COMPAL CONFIDENTIAL

MODEL NAME : *NAL22/23/24*

PCB NO : *LA-5573P (DAA00001G00)*

BOM P/N : *43177531LXX*

M10 Margaux DIS/ASICS
rPGA Auburndale/Clarksfield
+FCBGA PCH IBEXPEAK-M
+ N10M-NS-B/N10P-GLM/N10P-GLM4

2010-01-21

REV : 1.0(A00)

@ : Nopop Component

7@ : N10P-GLM VID

8@ : N10M-NS-B & N10P-GLM4 VID

9@ : N10P-GLM4 only

MB Type	BOM P/N	Asics DIS N10P	Margaux DIS N10M	TCM		TPM		BOM CONFIG
		1@	2@	W(3@)	W/O(4@)	W(5@)	W/O(6@)	
Margaux DIS, TPM EN,TCM DIS	43177531L01		*		*	*		2@,4@,5@,8@
Margaux DIS, TCM EN,TPM DIS	43177531L02		*	*			*	2@,3@,6@,8@
Margaux DIS, ALL TPM DISABLE	43177531L03		*		*		*	2@,4@,6@,8@
Asics GLM, TPM EN,TCM DIS	43177531L11	*			*	*		1@,4@,5@,7@
Asics GLM, TCM EN,TPM DIS	43177531L12	*		*			*	1@,3@,6@,7@
Asics GLM, ALL TPM DISABLE	43177531L13	*			*		*	1@,4@,6@,7@
Asics GLM4, TPM EN,TCM DIS	43177531L21	*			*	*		1@,4@,5@,8@,9@
Asics GLM4, TCM EN,TPM DIS	43177531L22	*		*			*	1@,3@,6@,8@,9@
Asics GLM4, ALL TPM DISABLE	43177531L23	*			*		*	1@,4@,6@,8@,9@

MB PCB

Part Number	Description
DAA00001G00	PCB 0AH LA-5573P REV0 M/B DIS

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Title: Cover Sheet

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Block Diagram
Compal confidential
Model : NAL22

Thermal GUARDIAN III EMC4002 +3.3V_M page 23

CPU/PCH XDP Port +1.05V_VCCP page 8,15

Clock Generator SLG8SP585 +3.3V_RUN page6

FAN R3P TPF3000 +FAN1_VOUT page 23

CRT CONN +5V_RUN page 27

Video Switch PI3V712-AZLE +3.3V_RUN page 27

VGA

eDP CONN +5V_ALW +3.3V_RUN +PWR_SRC page 24

DP Repeater DP119 +3.3V_RUN page 24

eDP

N10M/N10P 29X29 +GPU_CORE +1.5V_MEM_GFX +1.05V_RUN_VTT_GFX page 24-27

DPC

DP Switch PI3VDP8200 +5V_RUN page 26

DPB

PCIE-E 16X

Auburndale/Clarksfield 4MB (Socket G1) PGA CPU +VCC_CORE +1.5V_MEM +1.05V_1.1V_RUN_VTT +VCC_GFXCORE 988A pins page 7-12

Memory BUS (DDR3) +1.5V_MEM 800Mhz/1066MHz

DDRIII-DIMM X2 BANK 0, 1, 2, 3, 4 ,5 ,6 ,7 ,8 page 13,14 +1.5V_MEM +V_DDR_REF +V_DDR_REF

DMI Lane x 4

INTEL IBEXPEAK-M 1060pin BGA +1.8V_RUN +1.05V_RUN_VTT +1.05V_M +3.3V_ALW_PCH page 15-22

USB[11] Camera +5V_RUN page 24 Trough eDP Cable

SATA4 SATA Repeater SN75LVCP412 +3.3V_RUN page 37 E-SATA USB Ports X2 +5V_ALW page 37

USB[2,3] L SIDE

USB2 : Left side pair top
USB3 Rear Right pair bottom

48MHz

USB[0,10] R SIDE USB Ports X2 +5V_ALW page 36 On IO/B

USB0 : Right side pair top
USB1 : Right side pair bottom

DOCKING PORT page 38

DAI

USB[8,9]

SATA5

DOCK LPC BUS

DP CONN +5V_RUN page 26

PCMCIA SLOT +3.3V_RUN page 34

On IO/B

IEEE1394 page 33

SD/MMC CONN +3.3V_RUN page 33

CardBus R5U242 +3.3V_RUN page 33-34

PCIE3

PCIE

+1.05V_RUN_VTT /100MHz

HD Audio I/F

+1.05V_RUN_VTT /100MHz

PCI Express BUS

S-ATA 0/1/4/5 3GB/s

SPI

Option

China TPM1.2 SSX35BCB page 32

LPC BUS +3V_RUN 33MHz

W25Q64VSSIG +3.3V_M page 15 64M 4K sector

W25X64VSSIG +3.3V_M page 15 32M 4K sector

SATA1 E-Module +5V_MOD page 28

SATA0 SATA Repeater SN75LVCP412 +3.3V_RUN page 28

S-HDD +5V_HDD +3.3V_HDD page 28

Intel Hanksville 82577LM +3.3V_LAN +1.0V_LAN page 30

LAN SWITCH PI3L720 +3.3V_LAN pg 30

Azalia Codec 92HD81B1 +3.3V_RUN +5V_RUN page 29

INT.Speaker page 29

HeadPhone & MIC Jack +3.3V_RUN

RJ45

WiFi ON/OFF

On IO/B

EXPRESS Card +3.3V_RUN page 35

PCIE5

SATA/PCIE MUX PI2DBS212

PCIE2

Mini Card2 WLAN +3.3V_WLAN +1.5V_RUN page 36

PCIE1

Mini Card 1 WWAN +3.3V_RUN_WWAN_PWR +1.5V_RUN page 36

USB[7]

Mini Card 3 PCIE\BKT +3.3V_RUN +1.5V_RUN page 36

USB[4]

USB[5]

USH TPM1.2 BCM5882 +3.3V_RUN +2.5V_RUN +1.2V_RUN page 31,32

Smart Card page 32

TDA8034HN +5V_RUN +3.3V_RUN page 32

USB[13]

RFID page 33

USBH

USB[1]

SATA Repeater SN75LVCP412 +3.3V_RUN page 35

SATA2

SMSC KBC MEC5045 +RTC_CELL +3.3V_ALW page 40

DOCK LPC BUS

BC BUS

SMSC SIO ECE5028 +3.3V_ALW page 39

MDC +3V_SUS page 34 On IO/B

RJ11 Trough Cable

TI TLV320AIC3004 +3.3V_RUN page 29

DOCK

Dig. MIC

Trough LVDS Cable

+VCC_GFXCORE page 53

Trough Cable

Biometric +3.3V_RUN page 36

SMBUS

Touch Pad

Stick

BC BUS page 40

ECE1077 +3.3V_ALW

Int.KBD & Stick

0.75V page 49

VCORE (IMVP-6) page 51

3V/5V page 47

PWR SELECT page 54

1.1V page 50

CHARGER page 52

1.5V page 48

DC IN & BATT IN page 46

Power On/Off SW & LED page 42

DC/DC Interface page 41

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Title: Block Diagram

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POWER STATES

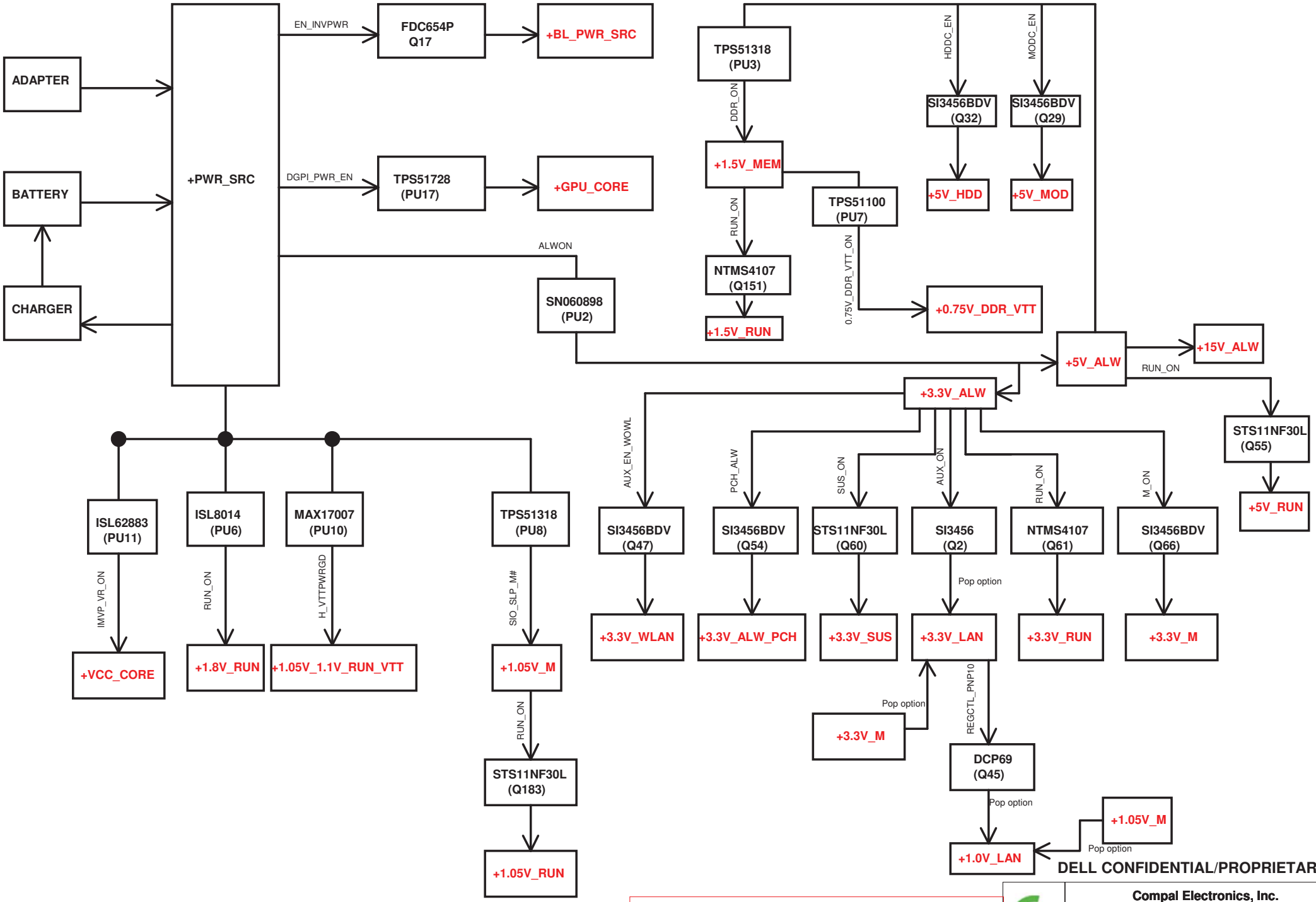
State \ Signal	SLP S3#	SLP S4#	SLP S5#	S4 STATE#	SLP M#	ALWAYS PLANE	M PLANE	SUS PLANE	RUN PLANE	CLOCKS
S0 (Full ON) / M0	HIGH	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON	ON
S3 (Suspend to RAM) / M1	LOW	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	OFF	OFF
S4 (Suspend to DISK) / M1	LOW	LOW	HIGH	LOW	HIGH	ON	ON	OFF	OFF	OFF
S5 (SOFT OFF) / M1	LOW	LOW	LOW	LOW	HIGH	ON	ON	OFF	OFF	OFF
S3 (Suspend to RAM) / M-OFF	LOW	HIGH	HIGH	HIGH	LOW	ON	OFF	ON	OFF	OFF
S4 (Suspend to DISK) / M-OFF	LOW	LOW	HIGH	LOW	LOW	ON	OFF	OFF	OFF	OFF
S5 (SOFT OFF) / M-OFF	LOW	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF	OFF

PM TABLE

State \ power plane	+15V_ALW +5V_ALW +3.3V_ALW_PCH +3.3V_RTC_LDO	+3.3V_SUS +1.5V_MEM	+5V_RUN +3.3V_RUN +1.8V_RUN +1.5V_RUN +0.75V_DDR_VTT +VCC_CORE +1.05V_RUN_VTT +1.05V_RUN	+3.3V_M +1.05V_M	+3.3V_M +1.05V_M (M-OFF)
S0	ON	ON	ON	ON	ON
S3	ON	ON	OFF	ON	OFF
S5 S4/AC	ON	OFF	OFF	ON	OFF
S5 S4/AC don't exist	OFF	OFF	OFF	OFF	OFF

PCH	USB PORT#	DESTINATION
	0	JUSB1 (Ext Right Side Bottom)
	1	JUSB1 (Ext Right Side Top)
	2	JESA1 (Ext Left Side Top)
	3	JESA1 (Ext Left Side Bottom)
	4	WLAN
	5	WWAN
	6	Bluetooth
	7	USH->BIO
	8	DOCKING
	9	DOCKING
	10	Express card
	11	Camera
	12	NA
	13	WPAN/NVMHCI

PCI EXPRESS	DESTINATION
Lane 1	MINI CARD-1 WWAN
Lane 2	MINI CARD-2 WLAN
Lane 3	Card Bus
Lane 4	EXPRESS CARD
Lane 5	MINI CARD-3 PCIE/BKT
Lane 6	10/100/1G LAN
Lane 7	None
Lane 8	None



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Title	Power Rail
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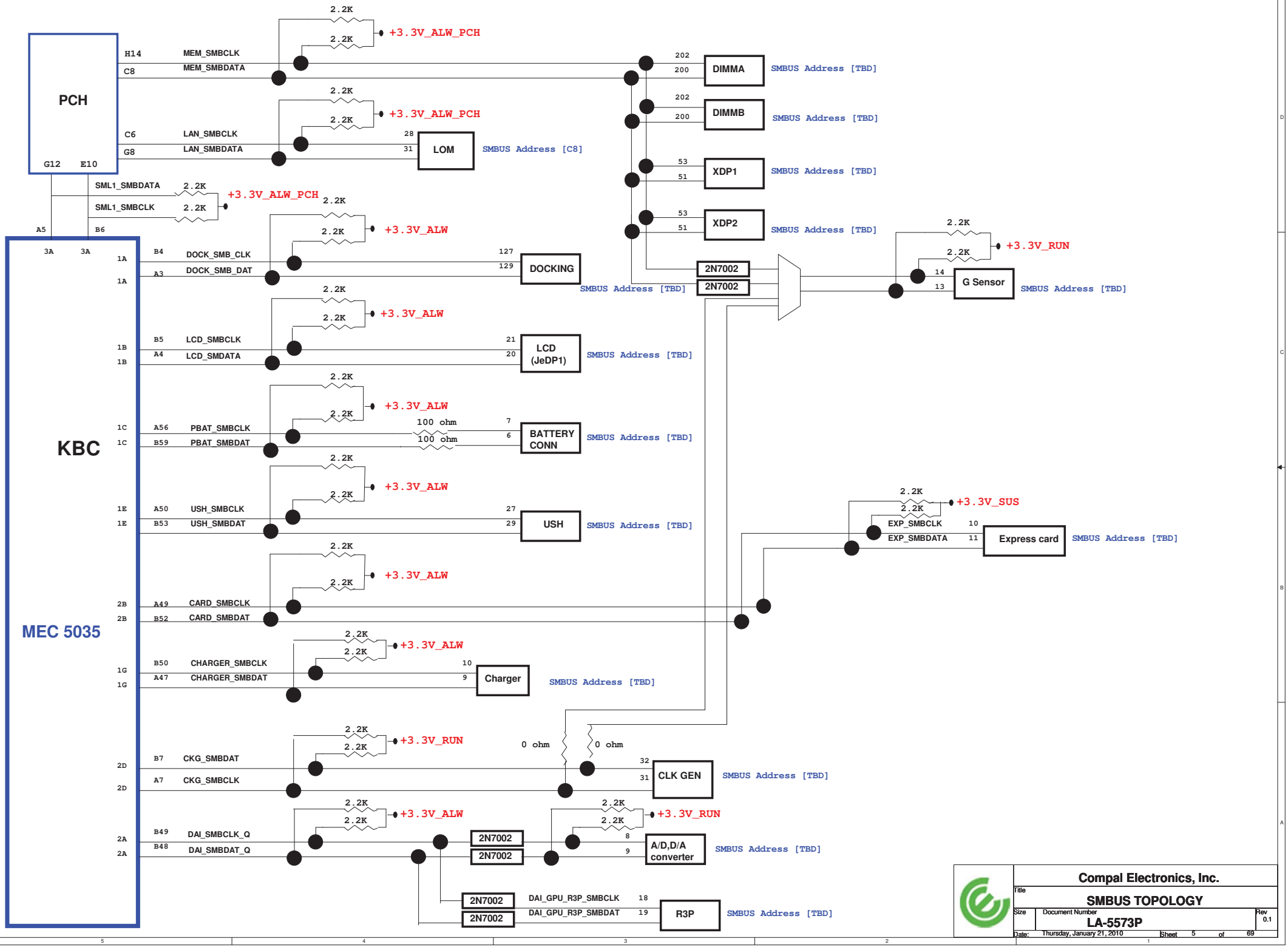

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Title	SMBUS TOPOLOGY
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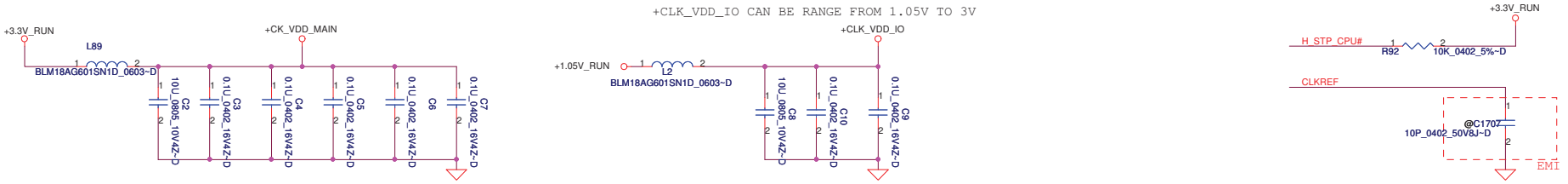
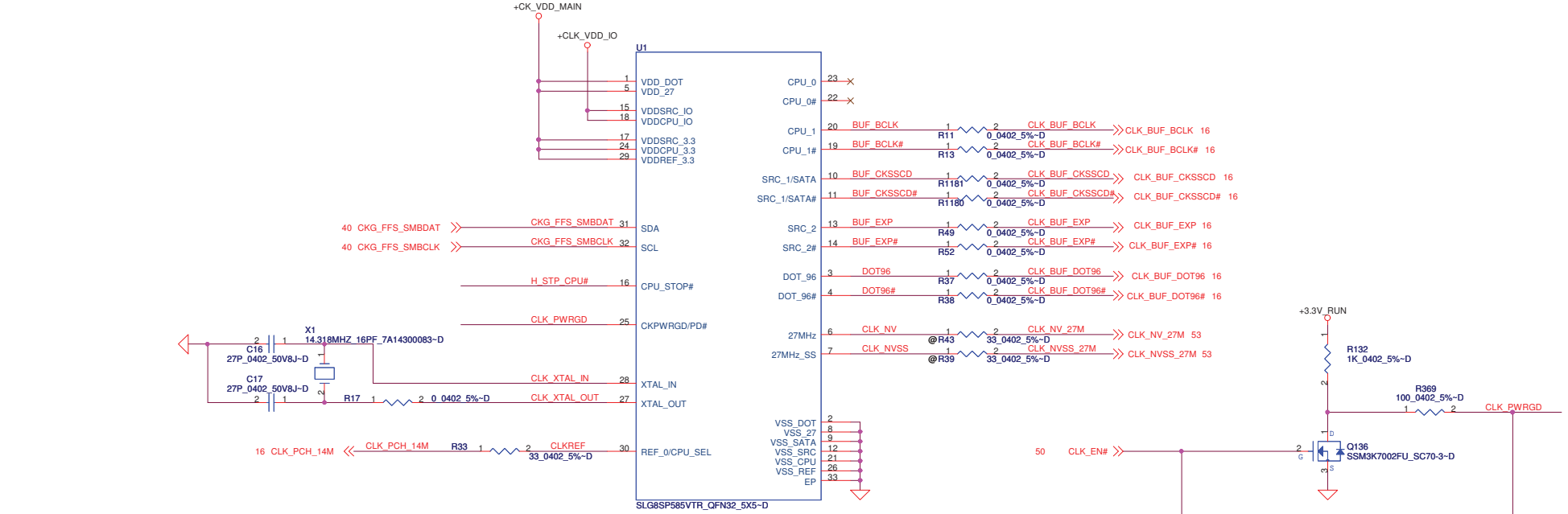
+CLK_VDD_IO CAN BE RANGE FROM 1.05V TO 3V





REF_O/CPU_SEL

PIN 30	CPU0	CPU1
1(0.7~1.5v)	100MHz	100MHz
0 (DEFULT)	133MHz	133MHz

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Title: Clock Generator

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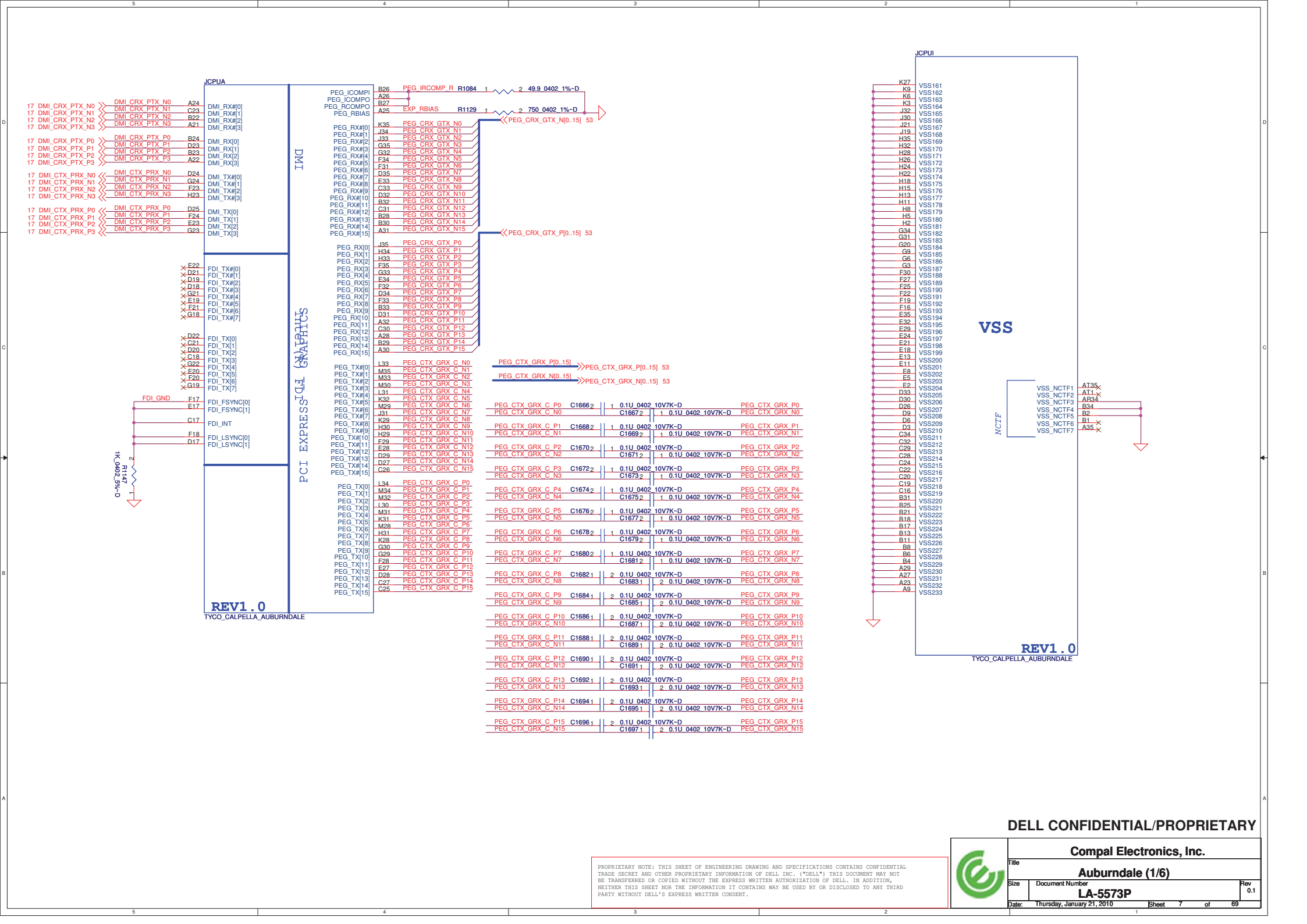

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Title	Auburndale (1/6)
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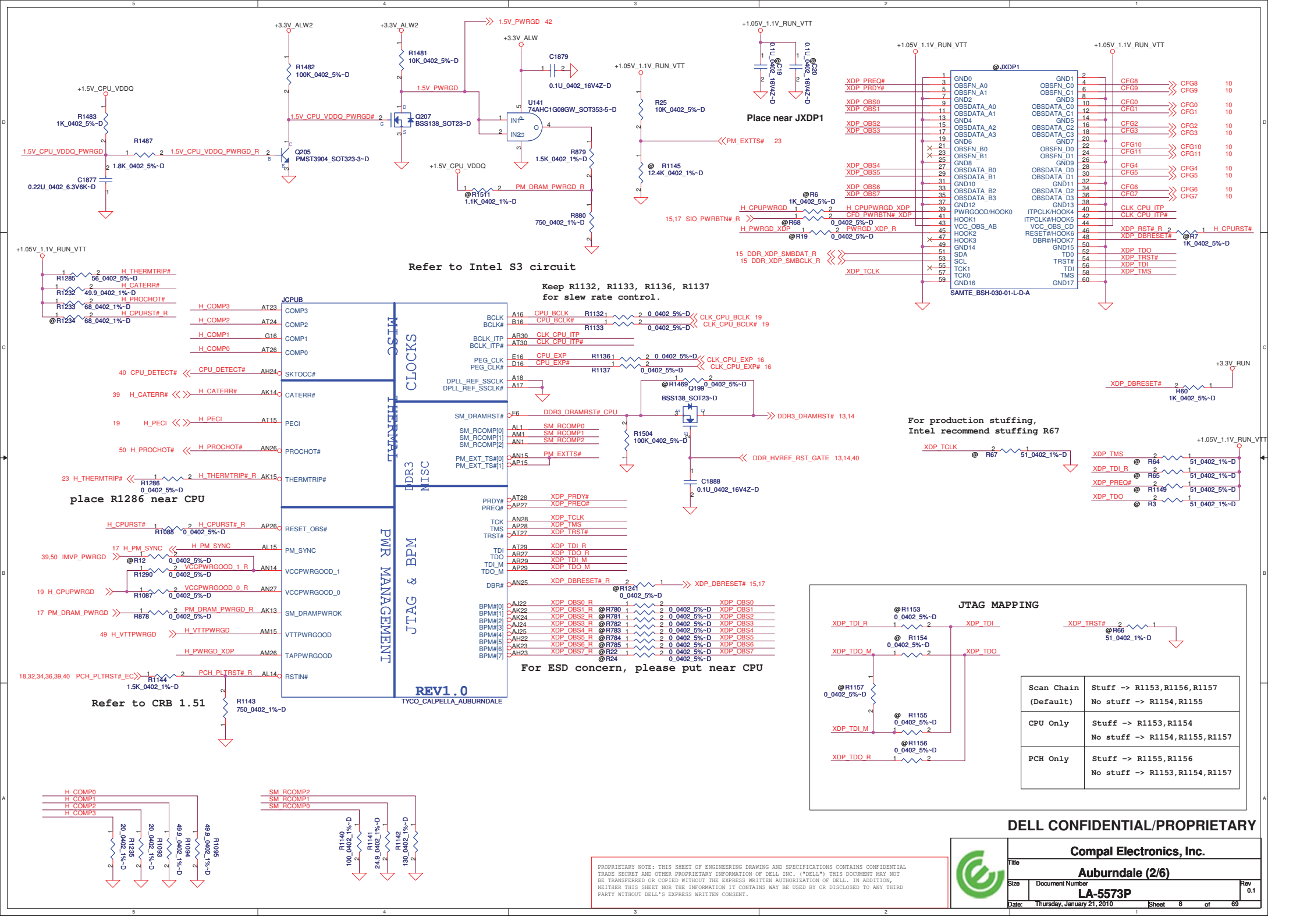
Refer to Intel S3 circuit
Keep R1132, R1133, R1136, R1137
for slew rate control.
Place near JXDP1
For production stuffing,
Intel recommend stuffing R67
place R1286 near CPU
Refer to CRB 1.51
For ESD concern, please put near CPU
JTAG MAPPING
REV1.0
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Auburndale (2/6)
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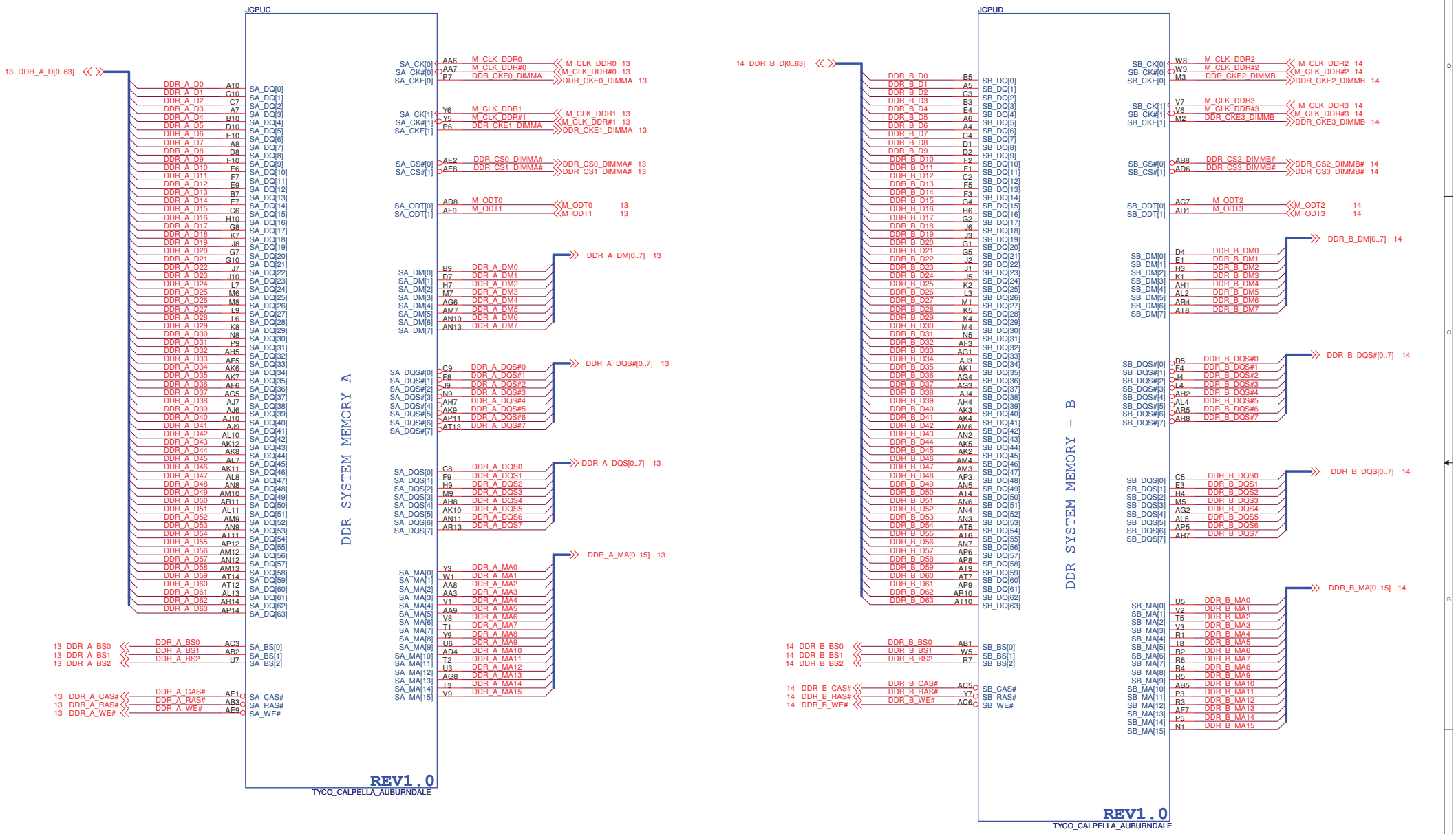

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Title	Auburndale (3/6)
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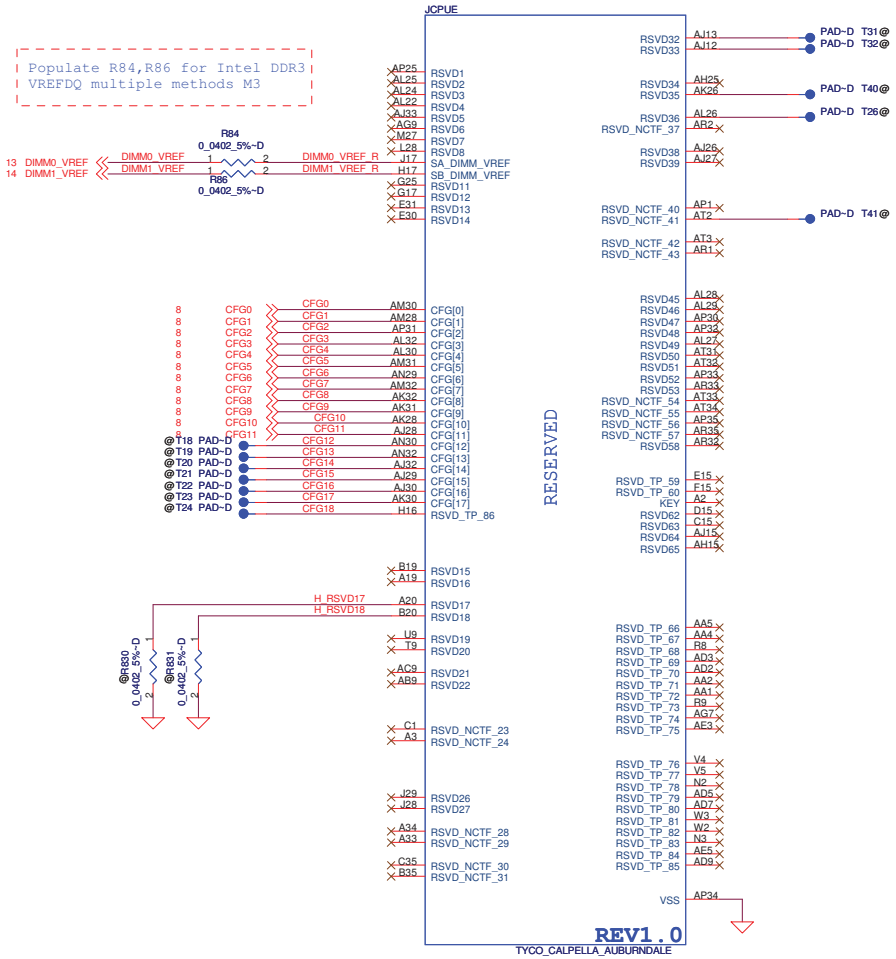
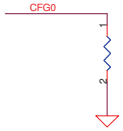
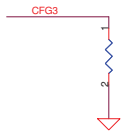
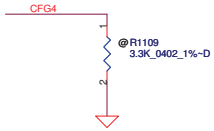




PCI-Express Configuration Select	
CFG0	1 : Single PEG 0 : Bifurcation enable



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



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

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Title: Auburndale (4/6)

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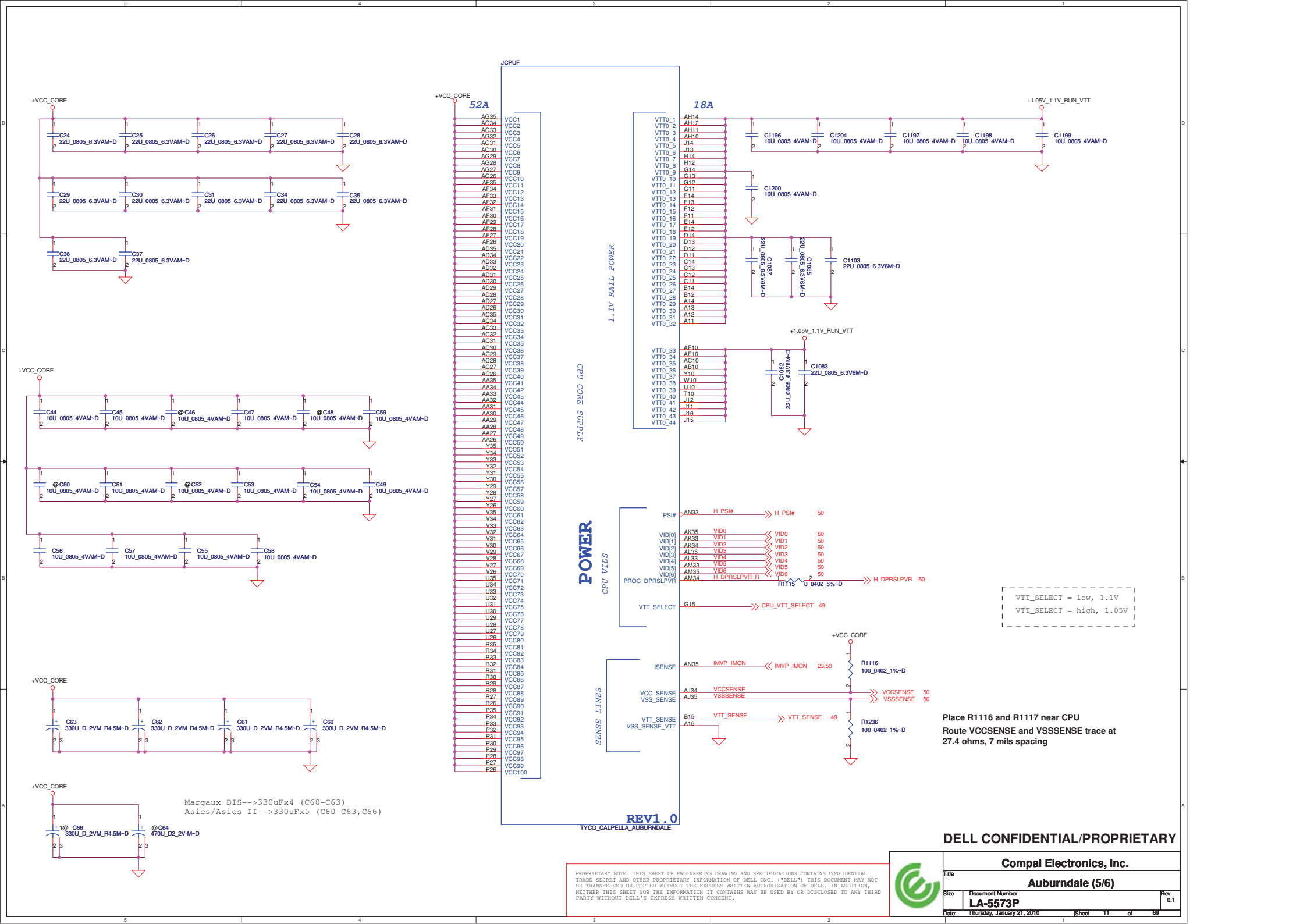
JCPUF
+VCC_CORE
52A
18A
+1.05V_1.1V_RUN_VTT
CPU CORE SUPPLY
1.1V RAIL POWER
POWER
CPU VIDS
SENSE LINES
VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 VCC7 VCC8 VCC9 VCC10 VCC11 VCC12 VCC13 VCC14 VCC15 VCC16 VCC17 VCC18 VCC19 VCC20 VCC21 VCC22 VCC23 VCC24 VCC25 VCC26 VCC27 VCC28 VCC29 VCC30 VCC31 VCC32 VCC33 VCC34 VCC35 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
VTT_SELECT = low, 1.1V
VTT_SELECT = high, 1.05V
Place R1116 and R1117 near CPU
Route VCCSENSE and VSSSENSE trace at 27.4 ohms, 7 mils spacing
Margaux DIS-->330uFx4 (C60-C63)
Asics/Asics II-->330uFx5 (C60-C63,C66)
REV1.0
TYCO_CALPELLA_AUBURNDALE
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Auburndale (5/6)
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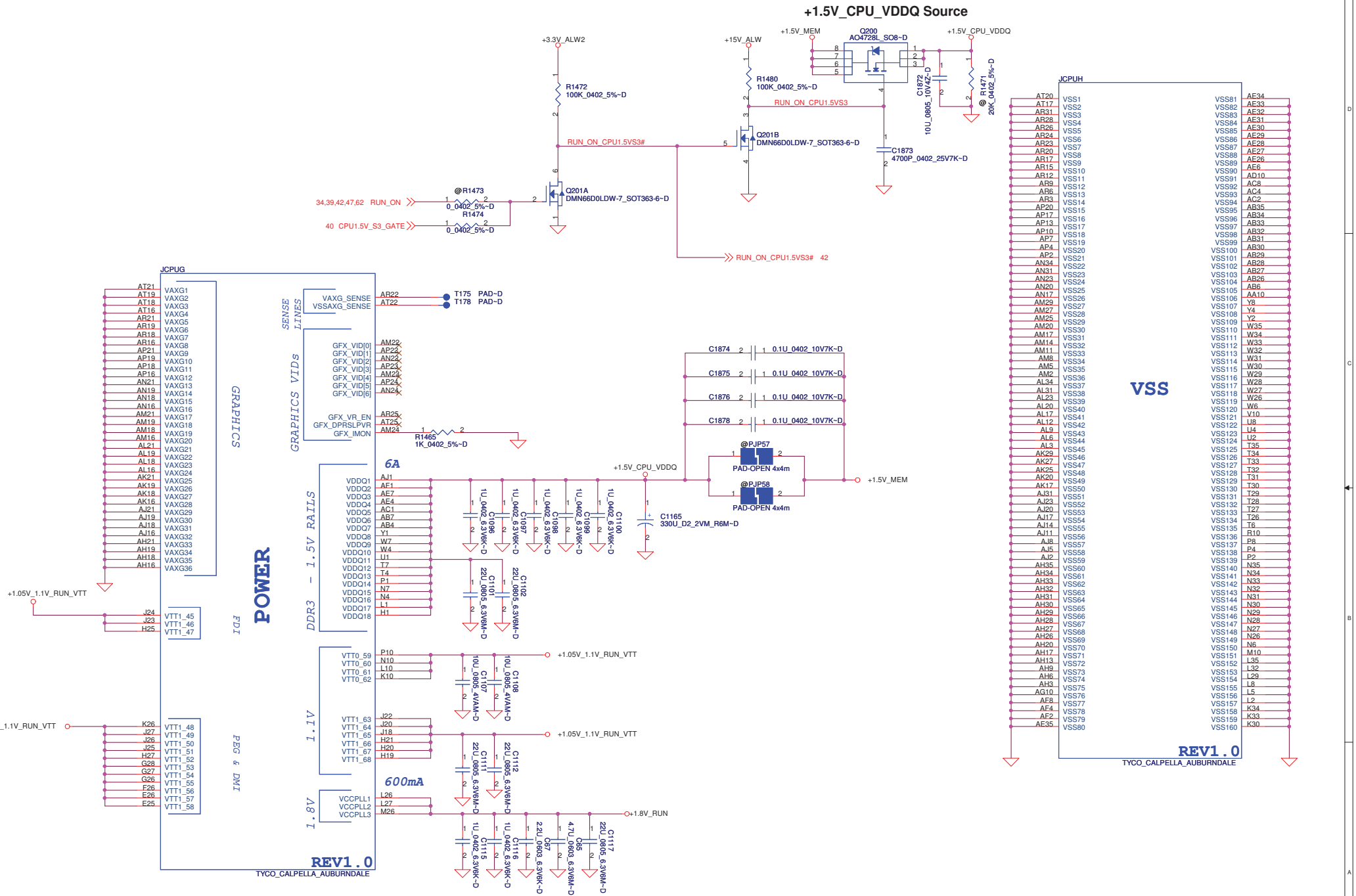

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Title: Auburndale (6/6)

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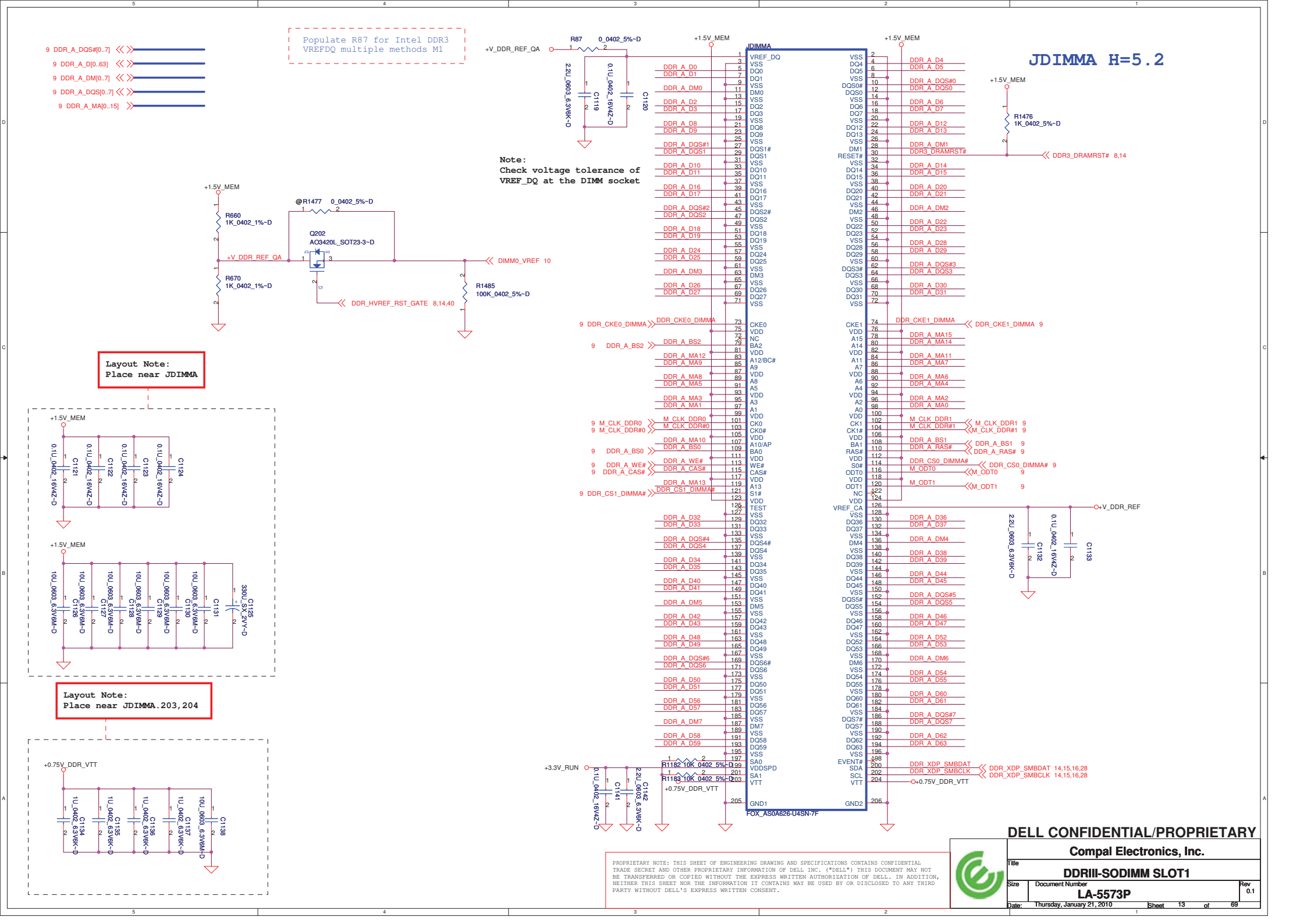
9 DDR_A_DQS#[0..7]
9 DDR_A_D[0..63]
9 DDR_A_DM[0..7]
9 DDR_A_DQS[0..7]
9 DDR_A_MA[0..15]
Populate R87 for Intel DDR3
VREFDQ multiple methods M1
JDIMMA H=5.2
Note:
Check voltage tolerance of
VREF_DQ at the DIMM socket
Layout Note:
Place near JDIMMA
Layout Note:
Place near JDIMMA.203,204
JDIMMA
FOX_AS0A626-U4SN-7F
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DDRIII-SODIMM SLOT1
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JDIMMB H=9.2

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

Populate R88 for Intel DDR3
VREFDQ multiple methods M1

Note:
Check voltage tolerance of VREF_DQ at the DIMM socket

Layout Note:
Place near JDIMMB

Layout Note:
Place near JDIMMB.203,204

JDIMMB
FOX_AS0A626-U8SN-7F

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Title: DDRIII-SODIMM SLOT2

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CMOS_CLR1	CMOS setting
Shunt	Clear CMOS
Open	Keep CMOS

ME_CLR1	TPM setting
Shunt	Clear ME RTC Registers
Open	Keep ME RTC Registers

INTVRMEN- Integrated SUS 1.1V VRM Enable
High - Enable Internal VRs

On Die PLL VR is supplied by 1.5V when sampled high, 1.8 V when sampled low

Disconnect XDP trace, add R1532/1533

Stuff R128,no stuff R123 when production

CMOS place near DIMM

200 MIL SO8
64Mb Flash ROM
For iAMT

200 MIL SO8
32Mb Flash ROM

		PCH JTAG Enable		PCH JTAG Disable		Production
PCH Pin	Ref.	ES1	ES2	ES1	ES2	All
TDO	R806	No Stuff	200 ohm	No Stuff	No Stuff	No Stuff
	R1315	No Stuff	100 ohm	No Stuff	No Stuff	No Stuff
TMS	R807	200 ohm	200 ohm	No Stuff	No Stuff	No Stuff
	R1281	100 ohm	100 ohm	No Stuff	No Stuff	No Stuff
TDI	R805	200 ohm	200 ohm	20K ohm	No Stuff	No Stuff
	R1282	100 ohm	100 ohm	10K ohm	No Stuff	No Stuff
TCK	R804	51 ohm	51 ohm	51 ohm	51 ohm	No Stuff
TRST#	R808	20K ohm	20K ohm	No Stuff	No Stuff	
	R1316	10K ohm	10K ohm	No Stuff	No Stuff	

No Reboot Strap	
SPKR	Low = Default
	High = No Reboot

Compal Electronics, Inc.

Title: PCH (1/8)

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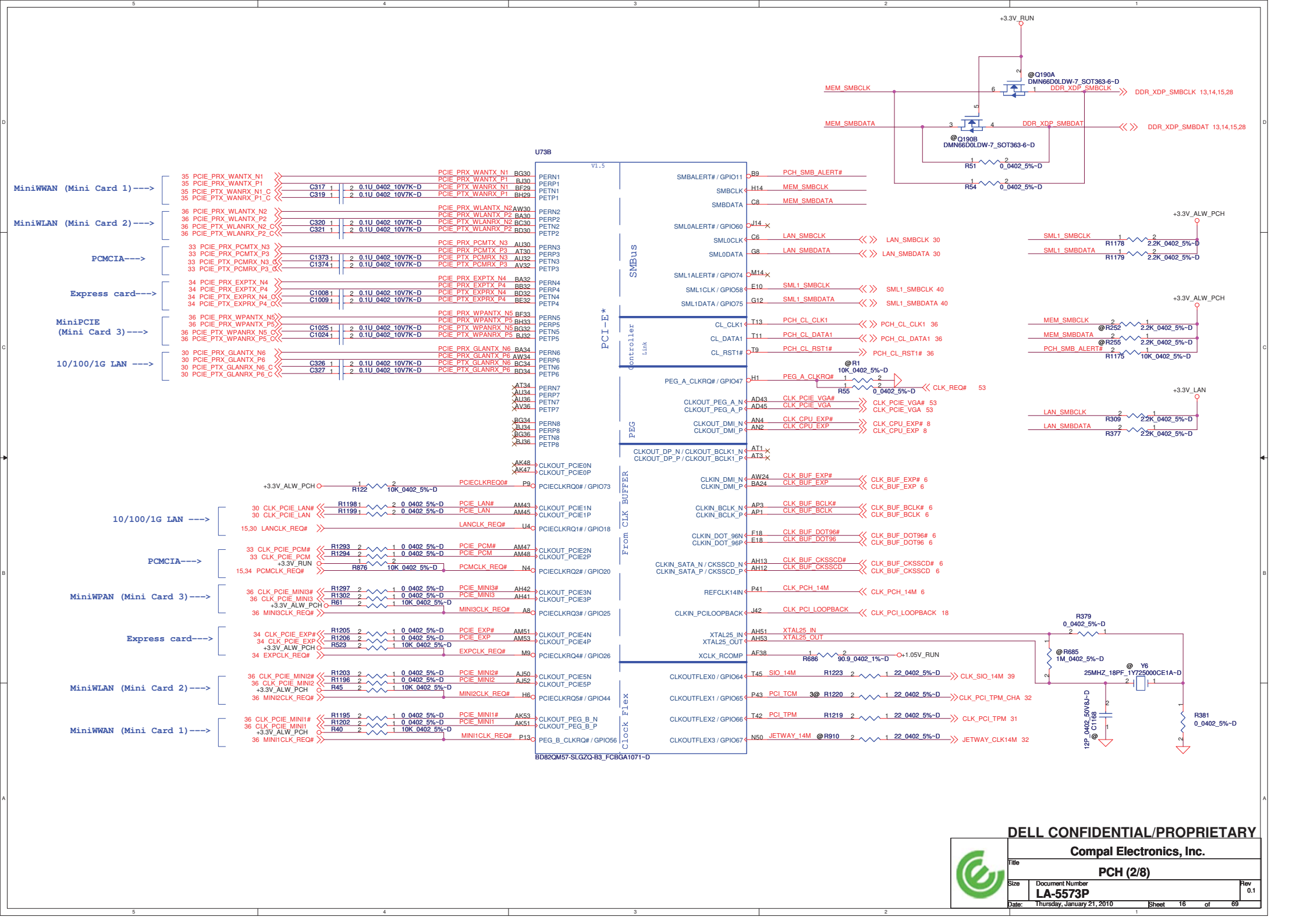

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Compal Electronics, Inc.		
Title: PCH (2/8)		
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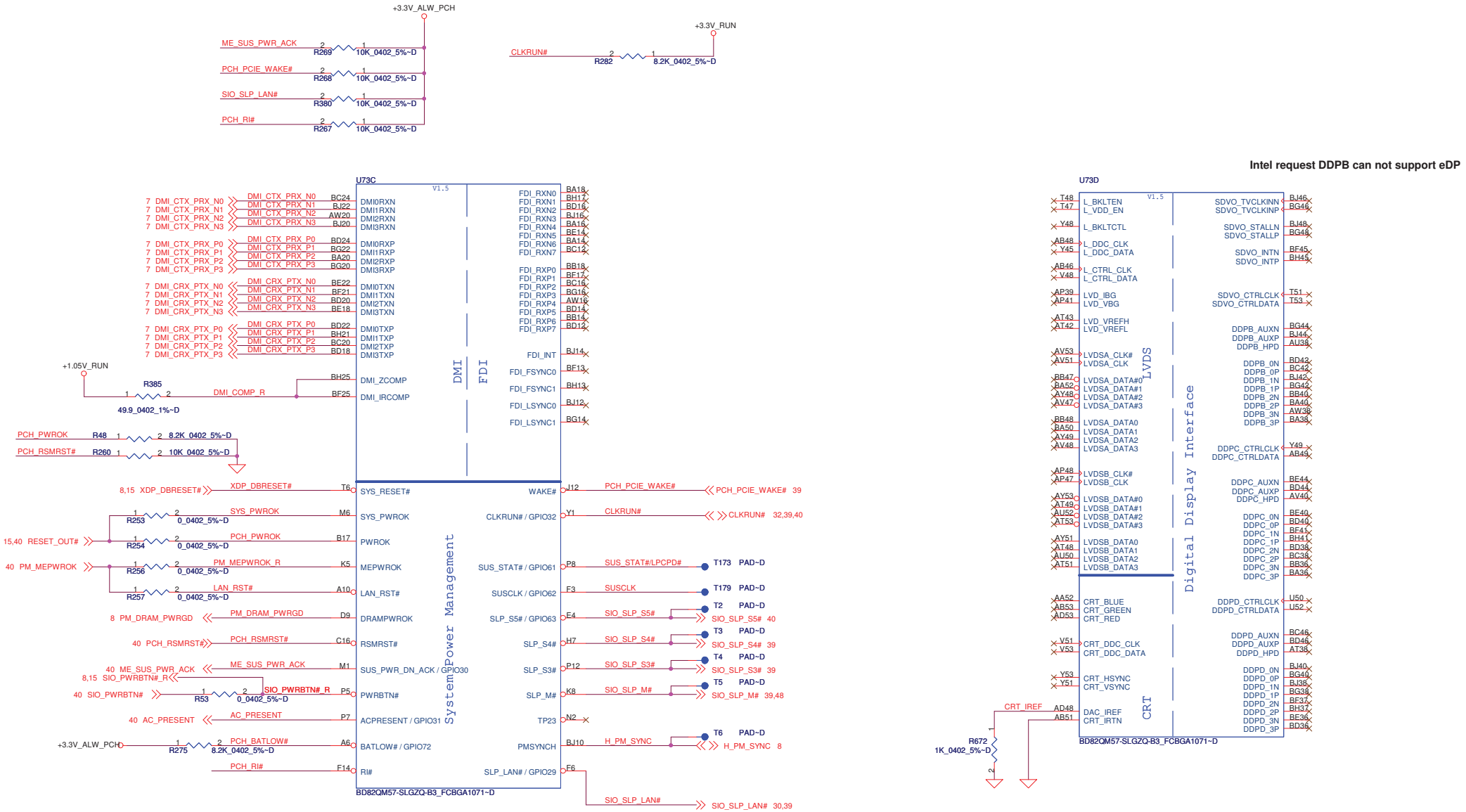

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Title: PCH (3/8)

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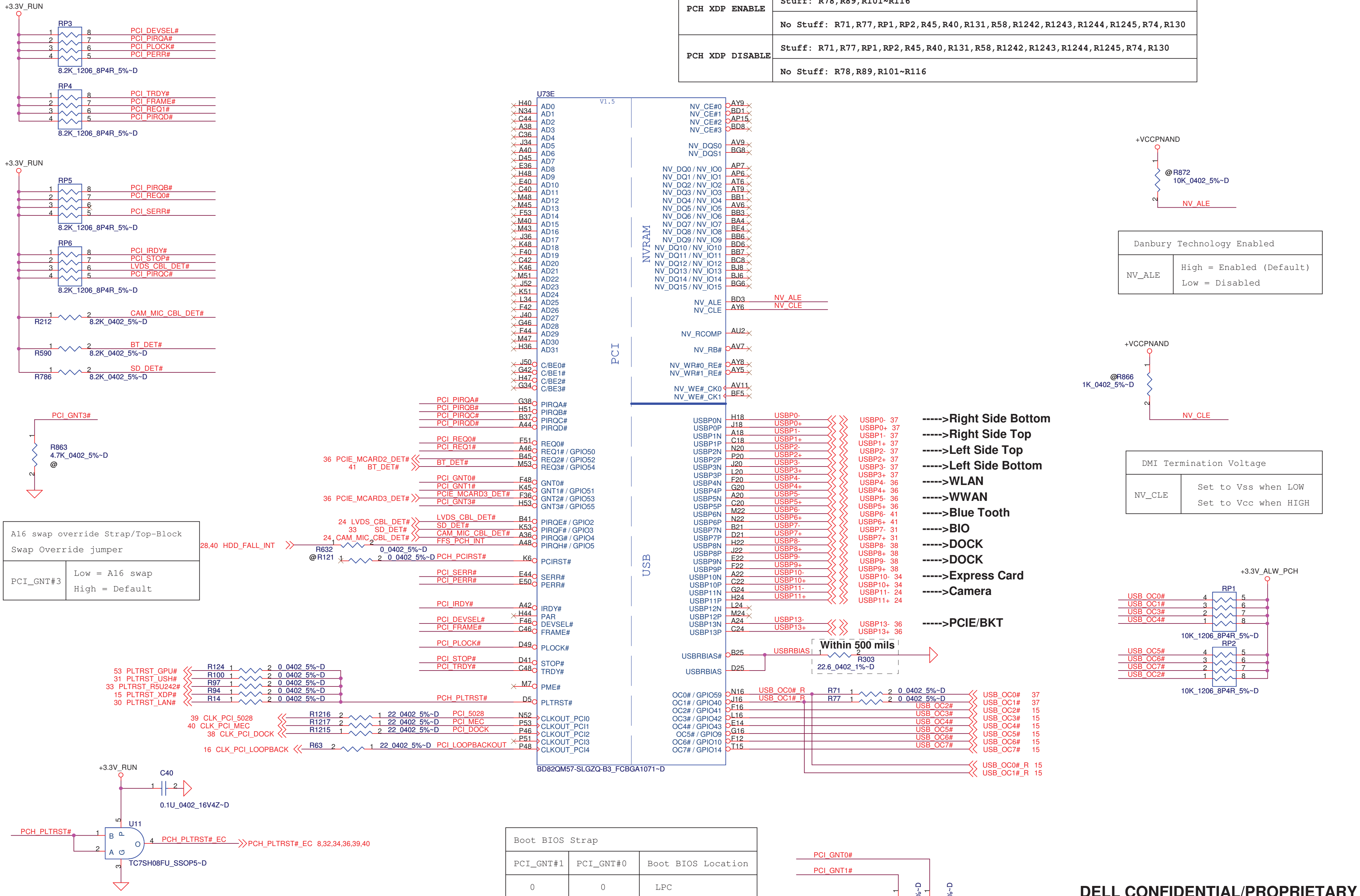
PCH XDP ENABLE	
	Stuff: R78,R89,R101~R116
	No Stuff: R71,R77,RP1,RP2,R45,R40,R131,R58,R1242,R1243,R1244,R1245,R74,R130
PCH XDP DISABLE	Stuff: R71,R77,RP1,RP2,R45,R40,R131,R58,R1242,R1243,R1244,R1245,R74,R130
	No Stuff: R78,R89,R101~R116



+3.3V_RUN
RP3 8.2K_1206_8P4R_5%~D
PCI_DEVSEL#
PCI_PIRQA#
PCI_PLOCK#
PCI_PERR#
RP4 8.2K_1206_8P4R_5%~D
PCI_TRDY#
PCI_FRAME#
PCI_REQ1#
PCI_PIRQD#
RP5 8.2K_1206_8P4R_5%~D
PCI_PIRQB#
PCI_REQ0#
PCI_SERR#
RP6 8.2K_1206_8P4R_5%~D
PCI_IRDY#
PCI_STOP#
LVDS_CBL_DET#
PCI_PIRQC#
R212 8.2K_0402_5%~D CAM_MIC_CBL_DET#
R590 8.2K_0402_5%~D BT_DET#
R786 8.2K_0402_5%~D SD_DET#
PCI_GNT3#
R863 4.7K_0402_5%~D
U73E
V1.5
PCI
NVRAM
USB
BD82QM57-SLGZQ-B3_FCBGA1071~D
USBP0- 37 ----->Right Side Bottom
USBP0+ 37 ----->Right Side Top
USBP1- 37 ----->Left Side Top
USBP1+ 37 ----->Left Side Bottom
USBP4- 36 ----->WLAN
USBP4+ 36 ----->WWAN
USBP6- 41 ----->Blue Tooth
USBP7- 31 ----->BIO
USBP8- 38 ----->DOCK
USBP9- 38 ----->DOCK
USBP10- 34 ----->Express Card
USBP11- 24 ----->Camera
USBP13- 36 ----->PCIE/BKT
Within 500 mils
R303 22.6_0402_1%~D
+VCCPNAND
@R872 10K_0402_5%~D NV_ALE
@R866 1K_0402_5%~D NV_CLE
+3.3V_ALW_PCH
RP1 10K_1206_8P4R_5%~D
RP2 10K_1206_8P4R_5%~D
R71 0_0402_5%~D
R77 0_0402_5%~D
28,40 HDD_FALL_INT
R632 0_0402_5%~D
@R121 0_0402_5%~D
PCH_PCIRST#
53 PLTRST_GPU#
31 PLTRST_USH#
33 PLTRST_R5U242#
15 PLTRST_XDP#
30 PLTRST_LAN#
R124 R100 R97 R94 R14 0_0402_5%~D
PCH_PLTRST#
39 CLK_PCI_5028
40 CLK_PCI_MEC
38 CLK_PCI_DOCK
16 CLK_PCI_LOOPBACK
R1216 R1217 R1215 22_0402_5%~D
R63 22_0402_5%~D
C40 0.1U_0402_16V4Z~D
U11 TC7SH08FU_SSOP5~D
PCH_PLTRST#_EC 8,32,34,36,39,40
PCI_GNT0#
PCI_GNT1#
@R79 1K_0402_5%~D
@R93 1K_0402_5%~D

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

DMI Termination Voltage	
NV_CLE	Set to Vss when LOW Set to Vcc when HIGH

A16 swap override Strap/Top-Block Swap Override jumper	
PCI_GNT#3	Low = A16 swap High = Default

Boot BIOS Strap		
PCI_GNT#1	PCI_GNT#0	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
* 1	1	SPI

Compal Electronics, Inc.

Title: PCH (4/8)

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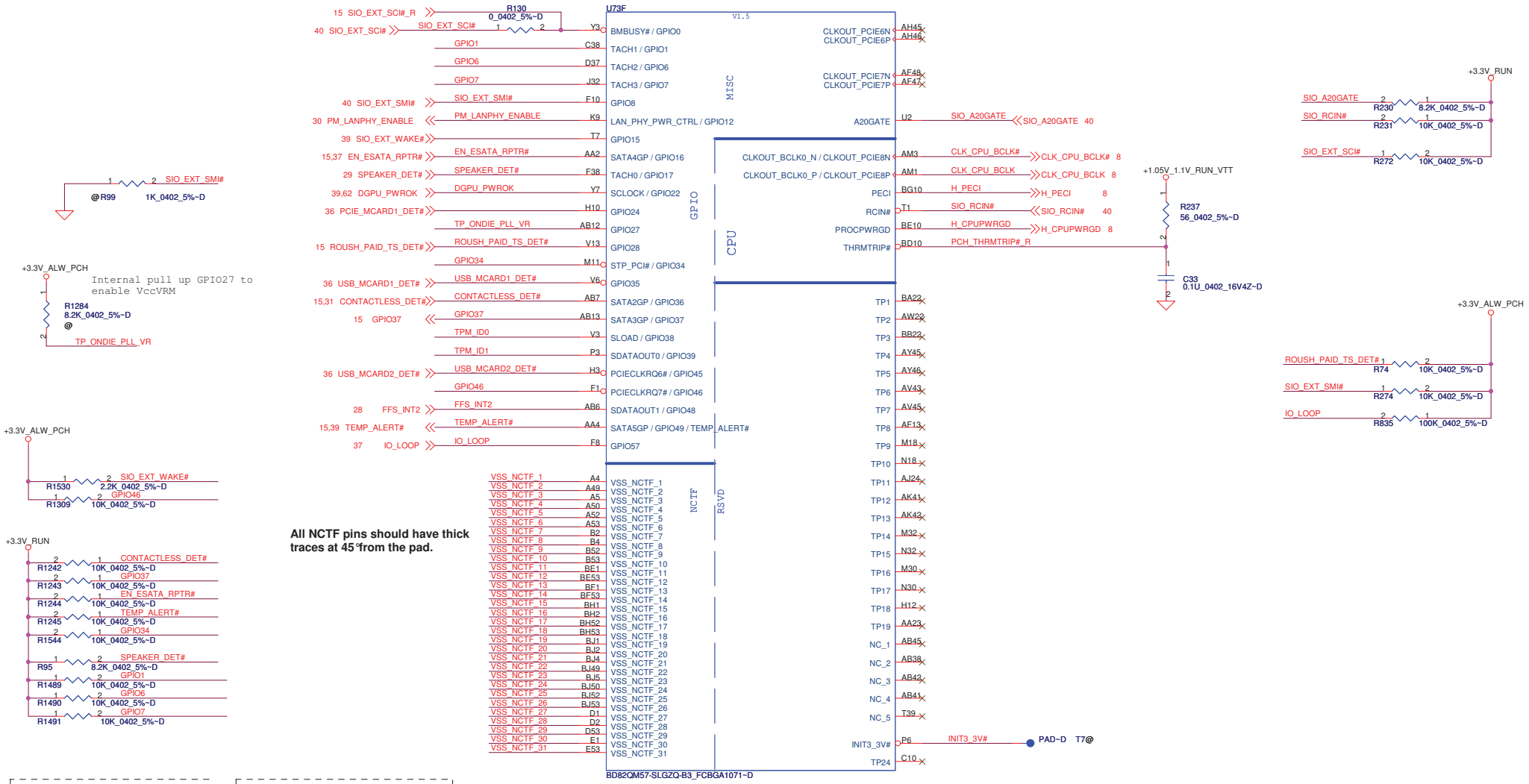

	TPM_ID0	TPM_ID1
China TPM	0	0
No TPM, No China TPM	0	1
USH1.0 (For SSI)	1	0
USH2.0	1	1

-----> will use MEMO control pop R339 & de-pop R787 when USH1.0 enable for SSI build only

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Title: PCH (5/8)

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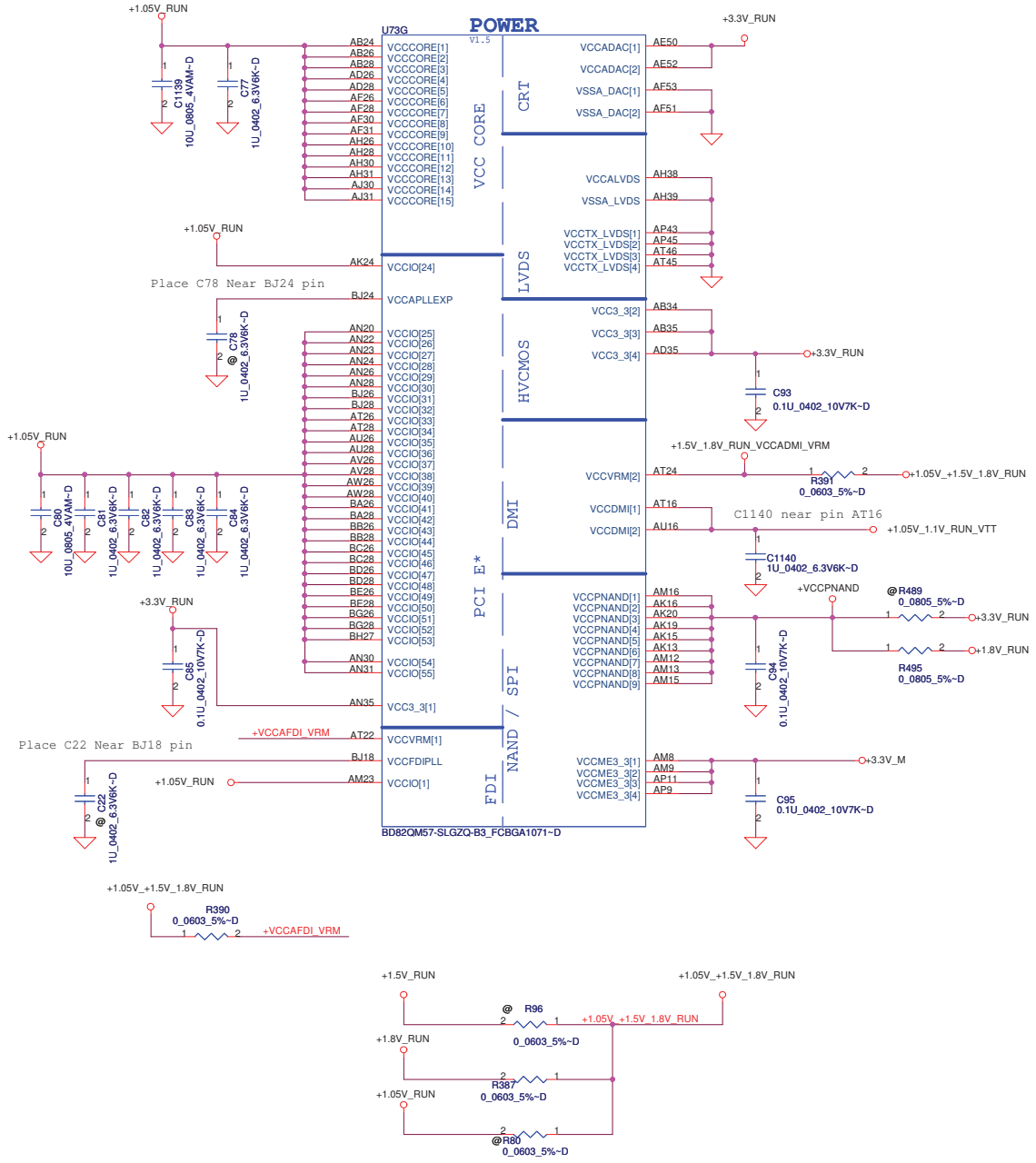

PCH Power Rail Table

Voltage Rail	Voltage	S0 Iccmax Current (A)
V_CPU_IO	1.1/1.05	< 1 (mA)
V5REF	5	< 1 (mA)
V5REF_Sus	5	< 1 (mA)
Vcc3_3	3.3	0.357
VccAClk	1.1	0.052
VccADAC	3.3	0.069
VccADPLLA	1.1	0.068
VccADPLLB	1.1	0.069
VccapllEXP	1.1	0.04
VccCore	1.1	1.432
VccDMI	1.1	0.058
VccDMI	1.1	0.061
VccFDIPLL	1.1	0.037
VccIO	1.1	3.062
VccLAN	1.1	0.32
VccME	1.1	1.849
VccME3_3	3.3	0.085
VccpNAND	1.8	0.156
VccRTC	3.3	2 (mA)
VccSATAPLL	1.1	0.031
VccSus3_3	3.3	0.163
VccSusHDA	3.3	0.006
VccVRM	1.8 / 1.5	0.196
VccVRM	1.05	< 1 (mA)
VccALVDS	3.3	< 1 (mA)
VccTX_LVDS	1.8	0.059

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Title: PCH (6/8)

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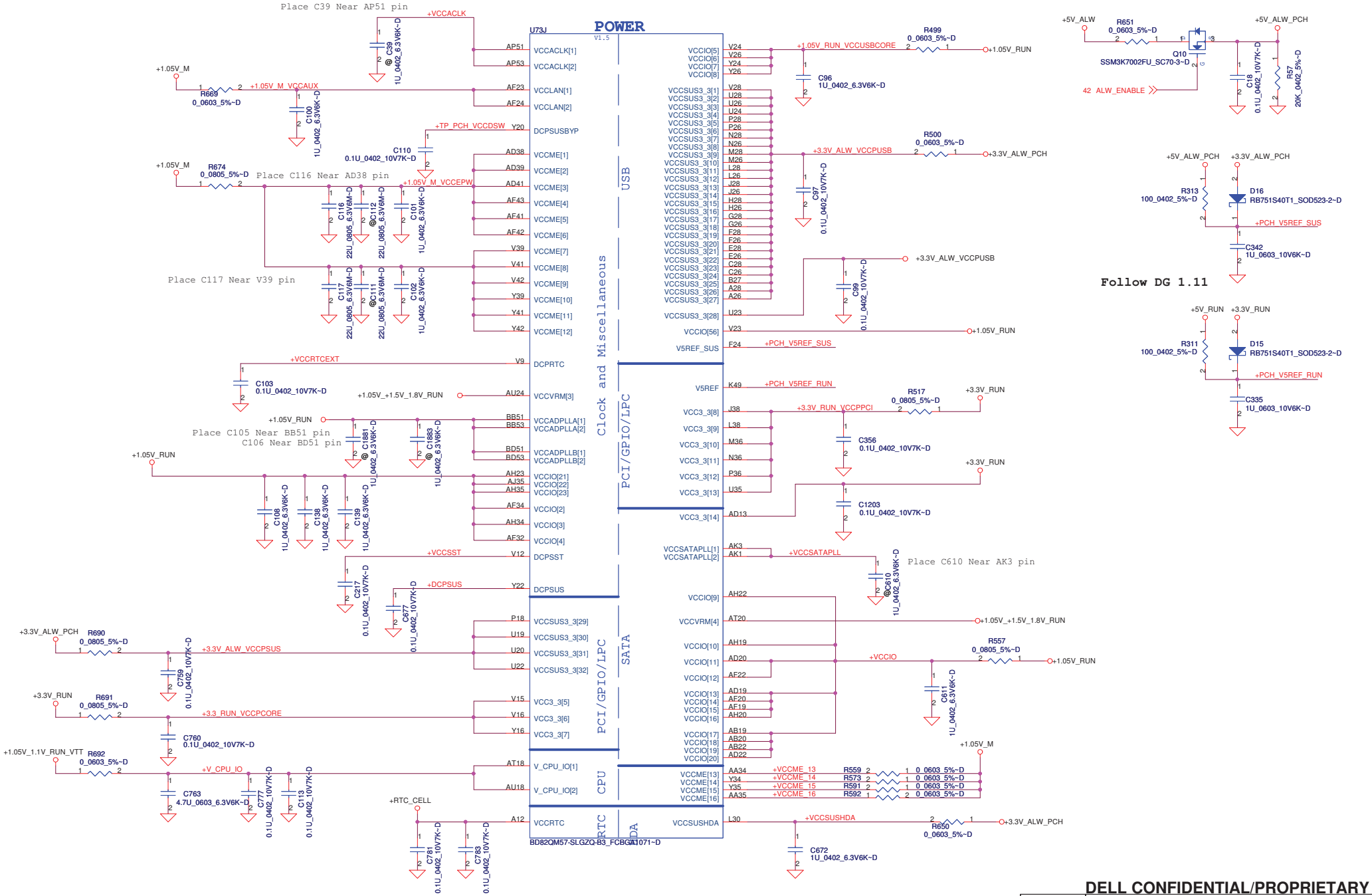

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Title	PCH (7/8)	
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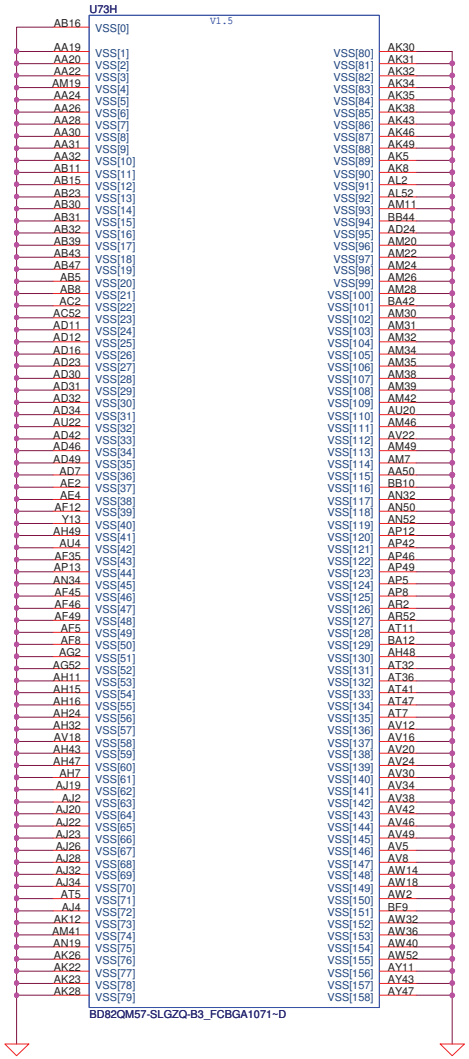

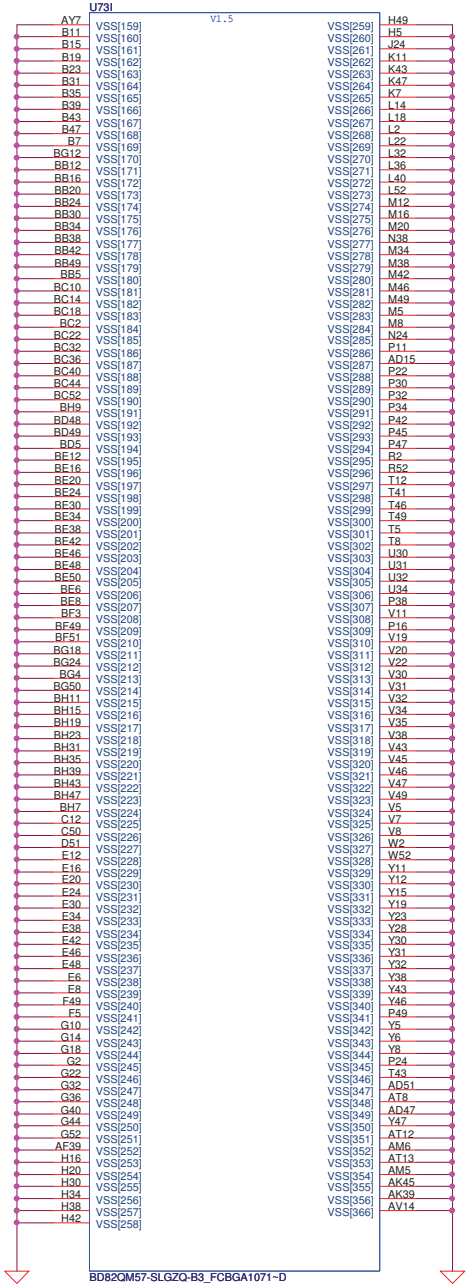

Compal Electronics, Inc.

Title: PCH (8/8)

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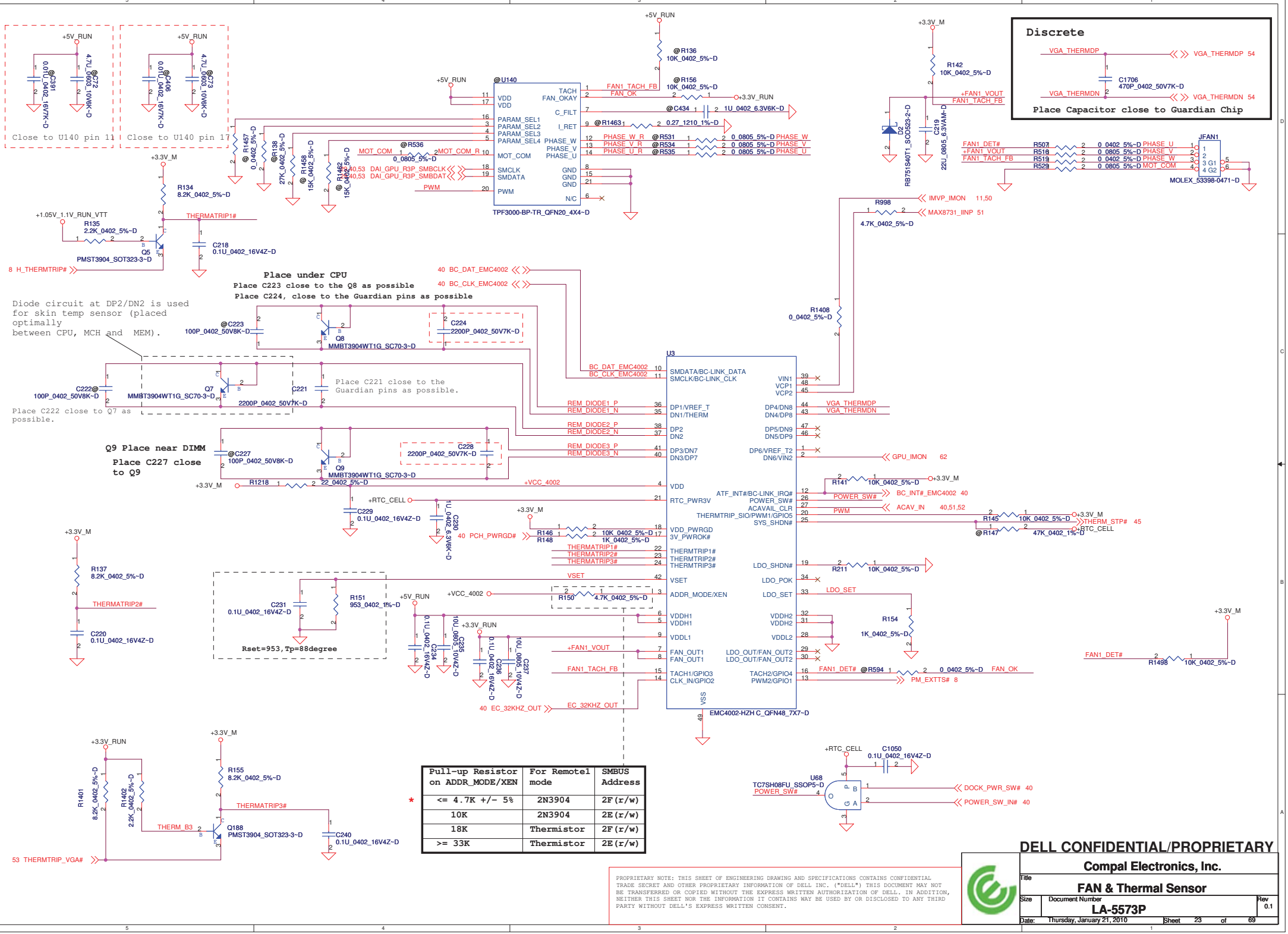

Pull-up Resistor on ADDR_MODE/XEN	For Remote1 mode	SMBUS Address
<= 4.7K +/- 5%	2N3904	2F(r/w)
10K	2N3904	2E(r/w)
18K	Thermistor	2F(r/w)
>= 33K	Thermistor	2E(r/w)

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Title: FAN & Thermal Sensor

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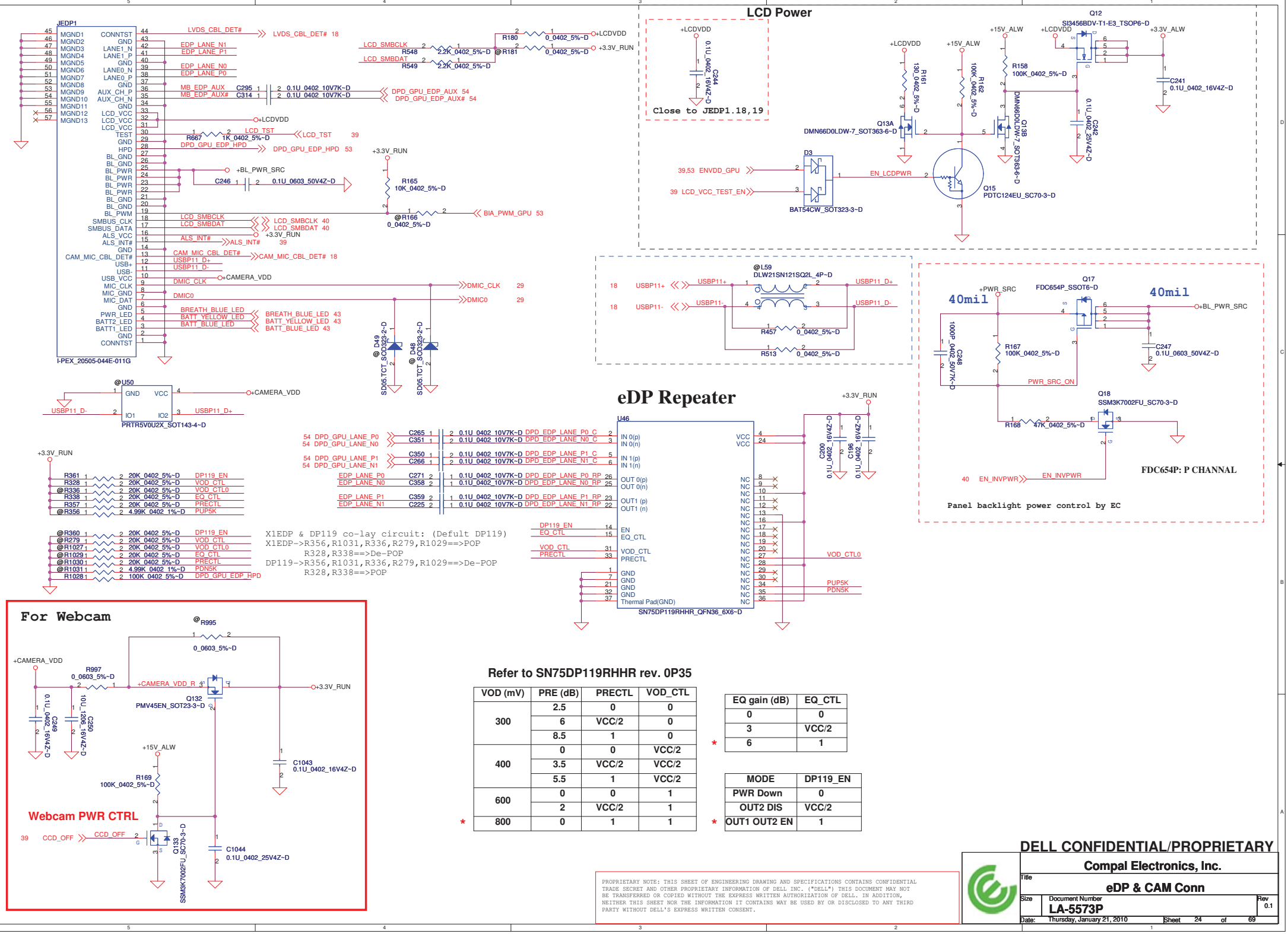
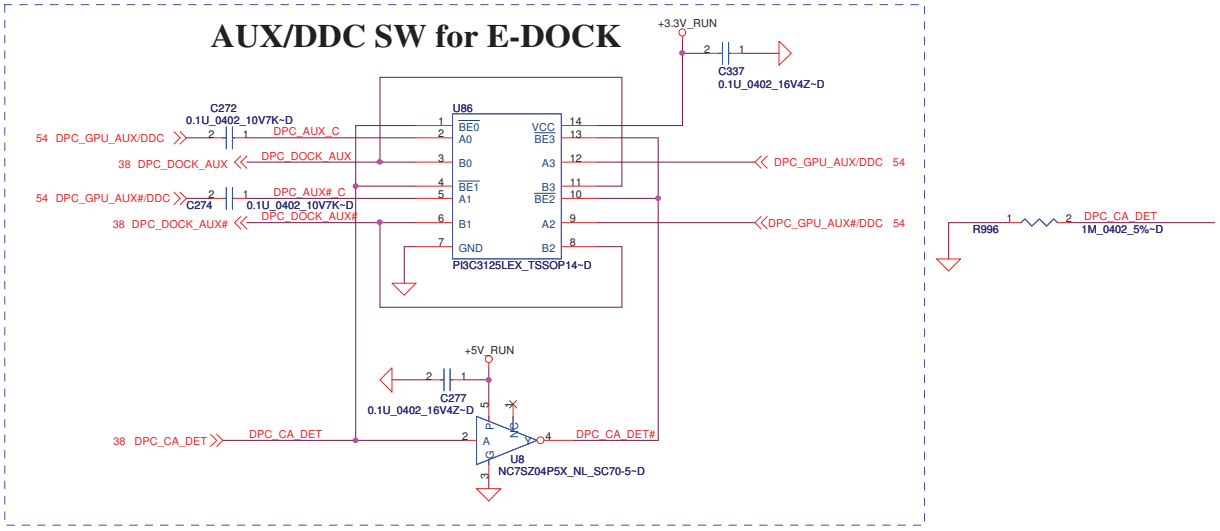


AUX/DDC SW for E-DOCK



Compal Electronics, Inc.

Title: DP SW

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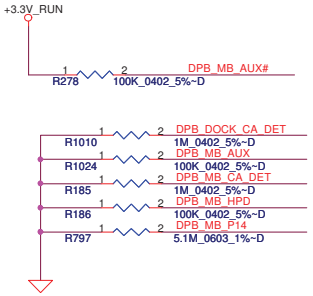
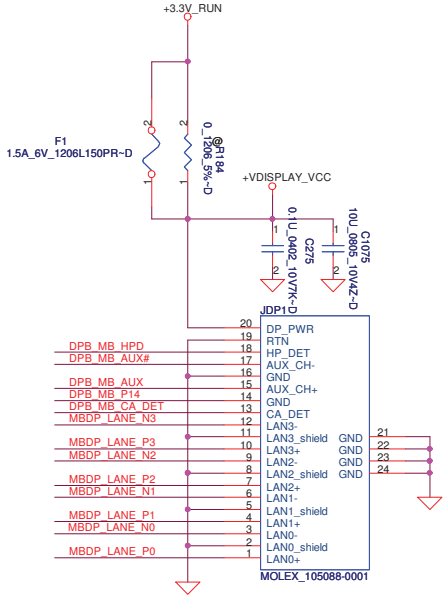
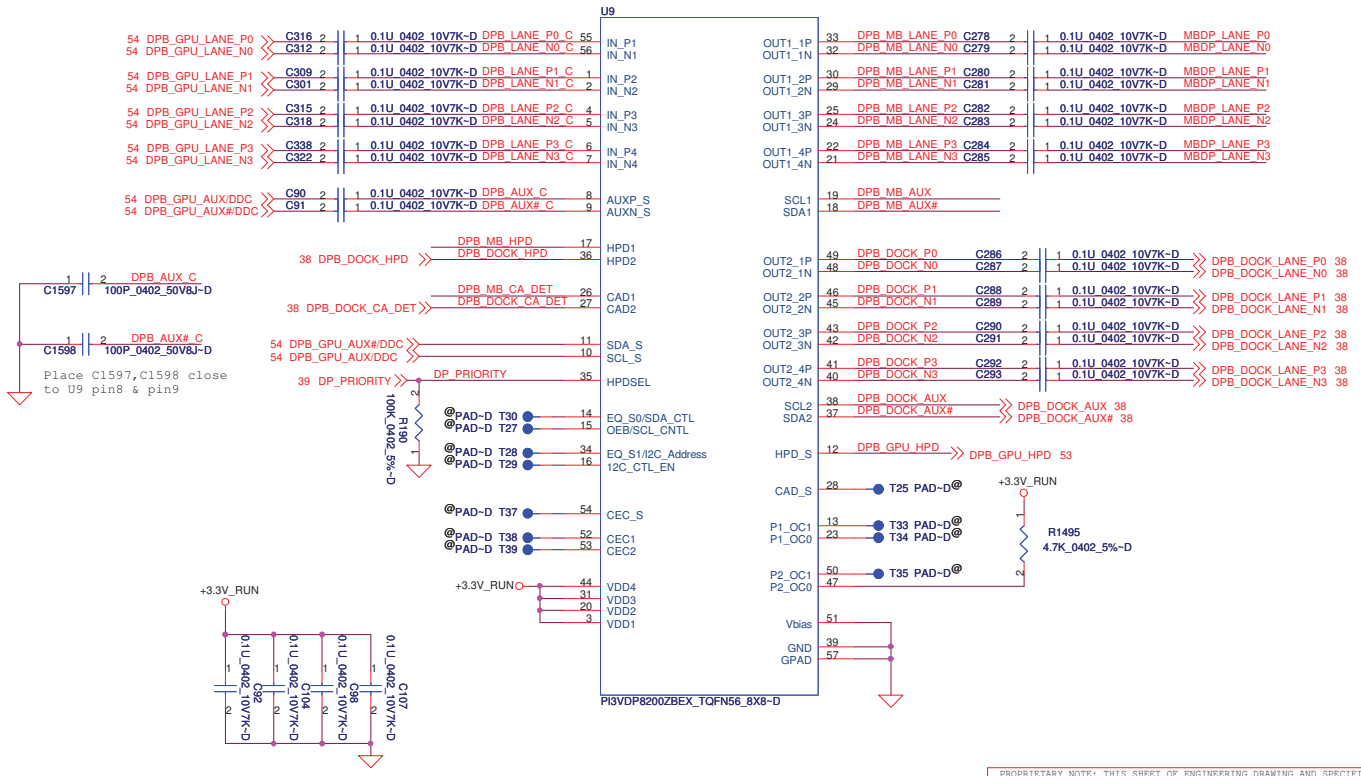
Display port Dip Connector





DPB SW for MB & DOCK



Compal Electronics, Inc.

Title: Display port

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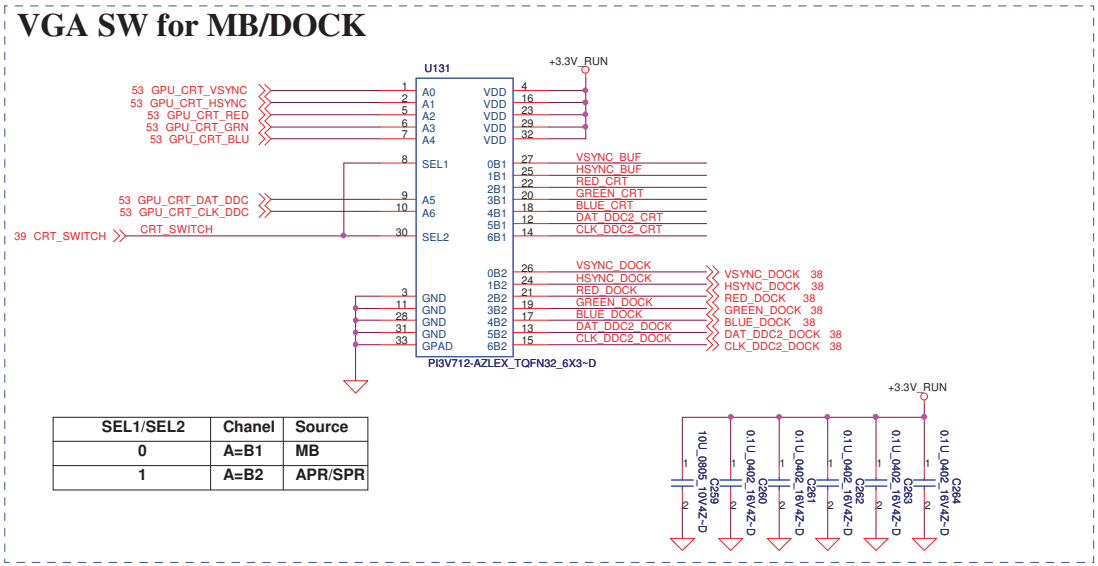

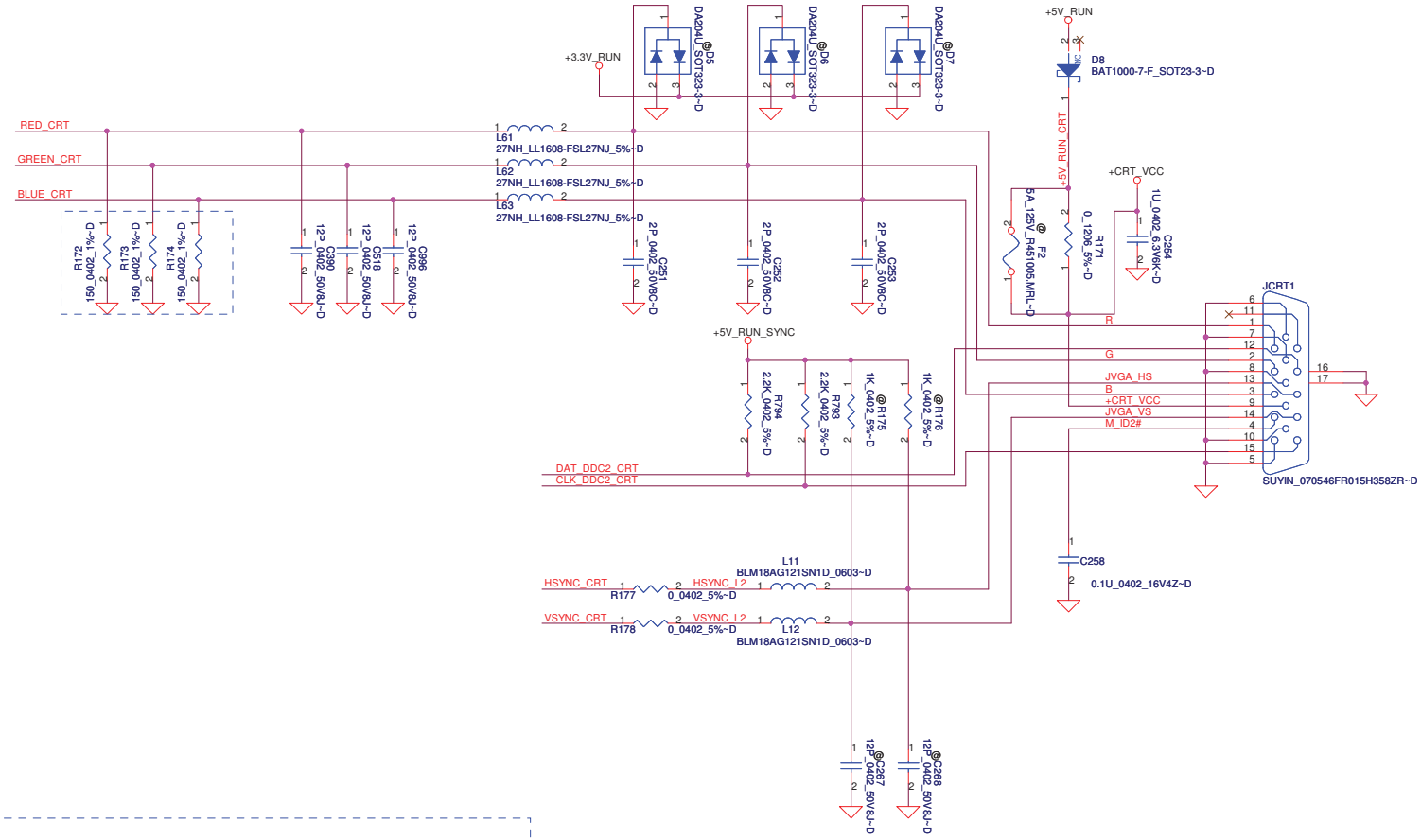

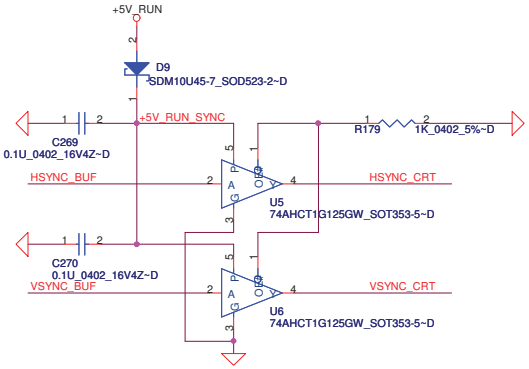

Compal Electronics, Inc.

Title: CRT/Video switch

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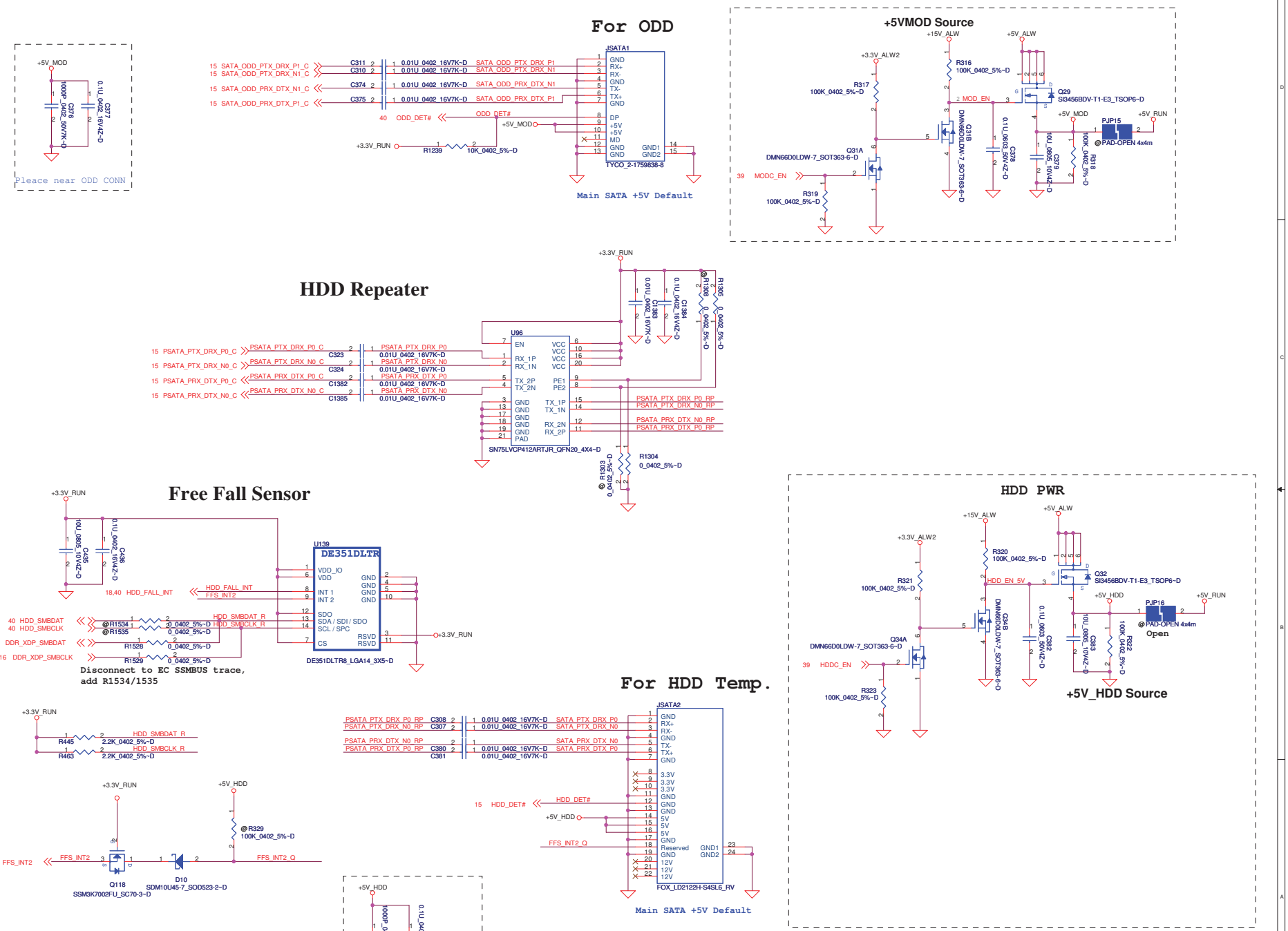
For ODD
+5VMOD Source
HDD Repeater
Free Fall Sensor
HDD PWR
For HDD Temp.
Main SATA +5V Default
Pleace near ODD CONN
Disconnect to EC SSMBUS trace,
add R1534/1535
+5V_HDD Source
Main SATA +5V Default
Pleace near HDD CONN
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Compal Electronics, Inc.
ODD/HDD CONNECTOR
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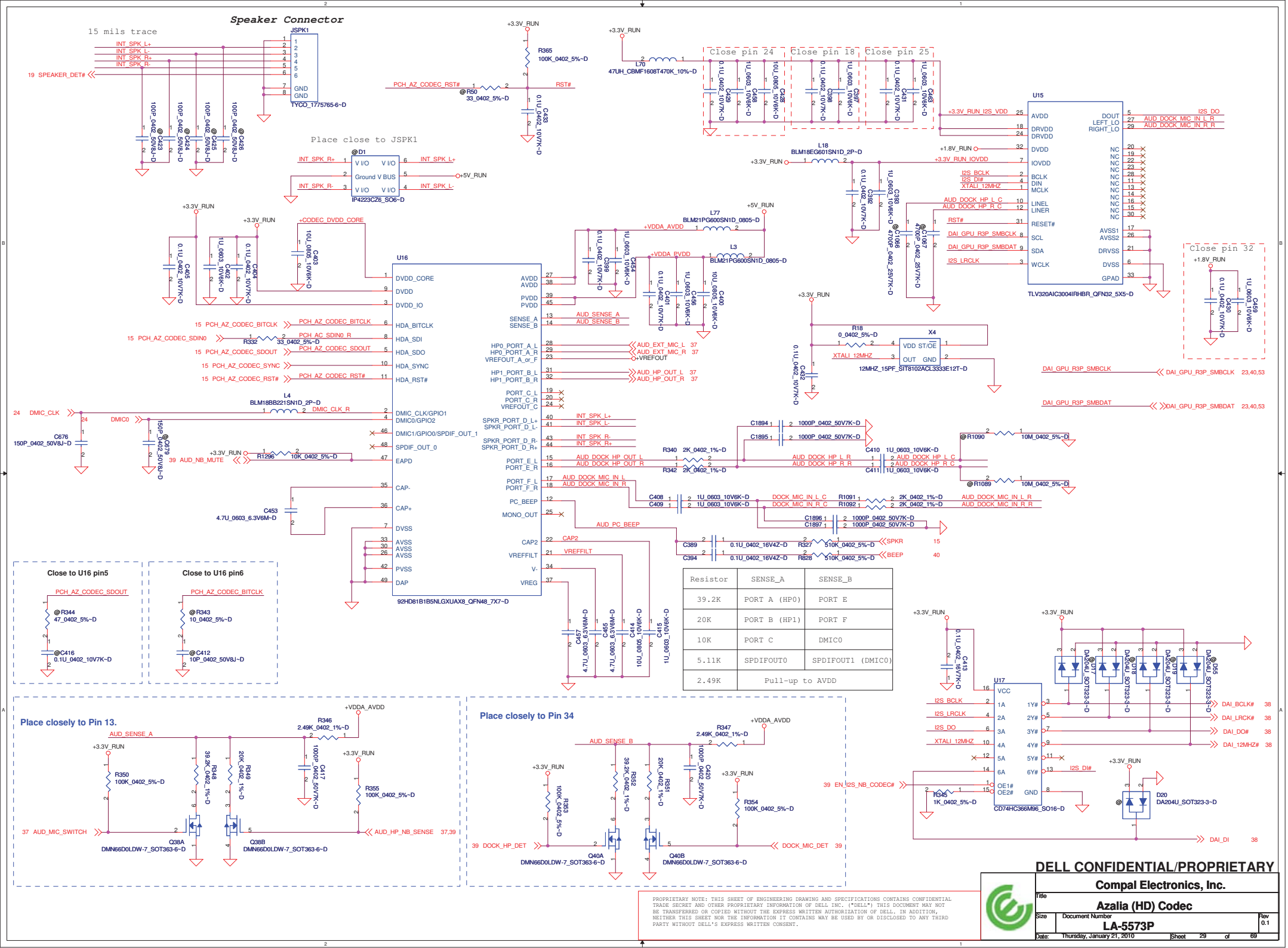

Compal Electronics, Inc.

Title: Azalia (HD) Codec

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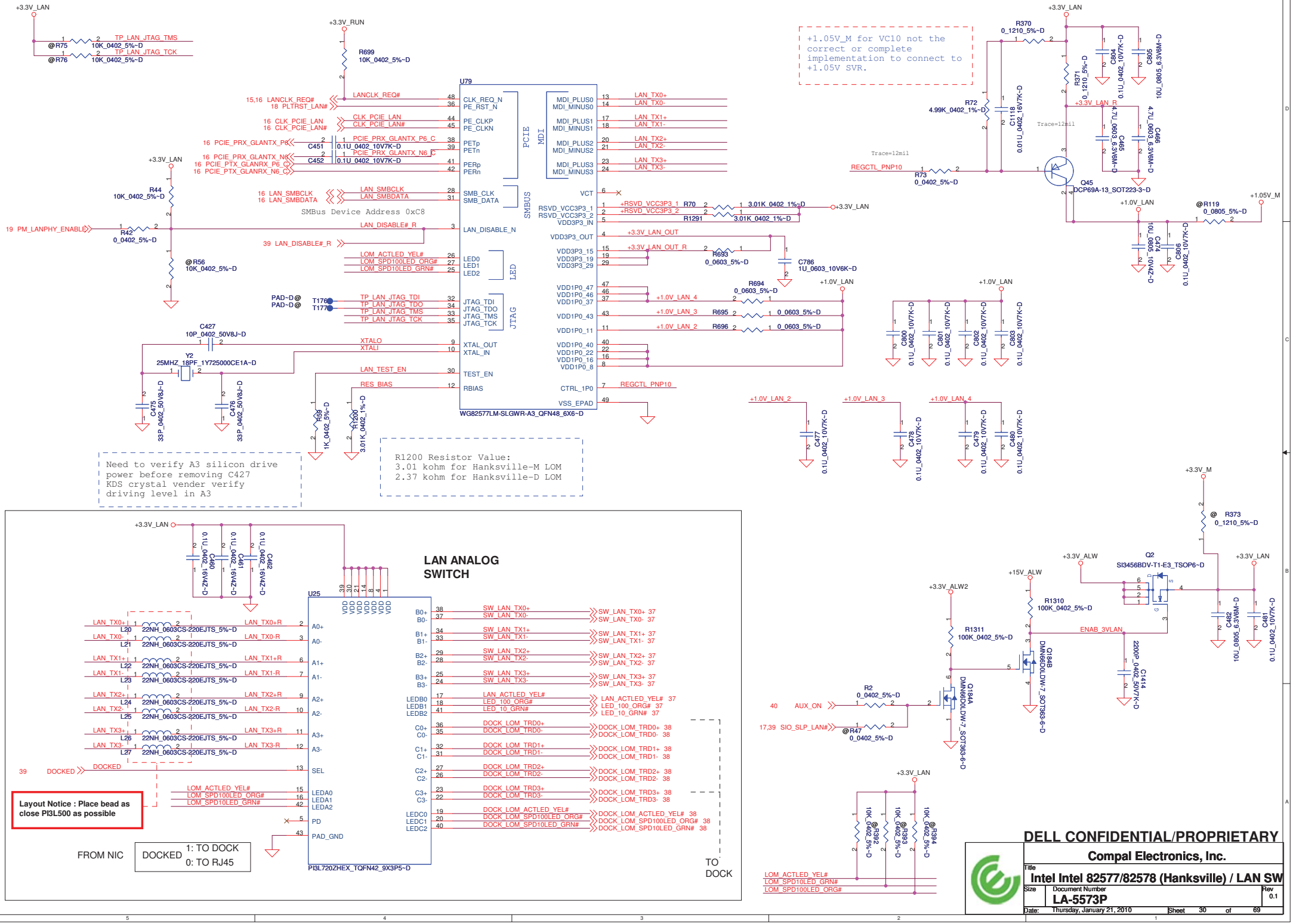
+3.3V_LAN
+3.3V_RUN
+1.05V_M for VC10 not the correct or complete implementation to connect to +1.05V SVR.
U79
WG82577LM-SLGWR-A3_QFN48_6X6~D
SMBus Device Address 0xC8
Need to verify A3 silicon drive power before removing C427
KDS crystal vender verify driving level in A3
R1200 Resistor Value:
3.01 kohm for Hanksville-M LOM
2.37 kohm for Hanksville-D LOM
LAN ANALOG SWITCH
PI3L720ZHEX_TQFN42_9X3P5~D
Layout Notice : Place bead as close PI3L500 as possible
FROM NIC
DOCKED 1: TO DOCK 0: TO RJ45
TO DOCK
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Compal Electronics, Inc.
Intel Intel 82577/82578 (Hanksville) / LAN SW
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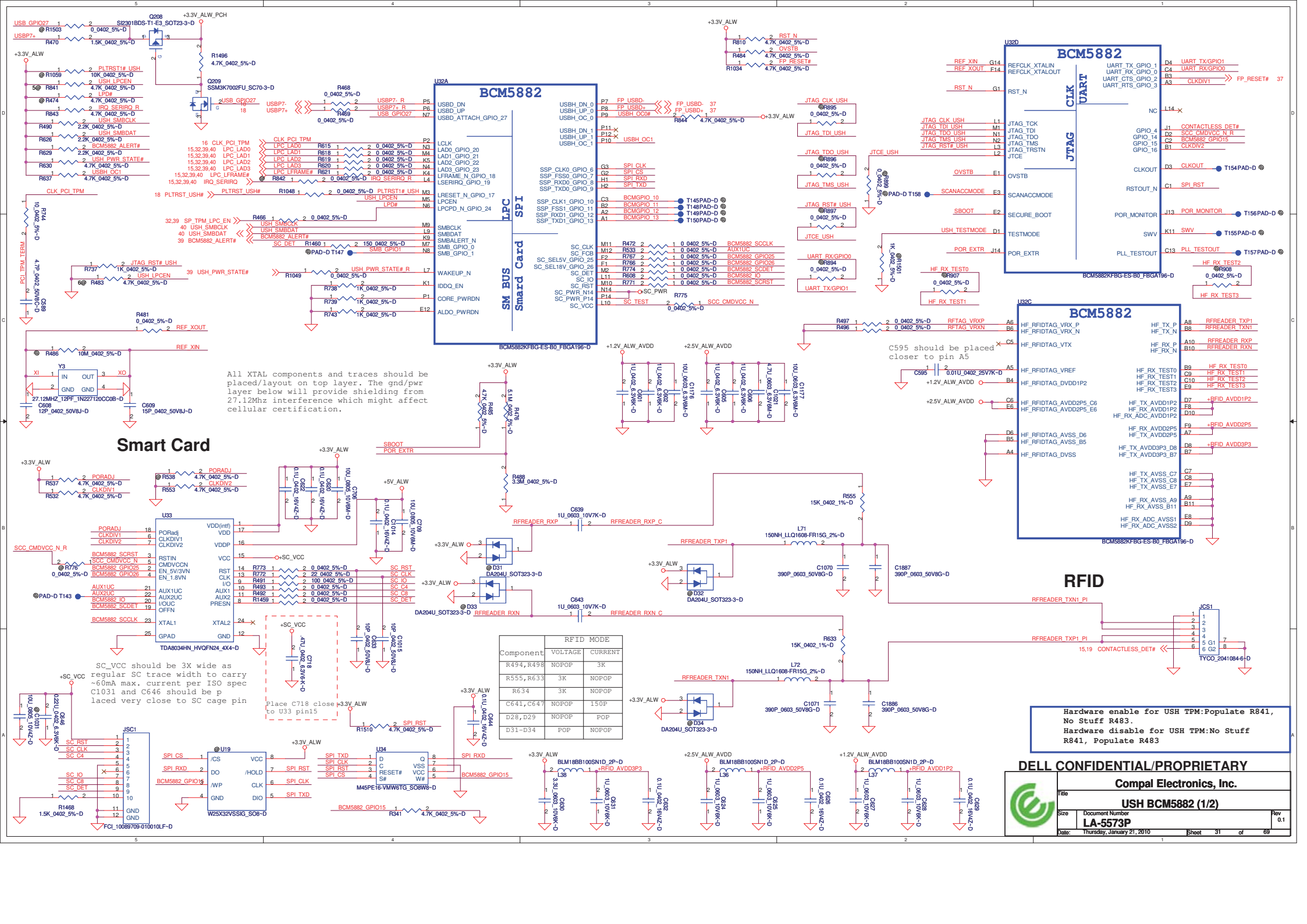
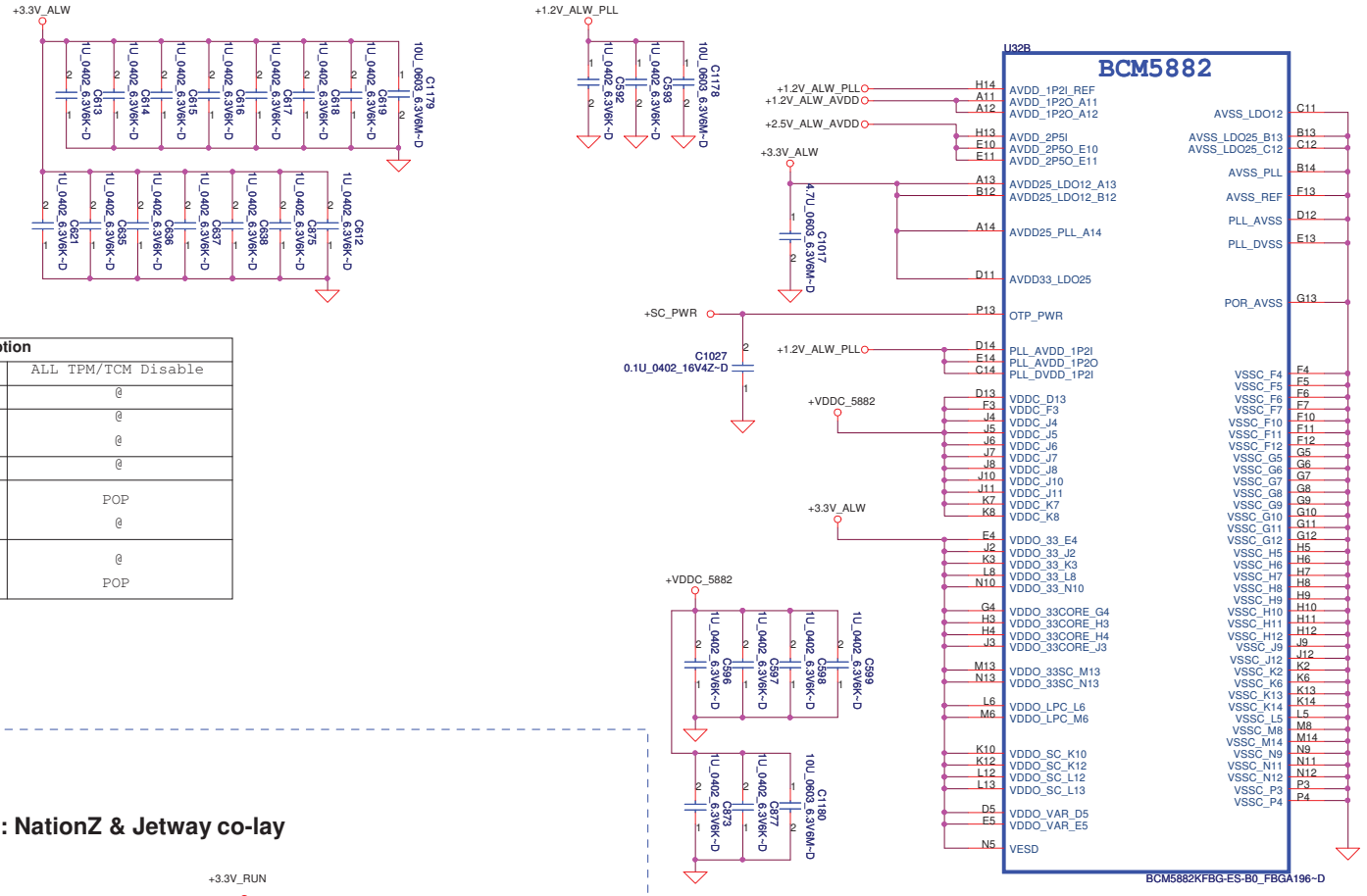
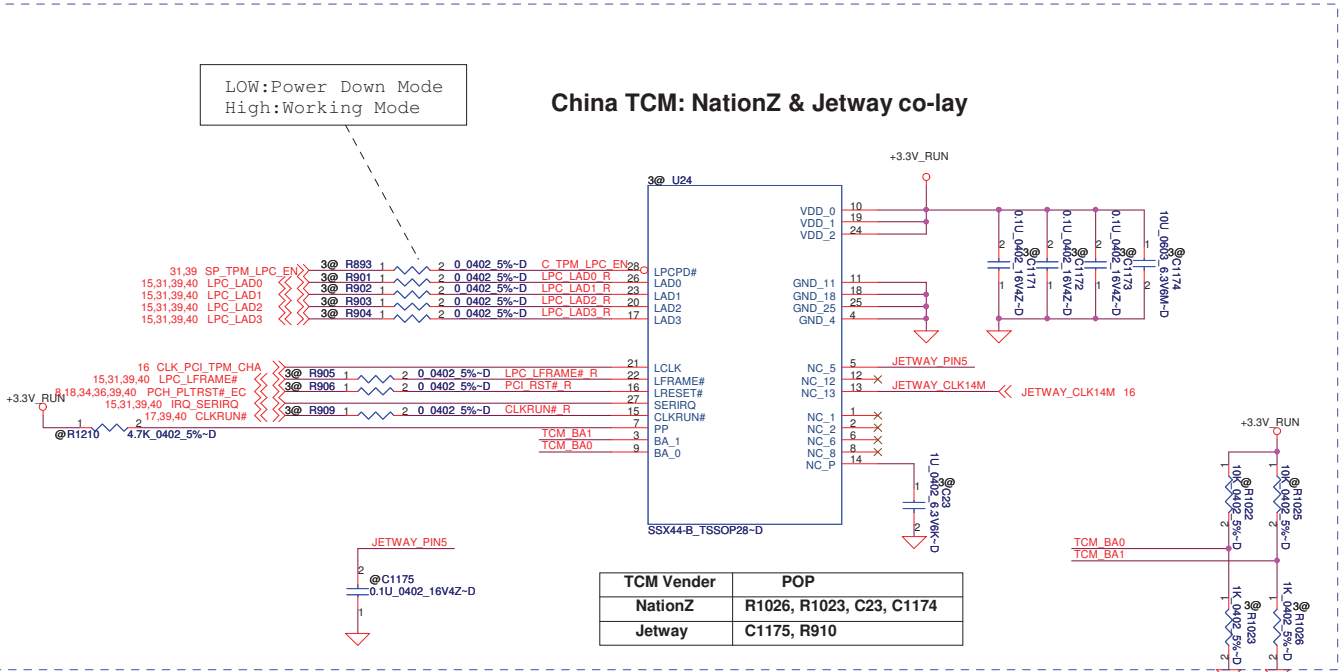


Component	RFID MODE	
	VOLTAGE	CURRENT
R494,R498	NOPOP	3K
R555,R633	3K	NOPOP
R634	3K	NOPOP
C641,C647	NOPOP	150P
D28,D29	NOPOP	POP
D31~D34	POP	NOPOP



USH BCM5882 and China TCM Z8H172T Option				
PART/PIN	Ref Des	TCM Enable	TPM Enable	ALL TPM/TCM Disable
TCM circuit	All 3@	POP	@	@
USH_LPCEN	PU R841	@	POP	@
	PD R483	POP	@	@
SIO 5028 ->SP_TPM_LPC_EN	PU R788	@	@	@
PCH GPIO39 ->TPM_ID1	PU R787	@	@	POP
	PD R339	POP	POP	@
PCH GPIO38 ->TPM_ID0	PU R273	POP	POP	@
	PD R922	@	@	POP



TCM Vender	POP
NationZ	R1026, R1023, C23, C1174
Jetway	C1175, R910

Compal Electronics, Inc.

Title: USH BCM5882 (2/2)

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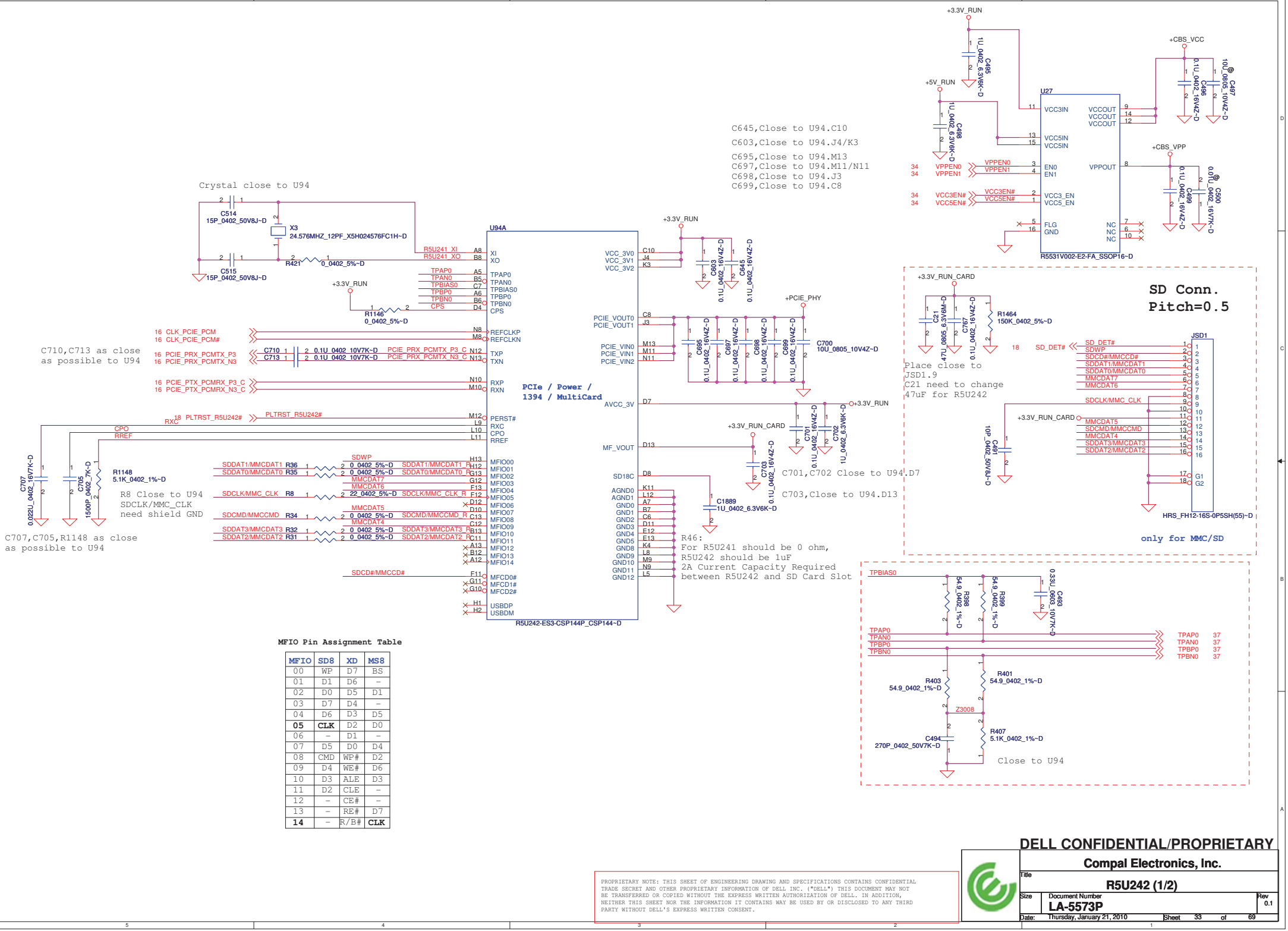

MFIO Pin Assignment Table

MFIO	SD8	XD	MS8
00	WP	D7	BS
01	D1	D6	–
02	D0	D5	D1
03	D7	D4	–
04	D6	D3	D5
05	**CLK**	D2	D0
06	–	D1	–
07	D5	D0	D4
08	CMD	WP#	D2
09	D4	WE#	D6
10	D3	ALE	D3
11	D2	CLE	–
12	–	CE#	–
13	–	RE#	D7
14	–	R/B#	**CLK**

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Compal Electronics, Inc.

Title: R5U242 (1/2)

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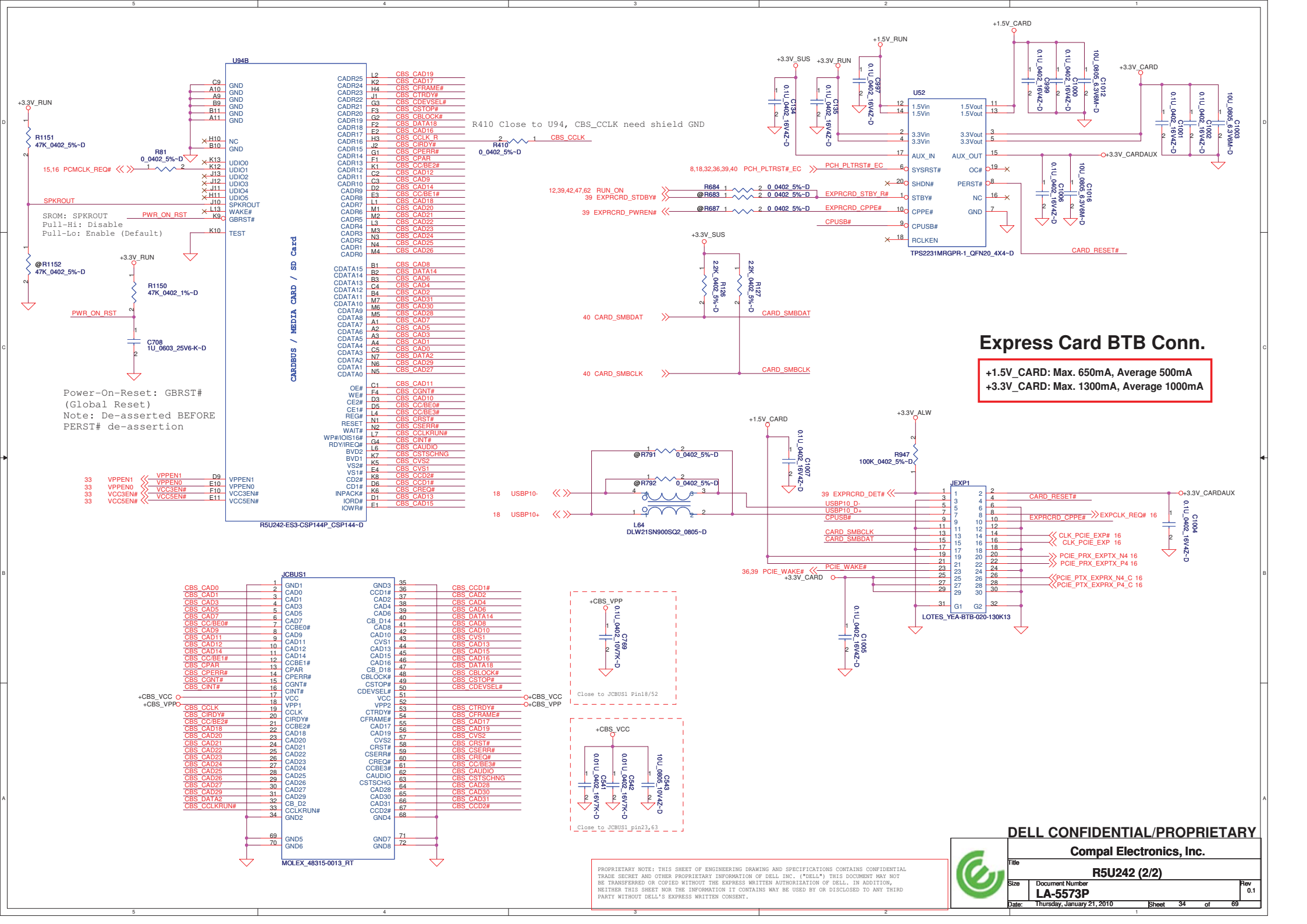
U94B
CARDBUS / MEDIA CARD / SD Card
R5U242-ES3-CSP144P_CSP144~D
R410 Close to U94, CBS_CCLK need shield GND
SROM: SPKROUT
Pull-Hi: Disable
Pull-Lo: Enable (Default)
Power-On-Reset: GBRST#
(Global Reset)
Note: De-asserted BEFORE
PERST# de-assertion
U52
TPS2231MRGPR-1_QFN20_4X4~D
Express Card BTB Conn.
+1.5V_CARD: Max. 650mA, Average 500mA
+3.3V_CARD: Max. 1300mA, Average 1000mA
JEXP1
LOTES_YEA-BTB-020-130K13
JCBUS1
MOLEX_48315-0013_RT
L64
DLW21SN900SQ2_0805~D
Close to JCBUS1 Pin18/52
Close to JCBUS1 pin23,63
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R5U242 (2/2)
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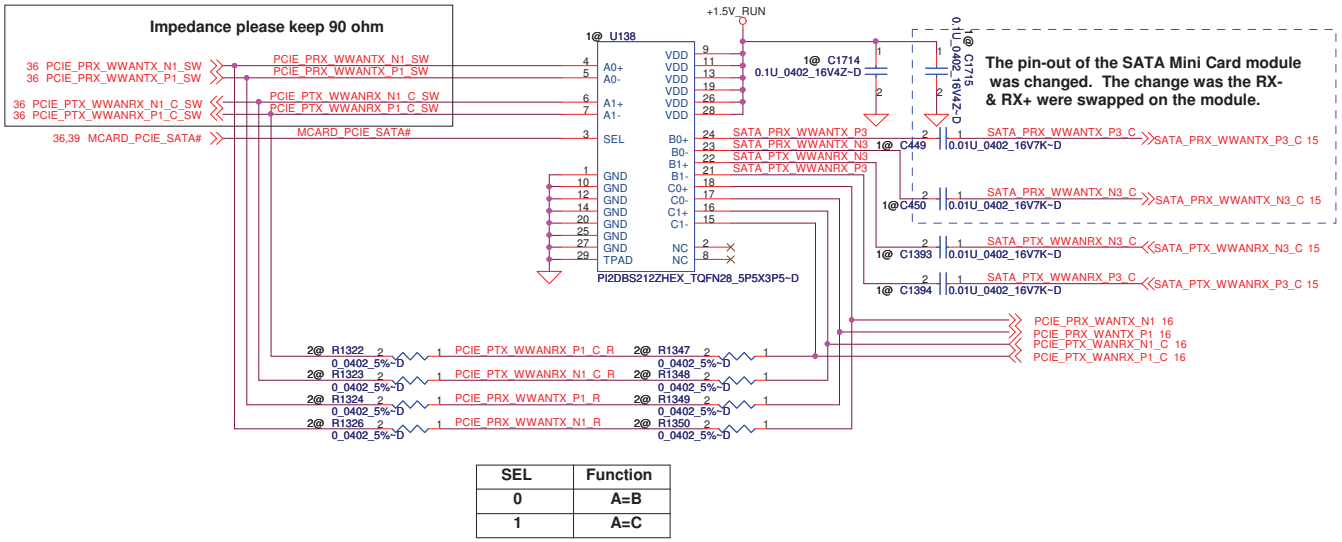
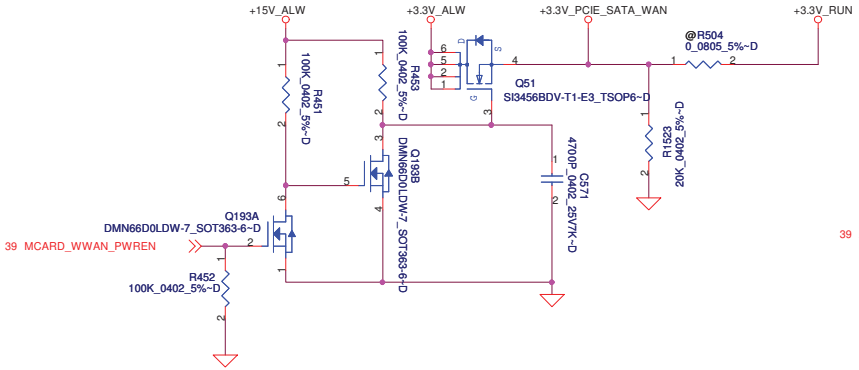
For Asics placement estimate

PCIE/SATA SW for Mini card1

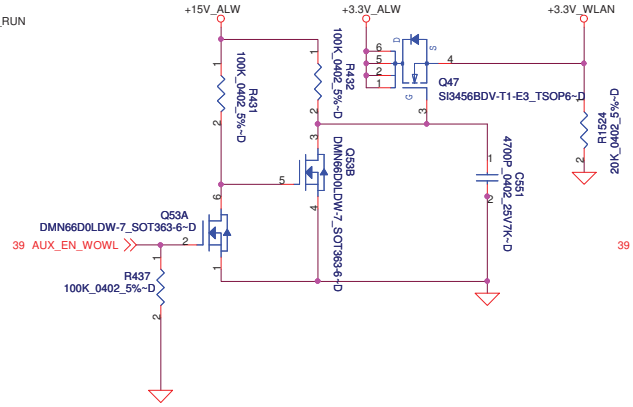


SEL	Function
0	A=B
1	A=C

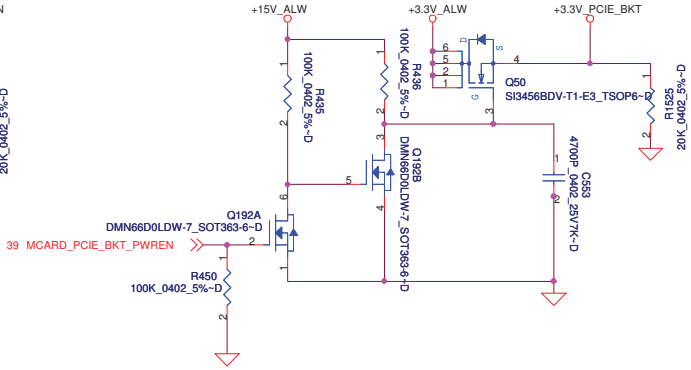
Power Control for Mini card1



Power Control for Mini card2



Power Control for Mini card3



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Title: PCIE/SATA SW & PCIE PWR

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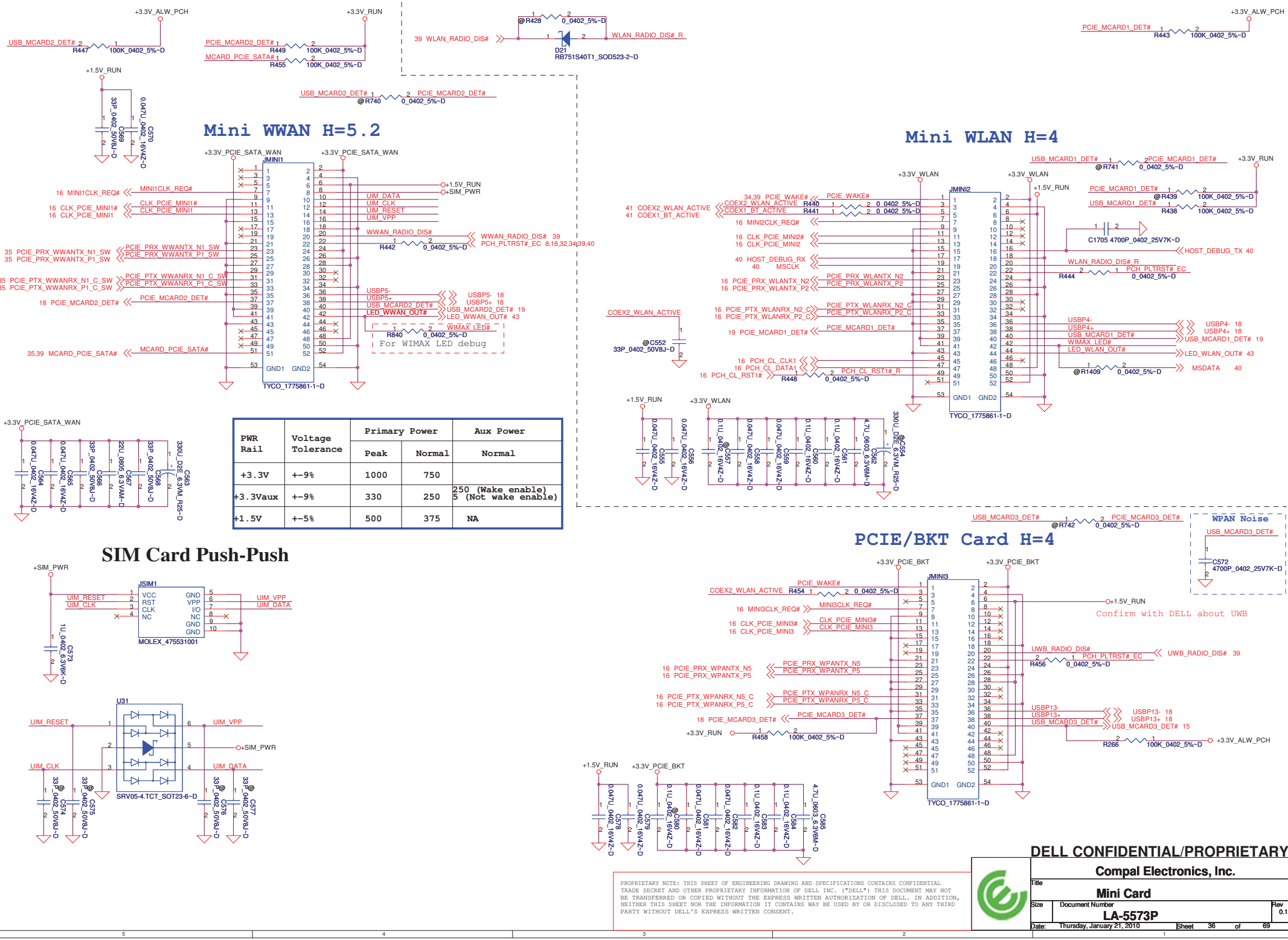

PWR Rail	Voltage Tolerance	Primary Power		Aux Power
		Peak	Normal	Normal
+3.3V	+-9%	1000	750	
+3.3Vaux	+-9%	330	250	250 (Wake enable) 5 (Not wake enable)
+1.5V	+-5%	500	375	NA

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Title: Mini Card

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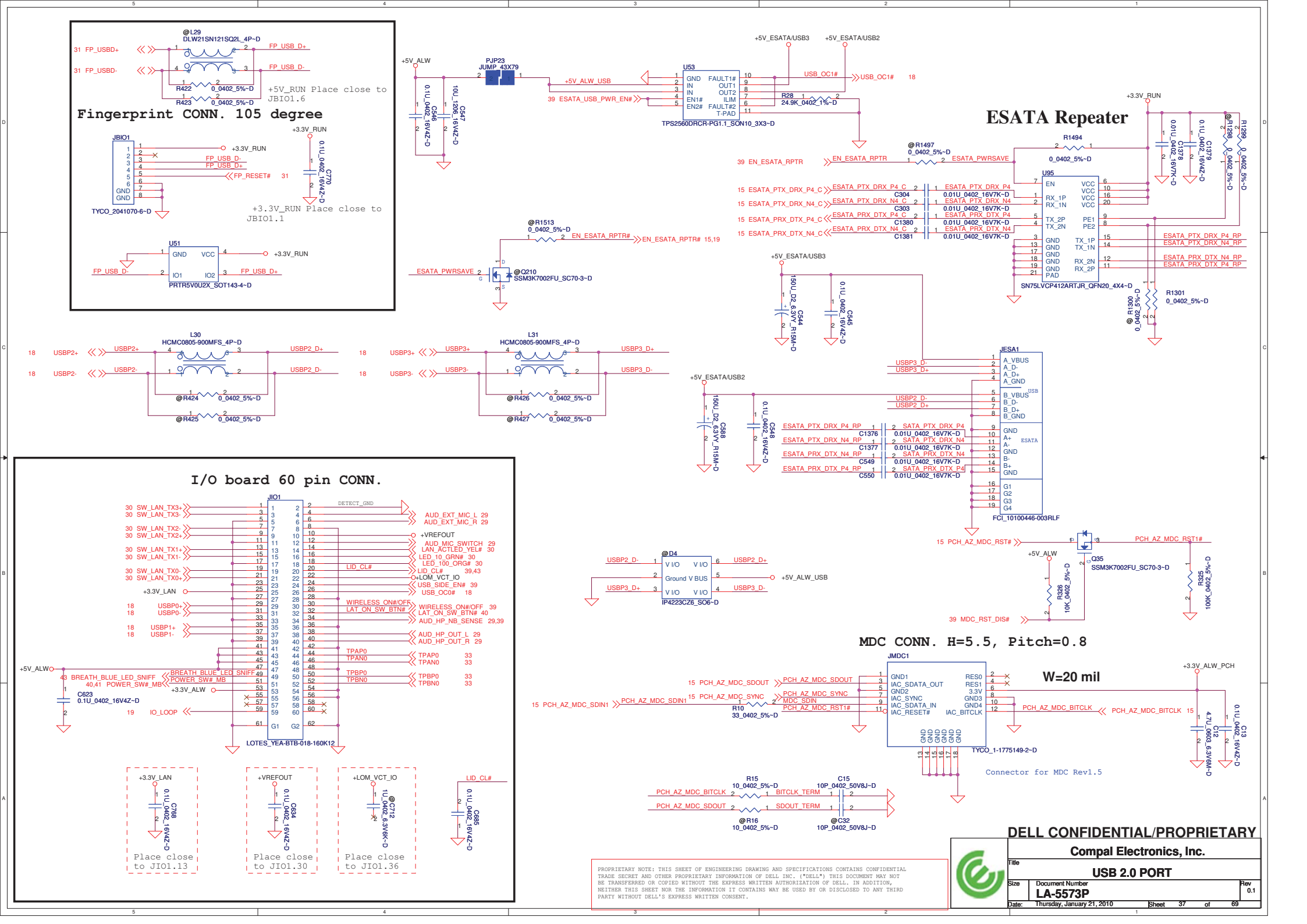
Fingerprint CONN. 105 degree
@L29
DLW21SN121SQ2L_4P~D
FP_USB_D+
FP_USB_D-
R422 0_0402_5%~D
R423 0_0402_5%~D
+5V_RUN Place close to JBIO1.6
JBIO1
TYCO_2041070-6~D
FP_RESET#
+3.3V_RUN Place close to JBIO1.1
U51
PRTR5V0U2X_SOT143-4~D
+5V_ALW
PJP23
JUMP_43X79
+5V_ALW_USB
ESATA_USB_PWR_EN#
U53
TPS2560DRCR-PG1.1_SON10_3X3~D
USB_OC1#
R28 24.9K_0402_1%~D
ESATA Repeater
EN_ESATA_RPTR
ESATA_PWRSAVE
@R1497 0_0402_5%~D
R1494 0_0402_5%~D
U95
SN75LVCP412ARTJR_QFN20_4X4~D
ESATA_PTX_DRX_P4_C
ESATA_PTX_DRX_N4_C
ESATA_PRX_DTX_P4_C
ESATA_PRX_DTX_N4_C
ESATA_PTX_DRX_P4
ESATA_PTX_DRX_N4
ESATA_PRX_DTX_P4
ESATA_PRX_DTX_N4
@R1513 0_0402_5%~D
@Q210
SSM3K7002FU_SC70-3~D
R1301 0_0402_5%~D
L30
HCMC0805-900MFS_4P~D
L31
@R424 0_0402_5%~D
@R425 0_0402_5%~D
@R426 0_0402_5%~D
@R427 0_0402_5%~D
JESA1
FCI_10100446-003RLF
@D4
IP4223CZ6_SO6~D
Q35
SSM3K7002FU_SC70-3~D
R326 10K_0402_5%~D
R325 10K_0402_5%~D
I/O board 60 pin CONN.
JIO1
LOTES_YEA-BTB-018-160K12
DETECT_GND
AUD_EXT_MIC_L
AUD_EXT_MIC_R
+VREFOUT
AUD_MIC_SWITCH
LAN_ACTLED_YEL#
LED_10_GRN#
LED_100_ORG#
LID_CL#
+LOM_VCT_IO
USB_SIDE_EN#
USB_OC0#
WIRELESS_ON#/OFF
LAT_ON_SW_BTN#
AUD_HP_NB_SENSE
AUD_HP_OUT_L
AUD_HP_OUT_R
TPAP0
TPAN0
TPBP0
TPBN0
BREATH_BLUE_LED_SNIFF
POWER_SW#_MB
IO_LOOP
Place close to JIO1.13
Place close to JIO1.30
Place close to JIO1.36
MDC CONN. H=5.5, Pitch=0.8
JMDC1
TYCO_1-1775149-2~D
W=20 mil
Connector for MDC Rev1.5
PCH_AZ_MDC_SDOUT
PCH_AZ_MDC_SDIN1
PCH_AZ_MDC_SYNC
PCH_AZ_MDC_RST1#
PCH_AZ_MDC_BITCLK
PCH_AZ_MDC_RST1
BITCLK_TERM
SDOUT_TERM
DELL CONFIDENTIAL/PROPRIETARY
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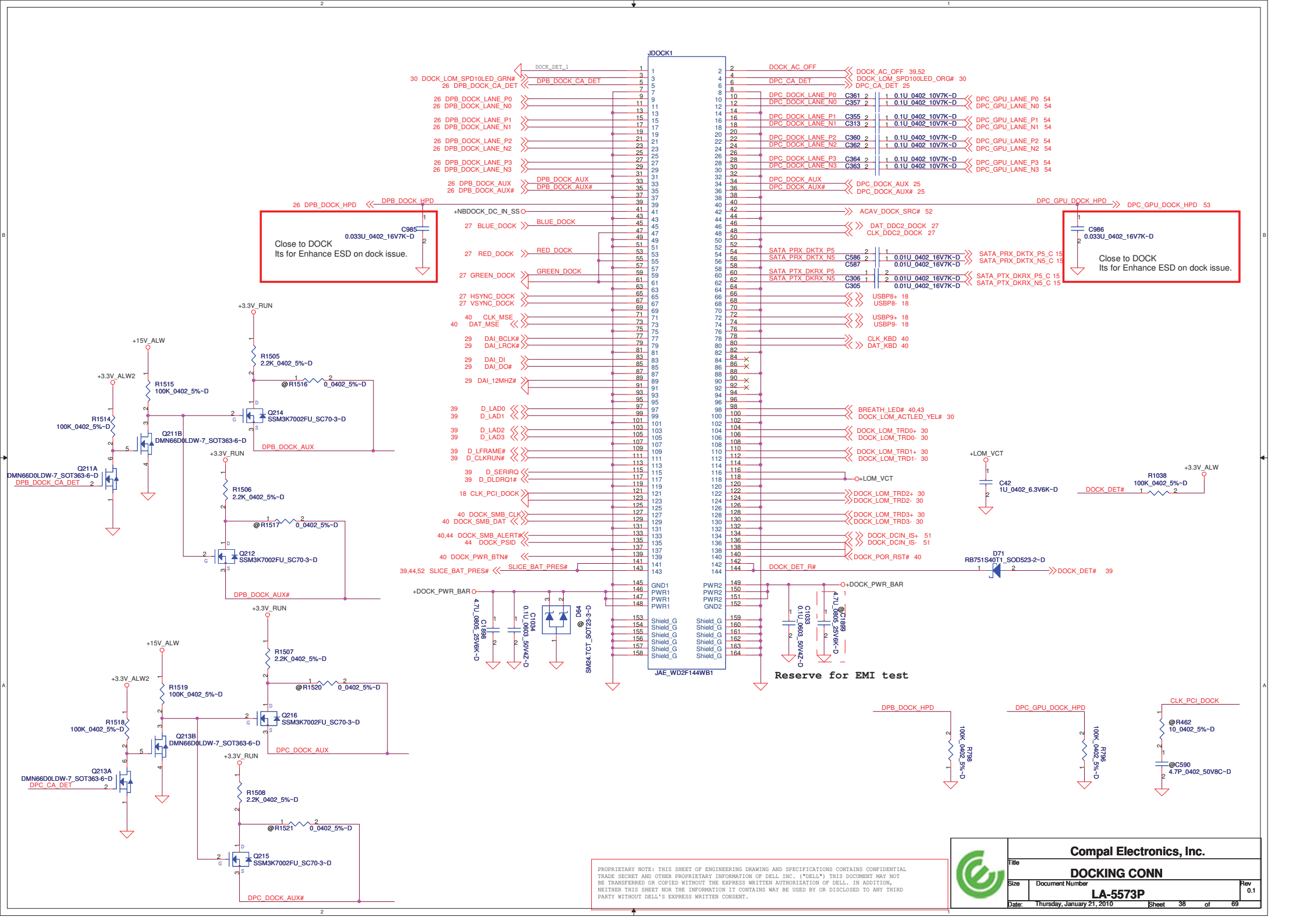
Compal Electronics, Inc.
Title
USB 2.0 PORT
Size
Document Number
LA-5573P
Rev
0.1
Date: Thursday, January 21, 2010
Sheet 37 of 69


JDOCK1
JAE_WD2F144WB1
Close to DOCK
Its for Enhance ESD on dock issue.
Close to DOCK
Its for Enhance ESD on dock issue.
Reserve for EMI test
Q211A DMN66D0LDW-7_SOT363-6~D
Q211B DMN66D0LDW-7_SOT363-6~D
Q212 SSM3K7002FU_SC70-3~D
Q213A DMN66D0LDW-7_SOT363-6~D
Q213B DMN66D0LDW-7_SOT363-6~D
Q214 SSM3K7002FU_SC70-3~D
Q215 SSM3K7002FU_SC70-3~D
Q216 SSM3K7002FU_SC70-3~D
D71 RB751S40T1_SOD523-2~D
D44 @ SM24.TCT_SOT23-3~D
+3.3V_RUN
+15V_ALW
+3.3V_ALW2
+LOM_VCT
+DOCK_PWR_BAR
DPB_DOCK_AUX
DPB_DOCK_AUX#
DPC_DOCK_AUX
DPC_DOCK_AUX#
DPB_DOCK_HPD
DPC_GPU_DOCK_HPD
CLK_PCI_DOCK
DOCK_DET#
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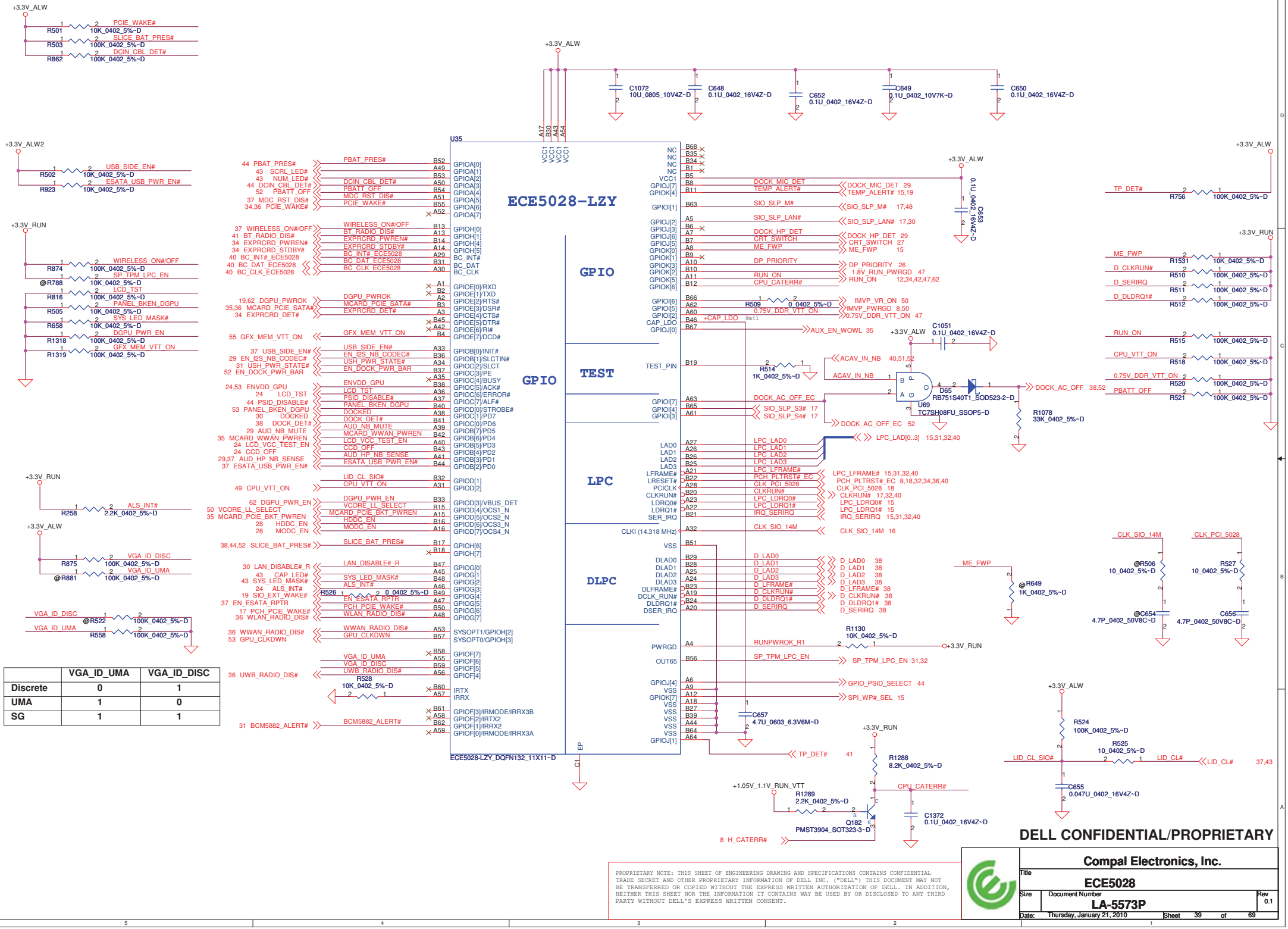
Compal Electronics, Inc.
Title
DOCKING CONN
Size
Document Number
LA-5573P
Rev
0.1
Date: Thursday, January 21, 2010
Sheet 38 of 69



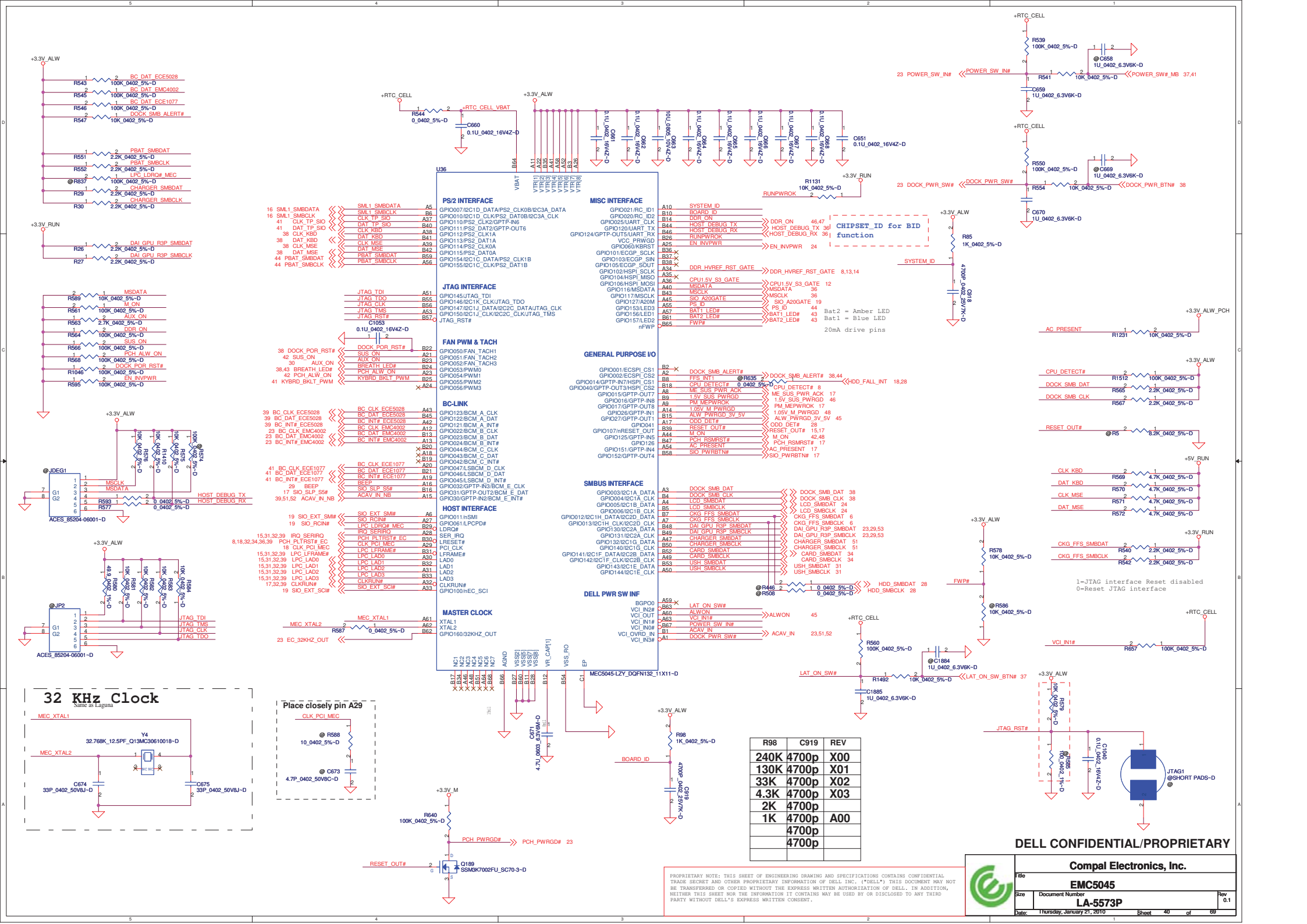
	VGA_ID_UMA	VGA_ID_DISC
Discrete	0	1
UMA	1	0
SG	1	1

Compal Electronics, Inc.

Title: ECE5028

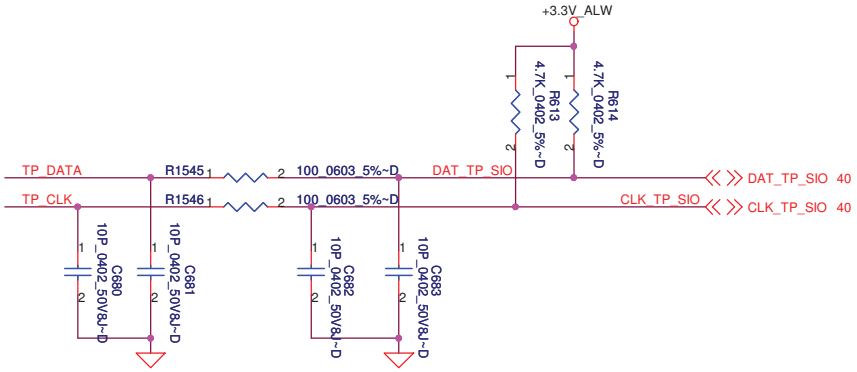
Size: | Document Number: LA-5573P | Rev: 0.1

Date: Thursday, January 21, 2010 | Sheet 39 of 69

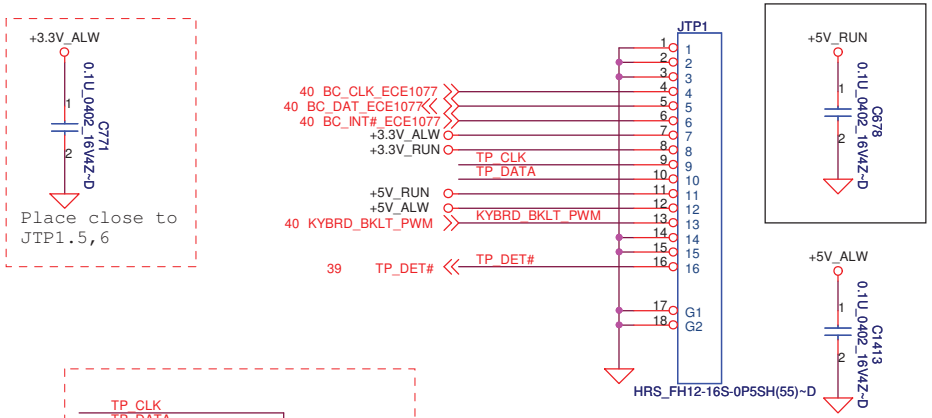


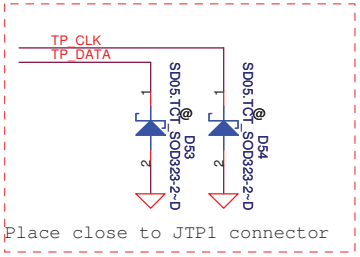
R98	C919	REV
240K	4700p	X00
130K	4700p	X01
33K	4700p	X02
4.3K	4700p	X03
2K	4700p	
1K	4700p	A00
	4700p	
	4700p	

Touch Pad

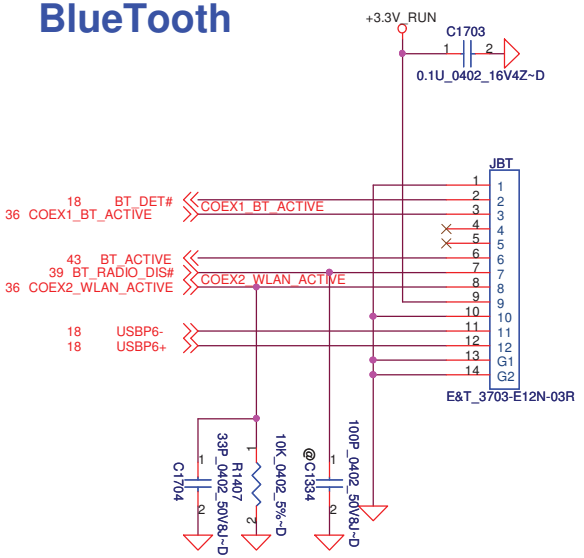


Touch Pad Conn. Pitch=0.5

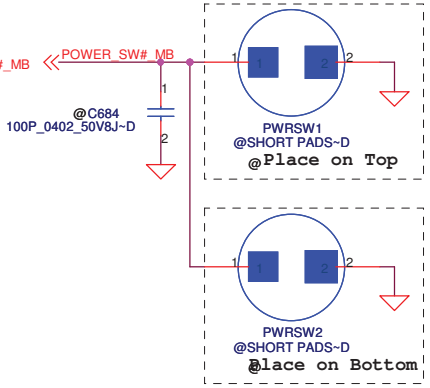




BlueTooth



Power Switch for debug



@FAN

Part Number	Description
DC28A000800	FAN SET DAQ20 DC5V AB7405HB-HB3 ADDA

@Speak

Part Number	Description
PK230003Q0L	SPK PACK ZJX 2.0W 4 OHM FG

@SM CARD BODY

Part Number	Description
SP070007V0L	S SOCKET TYCO 1770551-1 10P H5.9 SMART

@PCMCIA BODY

Part Number	Description
DC000001Q0L	PCMCIA TYCO 1759096-1

@MDC wire set cable

Part Number	Description
DC02000CS0L	H-CONN SET ZGX MB-MDC

@T/P wire set cable

Part Number	Description
DC02000840L	H-CONN SET ZJX MB-B/T-TP-FP

@LVDS cable

Part Number	Description
DC020003Y0L	H-CONN SET ZJX MB-LCD 14 WXGA+(-1ch)

@LVDS cable

Part Number	Description
DC02000870L	H-CONN SET ZJX MB-LCD 14 WXGA+(-2ch)

@RTC BATT

Part Number	Description
GC20323MX00	BATT CR2032 3V 220MAH MAXELL

Compal Electronics, Inc.

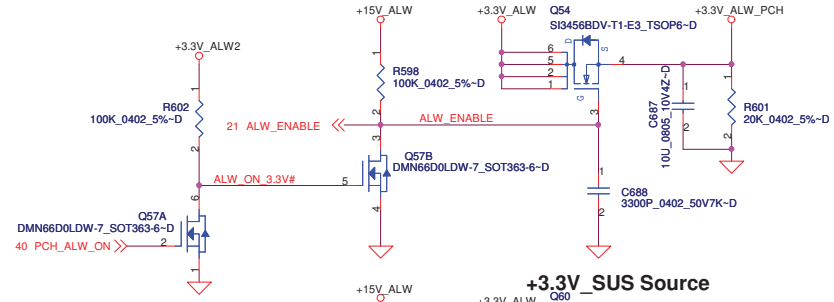
Title: Touch PAD/Int KB/LID

Size | Document Number: LA-5573P | Rev: 0.1

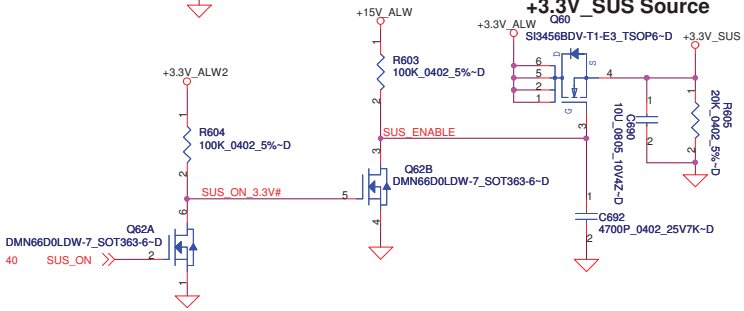
Date: Thursday, January 21, 2010 | Sheet 41 of 69

DC/DC Interface

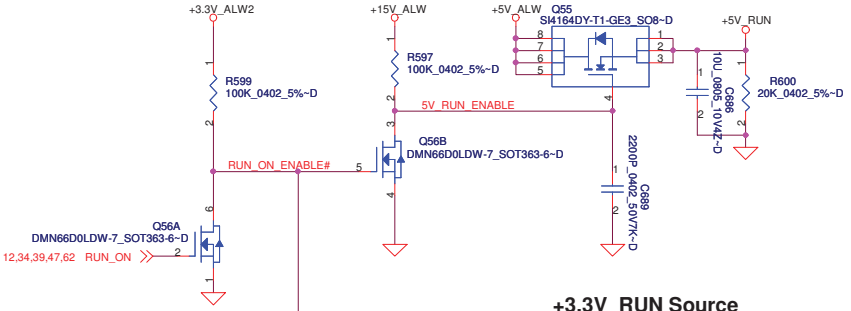
+3.3V_ALW_PCH Source



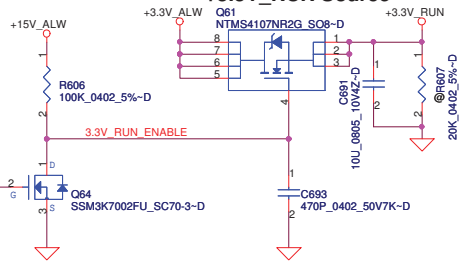
+3.3V_SUS Source

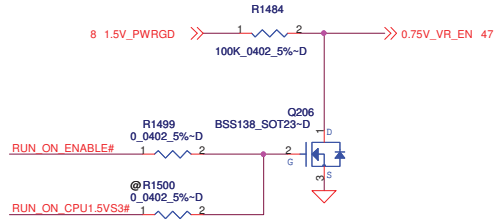


+5VRUN Source

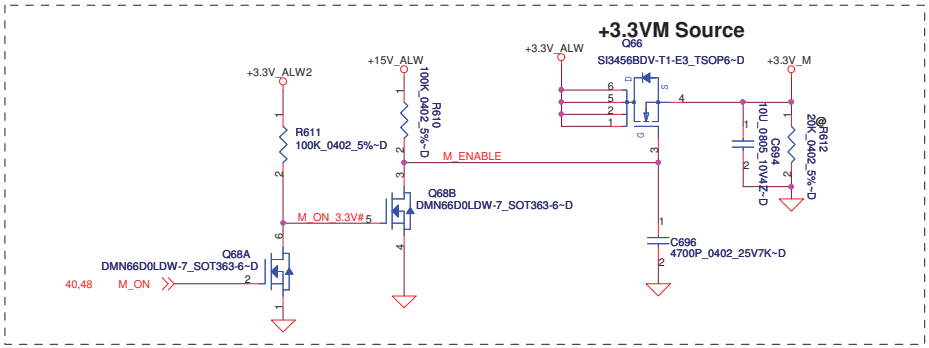


+3.3V_RUN Source

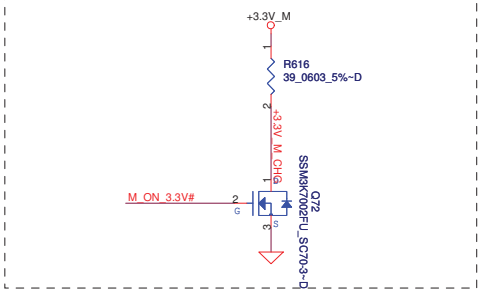




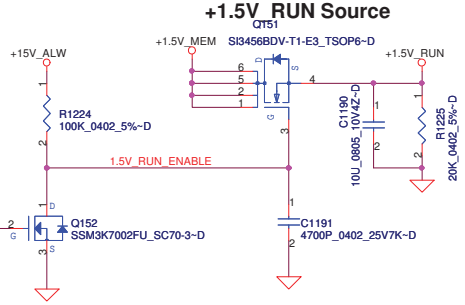
+3.3VM Source



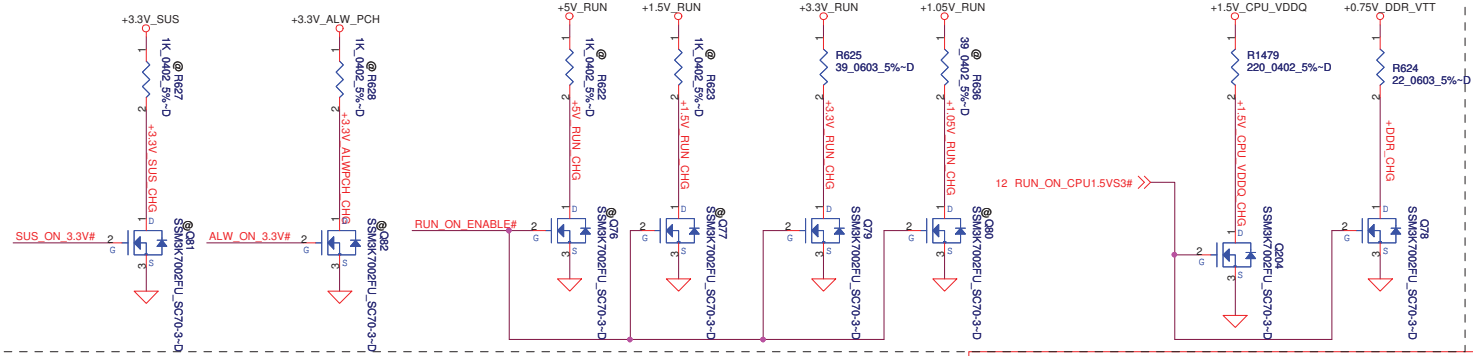
Discharg Circuit



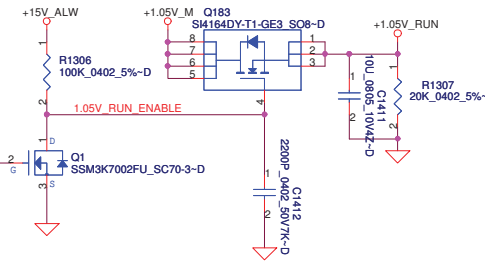
+1.5V_RUN Source



Discharg Circuit



+1.05V_RUN Source



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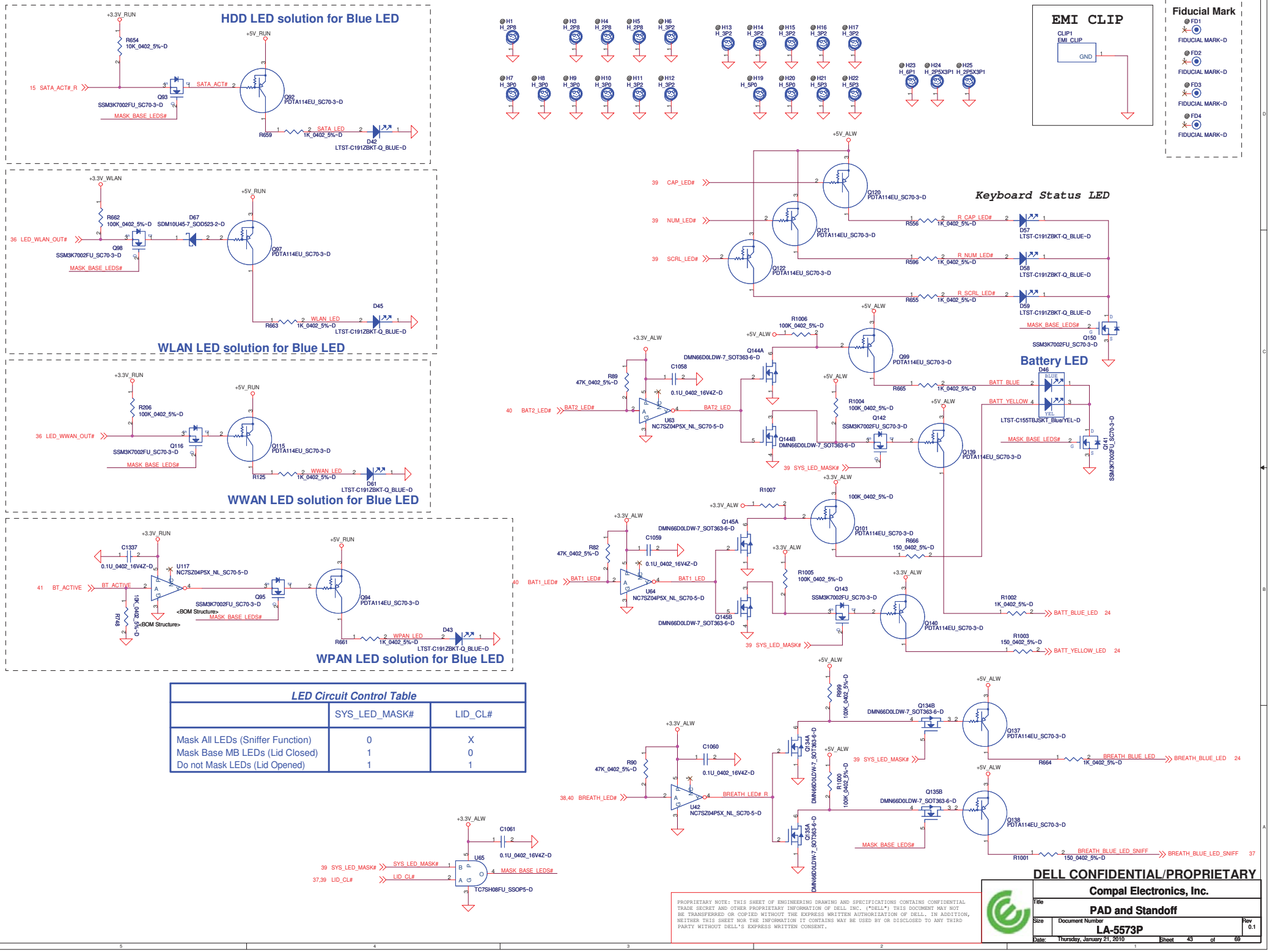
Compal Electronics, Inc.

Title: POWER CONTROL

Size | Document Number: LA-5573P | Rev: 0.1

Date: Thursday, January 21, 2010 | Sheet 42 of 69


HDD LED solution for Blue LED
WLAN LED solution for Blue LED
WWAN LED solution for Blue LED
WPAN LED solution for Blue LED
EMI CLIP
Fiducial Mark
Keyboard Status LED
Battery LED
LED Circuit Control Table
SYS_LED_MASK#
LID_CL#
Mask All LEDs (Sniffer Function) 0 X
Mask Base MB LEDs (Lid Closed) 1 0
Do not Mask LEDs (Lid Opened) 1 1
DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.
PAD and Standoff
LA-5573P
Rev 0.1
Thursday, January 21, 2010
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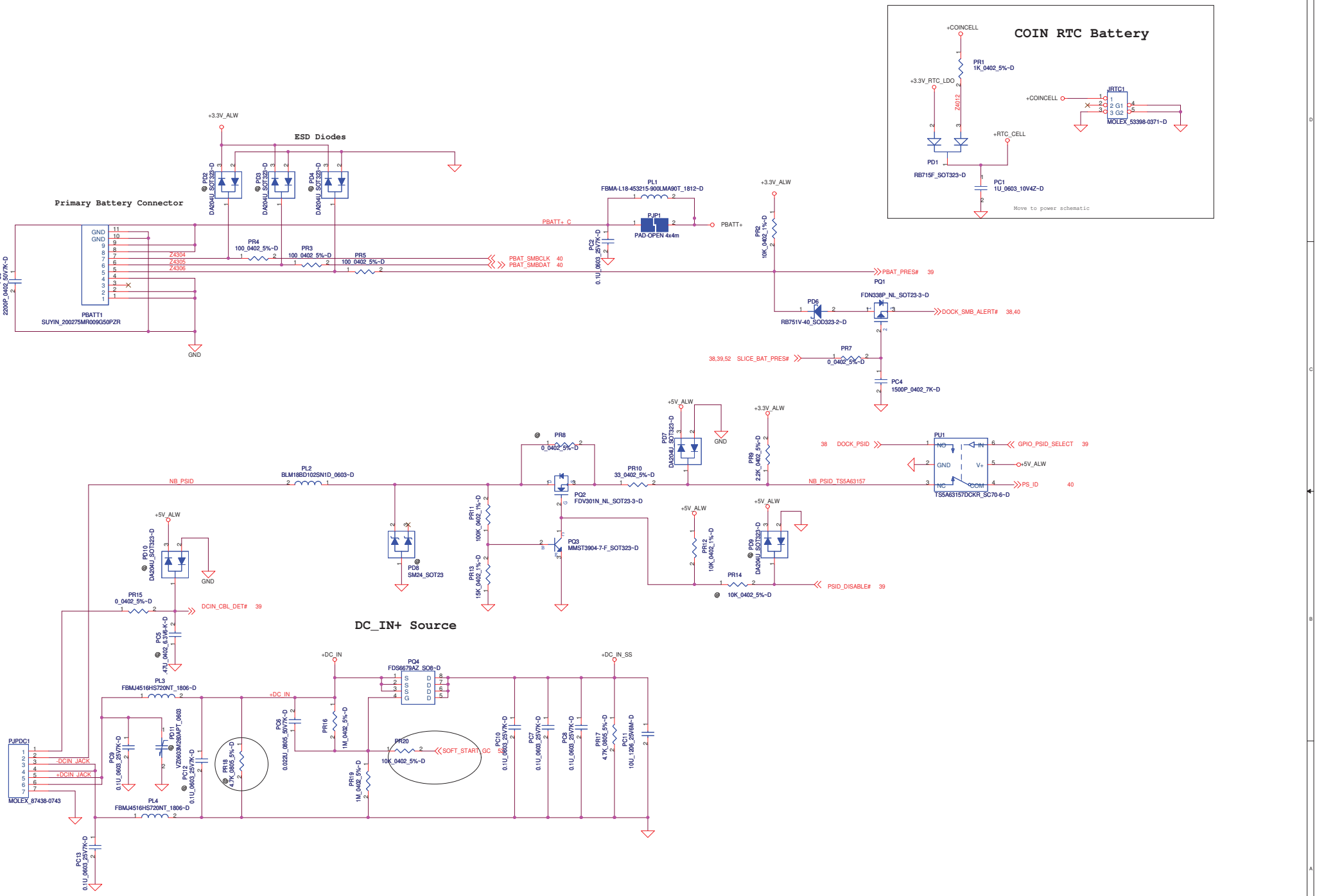
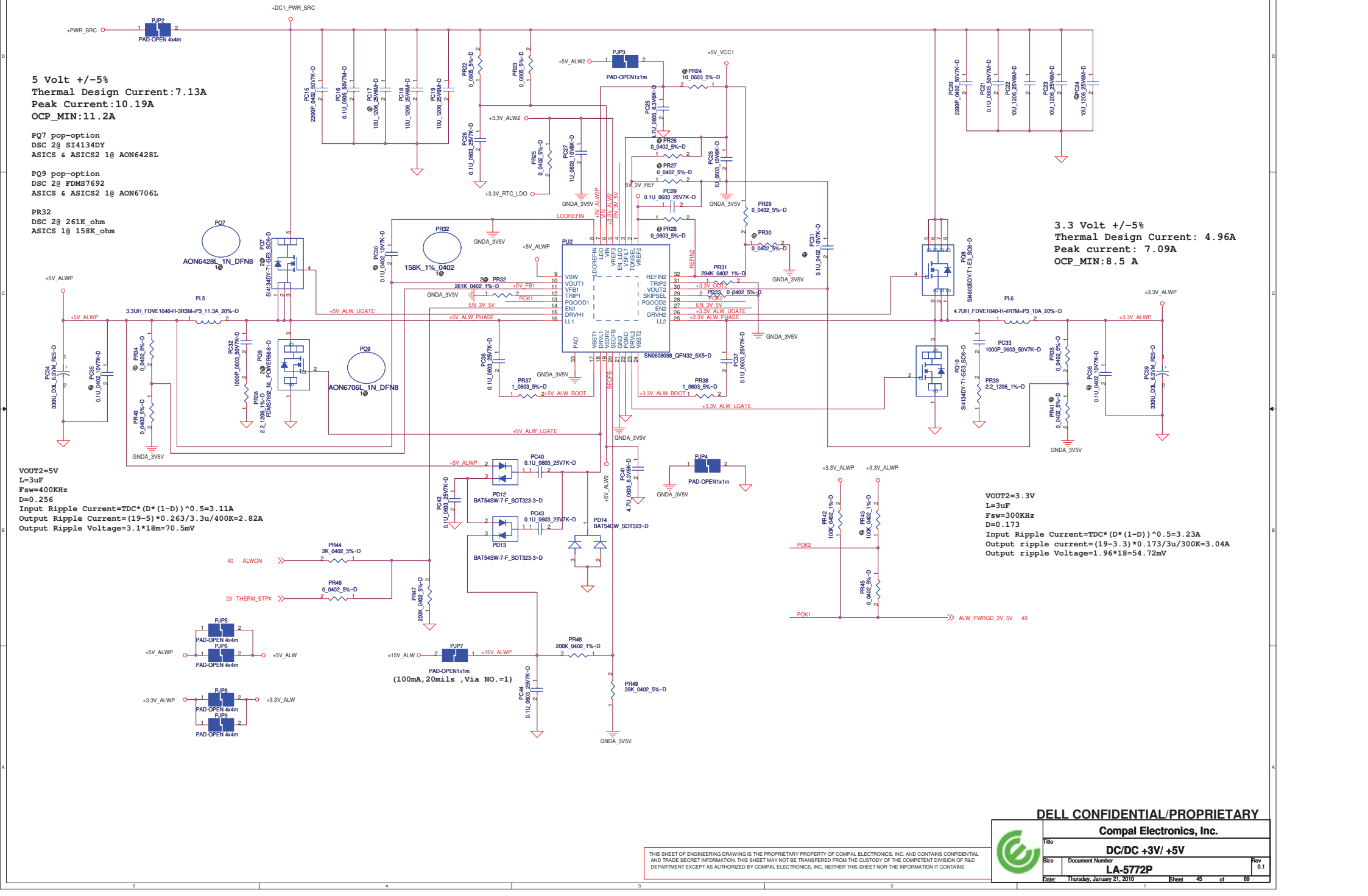
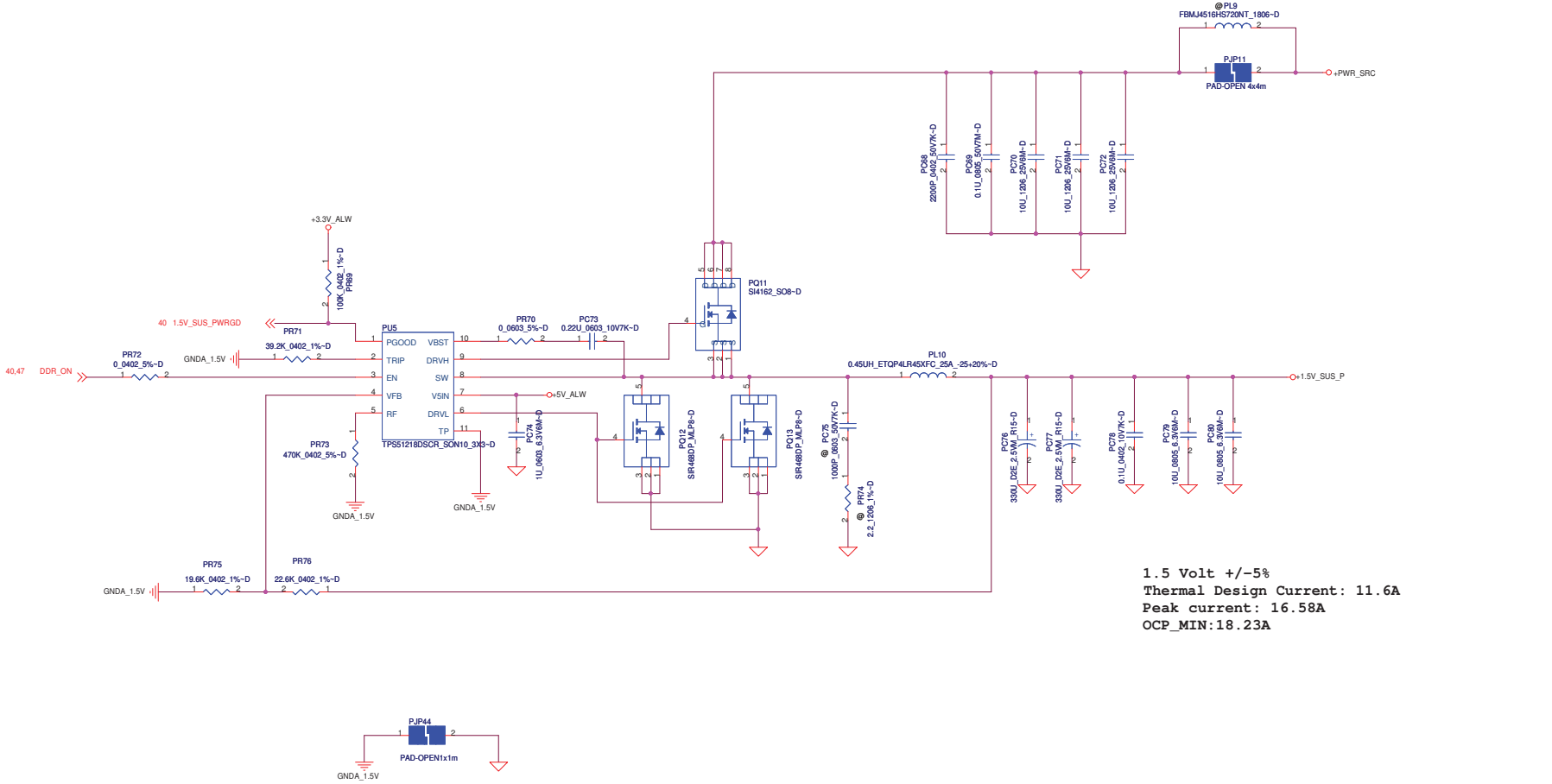


Compal Electronics, Inc.		
Title	+DCIN	
Size	Document Number LA-5772P	Rev 0.1
Date: Thursday, January 21, 2010	Sheet 44 of 69	

+3.3V_ALWP/ +5V_ALWP/ +5V_ALW2 / +15V_ALWP/ +3.3V_RTC_LDO



Compal Electronics, Inc.			
Title	DC/DC +3V/ +5V		
Size	Document Number		Rev
	LA-5772P		0.1
Date:	Thursday, January 21, 2010	Sheet 45 of 69	



Compal Electronics, Inc.		
Title: +1.5V_MEM		
Size	Document Number: LA-4151P	Rev: 0.1
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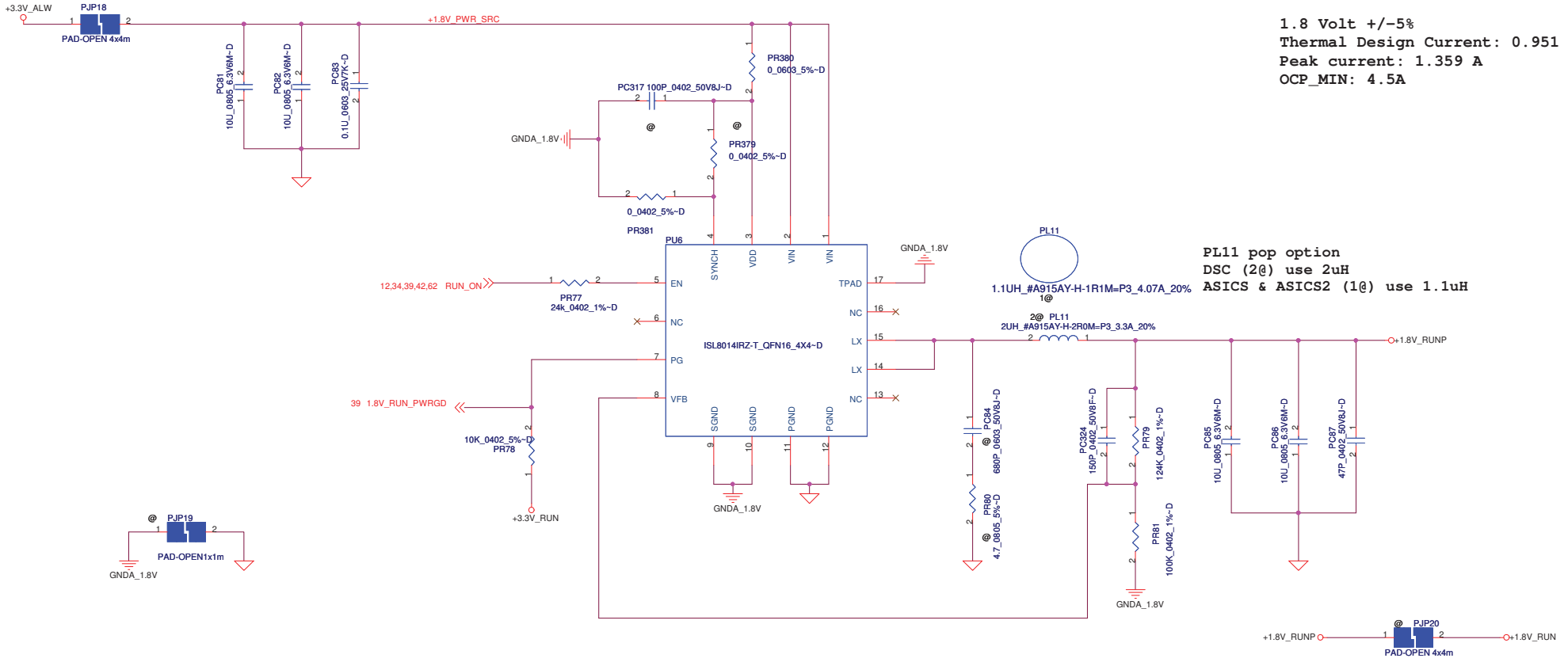
+1.8V_RUNP

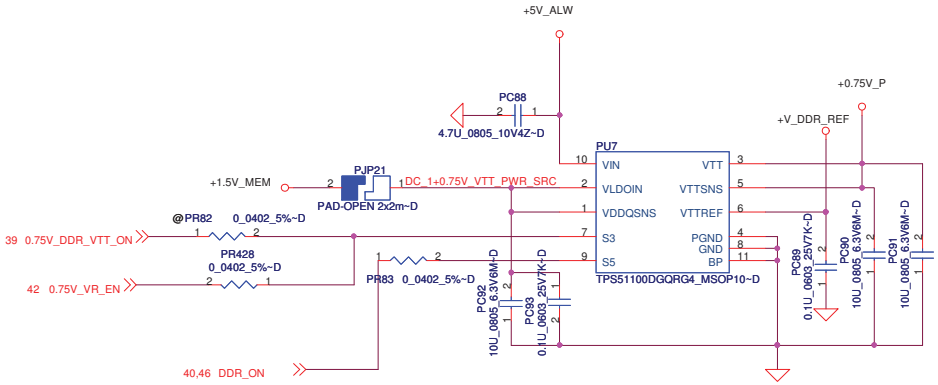


1.8 Volt +/-5%
Thermal Design Current: 0.951 A
Peak current: 1.359 A
OCP_MIN: 4.5A

PL11 pop option
DSC (2@) use 2uH
ASICS & ASICS2 (1@) use 1.1uH

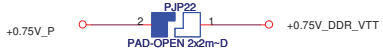
+0.75V_DDR_VTT

DDR3 Termination



0.75Volt +/-5%
Thermal Design Current: 0.7A
Peak current: 1A

VOUT=1.8V
L=3.3uF
Fsw=290KHz
D=0.092
Input Ripple Current=TDC*(D*(1-D))^0.5=0.884A
Output Ripple Current=1.707A
Output Ripple Voltage=1.707*15m=20.5mV



Compal Electronics, Inc.

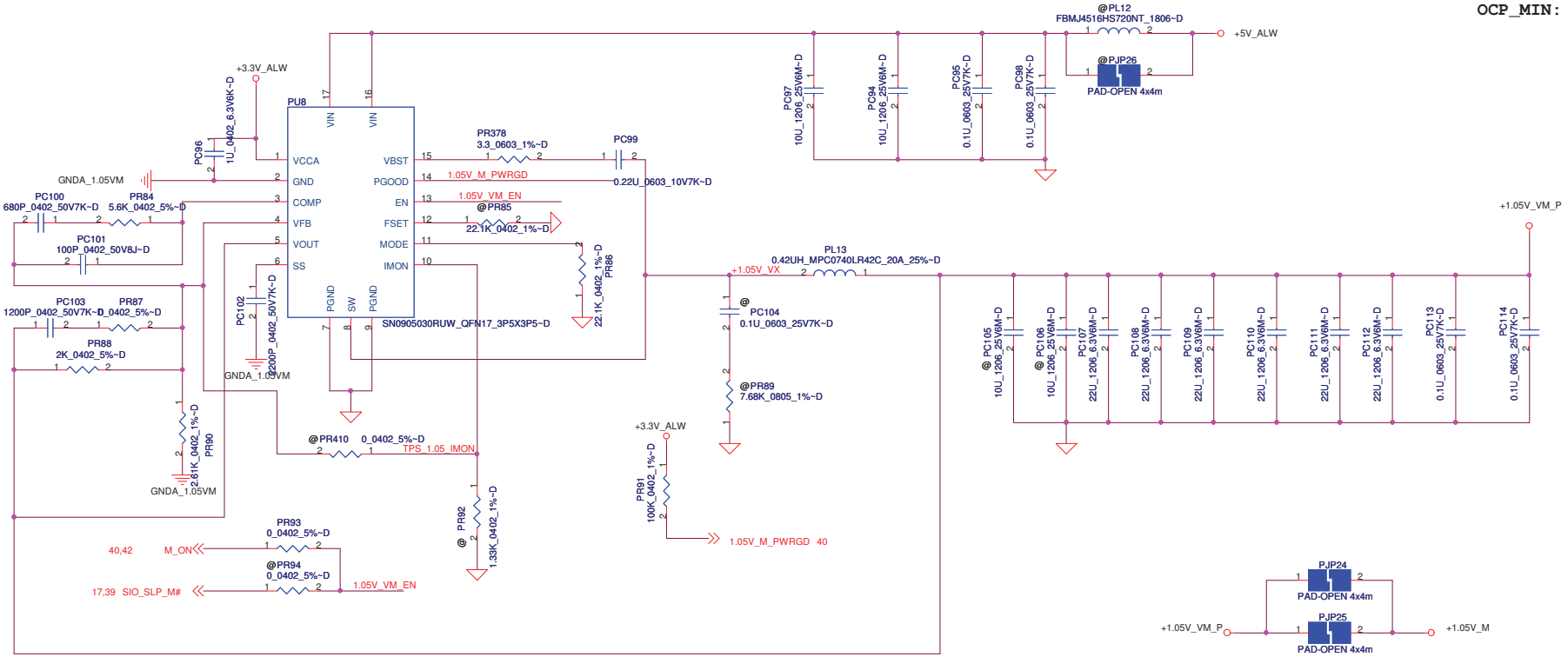
Title: +0.75V_DDR_VT/+1.8V_RUN

Size | Document Number: LA-5772P | Rev: 0.1

Date: Thursday, January 21, 2010 | Sheet 47 of 69

+1.05V_M_P

1.05 Volt +/-5%
Thermal Design Current: 7.6A
Peack current: 10.9A
OCP_MIN: 11.9A



Compal Electronics, Inc.		
Title: +1.05VM		
Size	Document Number: LA-4151P	Rev: 0.1
Date: Thursday, January 21, 2010	Sheet 48 of 69	

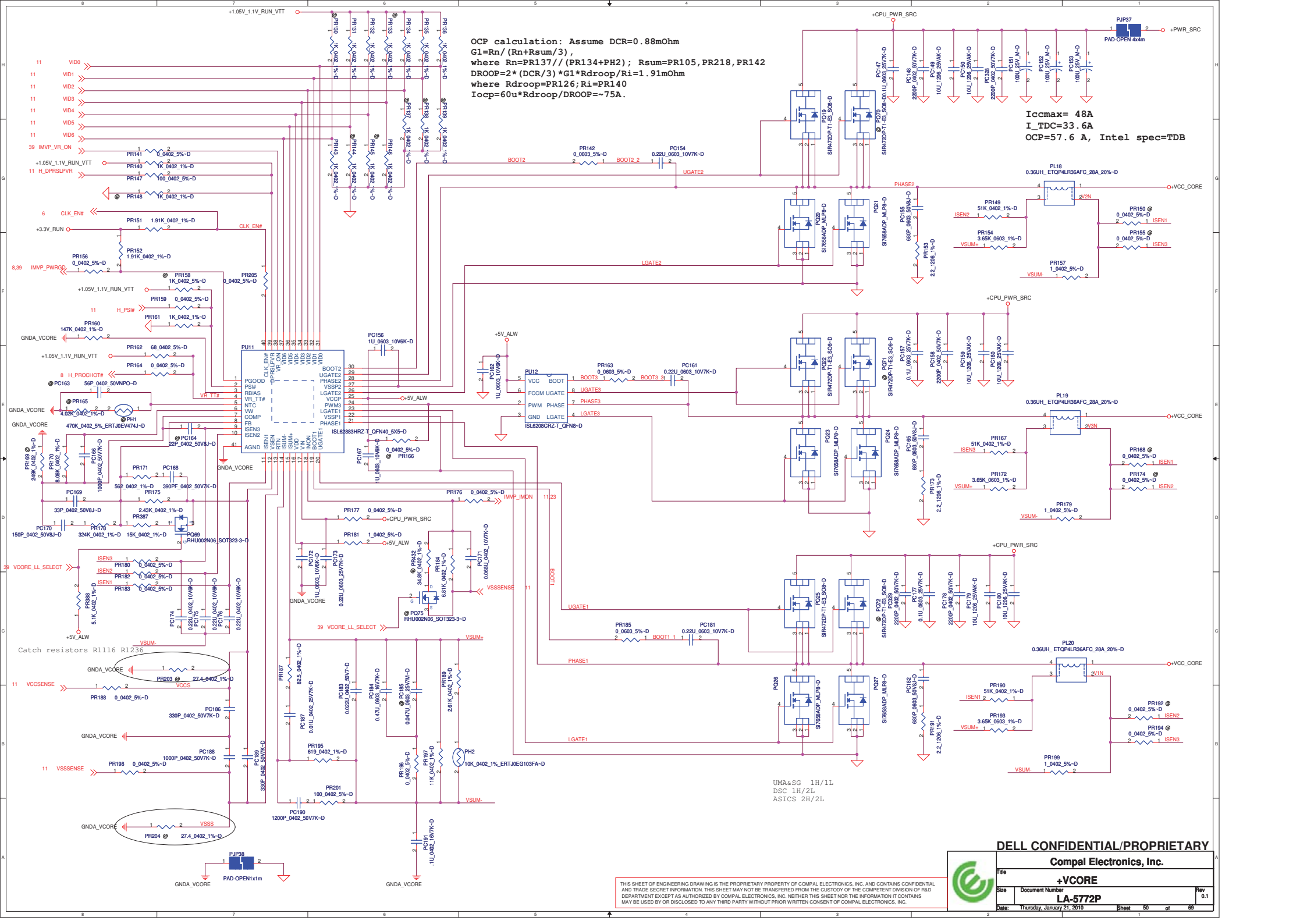
1.1 Volt +/-5%
Thermal Design Current: 12.641A
Peack current: 18.059A
OCP_MIN: 21.67A

1.05 Volt +/-5%
Thermal Design Current: 18.72A
Peack current: 26.75A
OCP_MIN: 32.096A

PR110 PR120
Margaux UMA and SG 3.01K
Margaux DSC and ASICS 1.58K

PR113 PR122
Margaux UMA and SG 4.99K
Margaux DSC and ASICS 6.98K

Title	<Title>	
Size C	Document Number LA-5772P	Rev 1A
Date: Thursday, January 21, 2010	Sheet 49 of 69	


OCP calculation: Assume DCR=0.88mOhm
G1=Rn/(Rn+Rsum/3),
where Rn=PR137//(PR134+PH2); Rsum=PR105,PR218,PR142
DROOP=2*(DCR/3)*G1*Rdroop/Ri=1.91mOhm
where Rdroop=PR126;Ri=PR140
Iocp=60u*Rdroop/DROOP=~75A.
Iccmax= 48A
I_TDC=33.6A
OCP=57.6 A, Intel spec=TDB
ISL62883HRZ-T_QFN40_5X5-D
ISL6208CRZ-T_QFN8-D
PAD-OPEN 4x4m
PAD-OPEN1x1m
Catch resistors R1116 R1236
UMA&SG 1H/1L
DSC 1H/2L
ASICS 2H/2L
DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.
+VCORE
LA-5772P
Thursday, January 21, 2010
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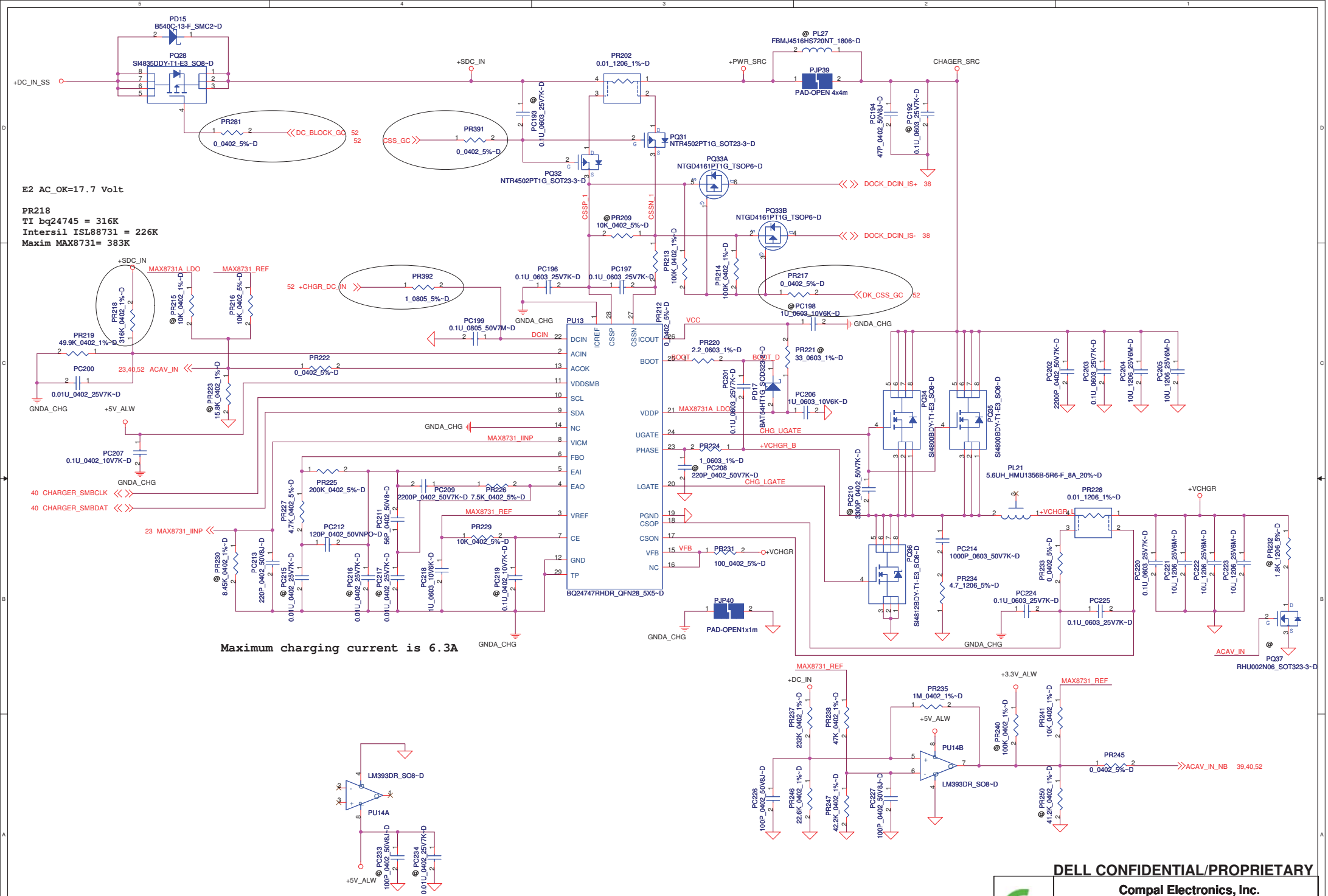

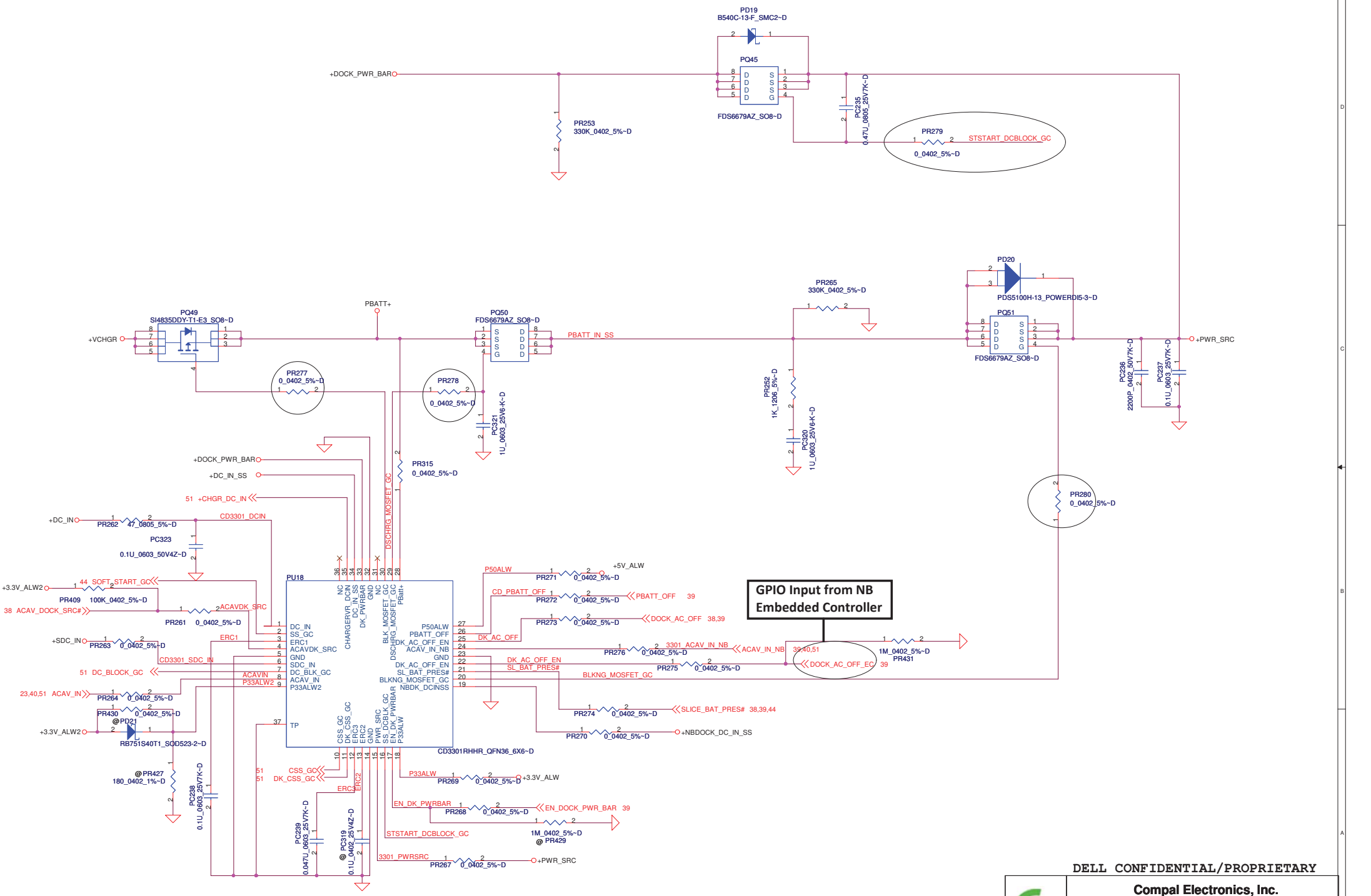

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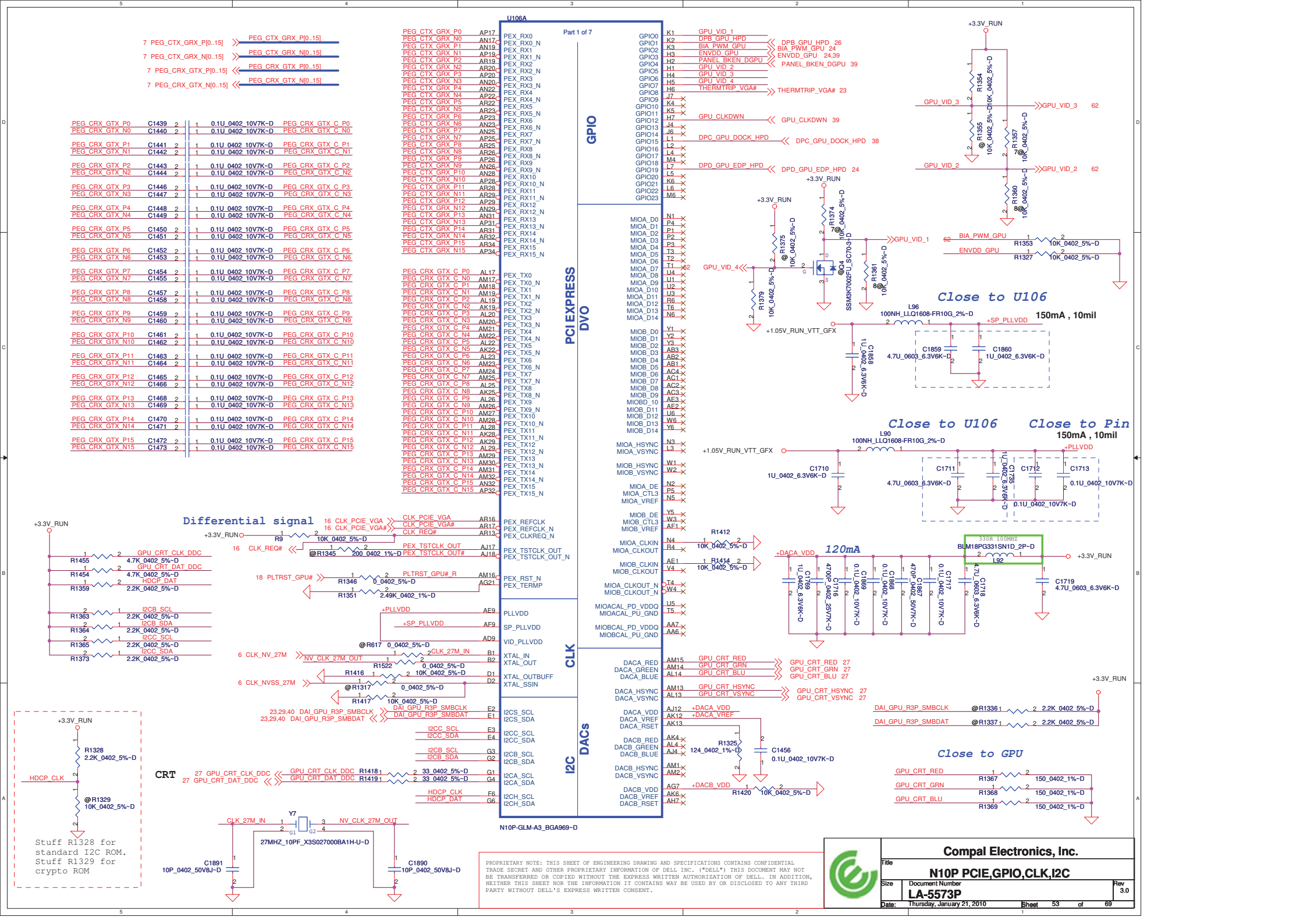
Compal Electronics, Inc.

Title	Selector	
Size	Document Number LA-5772P	Rev 0.1
Date: Thursday, January 21, 2010	Sheet 52 of 69	


U106A
Part 1 of 7
GPIO
PCI EXPRESS
DVO
CLK
I2C
DACs
N10P-GLM-A3_BGA969~D
Differential signal
CRT
Close to U106
Close to Pin
Close to GPU
120mA
150mA , 10mil
Stuff R1328 for standard I2C ROM. Stuff R1329 for crypto ROM
Compal Electronics, Inc.
N10P PCIE,GPIO,CLK,I2C
LA-5573P
Rev 3.0
Thursday, January 21, 2010
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STRAP0	USER[3:0]
STRAP1	3GIO_PADCFG_LUT_ADR[3:0]
STRAP2	PCI_DEVID[3:0]

ROM_SCLK	PCIDEVID_EXT, SUB_VENDOR, SLOT_CLK, PEX_PLL_EN
ROM_SI	RAM_CFG[3:0]
ROM_SO	XCLK_417, FB_0_BAR_SIZE, ALT_ADOOR, VGA_DEVICE

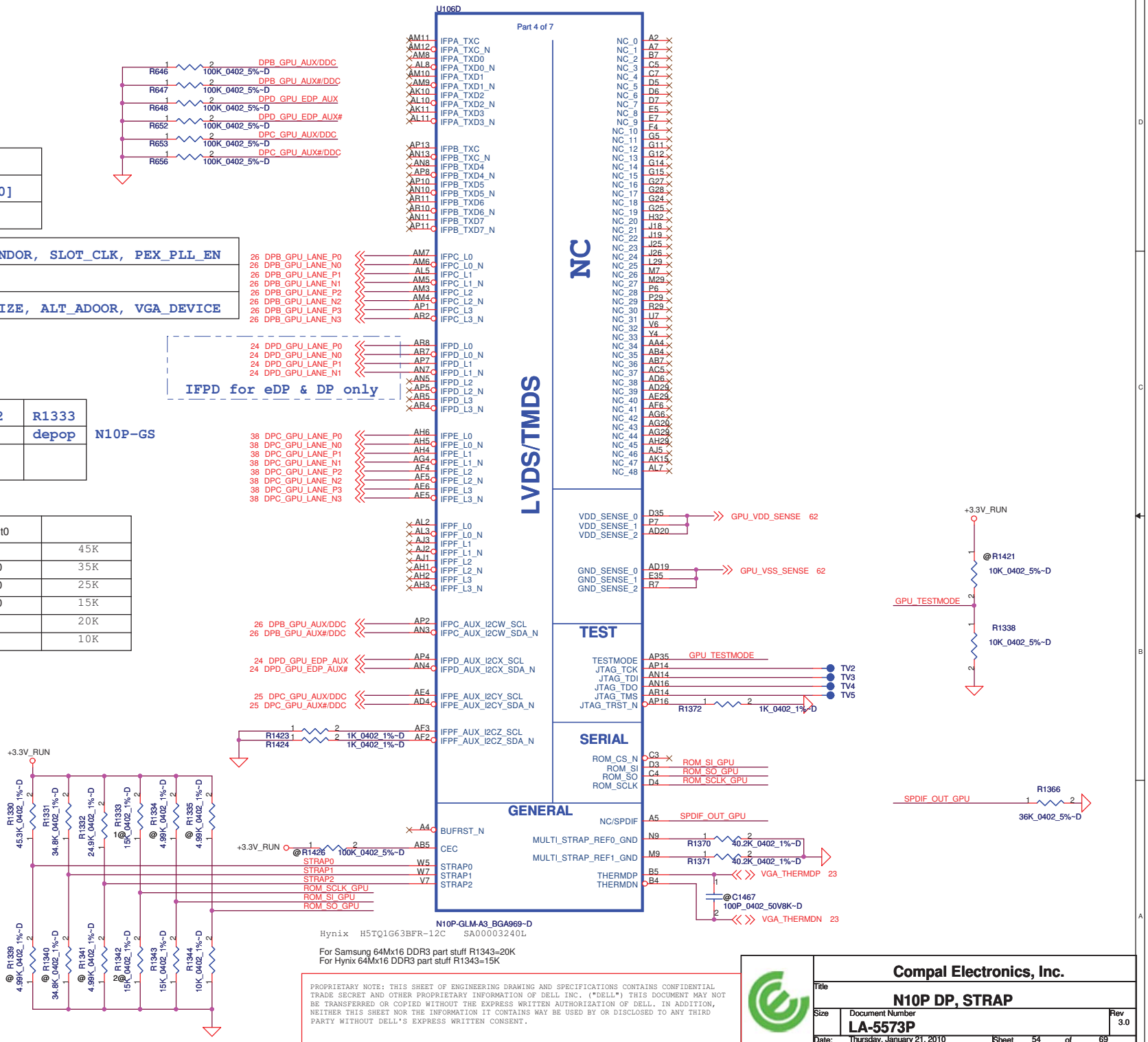
	R1332	R1341	R1342	R1333
Asics	10K	depop	15K	depop
Margaux				

N10P-GS

Resistor Values	PU/PD	Bit3-Bit0	
STRAP0	PU	1111	45K
STRAP1	PD	0110	35K
STRAP2	PU	1100	25K
ROM_SCLK	PD	0010	15K
ROM_SI	PD	0011	20K
ROM_SO	PD	0001	10K

For Samsung 64Mx16 DDR3 part stuff R1343=20K
For Hynix 64Mx16 DDR3 part stuff R1343=15K

Hynix H5TQ1G63BFR-12C SA00003240L



Compal Electronics, Inc.

Title: N10P DP, STRAP

Size: | Document Number: LA-5573P | Rev: 3.0

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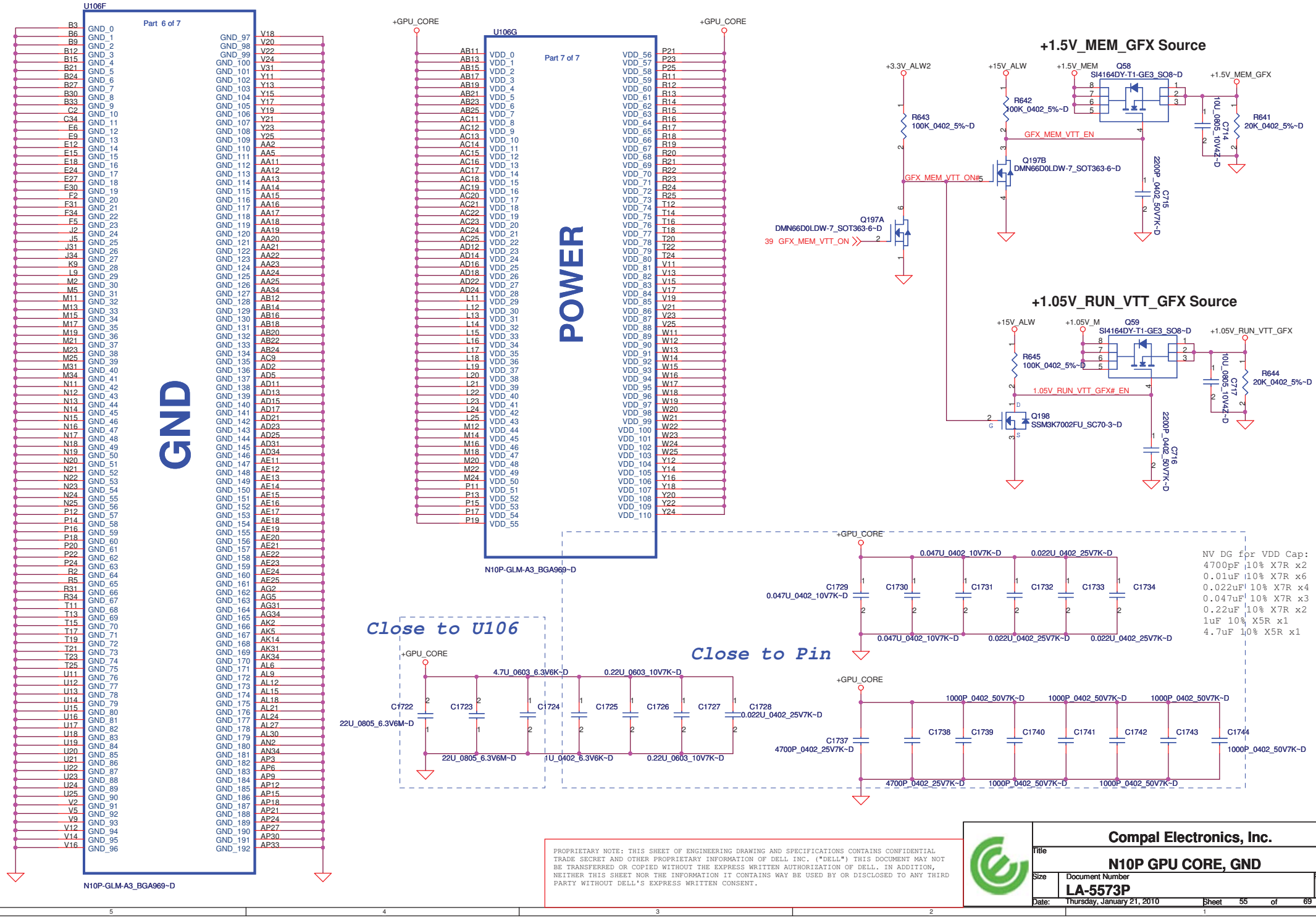
U106F
Part 6 of 7
GND
N10P-GLM-A3_BGA969~D
U106G
Part 7 of 7
POWER
+GPU_CORE
N10P-GLM-A3_BGA969~D
+1.5V_MEM_GFX Source
+3.3V_ALW2
+15V_ALW
+1.5V_MEM
Q58
SI4164DY-T1-GE3_SO8~D
+1.5V_MEM_GFX
R642
100K_0402_5%~D
R643
100K_0402_5%~D
R641
20K_0402_5%~D
GFX_MEM_VTT_EN
GFX_MEM_VTT_ON#5
Q197B
DMN66D0LDW-7_SOT363-6~D
Q197A
DMN66D0LDW-7_SOT363-6~D
39 GFX_MEM_VTT_ON
2200P_0402_50V7K~D
C715
10U_0805_10V4Z~D
C714
+1.05V_RUN_VTT_GFX Source
+15V_ALW
+1.05V_M
Q59
SI4164DY-T1-GE3_SO8~D
+1.05V_RUN_VTT_GFX
R645
100K_0402_5%~D
R644
20K_0402_5%~D
1.05V_RUN_VTT_GFX#_EN
Q198
SSM3K7002FU_SC70-3~D
2200P_0402_50V7K~D
C716
10U_0805_10V4Z~D
C717
Close to U106
+GPU_CORE
4.7U_0603_6.3V6K~D
0.22U_0603_10V7K~D
C1722
C1723
C1724
C1725
C1726
C1727
C1728
0.022U_0402_25V7K~D
22U_0805_6.3V6M~D
22U_0805_6.3V6M~D
1U_0402_6.3V6K~D
0.22U_0603_10V7K~D
Close to Pin
+GPU_CORE
0.047U_0402_10V7K~D
0.022U_0402_25V7K~D
C1729
C1730
C1731
C1732
C1733
C1734
0.047U_0402_10V7K~D
0.047U_0402_10V7K~D
0.022U_0402_25V7K~D
0.022U_0402_25V7K~D
+GPU_CORE
1000P_0402_50V7K~D
C1737
C1738
C1739
C1740
C1741
C1742
C1743
C1744
4700P_0402_25V7K~D
4700P_0402_25V7K~D
1000P_0402_50V7K~D
1000P_0402_50V7K~D
1000P_0402_50V7K~D
NV DG for VDD Cap:
4700pF 10% X7R x2
0.01uF 10% X7R x6
0.022uF 10% X7R x4
0.047uF 10% X7R x3
0.22uF 10% X7R x2
1uF 10% X5R x1
4.7uF 10% X5R x1
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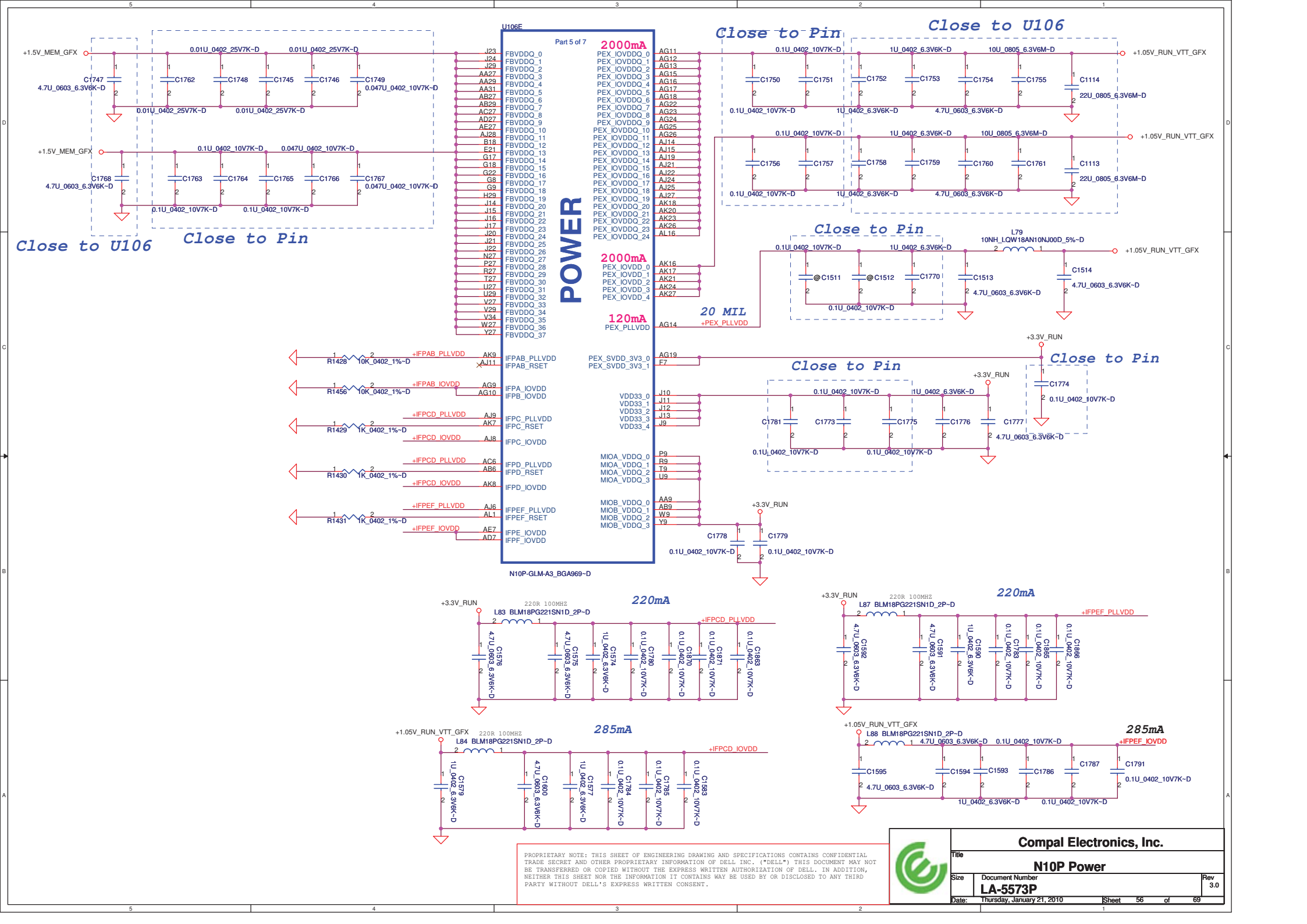

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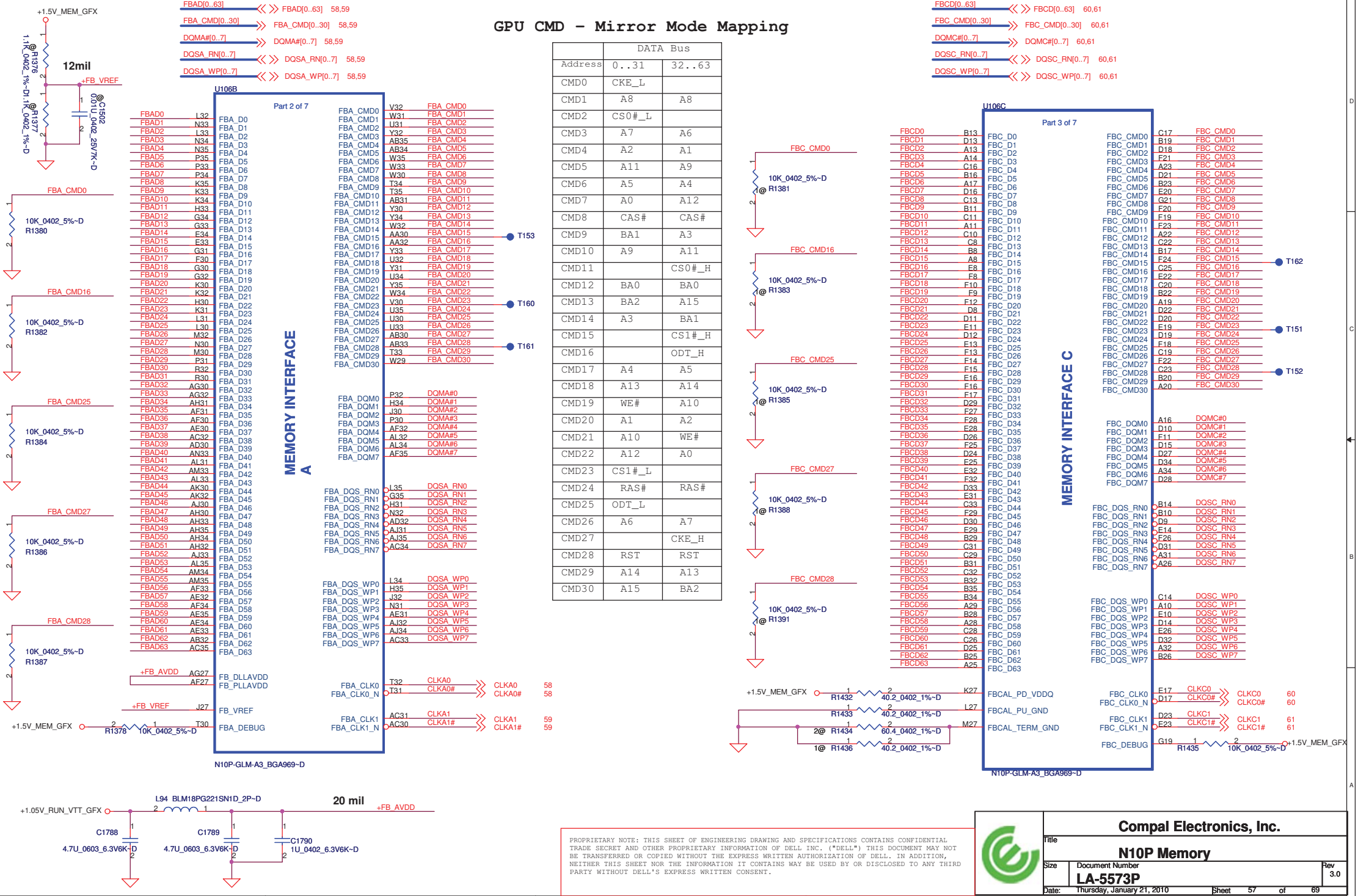
GPU CMD – Mirror Mode Mapping

	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: N10P Memory

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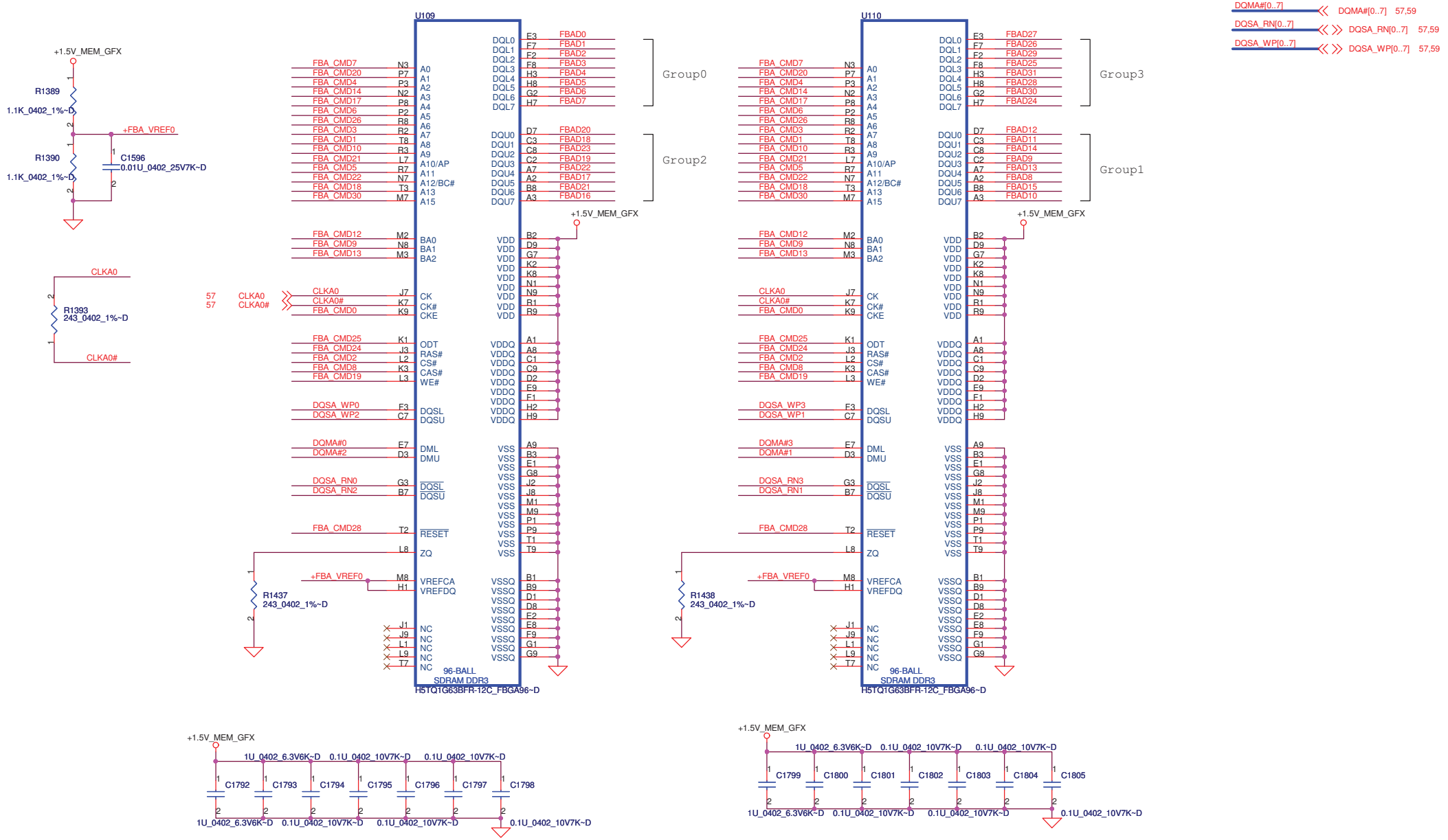
Memory Partition A - Lower 32 bits



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Title: VRAM A Lower

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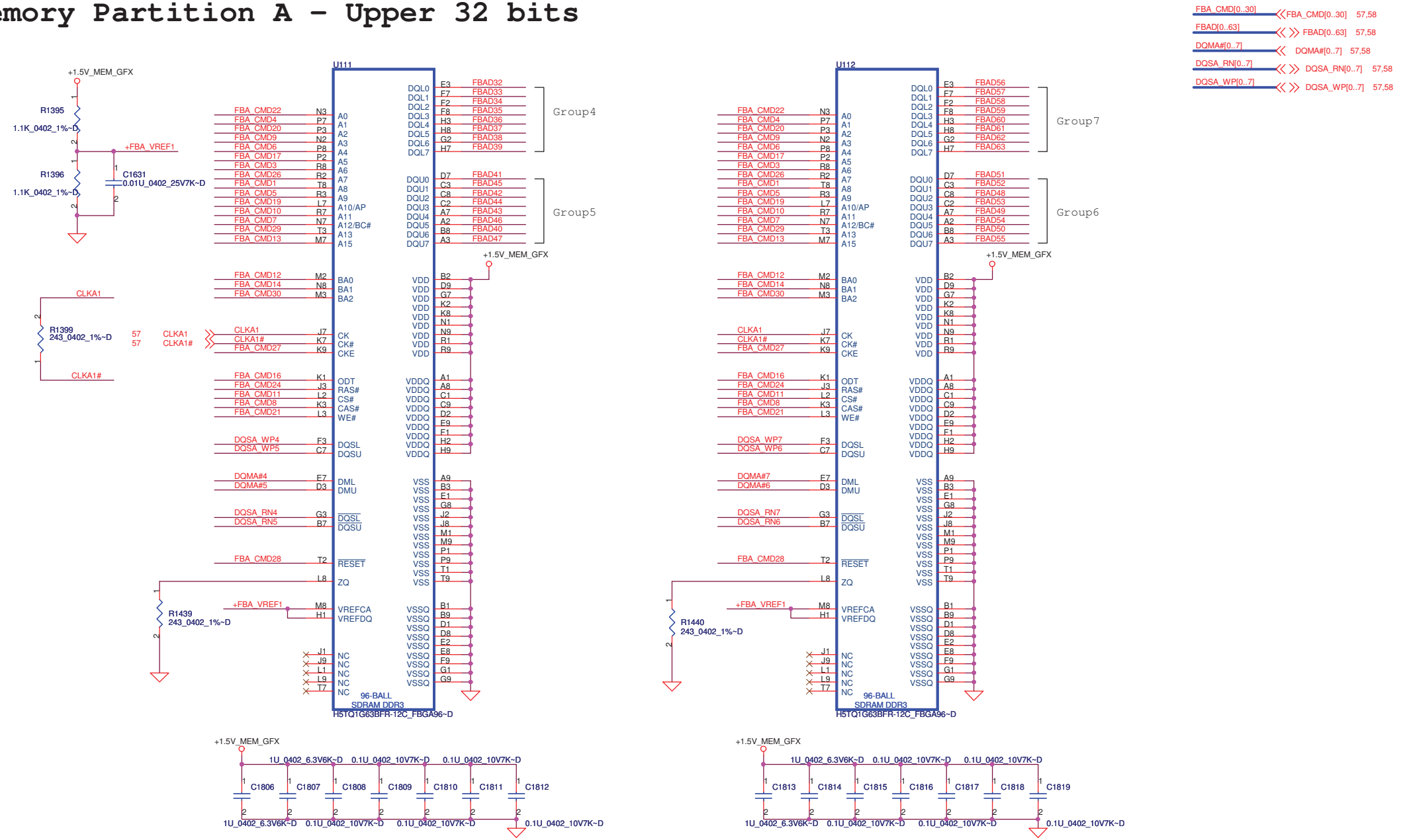
Memory Partition A - Upper 32 bits



Compal Electronics, Inc.

Title: VRAM A Upper

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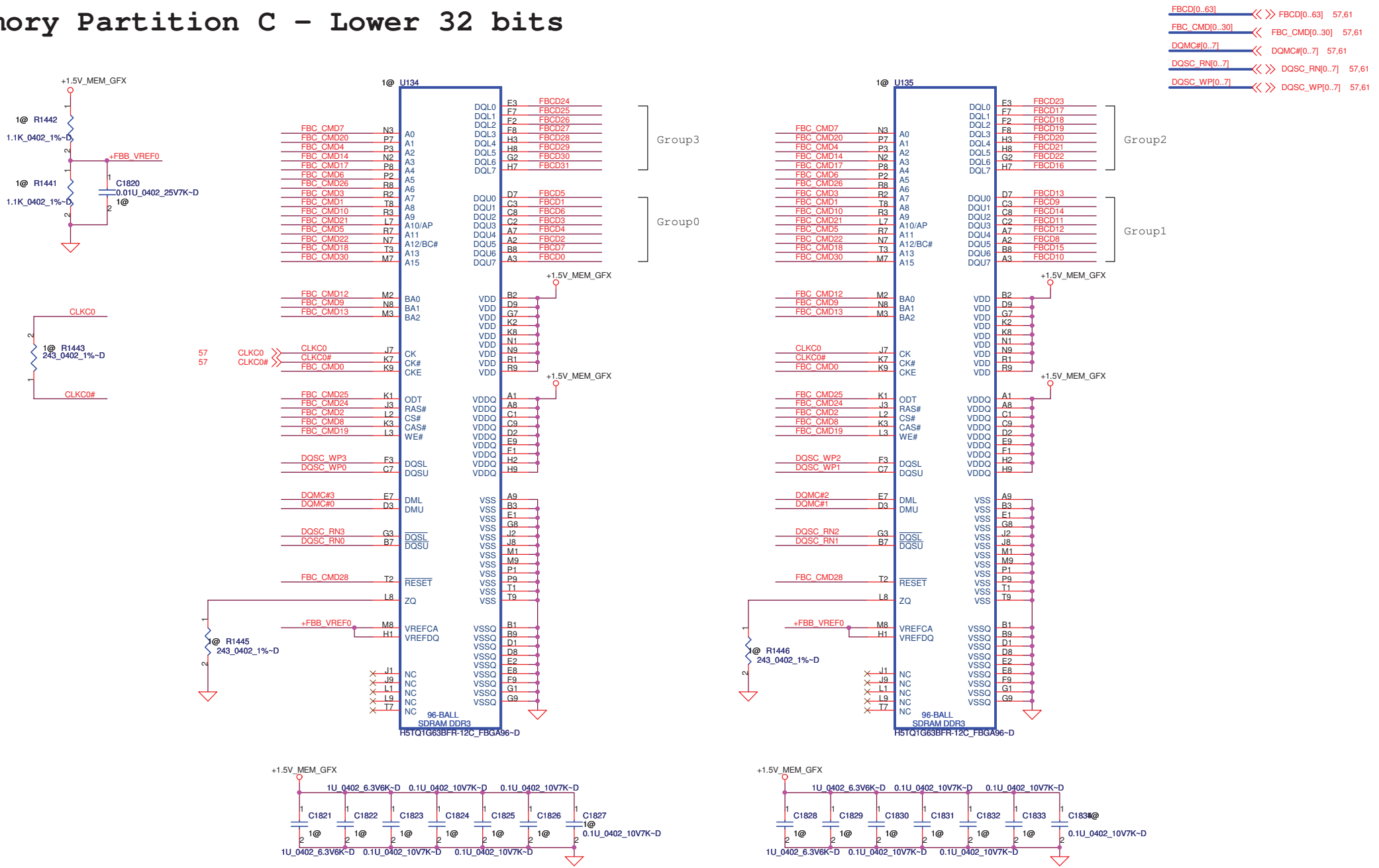
Memory Partition C – Lower 32 bits



Compal Electronics, Inc.

Title: VRAM C Lower

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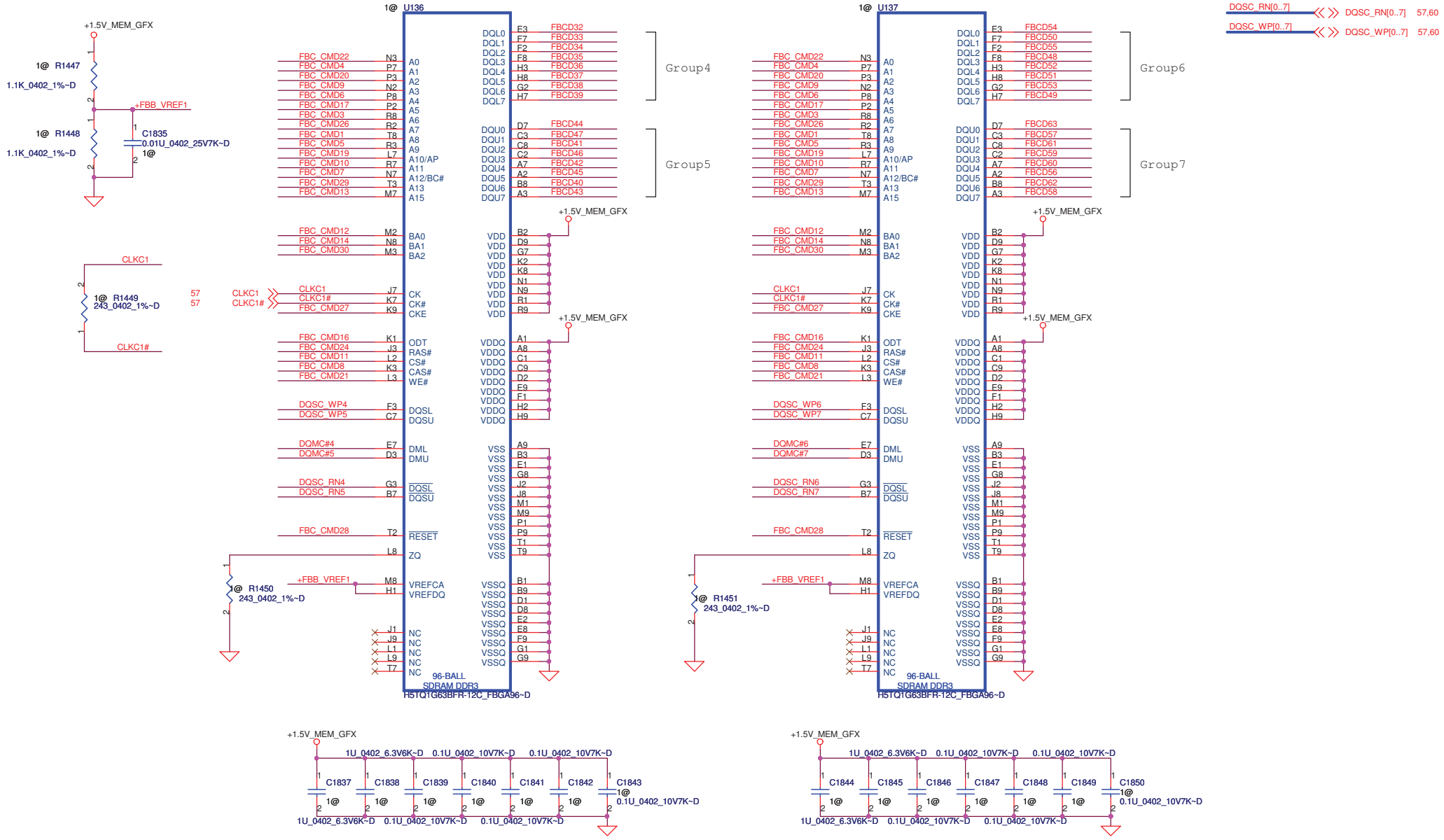
Memory Partition C - Upper 32 bits



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Title: VRAM C Upper

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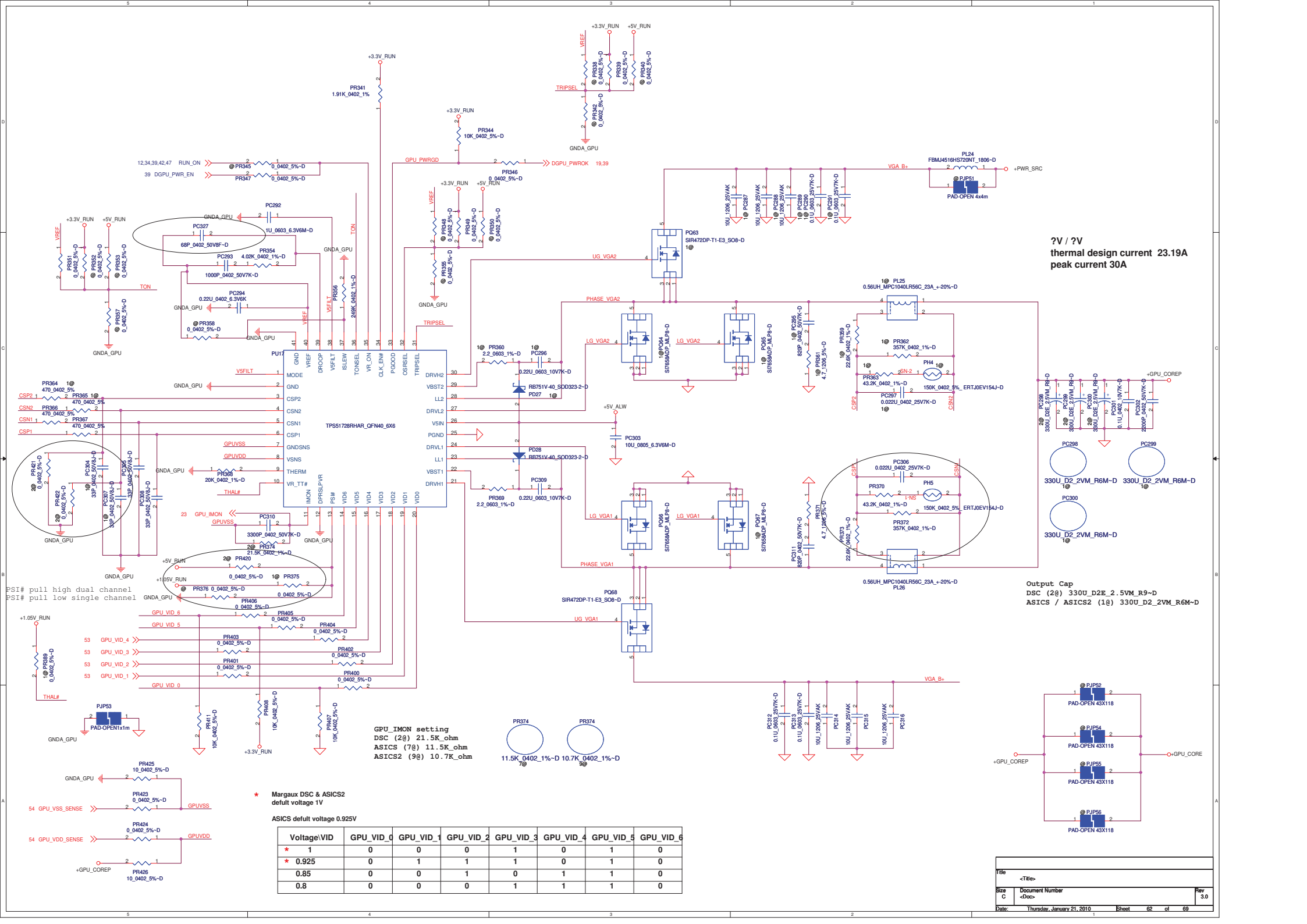
TPS51728RHAR_QFN40_6X6
PU17
?V / ?V
thermal design current 23.19A
peak current 30A
PSI# pull high dual channel
PSI# pull low single channel
GPU_IMON setting
DSC (2@) 21.5K_ohm
ASICS (7@) 11.5K_ohm
ASICS2 (9@) 10.7K_ohm
Output Cap
DSC (2@) 330U_D2E_2.5VM_R9~D
ASICS / ASICS2 (1@) 330U_D2_2VM_R6M~D
* Margaux DSC & ASICS2
defult voltage 1V
ASICS defult voltage 0.925V
Voltage\VID | GPU_VID_0 | GPU_VID_1 | GPU_VID_2 | GPU_VID_3 | GPU_VID_4 | GPU_VID_5 | GPU_VID_6
* 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0
* 0.925 | 0 | 1 | 1 | 1 | 0 | 1 | 0
0.85 | 0 | 0 | 1 | 0 | 1 | 1 | 0
0.8 | 0 | 0 | 0 | 1 | 1 | 1 | 0
Title
<Title>
Size C
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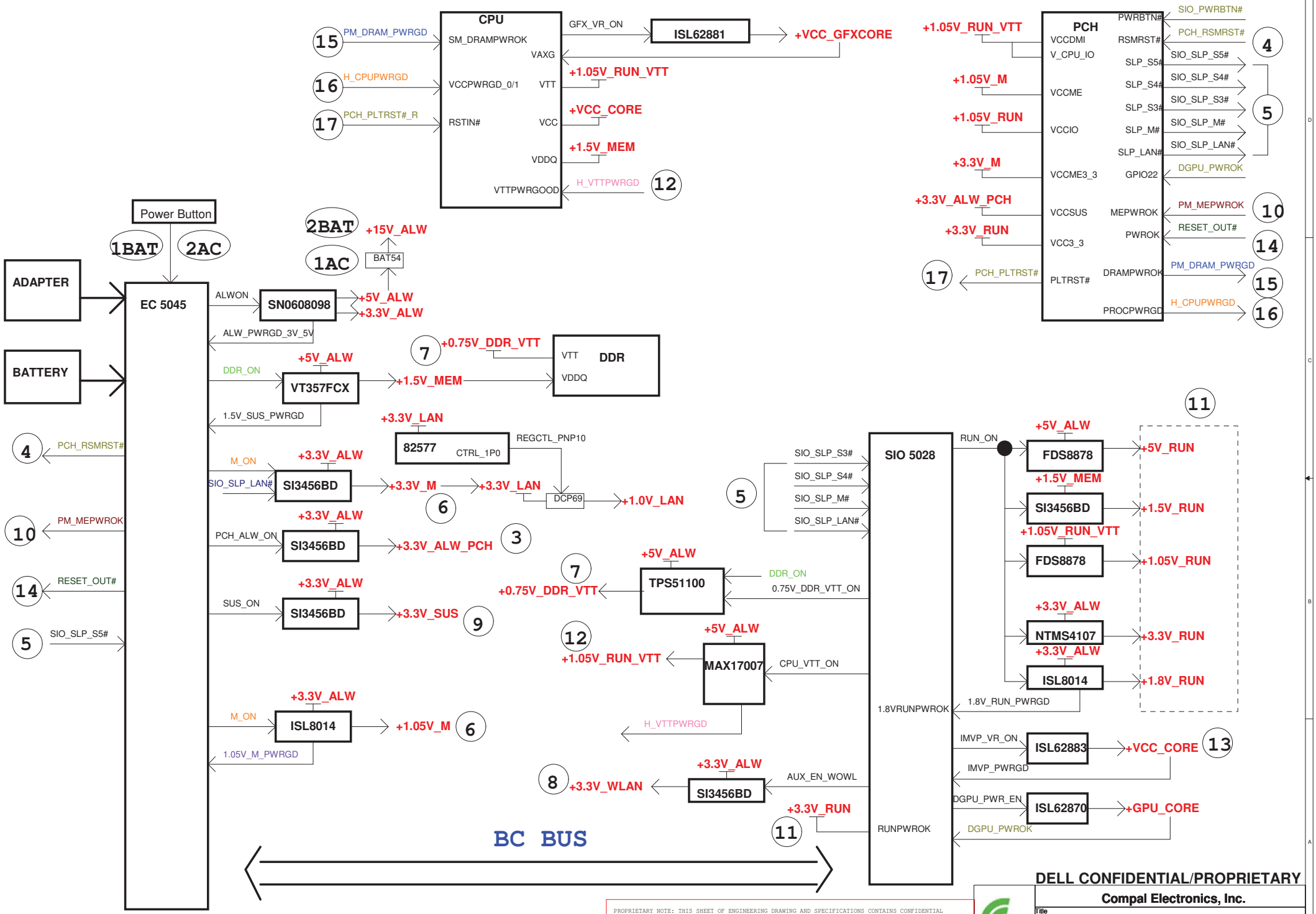

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Compal Electronics, Inc.

Title: Power Sequence

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Version Change List (P. I. R. List)

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	8,12,13, 14,42	HW	6/30/2009	Intel	Intel S3 reduction circuit.	Add R1469, R1471-R1480, C1872-C1877, Q199-Q204, change R624 to 27 ohm, pop Q78, add net DDR_HVREF_RST_GATE from U36.B36, CPU1.5V_S3_GATE from U36.B37, change CPU VDDQ net name to +1.5V_CPU_VDDQ	X01
2	40	HW	6/30/2009	COMPAL	Board ID	R98 change to 130k ohm	X01
3	43	HW	6/30/2009	COMPAL	for derating concern	Change R1001 from 82 to 150 ohm	X00
4	8	HW	6/30/2009	Intel	Follow CRB by Intel request	R1286 needs to change to 0-ohm	X00
5	39,40	HW	6/30/2009	COMPAL	MEMO implementation	de-pop R1319, R595	X00
6	8	HW	7/01/2009	Intel	Intel S3 reduction circuit.	Change R879 to 2k, R880 to 1.1k, add U141	X01
7	55	HW	7/01/2009	COMPAL	Rdson concern by ADC	Change Q55/Q58/Q59/Q183 to SI4164	X01
8	8,42,47	HW	7/02/2009	Intel	Intel S3 reduction circuit.	Add R1481-R1484, Q205, Q206, Q207, C1877, PR428, change R879 to 1.5k, R880 to 750 ohm, change net DDR_HVREF_RST_GATE to U36.A34, CPU1.5V_S3_GATE to U36.A36	X01
9	30	HW	7/03/2009	COMPAL	+3.3V_LAN enable control follow M09	De-pop R47	X01
10	12	HW HW	7/03/2009	DELL	Intel S3 reduction circuit.	De-pop R1473, separated +V_DDR_REF_Q for each SO-DIMM, The dividers should use 1% part replacement for 5% as well	X01
11	8,12,13, 14,42	HW	7/08/2009	DELL Intel	Intel S3 reduction circuit.	Add C1879, PJP57, PJP58, R1485, R1486, change Q205 to PMST3904, Q200 to AO4728L, R624 to 22 ohm, connect RUN_ON_CPU1.5VS3# to Q78.2 Q204.2,	X01
12	8	HW	7/09/2009	COMPAL	Intel S3 reduction circuit.	Add R1487	X01
13	24	HW	7/14/2009	COMPAL	NVidia BIA_PWM implementation	POP R165, de-pop R166	X01
14	8,15	HW	7/14/2009	COMPAL	Depop all related components where are located at 0 Z-hight area	Depop JXDP1, JXDP2, JDEG1, JP2 circuit	X02
15	24	HW	7/14/2009	DELL	ENVDD_PCH connection	Remove D91 and connect ENVDD_GPU to 5028.pin B38	X02
16	19	HW	7/14/2009	Intel	GPIO1,6,7 PU if not being used	Add R1489-R1491	X02
17	24	HW	7/14/2009	COMPAL	Camera need to be changed from 7 to 8 pin	Change JEDP1 pin definition	X02
18	37	HW	7/16/2009	COMPAL	JTP1, JBIO1 power gnd pins redefined	Change JTP1, JBIO1 pin definition	X02
19	37,40	HW	7/16/2009	SMSC	LAT_ON_SW# needs to be added a 1uF cap	Add @C1884, C1885, R1492, change R560 to 100K, JIO.32 change to LAT_ON_SW_BTN#	X02
20	23	HW	7/16/2009	SMSC	R594 has to be a group with R3P circuit	De-pop R594 for M09 fan solution	X02
21	31	HW	7/17/2009	Braodcom	Found both PD R898 and PU R485 pop	depopulate R898 for normal operation	X02
22	40	HW	7/17/2009	COMPAL	Board ID	Change R98 to 62K ohm.	X02
23	31	HW	7/17/2009	Braodcom	RFID disable circuit remove	Remove R1062-R1065	X02
24	28,37	HW	7/17/2009	TI	Please reserve 1 resistor and connect connector (Pin1 or 7) to MAX4951	Add R1493 & R1494 at pin 18 of U95 & U96 for power saving	X02
25	31	HW	7/17/2009	Braodcom	+SC_VCC Capacitor (C718) Value Change	Broadcom has recommneded changing the value of C718 from .47uF to 220nF	X02
26	42	HW	7/17/2009	COMPAL	Backdrive EA Failure on Margaux/ASICS	Pop R625 and Q79	X02
27	24	HW	7/17/2009	DELL	eDP repeater change to SN75DP119.	update U46 circuit for eDP repeater	X02
28	23	HW	7/17/2009	COMPAL	R3P circuit by SMSC request	R536 depop for 3P FAN, R1457 change to 0 ohm, R138 change to 27K ohm	X02
29	21	HW	7/17/2009	Intel	The PLLs aren't used in a DIS system	De-pop C105 & C106	X02
30	33	HW	7/17/2009	TXC	EA result	C514, C515 have to change to 22pF	X02
31	36,39	HW	7/22/2009	DELL	Reconnect the signal UWB_RADIO_DIS#	connect UWB_RADIO_DIS# from EC5028.A56 to MINI3.20	X02
32	23	HW	7/22/2009	DELL	Change FAN solution to M09	De-pop R3P circuit component & pop M09 solution	X02
33	42	HW	7/23/2009	COMPAL	de-rating result fail	Change Q61 from AO4456 to NTMS4107	X02
34	26	HW	7/23/2009	PERICOM	Pericom 8200 SW issue DVI can not work	Add R1495 to pull up U9 pin 23 (P1_OC0) of Pericom 8200 SW with a 4.7K ohm resistor to 3.3_RUN	X02
35	24	HW	7/23/2009	TI	eDP repeater DP119 vender review request	reserve pop option for X1EDP & DP119, change PU/PD to 20K.	X02
36	28	HW	7/23/2009	DELL	We will never disable the power to HDD redriver, go back connected in SSI	Remove R1493 & delete SATA_PWRSAVE	X02
37	18,28,40	HW	7/23/2009	DELL	There has been some confusion due to the net name showing active low	change net name HDD_FALL_INT1# to HDD_FALL_INT to show correct polarity	X02

Version Change List (P. I. R. List)

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
38	29	HW	7/24/2009	DELL	use the SiTimes part due to the cost savings	change X4 from TXC to SiTimes.	X02
39	31	HW	7/24/2009	Braodcom	connect pin-L10 of U32 to pin-5 of U33, and disconnect pin-D2 from pin-5 of U33	pop R775, de-pop R776	X02
40	33	HW	7/24/2009	COMPAL	fixed SD/MMC Clock overshoot and undershoot	Changing R8 dumping from 0-ohm to 10-ohm	X02
41	31	HW	7/24/2009	Braodcom	BCM5880 Leakage Issue on Margaux	Add Q208,Q209,R1496 circuit to fix.	X02
42	37,39	HW	7/27/2009	DELL	ESATA repeater power saving	Add a 0 ohm jumper between EN pin and VDD, but no-pop it. Then connect the EN pin to 5028.A47 with a 0 ohm jumper that is popped.	X02
43	39	HW	7/27/2009	DELL	Sometimes VGA_ID_DISC and VGA_ID_UMA both read as low	Change R875 and R881 to +3.3V_ALW rail.	X02
44	23	HW	7/27/2009	SMSC	SMSC review feedback	The pull-up source of the R150 should be changed to +VCC_4002	X02
45	31	HW	7/27/2009	NXP	Better for decoupling noise	Change C1015 ,C633 to 10pf	X02
46	36	HW	7/27/2009	DELL	For PCH GPIOs rail.	PCIE_MCARD3_DET# & USB_MCARD1_DET# pull-ups (R458 & R438) need to change from +3.3V_ALW_PCH rail to +3.3V_RUN rail	X02
47	11	HW	7/27/2009	Intel	The VCC_Core de-coupling requirements for Clarksfield XE processor	C60-64, C66 change to 470uF/4mOhm, C44-C59 change to 22uF(0805)	X02
48	23,40	HW	7/29/2009	SMSC	per SMSC 5045 AN 19.6, 4002 AN 16.11	R541, R554, R1492 should be 10K, R147 should be populate, Add R1498	X02
49	35	HW	7/29/2009	DELL	Braidwood has been removed from Ibex Peak platforms	De-pop JBW1 & R1453	X02
50	39	HW	7/29/2009	DELL	GPIO MAP update	change net name from RESERVED FOR ESATA to EN_ESATA_RPTR	X02
51	42	HW	7/29/2009	Compal	By Intel S3 timing concern	reserve R1500 & @R1499 0 ohm for Q206.2 from RUN_ON_CPU1.5VS3# & RUN_ON_ENABLE#	X02
52	37	HW	7/30/2009	Intel	Intel continues to recommend that all pre-production and production motherboards include common mode choke footprints to enable a stuffing option in case a choke is required to pass EMI testing	Add @L30, @L31, R424-R427	X02
53	31	HW	7/30/2009	Broadcom	Broadcom schematic review request	pop R537; Remove C647, C641,R634, R498, R898; Add @C1886 & @C1887; Remove L73, R631, C1026, R494, Short net RFREADER_TXN1_PI_R to RFREADER_RXP_C; Remove C642, C640, change R487, R496 to 0 ohm; Add @R1501; de-pop R496 & R497; JCS1 pin2 & pin3 and pin4 & pin5 should be short to carry higher current.	X02
54	31	HW	7/30/2009	Compal	Solve smart card cage vender reverse pin definition.	Reverse JSC1 pin definition	X02
55	31	HW	7/31/2009	Broadcom	Broadcom schematic review request	The pin1 of R497 and R496 should be connected to GND	X02
56	15,40	HW	7/31/2009	KDS	KDS crystal EA result	change DIS C296 & C297 to 12pF, C674, C675 to 33pF	X02
57	8,15	HW	7/31/2009	Intel	For XDP debug concern	Populate all the resistors and leave out the connector	X02
58	27	HW	8/03/2009	Compal	CRB EA result	C251-C253 to 4.7pF; L61-L63 to 10-Ohm Bead ; De-pop C996, C518, C390	X02
59	23	HW	8/03/2009	Compal	If populate R147 PU resistor for THERM_STP#, it will impact ALWON signal at MEC 5045	De-pop R147	X02
60	15,40	HW	8/04/2009	KDS	KDS crystal EA result	change DIS C427 change to 200 ohm, C514, C515 back to 15P and change X3 from CL=16pF to CL=12pF	X02
61	8	HW	8/05/2009	DELL	fix the Intel S3 power up timing	change C1877 from 0.01uF to 0.22uF 0402 cap.	X02
62	28,37	HW	8/06/2009	Compal	Per ESATA/SATA EA result	pop R1301, R1304, de-pop R1298, R1308	X02
63	28	HW	8/06/2009	Compal	ODD_DET# PU from +5V_MOD to +3.3V_RUN	connect R1239.1 to +3.3V_RUN & pop R1239	X02
64	42	HW	8/06/2009	SMSC	Watch dog timer may not be resetED when 4002 VDD_PWRGD is not completely at Logic Low	Pop R616 to 39 & pop Q72	X02
65	30	HW	8/10/2009	Intel	Remove the VCT trace	Remove @R562, @C41	X02
66	35	HW	8/10/2009	DELL	Braidwood Removal on RAM	Remove @JBW1, @C1851, @R1452, @R1453, @C1852, R1411	X02
67	31	HW	8/11/2009	Broadcom	Broadcom review request	Remove @R1061, Change C718 value to 470pF, change C646 value to 220pF. pin2 of R470 should have a 0ohm but de-pop resistor to USB_GPIO27 net.	X02

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Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
68	8	HW	8/11/2009	Intel	Intel review request	add @R1504 for DDR3_DRAMRST#_CPU PD & add C1888 for PM_DRAMRST# to slow down gate of FET	X02
69	33	HW	8/11/2009	Richo	Change pop option for R5U242	Change C21 from 10U to 47U, change R46 to C1889 (1uF)	X02
70	38	HW	8/11/2009	Compal	For DVI DOCK issue	Add R1505-R1508	X02
71	21	HW	8/12/2009	Intel	Follow CRB rev 1.6 schematic	No stuff C111 and C112	X02
72	31	HW	8/12/2009	Broadcom	Per Broadcom request	pop R496 & R497 (0 ohm)	X02
73	31	HW	8/12/2009	Compal	Smart card EA result	change R772 to 47 Ohm for resolving SC_CLK Rise/Fail timing issue	X02
74	8	HW	8/12/2009	Intel	Follow Intel S3 white paper rev0.9	pop R1504 & change C1888 to 470pF	X02
75	37	HW	8/12/2009	DELL	add a pull-up to +3.3V_ALW for IO_LOOP	change R835.1 from +3.3V_ALW_PCH to +3.3V_ALW	X02
76	37	HW	8/12/2009	Compal	disconnect IO & DOCK VCT	rename IO VCT to +LOM_VCT_IO & reserve C712 pad for test.	X02
77	31	HW	8/13/2009	Broadcom	Per Broadcom request	need to have 4.7K pull-up to 3.3V_ALW for BCM5882 pin-C1 "RSTOUT_N"	X02
78	8	HW	8/13/2009	DELL	Avoid a glitch for DDR_HVREF_RST_GATE, please add a 1.1K 1% no-stuff pull-up to +1.5V_CPU_VDDQ rail on the PM_DRAM_PWRGD_R signal for a back-up option	change C1888 to 0.1u, add @R1511 for PM_DRAM_PWRGD_R	X02
79	8,45	HW	8/13/2009	DELL	CPU detection since the edge diode has been removed from M'09	Add R1512 for CPU_DETECT# and connect JCPU.AH24 to U36.B18	X02
80	37	HW	8/14/2009	DELL	Invert the EN_ESATA_RPTR signal and connect this to SATAGP4/GPIO16	Add @R1513 & @Q210, pop R1494 and de-pop R1497, change net name from GPIO16 to EN_ESATA_RPTR#	X02
81	33	HW	8/14/2009	Compal	Solve 1394 impedance issue	Change R399, R400, R401, R403 to 54.9 ohm.	X02
82	37	HW	8/14/2009	Compal	EMI solution	pop L30 & L31, de-pop R424-R427	X02
83	38	HW	8/17/2009	NV	Solve DIV issue	Add Q211-Q216, R1514-R1521 for SW DDC PU.	X02
84	11	HW	8/17/2009	Compal	PWR team request	de-pop C66, C64, change C60-C63 to 330uF, C44-C59 to 10uF, can meet Intel spec.	X02
85	55	HW	8/18/2009	NV	Reserve crystal for 27M.	add @R1522, @y7, @C1890, @C1891	X02
86	26	HW	8/19/2009	Pericom	8200 pin 8,9 add cpas to minimize noise	Add C1597 & C1598	X02
87	29	HW	8/19/2009	COMPAL	EMI solution	C676 to 150pF and R1295 to L4 (220 ohm), POP C1121-C1124, C1145-C1148	X02
88	33,34	HW	8/20/2009	COMPAL	EMI solution for SD CLOCK & EXP card USB	R8 change to 22 ohm, pop L64 & depop R791, R792	X02
89	11	HW	9/11/2009	DELL	To meet Intel spec	C60-C63, Margaux DIS-->330uF, Asics/Asics II-->470uF	X02
90	55	HW	9/11/2009	DELL	27M crystal for NV	add Y7, C1890, C1891, R1522, R1417, de-pop R617, R1317, R43, R39	X02
91	21	HW	9/11/2009	Intel	Intel request	de-pop C39, C610	X02
92	31	HW	9/11/2009	Broadcom	Broadcom review feedback	change C718 from 470p to .47u, C646 from 220p to .22u	X02
93	30	HW	9/11/2009	Intel	Follow Intel document request	change R1502 to C427 10pF, C475, C476 to 33pF	X02
94	35	HW	9/11/2009	Compal	Add PD 10k for Minicard PWR	Add R1523-R1525	X03
95	31	HW	10/23/2009	Compal	Smart card connector DFM issue	change JSC1 type (the same with Rothschild)	X03
96	54	HW	10/23/2009	NV	JTAG_TRST#: Populate R1372 with 1K resistor.	Change R1372 to 1K and pop	X03
97	40	HW	10/23/2009	COMPAL	Board ID	Change R98 to 4.3K ohm.	X03
98	17	HW	10/23/2009	Intel	Intel schematic check list 2.0 request	R268 change from 1k ohm to 10k ohm, R672 change from 0.5% to 5%	X03
99	40	HW	10/23/2009	SMSC	SMSC review feed back	R561 and R1046 are too large it is recommend that no PU/PD be larger than 100K	X03
100	12,42	HW	10/23/2009	COMPAL	avoid double bleed off	+3.3V_M, +3.3V_RUN, +1.5V_CPU_VDDQ power plane discharge circuit have been pop, de-pop R612, R607, R1471.	X03
101	36	HW	10/23/2009	DELL	support WiMax LED status	Need to populate R840	X03
102	16,32	HW	10/25/2009	COMPAL	Change R910 placement	Please put R910 close to PCH not TCM chip	X03
103	41	HW	10/25/2009	COMPAL	Touch Pad PU need to move from 5V to 3V	R613, R614 change power rail from +5V_ALW to +3.3V_ALW	X03
104	31	HW	10/28/2009	Broadcom	For 5882-B0 request	L71, L72 68nH, 2%, 400mA; C1070, C1071 1500pF, 2%, 50V; C1886, C1887 150pF, 2%, 50V	X03
105	29	HW	10/28/2009	IDT	create a low pass filter with the pole set at 36kHz to filter out of band noise	de-pop C1066 & C1067, R1090, R1089 ; R340 & R342, R1091 & R1092 change to 2k, add C1894-C1897 1000pF.	X03
110	29	HW	10/28/2009	COMPAL	ME request for JSPK1 swap	JSPK1 Pin 2 and pin 4 swap, pin 3 and pin 5 swap	X03

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Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
111	8,12,13, 15,16,28	HW	10/29/2009	DELL	MEM SMBus design needs to change	Move Q190 connection, add R1528,R1529, add net name DDR_XDP_CLK/DAT	X03
112	31	HW	10/29/2009	DELL	smart card clock resistor	Change R772 from 47 ohm to 22 ohm	X03
113	37	HW	10/29/2009	COMPAL	EMI concern	pop R15 with 10 ohm and C15 with 10pF	X03
114	36	HW	10/29/2009	COMPAL	USB_MCARD2_DET# change to +3.3V_ALW_PCH	R447 pull up should change to +3.3V_ALW_PCH	X03
115	40	HW	10/29/2009	COMPAL	avoid RESET_OUT# double PD	de-pop R5	X03
116	15	HW	11/02/2009	COMPAL	EMI, RF team concern	pop C300, C302	X03
117	24	HW	11/04/2009	COMPAL	LCD power sequencing issue	change R161 from 470 to 130 ohm .	X03
118	37	HW	11/05/2009	COMPAL	EMI concern	Change choke vender from Murata to Delta on L30,L31	X03
119	29	HW	11/05/2009	COMPAL	RF team concern	X4 change from Sitime to TXC	X03
120	15	HW	11/05/2009	COMPAL	RTC issue	Y1 & Y4 change from 30ppm to 10ppm.	X03
121	15	HW	11/05/2009	COMPAL	For flash ROM EOL issue	U13 change from W25X32 to W25Q32	X03
122	19	HW	11/09/2009	DELL	PCH driving the siganl low at GPIO15 initial	add R1530 2.2K PU resistor to +3.3V_ALW_PCH on the SIO_EXT_WAKE# signal.	X03
123	55	HW	11/10/2009	COMPAL	By power team request	Please pop 22u*2 at original reserved location C1722 and C1723.	X03
124	39	HW	11/10/2009	DELL	add a 10K 5% PU to +3.3V_RUN on ME_FWP	Add R1531	X03
125	24, 53	HW	11/11/2009	NV	By NV review request	~~pop R180, de-pop R181~~; change GPU booting voltage setting, GPU_VID1: @Q4, 7@R1374, 8@R1361, GPU_VID4:pop R1379, GPU VID2: 7@R1357, 8@R1360, GPU_VID3: pop R1354	X03
126	15,28	HW	11/13/2009	COMPAL	To cut redundant trace for SMBUS	Add @R1532/R1533/R1534/R1535	X03
127	19	HW	11/17/2009	Intel	By Intel check list request	Add R1544 for PCH GPIO34	X03
128	41	HW	12/24/2009	Compal	To solve touch pad ESD issue	Change L41 and L42 to R1545 & R1546 with 100 ohm.	X03
129	29	HW	12/24/2009	Compal	RF noise issue concern	change Sitime 12MHz oscillator X4 to driver strength 1x	X03
130	15	HW	12/24/2009	Intel	Follow Intel check list rev2.0	Change R224 to tolerance from 5% to 1%	X03
131	36	HW	12/24/2009	DELL	Wimax LED abnormal operation.	de-pop R1409	X03
132	11	HW	12/24/2009	Compal	PWR team request	Change C60-C63, add C66 to 330uF for Ascis/AsicsII	X03
133	38	HW	12/24/2009	Compal	Simplo battery slice EMI issue	Add C1898 and C1899(Depop,reserve for EMI test)	A00
134	31	HW	12/24/2009	Braodcom	By Broadcom request	Change L71,L72 from 68nH to 150nH, C1070,C1071 from 1500pF to 390pF.C1887, C1888 from 150pF to 390pF.	A00
135	40	HW	12/30/2009	DELL	Board ID	Change R98 from 4.3K to 1K for A00	A00
136	33,34	HW	12/30/2009	COMPAL	Change R5U242 to rev ES3	Change U94 from ES2 to ES3	A00
137	8,15	HW	12/30/2009	Intel	De-pop XDP & JTAG resistor	de-pop C19,C20,R6,R7,R68,R19,R3,R1153,R1156,R1157,R66,R1241,R780-R785, R22,R24,R78,R91,R101-R116,C1375,R69,R118,R123,R804,R807,R805,R806,R1281, R1282,R1315	A00
138	28,37	HW	01/15/2010	COMPAL	Change Esata repeater for power save	Change U95 U96 from 412 to 412A	A00
139	27	HW	01/15/2010	COMPAL	EMI concern	Change L61-L63 to 27nH, C251-C253 to 2P, pop C390, C518, C996	A00
140	11	HW	01/18/2010	COMPAL	No stuff MLCC caps to fix Acoustic noise	de-pop C46, C48, C50, C52	A00
141	15	HW	01/21/2010	COMPAL	For factory to do JTAG test	Pop R123, R804-R807, R1281, R1282, R1315	A00

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1	50	+VCORE_DSC	6/12	Dell	Adjust Vimon	ASICS and ASICS2 Change PR184 to 7.5K	
2	62	Graphic ASICS	6/19	TI	Adjust compensation	DSC Change PR370 to 43.2K, PR372 to 357K, PR373 to 22.6K, PC 306 to 0.022uF ASICS/ASICS2 Change PR370&PR363 to 43.2K, PR372&PR362 to 357K, PR373&PR359 to 22.6K, PC306&PC297 to 0.022uF	
3	62	Graphic ASICS	6/19	TI	Droop circuit add cap for filtering the noise	DSC, ASICS and ASICS2 Change PD26 to PC327 68pF	
4	62	Graphic ASICS	6/19	TI	Adjust to operate single phase	DSC PR364,PR365,PC304,PC307 unpop and add PR421&PR422 0_ohm to avoid PIN3,4 floating Add PR420 0_ohm connect +5V_RUN to control PSI# for Single phase	
5	62	Graphic ASICS	6/30	TI	add 0_ohm for cut power rail to debug	Add PR423 PR424 PR425 PR426	
6	62	Graphic ASICS	7/01	TI	CSS GC logic wrong issue	Add PR427 180_ohm to GND	
7	62	Graphic ASICS	7/2	ADC Guangyong 090612	Change PR374 and PC310 reference GND to GPUVSS	connect PR374 and PC310 pin1 to GPUVSS	
8	50	+VCORE	7/14	Dell / intersil	change Cisense GND to VSUM-	PC174 PC175 PC176 pin2 connect to VSUM-	
9	52	Selector	7/16	Compal	Add 1M_ohm pull down to fix ACAV_IN_NB oscillation when battery mode S5	Add PR429	
10	52	Selector	7/22	TI	new version CD3301 (PG2.1) dont need PD21	un-pop PD21 add PR430	
11	53	Selector	7/22	TI	DOCK_AC_OFF_EC floating issue	add PR431	
12	62	Graphic ASICS	8/3	TI	Pin38 V5FILT is output pin. don't need to connect to power rail.	Delete connection to +5V_RUN	
13	45 / 49 50 / 51	+5V/+3.3V +1.1VTT +Vcore charger	8/11	Compal / EMC	solve EMI issue	pop PC32 PC33 PR36 PR39 PL15 PC155 PC165 PC182 PR153 PR173 PR191 PL24 add PL27	
14	50	+VCORE	8/13	Intersil	Adjust Imon and Load line	PR195 change to 619, PR175 change to 2.43K, PR387 change to 15K PR184 change to 8.45K, add PR432 34.8K and PQ75 (PR432 and PQ75 un-pop Merle 0820) PC171 change to 0.068uF, PC183 add 0.022uF	
15	49	+1.1VTT	8/13	DELL	Improve ESD	PQ74 change SB57002528L to SB00000DH0L	
16	51	Charger	8/13	Dell / TI	change PU13 to BQ24747 to improve IC ESD to change strong	change PU13 from SA00001RK0L to SA00003KX0L	
17	48	+1.05V_VM_DSC	8/13	TI	change from TPS51318 to SN0905030	change PU8 to SN0905030	
18	45	+5V/+3.3V	8/17	TI/Compal	adjust OCP setting	Change PR31 from 243K to 294K, PR32 from 232K to 261K(DSC) 158K(ASICS)	
19	46	+1.5V_MEM_DSC	8/17	TI/Compal	adjust OCP setting	Change PR71 from 61.9K to 39.2K	
20	50	+VCORE	0820	Dell EMC	Add 2 2200pF caps. (jerry lin 0820)	Add PC328 PC329	

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21	44	+DCIN	10/23	TI/Compal	slow soft star to fast issue	Change PR20 from 0_ohm to 10K.	
22	49	+1.1VTT	10/23	Intel	VTT power good voltage level change	Change PR124 from 28.7K to 9.31K. Change PR128 from 10K to 2.74K.	
23	51	Charger	10/23	Compal EMI	EMI solution	pop PC214 1000pF, PR234 4.7_ohm	
24	49	+1.1VTT	10/23	Maxim	fix VTT drop issue	ILIM = 30mV, un-pop PR104, PR103=0_ohm, PC130=220pF PR110, PR120=1.58K_ohm ; PR113, PR122=6.98K_ohm ; PR114, PR123=0_ohm Ceq PC132, PC144 =0.22uF ; Filter PC133, PC145=un-pop ; PR115, PR129=0_ohm REF capacitor PC137 change to 2.2nF ; REFIN PR117, PR118 and PR119 increase by 10x Add PR432, PR433 for dual remote sense	
25	51	Charger	10/23	TI	Reduce CD3301 pin34 pin 35 peak current	Change PR392 to 0805 size.	
26	51	Charger	11/10	Compal	ACAV_IN_NB level adjust. (10/29)	Change PR246 from 21.5K to 22.6K	
27	50	+Vcore	11/17	Compal	pop PC190 PR201 for improve 2nd source FDIM	pop PC190 PR201	
28	49	+1.1VTT	01/20	Maxim	fix dual palse issue	pop filter PC133, PC145=1000p ; PR115, PR129=10_ohm	
29	51	Charger	01/20	Compal	reduce surge current. (for CD3301)	Change PR392 form 0_ohm to 1ohm change PC199 from 1uF to 0.1uF	
30	51	Charger	01/20	Compal	EMI can pass without this bead. remove for cost saving.	un-pop PL27	
31	62	Graphic ASICS	8/3	Compal	RF boardband issue	pop PC295 PC311 820pF , pop PR361 PR371 4.7ohm.	
32	49	+1.1VTT	01/20	Compal RF/EMI	fix RF boardband issue	change PC131 PC146 from 680pF to 820pF	

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