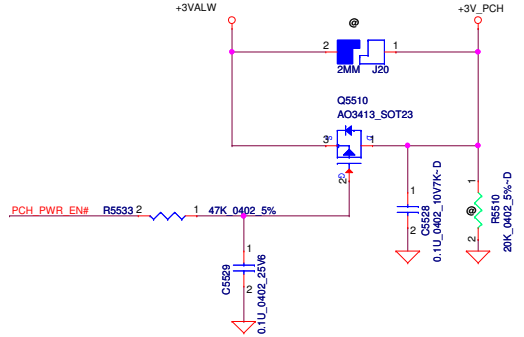


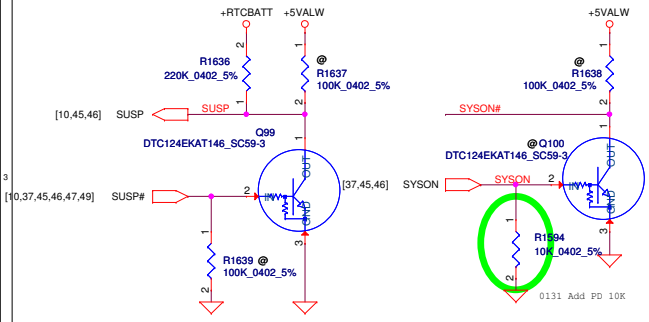


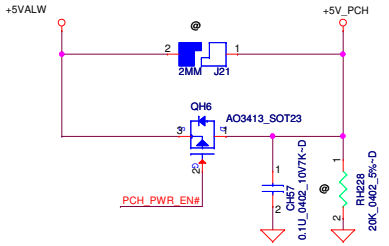
For Intel S3 Power Reduction.

+1.5V_IO to +1.5VS









Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: DC Interface

Size	Document Number	Rev
Custom	Sherry and Royal	0.1
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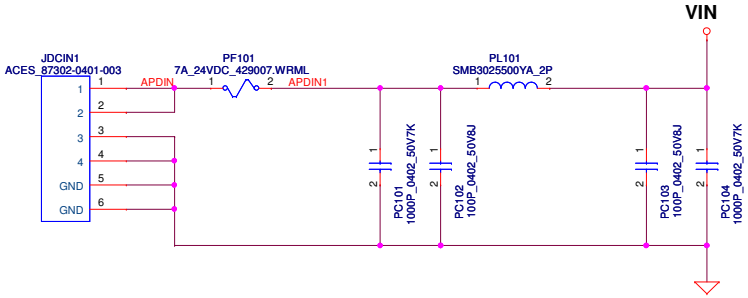
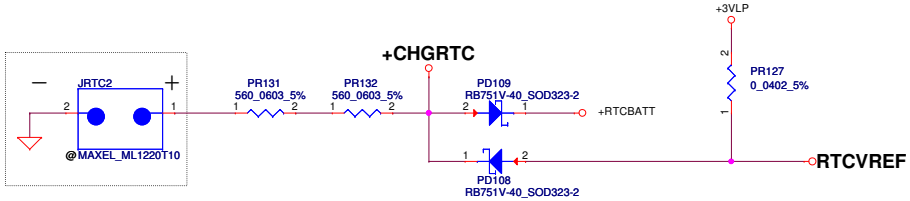




RTC Battery

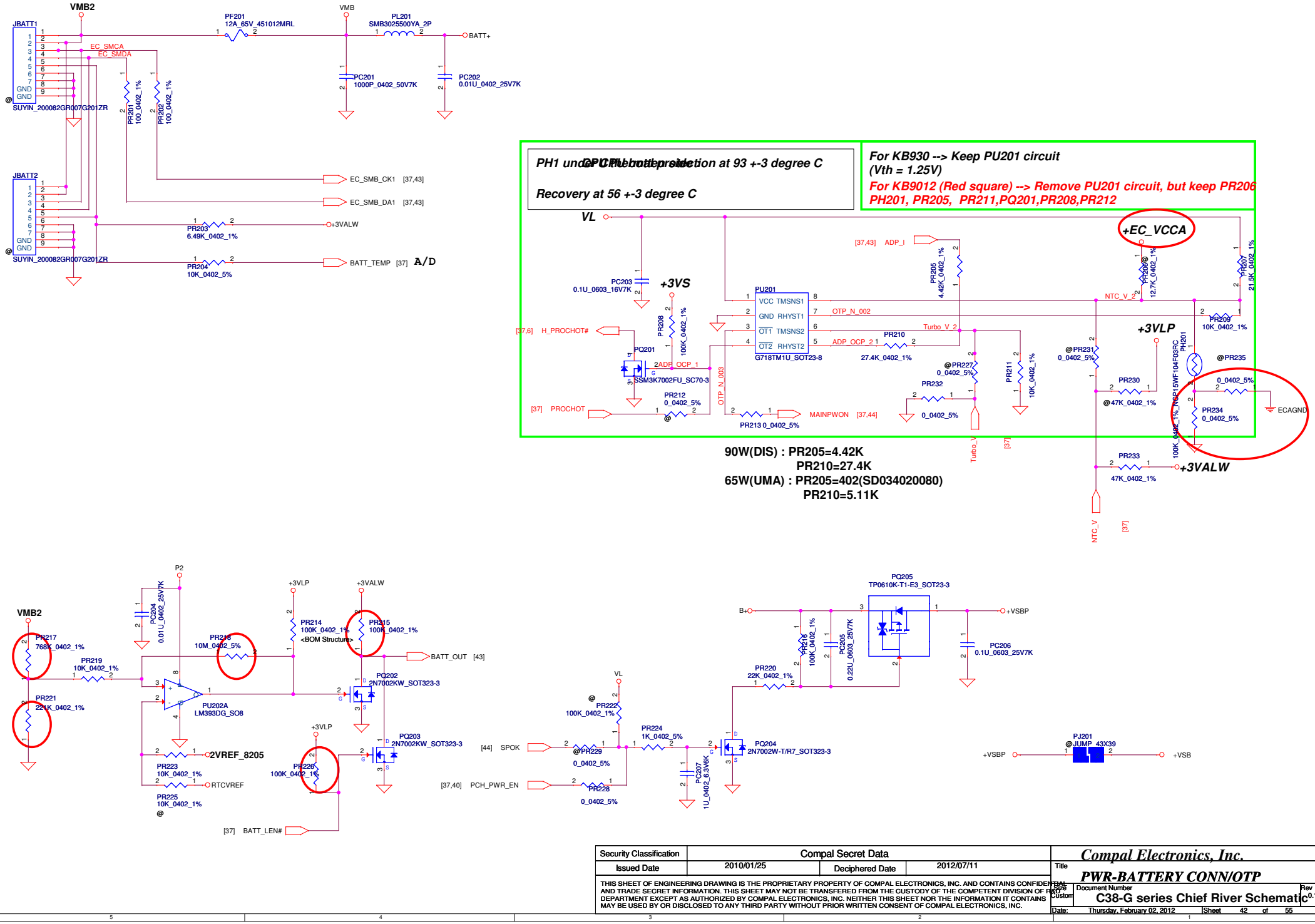
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: ***PWR DCIN***

Size: Custom | Document Number: **C38-G series Chief River Schematic** | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 41 of 55



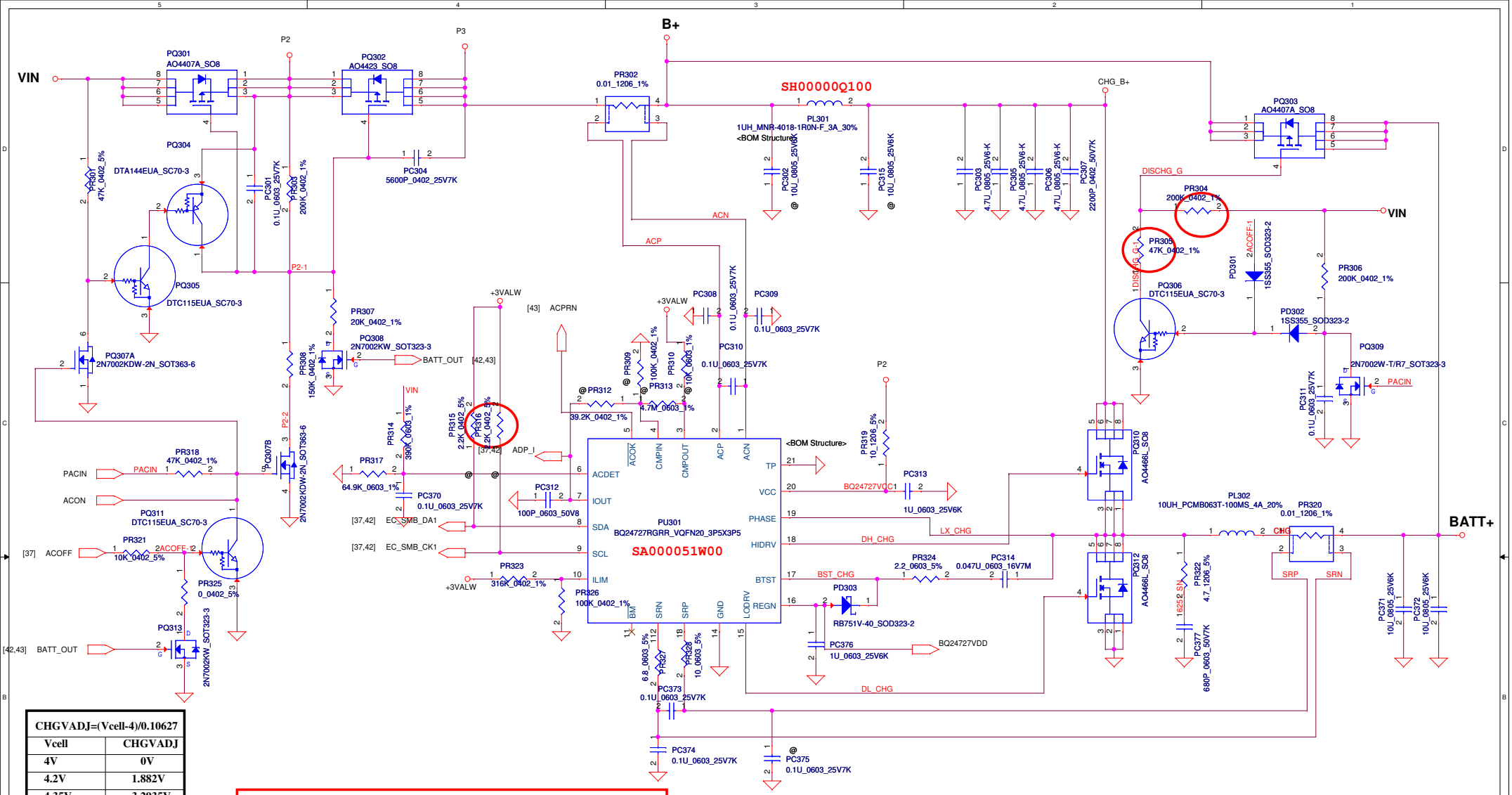
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PWR-BATTERY CONN/OTP

Size: Custom | Document Number: C38-G series Chief River Schematic | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 42 of 55



Security Classification	Compal Secret Data		
Issued Date	2010/01/13	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: CHARGER

Size | Document Number: C38-G series Chief River Schematic | Rev: 0.1

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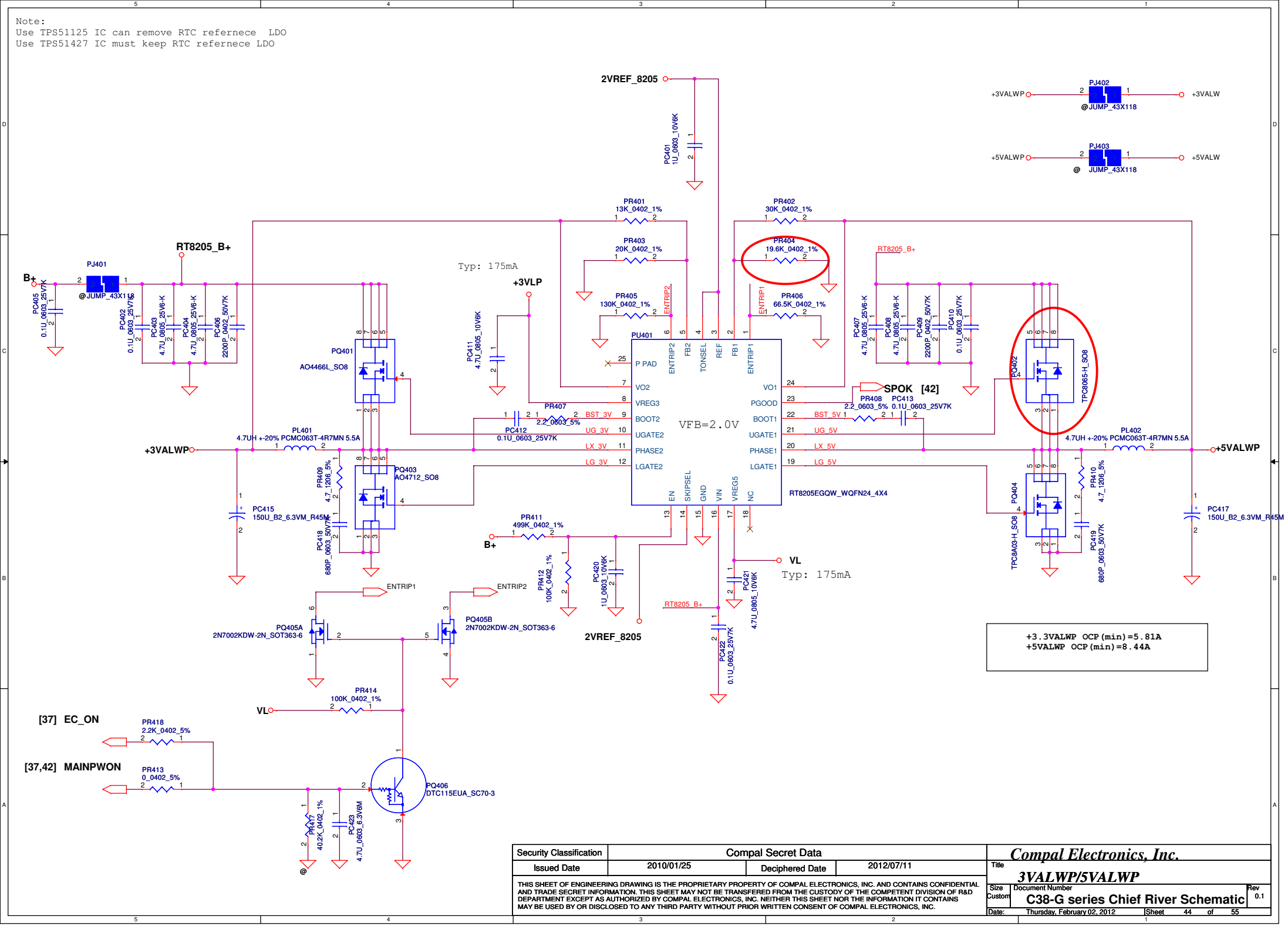
Note:
Use TPS51125 IC can remove RTC refernece LDO
Use TPS51427 IC must keep RTC refernece LDO



Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2012/07/11

Compal Electronics, Inc.

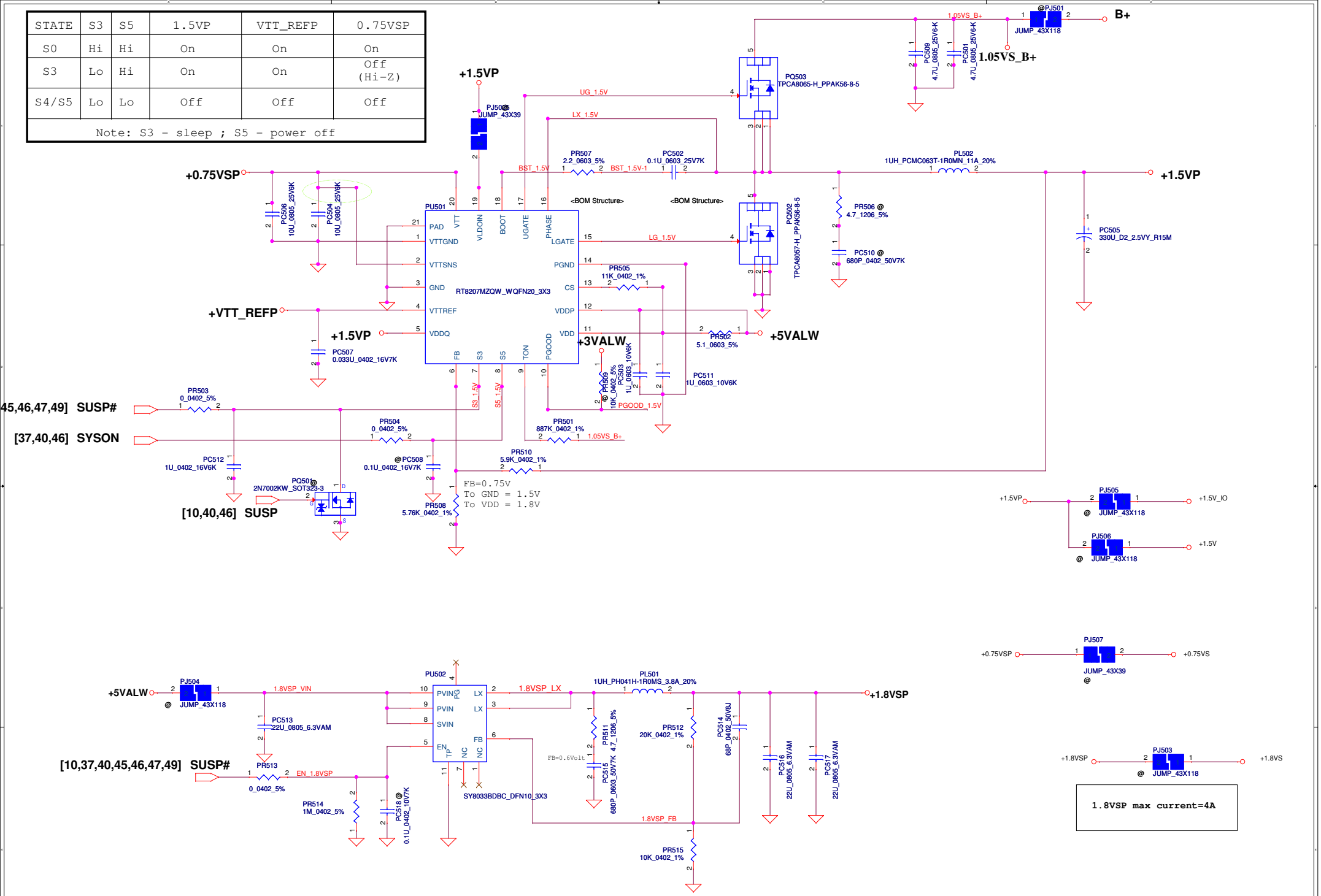
Title: 3VALWP/5VALWP

Size: Custom | Document Number: C38-G series Chief River Schematic | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 44 of 55

STATE	S3	S5	1.5VP	VTT_REFP	0.75VSP
S0	Hi	Hi	On	On	On
S3	Lo	Hi	On	On	Off (Hi-Z)
S4/S5	Lo	Lo	Off	Off	Off

Note: S3 - sleep ; S5 - power off



Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2012/07/11

Compal Electronics, Inc.

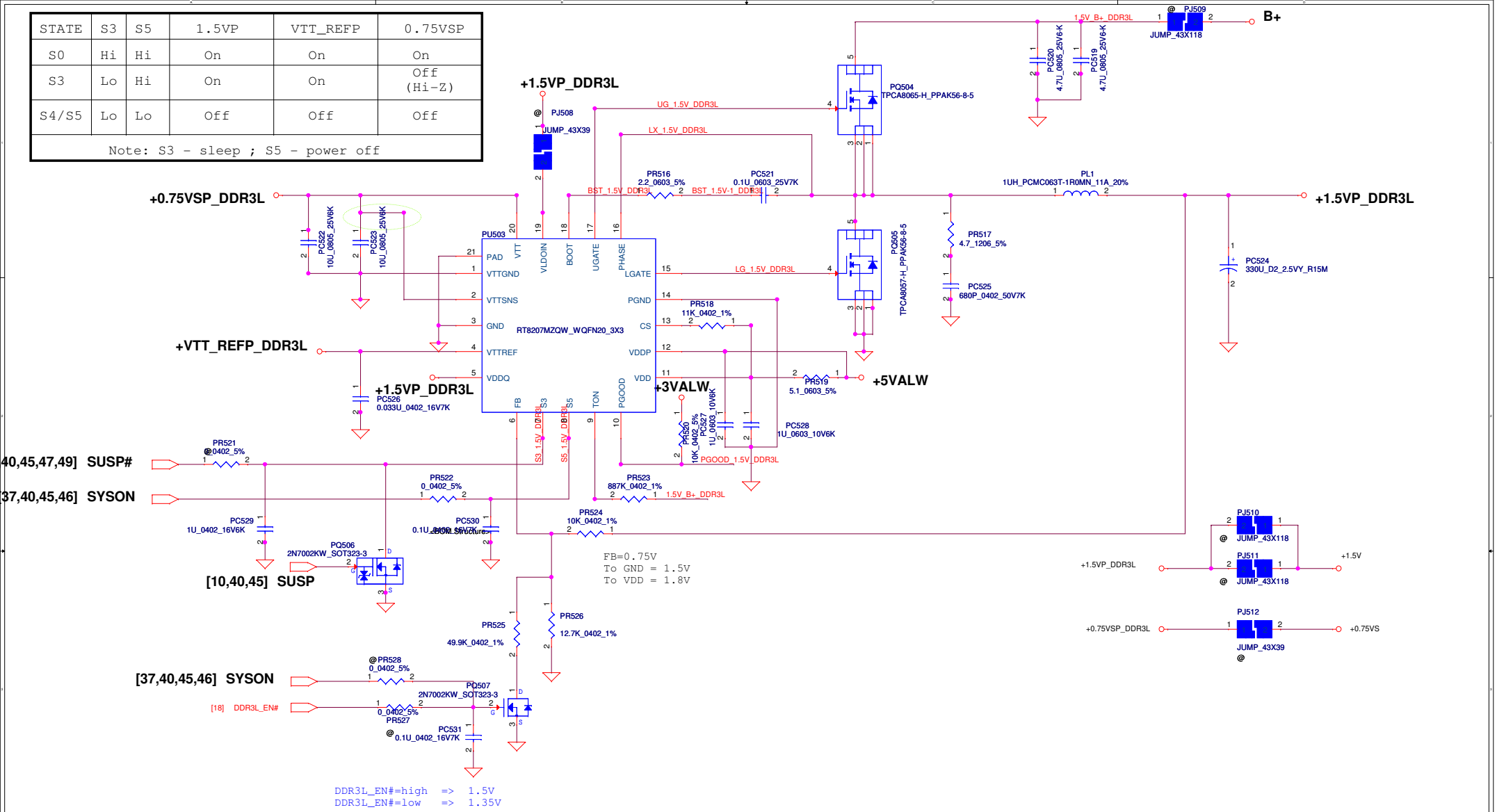
Title: PWR-+1.5VP/+1.8VSP

Size: Custom | Document Number: C38-G series Chief River Schematic | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 45 of 55

STATE	S3	S5	1.5VP	VTT_REFP	0.75VSP
S0	Hi	Hi	On	On	On
S3	Lo	Hi	On	On	Off (Hi-Z)
S4/S5	Lo	Lo	Off	Off	Off

Note: S3 - sleep ; S5 - power off



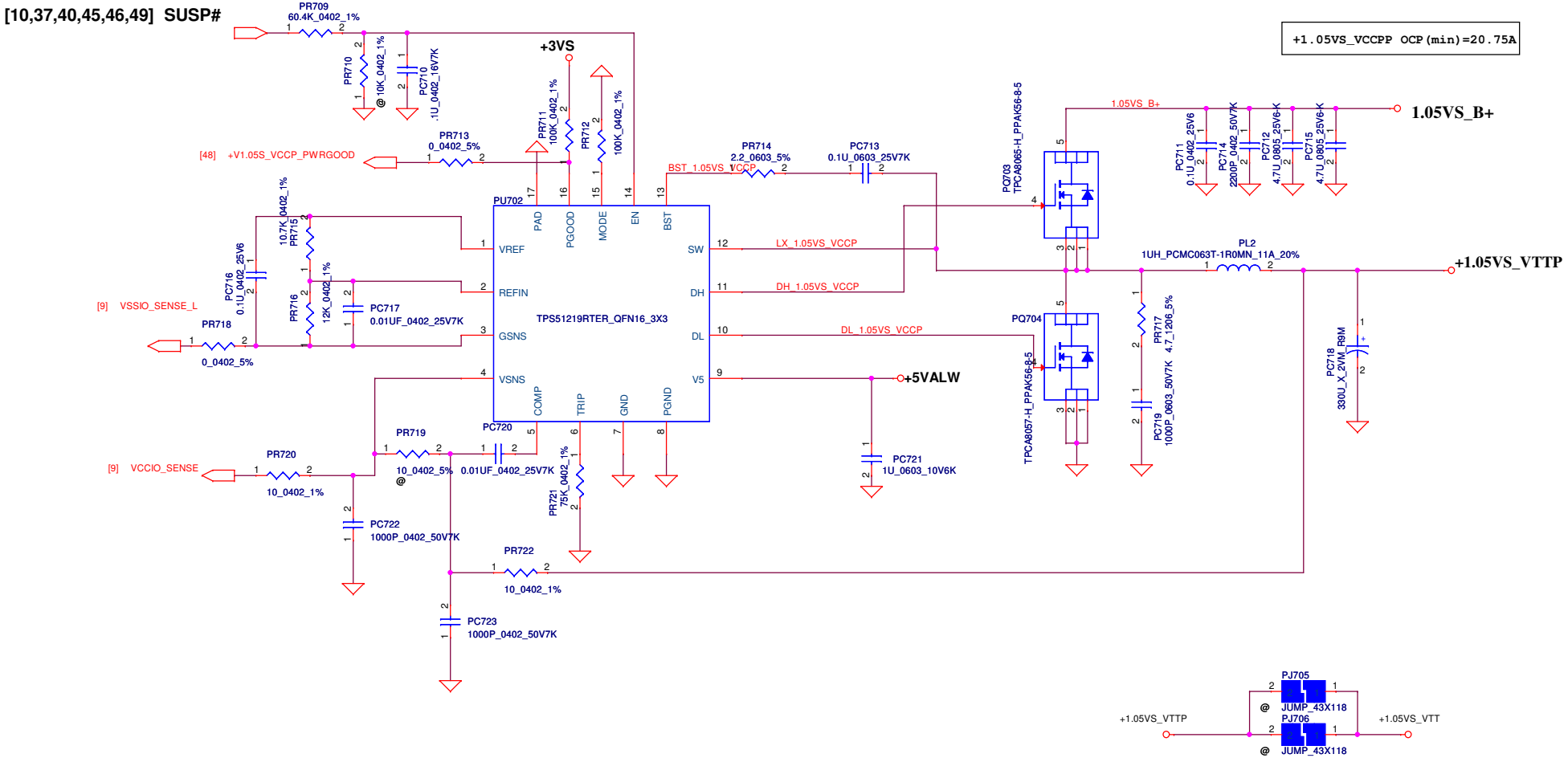
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PWR-+1.5VP/+1.8VSP

Size: Custom | Document Number: C38-G series Chief River Schematic | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 46 of 55



Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PWR +1.05VS_VCCPP/

Size: Custom | Document Number: C38-G series Chief River Schematic | Rev: 0.1

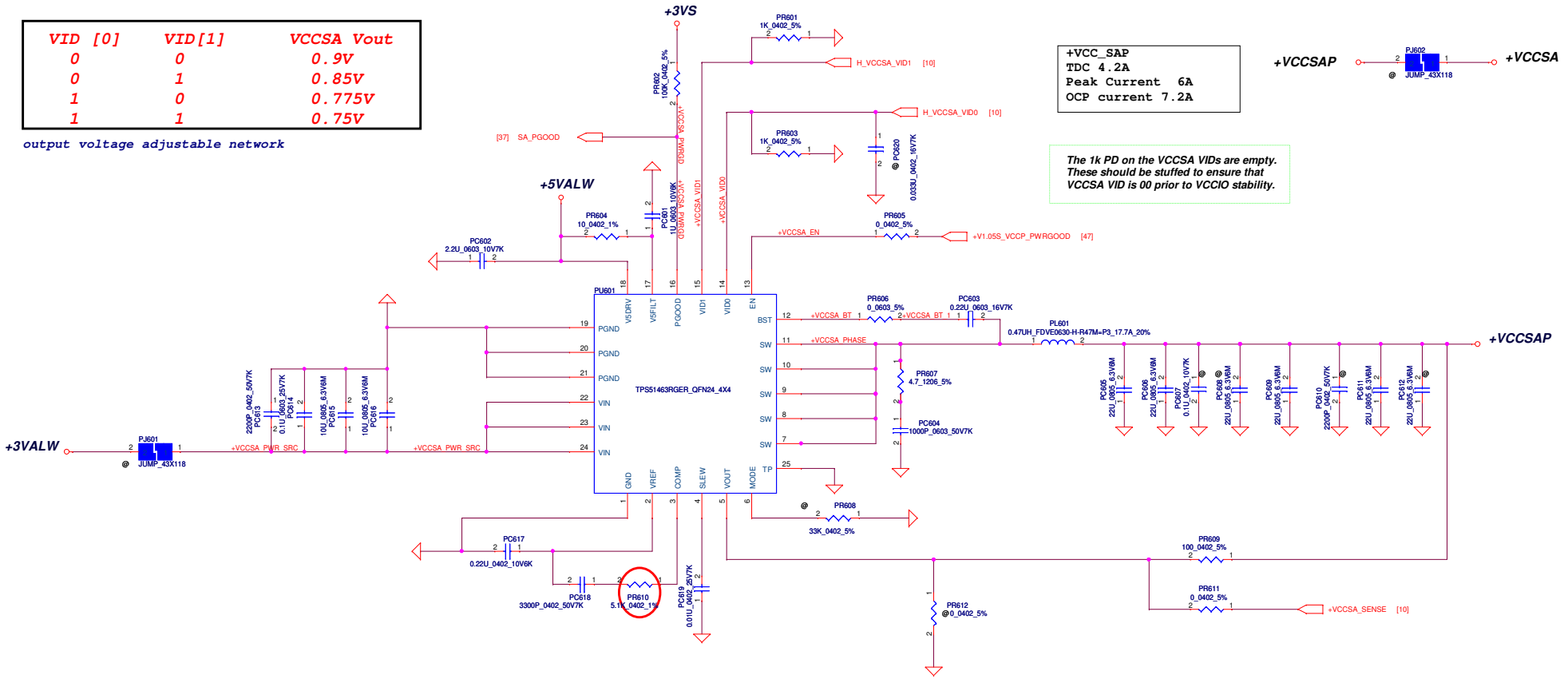
Date: Thursday, February 02, 2012 | Sheet 47 of 55

VID [0]	VID[1]	VCCSA Vout
0	0	0.9V
0	1	0.85V
1	0	0.775V
1	1	0.75V

output voltage adjustable network

+VCC_SAP
TDC 4.2A
Peak Current 6A
OCP current 7.2A

The 1k PD on the VCCSA VIDs are empty. These should be stuffed to ensure that VCCSA VID is 00 prior to VCCIO stability.



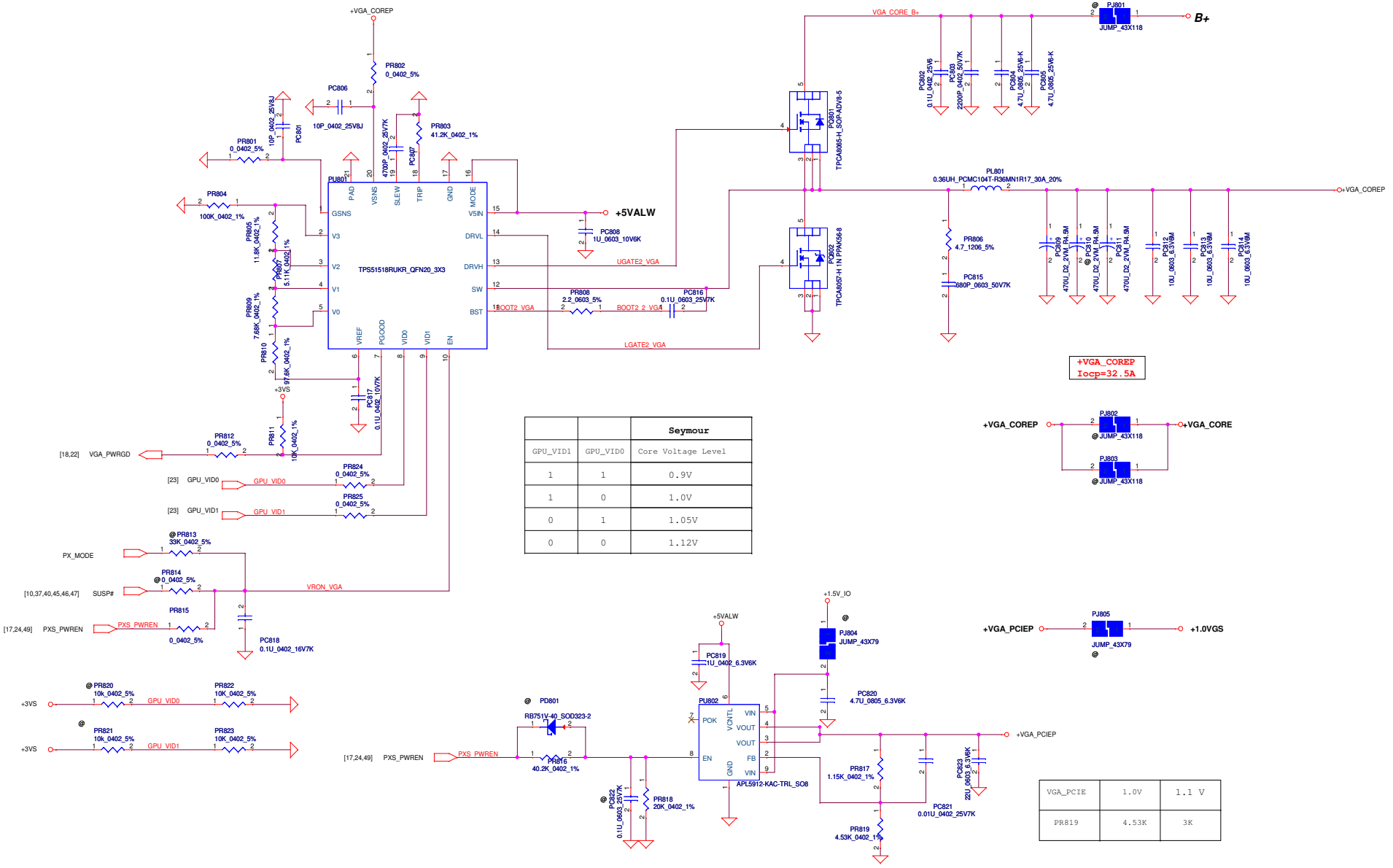
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: PWR +VCCSAP

Size	Document Number	Rev
C	C38-G series Chief River Schematic	0.1

Date: Thursday, February 02, 2012 Sheet 48 of 55



		Seymour
GPU_VID1	GPU_VID0	Core Voltage Level
1	1	0.9V
1	0	1.0V
0	1	1.05V
0	0	1.12V

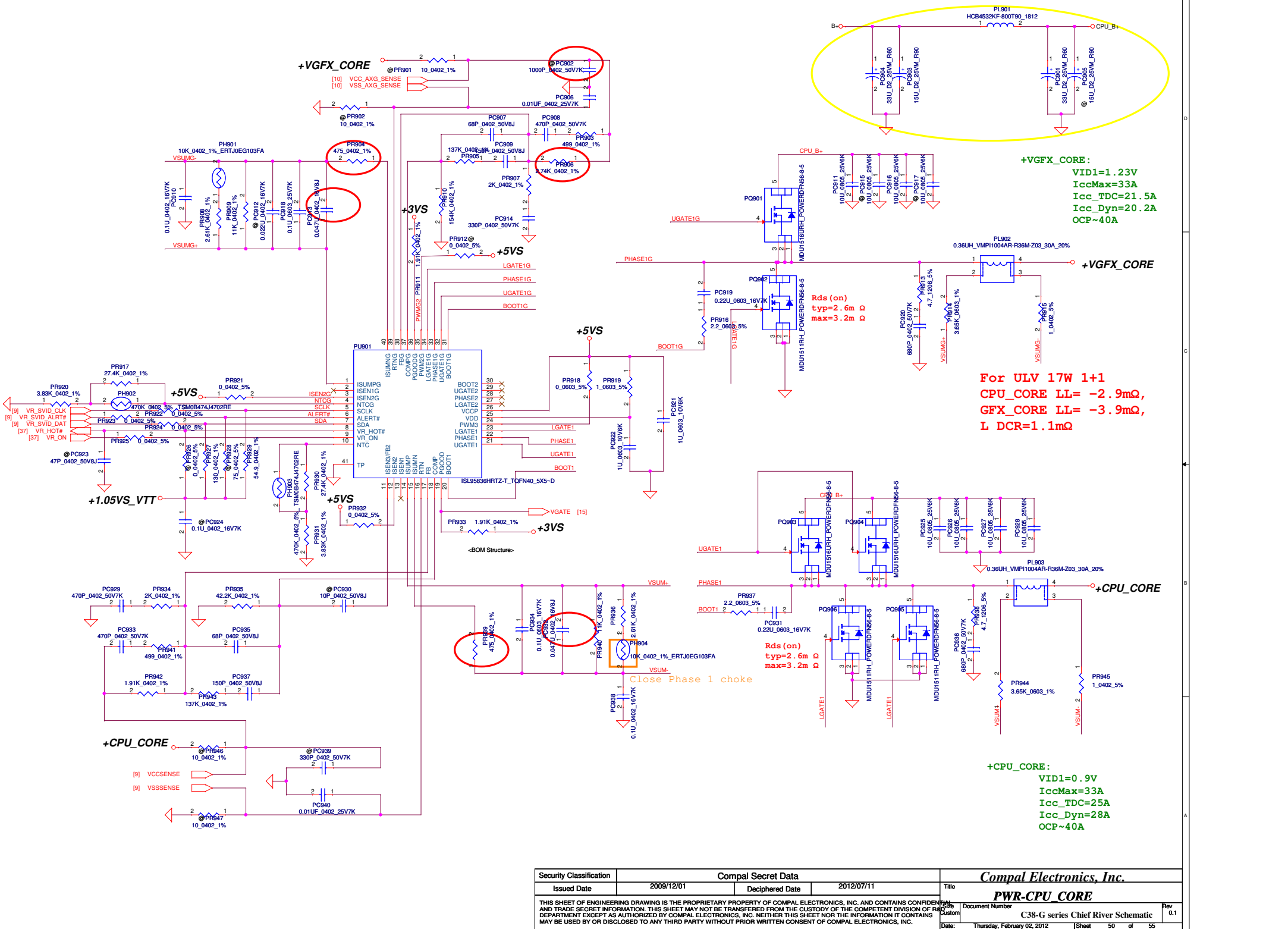
VGA_PCIE	1.0V	1.1 V
PR819	4.53K	3K

Compal Electronics, Inc.

Title: PWR-VGA_CORE/VGA_PCIE

Size: Document Number: Rev 0.1

Date: Thursday, February 02, 2012 Sheet 49 of 55



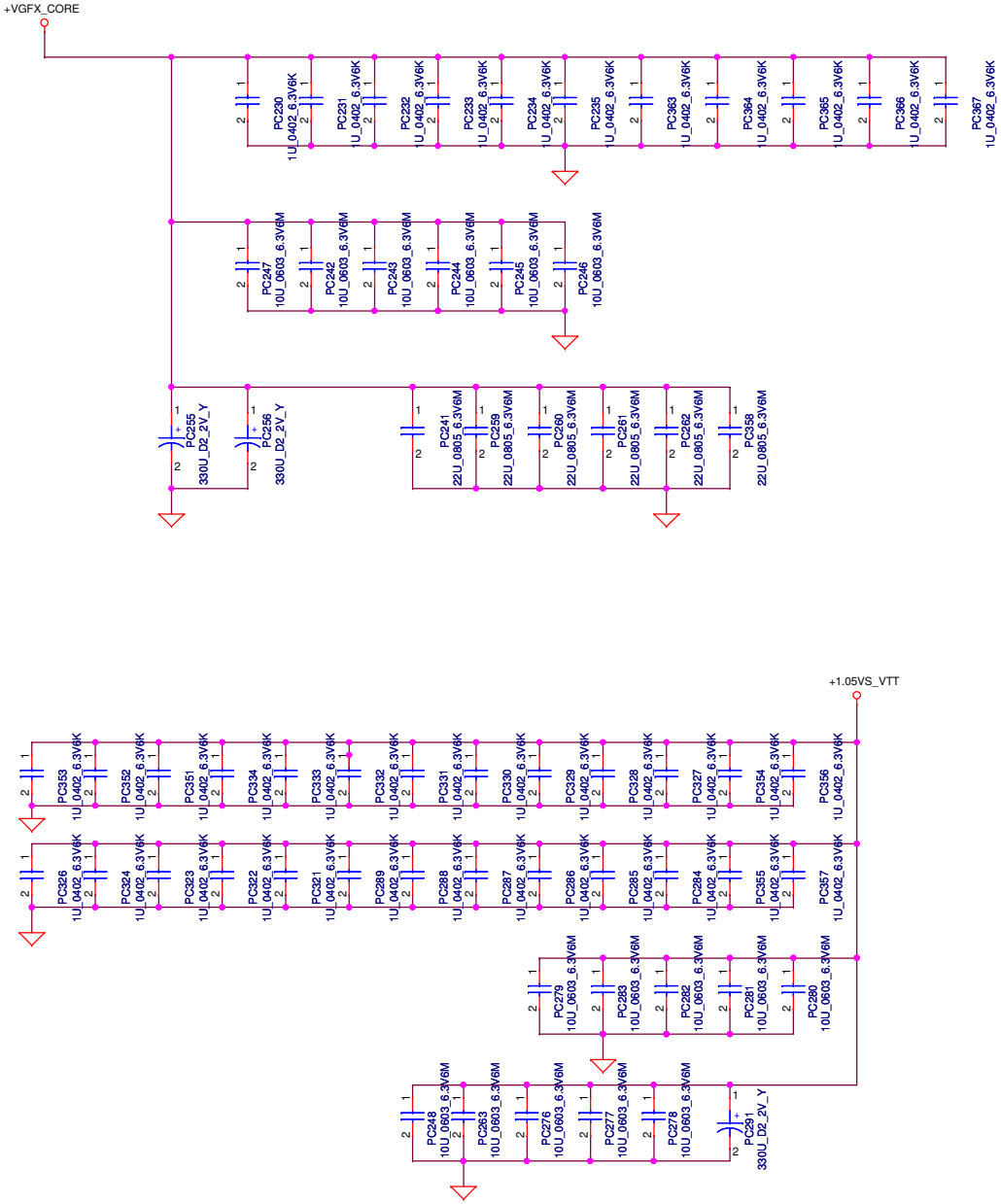
Security Classification	Compal Secret Data		
Issued Date	2009/12/01	Deciphered Date	2012/07/11

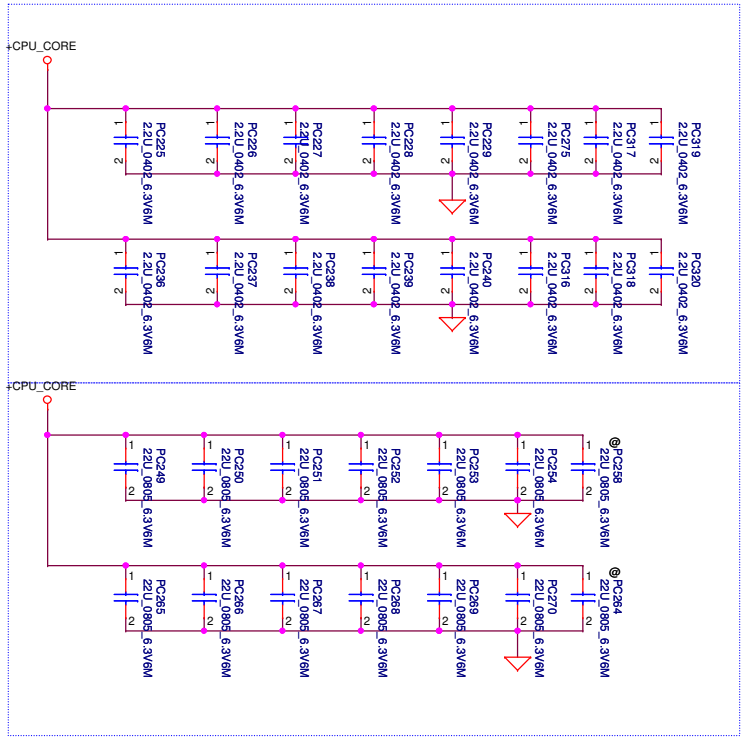
Compal Electronics, Inc.

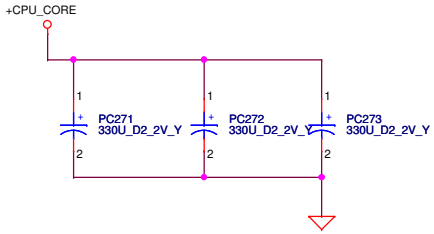
Title: PWR-CPU_CORE

Size: Custom | Document Number: C38-G series Chief River Schematic | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 50 of 55







Security Classification	Compal Secret Data		
Issued Date	2011/06/24	Deciphered Date	2012/07/12

Compal Electronics, Inc.

Title: CPU_CORE_CAP

Size: Custom | Document Number | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 51 of 55

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					

Compal Electronics, Inc.

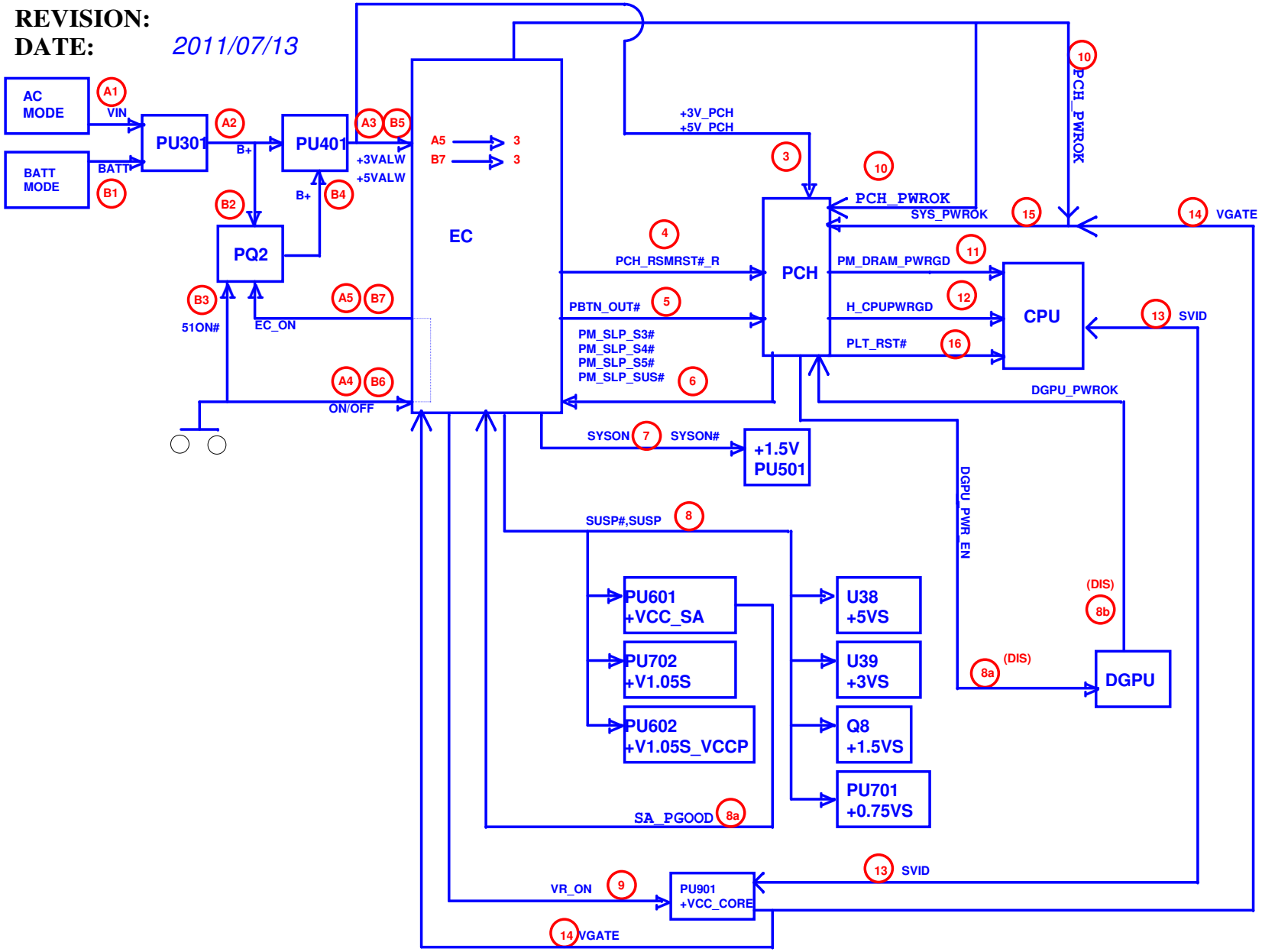
Title: PIR (PWR)

Size: Custom | Document Number: C38-G series Chief River Schematic | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 52 of 55

COMPAL CONFIDENTIAL

MODEL NAME: *Power Sequence Block Diagram*
PCB NAME: *LA-7981P*
REVISION:
DATE: *2011/07/13*



Security Classification	Compal Secret Data		
Issued Date	2011/06/15	Deciphered Date	2012/07/11

Compal Electronics, Inc.

Title: ***Power sequence***

Size: Custom | Document Number: ***Sherry and Royal*** | Rev: 0.1

Date: Thursday, February 02, 2012 | Sheet 53 of 55

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

Item	Reason for change	PG#	Modify List	Date	Phase
1	Initial				DVT
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

Compal Electronics, Inc.			
Title: *HW-PIR1*			
Size: Custom	Document Number: **Sherry and Royal**		Rev: 0.1
Date: Thursday, February 02, 2012	Sheet 54 of 55		