PCA70/61

Sugar Bay

LA-7521P REV 0.2
LA-7522P REV 0.1

Schematic

Intel Processor(Sandy Bridge) / PCH(Cougar Point)

Tuesday, April 12, 2011 Rev 0.2

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

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Title: ***Cover Page***

Size	Document Number	Rev
Custom	**PCA70 LA-7521P M/B**	0.1

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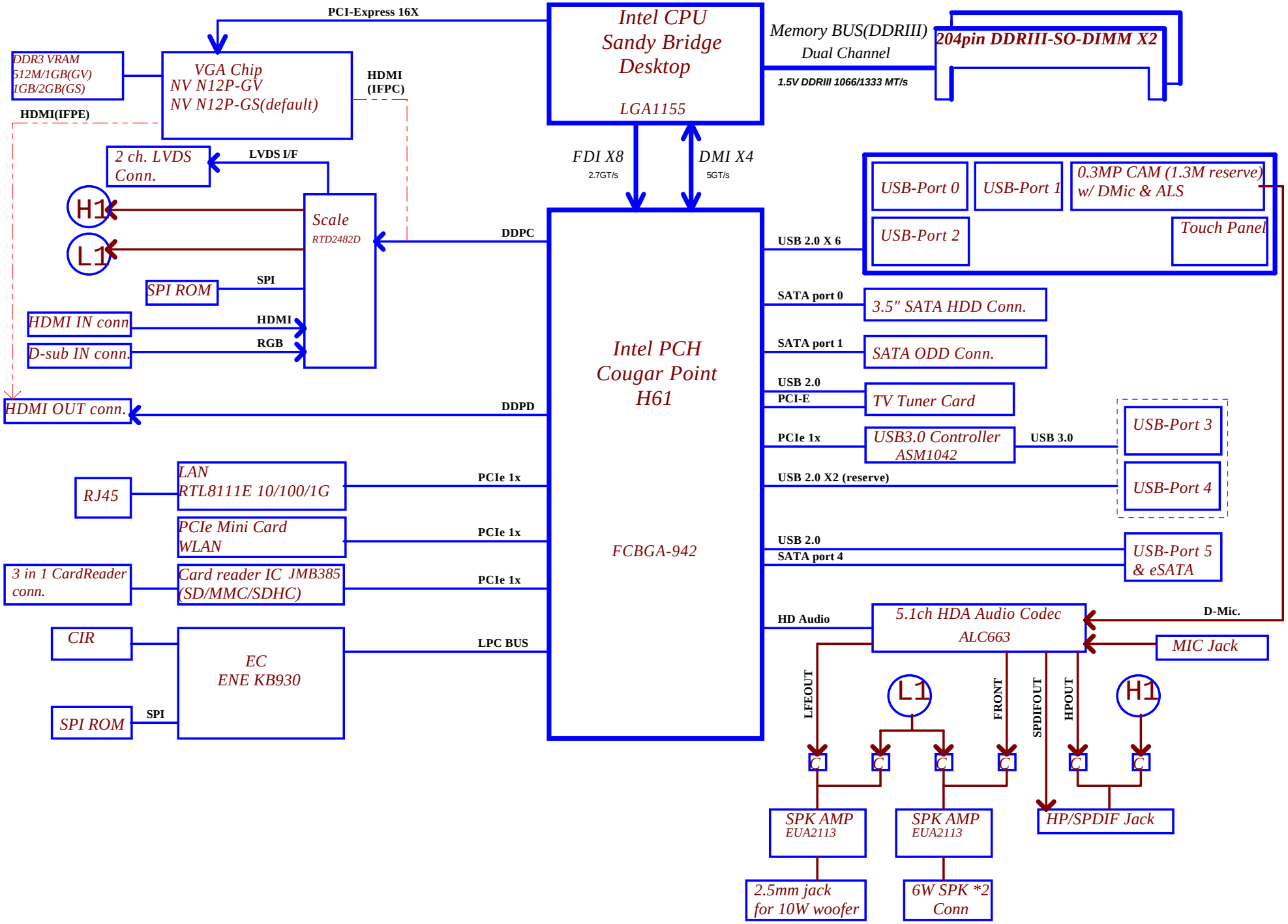

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Title: **Block Diagram**

Size | Document Number: **PCA70 LA-7521P M/B** | Rev: 0.1

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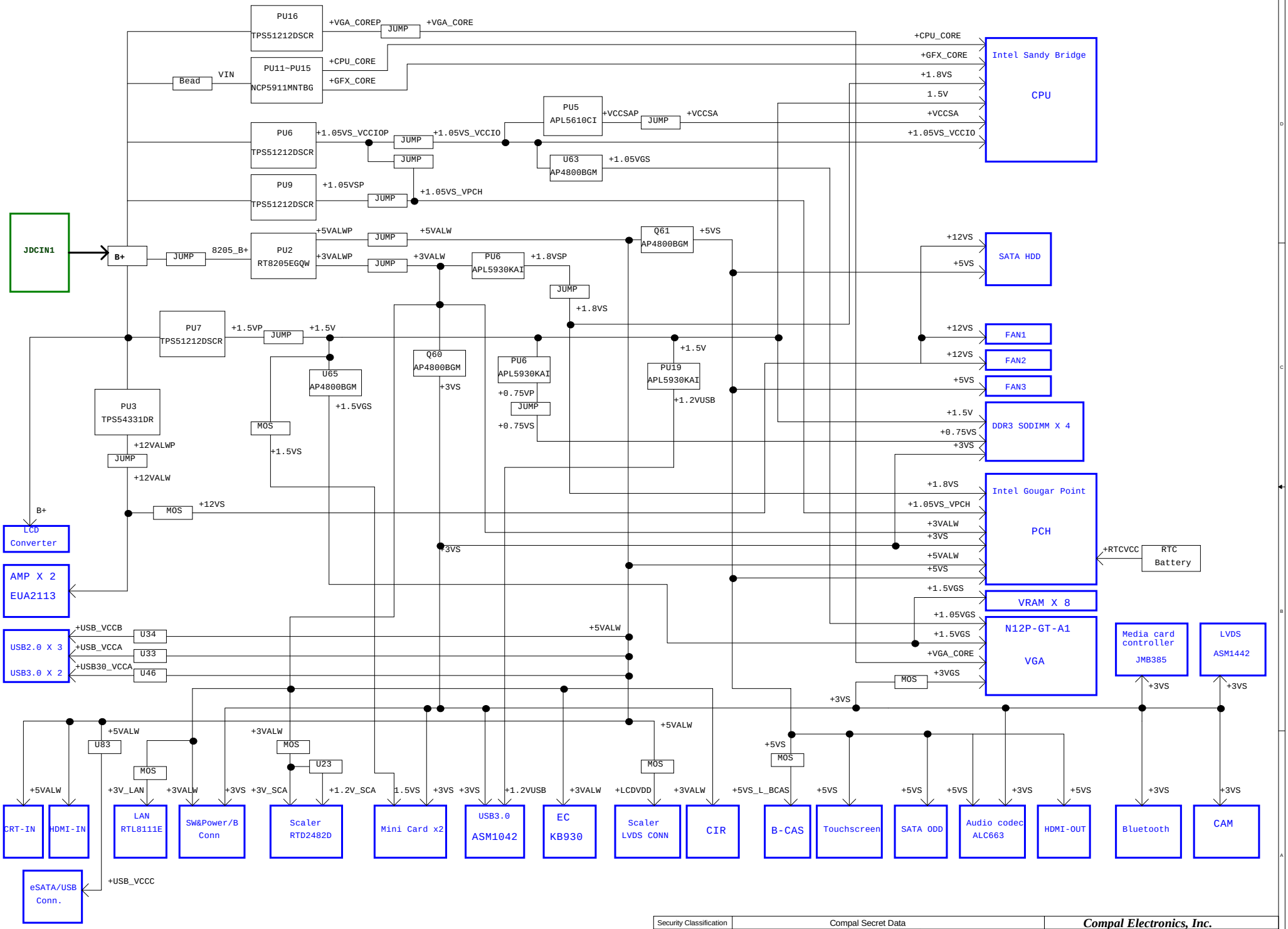

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Title: **Power Tree**

Size	Document Number	Rev
	PCA70 LA-7521P M/B	0.1

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Voltage Rails

Power Plane	Description	S0	S3	S5
VIN	Adapter power supply (19V)	N/A	N/A	N/A
B+	AC power rail for power circuit.	N/A	N/A	N/A
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+GFX_CORE	Graphics voltage for CPU	ON	OFF	OFF
+VCCSA	System Agent core voltage for CPU	ON	OFF	OFF
+1.05VS_VCCIO	1.05V power rail for CPU	ON	OFF	OFF
+1.05VS_VPCH	1.05V power rail for PCH	ON	OFF	OFF
+0.75VS	0.75V power rail for DDR terminator	ON	OFF	OFF
+1.5V	1.5V power rail for DDRIII	ON	ON	OFF
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail once AC plug in	ON	ON	ON
+3V_LAN	3.3V power rail for LAN	ON	ON	OFF
+3VS	3.3V switched power rail	ON	OFF	OFF
+3V_SCA	3.3V switched power rail for scaler	ON	N/A	N/A
+1.2V_SCA	1.2V switched power rail for scaler	ON	N/A	N/A
+1.2V_USB	1.2V power rail for USB3.0	ON	OFF	OFF
+5VALW	5V always on power rail once AC plug in	ON	ON	ON
+5VS	5V switched power rail	ON	OFF	OFF
+LCDVDD	5V switched power rail for panel	ON	N/A	N/A
+RTCVCC	RTC power	ON	ON	ON
+3VGS	3.3V power rail for GPU	ON	OFF	OFF
+VGA_CORE	Graphics power rail for GPU	ON	OFF	OFF
+1.05VGS	1.05VS switched power rail for GPU	ON	OFF	OFF
+1.5VGS	1.5VS power rail for GPU and VRAM	ON	OFF	OFF
+12VALW	12V always on power rail once AC plug in	ON	N/A	N/A
+12VS	5V switched power rail	ON	OFF	OFF

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

PCH SM Bus Address

Power	Device	HEX	Address
+3VS	DDR(JDDRL2)		1010 000X b
+3VS	DDR(JDDRH1)		1010 010X b

PCH SML1 Bus Address

Power	Device	HEX	Address
	VGA Ext. thermal sensor		1001_1010b
	VGA Int. thermal sensor (defaulta)		1001_1110b

EC SM Bus2 Address

Power	Device	HEX	Address
	Scaler		0000_0101b

Board ID	Rb	V_{BID} min	V_{BID} typ	V_{BID} max	EC AD3
0	0	0 V	0 V	0.155 V	0x00 - 0x0C
1	8.2K +/- 5%	0.168 V	0.250 V	0.362 V	0x0D - 0x1C
2	18K +/- 5%	0.375 V	0.503 V	0.621 V	0x1D - 0x30
3	33K +/- 5%	0.634 V	0.819 V	0.945 V	0x31 - 0x49
4	56K +/- 5%	0.958 V	1.185 V	1.359 V	0x4A - 0x69
5	100K +/- 5%	1.372 V	1.650 V	1.838 V	0x6A - 0x8E
6	200K +/- 5%	1.851 V	2.200 V	2.420 V	0x8F - 0xBB
7	NC	2.433 V	3.300 V	3.300 V	0xBC - 0xFF

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

USB Port Table

USB 2.0	USB 1.1	Port	Device
EHCI1	UHCI0	0	Co-lay w/USB30 PORT0
		1	Co-lay w/USB30 PORT1
	UHCI1	2	Touch Screen
		3	Web Camera
	UHCI2	4	eSATA+USB Conn
		5	USB Conn 6
	UHCI3	6	Disabled on H61
		7	Disabled on H61
EHCI2	UHCI4	8	USB Conn 4
		9	USB Conn 3
	UHCI5	10	Mini Card(TV Tuner)
		11	Blue Tooth
	UHCI6	12	Disabled on H61
		13	Disabled on H61

SATA Port Table

Port		Device
6G	0	HDD
	1	ODD
3G	2	Disabled on H61
	3	Disabled on H61
	4	eSATA+USB Conn
	5	NC

PCIE Port Table

Port	Device
1	NC
2	USB30
3	WLAN
4	TV
5	Card reader
6	LAN
7	Disabled on H61
8	Disabled on H61

BOARD ID Table

Board ID	PCB Revision
* 0	0.1
1	0.2
2	
3	
4	

BOM Structure Table

BTO Item	BOM Structure
ME components	CONN@
VGA-N12P-GS	GS@
VGA-N12P-GV	GV@
UMA Only	UMA@
DISCRETE ONLY	DIS@
USB30	USB30@
No USB30 SKU	USB20@
D-sub IN	VGAIN@
HDMI IN	HDMIIN@
HDMI OUT	HDMIO@
HDMI OUT from DIS	HDMIOD@
HDMI OUT from UMA	HDMIOU@
VGA w/o Senergy	DISO@
BCAS	TV@
VRAM select	X76@
VRAM 1G Hynix X7630488L01	X76_HY1G@
VRAM 1G Samsung X7630488L02	X76_SAM1G@
SKU IO Select	GPIO69_H@
	GPIO69_L@
	GPIO70_H@
	GPIO70_L@
	GPIO71_H@
	GPIO71_L@
Unpop	@
LA-7521P 6 Layer PCB	6LOCB@
LA-7522P 8 Layer PCB	8LPCB@

SKU ID(Project) Table

Project_ID2 (GPIO69)	Project_ID1 (GPIO70)	Project_ID0 (GPIO71)	Project	SKU	
0	0	0	PCA70	UMA USB30 w/o HDMI 4319D588L03	UMA@ USB30@ 8LPCB@ GPIO69_L@ GPIO70_L@ GPIO71_L@
0	0	1		DIS-Hynix USB30 w/ HDMI 4319D588L04	GS@ DIS@ USB30@ VGAIN@ HDMIO@ HDMIOD@ DISO@ HDMIIN@ 8LPCB@ X76_HY1G@ GPIO69_L@ GPIO70_L@ GPIO71_H@
0	1	0		UMA USB30 w/ HDMI 4319D588L05	UMA@ USB30@ VGAIN@ HDMIO@ HDMIOU@ DEBUG@ HDMIIN@ 8LPCB@ GPIO69_L@ GPIO70_H@ GPIO71_L@
0	1	1	PCA61	DIS-Hynix USB30 w/ HDMI 4319D588L11	GV@ DIS@ USB30@ VGAIN@ HDMIO@ HDMIOD@ DISO@ HDMIIN@ 6LOCB@ GPIO69_L@ GPIO70_H@ GPIO71_H@
1	0	0		UMA USB20 w/ HDMI 4319D588L12	UMA@ USB20@ VGAIN@ HDMIO@ HDMIOU@ DEBUG@ HDMIIN@ 6LOCB@ GPIO69_H@ GPIO70_L@ GPIO71_L@
1	0	1		X	
1	1	0		X	
1	1	1		X	

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Title: Notes List

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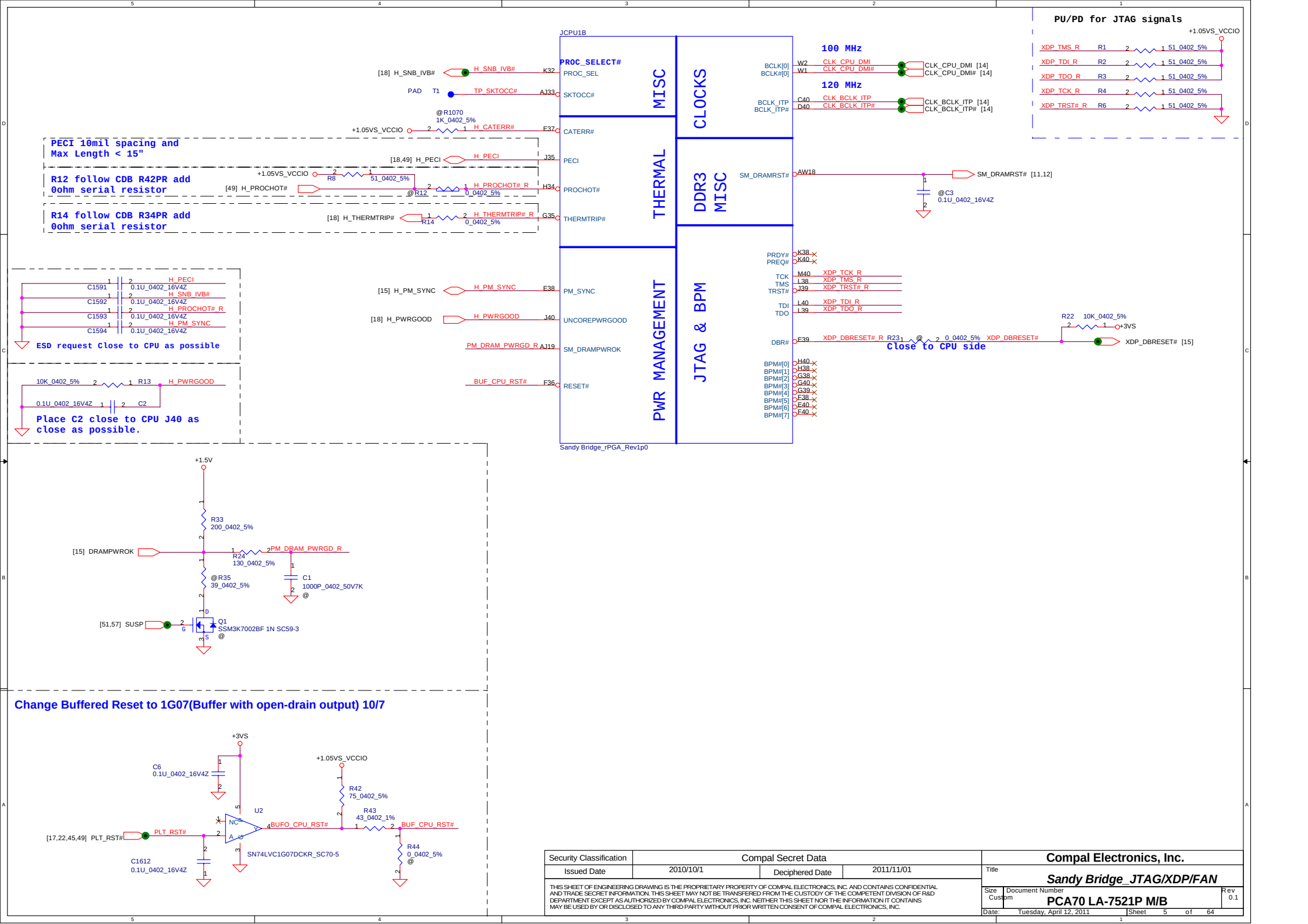
PU/PD for JTAG signals
+1.05VS_VCCIO
XDP_TMS_R R1 51_0402_5%
XDP_TDI_R R2 51_0402_5%
XDP_TDO_R R3 51_0402_5%
XDP_TCK_R R4 51_0402_5%
XDP_TRST#_R R6 51_0402_5%
JCPU1B
PROC_SELECT#
PROC_SEL K32
SKTOCC# AJ33
CATERR# E37
PECI J35
PROCHOT# H34
THERMTRIP# G35
PM_SYNC E38
UNCOREPWRGOOD J40
SM_DRAMPWROK AJ19
RESET# F36
MISC
THERMAL
PWR MANAGEMENT
CLOCKS
DDR3 MISC
JTAG & BPM
100 MHz
120 MHz
BCLK[0] W2 CLK_CPU_DMI
BCLK#[0] W1 CLK_CPU_DMI#
CLK_CPU_DMI [14]
CLK_CPU_DMI# [14]
BCLK_ITP C40 CLK_BCLK_ITP
BCLK_ITP# D40 CLK_BCLK_ITP#
CLK_BCLK_ITP [14]
CLK_BCLK_ITP# [14]
SM_DRAMRST# AW18
SM_DRAMRST# [11,12]
@C3 0.1U_0402_16V4Z
PRDY# K38
PREQ# K40
TCK M40 XDP_TCK_R
TMS L38 XDP_TMS_R
TRST# J39 XDP_TRST#_R
TDI L40 XDP_TDI_R
TDO L39 XDP_TDO_R
DBR# E39 XDP_DBRESET#_R R23 0_0402_5% XDP_DBRESET#
R22 10K_0402_5% +3VS
XDP_DBRESET# [15]
Close to CPU side
BPM#[0] H40
BPM#[1] H38
BPM#[2] G38
BPM#[3] G40
BPM#[4] G39
BPM#[5] F38
BPM#[6] E40
BPM#[7] F40
Sandy Bridge_rPGA_Rev1p0
[18] H_SNB_IVB# H_SNB_IVB#
PAD T1 TP_SKTOCC#
+1.05VS_VCCIO @R1070 1K_0402_5% H_CATERR#
[18,49] H_PECI H_PECI
+1.05VS_VCCIO R8 51_0402_5%
[49] H_PROCHOT# @R12 0_0402_5% H_PROCHOT#_R
[18] H_THERMTRIP# R14 0_0402_5% H_THERMTRIP#_R
PECI 10mil spacing and Max Length < 15"
R12 follow CDB R42PR add 0ohm serial resistor
R14 follow CDB R34PR add 0ohm serial resistor
[15] H_PM_SYNC H_PM_SYNC
[18] H_PWRGOOD H_PWRGOOD
PM_DRAM_PWRGD_R
BUF_CPU_RST#
C1591 H_PECI 0.1U_0402_16V4Z
C1592 H_SNB_IVB# 0.1U_0402_16V4Z
C1593 H_PROCHOT#_R 0.1U_0402_16V4Z
C1594 H_PM_SYNC 0.1U_0402_16V4Z
ESD request Close to CPU as possible
10K_0402_5% R13 H_PWRGOOD
0.1U_0402_16V4Z C2
Place C2 close to CPU J40 as close as possible.
+1.5V
R33 200_0402_5%
[15] DRAMPWROK
R24 130_0402_5% PM_DRAM_PWRGD_R
@R35 39_0402_5%
C1 1000P_0402_50V7K @
[51,57] SUSP
Q1 SSM3K7002BF 1N SC59-3 @
Change Buffered Reset to 1G07(Buffer with open-drain output) 10/7
+3VS
C6 0.1U_0402_16V4Z
+1.05VS_VCCIO
R42 75_0402_5%
R43 43_0402_1%
U2
[17,22,45,49] PLT_RST#
PLT_RST#
BUFO_CPU_RST#
BUF_CPU_RST#
SN74LVC1G07DCKR_SC70-5
C1612 0.1U_0402_16V4Z
R44 0_0402_5% @
Security Classification
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Issued Date
2010/10/1
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2011/11/01
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Title
Sandy Bridge_JTAG/XDP/FAN
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PEG_ICOMPI and RCOMPO signals should be shorted and routed with
- max length = 500 mils
- typical impedance = 43 m ohm (4 mils/15mils)
PEG_ICOMPO signals should be routed with
- max length = 500 mils
- typical impedance = 14.5 m ohm (12 mils/15mils)

SHORT B4 & C4 TOGETHER, ROUTE AS A SINGLETRACE TO R?
ROUTE B5 TO R? AS A SEPERATE TRACE

Intel confirm pull high is correct

+1.05VS_VCCIO

R45 24.9_0402_1%

JCPU1A

DMI

Intel(R) FDI

PCI EXPRESS* - GRAPHICS

PCI-EXPRESS

PEG_COMPI
PEG_ICOMPO
PEG_RCOMPO
B4 PEG_COMP
B5
C4

[15] DMI_PTX_CRX_N0 DMI_PTX_CRX_N0 W4 DMI_RX#[0]
[15] DMI_PTX_CRX_N1 DMI_PTX_CRX_N1 V4 DMI_RX#[1]
[15] DMI_PTX_CRX_N2 DMI_PTX_CRX_N2 Y4 DMI_RX#[2]
[15] DMI_PTX_CRX_N3 DMI_PTX_CRX_N3 AA5 DMI_RX#[3]

[15] DMI_PTX_CRX_P0 DMI_PTX_CRX_P0 W5 DMI_RX[0]
[15] DMI_PTX_CRX_P1 DMI_PTX_CRX_P1 V3 DMI_RX[1]
[15] DMI_PTX_CRX_P2 DMI_PTX_CRX_P2 Y3 DMI_RX[2]
[15] DMI_PTX_CRX_P3 DMI_PTX_CRX_P3 AA4 DMI_RX[3]

[15] DMI_CTX_PRX_N0 DMI_CTX_PRX_N0 V6 DMI_TX#[0]
[15] DMI_CTX_PRX_N1 DMI_CTX_PRX_N1 W8 DMI_TX#[1]
[15] DMI_CTX_PRX_N2 DMI_CTX_PRX_N2 Y7 DMI_TX#[2]
[15] DMI_CTX_PRX_N3 DMI_CTX_PRX_N3 AA8 DMI_TX#[3]

[15] DMI_CTX_PRX_P0 DMI_CTX_PRX_P0 V7 DMI_TX[0]
[15] DMI_CTX_PRX_P1 DMI_CTX_PRX_P1 W7 DMI_TX[1]
[15] DMI_CTX_PRX_P2 DMI_CTX_PRX_P2 Y6 DMI_TX[2]
[15] DMI_CTX_PRX_P3 DMI_CTX_PRX_P3 AA7 DMI_TX[3]

[15] FDI_CTX_PRX_N0 FDI_CTX_PRX_N0 AC7 FDI_TX#[0]
[15] FDI_CTX_PRX_N1 FDI_CTX_PRX_N1 AC3 FDI_TX#[1]
[15] FDI_CTX_PRX_N2 FDI_CTX_PRX_N2 AD1 FDI_TX#[2]
[15] FDI_CTX_PRX_N3 FDI_CTX_PRX_N3 AD3 FDI_TX#[3]
[15] FDI_CTX_PRX_N4 FDI_CTX_PRX_N4 AD6 FDI_TX#[4]
[15] FDI_CTX_PRX_N5 FDI_CTX_PRX_N5 AE8 FDI_TX#[5]
[15] FDI_CTX_PRX_N6 FDI_CTX_PRX_N6 AF2 FDI_TX#[6]
[15] FDI_CTX_PRX_N7 FDI_CTX_PRX_N7 AG1 FDI_TX#[7]

[15] FDI_CTX_PRX_P0 FDI_CTX_PRX_P0 AC8 FDI_TX[0]
[15] FDI_CTX_PRX_P1 FDI_CTX_PRX_P1 AC2 FDI_TX[1]
[15] FDI_CTX_PRX_P2 FDI_CTX_PRX_P2 AD2 FDI_TX[2]
[15] FDI_CTX_PRX_P3 FDI_CTX_PRX_P3 AD4 FDI_TX[3]
[15] FDI_CTX_PRX_P4 FDI_CTX_PRX_P4 AD7 FDI_TX[4]
[15] FDI_CTX_PRX_P5 FDI_CTX_PRX_P5 AE7 FDI_TX[5]
[15] FDI_CTX_PRX_P6 FDI_CTX_PRX_P6 AE3 FDI_TX[6]
[15] FDI_CTX_PRX_P7 FDI_CTX_PRX_P7 AG2 FDI_TX[7]

[15] FDI_FSYNC0 FDI_FSYNC0 AC5 FDI_FSYNC[0]
[15] FDI_FSYNC1 FDI_FSYNC1 AE5 FDI_FSYNC[1]

[15] FDI_INT FDI_INT AG3 FDI_INT

[15] FDI_LSYNC0 FDI_LSYNC0 AC4 FDI_LSYNC[0]
[15] FDI_LSYNC1 FDI_LSYNC1 AE4 FDI_LSYNC[1]

+1.05VS_VCCIO R46 1 2 24.9_0402_1% FDI_COMP AE2 FDI_COMPIO
AE1 FDI_ICOMPO

FDI_COMP signals should be shorted near balls and routed with width 10mils, length<250mils.

P3 PE_RX[0]
R2 PE_RX[1]
T4 PE_RX[2]
U2 PE_RX[3]

P4 PE_RX#[0]
R1 PE_RX#[1]
T3 PE_RX#[2]
U1 PE_RX#[3]

P8 PE_TX[0]
T7 PE_TX[1]
R6 PE_TX[2]
U5 PE_TX[3]

P7 PE_TX#[0]
T8 PE_TX#[1]
R5 PE_TX#[2]
U6 PE_TX#[3]

7/20 PE_RX[0~3]/PE_RX#[0~3] PE_TX[0~3]/PE_TX#[0~3] only use on Server/Workstation.

Sandy Bridge_rPGA_Rev1p0

PEG_RX#[0] B12 PCIE_GTX_C_CRX_N15
PEG_RX#[1] D11 PCIE_GTX_C_CRX_N14
PEG_RX#[2] C9 PCIE_GTX_C_CRX_N13
PEG_RX#[3] E9 PCIE_GTX_C_CRX_N12
PEG_RX#[4] B7 PCIE_GTX_C_CRX_N11
PEG_RX#[5] C5 PCIE_GTX_C_CRX_N10
PEG_RX#[6] A6 PCIE_GTX_C_CRX_N9
PEG_RX#[7] E1 PCIE_GTX_C_CRX_N8
PEG_RX#[8] F3 PCIE_GTX_C_CRX_N7
PEG_RX#[9] G1 PCIE_GTX_C_CRX_N6
PEG_RX#[10] H4 PCIE_GTX_C_CRX_N5
PEG_RX#[11] J2 PCIE_GTX_C_CRX_N4
PEG_RX#[12] K4 PCIE_GTX_C_CRX_N3
PEG_RX#[13] L2 PCIE_GTX_C_CRX_N2
PEG_RX#[14] M4 PCIE_GTX_C_CRX_N1
PEG_RX#[15] N2 PCIE_GTX_C_CRX_N0

PCIE_GTX_C_CRX_N[0..15] [22]

PEG_RX[0] B11 PCIE_GTX_C_CRX_P15
PEG_RX[1] D12 PCIE_GTX_C_CRX_P14
PEG_RX[2] C10 PCIE_GTX_C_CRX_P13
PEG_RX[3] E10 PCIE_GTX_C_CRX_P12
PEG_RX[4] B8 PCIE_GTX_C_CRX_P11
PEG_RX[5] C6 PCIE_GTX_C_CRX_P10
PEG_RX[6] A5 PCIE_GTX_C_CRX_P9
PEG_RX[7] E2 PCIE_GTX_C_CRX_P8
PEG_RX[8] F4 PCIE_GTX_C_CRX_P7
PEG_RX[9] G2 PCIE_GTX_C_CRX_P6
PEG_RX[10] H3 PCIE_GTX_C_CRX_P5
PEG_RX[11] J1 PCIE_GTX_C_CRX_P4
PEG_RX[12] K3 PCIE_GTX_C_CRX_P3
PEG_RX[13] L1 PCIE_GTX_C_CRX_P2
PEG_RX[14] M3 PCIE_GTX_C_CRX_P1
PEG_RX[15] N1 PCIE_GTX_C_CRX_P0

PCIE_GTX_C_CRX_P[0..15] [22]

PEG_TX[0] C14 PCIE_CTX_GRX_N15 C7 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N15
PEG_TX[1] E13 PCIE_CTX_GRX_N14 C8 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N14
PEG_TX[2] G13 PCIE_CTX_GRX_N13 C9 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N13
PEG_TX[3] F11 PCIE_CTX_GRX_N12 C10 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N12
PEG_TX[4] J13 PCIE_CTX_GRX_N11 C11 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N11
PEG_TX[5] D7 PCIE_CTX_GRX_N10 C12 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N10
PEG_TX[6] C3 PCIE_CTX_GRX_N9 C13 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N9
PEG_TX[7] E5 PCIE_CTX_GRX_N8 C14 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N8
PEG_TX[8] F7 PCIE_CTX_GRX_N7 C15 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N7
PEG_TX[9] G9 PCIE_CTX_GRX_N6 C16 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N6
PEG_TX[10] G6 PCIE_CTX_GRX_N5 C17 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N5
PEG_TX[11] K8 PCIE_CTX_GRX_N4 C18 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N4
PEG_TX[12] J6 PCIE_CTX_GRX_N3 C19 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N3
PEG_TX[13] M7 PCIE_CTX_GRX_N2 C20 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N2
PEG_TX[14] L5 PCIE_CTX_GRX_N1 C21 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N1
PEG_TX[15] N6 PCIE_CTX_GRX_N0 C22 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_N0

PCIE_CTX_C_GRX_N[0..15] [22]

PEG_TX[0] C13 PCIE_CTX_GRX_P15 C23 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P15
PEG_TX[1] E14 PCIE_CTX_GRX_P14 C24 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P14
PEG_TX[2] G14 PCIE_CTX_GRX_P13 C25 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P13
PEG_TX[3] F12 PCIE_CTX_GRX_P12 C26 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P12
PEG_TX[4] J14 PCIE_CTX_GRX_P11 C27 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P11
PEG_TX[5] D8 PCIE_CTX_GRX_P10 C28 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P10
PEG_TX[6] D3 PCIE_CTX_GRX_P9 C29 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P9
PEG_TX[7] E6 PCIE_CTX_GRX_P8 C30 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P8
PEG_TX[8] F8 PCIE_CTX_GRX_P7 C31 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P7
PEG_TX[9] G10 PCIE_CTX_GRX_P6 C32 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P6
PEG_TX[10] G5 PCIE_CTX_GRX_P5 C33 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P5
PEG_TX[11] K7 PCIE_CTX_GRX_P4 C34 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P4
PEG_TX[12] J5 PCIE_CTX_GRX_P3 C35 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P3
PEG_TX[13] M8 PCIE_CTX_GRX_P2 C36 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P2
PEG_TX[14] L6 PCIE_CTX_GRX_P1 C37 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P1
PEG_TX[15] N5 PCIE_CTX_GRX_P0 C38 1 2 DIS@ 0.1U_0402_16V7K PCIE_CTX_C_GRX_P0

PCIE_CTX_C_GRX_P[0..15] [22]

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)

Close to CPU

FDI_INT 1 @ 2 R47 1K_0402_5%
FDI_FSYNC0 1 @ 2 R48 1K_0402_5%
FDI_FSYNC1 1 @ 2 R49 1K_0402_5%
FDI_LSYNC0 1 @ 2 R50 1K_0402_5%
FDI_LSYNC1 1 @ 2 R51 1K_0402_5%

Leverage LA-6831 and LA6951(B520) used 1000P connect to GND to substitute for 1K ohm PD resistor.

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: Sandy Bridge_DMI/PEG/FDI

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

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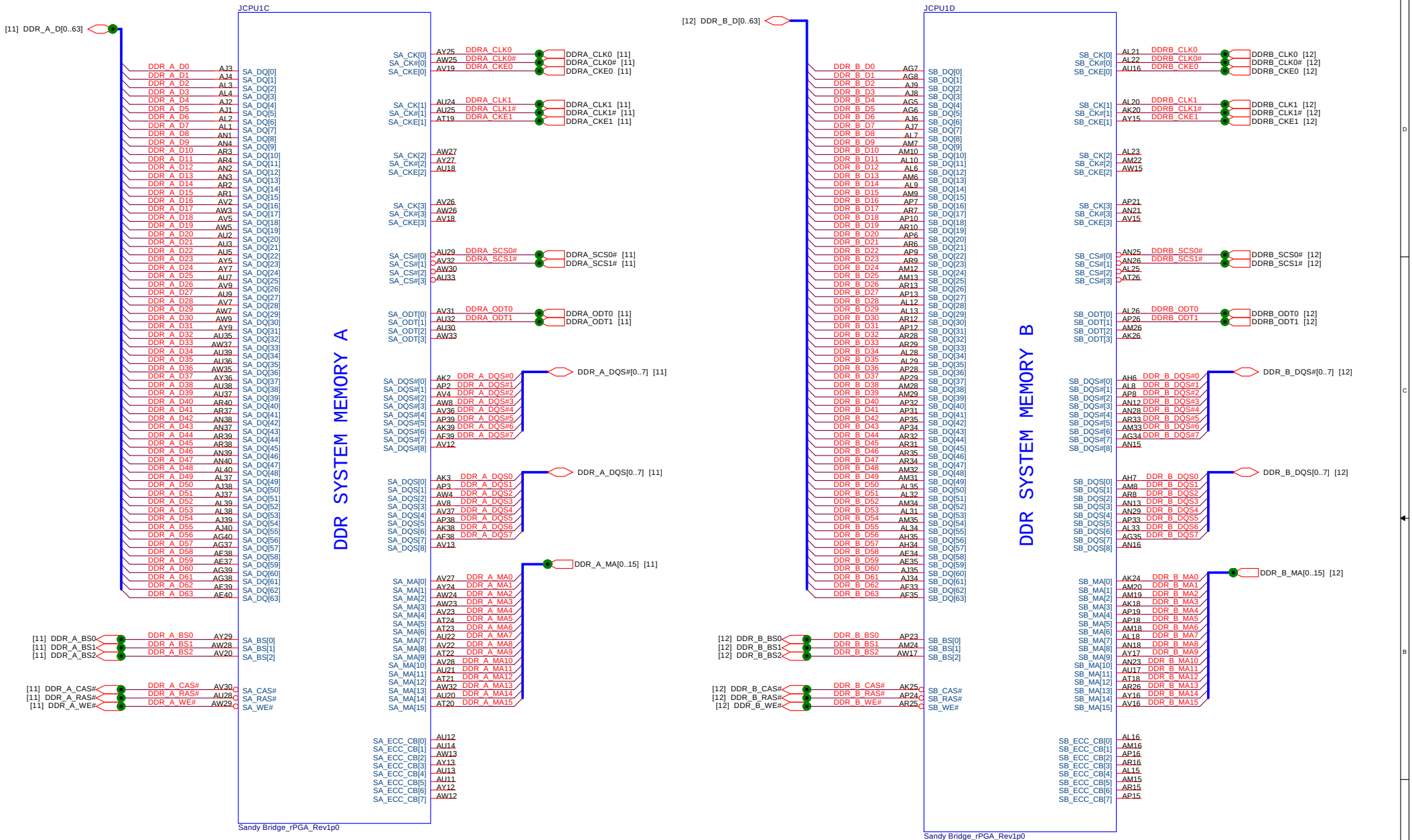

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***Sandy Bridge_DDR3***

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

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POWER

JCPU1F
76A (Quad Core 65W)
8.5A

CORE SUPPLY

PEG AND DDR

VCCIO1 VCCIO2 VCCIO3 VCCIO4 VCCIO5 VCCIO6 VCCIO7 VCCIO8 VCCIO9 VCCIO10 VCCIO11 VCCIO12 VCCIO13 VCCIO14 VCCIO15 VCCIO16 VCCIO17 VCCIO18 VCCIO19 VCCIO20 VCCIO21 VCCIO22 VCCIO23 VCCIO24 VCCIO25 VCCIO26 VCCIO27 VCCIO28 VCCIO29 VCCIO30 VCCIO31 VCCIO32 VCCIO33 VCCIO34 VCCIO35 VCCIO36 VCCIO37 VCCIO38 VCCIO39 VCCIO40 VCCIO41 VCCIO42 VCCIO43 VCCIO44 VCCIO45

SVID

VIDALERT# VIDSCLK VIDSOUT

SENSE LINES

VCC_SENSE VSS_SENSE

VCCIO_SENSE VSSIO_SENSE

VCC121 VCC122 VCC123 VCC124 VCC125 VCC126 VCC127 VCC128 VCC129 VCC130 VCC131 VCC132 VCC133 VCC134 VCC135 VCC136 VCC137 VCC138 VCC139 VCC140 VCC141 VCC142 VCC143 VCC144 VCC145 VCC146 VCC147 VCC148 VCC149 VCC150 VCC151 VCC152 VCC153 VCC154 VCC155 VCC156 VCC157 VCC158 VCC159 VCC160 VCC161

VSS_SENSE_VCCIO

VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 VCC7 VCC8 VCC9 VCC10 VCC11 VCC12 VCC13 VCC14 VCC15 VCC16 VCC17 VCC18 VCC19 VCC20 VCC21 VCC22 VCC23 VCC24 VCC25 VCC26 VCC27 VCC28 VCC29 VCC30 VCC31 VCC32 VCC33 VCC34 VCC35 VCC36 VCC37 VCC38 VCC39 VCC40 VCC41 VCC42 VCC43 VCC44 VCC45 VCC46 VCC47 VCC48 VCC49 VCC50 VCC51 VCC52 VCC53 VCC54 VCC55 VCC56 VCC57 VCC58 VCC59 VCC60 VCC61 VCC62 VCC63 VCC64 VCC65 VCC66 VCC67 VCC68 VCC69 VCC70 VCC71 VCC72 VCC73 VCC74 VCC75 VCC76 VCC77 VCC78 VCC79 VCC80 VCC81 VCC82 VCC83 VCC84 VCC85 VCC86 VCC87 VCC88 VCC89 VCC90 VCC91 VCC92 VCC93 VCC94 VCC95 VCC96 VCC97 VCC98 VCC99 VCC100 VCC101 VCC102 VCC103 VCC104 VCC105 VCC106 VCC107 VCC108 VCC109 VCC110 VCC111 VCC112 VCC113 VCC114 VCC115 VCC116 VCC117 VCC118 VCC119 VCC120

Sandy Bridge_rPGA_Rev1p0

TOP Socket Cavity

+1.05VS_VCCIO

+1.05VS_VCCP Decoupling:
3X 560U (6m ohm), 9X 22U

22U_0805_6.3V6M: C39 C40 C41 C42 C43 C44 C45 C46 C47

560U_2.5V_M: C48 C49 C50

HR's R52=130 ohm
SB CRB suggst 110ohm

90.9_0402_1%
R52 110_0402_5%
R53 @
R54 75_0402_5%
R55 43_0402_1%

Pull high resistor close to CPU
SVID signal 50 ohm impedance
spacing >12mil length 3-6"

H_CPU_SVIDALRT#
VR_SVID_CLK_R
VR_SVID_DAT_R
R1037 0_0402_5%
R1038 0_0402_5%

VR_SVID_ALRT# [58]
VR_SVID_CLK [58]
VR_SVID_DAT [58]

VCCSENSE [58]
VSSSENSE [58]

VCCIO_SENSE
VCCIO_SENSE [54]
R56 100_0402_1%

+CPU_CORE

+CPU_CORE Decoupling:
5X 560U (4m ohm), 2X330U, 18X 22U

TOP Socket Edge

C52 560U_2.5V_M
C54 560U_2.5V_M
C51 560U_2.5V_M
C53 560U_2.5V_M
C59 560U_2.5V_M

Bottom Socket Edge

C55 330U_D2_2V_Y
@C56
C58 330U_D2_2VM_R6M
@ 330U_D2_2V_Y

14 pcs in TOP and 4pcs in BOT Socket Cavity

22U_0805_6.3V6M: C60 C61 C62 C63 C64 C65 C66 C67 C68 C69 C70 C71 C72 C73 C74 C75 C76 C77

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: *Sandy Bridge_POWER-1*

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

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POWER

+GFX_CORE Decoupling:
2X 470U (4m ohm), 12X 22U

Bottom Socket Edge

Top Socket Edge

Top Socket Cavity

Bottom Socket Edge

VCCPLL Decoupling:
1X 220U, 2X 10U

+V_SM_VREF should have 20 mil trace width

+1.5V Decoupling:
3X 330U , 9X 22U

TOP Socket Cavity

+VCCSA Decoupling:
1X 560U, 2X 10U

VCCSA_VID1	+VCCSA
0	0.925 V (Default)
1	0.85 V

R66,R67 should place close to DIMM for minimum stubs trace

JCPU1G

35A
VCCAXG1 VCCAXG2 VCCAXG3 VCCAXG4 VCCAXG5 VCCAXG6 VCCAXG7 VCCAXG8 VCCAXG9 VCCAXG10 VCCAXG11 VCCAXG12 VCCAXG13 VCCAXG14 VCCAXG15 VCCAXG16 VCCAXG17 VCCAXG18 VCCAXG19 VCCAXG20 VCCAXG21 VCCAXG22 VCCAXG23 VCCAXG24 VCCAXG25 VCCAXG26 VCCAXG27 VCCAXG28 VCCAXG29 VCCAXG30 VCCAXG31 VCCAXG32 VCCAXG33 VCCAXG34 VCCAXG35 VCCAXG36 VCCAXG37 VCCAXG38 VCCAXG39 VCCAXG40 VCCAXG41 VCCAXG42 VCCAXG43 VCCAXG44

GRAPHICS

VCCAXG_SENSE VSSAXG_SENSE

SENSE LINES

VCC_AXG_SENSE [58]
VSS_AXG_SENSE [58]

SM_VREF

VREF

4.75A
VDDQ1 VDDQ2 VDDQ3 VDDQ4 VDDQ5 VDDQ6 VDDQ7 VDDQ8 VDDQ9 VDDQ10 VDDQ11 VDDQ12 VDDQ13 VDDQ14 VDDQ15 VDDQ16 VDDQ17 VDDQ18 VDDQ19 VDDQ20 VDDQ21 VDDQ22 VDDQ23

DDR3 -1.5V RAILS

8.8A
VCCSA1 VCCSA2 VCCSA3 VCCSA4 VCCSA5 VCCSA6 VCCSA7 VCCSA8 VCCSA9 VCCSA10 VCCSA11

SA RAIL

VCCSA_SENSE VCCSA_VID

VCCSA_SENSE [56]
VCCSAP_VID1 [56]

1.5A
VCCPLL1 VCCPLL2

1.8V RAIL

FC_AH1 FC_AH4

MISC

Sandy Bridge_rPGA_Rev1p0

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: *Sandy Bridge_POWER-2*

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

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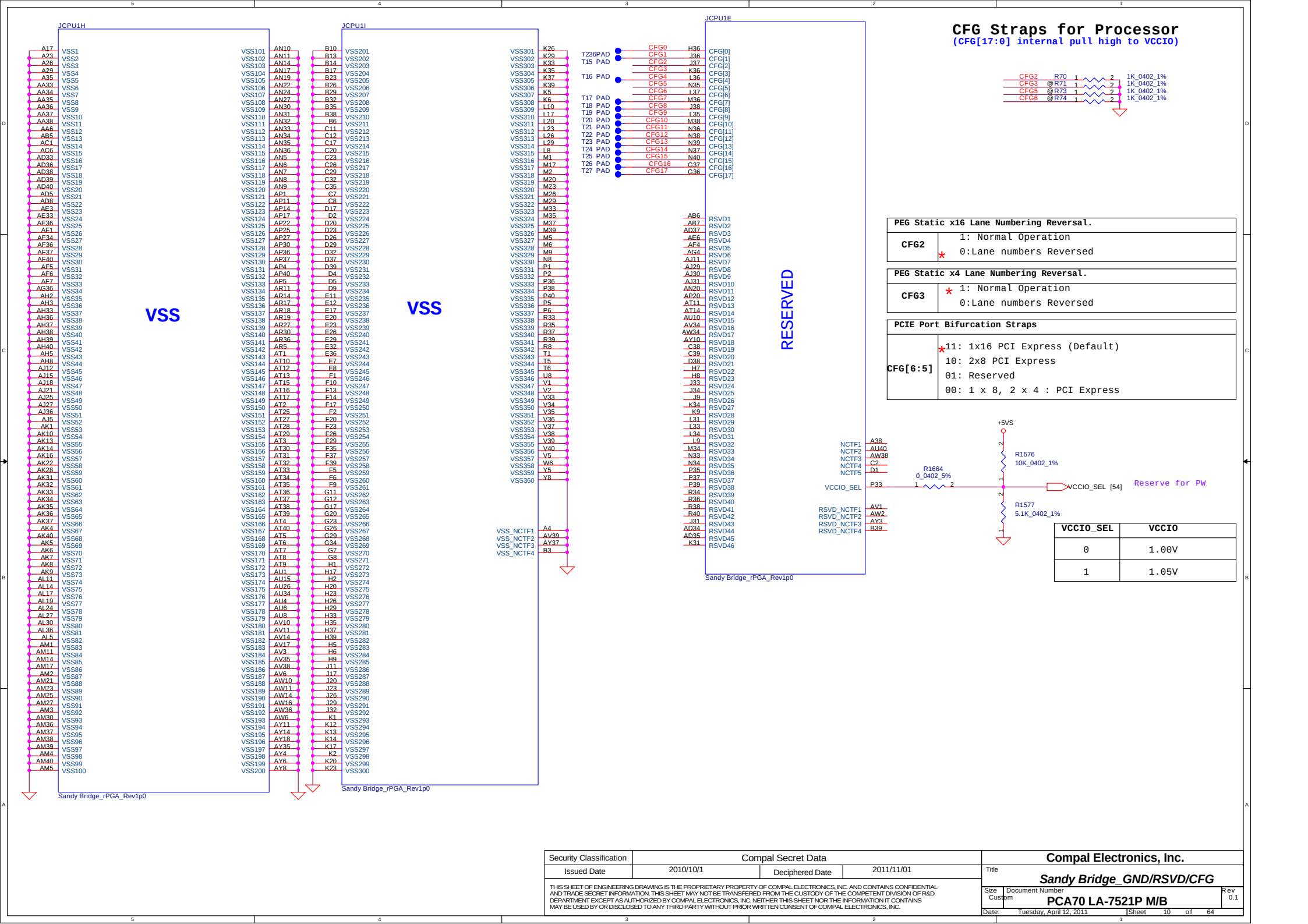
CFG Straps for Processor

(CFG[17:0] internal pull high to VCCIO)



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***Sandy Bridge_GND/RSVD/CFG***

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

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CHA SO-DIMM 0(A0)

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

R91 1K_0402_1% +1.5V +VREF_DQA
R93 1K_0402_1%
C114 0.1U_0402_16V4Z
C115 2.2U_0603_6.3V6K
Close to JDDRL.1

JDDRL2
CONN@
TYCO_2-2013290-1

Layout Note:
Place near JDDRL1.203 and 204

+0.75VS
C134 10U_0805_6.3V6M
C135 1U_0402_6.3V6K
C136 1U_0402_6.3V6K
C139 1U_0402_6.3V6K
C140 1U_0402_6.3V6K

Layout Note:
Place near JDDRL1

+1.5V
C143 390U_2.5V_M_R10
C145 10U_0805_6.3V6M
C147 10U_0805_6.3V6M
C149 10U_0805_6.3V6M
C151 10U_0805_6.3V6M
C152 10U_0805_6.3V6M
C153 10U_0805_6.3V6M

Layout Note: Place these 4 Caps near Command and Control signals of JDDRL1

+1.5V
C144 0.1U_0402_16V4Z
C146 0.1U_0402_16V4Z
C148 0.1U_0402_16V4Z
C150 0.1U_0402_16V4Z

R97 10K_0402_5% +3VS
C154 2.2U_0603_6.3V6K
C155 0.1U_0402_16V4Z
R98 10K_0402_5% +0.75VS

R94 1K_0402_1% +1.5V
R96 1K_0402_1%
C137 2.2U_0603_6.3V6K
C138 0.1U_0402_16V4Z
close to JDDRL1.126

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***DDRIII-SODIMMA***

Size: Custom | Document Number: **PCA70 LA-7521P M/B** | Rev: 0.1

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CHB SO-DIMM 0(A4)

[7] DDR_B_DQS#[0..7]
[7] DDR_B_DQS[0..7]
[7] DDR_B_D[0..63]
[7] DDR_B_MA[0..15]

R101 1K_0402_1% +1.5V +VREF_DQB
R103 1K_0402_1%
C158 2.2U_0603_6.3V6K
C159 0.1U_0402_16V4Z
Close to JDDRL2.1

JDDRH1 TYCO_2-2013311-1 @

	VREF_DQ	1	2	VSS1		DDR_B_D4	
	VSS2	3	4	DQ4		DDR_B_D5	
DDR_B_D0	DQ0	5	6	DQ5			
DDR_B_D1	DQ1	7	8	VSS3			
	VSS4	9	10	DQS#0		DDR_B_DQS#0	
	DM0	11	12	DQS0		DDR_B_DQS0	
	VSS5	13	14	VSS6			
DDR_B_D2	DQ2	15	16	DQ6		DDR_B_D6	
DDR_B_D3	DQ3	17	18	DQ7		DDR_B_D7	
	VSS7	19	20	VSS8			
DDR_B_D8	DQ8	21	22	DQ12		DDR_B_D12	
DDR_B_D9	DQ9	23	24	DQ13		DDR_B_D13	
	VSS9	25	26	VSS10			
DDR_B_DQS#1	DQS#1	27	28	DM1			
DDR_B_DQS1	DQS1	29	30	RESET#		SM_DRAMRST#	SM_DRAMRST# [5,11]
	VSS11	31	32	VSS12			
DDR_B_D10	DQ10	33	34	DQ14		DDR_B_D14	
DDR_B_D11	DQ11	35	36	DQ15		DDR_B_D15	
	VSS13	37	38	VSS14			
DDR_B_D16	DQ16	39	40	DQ20		DDR_B_D20	
DDR_B_D17	DQ17	41	42	DQ21		DDR_B_D21	
	VSS15	43	44	VSS16			
DDR_B_DQS#2	DQS#2	45	46	DM2			
DDR_B_DQS2	DQS2	47	48	VSS17			
	VSS18	49	50	DQ22		DDR_B_D22	
DDR_B_D18	DQ18	51	52	DQ23		DDR_B_D23	
DDR_B_D19	DQ19	53	54	VSS19			
	VSS20	55	56	DQ28		DDR_B_D28	
DDR_B_D24	DQ24	57	58	DQ29		DDR_B_D29	
DDR_B_D25	DQ25	59	60	VSS21			
	VSS22	61	62	DQS#3		DDR_B_DQS#3	
	DM3	63	64	DQS3		DDR_B_DQS3	
	VSS23	65	66	VSS24			
DDR_B_D26	DQ26	67	68	DQ30		DDR_B_D30	
DDR_B_D27	DQ27	69	70	DQ31		DDR_B_D31	
	VSS25	71	72	VSS26			
[7] DDRB_CKE0	DDRB_CKE0	73	74	CKE1		DDRB_CKE1	DDRB_CKE1 [7]
	CKE0	75	76	VDD2			
	VDD1	77	78	A15		DDR_B_MA15	
[7] DDR_B_BS2	NC1	79	80	A14		DDR_B_MA14	
DDR_B_MA12	BA2	81	82	VDD4			
DDR_B_MA9	VDD3	83	84	A11		DDR_B_MA11	
	A12/BC#	85	86	A7		DDR_B_MA7	
DDR_B_MA8	A9	87	88	VDD6			
DDR_B_MA5	VDD5	89	90	A6		DDR_B_MA6	
	A8	91	92	A4		DDR_B_MA4	
DDR_B_MA3	A5	93	94	VDD8			
DDR_B_MA1	VDD7	95	96	A2		DDR_B_MA2	
	A3	97	98	A0		DDR_B_MA0	
	A1	99	100				
[7] DDRB_CLK0	VDD9	101	102	VDD10			
[7] DDRB_CLK0#	CK0	103	104	CK1		DDRB_CLK1	DDRB_CLK1 [7]
	CK0#	105	106	CK1#		DDRB_CLK1#	DDRB_CLK1# [7]
DDR_B_MA10	VDD11	107	108	VDD12			
[7] DDR_B_BS0	A10/AP	109	110	BA1		DDR_B_BS1	DDR_B_BS1 [7]
	BA0	111	112	RAS#		DDR_B_RAS#	DDR_B_RAS# [7]
[7] DDR_B_WE#	VDD13	113	114	VDD14			
[7] DDR_B_CAS#	WE#	115	116	S0#		DDRB_SCS0#	DDRB_SCS0# [7]
DDR_B_MA13	CAS#	117	118	ODT0		DDRB_ODT0	DDRB_ODT0 [7]
[7] DDRB_SCS1#	VDD15	119	120	VDD16			
	A13	121	122	ODT1		DDRB_ODT1	DDRB_ODT1 [7]
	S1#	123	124	NC2			
	VDD17	125	126	VDD18			
	NCTEST	127	128	VREF_CA		+VREF_CAB	
	VSS27	129	130	VSS28			
DDR_B_D37	DQ32	131	132	DQ36		DDR_B_D32	
DDR_B_D36	DQ33	133	134	DQ37		DDR_B_D33	
	VSS29	135	136	VSS30			
DDR_B_DQS#4	DQS#4	137	138	DM4			
DDR_B_DQS4	DQS4	139	140	VSS31			
	VSS32	141	142	DQ38		DDR_B_D38	
DDR_B_D34	DQ34	143	144	DQ39		DDR_B_D39	
DDR_B_D35	DQ35	145	146	VSS33			
	VSS34	147	148	DQ44		DDR_B_D44	
DDR_B_D40	DQ40	149	150	DQ45		DDR_B_D45	
DDR_B_D41	DQ41	151	152	VSS35			
	VSS36	153	154	DQS#5		DDR_B_DQS#5	
	DM5	155	156	DQS5		DDR_B_DQS5	
	VSS37	157	158	VSS38			
DDR_B_D42	DQ42	159	160	DQ46		DDR_B_D46	
DDR_B_D43	DQ43	161	162	DQ47		DDR_B_D47	
	VSS39	163	164	VSS40			
DDR_B_D48	DQ48	165	166	DQ52		DDR_B_D52	
DDR_B_D49	DQ49	167	168	DQ53		DDR_B_D53	
	VSS41	169	170	VSS42			
DDR_B_DQS#6	DQS#6	171	172	DM6			
DDR_B_DQS6	DQS6	173	174	VSS43			
	VSS44	175	176	DQ54		DDR_B_D50	
DDR_B_D54	DQ50	177	178	DQ55		DDR_B_D51	
DDR_B_D55	DQ51	179	180	VSS45			
	VSS46	181	182	DQ60		DDR_B_D60	
DDR_B_D56	DQ56	183	184	DQ61		DDR_B_D61	
DDR_B_D57	DQ57	185	186	VSS47			
	VSS48	187	188	DQS#7		DDR_B_DQS#7	
	DM7	189	190	DQS7		DDR_B_DQS7	
	VSS49	191	192	VSS50			
DDR_B_D58	DQ58	193	194	DQ62		DDR_B_D62	
DDR_B_D59	DQ59	195	196	DQ63		DDR_B_D63	
	VSS51	197	198	VSS52			
	SA0	199	200	EVENT#		PM_SMBDATA	PM_SMBDATA [11,14,40]
	VDDSPD	201	202	SDA		PM_SMBCLK	PM_SMBCLK [11,14,40]
	SA1	203	204	SCL			
	VTT1	205	206	VTT2		+0.75VS	+0.75VS
	G1			G2			

R107 10K_0402_5% +3VS
R108 10K_0402_5% +0.75VS
C198 2.2U_0603_6.3V6K
C199 0.1U_0402_16V4Z

R104 1K_0402_1% +1.5V
R106 1K_0402_1%
C180 2.2U_0603_6.3V6K
C181 0.1U_0402_16V4Z
Close to JDDRL2.126

Layout Note:
Place near JDDRL2.203 and 204

+0.75VS
C178 10U_0805_6.3V6M
C179 1U_0402_6.3V6K
C182 1U_0402_6.3V6K
C183 1U_0402_6.3V6K
C184 1U_0402_6.3V6K

Layout Note:
Place near JDDRL2

Layout Note: Place these 4 Caps near Command and Control signals of JDDRL2

+1.5V
C187 390U_2.5V_M_R10
C189 10U_0805_6.3V6M
C191 10U_0805_6.3V6M
C193 10U_0805_6.3V6M
C195 10U_0805_6.3V6M
C196 10U_0805_6.3V6M
C197 10U_0805_6.3V6M

+1.5V
C188 0.1U_0402_16V4Z
C190 0.1U_0402_16V4Z
C192 0.1U_0402_16V4Z
C194 0.1U_0402_16V4Z

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***DDRIII-SODIMM B***

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

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CMOS Setting, near DDR Door

+RTCVCC — R111 20K_0402_5% — PCH_RTCRST# — JCOMS1 CONN@ — C203 1U_0402_6.3V6K

RC Delay 18~25mS

iME Setting.

R115 20K_0402_5% — PCH_SRTCRST# — JME1 CONN@ — C205 1U_0402_6.3V6K

RC Delay 18~25mS

Integrated SUS 1.05V VRM Enable

PCH_INTVRMEN	High - Enable Internal VRs (must be always pulled high)

+RTCVCC — R122 390K_0402_5% — PCH_INTVRMEN

+RTCVCC — R121 1M_0402_5% — SM_INTRUDER#

+3VS — R126 10K_0402_5% — PCH_GPIO33

+3VALW — R133 10K_0402_5% — PCH_GPIO13

PCH_SPKR

* High = Enabled (No Reboot)

Low = Disabled (Default)

+3VS — R131 1K_0402_5% — PCH_SPKR

HDA_SYNC

This signal has a weak internal pull down

*H=>On Die PLL is supplied by 1.5V (mobile)

L=>On Die PLL is supplied by 1.8V (DT)

Need to pull high for Huron River platform

+3VALW — @R136 1K_0402_5% — AZ_SYNC

No mention on SB PDG but HR mention on PDG reserve for Potential Leakage Concern

+5VS — @ Q2 BSS138LT1G_SOT23-3

[47] AZ_SYNC_HD — R139 33_0402_5% — AZ_SYNC_R

R140 0_0402_5%

HDA_SDO

ME debug mode,

this signal has a weak internal pull down

*Low = Disable (default)

High = Enable (flash descriptor security overide)

[49] PWRME_CTRL# — PWRME_CTRL# R129 @ 0_0402_5% AZ_SDOUT

R134 @ 1K_0402_5%

PCH_SPIDI R143 0_0402_5% DI

PCH_SPICLK R144 0_0402_5% CLK

PCH_SPICS# R145 0_0402_5% CS#

PCH_SPIDO R146 0_0402_5% DO

+3VALW

4M Byte

C212 0.1U_0402_16V4Z

U6 W25Q32BVSSIG_SO8

CS# DO WP# GND VCC HOLD# CLK DI

Socket: SP07000F500/SP07000H900

Please close to U2 PCH

U4A — BD82CPDS-QMZP-B0_FCBGA942

C202 15P_0402_50V8J — Y1 32.768KHZ_12.5PF_Q13MC14610002 — C204 15P_0402_50V8J — R113 10M_0402_5%

PCH_RTCX1 BR39 — RTCX1

PCH_RTCX2 BN39 — RTCX2

PCH_RTCRST# BT41 — RTCRST#

PCH_SRTCRST# BN37 — SRTCRST#

SM_INTRUDER# BM38 — INTRUDER#

PCH_INTVRMEN BN41 — INTVRMEN

RTC

[47] AZ_BITCLK_HD — R118 33_0402_5% — AZ_BITCLK BU22 — HDA_BCLK

AZ_SYNC BP23 — HDA_SYNC

[47] PCH_SPKR — PCH_SPKR BE56 — SPKR

[47] AZ_RST_HD# — R120 33_0402_5% — AZ_RST# BC22 — HDA_RST#

[47] AZ_SDIN0_HD — AZ_SDIN0_HD BD22 — HDA_SDIN0

BF22 — HDA_SDIN1

BK22 — HDA_SDIN2

+3VALW — R124 1K_0402_5% — BJ22 — HDA_SDIN3

[47] AZ_SDOUT_HD — R125 33_0402_5% — AZ_SDOUT BT23 — HDA_SDO

IHDA

PCH_GPIO33 BC25 — HDA_DOCK_EN# / GPIO33

PCH_GPIO13 BA25 — HDA_DOCK_RST# / GPIO13

PCH_JTAG_TCK BA43 — JTAG_TCK

PCH_JTAG_TMS BC50 — JTAG_TMS

PCH_JTAG_TDI BC52 — JTAG_TDI

PCH_JTAG_TDO BF47 — JTAG_TDO

JTAG

PCH_SPICLK AR54 — SPI_CLK

PCH_SPICS# AT57 — SPI_CS0#

AR56 — SPI_CS1#

PCH_SPIDI AU53 — SPI_MOSI

PCH_SPIDO AT55 — SPI_MISO

SPI

FWH0 / LAD0 BK15 — LPC_AD0 — LPC_AD0 [49]

FWH1 / LAD1 BJ17 — LPC_AD1 — LPC_AD1 [49]

FWH2 / LAD2 BJ20 — LPC_AD2 — LPC_AD2 [49]

FWH3 / LAD3 BG20 — LPC_AD3 — LPC_AD3 [49]

FWH4 / LFRAME# BG17 — LPC_FRAME# — LPC_FRAME# [49]

LDRQ0# BK17

LDRQ1# / GPIO23 BA20

SERIRQ AV52 — SERIRQ — SERIRQ [49]

LPC

SATA 6G

SATA0RXN AC56 — SATA_PRX_C_DTX_N0 — SATA_PRX_C_DTX_N0 [41]

SATA0RXP AB55 — SATA_PRX_C_DTX_P0 — SATA_PRX_C_DTX_P0 [41]

SATA0TXN AE46 — SATA_PTX_DRX_N0 — C206 0.01U_0402_25V7K — SATA_PTX_C_DRX_N0 [41]

SATA0TXP AE44 — SATA_PTX_DRX_P0 — C207 0.01U_0402_25V7K — SATA_PTX_C_DRX_P0 [41]

HDD

SATA1RXN AA53 — SATA_PRX_C_DTX_N1 — SATA_PRX_C_DTX_N1 [41]

SATA1RXP AA56 — SATA_PRX_C_DTX_P1 — SATA_PRX_C_DTX_P1 [41]

SATA1TXN AG49 — SATA_PTX_DRX_N1 — C208 0.01U_0402_25V7K — SATA_PTX_C_DRX_N1 [41]

SATA1TXP AG47 — SATA_PTX_DRX_P1 — C209 0.01U_0402_25V7K — SATA_PTX_C_DRX_P1 [41]

ODD

SATA2RXN AL50

SATA2RXP AL49

SATA2TXN AL56

SATA2TXP AL53

SATA port2 and port3 are disabled on H61

SATA3RXN AN46

SATA3RXP AN44

SATA3TXN AN56

SATA3TXP AM55

SATA4RXN AN49 — SATA_PRX_C_DTX_N4 — SATA_PRX_C_DTX_N4 [40]

SATA4RXP AN50 — SATA_PRX_C_DTX_P4 — SATA_PRX_C_DTX_P4 [40]

SATA4TXN AT50 — SATA_PTX_DRX_N4 — C1390 0.01U_0402_25V7K — SATA_PTX_C_DRX_N4 [40]

SATA4TXP AT49 — SATA_PTX_DRX_P4 — C1391 0.01U_0402_25V7K — SATA_PTX_C_DRX_P4 [40]

SATA5RXN AT46

SATA5RXP AT44

SATA5TXN AV50

SATA5TXP AV49

Place R128 and R130 within 500 mils of the PCH. Avoid routing next to clock pins.

SATAICOMPO AJ53

SATAICOMPI AJ55 — SATAICOMP — R128 37.4_0402_1% — +1.05VS_VPCH

SATA3RCOMPO AE52

SATA3COMPI AE54 — SATA3_COMP — R130 49.9_0402_1% — +1.05VS_VPCH

SATA3RBIAS AC52 — RBIAS_SATA3 — R132 750_0402_1%

SATALED# BF57 — SATA_LED# — SATA_LED# [50]

SATA0GP / GPIO21 BC54 — CR_WAKE# — CR_WAKE# [44]

SATA1GP / GPIO19 AY52 — GPIO19

SATA

+3VS — SERIRQ R112 10K_0402_5%

+3VS — SATA_LED# R114 10K_0402_5%

CR_WAKE# R116 10K_0402_5%

GPIO19 R117 10K_0402_5%

for EMI

CLK — R137 10_0402_5% @ — C214 10P_0402_50V8J @

+RTCVCC — R1039 1K_0402_5% — D1 DAN202UT106_SC70-3 — +RTCBATT — +3VALW

C210 0.1U_0402_16V4Z

+3VALW — R147 200_0402_5% @ — PCH_JTAG_TMS — R151 100_0402_1%

+3VALW — R148 200_0402_5% @ — PCH_JTAG_TDO — R152 100_0402_1%

+3VALW — R149 200_0402_5% @ — PCH_JTAG_TDI — R153 100_0402_1%

R154 51_0402_1% — PCH_JTAG_TCK

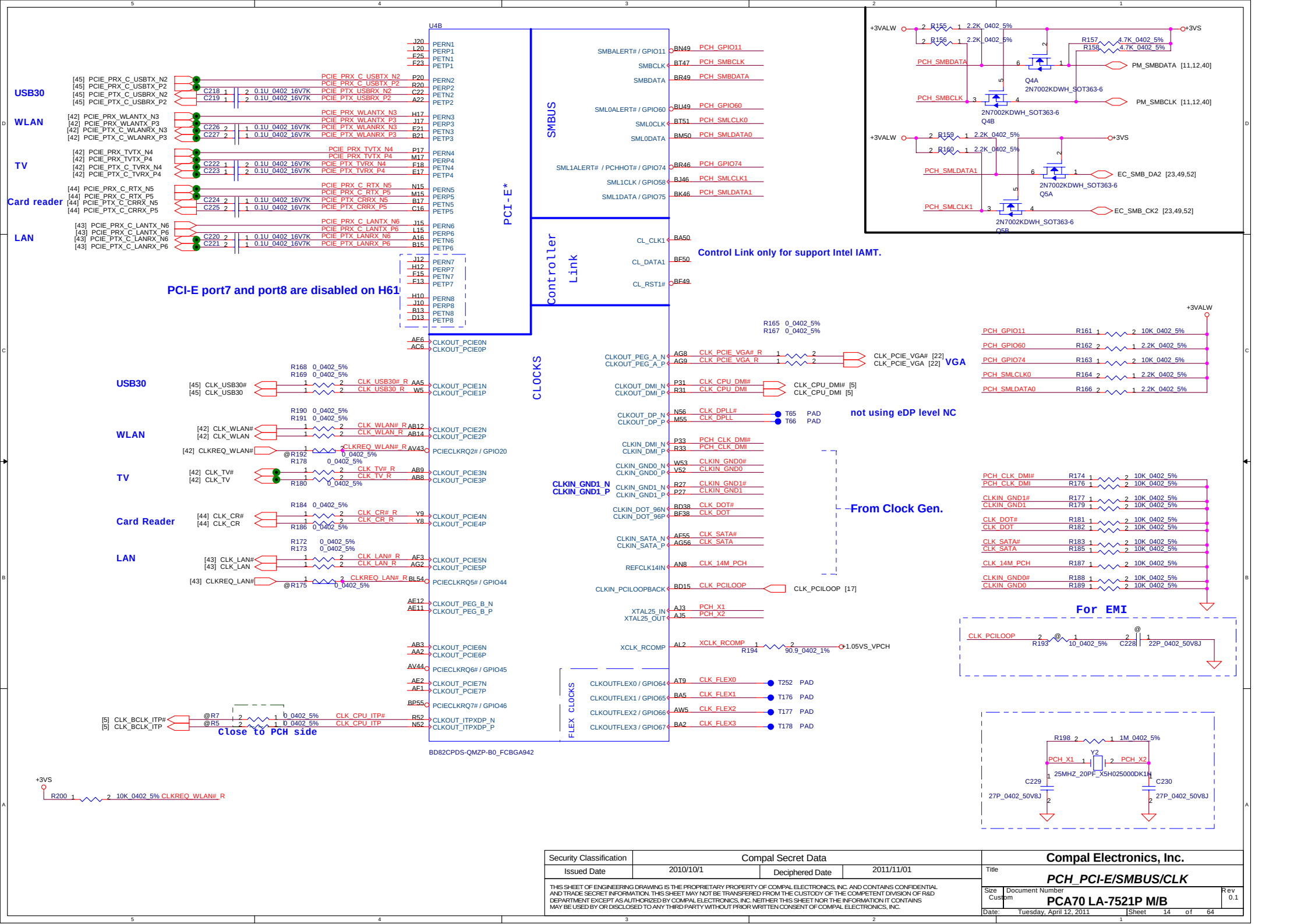
Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: *PCH_HDA/JTAG/SATA/SPI/LPC*

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 13 of 64



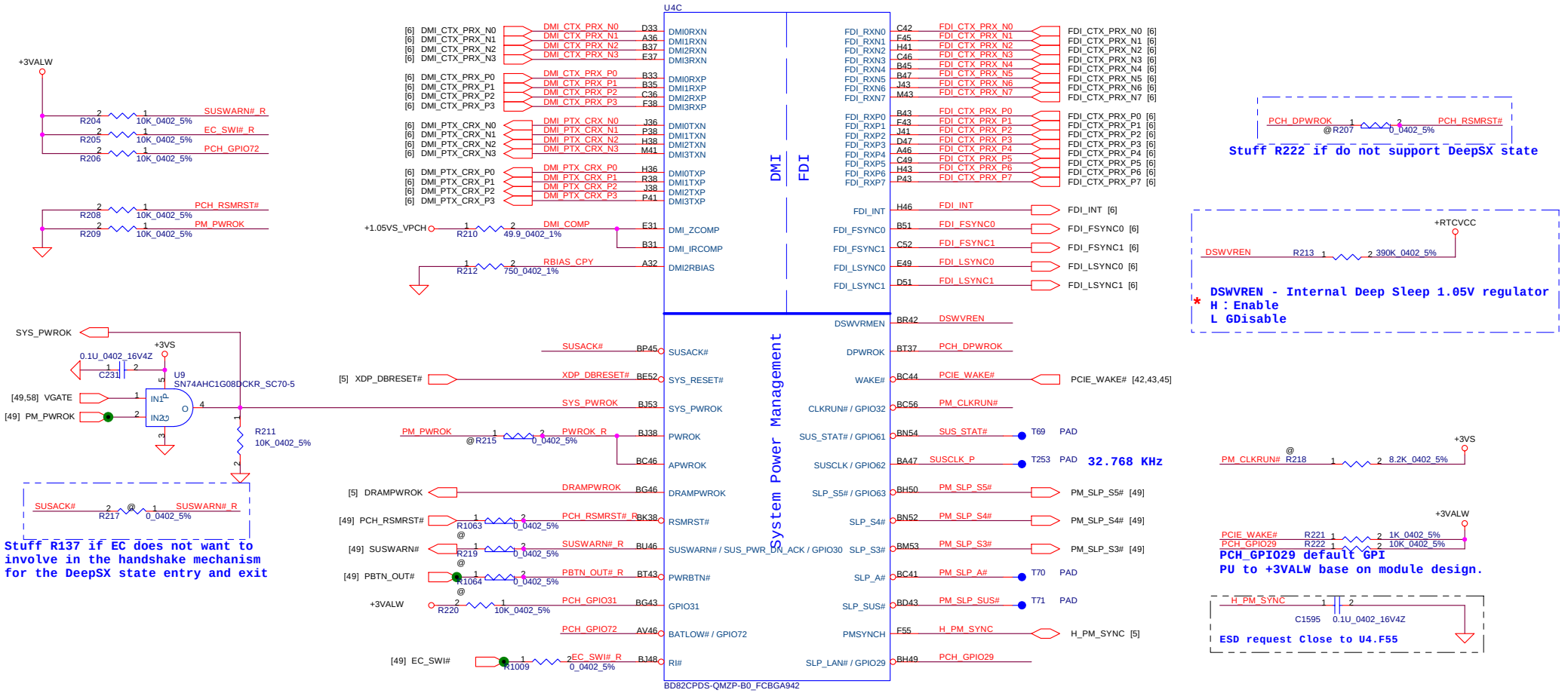
Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***PCH_PCI-E/SMBUS/CLK***

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

Date: Tuesday, April 12, 2011 | Sheet 14 of 64



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: *PCH_DMI/FDI/PM*

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

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NOTE:PCH adds support for panel power sequencing required for embedded DisplayPort support. L_VDDEN, L_BKLTEN and L_BKLTCTL pins are added on the PCH for panel power sequencing. It is important to note that a 6 layer board design may be required to access these pins on the PCH package in a fully featured platform design.

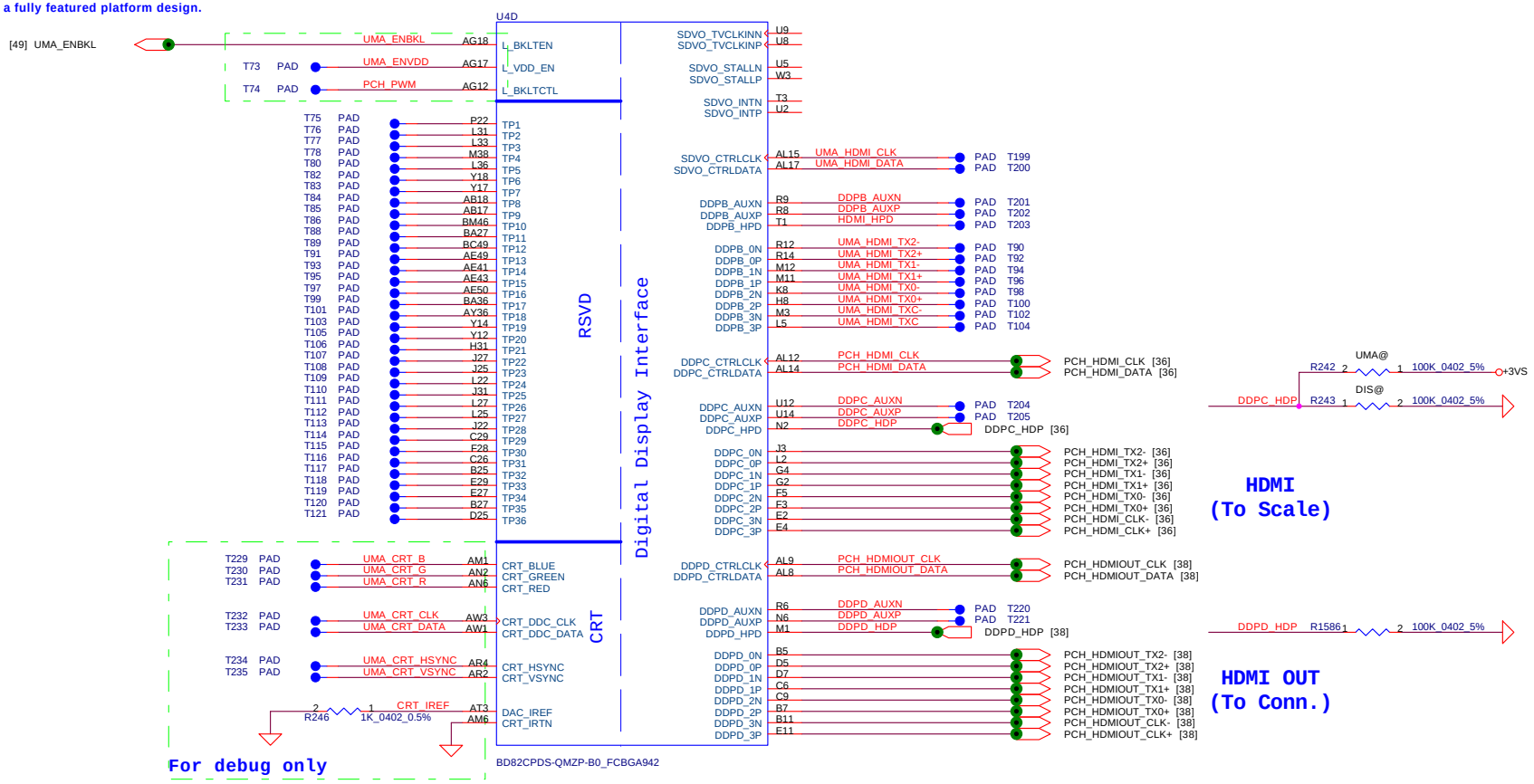

Table 5-60. PCH Digital Port Pin Mapping

Port Description	DisplayPort* Signals	HDMI* Signals	SDVO Signals	PCH Display Port Pin details
Port B	DPB_LANE3	TMDSB_CLK	SDVOB_CLK	DDPB_[3]P
	DPB_LANE3#	TMDSB_CLKB	SDVOB_CLK#	DDPB_[3]N
	DPB_LANE2	TMDSB_DATA0	SDVOB_BLUE	DDPB_[2]P
	DPB_LANE2#	TMDSB_DATA0B	SDVOB_BLUE#	DDPB_[2]N
	DPB_LANE1	TMDSB_DATA1	SDVOB_GREEN	DDPB_[1]P
	DPB_LANE1#	TMDSB_DATA1B	SDVOB_GREEN#	DDPB_[1]N
	DPB_LANE0	TMDSB_DATA2	SDVOB_RED	DDPB_[0]P
	DPB_LANE0#	TMDSB_DATA2B	SDVOB_RED*	DDPB_[0]N
	DPB_HPD	TMDSB_HPD		DDPB_HPD
	DPB_AUX			DDPB_AUXP
	DPB_AUXB			DDPB_AUXN
Port C	DPC_LANE3	TMDSC_CLK		DDPC_[3]P
	DPC_LANE3#	TMDSC_CLKB		DDPC_[3]N
	DPC_LANE2	TMDSC_DATA0		DDPC_[2]P
	DPC_LANE2#	TMDSC_DATA0B		DDPC_[2]N
	DPC_LANE1	TMDSC_DATA1		DDPC_[1]P
	DPC_LANE1#	TMDSC_DATA1B		DDPC_[1]N
	DPC_LANE0	TMDSC_DATA2		DDPC_[0]P
	DPC_LANE0#	TMDSC_DATA2B		DDPC_[0]N
	DPC_HPD	TMDSC_HPD		DDPC_HPD
	DPC_AUX			DDPC_AUXP
	DPC_AUXC			DDPC_AUXN
Port D	DPD_LANE3	TMDSD_CLK		DDPD_[3]P
	DPD_LANE3#	TMDSD_CLKB		DDPD_[3]N
	DPD_LANE2	TMDSD_DATA0		DDPD_[2]P
	DPD_LANE2#	TMDSD_DATA0B		DDPD_[2]N
	DPD_LANE1	TMDSD_DATA1		DDPD_[1]P
	DPD_LANE1#	TMDSD_DATA1B		DDPD_[1]N
	DPD_LANE0	TMDSD_DATA2		DDPD_[0]P
	DPD_LANE0#	TMDSD_DATA2B		DDPD_[0]N
	DPD_HPD	TMDSD_HPD		DDPD_HPD
	DPD_AUX			DDPD_AUXP
	DPD_AUXD			DDPD_AUXN

Compal Electronics, Inc.

Title: ***PCH_CRT/LVDS/HDMI***

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

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PCI PU resistor

+3VS

R253	1	2	8.2K_0402_5%	PCI_DEVSEL#
R254	1	2	8.2K_0402_5%	PCI_FRAME#
R255	1	2	8.2K_0402_5%	PCI_IRDY#
R256	1	2	8.2K_0402_5%	PCI_TRDY#
R259	1	2	8.2K_0402_5%	PCI_STOP#
R260	1	2	8.2K_0402_5%	PCI_PERR#
R261	1	2	8.2K_0402_5%	PCI_SERR#
R262	1	2	8.2K_0402_5%	PCI_PLOCK#
R263	1	2	8.2K_0402_5%	PCI_PIRQA#
R264	1	2	8.2K_0402_5%	PCI_PIRQB#
R266	1	2	8.2K_0402_5%	PCI_PIRQC#
R267	1	2	8.2K_0402_5%	PCI_PIRQD#
R269	1	2	8.2K_0402_5%	PCH_REQ0#

+3VS

R270	1	2	8.2K_0402_5%	DGPU_HOLD_RST#
R271	1	2	8.2K_0402_5%	PCH_GPIO52
R272	1	2	8.2K_0402_5%	DGPU_PWR_EN
R276	1	2	8.2K_0402_5%	PCH_GPIO2
R277	1	2	8.2K_0402_5%	PCH_GPIO3
R278	1	2	8.2K_0402_5%	PCH_GPIO4
R279	1	2	8.2K_0402_5%	CR_CPPE#

Intel confirm GPIO19 is correct.

Boot BIOS Strap

PCH_GNT1#	GPIO19	Boot BIOS Loaction
0	0	LPC
0	1	Reserved
1	0	PCI
1	1	SPI *

U4E

PCI

BF15	AD0	DEVSEL#	BH9 PCI_DEVSEL#
BF17	AD1		
BT7	AD2	FRAME#	BC11 PCI_FRAME#
BT13	AD3		
BG12	AD4	IRDY#	BF11 PCI_IRDY#
BN11	AD5		
BJ12	AD6	TRDY#	BC8 PCI_TRDY#
BU9	AD7		
BR12	AD8	STOP#	BC12 PCI_STOP#
BJ3	AD9		
BR9	AD10	PAR	BH8 PAR — PAD T122
BJ10	AD11		
BM8	AD12	PERR#	BM3 PCI_PERR#
BF3	AD13		
BN2	AD14	SERR#	BR6 PCI_SERR#
BE4	AD15		
BE6	AD16	PCIRST#	AV14
BG15	AD17		
BC6	AD18	PLOCK#	BA17 PCI_PLOCK#
BT11	AD19		
BA14	AD20		
BL2	AD21		
BC4	AD22		
BL4	AD23		
BC2	AD24		
BM13	AD25		
BA9	AD26		
BF9	AD27		
BA8	AD28		
BF8	AD29		
AV17	AD30		
BK12	AD31		

BN4	C/BE0#	
BP7	C/BE1#	
BG2	C/BE2#	
BP13	C/BE3#	

PCI_PIRQA#	BK10	PIRQA#
PCI_PIRQB#	BJ5	PIRQB#
PCI_PIRQC#	BM15	PIRQC#
PCI_PIRQD#	BP5	PIRQD#

PCH_REQ0#	BG5	REQ0#	
[22] DGPU_HOLD_RST#	DGPU_HOLD_RST# BT5	REQ1# / GPIO50	
PCH_GPIO52	BK8	REQ2# / GPIO52	
[26,60] DGPU_PWR_EN	DGPU_PWR_EN AV11	REQ3# / GPIO54	

Have internal PU

T195	PAD	PCH_GNT0#	BA15	GNT0#
T196	PAD	PCH_GNT1#	AV8	GNT1# / GPIO51
T197	PAD	PCH_GNT2#	BU12	GNT2# / GPIO53
T198	PAD	PCH_GNT3#	BE2	GNT3# / GPIO55

PCH_GPIO2	BN9	PIRQE# / GPIO2	
PCH_GPIO3	AV9	PIRQF# / GPIO3	
PCH_GPIO4	BT15	PIRQG# / GPIO4	
CR_CPPE#	BR4	PIRQH# / GPIO5	

For CR D3E wake up reserve [44] CR_CPPE#

T123PAD — PCH_PME# AV15 — PME#

PCH_PLT_RST# BK48 — PLTRST#

T179	PAD		AT11	CLKOUT_PCI0
T180	PAD		AN14	CLKOUT_PCI1
[14] CLK_PCILOOP	22_0402_5% 1	2 R281 CLK_PCILOOP_R	AT12	CLKOUT_PCI2
[49] CLK_PCI_EC	22_0402_5% 1	2 R282 CLK_PCI_EC_R	AT17	CLKOUT_PCI3
T181	PAD		AT14	CLKOUT_PCI4

BD82CPDS-QMZP-B0_FCBGA942

USB

EHCI 1

USBP0N	BF36	USB20_N0	USB20_N0 [46]
USBP0P	BD36	USB20_P0	USB20_P0 [46]
USBP1N	BC33	USB20_N1	USB20_N1 [46]
USBP1P	BA33	USB20_P1	USB20_P1 [46]
USBP2N	BM33	USB20_N2	USB20_N2 [50]
USBP2P	BM35	USB20_P2	USB20_P2 [50]
USBP3N	BT33	USB20_N3	USB20_N3 [50]
USBP3P	BU32	USB20_P3	USB20_P3 [50]
USBP4N	BR32	USB20_N4	USB20_N4 [40]
USBP4P	BT31	USB20_P4	USB20_P4 [40]
USBP5N	BN29	USB20_N5	USB20_N5 [41]
USBP5P	BM30	USB20_P5	USB20_P5 [41]

Reserve for USB30 PORT0@ CONN2
Reserve for USB30 PORT1@ CONN1
Touch
Int. Camera
eSATA+USB
USB PORT5 CONN6

USB port6 and port7 are disabled on H61

EHCI 2

USBP6N	BK33		
USBP6P	BJ33		
USBP7N	BF31		
USBP7P	BD31		
USBP8N	BN27	USB20_N8	USB20_N8 [41]
USBP8P	BR29	USB20_P8	USB20_P8 [41]
USBP9N	BR26	USB20_N9	USB20_N9 [41]
USBP9P	BT27	USB20_P9	USB20_P9 [41]
USBP10N	BK25	USB20_N10	USB20_N10 [42]
USBP10P	BJ25	USB20_P10	USB20_P10 [42]
USBP11N	BJ31	USB20_N11 — PAD T254	
USBP11P	BK31	USB20_P11 — PAD T255	
USBP12N	BF27		
USBP12P	BD27		
USBP13N	BJ27		
USBP13P	BK27		

USB20_N8 [41] — USB PORT8 CONN4
USB20_P8 [41] — USB PORT9 CONN3
USB20_N9 [41] — TV Tuner #1
USB20_P9 [41] — Reserve
USB20_N10 [42]
USB20_P10 [42]

USB port12 and port13 are disabled on H61

USBRBIAS# BP25 — USBBIAS — R280 1 2 22.6_0402_1%

USBRBIAS BM25

Layout Note:USB_BIAS WITH LENGTH NO MORE THAN 500 MILS TO RESISTOR.

OC0# / GPIO59	BM43	USB_OC1	USB_OC1 [45,46]
OC1# / GPIO40	BD41	USB_OC#1	
OC2# / GPIO41	BG41	USB_OC#2	USB_OC#2 [40,41]
OC3# / GPIO42	BK43	USB_OC#3	
OC4# / GPIO43	BP43	USB_OC#4	USB_OC#4 [41]
OC5# / GPIO9	BJ41	USB_OC#5	
OC6# / GPIO10	BT45	USB_OC#6	
OC7# / GPIO14	BM45	USB_OC#7	

USB30 PORT 0,1
USB PORT 4,5
USB PORT 8,9

@R250 0_0402_5%

+3VS

U10 NC7SZ08P5X_NL_SC70-5

PCH_PLT_RST# — PLT_RST# — PLT_RST# [5,22,45,49]

C1047 0.1U_0402_16V4Z

R257 100K_0402_5%

C1048 0.1U_0402_16V4Z

U57 NC7SZ08P5X_NL_SC70-5

PLT_A_RST# [42,43,44]

R1067 100K_0402_5%

+3VALW

USB_OC1	R283	1 2	10K_0402_5%
USB_OC#1	R284	1 2	10K_0402_5%
USB_OC#4	R285	1 2	10K_0402_5%
USB_OC#2	R286	1 2	10K_0402_5%
USB_OC#3	R287	1 2	10K_0402_5%
USB_OC#5	R288	1 2	10K_0402_5%
USB_OC#6	R1011	1 2	10K_0402_5%
USB_OC#7	R1012	1 2	10K_0402_5%

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: PCH_PCI/USB/NAND

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

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Project ID	GPIO69	GPIO70	GPIO71
SKU1	0	0	0
SKU2	0	0	1
SKU3	0	1	0
SKU4	0	1	1
x	1	0	0
x	0	0	1
x	0	1	0
x	0	1	1
x	1	0	0
x	1	0	1
x	1	1	0
x	1	1	1

PROJECT ID TABLE

GPIO8

Integrated Clock Chip Enable (Removed)
* **H: Disable**
L: Enable

Integrated clock enable functionality is achieved by soft-strap
The current default is clock enable

In Deep Sleep Power Well. Unmuxed.
Defaults to GPI.
Not used Weak pull-up 10kΩ to VccDSW3_3
-->Check list1.5 P402.
PD to GND for Huron River!!

GPIO28

On-Die PLL Voltage Regulator
* **H: Enable**
L: Disable

SATA2GP/GPIO36 & SATA3GP/GPIO37Sampled 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

ISDBT_DET

For OPT

DMI & FDI Termination Voltage

NV_CLE	
	Set to VCC when HIGH
	Set to VSS when LOW

Internal Pull Down

Note:Place R329 close to U1.R47 and <=100 mils

ESD request Close to U4.BB57

ESD request Close to U4.R47

BD82CPDS-QMZP-B0_FCBGA942

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***PCH_CPU/GPIO***

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

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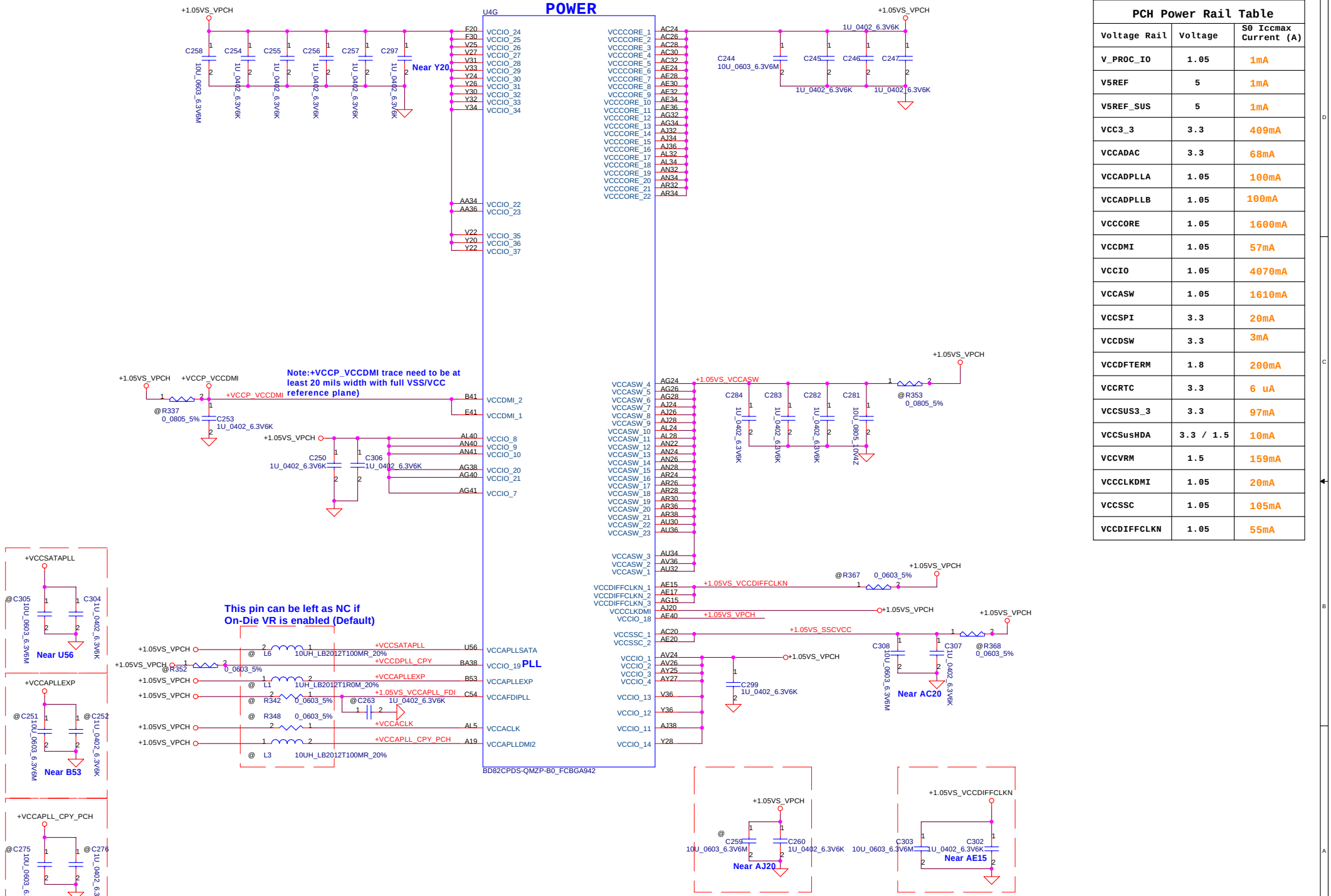
POWER



PCH Power Rail Table

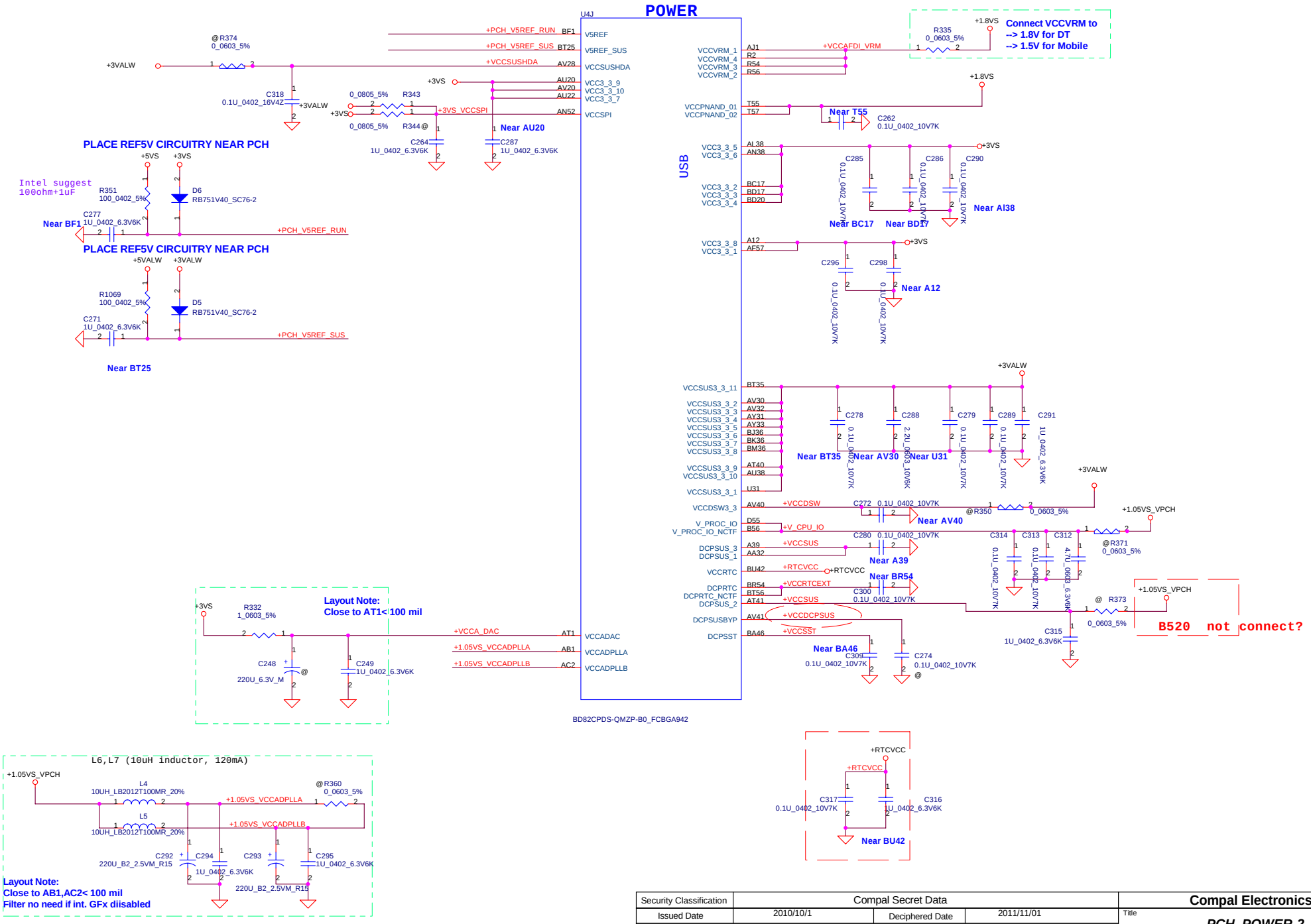
Voltage Rail	Voltage	S0 Iccmax Current (A)
V_PROC_IO	1.05	1mA
V5REF	5	1mA
V5REF_SUS	5	1mA
VCC3_3	3.3	409mA
VCCADAC	3.3	68mA
VCCADPLLA	1.05	100mA
VCCADPLLB	1.05	100mA
VCCCORE	1.05	1600mA
VCCDMI	1.05	57mA
VCCIO	1.05	4070mA
VCCASW	1.05	1610mA
VCCSPI	3.3	20mA
VCCDSW	3.3	3mA
VCCDFTERM	1.8	200mA
VCCRTC	3.3	6 uA
VCCSUS3_3	3.3	97mA
VCCSusHDA	3.3 / 1.5	10mA
VCCVRM	1.5	159mA
VCCCLKDMI	1.05	20mA
VCCSSC	1.05	105mA
VCCDIFFCLKN	1.05	55mA

Compal Electronics, Inc.

Title: PCH_POWER-1

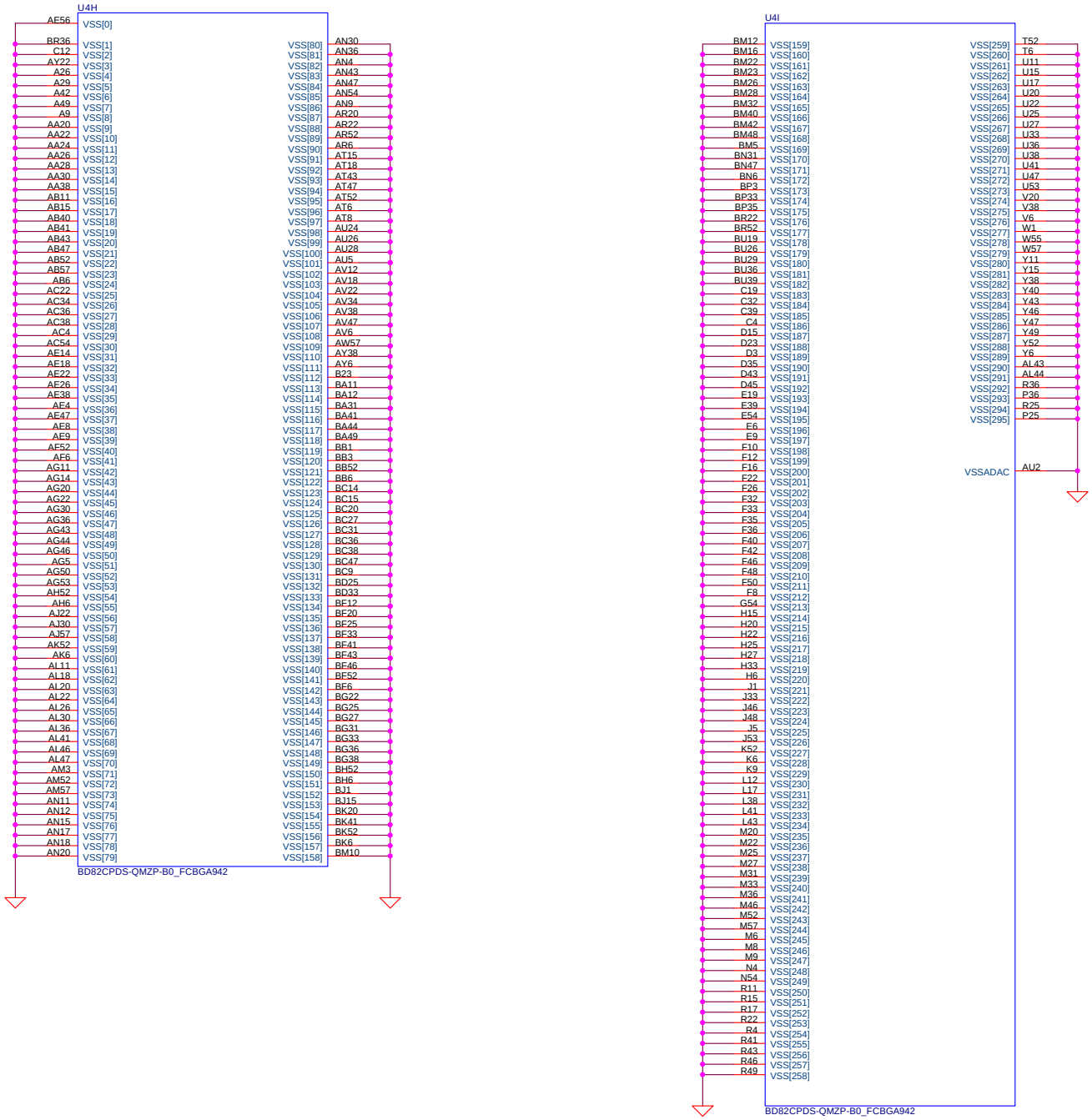
Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 19 of 64



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.	
Title	PCH_POWER-2
Size: Custom	Document Number: PCA70 LA-7521P M/B
Rev	0.1
Date: Tuesday, April 12, 2011	Sheet 20 of 64



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***PCH_GND***

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

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GPIO Description

GPIO	I/O	ACTIVE	USAGE
GPIO0	IN	N/A	IFPAB HOTPLUG DETECT
GPIO1	IN	N/A	IFPC HOTPLUG DETECT
GPIO2	OUT	HIGH	PANEL BACKLIGHT PWM
GPIO3	OUT	HIGH	PANEL POWER ENABLE
GPIO4	OUT	HIGH	PANEL BACKLIGHT ENABLE
GPIO5	OUT	HIGH	NVVDD ALTV0
GPIO6	OUT	HIGH	NVVDD ALTV1
GPIO7	OUT	HIGH	FBVDDQ ALTV
GPIO8	IN/OUT	LOW	OVERTEMP ALERT
GPIO9	OUT	LOW	THERMAL ALERT
GPIO10	OUT	HIGH	FB_VREF CONTROL
GPIO11	OUT	HIGH	RESERVED
GPIO12	IN	N/A	AC DETECT
GPIO13	OUT	LOW	LOAD STEP DOWN
GPIO14	OUT	HIGH	LOAD STEP UP
GPIO15	IN	N/A	IFPE HOTPLUG DETECT
GPIO16	IN	N/A	FAN PWM OUT
GPIO17	IN	N/A	FAN TACH IN
GPIO18	IN	N/A	RESERVED
GPIO19	IN	N/A	IFPD HOTPLUG DETECT
GPIO20	IN	N/A	RESERVED
GPIO21	IN	N/A	IFPF HOTPLUG DETECT
GPIO22	IN	N/A	RESERVED
GPIO23	IN	N/A	RESERVED
GPIO24	IN	N/A	RESERVED

PCI-Express Gen2 x16 Interface

Close to GPU (Reserve for debug)

(Reserve for debug)

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

Compal Electronics, Inc.

Title: VGA_PCIE/DAC/GPIO

Size: | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

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For GB2-128 & GB2b-128 colayout....

Display	Interface Support
LinkA	LVDS(Single Link or Dual Link with IFPB)
LinkB	LVDS(Dual Link with IFPA)
LinkC	Display Port/HDMI
LinkD	Display Port/eDP
LinkE	Display Port/DVI(Single Link or Dual Link with IFPF))/HDMI
LinkF	Display Port/DVI(Dual Link with IFPE)

U58D
Part 4 of 7
N12P-GS-A1_BGA_973P
GS@

LVDS/TMDS
Channel A
Channel B
NC
TEST
SERIAL
GENERAL

IFPA_TXC, IFPA_TXC_N, IFPA_TXD0, IFPA_TXD0_N, IFPA_TXD1, IFPA_TXD1_N, IFPA_TXD2, IFPA_TXD2_N, IFPA_TXD3, IFPA_TXD3_N
IFPB_TXC, IFPB_TXC_N, IFPB_TXD4, IFPB_TXD4_N, IFPB_TXD5, IFPB_TXD5_N, IFPB_TXD6, IFPB_TXD6_N, IFPB_TXD7, IFPB_TXD7_N
IFPC_L0, IFPC_L0_N, IFPC_L1, IFPC_L1_N, IFPC_L2, IFPC_L2_N, IFPC_L3, IFPC_L3_N
IFPD_L0, IFPD_L0_N, IFPD_L1, IFPD_L1_N, IFPD_L2, IFPD_L2_N, IFPD_L3, IFPD_L3_N
IFPE_L0, IFPE_L0_N, IFPE_L1, IFPE_L1_N, IFPE_L2, IFPE_L2_N, IFPE_L3, IFPE_L3_N
IFPF_L0, IFPF_L0_N, IFPF_L1, IFPF_L1_N, IFPF_L2, IFPF_L2_N, IFPF_L3, IFPF_L3_N

NC_0 … NC_29

STRAP4 → STRAP4 [33]
STRAP3 → STRAP3 [33]
VPGOOD → R1643 1 2 10K_0402_5% GV@
STRAP_REF2 → R1646 1 2 40.2K_0402_1% GV@

[36] VGA_SHDMI_ETXD2+
[36] VGA_SHDMI_ETXD2-
[36] VGA_SHDMI_ETXD1+
[36] VGA_SHDMI_ETXD1-
[36] VGA_SHDMI_ETXD0+
[36] VGA_SHDMI_ETXD0-
[36] VGA_SHDMI_ETXC+
[36] VGA_SHDMI_ETXC-

To HDMI OUT

[38] VGA_HDMI_ETXD2+
[38] VGA_HDMI_ETXD2-
[38] VGA_HDMI_ETXD1+
[38] VGA_HDMI_ETXD1-
[38] VGA_HDMI_ETXD0+
[38] VGA_HDMI_ETXD0-
[38] VGA_HDMI_ETXC+
[38] VGA_HDMI_ETXC-

To HDMI OUT

+3VGS
R1578 1 2 2.2K_0402_5% DIS@
R1579 1 2 2.2K_0402_5% DIS@
[36] VGA_SHDMI_ECLK
[36] VGA_SHDMI_EDATA

+3VGS
R1138 1 2 2.2K_0402_5% DIS@
R1139 1 2 2.2K_0402_5% DIS@
[38] VGA_HDMI_ECLK
[38] VGA_HDMI_EDATA

VDD_SENSE_0, VDD_SENSE_1, VDD_SENSE_2 → D35, P7, AD20 → VGA_SENSE [60]
GND_SENSE_0, GND_SENSE_1, GND_SENSE_2 → AD19, E35, R7 → GND_SENSE [60]

TESTMODE, JTAG_TCK, JTAG_TDI, JTAG_TDO, JTAG_TMS, JTAG_TRST_N
AP35 TESTMODE
AP14 T216
AN14 T217
AN16 T218
AR14 T219
AP16 → R1141 1 2 10K_0402_5% DIS@
R1140 10K_0402_5% DIS@

ROM_CS_N, ROM_SI, ROM_SO, ROM_SCLK
C3 ROM_CS#
D3 ROM_SI
C4 ROM_SO
D4 ROM_SCLK
ROM_SI [33]
ROM_SO [33]
ROM_SCLK [33]

if unuse this pin , pull down 36k
A5 R1627 2 DIS@ 1 36K_0402_1%
N9 R11431 2 DIS@ 40.2K_0402_1%
M9 R11451 2 DIS@ 40.2K_0402_1%

R1144 10K_0402_5% DIS@ +3VGS
A4 BUFRST_N
AB5 CEC
[33] STRAP0
[33] STRAP1
[33] STRAP2
W5 STRAP0
W7 STRAP1
V7 STRAP2

NC/SPDIF_NC
MULTI_STRAP_REF0_GND
MULTI_STRAP_REF1_GND
THERMDP
THERMDN
B5 THERM_D+
B4 THERM_D-

External VGA Thermal Sensor

Address: 0x9A H

+3VGS
C1122 @ 2 1 0.1U_0402_16V4Z
THERM_D+
THERM_D-
C1123 @ 2200P_0402_50V7K
U60
VDD, D+, D-, THERM#, SCLK, SDATA, ALERT#, GND
SMB_CLK_GPU
SMB_DATA_GPU
ADM1032ARMZ-2REEL_MSOP8
@

Internal Thermal Sensor

Address: 0x9E H

To VGA
SMB_CLK_GPU [22]
SMB_DATA_GPU [22]
THERM#_VGA_R [22]
+3VGS
R1134 DIS@ 100K_0402_5%

+3VGS
R1135 2.2K_0402_5% DIS@
R1136 2.2K_0402_5% DIS@
SMB_CLK_GPU
SMB_DATA_GPU
Q75A DIS@ 2N7002KDWH_SOT363-6
Q75B DIS@ 2N7002KDWH_SOT363-6
EC_SMB_CK2 [14,49,52]
EC_SMB_DA2 [14,49,52]
To EC

Reserve VBIOS for NV suggest (1Mbit)

+3VGS
R379 10K_0402_5%
R754 4.7K_0402_5% SPI_WP#_VGA
R750 4.7K_0402_5% SPI_HOLD#_VGA
ROM_CS#
U54
CE#, WP#, HOLD#, VSS, VDD, SCK, SI, SO
MX25L1005AMC-12G_SOP8
C1447 0.1U_0402_16V4Z
ROM_SCLK
ROM_SI
ROM_SO

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

Compal Electronics, Inc.

Title: VGA_LVDS/HDMI/THERM/eDP

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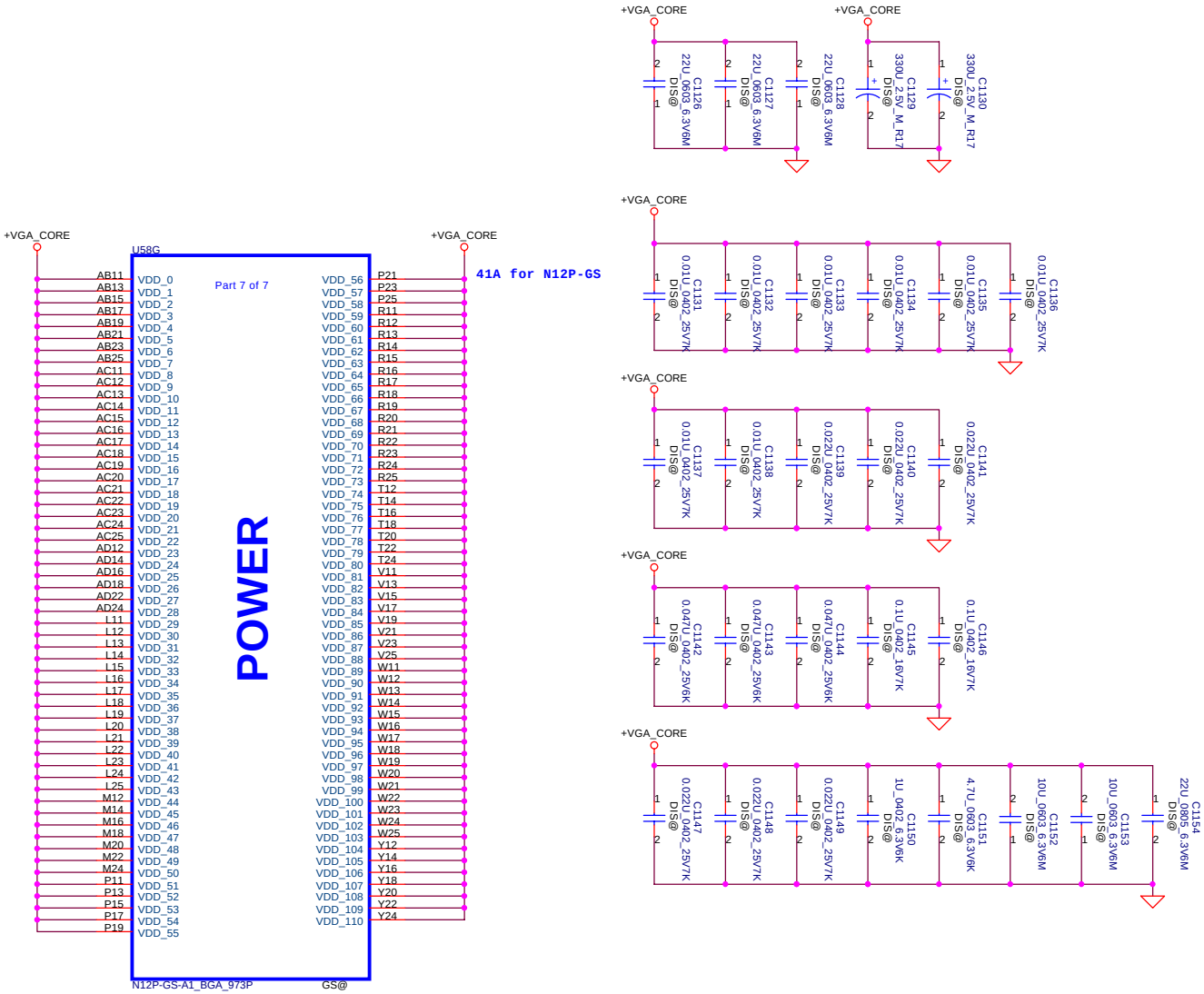


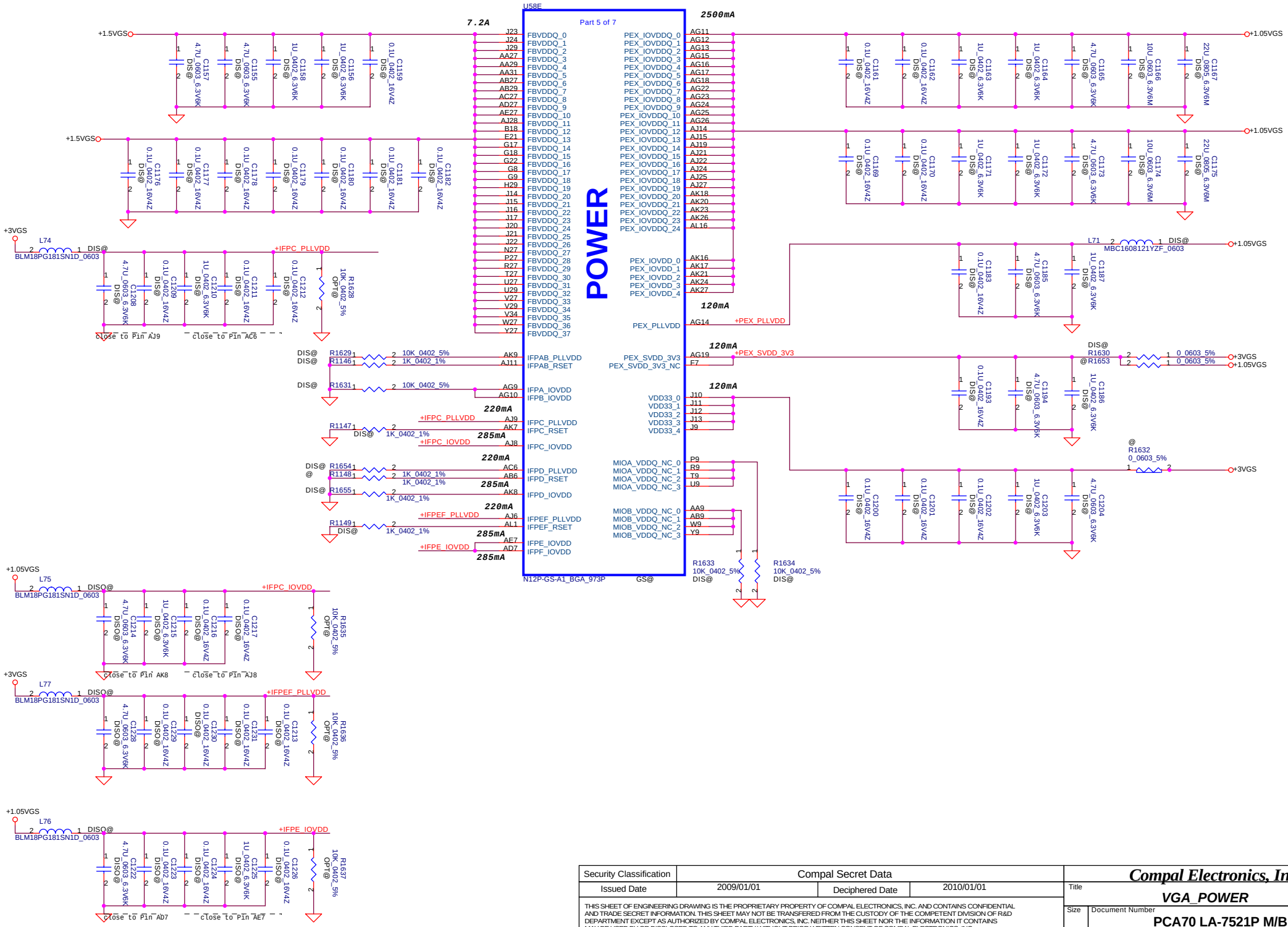
Security Classification	Compal Secret Data		
Issued Date	2009/01/01	Deciphered Date	2010/01/01

Compal Electronics, Inc.

Title: VGA_VGA CORE

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 24 of 64



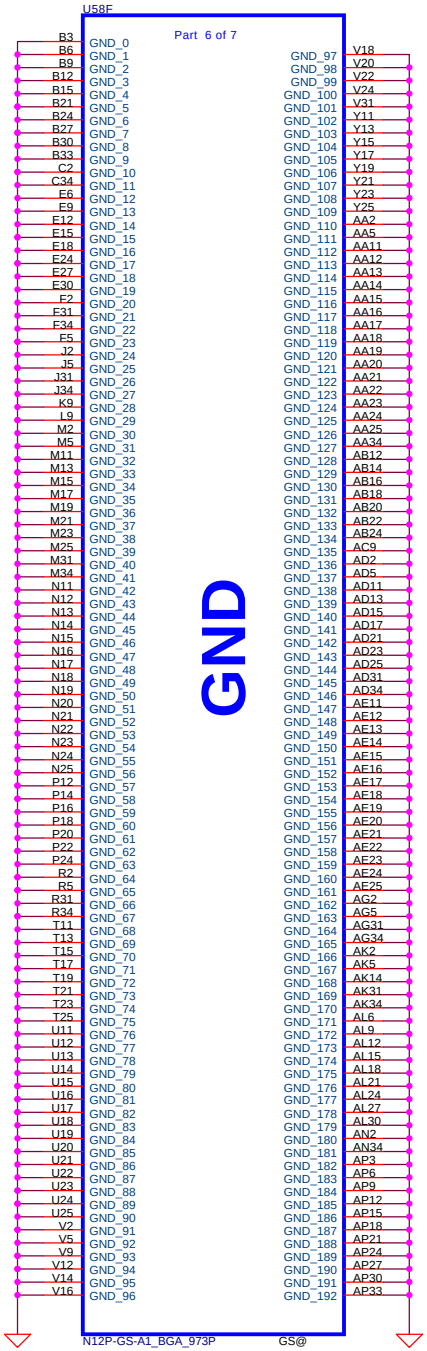
Security Classification	Compal Secret Data		
Issued Date	2009/01/01	Deciphered Date	2010/01/01

Compal Electronics, Inc.

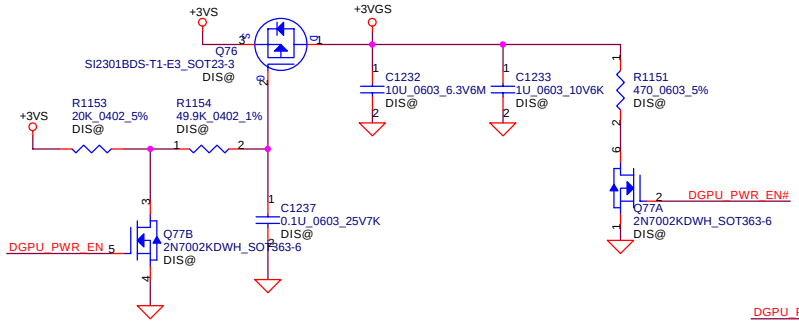
Title: VGA_POWER

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

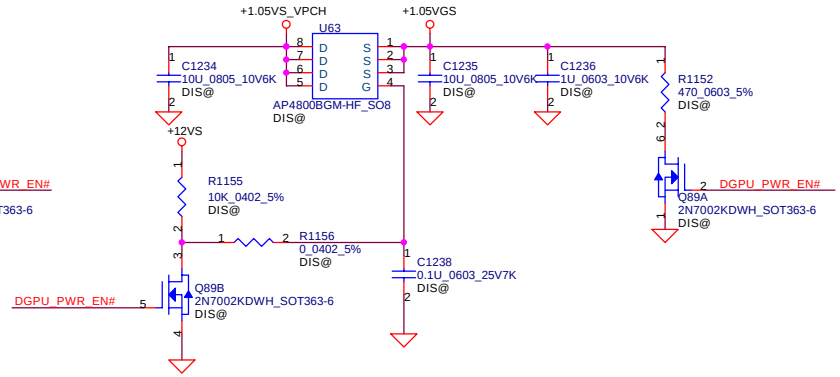
Date: Tuesday, April 12, 2011 | Sheet 25 of 64

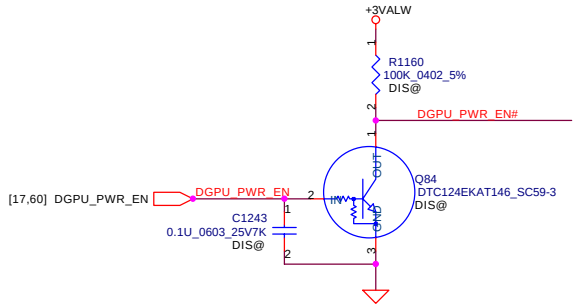


+3.3VS TO +3.3VGS

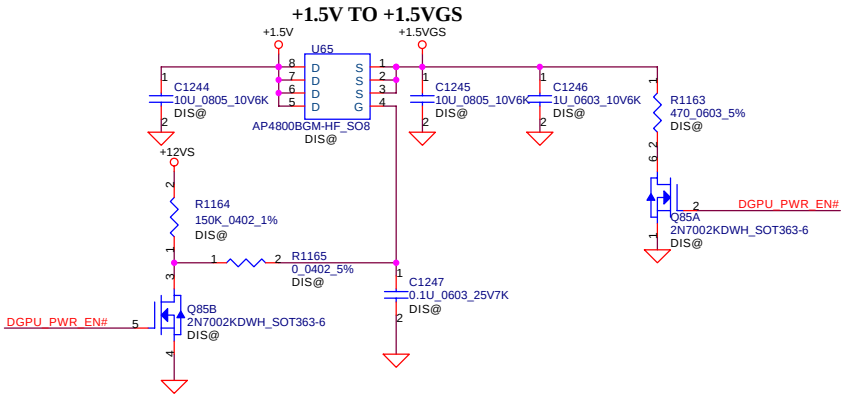


+1.05VS_VCCIO TO +1.05VGS

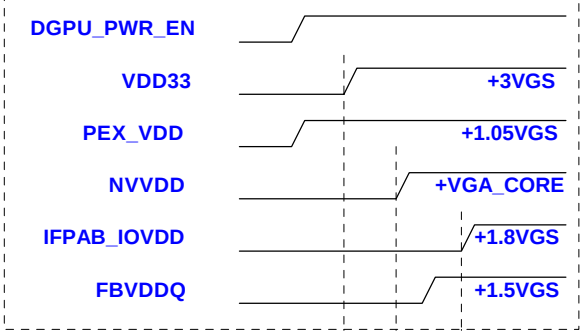




+1.5V TO +1.5VGS



Power Sequence of N12P_GS/GE,N12M_GE



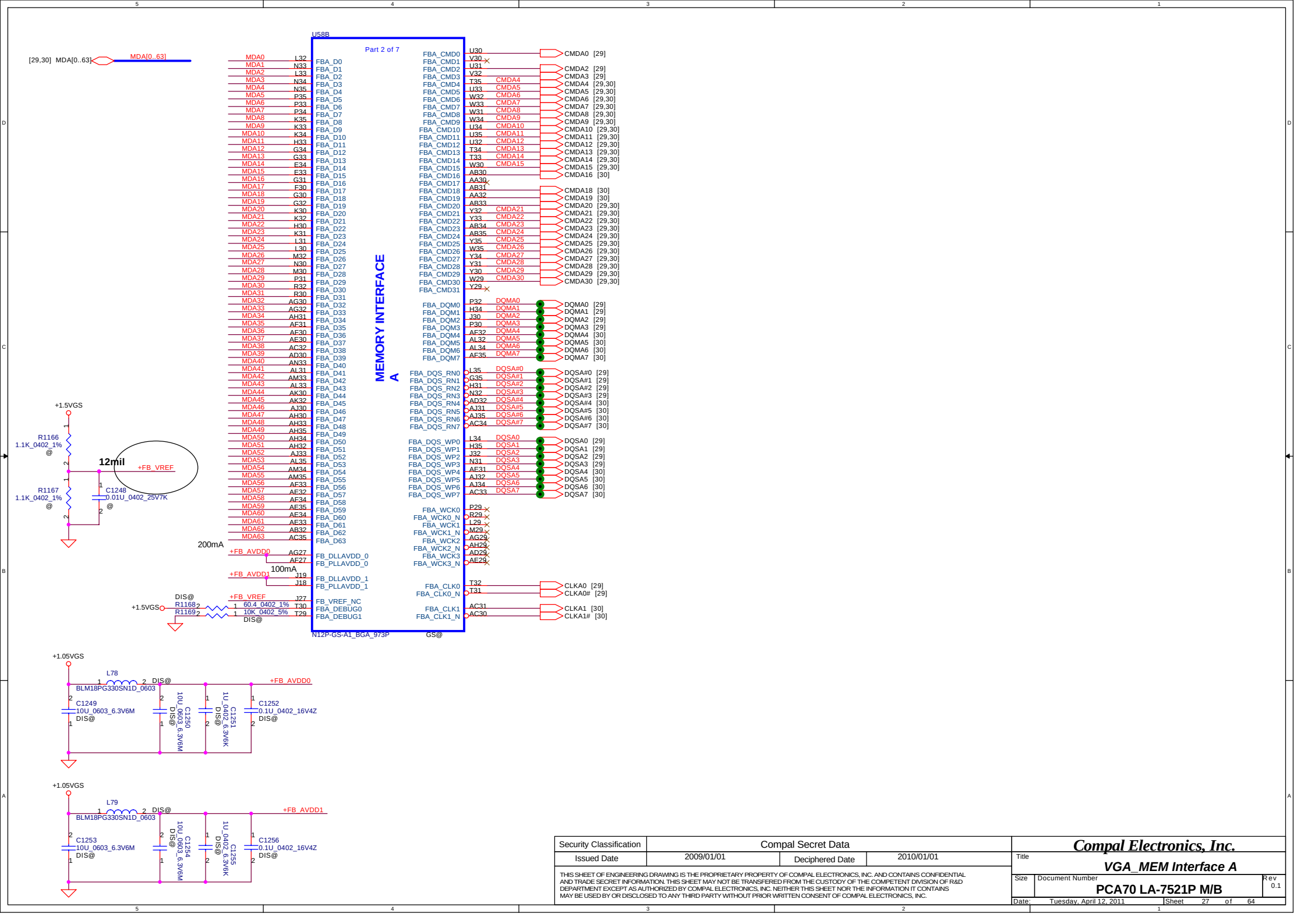
Security Classification	Compal Secret Data		
Issued Date	2009/01/01	Deciphered Date	2010/01/01

Compal Electronics, Inc.

Title: VGA_GND/POWER

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 26 of 64



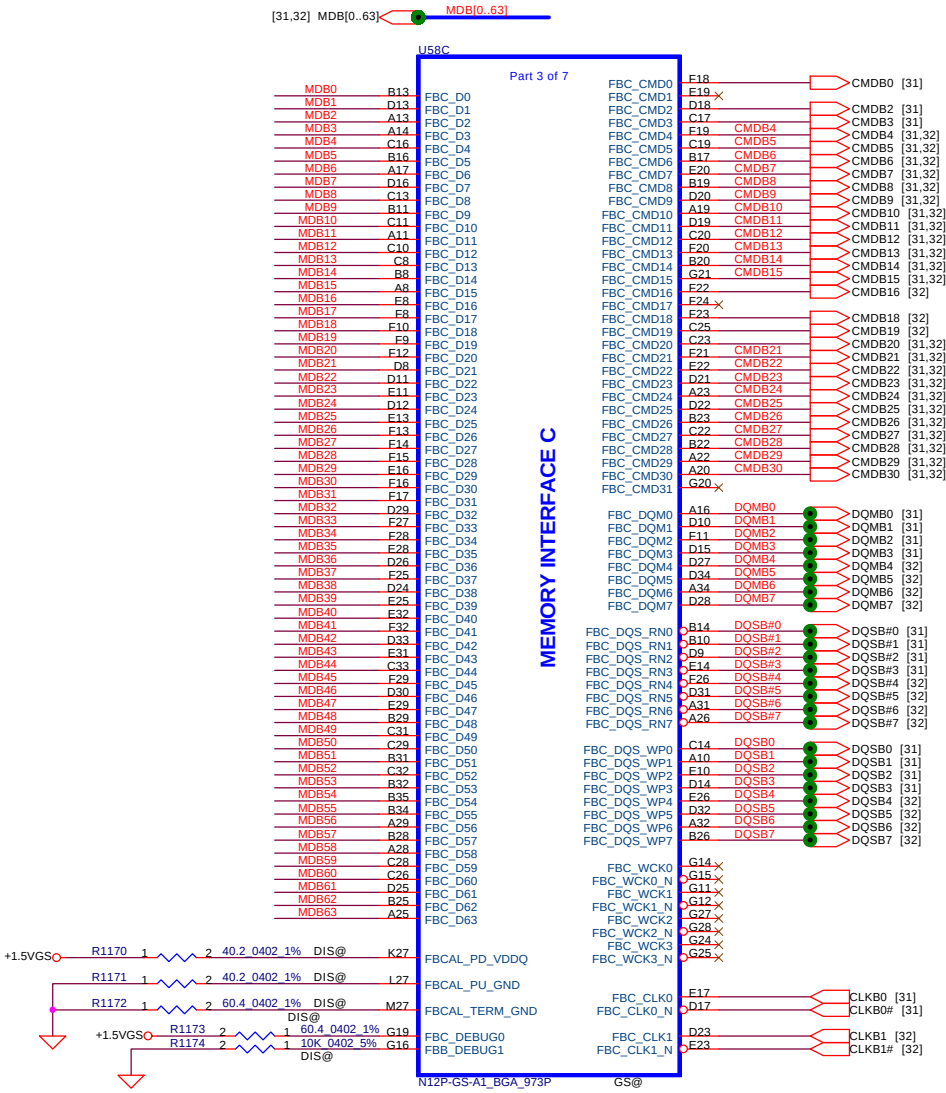
Security Classification	Compal Secret Data		
Issued Date	2009/01/01	Deciphered Date	2010/01/01

Compal Electronics, Inc.

Title: VGA_MEM Interface A

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 27 of 64



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

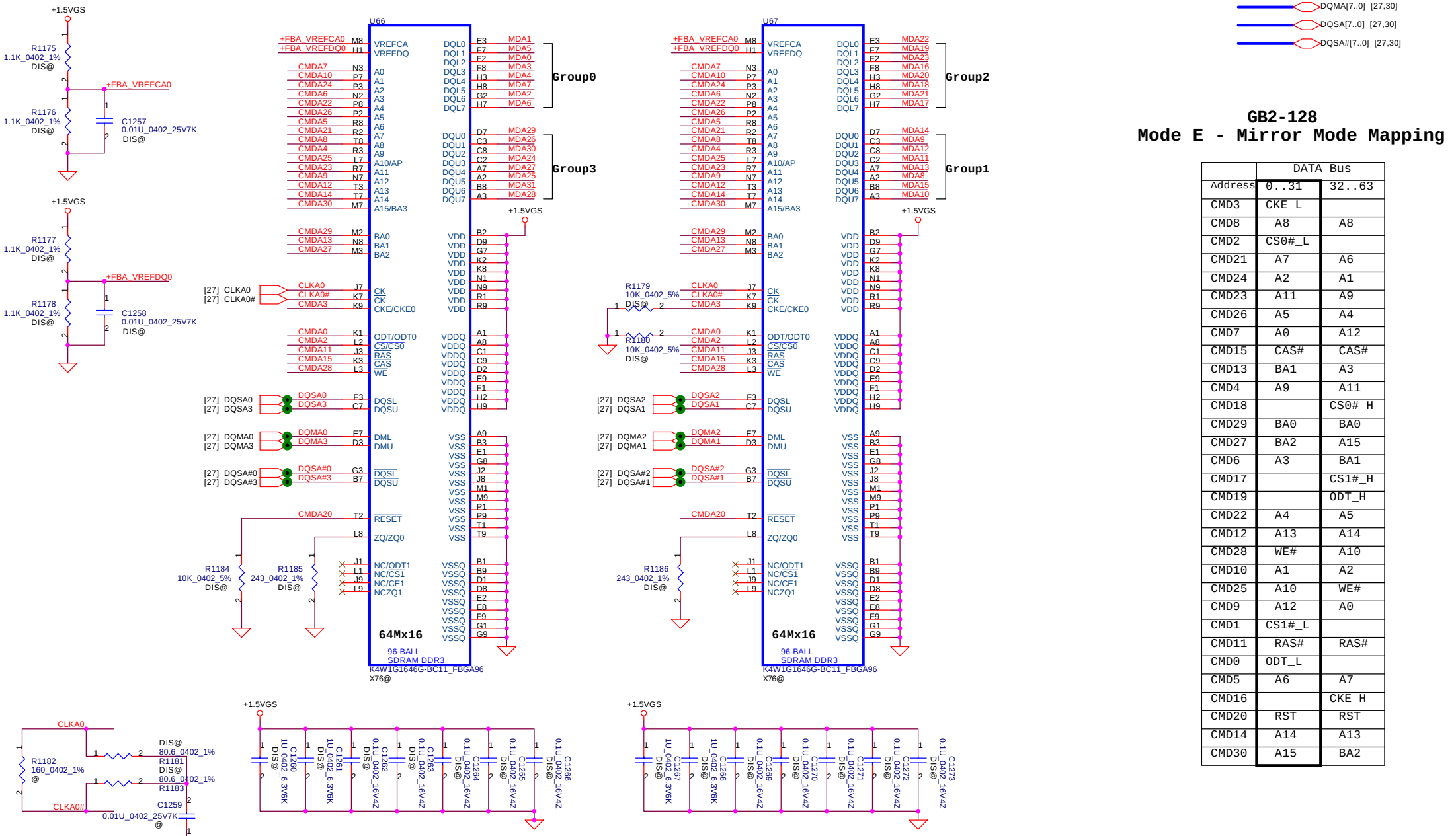
Compal Electronics, Inc.

Title: VGA_MEM Interface C

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 28 of 64

Memory Partition A - Lower 32 bits



GB2-128
Mode E - Mirror Mode Mapping

	DATA Bus	
Address	0..31	32..63
CMD3	CKE_L	
CMD8	A8	A8
CMD2	CS0#_L	
CMD21	A7	A6
CMD24	A2	A1
CMD23	A11	A9
CMD26	A5	A4
CMD7	A0	A12
CMD15	CAS#	CAS#
CMD13	BA1	A3
CMD4	A9	A11
CMD18		CS0#_H
CMD29	BA0	BA0
CMD27	BA2	A15
CMD6	A3	BA1
CMD17		CS1#_H
CMD19		ODT_H
CMD22	A4	A5
CMD12	A13	A14
CMD28	WE#	A10
CMD10	A1	A2
CMD25	A10	WE#
CMD9	A12	A0
CMD1	CS1#_L	
CMD11	RAS#	RAS#
CMD0	ODT_L	
CMD5	A6	A7
CMD16		CKE_H
CMD20	RST	RST
CMD14	A14	A13
CMD30	A15	BA2

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

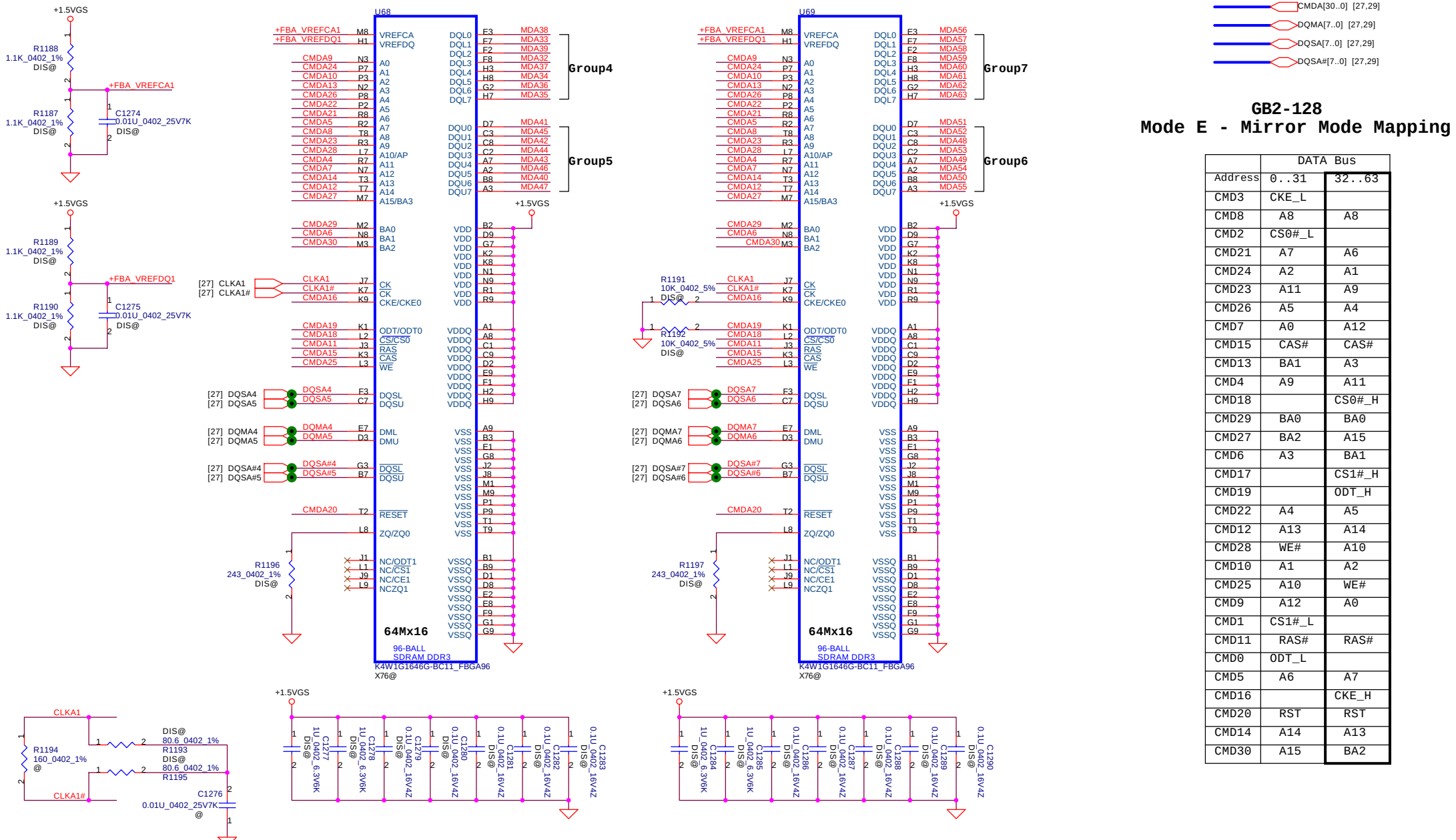
Compal Electronics, Inc.

Title: VGA_VRAM_A Lower

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 29 of 64

Memory Partition A - Upper 32 bits



GB2-128
Mode E - Mirror Mode Mapping

	DATA Bus	
Address	0..31	32..63
CMD3	CKE_L	
CMD8	A8	A8
CMD2	CS0#_L	
CMD21	A7	A6
CMD24	A2	A1
CMD23	A11	A9
CMD26	A5	A4
CMD7	A0	A12
CMD15	CAS#	CAS#
CMD13	BA1	A3
CMD4	A9	A11
CMD18		CS0#_H
CMD29	BA0	BA0
CMD27	BA2	A15
CMD6	A3	BA1
CMD17		CS1#_H
CMD19		ODT_H
CMD22	A4	A5
CMD12	A13	A14
CMD28	WE#	A10
CMD10	A1	A2
CMD25	A10	WE#
CMD9	A12	A0
CMD1	CS1#_L	
CMD11	RAS#	RAS#
CMD0	ODT_L	
CMD5	A6	A7
CMD16		CKE_H
CMD20	RST	RST
CMD14	A14	A13
CMD30	A15	BA2

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

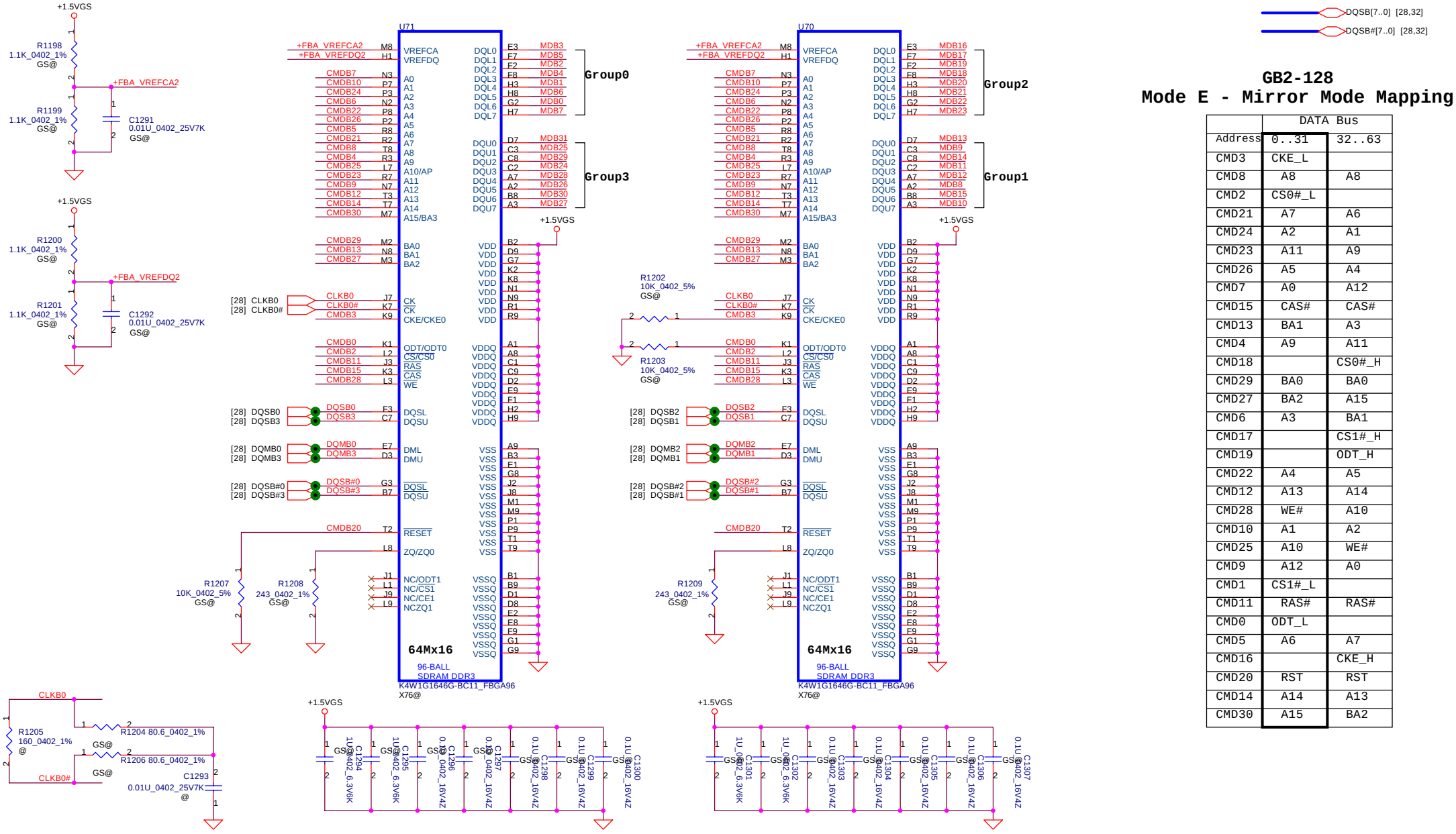
Compal Electronics, Inc.

Title: VGA_VRAM_A Upper

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 30 of 64

Memory Partition C - Lower 32 bits



GB2-128
Mode E - Mirror Mode Mapping

	DATA Bus	
Address	0..31	32..63
CMD3	CKE_L	
CMD8	A8	A8
CMD2	CS0#_L	
CMD21	A7	A6
CMD24	A2	A1
CMD23	A11	A9
CMD26	A5	A4
CMD7	A0	A12
CMD15	CAS#	CAS#
CMD13	BA1	A3
CMD4	A9	A11
CMD18		CS0#_H
CMD29	BA0	BA0
CMD27	BA2	A15
CMD6	A3	BA1
CMD17		CS1#_H
CMD19		ODT_H
CMD22	A4	A5
CMD12	A13	A14
CMD28	WE#	A10
CMD10	A1	A2
CMD25	A10	WE#
CMD9	A12	A0
CMD1	CS1#_L	
CMD11	RAS#	RAS#
CMD0	ODT_L	
CMD5	A6	A7
CMD16		CKE_H
CMD20	RST	RST
CMD14	A14	A13
CMD30	A15	BA2

Compal Electronics, Inc.

Title: VGA_VRAM_C Lower

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

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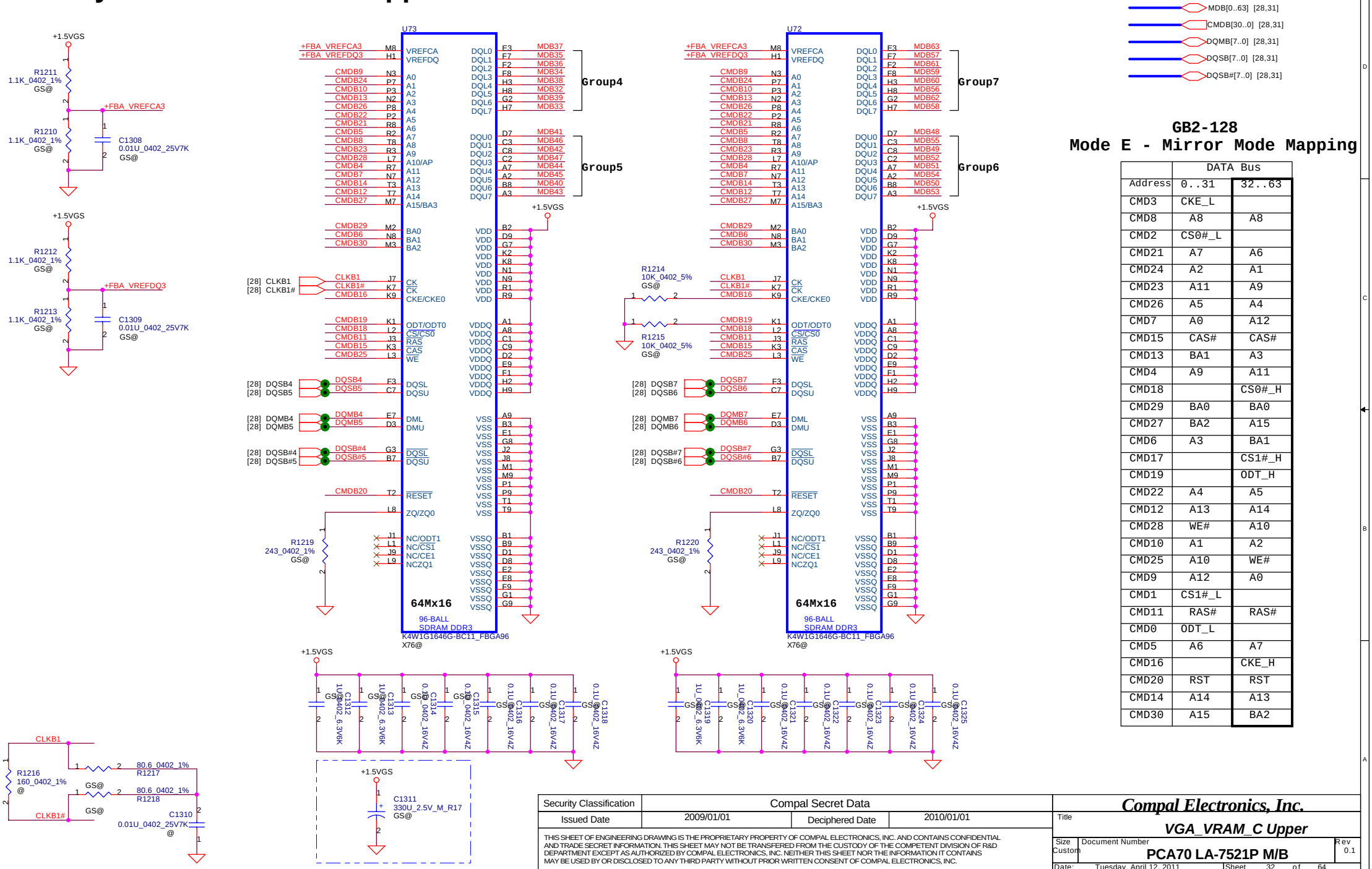
Memory Partition C - Upper 32 bits



GB2-128
Mode E - Mirror Mode Mapping

	DATA Bus	
Address	0..31	32..63
CMD3	CKE_L	
CMD8	A8	A8
CMD2	CS0#_L	
CMD21	A7	A6
CMD24	A2	A1
CMD23	A11	A9
CMD26	A5	A4
CMD7	A0	A12
CMD15	CAS#	CAS#
CMD13	BA1	A3
CMD4	A9	A11
CMD18		CS0#_H
CMD29	BA0	BA0
CMD27	BA2	A15
CMD6	A3	BA1
CMD17		CS1#_H
CMD19		ODT_H
CMD22	A4	A5
CMD12	A13	A14
CMD28	WE#	A10
CMD10	A1	A2
CMD25	A10	WE#
CMD9	A12	A0
CMD1	CS1#_L	
CMD11	RAS#	RAS#
CMD0	ODT_L	
CMD5	A6	A7
CMD16		CKE_H
CMD20	RST	RST
CMD14	A14	A13
CMD30	A15	BA2

Compal Electronics, Inc.

Title: VGA_VRAM_C Upper

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

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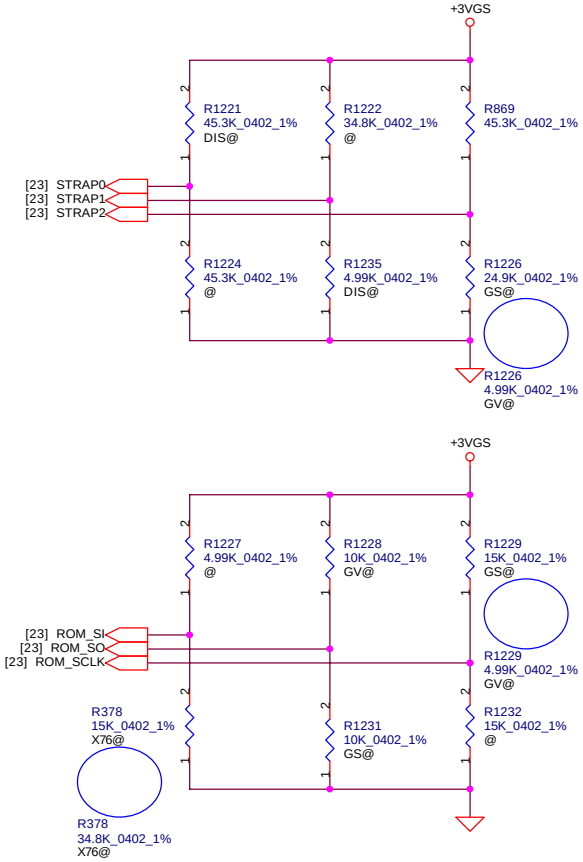
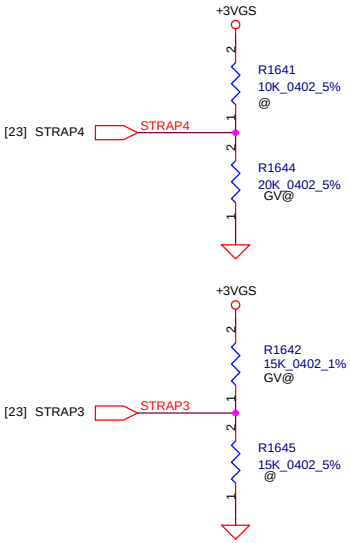


Resistor Values	Pull-up to +3VGS	Pull-down to Gnd
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111



Physical Strapping pin		Power Rail	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0
ROM_SO	GS	+3VGS	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE
	GV		FB[1]	FB[0]		
ROM_SCLK	GS	+3VGS	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM
	GV				PCI_DEVID[5]	
ROM_SI		+3VGS	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP0		+3VGS	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1		+3VGS	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
STRAP2		+3VGS	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
STRAP3		+3VGS	SOR3_EXPOSED	SOR2_EXPOSED	SOR1_EXPOSED	SOR0_EXPOSED
STRAP4		+3VGS	RESERVED	RESERVED	PCIE_MAX_SPEED	DP_PLL_VDD33V

GPU	Frenq.	Memory Size	Memory Config	strap0	strap1	strap2	strap3	strap4	ROM_SI	ROM_SO	ROM_SCLK
N12P-GS	900 MHz	64M* 16* 8 1GB	Hynix (0x2) H5TQ1G63DFR-11C SA000041S60	1111 R1221 PU 45K	0000 R1235 PD 5K	0100 R1226 PD 25K	NC	NC	0010 R453 PD 15K	0001 R1231 PD 10K	1010 R1229 PU 15K
N12P-GS	900 MHz	64M* 16* 8 1GB	Samsung (0x3) K4W1G1646G-BC11 SA00004GS30	1111 R1221 PU 45K	0000 R1235 PD 5K	0100 R1226 PD 25K	NC	NC	0011 R378 PD 20K	0001 R1231 PD 10K	1010 R1229 PU 15K
N12P-GV	900 MHz	64M* 16* 4 512MB	Hynix (0x2) H5TQ1G63DFR-11C SA000041S60	1111 R1221 PU 45K	0000 R1235 PD 5K	0000 R1226 PD 5K	1010 R1642 PU 15K	0011 R1644 PD 20K	0010 R378 PD 15K	1001 R1228 PU 10K	1000 R1229 PU 5K
N12P-GV	900 MHz	64M* 16* 4 512MB	Samsung (0x3) K4W1G1646G-BC11 SA00004GS30	1111 R1221 PU 45K	0000 R1235 PD 5K	0000 R1226 PD 5K	1010 R1642 PU 15K	0011 R1644 PD 20K	0011 R378 PD 20K	1001 R1228 PU 10K	1000 R1229 PU 5K
N12P-GV	800 MHz	128M* 16* 4 1GB	Hynix (0x6) H5TQ2G63BFR-12C SA00003VS30	1111 R1221 PU 45K	0000 R1235 PD 5K	0000 R1226 PD 5K	1010 R1642 PU 15K	0011 R1644 PD 20K	0110 R378 PD 35K	1001 R1228 PU 10K	1000 R1229 PU 5K

SUB_VENDOR

0	No VBIOS ROM (Default)
1	BIOS ROM is present

XCLK_417

0	277MHz (Default)
1	Reserved

FB_0_BAR_SIZE

0	256MB (Default)
1	Reserved

User [3:0]

1111	EDID is used 1920x1080
1000-1100	Customer defined

3GIO_PADCFG[3:0]

0000	RESERVED
0110	Notebook Default

PEX_PLL_EN_TERM

0	Disable (Default)
1	Enable

SLOT_CLOCK_CFG

0	GPU and MCH don't share a common reference clock
1	GPU and MCH share a common reference clock (Default)

SMBUS_ALT_ADDR

0	0x9E (Default)
1	0x9C (Multi-GPU usage)

VGA_DEVICE

0	3D Device
1	VGA Device (Default)

PCIE_MAX_SPEED

1	Default

DP_PLL_VDD33V

0	Default

GPU	Package	DeviceID	PCI_DEVID[5..0]
N12P-GS	GB2-128	0x0DF4	(..1111 0100)
N12P-GV-B	GB2b-128	0x1050	(..0101 0000)

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

Compal Electronics, Inc.

Title: *VGA_MSIC*

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 33 of 64

pre-MP Scaler power soft start

PVT change to KBC control for EUP S5 over 1W

+3V TO +1.2VALW

151mA

600mA

MP for S5 HDMI_IN no function.

+1.2VALW=1+R533/R535

FOR Scalar Firmware Code

58mA

116mA

INTERNAL HDMI

EXTERNAL HDMI-IN

HDMI-Port0

HDMI-Port1

0.67mA

EXTERNAL D-Sub-IN

LVDS

DVT add Pull high for PNL_STAT, HDMI_CABLE_DET

To AMP SPK Enable pin

PVT for DIS/UMA FW control.

Mode	PNL_STAT	PNL_STAT2
PC	0	0
HDMI	1	0
VGA	0	1

HDMI_STAT
High: OSD OFF
Low : OSD ON

MP change from 0ohm for ENI

FOR OSD/HDCP Parameter Value

To AMP Input

To HP Out

To EC ADC

DVT add test point for Scalar dubug.

For Port1

For Port0

HDMI Port0 HPD

HDMI-IN

PCH

change to 75 ohm for HDCP protect.

close to U55(Scaler)

88mA

RTD2472D-GR_LQFP128_20X14

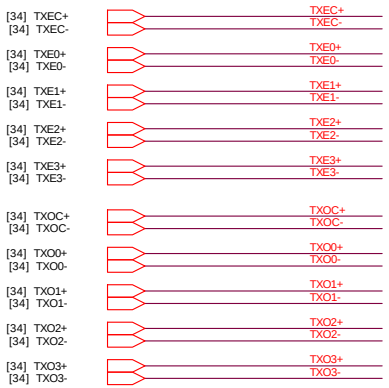
Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

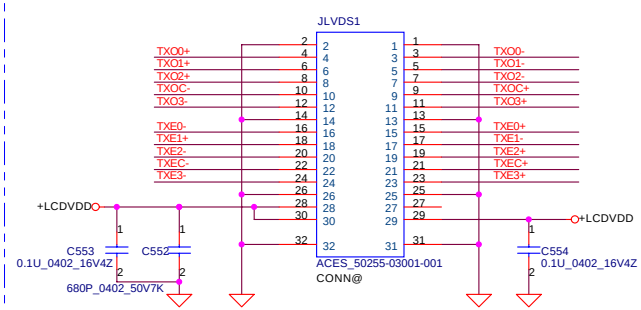
Title: Scaler RTD2472/82D

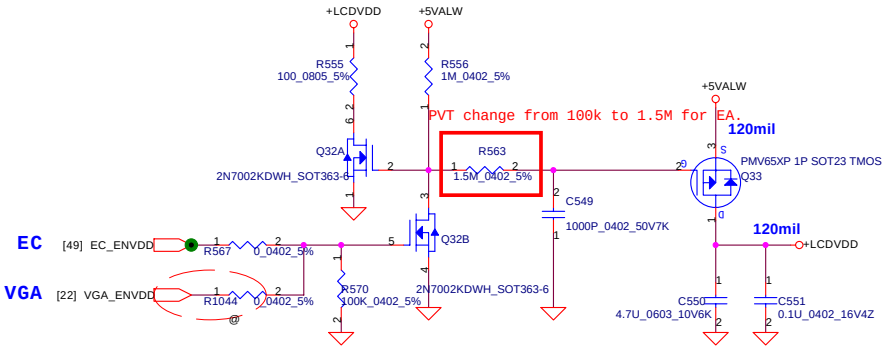
Size: | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

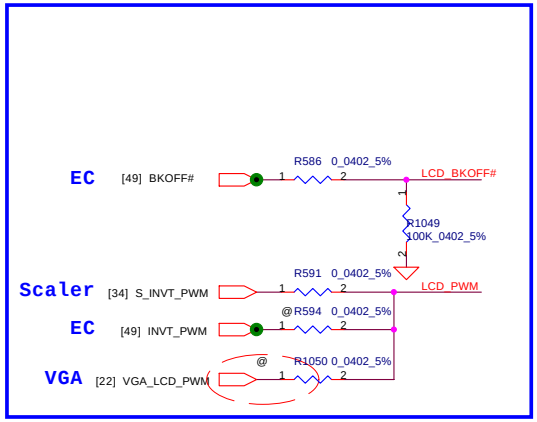
Date: Tuesday, April 12, 2011 | Sheet 34 of 64



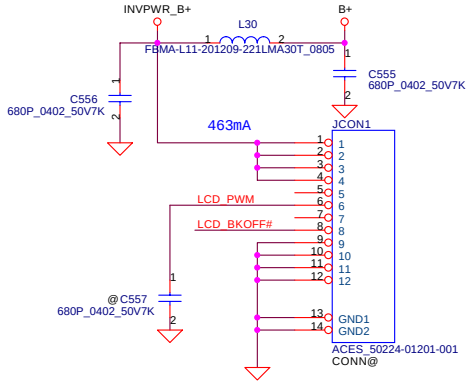
For Scaler LVDS Conn.







Converter



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***LVDS***

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

Date: Tuesday, April 12, 2011 | Sheet 35 of 64

DIS only

[23] VGA_SHDMI_ETXC+
[23] VGA_SHDMI_ETXC-
VGA_SHDMI_ETXC+ — DIS@ C1556 — 0.1U_0402_10V7K — HDMI_C_CLK+ — HDMI_C_CLK+ [34]
VGA_SHDMI_ETXC- — DIS@ C1557 — 0.1U_0402_10V7K — HDMI_C_CLK- — HDMI_C_CLK- [34]

[23] VGA_SHDMI_ETXD0+
[23] VGA_SHDMI_ETXD0-
VGA_SHDMI_ETXD0+ — DIS@ C1558 — 0.1U_0402_10V7K — HDMI_C_TX0+ — HDMI_C_TX0+ [34]
VGA_SHDMI_ETXD0- — DIS@ C1559 — 0.1U_0402_10V7K — HDMI_C_TX0- — HDMI_C_TX0- [34]

[23] VGA_SHDMI_ETXD1+
[23] VGA_SHDMI_ETXD1-
VGA_SHDMI_ETXD1+ — DIS@ C1560 — 0.1U_0402_10V7K — HDMI_C_TX1+ — HDMI_C_TX1+ [34]
VGA_SHDMI_ETXD1- — DIS@ C1561 — 0.1U_0402_10V7K — HDMI_C_TX1- — HDMI_C_TX1- [34]

[23] VGA_SHDMI_ETXD2+
[23] VGA_SHDMI_ETXD2-
VGA_SHDMI_ETXD2+ — DIS@ C1562 — 0.1U_0402_10V7K — HDMI_C_TX2+ — HDMI_C_TX2+ [34]
VGA_SHDMI_ETXD2- — DIS@ C1563 — 0.1U_0402_10V7K — HDMI_C_TX2- — HDMI_C_TX2- [34]

UMA only

[16] PCH_HDMI_CLK+
[16] PCH_HDMI_CLK-
PCH_HDMI_CLK+ — UMA@C1564 — 0.1U_0402_10V7K — HDMI_C_CLK+
PCH_HDMI_CLK- — UMA@C1565 — 0.1U_0402_10V7K — HDMI_C_CLK-

[16] PCH_HDMI_TX0+
[16] PCH_HDMI_TX0-
PCH_HDMI_TX0+ — UMA@C1566 — 0.1U_0402_10V7K — HDMI_C_TX0+
PCH_HDMI_TX0- — UMA@C1567 — 0.1U_0402_10V7K — HDMI_C_TX0-

[16] PCH_HDMI_TX1+
[16] PCH_HDMI_TX1-
PCH_HDMI_TX1+ — UMA@C1568 — 0.1U_0402_10V7K — HDMI_C_TX1+
PCH_HDMI_TX1- — UMA@C1569 — 0.1U_0402_10V7K — HDMI_C_TX1-

[16] PCH_HDMI_TX2+
[16] PCH_HDMI_TX2-
PCH_HDMI_TX2+ — UMA@C1570 — 0.1U_0402_10V7K — HDMI_C_TX2+
PCH_HDMI_TX2- — UMA@C1571 — 0.1U_0402_10V7K — HDMI_C_TX2-

INTEL use 680 Ohm for terminationn

UMA@ R635 680_0402_5%
UMA@ R636 680_0402_5%
UMA@ R637 680_0402_5%
UMA@ R638 680_0402_5%
UMA@ R639 680_0402_5%
UMA@ R640 680_0402_5%
UMA@ R642 680_0402_5%
UMA@ R643 680_0402_5%

+3VS
Q36
SSM3K7002BF 1N SC59-3
UMA@

pull down for HDMI 1.3 standard, remove in PVT phase.

NV use 499 Ohm for terminationn

DIS@ R642 499_0402_5%
DIS@ R643 499_0402_5%
DIS@ R639 499_0402_5%
DIS@ R640 499_0402_5%
DIS@ R635 499_0402_5%
DIS@ R636 499_0402_5%
DIS@ R637 499_0402_5%
DIS@ R638 499_0402_5%

+3VS
UMA@ R617 2.2K_0402_5%
R618 UMA@ 2.2K_0402_5%

[16] PCH_HDMI_DATA
[23] VGA_SHDMI_EDATA
PCH_HDMI_DATA — R1580 0_0402_5% UMA@ — R1581 0_0402_5% DIS@

[16] PCH_HDMI_CLK
[23] VGA_SHDMI_ECLK
PCH_HDMI_CLK — R1582 0_0402_5% UMA@ — R1583 0_0402_5% DIS@

+3VS
+5VS
R619 4.7K_0402_5%
R620 4.7K_0402_5%
Q35A
2N7002KDW_SOT363-6
Q35B
2N7002KDW_SOT363-6

S_HDMI_DATA — S_HDMI_DATA [34]
S_HDMI_CLK — S_HDMI_CLK [34]

[16] DDPC_HDP
DDPC_HDP — UMA@ R641 0_0402_5% — HDMI_HPD_LS — HDMI_HPD_LS [34]

[22] VGA_SHDMI_HPD
VGA_SHDMI_HPD — DIS@ R1584 0_0402_5%

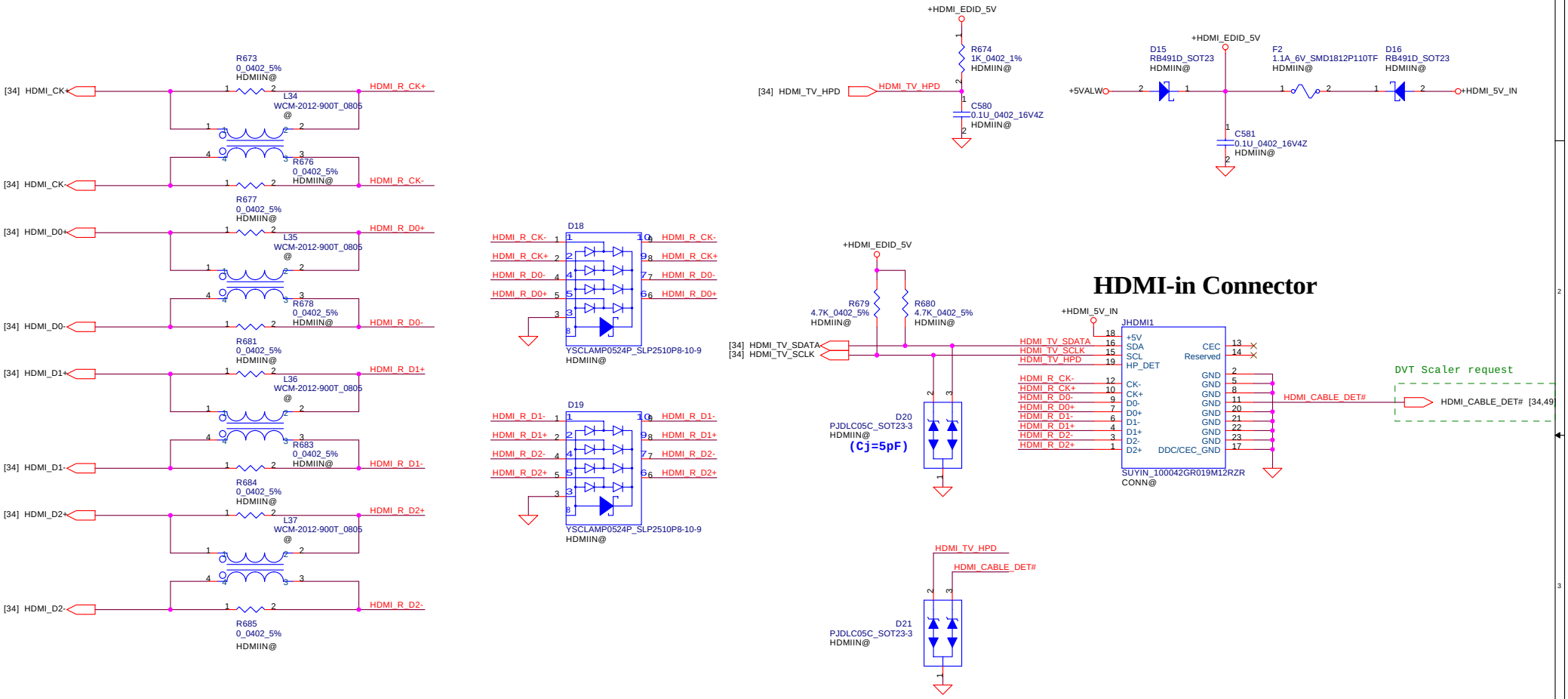
Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: *HDMI Level Shift Scaler*

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 36 of 64



HDMI-in Connector

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

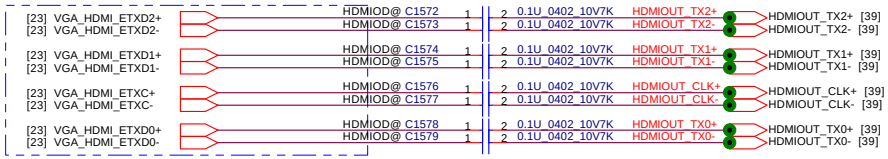
Compal Electronics, Inc.

Title: **HDMI-IN**

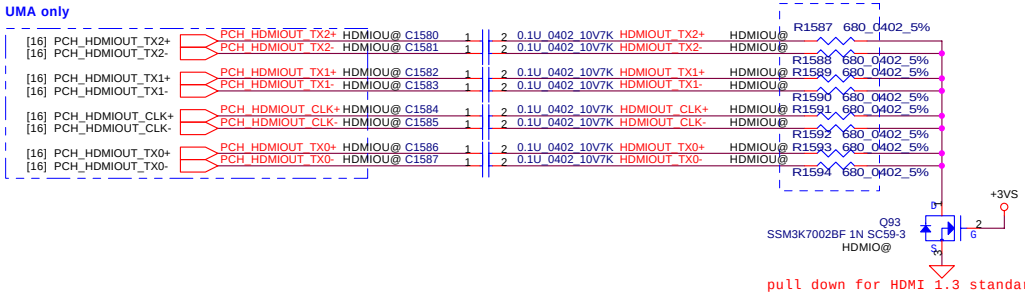
Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

Date: Tuesday, April 12, 2011 | Sheet 37 of 64

DIS only

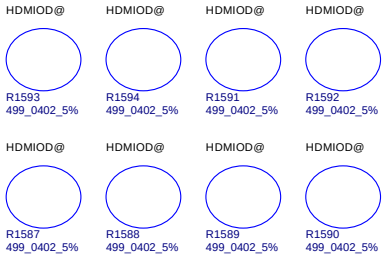


UMA only

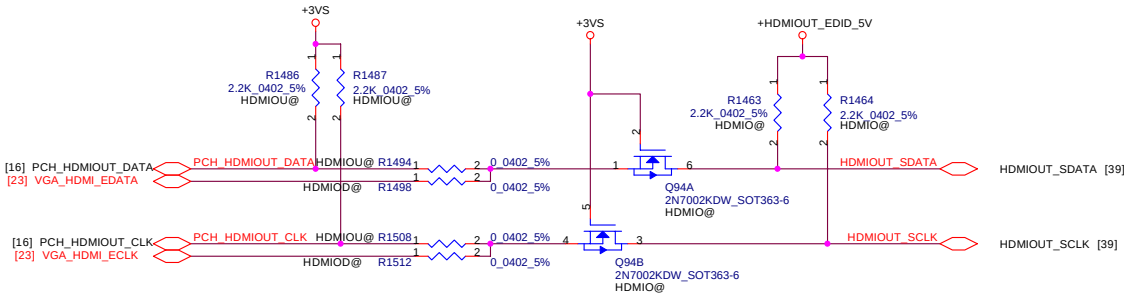


INTEL use 680 Ohm for terminationn

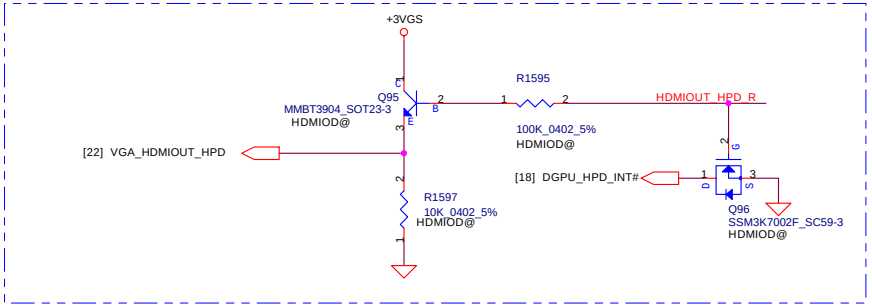
NV use 499 Ohm for terminationn



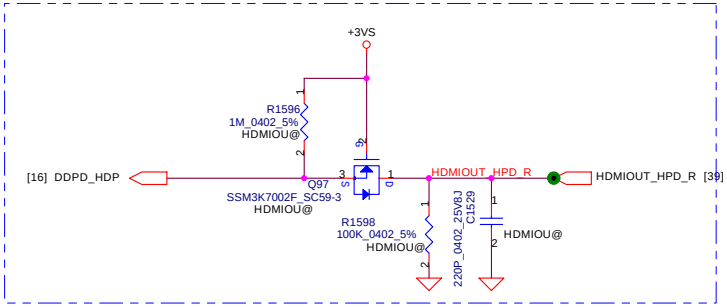
pull down for HDMI 1.3 standard, remove in PVT phase.



DIS only



UMA only



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

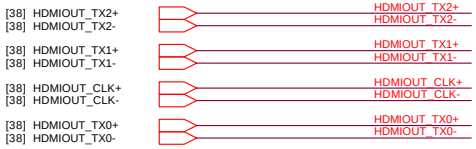
Compal Electronics, Inc.

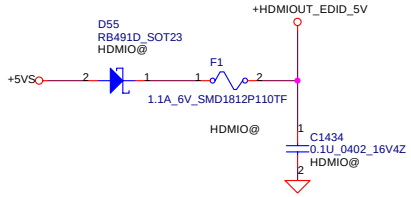
Title: ***HDMI-OUT Level Shift***

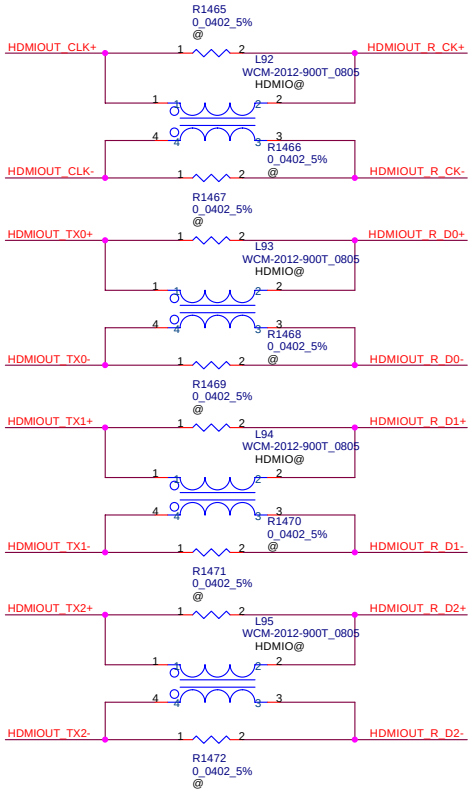
Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

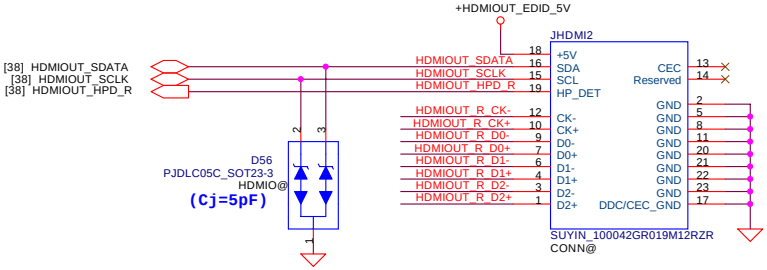
Date: Tuesday, April 12, 2011 | Sheet 38 of 64

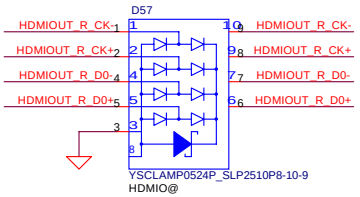
HDMI-OUT Connector

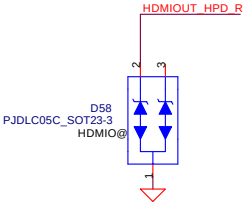


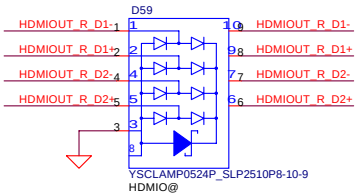












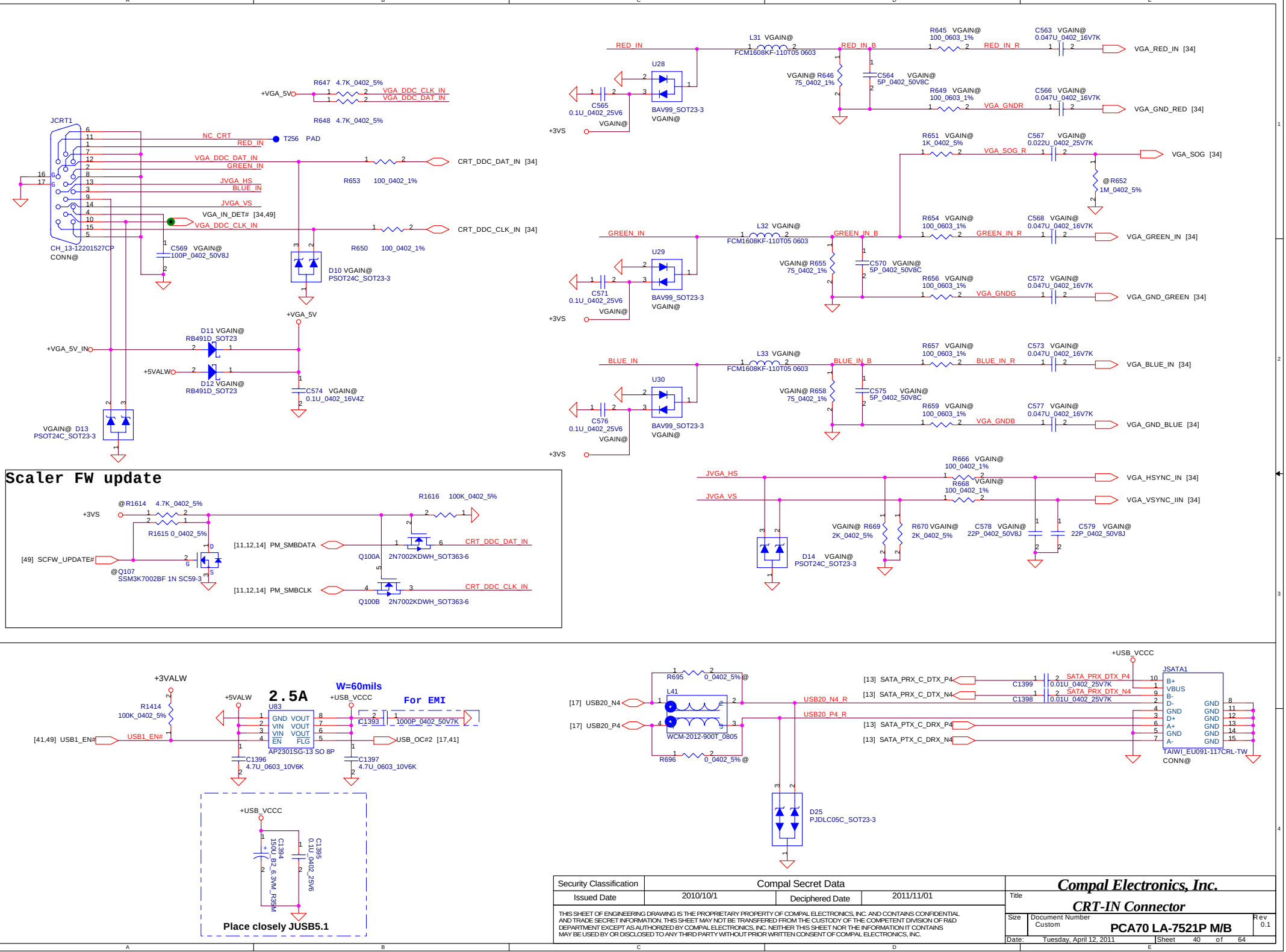
Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: **HDMI-OUT**

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

Date: Tuesday, April 12, 2011 | Sheet 39 of 64



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

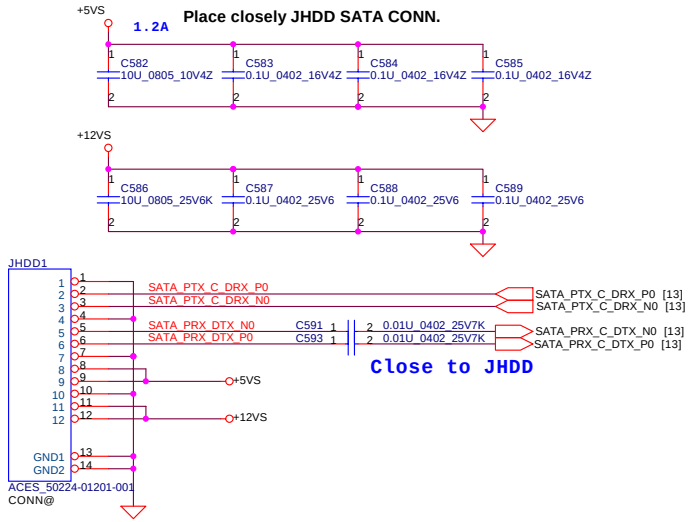
Compal Electronics, Inc.

Title: **CRT-IN Connector**

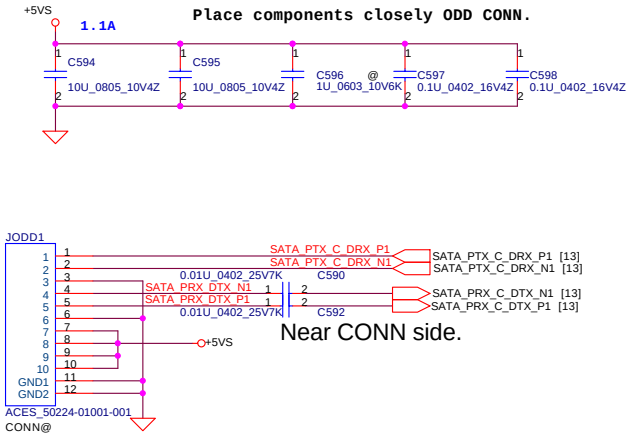
Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

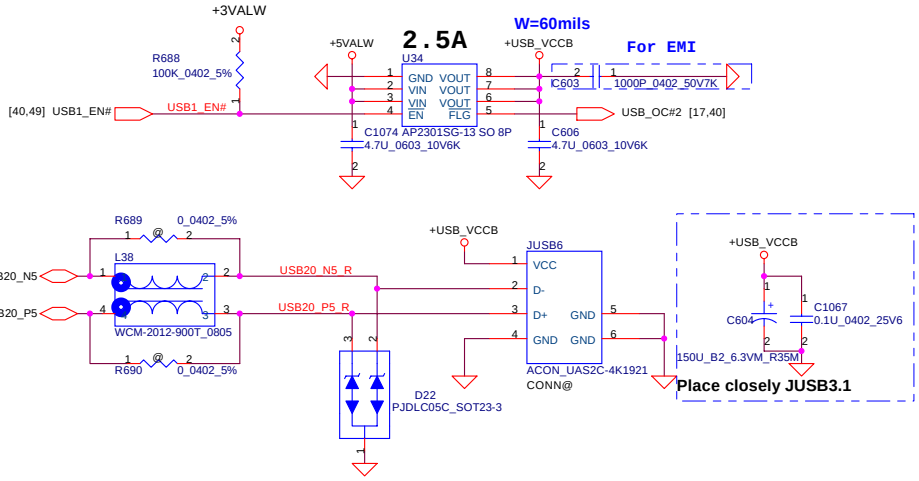
Date: Tuesday, April 12, 2011 Sheet 40 of 64

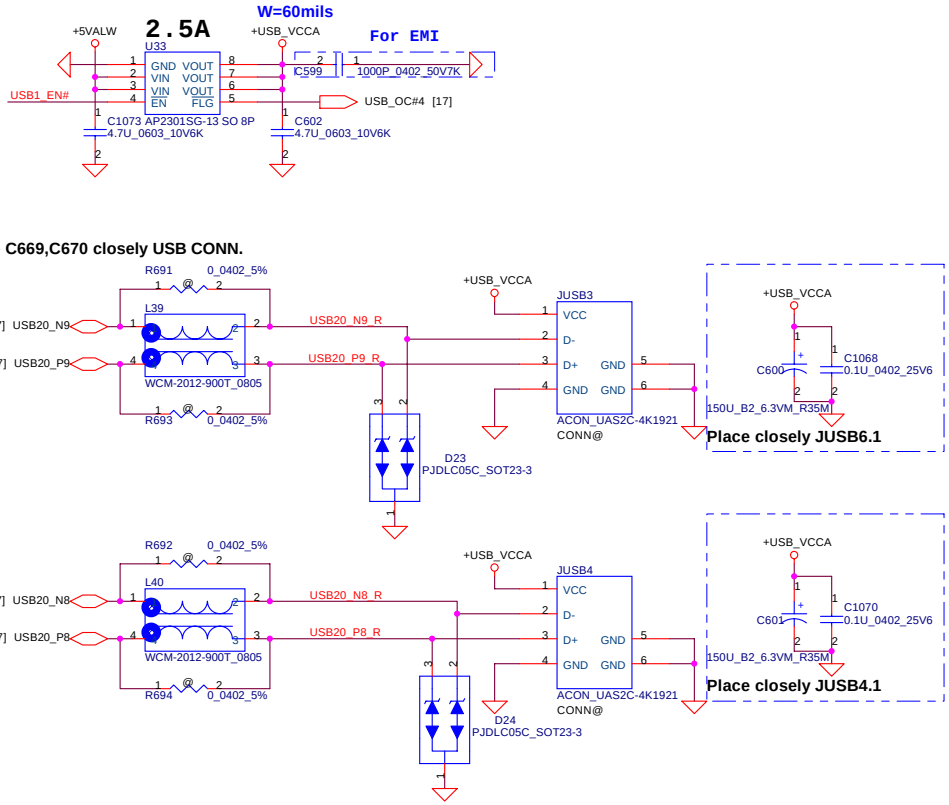
SATA HDD Conn.



SATA ODD Conn

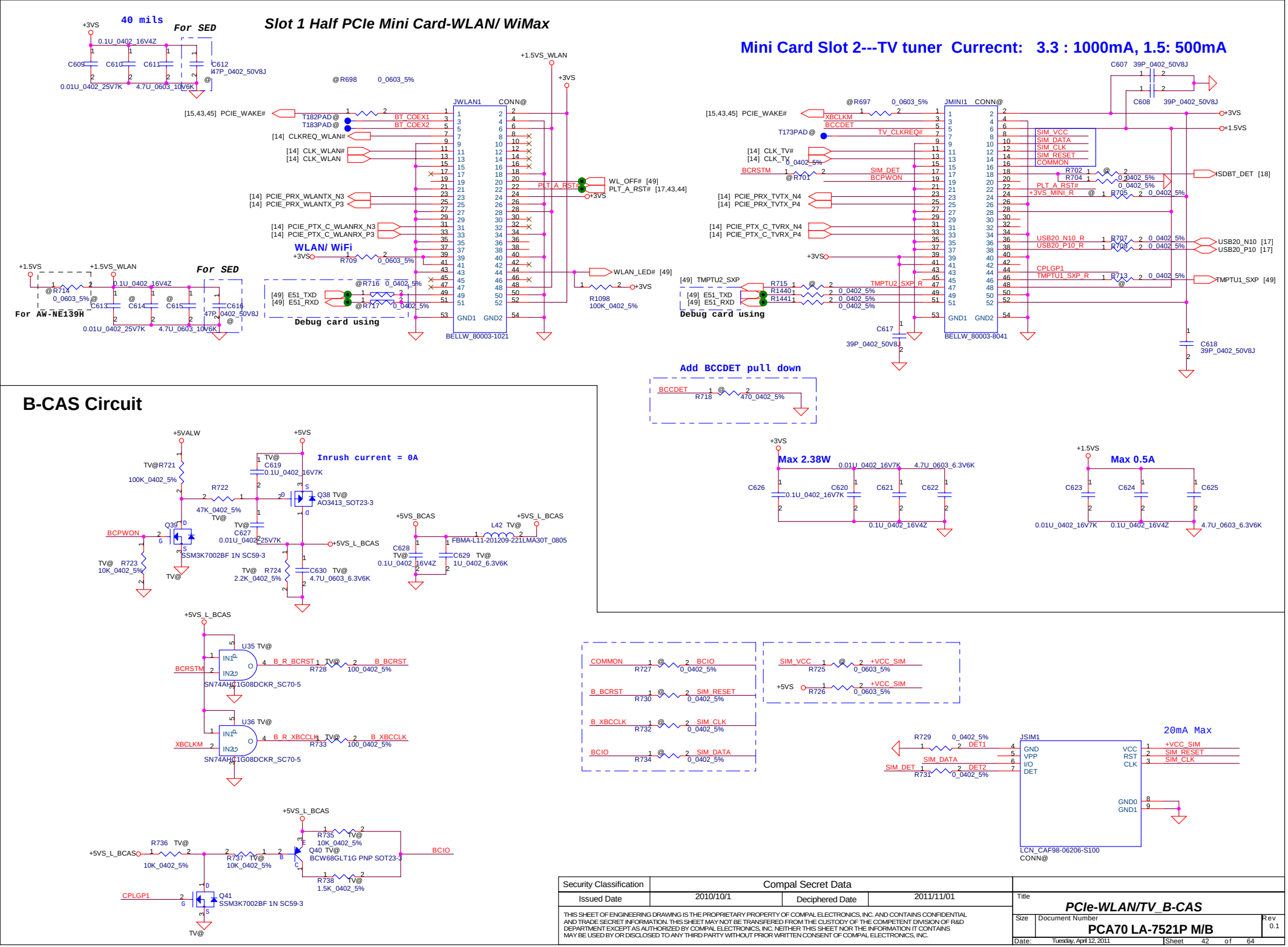






Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.			
Title	SATA-HDD/ODD/USB		
Size	Document Number		Rev
	PCA70 LA-7521P M/B		0.1
Date: Tuesday, April 12, 2011	Sheet 41 of 64		

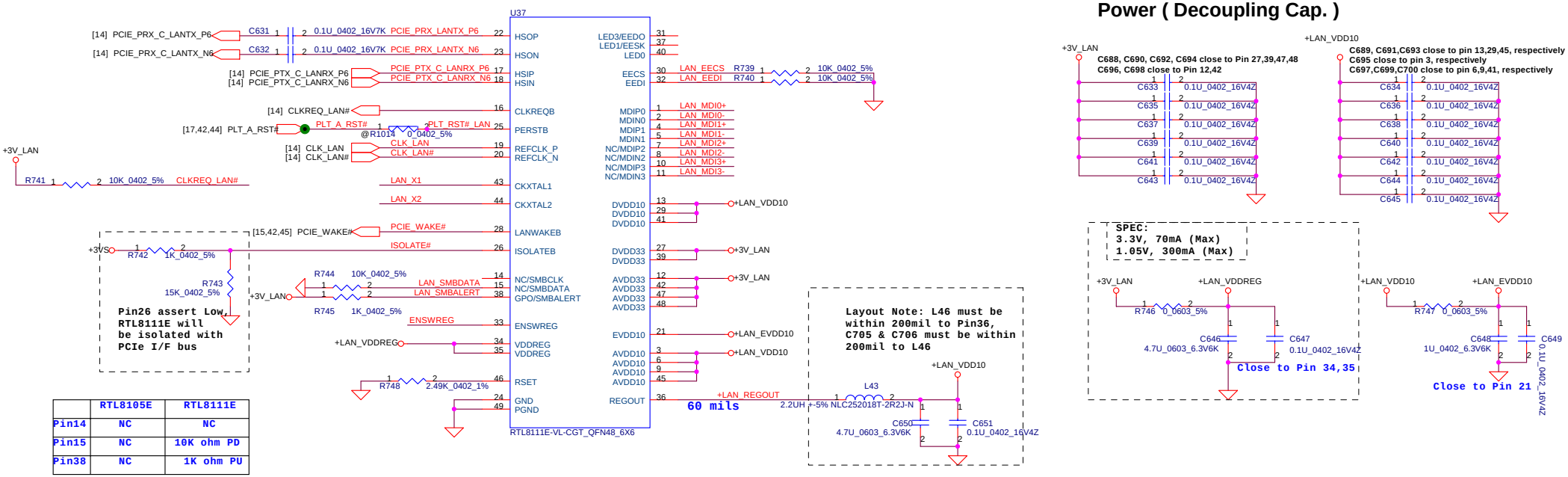


Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Title: **PCIe-WLAN/TV_B-CAS**

Size	Document Number	Rev
	PCA70 LA-7521P M/B	0.1

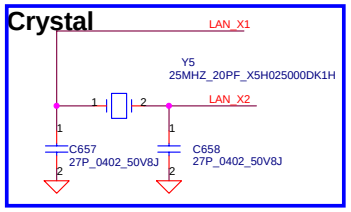
Date: Tuesday, April 12, 2011 Sheet 42 of 64

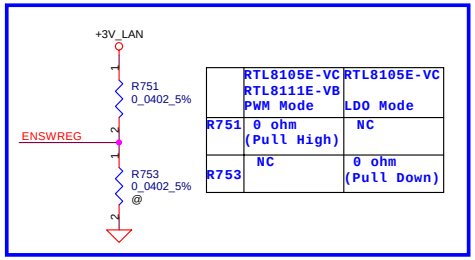


	RTL8105E	RTL8111E
Pin14	NC	NC
Pin15	NC	10K ohm PD
Pin38	NC	1K ohm PU

Power (Decoupling Cap.)

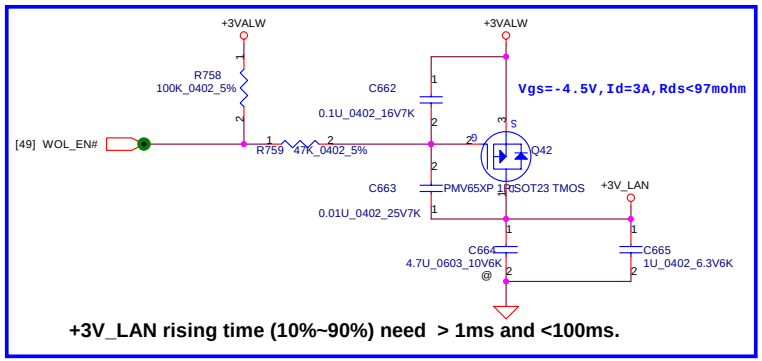
Crystal





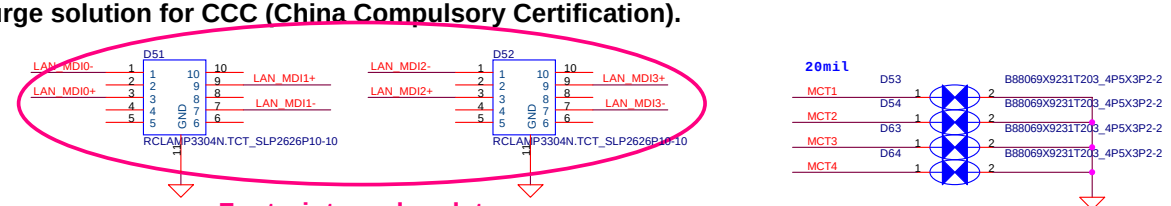
	RTL8105E-VC RTL8111E-VB PWM Mode	RTL8105E-VC LDO Mode
R751	0 ohm (Pull High)	NC
R753	NC	0 ohm (Pull Down)

WOL circuit (Connect +3V_LAN to +3VALW)



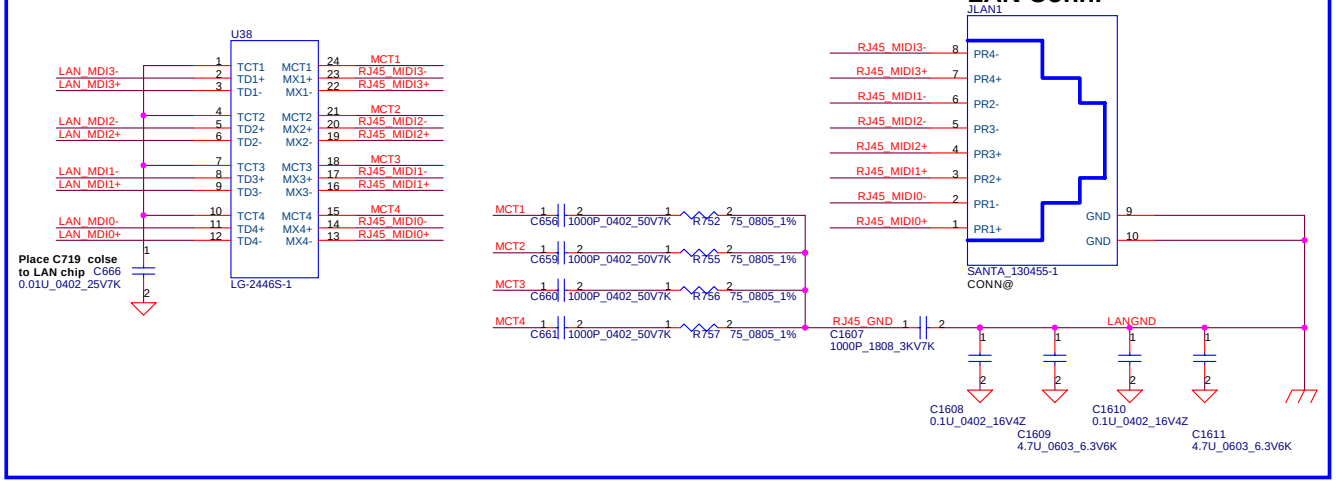
+3V_LAN rising time (10%~90%) need > 1ms and <100ms.

EMI surge solution for CCC (China Compulsory Certification).



Footprint need update

LAN Conn.



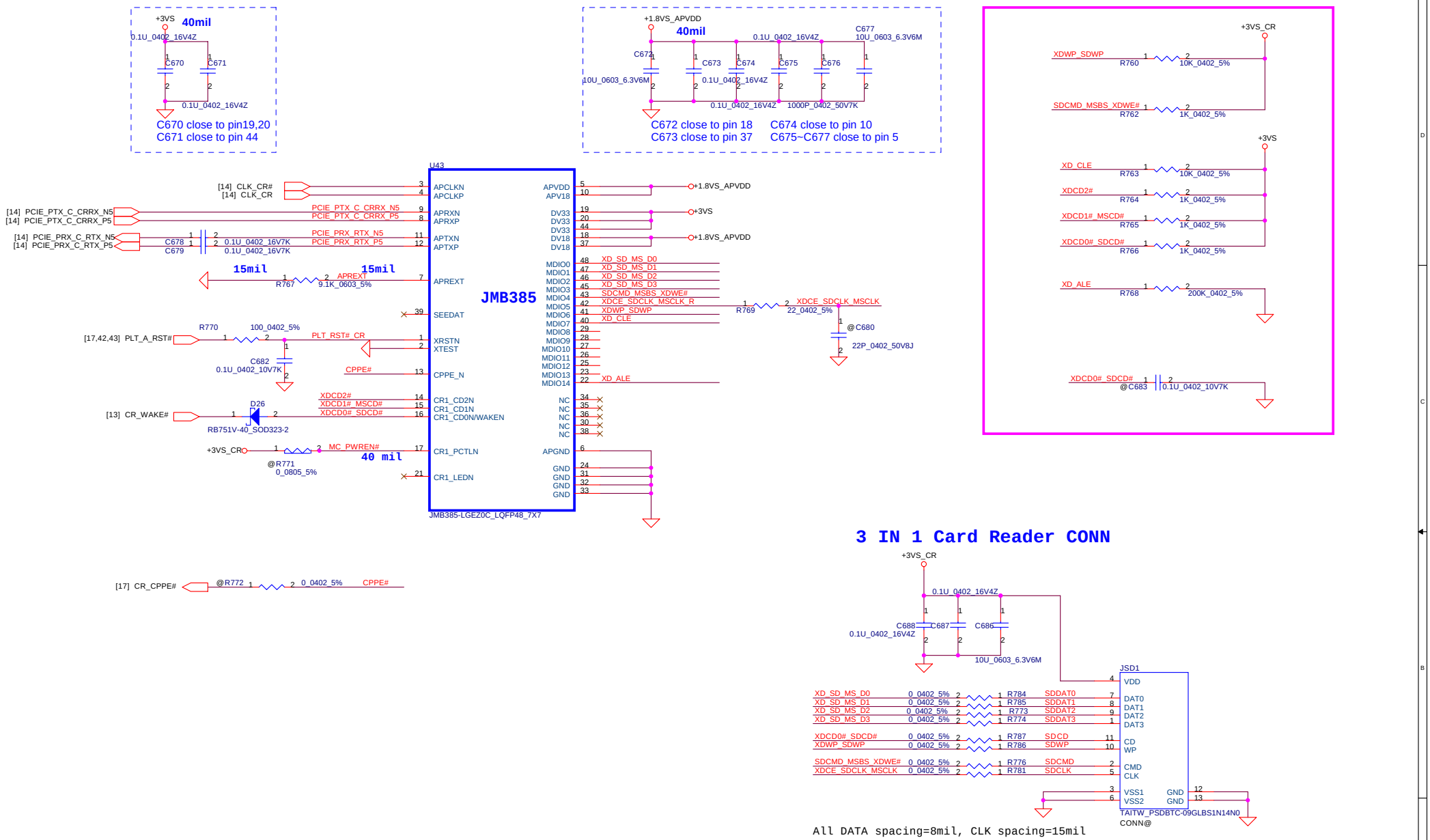
Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: PCIe-LAN-RTL8111E

Size: Custom | Document Number | Rev 0.1

Date: Tuesday, April 12, 2011 | Sheet 43 of 64



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: **JMB385 Media Card Controller**

Size	Document Number	Rev
Custom	PCA70 LA-7521P M/B	0.1

Date: Tuesday, April 12, 2011 | Sheet 44 of 64

USB_PEPWRDET
For WAKE Function

	R809	R826
D3 Hot	@	Mount
D3 Cold	Mount	@

update PEPWRDET at D3 hot mode pull low

USB_PESEL

	R808	R825
Other applaction	Mount	@
Express Card/Mini Card	@	Mount

Close to ASM1042

U44 ASM1042 (TQFN 64)
ASM1042_TQFN64_9X9
USB30@

U45 MX25L5121EMC-20G SOP 8P
USB30@

Power On Sequence Timing Specification

Symbols	Parameter	Min	Max	Unit
t_{VDR}	Rising time for Suspend Power Ready		10	ms
t_{PWRRDY}	Timing for Normal Power Ready	50		ms
t_{PORST1}	Timing for 1.2V/3.3V Normal Power Ready to Power On Reset (D3Cold)	2	80	ms
t_{PORST2}	Timing for 1.2V/3.3V Normal Power Ready to Power On Reset (D3Hot)	50	80	ms
t_{PECLK}	Timing for PE_CLK Ready to PE_RST#	100		μs
t_{CLK}	Timing for 20MHz Crystal Clock Ready to Power On Reset		20	ms
t_{PERST1}	Timing for PE_RST# delay after Normal Power Ready	100		ms
t_{PERST2}	Timing for PE_RST# delay after PORST# comes up	20		ms

Power Sequence

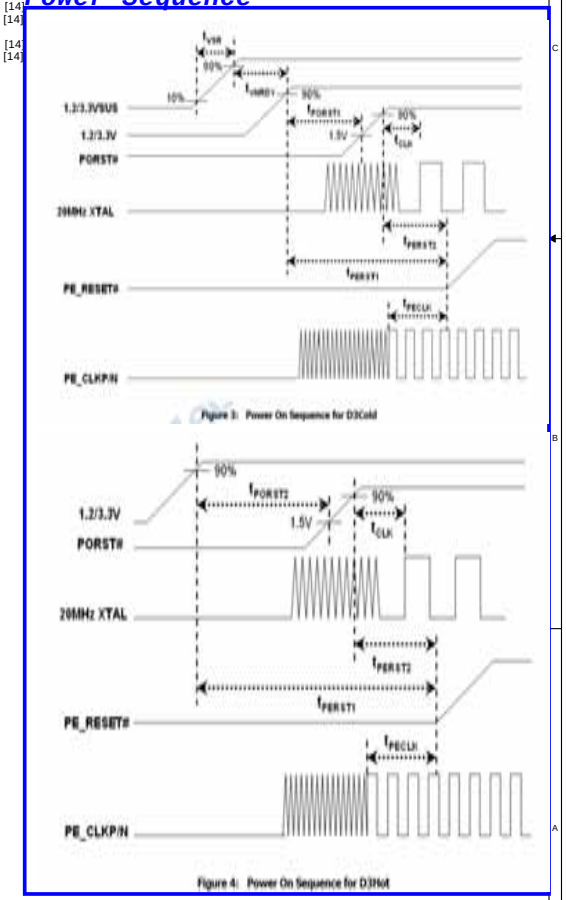


Figure 3: Power On Sequence for D3Cold

Figure 4: Power On Sequence for D3Hot

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: USB3.0

Size: Custom | Document Number: PCA70 LA-7521P M/B | Rev: 0.2

Date: Tuesday, April 12, 2011 | Sheet 45 of 64

For USB2.0 ESD diode

D27 PJUSB208H_SOT23-6

USB20_N1_L, USB20_P1_L, +USB30_VCCA

For USB3.0 ESD diode

D38 YSCLAMP0524P_SLP2510P8-10-9 USB30@

U3TXDP_A_R, U3TXDN_A_R, U3RXDP_A_R_0, U3RXDN_A_R_0

For USB2.0 ESD diode

D28 PJUSB208H_SOT23-6

USB20_N0_L, USB20_P0_L, +USB30_VCCA

For USB3.0 ESD diode

D39 YSCLAMP0524P_SLP2510P8-10-9 USB30@

U3TXDP_B_R, U3TXDN_B_R, U3RXDP_B_R_1, U3RXDN_B_R_1

USB3.0 Port A Connector

[17] USB20_N1 / [45] U2DN_A → USB20@ R880 / USB30@ R881 → USB20_N1_R

[17] USB20_P1 / [45] U2DP_A → USB20@ R882 / USB30@ R883 → USB20_P1_R

Layout placement as close as possable

R879 0_0402_5% @

L49 WCM-2012-900T_0805 USB30@

R884 0_0402_5% @

R885 0_0402_5% @

L50 USB30@ WCM-2012-900T_0805

R888 0_0402_5% @

R889 0_0402_5% @

L51 USB30@ WCM-2012-900T_0805

R890 0_0402_5% @

[45] U3TXDN_A_C → USB30@ C767 0.1U_0402_16V7K → U3TXDN_A

[45] U3TXDP_A_C → USB30@ C768 0.1U_0402_16V7K → U3TXDP_A

must to close to JUSB1

USB20_N1_L, USB20_P1_L, U3RXDN_A_R_0, U3RXDP_A_R_0, U3TXDN_A_R, U3TXDP_A_R

+USB30_VCCA W=60mils

JUSB1 OCTEK_USB-09EAEB CONN@

SSTX+, VBUS, SSTX-, D-, GND, D+, SSRX+, GND, SSRX-

+USB30_VCCA C765 150U_B2_6.3VM_R35M C1071 0.1U_0402_25V6

Place closely JUSB1.1

USB2.0 Connector Co-lay with JUSB1 When USB30 not used

+USB30_VCCA JUSB7 OCTEK_USB-04APEB CONN@

USB20_N1_L, USB20_P1_L, GND

USB3.0 Port B Connector

[17] USB20_N0 / [45] U2DN_B → USB20@ R892 / USB30@ R893 → USB20_N0_R

[17] USB20_P0 / [45] U2DP_B → USB20@ R894 / USB30@ R895 → USB20_P0_R

Layout placement as close as possable

R891 0_0402_5% @

L52 WCM-2012-900T_0805 USB30@

R896 0_0402_5% @

R897 0_0402_5% @

L53 USB30@ WCM-2012-900T_0805

R900 0_0402_5% @

R901 0_0402_5% @

L54 USB30@ WCM-2012-900T_0805

R902 0_0402_5% @

[45] U3TXDN_B_C → USB30@ C769 0.1U_0402_16V7K → U3TXDN_B

[45] U3TXDP_B_C → USB30@ C770 0.1U_0402_16V7K → U3TXDP_B

must to close to JUSB2

USB20_N0_L, USB20_P0_L, U3RXDN_B_R_1, U3RXDP_B_R_1, U3TXDN_B_R, U3TXDP_B_R

+USB30_VCCA W=60mils

JUSB2 OCTEK_USB-09EAEB CONN@

SSTX+, VBUS, SSTX-, D-, GND, D+, SSRX+, GND, SSRX-

+USB30_VCCA C766 150U_B2_6.3VM_R35M C1072 0.1U_0402_25V6

Place closely JUSB2.1

USB2.0 Connector Co-lay with JUSB2 When USB30 not used

+USB30_VCCA JUSB8 OCTEK_USB-04APEB CONN@

USB20_N0_L, USB20_P0_L, GND

+3VALW R1019 0_0402_5% USB2_EN# [49]

R1020 100K_0402_5% USB20@ USB_PPON_A#

[45] USB_PPON_A → USB_PPON_A Q49 SSM3K7002FU_SC70-3 USB30@

+5VALW C713 1U_0603_10V6K

2.5A U46 RT9715BGS_SO8

GND, VIN, EN, VOUT, VOUT, FLG

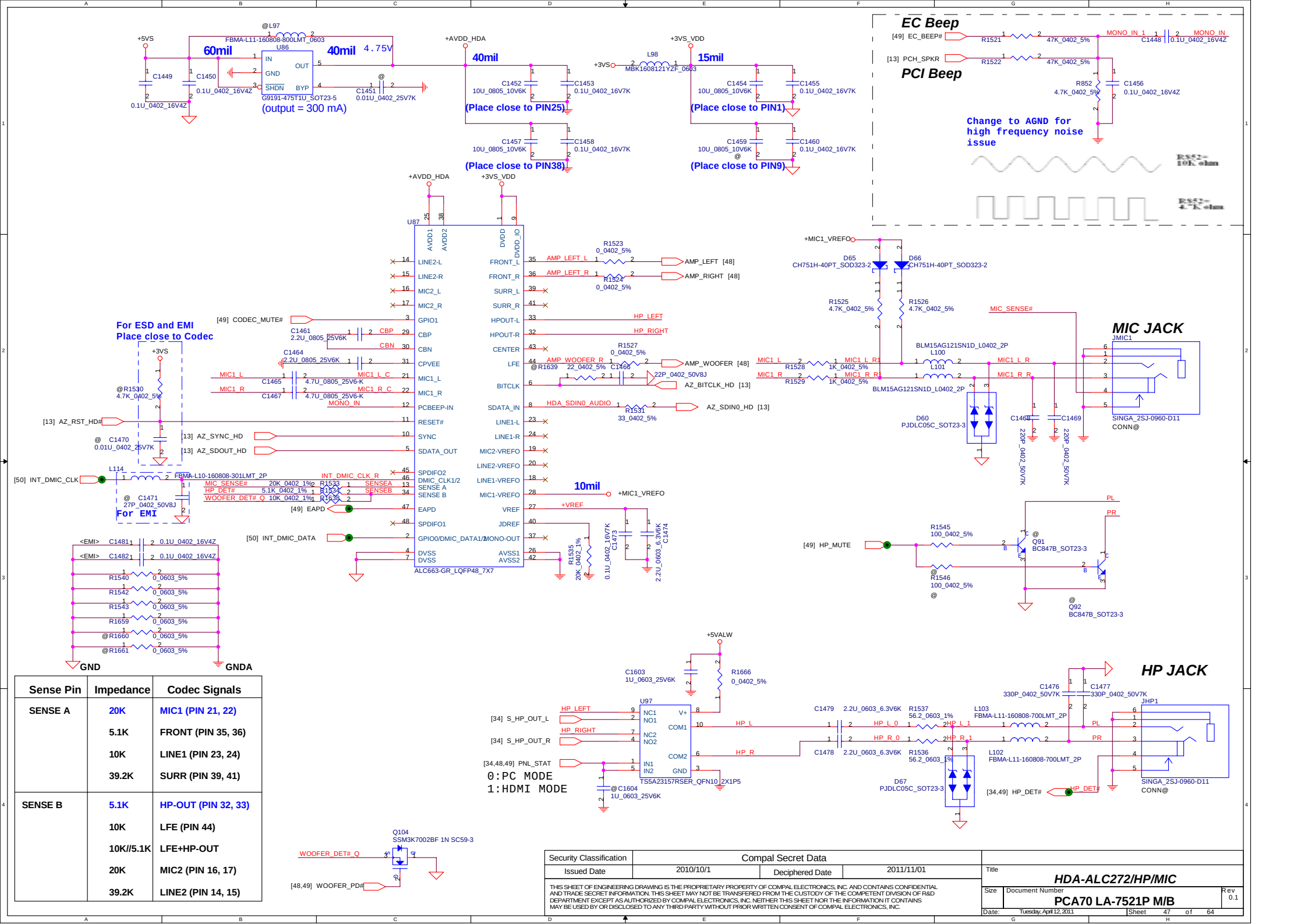
USB_PPON_A# USB_OCI [17,45] USB_OCI

+USB30_VCCA W=60mils

C710 4.7U_0805_10V4Z C711 0.1U_0402_16V4Z C712 1000P_0402_50V7K

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Title	USB3.0 CONN		
Size	Document Number	PCA70 LA-7521P M/B	Rev 0.1
Date:	Tuesday, April 12, 2011	Sheet 46 of 64	



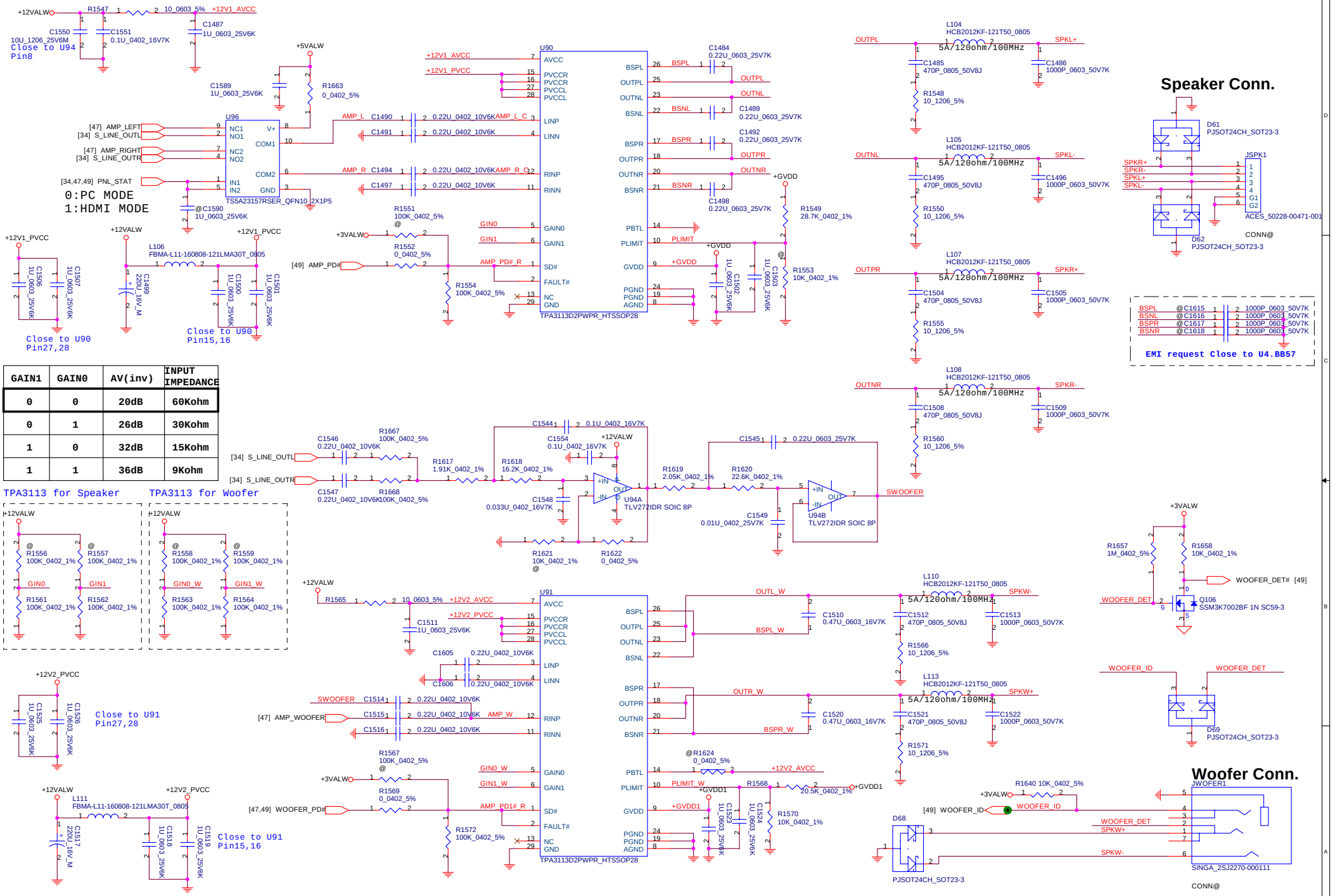
Sense Pin	Impedance	Codec Signals
SENSE A	20K	MIC1 (PIN 21, 22)
	5.1K	FRONT (PIN 35, 36)
	10K	LINE1 (PIN 23, 24)
	39.2K	SURR (PIN 39, 41)
SENSE B	5.1K	HP-OUT (PIN 32, 33)
	10K	LFE (PIN 44)
	10K//5.1K	LFE+HP-OUT
	20K	MIC2 (PIN 16, 17)
	39.2K	LINE2 (PIN 14, 15)

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Title: HDA-ALC272/HP/MIC

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

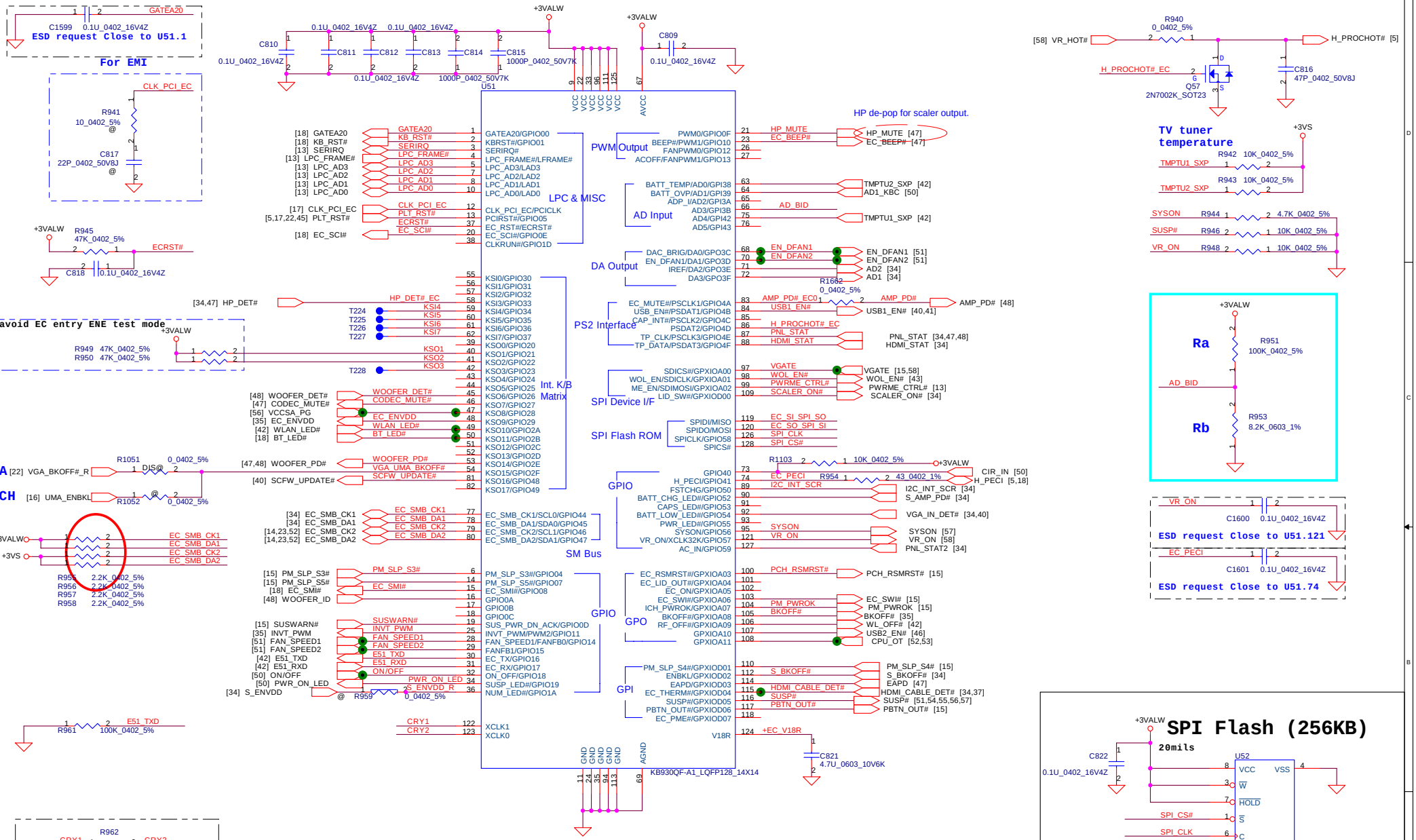
Date: Tuesday, April 12, 2011 | Sheet 47 of 64



GAIN1	GAIN0	AV(inv)	INPUT IMPEDANCE
0	0	20dB	60Kohm
0	1	26dB	30Kohm
1	0	32dB	15Kohm
1	1	36dB	9Kohm

Security Classification	Compal Secret Data		
Issued Date	2010/04/14	Deciphered Date	2011/04/14

Compal Electronics, Inc.			
Title: AMP & Audio Jack			
Size: Custom	Document Number: PCA70 LA-7521P M/B		Rev: 1.0
Date: Tuesday, April 12, 2011		Sheet 48 of 64	



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

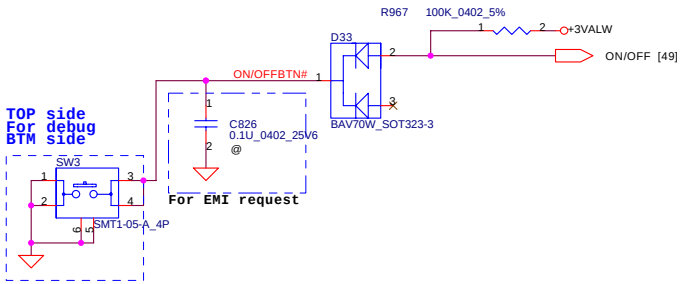
Compal Electronics, Inc.

Title: **LPC-EC-KB930**

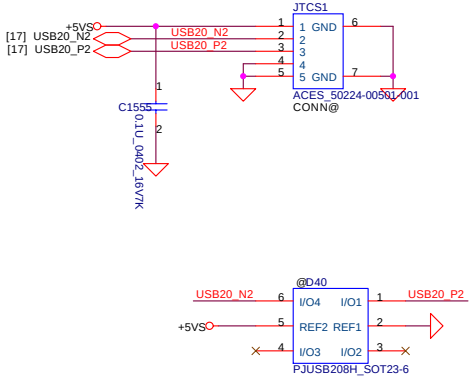
Size: | Document Number: **PCA70 LA-7521P M/B** | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 49 of 64

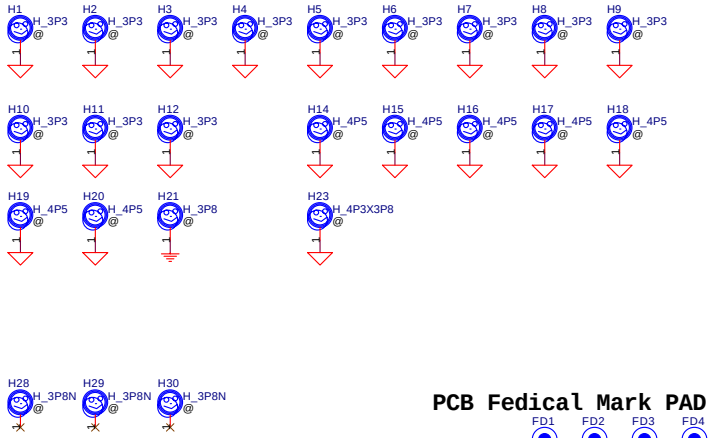
Power Button



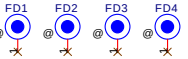
Touchscreen



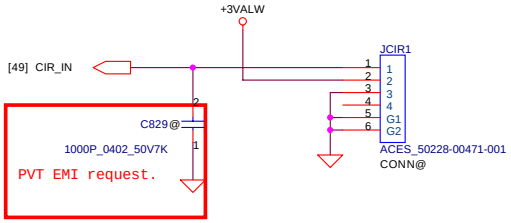
Screw Hole



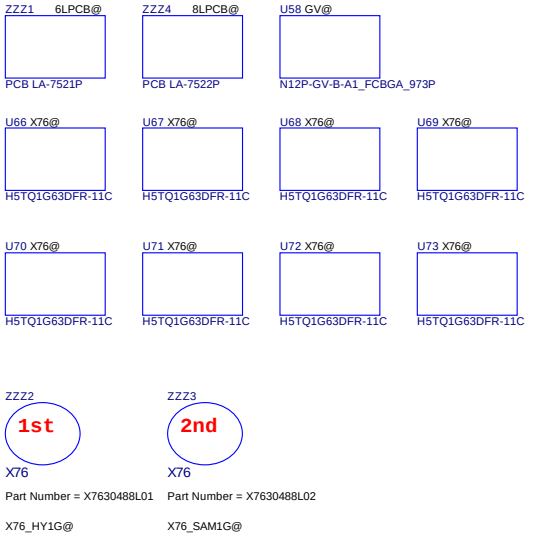
PCB Fedical Mark PAD



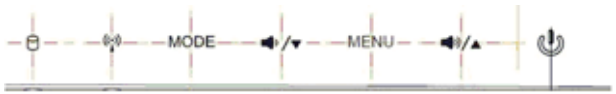
CIR

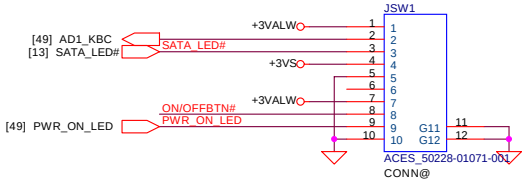


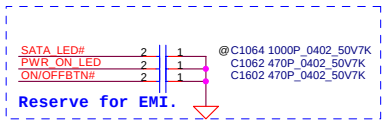
ISPD



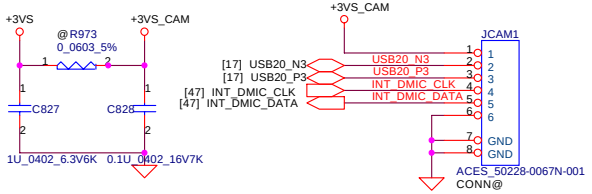
CAP Button/B Connector

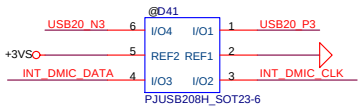






CAM





Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Title: PWR/Cap./TP/LED/LP/LS/Screw

Size | Document Number: PCA70 LA-7521P M/B | Rev: 0.1

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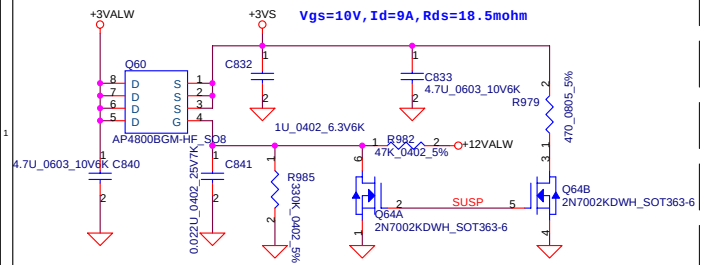
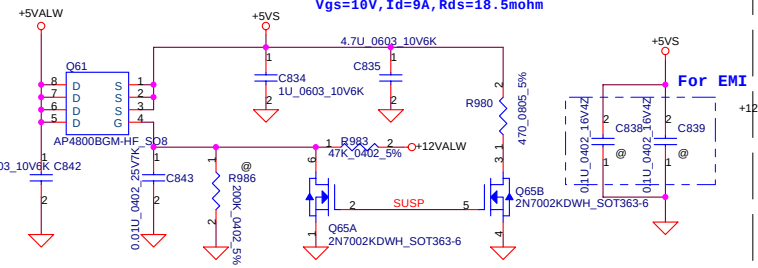
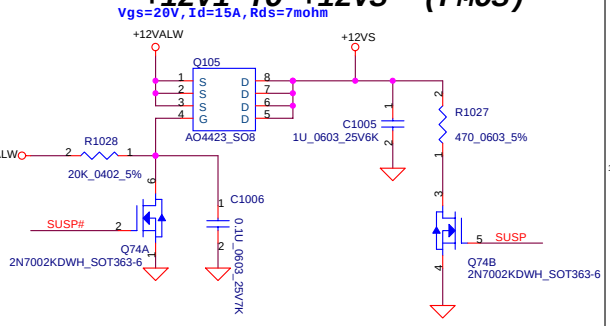
+3VALW TO +3VS



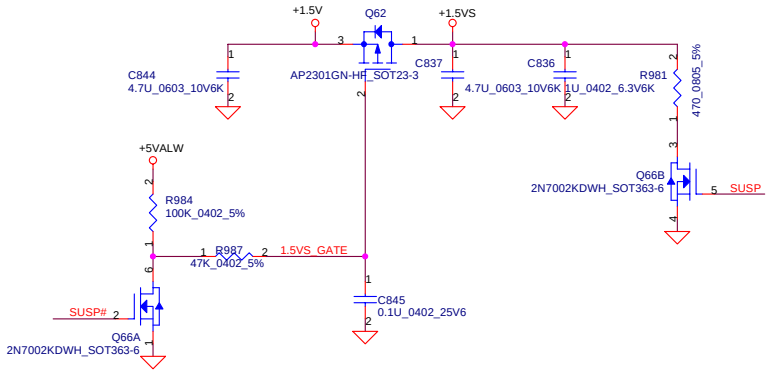
+5VALW TO +5VS



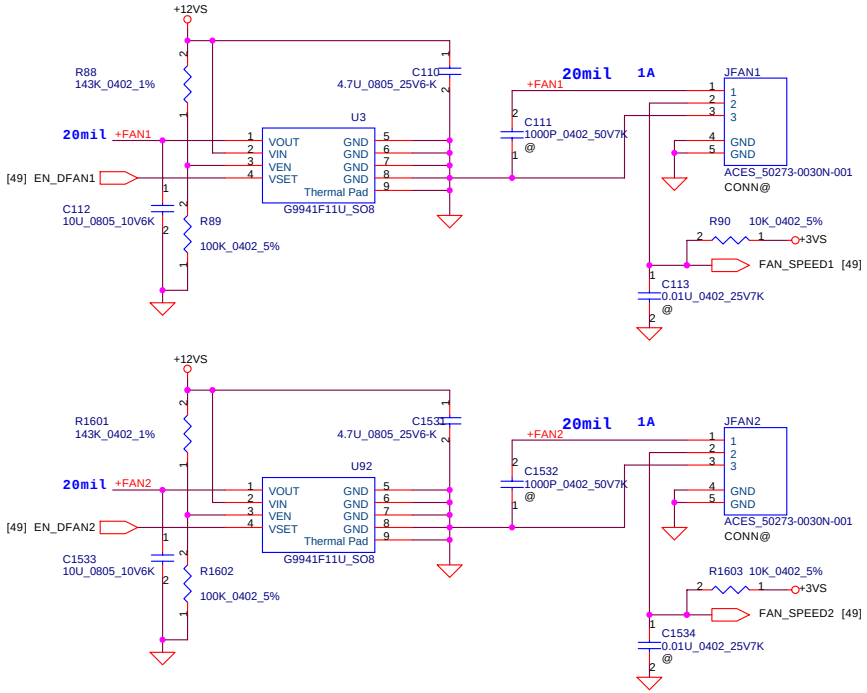
+12V1 TO +12VS (PMOS)



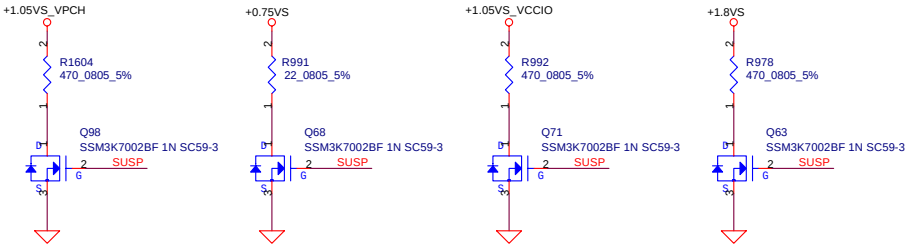
+1.5V to +1.5VS

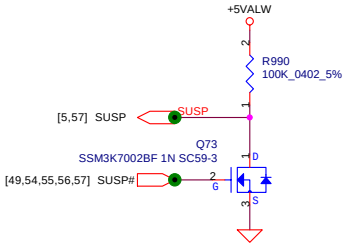


FAN Control Circuit



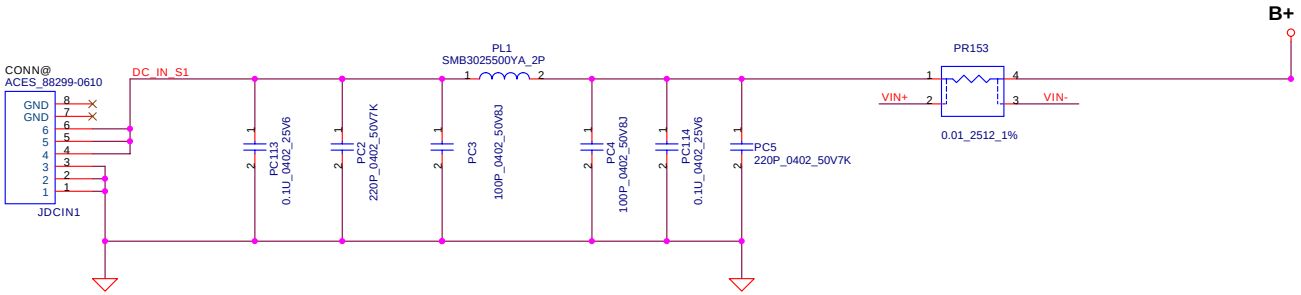
Discharge circuit

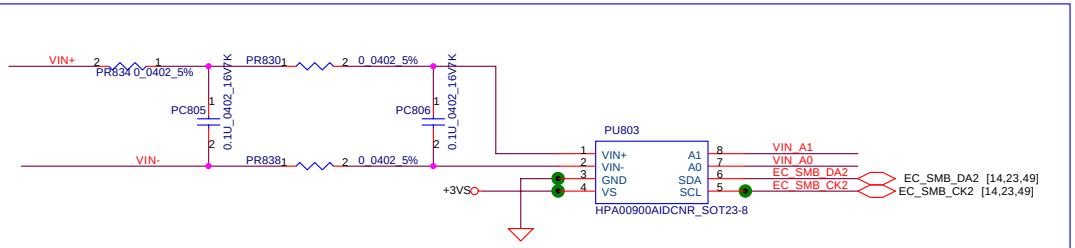


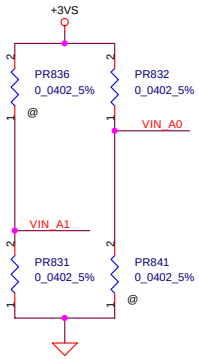


Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.			
Title	DC-DC INTERFACE		
Size	Document Number	PCA70 LA-7521P M/B	Rev 0.1
Date: Tuesday, April 12, 2011	Sheet 51 of 64		

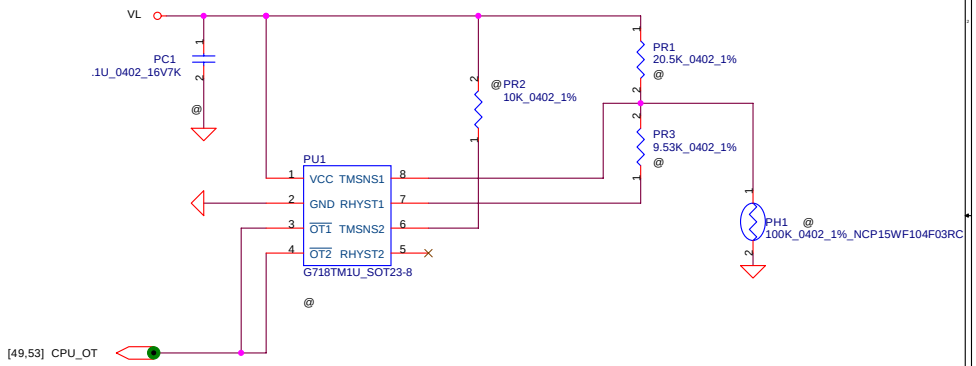


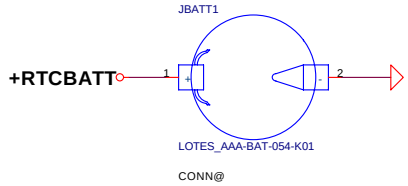




Current sense solution 2

Ventura for CPU side
slave address : 1000001
please placemnet near R-sense





Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: **P51_PWR_DC-IN**

Size | Document Number: **PCA70 LA-7521P M/B** | Rev: 0.1

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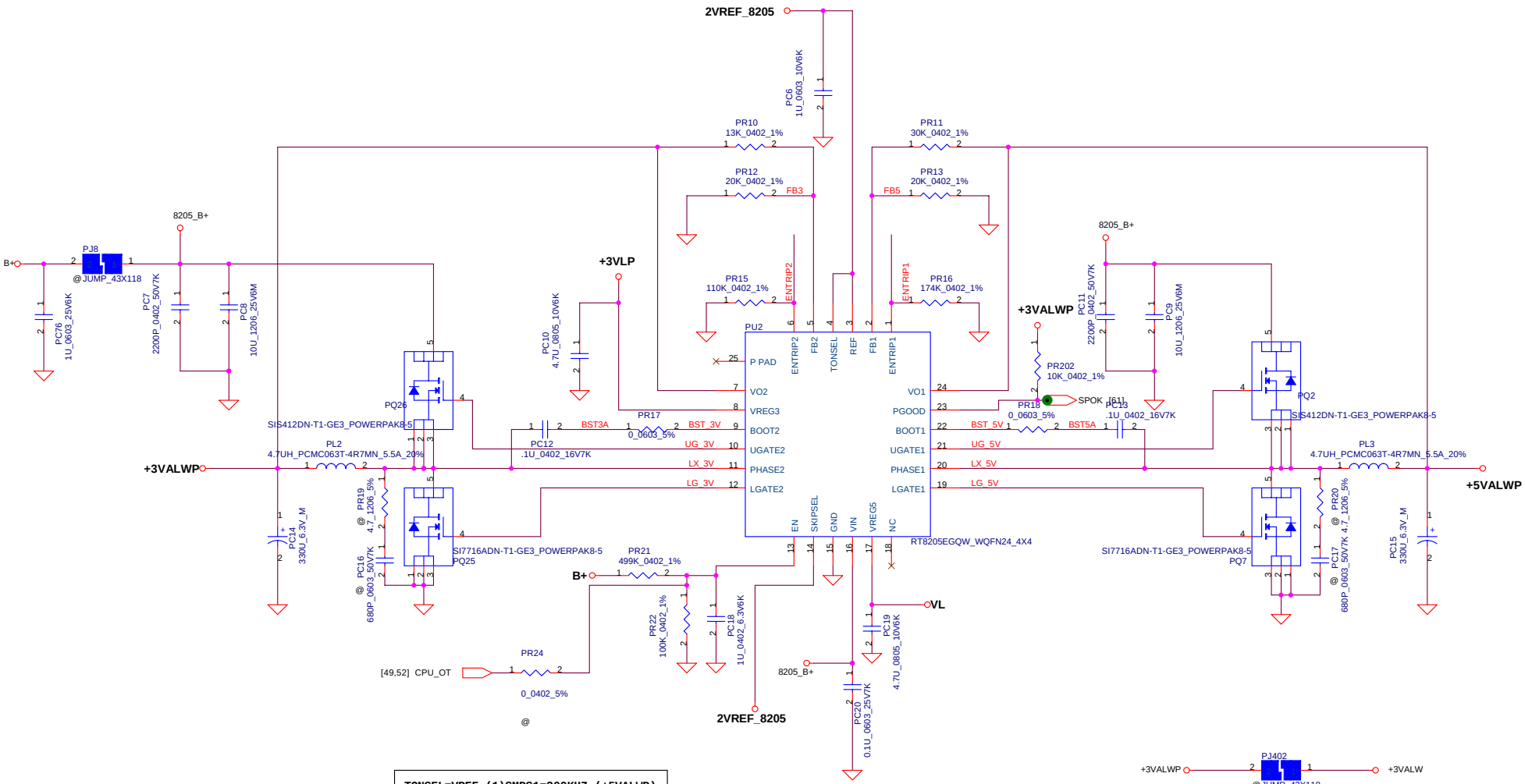


TONSEL=VREF (1)SMPS1=300KHZ (+5VALWP)
(2)SMPS2=375KHZ(+3VALWP)

+3.3VALWP
Ipeak=5.71A ; 1.2Ipeak=6.852A; Imax=3.997A
f=375KHz, L=4.7UH
Rdson=15~18m ohm
1/2Delta I = 1/2 *(19-3.3)*(3.3/19)/(375KHz*4.7UH)=0.773A
Vlimit=10*10^-6*110Kohm/10=0.11V
Ilimit=0.11/(18m*1.2)~0.11/(15m)=6.34A~9.13A
Iocp=7.113A~10.073A (7.113A>6.852A -> ok) -DVT-

+5VALWP
Ipeak=7.376A ; 1.2Ipeak=8.85A; Imax=5.16A
f=300KHz, L=4.7UH,Rentrip=174k ohm
Rdson=15~18m ohm
1/2Delta I = 1/2 *(19-5)*(5/19)/(300KHz*4.7UH)=1.306A
Vlimit=10*(10^-6)*174Kohm/10=0.174V
Ilimit=0.174/(18m*1.2)~0.174/(15m)=8.055~11.6A
Iocp=9.361~12.906A (9.361>8.85 -> OK)

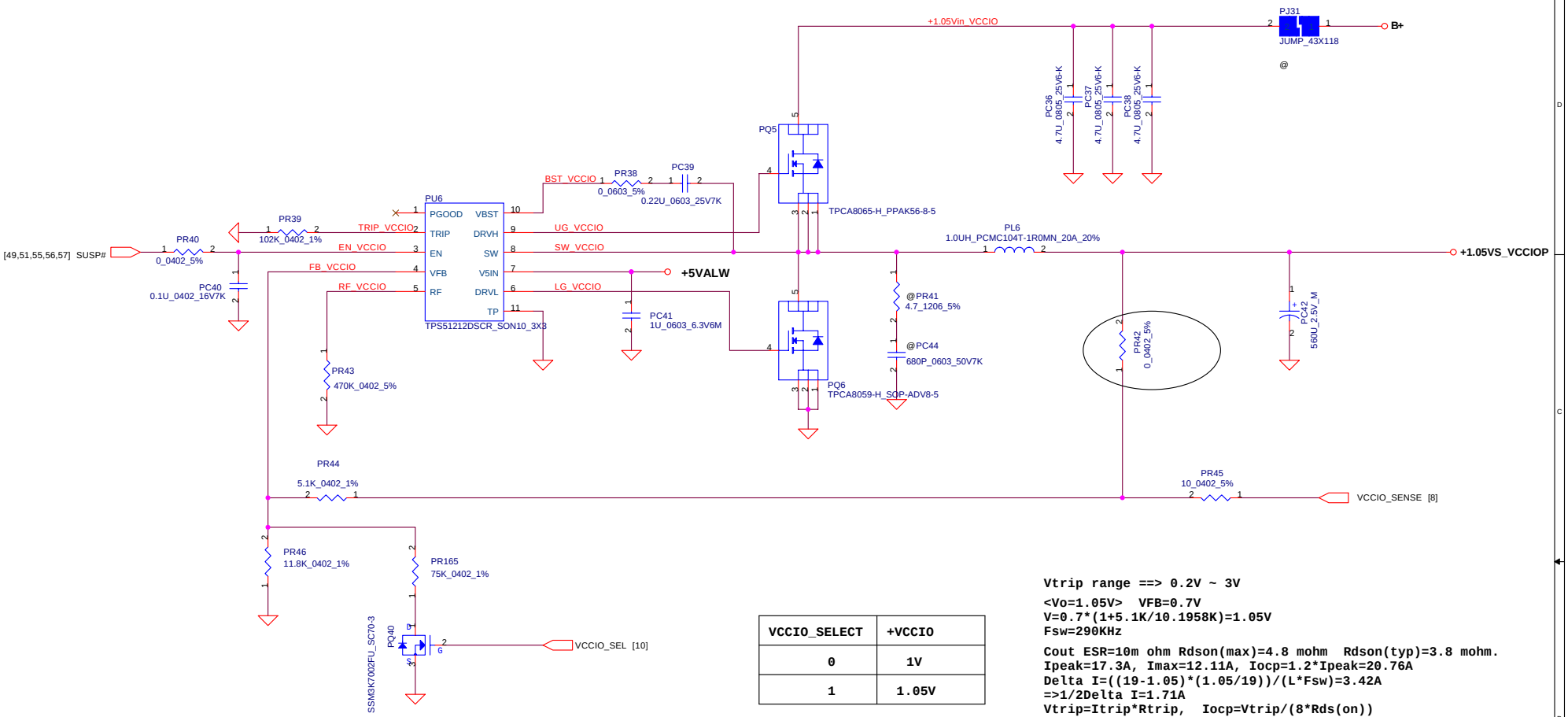
Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: **P52-PWR-+3VALW/+5VALW**

Size	Document Number	Rev
	PCA70 LA-7521P M/B	0.1

Date: Tuesday, April 12, 2011 | Sheet 53 of 64



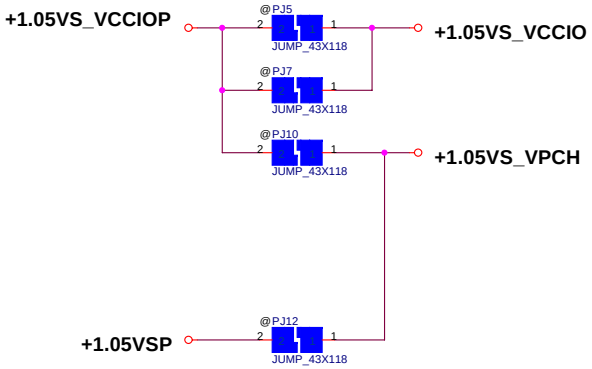
VCCIO_SELECT	+VCCIO
0	1V
1	1.05V

Vtrip range ==> 0.2V ~ 3V

<Vo=1.05V> VFB=0.7V
V=0.7*(1+5.1K/10.1958K)=1.05V
Fsw=290KHz

Cout ESR=10m ohm Rdson(max)=4.8 mohm Rdson(typ)=3.8 mohm.
Ipeak=17.3A, Imax=12.11A, Iocp=1.2*Ipeak=20.76A
Delta I=((19-1.05)*(1.05/19))/(L*Fsw)=3.42A
=>1/2Delta I=1.71A
Vtrip=Itrip*Rtrip, Iocp=Vtrip/(8*Rds(on))
Iocpmax=((102K*11uA)/(8*0.0038))+1.71A=38.617A
Iocpmin=((102K*9uA)/(8*0.0048))+1.71A=25.616A
Iocp=25.616A~38.617A

(17A,680mils ,Via NO.=34)



<Vo=1.0V> VFB=0.7V
V=0.7*(1+5.1K/11.8K)=1.0V
Fsw=290KHz

Cout ESR=10m ohm Rdson(max)=4.8 mohm Rdson(typ)=3.8 mohm.
Ipeak=17.3A, Imax=12.11A, Iocp=1.2*Ipeak=20.76A
Delta I=((19-1.0)*(1.0/19))/(L*Fsw)=3.266A
=>1/2Delta I=1.633A
Vtrip=Itrip*Rtrip, Iocp=Vtrip/(8*Rds(on))
Iocpmax=((102K*11uA)/(8*0.0038))+1.633A=38.54A
Iocpmin=((102K*9uA)/(8*0.0048))+1.633A=25.539A
Iocp=25.539A~38.54A

Security Classification	Compal Secret Data		
Issued Date	2009/11/13	Deciphered Date	2009/04/28

Compal Electronics, Inc.

Title: *+1.05VSP*

Size	Document Number	Rev
	PCA60/70 LA-7001P M/B	0.1

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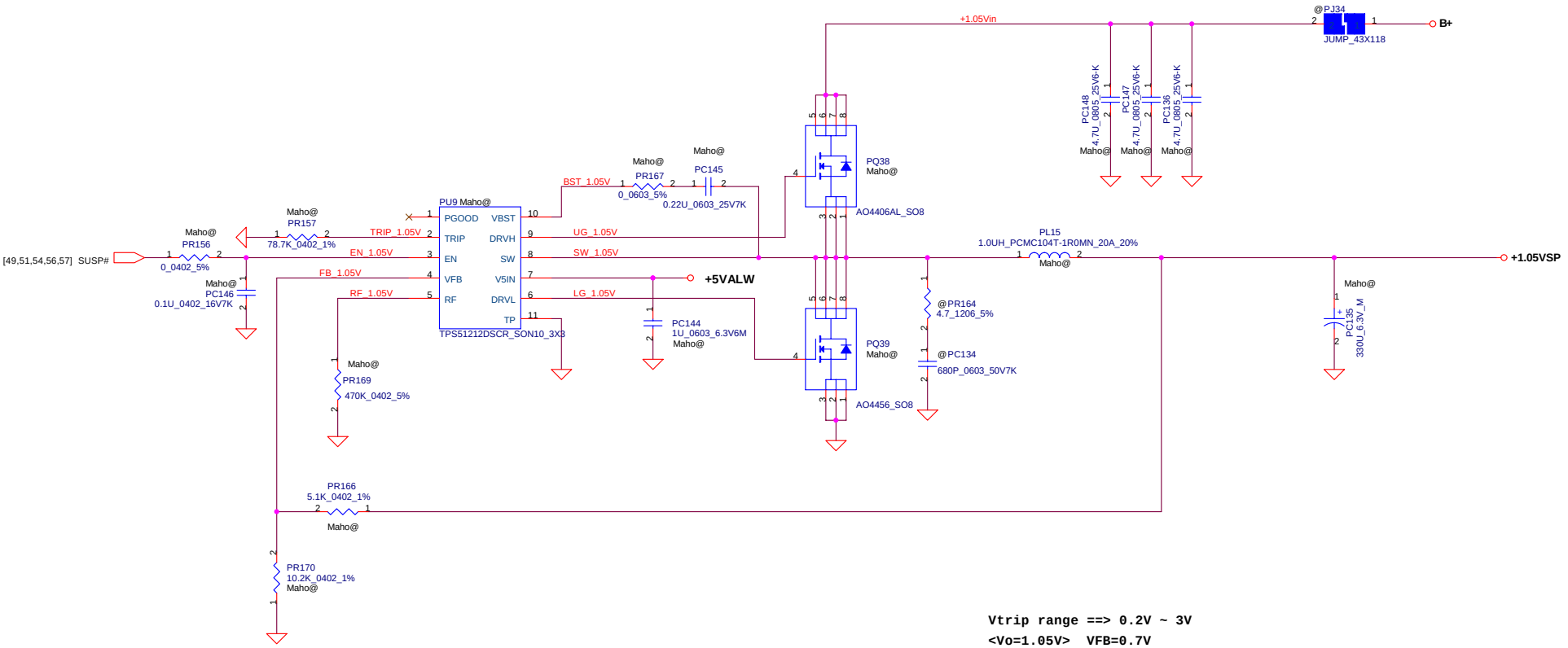


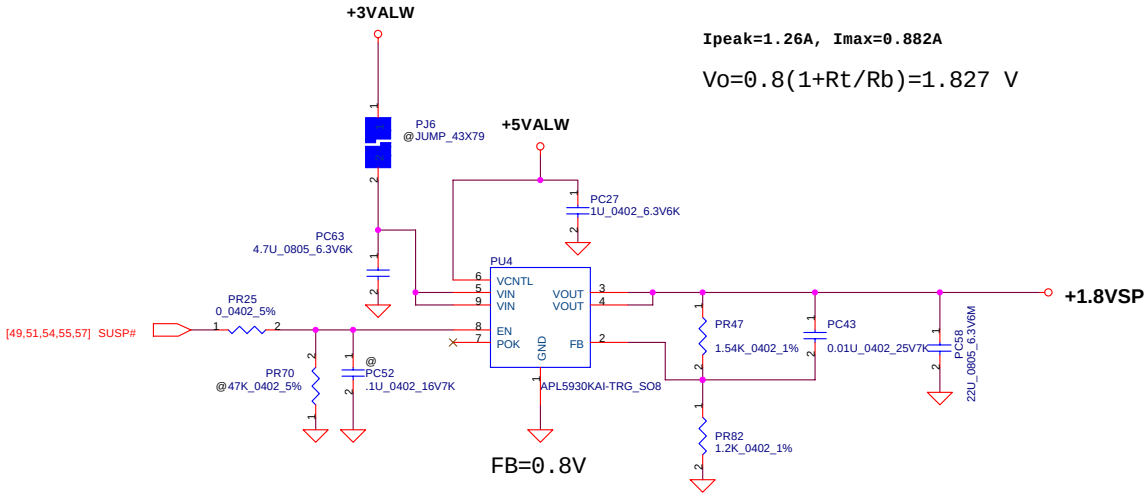
Vtrip range ==> 0.2V ~ 3V

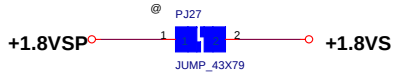
<Vo=1.05V> VFB=0.7V
V=0.7*(1+5.1K/10.2K)=1.05V
Fsw=290KHz

Cout ESR=10m ohm Rdson(max)=5.6 mohm Rdson(typ)=4.5 mohm.
Ipeak=7.3A, Imax=5.11A, Iocp=1.2*Ipeak=8.76A
Delta I=((19-1.05)*(1.05/19))/(L*Fsw)=3.42A
=>1/2Delta I=1.71A
Vtrip=Itrip*Rtrip, Iocp=Vtrip/(8*Rds(on))
Iocpmax=((78.7K*11uA)/(8*0.0045))+1.71A=25.75A
Iocpmin=((78.7K*9uA)/(8*0.0056*1.3))+1.71A=13.871A
Iocp=13.871A~25.75A

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

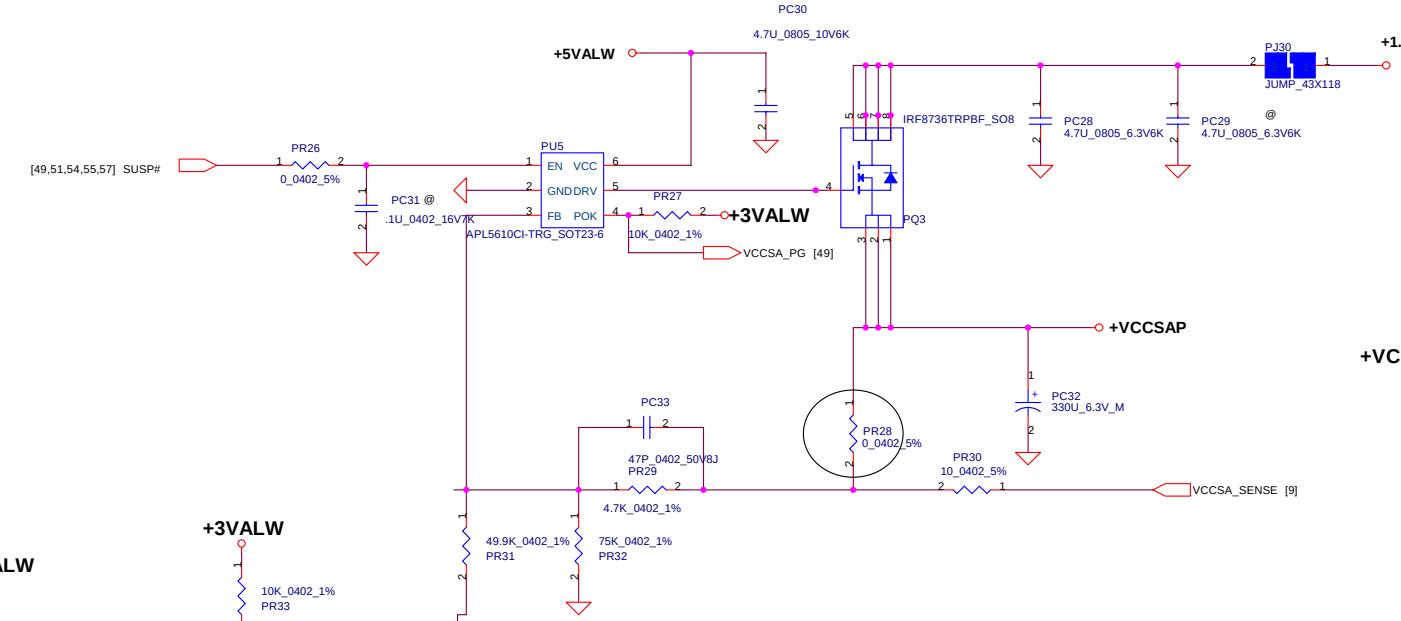
Compal Electronics, Inc.	
Title	P54_PWR-+1.05VSP
Size	Document Number: PCA70 LA-7521P M/B
Rev	0.1
Date: Tuesday, April 12, 2011	Sheet 55 of 64





3.3A,140mils ,Via NO.= 7

Ipeak=8.8A
Imax=6.2A
Toatal Capacitor ??u
ESR=15mohm
Vout=0.8(1+Rt/Rb)

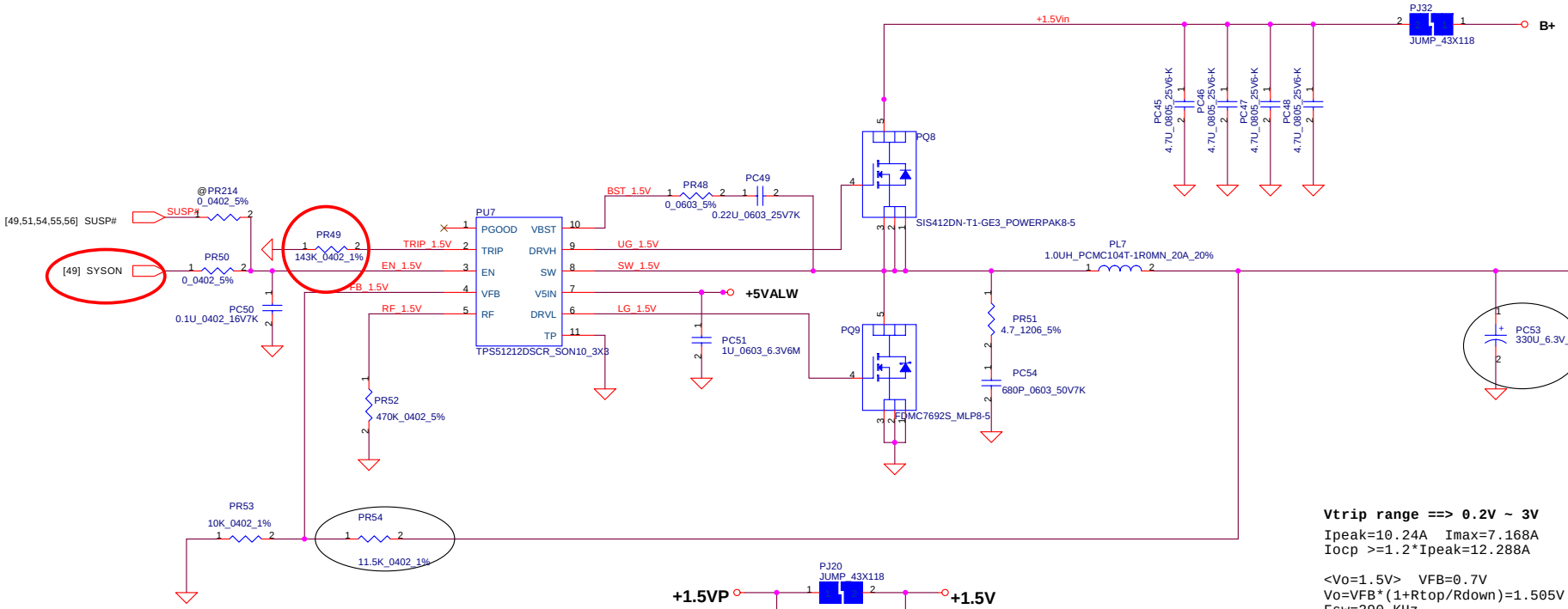


(6A,240mils ,Via NO.= 12)

VCCSA_VID	+VCCSAP
0	0.925V
1	0.85V

Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2009/04/28

Title	+VCCSA/+1.8VSP		
Size Custom	Document Number PCA60/70 LA-7001P M/B		Rev 0.1
Date: Tuesday, April 12, 2011	Sheet 56 of 64		

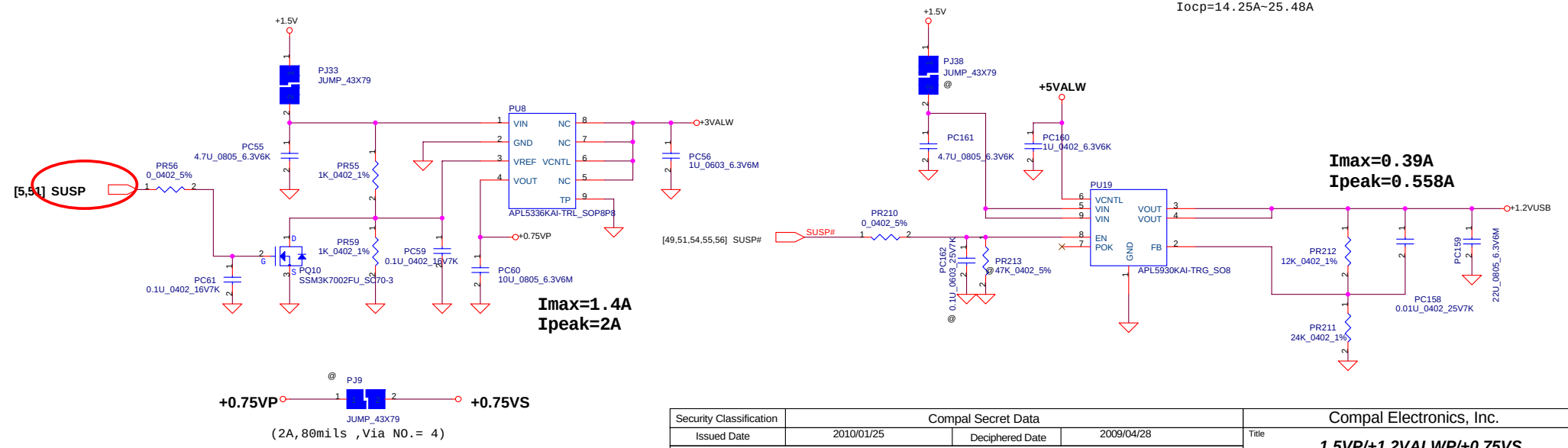


Vtrip range ==> 0.2V ~ 3V

```
Ipeak=10.24A  Imax=7.168A
Iocp >=1.2*Ipeak=12.288A

<Vo=1.5V>  VFB=0.7V
Vo=VFB*(1+Rtop/Rdown)=1.505V
Fsw=290 KHz
Cout ESR=15m ohm Rdson(max)=5.6m ohm, Rdson(typ)=4.5 mohm

Delta I=((19-1.5)*(1.5/19))/(1u*290 K)=4.764 A
=>1/2DeltaI=2.382A
Vtrip=Itrip*Rtrip,  Iocp=Vtrip/(8*Rds(on))
Iocpmax=((76.8K*11uA)/(8*0.0045))+2.382A=25.848A
 Iocpmin=((76.8K*9uA)/(8*0.0056*1.3))+2.382A=14.25A
Iocp=14.25A~25.48A
```



Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2009/04/28

Compal Electronics, Inc.

Title: *1.5VP/+1.2VALWP/+0.75VS*

Size	Document Number	Rev
Custom	PCA60/70 LA-7001P M/B	0.1

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CPU CORE OCP: 90A-----65W
136A----95W

65W CPU IMAX=75A

95W CPU IMAX=112A

Iout_MAX=35A

GFX OCP:42A

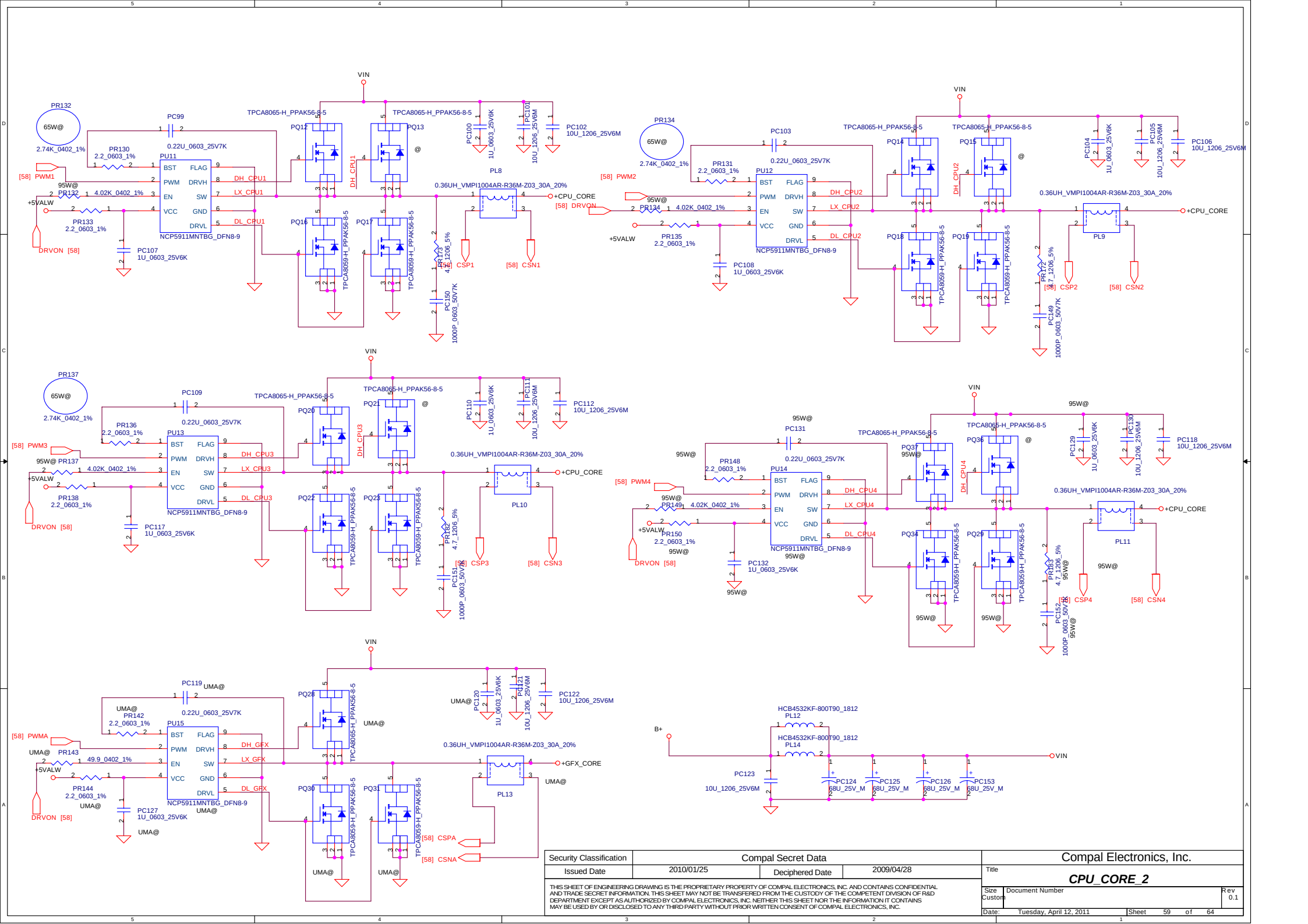
ESD request Close to PU10.9

Security Classification	Compal Secret Data		Compal Electronics, Inc.
Issued Date	2010/01/25	Deciphered Date	2009/04/28

Title: *CPU_CORE_1*

Size: C | Document Number: PCA60/70 LA-7001P M/B | Rev: 0.1

Date: Tuesday, April 12, 2011 | Sheet 58 of 64



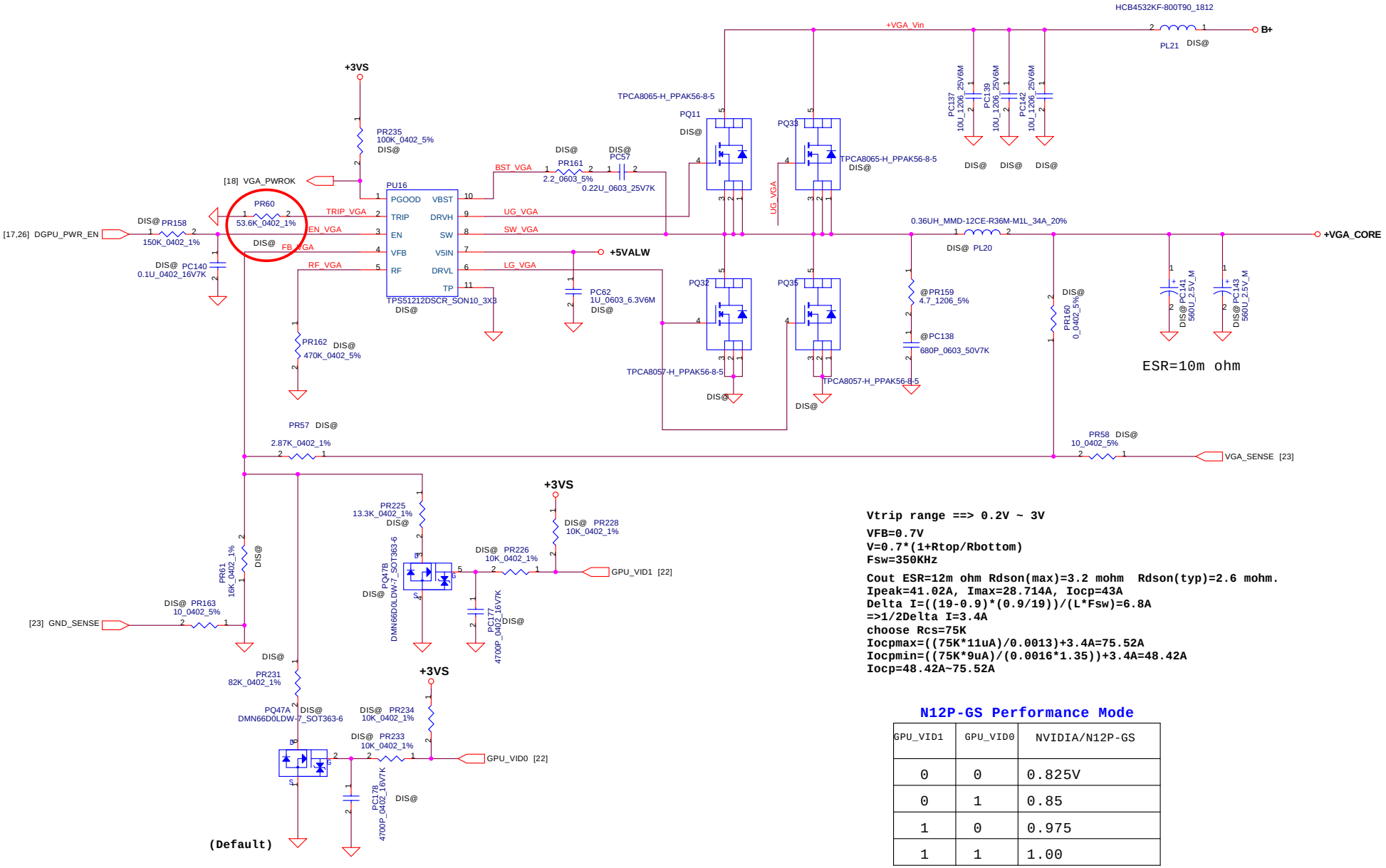
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2009/04/28

Compal Electronics, Inc.

Title: **CPU_CORE_2**

Size	Document Number	Rev
Custom		0.1

Date: Tuesday, April 12, 2011 | Sheet 59 of 64



Vtrip range ==> 0.2V ~ 3V

VFB=0.7V
V=0.7*(1+Rtop/Rbottom)
Fsw=350KHz

Cout ESR=12m ohm Rdson(max)=3.2 mohm Rdson(typ)=2.6 mohm.
Ipeak=41.02A, Imax=28.714A, Iocp=43A
Delta I=((19-0.9)*(0.9/19))/(L*Fsw)=6.8A
=>1/2Delta I=3.4A
choose Rcs=75K
Iocpmax=((75K*11uA)/0.0013)+3.4A=75.52A
Iocpmin=((75K*9uA)/(0.0016*1.35))+3.4A=48.42A
Iocp=48.42A~75.52A

N12P-GS Performance Mode

GPU_VID1	GPU_VID0	NVIDIA/N12P-GS
0	0	0.825V
0	1	0.85
1	0	0.975
1	1	1.00

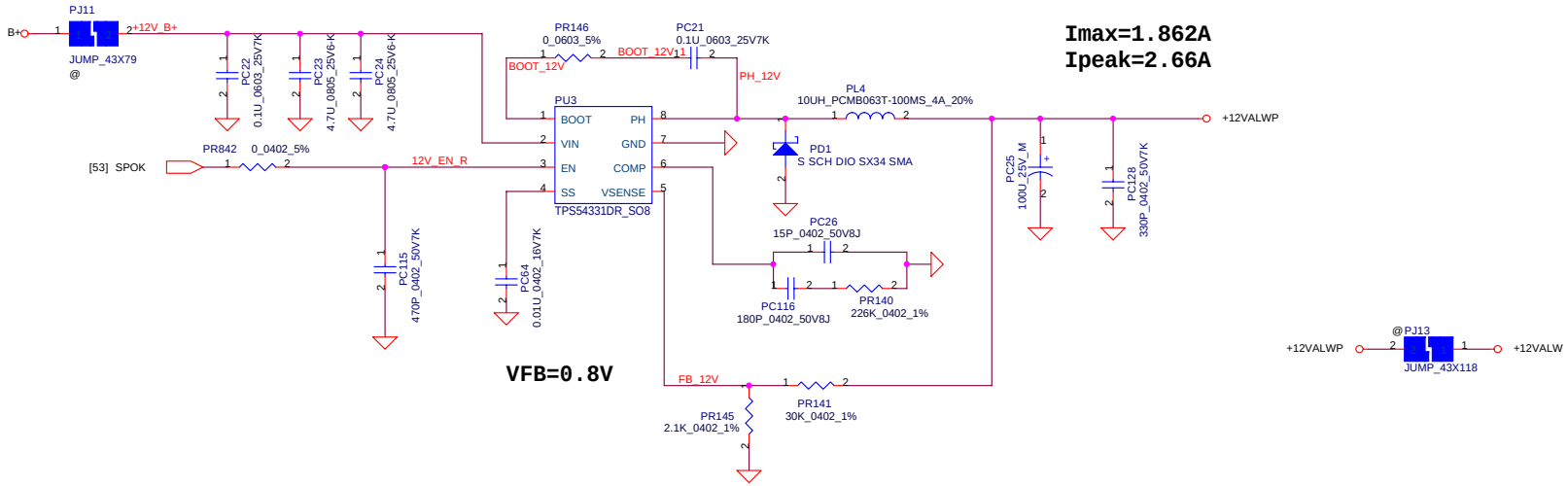
Security Classification	Compal Secret Data		
Issued Date	2010/01/25	Deciphered Date	2009/04/28

Compal Electronics, Inc.

Title: ***VGA_CORE***

Size	Document Number	Rev
Custom	PCA60/70 LA-7001P M/B	0.1

Date: Tuesday, April 12, 2011 Sheet 60 of 64



Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***P60_PWR-+12V***

Size	Document Number	Rev
	PCA70 LA-7521P M/B	0.1

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NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	2010/09/30	P48~49	Change PR39 to 118k ohm Change PR49 to 95.3k ohm	Modify OCP setting value
2	2010/10/01	P48	Remove reserved 1.05VP power rail	Because VCCIO will not be changeable voltage on Sandy Bridge platform. We don't need another 1.05V for PCH
3	2010/10/28	P50	PC124,PC125 change to 220u_25V Remove PC126	Modify for input cap
4	2010/10/28	P49	Remove PR70, PR82, PR84, PR171, PR172, PR173, PR174, PC76	Remove forth phase related components
5	2010/10/28	P49	PR62, PR65, PR66 change to 90.9K_0603_1% PC72 change to 1500P_0402_50V	Change for correct droop setting
6	2010/10/28	P49	PR129 change to 39.2K_0603_1% PR117 change to 25.5k_0402_1% PC92 change to 220P_0402_50V	Change for correct GT droop setting
7	2011/01/27	P58	update Net name "IMAX "	update after vender review layout
8	2011/01/27	P61	change PC25 part number to SF000004S00	material shoretage
9	2011/01/27	P59	change PC124/125/126/153 part number from SF000004L00 to SF000004M00	material shoretage
10	2011/02/09	P52	add "@" at BOM structure of PR836 and PR841	change for EC
11	2011/02/16	P53	change PU2 part number to SA00004NY00	change for part EOL
12	2011/03/07	P60	change PR60 from 75Kohm to 53.6Kohm	change for OCP setting point
	2011/03/07	P57	change PR49 from 76.8Kohm to 143Kohm	change for OCP setting point
13	2011/03/25	P60	change BOM structure PQ11 from @ to DIS@	for Thermal team concern
14	2011/03/30	P60	Remove VGA_core Jump for impedence concern	
15	2011/03/30	P52	change PR153 from 15m ohm to 10m ohm for Inrush concern	
16	2011/03/30	P59	change PC124/125/126/153 part number from SF000004M00 to SF000004T00	
17	2011/03/30		change PC101/102/105/106/111/112/118/121/122/123/130/137/139/142 part number from SE142106K80 to SE142106M80	
18	2011/04/06	P52	Remove JDCIN1 pin.7 and pin.8 from GND	Layout modification
19	2011/04/08	P58	add PC807 at PU10.9 for ESD request change PR68=5.49Kohm, PC67=1nF, PR62=PR65=PR66=PR152=95.3Kohm, PC65=470pF, PC69=10pF, PC66=220pF, PR80=1.5kohm, PR79=2.8kohm, PR129=39.2Kohm, PC88=2.2nF, PC97=680pF, PC90=10pF, PC95=220pF, PR116=1.24kohm, PR109=887ohm, PC92=820pF	
20	2011/04/08	P60	change PC141/PC143 part number to SF000002P00	

HW PIR (Product Improve Record)

NWQAA LA-6062P SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.1 TO 0.2
GERBER-OUT DATE: 2009/12/30

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE

Security Classification	Compal Secret Data		
Issued Date	2010/10/1	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***HW-PIR***

Size | Document Number: **PCA70 LA-7521P M/B** | Rev: 0.1

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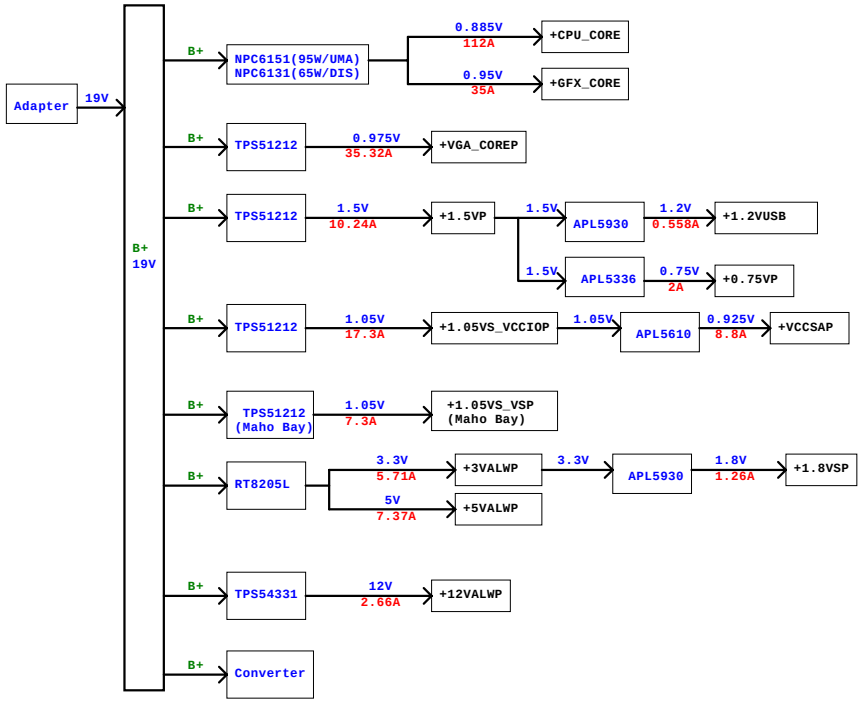

Security Classification	Compal Secret Data		
Issued Date	2010/10/28	Deciphered Date	2011/11/01

Compal Electronics, Inc.

Title: ***Power Rail***

Size	Document Number	Rev
		0.1

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