COMPAL CONFIDENTIAL

MODEL NAME : *JAL10*

PCB NO : *LA4151P(DAA00000Q1L)*

BOM P/N :

M09 Lola UMA

uFCBGA Mobile Penryn

Intel Cantiga GM + ICH9M

2008-07-4

REV : 1.0

@ : Nopop Component
1@ : Use TCM only
2@ : Use TAA only
3@ : Use BROADCOM TPM only
4@ : Use without TAA only
5@ : Use with BKT only
6@ : Use without BKT only
7@ : Use disable TPM only
8@ : Use with TCM depop
9@ : Use with ZTE TCM
10@ : Use with Jetway TCM

MB PCB

Part Number	Description
DAA00000Q1L	PCB 03S LA-4151P REV0 M/B

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Title: Cover Sheet

Size | Document Number: LA-4151P | Rev: 1.0

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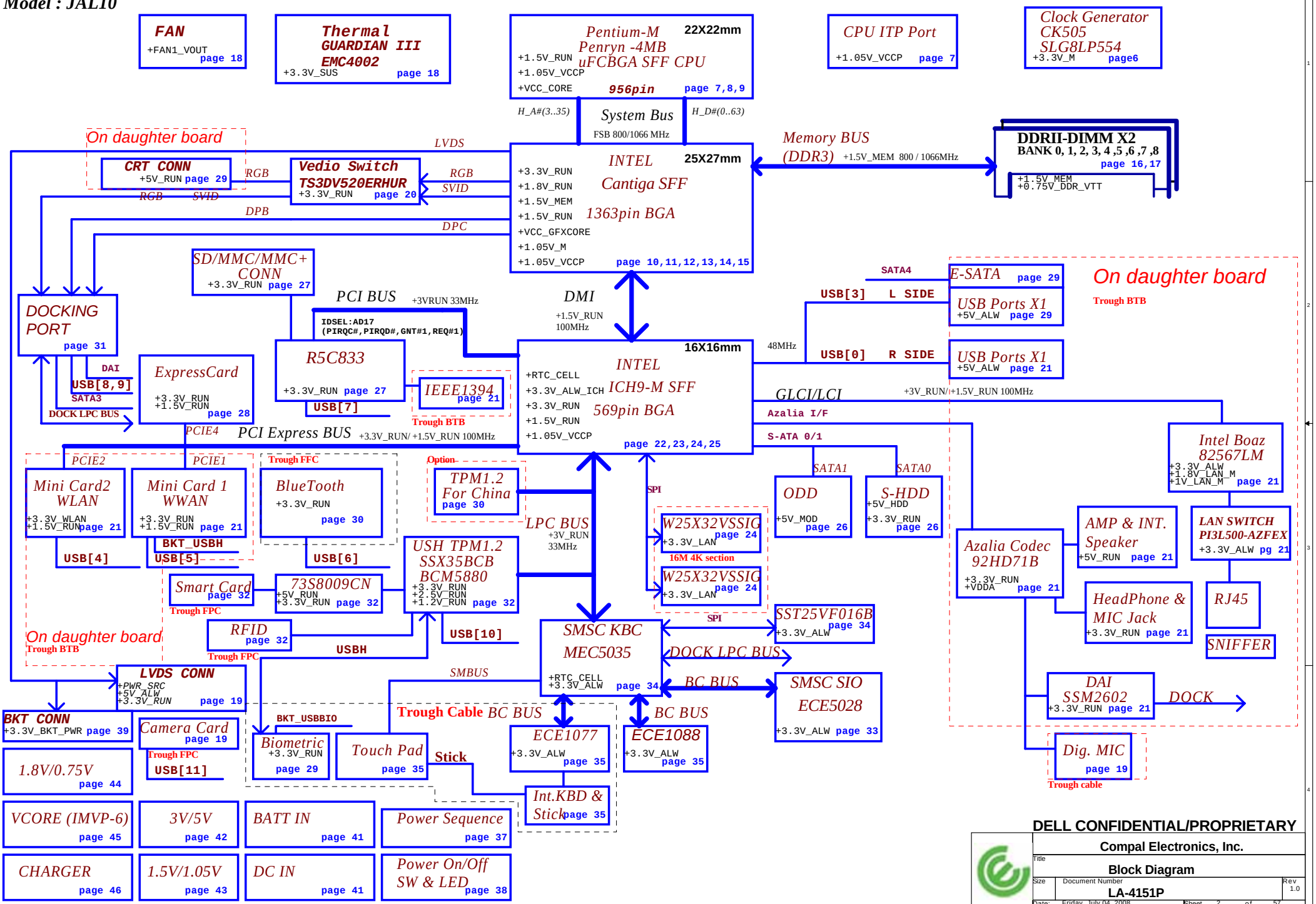
Block Diagram
Compal confidential
Model : JAL10



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Title: Block Diagram		
Size	Document Number: LA-4151P	Rev: 1.0
Date: Friday, July 04, 2008	Sheet 2 of 57	

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	ON
S4 (Suspend to DISK) / M1	LOW	HIGH	HIGH	LOW	HIGH	ON	ON	ON	OFF	ON
S5 (SOFT OFF) / M1	LOW	HIGH	LOW	LOW	HIGH	ON	ON	ON	OFF	ON
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_ICH +3.3V_RTC_LDO	+3.3V_SUS +1.5V_MEM	+5V_RUN +3.3V_RUN +2.5V_RUN +1.5V_RUN +1.8V_RUN +0.75V_DDR_VTT +VCC_GFXCORE +VCC_CORE +1.05V_VCCP	+3.3V_M +1.05V_M	+3.3V_M +1.05V_M (M-OFF)	+3.3V_RUN_ WWAN_PWR +3.3V_RUN_ BKT_PWR +3.3V_BKT _PWR +INV_PWR_SRC +LCDVDD
S0	ON	ON	ON	ON	ON	ON
S3	ON	ON	OFF	ON	OFF	OFF
S5 S4/AC	ON	OFF	OFF	ON	OFF	OFF
S5 S4/AC don't exist	OFF	OFF	OFF	OFF	OFF	OFF
BlackTop mode	ON	OFF	OFF	OFF	OFF	ON

PCI TABLE

PCI DEVICE	IDSEL	REQ#/GNT#	PIRQ
R5C833	AD17	REQ#1 / GNT#1	PIRQ[C..D]

ICH9-M	USB PORT#	DESTINATION
	0	JUSB1 (Ext Right Side Top)
	1	BLT mode
	2	None
	3	JESATA1 (Ext Left Side Bottom)
	4	WLAN
	5	WWAN
	6	BT
	7	Express card
	8	DOCKING
	9	DOCKING
	10	USH->BIO
	11	Camera

PCI EXPRESS	DESTINATION
Lane 1	MINI CARD-1 WWAN
Lane 2	MINI CARD-2 WLAN
Lane 3	None
Lane 4	EXPRESS CARD
Lane 5	None
Lane 6	10/100/1G LAN

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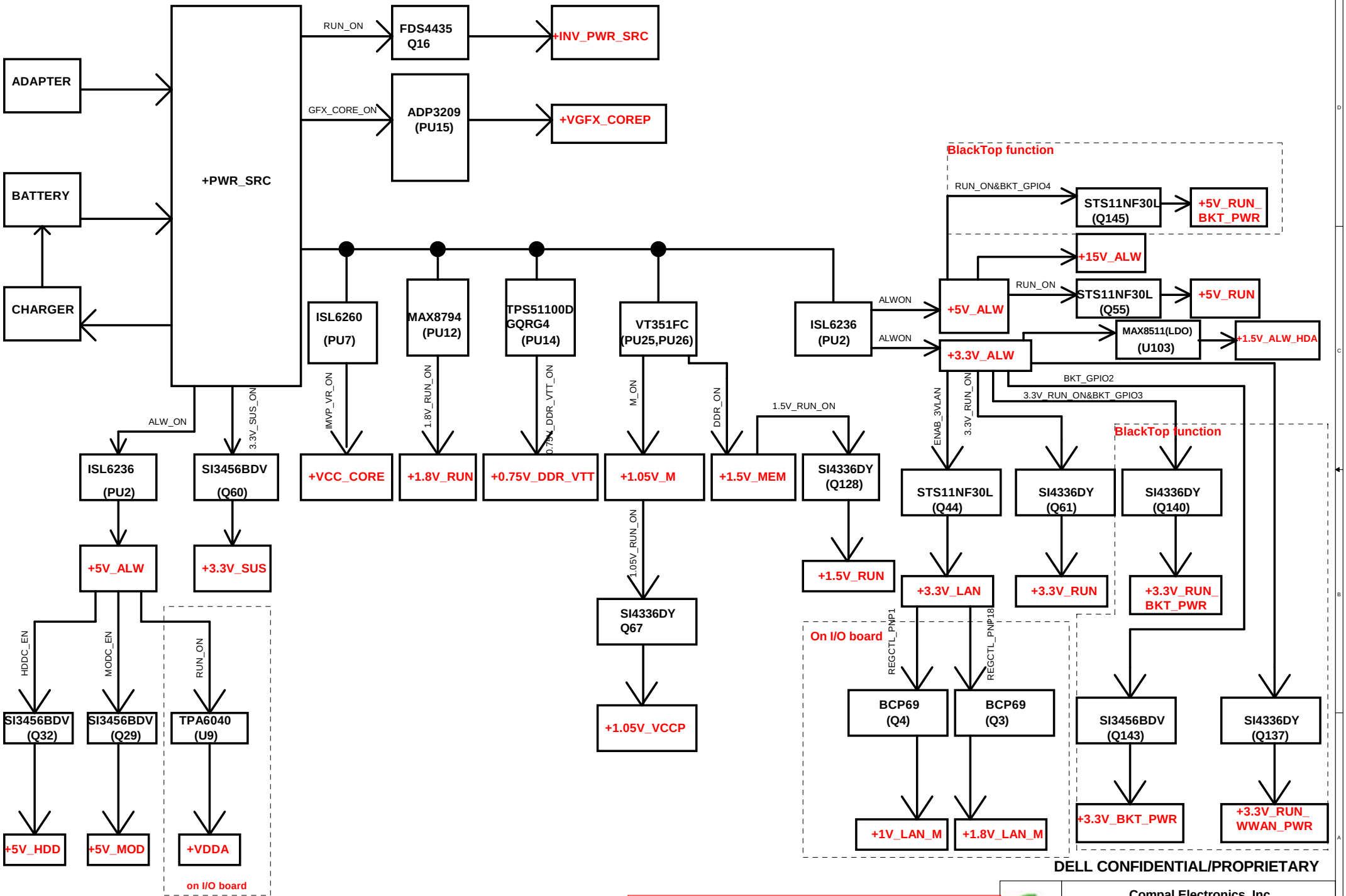

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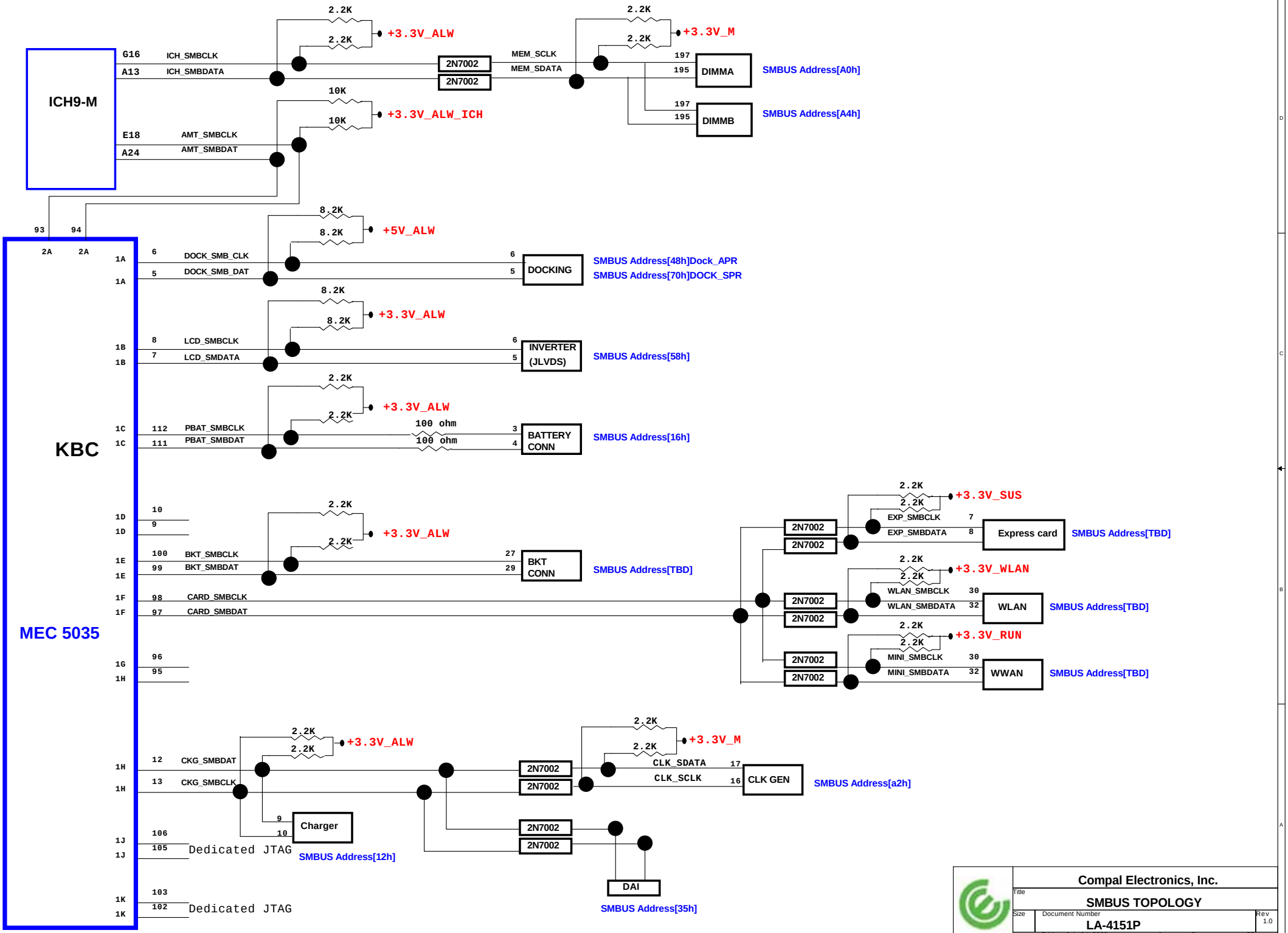
Title: Power Rail

Size | Document Number: LA-4151P | Rev: 1.0

Date: Friday, July 04, 2008 | Sheet 4 of 57



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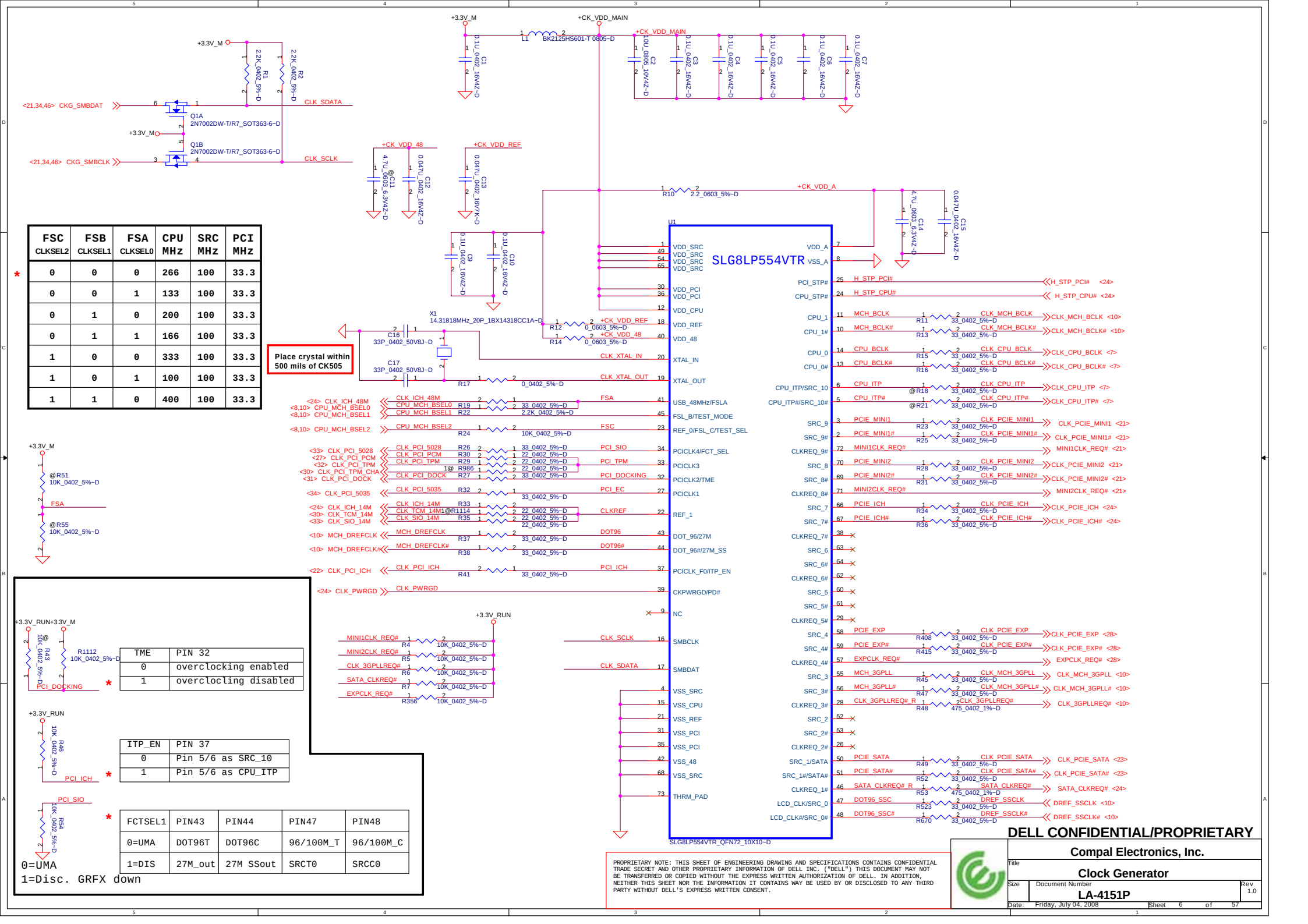
Title	SMBUS TOPOLOGY
Size	Document Number: LA-4151P
Rev	1.0
Date: Friday, July 04, 2008	Sheet 5 of 57



FSC CLKSEL2	FSB CLKSEL1	FSA CLKSEL0	CPU MHz	SRC MHz	PCI MHz
* 0	0	0	266	100	33.3
0	0	1	133	100	33.3
0	1	0	200	100	33.3
0	1	1	166	100	33.3
1	0	0	333	100	33.3
1	0	1	100	100	33.3
1	1	0	400	100	33.3

TME	PIN 32
0	overclocking enabled
1	overclocling disabled

ITP_EN	PIN 37
0	Pin 5/6 as SRC_10
1	Pin 5/6 as CPU_ITP

FCTSEL1	PIN43	PIN44	PIN47	PIN48
0=UMA	DOT96T	DOT96C	96/100M_T	96/100M_C
1=DIS	27M_out	27M SSout	SRCT0	SRCC0

0=UMA
1=Disc. GRFX down

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Compal Electronics, Inc.

Title: Clock Generator

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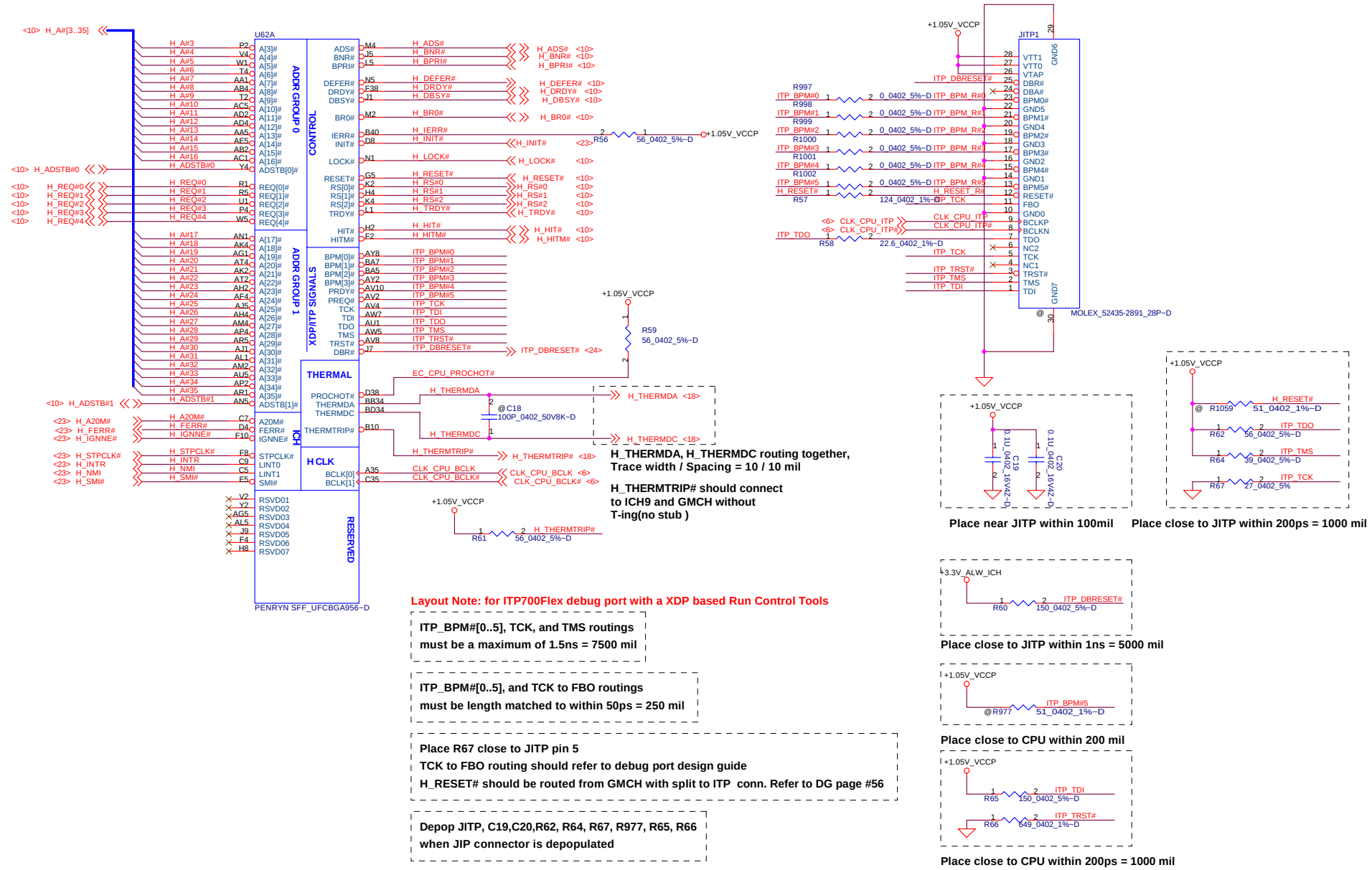
Date: Friday, July 04, 2008 Sheet 6 of 57



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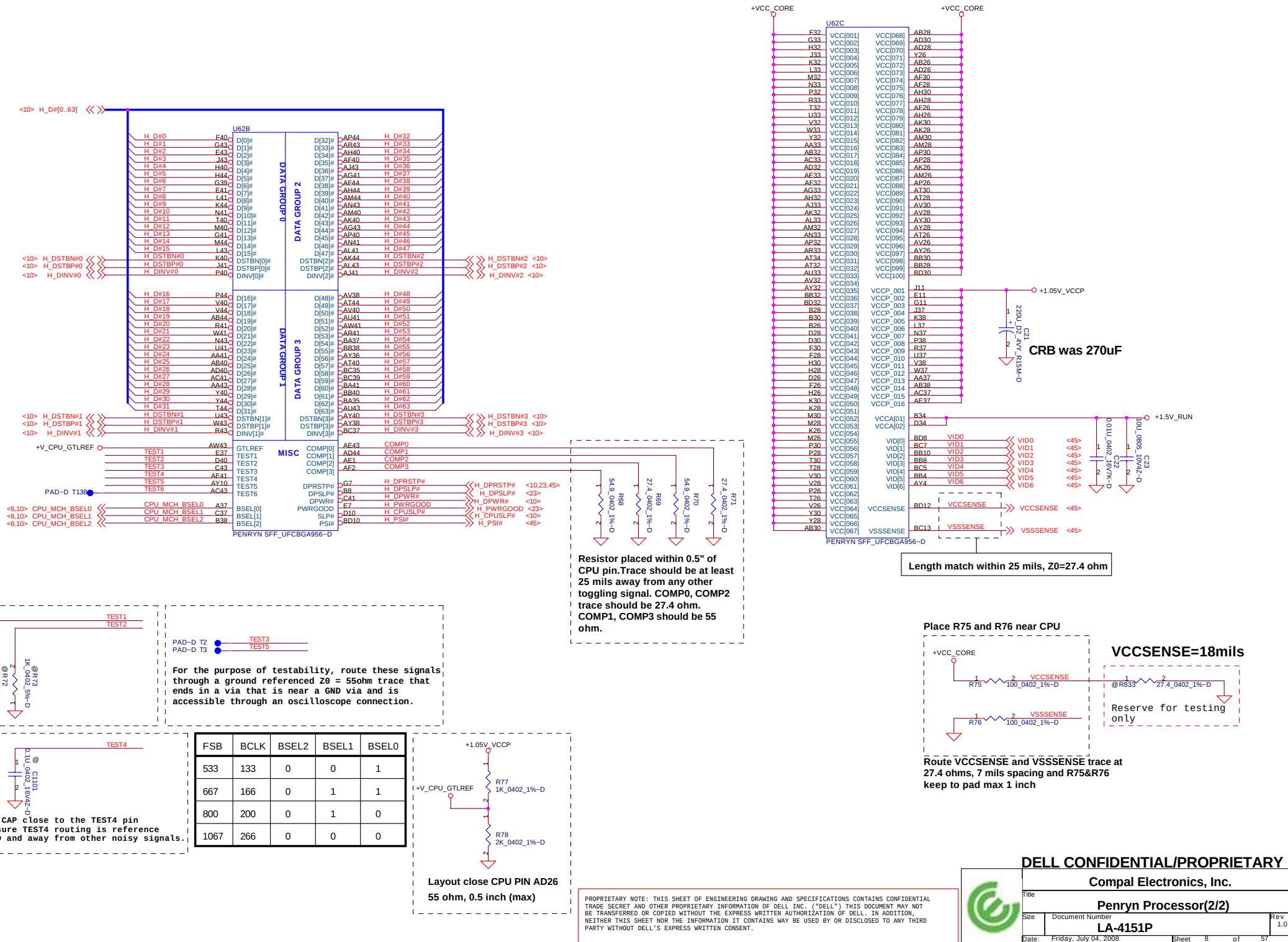
Compal Electronics, Inc.

Title: Penryn Processor(1/2)

Size: | Document Number: LA-4151P | Rev: 1.0

Date: Friday, July 04, 2008 | Sheet 7 of 57



FSB	BCLK	BSEL2	BSEL1	BSEL0
533	133	0	0	1
667	166	0	1	1
800	200	0	1	0
1067	266	0	0	0

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Compal Electronics, Inc.

Title: Penryn Processor(2/2)

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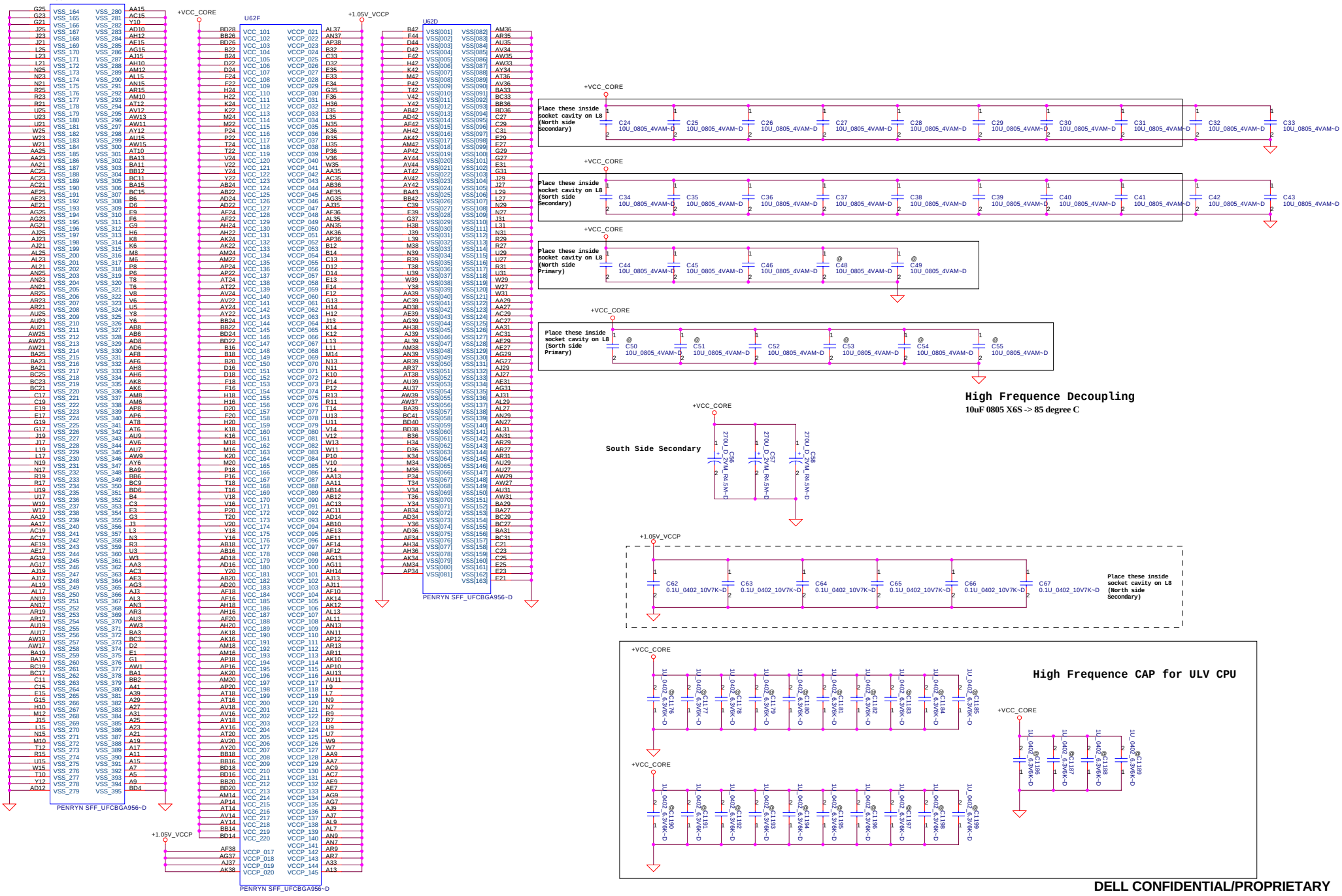

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Compal Electronics, Inc.

Title: CPU Bypass

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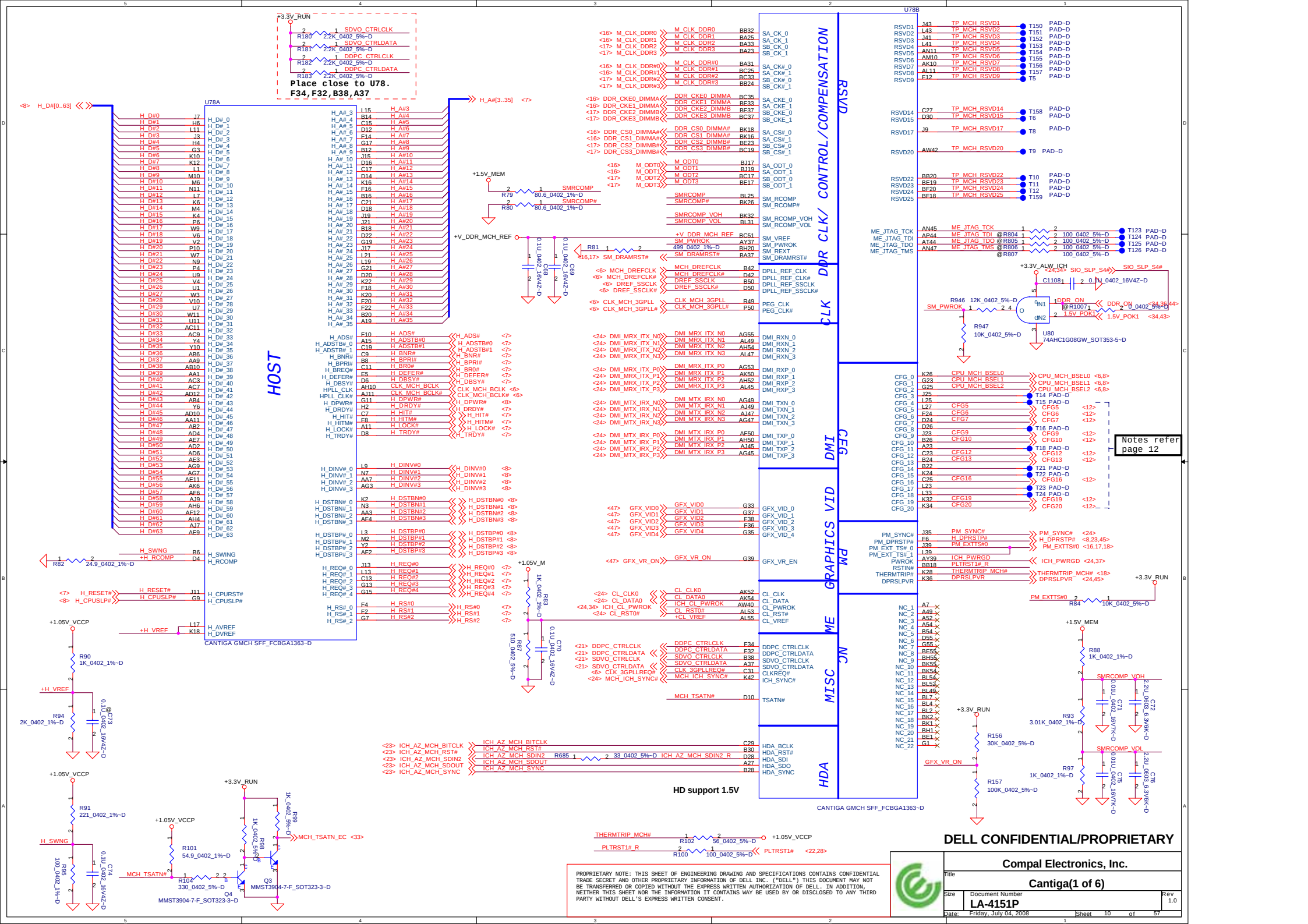
Date: Friday, July 04, 2008 | Sheet 9 of 57


+3.3V_RUN
SDVO_CTRLCLK
SDVO_CTRLDATA
DDPC_CTRLCLK
DDPC_CTRLDATA
2.2K_0402_5%~D
Place close to U78.
F34,F32,B38,A37
U78A
HOST
CANTIGA GMCH SFF_FCBGA1363~D
U78B
RSVD
DDR CLK/ CONTROL/COMPENSATION
CFG
DMI
GRAPHICS VID
PM
ME
MISC
HDA
CANTIGA GMCH SFF_FCBGA1363~D
Notes refer page 12
HD support 1.5V
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Cantiga(1 of 6)
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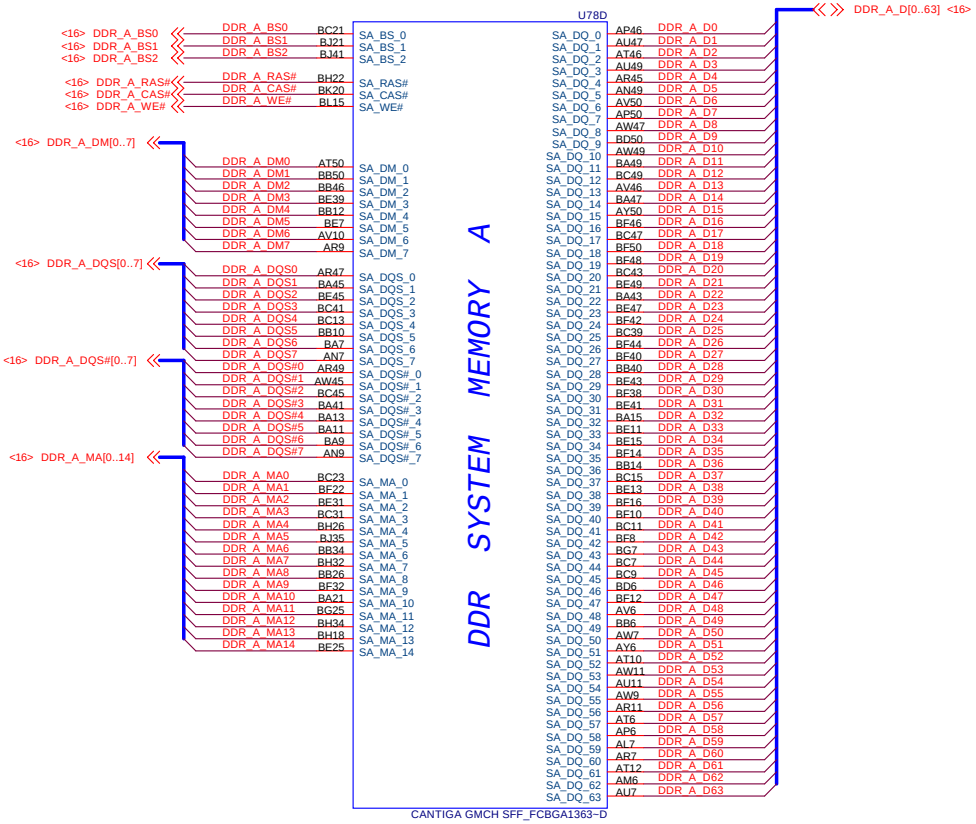

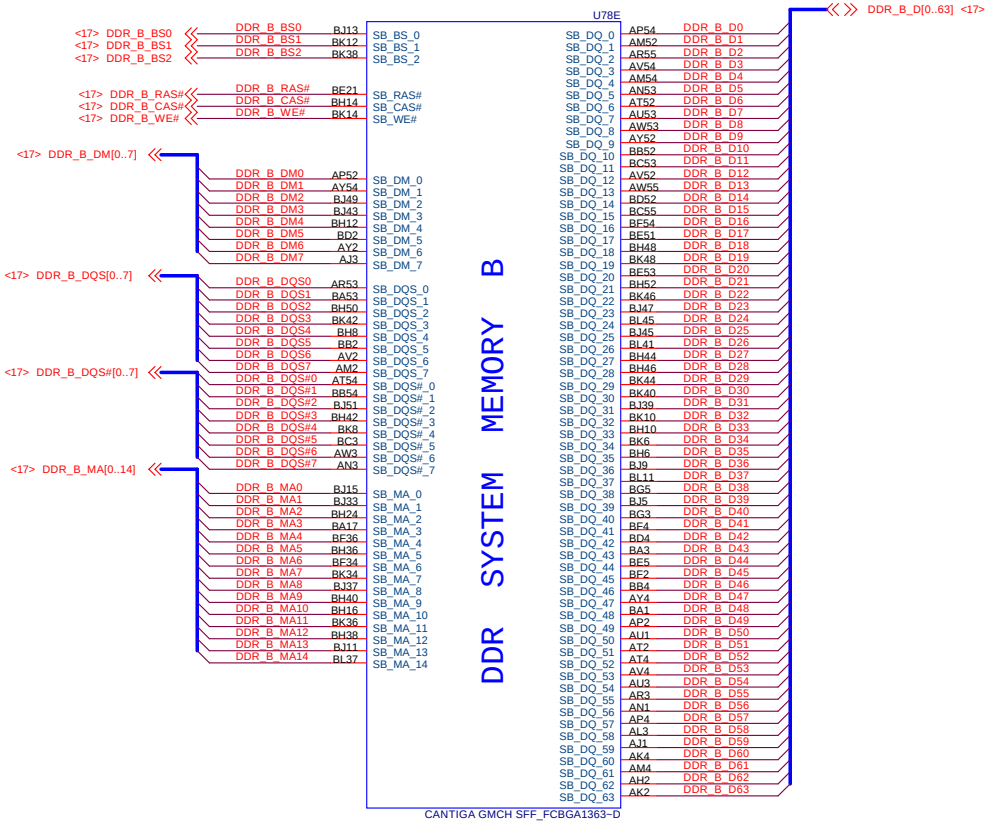

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Title: Cantiga(2 of 6)

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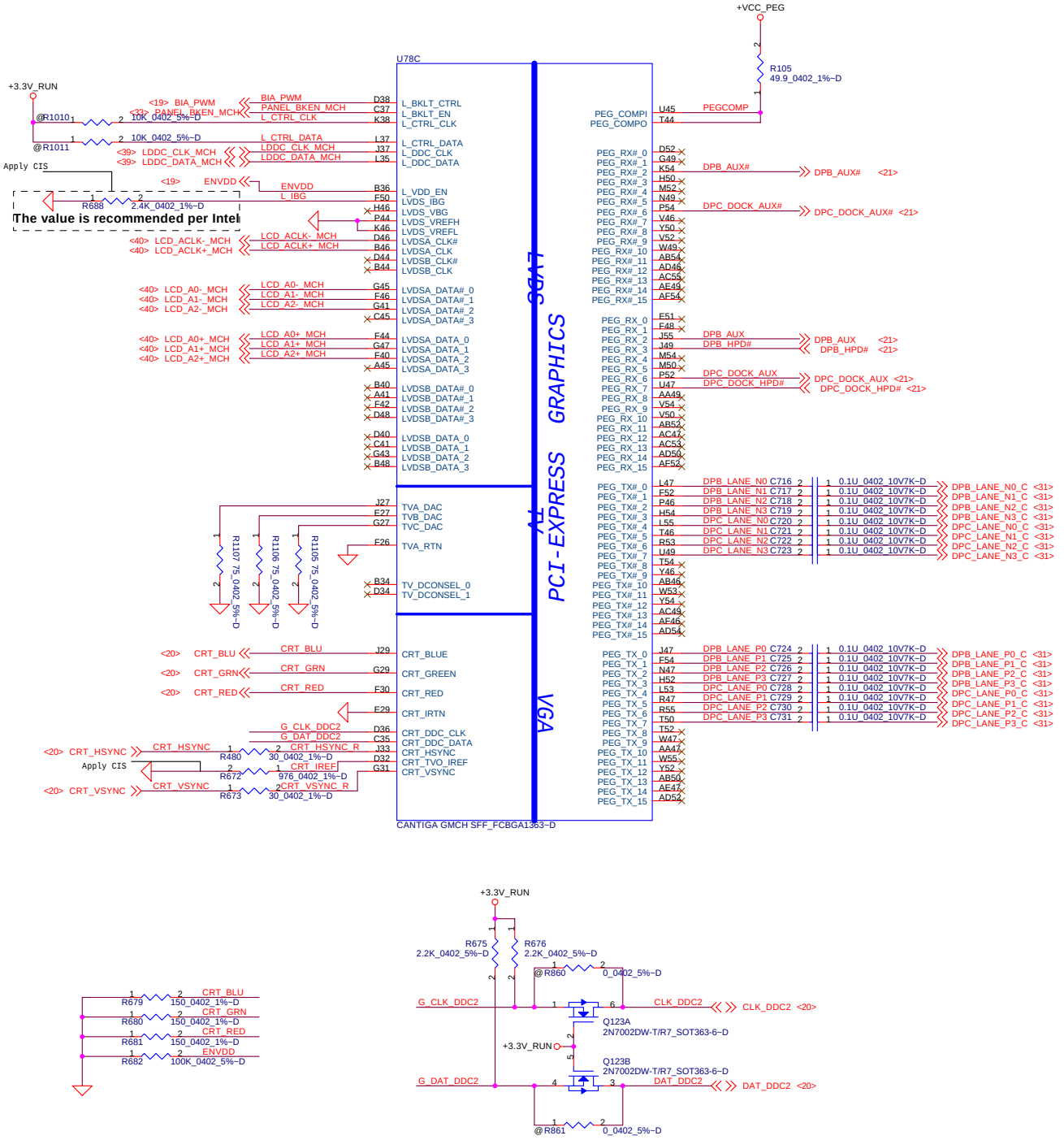

Strap Pin Table

CFG5	DMI X2 Select	Low = DMI x 2 High = DMI x 4 (Default)
CFG6	iTPM Host Interface	Low = iTPM enable High = iTPM disable(Default)
CFG7	Management Engine Crypto Strap	Low = TLS cipher suite with no confidentiality High = TLS cipher suite with confidentiality(Default)
CFG9	PCI Express Graphic Lane	Low = Reverse Lane High = Normal Operation(Default)
CFG16	FSB Dynamic ODT	Low=Dynamic ODT Disable High=Dynamic ODT Enable(default)
CFG19	DMI Lane Reversal	Low=Normal (default) High=Lane Reversed
CFG20	SDVO/PCIE Concurrent Operation	Low=Only SDVO or PCIEx1 is operational (default) High=SDVO and PCIEx1 are operating simultaneously via PEG port
SDVO_CRTL_DATA		Low=No SDVO Device Present (default) High=SDVO Device Present
DDPC_CTRLDATA		Low=DisplayPort disabled (default) High=DisplayPort device present

XOR/ALLZ/Clock Un-gating

CG13	CG12	configuration
0	0	Reserved
1	0	XOR Mode Enabled
0	1	All-Z Mode Enabled
1	1	Normal Operation(default)

CG10(PCIE Loopback enable)

Low= Enables
High= Disable(default)

CFG5 @R106 2.21K_0402_1%~D
CFG6 @R107 2.21K_0402_1%~D
CFG7 @R108 2.21K_0402_1%~D
CFG9 @R109 2.21K_0402_1%~D
CFG16 @R110 2.21K_0402_1%~D

CFG[5:16] have internal pullup

CFG10 @R979 2.21K_0402_1%~D
CFG12 @R980 2.21K_0402_1%~D
CFG13 @R981 2.21K_0402_1%~D

+3.3V_RUN

CFG19 @R111 4.02K_0402_1%~D
CFG20 @R112 4.02K_0402_1%~D

CFG[19:20] have internal pulldown

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Title: Cantiga(3 of 6)

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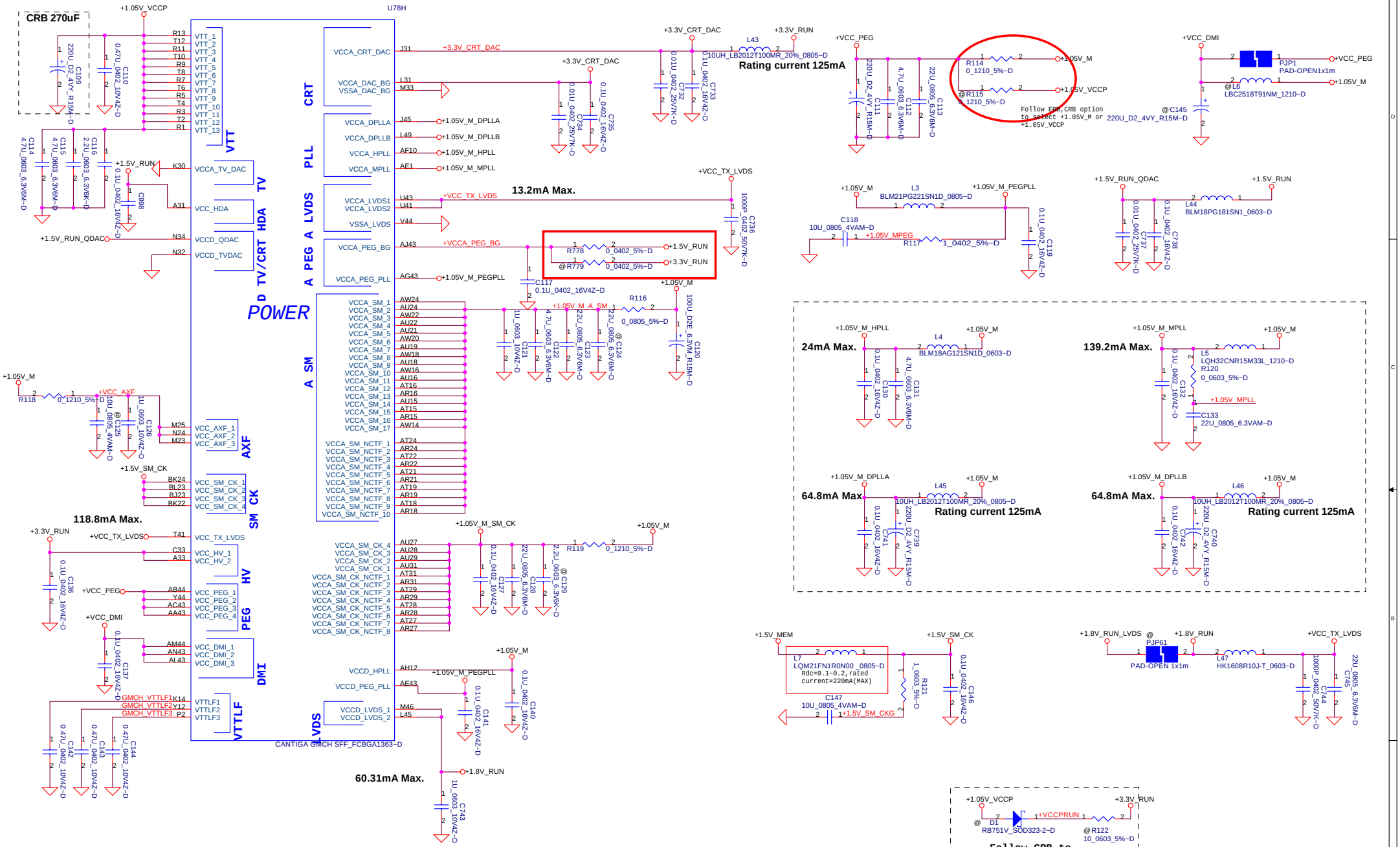

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Title	Cantiga(4 of 6)
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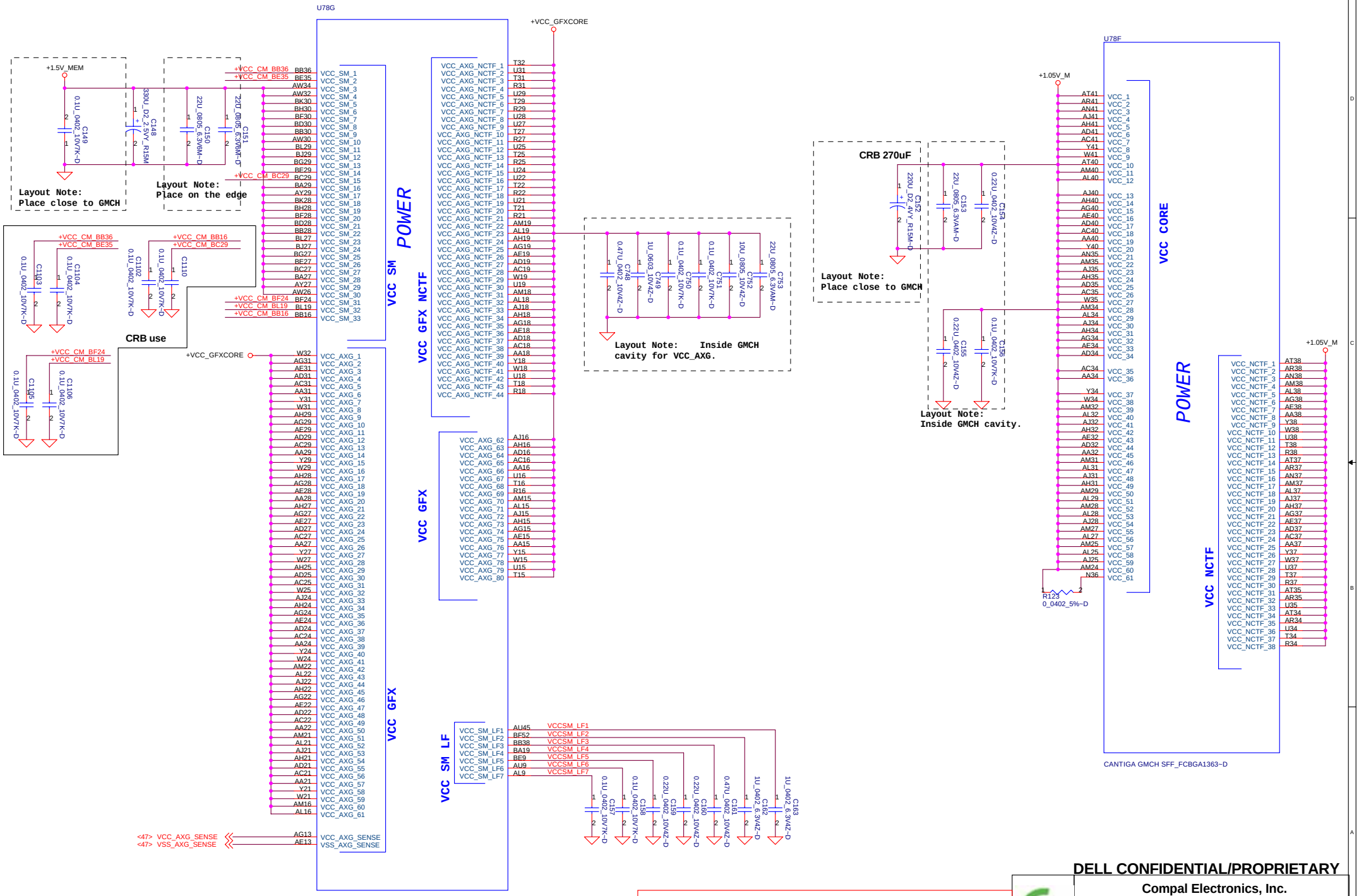

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Title: Cantiga(5 of 6)

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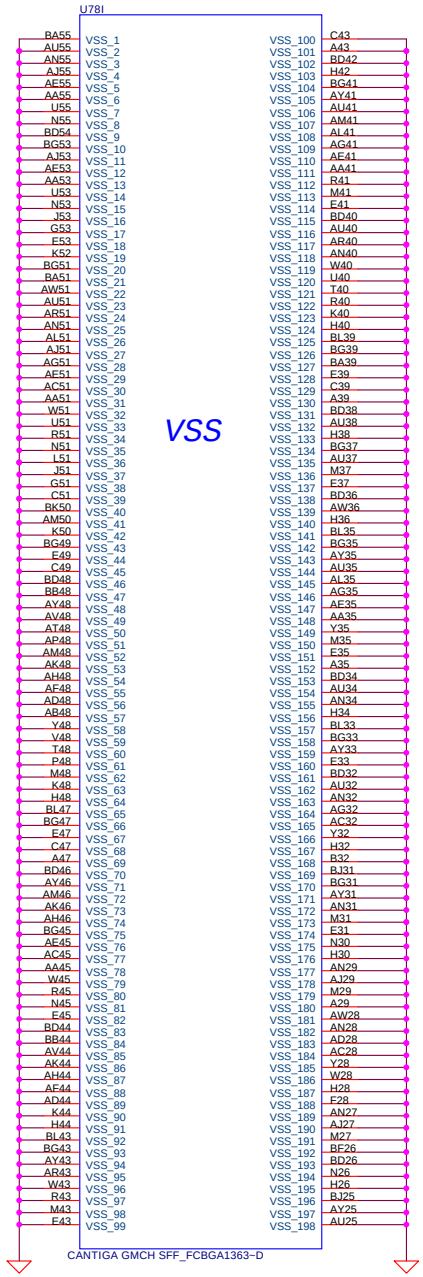

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Title	Cantiga(6 of 6)
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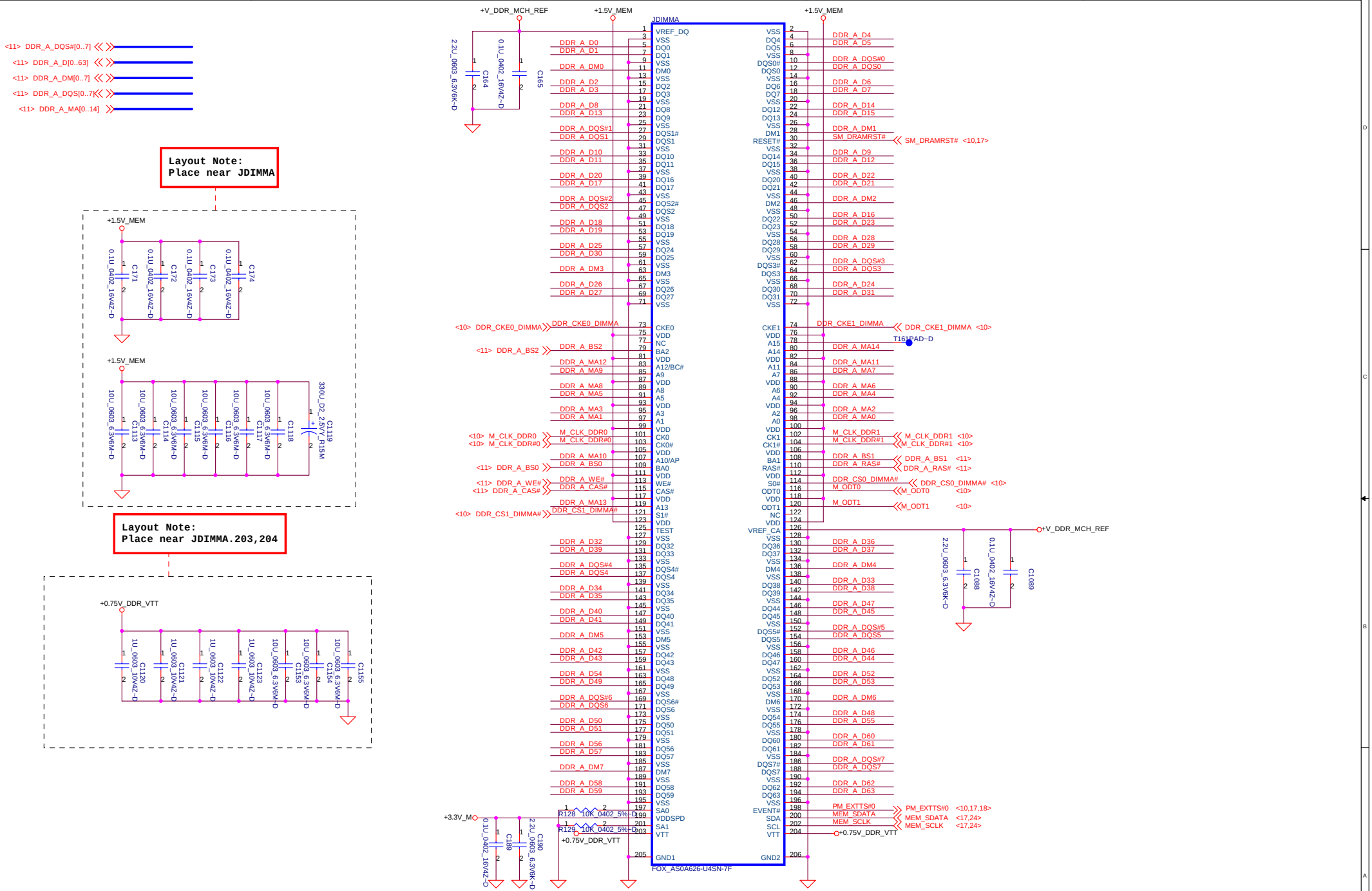
Date: Friday, July 04, 2008	Sheet 15 of 57



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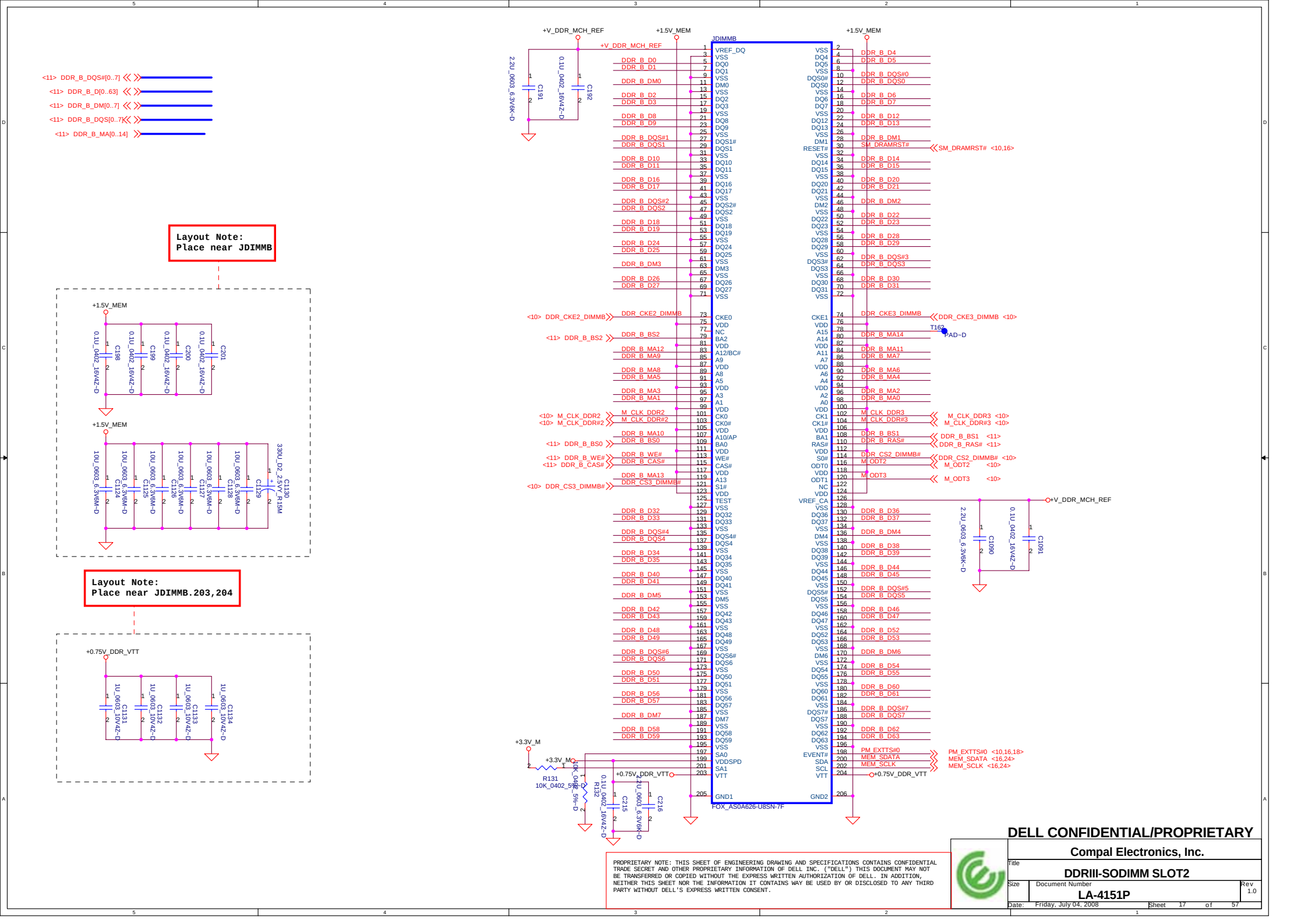
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Place near JDIMMB
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Place near JDIMMB.203,204
JDIMMB
FOX_AS0A626-U8SN-7F
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DDRIII-SODIMM SLOT2
LA-4151P
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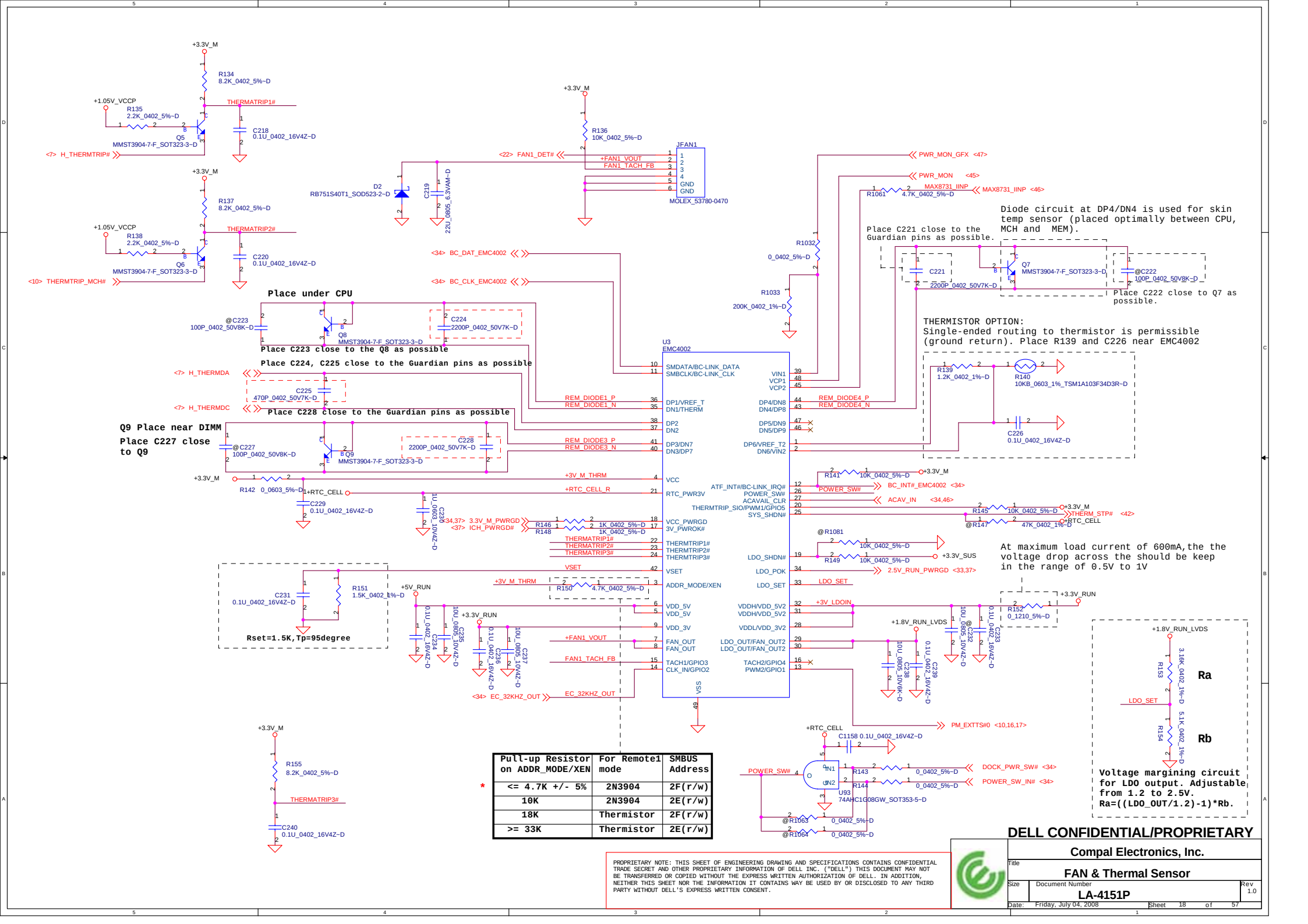

Pull-up Resistor on ADDR_MODE/XEN	For Remote1 mode	SMBUS Address
<= 4.7K +/- 5%	2N3904	2F(r/w)
10K	2N3904	2E(r/w)
18K	Thermistor	2F(r/w)
>= 33K	Thermistor	2E(r/w)

*

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Compal Electronics, Inc.

Title: FAN & Thermal Sensor

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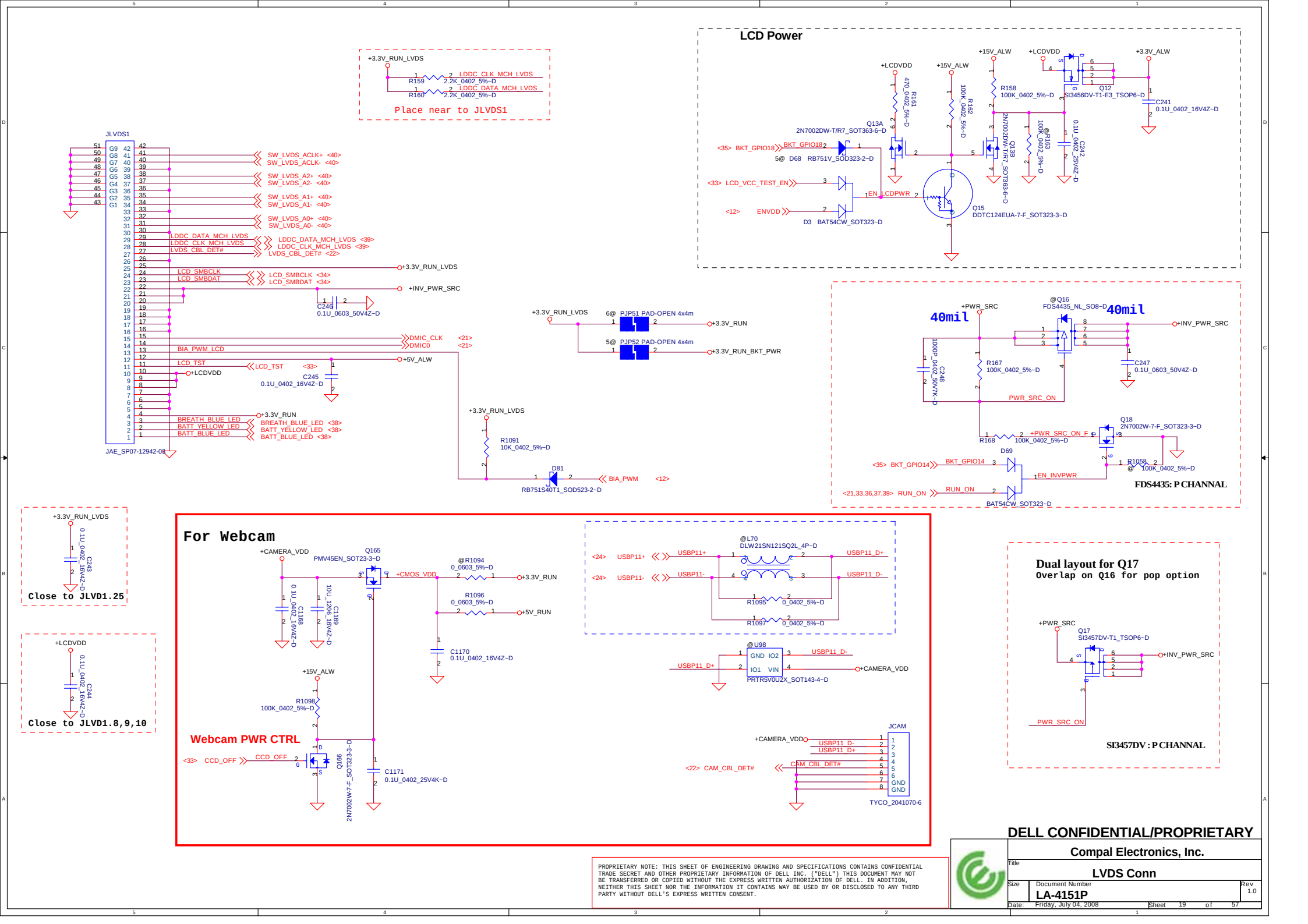
LCD Power
+3.3V_RUN_LVDS
R159 2.2K_0402_5%~D
R160 2.2K_0402_5%~D
LDDC_CLK_MCH_LVDS
LDDC_DATA_MCH_LVDS
Place near to JLVDS1
JLVDS1
JAE_SP07-12942-08
SW_LVDS_ACLK+ <40>
SW_LVDS_ACLK- <40>
SW_LVDS_A2+ <40>
SW_LVDS_A2- <40>
SW_LVDS_A1+ <40>
SW_LVDS_A1- <40>
SW_LVDS_A0+ <40>
SW_LVDS_A0- <40>
LDDC_DATA_MCH_LVDS <39>
LDDC_CLK_MCH_LVDS <39>
LVDS_CBL_DET# <22>
LCD_SMBCLK
LCD_SMBDAT
LCD_SMBCLK <34>
LCD_SMBDAT <34>
+3.3V_RUN_LVDS
+INV_PWR_SRC
C246 0.1U_0603_50V4Z~D
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DMIC0 <21>
BIA_PWM_LCD
+5V_ALW
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BATT_YELLOW_LED
BATT_BLUE_LED
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BATT_YELLOW_LED <38>
BATT_BLUE_LED <38>
+3.3V_RUN
+3.3V_RUN_LVDS
6@ PJP51 PAD-OPEN 4x4m
5@ PJP52 PAD-OPEN 4x4m
+3.3V_RUN
+3.3V_RUN_BKT_PWR
R1091 10K_0402_5%~D
D81
RB751S40T1_SOD523-2~D
BIA_PWM <12>
+LCDVDD
+15V_ALW
R161 470_0402_5%~D
R162 100K_0402_5%~D
Q13A 2N7002DW-T/R7_SOT363-6~D
<35> BKT_GPIO18
BKT_GPIO18
5@ D68 RB751V_SOD323-2~D
<33> LCD_VCC_TEST_EN
EN_LCDPWR
<12> ENVDD
D3 BAT54CW_SOT323~D
Q15 DDTC124EUA-7-F_SOT323-3~D
Q13B 2N7002DW-T/R7_SOT363-6~D
R158 100K_0402_5%~D
@R163 100K_0402_5%~D
C242 0.1U_0402_25V4Z~D
Q12 SI3456DV-T1-E3_TSOP6~D
C241 0.1U_0402_16V4Z~D
+3.3V_ALW
+PWR_SRC
@Q16 FDS4435_NL_SO8~D
40mil
40mil
+INV_PWR_SRC
C248 1000P_0402_50V7K~D
R167 100K_0402_5%~D
C247 0.1U_0603_50V4Z~D
PWR_SRC_ON
Q18 2N7002W-7-F_SOT323-3~D
R168 100K_0402_5%~D
+PWR_SRC_ON_F
D69
<35> BKT_GPIO14
BKT_GPIO14
EN_INVPWR
@R1058 100K_0402_5%~D
<21,33,36,37,39> RUN_ON
RUN_ON
BAT54CW_SOT323~D
FDS4435: P CHANNAL
+3.3V_RUN_LVDS
C243 0.1U_0402_16V4Z~D
Close to JLVD1.25
+LCDVDD
C244 0.1U_0402_16V4Z~D
Close to JLVD1.8,9,10
For Webcam
+CAMERA_VDD
Q165 PMV45EN_SOT23-3~D
+CMOS_VDD
@R1094 0_0603_5%~D
+3.3V_RUN
R1096 0_0603_5%~D
+5V_RUN
C1168 0.1U_0402_16V4Z~D
C1169 10U_1206_16V4Z~D
C1170 0.1U_0402_16V4Z~D
+15V_ALW
R1098 100K_0402_5%~D
Webcam PWR CTRL
<33> CCD_OFF
CCD_OFF
Q16 2N7002W-7-F_SOT323-3~D
C1171 0.1U_0402_25V4K~D
<24> USBP11+
USBP11-
@L70 DLW21SN121SQ2L_4P~D
USBP11_D+
USBP11_D-
R1095 0_0402_5%~D
R1097 0_0402_5%~D
@U98
GND IO2
IO1 VIN
PRTR5V0U2X_SOT143-4~D
+CAMERA_VDD
JCAM
<22> CAM_CBL_DET#
CAM_CBL_DET#
GND
TYCO_2041070-6
Dual layout for Q17
Overlap on Q16 for pop option
+PWR_SRC
Q17 SI3457DV-T1_TSOP6~D
+INV_PWR_SRC
PWR_SRC_ON
SI3457DV : P CHANNAL
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Compal Electronics, Inc.
Title
LVDS Conn
Size
Document Number
LA-4151P
Rev 1.0
Date: Friday, July 04, 2008
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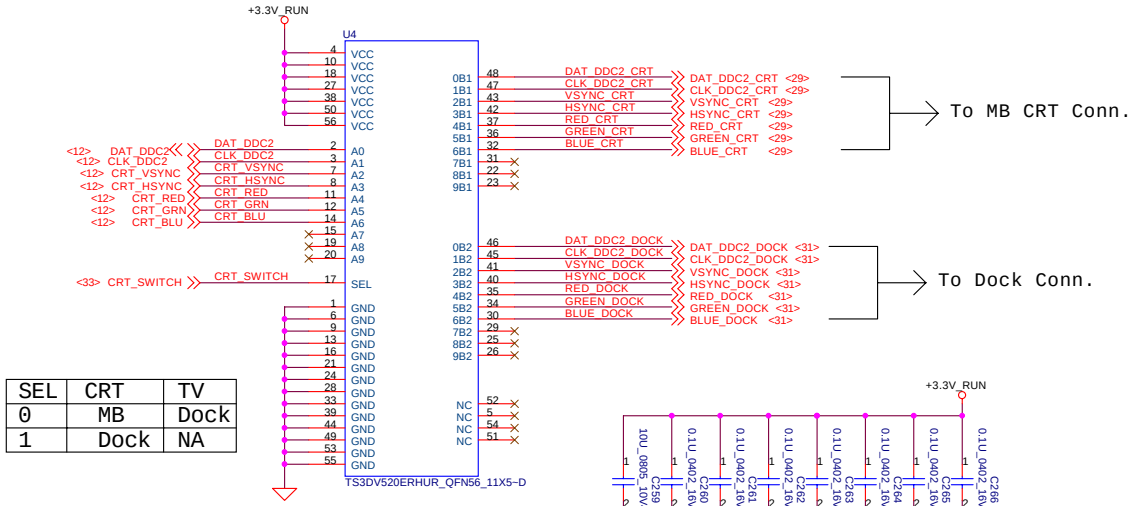

SEL	CRT	TV
0	MB	Dock
1	Dock	NA

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Compal Electronics, Inc.

Title: CRT/Video switch

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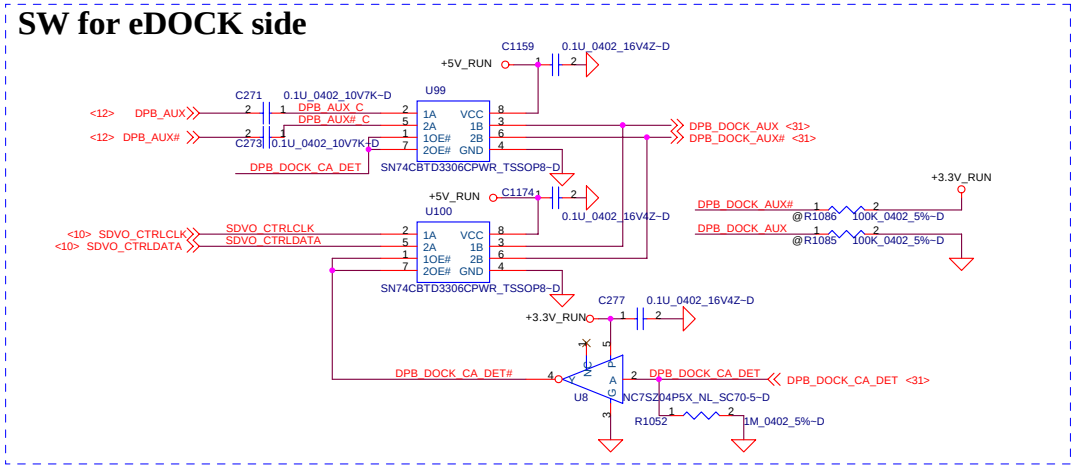
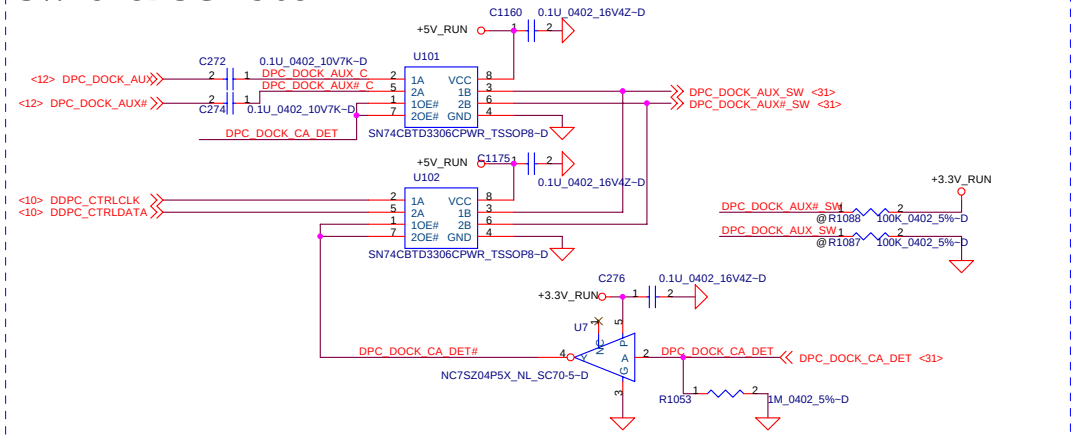
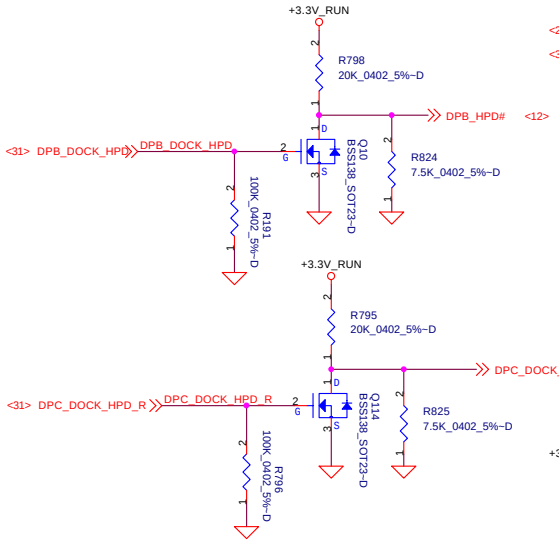
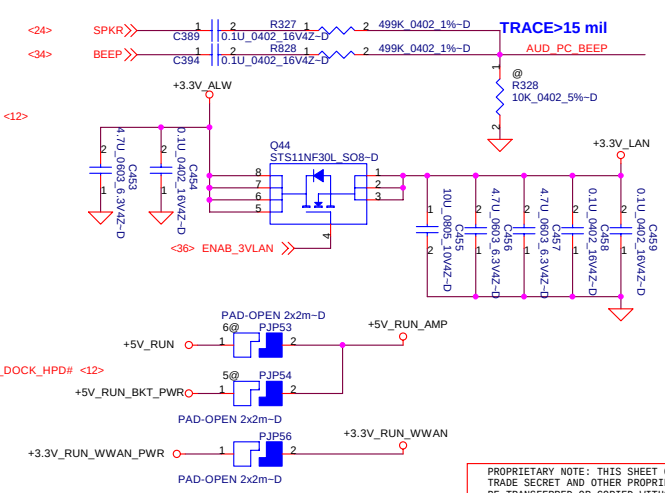
SW for eDOCK side

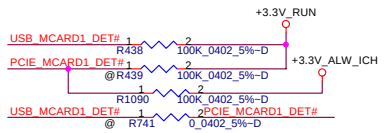


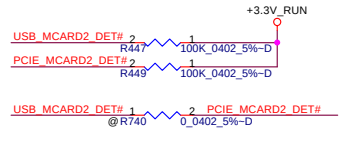
SW for eDOCK side

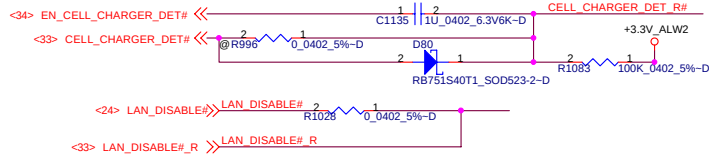












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Compal Electronics, Inc.

Title: Display port

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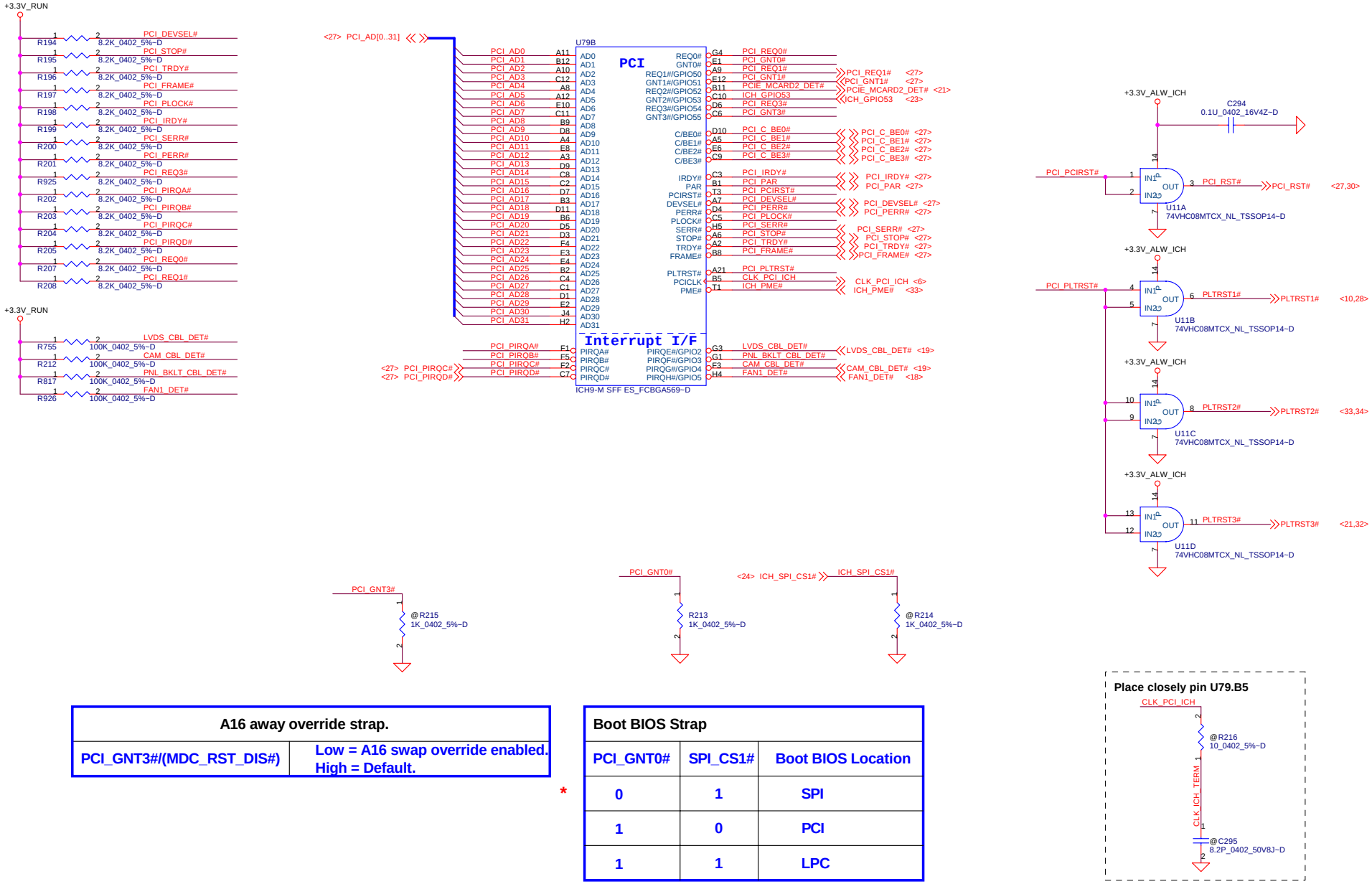

A16 away override strap.	
PCI_GNT3#/(MDC_RST_DIS#)	Low = A16 swap override enabled. High = Default.

*

Boot BIOS Strap		
PCI_GNT0#	SPI_CS1#	Boot BIOS Location
0	1	SPI
1	0	PCI
1	1	LPC

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Compal Electronics, Inc.

Title: ICH9-M(1/4)

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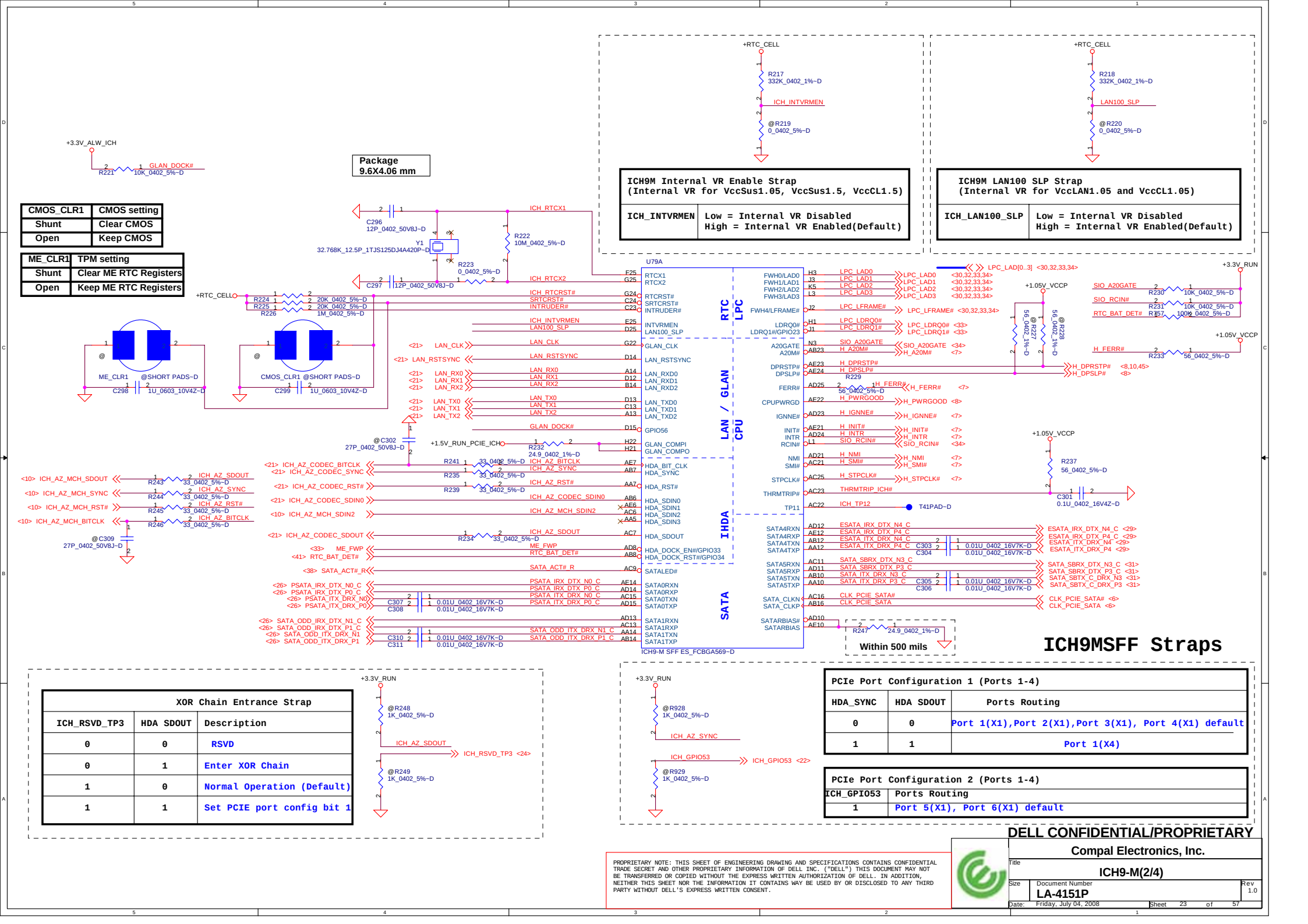
Package
9.6X4.06 mm
CMOS_CLR1 | CMOS setting
Shunt | Clear CMOS
Open | Keep CMOS
ME_CLR1 | TPM setting
Shunt | Clear ME RTC Registers
Open | Keep ME RTC Registers
ICH9M Internal VR Enable Strap
(Internal VR for VccSus1.05, VccSus1.5, VccCL1.5)
ICH_INTVRMEN | Low = Internal VR Disabled
High = Internal VR Enabled(Default)
ICH9M LAN100 SLP Strap
(Internal VR for VccLAN1.05 and VccCL1.05)
ICH_LAN100_SLP | Low = Internal VR Disabled
High = Internal VR Enabled(Default)
ICH9MSFF Straps
XOR Chain Entrance Strap
ICH_RSVD_TP3 | HDA SDOUT | Description
0 | 0 | RSVD
0 | 1 | Enter XOR Chain
1 | 0 | Normal Operation (Default)
1 | 1 | Set PCIE port config bit 1
PCIe Port Configuration 1 (Ports 1-4)
HDA_SYNC | HDA SDOUT | Ports Routing
0 | 0 | Port 1(X1),Port 2(X1),Port 3(X1), Port 4(X1) default
1 | 1 | Port 1(X4)
PCIe Port Configuration 2 (Ports 1-4)
ICH_GPIO53 | Ports Routing
1 | Port 5(X1), Port 6(X1) default
U79A
RTC
LPC
LAN / GLAN
CPU
IHDA
SATA
ICH9-M SFF ES_FCBGA569~D
Within 500 mils
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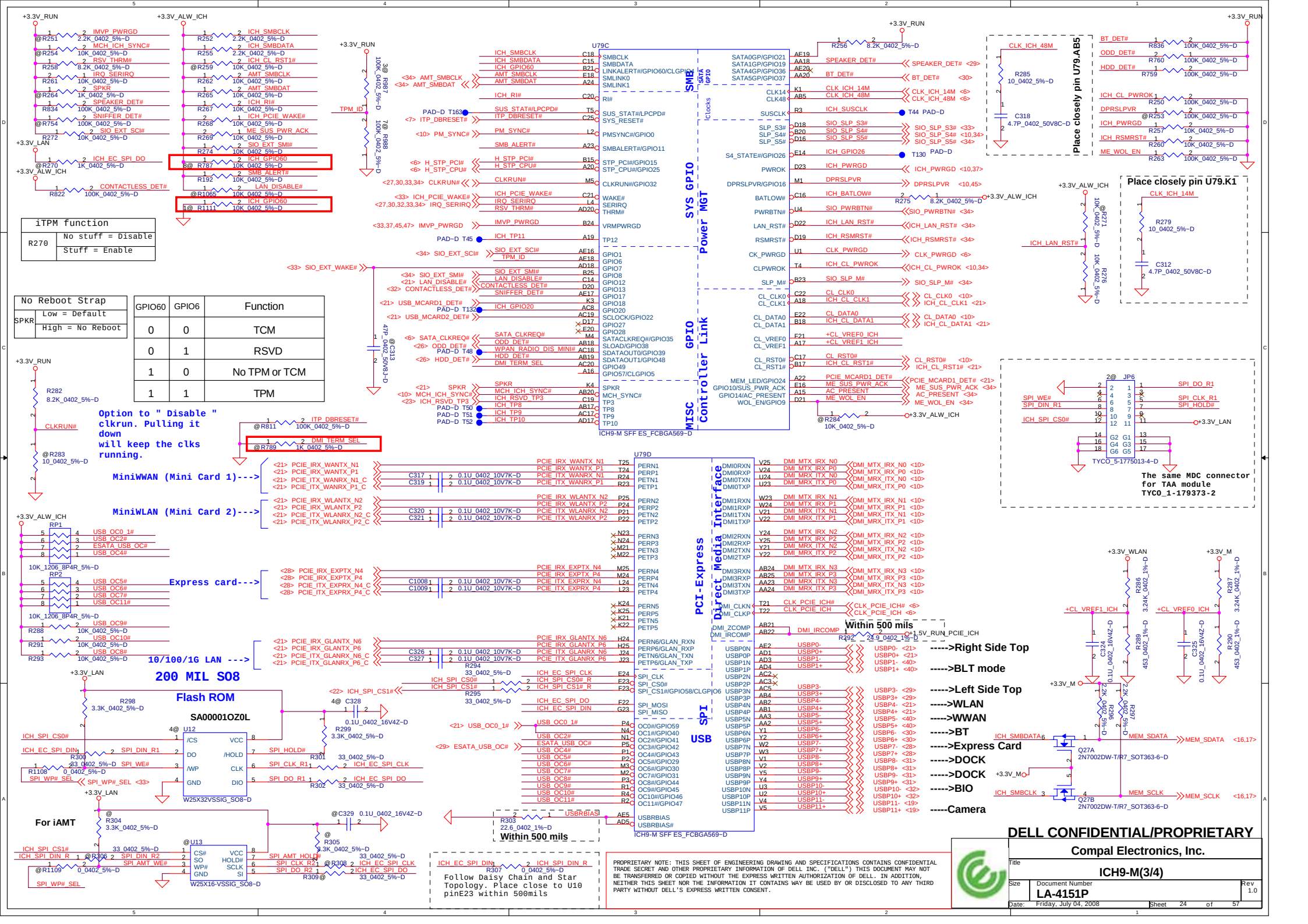
iTPM function
R270
No stuff = Disable
Stuff = Enable
No Reboot Strap
SPKR
Low = Default
High = No Reboot
GPIO60 GPIO6 Function
0 0 TCM
0 1 RSVD
1 0 No TPM or TCM
1 1 TPM
Option to " Disable " clkrun. Pulling it down will keep the clks running.
MiniWWAN (Mini Card 1)--->
MiniWLAN (Mini Card 2)--->
Express card--->
10/100/1G LAN --->
200 MIL SO8
Flash ROM
SA00001OZ0L
For iAMT
U79C
U79D
ICH9-M SFF ES_FCBGA569~D
SYS GPIO
Power MGT
GPIO
Controller Link
MISC
PCI-Express
Direct Media Interface
SPI
USB
Place closely pin U79.ABS
Place closely pin U79.K1
JP6
TYCO_5-1775013-4~D
The same MDC connector for TAA module TYCO_1-179373-2
Within 500 mils
Follow Daisy Chain and Star Topology. Place close to U10 pinE23 within 500mils
----->Right Side Top
----->BLT mode
----->Left Side Top
----->WLAN
----->WWAN
----->BT
----->Express Card
----->DOCK
----->DOCK
----->BIO
----->Camera
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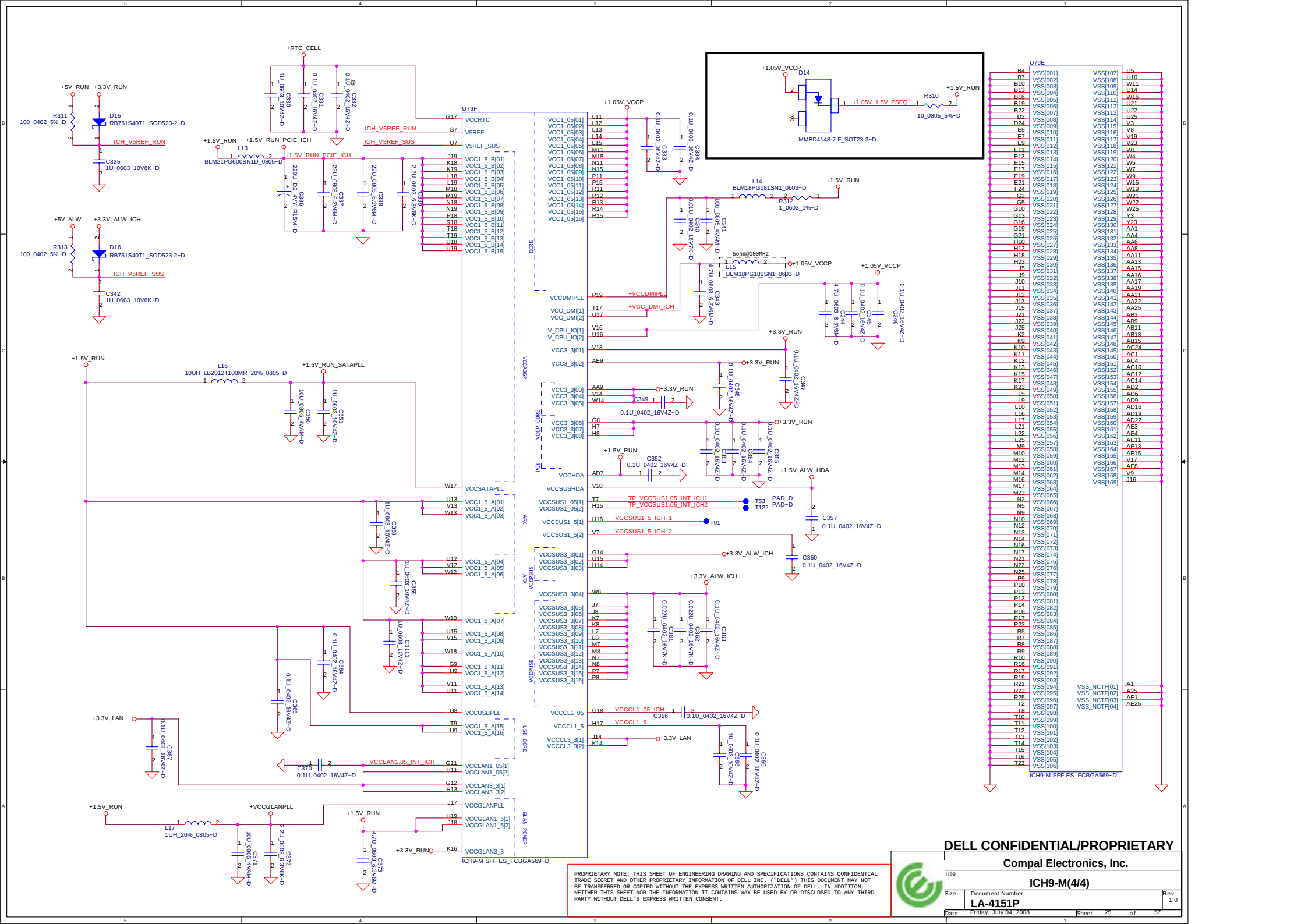
+RTC_CELL
+5V_RUN
+3.3V_RUN
+5V_ALW
+3.3V_ALW_ICH
+1.5V_RUN
+1.5V_RUN_PCIE_ICH
+1.5V_RUN_SATAPLL
+1.05V_VCCP
+1.05V_VCCP
+1.5V_ALW_HDA
+3.3V_LAN
+VCCGLANPLL
ICH_V5REF_RUN
ICH_V5REF_SUS
VCCLAN1.05_INT_ICH
VCCCL1_05_ICH
VCCCL1_5
TP_VCCSUS1.05_INT_ICH1
TP_VCCSUS1.05_INT_ICH2
VCCSUS1_5_ICH_1
VCCSUS1_5_ICH_2
+VCCDMIPLL
+VCC_DMI_ICH
+1.05V_1.5V_PSEQ
MMBD4148-7-F_SOT23-3~D
U79F
ICH9-M SFF ES_FCBGA569~D
U79E
ICH9-M SFF ES_FCBGA569~D
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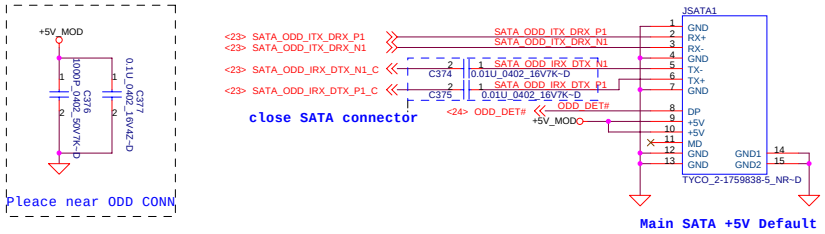
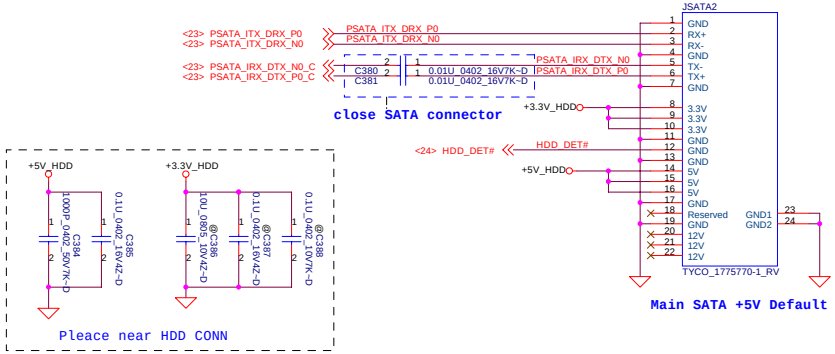
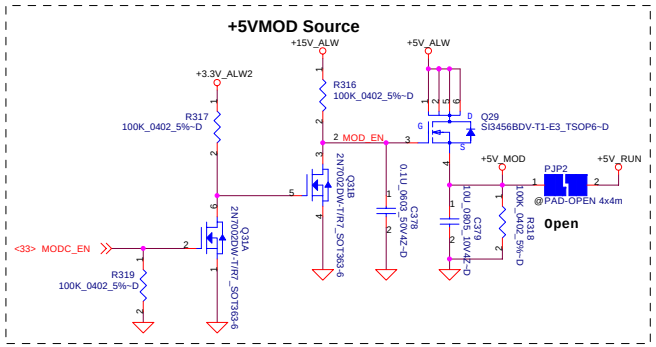
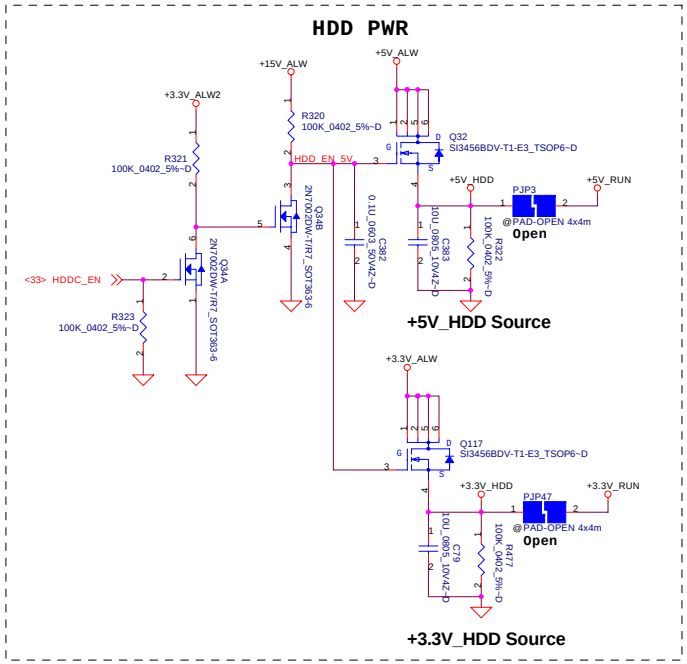
For ODD



For HDD







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Compal Electronics, Inc.

Title	ODD/HDD CONNECTOR	
Size	Document Number: LA-4151P	Rev: 1.0
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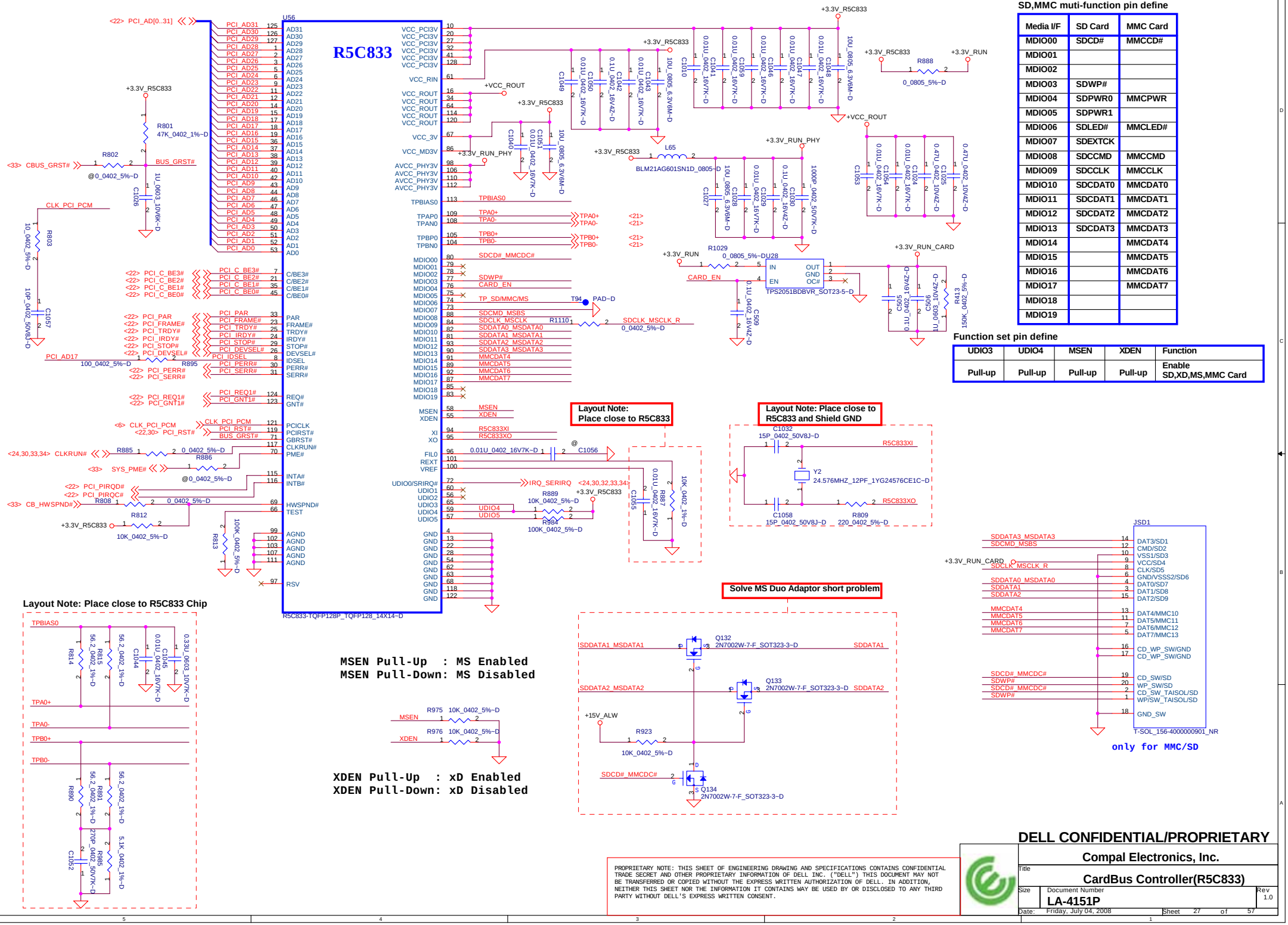

SD,MMC muti-function pin define

Media I/F	SD Card	MMC Card
MDIO00	SDCD#	MMCCD#
MDIO01		
MDIO02		
MDIO03	SDWP#	
MDIO04	SDPWR0	MMCPWR
MDIO05	SDPWR1	
MDIO06	SDLED#	MMCLED#
MDIO07	SDEXTCK	
MDIO08	SDCCMD	MMCCMD
MDIO09	SDCCLK	MMCCLK
MDIO10	SDCDAT0	MMCDAT0
MDIO11	SDCDAT1	MMCDAT1
MDIO12	SDCDAT2	MMCDAT2
MDIO13	SDCDAT3	MMCDAT3
MDIO14		MMCDAT4
MDIO15		MMCDAT5
MDIO16		MMCDAT6
MDIO17		MMCDAT7
MDIO18		
MDIO19		

Function set pin define

UDIO3	UDIO4	MSEN	XDEN	Function
Pull-up	Pull-up	Pull-up	Pull-up	Enable SD,XD,MS,MMC Card

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Compal Electronics, Inc.

Title: CardBus Controller(R5C833)

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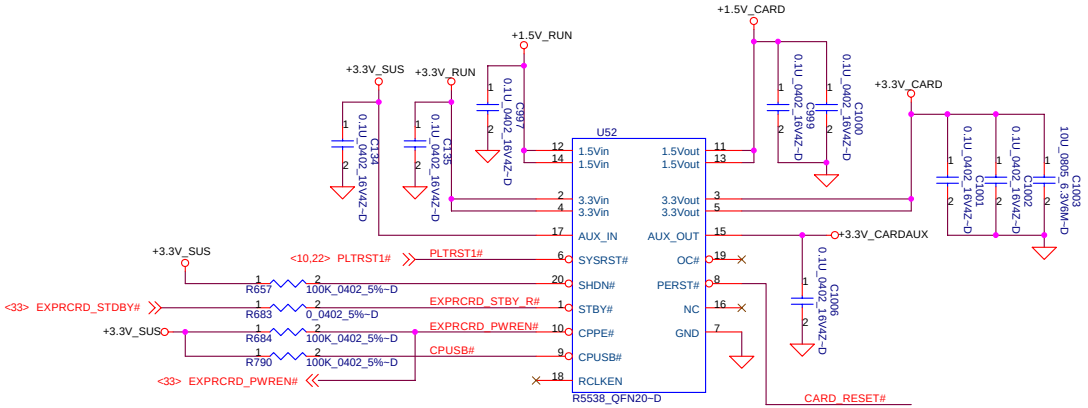
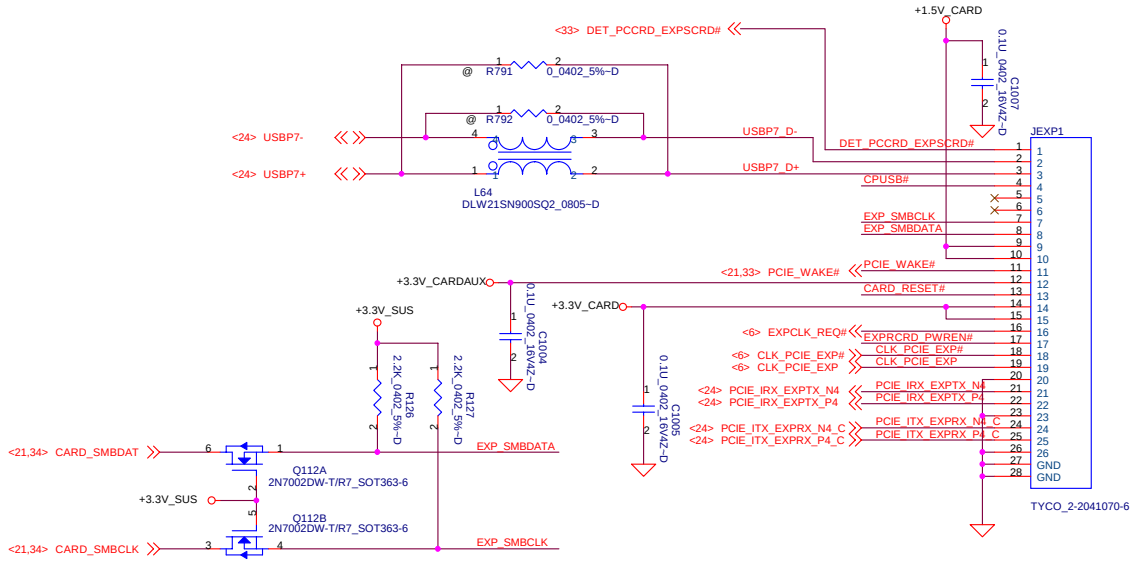


Express Card

+1.5V_CARD: Max. 650mA, Average 500mA
+3.3V_CARD: Max. 1300mA, Average 1000mA



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Compal Electronics, Inc.

Title: **CardBus/SD card Socket**

Size | Document Number: **LA-4151P** | Rev: 1.0

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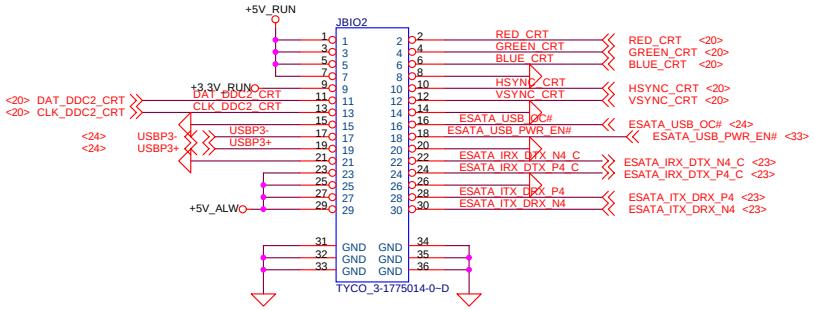
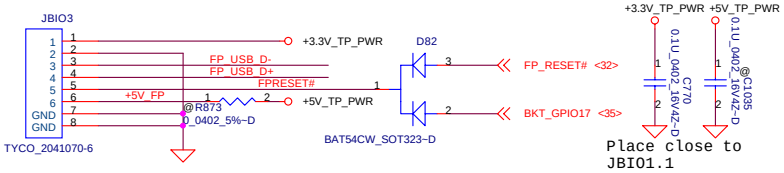
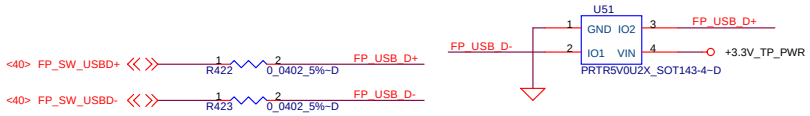
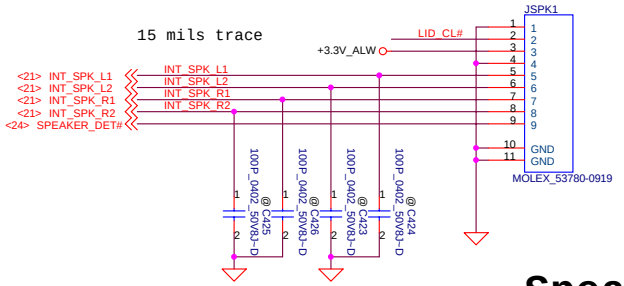
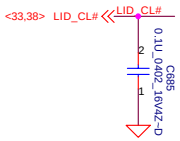
IO connector II











Speaker Connector

USB PORT#	DESTINATION
0	JUSB1 (Ext Right Side Top)
1	BLT mode
2	NC
3	JESATA1 (Ext Left Side Bottom)
4	WLAN
5	WWAN
6	BT
7	Card Bus/Express card
8	DOCKING
9	DOCKING
10	USH->BIO
11	Camera

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Title: FingerFrint

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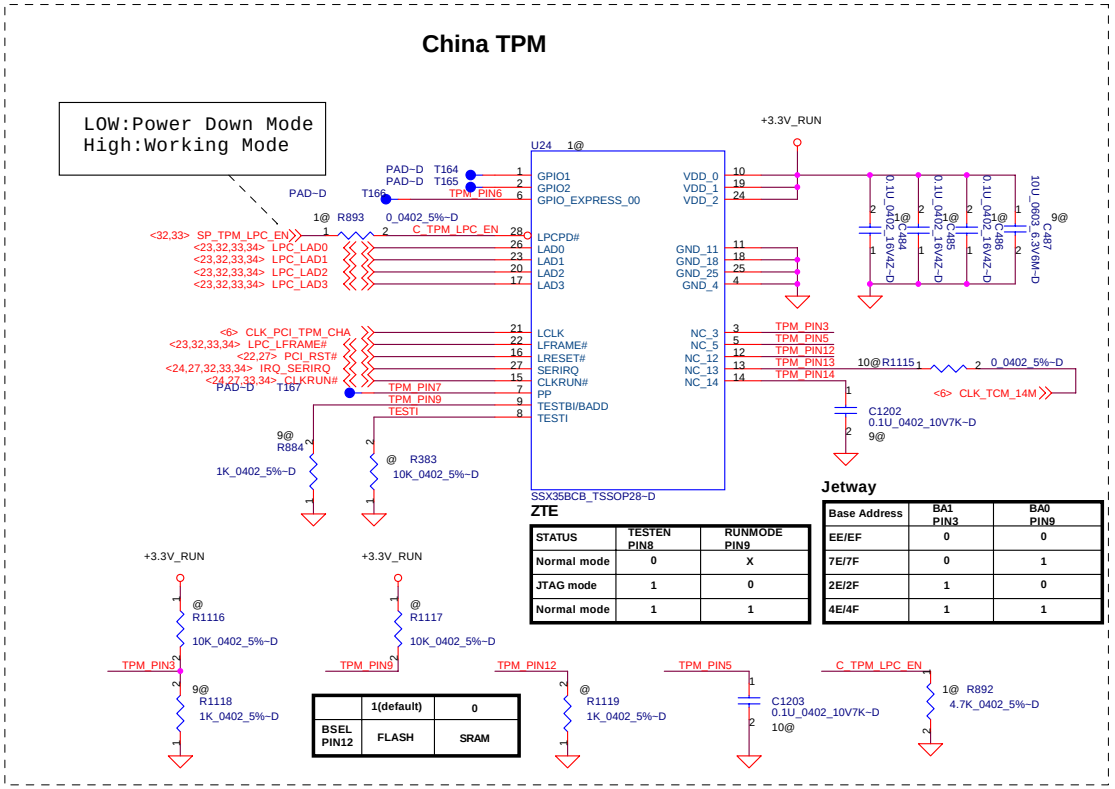
China TPM



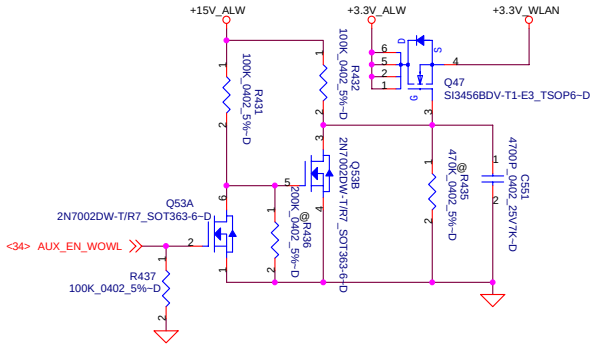
STATUS	TESTEN PIN8	RUNMODE PIN9
Normal mode	0	X
JTAG mode	1	0
Normal mode	1	1

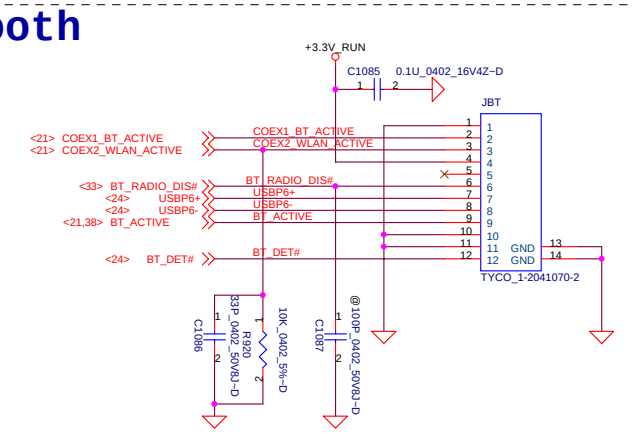
Base Address	BA1 PIN3	BA0 PIN9
EE/EF	0	0
7E/7F	0	1
2E/2F	1	0
4E/4F	1	1

Lola USH and China TPM BOM Option

DESCRIPTION	PART/PIN	Ref Des	A0 USH	B0 USH	A0 w/CHINA	B0 w/CHINA
Pull-up on LPC_EN_R	USH pin R6 LPCEN	R841	POP	@	POP	@
Pull-down on LPC_EN_R	USH pin R6 LPCEN	R483	@	POP	@	POP
Series from EC to LPC_EN_R	EC to USH Pin R6 LPCEN	3@ R464	@	POP	@	@
Series from EC to LPD#	EC to USH Pin P7 LPCPD_N	R466	@	@	@	@
Pull-up on LPD#	USH pin P7 LPCPD_N	R474	POP	POP	POP	POP
Pull-up on EC	SIO pin 105 OUT65	R788	@	@	@	@
Pull-down on China TPM	To China TPM U24 pin 28	1@ R892	@	@	POP	POP
Series from EC to China PD#	SIO to China Pin 28 LPCPD#	1@ R893	@	@	POP	POP
Broadcom USH	U32 USH	U32	POP	POP	POP	POP
China TPM	U24 China TPM	1@ U24	@	@	POP	POP
LPCBus Series Resistors	R705,R723,R724,R732,R733	3@	POP	POP	@	@
TPM_ID(Strap Low)	ICH9M GPIO6 Pin AH21	1@ R988	@	@	POP	POP
TPM_ID (Strap High)	ICH9M GPIO6 Pin AH21	3@ R987	POP	POP	@	@

1@ is for TCM
3@ is for Broadcom TPM only
9@ is for ZTE TCM
10@ is for Jetway TCM





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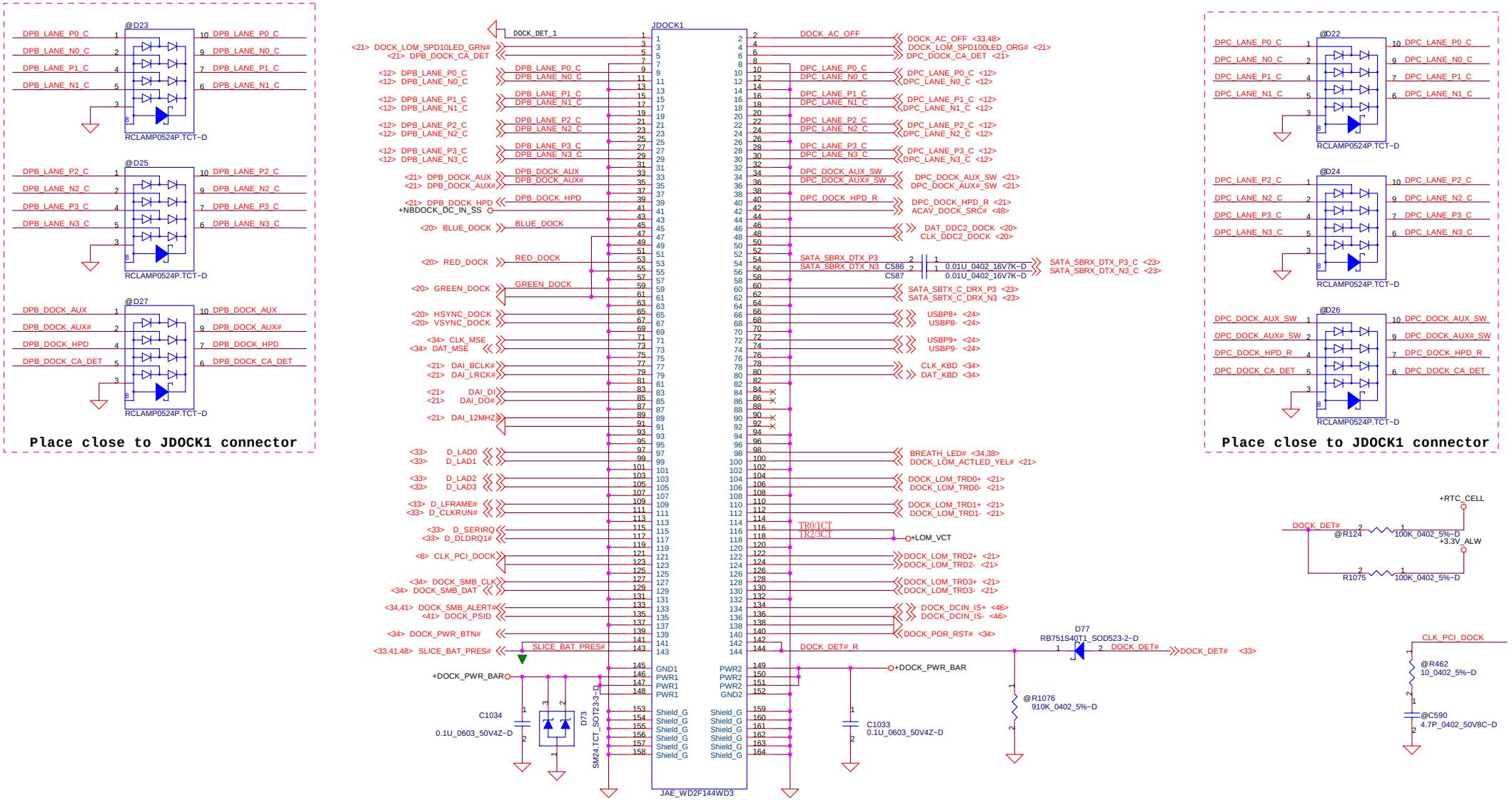
Compal Electronics, Inc.

Title: Blue Tooth

Size | Document Number: LA-4151P | Rev: 1.0

Date: Friday, July 04, 2008 | Sheet 30 of 57



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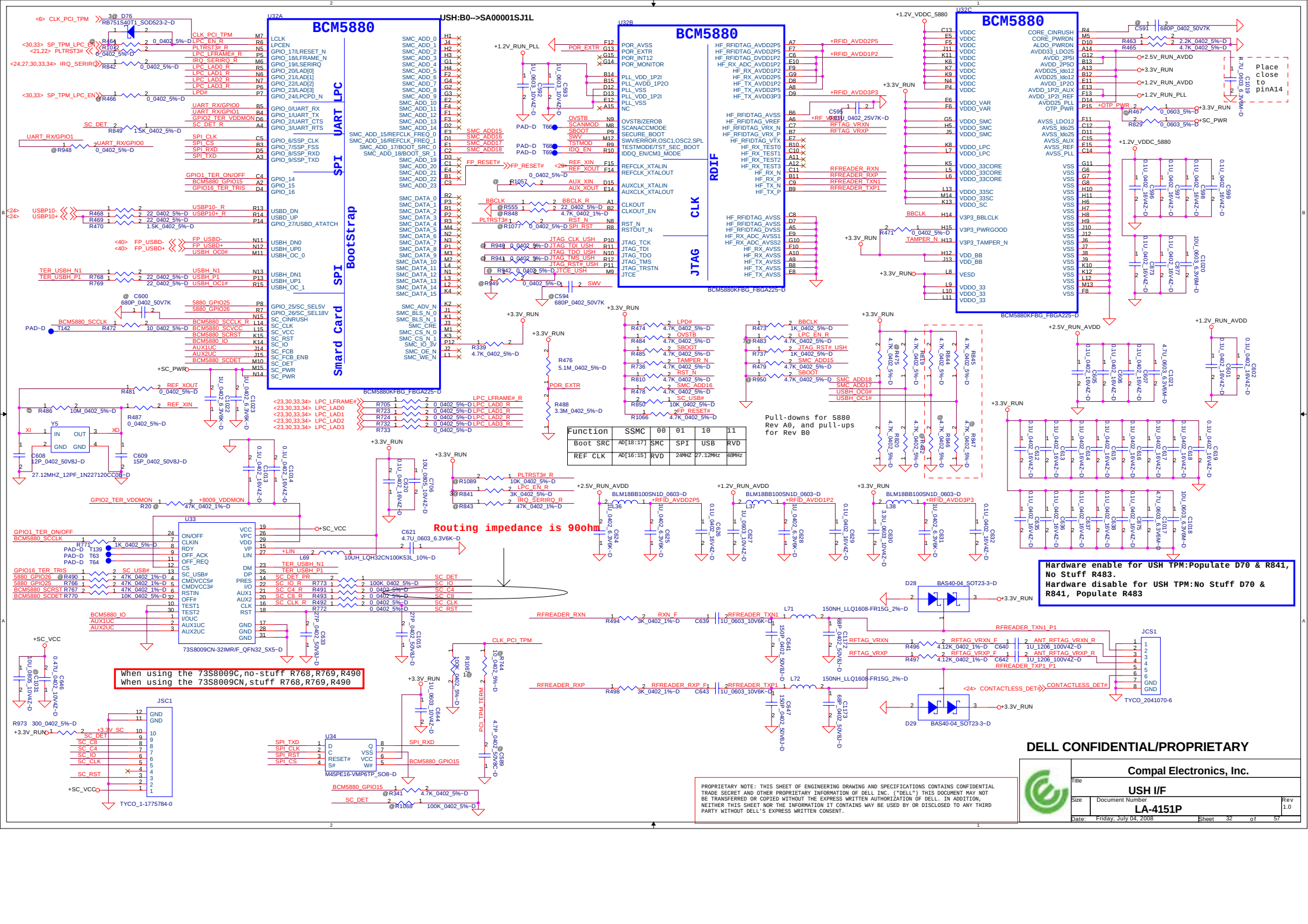
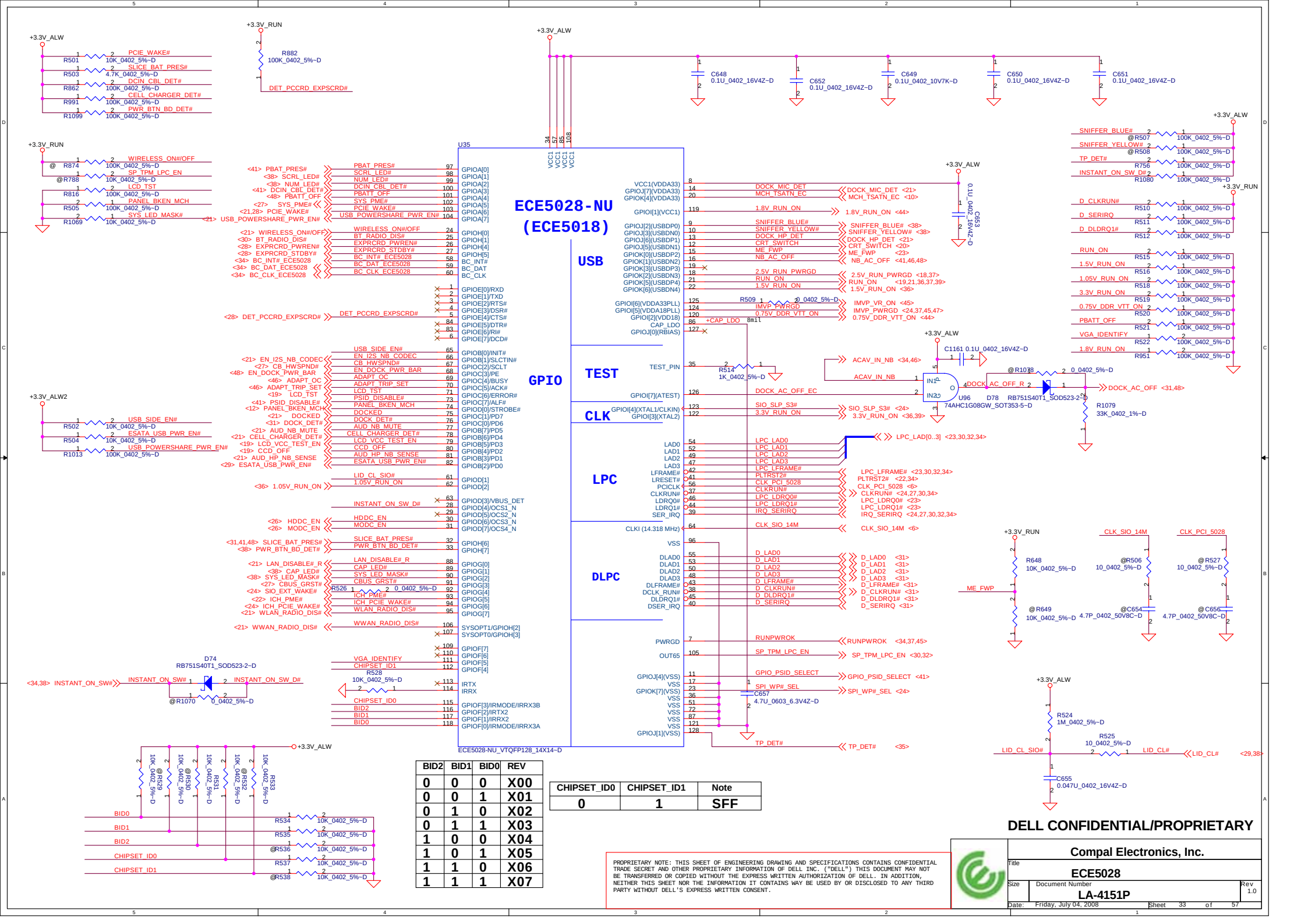
Compal Electronics, Inc.

Title: DOCKING CONN

Size: | Document Number: LA-4151P | Rev: 1.0

Date: Friday, July 04, 2008 | Sheet 31 of 57


BCM5880
U32A
U32B
U32C
USH:B0-->SA00001SJ1L
LPC
UART
SPI
BootStrap
Smard Card
SPI
RDIF
CLK
JTAG
Routing impedance is 90ohm
When using the 73S8009C,no-stuff R768,R769,R490
When using the 73S8009CN,stuff R768,R769,R490
Hardware enable for USH TPM:Populate D70 & R841, No Stuff R483.
Hardware disable for USH TPM:No Stuff D70 & R841, Populate R483
Pull-downs for 5880 Rev A0, and pull-ups for Rev B0
Function | SSMC | 00 | 01 | 10 | 11
Boot SRC | AD[18:17] | SMC | SPI | USB | RVD
REF CLK | AD[16:15] | RVD | 24MHz | 27.12MHz | 48MHz
DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.
USH I/F
LA-4151P
Friday, July 04, 2008



BID2	BID1	BID0	REV
0	0	0	X00
0	0	1	X01
0	1	0	X02
0	1	1	X03
1	0	0	X04
1	0	1	X05
1	1	0	X06
1	1	1	X07

CHIPSET_ID0	CHIPSET_ID1	Note
0	1	SFF

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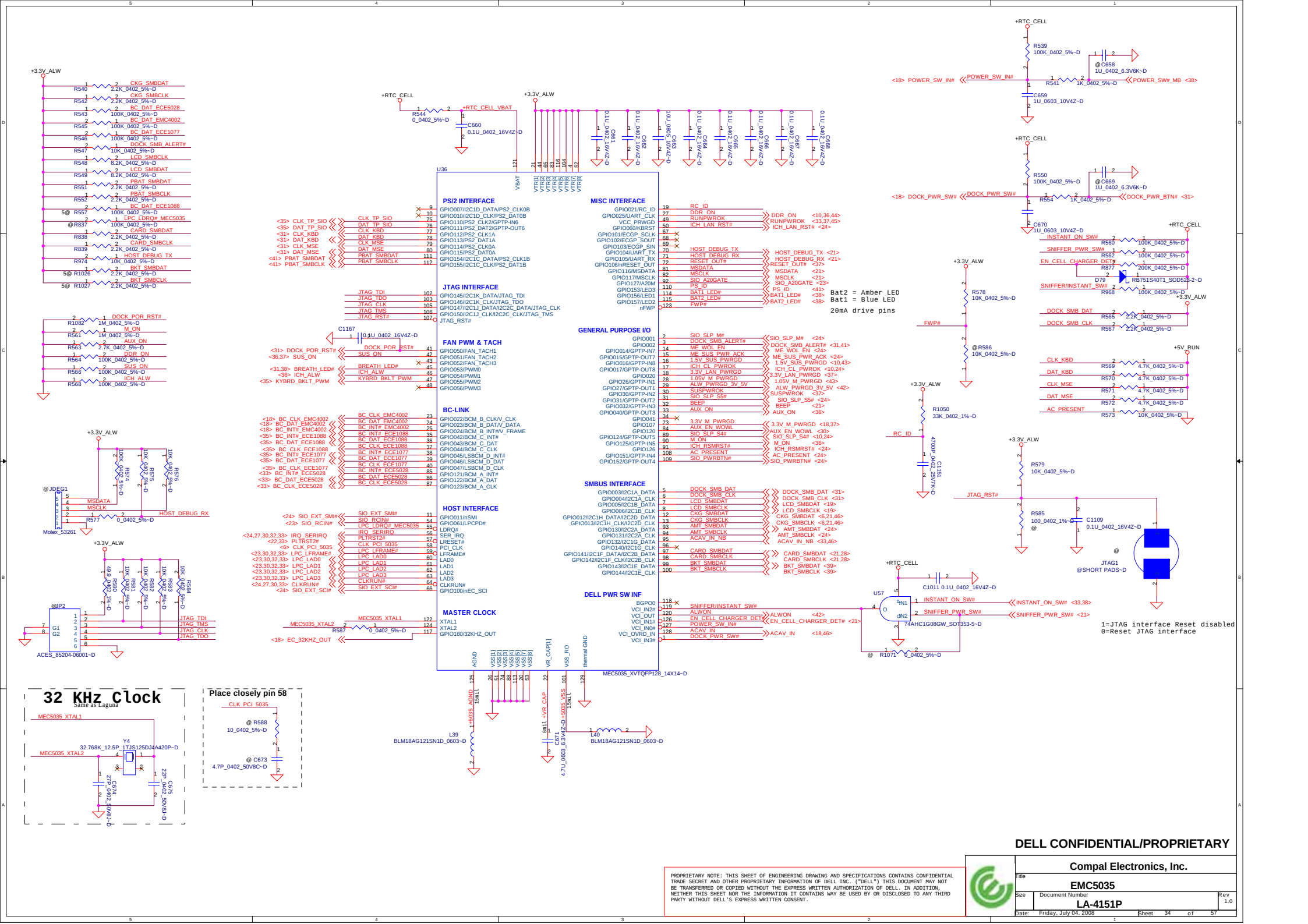
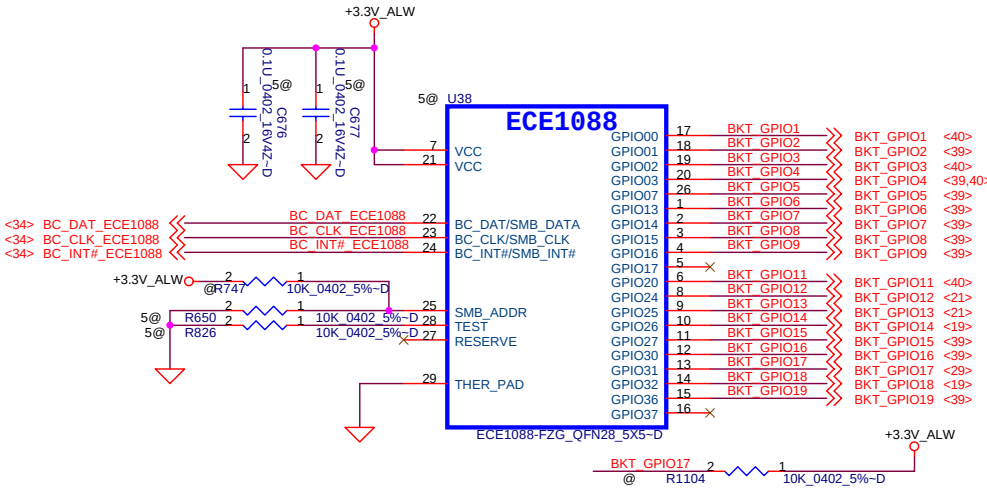
Compal Electronics, Inc.

Title: ECE5028

Size: Document Number: LA-4151P Rev: 1.0

Date: Friday, July 04, 2008 Sheet 33 of 57


U36
MEC5035_XVTQFP128_14X14~D
PS/2 INTERFACE
JTAG INTERFACE
FAN PWM & TACH
BC-LINK
HOST INTERFACE
MASTER CLOCK
MISC INTERFACE
GENERAL PURPOSE I/O
SMBUS INTERFACE
DELL PWR SW INF
Bat2 = Amber LED
Bat1 = Blue LED
20mA drive pins
1=JTAG interface Reset disabled
0=Reset JTAG interface
32 KHz Clock
Same as Laguna
Place closely pin 58
DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.
EMC5035
LA-4151P
Friday, July 04, 2008



	Normal mode	BKT mode
BKT_GPIO12	0	1

BKT_GPIO1 → For LVDS signals switch
BKT_GPIO2 → For BKT power switch
BKT_GPIO3 → For TP power swich&USB signal switch
BKT_GPIO4 → For AMP/TP power source&USB signal switch
BKT_GPIO5 → For LID_Closed
BKT_GPIO6 → For PAD_Out
BKT_GPIO7 → For BKT Reset
BKT_GPIO8 → For USB_SEL_BLK
BKT_GPIO9 → For Radio_OFF
BKT_GPIO11 → Biometric mux switch
BKT_GPIO12 → For WLAN antenna mux control
BKT_GPIO13 → RSB_DET#
BKT_GPIO14 → For Inverter Power
BKT_GPIO15 → For WWAN Power
BKT_GPIO16 → For SMBALERT
BKT_GPIO17 → For Biometic reset signal
BKT_GPIO18 → For LVDS Power switch
BKT_GPIO19 → For TP Power

@RTC BATT

Part Number	Description
GC20323MX00	BATT CR2032 3V 220MAH MAXELL

@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

@PWR cable

Part Number	Description
NBX00009O0L	FFC 4P G P.5 PAD=.3 79MM MB-PWR_SW/B 03S

@LCD-LED cable

Part Number	Description
DC02000KC0L	H-CONN SET 03S MB-LCD

@LED cable

Part Number	Description
DA30000300L	FPC 03S LF-4151P REV0 M/B-LED/B

@TOUCH PAD cable

Part Number	Description
NBX0000BA0L	FFC 16P G P0.5 PAD=0.3 117MM MB-TP 03S

@Bluetooth cable

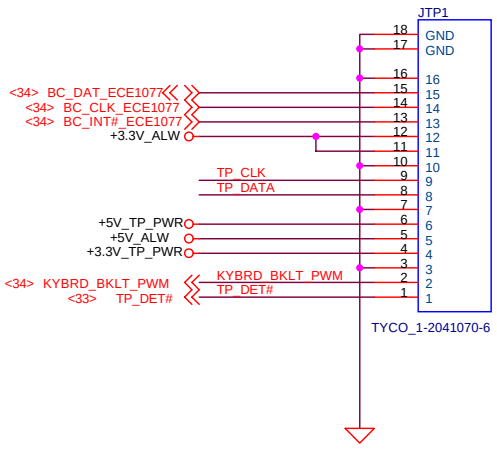
Part Number	Description
NBX00009L0L	FFC 12P F P0.5 PAD=0.3 76MM MB-BT/B 03S

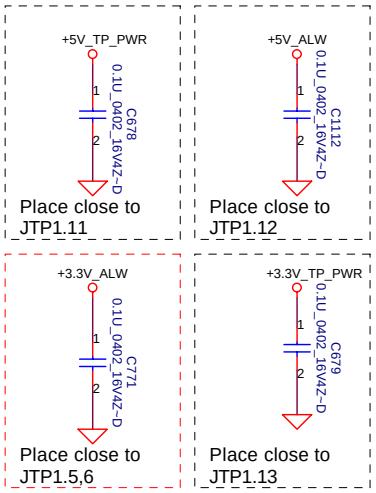
@SW cable

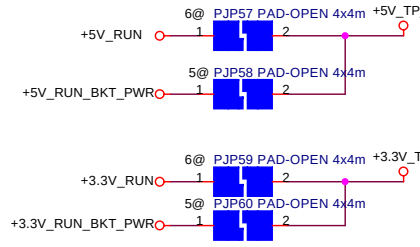
Part Number	Description
NBX0000BF0L	FFC 12P A P1 PAD=0.6 L=83MM 031

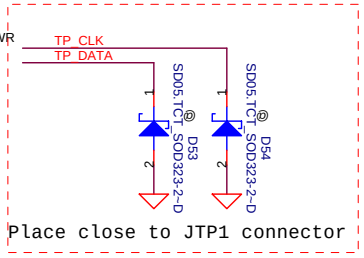
@Finger print cable

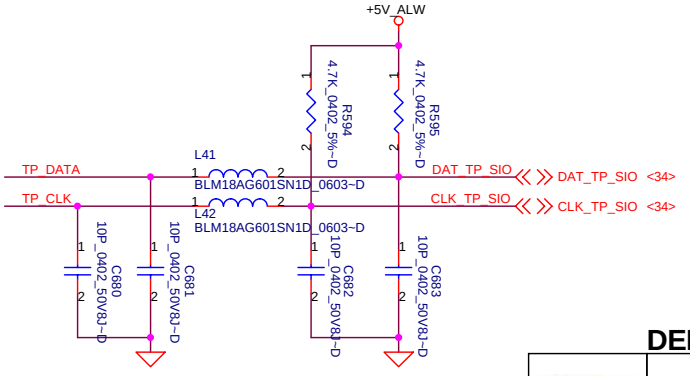
Part Number	Description
NBX00009M0L	FFC 6P F P0.5 PAD=0.3 257.2MM MB-FP 03S











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Compal Electronics, Inc.

Title: Touch PAD/Int KB/LID

Size: | Document Number: LA-4151P | Rev: 1.0

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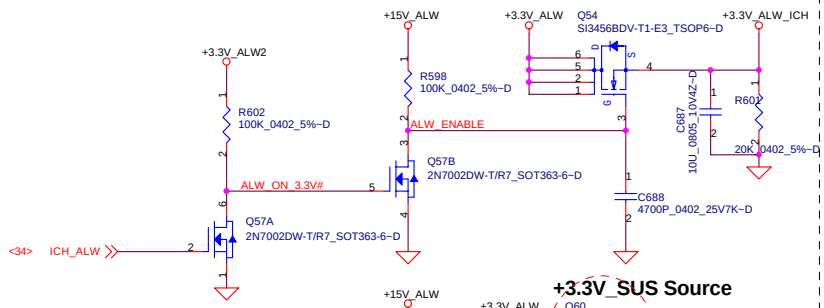
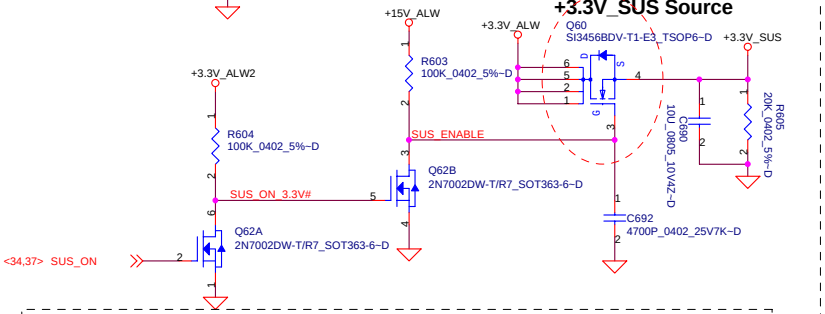
DC/DC Interface

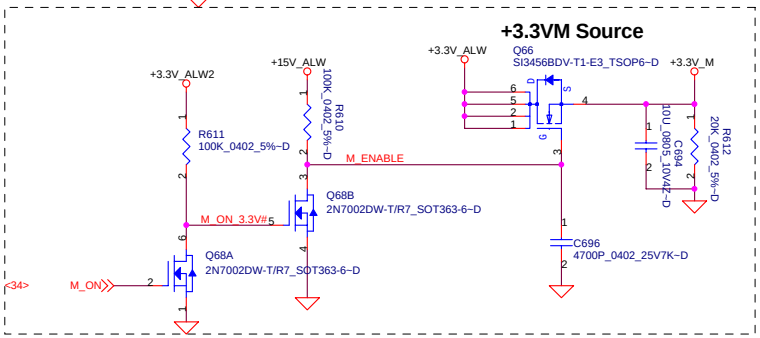
+3.3V_ALW_ICH Source

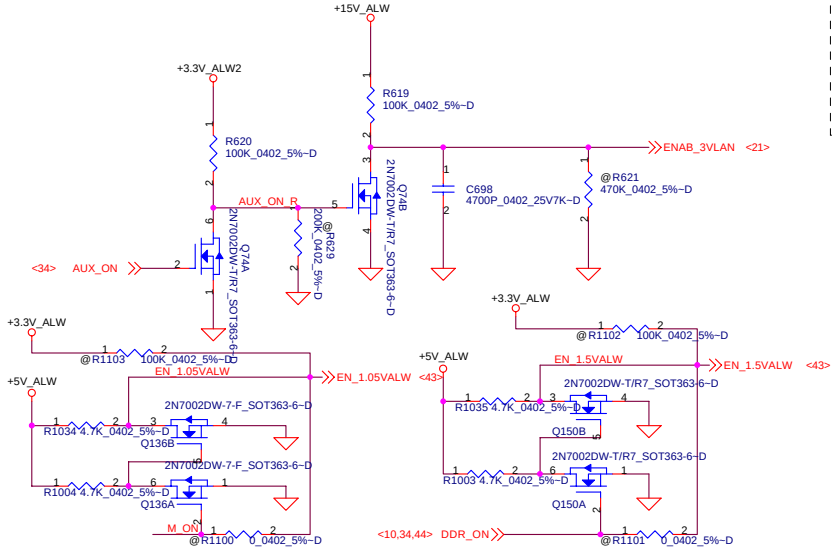


+3.3V_SUS Source

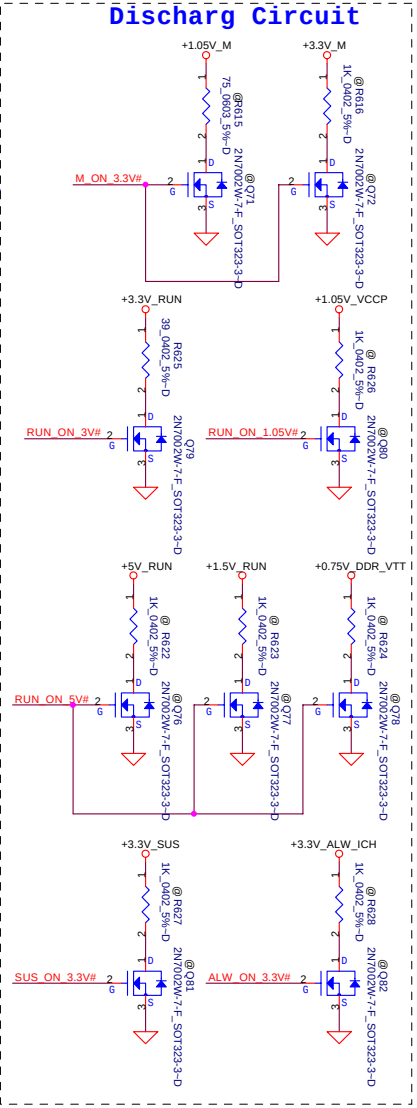


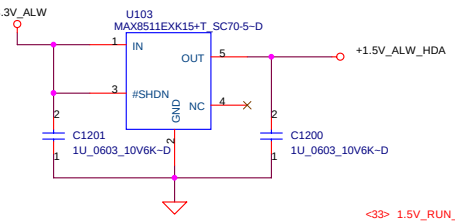
+3.3VM Source





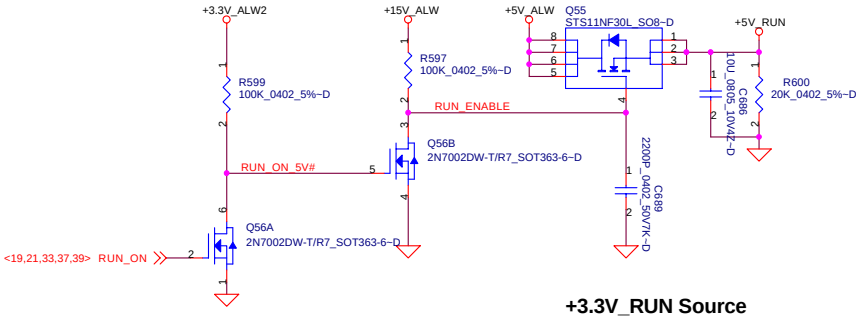
Discharg Circuit



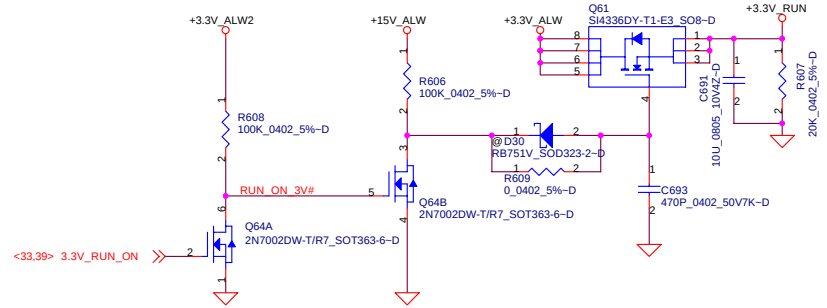


1.5 Volt +/-5%
Design Current:11mA
Peak current: 11mA

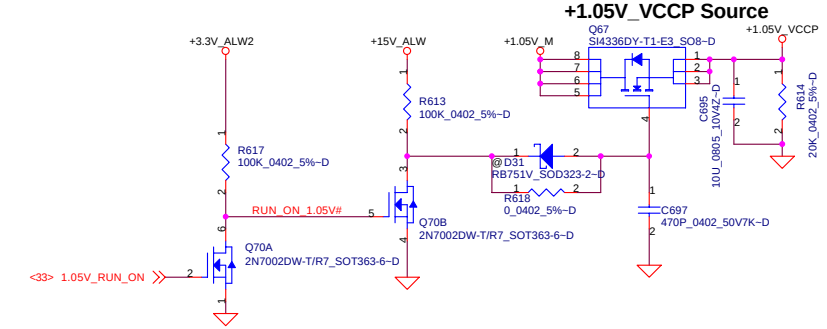
+5VRUN Source



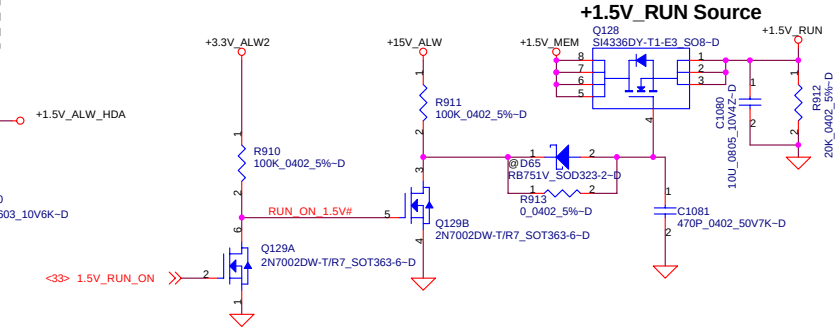
+3.3V_RUN Source



+1.05V_VCCP Source



+1.5V_RUN Source



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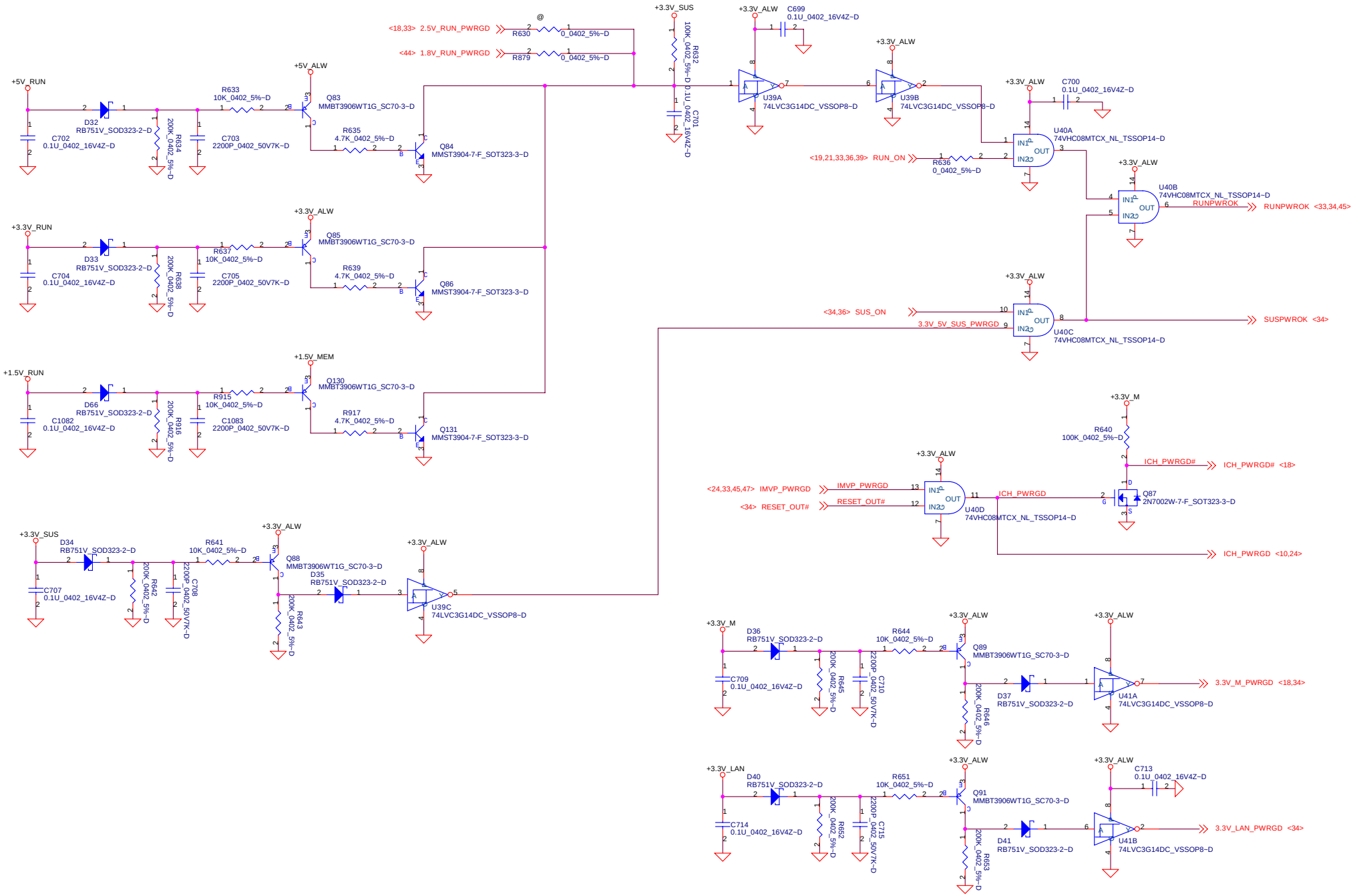
Compal Electronics, Inc.	
Title	POWER CONTROL
Size	Document Number: LA-4151P
Rev	1.0
Date:	Friday, July 04, 2008
Sheet	36 of 57



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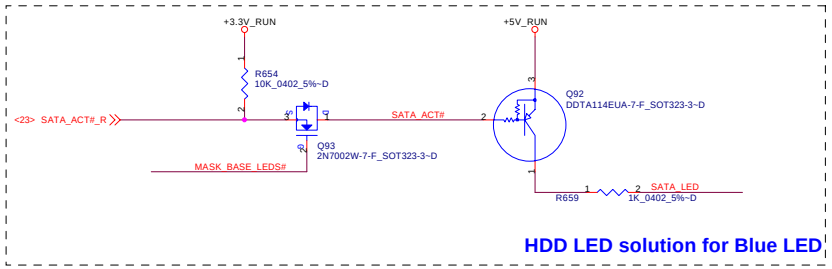
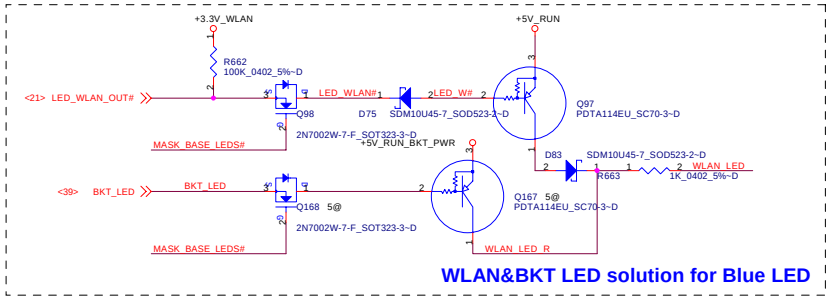
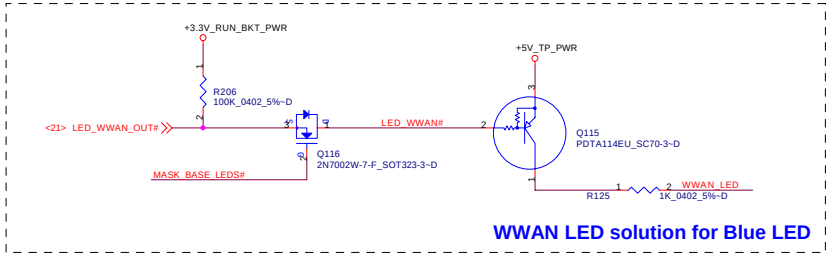
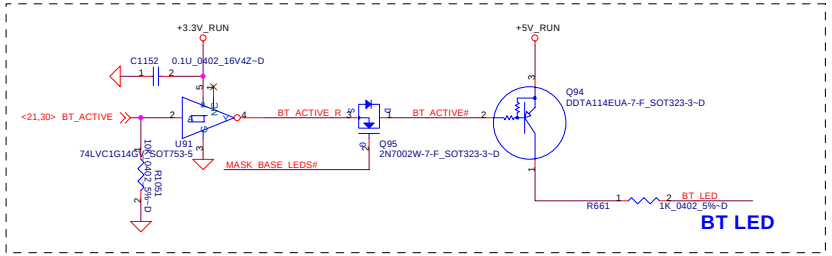
Compal Electronics, Inc.	
Title	Power Good
Size	Document Number: LA-4151P
Rev	1.0
Date: Friday, July 04, 2008	Sheet 37 of 57



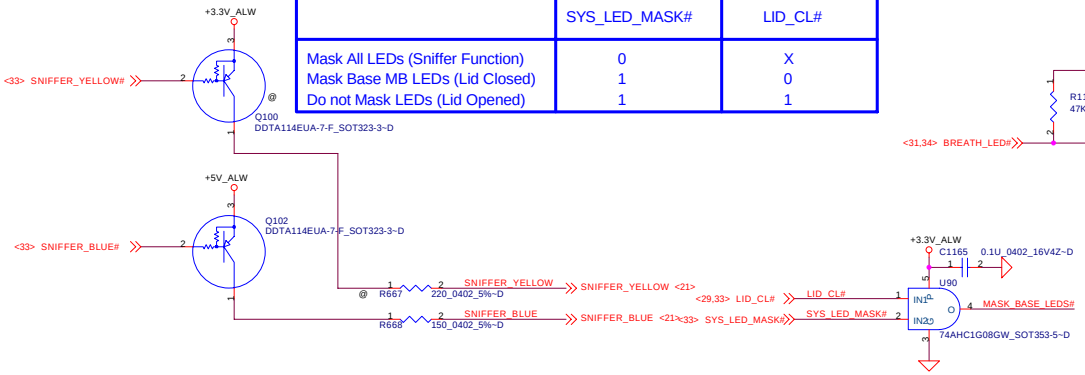


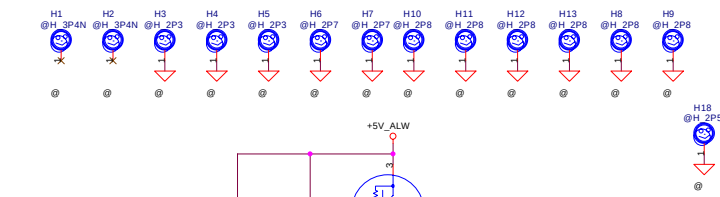




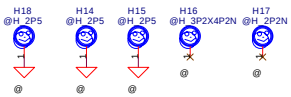
LED Circuit Control Table

	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

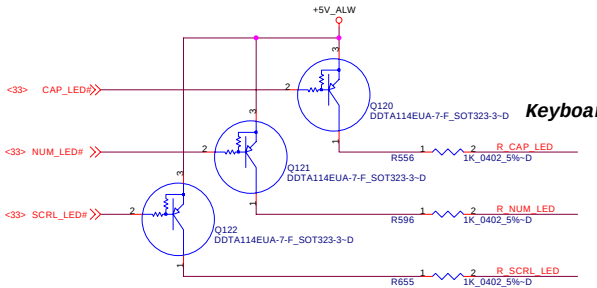


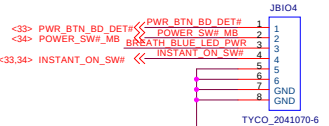


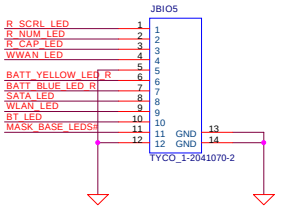
Fiducial Mark

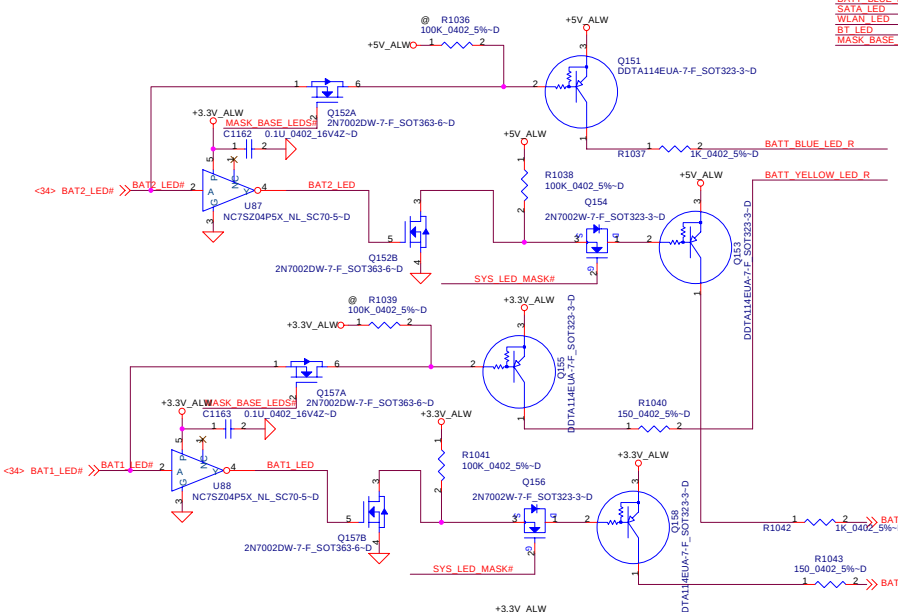


Keyboard Status LED









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DELL CONFIDENTIAL/PROPRIETARY

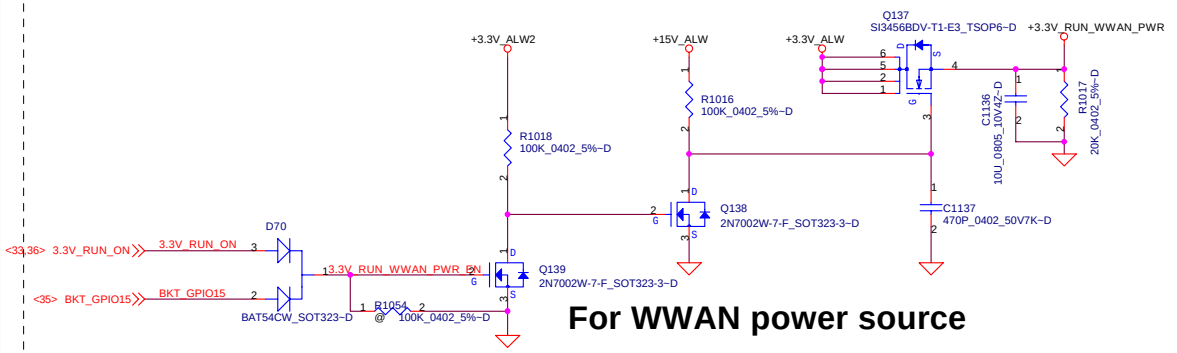
Compal Electronics, Inc.

Title: PAD and Standoff

Size | Document Number: LA-4151P | Rev: 1.0

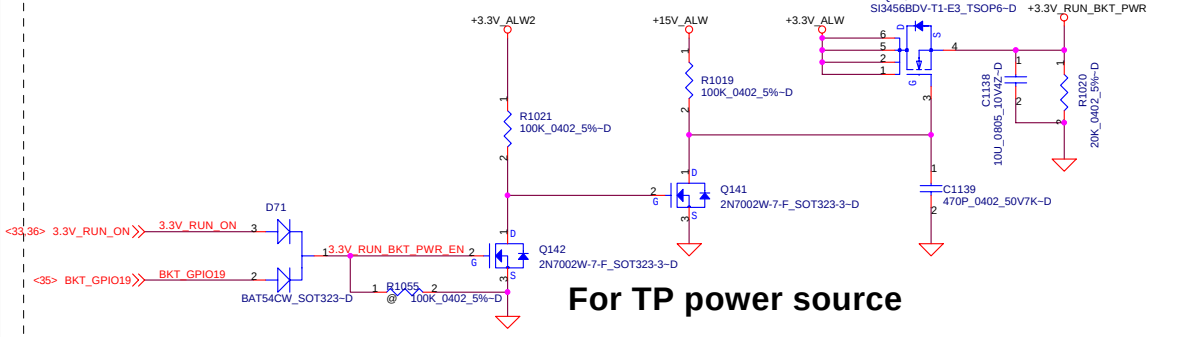
Date: Friday, July 04, 2008 | Sheet 38 of 57

+3.3V_RUN_WWAN_PWR Source



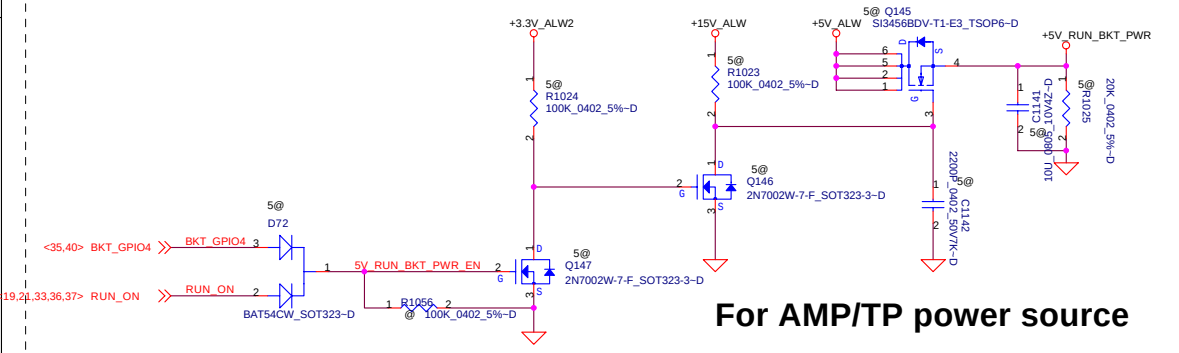
For WWAN power source

+3.3V_RUN_BKT_PWR Source

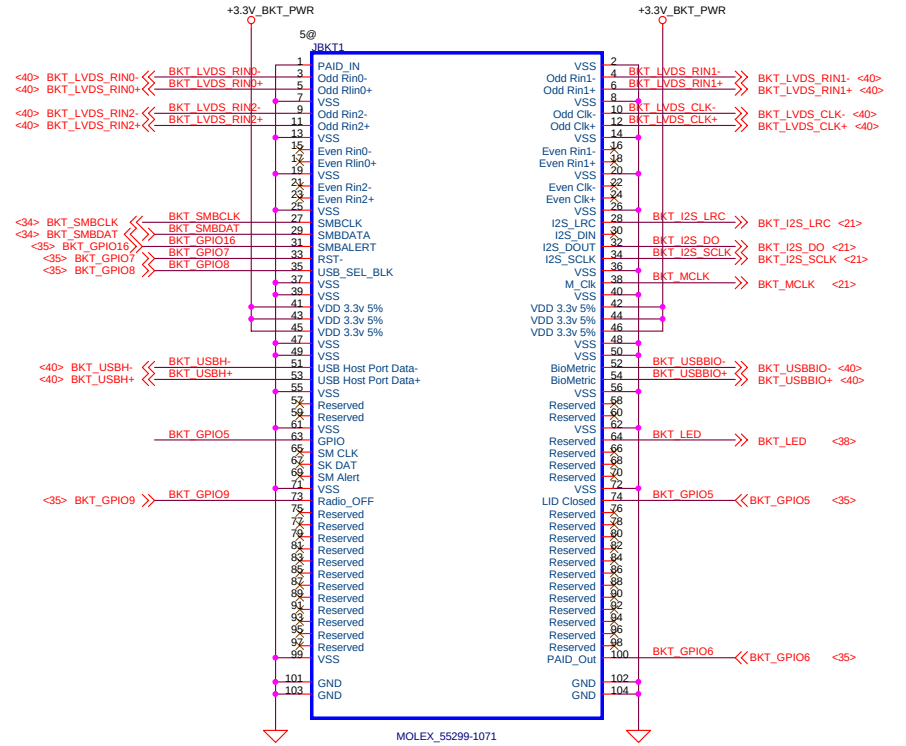


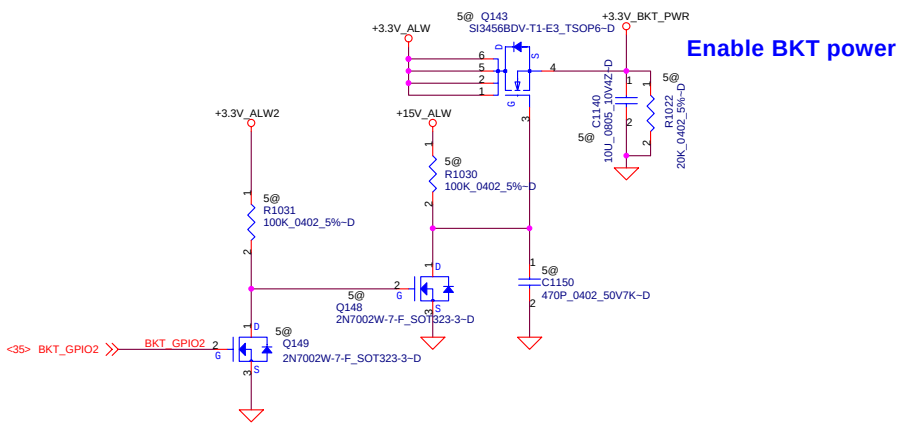
For TP power source

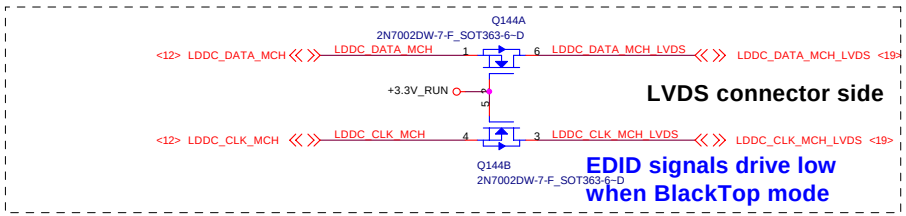
+5V_RUN_BKT_PWR Source



For AMP/TP power source







Compal Electronics, Inc.		
Title: BlackTopl		
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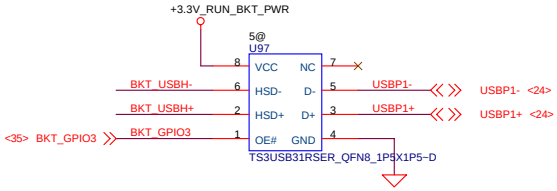
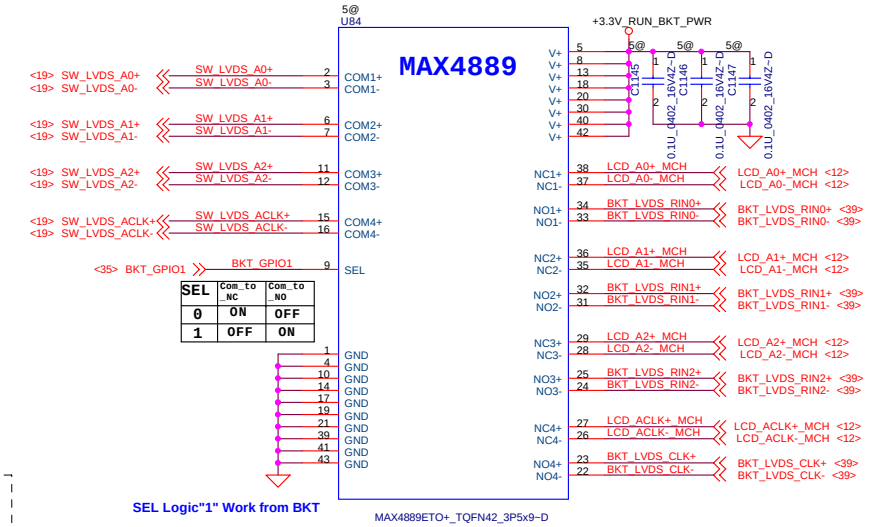
	Normal mode	BKT mode
BKT_GPIO1	0	1
BKT_GPIO4	0	1
BKT_GPIO11	0	1

	Normal mode	BKT mode	Diag mode
BKT_GPIO3	1	1	0



BKT_GPIO3 Logic"0" on Diag mode

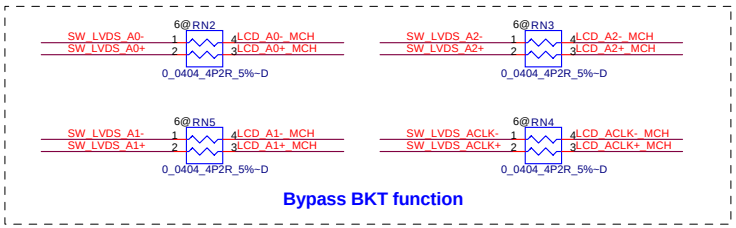
Add SB<-->BKT by USB interface when diagnostic mode



SEL	Com_to_NC	Com_to_NO
0	ON	OFF
1	OFF	ON

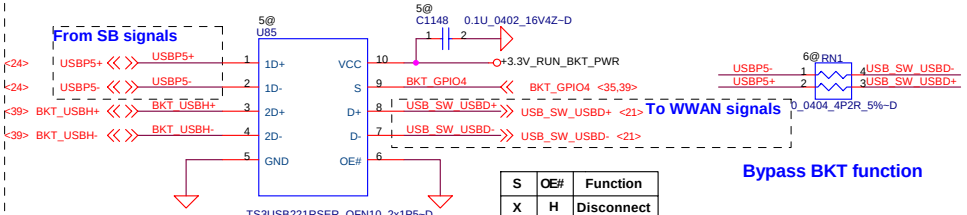
SEL Logic"1" Work from BKT

LVDS switch when system on power mode or BKT mode



Bypass BKT function

For WWAN

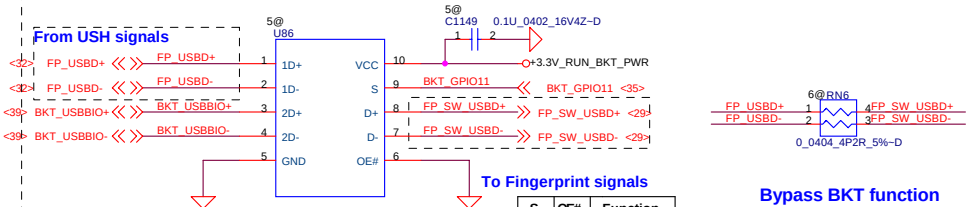


S Logic"1" Work from BKT

S	OE#	Function
X	H	Disconnect
L	L	D=1D
H	L	D=2D

Bypass BKT function

For Biometric



S Logic"1" Work from BKT

S	OE#	Function
X	H	Disconnect
L	L	D=1D
H	L	D=2D

Bypass BKT function

Compal Electronics, Inc.		
Title: BlackTopII		
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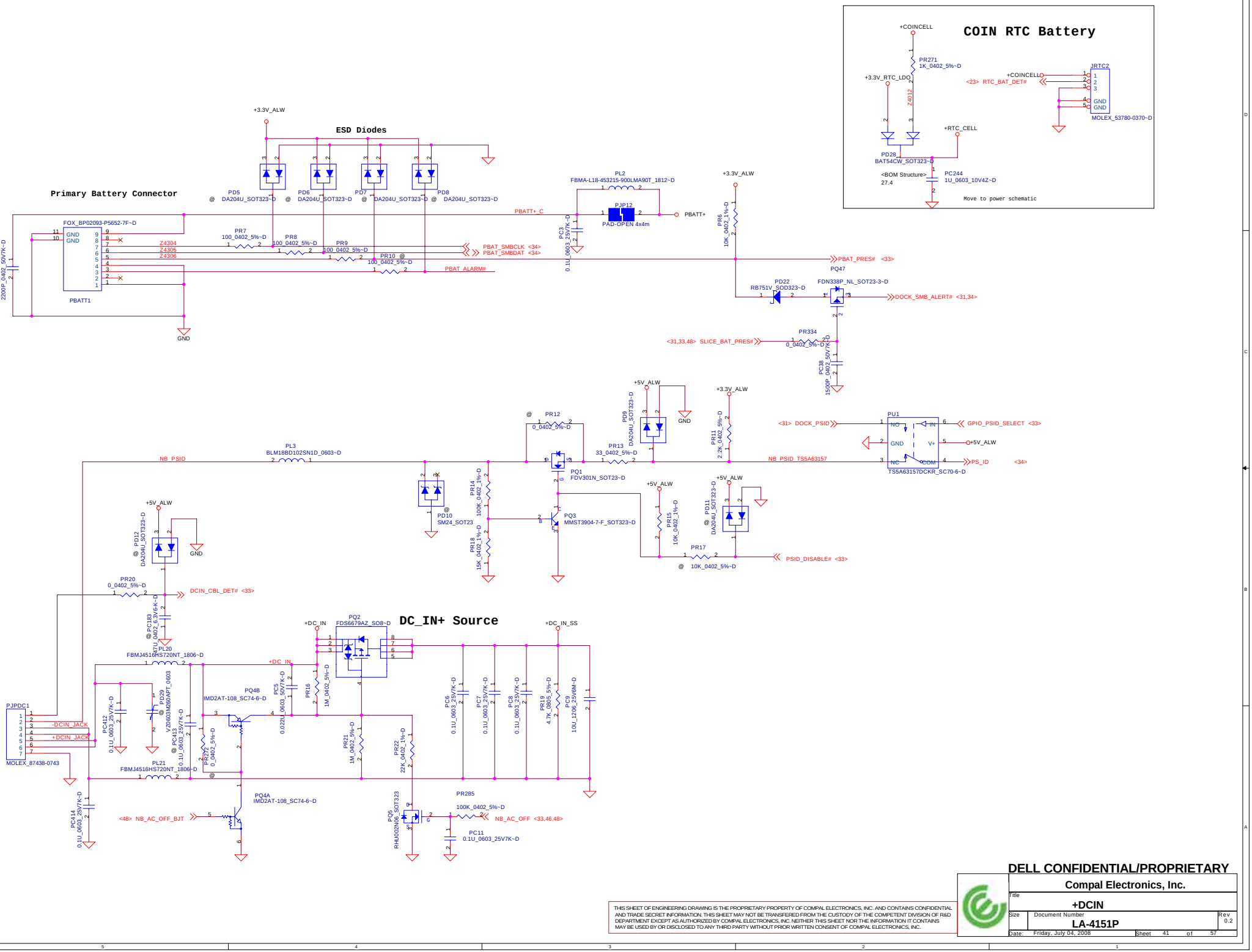
Date: Friday, July 04, 2008	Sheet 40 of 57	



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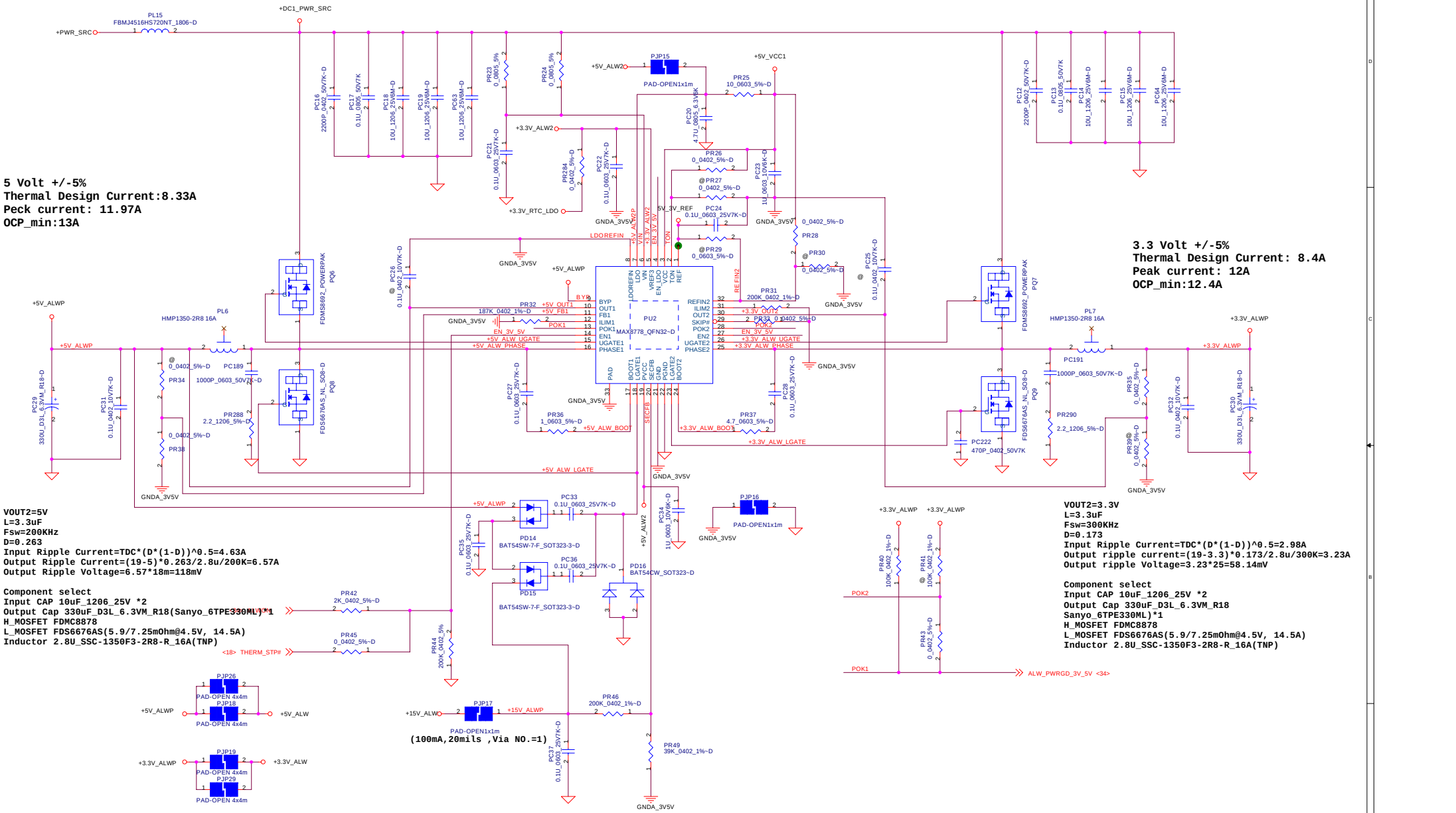
+3.3V_ALWP/ +5V_ALWP/ +5V_ALW2 / +15V_ALWP/ +3.3V_RTC_LDO



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Compal Electronics, Inc.		
Title: DC/DC +3V/ +5V		
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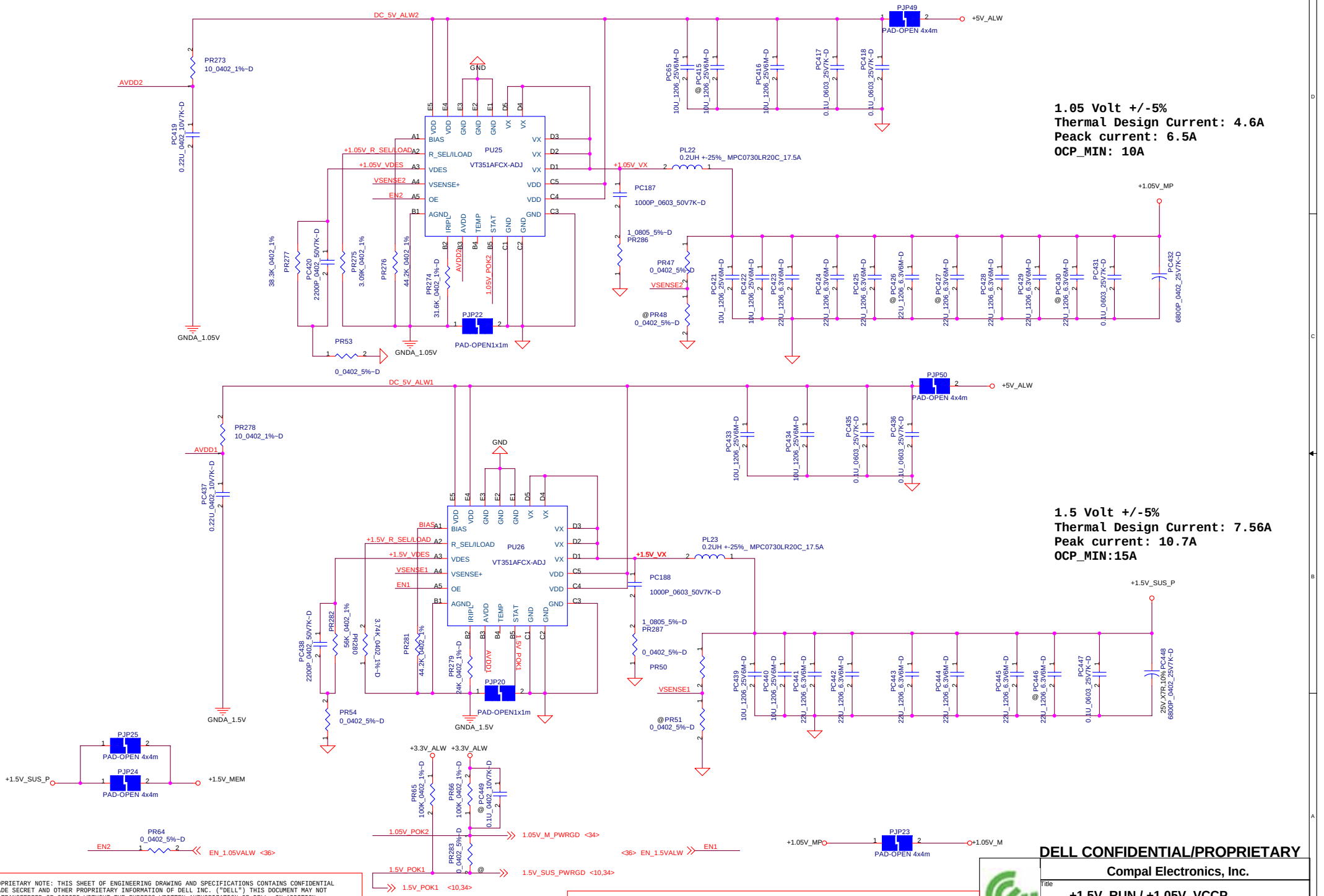
+1.5V_SUS_P / +1.05V_M

1.05 Volt +/-5%
Thermal Design Current: 4.6A
Peak current: 6.5A
OCP_MIN: 10A

1.5 Volt +/-5%
Thermal Design Current: 7.56A
Peak current: 10.7A
OCP_MIN:15A



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Compal Electronics, Inc.	
Title	+1.5V_RUN / +1.05V_VCCP
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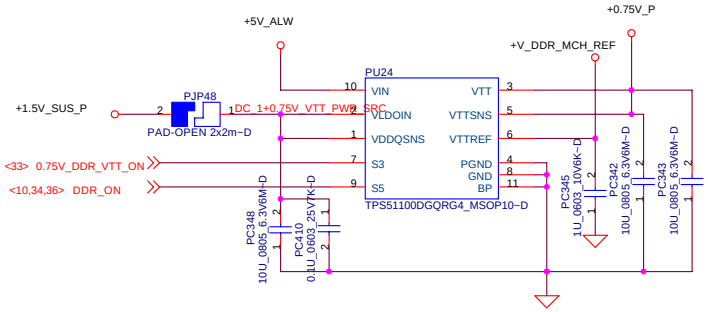
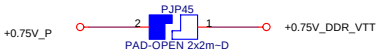
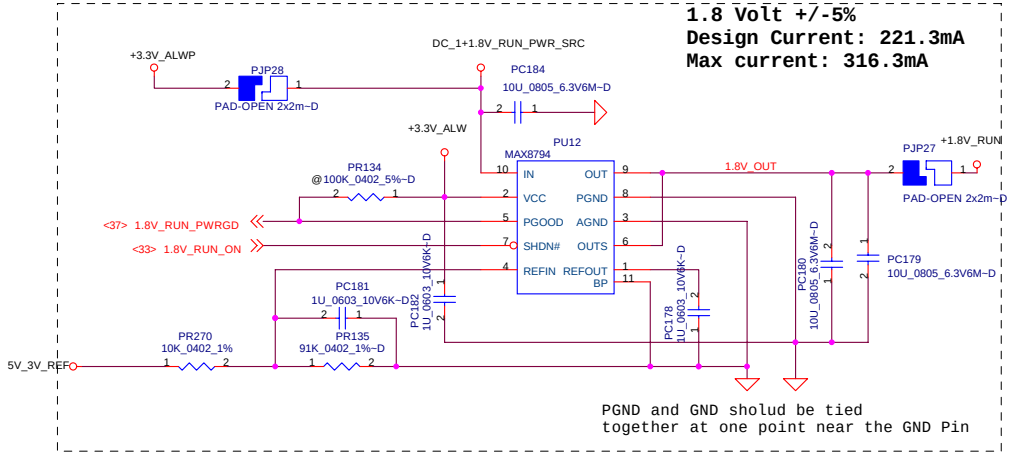
+1.8VRUN/ +0.75V_DDR_VTT

DDR3 Termination



0.75Volt +/-5%
Thermal Design Current: 1.4A
Peak current: 2A





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Compal Electronics, Inc.	
Title	+1.8VSUSP/ +0.75V_DDR_VT
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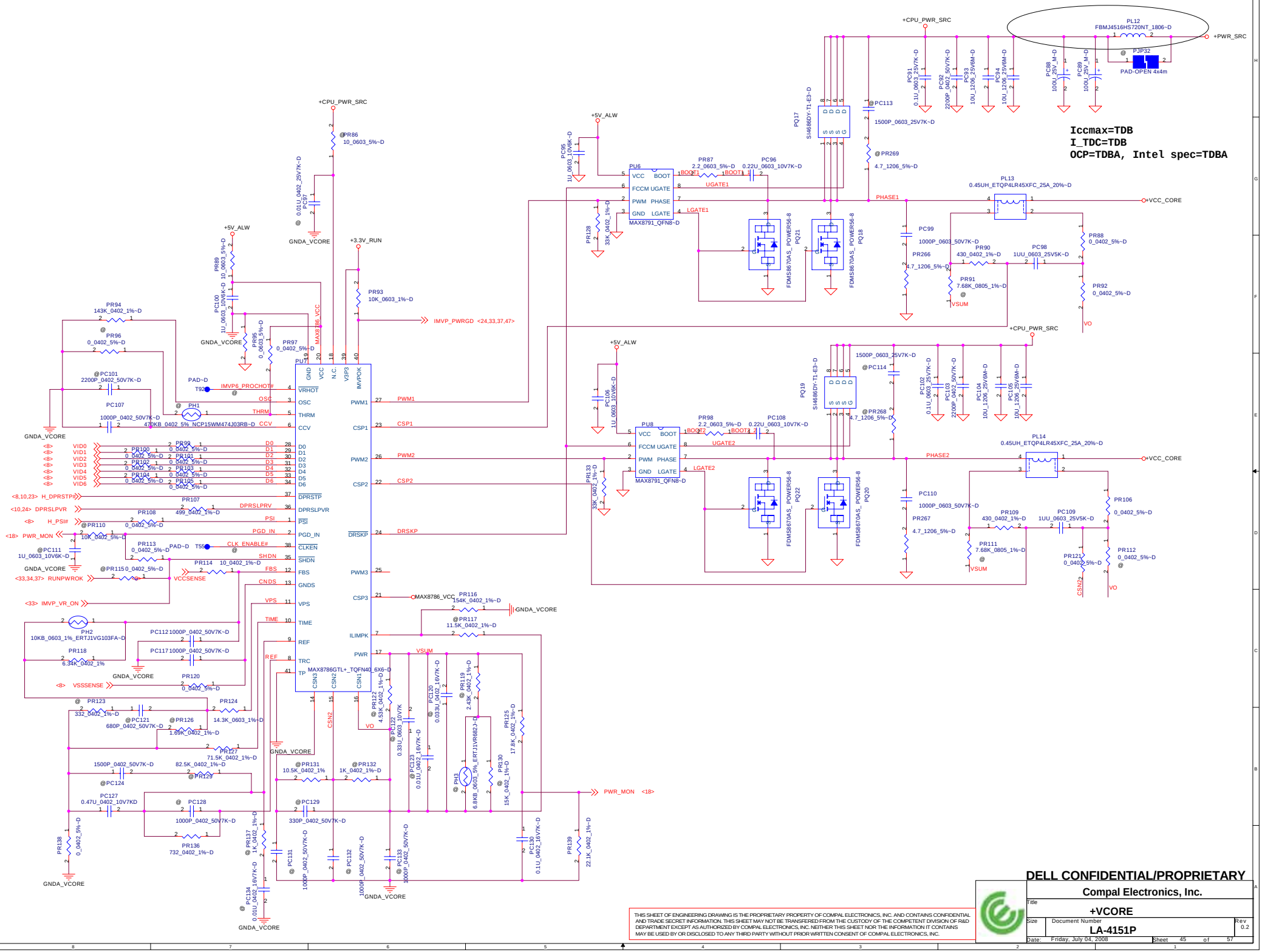

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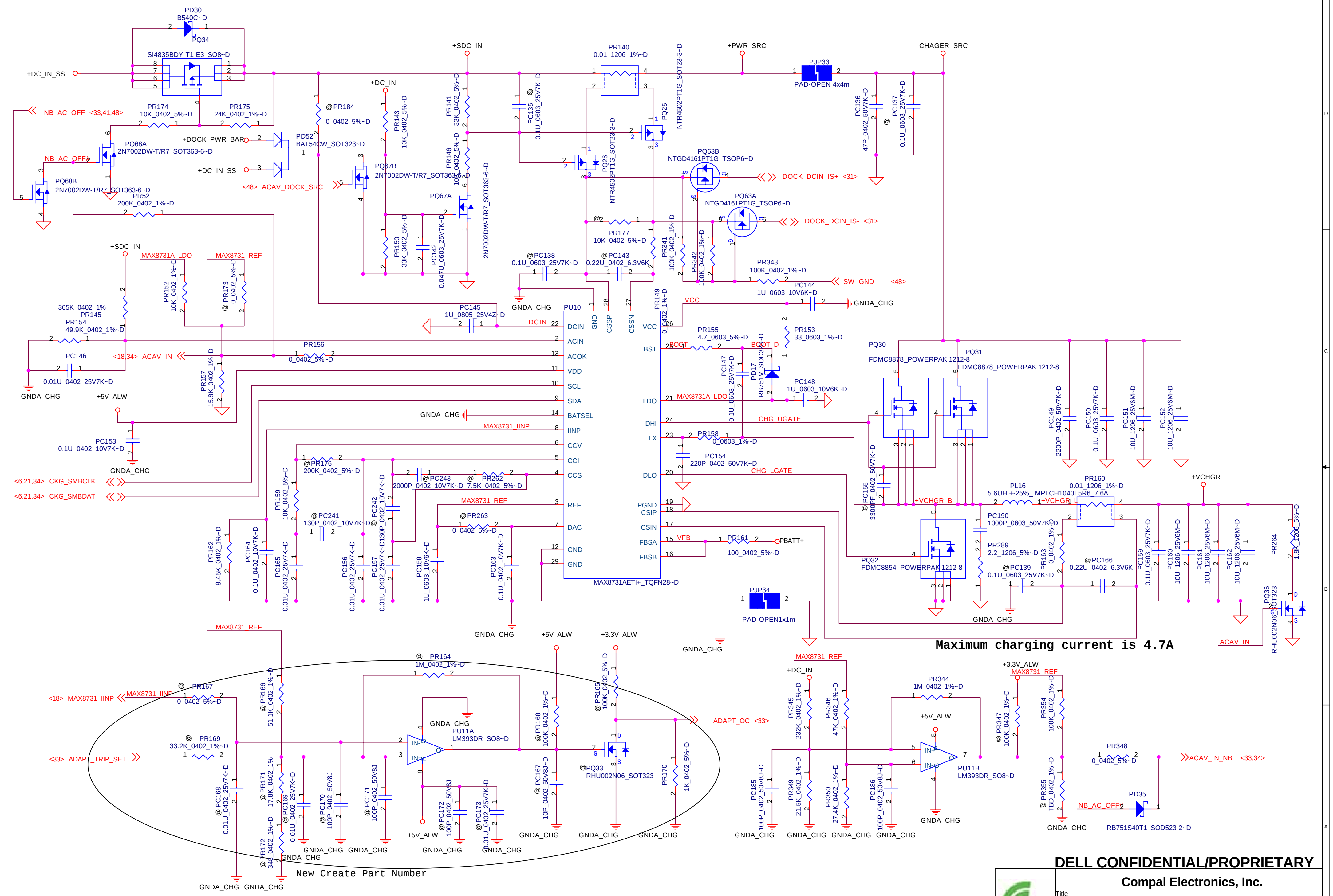

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Compal Electronics, Inc.

Title	**Charger**
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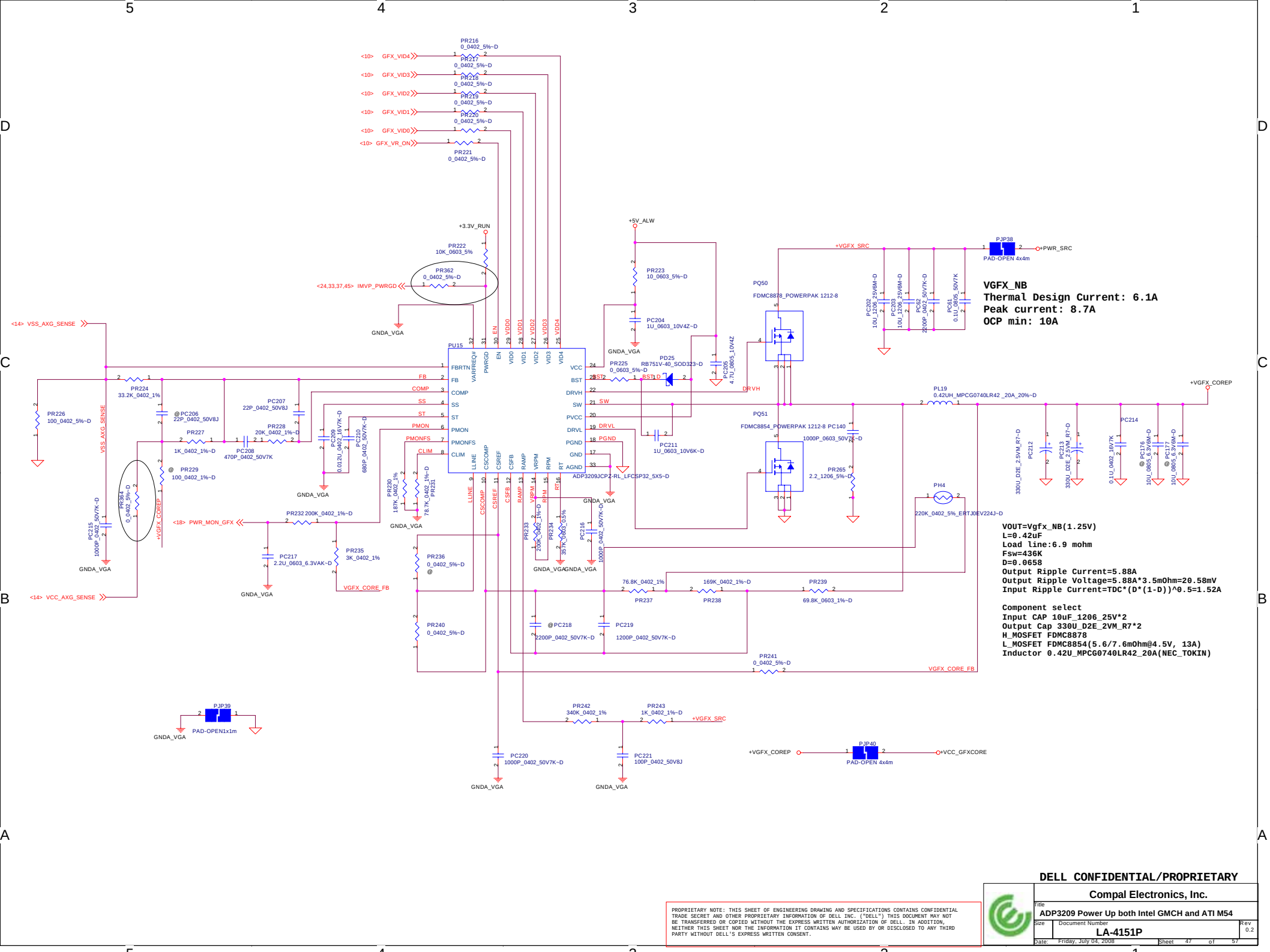
VGFX_NB
Thermal Design Current: 6.1A
Peak current: 8.7A
OCP min: 10A
VOUT=Vgfx_NB(1.25V)
L=0.42uF
Load line:6.9 mohm
Fsw=436K
D=0.0658
Output Ripple Current=5.88A
Output Ripple Voltage=5.88A*3.5mOhm=20.58mV
Input Ripple Current=TDC*(D*(1-D))^0.5=1.52A
Component select
Input CAP 10uF_1206_25V*2
Output Cap 330U_D2E_2VM_R7*2
H_MOSFET FDMC8878
L_MOSFET FDMC8854(5.6/7.6mOhm@4.5V, 13A)
Inductor 0.42U_MPCG0740LR42_20A(NEC_TOKIN)
PU15
ADP3209JCPZ-RL_LFCSP32_5X5~D
PQ50
FDMC8878_POWERPAK 1212-8
PQ51
FDMC8854_POWERPAK 1212-8
PD25
RB751V-40_SOD323~D
PL19
0.42UH_MPCG0740LR42 _20A_20%~D
PH4
220K_0402_5%_ERTJ0EV224J~D
PJP38
PAD-OPEN 4x4m
PJP39
PAD-OPEN1x1m
PJP40
PAD-OPEN 4x4m
+3.3V_RUN
+5V_ALW
+VGFX_SRC
+PWR_SRC
+VGFX_COREP
+VCC_GFXCORE
GNDA_VGA
VGFX_CORE_FB
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Compal Electronics, Inc.
ADP3209 Power Up both Intel GMCH and ATI M54
LA-4151P
Friday, July 04, 2008
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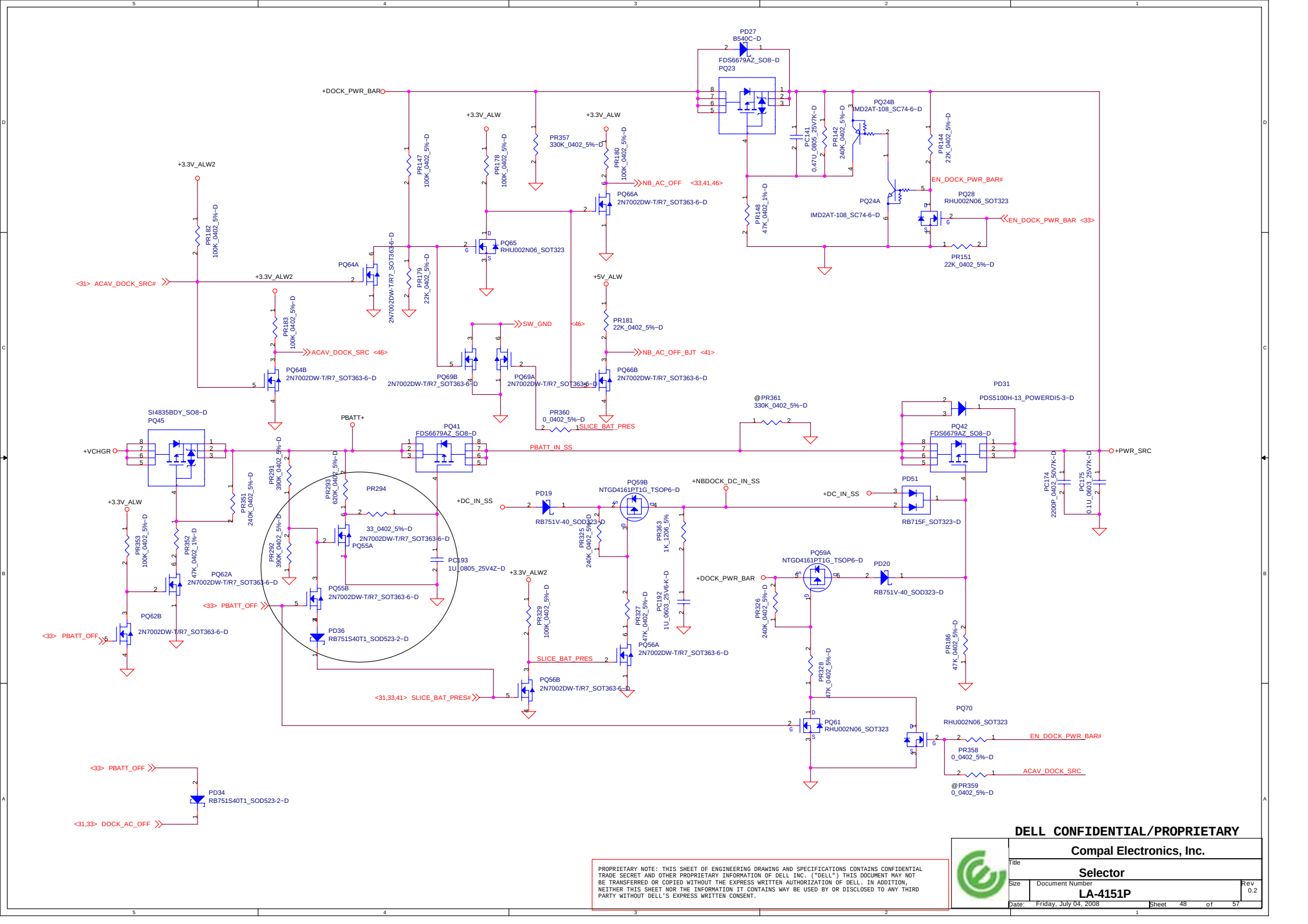

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Title: Selector

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	7	CPU	12/14/2007	HW	Add R1059 H_RESET# pull up +1.05V_VCCP and Depop R1059	Depop R1059	X01
2	9	CPU	12/14/2007	HW	For Intel CPU power transient	Change C56,C57and C58 to 470UF	X01
3	10	MCH	12/14/2007	HW	For Intel request for DP function	Change R180,R181,R182 and R183 to 4.02K	X01
4	10,34	MCH	12/14/2007	HW	For design issue	Change U80 and U57 to 74AHC1G08GW	X01
5	13	MCH	12/14/2007	HW	For Intel request power seq	Depop D1 and R122	X01
6	13	MCH	12/14/2007	HW	For disable TV-OUT function	Modify U78.K30 to GND plane	X01
7	18	EMC4002	12/14/2007	Dell	For Dell request	-Disconnect PWR_MON_GFX from U3.45 -Connect U3.45 to MAX8731_IINP with a 4.7k series resistor -Identify the values of R1033 and R1061	X01
8	18	EMC4002	12/14/2007	Dell	For U3 POWER_SW# Input-Add AND Gate	-Add U93,C1158,R1063,and R1064 -Change R142 to 0ohm	X01
9	21	DP	12/14/2007	Intel	Follow Intel proposal for DP interoperability	Add U94,U95,Q163,Q164,C1159,R1073,R1074 and C1160	X01
10	31	Docking	12/14/2007	Compal	For Docking ESD concern	Add D73	X01
11	32	USH	12/14/2007	Broadcom	Follow Broadcom request to modify schematics for USH	-Add R1066,R1067,R1068 and del R495,R499 and change R771 to 1K -Depop R1067,R490,C594,C591,R467 and pop R829,add R1072	X01
12	33	SIO	12/14/2007	Dell	GPIO Map update	-Changed pin 82 from USB_CHARGER_PWR_EN# to ESATA_USB_PWR_EN# -Change pin 104 from ESATA_USB_PWR_EN# to USB_POWERSHARE_PWR_EN#	X01
13	33	SIO	12/14/2007	Dell	The LCD/LED will keep had power with USB device when unplug AC & Battery	-Add 100k no pop pull-ups to +3.3V_ALW2 on: USB_SIDE_EN#,ESATA_USB_PWR_EN#,USB_POWERSHARE_PWR_EN# -No stuff R502, R504, R1013.	X01
14	33	SIO	12/14/2007	Dell	On Battery Mode U35 have +3.3V backdrive	-Add diode on signal INSTANT_ON_SW# to 5028 pin 28 -Add D74 and R1070	X01
15	33	SIO	12/14/2007	Dell	Add PD on SYS_LED_MASK#	Add R1069	X01
16	33	SIO	12/14/2007	Compal	Change BID to X01(001)	Pop R529 and depop R534	X01
17	33	SIO	12/14/2007	Dell	GPIO Map update	Add U96 and C1161	X01
18	34	EC	12/14/2007	Dell	GPIO Map update	-Del U59,C1012,R553,R558 and add R1071,Change R1050 from 1K to 33K -Change ACAV_IN_DOCK# to ACAC_DOCK_SRC# ACAV_IN_MB/DOCK to ACAV_IN	X01
19	35	EC	12/14/2007	Dell	GPIO Map update	-For BKT add U38.15 to BKT_GPIO17 connect to D71.2	X01
20	38	LED	12/14/2007	Compal	Backdrive from +3.3V_WLAN to +5V_RUN on S3 mode	Add D75 between Q97 and Q98	X01
21	38	LED	12/31/2007	Compal	Add Bypass Capacitor for TTL Gate	Add C1162~C1165	X01
22	32	USH	12/31/2007	Broadcom	Follow Broadcom request to modify schematics for USH	-Change R476 to 5.1M ohms and R488 to 3.3M ohms to lower -Pop D70, C641, C647,add R1077 and Depop R464,R1077	X01
23	31	Docking	12/31/2007	Dell	Roush + Docking AC protect issue(crowbar)	Add D77, R1075,R1076,and Depop R124.	X01
24	33	SIO	12/31/2007	Dell	For Power change Media Slice issue	Add D78, R1079 and Depop R1078.	X01
25	21,40	USB	01/03/2008	Compal	For power leakage for USB switch	Change U97,P/N from FSUSB31K8X_US8 to TS3USB31RSER_QFN8	

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
26	16,17	DIMM	01/03/2008	ME	For ME team change foxconn to main source	-Change DIMMA P/N from TYCO_2013022-1 to FOX_AS0A620_U4SN-7F -Change DIMMB P/N from TYCO_2013297-1 to FOX_AS0A620_U8SN-7F	X01
27	34	SIO	01/03/2008	HW	Update Cell charger detect circuit	Add D79	X01
28	29	Fingerprint	01/03/2008	HW	Follow Broadcom request to modify schematics for USH	Modify JBIO3.5 from U19.A16 to U32.C3(FP_RESET#)	X01
29	24	SB	01/03/2008	HW	For LOM Disable concern	Add R1065 and Depop R1065 and del R935	X01
30	40	BKT	01/03/2008	HW	For BKT function concern and bypass BKT function	-Del U81 and U86.6 connect to GND -Add RN1~RN6 and depop	X01
31	34	SIO	01/04/2008	HW	For GPIO update	-Modify U36.41 to DOCK_POR_RST# connect to JDOCK1.140 -Add C1167,R1082	X01
32	19	LVDS	01/07/2008	HW/ME	For ME team change LVDS connector and cost down action for BKT function	-Modify LVDS connector to SP02081020 -Modify LVDS1.4 from PNL_BKLT_CBL_DET# to +3.3V_RUN -Swap netname LCD_VCC_TEST_EN and BKT_GPIO2	X01
33	21	BTB	01/08/2008	HW	For HW concern	Modify pin-name from JBIO1.109,111,113~123 to JBIO1.107,109, 111~121 and change JBIO1.139 from +1.8V_LAN_M to +LOM_VCT	X01
34	21,33	BTB	01/08/2008	HW	For HW concern	-Add D80 and R1083 to pull up +3V_ALW2 -Add R1084 pull up to +3V_ALW and depop	X01
35	35	ECE1088	01/08/2008	HW	For GPIO update	Modify U38.15 from BKT_GPIO17 to BKT_GPIO19	X01
36	21,33	BTB	01/08/2008	HW	For GPIO update	-Modify from WIRELESS_ON/OFF# to WIRELESS_ON#/OFF -Del R489,R830 and netname SC_DET from U35.84	X01
37	21	DP	01/09/2008	HW	For Intel DP solution update	Add R1085,R1086,R1087,R1088	X01
38	23,27,32,34	Crystal	01/09/2008	HW	For EA test result for crystal	-Change Y3 to SJ100005X0L,C674 to 27PF -Change C608,C296,C297 to 12PF,C609,C1032,C1058 to 15PF	X01
39	35	TouchPAD	01/09/2008	ME	For ME team change connector	Change JTP1 to SP070801070	X01
40	38	LED	01/09/2008	ME	For ME team change LED board to FPC	Change JBIO5 pin-define	X01
41	21,35	WLAN	01/10/2008	HW	For GPIO update for WLAN switch	Add BKT_GPIO12(U38.8) and BKT_GPIO13(U38.9) connect to JBIO1.75 and JBIO1.120	X01
42	07	ITP	01/10/2008	HW	For Intel ITP solution update	Change R62,R64,R65,R66,R67 from 51ohm to 56ohm and R977 depop	X01
43	32	USH	01/11/2008	HW	Follow Broadcom request to modify schematics for USH	Add R1089	X01
44	10	MCH	01/14/2008	HW	UMA display TV solution implement	Remove TV_CVBS/TV_Y/TV_C signals with pull down resistors (R674,R677 and R678). Connect pin J27,E27 and G27 to GND	X01
45	10	MCH	01/14/2008	HW	Follow Roush UMA implement (CRT/LVDS)	Remove R1048,R1049(CRT_H/VSYNC)pull up. Change R688 from 2.37K_1% to 2.4K_1%; Change R672 from 1.02K_1% to 976_1%	X01
46	11	MCH	01/14/2008	HW	UMA display TV solution implement	Change pin N32 of U78(VCCD_TVDAC) from +1.5V_RUN to GND. Remove C138 and C139	X01
47	23	ICH9M	01/14/2008	HW	Follow Roush UMA implement	Remove R952, connect pin AC23 of U79 to pin2 of R237 Remove BIO_DET# net(Del. R823,R932; pin A16 of U79), depop R754	X01
48	21	DP/Card1 IO	01/14/2008	HW	Follow Roush UMA implement	Add R1090(100K)pull up to +3.3V_ALW_ICH on PCIE_MCARD1_DET# net, make R439 depop; change C1135 from .1uf to 1uf	X01
49	24,35	ICH9M	01/14/2008	HW	CIS Symbol update	Link JP3(Change to JP6) and JTP1	X01
50	19	LVDS	01/15/2008	HW	BIA_PWM signal seems to be floating in " BKT mode ".	Add D81 between LVDS and MCH, ADD 1091 pullup.	X01

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Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
51	6	CLKGEN	03/04/2008	HW	For component derating	L1 change to SM01002480L	X02
52	7	CPU	03/04/2008	HW	For ITP modify solution	R57 change to 124ohm, R64 change to 39ohm, R65 change to 150ohm, R66 change to 649ohm, R67 change to 27ohm	X02
53	9	CPU	03/04/2008	HW	For CPU power loadline solution	C52 change to pop and C56,C57,C58 change to 270UF(SGA00003H0L)	X02
54	10	MCH	03/04/2008	HW	For DP modify solution	R180,R181,R182,R183 change to 2.2K ohm	X02
55	19	PFG	03/04/2008	HW	Add Camera solution for PFG	Add Q165,Q166,R1094(unpop),R1095,R1096,R1097,R1098,C1168,C1169 C1170,C1171,U98(unpop),L70(unpop),JCAM and net CAM_MIC_CBL_DET#	X02
56	19	LVDS,JBIO1	03/04/2008	HW	For BKT table updated	Modify D68.2 to BKT_GPIO18 for +LCDVDD power and	X02
57	21	Audio	03/04/2008	HW	For audio vendor solution	R327,R828 change to 499K ohm and R328 unpop	X02
58	27	R5C833	03/04/2008	HW	For R5C833 crystal solution by test result	Modify X2(SJ124P5M53L)-->Y2(SJ10000690L)	X02
59	29	FP	03/04/2008	ME	For FP connector change	Modify JBIO3(Tyco_1734820-6)-->(TYCO_1734242-6)	X02
60	32	BCM5880	03/04/2008	HW	For EMI solution by BCM5880	Add L71,L72,C1172,C1173 R841 change to 3K and R473 change to 1K,R849 pop	X02
61	33	ECE5028	03/04/2008	HW	For ECE5028 and board ID updated	Del R1084, add PWR_BTN_BD_DET# R529(unpop),R534(pop),R530(pop),R535(unpop) for X02	X02
62	34	ECE5035	03/04/2008	HW	For ECE5035 updated	Modify R560 to pop,R877 change to 200K and R565,R567 change to 2.2K ohm	X02
63	38	LED	03/04/2008	HW	Add WLAN LED share to BKT LED	Add Q167,Q168	X02
64	38	PWR board	03/04/2008	ME	For PWR board connector change	JBIO4 change from Tyco_1734242-4 to Tyco_1734242-6 add PWR_BTN_BD_DET# for PWR board	X02
65	39	BKT function	03/04/2008	HW	For BKT function updated	Modify +3.3V_RUN_BKT_PWR source to alway pop Add net BKT_LED to control LED	X02
66	40	BKT function	03/04/2008	HW	For BKT table updated	Modify U86.9 to BKT_GPIO11(U38.14)	X02
67	24	SPI	03/04/2008	HW	For del recovery bios function	Del U13,R295,R303,R304,R305,R306,R308,R309,C329	X02
68	31	Dock	03/04/2008	HW	For Docking ESD concern	Modify D73 from SC10T24C010 and SC600000N0L	X02
69	36	Power	03/04/2008	HW	For power control concern	Reserve R1100,R1101 to bypass level shift	X02
70	29,35	BKT function	03/05/2008	HW	For BKT table updated	Add net BKT_GPIO17 and R1104(unpop),D82 for Biometic reset signal	X02
71	35	TP	03/06/2008	HW	For backdrive from Touch PAD	Modify R594,R595 pull-up to +5V_ALW	X02
72	32	USH	03/06/2008	HW	For smart card concern	Modify R849 to 1.5K and R973 to 300ohm	X02
73	38	LED	03/07/2008	HW	For keyboard LED modify	-Modify JBIO5 to TYCO_1-1734242-2 and add net MASK_BASE_LEDS# -Q120.3,Q121.3,Q122.3 modify to +5V_ALW	X02
74	19,22	Camera	03/10/2008	HW	For Camera function	Modify net name from CAM_MIC_CBL_DET# to CAM_CBL_DET#	X02

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75	31	Docking	04/07/2008	HW	Slice battery issue	change R1076 from 1K to 910K	X03
76	33	EC5028	04/07/2008	HW	Support wireless on#/off switch on BLT mode	change R874 to depop	X03
77	38	LED	04/07/2008	HW	Blue LED brightness concern	R659, R663, R125, R661, R556, R596, R655, R1037, R1042, R1045 change from 150 ohm to 1K ohm	X03
78	33	EC5028	04/07/2008	HW	Roush MB side have backdrive when plug some USB device which have extra-power source	R504 change to 10K and made pop.R502 and R1013 change to pop	X03
79	18	EMC4002	04/07/2008	HW	Vendor recommend value	R1033 change to 200K	X03
80	34	EC5035	04/07/2008	HW	Remove reserved SPI ROM at EC side.	Remove U37,C672,R589,R590,R591,R592,R593 and R558	X03
81	24	SPI ROM	04/07/2008	HW	Reserved 2nd SPI ROM for code size over 4M byte.	Add U13,C329,R295,R304,R305,R306,R308,,R307 and R309	X03
82	32	USH	04/07/2008	HW	Vendor recommend schematics for EMI	D28 and D29 change connect to RFREADER_TXN1_P1 and RFREADER_TXP1_P1 R494 and C639 change connect to RFREADER_TXN1 R498 and C643 change connect to RFREADER_TXP1	X03
83	21	DP	04/07/2008	HW	Vendor recommend schematics for DP switch	Add U99~U101(SN74CBTD3306) and C1174~C1175(0.1UF) R1053 change from 100K ohm to 1M ohm Del Q19,Q20,Q163,Q164,R958,R960,R964,R966,R1073,R1074	X03
84	12	TV	04/07/2008	HW	Vendor recommend schematics for TV disable	Add R1105~R1107 to 75 ohm	X03
85	24,33	EC5028, SPI ROM	04/07/2008	HW	GPIO table update	Add net name SPI_WP#_SEL and R1108~R1109(0 ohm)	X03
86	35	TouchPAD	04/07/2008	ME	ME concern need to shorten TouchPAD FFC length	Swap JTP1 Pin1~Pin16 net name	X03
87	06	Clock	04/07/2008	HW	Isolate CLK_PCI_DOCK signal that has risk for docking scenarios.	change CLK_PCI_PCM to U1.33	X03
88	40	BlackTop	04/07/2008	HW	USB interface change for BKT to ICH	Del U83 and C1144,Modify U97.5 to USB1-,U97.3 to USB1+ and U85.6 from BKT_GPIO3 to GND and change U97.1to BKT_GPIO3	X03
89	19	Camera	04/07/2008	HW	Camera pinout modify for vendor	USBP11_D- change to JCAM.2,USBP11_D+ change to JCAM.3 CAM_CBL_DET# change to JCAM.5	X03
90	38	LED	04/09/2008	HW	Add WWAN LED control on BLT mode	Modify R206.1 to +3.3V_RUN_BKT_PWR and Q115.3 to +5V_TP_PWR	X03
91	27	R5C833	04/09/2008	HW	Add SC CLK impedance control between chip(20~30 ohm) and connector	Add R1110	X03
92	29	PWR SW	04/09/2008	HW	Remove PWR SW for debug	Remove PWRSW1,PWRSW2 and C684	X03
93	21	I/O	04/10/2008	HW	Vendor I/O connector update	Remove JBIO1.141~144	X03
94	06	Clock	04/14/2008	HW	Vendor recommend schematics modify to damping resistor for share CLK signals	Modify R27 to 33ohm	X03
95	29,32	Hall sensor	04/16/2008	ME	Modify Hall sensor from smart card connector to SPK connector	Modify JSC1 to 10pin and JSPK1 to 9pin connector	X03
96	24,27	RF issue	04/21/2008	HW	Add 14M/33M/48MHz terminator for RF issue	POP R279,C312,R285,C318,R803 and C1057	X03
97	10	S3	04/21/2008	HW	Fixed S3 resume	Modify U80 power to +3.3V_ALW_ICH	X03

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98	9	CPU	04/21/2008	HW	Reserve 24 pcs high frequence for ULV CPU	Add C1176~C1199	X03
99	18	Thermal	04/22/2008	HW	Modidy thermal protect on 95 degree	change R151 to 1.5K	X03
100	21	DP	04/23/2008	HW	Update new DP swith schematics	Depop R1085~R1088	X03
101	36	backdrive	04/24/2008	HW	Fix +3.3V_RUN backdrive from North bridge	Modify R625 to 33ohm 0603 and pop Q79	X03
102	39	BLT	04/25/2008	HW	Update BLT GPIO table	Add BKT_GPIO5 connect to JBKT1.63	X03
103	10,36	Audio	05/22/2008	HW	Fix WLAN card intermittent can't detect	Add U103,C1200,C1201 and del U92,C1156,C1157,R1060 ,U79.V10 change to +1.5V_ALW_HDA R153 change to 3.16K R154 change to 5.1K, del R314,R315 and U79.AD7 change to +1.5V_RUN	X04
104	38	LED	05/22/2008	HW	Fix +5V_RUN backdrive on BLT mode	Add D83	X04
105	33	Slice Battery	06/10/2008	HW	Fix slice battery concern on power	Change R503 from 100K to 4.7K	X05
106	27	1394	06/10/2008	HW	Fix 1394 reset timing	Modify R801 to 47K	X05
107	24	ICH	06/10/2008	HW	Update GPIO table for TPM and TCM	Add R1111	X05
108	36	backdrive	06/10/2008	HW	Fix +3.3V_RUN backdrive from North bridge	Modify R625 to 39ohm 0402	X05
109	30,38	connector	06/11/2008	ME	Fix ME concern for factory build	Modify JBT and JBIO5 to SP070805091(TYCO_1-2041070-2)	X05
110	29,38	connector	06/11/2008	ME	Fix ME concern for factory build	Modify JBIO3,JCAM,JCS1 and JBIO4 to SP070805092(TYCO_2041070-6)	X05
111	28	connector	06/11/2008	ME	Fix ME concern for factory build	Modify JEXP1 to SP070805271(TYCO_2-2041070-6)	X05
112	35	connector	06/11/2008	ME	Fix ME concern for factory build	Modify JEXP1 to SP070805270(TYCO_1-2041070-6) JSATA1 to SP01000SE0L(TYCO 2-1759838-5)	X05
113	32	USH	06/13/2008	HW	Modify USH component tolerance	Modify L71,L72 change to SHI00005Y0L and C639,C643 change to +-10%	X05
~~114~~	~~12~~	~~NB~~	~~06/13/2008~~	~~HW~~	~~Update NB reference schematics~~	~~Add C1202~~	~~X05~~
115	29	SPK	06/16/2008	ME	Modify SPK connector pin define to improve cable routing for ME concern	Re-define SPK connector pin-out	X05
116	6	CLKGEN	06/20/2008	HW	Fix setup ME power package5 issue when power on	Add R1112	X05
117	38	LED	06/20/2008	HW	Fix LED flash bright when unplug AC	Add R1113	X05
118	21	USB Charge	06/20/2008	HW	Follow Roush reduce USB charge schematics	Delete R995	X05
119	30	BT	06/20/2008	HW	Fix BT cable for factory assemble	Modify BT_DET# from JBT.1 to JBT.12	X05
120	30	TCM	06/20/2008	HW	Update TCM reference schematics	Add R1115~R1119,C1202,C1203 and R383 change to 10K,R884 change to 1K and delete R381,R382	X05

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1	41	Battery slice application	12/13	Dell	for Slice battery to detect NB battery is insert or not.	Add PQ47(FDN338P_NL), PD22(RB751V) and PR234 (0 ohm)	X01
2	46/48	Charger	12/13	Dell	To block +PWR_SRC (19.5V) from Docking connector DOCK_DCIN_S +/- pins when NB is not docked	Add PQ63 A/B(NTGD4161PT1G),P341(100K),PR342(100K), PR343(100K). Add PQ46 RHU002N06 to control PQ62 on/off	X01

3	46	Charger	12/13	Dell	Charger of ISL88731 will turn off When ACIN is no power	Add LM393 to replace ISL88731 ACOK function(PU11B)
						Add PR345(232K),PR346(47K),PR349(21.5K),PR350(27.4K)
						Add PR344(1M),PR347(100K), PR348(0)
						Add PC185(0.1U),PC186(100P)
							X01

4	46	Charger	12/13	Dell	This change to allow charging when AC adapter only in Dock. Note TI and Intersil version of charger will disable charging when AC OK goes low. Maxim charger function was fine. The added comparator circuit is used to give BIOS indication when AC adapter is inserted or removed from notebook. Replaces charger AC OK function.	Remove PR188 and PR187, Change PR145 from +DC_IN to +SDC_IN. change PR157 net name from ACAV_IN_NB to ACAV_IN.	X01
5	46/48	Charger	12/13	Dell	Change all notebook signal name's "ACAV_IN_DOCK" and "ACAV_IN_DOCK#" to "ACAV_DOCK_SRC" and "ACAV_DOCK_SRC#" respectfully.	Change PQ40_Pin1 from "ACAV_IN_DOCK#" to "ACAV_DOCK_SRC#" Change PQ40_Pin2 from "ACAV_IN_DOCK" to "ACAV_DOCK_SRC" Change PQ43_Pin2 from "ACAV_IN_DOCK" to "ACAV_DOCK_SRC"	X01
6	46	Charger	12/13	Dell	Change PQ36.2 connection from ACAV_IN_NB to "ACAV_IN"	Change PQ36.2 connection from ACAV_IN_NB to "ACAV_IN"	X01
7	48	Selector	12/13	Dell	PBATT back drive to Battery Slice vias charger high side MOSFET	Add PQ45 between PBATT+ and +VCHGR Use PBATT_OFF control PQ62 to switch PQ45 Add PR351(240K), PR352(47K) and PR353(100K)	X01
8	48	Selector	12/13	Compal	PBATT_OFF connect to DOCK_AC_OFF	Add PD34 RB751V-40	X01
9	41	DC_IN	12/13	Dell	Add PC183 and non-stuff	Add PC183 and non-stuff	X01
10	42	+3.3V/+5V	12/13	Dell	EE work item	Change PL6 and PL7 from HMP1350-3R3LD-R to SSC-1350F3-2R8 Change PQ6 and PQ7 from FDMC8878 to FDMS8692	X01
11	48	Selector	12/14	Compal	For save the placement space, use one dule MOS chip to replace 2pcs MOS chip	Add PQ64 A/B (2N7002DW-T/R7) to replace PQ29 and PQ40 (RHU002N06) Add PQ65 A/B (2N7002DW-T/R7) to replace PQ37 and PQ46 (RHU002N06) Add PQ66A/B (2N7002DW-T/R7) to replace PQ 38and PQ39 (RHU002N06)	X01
12	46	Charger	12/14	Compal	For save the placement space, use one dule MOS chip to replace 2pcs MOS chip	Add PQ67 A/B (2N7002DW-T/R7) to replace PQ27 and PQ43 (RHU002N06) Add PQ68 A/B (2N7002DW-T/R7) to replace PQ35 and PQ44 (RHU002N06)	X01
13	42	+3.3V/+5V	12/14	Compal	ME highet limit issue	Change PL16 from HMU1356-5R6 to MPLCH1040L5R6	X01
14	45	CPU_VCORE	12/14	Compal	Connect MAX8786_VCC to PU7_Pin3 to disable third phase	Connect MAX8786_VCC to PU7_Pin3	X01

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1	48	Selector	1/7	AJ Compal	Charger for Battery Slice	Change PQ63 to 2N7002DW Add PR360 0_0402_5% between PQ63 and SLICE_BAT_PRES	X01
2	46	Charger	1/7	Merle DELL	Charger Isense MOSFET timing change	PC142 change to 0.047u_0603_25V	X01
3	48	Selector	1/7	Merle DELL	Hot dock issue, adapter crowber	Add PR357 330K_0402 form +DOCK_PWR_BAR to GND. Add PQ70 RHU002N06 parallel PQ61, series PR358 0_0402 to EN_DOCK_PWR_BAR#,serial PR359 0_0402 to ACAV_DOCK_SRC	X01
4	41	+DC_IN	1/7	Doug DELL	PJPDC1 change to 7pin connector	PJPDC1 change to MOLEX_87438-0743_7P-T Change PR20 to 0_0402_5% and populate	X01
5	PWR	Snubber	1/9	Guangyong DELL	DELL request add a snubber circuit on every regulator	Add below location of regulator switching node +3.3V_ALW: PR290, PC191 +5V_ALW: PR288, PC189 +1.5V_RUN:PR287, PC188 +1.05V_M:PR286, PC187 +VCHGR:PR289, PC190	X01
6	41	+DC_IN	1/9	Battery Team DELL	Change Battery Pin from 9 to 7pin	Change Battery Pin from 9 to 7pin	X01
7	47	ADP3209 NB_CORE	1/10	Guangyong DELL	Modify ADP3209 schematic Follow ADI suggestion	Populate PR224 Change PR239 from220K_0603_1% to 49.9K_0603_1% Change PR238 from 140K_0402_1% to 169K_0402_1% Change PC219 from 2200p_0402_50V to 1200p_0402_50V	X01
8	45	CPU_CORE	1/10	Compal	The load line SPEC is 4 mohm for SFF SV CPU	Change PR124 from 6.49K_0603_1% to 14.3K_0603_1% Change PR118 from 4.99K_0402_1% to 6.34K_0402_1% Change PR136 from 1.43K_0402_1% to 732_0402_1% Change PR90 and PR109 fro, 2K_0402_1% to 430_0402_1% Change P98 and PC109 from 0.22U_0603_10V to 1U_0603_25V No stuff PC131, PC132 and PC133	X01
9	46	Charger	2/19	BO DELL	Maxim Charger from powering on while in S5 and battery only	1. Un-pop PR184, PR347. 2.Add PD52 BAT54CW_SOT323, +DOCK_PWR_BAR/+DC_IN_SS Reserve PR184 0_0402_5% form +SDC_IN to PU10 PIN22 3. Add PR354 (10K), MAX8731A_REF/PR348_Pin1 ADD PR355 (41.2K) PR348_Pin1/GND	X02
10	46	Charger	3/4	Merle DELL	Fix BITS CR196131 and CR196130	Add PR363 1K_1206 and PC192 1U_0603_25V from +NBDOCK_DC_IN_SS to ground. Add PD35 RB751S40T1_SOD523-2 from NB_AC_OFF# to ACAV_IN_NB.	X02
11	48	Selector	3/4	AJ Compal	for reducing leakage current.	Change PD31 from SCSB540C08L(S SCH DIO B540C-13-F SMC) to SCS00002M0L(S SCH DIO PDS5100H-13 POWERDI5).	X02
12	47	+VGFX_CORE	3/4	Kenny Compal	for VGFX-CORE test	Add PR364 SD02800008L(S RES 1/16W 0 +-5% 0402 between VCC_AXG_SENSE and PR227.2 Add PR362:SD02800008L(S RES 1/16W 0 +-5% 0402) between IMVP_PWRGD and pin31 of PU15.	X02
13	PWR	Snubber	3/5	Compal EMI	In order to meet the derating requirement, change the resister component size	Change component sixe from 0805 t0 1206 below location of regulator switching node +3.3V_ALW: PR290 +5V_ALW: PR288, +VCHGR:PR289, Vcore: PR266,PR267,PR268 and PR269	X02

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1	48	Selector	3/6	MERLE DELL	Application for Battery Slice	Delete PR260 and PR261 Change PQ55 from IMD2AT to 2N7002DW Add PR291, PR292, PR293, PR294, PC193 and PD36	X02
2	46	Charger	3/6	Compal	Material smooth control	Change PQ30 and PQ31 from SI7326DN-T1-E3 to FDMC8878 Change PQ32 from SI7230DN-T1-E3 to FDMC8854	X02
3	41	DC_IN	4/8	AJ Compal	SPACE limitation	Change PC5 to SE00000GG8L(22U_0603) from SE002223K8L(22U_0806)	X03
4	45	VCORE	4/8	James Compal	PWM circuitry DH/DL still switch a few cycles in all 3 phase after power off resulted in a voltage pulse observed at output Vcore with a negative voltage (-0.24V approximately).	Add PR128 (10K_0402) between PWM1 to GND Add PR133 (10K_0402) Between PWM2 to GND	X03
5	43	+1.5V/1.05V	4/8	Compal	Chenge logic high level voltage for OE pin from 5V to 3.3V	Change PU25 and PU26 from SA000022Y0L(S IC VT351FCX-ADJ CSP 25P) to SA00002GE0L (S IC VT351AFCX-ADJ CSP 25P	X03
	42,43, 45,46, 47	EMC&Noise	4/8	EMI and Key Part DELL	To solve the EMI and system noisde issue	1.Boost resister. a.CPU Vocre Change PR87 and PR98 from 0ohm_0603 to 2.2ohm_0603 2 Snubber a.CPU Vcore Change PC99 and PC110 from 1500PF_0603 to 1000PF_0603 Stuff PR266 (4.7ohm_1206), PR267(4.7ohm_1206), PC99 and PC110. b.5V/3.3V/Charger/GPU_Core Change PC191, PC140, PC190 and PC189 from 1500PF_0603 to 1000PF_0603. Change PR288, PR265, PR289 and PR290 from 4.7ohm_1206 to 2.2ohm_1206. Stuff PC189, PC191, PC190, PC140, PR265, PR289, PR288 and PR290. C.1.5V/1.05V Change PC187 and PC188 from 1500PF_0603 to 1000PF_0603. Change PR286 and PR287 from 4.7ohm_1206 to 1ohm_1206. Stuff PC187, PC188, PR286 and PR287.	X03
6	48	Selector	4/8	Kenny Compal	Current Derating issue	Change PQ41 and PQ42 from SI4835 to FDS6679Z	X03
7	42	+3.3V/+5V	4/22	Kenny Compal	Material PSL issue	Change PL6 and PL7 from SSC-1350F3-2R8 (TMP) to HMP1350-2R8 (Delta)	X03
8	45	VCORE	4/22	LES DELL	PWM circuitry DH/DL still switch a few cycles in all 3 phase after power off resulted in a voltage pulse observed at output Vcore with a negative voltage (-0.24V approximately).	Change PR128 and PR138 from 10K_0402 to 33K_0402	X03
9	46	Charger	6/2	AJ Compal	M09 NB_AC_IN design change for sequence issue	Change PC185 from 1000p to 100p. Change PR175 from 100K to 24K	X05
10	46	Charger	6/2	AJ Compal	Change UL setting from 65W to 90W	Change PR166 from 57.6K to 51.1K Cgange PR171 from 13K to 17.8K Change PR172 from 105 to 348 Pop Pr169	X05
11	41	DC_IN	6/3	AJ Compal	SLICE_BAT_PRES# glitch issue	Add PC38 (1500n) between PQ47 to GND	X05
12	46	Charger	6/20	AJ Compal	Follow the common design	Change PR354 from 10K to 100K De-POP PR355	X05

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	43	+1.5V/1.05V	6/20	Henry Compal	Change PR65 pull high voltage from +3.3V_SUS to +3.3V_ALW	Change PR65 pull high voltage from +3.3V_SUS to +3.3V_ALW	X05
2	47	+Vgfx_Core	6/20	Kenny Compal	Load lide 6.9mohm to follow HW North Bridge setting on performance mode	Change PR239 from 49.9K to 69.8K	X05
3	45	+Vcore	6/20	Kenny Compal	Modify the CPU power monitor error on thermal control panel	Change PR139 from 22.1K to 14.3K	X05
4	42/45/46	EMI ISN	6/25	EMI Compal	EMI ISN issue	Add PL15(FBMJ4516HS720NT) and PC222(470P_0402) Change PR155 from 0 ohm to 4.7 ohm. Change PR37 from 1ohm to 4.7 ohm. POP PL12 and de-POP PJP32	X05
5	46	Charger	7/4	Merle Dell	Because the the average current is not over 3A(65W adapter).	Depop UL circuit, pop PR170	X05

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