COMPAL CONFIDENTIAL

MODEL NAME : ***E-Docking (For APR)***

PCB NO : ***LA-3954P***

COMPAL P/N : ***TBD***

E-Docking Schematics Document

E-APR

2008-04-18

REV : 0.4 (DELL: X03)

MB PCB

Part Number	Description
DA40000930L	PCB LA-3954P REV0.3 MB

BOM NO: TBD

PCB P/N: TBD

DELL CONFIDENTIAL/PROPRIETARY

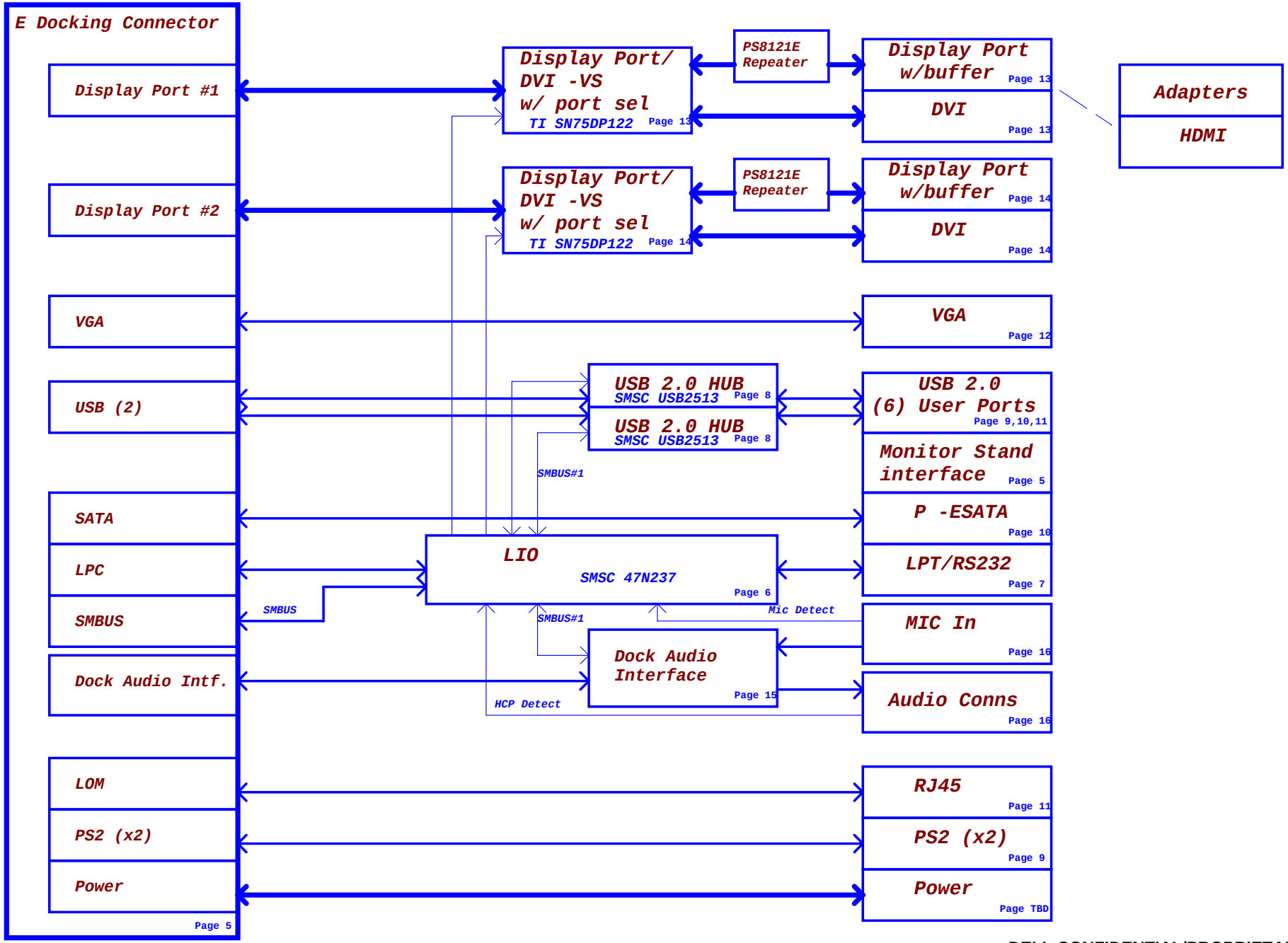
Compal Electronics, Inc.

Title: Cover Sheet

Size | Document Number: LA-3954P | Rev: X03

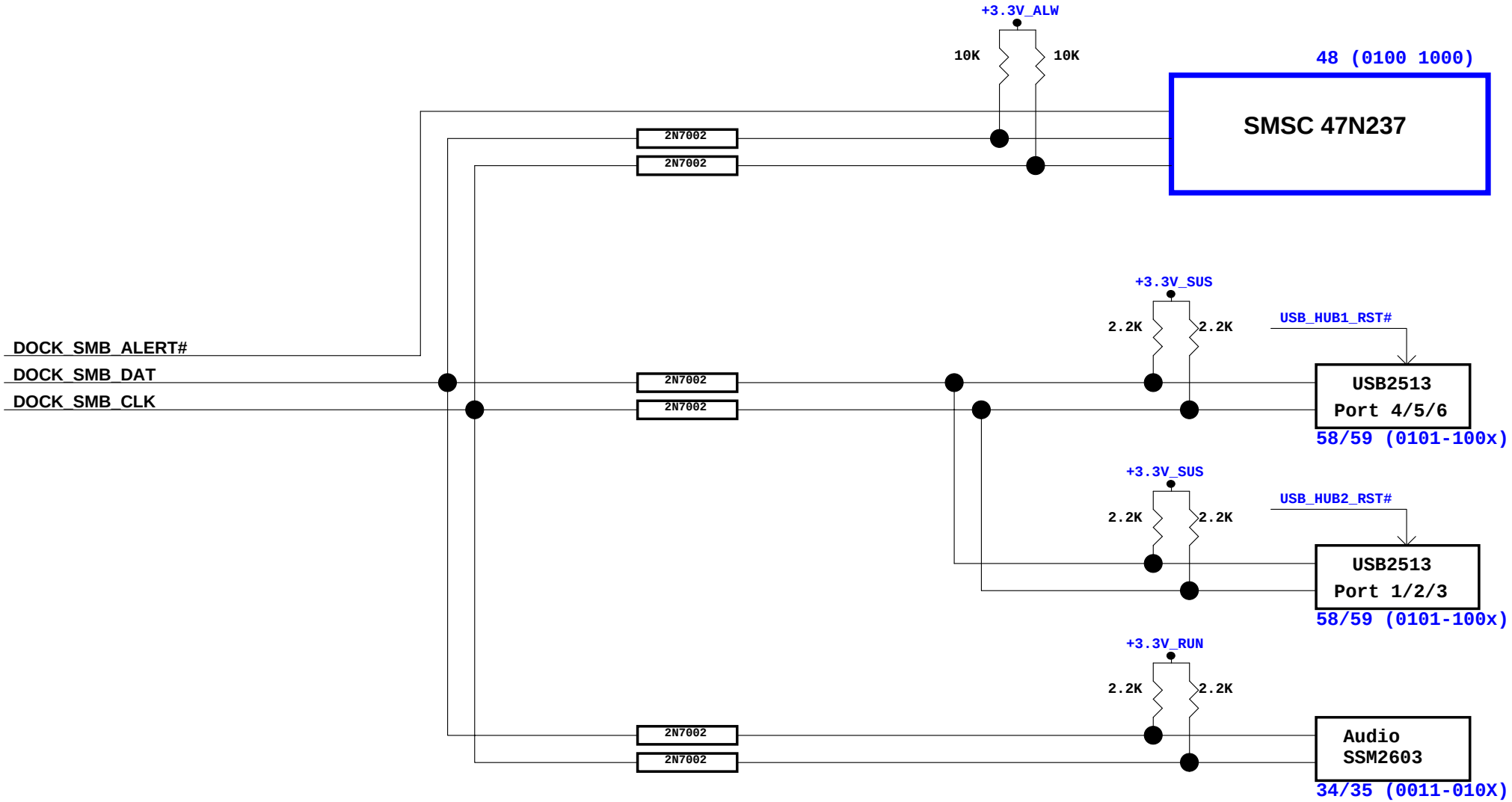
Date: Friday, April 18, 2008 | Sheet 1 of 29

Block Diagram



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.	
Title	Block Diagram
Size	Document Number: LA-3954P
Rev	X03
Date: Friday, April 18, 2008	Sheet 2 of 29



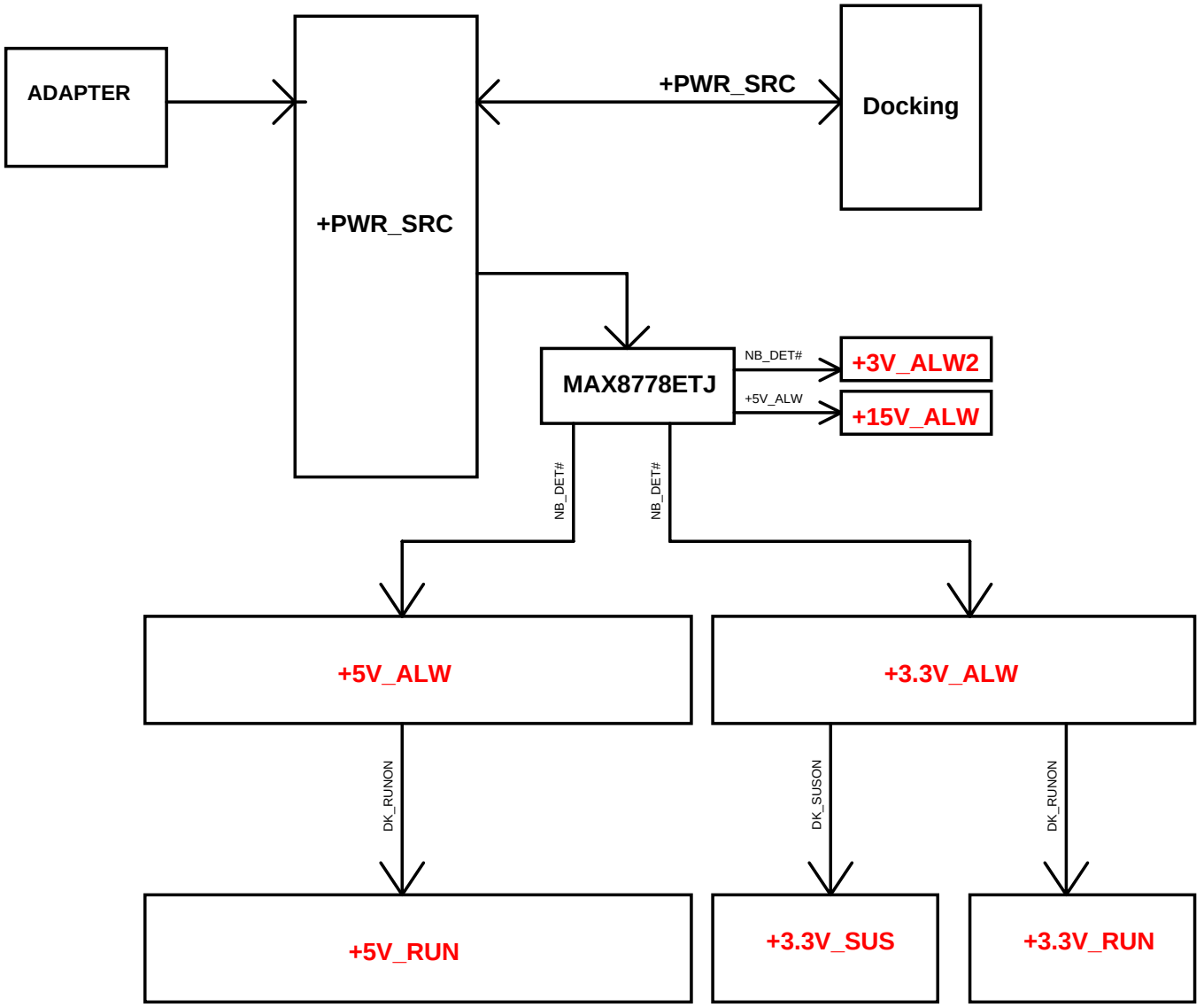
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: SMBus Block Diagram

Size | Document Number: LA-3954P | Rev: X03

Date: Friday, April 18, 2008 | Sheet 3 of 29



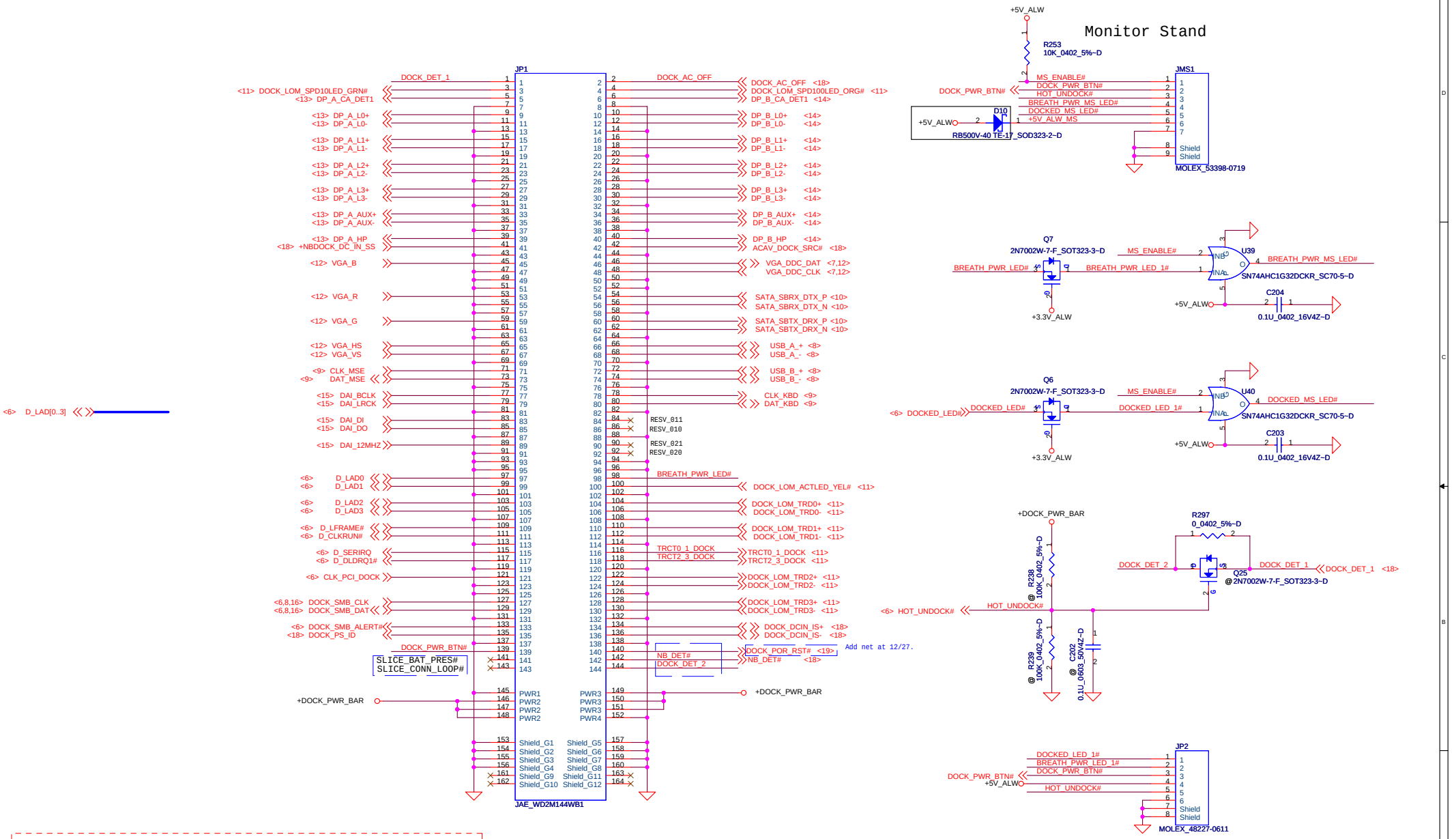
DELL CONFIDENTIAL/PROPRIETARY

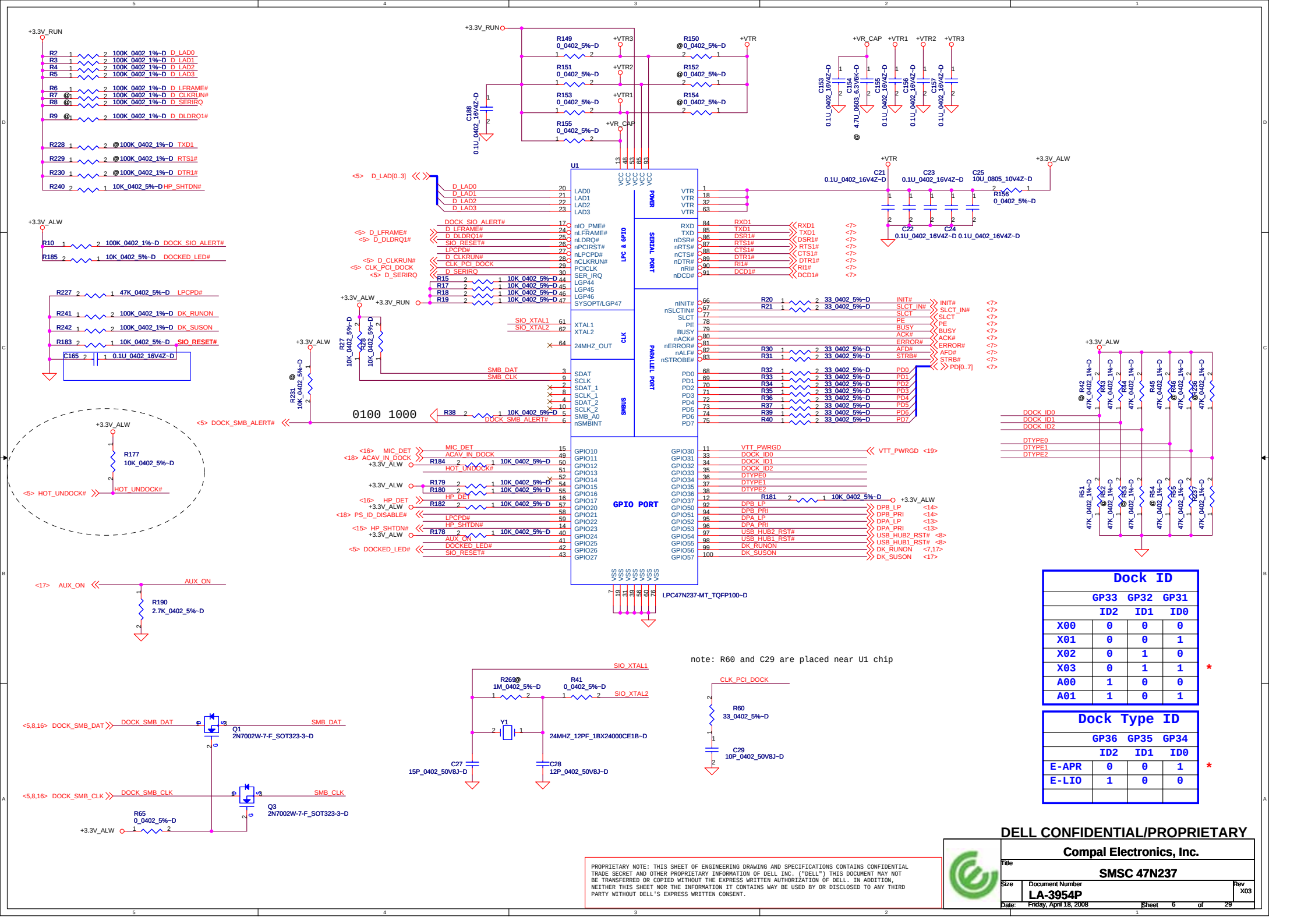
Compal Electronics, Inc.

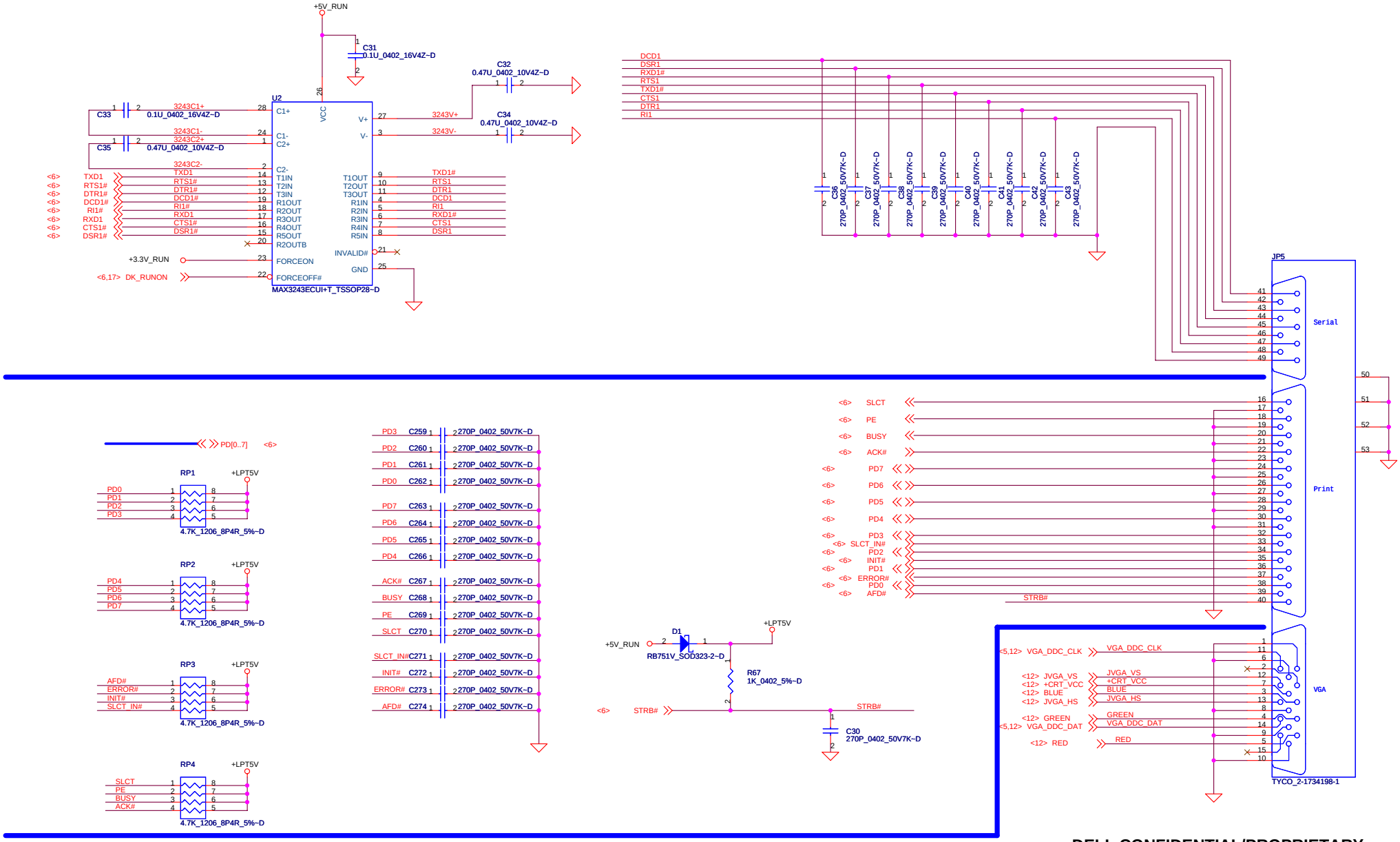
Title: Power Rail Block Diagram

Size | Document Number: LA-3954P | Rev: X03

Date: Friday, April 18, 2008 | Sheet 4 of 29

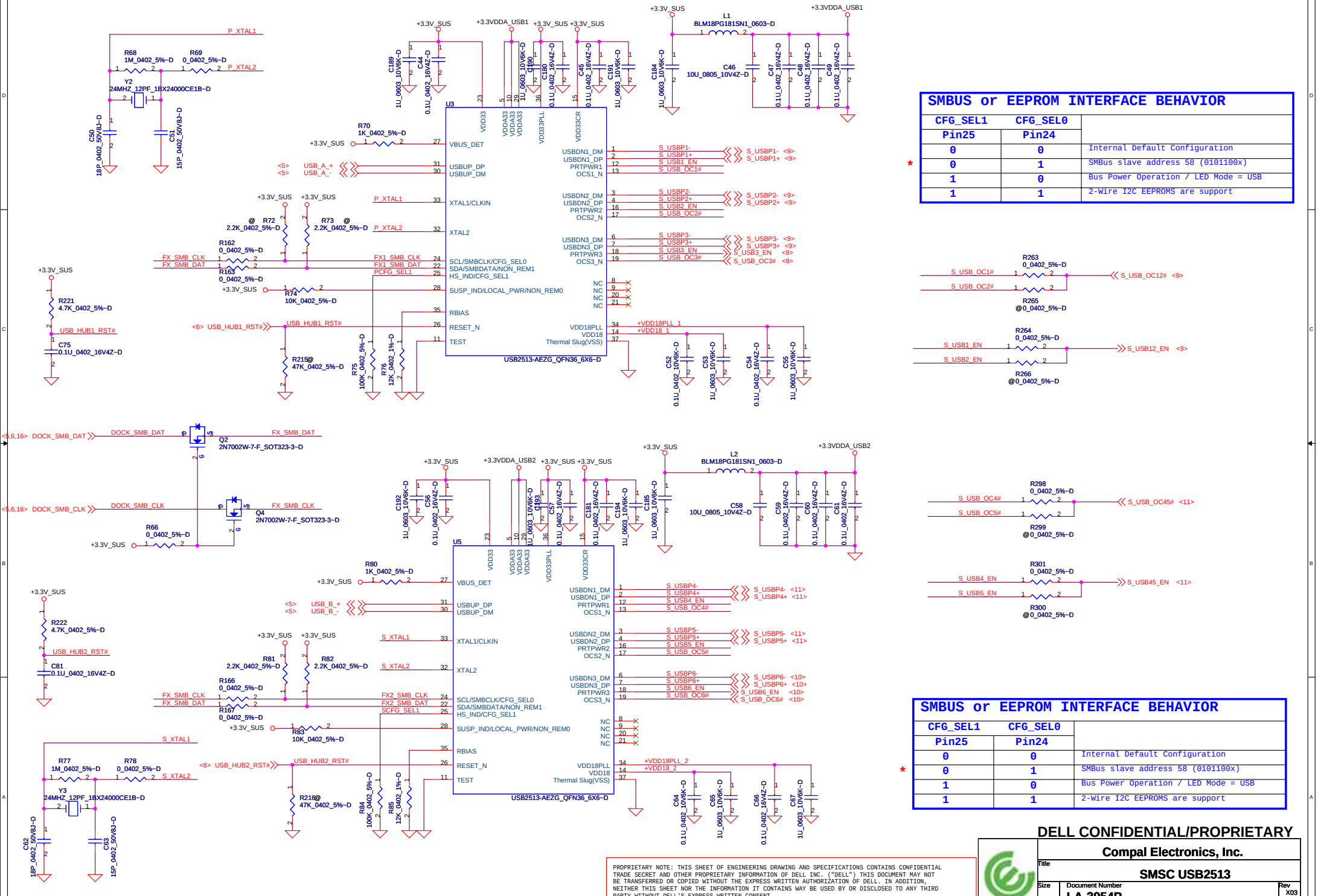

JP1
JAE_WD2M144WB1
DOCK_DET_1
DOCK_AC_OFF
DOCK_PWR_BTN#
SLICE_BAT_PRES#
SLICE_CONN_LOOP#
+DOCK_PWR_BAR
RESV_011
RESV_010
RESV_021
RESV_020
BREATH_PWR_LED#
TRCT0_1_DOCK
TRCT2_3_DOCK
NB_DET#
DOCK_DET_2
Add net at 12/27.
Monitor Stand
+5V_ALW
R253
10K_0402_5%~D
JMS1
MOLEX_53398-0719
D10
RB500V-40 TE-17_SOD323-2~D
Q7
2N7002W-7-F_SOT323-3~D
U39
SN74AHC1G32DCKR_SC70-5~D
C204
0.1U_0402_16V4Z~D
+3.3V_ALW
Q6
U40
C203
R297
0_0402_5%~D
Q25
R238
R239
C202
JP2
MOLEX_48227-0611
Close to connector
C158
C159
C205
C206
C218
C219
C207
C208
C160
C161
C220
C221
PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS WAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.
DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.
Docking Connector
LA-3954P
X03
Friday, April 18, 2008
Sheet 5 of 29


U1
LPC47N237-MT_TQFP100-D
LPC & GIO
SERIAL PORT
CLK
SMBUS
PARALLEL PORT
GPIO PORT
POWER
0100 1000
Dock ID
GP33 GP32 GP31
ID2 ID1 ID0
X00 0 0 0
X01 0 0 1
X02 0 1 0
X03 0 1 1 *
A00 1 0 0
A01 1 0 1
Dock Type ID
GP36 GP35 GP34
ID2 ID1 ID0
E-APR 0 0 1 *
E-LIO 1 0 0
note: R60 and C29 are placed near U1 chip
DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.
SMSC 47N237
LA-3954P
Rev X03
Friday, April 18, 2008
Sheet 6 of 29



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.	
Title	LPT and RS232
Size	Document Number: LA-3954P
Rev	X03
Date:	Friday, April 18, 2008
Sheet	7 of 29



SMBUS or EEPROM INTERFACE BEHAVIOR

CFG_SEL1	CFG_SEL0	
Pin25	Pin24	
0	0	Internal Default Configuration
0	1	SMBus slave address 58 (0101100x)
1	0	Bus Power Operation / LED Mode = USB
1	1	2-Wire I2C EEPROMS are support

*

SMBUS or EEPROM INTERFACE BEHAVIOR

CFG_SEL1	CFG_SEL0	
Pin25	Pin24	
0	0	Internal Default Configuration
0	1	SMBus slave address 58 (0101100x)
1	0	Bus Power Operation / LED Mode = USB
1	1	2-Wire I2C EEPROMS are support

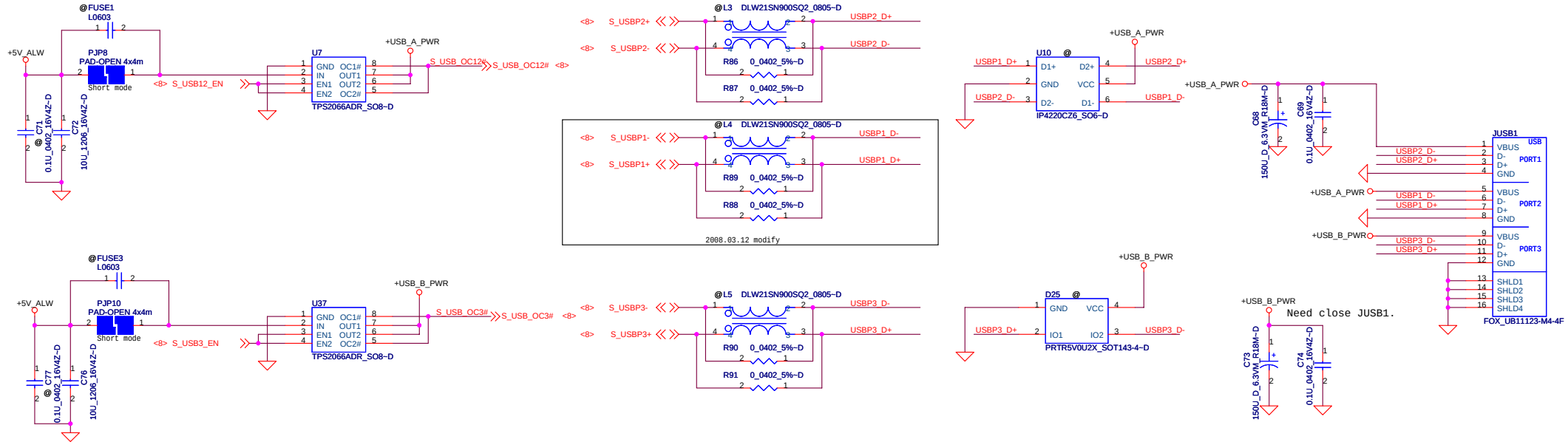
*

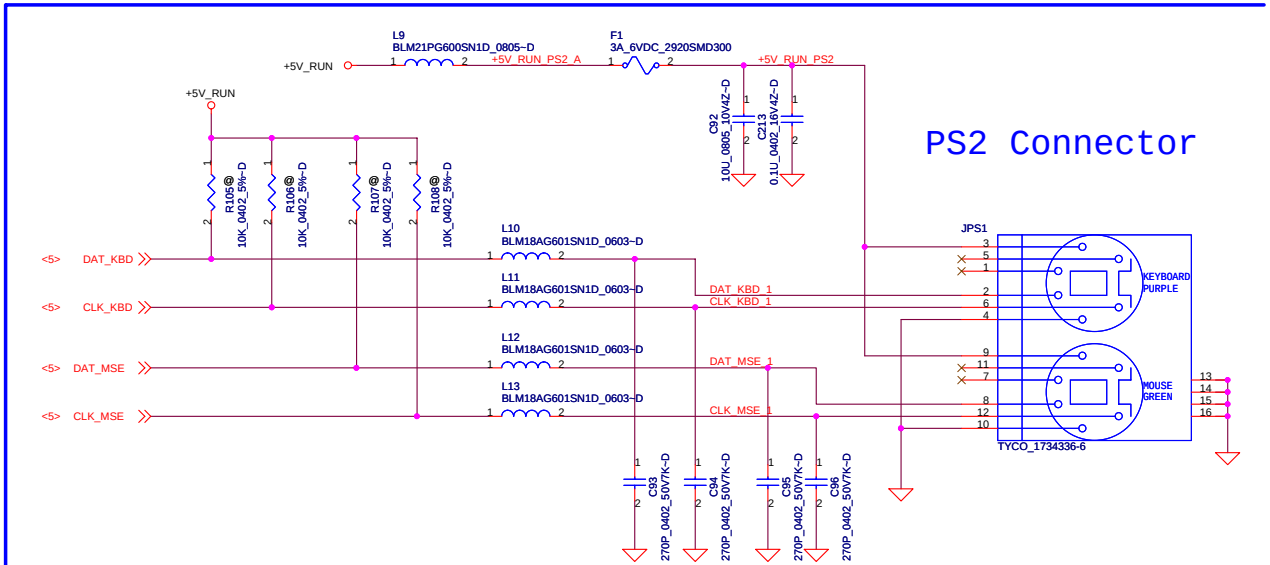
Compal Electronics, Inc.

Title: SMSC USB2513

Size: | Document Number: LA-3954P | Rev: X03

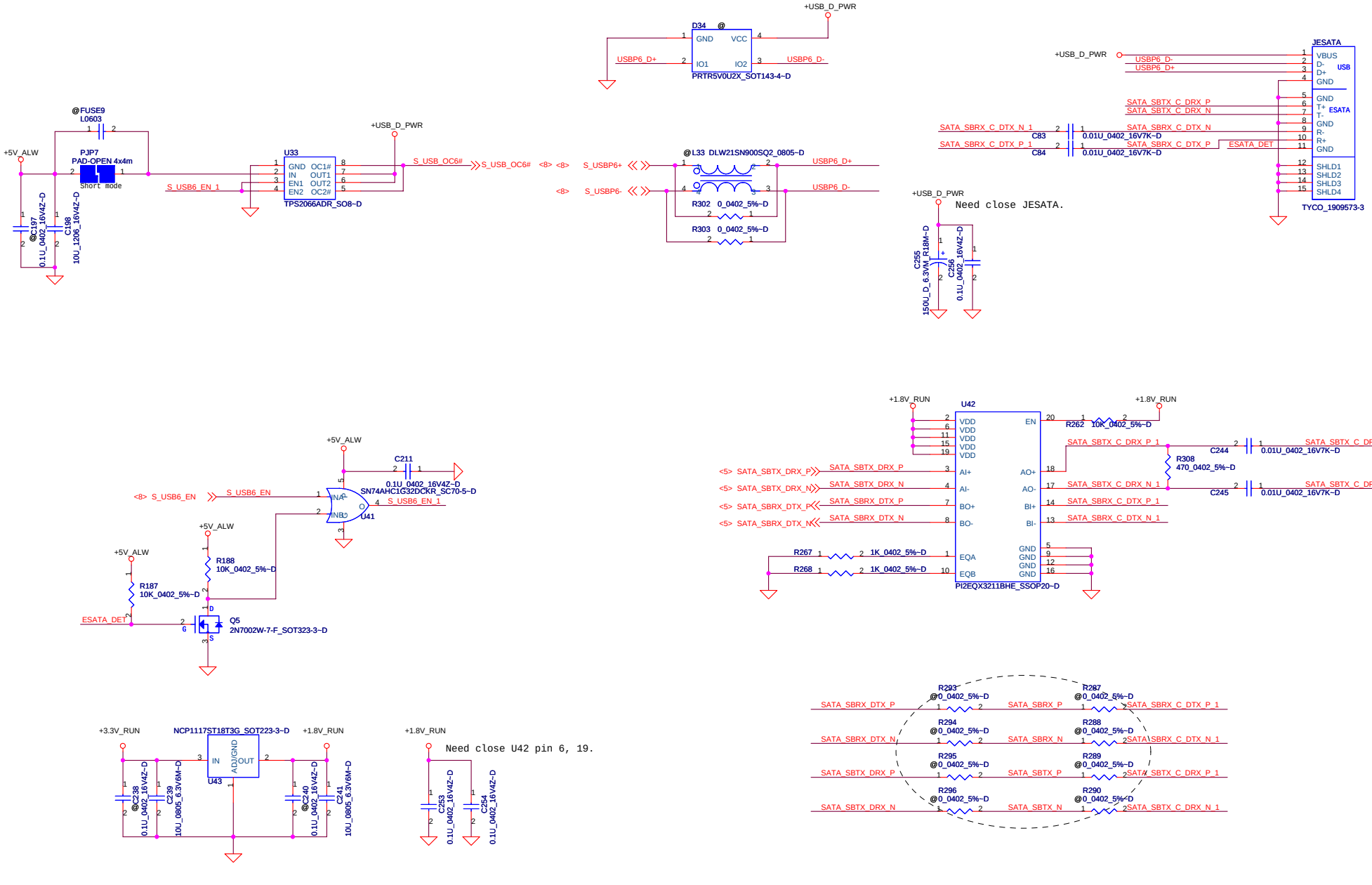
Date: Friday, April 18, 2008 | Sheet 8 of 29

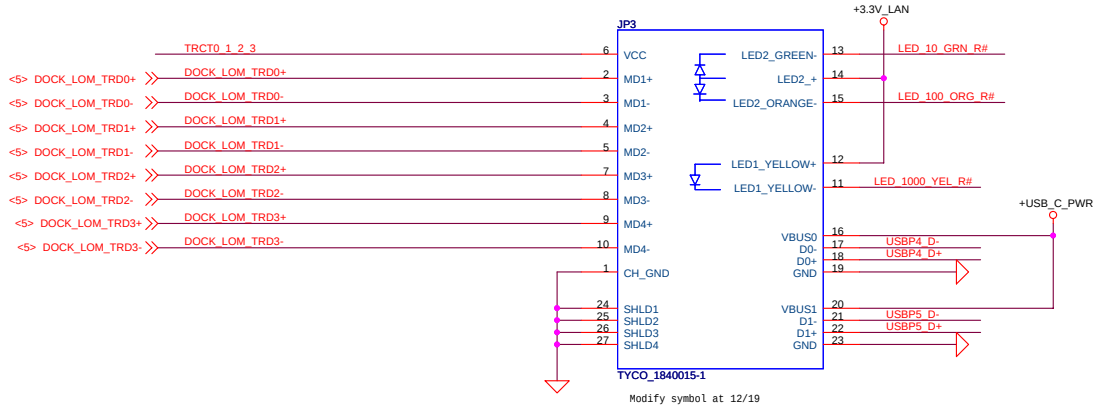




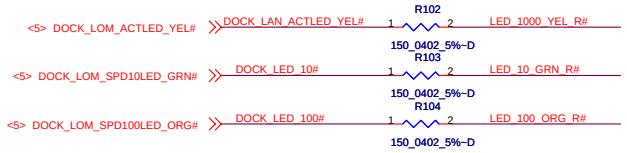
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.	
Title	USB Port x3 and PS2x2
Size	Document Number: LA-3954P
Rev	X03
Date: Friday, April 18, 2008	Sheet 9 of 29

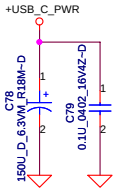

+USB_D_PWR
D34 @
GND VCC
IO1 IO2
USBP6_D+
USBP6_D-
PRTR5V0U2X_SOT143-4~D
JESATA
VBUS
D-
D+
USB
GND
T+ ESATA
T-
R-
R+
SHLD1
SHLD2
SHLD3
SHLD4
TYCO_1909573-3
SATA_SBTX_C_DRX_P
SATA_SBTX_C_DRX_N
SATA_SBRX_C_DTX_N_1
SATA_SBRX_C_DTX_P_1
SATA_SBRX_C_DTX_N
SATA_SBRX_C_DTX_P
ESATA_DET
C83 0.01U_0402_16V7K~D
C84 0.01U_0402_16V7K~D
@FUSE9
L0603
+5V_ALW
PJP7
PAD-OPEN 4x4m
Short mode
U33
GND OC1#
IN OUT1
EN1 OUT2
EN2 OC2#
TPS2066ADR_SO8~D
S_USB6_EN_1
S_USB_OC6#
@L33 DLW21SN900SQ2_0805~D
S_USBP6+
S_USBP6-
USBP6_D+
USBP6_D-
R302 0_0402_5%~D
R303 0_0402_5%~D
Need close JESATA.
C255 150U_D_6.3VM_R18M~D
C256 0.1U_0402_16V4Z~D
C197 @0.1U_0402_16V4Z~D
C198 10U_1206_16V4Z~D
U42
VDD
EN
AI+
AI-
BO+
BO-
EQA
EQB
AO+
AO-
BI+
BI-
GND
PI2EQX3211BHE_SSOP20~D
R262 10K_0402_5%~D
R308 470_0402_5%~D
C244 0.01U_0402_16V7K~D
C245 0.01U_0402_16V7K~D
SATA_SBTX_DRX_P
SATA_SBTX_DRX_N
SATA_SBRX_DTX_P
SATA_SBRX_DTX_N
R267 1K_0402_5%~D
R268 1K_0402_5%~D
S_USB6_EN
SN74AHC1G32DCKR_SC70-5~D
U41
C211 0.1U_0402_16V4Z~D
R188 10K_0402_5%~D
R187 10K_0402_5%~D
Q5 2N7002W-7-F_SOT323-3~D
R293 @0_0402_5%~D
R294 @0_0402_5%~D
R295 @0_0402_5%~D
R296 @0_0402_5%~D
R287 @0_0402_5%~D
R288 @0_0402_5%~D
R289 @0_0402_5%~D
R290 @0_0402_5%~D
+3.3V_RUN
NCP1117ST18T3G_SOT223-3~D
+1.8V_RUN
U43
IN
ADJ/GND
OUT
C238 @0.1U_0402_16V4Z~D
C239 10U_0805_6.3V6M~D
C240 @0.1U_0402_16V4Z~D
C241 10U_0805_6.3V6M~D
Need close U42 pin 6, 19.
C253 0.1U_0402_16V4Z~D
C254 0.1U_0402_16V4Z~D
Bill0703: Please place under U42. (co-layout..)
Benson0912: If populate R287~290 and R293~R296,
the U42,R262, R267, R268 ,U43, C239, C241
is no-stuff and C244,C245 will change to 0ohm.
DELL CONFIDENTIAL/PROPRIETARY
PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS WAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.
Compal Electronics, Inc.
Title
E-SATA+USB Port x1
Size
Document Number
LA-3954P
Rev
X03
Date: Friday, April 18, 2008
Sheet 10 of 29

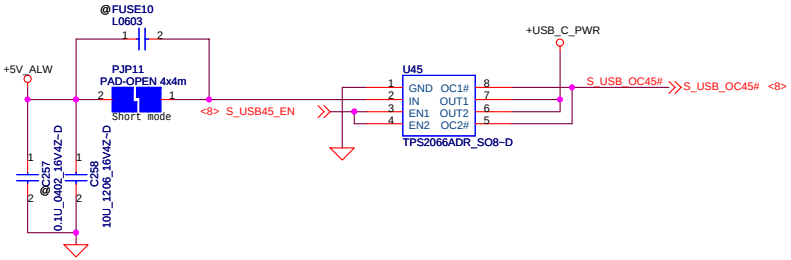


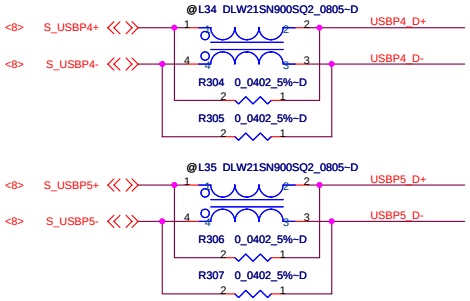
Modify symbol at 12/19

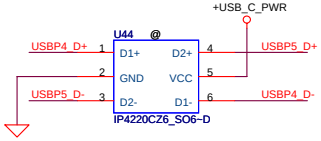


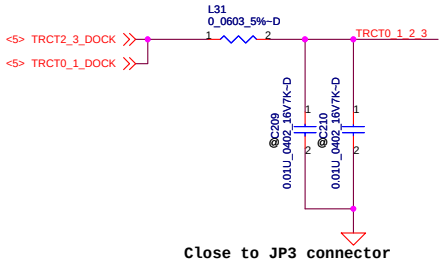
Need close JP3.











Close to JP3 connector

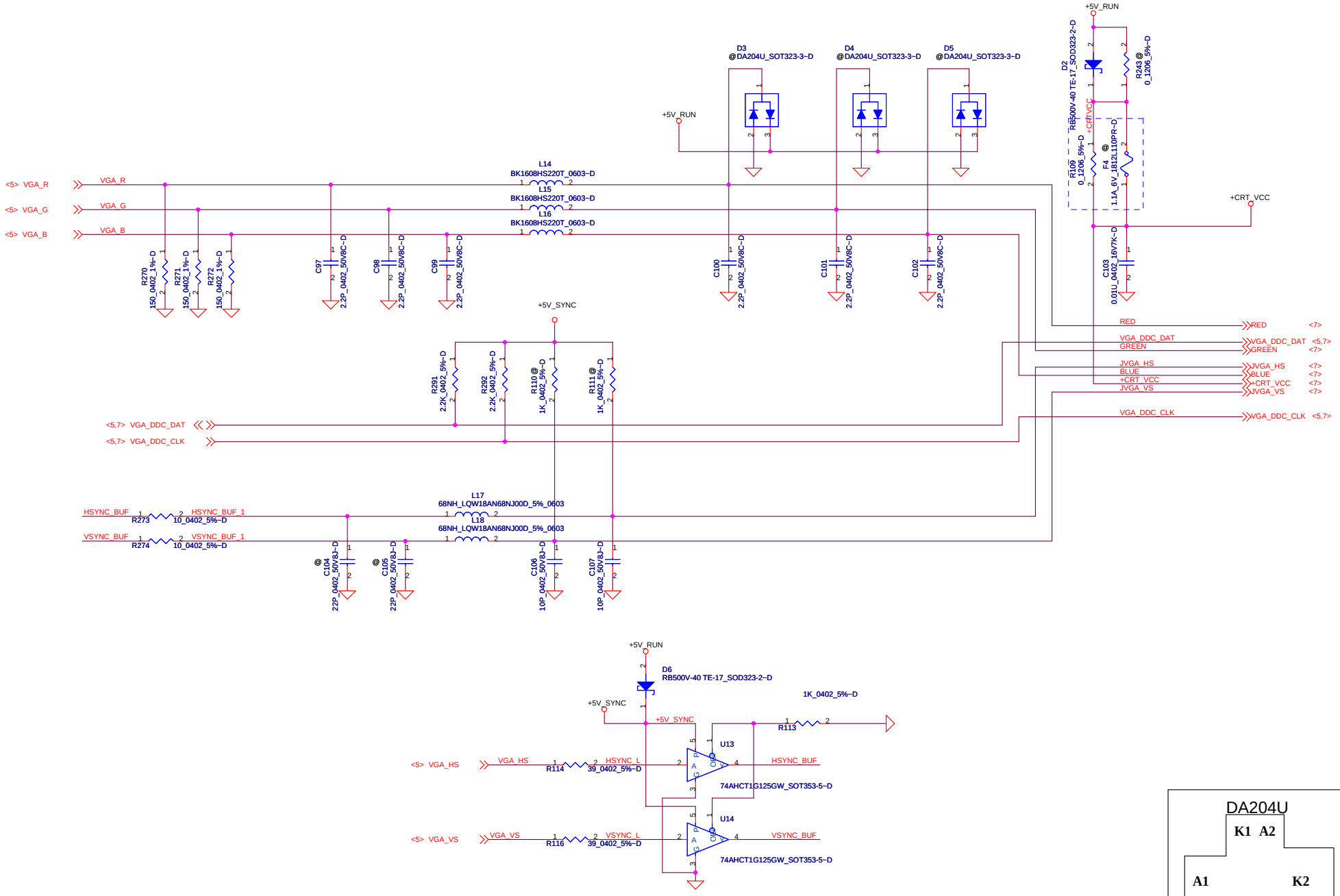
DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: RJ45+USB Portx2

Size: | Document Number: LA-3954P | Rev: X03

Date: Friday, April 18, 2008 | Sheet 11 of 29

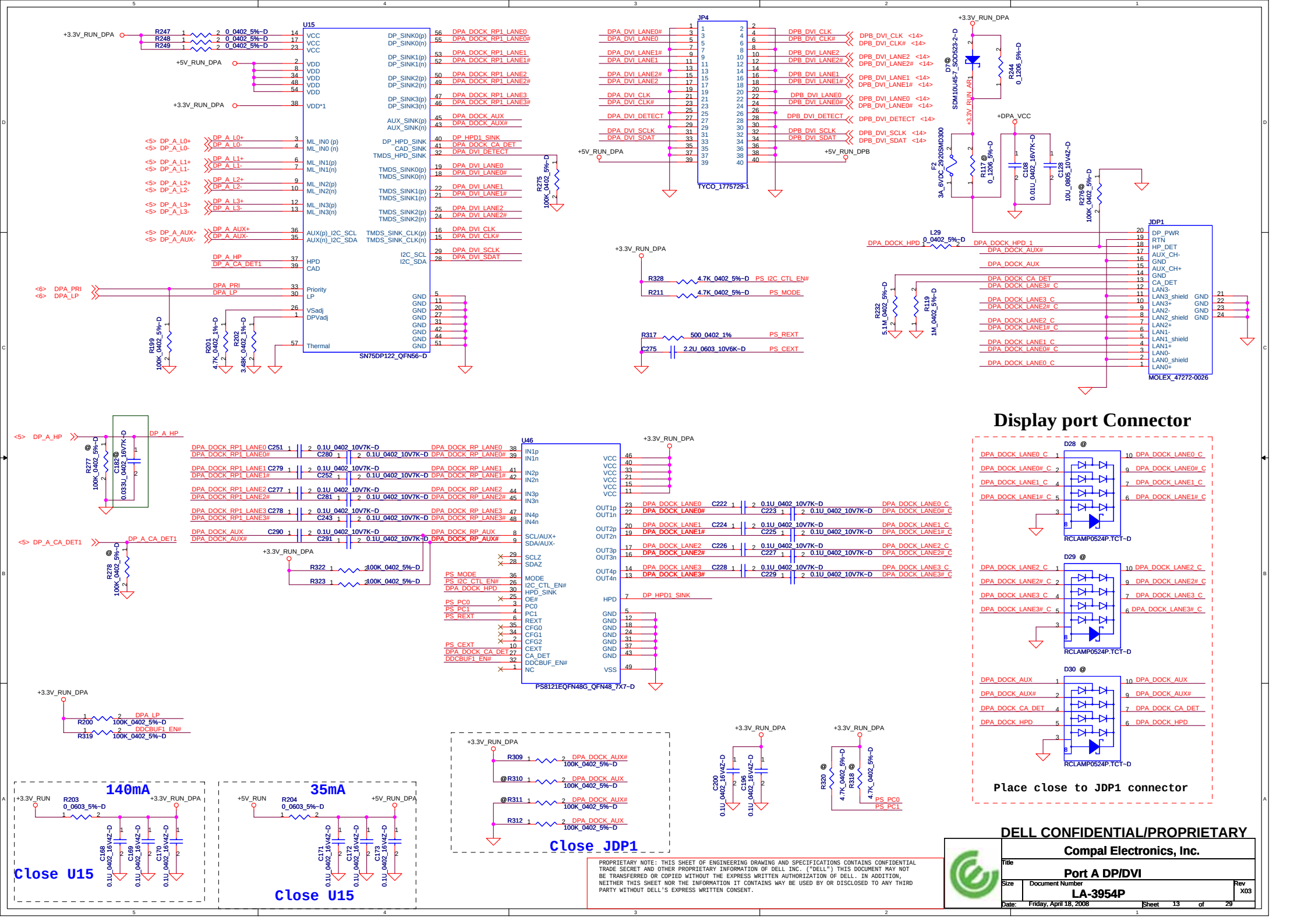


Compal Electronics, Inc.

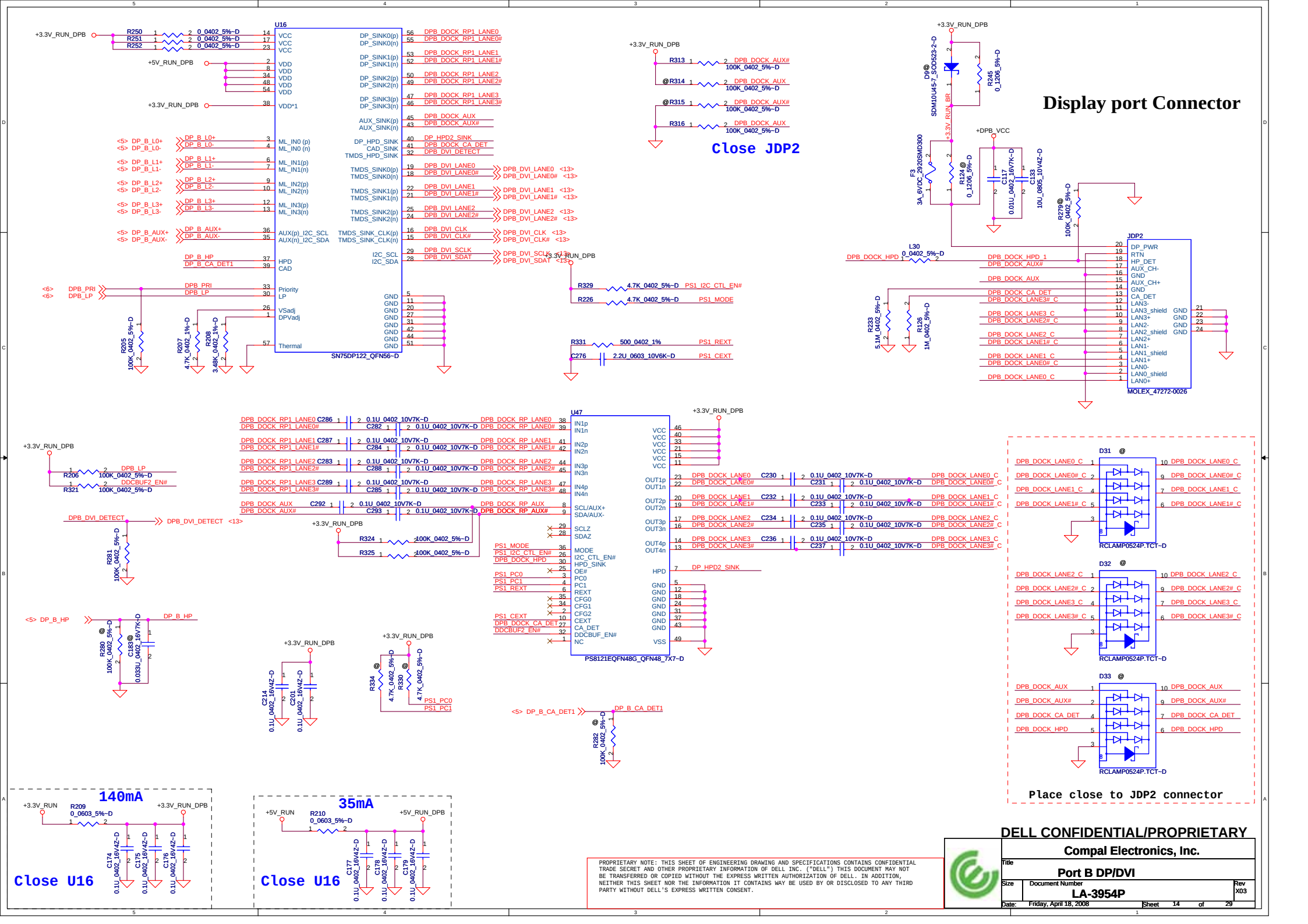
Title: CRT

Size | Document Number: LA-3954P | Rev: X03

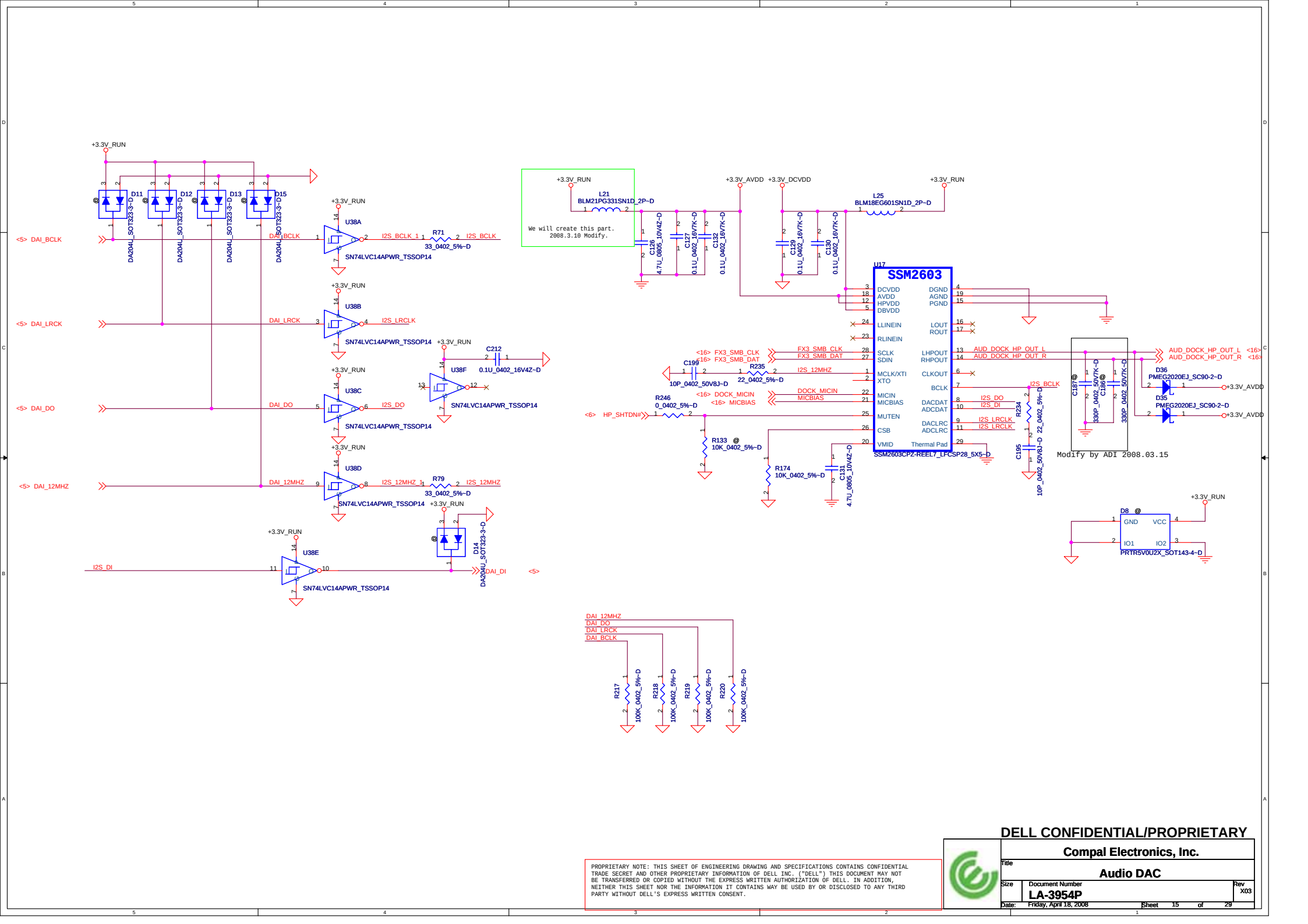
Date: Friday, April 18, 2008 | Sheet 12 of 29


U15
SN75DP122_QFN56-D
JP4
TYCO_1775729-1
JDP1
MOLEX_47272-0026
U46
PS8121EQFN48_QFN48_7X7-D
Display port Connector
D28 @
D29 @
D30 @
RCLAMP0524P.TCT-D
Place close to JDP1 connector
140mA
Close U15
35mA
Close U15
Close JDP1
DELL CONFIDENTIAL/PROPRIETARY
Compal Electronics, Inc.
Port A DP/DVI
LA-3954P
X03
Friday, April 18, 2008
Sheet 13 of 29

Display port Connector

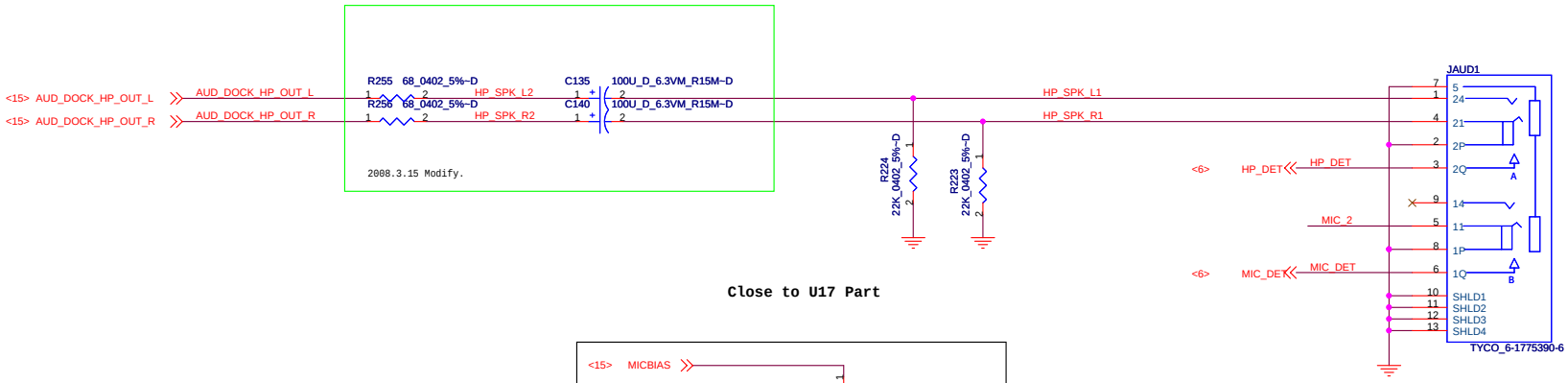


PROPRIETARY NOTE: THIS SHEET OF ENGINEERING DRAWING AND SPECIFICATIONS CONTAINS CONFIDENTIAL TRADE SECRET AND OTHER PROPRIETARY INFORMATION OF DELL INC. ("DELL") THIS DOCUMENT MAY NOT BE TRANSFERRED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF DELL. IN ADDITION, NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS WAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT DELL'S EXPRESS WRITTEN CONSENT.

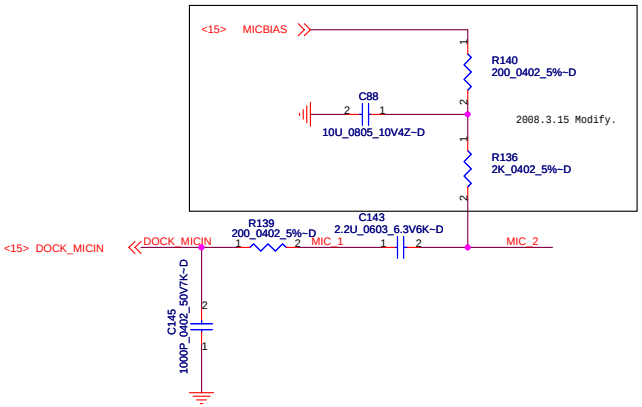


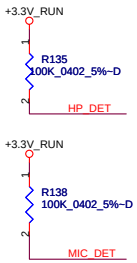
DELL CONFIDENTIAL/PROPRIETARY

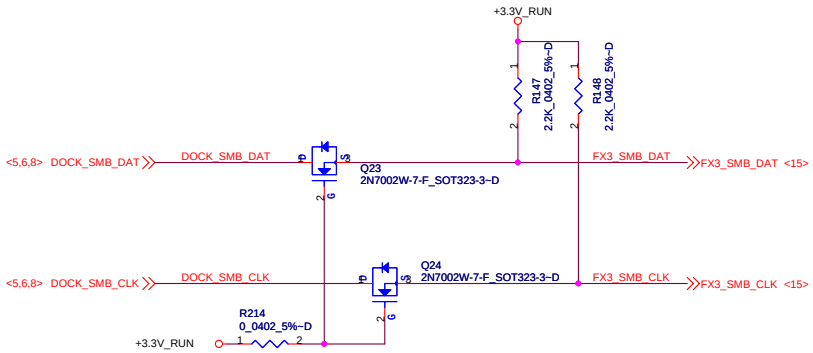
Compal Electronics, Inc.	
Title	Audio DAC
Size	Document Number: LA-3954P — Rev: X03
Date: Friday, April 18, 2008	Sheet 15 of 29



Close to U17 Part





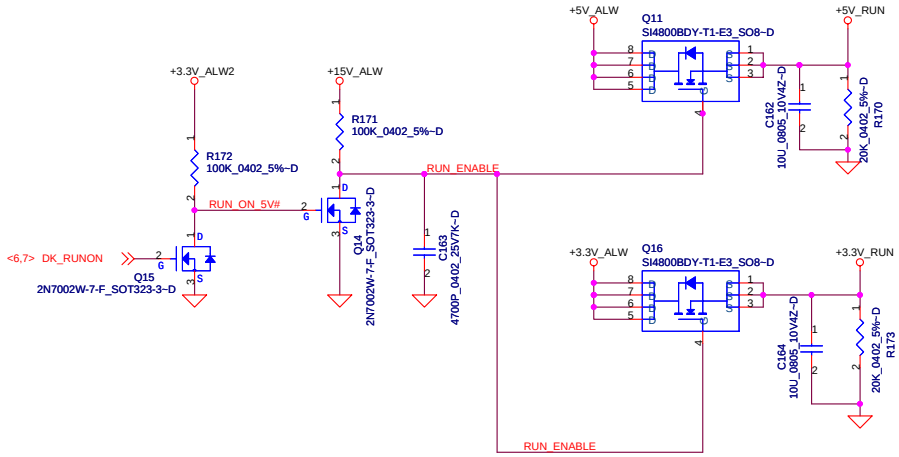


Compal Electronics, Inc.

Title: Audio (HeadPhone Jack and MIC)

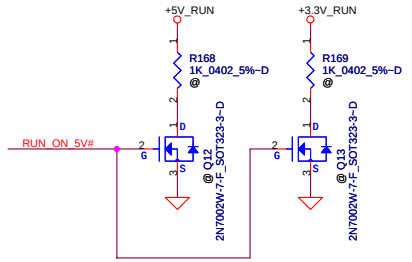
Size | Document Number: LA-3954P | Rev: X03

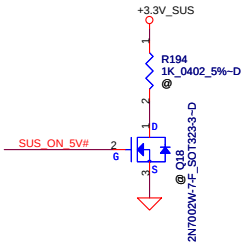
Date: Friday, April 18, 2008 | Sheet 16 of 29

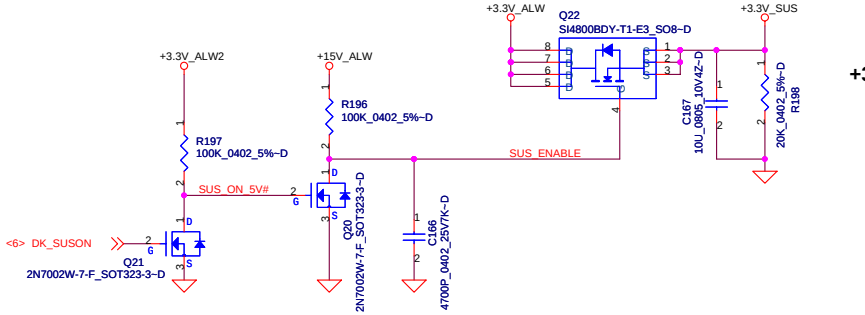


+5V_RUN Source
Design current: 200mA
Max current: 200mA

+3.3V_RUN Source
Design current: 300mA
Max current: 300mA

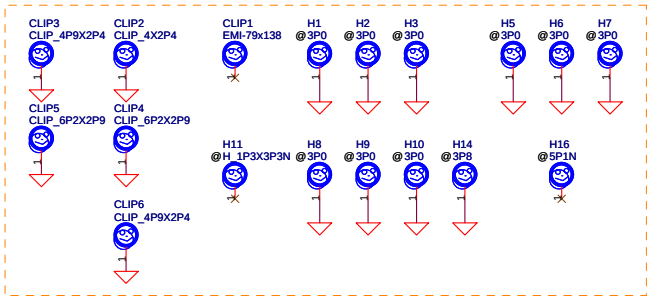


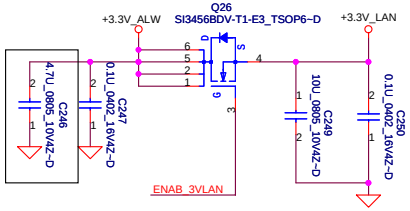


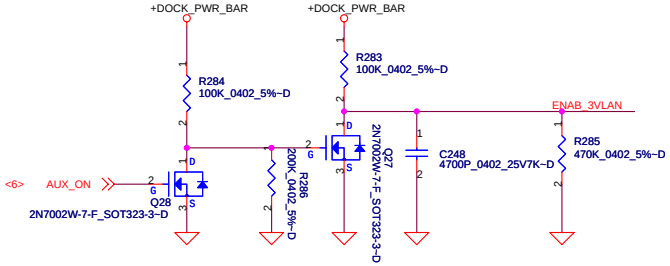


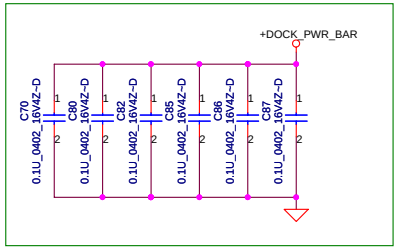
+3.3V_SUS Source
Design current: 200mA
Max current: 300mA

SCREW HOLE

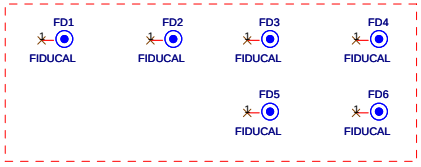








FIDUCIAL MARK



DELL CONFIDENTIAL/PROPRIETARY

Compal Electronics, Inc.

Title: EE Power

Size: | Document Number: LA-3954P | Rev: X03

Date: Friday, April 18, 2008 | Sheet 17 of 29

Dock DC_IN

This Capacitor should be used only as last resort for EMI suppression. Capacitance should be as small as possible.

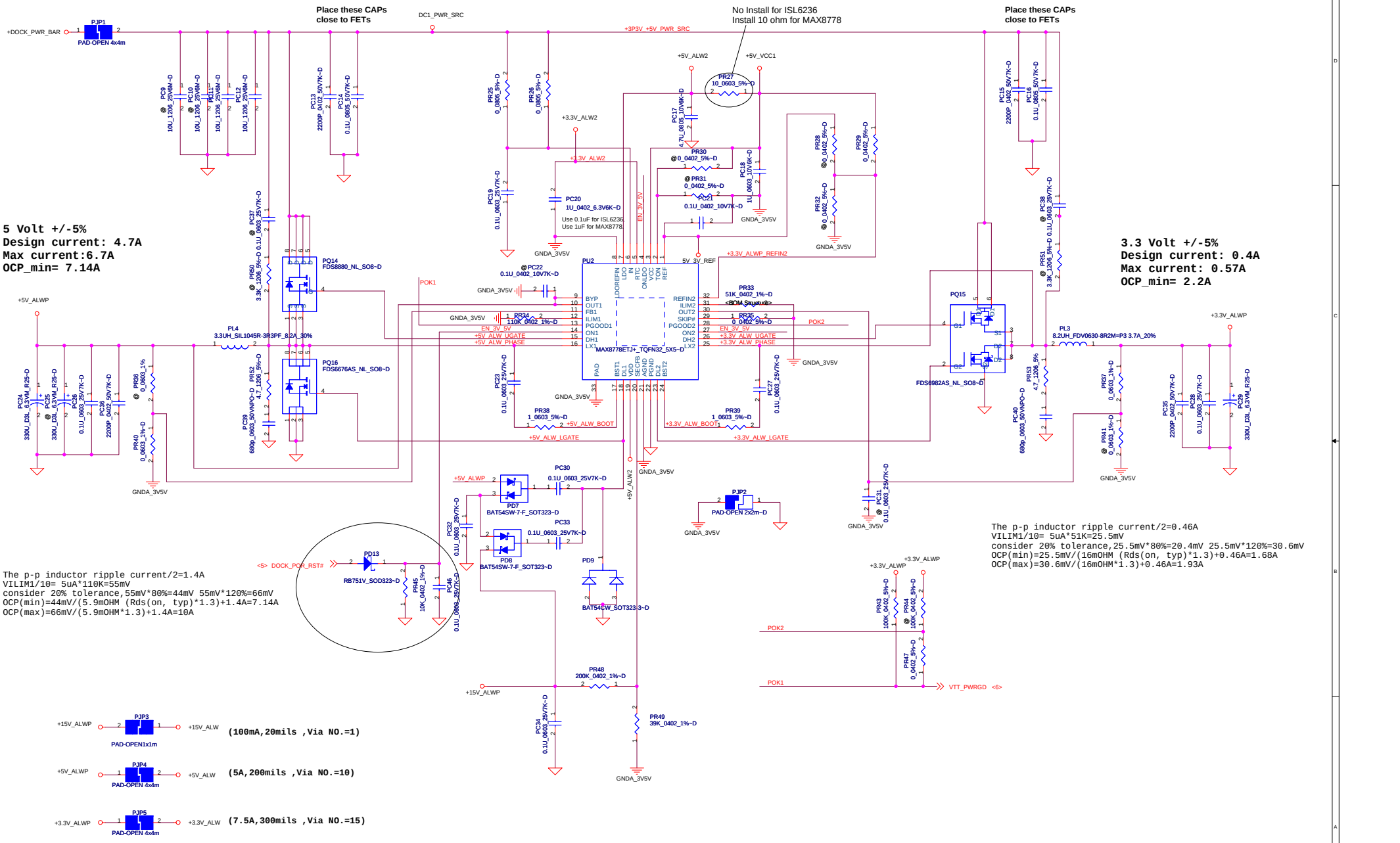
1. Populated PR68
2. Reserve delay circuit, no stuff.

Dock PS_ID Detector

2V* 100K/ (100K+32.4K)=1.51V
17.8V*21.5K/(232K+21.5K)= 1.51V

Compal Electronics, Inc.
Title: Power DC-DC
Size: | Document Number: LA-3954P | Rev: X03
Date: Friday, April 18, 2008 | Sheet 18 of 29

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



The p-p inductor ripple current/2=1.4A
VILIM1/10= 5uA*110K=55mV
consider 20% tolerance,55mV*80%=44mV 55mV*120%=66mV
OCP(min)=44mV//(5.9mOHM (Rds(on, typ)*1.3)+1.4A=7.14A
OCP(max)=66mV//(5.9mOHM*1.3)+1.4A=10A

The p-p inductor ripple current/2=0.46A
VILIM1/10= 5uA*51K=25.5mV
consider 20% tolerance,25.5mV*80%=20.4mV 25.5mV*120%=30.6mV
OCP(min)=25.5mV//(16mOHM (Rds(on, typ)*1.3)+0.46A=1.68A
OCP(max)=30.6mV//(16mOHM*1.3)+0.46A=1.93A

Compal Electronics, Inc.

Title: Power 3V/5V

Size | Document Number: LA-3954P | Rev: X03

Date: Friday, April 18, 2008 | Sheet 19 of 29

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
14	5,9, 10,11	ME	9/6	DELL	Customer Request: 1.Change Y TO B(6pin) Connector for POWER BOARD. 2.Change E-SATA+USB Connector. 3.Change TREBLE USB Connector. 4.Change RJ45+2USB Connector.	1.Change JP2 symbol from TYCO_48226-1211 to TYCO_48226-0611. 2.Change JESATA symbol from TYCO_1759557-2 to TYCO_1909573-3. 3.Change JUSB1 symbol from TYCO_5787617-4 to Foxconn_UB11123-M4-4F. 4.Change JP3 symbol from TYCO_1840021-1 to SUYIN_020181MHBK4M508ZA. 5.Change page from P09-USB Port x6 + E-SATA to P09-USB Port x3 and PS2x2. 6.Change page from P10-RJ45 and PS2x2 to P10-E-SATA+USB Port x1. 7.Add page P11-RJ45+USB Portx2.	4layer X00
15	15	GG list	9/5	DELL	Item 2 No-pop the Link Detect Circuit in Audio Section: U20, U21, U22, U23, U24, U25, U26, U27	NO-POP the U20, U21, U22, U23, U24, U25, U26, U27,C147,C148,C149, C150,C151,C152,R143,R144,R145,R146 parts	4layer X00
16	9,10,11	GG list	9/6	DELL	Item 3 USB Cost Reduction: No-pop ESD diodes Only use 4 TPS2066 switches Only use 4 150uF caps	1.JESATA use TPS2066 x1 and 150uF x1. 2.JUSB1 use TPS2066 x2 and 150uF x2. 3.JP3 use TPS2066 x1 and 150uF x1. 4.No-pop ESD Diodes.	4layer X00
17	8	GG list	9/6	DELL	Item 4 Pop 1Mohm resistors on USB crystal circuits (R68 and R77)	Pop 1Mohm resistors R68 and R77.	4layer X00
18	8	GG list	9/6	DELL	Item 5 No-pop the 47K resistors (R215 and R216) on USB hub reset lines since this signal is pulled low by the LPC before 3V_SUS comes up.	NO_Pop the 47k resistors R215 and R216.	4layer X00
19	10	GG list	9/6	DELL	Item 8 Please remove DC blocking caps C242 and C243 at U42.These caps are already present on Roush near the docking connector. Please verify.	Remove it.	4layer X00
20	9,10,11	EE	9/6	COMPAL	Remove FUSE (LF453) Parts.	Remove it.	4layer X00
21	15	EE	9/11	COMPAL	1.Headphones and Microphone detect wrong. 2.Audio input signal short ground.	1.Change HP_DET and MIC_DET to pulled up. 2.Change JAUD1.9 from Ground to NC pin.	4layer X00
22	6	GG list	9/12	DELL	Item10 Disconnect PCI_RST# from pin 26 on LPC. We will use GPIO27 from the LPC to control the reset of LPC bus. Name the net SIO_RESET#.	Modify OK.Net:SIO_RESET# Add pull down R183 resistor.	4layer X00
23	9	schematic review	9/12	Compal	(PS2)These pull up resistors are already present on Roush.	NO_Pop the 10K resistors R105,R106,R107,R108.	4layer X00
24	5,10,15	schematic review	9/17	Compal	OR and NOTGate Power add CAPS to GND	1.Add caps C203,C204,C211,C212 to GND. 2.Change caps packaged size to 0402.	4layer X00
25	11	schematic review	9/12	Compal	DOCK_LED_10#,DOCK_LED_100# Change current limit resistors	R103,R104 change to 150 ohm.	4layer X00
26	11	schematic review	9/12	Compal	JP3 connector by pass caps alyeady present SUYIN_020181MHBK4M508ZA	NO_pop the 0.01U caps C209,C210.	4layer X00
27	6	schematic review	9/12	Compal	Update DOCK_ID to X02	R43 change to No_pop;R52 change to pop.	4layer X00

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
28	12	GG list	9/17	DELL	Item 11 Please populate the fuse and the diode and no-pop the 0 ohm resistors at the VGA connector.	No-pop the R243,R109 resistors;POP the D2 diode F4 fuse.	4layer X00
29	13	GG list	9/17	DELL	Item 12 Please populate the fuse and the diode and no-pop the 0 ohm resistors at the DP connector.	No-pop the R244,R117 resistors;POP the D7 diode F2 fuse.	4layer X00
30	14	GG list	9/17	DELL	Item 13 Please populate the fuse and the diode and no-pop the 0 ohm resistors at the DP connector.	No-pop the R245,R124 resistors;POP the D9 diode F3 fuse.	4layer X00
31	14	GG list	9/17	DELL	Item 15 Please no-pop R282 since it is popped on Roush/Maybach.	No-pop the R282 resistor.	4layer X00
32	22	EE	9/17	COMPAL	Add new EE PIR-3 page.	Add Page22 EE PIR-3.	4layer X00
33	15	GG list	9/19	DELL	Layout issue Item34 Add no-pop ESD diode between AGND and GND at the audio connector for ESD purposes.	Add D8 ESD diode between AGND and GND at Audio connector.	4layer X00
34	15	GG list	9/19	DELL	Layout issue item 37 AUD_DOCK_HP_OUT - Traces change reference planes between AGND and GND. They need to maintain the same reference plane throughout their runs. The traces also do not reference planes for 100 mils. If not, add and populate 0.1uF capacitors where the traces cross the moats. See attached picture hp_crossing the moat.jpg for moat crossings and bypass locations, circled in red	Add the C165,C183 0.1uF caps.	4layer X00
33	13	GG list	9/20	DELL	Item 17 Need to no pop R278 (CA_DET pull down). The system side has(/is adding) a pull down for this net too. For now no pop, but in the future - may remove.	No-pop the R278 resistor (CA_DET pull down).	4layer X00
34	13,14	GG list	9/20	DELL	Item 18 Need to no pop R277, R280 (HPD pull downs). The system side has pull downs for these nets. For now no pop, after testing remove.	No-pop the R277,R280 resistors (HPD pull downs).	4layer X00
35	8	GG list	9/20	DELL	Item 19 We need to no-pop one pair of the pull-up resistors for the USB SMBus. There are two pairs of pull-ups on this bus.	No-pop the R72,R73 resistors. keep one pair of the pull-up resistor for the USB SMBus.	4layer X00
36	6,8	EE	11/5	Benson	Test Crystal EA fail.modify the circuit.	Recommend circuit: 1.Change Y1 part from 24MHZ_20PF_1BX24000BK1A~D to 24MHZ_12PF_1BX24000CE1B~D. 2.Change C27 part from 18P_0402_50V8J~D to 15P_0402_50V8J~D. 3.Change C28 part from 18P_0402_50V8J~D to 12P_0402_50V8J~D. 4.Change C51,C63 part from 12P_0402_50V8J~D to 15P_0402_50V8J~D. 5.Change C50,C62 part from 12P_0402_50V8J~D to 18P_0402_50V8J~D.	4layer X01
37	13	EE	11/06	Benson	DVI port A and port b on DVI board location wrong.	Modify JP4 board to board connector port A,B location.	4layer X01

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
38	10	EE	11/07	Benson	Test SATA EA fail.modify the circuit.	Net: SATA_SBTX_C_DRX_P_1 and SATA_SBTX_C_DRX_N_1 point add series connection R308 470ohm.	4layer X01
39	5	DELL	11/07	Benson	Modify E-DOCK PIN OUT	Add JP1 pin41 pin net: +DOCK_DC_IN_SS.source by P18-PWR_Dock DC_IN/PS_ID.	4layer X01
40	15	COMPAL	11/08	Benson	Audio SM2602 DVSS,AVSS,HPVSS noise.	Change L28,L29,L30 part to 0 ohmresistors .	4layer X01
41	6	COMPAL	11/08	Benson	Change DOCK ID to X03.	No-pop the R51 resistor;Pop the R42 resistor.	4layer X01
42	6	GG list	11/09	Benson	U39, U40 use a different schematic symbol for an OR gate then the U59 from Roush schematics. Compal needs to standardize on one symbol for an OR gate. What is being done to prevent the symbol issues seen on Roush? This needs to be resolved before PT gerber.	Change U39,U40 symbol to SN74AHC1G32DCKR_SC70-5~D best on Roush.	4layer X01
43	6	SCH164847	11/12	Benson	No-pop Duplicate Pull-up Resistors on APR	Please no-pop the following resistors since they are pulled up on the system side when docked:R7,R8,R9,R231.	4layer X01
44	6	SCH164844	11/12	Benson	Fix DVI Pinout Issue on APR and DVI Daughter Card.	There is a pin define error on the connector pinouts of both APR and DVI daughtercard that is preventing DVI display.The pinout on JP4 (APR) and JP1 (DVI board) need to change for proper DVI display on both channels. DVI Port A should be above Display Port A DVI Port B should be above Display Port B.	4layer X01
45	5	SCH164880	11/13	Benson	Passing 3V_ALW to Power Board	we add Q6 at DOCKED_LED# net and Q7 at BREATH_PWR_LED# net.	4layer X01
46	6	COMPAL	11/13	Benson	Change connector part.	Change JP2 symbol from MOLEX_48226-0611 to MOLEX_48227-0611.	4layer X01
47	6	SCH164886	11/13	Benson	Add Comparator Circuit for AC_AVIN_DOCK.	Please add a comparator circuit, as outlined in separate email.The output of this comparator circuit will be named ACAV_IN_DOCK and needs to be routed to a Dock EC GPIO.Use GPIO11 on the APR. and Remove the R186 part.	4layer X01
48	5	COMPAL	11/13	Benson	Follow the POWER PIR2 item 2.	Change net "ACAV_IN_DOCK#" to "ACAV_DOCK_SRC#"	4layer X01
49	17	COMPAL	11/13	Benson	Add EMI CLIP.	ADD CLIP2~CLIP6 Part.	4layer X01
50	15	COMPAL	11/14	Benson	Audio EMI test fail.	1.Please reserve R71,R79 0 ohm at Dock connector side and AC termination at the End for I2S_BCLK and I2S_12MHz. 2. I2S_BCLK parallel R234 22 ohm and C195 10P to GND. 2. I2S_12MHZ parallel R235 22 ohm and C199 10P to GND.	4layer X01
51	16	COMPAL	11/15	Bill	MIC bias resistor needs to change from 4.99 ohm to 40Kohm at R139.	Change R139 from 4.99ohm to 40.2Kohm.	4layer X01
52	13,14	COMPAL	11/15	Bill	Change F2, F3 to 3A_6VDC_2920SMD300	Change F2, F3 to 3A_6VDC_2920SMD300	4layer X01
53	6,8,16	COMPAL	11/19	Benson	Have found that high Resistance values at the gate of the SMBus isolation FETs may affect the Vgs turn-on volatge, causing the SMBus to disconnect unexpectedly because the isolation FETs are not turning on.	Change the R65,R66,R214 from 10K to 0ohm	4layer X01
54	13, 14	COMPAL	12/13	Jake Lee	Customer Request: 1.Change resistor for SN75DP122_QFN56~D. 2.Change resistor for SN75DP122_QFN56~D.	1. Change part R202 from 5.11Kto 3.48K. 2. Change part R208 from 5.11Kto 3.48K.	4layer X02

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
55	13, 14, 15	COMPAL	12/13	Jake Lee	Customer Request: 1.Change FUSE part 2.Change SSM2603CPZ	1. Change part F2 from 3A_6VDC to 1.1A_6V. 2. Change part F3 from 3A_6VDC to 1.1A_6V. 3. Change part U17 from SSM2603 to SSM2603.	4layer X02
56	5	COMPAL	12/19	Jake Lee	Customer Request: 1. Change resistor for TYCO_1840015-1.	1. Change part JP3 from SUYIN_020181MHBK4M508ZA to TYCO_1840015-1.	4layer X02
57	16	COMPAL	12/27	Jake Lee	Headphone channels of right and left are exchanging.	Exchange nets of between the AUD_COCK_HP_OUT_R and the AUD_DOCK_HP_OUT_L.	4layer X02
58	5	COMPAL	12/27	Jake Lee	The DOCK_POR_RST# signal will now be used to control the power to the dock.	Add new net of DOCK_POR_RST# to JP1.140.	4layer X02
59	6	COMPAL	01/07	Benson	Change DOCK ID to X02.	No-pop the R42 resistor;Pop the R51 resistor.	4layer X02
60	13,14	DELL	01/15	Benson	Base on Roush Discrete Graphics changes for DP.	1. Add 10KOhm POP the PU (R309) and NO-POP the PD (R311) on DPA_DOCK_AUX#. 2. Add 10KOhm NO-POP the PU (R310) and POP the PD (R312) on DPA_DOCK_AUX. 3. Add 10KOhm POP the PU (R313) and NO-POP the PD (R315) on DPB_DOCK_AUX#. 4. Add 10KOhm NO-POP the PU (R314) and POP the PD (R316) on DPB_DOCK_AUX.	4layer X02
61	5	DELL	01/14	Benson	The Docking pinout will change to move the DOCK_DET# and SLICE_BAT_PRES# pins to minimize the false detection of an attached dock or slice battery when the system is inserted at an angle	Swap pin141 and pin143 on connector. Swap pin142 and pin144 on connector.	4layer X02
62	11	DELL	01/15	Benson	Customer Request	Change L31 to 0 ohm resistor for LOM CT signaling	4layer X02
63	9,10,11	DELL	01/15	Benson	Change COMPAL part.	Change U7,U33,U37,U45 from TPS2066DR_SO8~D to TPS2066ADR_SO8~D0 part.	4layer X02
64	7	COMPAL	01/16	Benson	Parallel capactior change to 0402 capacitor...	Change CP1,CP2,CP3,CP4 from Parallel capactior to (C259-C274) 0402 capactior.	4layer X02
65	12	COMPAL	01/29	Benson	Change the ports for CRT EA report.	Add 2.2pF capacitor to C97~C102 and change L14~L16 to 22 ohm bead (BK1608HS220T_0603~D).	4layer X02
66	12	COMPAL	01/24	Benson	Customer Request: 1.Change FUSE part	1. Change part F4 from 3A_6VDC to 1.1A_6V.	4layer X02
67	15	DELL	2/12	Benson	For customer request. Power supply filtering for U17 the SSM2603.	1.Change part L21,L25from BK1608LM182-T_0603~D to BLM18EG601SN1D_2P~D. 2.Pin3 and pin5 of U19 are combined together,and remove part C133,C187 and add L25 to keep the power supply clean. 3.Pin12 and pin18 of U19 are combined together,and remove part C124,C125. Change C126,C129,C131 from 1uF to 10U_0805_10V4Z~D.	4layer X02
68	13,14	DELL	2/14	Benson	For customer request. Based on a review of the DP spec.we are considering making changes to the DP connector power delivery, like adding a PTC fuse and bulk capacitance on the system and dock side.	1.Change part F2 and F3 from 1.1A_6V_1812L110PR~D to 3A_6VDC_2920SMD300. 2. Add part C128 10U_0805_10V4Z~D at +DPA_VCC net 3. Add part C133 10U_0805_10V4Z~D at +DPB_VCC net	4layer X02
69	13,14	DELL	2/14	Benson	DP BOM Changes to Support PT SMT	R202 and R208 should change to 3.83K for passing DP eye.	4layer X02

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
70	13,14,16	DELL	02/19	Benson	Customer Request: 1.Change Display connector part 2.Change Audio connector part	1. Change part JDP1,JDP2 from MOLEX_47272-0001~D to MOLEX_47272-0026. 2. Change part JAUD1 from TYCO_1775390-6 to TYCO_6-1775390-6.	4layer X02
71	13, 14	DELL	02/19	Benson	DP BOM Changes to Support PT SMT	R202 and R208 should change to 3.83K for passing DP eye.	4layer X02
72	15,16	DELL	02/19	Benson	For customer request. Audio Output protection.	1. Add D35 part.anode to the output Pin13(LHOUT) and the cathode to pin 12 HPVDD. 2. Add D36 part.anode to the output Pin14(RHOUT) and the cathode to pin 12 HPVDD. 3. Add one capacitor of around 300pF in parallel with R223 and do the same for R224, and place these 2 capacitors be close to the U17.	4layer X02
73	12	DELL	02/19	Benson	For customer request. Change CRT FUSE to No_pop.	F4 change to No_pop;R109 change to pop.	4layer X02
74	15,16	ADI	02/19	Benson	Recommended by ADI	1.Delete the R23~R26 Part 0_0603_5%~D. 2.Delete the C165,C183 Part 0.1U_0402_16V7K~D. 3.Delete the L28~L30 Part 0_0603_5%~D. 4.Add the C134 Part 0.1U_0402_16V7K~D at +3.3V_RUN. 5.Add the C132 Part 0.1U_0402_16V7K~D at +3.3V_AVDD. 6.Add the R92 Part 0_0402_5%~D at AGND and DGND. 7.Change the C275 net from HP_SPK_L1 to AUD_DOCK_HP_OUT_L. 8.Change the C276 net from HP_SPK_R1 to AUD_DOCK_HP_OUT_R. 9.Change the C145 net from MIC3 to MIC2. 10.Delete the D26,D27 Part PRTR5V0U2X_SOT143-4~D. 11.Delete the L24 Part BLM18AG121SN1D_0603~D. 12.Delete the R225~R226 Part 0_0402_5%~D.	4layer X02
75	6,13,14	COMPAL	03/04	Benson	Enhance ESD test result.	1.Add C165 0.1uF on SIO_RESET#(near chip side). 2.Add C183 and C183 0.1uF on DP_A_HP and DP_B_HP(near chip side)	4layer X02
76	15,16	ADI	03/10	Benson	Recommended by ADI	1.Delete the C134 Part 0.1U_0402_16V7K~D. 2.Change the C126,C131 Part from 10U_0805_10V4Z~D to 4.7U_0805_10V4Z~D. 3.Change C129 Part from 10U_0805_10V4Z~D to 0.1U_0402_16V7K~D. 4.Delete the C275,C276,L23,L22,C137,C138,R141 part. 5.Change the R139 from 40.2K_0402_1%~D to 200_0402_1%~D. 6.Change the C145,1 net from Mic_2 to DOCK_MICIN.by the way change to 1000PF.	4layer X02
77	13	COMPAL	03/10	Benson	Change the ports for DPa EA report.	1.Change R202 Part from 3.83K_0402_1%~D to 4.02K_0402_1%~D.	4layer X02
78	16	COMPAL	03/12	Benson	We review audio schematic found Symbol pin define mirror.	1.Modify JAUD1 symbol.	4layer X02
79	13,14	DELL	03/12	Benson	Change the ports for DPa an DPb EA report.	1.Change R202 Part from 4.02K_0402_1%~D to 3.48K_0402_1%~D. 1.Change R208 Part from 3.83K_0402_1%~D to 3.48K_0402_1%~D.	4layer X02
80	15	COMPAL	03/12	Benson	Recommended by ADI	1.Delete R92 Resister AGND Connect DGND 2.Change L25 part from 0_0805 to BLM18EG601SN1D_2P~D	4layer X02
81	17	COMPAL	03/12	Benson	Modify H14 SCREW HOLE	1.Change H14 from 3P25 to 3P8.	4layer X02
82	9	COMPAL	03/12	Benson	L4 swap for layout routing issue.	1.L4 swap PIN define.	4layer X02

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
83	17	DELL	03/13	Benson	EMI Request APR and add several 0.1µF capacitance from Vcc to GND and PCI_CLK AC terminal.	1. +DOCK_PWR_BAR net New add: 6*0.1µF C80,C82,C85,C86,C87,C70 at BOT and TOP side. 2. PCI_CLK: change BOM: R60 change to 33 ohm, C29 change to 10P	4layer X02
84	17	DELL	03/13	Benson	Audio jack pin define correct	1.Swap pin1 and pin4 on JAUD1 2.Swap pin2 and pin3 on JAUD1 3.Swap pin6 and pin8 on JAUD1 4.Swap pin5 and pin9 on JAUD1	4layer X02
85	17	DELL	03/14	Benson	Change COMPAL part	1.Change C246 part form 4.7U_0603_6.3V4Z~D to 4.7U_0805_10V4Z~D.	4layer X02
86	12	DELL	03/14	Benson	Change the ports for CRT EA report.	Modify 2.2pF capacitor to C97~C102.	4layer X02
87	15,16	ADI	03/15	Benson	1.Improve Dynamic Range on HP and Mic. 2.Need to adjust Mic Bias to accommodate Bias current of <750uA 3.System noise is effecting the Microphone performance. 4.Need to meet GS Mark Spec 5.Improve THD on HP	1.Change L21 to BLM21PG331SN1D. 2.Change C136 to 2K_0402_5%~D. 3.Connect a cap C88 (10uf) from R136 pin 1 to Analog Ground and connect a resistor R140 (200ohm) from R136 pin 1 to MICBIAS. 4.Change C135 & C140 to 100uf and the output resistor R225,R226 values will be 68 Ohms. 5.Connect 2 capacitors C186,C187 of 300pF from pin 13 and pin 14 respectively to the analog ground on U17. Please make these Nopop for now.	4layer X02
87	15,16	ADI	03/15	Benson	R225,R226 part correct	1.Change the R225,R226 to 68_0402_5%~D.	4layer X02
88	13,14	DELL	04/08	Benson	Add DP to DP repeater.	Add U46,U47 8121E parts.	4layer X03
89	13	DELL	04/08	Benson	Remove the about audio no-pop part.	Remove the U19,U20,U21,U22,U23,U24,U25,U26 part.	4layer X03
90	13,14	TI	04/11	Cindy	for TI comments.	1.Change pin8 and 9 of PS8121E from AUX_A_CH+/- to DPA_DOCK_AUX/#. 2.Change HPD flow to DP connector to PS8121 to DP122 to Dock connector (1)Pin18 JDP1 connector feed pin30 PS8121 (HPD_SINK) (2)Pin 7 of PS8121 (HPD) feed pin40 DP122 (DP_HPD_SINK) (3)Pin37 DP122 (HPD) feed pin39 docking station connector 3.Add R139 and R321 to pull high DDCBUF_EN# of PS8121E. 4.remove CA_DET application circuit.	4layer X03
91	13,14	DELL	04/16	Benson	for Dell comments.	1. C182,C183 should be "no-pop" and the value should change to 0.033uF (0402 pkg). 2. Place pads for a 600 ohm FB (0402 pkg) between JDP1 pin 18 and the DPA_DOCK_HPD net. Please use a 0 ohm resistor in this location. 3. Place pads for a 600 ohm FB (0402 pkg) between JDP2 pin 18 and the DPB_DOCK_HPD net. Please use a 0 ohm resistor in this location. 4. Populate the R244,R245 and "no-pop" the D7,D9. 5. Change the R276,R279 to "no-pop".	4layer X03
92	06	COMPAL	04/16	Benson	Change Dock ID form X02 to X03.	1.Change the R44 to "pop" ,R53 to "no-pop".	4layer X03
93	13	DELL	04/18	Benson	for Dell comments.	1.Change the PS_PC0 "R318" and PS_PC1 "R320" to "no-pop".	4layer X03

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
94	13,14	Parade	04/18	Benson	for Parade comments. Please add the ac-coupled capacitor on AUX channel to PS8121ED	1.Add the C290,C291 AC_coupled capacitor on AUX channel U46 and add the R322,R323 pull up 100K to 3.3V . 2.Add the C292,C293 AC_coupled capacitor on AUX channel U47 and add the R324,R325 pull up 100K to 3.3V .	4layer X03

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	17	GG list	8/2	DELL	Follow GG_issue_list	Change PR10 and PR12 from 240K to 100K Change PR11 from 100K to 240K Change PR13 and PR16 from 240K to 150K Change PR14 from 100K to 43K Change PR15 from 240K to 7.87K Change PR17 from 100K to 56K Change PC8 from 0.1U to 1U	X01
2	18	Derating issue	8/7	Compal	Because the Vgs rating for RUH002N06 is 20V and the NB_Det# is 19V.so we need adding resister to divide the voltage.	Add PR140 and PR141. Connect PR140_2 to NB_Det#, Connect PR140_1 to PR141_2and PQ17_2. Connect PR141_1 to GND	X01
3	18	+3.3V_ALWP Choke Size	8/7	Compal	Because the power budget is 0.57A_MAX for *3.3V_ALWP, we change the size for PL3	Change PL3 from 10mm*10mm*4mm to 7mm*7mm*3mm	X01
4	18	EMI	8/9	Compal	change location PR52 and PC39 each other change location PR53 and PC40 each other	change location PR52 and PC39 each other change location PR53 and PC40 each other	X01
5	17	PSL issue	8/15	Compal	The APL431LBAC-TRL for PU1 is not approve vender base on DELL PSL list	Change PU1 from APL431LBAC-TRL(AMPEC) to TL431BQDBZR(TI). Change PR15 from 7.87K to 16.5K	X01
6	17	DC_IN	8/15	Compal	Add PD10 between PQ2.1 and PQ22.8	Add PD10 between PQ2.1 and PQ22.8	X01
7	17	DC_IN	8/20	Compal	Dock supports the 230W adapter. The FDS6679 is not enough to meet current rating. We plan to change MOS for PQ1 and PQ2.	Change PQ1 and PQ2 from FDS6679 AZ to FDS6681Z	X01
8	18	Component	9/6	Compal	The FDS6676AS is common part	Change PQ16 from FDS6676S to FDS6676AS.	X02
9	17	DC_IN	9/10	Compal	Time seqence setting when NB insert to Docking	Add PR54 and PR55, no-pop PR54	X02
10	17	Component shortage issue	9/12	Compal	The Vender (TI) will material shortage issue for TL431BQDBZR on PU1 We plan to implement TL431BQDBZR on PT 2nd source	Change PU1 form TL431BQDBZR (TI)to LM431SBCMF(FIRCHILD)	X02
11	17	ACAV_IN circuit	10/26	DELL	Support E-Dock hot plug/unplug of AC Adapter	1. Change component PC6 from 0.47U to 0.1U PR4 from 240K to 1M PR6 from 47K to 220K PR7 from 47K to 22K PR8 from 100K to 10K PR5 from 100K to 4.99K PR10 from 100K to 24.9K PR13 and PR16 from 150K to 30K PC8 from 1U to .047U 2, Change net name for PR12.1 from +DOCK_SDC_IN to +DOCK_DC_IN_SS 3. Stuff PR54 and un-stuff PR55	X02
12	17	PSID circuit	10/31	Compal	Dock PSID signal fail	Change net name from +5VALW to +5V_ALW for PD3_Pin3, PR22_Pin2 and PD5_Pin3	X02

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	17	ACAV_IN circuit	11/12	DELL	When no AC adapter is in E-Dock and EN_DOCK_PWR_BAR is low to hold of Roush PQ23, there is back drive issue where the +DOCK_PWR_BAR is held up. The issue is that NB DOCK_DCIN_IS+ and - on the NB side is biased up to +PWR_SRC potential, this holds the source terminals of both PQ4, and PQ5 higher than their gates, which are biased up to +DOCK_PWR_BAR rail. The FET's perhaps operate in a linear mode where they are not fully turned off allowing current flow back into the _DOCK_PWR_BAR rail.	1.Delete cline between PR8_pin2 and Pq4_pin2 2.Add PR46(100K) between PQ4_pin3 nad PQ4_pin2. 3.Add PR56(100K) between PQ5_pin3 nad PQ5_pin2. 4.Add PR57(100K) between PQ18_pin1 nad PQ5_pin2. 5.Add PQ18(RHU002N06), connect PQ18_Pin1 to PR57_pin2; connect PQ18_pin2 to PD3_pin2; connect PQ18_pin3 to GND	X02
2	17	ACAV_IN circuit	11/12	DELL	Change net "ACAV_IN_DOCK#" to "ACAV_DOCK_SRC#"	Change net "ACAV_IN_DOCK#" to "ACAV_DOCK_SRC#"	X02
3	17	Comparator Circuit	11/12	DELL	Add Comparator Circuit	1.Add PU11 (LM393) 2.Add PC41 and PC42(100P) 3.Add PR143 (232K) 4.Add PR146 (21.5K) 5.Add PR144 (32.4K) 6.Add PR147 (100K) 7.Add PR142 (1M) 8.Add PR145 (0) 9.Add new net for "ACAV_IN_DOCK" 10 Add PR58(100K)	X02
4	17	ACAV_IN circuit	11/15	DELL	EE work item	Add PD11 (RB751)	X02
5	17	ACAV_IN circuit	11/15	DELL	EE work item	Change PC6 from 0.1U to 0.022U Change PR6 from 220K to 1M ohm	X02
6	18	POR issue	12/20	DELL	Reserve the Dock side delay circuit, but show it as no stuff with resistor option to short out.	1. Add PR68 (0) Add @PR59 (200K) Add @PR60 (200K) Add @PR61 (0) Add @PR62 (200K) Add @PR63 (100K) Add @PR64 (1K) Add @PR65 (40.2K) Add @PC43 (0.047U) Add @PC44 (10U) Add @PC45 (10U) Add @PD12 (RB751V) Add @PQ19A (2N7002DW) Add @PQ19B (2N7002DW)	X03

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	
7	19	POR issue	12/20	DELL	POR issue	1.Delete PR42, PR140, PQ17 2.Add PD13 (RB751V) 3.Add PC46 (0.1U) 4.Change PR45 from 4.99K to 10K 5.Add net DOCK_POR_RST# and connect to PD13_pin2	
8	18	E-Dock Worse case PQ11	12/24	DELL	marginal on guarantee turn off PQ11. With the Vgth of 1 to 2.5 volts, the node at the gate only drops to 1 volt. I think this is a result of changing from a 1.5V Vref TL431 to a 2.5V TL31 early in development. We also need to be able to turn on the transistor while powered via battery power so the 2.5V threshold is important as well. When calculation the circuit values required I find adjusting PR13, and PR16 considering battery voltage of 9 volts is right at 2.5V, while the values result in a low voltage of ~1V, just not too much margin. Really we need a tighter Vgth MOSFET.	1.Change PR16 from 30K to 10K 2.Change PR10 from 24.9K to 12.1K 3.Change PQ11 from RHU002N06(ROHM) to NTS4001NT1G(ON)	X03
9	18	crowbar	12/24	DELL	To add a PR69 0 ohm option on the next Dock Gerber out to tie PQ8 source to pin 1. The other 0 ohm will still got to dock ground. This to allow instant release of NB AC softstart upon hot undock if we later determine we have an issue.	Add PR69 0 ohm, no stuff.	X03
10	19	+3.3V	01/30	Compal	The vender (DELTA) molding type is non psl.	Change PL3 form 10UH +-20% MPL73-100 3A (DELTA)to 8.2UH +-20% FDV0630-8R2M=P3 3.7A (TOKO).	X03
11	18	Dock DC_IN	03/19	Compal	PQ1 and PQ2 are P-channel material ,but we use N-channel symbol.	Change PQ1 and PQ2 symbol from N-Channel to P-Channel.	X03