NWQAA

Marseille 10G

LA-6062P REV 2.0 Schematic

Intel Processor(CFD/ARD) / PCH(HM57/HM55/PM55)

2010-03-24 Rev 2.0

Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title: *Cover Page*			
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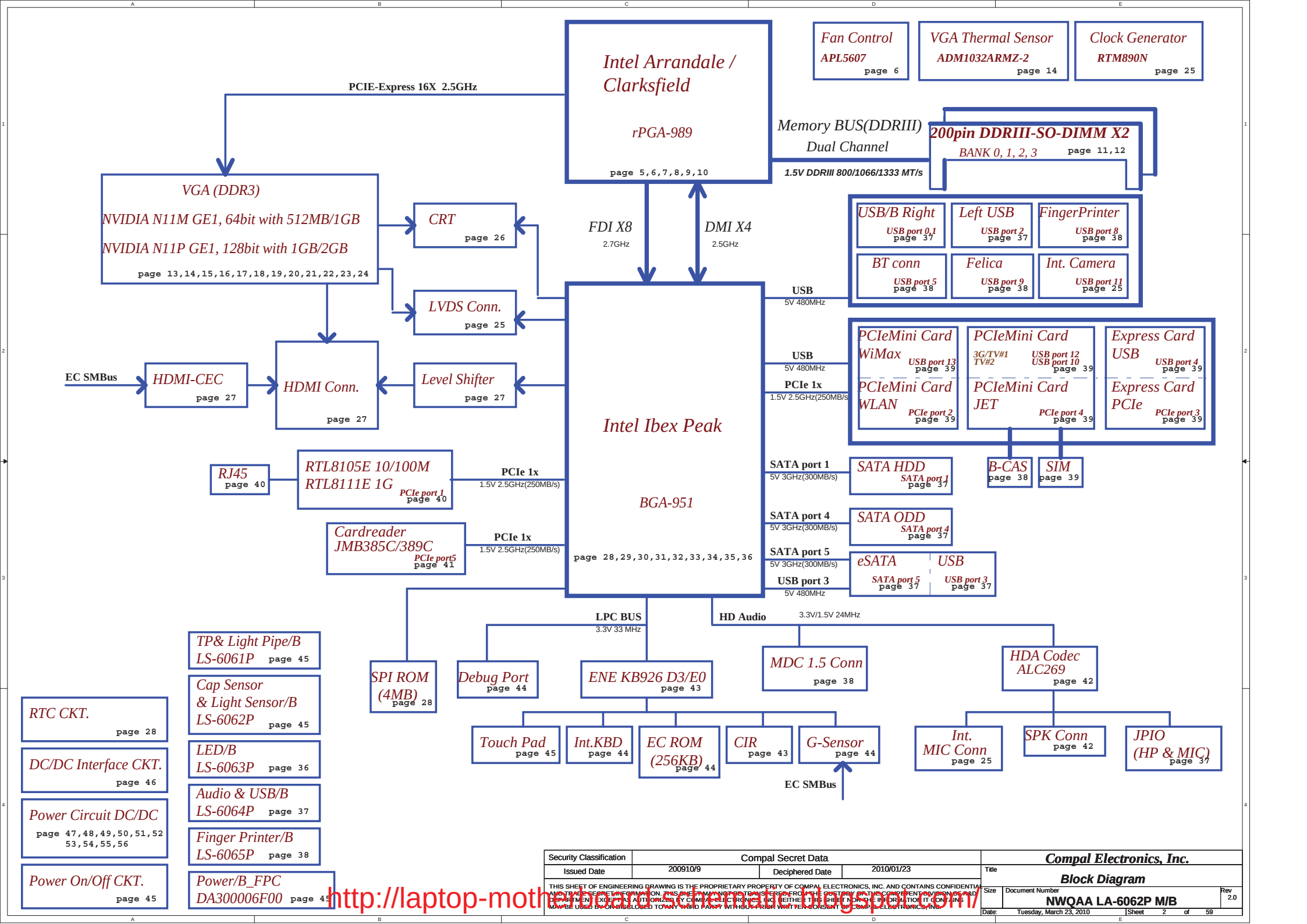

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Title: Block Diagram			
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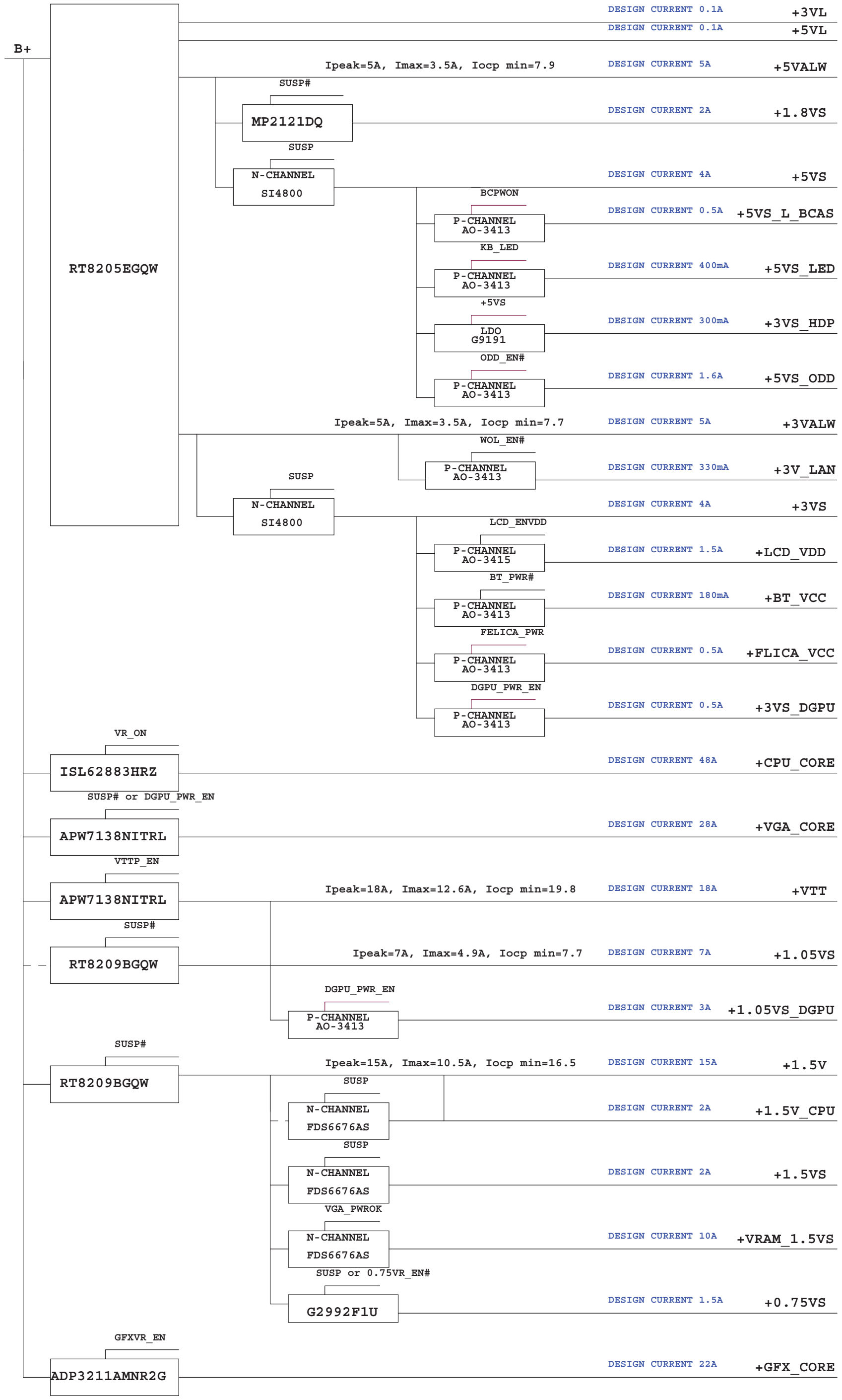

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Voltage Rails

(O MEANS ON X MEANS OFF)

power plane / State	+RTCVCC	B+	+5VL +3VL	+5VALW +3VALW +VSB	+1.5V	+5VS +3VS +1.8VS +1.5VS +1.05VS +0.75VS +CPU_CORE +VGA_CORE +GFX_CORE +VTT +VRAM_1.5VS +3VS_DGPU +1.05VS_DGPU
S0	O	O	O	O	O	O
S1	O	O	O	O	O	O
S3	O	O	O	O	O	X
S5 S4/AC	O	O	O	O	X	X
S5 S4/ Battery only	O	O	O	X	X	X
S5 S4/AC & Battery don't exist	O	X	X	X	X	X

PCH SM Bus Address

Power	Device	HEX	Address
+3VS	DDR SO-DIMM 0	A0 H	1010 0000 b
+3VS	DDR SO-DIMM 1	A4 H	1010 0100 b
+3VS	Clock Generator	D2 H	1101 0010 b
+3VS	New Card		
+3VS	WLAN/WIMAX		
+3VS	Clock Generator		
+3VS	3G		

EC SM Bus1 Address

Power	Device	HEX	Address
+3VL	Smart Battery	16 H	0001 0110 b
+3VL	HDMI-CEC	34 H	0011 0100 b

Power	Device	HEX	Address
+3VL	Cap. Sensor		Virtual I2C

EC SM Bus2 Address

Power	Device	HEX	Address
+3VS	PCH	96 H	1001 0110 b
+3VS	NVIDIA GPU	9A H	1001 1010 b
+3VS	G-Sensor	40 H	0100 0000 b
+3VS	Light Sensor	52 H	0101 0010 b

Platform	SKU	CPU	PCH	VGA
Calpella	UMA(OPT@)	Arrandale	HM55@/HM57@	N/A
	Discrete (DIS@)	Clarksfield/ Arrandale	HM55@/HM57@/PM55@	N11P@/N11M@
	Optimus (OPT@)	Arrandale	HM55@/HM57@	N11P@/N11M@

BTO Option Table

Function	HDMI				CPU		
description	HDMI				Arrandale	Clarksfield	
explain	UMA	Discrete/ Optimus	COMMON	CEC	Arrandale	Clarksfield	Clarksfield with S3 Power Saving
BTO	IHDMI@	DHDMI@	HDMI@	CEC@	M1@	M3@	PSM3@

Function	MINI PCI-E SLOT			LAN					
description	SLOT2		SLOT1	LAN		Fingerprint	Modem	CIR	KB Light
explain	3G	TV Tuner	WIMAX	10/100M	Giga	Fingerprint	Modem	CIR	KB Light
BTO	3G@	TV@	WIMAX@	8105E@	8111E@	FP@	MDC@	CIR@	KBL@

Function	Felica	BLUE TOOTH	G-SENSOR	SKU		LVDS			Camera & Mic
description	Felica	BLUE TOOTH	G-SENSOR	SKU		3D Panel			Camera & Mic
explain	Felica	BLUE TOOTH	G-SENSOR	Discrete	Optimus	Discrete		Optimus	Camera & Mic
BTO	FELICA@	BT@	GSENSOR@	DIS@	OPT@	3D@	NO3D@	OPTFH@	CAM@

Function	S3 Power Saving		GPU					New Card
description	S3 Power Saving		N11P & N11E			N11M		New Card
explain	No Power Saving	Power Saving	VRAM	N11P	N11E	N11M-GE1	N11M-OP1	New Card
BTO	NOPS@	PS@	8PCS@	N11P@	N11E@	N11MGE@	N11MOP@	NEW@

Function	Card reader	
description	JMB385C/389C	
explain	JMB385C	JMB389C
BTO	JMB385@	JMB389@

STATE / SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#
Full ON	HIGH	HIGH	HIGH
S1(Power On Suspend)	HIGH	HIGH	HIGH
S3 (Suspend to RAM)	LOW	HIGH	HIGH
S4 (Suspend to Disk)	LOW	LOW	HIGH
S5 (Soft OFF)	LOW	LOW	LOW
G3	LOW	LOW	LOW

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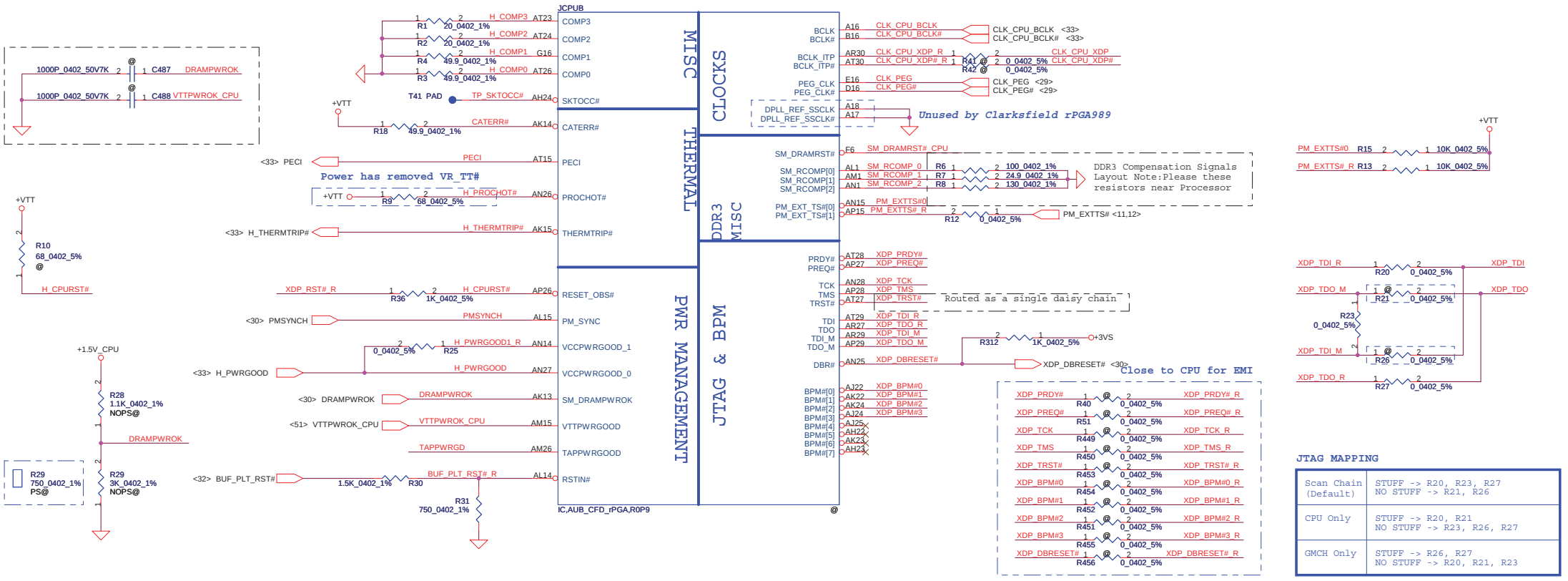
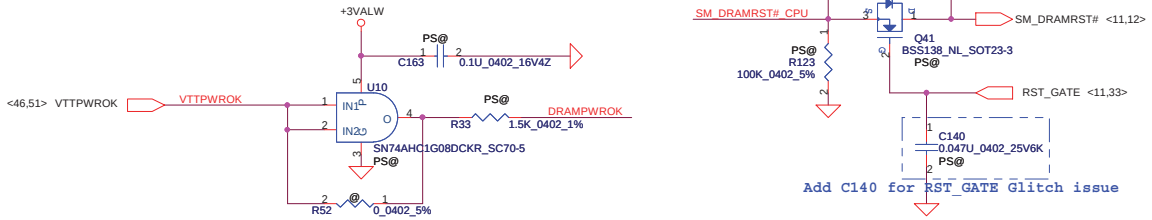


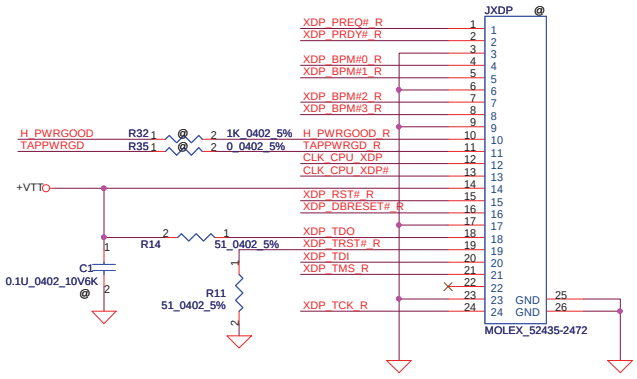
JTAG MAPPING

Scan Chain (Default)	STUFF -> R20, R23, R27 NO STUFF -> R21, R26
CPU Only	STUFF -> R20, R21 NO STUFF -> R23, R26, R27
GMCH Only	STUFF -> R26, R27 NO STUFF -> R20, R21, R23

For S3 CPU Power Saving



XDP Connector



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Title: CPU_CLK/MISC/JTAG/XDP

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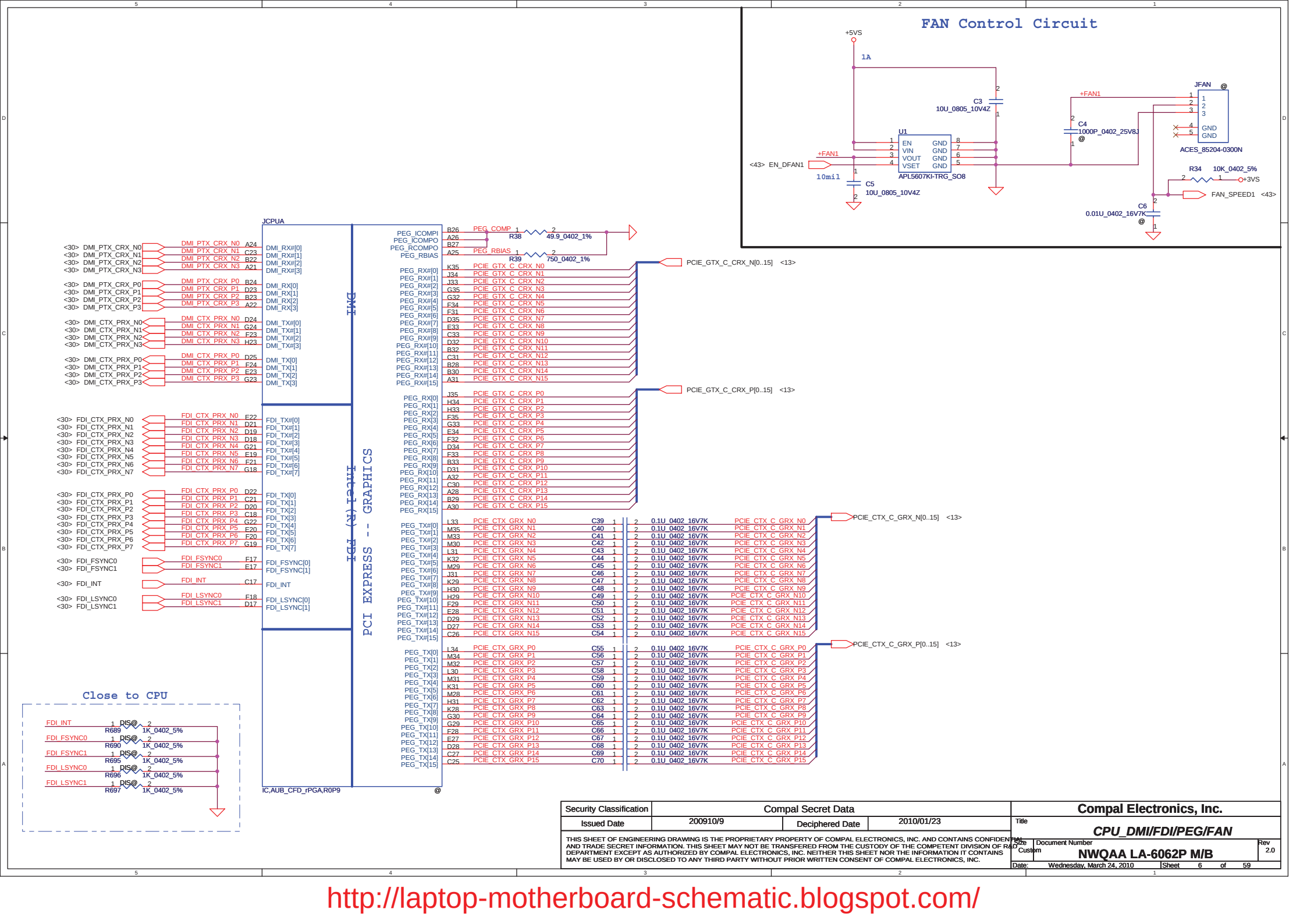

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Title	CPU_DMI/FDI/PEG/FAN		
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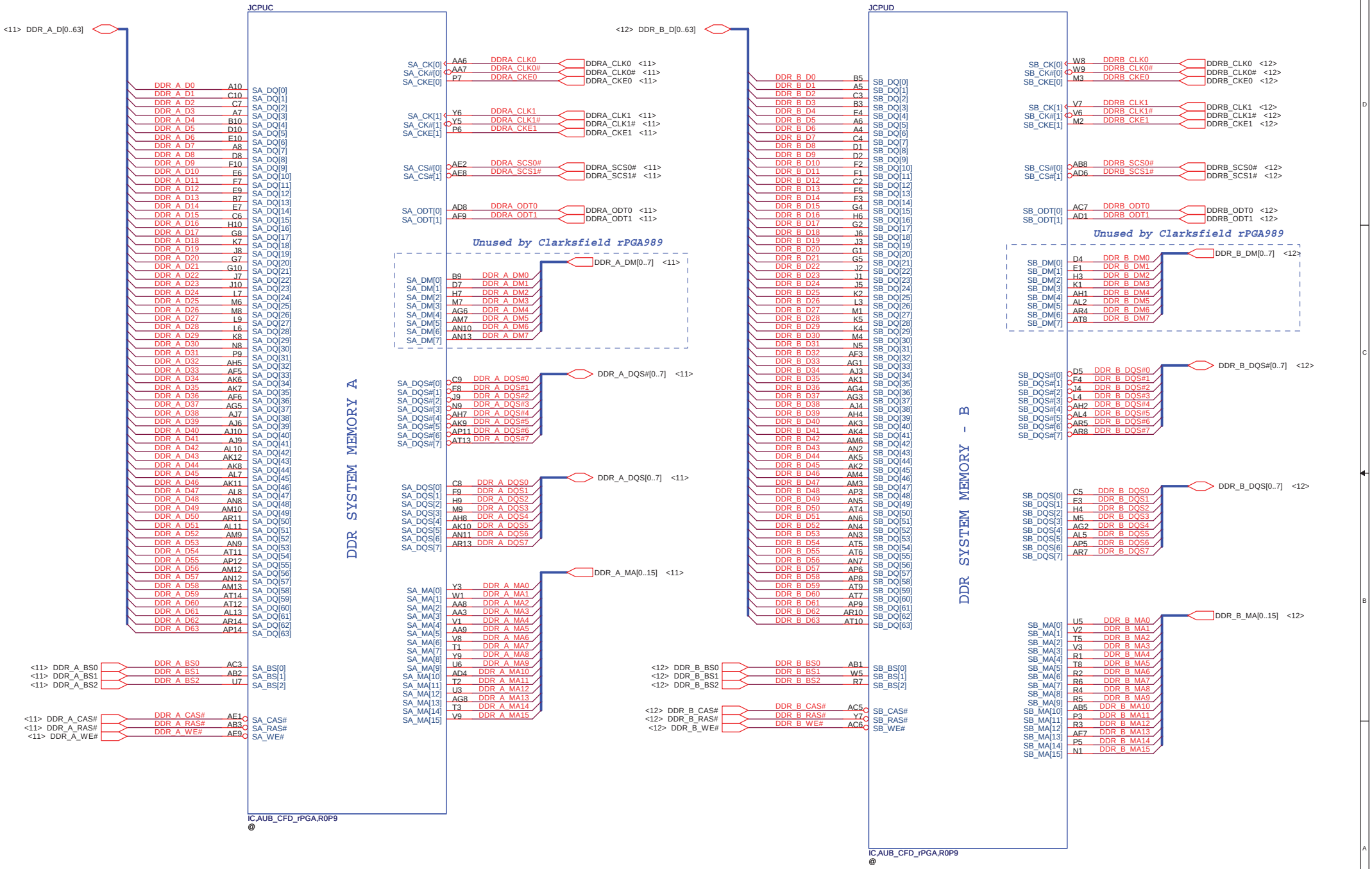

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Title: **CPU_DDR3**

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Material Note (+VTT):
390uF/ 10mohm, number are 3,
power x1, HW x2

JCPUF

+CPU_CORE

Clarksfield: 65A
Auburndale:48A

Clarksfield: 21A
Auburndale:18A

AG35 AG34 AG33 AG32 AG31 AG30 AG29 AG28 AG27 AG26 AF35 AF34 AF33 AF32 AF31 AF30 AF29 AF28 AF27 AF26 AD35 AD34 AD33 AD32 AD31 AD30 AD29 AD28 AD27 AD26 AC35 AC34 AC33 AC32 AC31 AC30 AC29 AC28 AC27 AC26 AA35 AA34 AA33 AA32 AA31 AA30 AA29 AA28 AA27 AA26 Y35 Y34 Y33 Y32 Y31 Y30 Y29 Y28 Y27 Y26 V35 V34 V33 V32 V31 V30 V29 V28 V27 V26 U35 U34 U33 U32 U31 U30 U29 U28 U27 U26 R35 R34 R33 R32 R31 R30 R29 R28 R27 R26 P35 P34 P33 P32 P31 P30 P29 P28 P27 P26

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

1.1V RAIL POWER

CPU CORE SUPPLY

VTT_0_1 VTT_0_2 VTT_0_3 VTT_0_4 VTT_0_5 VTT_0_6 VTT_0_7 VTT_0_8 VTT_0_9 VTT_0_10 VTT_0_11 VTT_0_12 VTT_0_13 VTT_0_14 VTT_0_15 VTT_0_16 VTT_0_17 VTT_0_18 VTT_0_19 VTT_0_20 VTT_0_21 VTT_0_22 VTT_0_23 VTT_0_24 VTT_0_25 VTT_0_26 VTT_0_27 VTT_0_28 VTT_0_29 VTT_0_30 VTT_0_31 VTT_0_32

AH14 AH12 AH11 AH10 J14 J13 H14 H12 G14 G13 G12 G11 F14 F13 F12 F11 E14 E12 D14 D13 D12 D11 C14 C13 C12 C11 B14 B12 A14 A13 A12 A11

VTT_0_33 VTT_0_34 VTT_0_35 VTT_0_36 VTT_0_37 VTT_0_38 VTT_0_39 VTT_0_40 VTT_0_41 VTT_0_42 VTT_0_43 VTT_0_44

AF10 AE10 AC10 AB10 Y10 W10 U10 T10 J12 J11 J16 J15

(Place these capacitors under CPU socket Edge, top layer)

+VTT

Change C144 to 4.5mm height at DVT

C144 330U_2.5V_M_R17
C267 390U_2.5V_M_R10
C87 22U_0805_6.3V6M
C91 22U_0805_6.3V6M

C81 C83 C85 C89 C88 C90 C92 C94 10U_0805_10V4K

5/25: Add for power team request.

+CPU_CORE

C158 C150 C128 C127 C120 C118 C119 C117 C129 22U_0805_6.3V6M

(Place these capacitors between inductor and socket on Bottom)

+CPU_CORE

C71 C72 C73 C74 C75 C76 C77 C78 C79 10U_0805_10V4K

(Place these capacitors under CPU socket, top layer)

+CPU_CORE

C98 C99 C100 C101 C102 C103 C104 10U_0805_10V4K

(Place these capacitors on CPU cavity, Bottom Layer)

+CPU_CORE

C105 C106 C107 C108 C109 C110 22U_0805_6.3V6M

+CPU_CORE

C111 C112 C113 C114 C115 C116 22U_0805_6.3V6M

POWER

CPU VIDS

PSI# AN33 H_PSI# → H_PSI# <54>

VID[0] AK35 CPU_VID0 → CPU_VID0 <54>
VID[1] AK33 CPU_VID1 → CPU_VID1 <54>
VID[2] AK34 CPU_VID2 → CPU_VID2 <54>
VID[3] AL35 CPU_VID3 → CPU_VID3 <54>
VID[4] AL33 CPU_VID4 → CPU_VID4 <54>
VID[5] AM33 CPU_VID5 → CPU_VID5 <54>
VID[6] AM35 CPU_VID6 → CPU_VID6 <54>

PROC_DPRSLPVR AM34 H_DPRSLPVR_R R62 0_0402_5% → H_DPRSLPVR <54>

VTT_SELECT G15 H_VTTSELECT → H_VTTSELECT <51>

CRB default setting:
VID[6:0]=[0100111]

VTT Rail

Auburndale +1.1VS_VTT=1.05V
Clarksfield +1.1VS_VTT=1.1V

H_VTTSELECT = low, 1.1V
H_VTTSELECT = high, 1.05V

SENSE LINES

ISENSE AN35 IMVP_IMON → IMVP_IMON <54>

VCC_SENSE AJ34 VCCSENSE_R R65 0_0402_5%
VSS_SENSE AJ35 VSSSENSE_R R66 0_0402_5%

R64 100_0402_1% +CPU_CORE
VCCSENSE
VSSSENSE
VCCSENSE <54>
VSSSENSE <54>
R67 100_0402_1%

VTT_SENSE B15 VTT_SENSE → VTT_SENSE <51>
VSS_SENSE_VTT A15 VSS_SENSE_VTT → VSS_SENSE_VTT <51>

Close to CPU

TOP side (under inductor)

+CPU_CORE

C121 C122 C123 C124 C125 330U_D2_2.5VM_R9M

Check list:

+CPU_CORE: 6x 470uF, 12x 22uF, 17x 10uF

+VTT: 4x 330uF, 7x 22uF, 8x 10uF

IC,AUB_CFD_rPGA,R0P9

@

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Title: CPU_POWER-1

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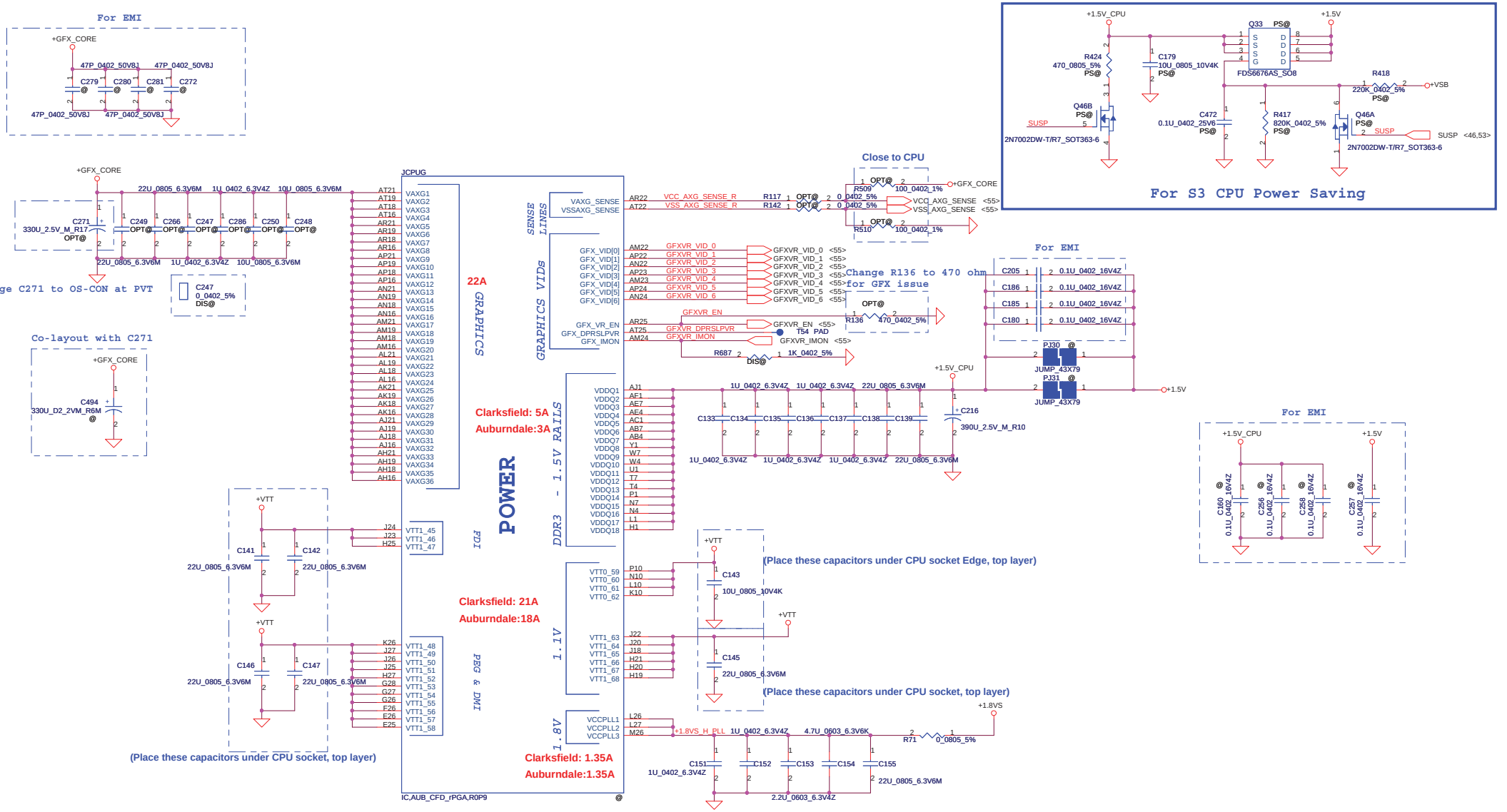

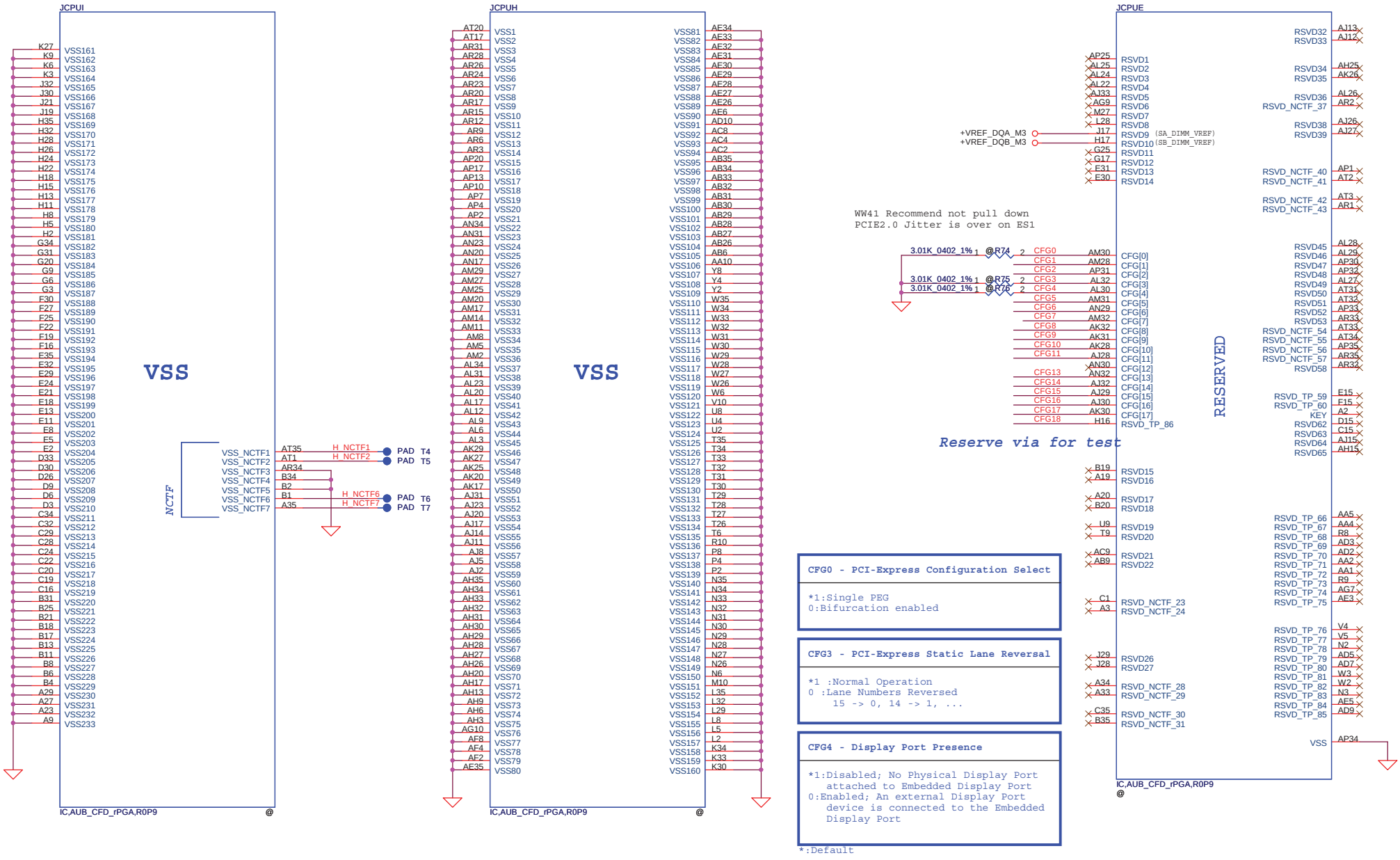

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Title: CPU_GND/RESERVED

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DDR3 SO-DIMM A
Reverse Type

JDDRL

FOX_AS0A626-U2SN-7F_204P

@

Close to JDDRL.1

For S3 CPU Power Saving

close to JDDRL.126

M1@: Arrandale

M3@: Clarksfield
For Clarksfield S3 CPU Power Saving

Layout Note:
Place near JDDRL

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

Change C218 to OSCON at DVT

Layout Note:
Place near JDDRL1.203 and 204

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Title: DDRIII-SODIMM0

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Reverse Type
DDR3 SO-DIMM B

JDDRH

+1.5V

+VREF_DQB

close to JDDRH.1

close to JDDRH.126

+V_DDR3_DIMM_REF

+3VS

+0.75VS

FOX_AS0A626-UASN-7F_204P

@

DDR_B_DQS#[0..7] <7>

DDR_B_DQS[0..7] <7>

DDR_B_D[0..63] <7>

DDR_B_DM[0..7] <7>

DDR_B_MA[0..15] <7>

Layout Note:
Place near JDDRH

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

Layout Note:
Place near JDDRH.203 and 204

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Title: ***DDRIII-SODIMM1***

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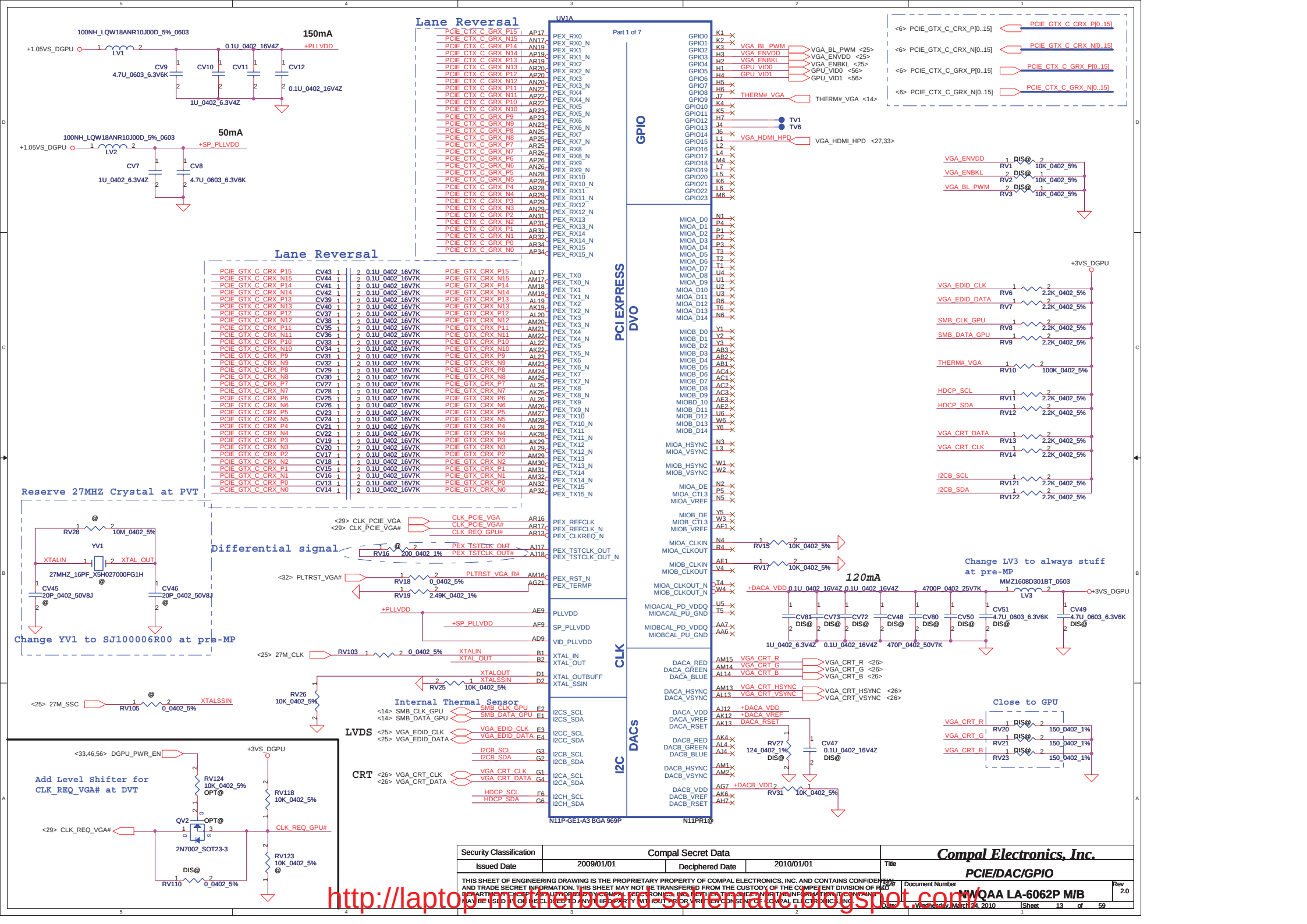
Lane Reversal
Lane Reversal
Reserve 27MHZ Crystal at PVT
Change YV1 to SJ100006R00 at pre-MP
Differential signal
Internal Thermal Sensor
LVDS
CRT
Add Level Shifter for CLK_REQ_VGA# at DVT
Change LV3 to always stuff at pre-MP
Close to GPU
150mA
50mA
120mA
UV1A
Part 1 of 7
GPIO
PCI EXPRESS
DVO
CLK
I2C
DACs
N11P-GE1-A3 BGA 969P
N11PR1@
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PCIE/DAC/GPIO
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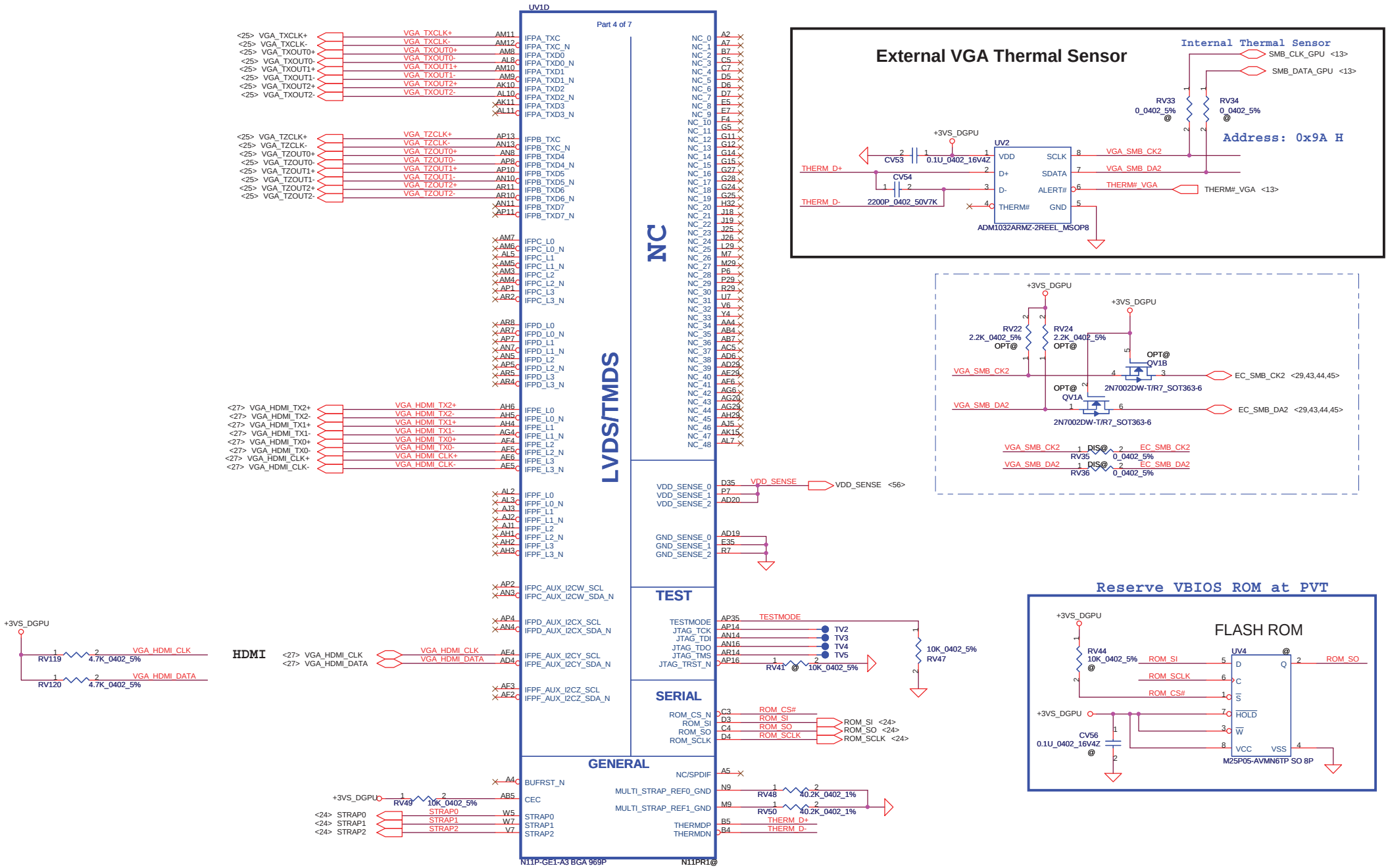
http://laptop-motherboard-schematic.blogspot.com/



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Compal Electronics, Inc.

Title: LVDS/HDMI/DP/THM

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N11E-GE1-LP Performance Mode

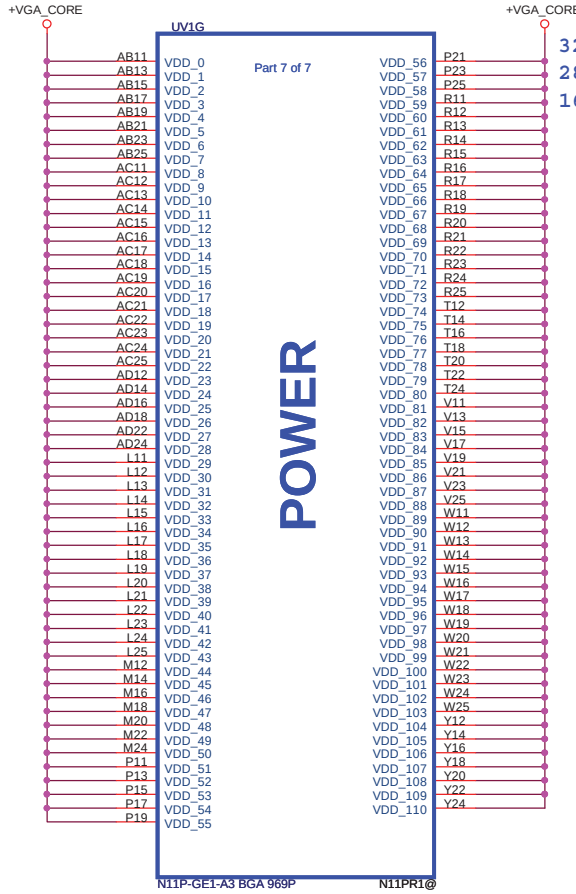
Mode	NVCLK (MHz)	MCLK (MHz)	+VGA_CORE
P0	450	790	0.90 V
P8	405	324	0.85 V
P12	135	135	0.80 V

N11P-GE1 Performance Mode

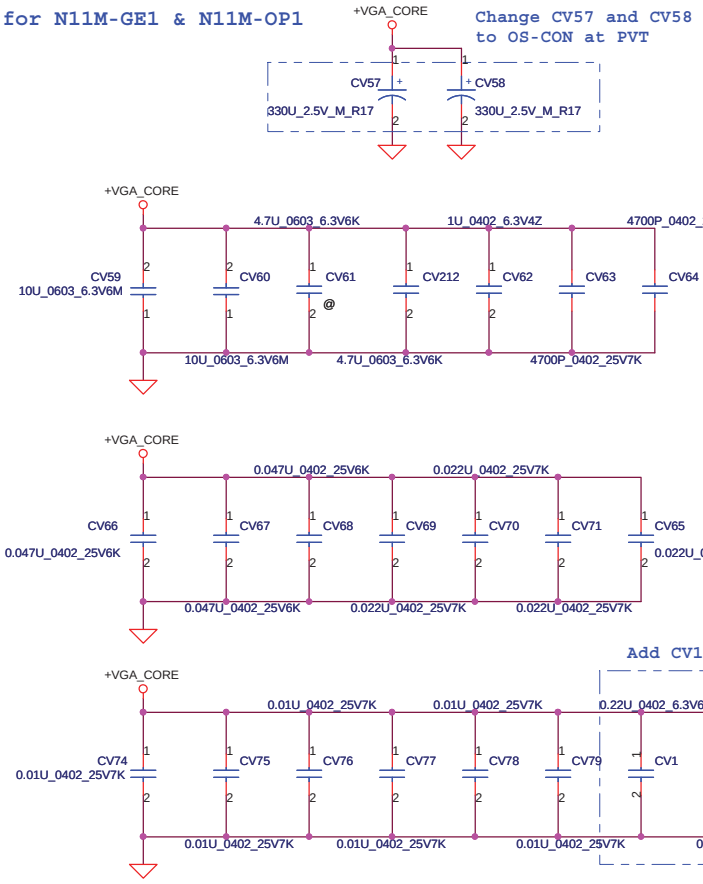
Mode	NVCLK (MHz)	MCLK (MHz)	+VGA_CORE
P0	575	790	0.95 V
P8	405	324	0.85 V
P12	135	135	0.80 V

N11M-GE1 & N11M-OP1 Performance Mode

Mode	NVCLK (MHz)	MCLK (MHz)	+VGA_CORE
P0	625	790	1.03 V
P8	405	405	0.85 V
P12	135	135	0.80 V



32A for N11E-GE1-LP
28A for N11P-GE1
16A for N11M-GE1 & N11M-OP1



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Compal Electronics, Inc.

Title: VGA CORE

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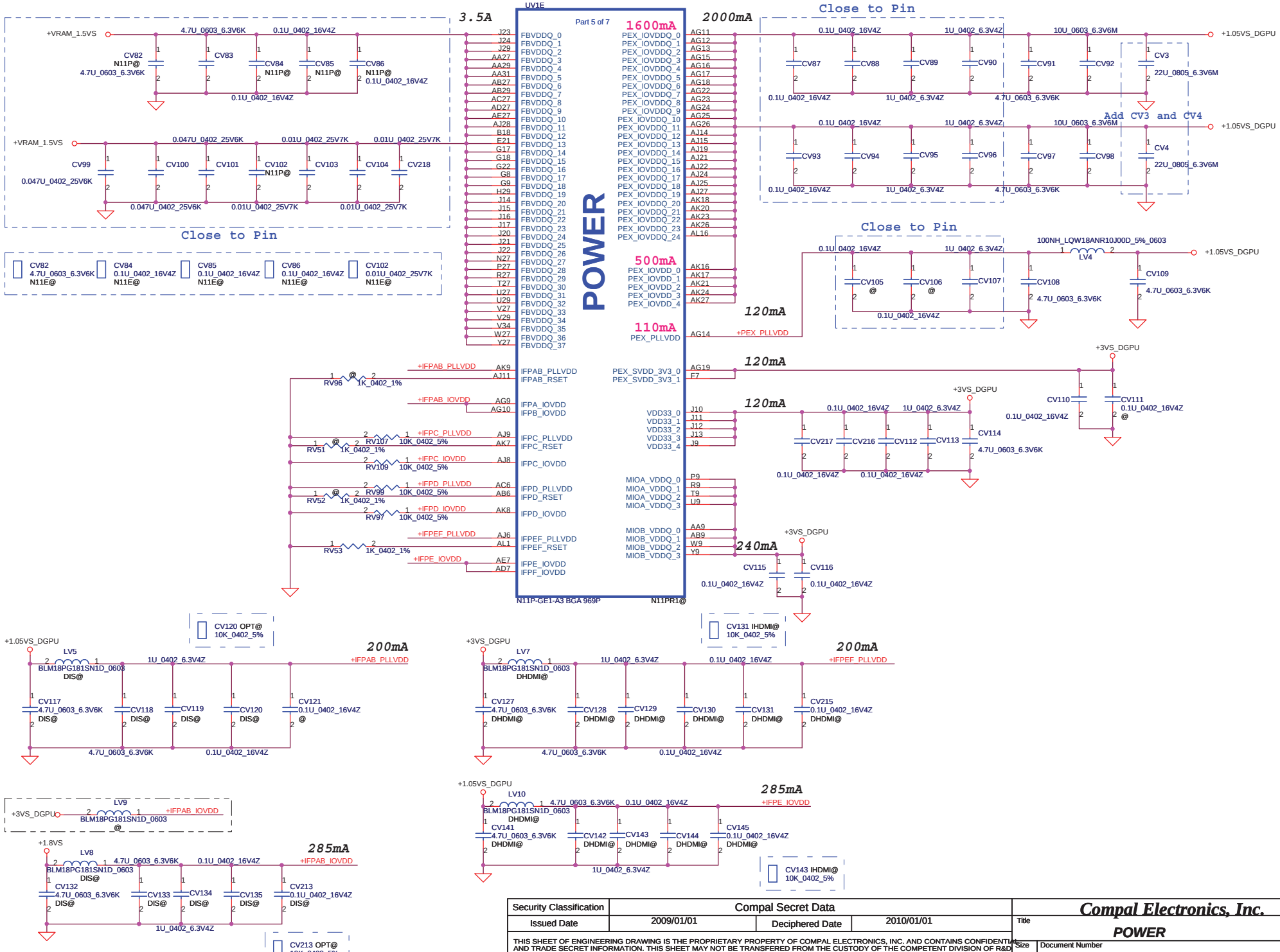

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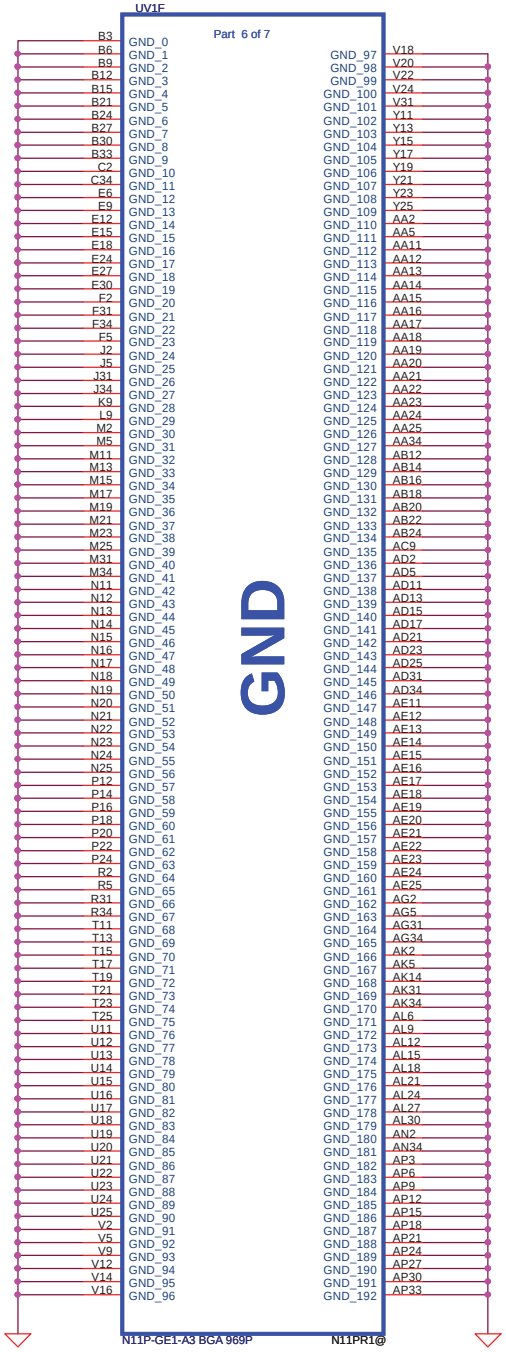

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Title: GND			
Size	Document Number: NWQAA LA-6062P M/B		Rev: 2.0
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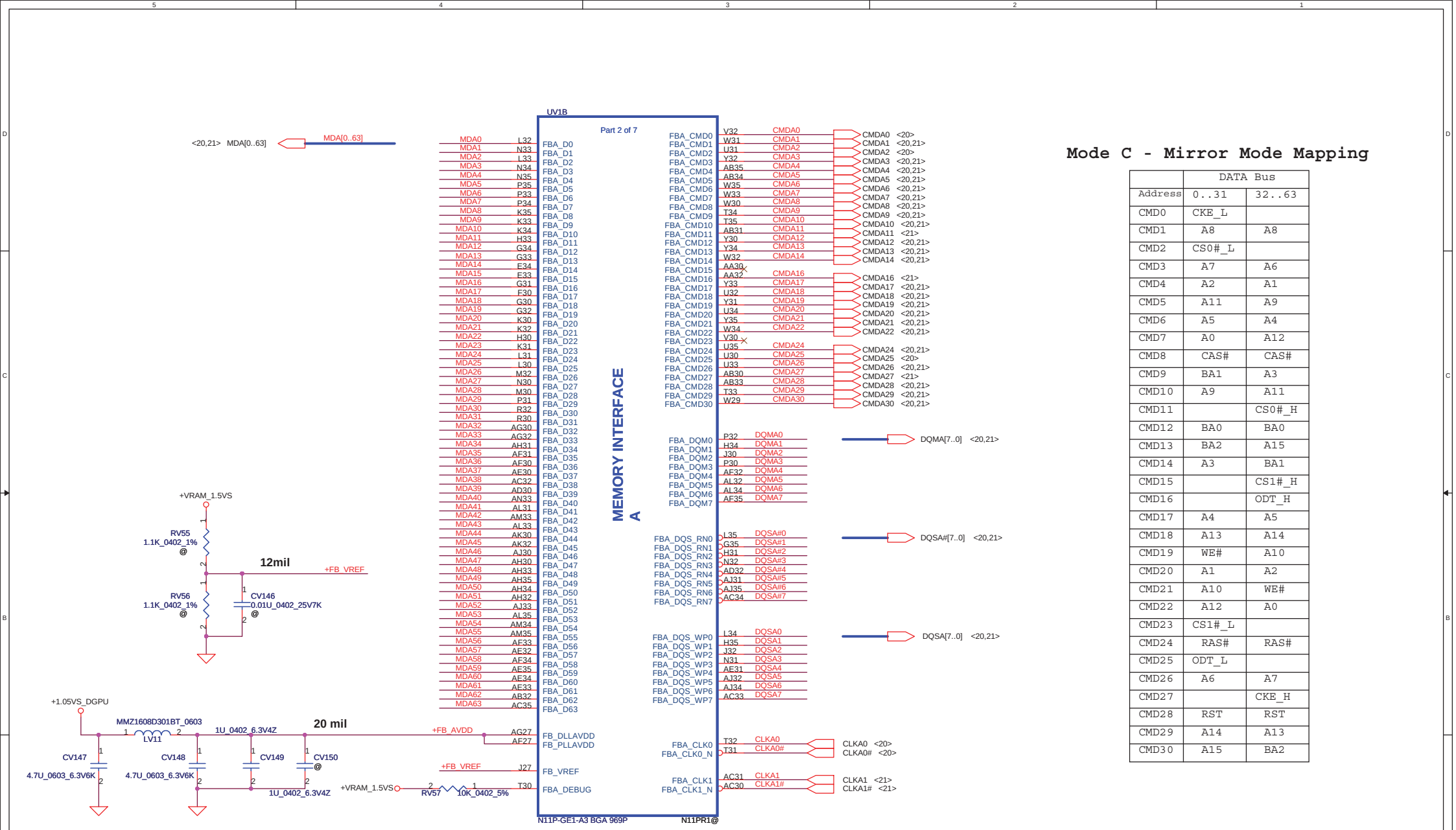

Mode C - Mirror Mode Mapping

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

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

Compal Electronics, Inc.

Title: MEM Interface A

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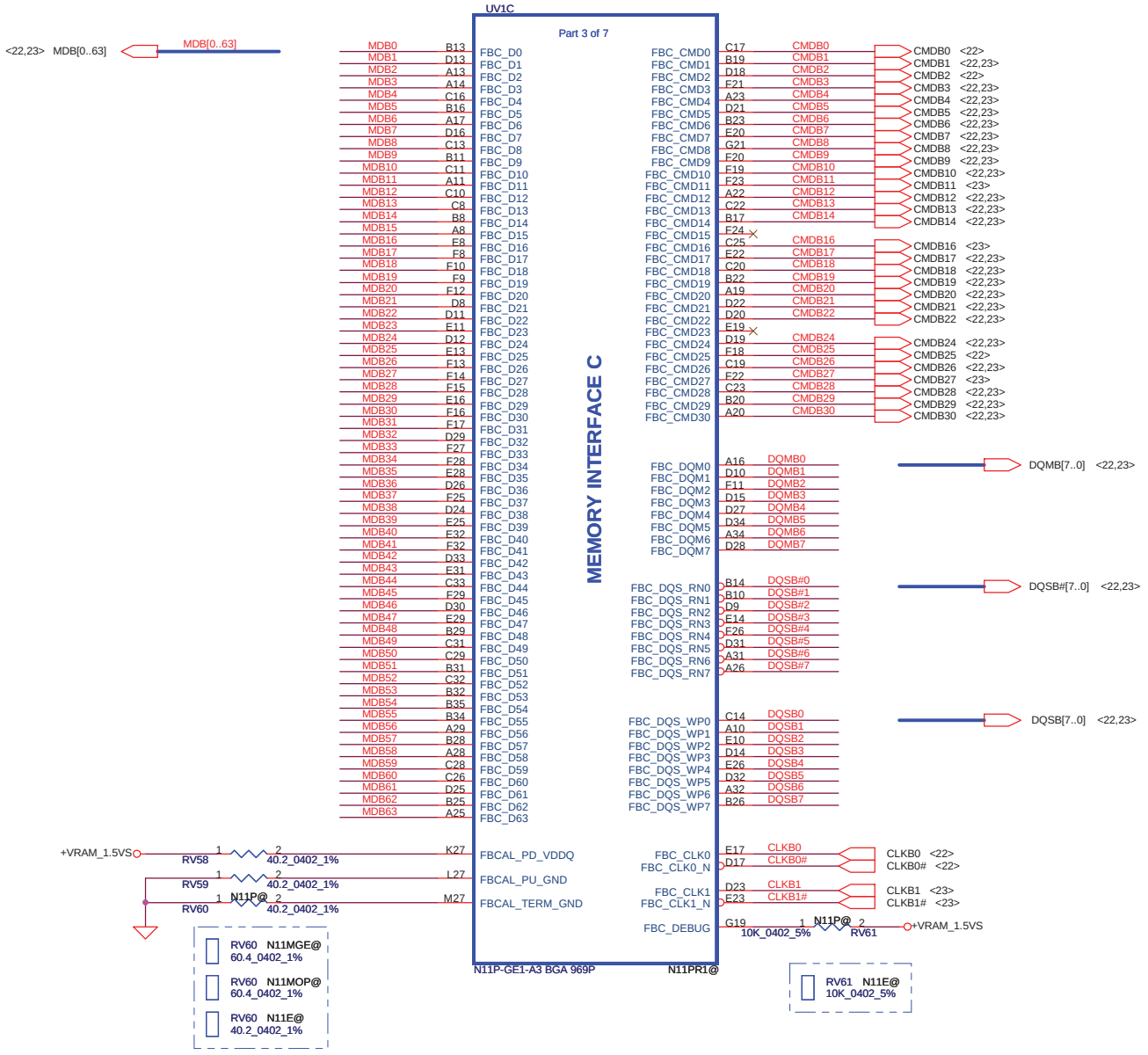

Mode C - Mirror Mode Mapping

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

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

Compal Electronics, Inc.

Title: MEM Interface C

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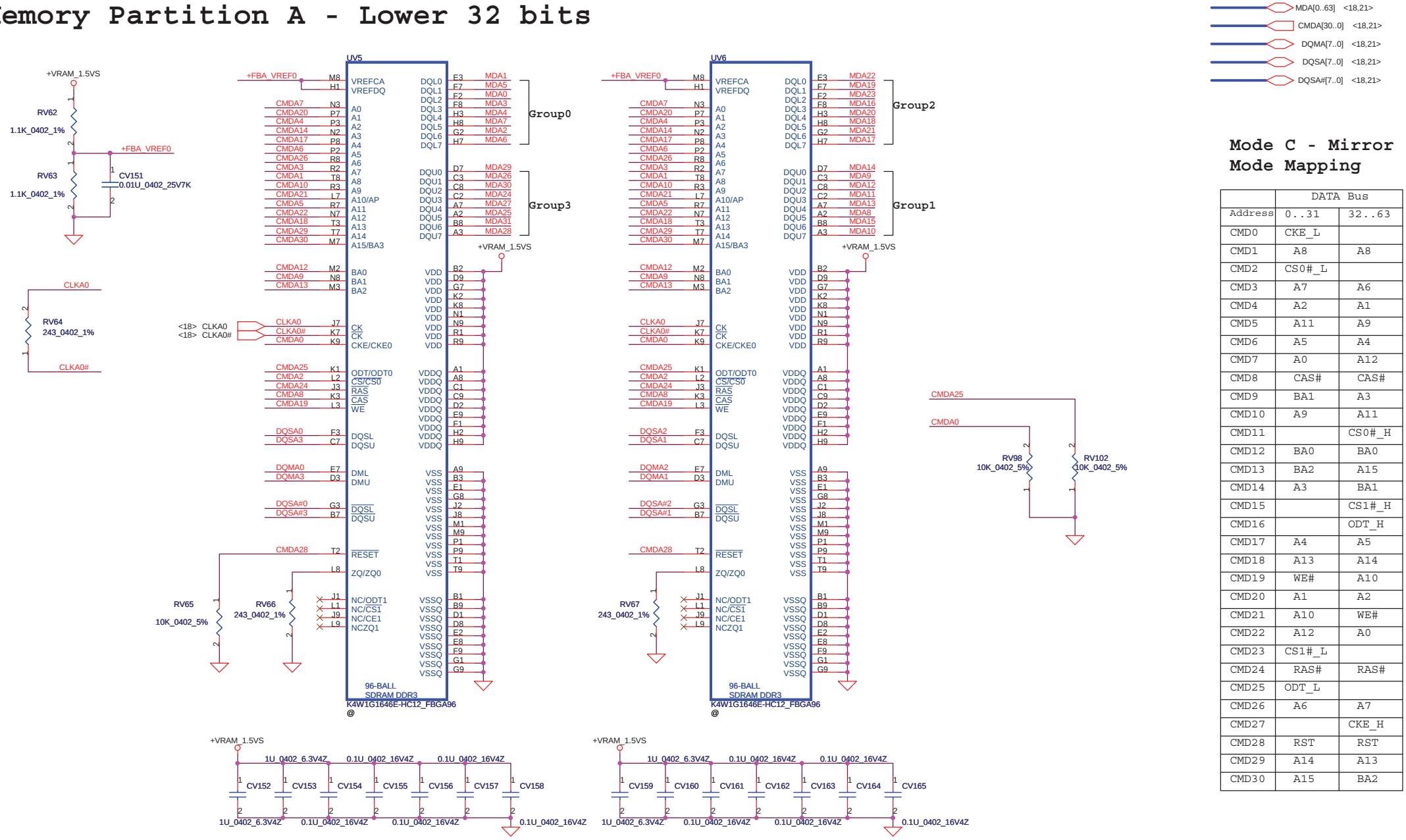
Memory Partition A - Lower 32 bits



Mode C - Mirror Mode Mapping

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

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

Compal Electronics, Inc.

Title: VRAM A Lower

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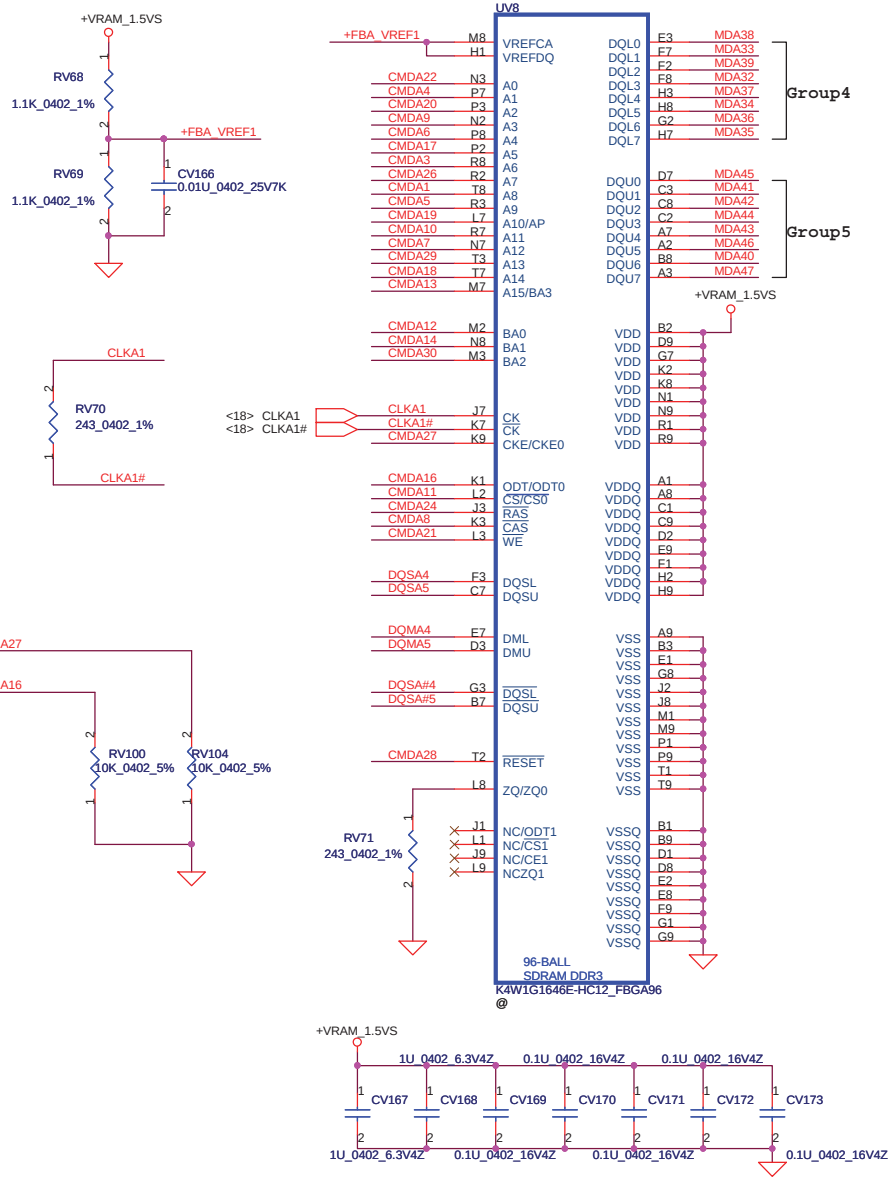
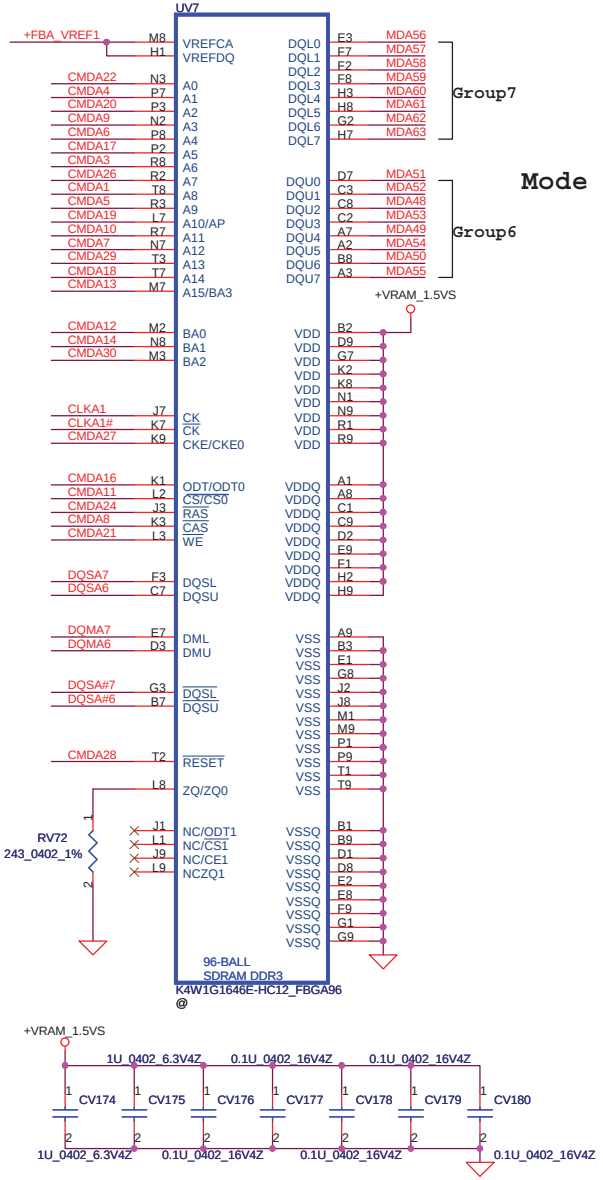
Memory Partition A - Upper 32 bits





MDA[0..63] <18,20>
CMDA[30..0] <18,20>
DQMA[7..0] <18,20>
DQSA[7..0] <18,20>
DQSA#[7..0] <18,20>

Mode C - Mirror Mode Mapping

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

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

Compal Electronics, Inc.

Title: VRAM A Upper

Size | Document Number: NWQAA LA-6062P M/B | Rev: 2.0

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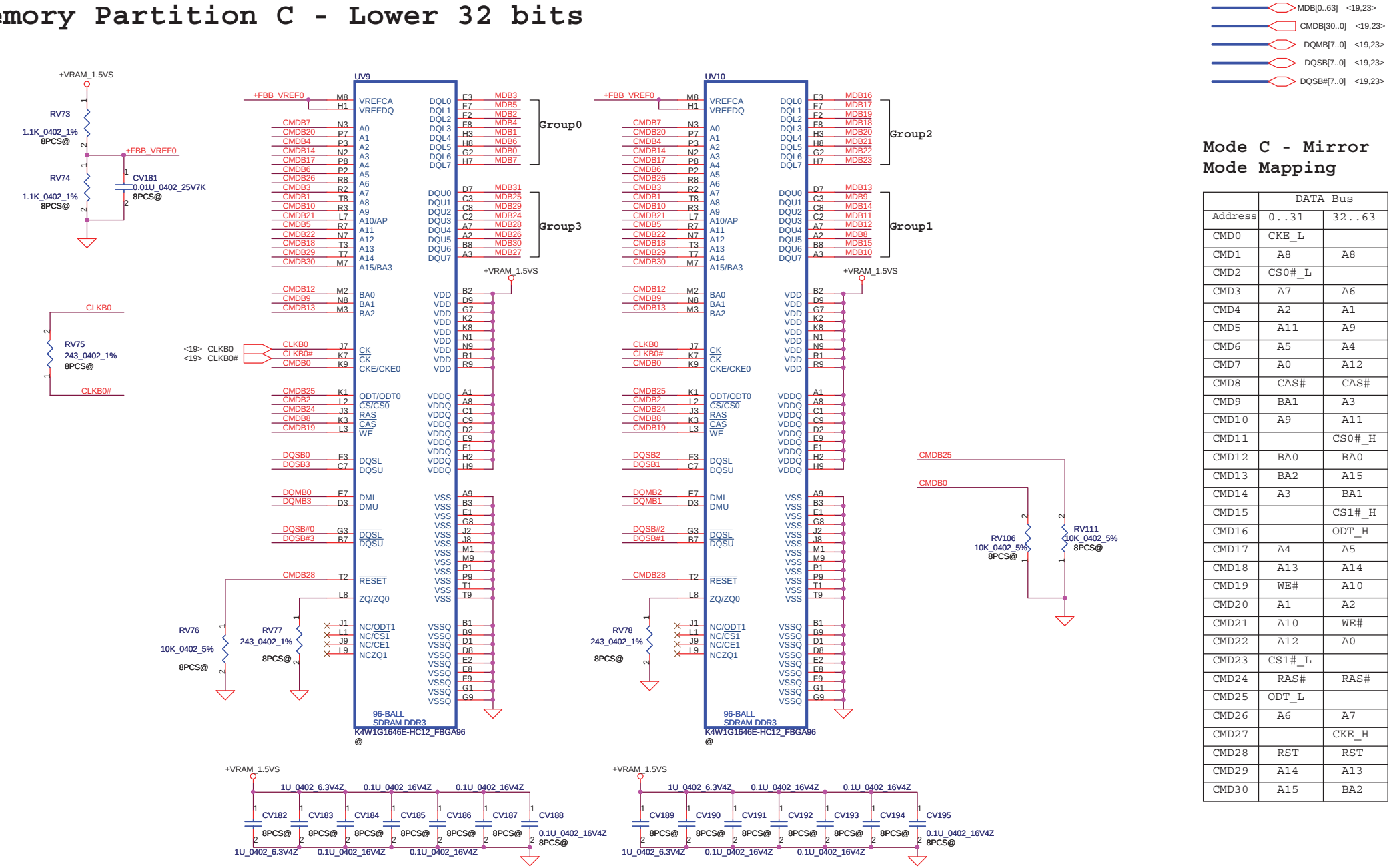
Memory Partition C - Lower 32 bits



Mode C - Mirror Mode Mapping

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

Compal Electronics, Inc.

Title: VRAM C Lower

Size: Custom | Document Number: NWQAA LA-6062P M/B | Rev: 2.0

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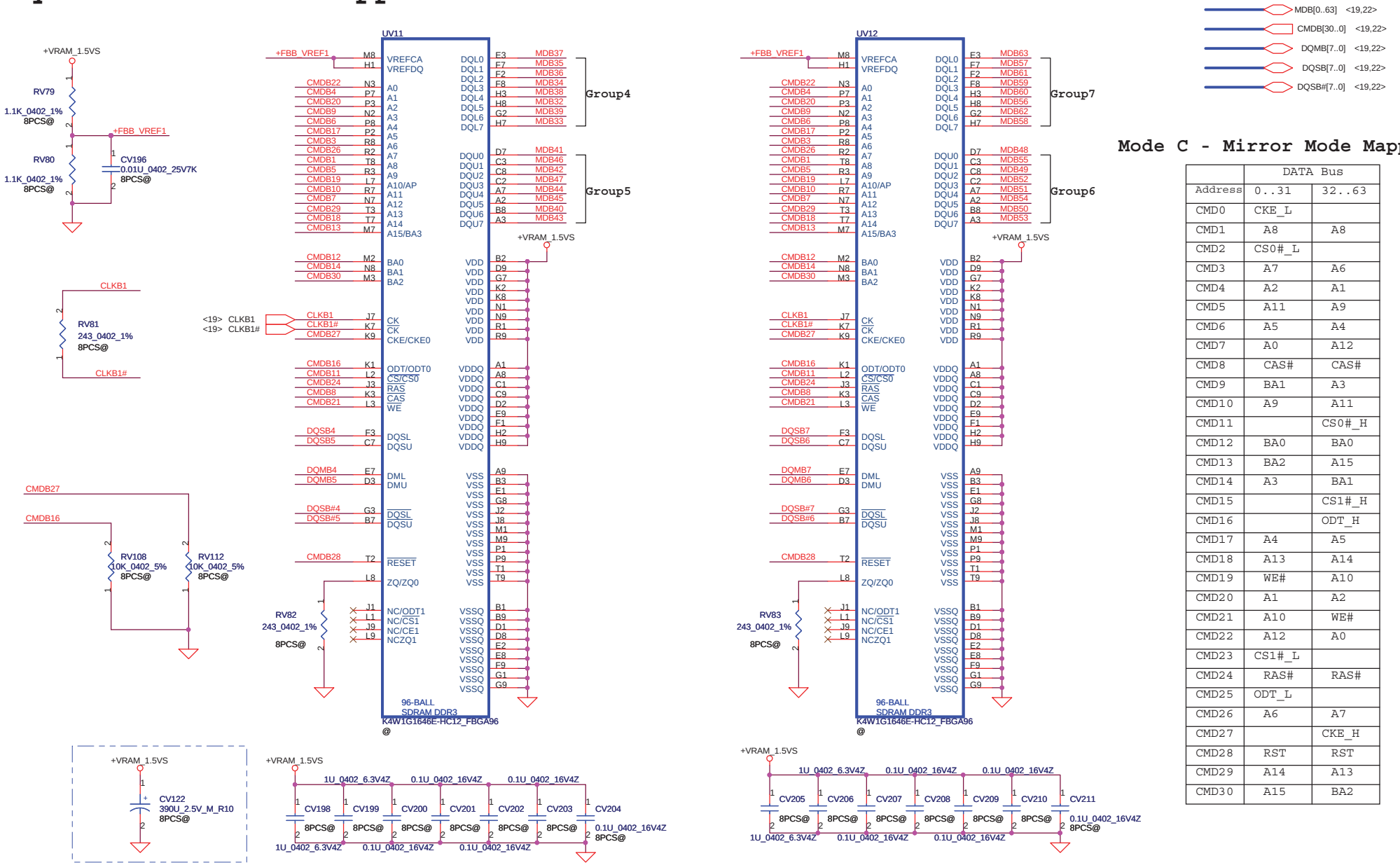
Memory Partition C - Upper 32 bits



MDB[0..63] <19,22>
CMDB[30..0] <19,22>
DQMB[7..0] <19,22>
DQSB[7..0] <19,22>
DQSB#[7..0] <19,22>

Mode C - Mirror Mode Mapping

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

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

Compal Electronics, Inc.

Title: VRAM C Upper

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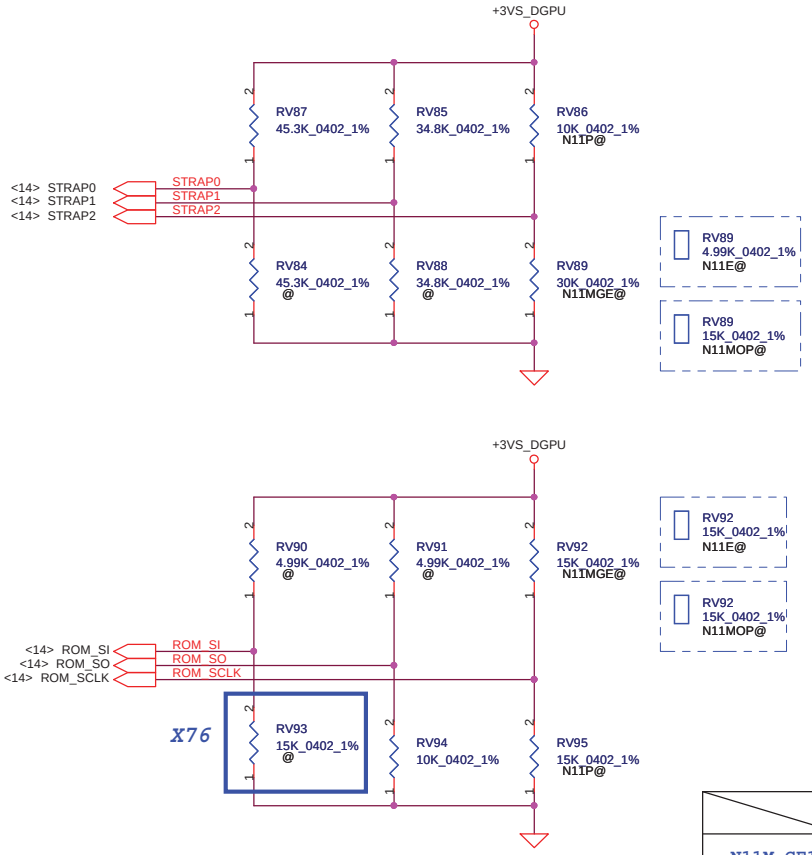

Physical Strapping pin	Power Rail	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0
ROM_SO	+3VS_DGPU	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE
ROM_SCLK	+3VS_DGPU	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLLEN_TERM
ROM_SI	+3VS_DGPU	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP2	+3VS_DGPU	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
STRAP1	+3VS_DGPU	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
STRAP0	+3VS_DGPU	USER[3]	USER[2]	USER[1]	USER[0]

Resistor Values	Pull-up to +3VS	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

	DeviceID	ROM_SCLK	STRAP2
N11M-GE1	0xA75	Pull up 15K	Pull down 30K
N11P-GE1	0xA29	Pull down 15K	Pull up 10K
N11M-OP1	0xA72	Pull up 15K	Pull down 15K
N11E-GE1(LP)	0xCB0	Pull up 15K	Pull down 5K

Hynix H5TQ1G63BFR-12C	512M	0010	PD 15K	SD034150280
SA000032400	1G	0010	PD 15K	
Samsung K4W1G1646E-HC12	512M	0011	PD 20K	SD034200280
SA000035700	1G	0011	PD 20K	

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 Straps

User[3:0]	
1000-1100	Customer defined

3GIO_PADCFG

3GIO_PADCFG[3:0]	
1110	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)

Security Classification	Compal Secret Data		
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Compal Electronics, Inc.

Title: MSIC

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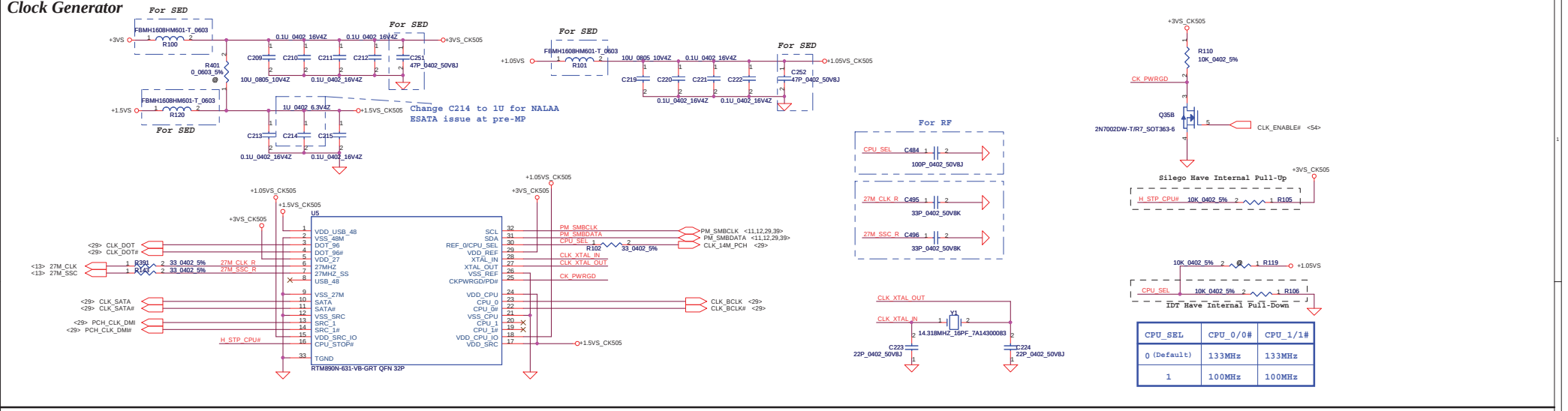
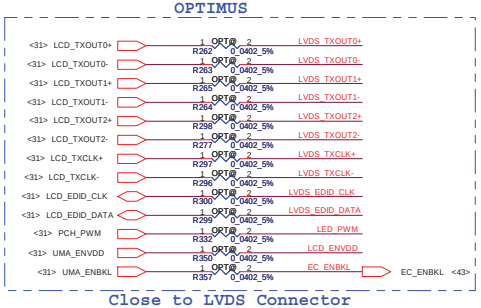
Clock Generator



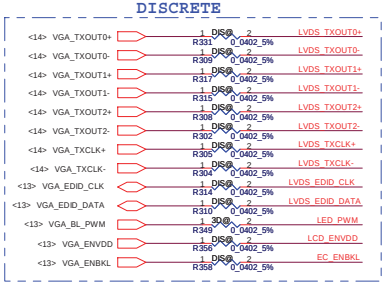
CPU_SEL	CPU_0/0#	CPU_1/1#
0 (Default)	133MHz	133MHz
1	100MHz	100MHz

OPTIMUS



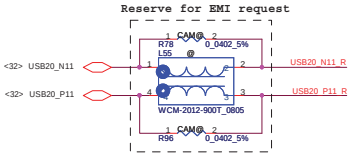
Close to LVDS Connector

DISCRETE

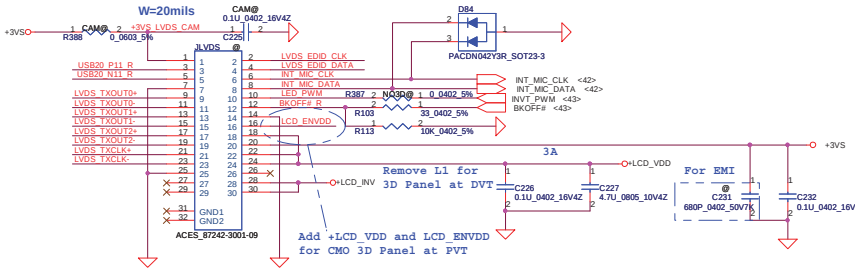


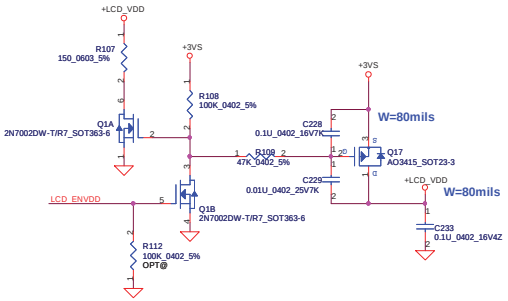
Close to LVDS Connector

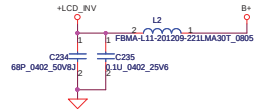
Reserve for EMI request

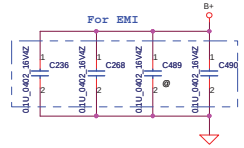


LCD/PANEL BD. Conn.

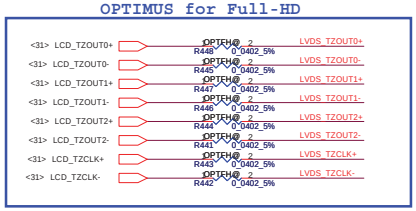




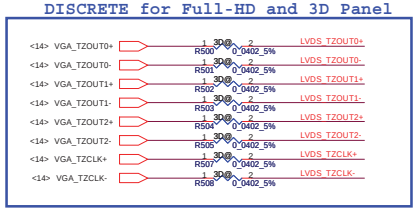




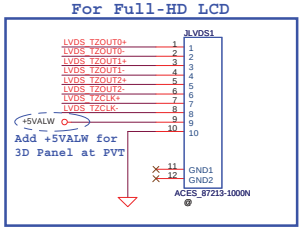
OPTIMUS for Full-HD



DISCRETE for Full-HD and 3D Panel



For Full-HD LCD



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

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Compal Electronics, Inc.			
Title	CCLK GEN/LVDS		
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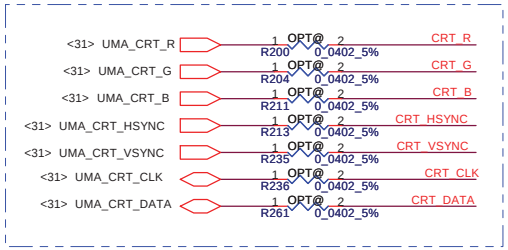
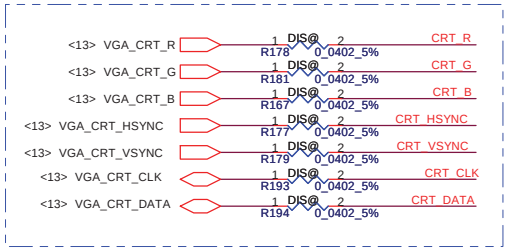
CRT CONNECTOR

OPTIMUS

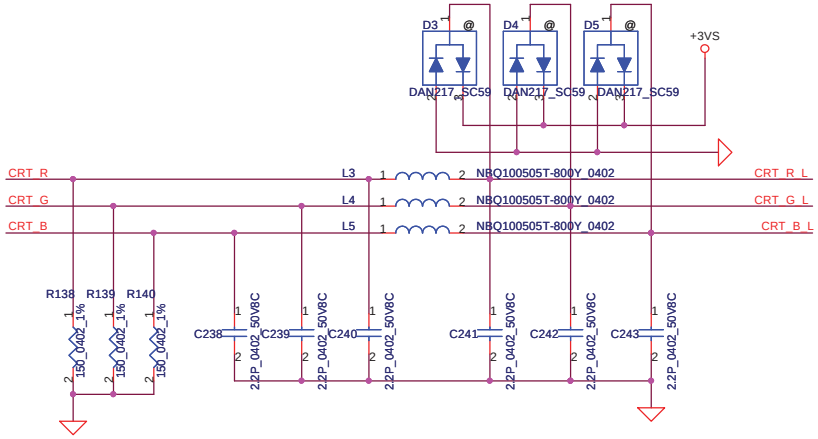


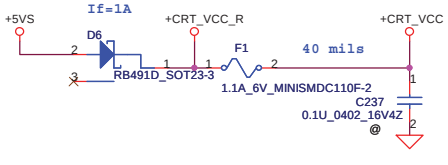
Close to CRT Connector

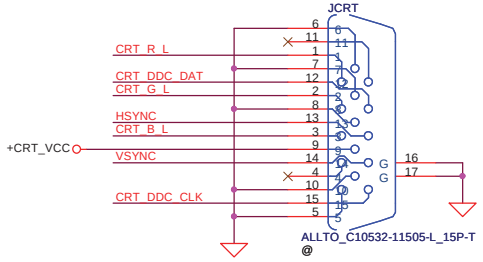
DISCRETE

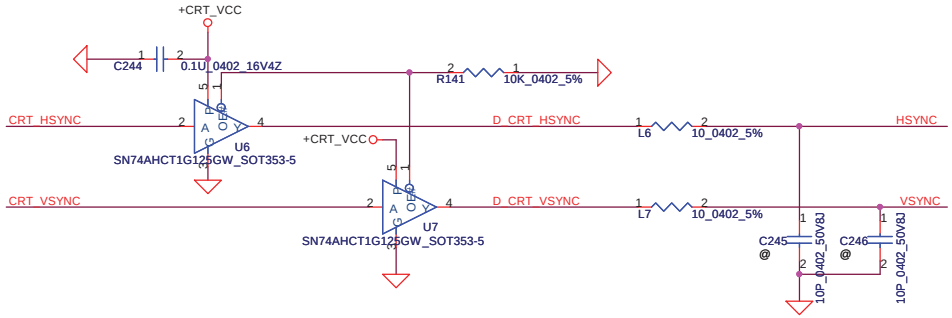


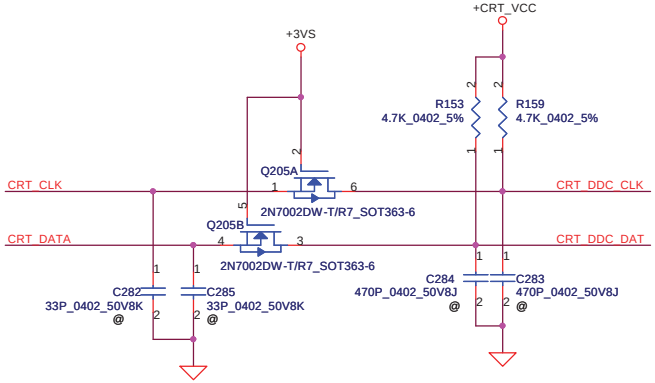
Close to CRT Connector











Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title: CRT			
Size	Document Number: NWQAA LA-6062P M/B		Rev: 2.0
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HDMI CEC Controller

Address: 0011010X

U16

R5F211A4C33SP-W4_LSSOP20

CEC_FSHUPD (Pin13)
Low= Force to update flash.

Change Q18 and Q19 power to +3VS_DGPU at pre-MP

Add R145 for U9 ESD issue at DVT

For DISCRETE

U18

ASM1442 QFN_48P_7X7

Add R208 for AOC monitor issue at PVT

Add D54 for HDMI CEC issue at pre-MP

HDMI Connector

JHDMI

TYCO_1939864-1_19P

Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title: HDMI Conn./CEC			
Size	Document Number: NWQAA LA-6062P M/B		Rev: 2.0
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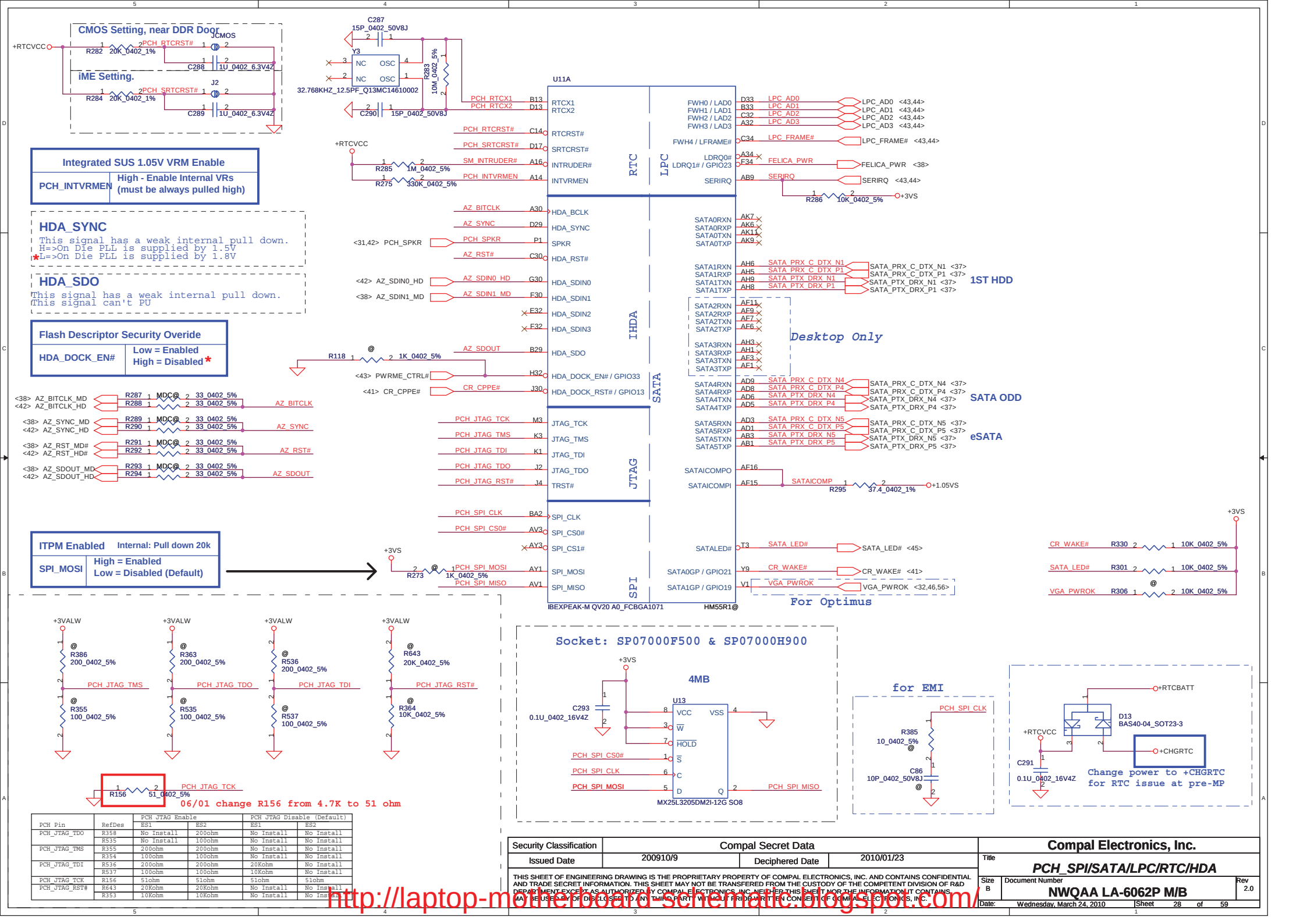


PCH Pin	RefDes	PCH JTAG Enable ES1	PCH JTAG Enable ES2	PCH JTAG Disable (Default) ES1	PCH JTAG Disable (Default) ES2
PCH_JTAG_TDO	R358	No Install	200ohm	No Install	No Install
	R535	No Install	100ohm	No Install	No Install
PCH_JTAG_TMS	R355	200ohm	200ohm	No Install	No Install
	R354	100ohm	100ohm	No Install	No Install
PCH_JTAG_TDI	R536	200ohm	200ohm	20Kohm	No Install
	R537	100ohm	100ohm	10Kohm	No Install
PCH_JTAG_TCK	R156	51ohm	51ohm	51ohm	51ohm
PCH_JTAG_RST#	R643	20Kohm	20Kohm	No Install	No Install
	R353	10Kohm	10Kohm	No Install	No Install

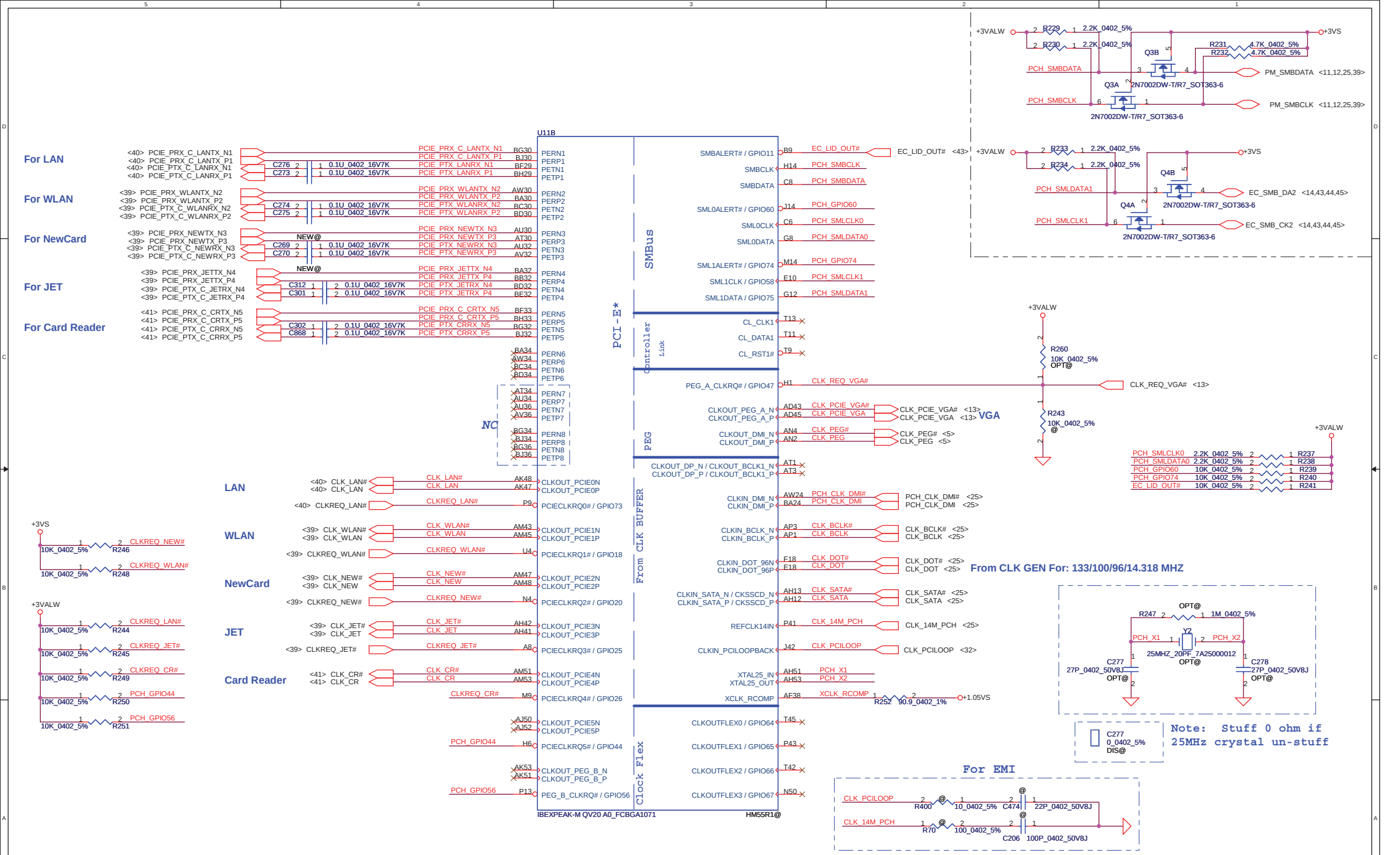
Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: PCH_SPI/SATA/LPC/RTC/HDA

Size	Document Number	Rev
B	NWQAA LA-6062P M/B	2.0

Date: Wednesday, March 24, 2010 Sheet 28 of 59



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

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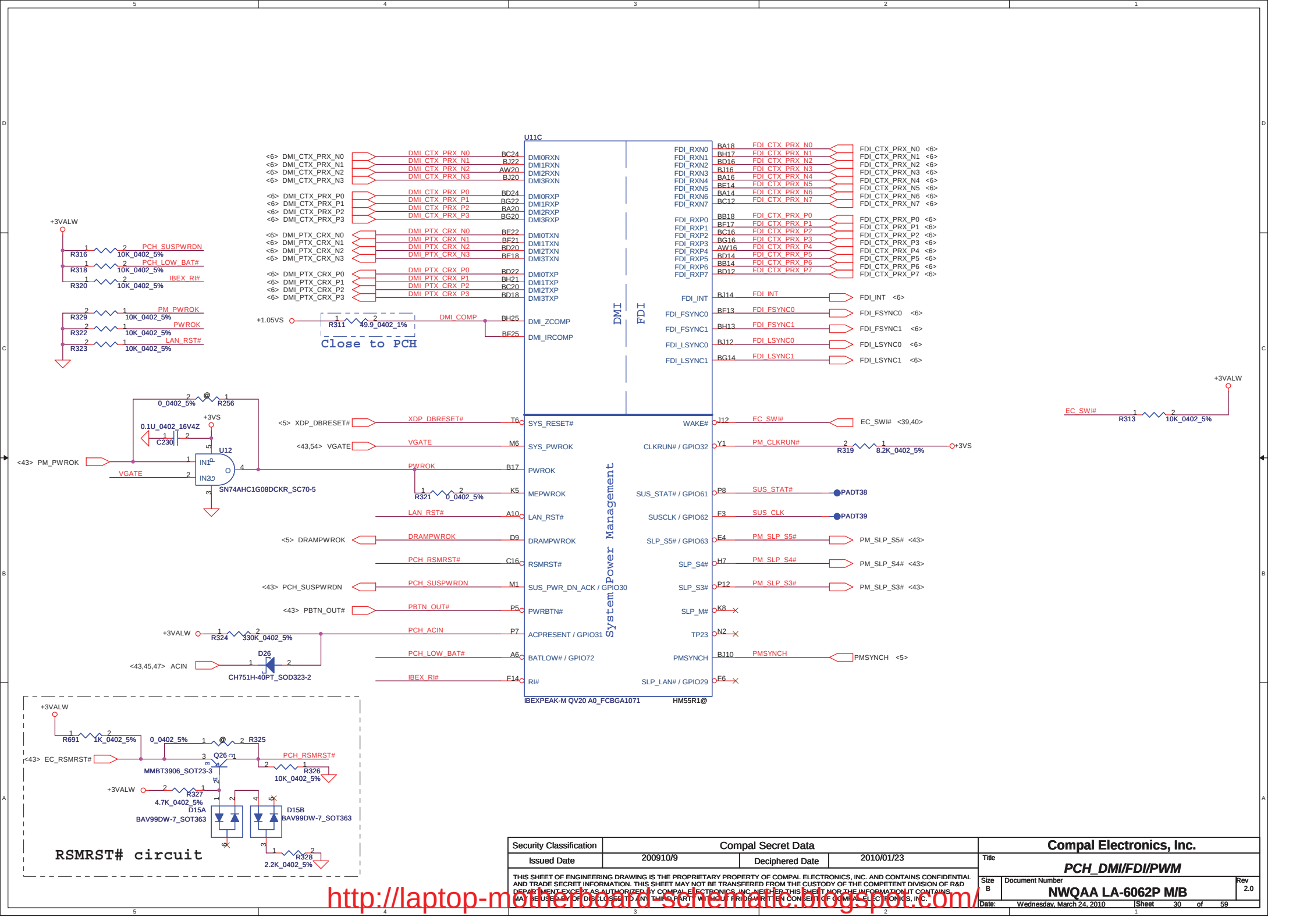
Compal Electronics, Inc.

Title: **PCH_CLK/PCIE/SMBUS**

Size	Document Number	Rev
Custom	NWQAA LA-6062P M/B	2.0

Date: Wednesday, March 24, 2010 Sheet 29 of 59



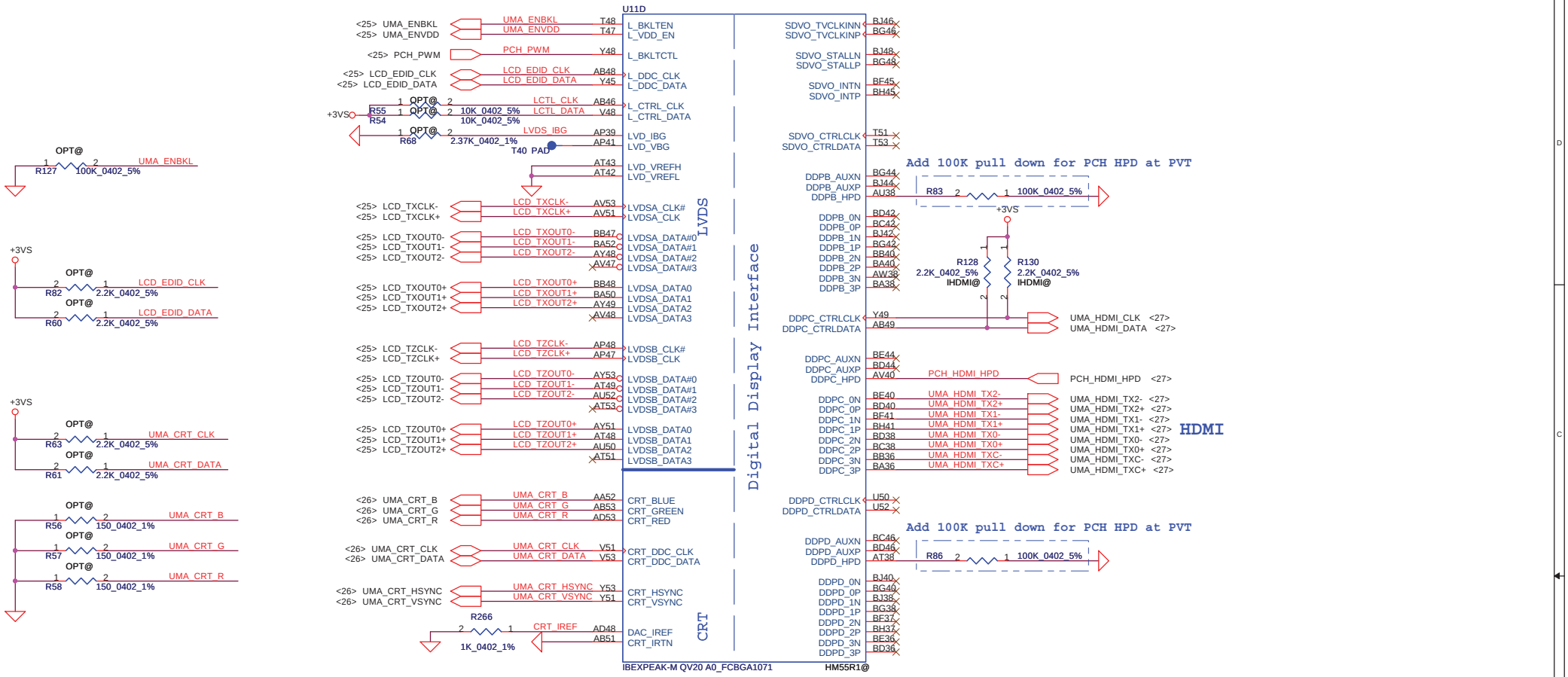
Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.

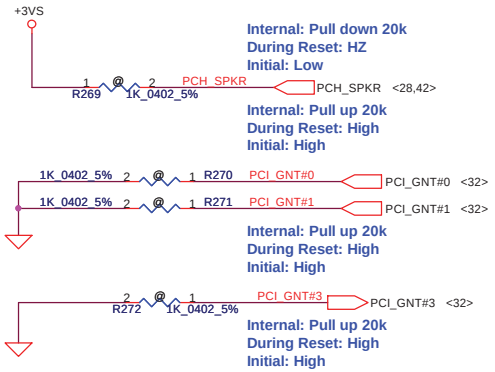
Title: PCH_DMI/FDI/PWM

Size: B | Document Number: NWQAA LA-6062P M/B | Rev: 2.0

Date: Wednesday, March 24, 2010 | Sheet 30 of 59



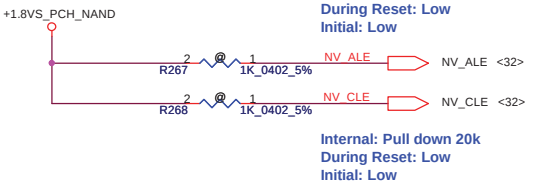
PCH Strap Pin



NO REBOOT Strap	
PCH_SPKR	Low= Disable High= Enable

Boot BIOS Strap		
PCI_GNT#1	PCI_GNT#0	Boot BIOS Loaction
0	0	LPC (Default)
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

A16 Swap Override Strap	
PCI_GNT#3	Low= A16 swap override Enable High= A16 swap override Disable



Danbury Technology Enabled	
NV_ALE	High = Enabled Low = Disabled (Default)

DMI Termination Voltage	
NV_CLE	Low= Set to Vss (Default) High= Set to Vcc

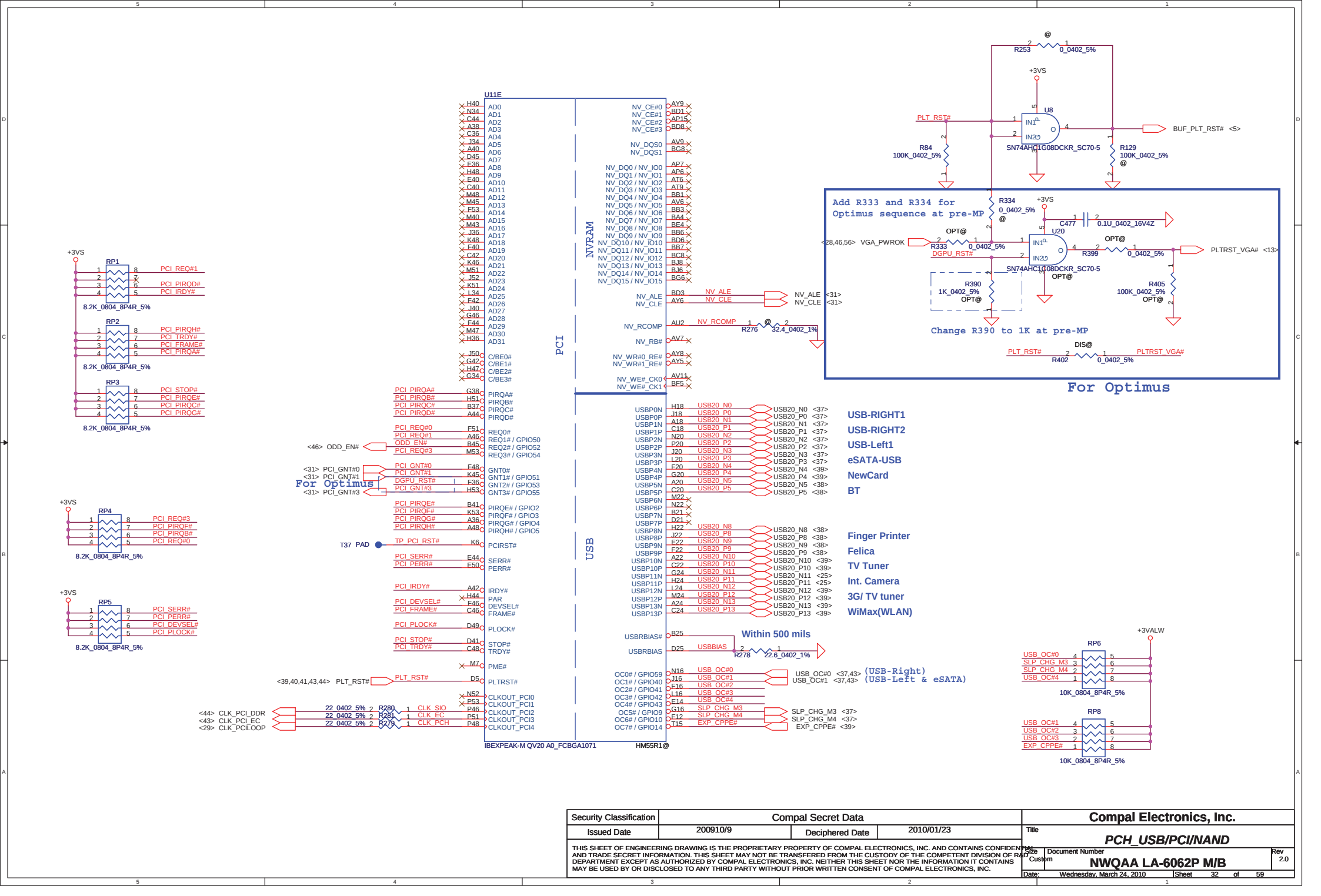
Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: PCH_CRT/LVDS/HDMI/STRAP

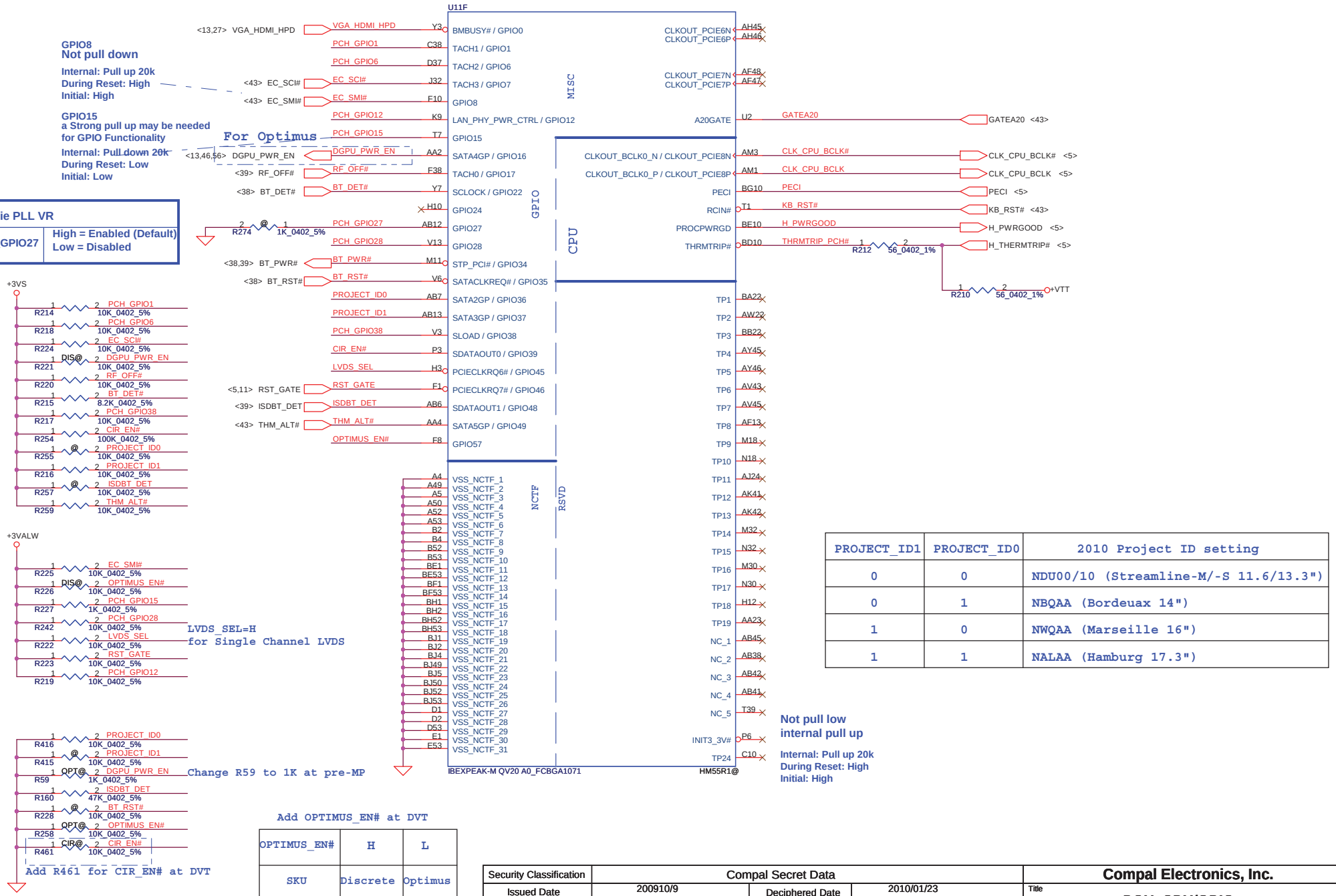
Size: Custom | Document Number: NWQAA LA-6062P M/B | Rev: 2.0

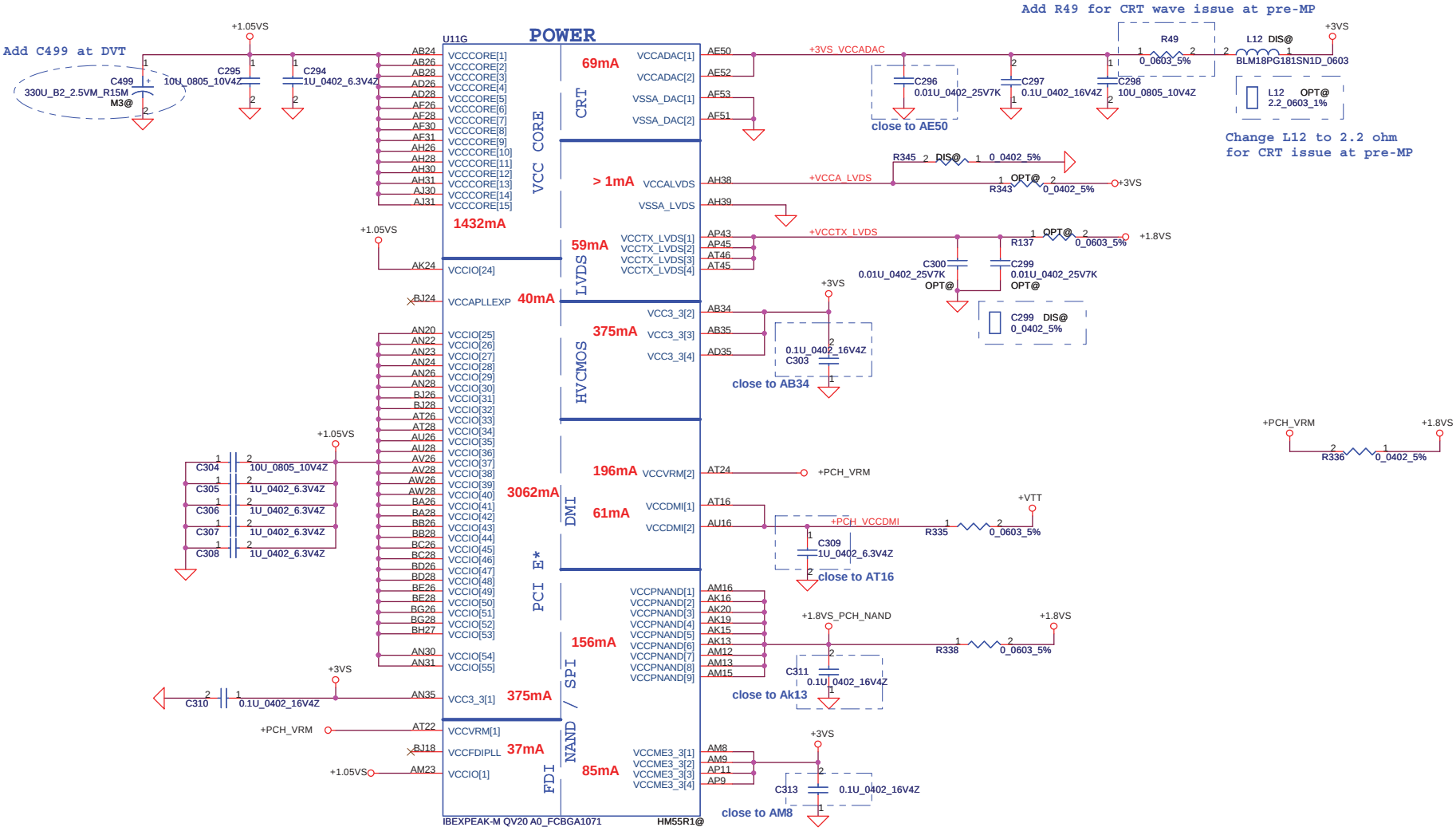
Date: Wednesday, March 24, 2010 | Sheet 31 of 59



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

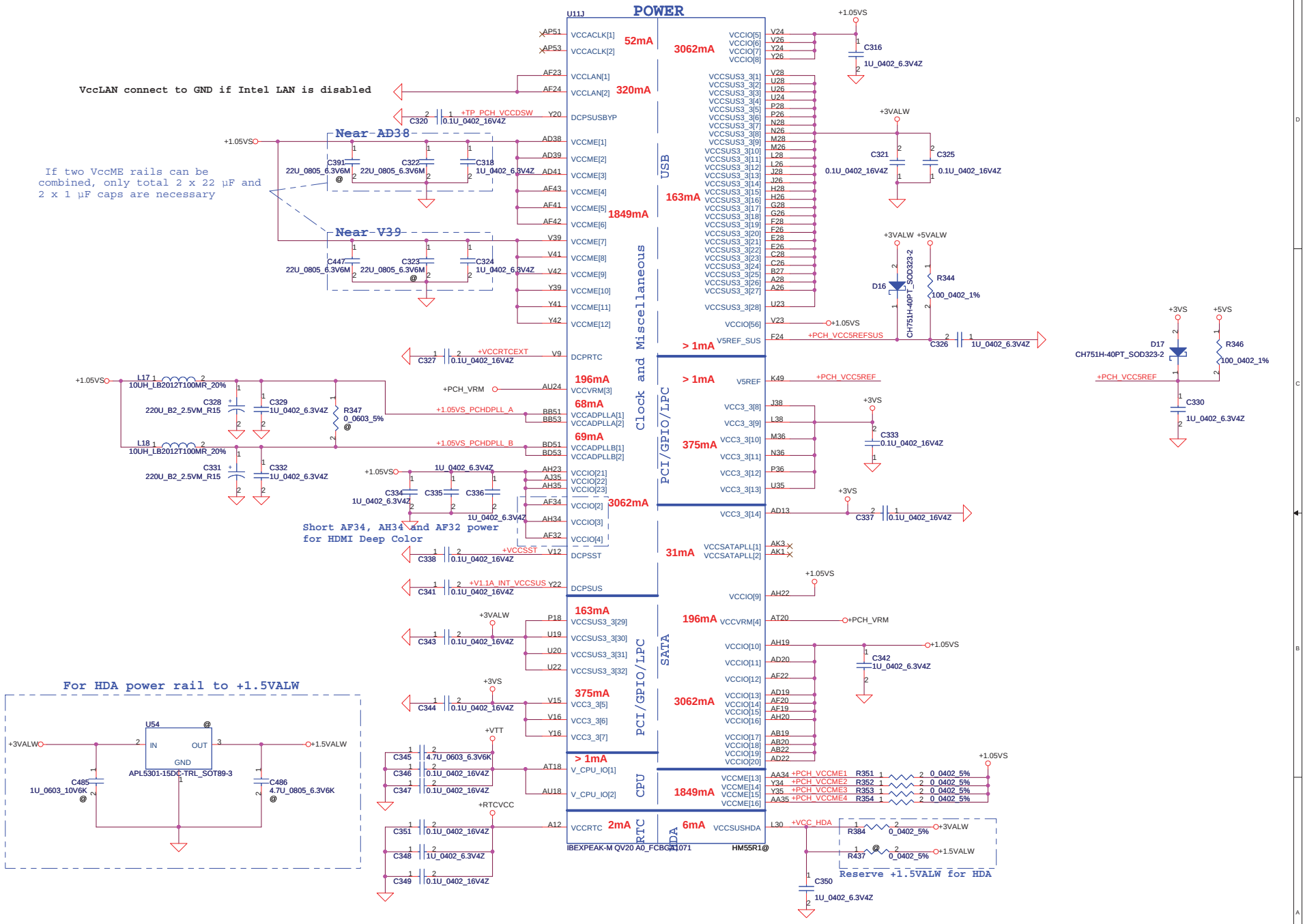
Compal Electronics, Inc.			
Title	PCH_USB/PCI/NAND		
Size: Custom	Document Number: NWQAA LA-6062P M/B		Rev: 2.0
Date: Wednesday, March 24, 2010	Sheet 32 of 59		





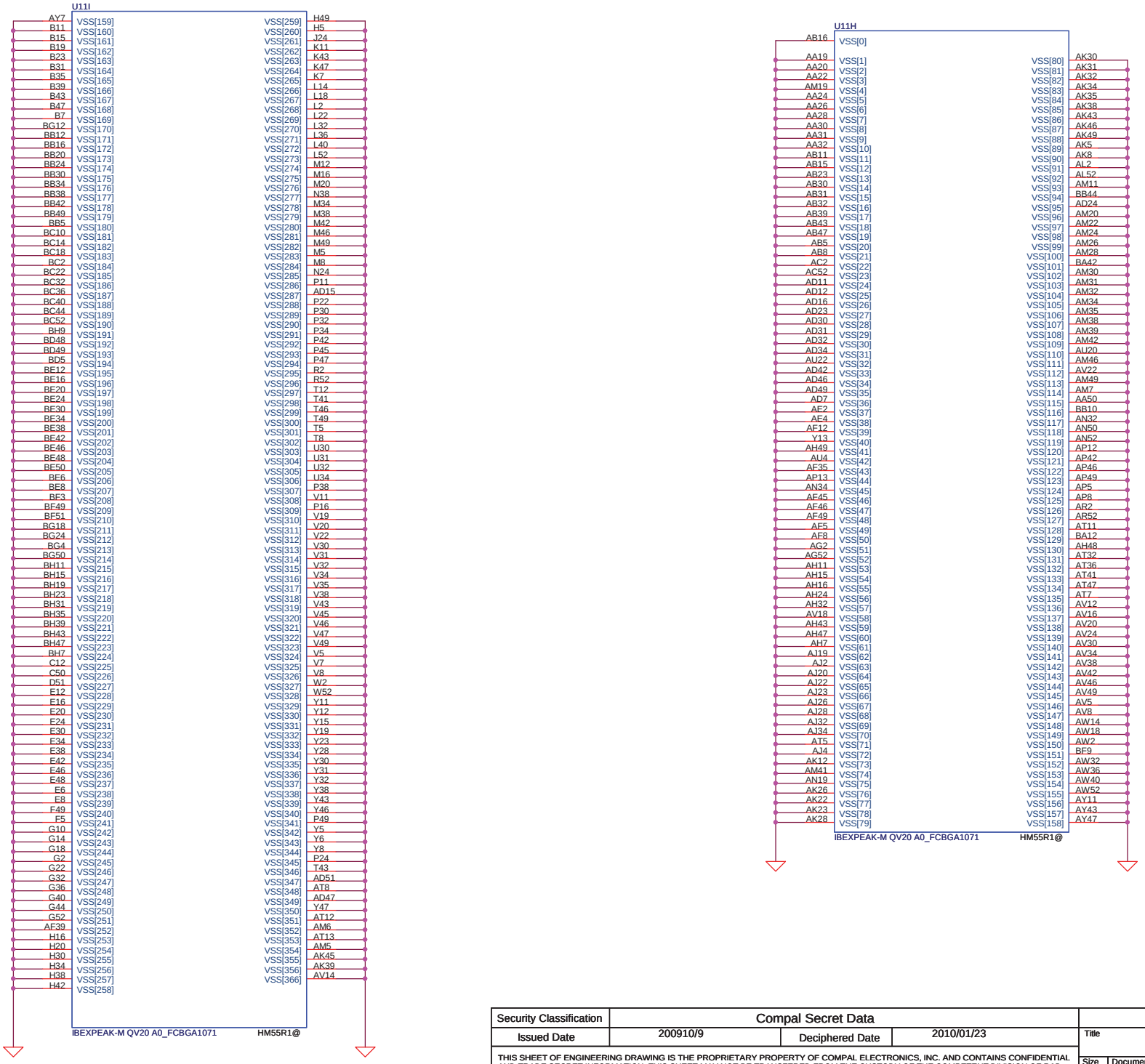
Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title: PCH_POWER-1			
Size: B	Document Number: NWQAA LA-6062P M/B		Rev: 2.0
Date: Tuesday, March 23, 2010	Sheet 34 of 59		



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title	PCH_POWER-2		
Size	Document Number		Rev
Custom	NWQAA LA-6062P M/B		2.0
Date: Tuesday, March 23, 2010		Sheet 35 of 59	



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: ***PCH_GND***

Size	Document Number	Rev
Custom	NWQAA LA-6062P M/B	2.0

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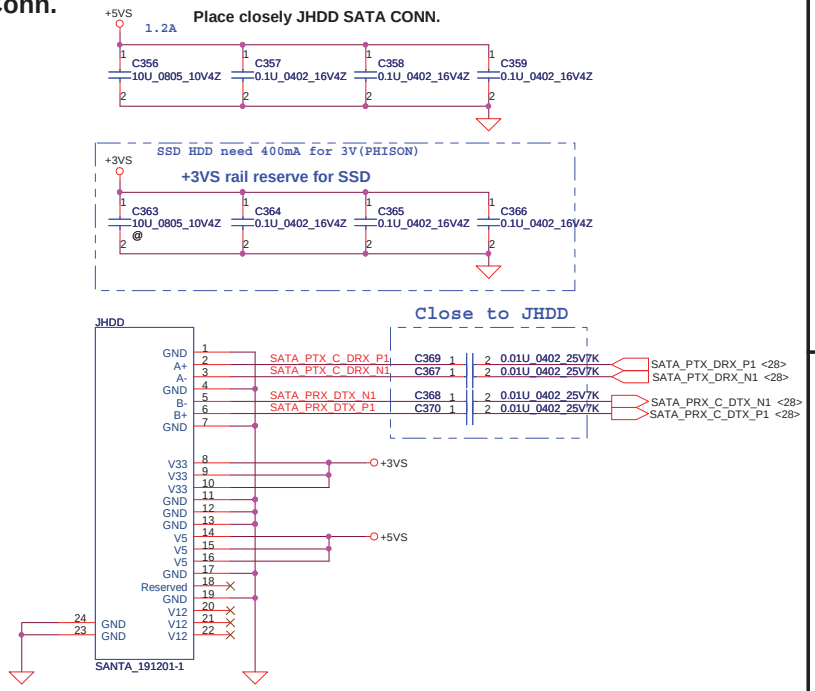
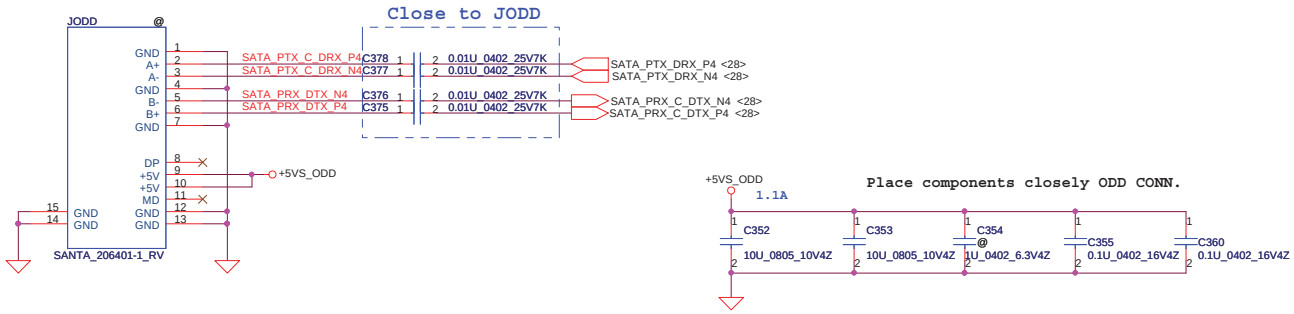
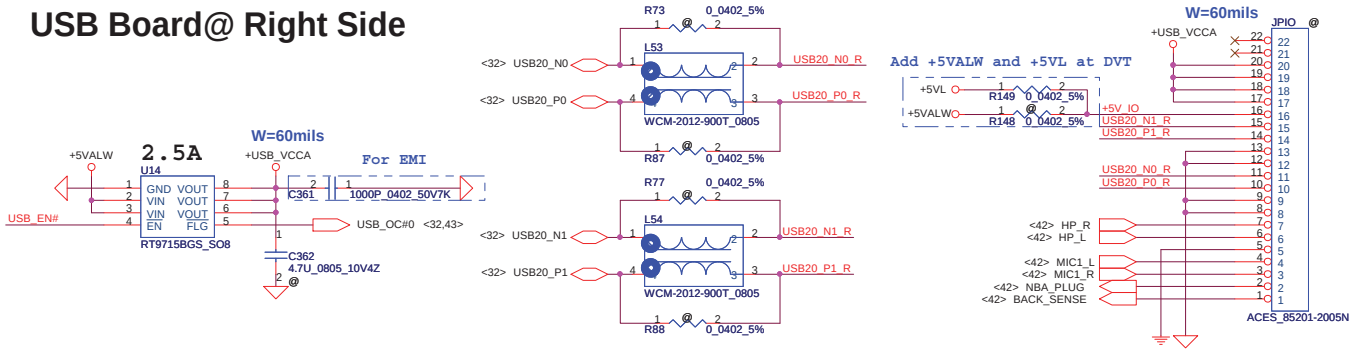
SATA HDD Conn.



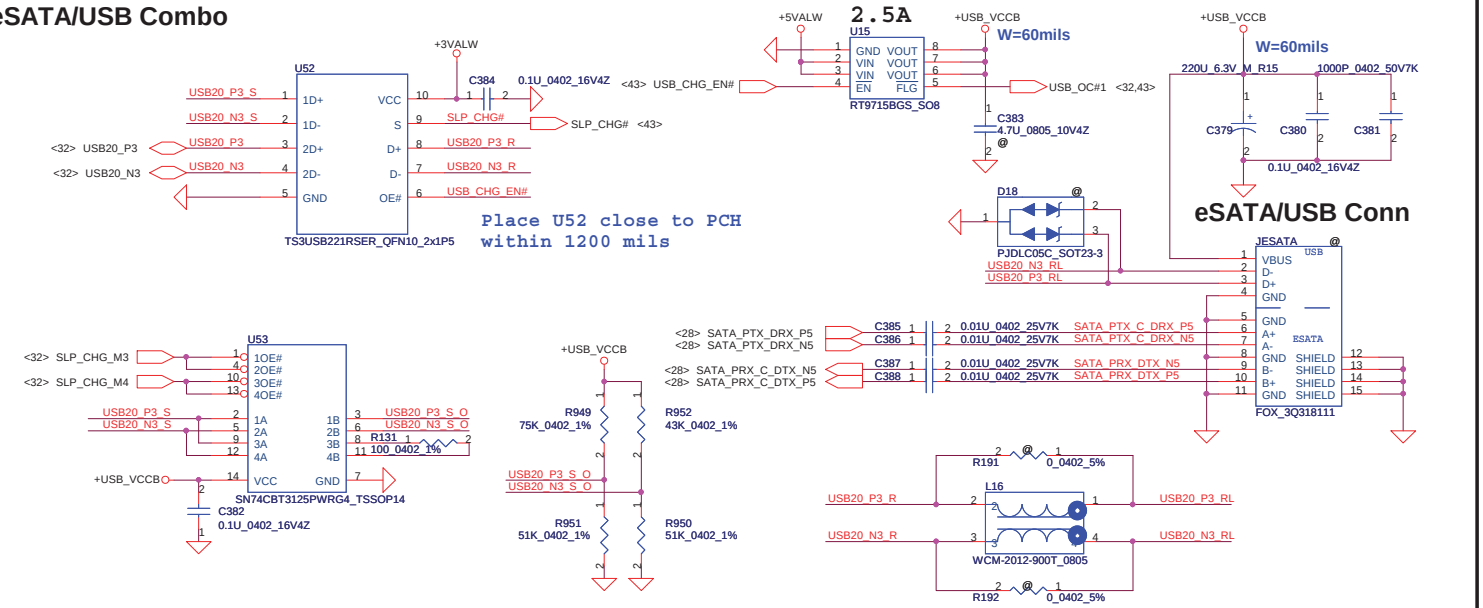
SATA ODD Conn



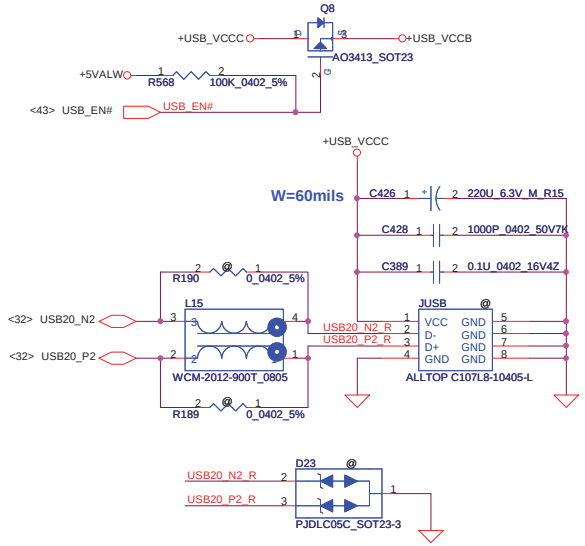
USB Board@ Right Side



eSATA/USB Combo



USB Board@ Left Side



SLP_CHG	FUNCTION
LOW	D=1D
HIGH	D=2D

	SLP_CHG_M3	SLP_CHG_M4
Mode 3	HIGH	LOW
Mode 4	LOW	HIGH

Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

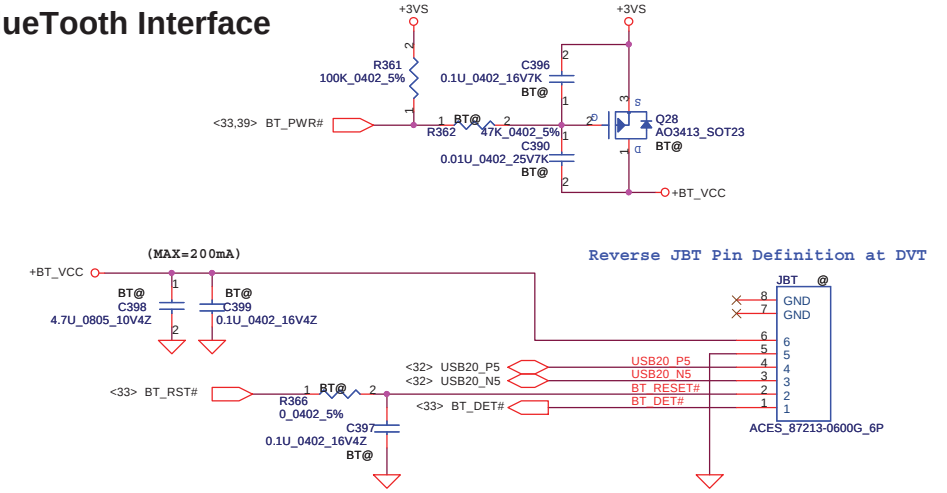
Compal Electronics, Inc.

Title: SATA-HDD/ODD/eSATA/USB

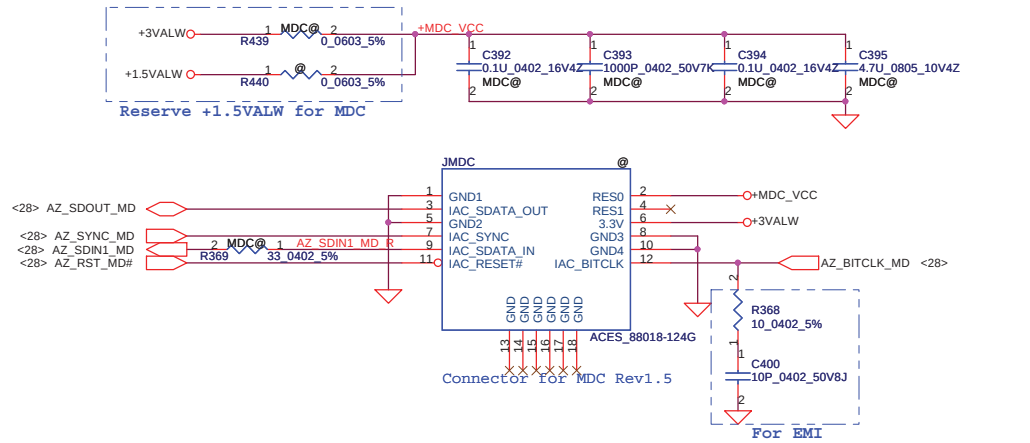
Size | Document Number: NWQAA LA-6062P M/B | Rev: 2.0

Date: Wednesday, March 24, 2010 | Sheet 37 of 59

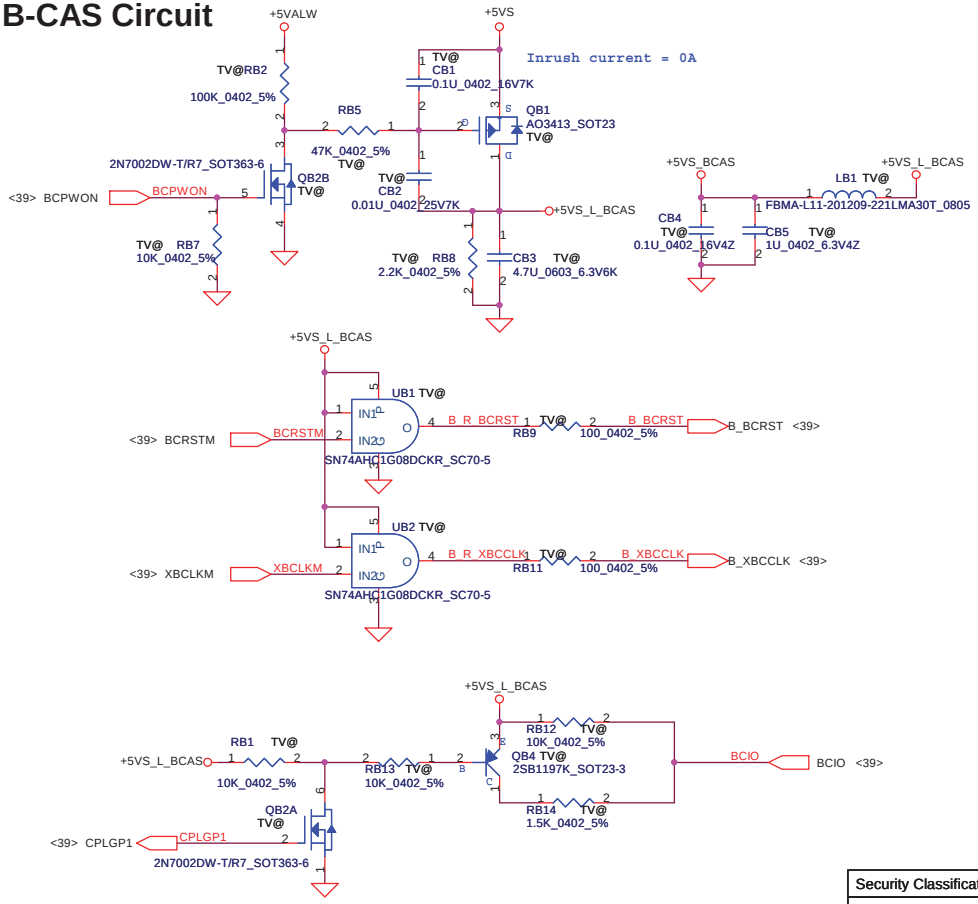
BlueTooth Interface



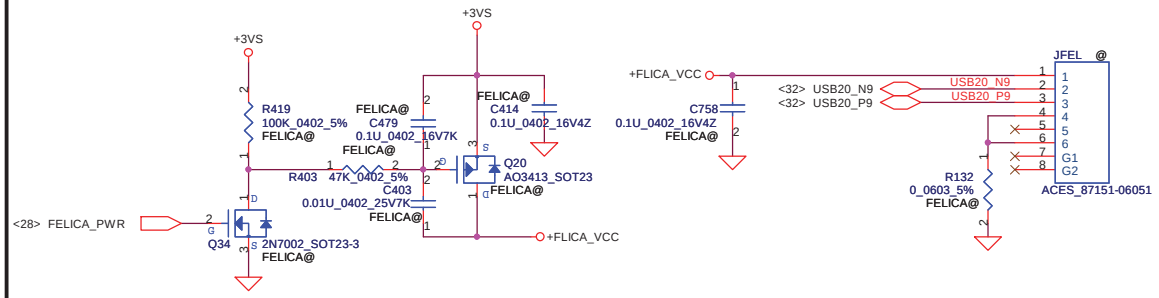
MDC 1.5 Conn.



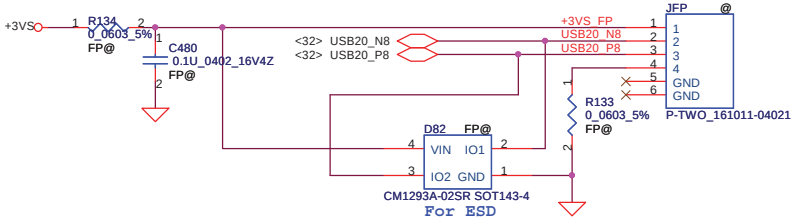
B-CAS Circuit



Felica



Finger printer



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: BT/FP/B-CAS/Felica/MDC

Size	Document Number	Rev
	NWQAA LA-6062P M/B	2.0

Date: Wednesday, March 24, 2010 Sheet 38 of 59

Slot 1 Half PCIe Mini Card-WLAN/ WiMax

+3VALW — PJ27@ JUMP_43X79 — +3V_WLAN

+3VS — PJ26@ JUMP_43X79

Short PJ27 for Wimax
Short PJ26 for WLAN

WLAN&BT Combo module circuits

	BT on module Enable	BT on module Disable
BT_CRTL	H	L
BT_PWR#	L	H

**If +3V_WLAN is +3VS, please remove D24

SUSP# — D24 CH751H-40PT_SOD323-2 — BT_CTRL

<33,38> BT_PWR# — Q36 2N7002_SOT23-3

Add BT_CTRL for WLAN & BT Combo module at DVT

+3V_WLAN — 40 mils — For SED — 0.1U_0402_16V4Z — CM1 CM2 CM3 C253 47P_0402_50V8J @ — 0.01U_0402_25V7K 4.7U_0805_10V4Z

+1.5VS — For SED — 0.1U_0402_16V4Z — CM7 CM8 CM9 C254 47P_0402_50V8J @ — 0.01U_0402_25V7K 4.7U_0805_10V4Z

JWLAN @ — FOX_AS0B226-S40N-7F

+1.5VS +3V_WLAN

<29> CLKREQ_WLAN# — BT_CTRL

<29> CLK_WLAN# <29> CLK_WLAN

<29> PCIE_PRX_WLANTX_N2 <29> PCIE_PRX_WLANTX_P2

<29> PCIE_PTX_C_WLANRX_N2 <29> PCIE_PTX_C_WLANRX_P2

WLAN/ WiFi

+3V_WLAN

PLT_RST# — WL_OFF# <43> PLT_RST# <32,40,41,43,44>

PM_SMBCLK <11,12,25,29> PM_SMBDATA <11,12,25,29>

USB20_N13 <32> USB20_P13 <32> WiMax

LED_WIMAX# — LED_WIMAX# <45> — RM6 100K_0402_5% WIMAX@ — +3VS

<43> E51_TXD <43> E51_RXD — R16 R17 0_0402_5%

Debug card using

Slot 2 Full PCIe Mini Card- 3G/ TV Tuner
Half PCIe Mini Card- JET

Add +1.5VS for TV tuner MC770A at PVT

+1.5VS +3VS — 2.75A

PCIE--JET B-CAS

<38> XBCLKM — BCCDET — <29> CLKREQ_JET# — <29> CLK_JET# <29> CLK_JET

<38> BCRSTM <38> BCPWON

<29> PCIE_PRX_JETTX_N4 <29> PCIE_PRX_JETTX_P4

<29> PCIE_PTX_C_JETRX_N4 <29> PCIE_PTX_C_JETRX_P4

<43> TMPTU2_SXP

J3G @ — FOX_AS0B226-S40N-7F

+3VS

UIM_DATA — +UIM_PWR

UIM_CLK

UIM_RESET

COMMON

ISDBT_DET — ISDBT_DET <33>

RF_OFF# — RF_OFF# <33>

PLT_RST#

USB20_P10_TV — R126 TV@ 0_0402_5% — USB20_P10 <32>

USB20_N10_TV — R135 TV@ 0_0402_5% — USB20_N10 <32>

USB--TV#2

R72 3G@ 0_0402_5% — PM_SMBCLK

R85 3G@ 0_0402_5% — PM_SMBDATA

USB20_N12 <32>

USB20_P12 <32> USB--3G/TV#1

LED_WIMAX# — CPLGP1 <38> — TMPTU1_SXP <43>

B-CAS

Add BCCDET pull down

BCCDET — R307 TV@ 470_0402_5%

+3VS — 120 mils — For SED — 0.1U_0402_16V4Z — CM4 CM5 CM6 C255 47P_0402_50V8J @ — 0.01U_0402_25V7K 4.7U_0805_10V4Z

RM3 0_0402_5% — 3G@ — UIM_VPP

COMMON — RM7 0_0402_5% — TV@ — BCIO — BCIO <38>

Close to J3G

+5VS_BCAS — RM4 TV@ 0_0603_5% — +VCC_SIM

+UIM_PWR — RM1 3G@ 0_0603_5%

UIM_RESET — RM5 3G@ 0_0402_5% — SIM_RESET

<38> B_BCRST — B_BCRST — RM8 TV@ 0_0402_5%

UIM_CLK — RM9 3G@ 0_0402_5% — SIM_CLK

<38> B_XBCCLK — B_XBCCLK — RM10 TV@ 0_0402_5%

UIM_DATA — RM11 3G@ 0_0402_5% — SIM_DATA

BCIO — RM12 TV@ 0_0402_5%

+VCC_SIM SIM_RESET SIM_CLK — J3GSIM @ — MOLEX_47273-0001-D

VCC RST CLK NC GND VPP I/O NC

UIM_VPP SIM_DATA

CM13 0.1U_0402_16V4Z 3G@ — DM1 RLZ20A_LL34 3G@

CM15 10P_0402_50V8J 3G@ — CM16 10P_0402_50V8J 3G@

+UIM_PWR — RM2 4.7K_0402_5% @ — CM14 22P_0402_50V8J @

+3VALW_CARD — Imax = 0.275A — CN1 10U_0805_10V4Z NEW@ — CN2 0.1U_0402_16V4Z NEW@

+3VS_CARD — Imax = 1.35A — CN3 10U_0805_10V4Z NEW@ — CN4 0.1U_0402_16V4Z NEW@

+1.5VS_CARD — Imax = 0.75A — CN5 10U_0805_10V4Z NEW@ — CN6 0.1U_0402_16V4Z NEW@

+3VALW — NEW@ — RN4 CP_USB# 100K_0402_5%

UN1 NEW@ — TPS2231MRGPR-2 QFN

+1.5VS — 1.5Vin 1.5Vin — 1.5Vout 1.5Vout — 40mils — +1.5VS_CARD

+3VS — 3.3Vin 3.3Vin — 3.3Vout 3.3Vout — 60mils — +3VS_CARD

+3VALW — AUX_IN — AUX_OUT — 20mils — +3VALW_CARD

PLT_RST# — SYSRST# — OC#

<43,53> SYSON — SHDN# — PERST# — PERST#

<43,46,49,52,56> SUSP# — STBY# — NC

EXP_CPPE# — CPPE# — GND

CP_USB# — CPUSB# — Thermal_Pad

RCLKEN — RCLKEN

Reserve for EMI request

<32> USB20_P4 — R125 NEW@ 0_0402_5% — USB20_P4_R

L56 @

<32> USB20_N4 — WCM-2012-900T_0805 — USB20_N4_R

R124 NEW@ 0_0402_5%

+3VS — RN7 10K_0402_5% @

+3VS — RN6 10K_0402_5% @ — CLKREQ# — UN2 @ — NC7SZ32P5X_NL_SC70-5 — CLKREQ_NEW# — CLKREQ_NEW# <29>

CN7 0.1U_0402_16V4Z @

RCLKEN — Q27 2N7002_SOT23-3 @

NEW@ — CLKREQ# — RN8 — CLKREQ_NEW# — 0_0402_5%

JEXP @ — SANTA_130801-5_NR

USB20_N4_R USB20_P4_R CP_USB#

PM_SMBCLK PM_SMBDATA

+1.5VS_CARD

<30,40> EC_SWI# +3VALW_CARD

PERST#

+3VS_CARD

CLKREQ# EXP_CPPE#

<32> EXP_CPPE# <29> CLK_NEW# <29> CLK_NEW

<29> PCIE_PRX_NEWTX_N3 <29> PCIE_PRX_NEWTX_P3

<29> PCIE_PTX_C_NEWRX_N3 <29> PCIE_PTX_C_NEWRX_P3

GND USB_D- USB_D+ CPUSB# RSV RSV SMB_CLK SMB_DATA +1.5V +1.5V WAKE# +3.3VAUX PERST# +3.3V +3.3V CLKREQ# CPPE# REFCLK- REFCLK+ GND PERp0 PERn0 GND PETn0 PETp0 GND GND GND GND GND

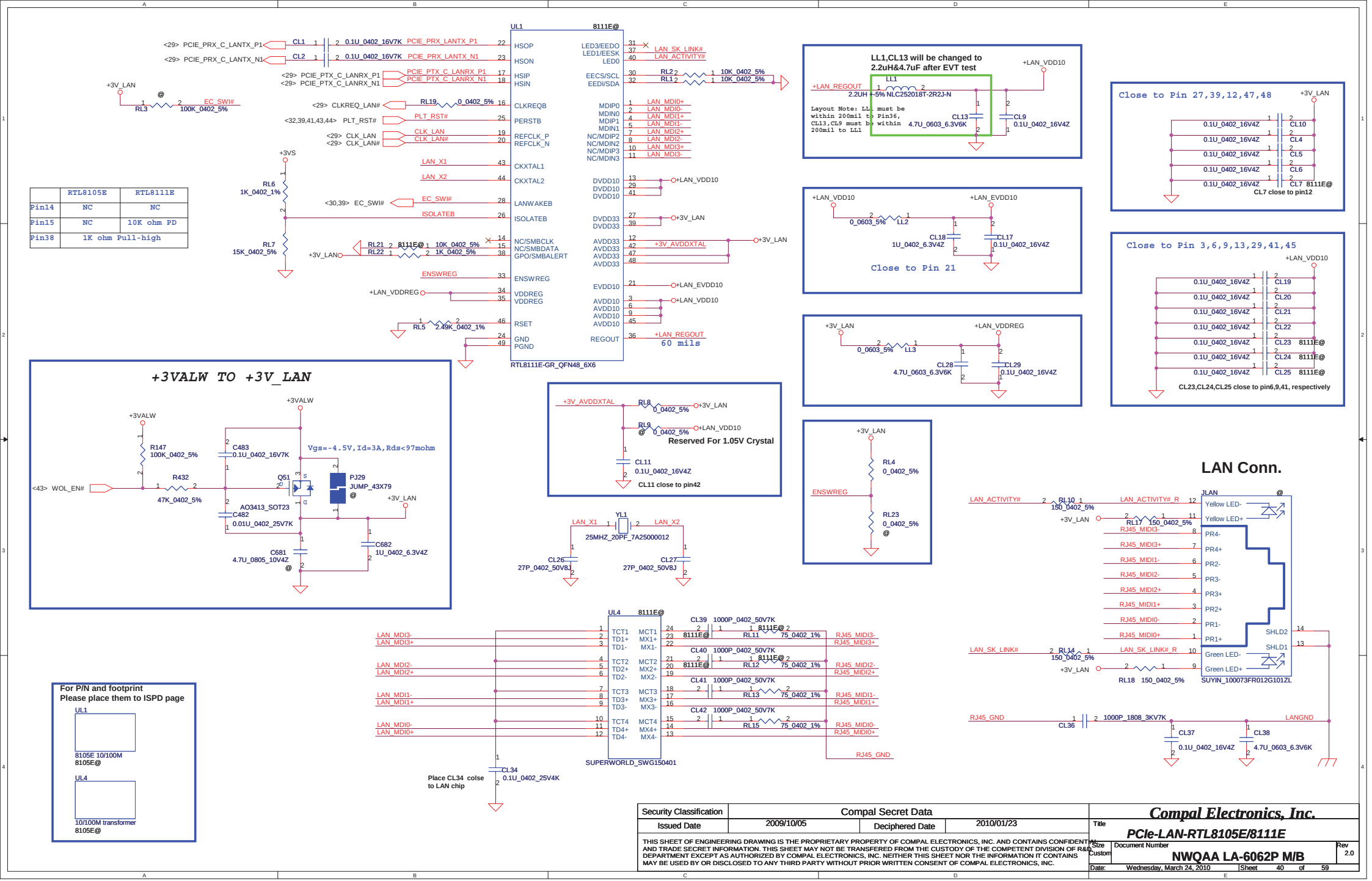
Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: PCIe-WLAN/JET/3G/TV/NewCard

Size: — Document Number: NWQAA LA-6062P M/B — Rev: 2.0

Date: Wednesday, March 24, 2010 — Sheet 39 of 59



	RTL8105E	RTL8111E
Pin14	NC	NC
Pin15	NC	10K ohm PD
Pin38	1K ohm Pull-high	

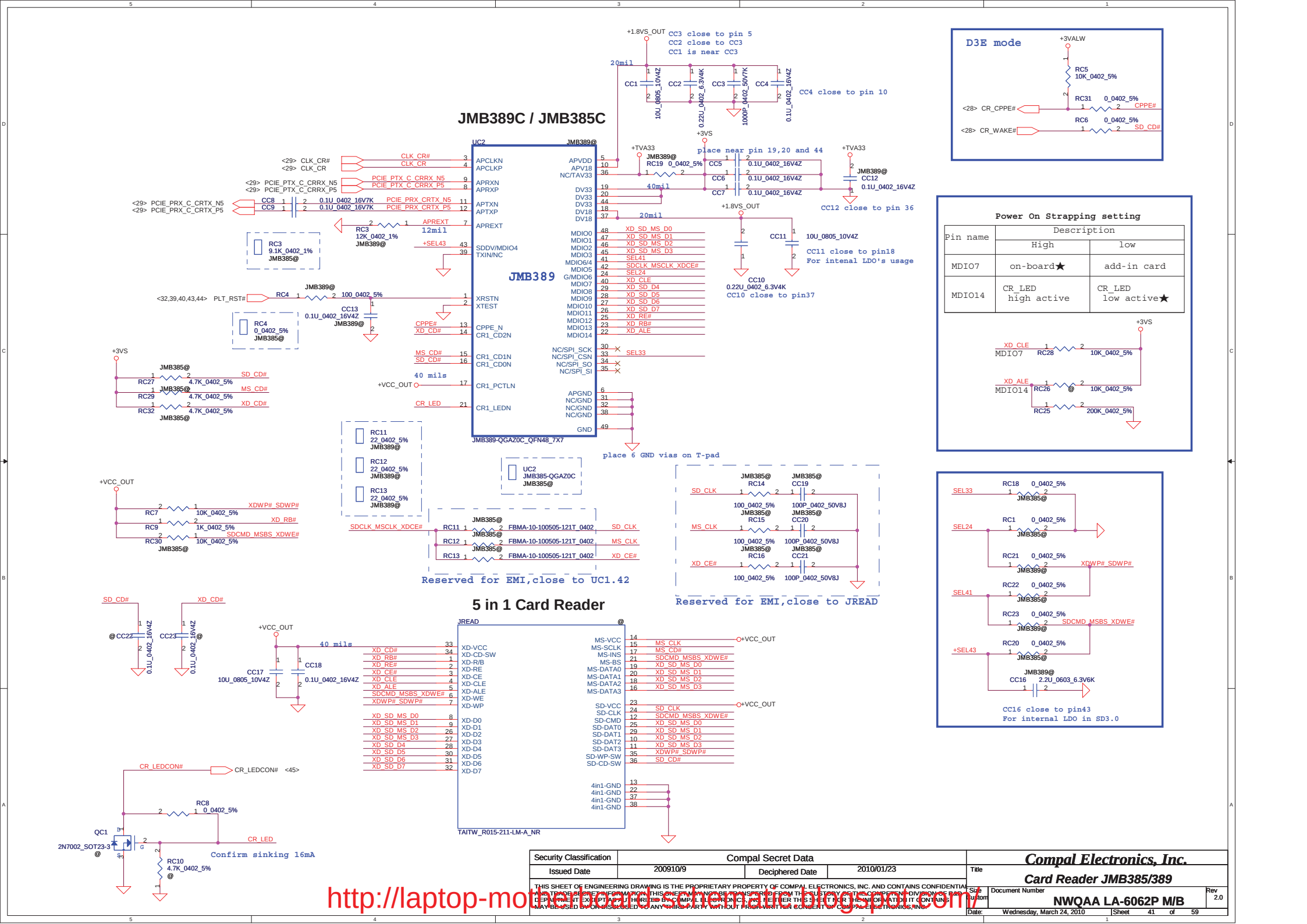
Security Classification	Compal Secret Data		
Issued Date	2009/10/05	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: PCIe-LAN-RTL8105E/8111E

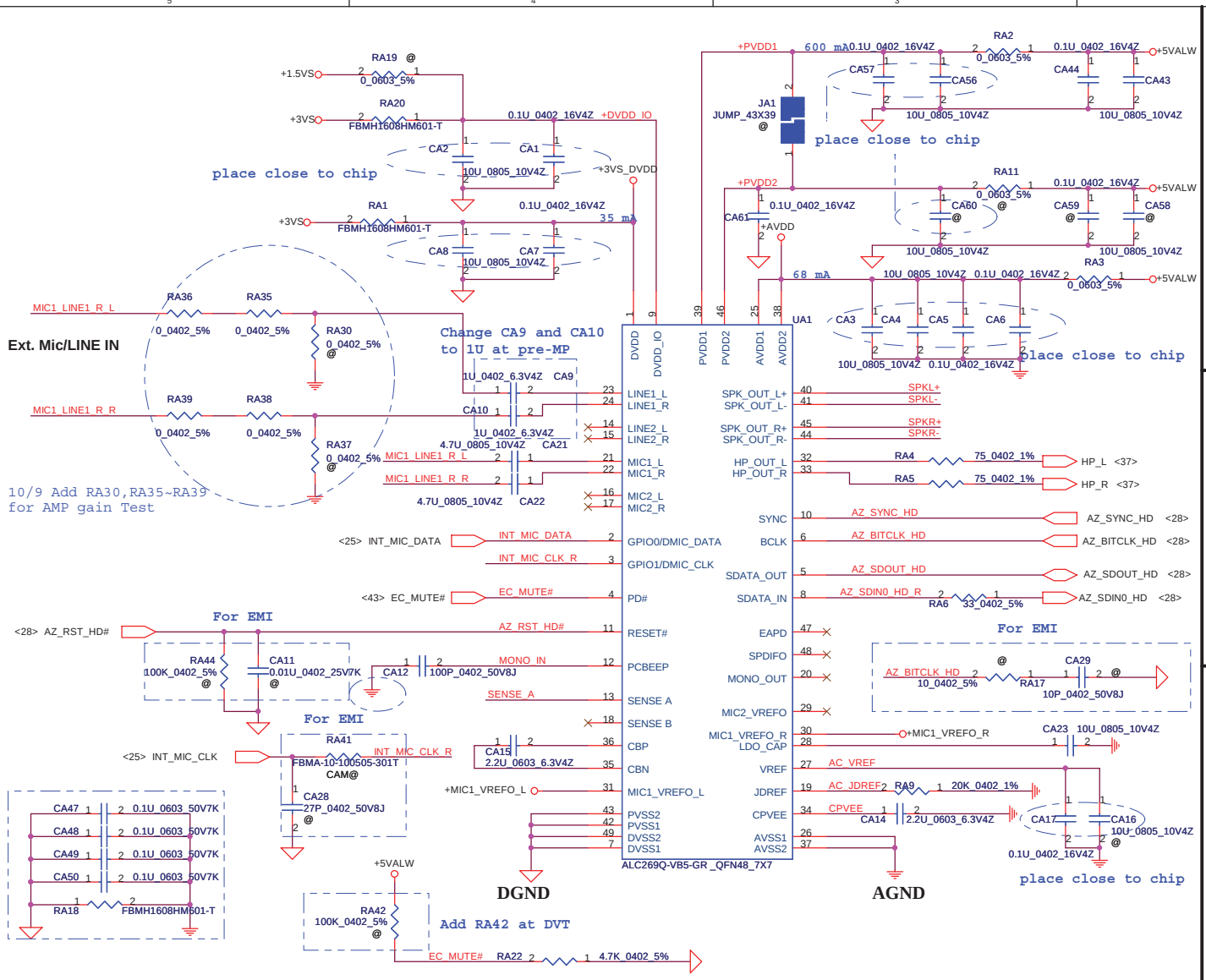
Size: Custom | Document Number: NWQAA LA-6062P M/B | Rev: 2.0

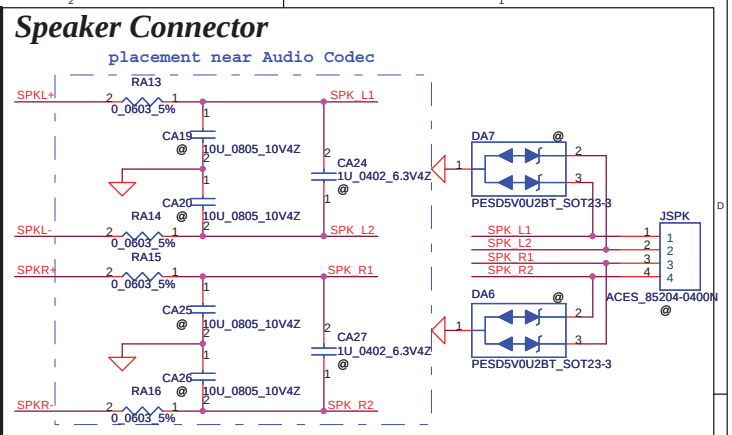
Date: Wednesday, March 24, 2010 | Sheet 40 of 59

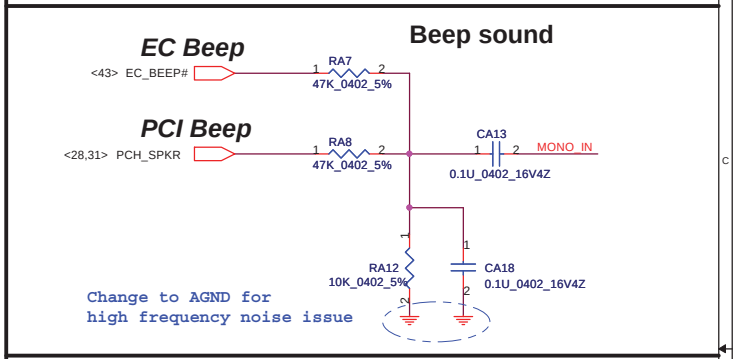


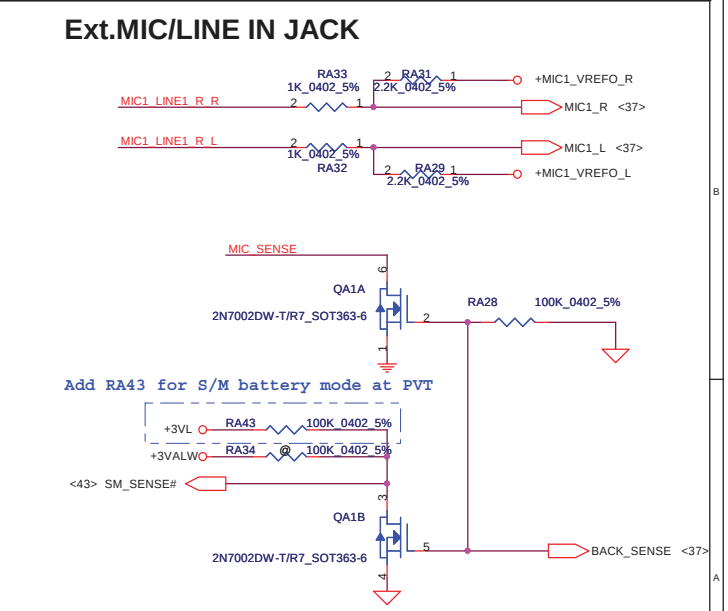
Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title: Card Reader JMB385/389			
Size: A3 (Custom)	Document Number: NWQAA LA-6062P M/B		Rev: 2.0
Date: Wednesday, March 24, 2010		Sheet 41 of 59	

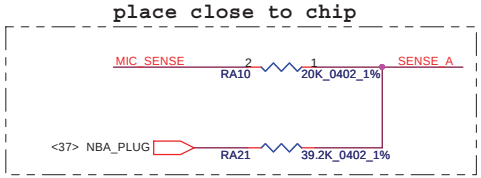








Sense Pin	Impedance	Codec Signals	Function
SENSE A	39.2K	PORT-I (PIN 32, 33)	Headphone out
	20K	PORT-B (PIN 21, 22)	Ext. MIC
	10K	PORT-C (PIN 23, 24)	
	5.1K	(PIN 48)	
SENSE B	39.2K	PORT-E (PIN 14, 15)	
	20K	PORT-F (PIN 16, 17)	
	10K	PORT-H (PIN 20)	



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title	HDA CODEC ALC269		
Size	Document Number		Rev
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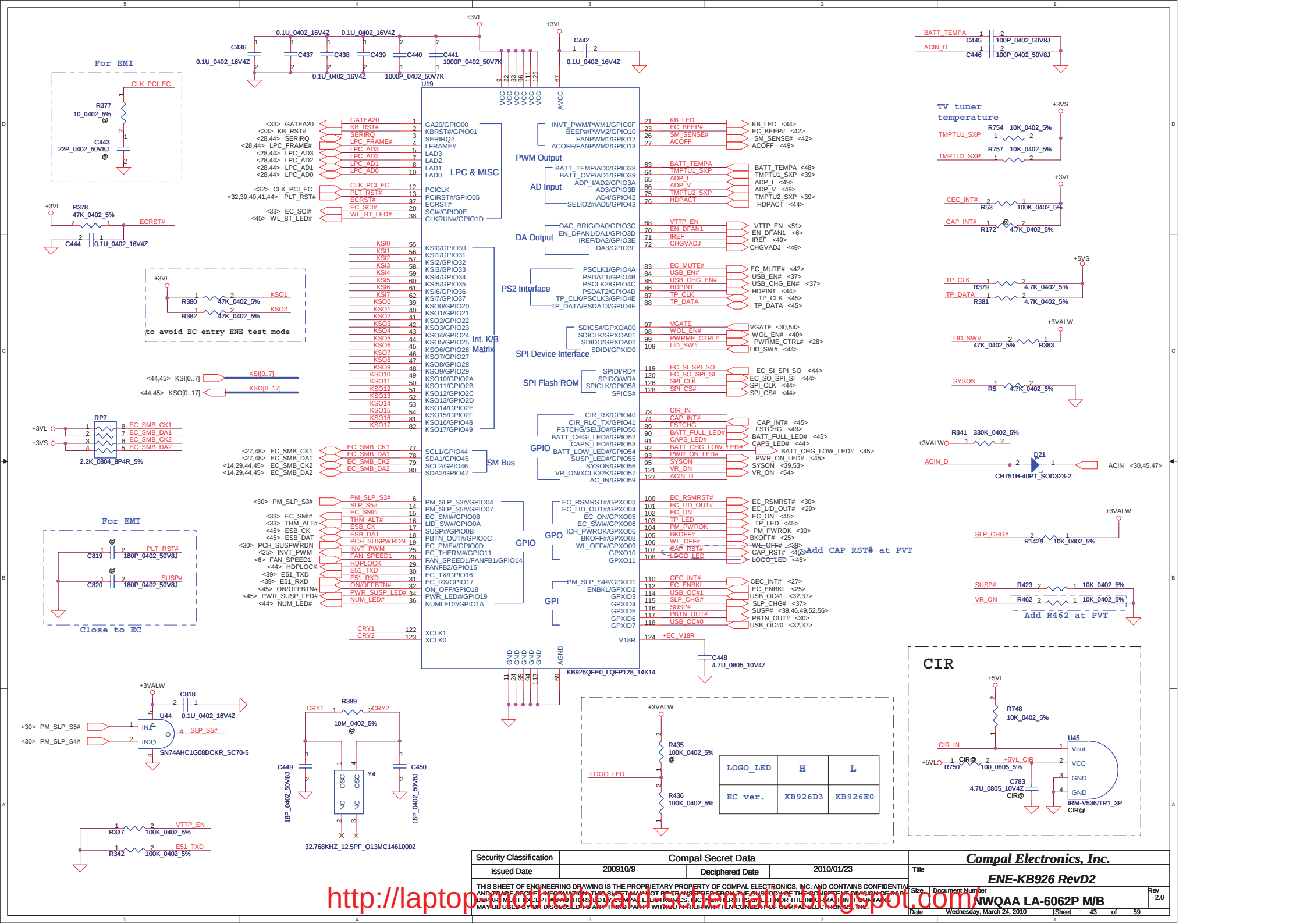

Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

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Compal Electronics, Inc.		
Title: ENE-KB926 RevD2		
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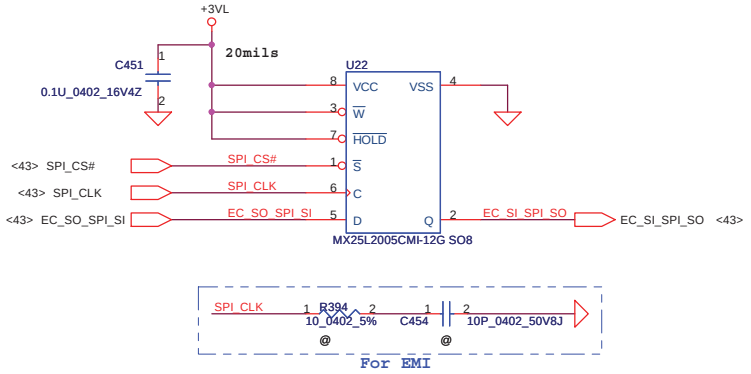
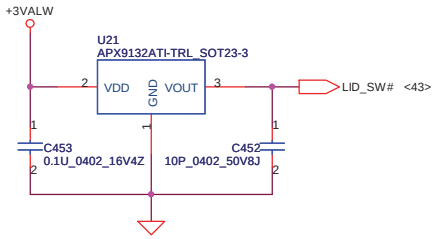
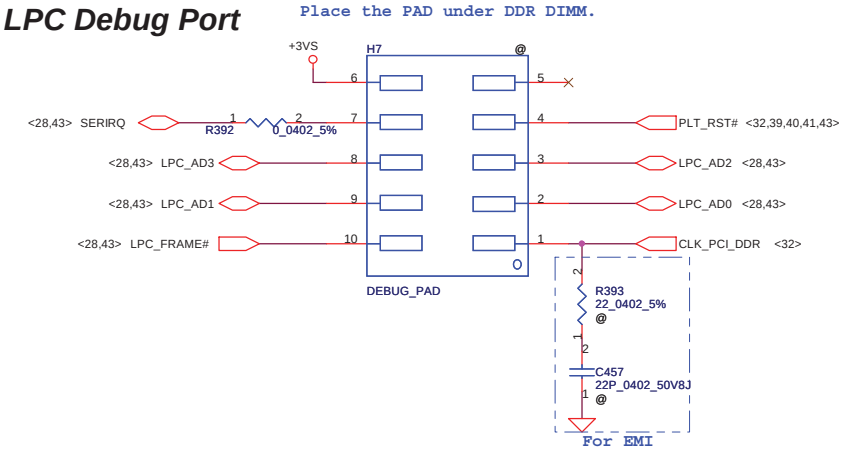
SPI Flash (256KB)



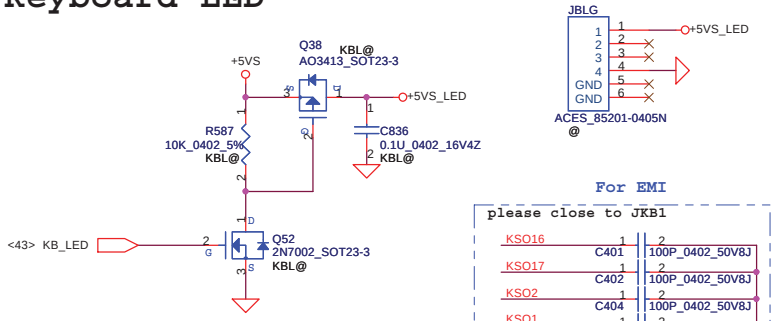
Lid SW



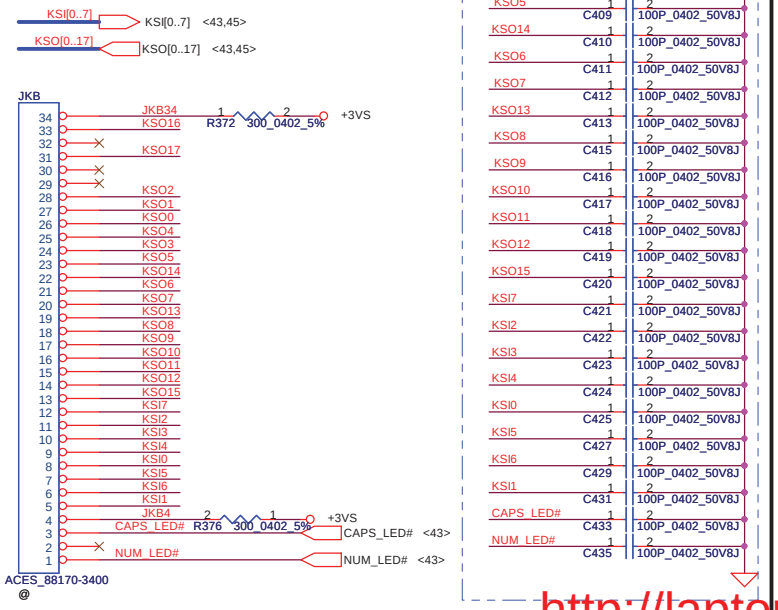
LPC Debug Port



Keyboard LED

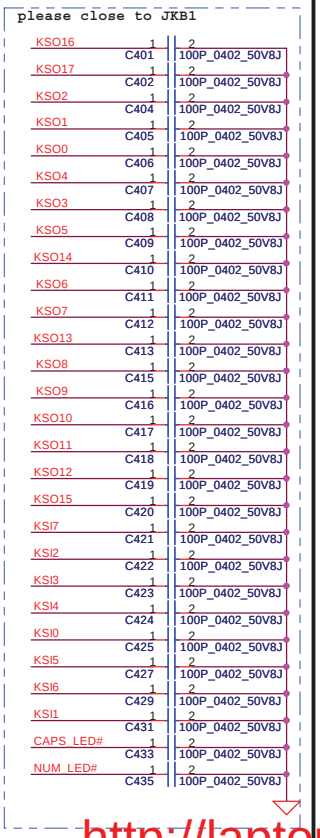


KEYBOARD CONN.

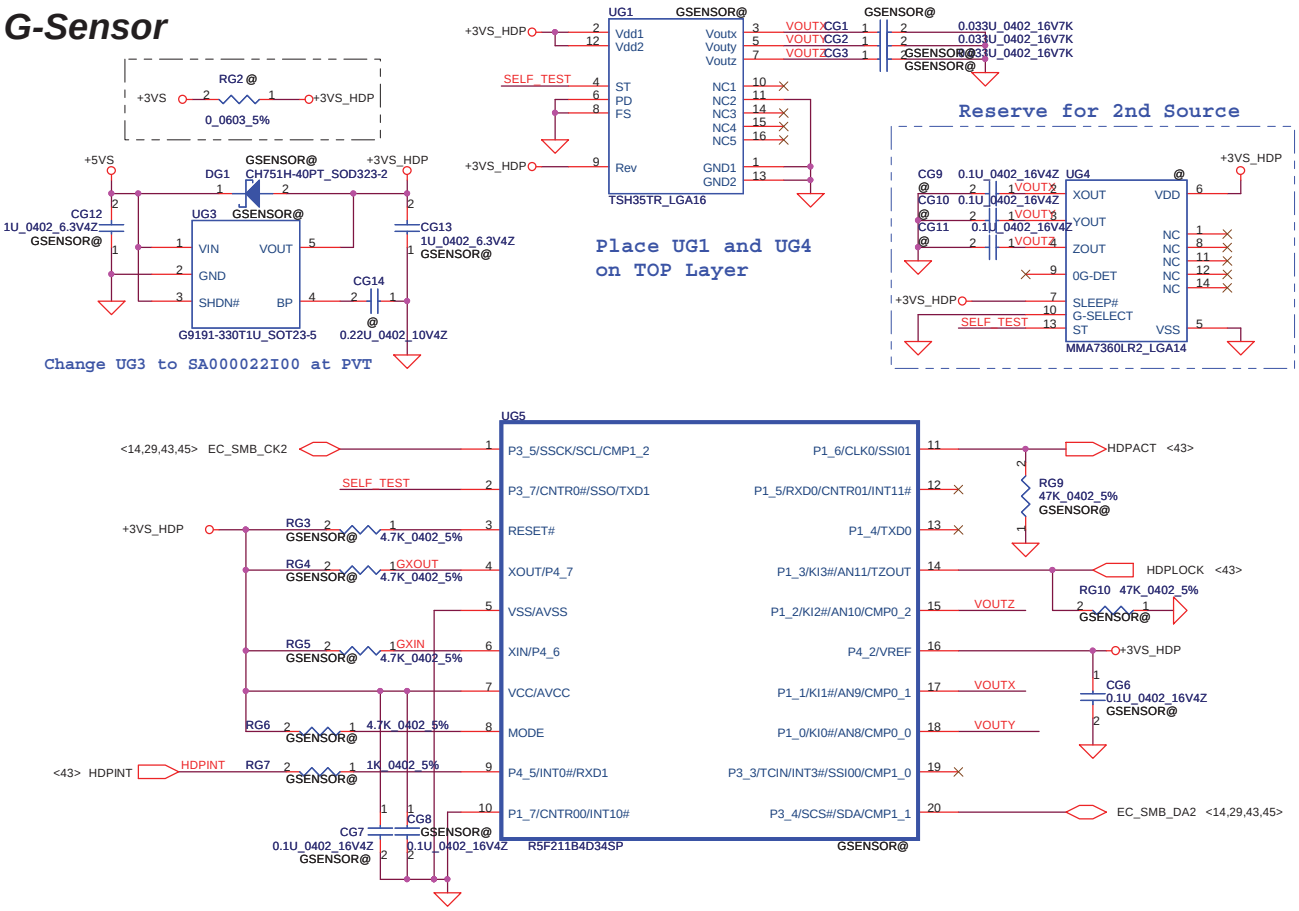


For EMI

please close to JKB1



G-Sensor



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title: SPI ROM/LID/Debug/KB/G-Sen			
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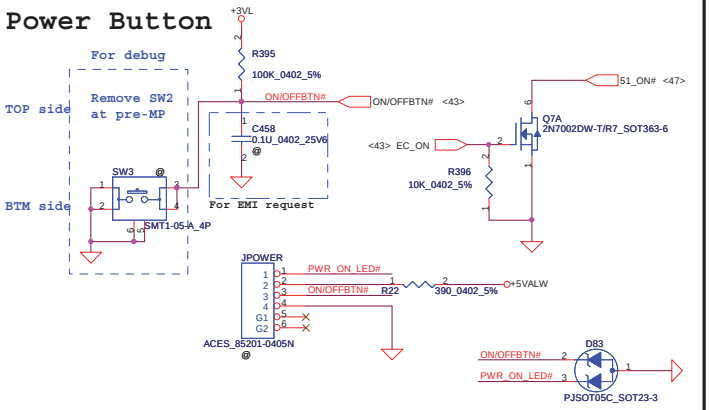
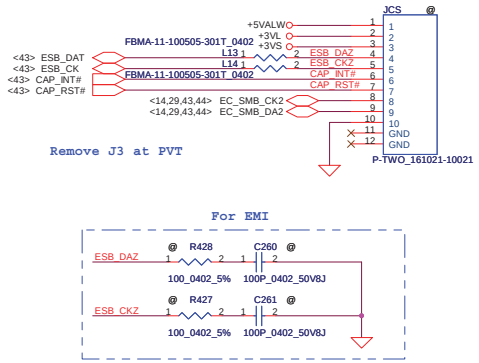
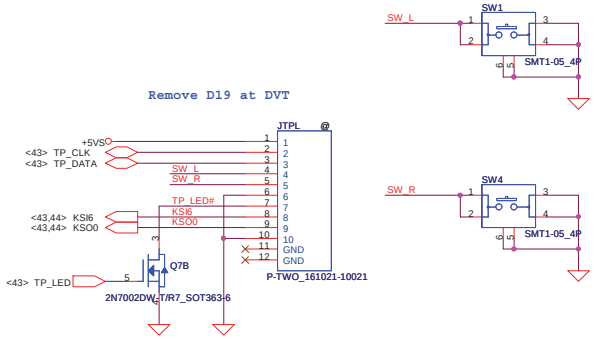
Power Button



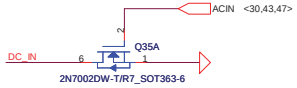
Caps Sensor/Light Sensor Conn.



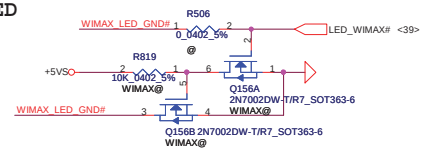
Touchpad & Light Pipe Connector



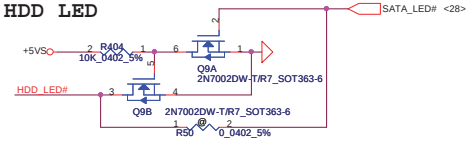
DC-IN LED



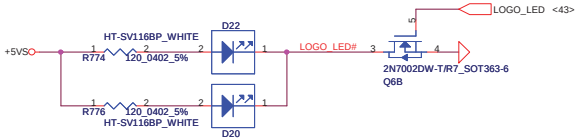
WiMAX LED



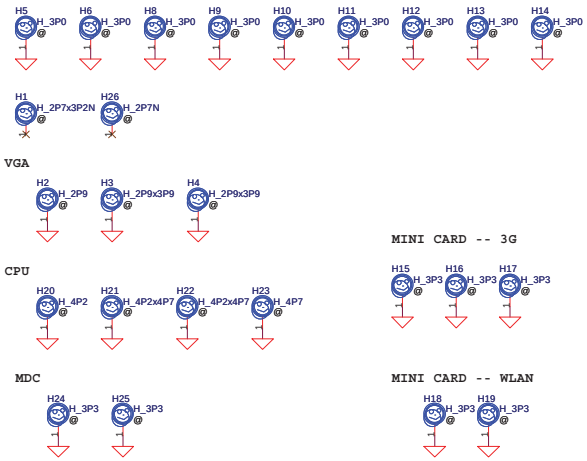
HDD LED



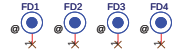
Logo LED



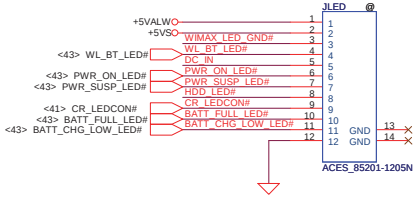
Screw Hole



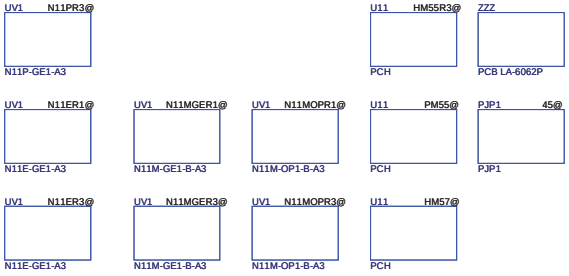
PCB Fedical Mark PAD



LED/B Connector



ISPD



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title: PWR/Cap./TP/LED/LP/LS/Screw			
Size:	Document Number: NWQAA LA-6062P M/B		Rev: 2.0
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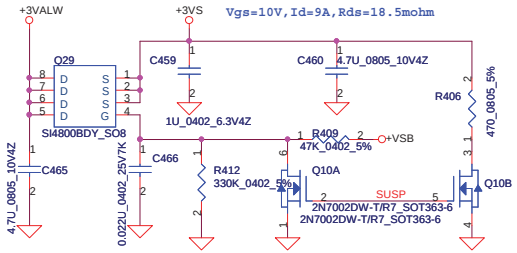
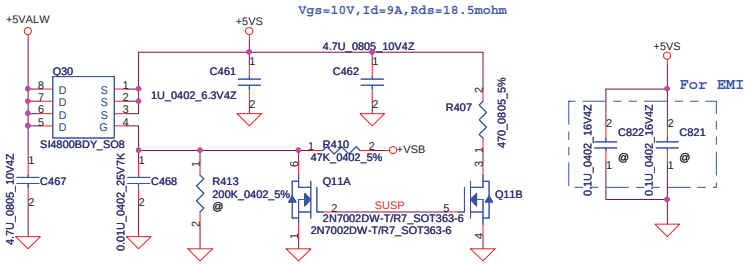
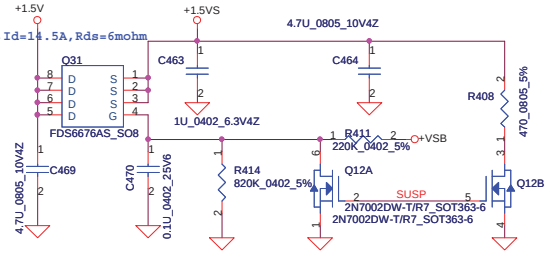
+3VALW TO +3VS



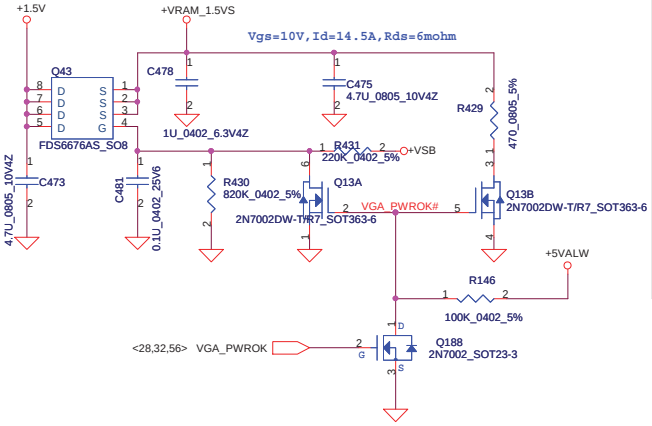
+5VALW TO +5VS



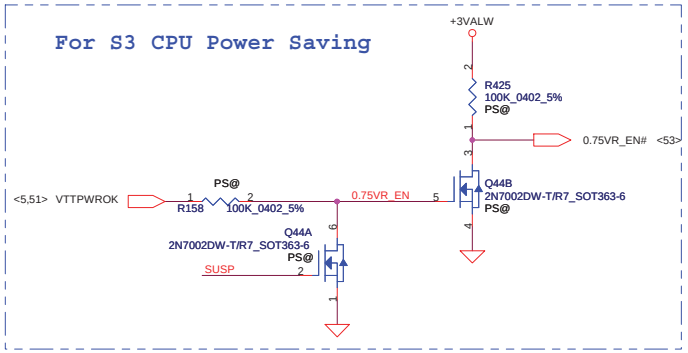
+1.5V to +1.5VS

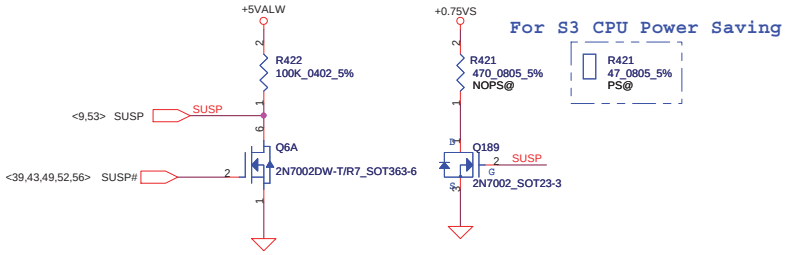


+1.5V to +VRAM_1.5VS



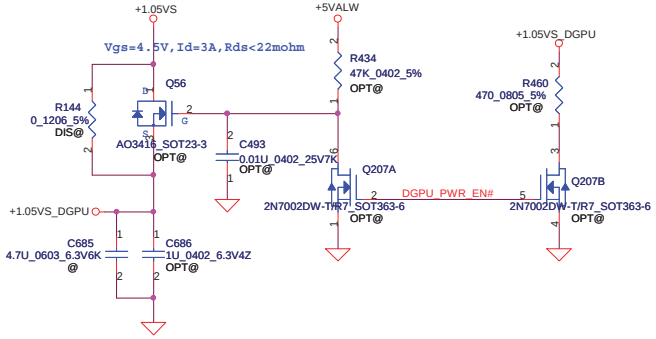
For S3 CPU Power Saving



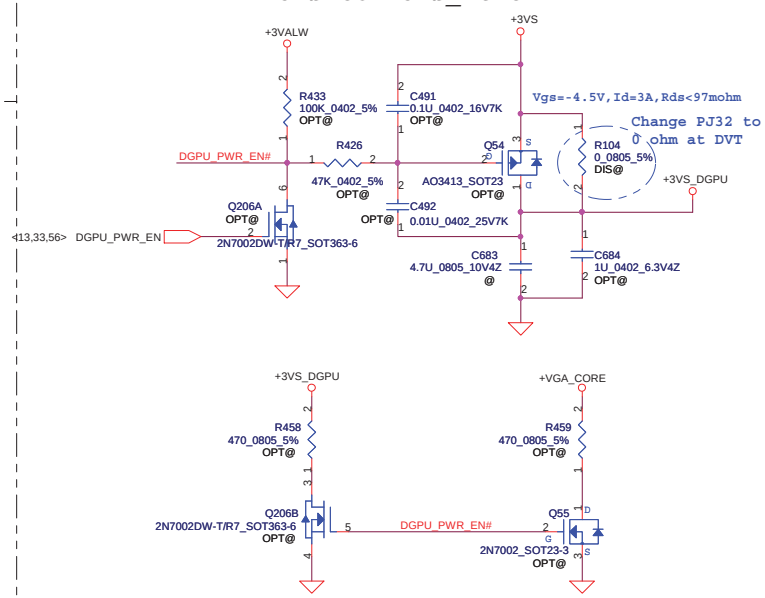


+1.05VS to +1.05VS_DGPU

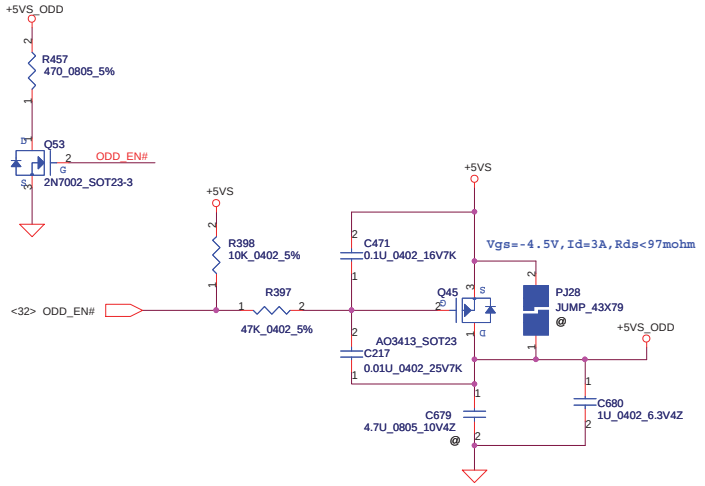
Change +1.05VS_DGPU circuit
to N-channel MOS at PVT



+3VS to +3VS_DGPU



+5VS TO +5VS_ODD



Security Classification	Compal Secret Data		
Issued Date	200910/9	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: DC-DC INTERFACE

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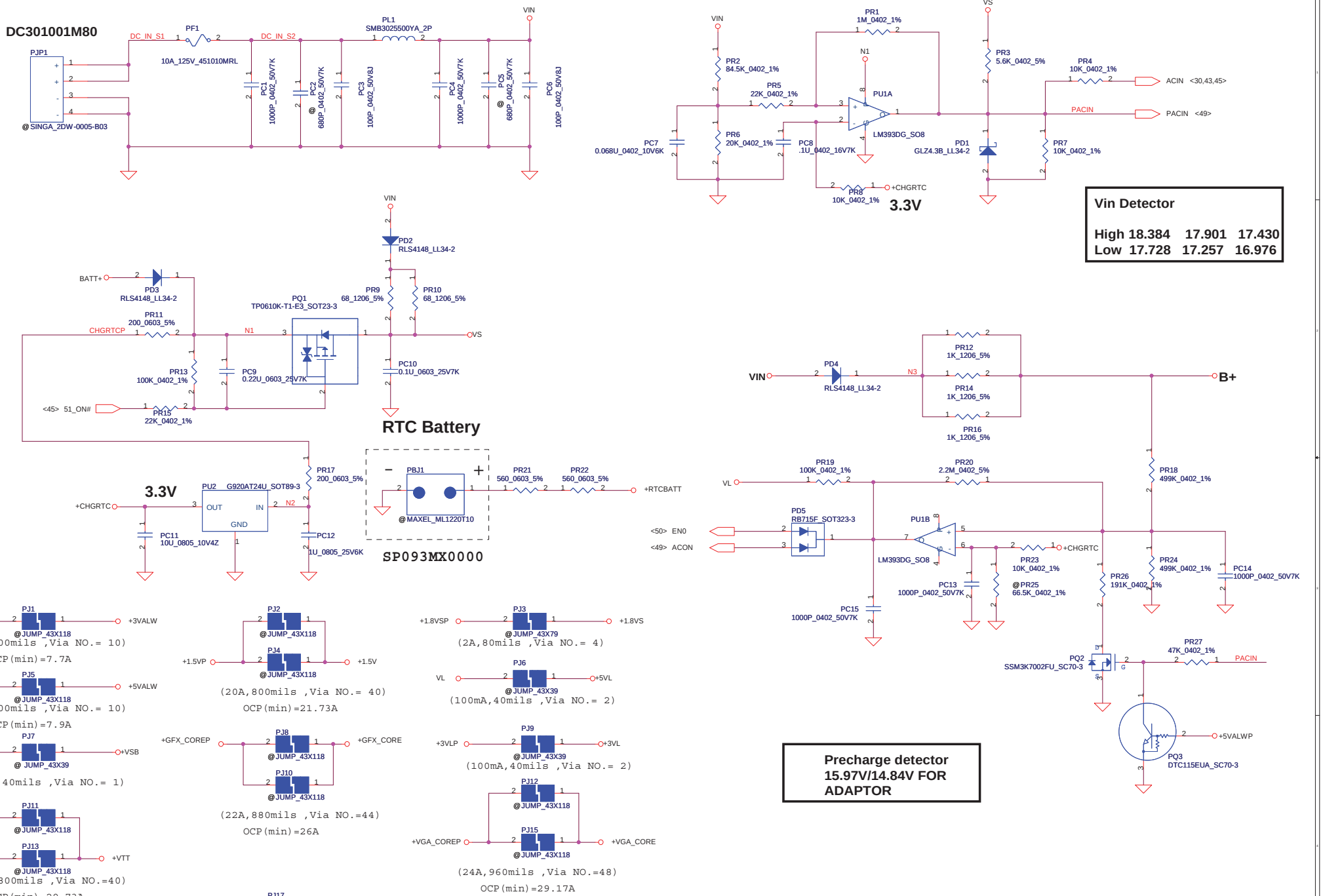

Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title: DCIN / DETECTOR			
Size	Document Number: NWQAA LA-6062P M/B		Rev: 2.0
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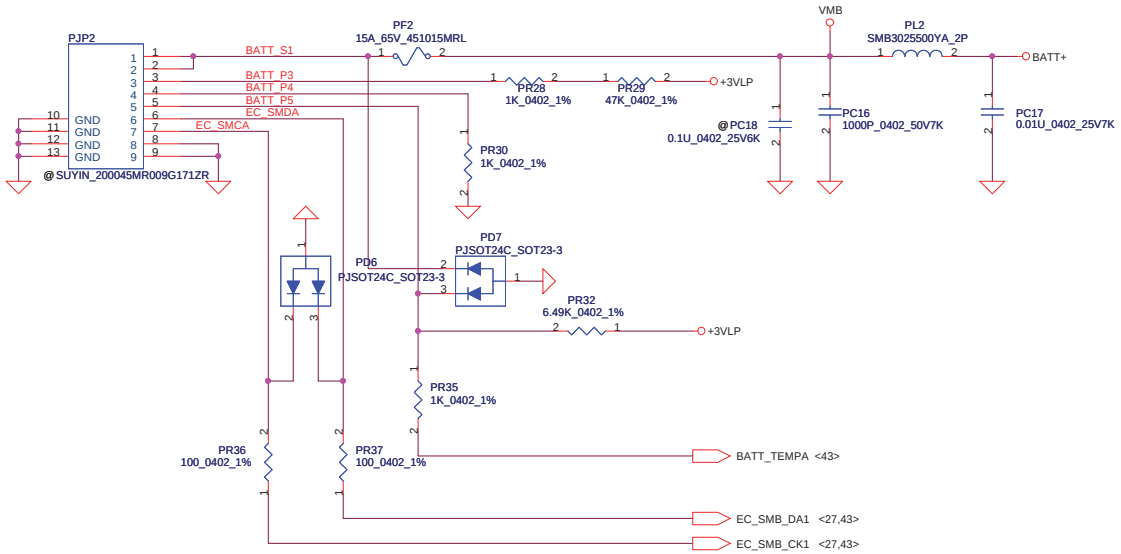
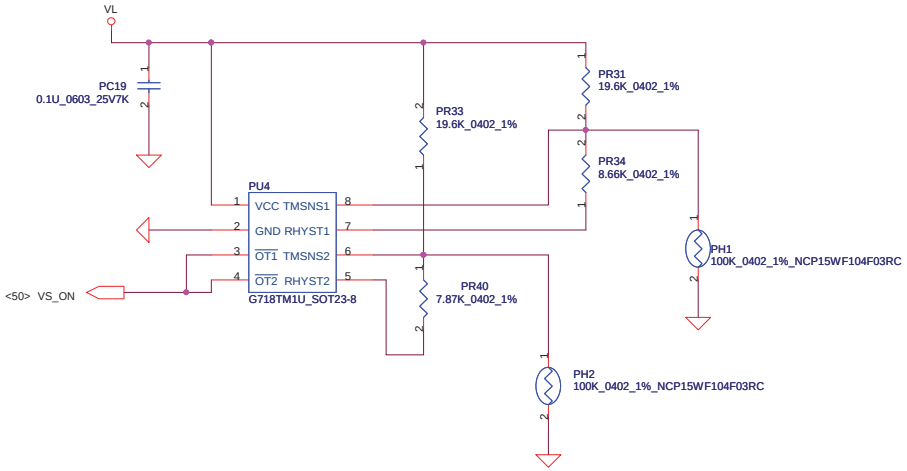
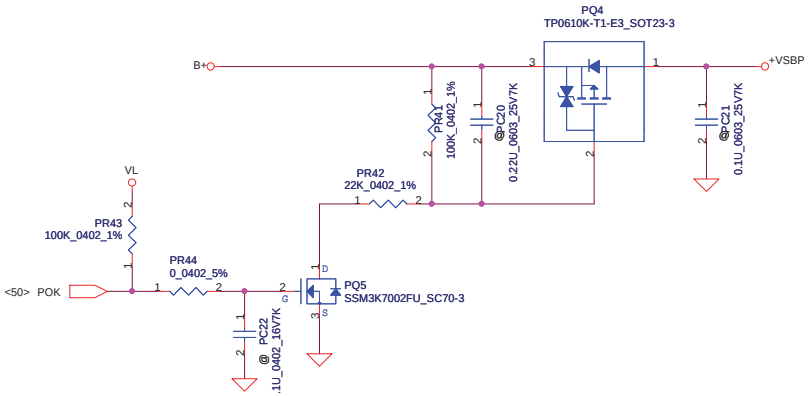


PH1 under CPU botten side :
CPU thermal protection at 95 degree C
Recovery at 56 degree C

PH2 near main Battery CONN :
BAT. thermal protection at 95 degree C
Recovery at 48 degree C





Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: BATTERY CONN / OTP

Size	Document Number	Rev
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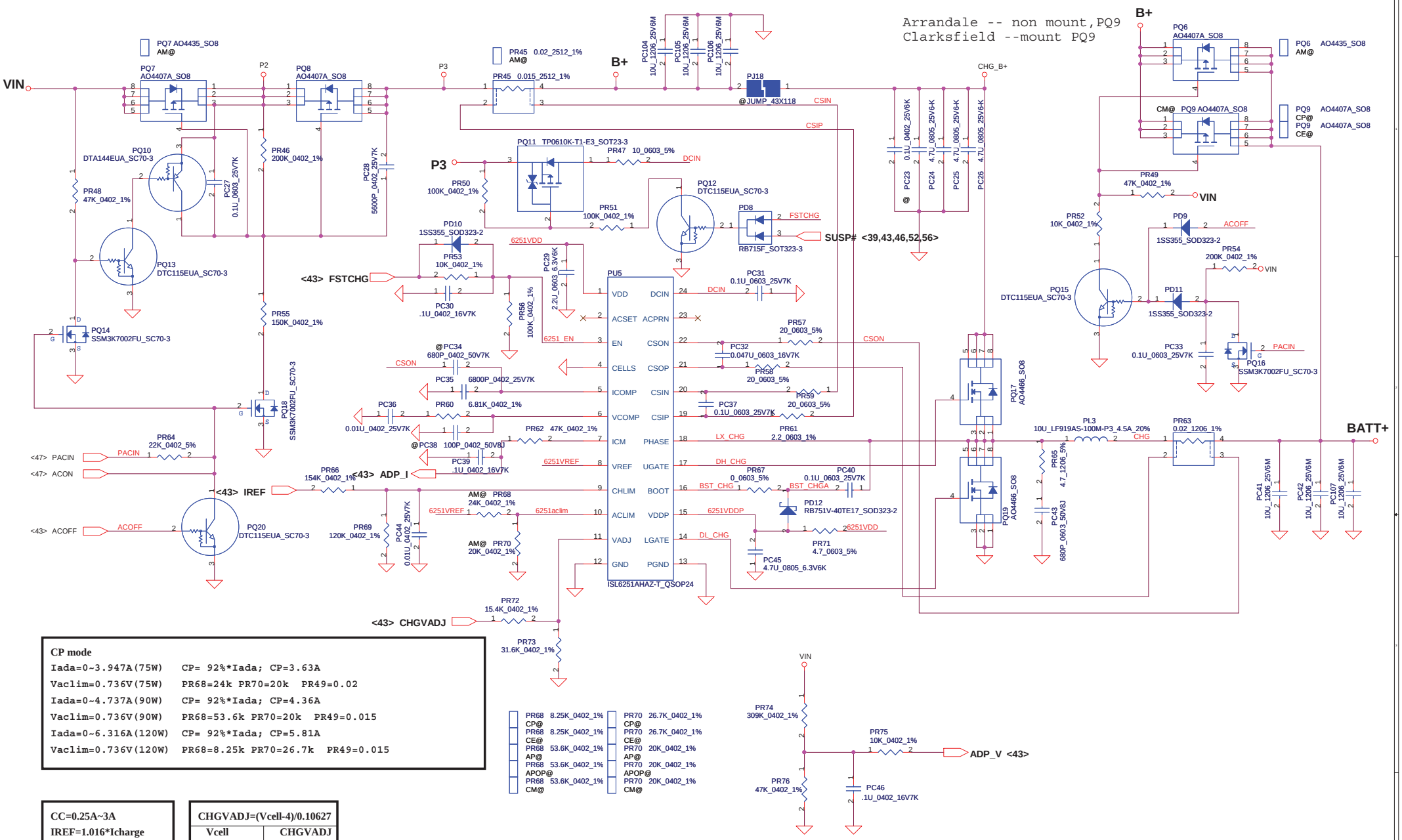

CP mode

Iada=0~3.947A(75W)	CP= 92%*Iada; CP=3.63A
Vaclim=0.736V(75W)	PR68=24k PR70=20k PR49=0.02
Iada=0~4.737A(90W)	CP= 92%*Iada; CP=4.36A
Vaclim=0.736V(90W)	PR68=53.6k PR70=20k PR49=0.015
Iada=0~6.316A(120W)	CP= 92%*Iada; CP=5.81A
Vaclim=0.736V(120W)	PR68=8.25k PR70=26.7k PR49=0.015

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

CHGVADJ=(Vcell-4)/0.10627

Vcell	CHGVADJ
4V	0V
4.2V	1.882V
4.35V	3.2935V

Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.	
Title	CHARGER
Size	Document Number: NWQAA LA-6062P M/B
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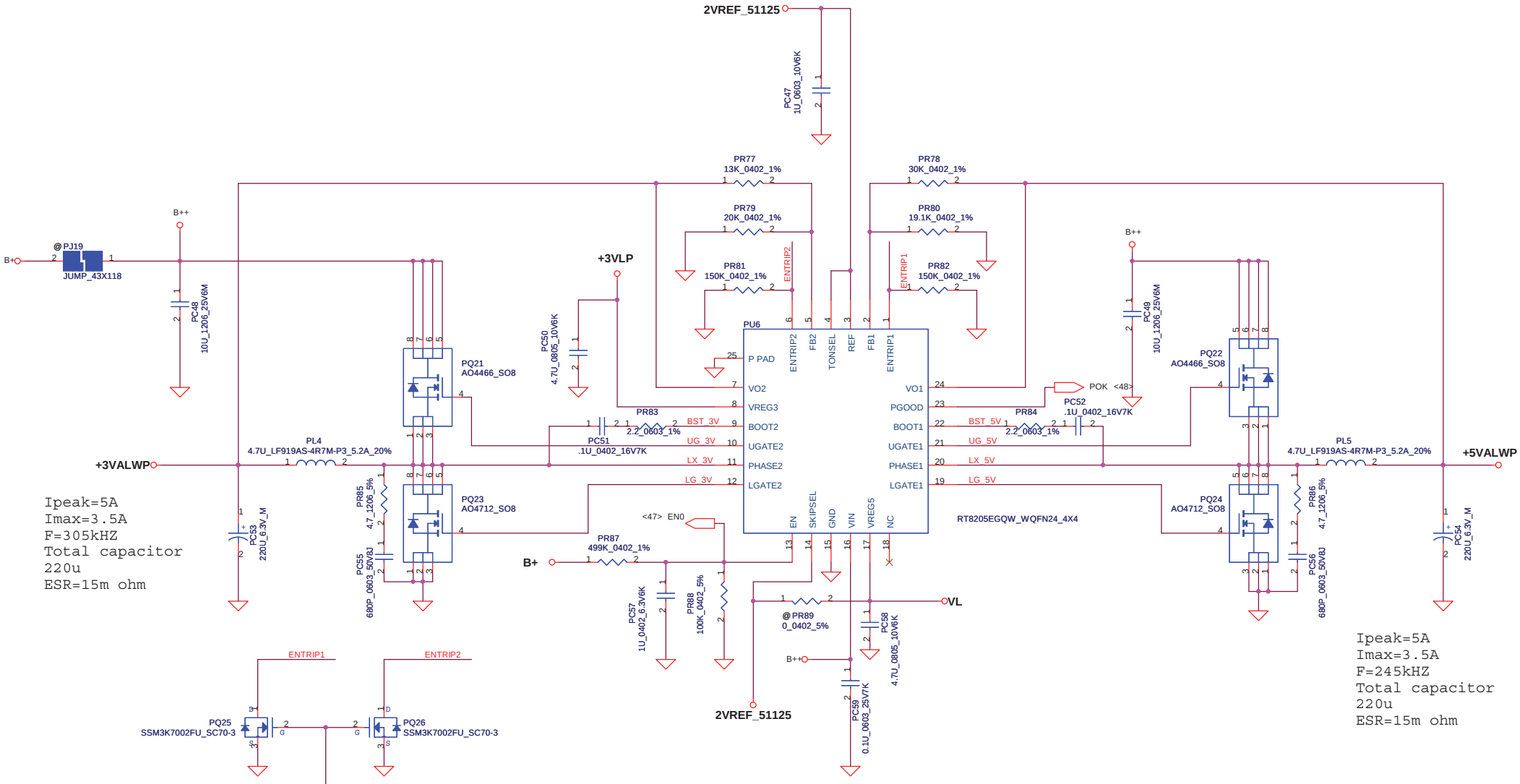
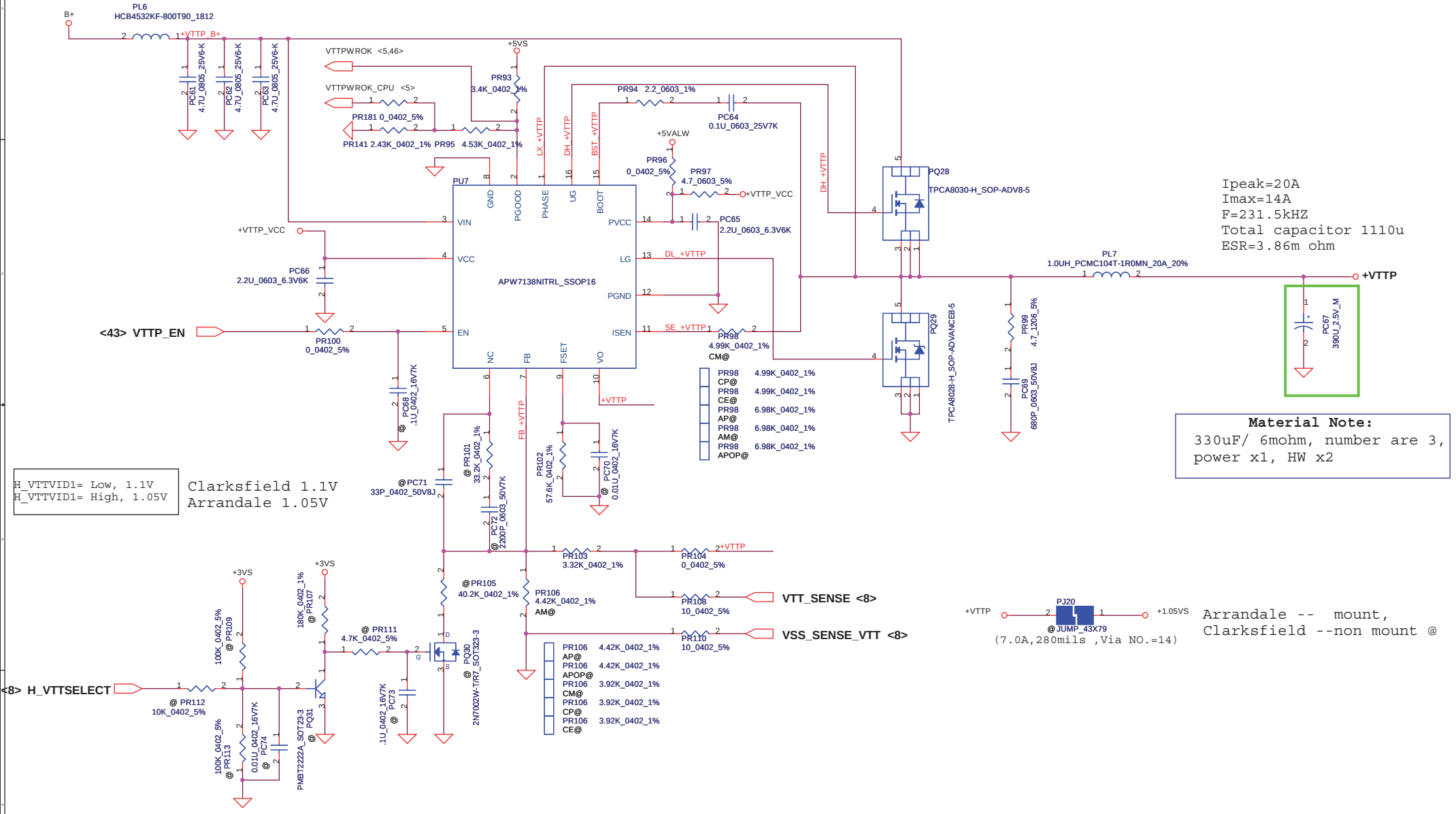


Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title	3VALWP/5VALWP		
Size	Document Number	NWQAA LA-6062P M/B	Rev 2.0
Date:	Wednesday, March 24, 2010	Sheet 50 of 59	



Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.			
Title	+VTTP		
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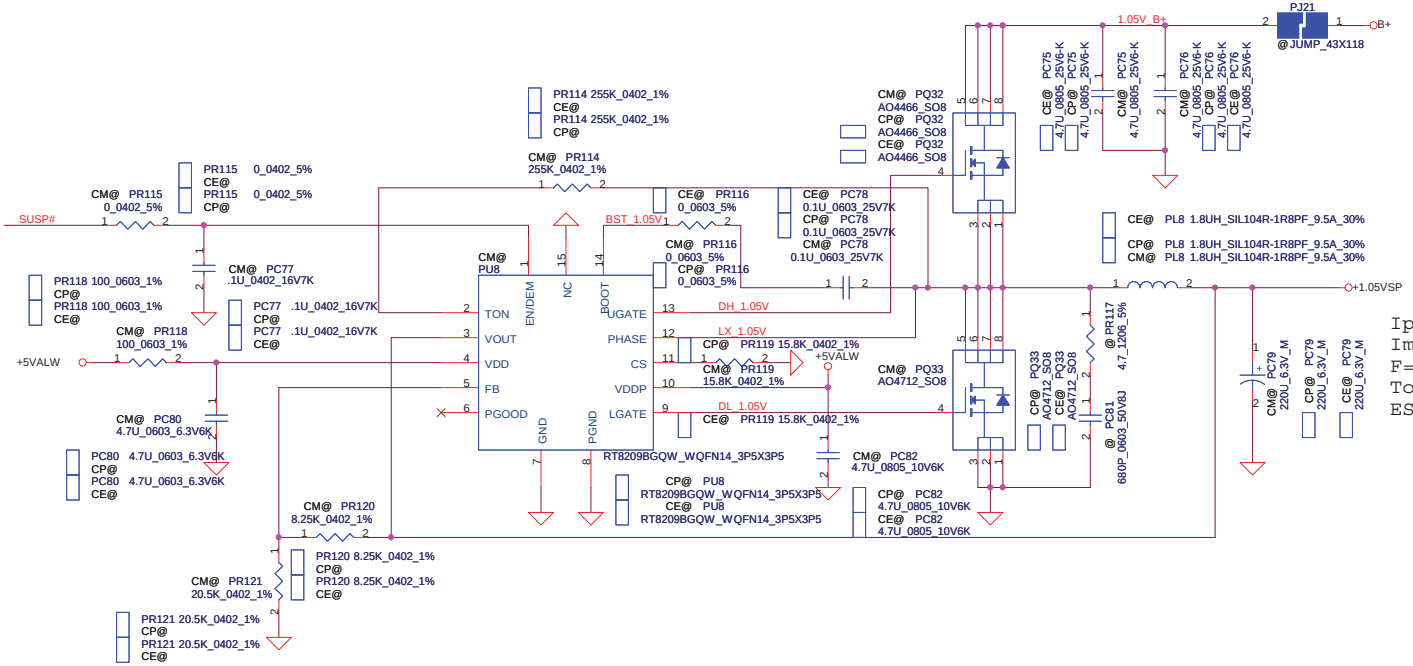
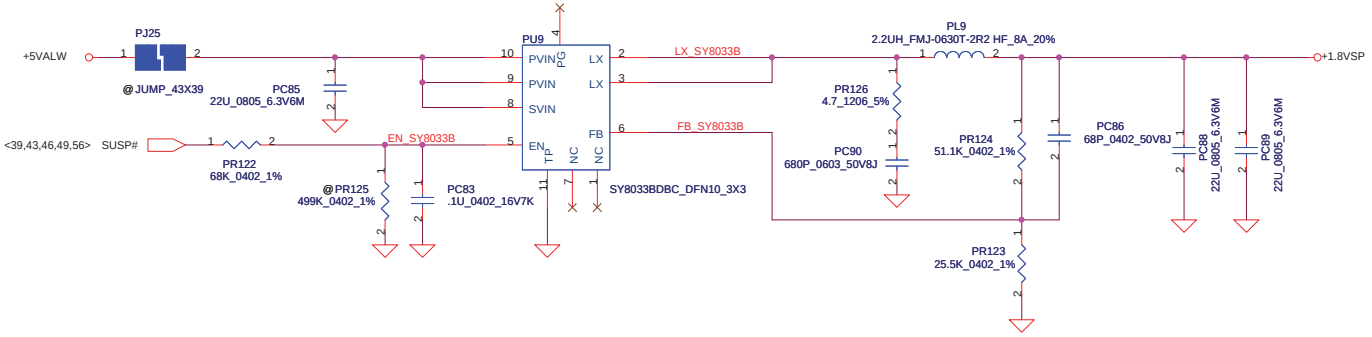
Arrandale -- non mount, @
Clarksfield --mount



Ipeak=7A
Imax=4.9A
F=313kHZ
Total capacitor 550u
ESR=5m ohm



Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: 1.05VSP / +1.8VSP

Size	Document Number	Rev
	NWQAA LA-6062P M/B	2.0

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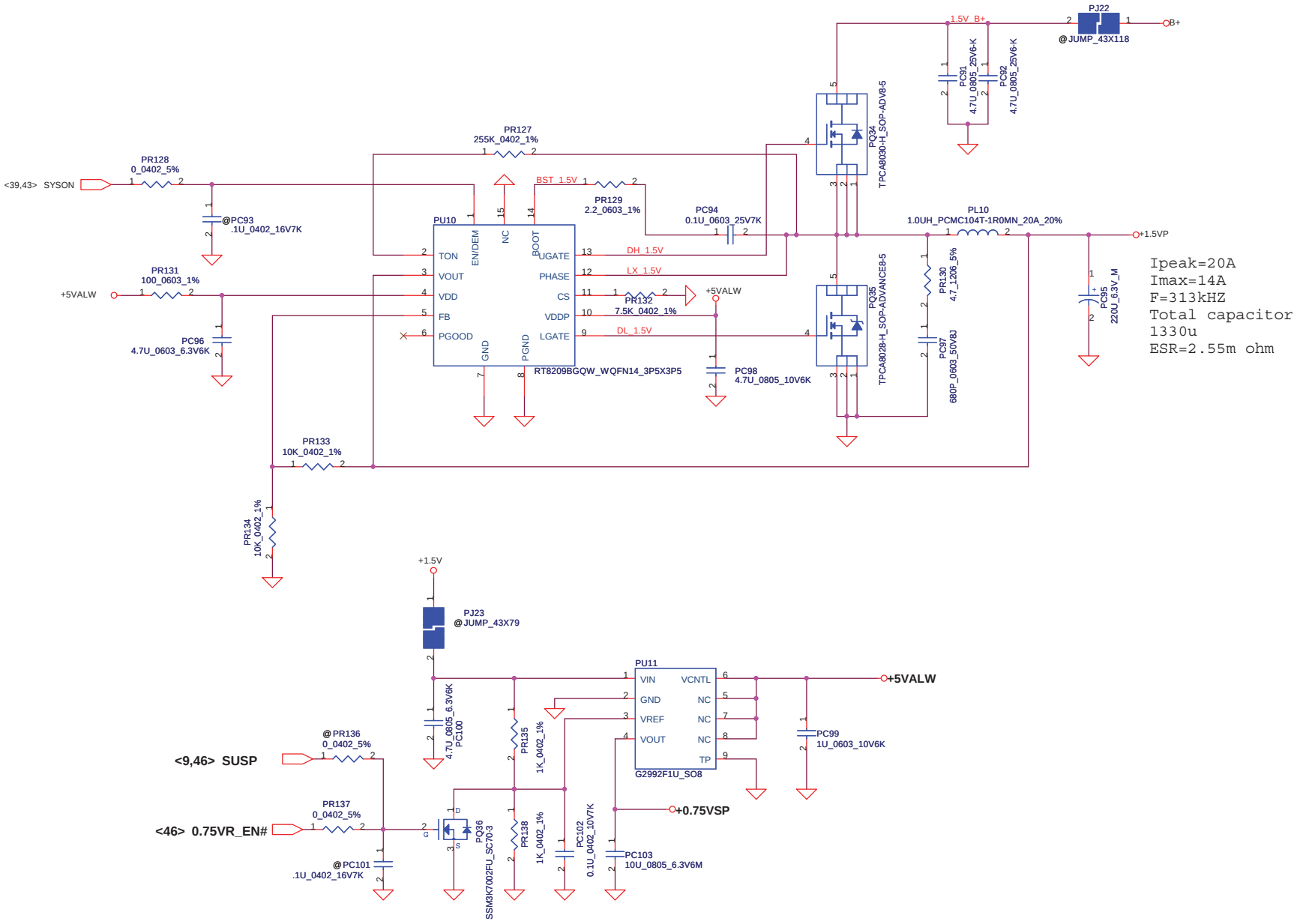

Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title	+1.5VP/0.75VSP	
Size: Custom	Document Number: NWQAA LA-6062P M/B	Rev: 2.0
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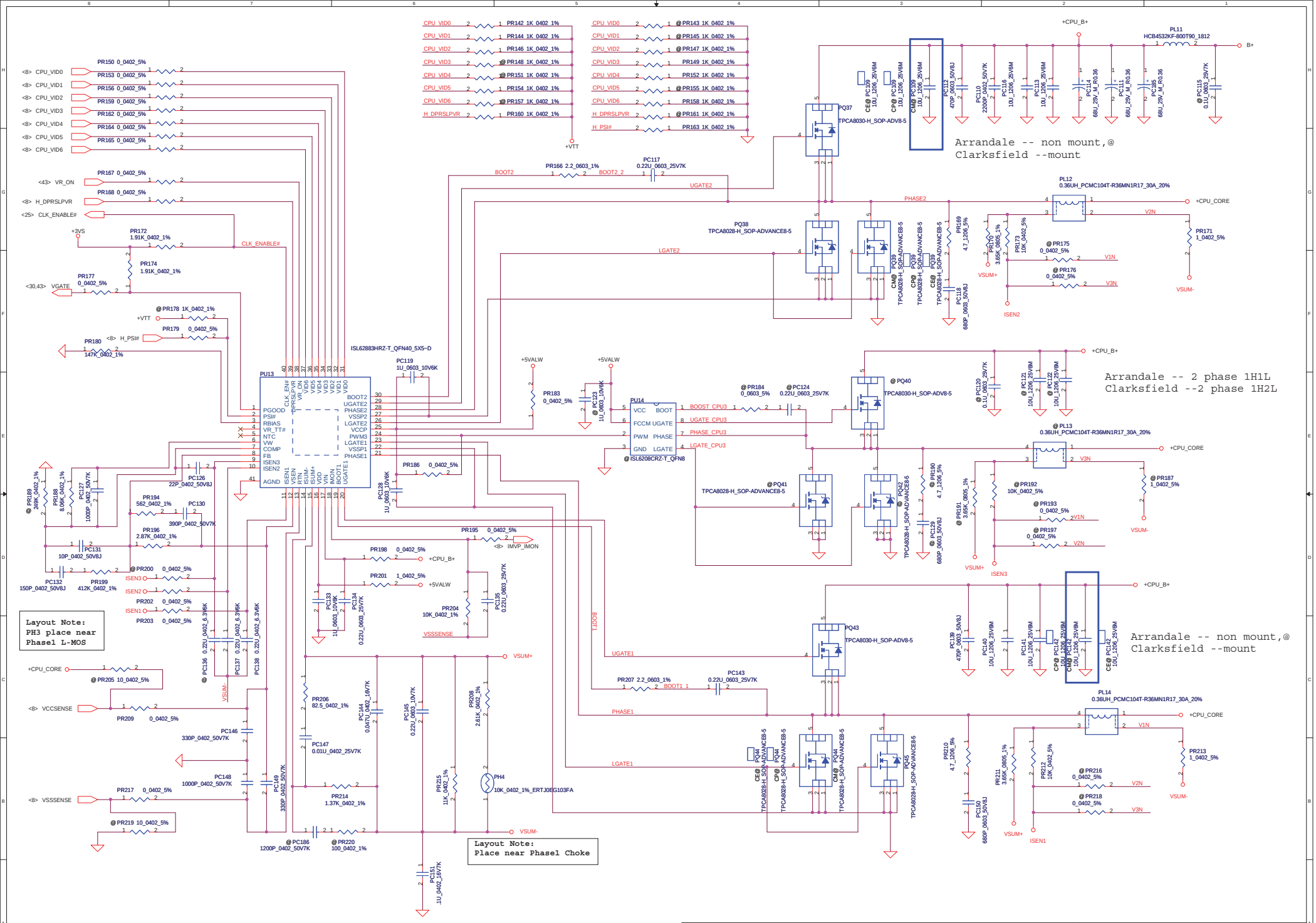

Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

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Compal Electronics, Inc.

Title: +CPU_CORE

Size	Document Number	Rev
C	NWQAA LA-6062P M/B	2.0

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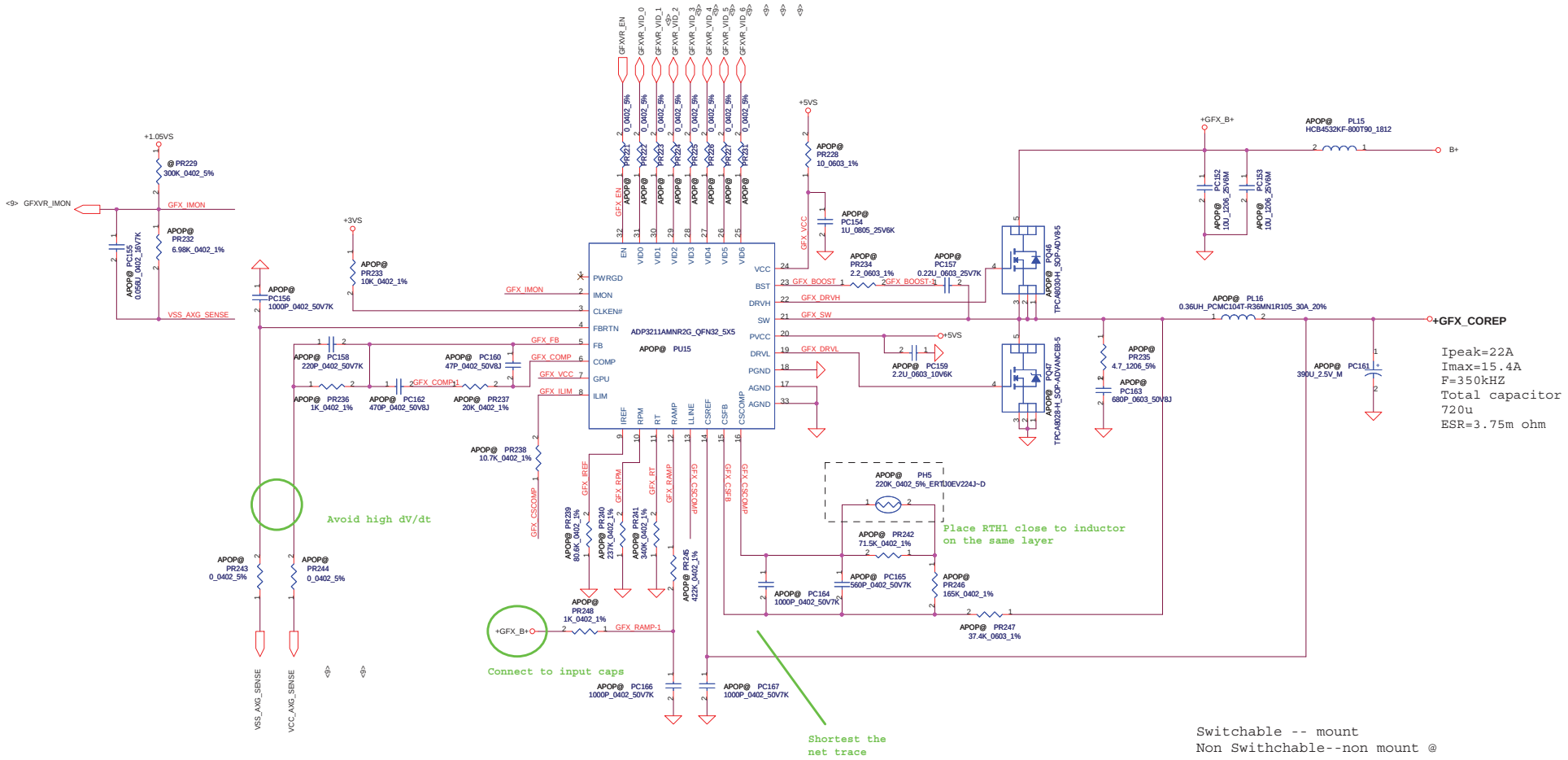

Security Classification	Compal Secret Data		
Issued Date	2009/10/02	Deciphered Date	2010/10/02

Compal Electronics, Inc.

Title: +GFX_COREP

Size | Document Number: NWQAA LA-6062P M/B | Rev: 2.0

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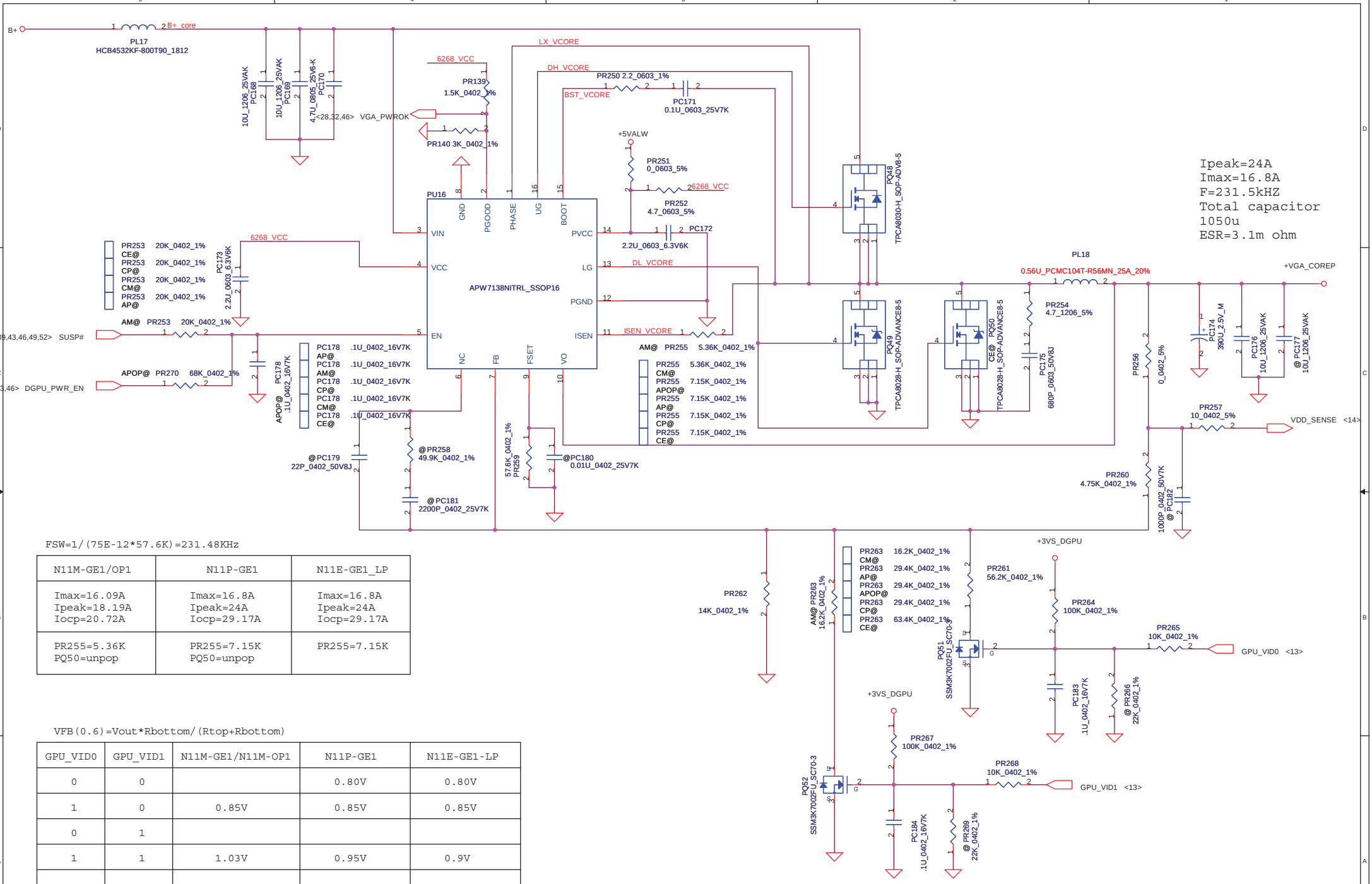

Ipeak=24A
Imax=16.8A
F=231.5kHZ
Total capacitor
1050u
ESR=3.1m ohm

FSW=1/(75E-12*57.6K)=231.48KHz

N11M-GE1/OP1	N11P-GE1	N11E-GE1_LP
Imax=16.09A Ipeak=18.19A Iocp=20.72A	Imax=16.8A Ipeak=24A Iocp=29.17A	Imax=16.8A Ipeak=24A Iocp=29.17A
PR255=5.36K PQ50=unpop	PR255=7.15K PQ50=unpop	PR255=7.15K

VFB(0.6)=Vout*Rbottom/(Rtop+Rbottom)

GPU_VID0	GPU_VID1	N11M-GE1/N11M-OP1	N11P-GE1	N11E-GE1-LP
0	0		0.80V	0.80V
1	0	0.85V	0.85V	0.85V
0	1			
1	1	1.03V	0.95V	0.9V
		PR260 = 4.75K PR262 =14K PR261 =56.2K PR263=16.2K	PR260 = 4.75K PR262 =14K PR261 =56.2K PR263=29.4K	PR260 = 4.75K PR262 =14K PR261 =56.2K PR263=63.4K

Security Classification	Compal Secret Data		
Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: +VGA_COREP

Size: Custom | Document Number: NWQAA LA-6062P M/B | Rev: 2.0

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NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
EVT		P53-PWR_1.5VP/0.75VSP	Change PR132 18k to 6.19k	Modify 1.5V OCP to 18.09A (2009/11/25)
EVT		P56-PWR_VGA_COREP	Change PR270 0 to 100 Ohm	Adjust RC for Optimus sequence (2009/11/25)
			Change PC178 0.1U to 0.01U	
EVT		P39-PWR_+VTTP	Change PR141 2.26k to 2.43k	Modify VTTPWROK voltage (2009/11/25)
EVT		P39-PWR_+VTTP	Remove PC71 33P, PC72 2200P, PR101 33.2k	APW7138 not use this function (2009/11/25)
EVT		P38-PWR_3VALWP/5VALWP	Change PR92 49.9k to 42.2k	Modify VS divider voltage to drive MOS (2009/11/25)
EVT		P56-PWR_VGA_COREP	Remove PC179 22P, PC181 2200P, PR258 49.9k	APW7138 not use this function (2009/11/25)
EVT		P56-PWR_VGA_COREP	Change PR255 7.15k to 9.09k	Modify VGA 11P OCP to 38.03A (2009/11/25)
EVT		P56-PWR_VGA_COREP	Remove PC177 10U	FAE suggest to remove 1 10U cap for IC on time control (2009/11/25)
EVT		P42-PWR_CPU_CORE	Change PL12,PL14 SH000005680 to SH00000IK00	Use 5% DCR choke (2009/11/25)
EVT		P43-PWR_GM VGA_CORE	Change PH5 SL20000058L to SL200000500	Use Compal PN (2009/11/25)
DVT		P56-PWR_VGA_COREP	Change PR255 9.09k to 7.15k	Modify VGA 11P OCP to 29.17A (2009/12/28)
DVT		P43-PWR_GM VGA_CORE	Change PL16 SH00000HK00 to SH00000IK00	Use same PN choke (2009/12/28)
DVT		P39-PWR_+VTTP	Change PR106 4.42k to 3.92k	Modify VTT voltage to 1.1V for Clarkfield (2009/12/28)
DVT		P42-PWR_CPU_CORE	Change PC114, PC111, PC185 from SF000000F80 to SF000000W00	Cost down (2009/12/28)
DVT		P43-PWR_GM VGA_CORE	Change PC161 to SGA00002680	For DVT budding(thermal issue), it will change to original type for PVT (2009/12/28)
DVT		P56-PWR_VGA_COREP	Change PR253 0 to 20k	For VGA sequence(2009/12/28)
DVT		P56-PWR_VGA_COREP	Change PR270 0 to 20k	For VGA sequence(2009/12/28)
DVT		P52-PWR_1.05VSP/1.8VSP	Add PC83 0.1U and change PR122 0 to 68k	For VGA sequence(2009/12/28)
DVT		P48-PWR_BATTERY CONN / OTP	Add PD6, PD7 ESD diode	For ESD solution(2009/12/28)
DVT		P49-PWR_CHARGER	Add PC104,PC105,PC106 10U	Reserve for EMI solution(2009/12/28)
DVT		P50-PWR_3VALWP/5VALWP	Change PR83,PR84 0 to 2.2	Add boost resistor(For EMI solution)(2009/12/28)
			Add PR85,PR86 4.7 and PC55,PC56 680P	Add snubber(For EMI solution)(2009/12/28)
DVT		P42-PWR_CPU_CORE	Change PR166,PR207 0 to 2.2	Add boost resistor(For EMI solution)(2009/12/28)
			Add PR169,PR210 4.7 and PC118,PC150 680P	Add snubber(For EMI solution)(2009/12/28)
DVT		P55-PWR_GM VGA_CORE	Change PR234 0 to 2.2	Add boost resistor(For EMI solution)(2009/12/28)
			Add PR235 4.7 and PC163 680P	Add snubber(For EMI solution)(2009/12/28)
DVT		P56-PWR_VGA_COREP	Add PR254 4.7 and PC175 680P	Add snubber(For EMI solution)(2009/12/28)
DVT		P48-PWR_BATTERY CONN / OTP	Change PR33 10k,PR31 21k to 19.6k, PR34 9.53k to 8.66k, PR40 47k to 7.87k	Adjust OTP setting point(2009/12/28)
DVT		P42-PWR_CPU_CORE	Add PQ39,PQ44 TPCA8028-H	Use 1H 2L MOS solution for Clarksfield (2009/12/31)
DVT		P42-PWR_CPU_CORE	Add PC109,PC142 10U input cap	For Clarksfield solution (2009/12/31)
DVT		P42-PWR_CPU_CORE	Change PR214 1.2k to 1.37k	Adjust CPO_CORE OCP to 65A (2009/12/31)
DVT		P42-PWR_CPU_CORE	Change PR196 2.43k to 2.87k	Adjust CPU_CORE load line (2009/12/31)
DVT		P42-PWR_CPU_CORE	Change PR204 8.25k to 10k	Adjust resistor for Imon (2009/12/31)
DVT		P39-PWR_+VTTP	Change PR98 4.99k to 6.98k	Adjust VTT_DIS_Arrandale OCP to 29.73A (2009/12/31)
DVT		P53-PWR_1.5VP/0.75VSP	Change PR132 6.19k to 7.5k	Adjust 1.5V OCP to 21.73A(2009/12/31)
DVT		P52-PWR_1.05VSP/1.8VSP	Change PQ33 from FDS6670 to AO4712	Change design rating(2009/12/31)
DVT		P39-PWR_+VTTP	Change PR98 6.98k to 4.99k	Adjust VTT_DIS_Clarksfield OCP to 20.64A (2009/12/31)
DVT		P55-PWR_GM VGA_CORE	Change PR247 34.8k to 37.4k	Adjust GFX load line (2009/12/31)
DVT		P41-PWR_0.75VSP/1.8VSP	Change PC90 SE025681K80 to SE024681J80	Use same PN (2009/12/31)
DVT		P56-PWR_VGA_COREP	Change PR270 20k to 68k, PC178 0.01U to 0.1U	Adjust Optimus sequence (2010/01/06)
PVT		P41-PWR_0.75VSP/1.8VSP	Remove PR136, Add PR137 0 Ohm	For S3 power saving function (2010/02/03)
PVT		P43-PWR_GM VGA_CORE	Change PC161 to SF000002O00	Change to original type for PVT (2010/02/03)
PVT		P49-PWR_CHARGER	Change PC24,PC25,PC26 4.7U to 10U	For EMI solution(ISN test) (2010/02/03)
PVT		P49-PWR_CHARGER	Add PC107 10U	For EMI solution(ISN test) (2010/02/03)
PVT		P49-PWR_CHARGER	Add PC104,PC105,PC106 10U	For EMI solution(ISN test) (2010/02/03)
PVT		P38-PWR_3VALWP/5VALWP	Change PQ27 from SSMK7002 to DTC115EUA	Use low Vth Transistor (2010/02/03)
PVT		P52-PWR_1.05VSP/1.8VSP	Change PR119 10k to 15.8k	Adjust 1.05V OCP to 8.47A (2010/02/03)

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NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
Pre MP		P52-PWR_1.05VSP/1.8VSP	Change PR123 316k to 25.5k,PR124 402k to 51.1k	Adjust 1.8V voltage divided resistor (2010/03/07)
Pre MP		P52-PWR_1.05VSP/1.8VSP	Change PU9 from MP2121 to SY8033	MP2121 ESD fail (2010/03/07)
Pre MP		P52-PWR_1.05VSP/1.8VSP	Delete PR125 0 Ohm Change PC85 from 0.1U to 22U Delete PC87 10UF, PC84 0.1U	Change for SY8033 solution(2010/03/07)
Pre MP		P52-PWR_1.05VSP/1.8VSP	Change PC86 10U to 68P	Improve 1.8V transient under shoot(2010/03/07)
Pre MP		P49-PWR_CHARGER	Change PC24,PC25,PC26 10U to 4.7U	10U 0805 size price too high(2010/03/07)
Pre MP		P47-PWR_DCIN/DECTOR	Change PC12 from SE033105Z80 to SE000001380	Change PN(2010/03/07)
Pre MP		P49-PWR_CHARGER	Change PR68 from 53.6k to 24k, PR45 from 0.015 to 0.02 Ohm	Change CP from 90W to 75W(For cost down)(2010/03/07)
Pre MP		P49-PWR_CHARGER	Change PQ6,PQ7 from AO4407A to AO4435	Change MOS reting for 75W adapter(For cost down)(2010/03/07)
Pre MP		P56-PWR_VGA_COREP	Add PR264,PR267 100k	Use 100k resistor to pull high +3VS_DGPU(Set initial VID to P0 state)(2010/03/07)

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Issued Date	2009/01/23	Deciphered Date	2010/01/23

Compal Electronics, Inc.

Title: **Power PIR**

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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
1	12/7	37	Add +5VALW and +5VL for JPIO pin5	For BACK_SENSE detect
2	12/7	46	Change PJ32 to R104 and PJ33 to R144	For discrete BOM structure
3	12/7	25	Remove JLVDS pin10 and pin12 for +LCDVDD_R	3D Panel max. current is 1.5A
4	12/8	45	Combine JTOUCH and JLP to JTPL and remove C648	For ME cost down
5	12/8	13	Add QV2, RV110, RV123 and RV124	For CLK_REQ_VGA# level shifter
6	12/14	25	Add C495 and C496	For RF request
7	12/15	33	Add R258	For OPTIMUS_EN#
8	12/15	34	Add C499	For power team request
9	12/17	45	Remove D19	Move D19 to LS-6061P
10	12/18	38	Reverse JBT pin definition	Due to pin reverse
11	12/18	42	Add RA42	For codec EC_MUTE# issue
12	12/21	41	Change JREAD to Push-push type (R015-211-LM-A)	For PRD update
13	12/21	25	Move LED_PWM and BKOFF#_R to JLVDS pin10 and pin12	For avoiding +LCD_INV short issue
14	12/22	44	Change H7 footprint to "DEBUG_PAD-MB-S"	For debug use
15	12/23	39	Add D24 and Q36 for BT_CTRL	For WLAN & BT combo module
16	12/23	33	Add R461	For CIR_EN#
17	12/24	25	Mount C236 and C268	For ESD request
18	12/24	37	Change JPIO footprint and reverse its pin definition	For ME request
19	12/24	27	Add R145	For U9 ESD damage issue
20	12/24	41	Add F3	For connector short issue
21	12/28	42	Change RA41 to SM01000CY00 (FBMA-10-100505-301T)	For EMI request
22	12/28	25	Remove L1	For 3D panel
23	12/29	42	Change RA1, RA18 and RA20 to SM01000B200	For RF request
24	12/29	25	Change C484 to 100P	For RF request
25	1/6	37	Change C426 to SF000001500	For cost down
26	1/12	38	Change R132 BOM from FLICA@ to FELICA@	For Felica issue
27	1/12	11	Change C218 to SF000002O00	For cost down
28	1/12	8	Change C144 to SF000002Z00	For thermal interfere issue

NWQAA LA-6062P SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.2 TO 0.3
GERBER-OUT DATE: 2010/02/08

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	1/15	42	Add RA43	For sleep & music on battery mode
2	1/15	46	Change +1.05VS_DGPU to N-MOS	For +1.05VS_DGPU drop issue
3	1/21	43	Add R462	Avoid VR_ON floating
4	1/25	44	Change UG3 to SA000022I00	For LDO issue
5	1/25	45	Change SW2 to @	For ME interfere issue
6	1/27	9	Change CV57, CV58 abd C271 to OS-CON	For cost down
7	2/1	25	Add +LCD_VDD to JLVDS pin18	For CMO 3D Panel
8	2/1	27	Add R208	For AOC monitor issue
9	2/1	43	Change U19 to SA00001J5A0	For KB926 E0 version
10	2/1	39	Add +1.5VS for J3G	For TV tuner MC770A
11	2/1	41	Remove F3	For UC1 ES2 sample
12	2/2	43	Add CAP_RST# to EC	For ESD issue
13	2/3	41	Change RC7 to 33 ohm	For EMI request
14	2/4	42	Remove RA40, add RA44 and RA22	For audio issue
15	2/4	14	Reserve VBIOS ROM	For SW request
16	2/5	32	Swap USB port4 and port8	For customer request
17	2/5	13	Reserve 27MHz crystal	For HDMI issue
18	2/9	40	Change LL1 to 2.2U and C113 to 4.7U	For Realtek request
19	2/10	41	Change RC7-RC14 to 22 ohm	For O2 request
20	2/10	27	Remove HDMI common mode choke	For cost down

NWQAA LA-6062P SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.3 TO 1.0
GERBER-OUT DATE: 2010/03/15

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	3/6	32	Change R390 to 1K	For Optimus sequence
2	3/6	33	Change R59 to 1K	For Optimus sequence
3	3/6	27	Change Q18 and Q19 power to +3VS_DGPU	For GPU power rail
4	3/6	41	Add QC2 and RC16	For O2 B0 workaround
5	3/7	28	Change D13.2 power to +CHGRTC	For RTC issue
6	3/8	32	Add R333 and R334	For Optimus sequence
7	3/8	25	Add BOM structure 3D@ and NO3D@	For 3D SKU PWM
8	3/8	13	Change YV1 to SJ100006R00	For cost down
9	3/11	46	Change C685 to 0603 size	For ME height limit
10	3/11	45	Change H15~H19 to H_3P3	For ME request
11	3/15	45	Remove SW2	For ESD request
12	3/15	42	Change CA9 and CA10 to 1U	For cut-off frequency
13	3/16	42	Change MONO_IN to AGND	For high frequency noise issue

NWQAA LA-6062P SCHEMATIC CHANGE LIST
REVISION CHANGE: 1.0 TO 2.0
GERBER-OUT DATE: 2010/03/19

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	3/17	41	Change cardreader to JMB385/389	For customer request
2	3/18	34	Add R49	For CRT wave issue
3	3/19	13	Change LV3 to always stuff	For NVIDIA request
4	3/19	34	Change L12 to 2.2 ohm for Optimus SKU	For CRT wave issue
5	3/22	27	Add D54	For HDMI CEC issue
6	3/24	25	Chane C214 to 1U	For NALAA ESATA performance low issue

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