

Gilbert

REV : A00

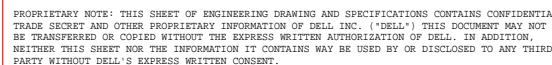
@ : Nopop Component

Dothan Schematic with Capture CIS and Function field
uFCPGA Dothan
10-04-2004
REV: 1.0

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PM TABLE

<div>power plane</div> <div>State</div>	+3VALW +5VALW	+3VSUS +5VSUS +2.5V_MEM +1.5VSUS +15V	+5VRUN +3VRUN +1.8VRUN +1.5VRUN +1.2VRUN +VCC_CORE +VCCP V_1P25V_DDR_VTT
S0	ON	ON	ON
S1	ON	ON	ON
S3	ON	ON	OFF
S5 S4/AC	ON	OFF	OFF
S5 S4/AC don't exist	OFF	OFF	OFF

PCI TABLE

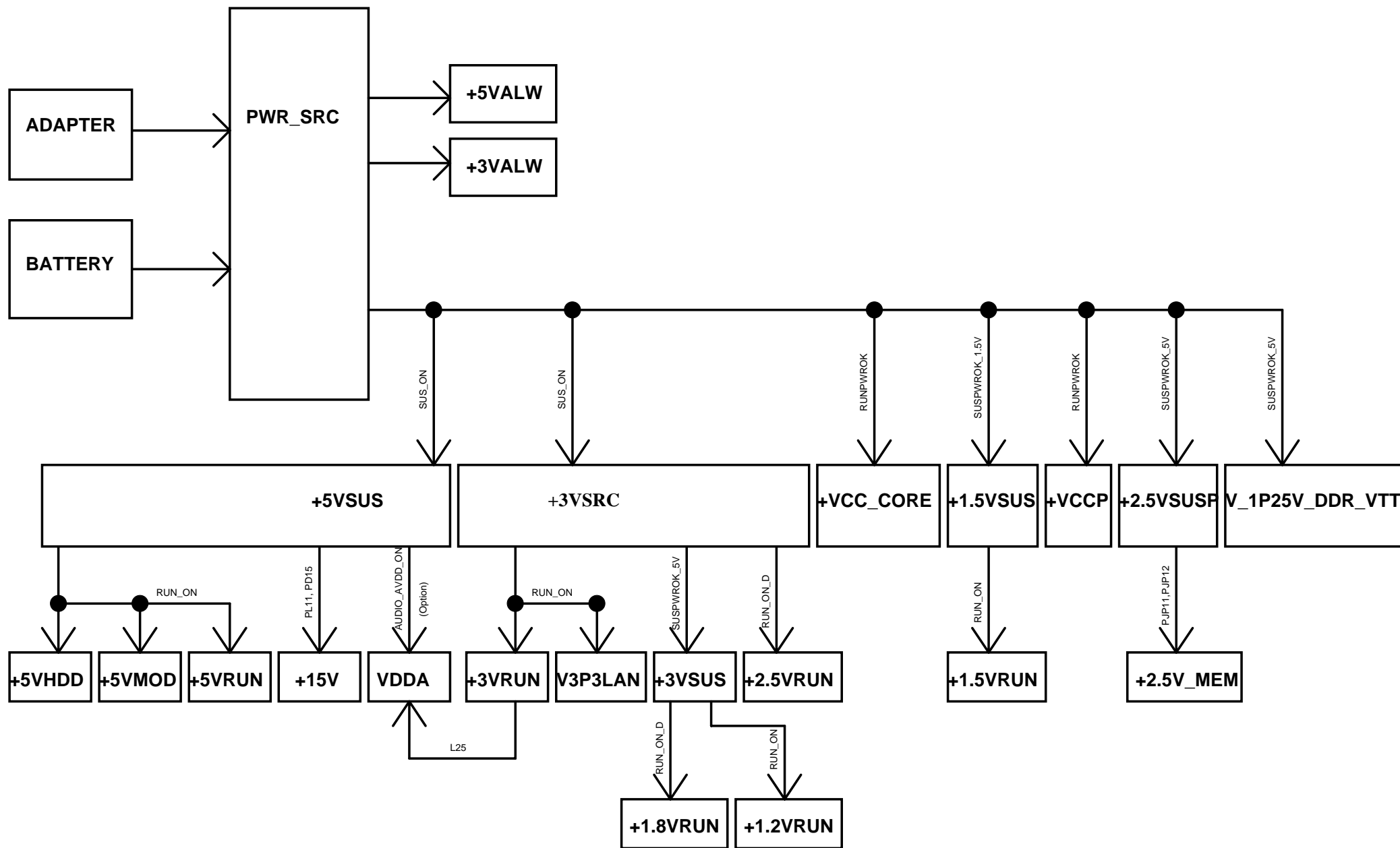
PCI DEVICE	IDSEL	REQ#/GNT#	PIRQ
CARD BUS	AD17	1	B,C,D
MINI PCI	AD19	3	D,B
LAN	AD16	4	C

USB TABLE

USB PORT#	DESTINATION
0	JUSB3 (Top)
1	JUSB3 (Bottom)
2	Blue Tooth
3	NEW CARD
4	JUSB2 (Top)
5	JUSB2 (Bottom)

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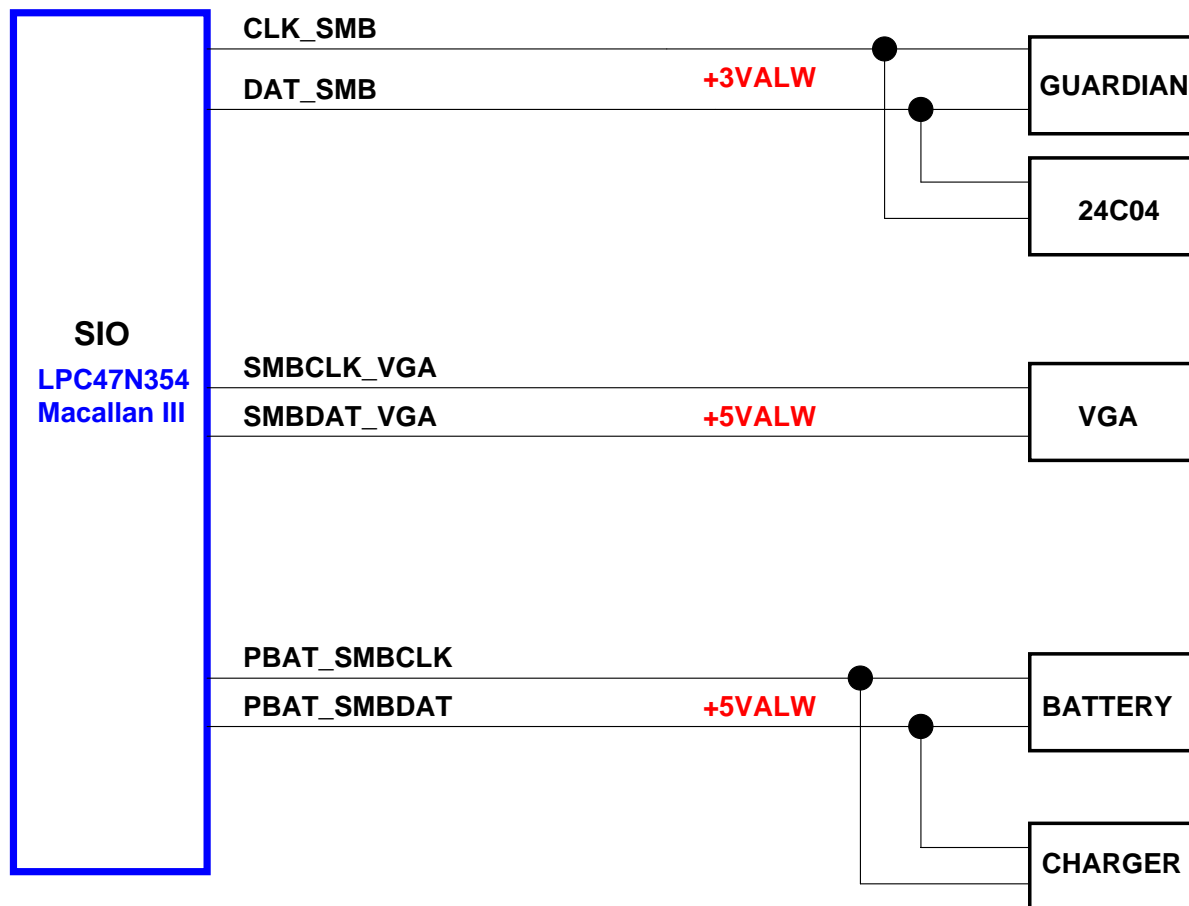
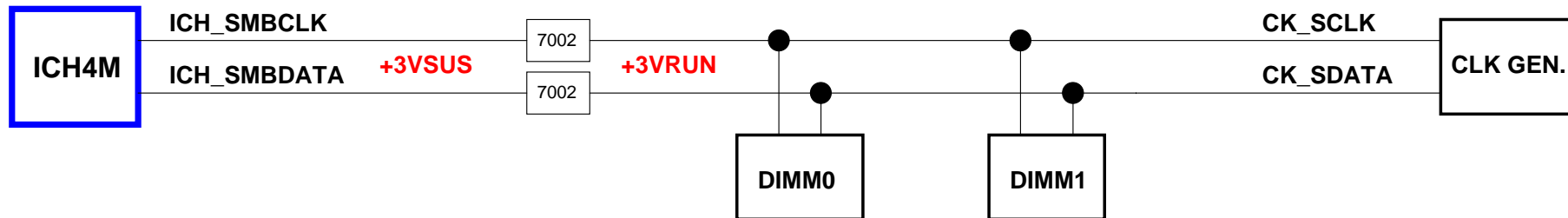
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Title		
Power Rail		
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	Device	Address
ICH4M-SMBus	DIM0	A0h
	DIM1	A2h
	CLK GEN.	D2h
EC-SMBus	GUARDIAN	5Eh
	24C04	A2h
	VGA	58h
	Battery	16h
	Charger	12h

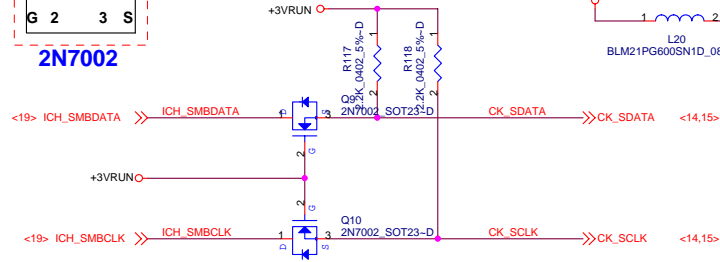
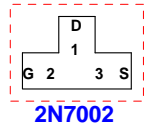
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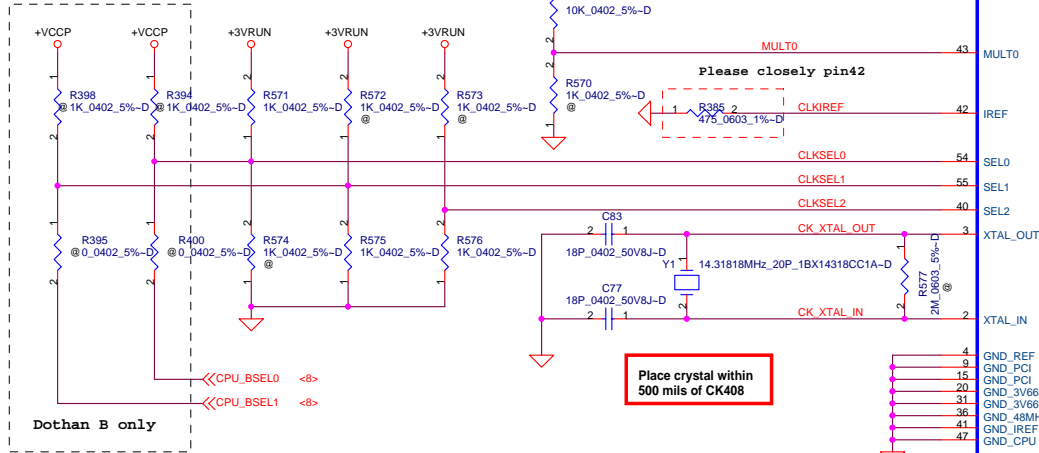
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Title		SMBUS TOPOLOGY	
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S2	S1	S0	CPU	3V66[0.4]	3V66_5/66IN
1	0	0	66	66IN	66 Input
1	0	1	100	66IN	66 Input
1	1	0	200	66IN	66 Input
1	1	1	133	66IN	66 Input
0	0	0	66	66	66 Input
0	0	1	100	66	66 Input
0	1	0	200	66	66 Input
0	1	1	133	66	66 Input
Mid	0	0	Hi-z	Hi-z	Hi-z
Mid	0	1	TCLK/2	TCLK/2	TCLK/2
Mid	1	0	Reserve	Reserve	Reserve
Mid	1	1	Reserve	Reserve	Reserve



W=20 mils

Place near each pin
W>40 mil

CK408

Rev 1.1

Place near CK408

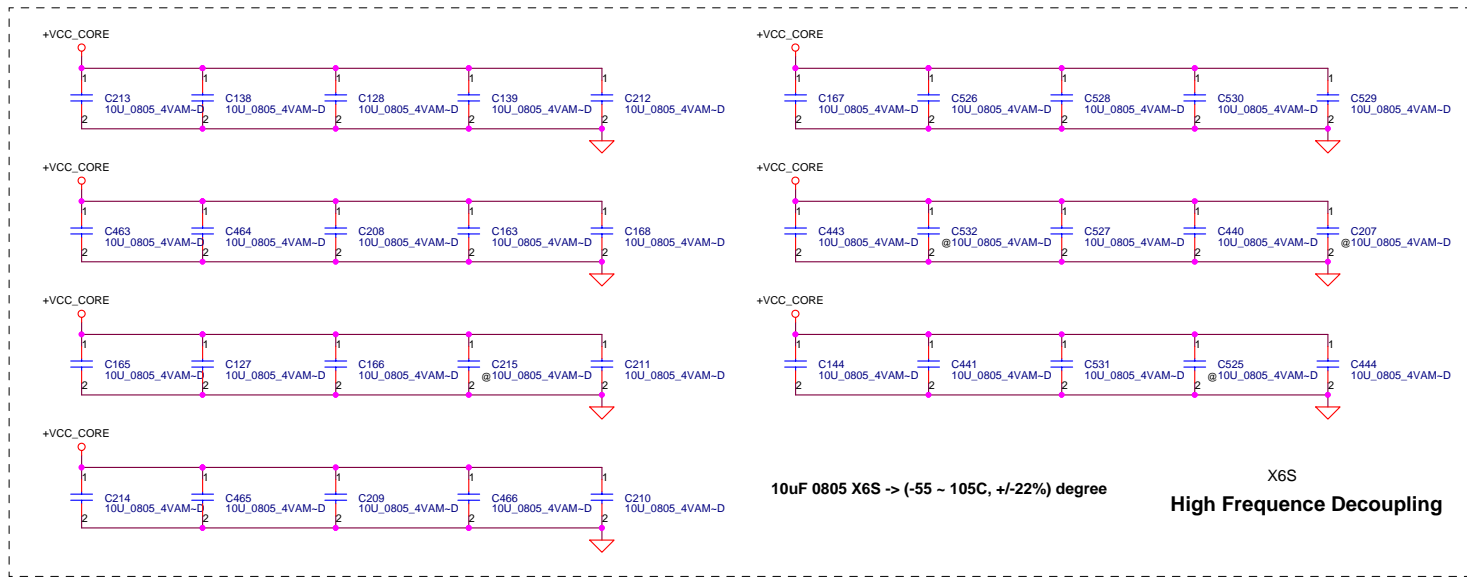
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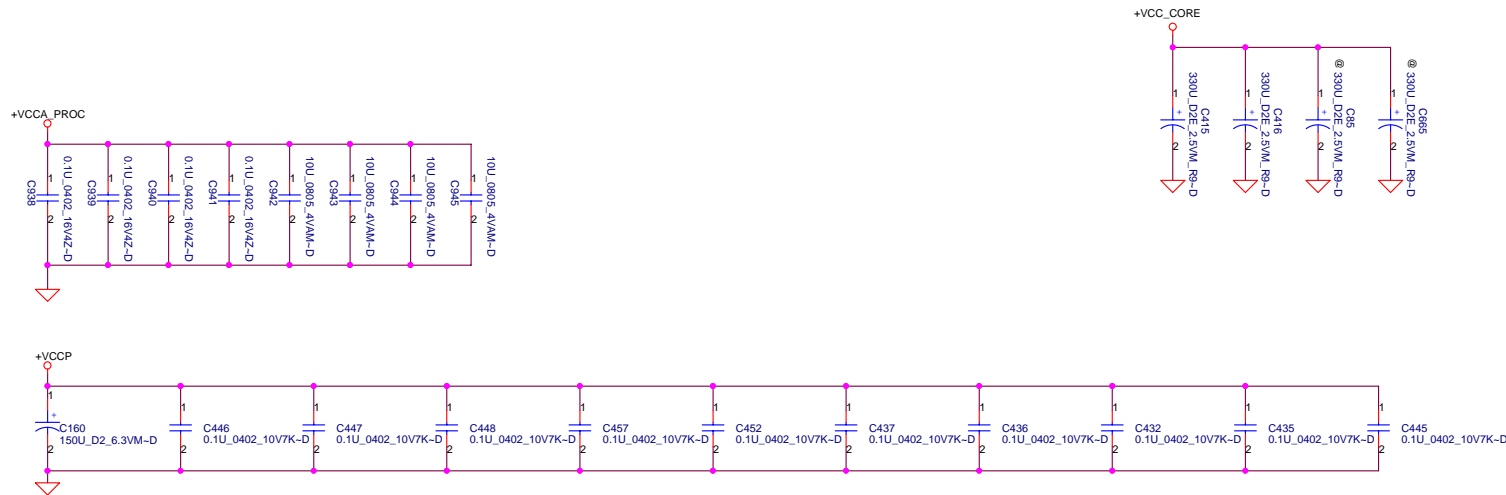
Clock Generator

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Near VCORE regulator.



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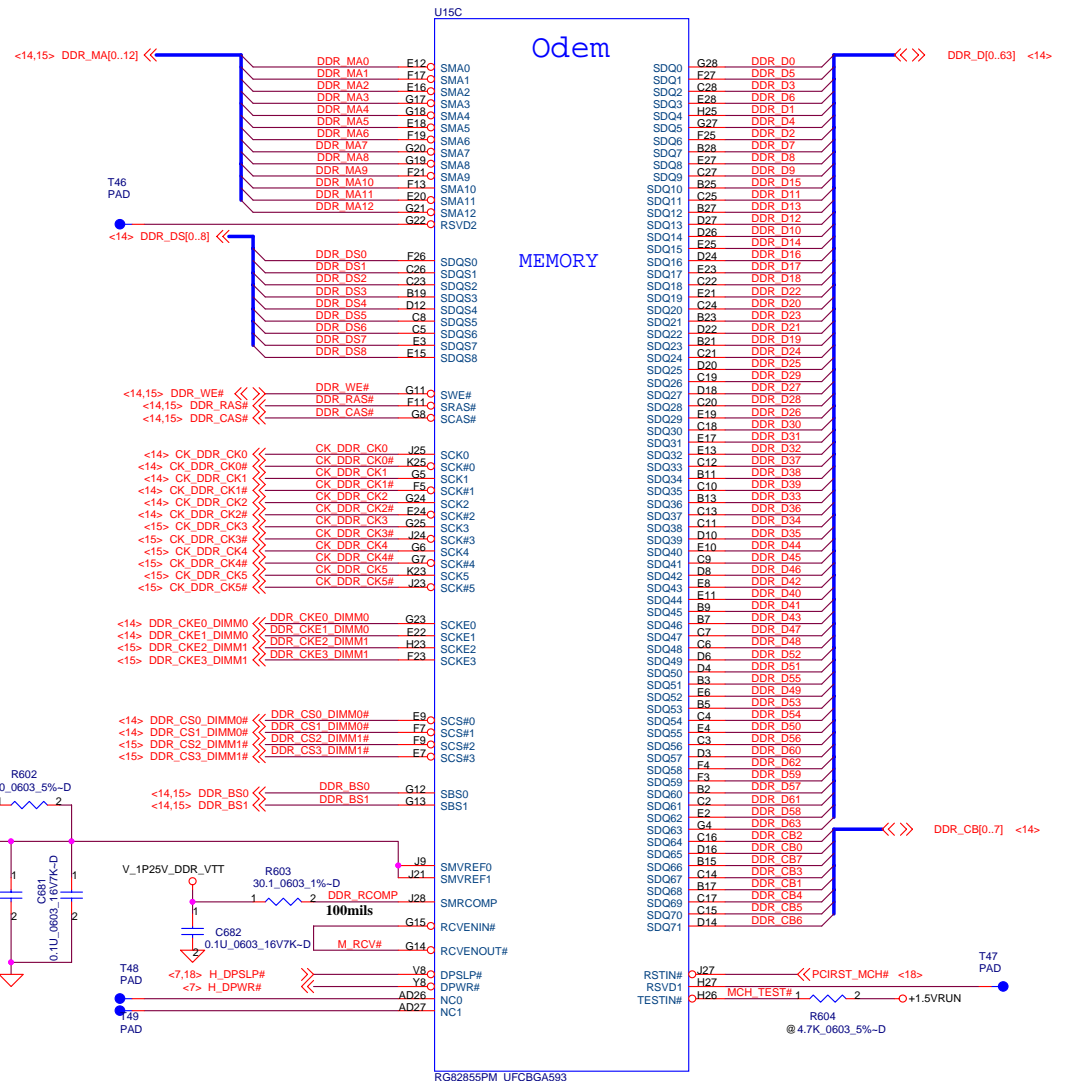
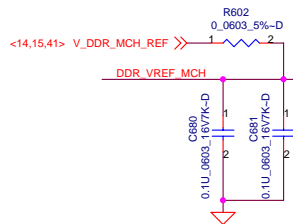
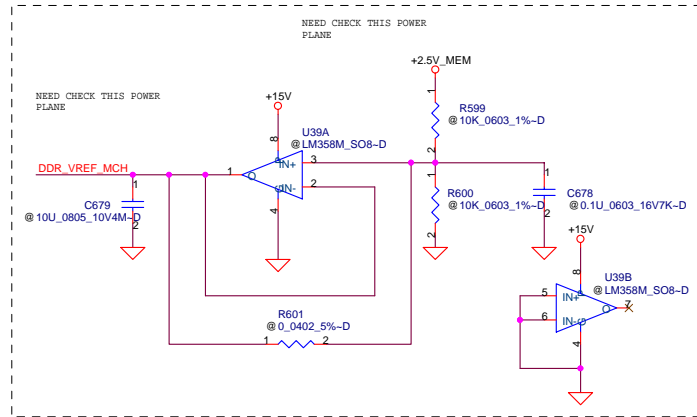
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Dothan Bypass

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Odem(2/3)

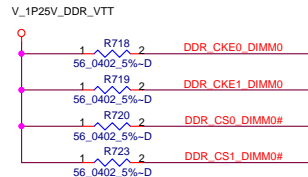
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<11> DDR_D[0.63] <<>>
<11> DDR_CB[0.7] <<>>
<11> DDR_DS[0.8] <<>>
<11,15> DDR_MA[0.12] <>>>

Layout Note:
Place these resistor
closely DIMM0,all
trace length
Max=1.3"



<11> CK_DDR_CK0 <>>>
<11> CK_DDR_CK0# <>>>

<11> CK_DDR_CK2 <>>>
<11> CK_DDR_CK2# <>>>

<11> DDR_CKE1_DIMM0 <>>>

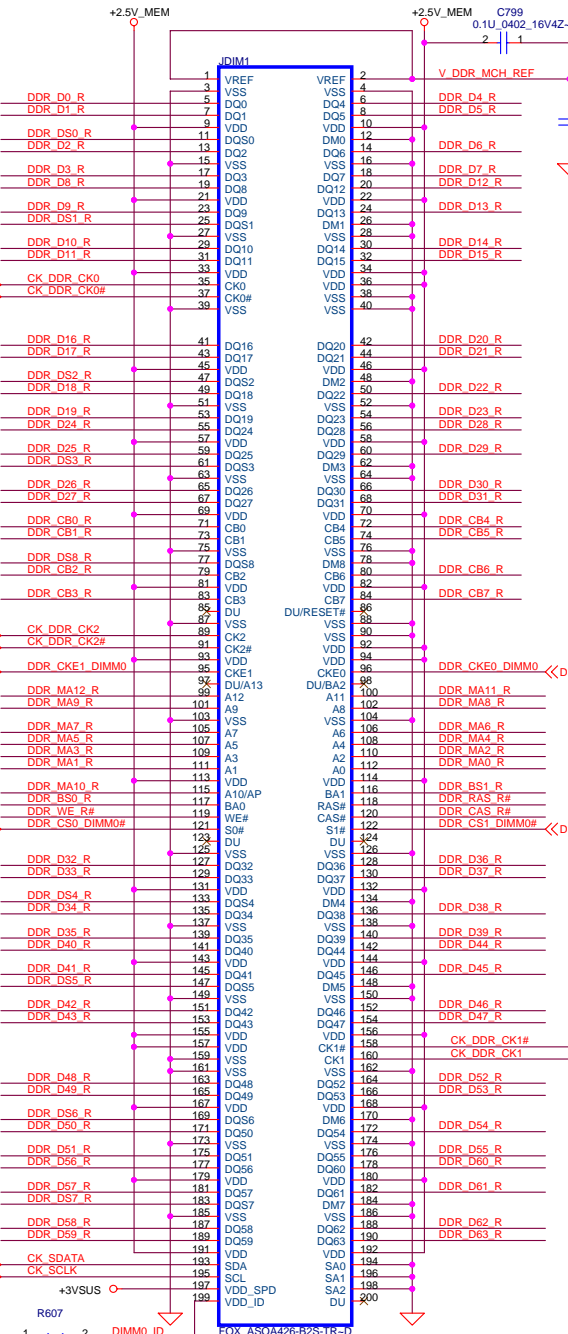
<11> DDR_CS0_DIMM0# <>>>

<6,15> CK_SDAT <>>>
<6,15> CK_SCLK <>>>

+2.5V_MEM 1 2 DIMM0_ID
10K_0402_5%-D

DIMM0
STANDARD

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DDR II-SODIMM SLOT1

LA-2501

File

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Rev

1.0

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Layout Note:
Place these resistors
closely DIMM1,all
trace length<800 mil

<11,14> DDR_MA[0..12] >>

<14> DDR_D0_R >> DDR_D0_R
<14> DDR_D1_R >> DDR_D1_R
<14> DDR_D2_R >> DDR_D2_R
<14> DDR_D3_R >> DDR_D3_R
<14> DDR_D4_R >> DDR_D4_R
<14> DDR_D5_R >> DDR_D5_R
<14> DDR_D6_R >> DDR_D6_R
<14> DDR_D7_R >> DDR_D7_R
<14> DDR_D8_R >> DDR_D8_R
<14> DDR_D9_R >> DDR_D9_R
<14> DDR_D10_R >> DDR_D10_R
<14> DDR_D11_R >> DDR_D11_R
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<14> DDR_D31_R >> DDR_D31_R
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<14> DDR_D60_R >> DDR_D60_R
<14> DDR_D61_R >> DDR_D61_R
<14> DDR_D62_R >> DDR_D62_R
<14> DDR_D63_R >> DDR_D63_R

<14> DDR_C80_R >> DDR_C80_R
<14> DDR_C81_R >> DDR_C81_R
<14> DDR_C82_R >> DDR_C82_R
<14> DDR_C83_R >> DDR_C83_R
<14> DDR_C84_R >> DDR_C84_R
<14> DDR_C85_R >> DDR_C85_R
<14> DDR_C86_R >> DDR_C86_R
<14> DDR_C87_R >> DDR_C87_R

<14> DDR_DS0_R >> DDR_DS0_R
<14> DDR_DS1_R >> DDR_DS1_R
<14> DDR_DS2_R >> DDR_DS2_R
<14> DDR_DS3_R >> DDR_DS3_R
<14> DDR_DS4_R >> DDR_DS4_R
<14> DDR_DS5_R >> DDR_DS5_R
<14> DDR_DS6_R >> DDR_DS6_R
<14> DDR_DS7_R >> DDR_DS7_R
<14> DDR_DS8_R >> DDR_DS8_R

<11,14> DDR_BS0 >> DDR_BS0
<11,14> DDR_BS1 >> DDR_BS1
<11,14> DDR_WE# >> DDR_WE#
<11,14> DDR_CAS# >> DDR_CAS#
<11,14> DDR_RAS# >> DDR_RAS#



<11> CK_DDR_CK3
<11> CK_DDR_CK3#

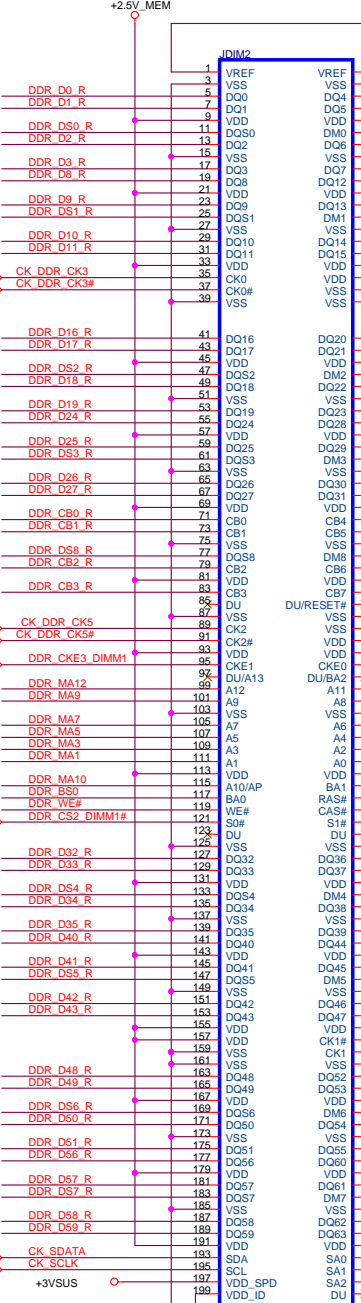
<11> CK_DDR_CK5
<11> CK_DDR_CK5#

<11> DDR_CKE3_DIMM1

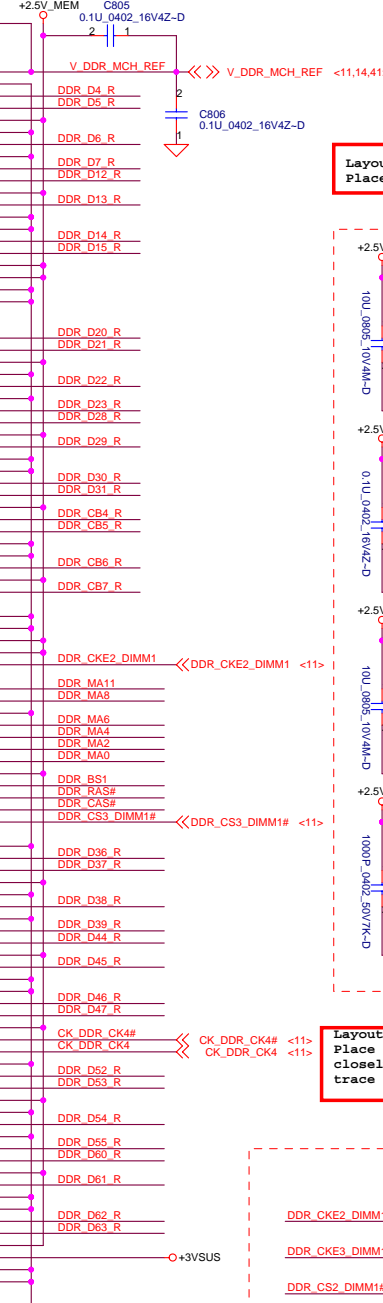
<11> DDR_CS2_DIMM1#

<6,14> CK_SDATA
<6,14> CK_SCLK

+2.5V_MEM
10K_0402_5%-D
DIMM1 ID



DIMM1
REVERSE

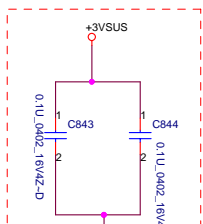
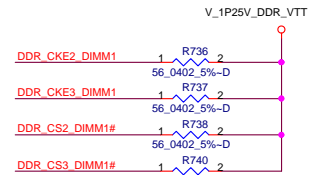


Layout Note:
Place CAP near SODIMM

One 0.1uF CAP per power pin.
Place each cap close to pin.

Layout Note:
Place these resistor
closely DIMM1,all
trace length Max=1.3"

Place by pin197 of each SODIMM



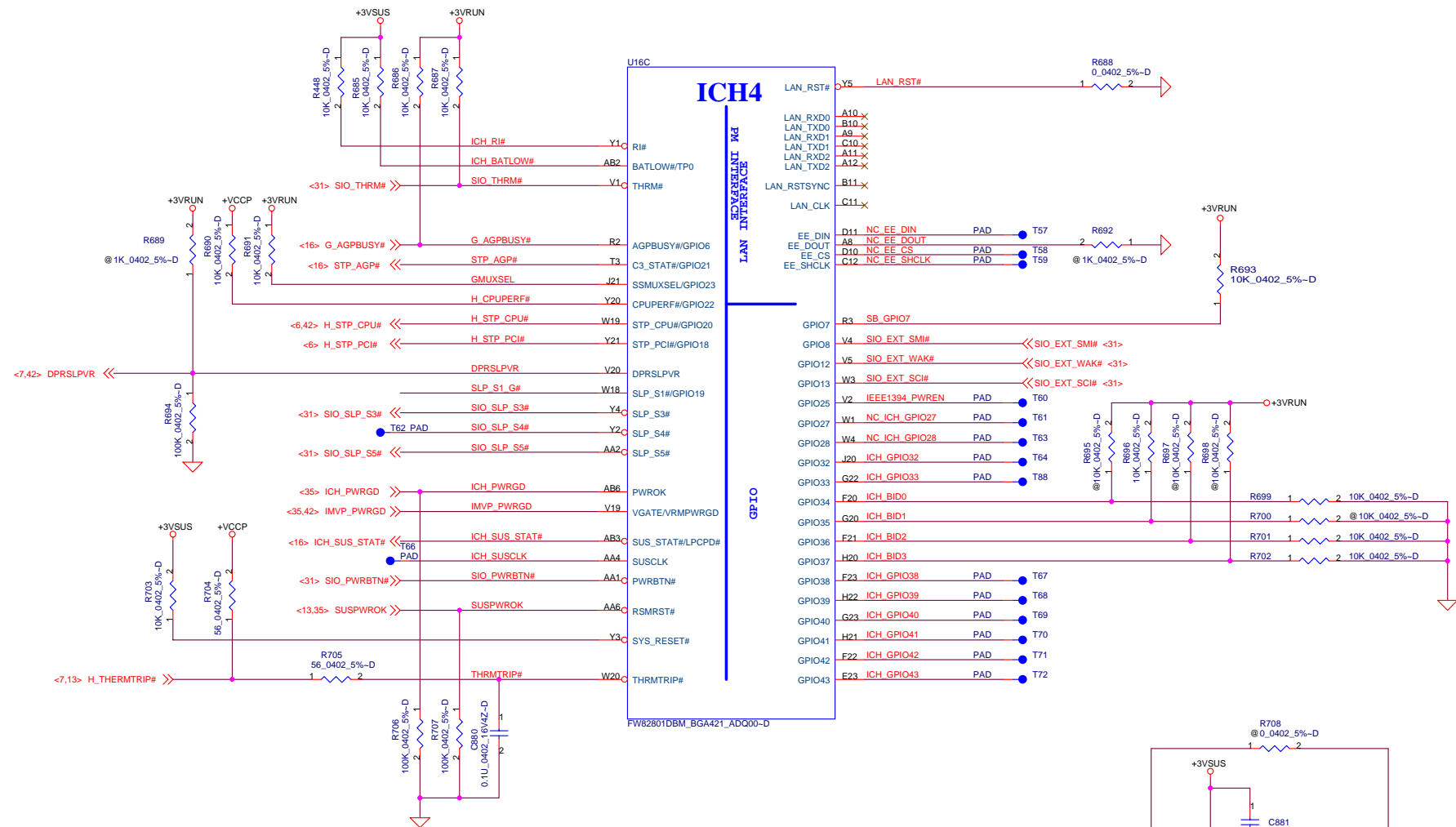
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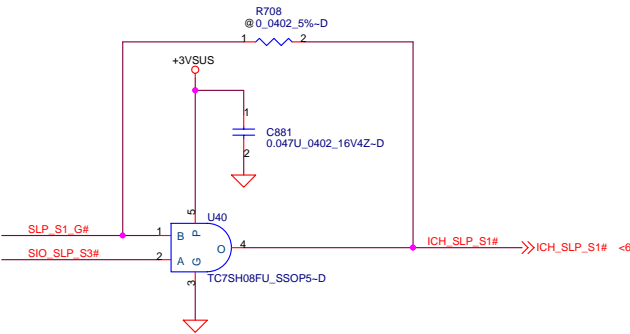
DDRII-SODIMM SLOT2

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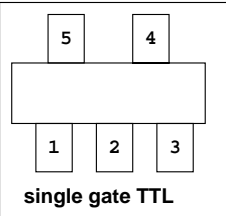
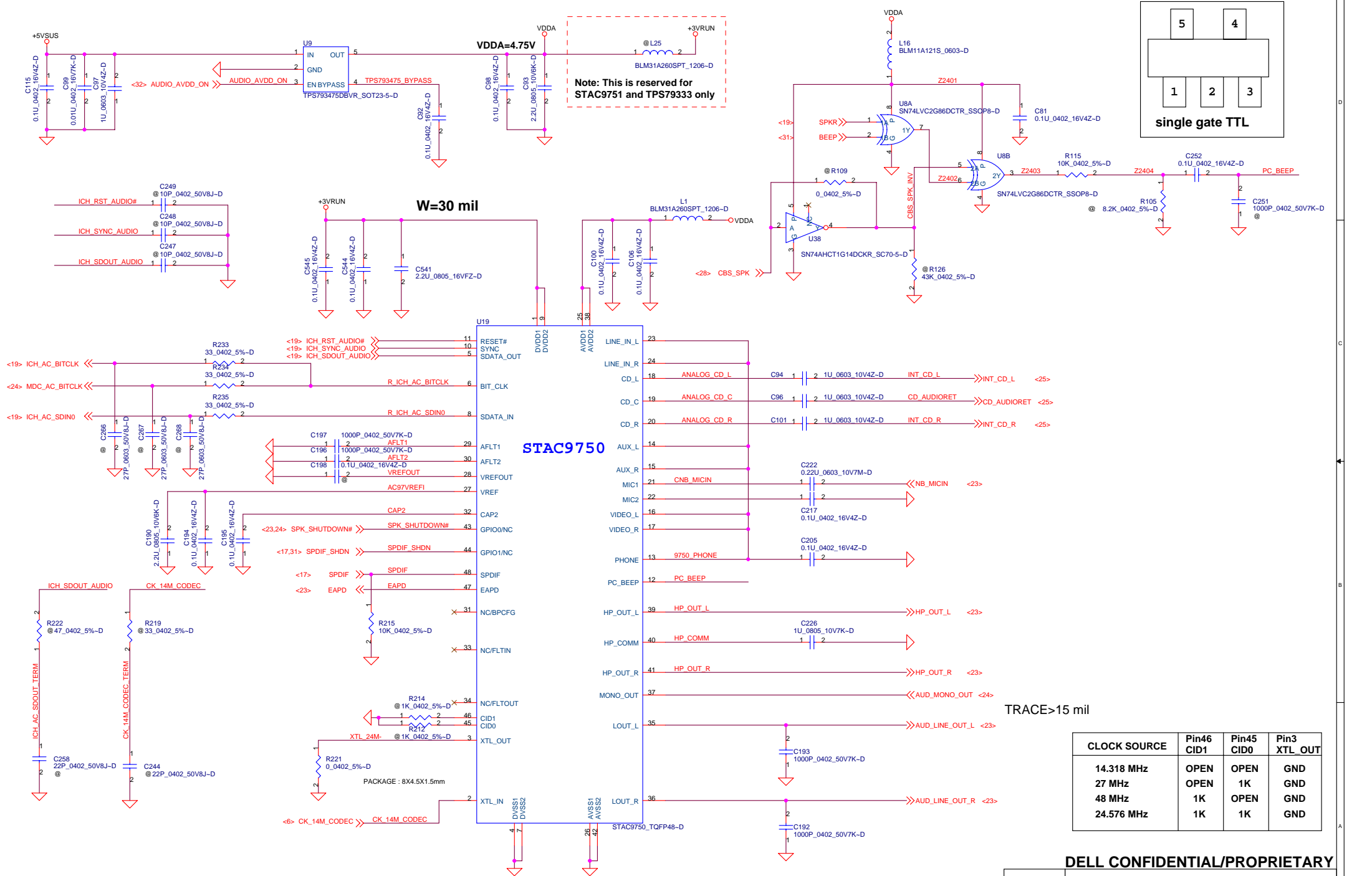


BID3	BID2	BID1	BID0	REV
0	0	0	0	X00
0	0	0	1	X01
0	0	1	0	A00



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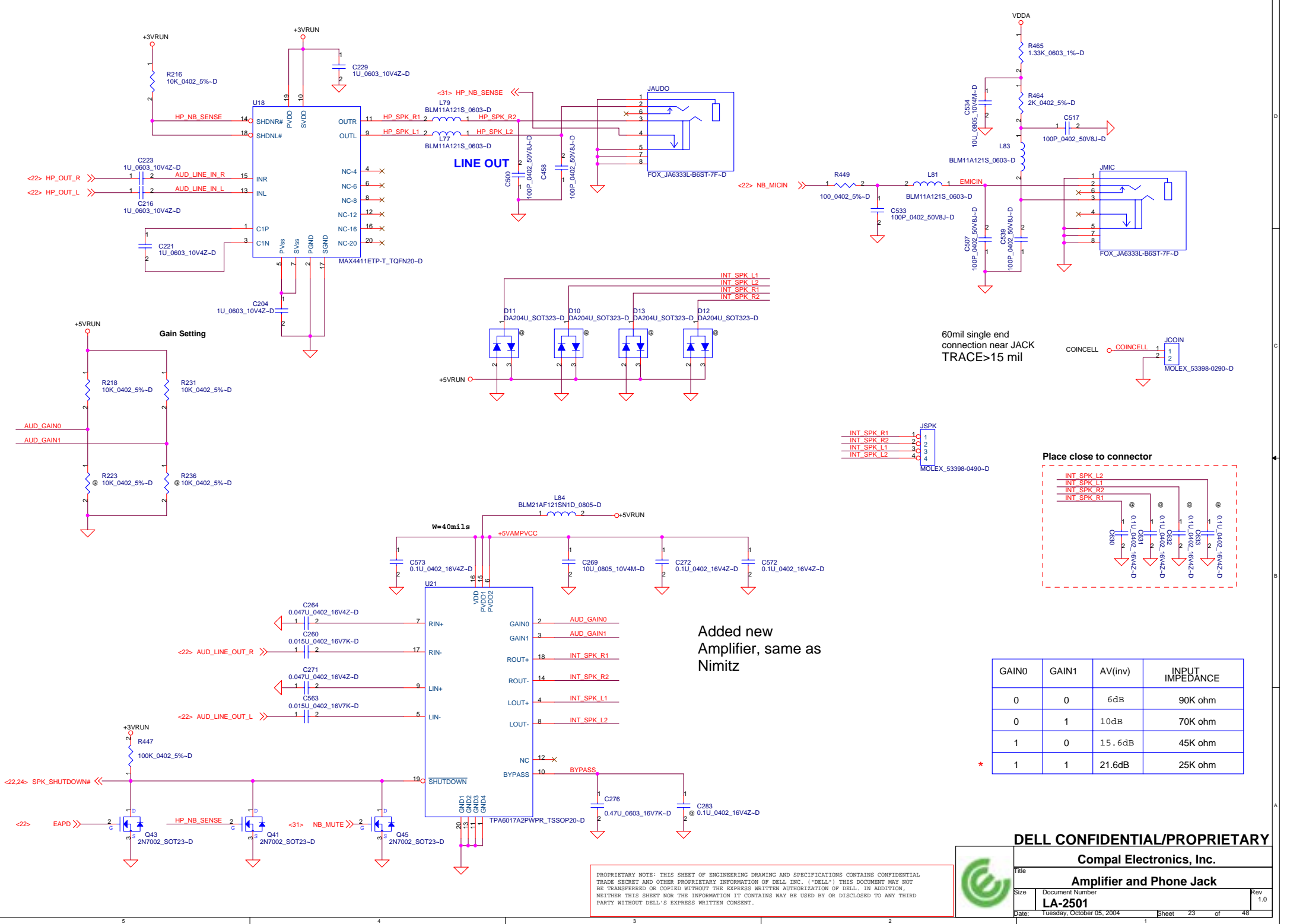




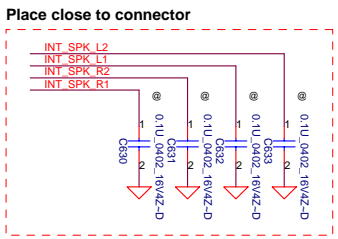
CLOCK SOURCE	Pin46 CID1	Pin45 CID0	Pin3 XTL_OUT
14.318 MHz	OPEN	OPEN	GND
27 MHz	OPEN	OPEN	GND
48 MHz	1K	OPEN	GND
24.576 MHz	1K	1K	GND



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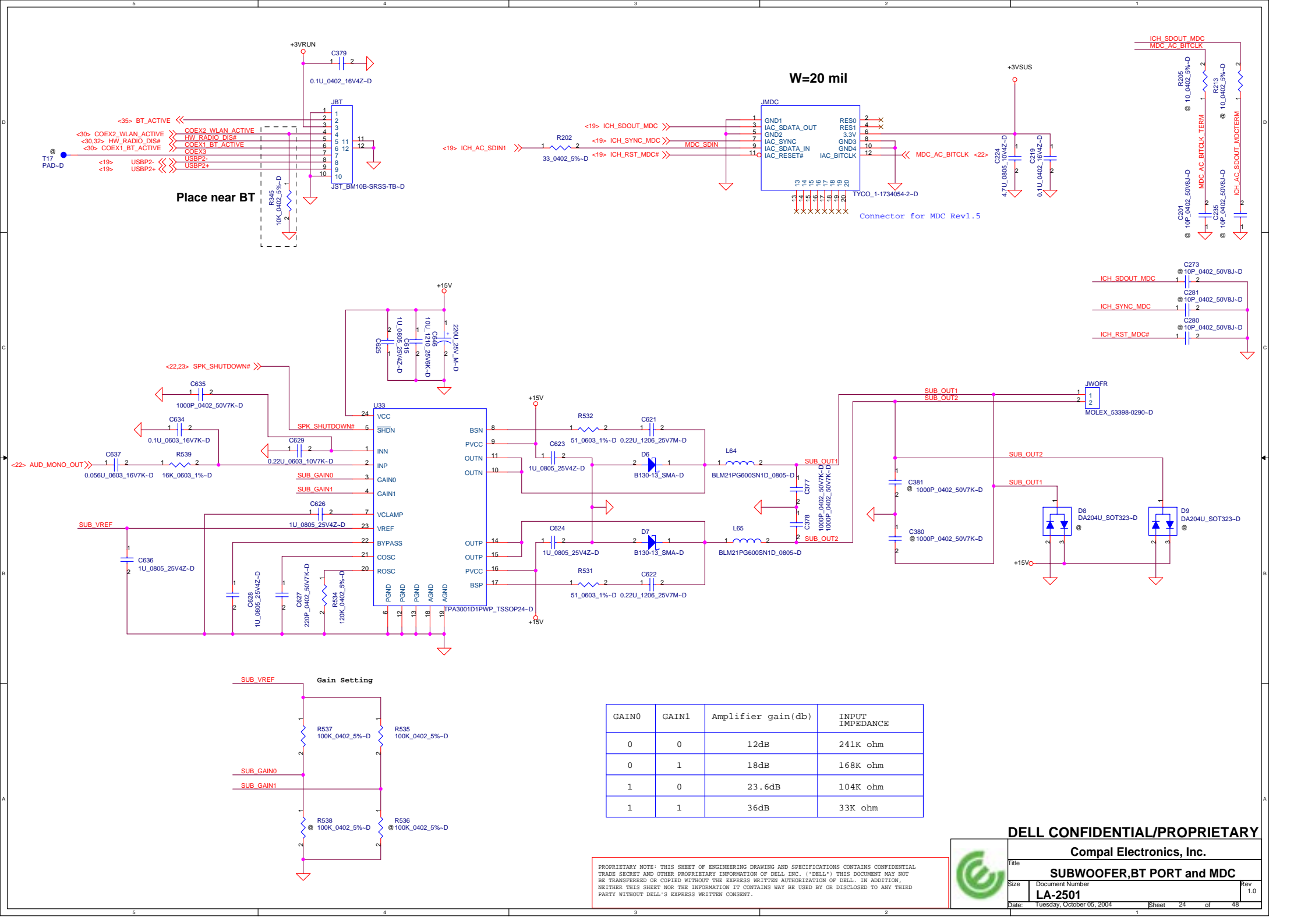


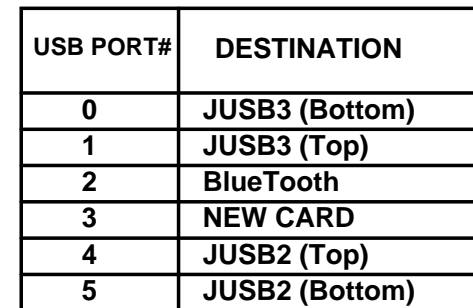
60mil single end
connection near JACK
TRACE>15 mil



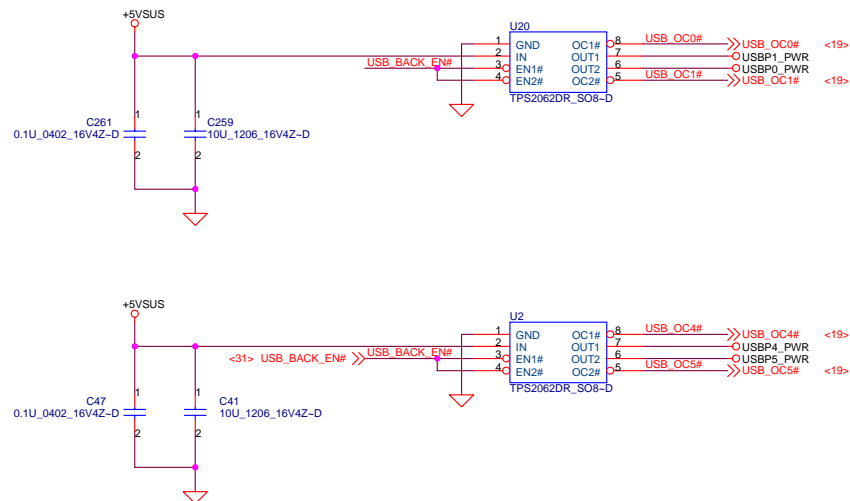
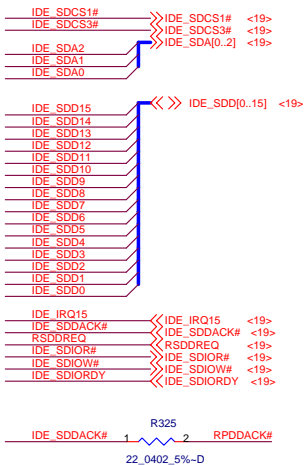
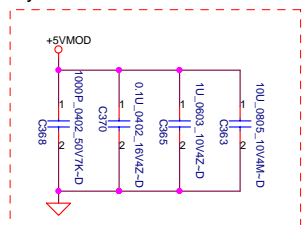
GAIN0	GAIN1	AV(inv)	INPUT IMPEDANCE
0	0	6dB	90K ohm
0	1	10dB	70K ohm
1	0	15.6dB	45K ohm
1	1	21.6dB	25K ohm

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[illegible]

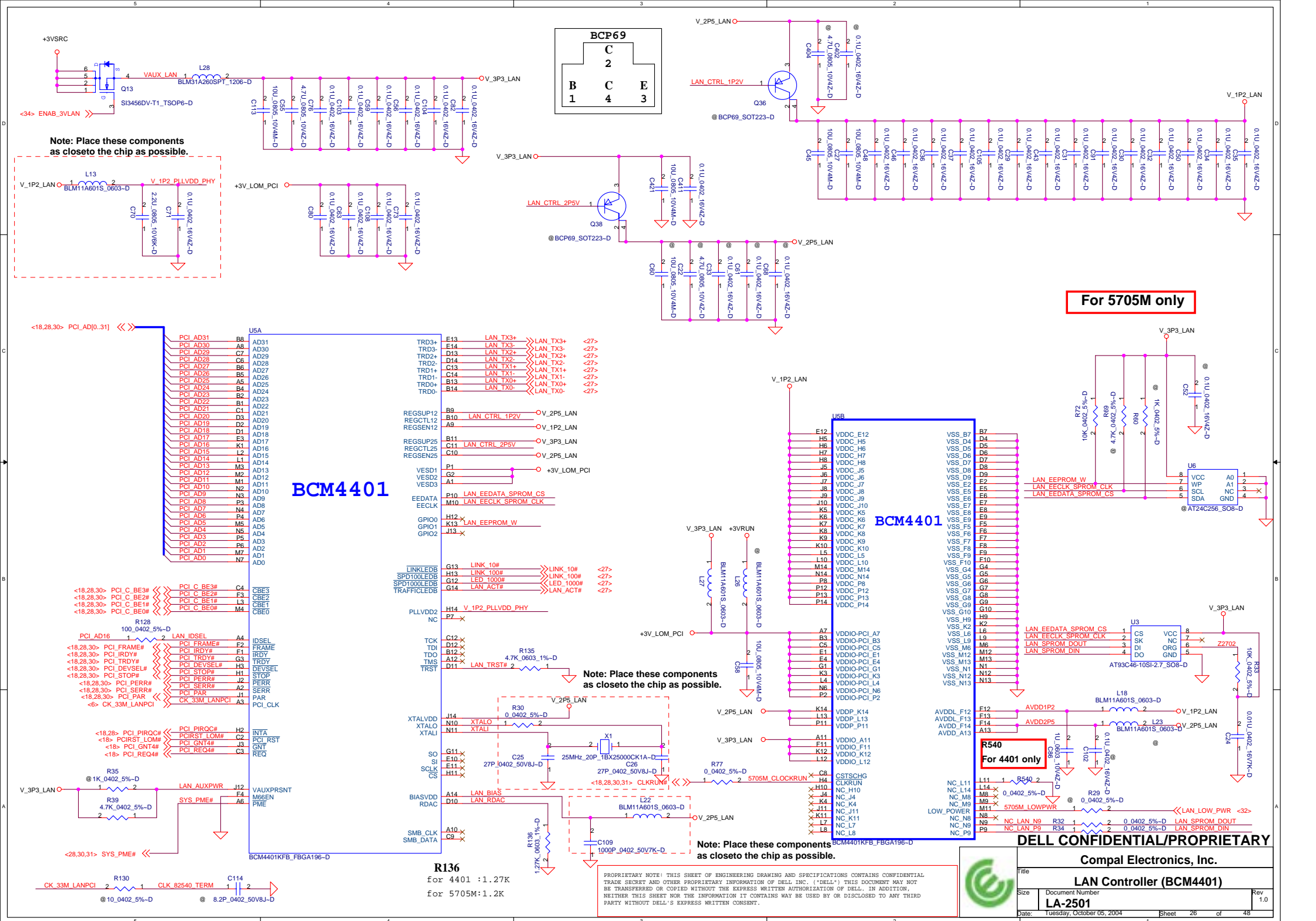
Layout Note: Place close to CD-ROM CONN.

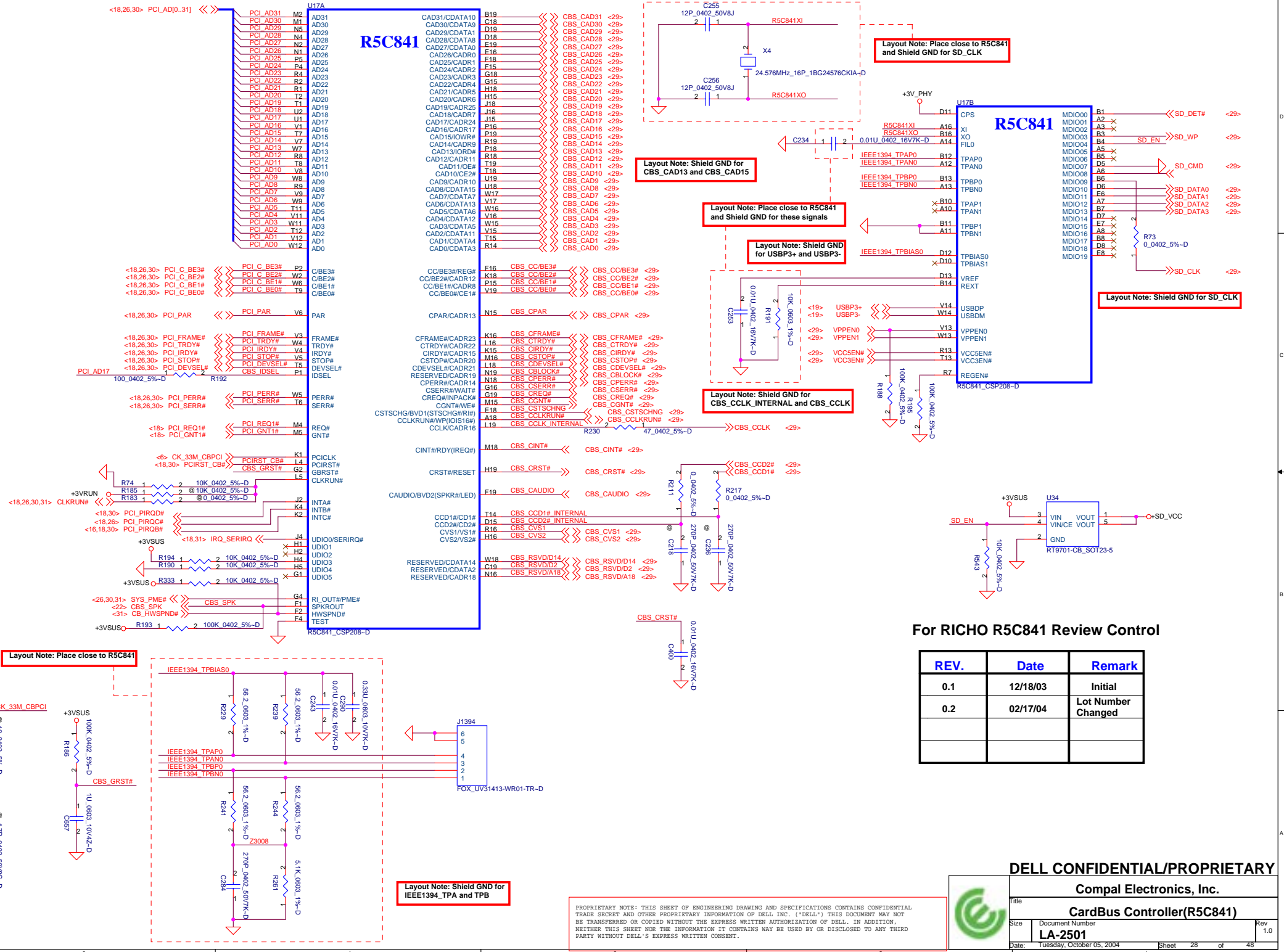


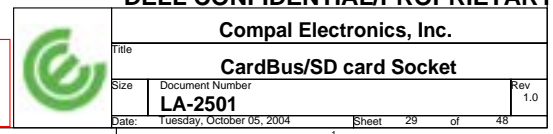
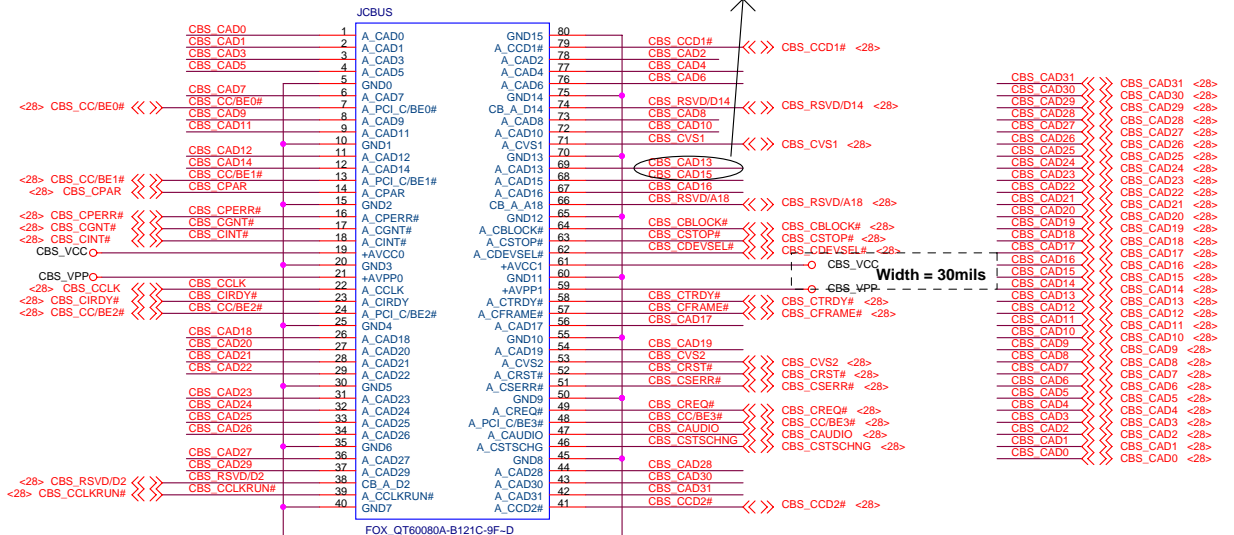
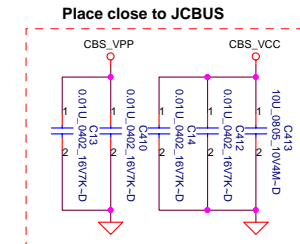
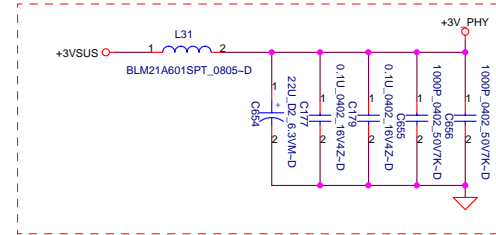
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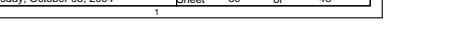
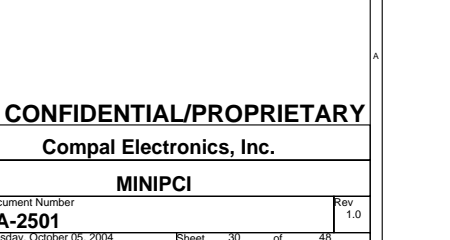
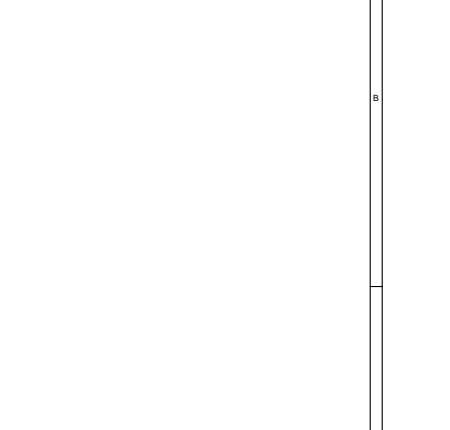
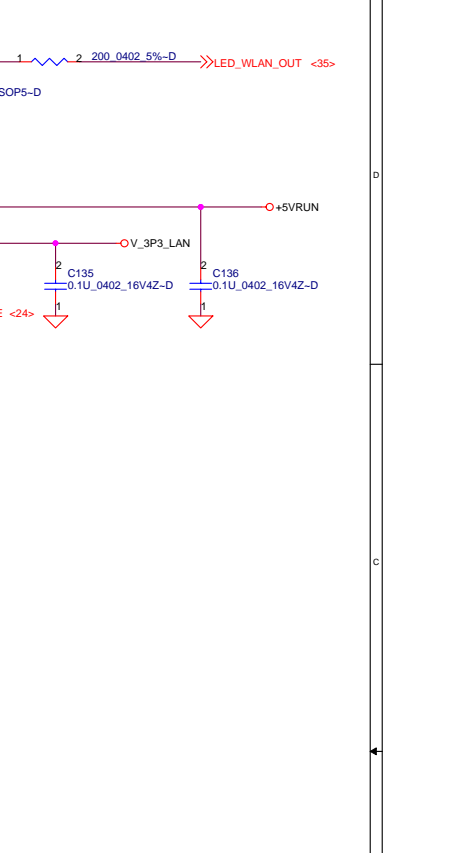
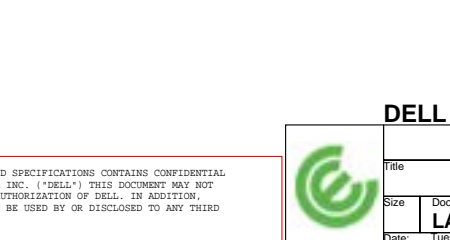
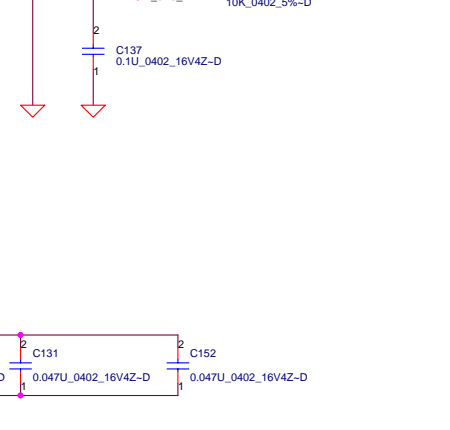
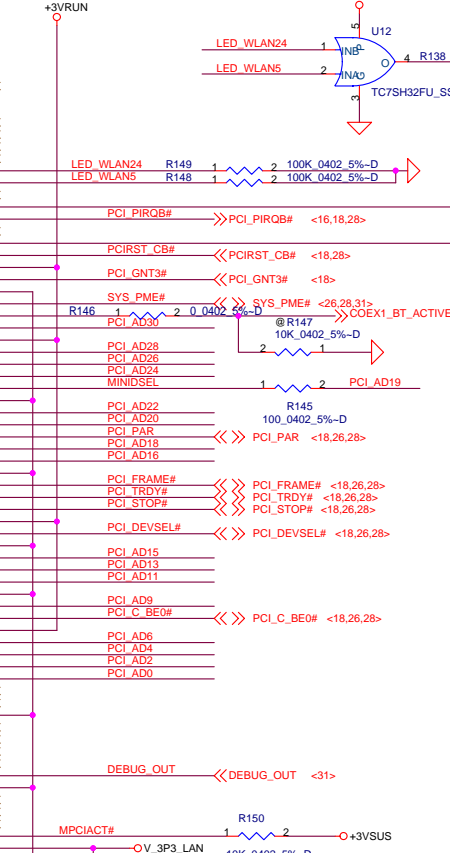
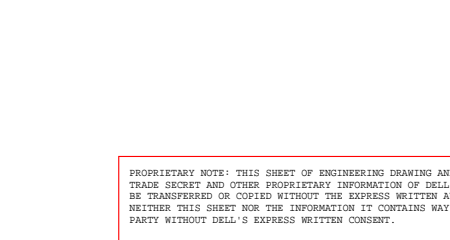
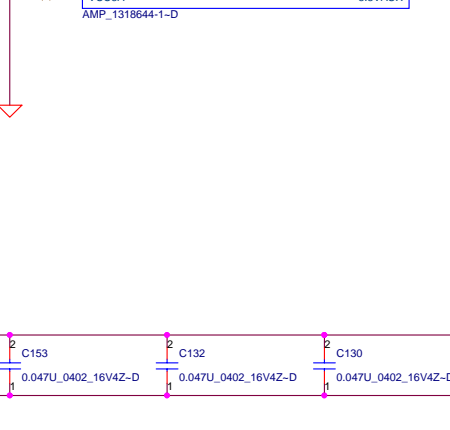
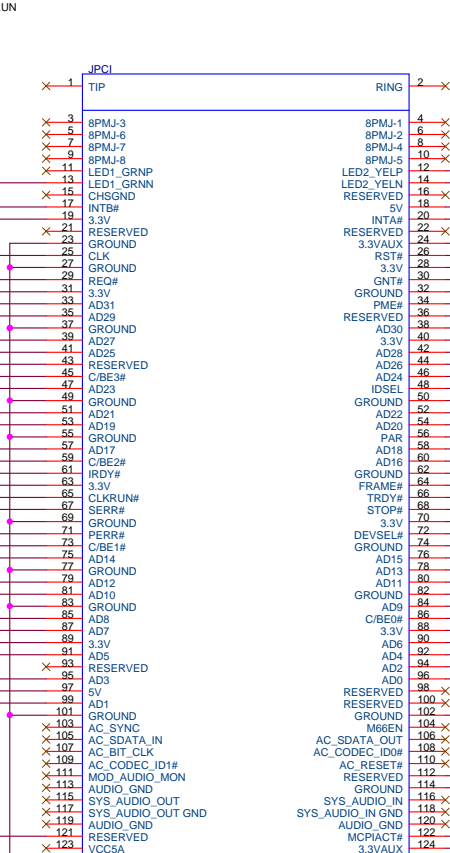
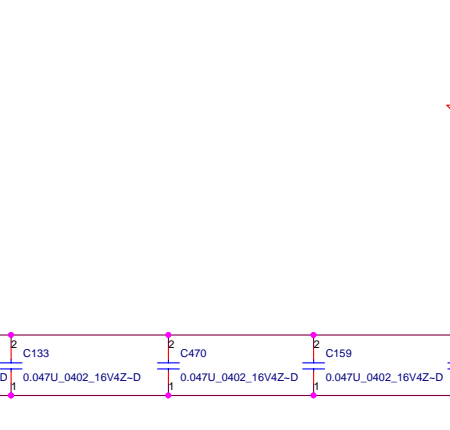
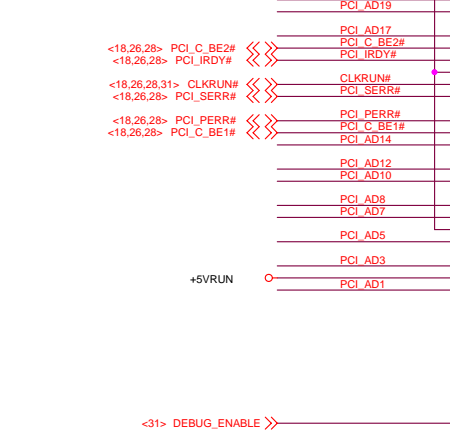
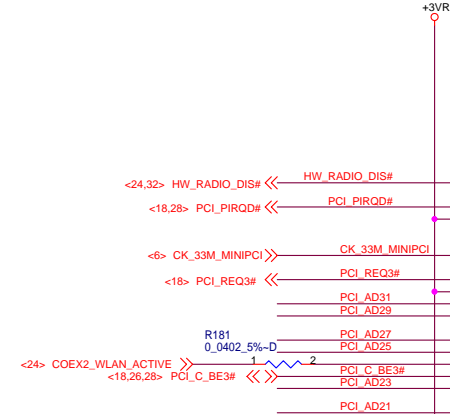
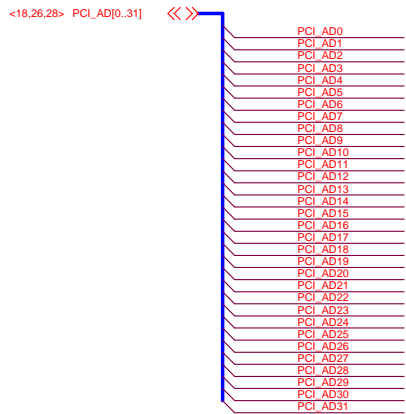








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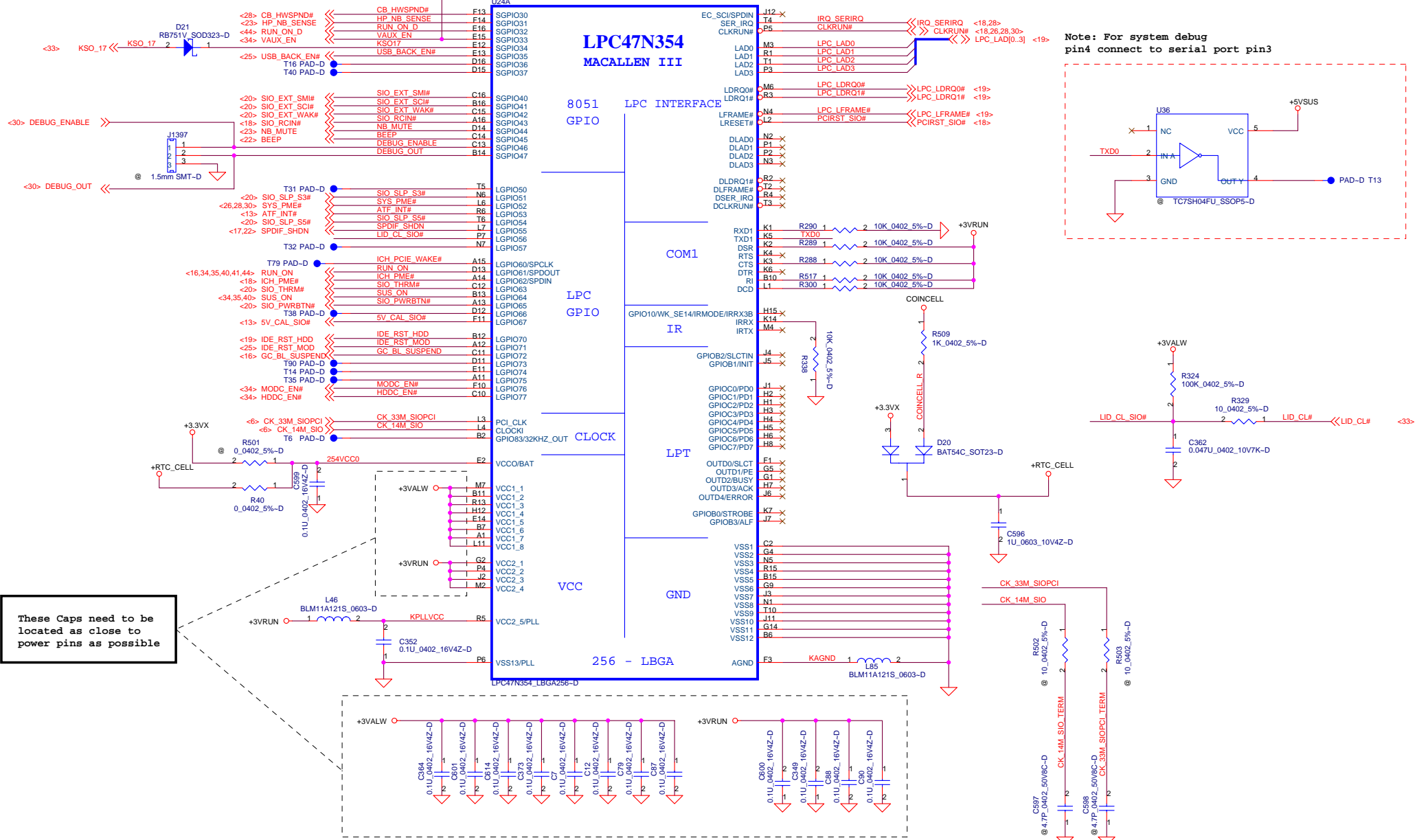


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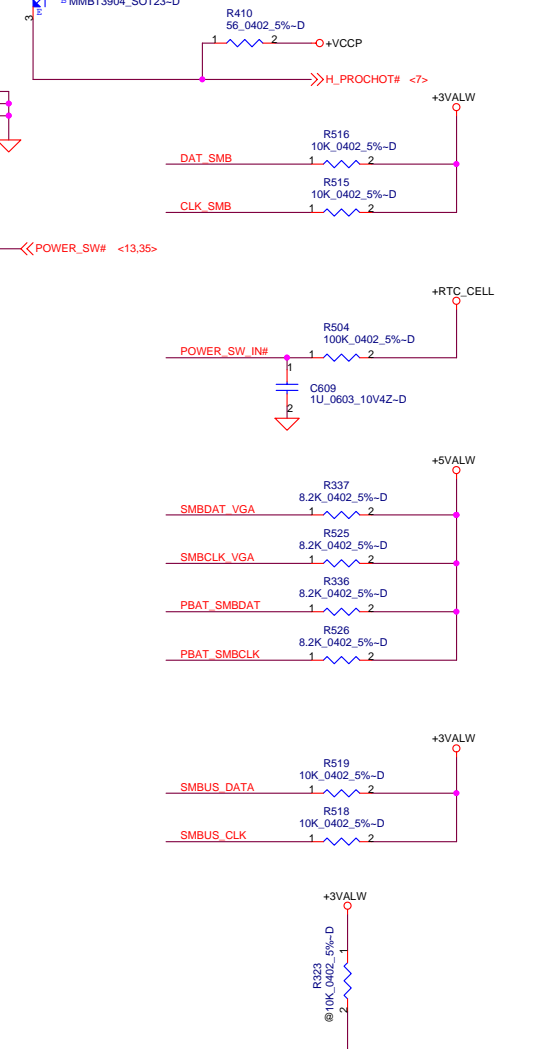
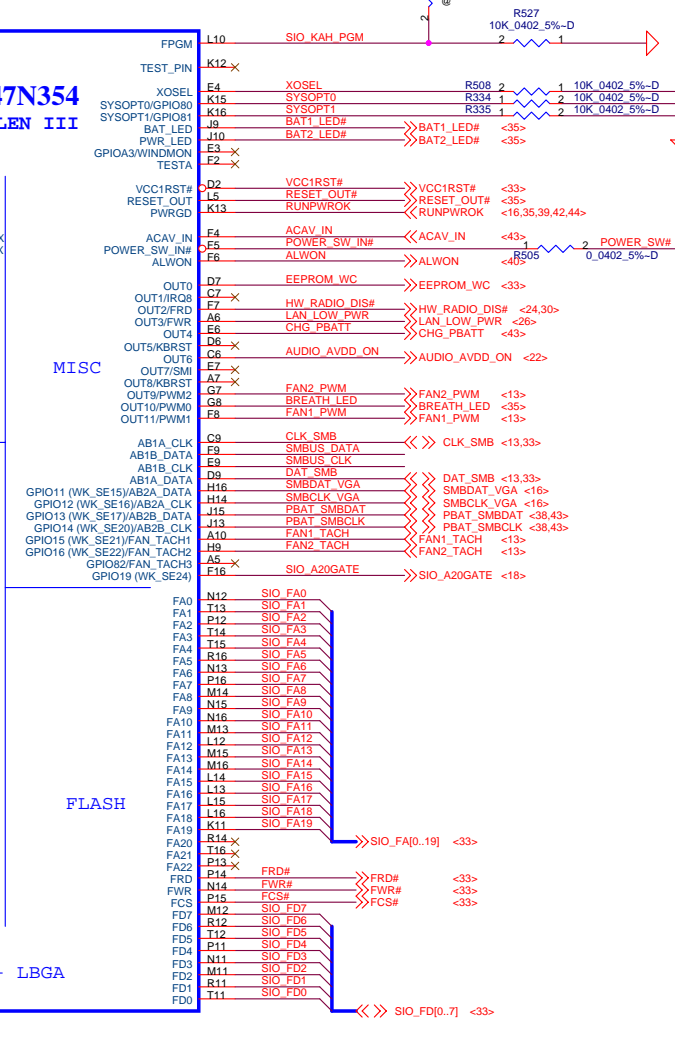
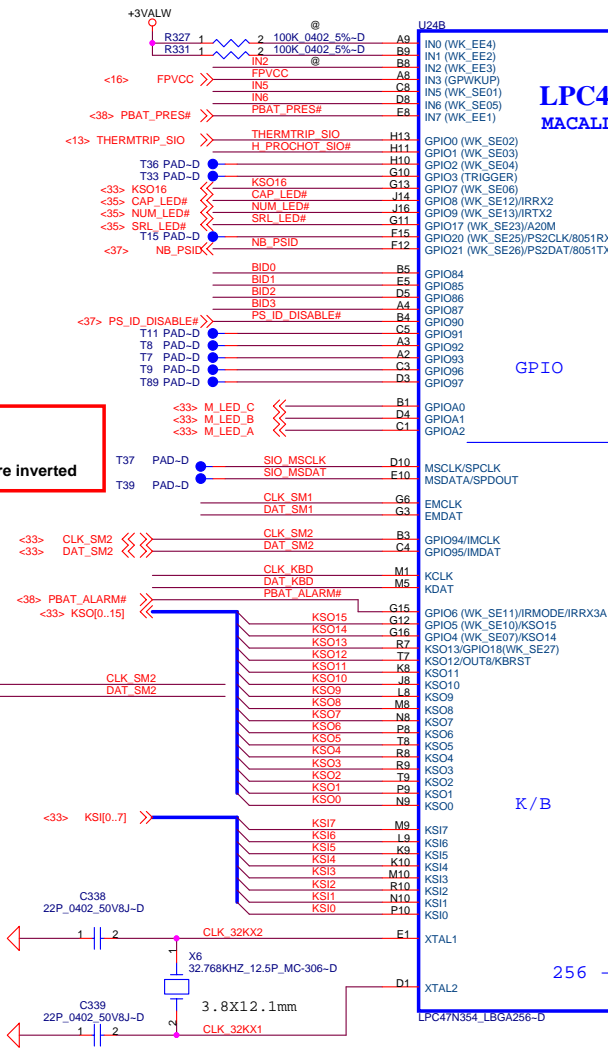
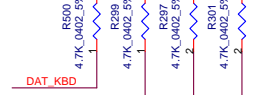
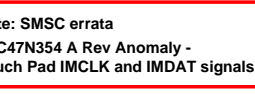
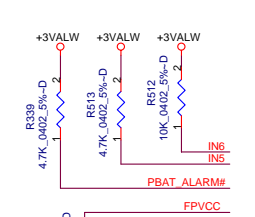
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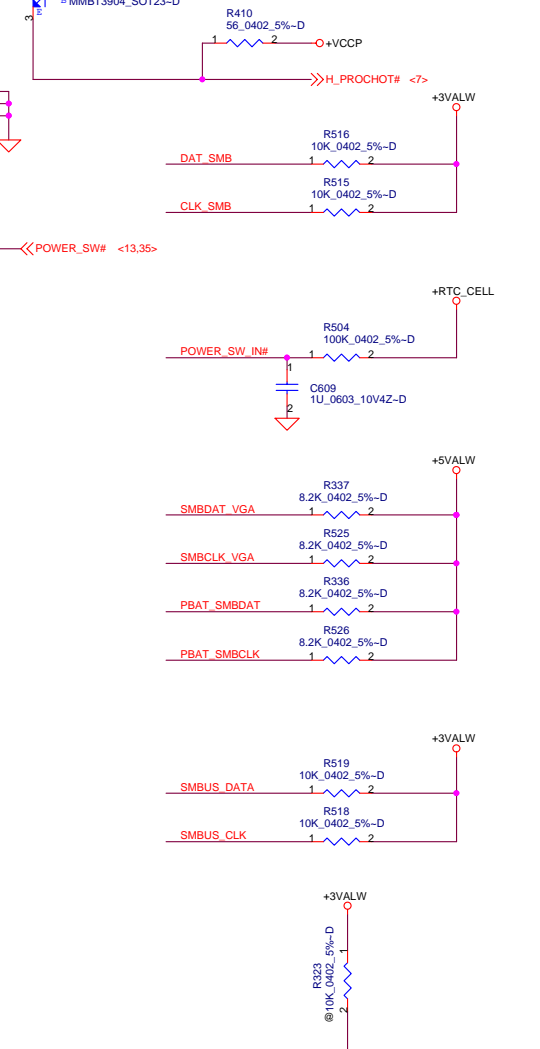
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Note: SMSC errata
LPC47N354 A Rev Anomaly -
Touch Pad IMCLK and IMDAT signals are inverted



Level shifter

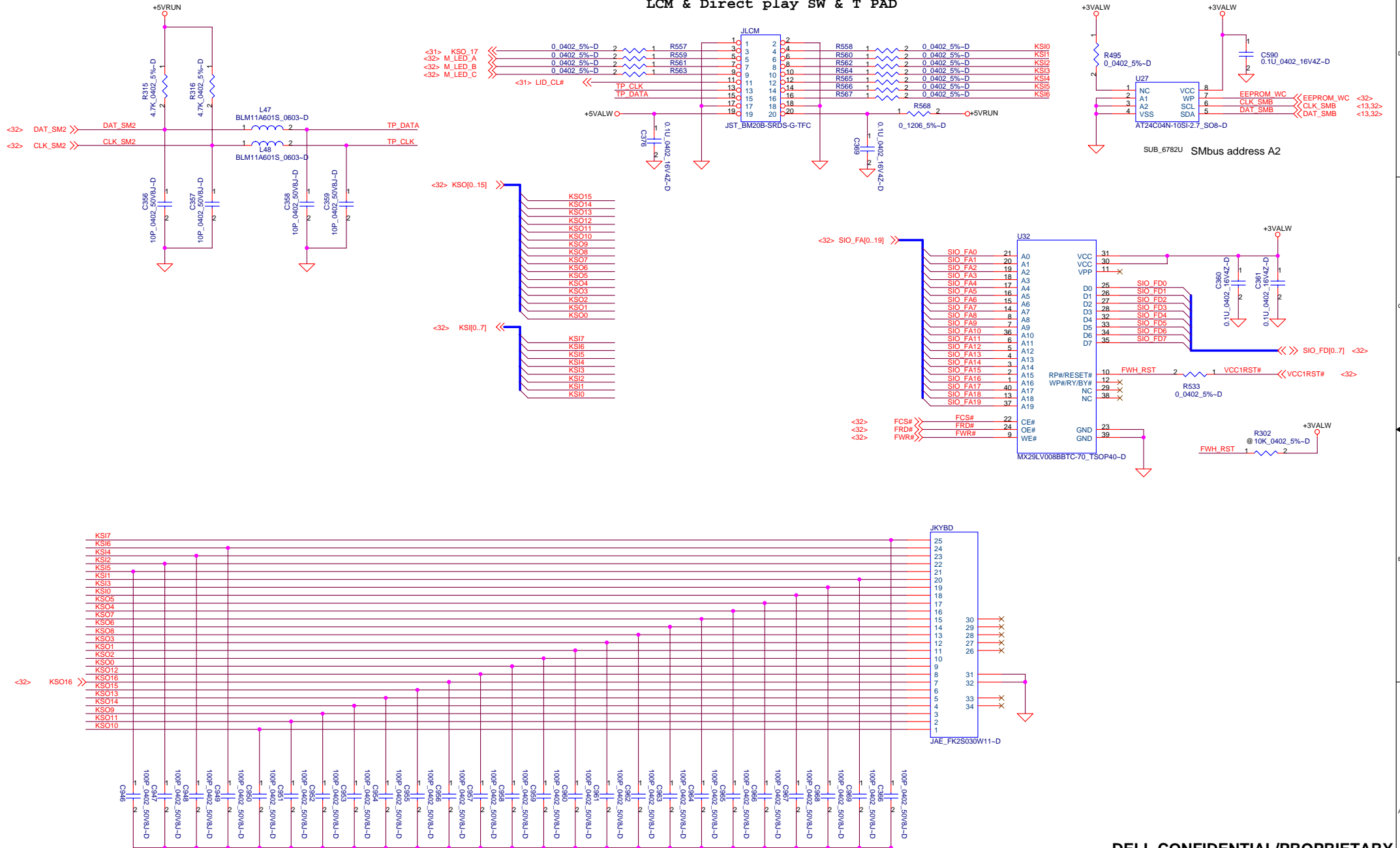


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Compal Electronics, Inc.			
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SIO LPC47N354(2/2)			
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Note: SMSC errata
LPC47N354 A Rev Anomaly - Touch Pad IMCLK and IMDAT signals are inverted



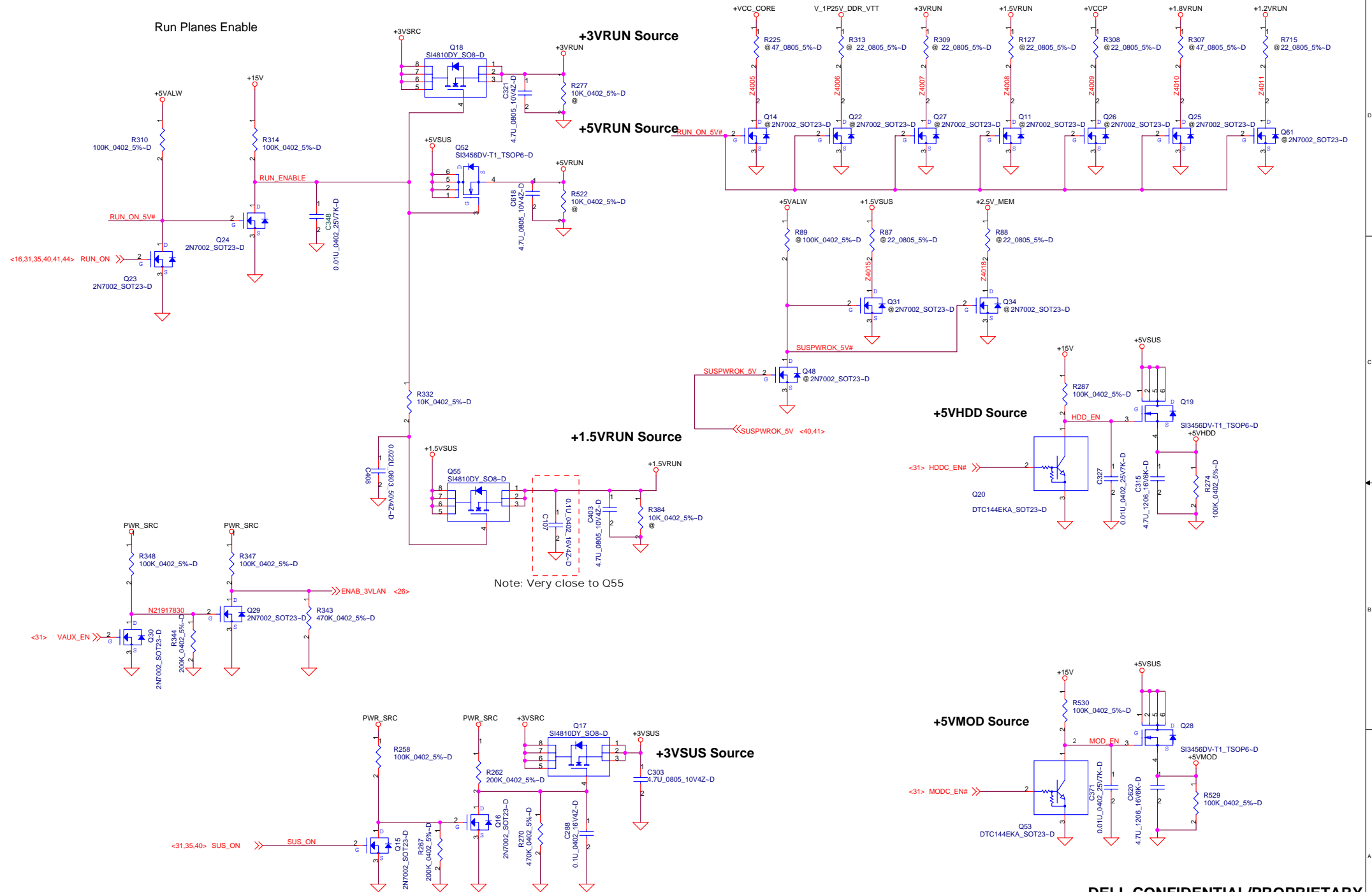
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INT KB/LCM CONN./EEPROM			
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Run Planes Enable



Note: Very close to Q55

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POWER CONTROL

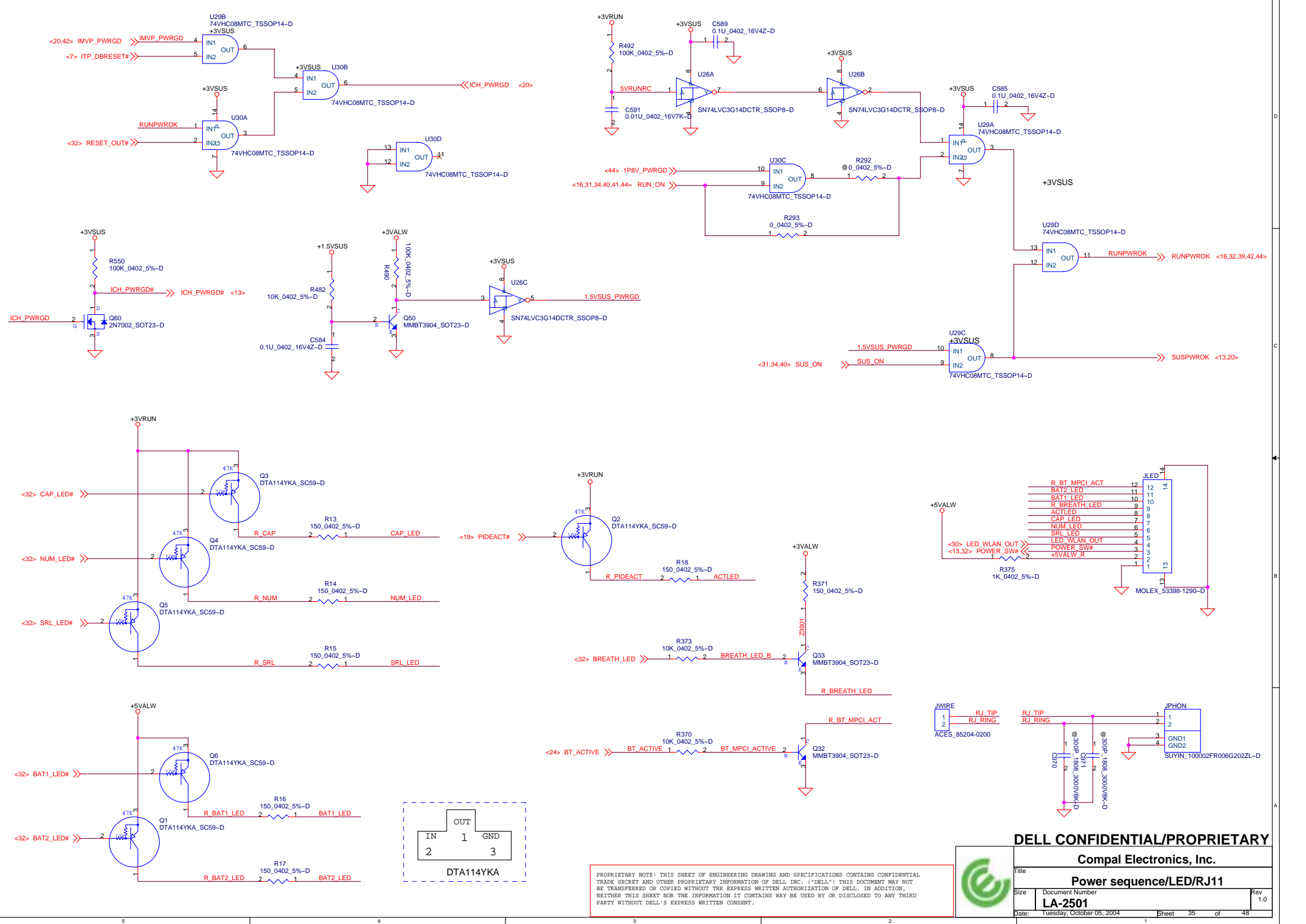
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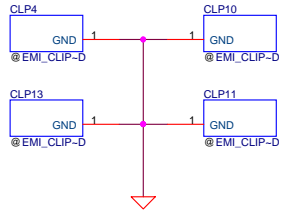
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Power sequence/LED/RJ11

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File Size Document Number Rev 1.0

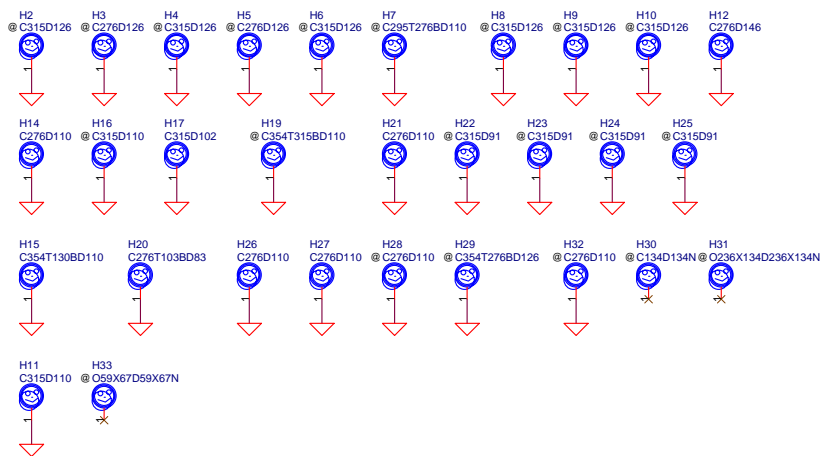
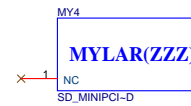
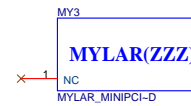
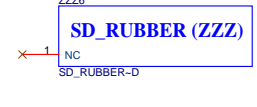
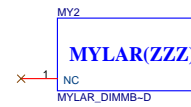
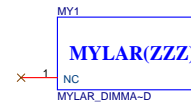
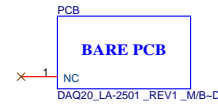
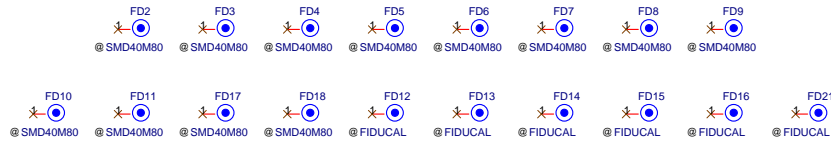
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HEX STANDOFF



Fiducial Mark



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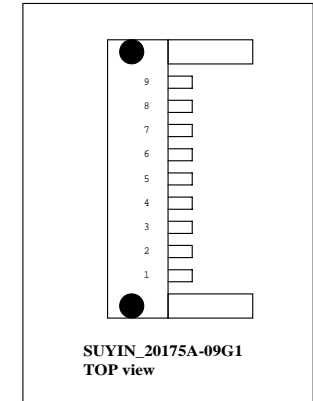
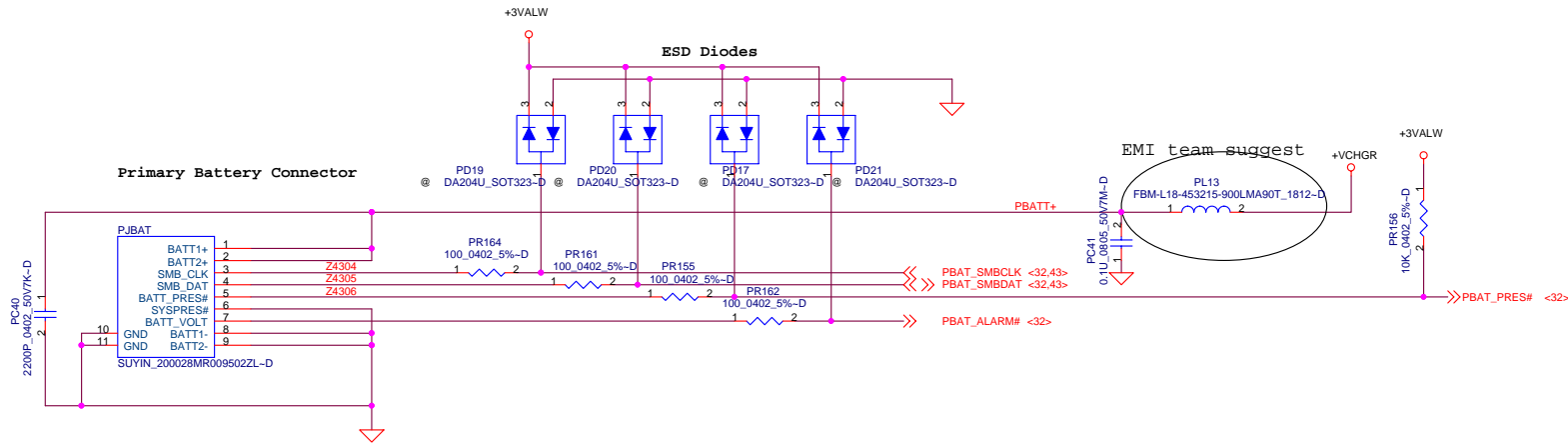
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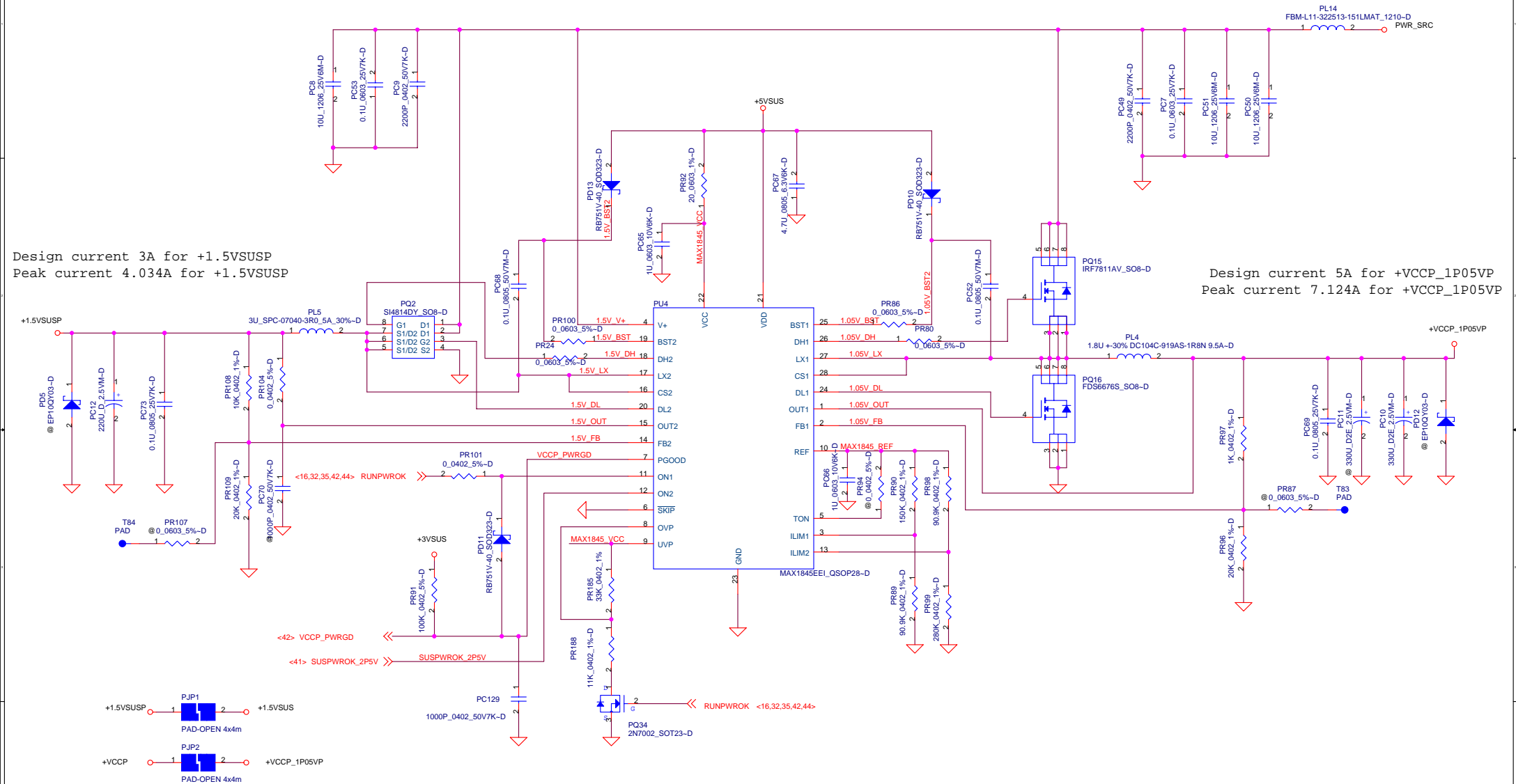


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+1.5VSUSP / +VCCP_1P05VP



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+1.5VSUSP /+VCCP_1P05VP

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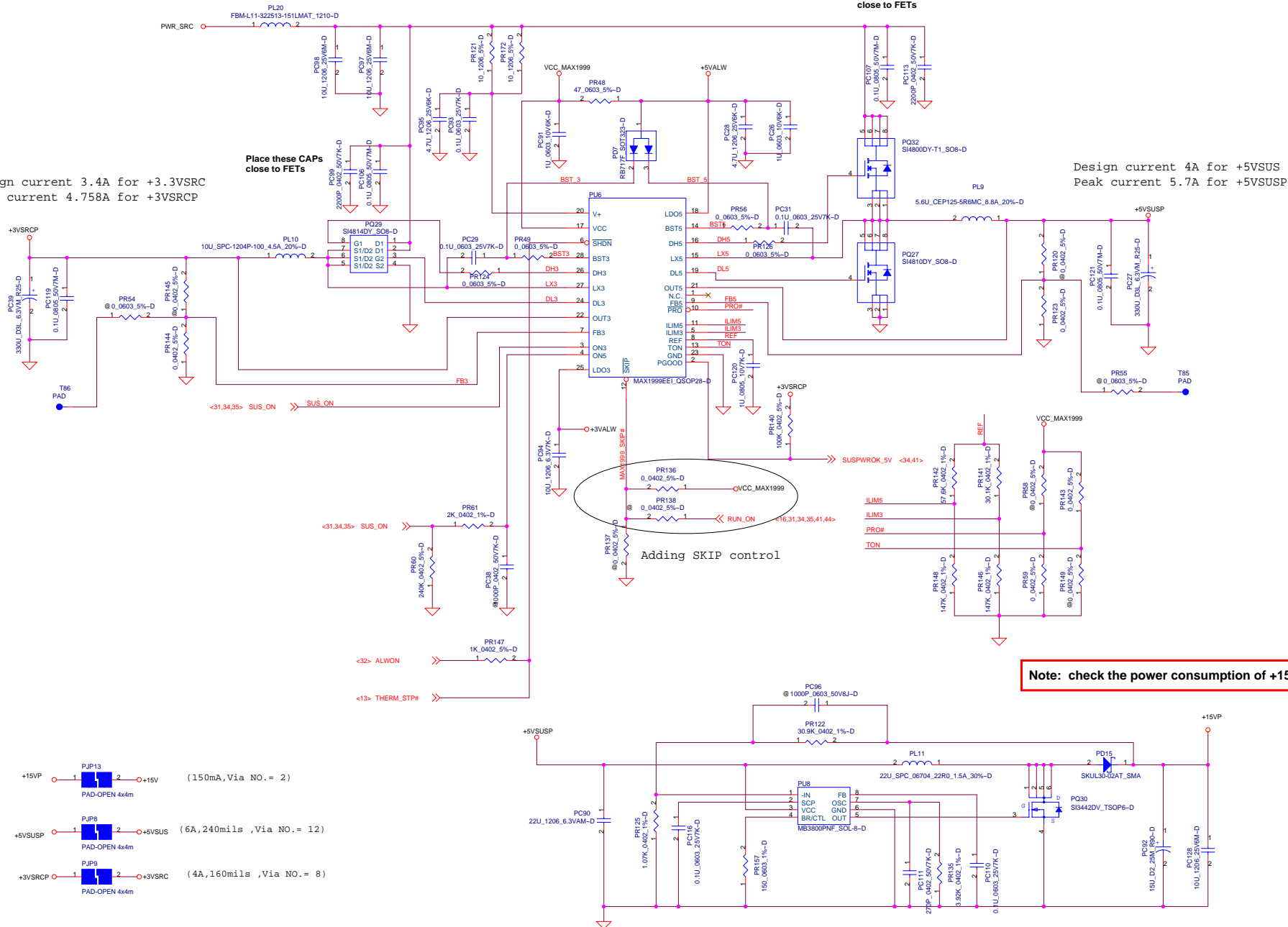
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**Place these CAPs
close to FETs**

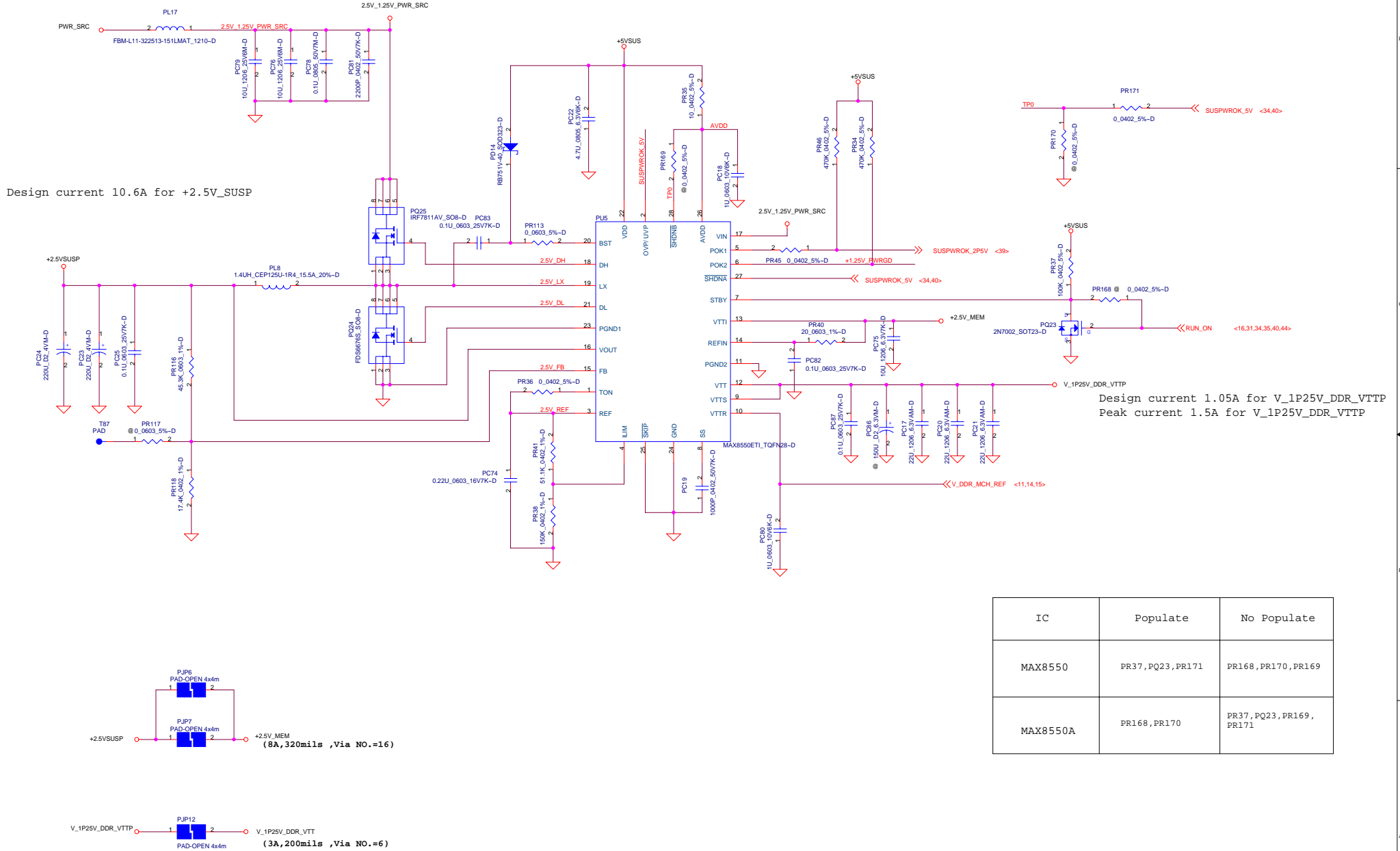
Design current 4A for +5VSUS
Peak current 5.7A for +5VSUSP



Note: check the power consumption of +15V plane

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+2.5V/ V_1P25V_DDR_VTT DDR1 Termination



IC	Populate	No Populate
MAX8550	PR37, PQ23, PR171	PR168, PR170, PR169
MAX8550A	PR168, PR170	PR37, PQ23, PR169, PR171

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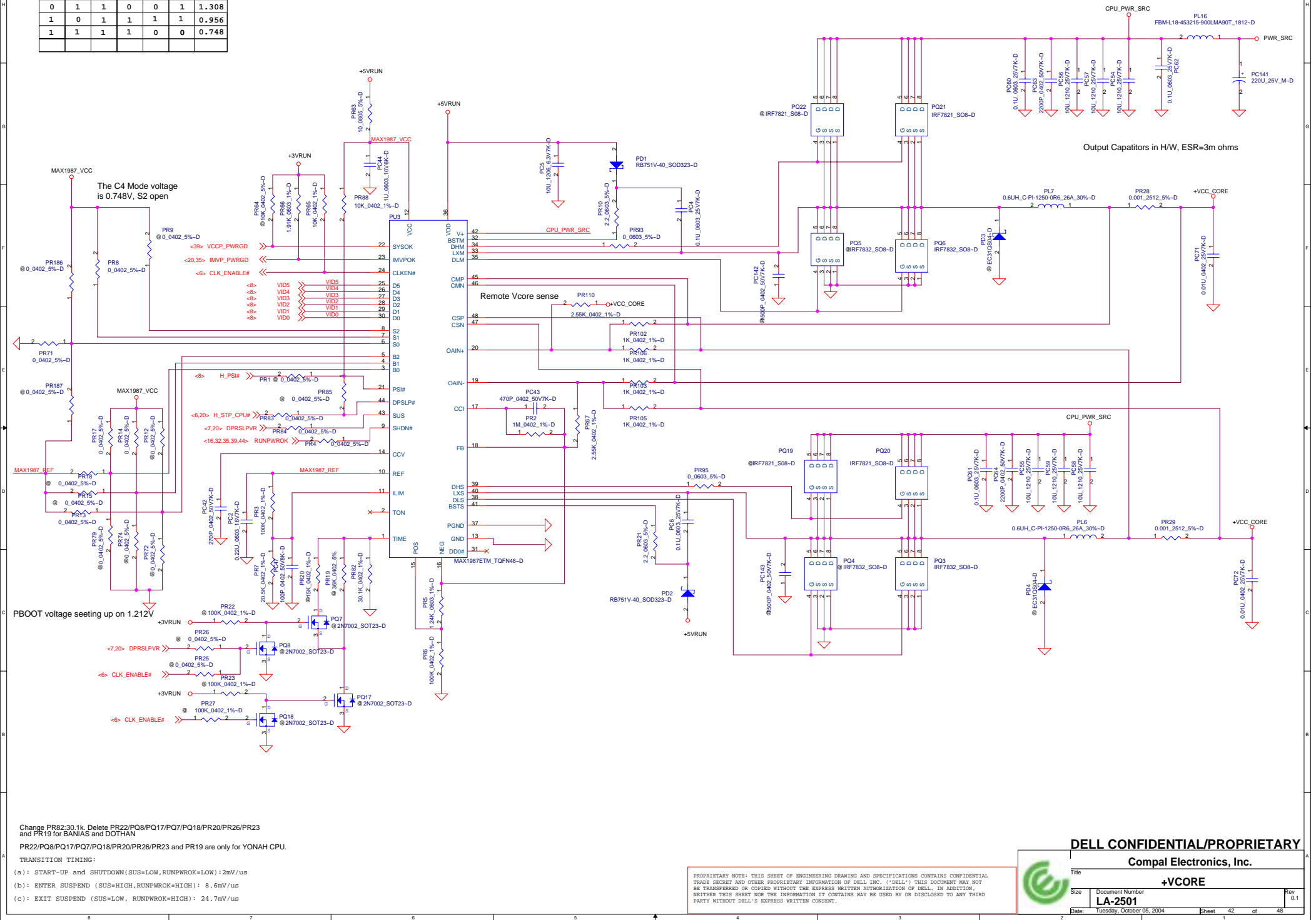
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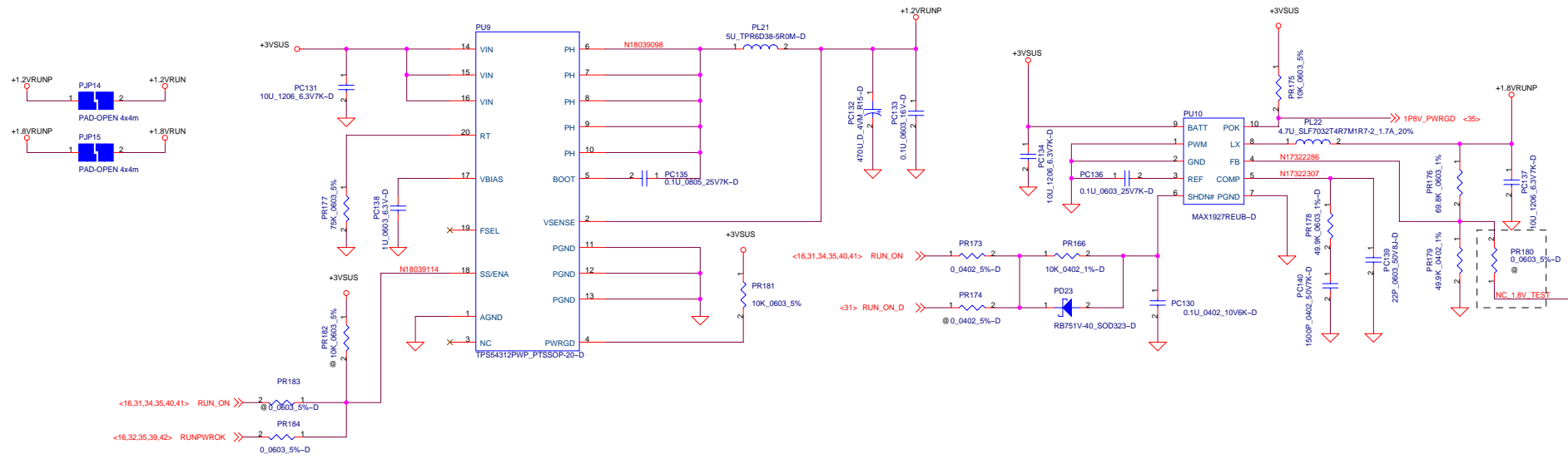
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V I D							Vcore
VID 5	VID 4	VID 3	VID 2	VID 1	VID 0	V	
0	1	1	1	1	0	1.484	
0	1	1	0	0	1	1.308	
1	0	1	1	1	1	0.956	
1	1	1	1	0	0	0.748	



+1.2VRUN/+1.8VRUN SOURCE



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+1.2V/ +1.8V

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
1	06	Clock	06/07/2004	Dell	change CK410M to CK409 for supporting ODEM-B	Change all parts on whole page	X00
2	10-12	ODEM	06/07/2004	Dell	Change Alviso to ODEM-B	All parts changed on thesae pages	X00
3	18-21	ICH4M	06/07/2004	Dell	Change ICH6M to ICH4M	All parts changed on thesae pages	X00
4	25	USB Ports	06/07/2004	Dell	ICH4M just support 6 USB ports	Delete USB1 port	X00
5	25	CDROM	06/07/2004	Dell	ICH4M not support SATA	Delete SATA Bridge for ICH4M not Support.	X00
6	16	AGP/DVI CONN.	06/07/2004	Dell	ODEM-B Chipset not support PCIe interface	Change PCIe Graphics Interface to AGP4X	X00
7	14,15	DDR1 Socket	06/07/2004	Dell	ODEM-B Chipset not support DDR2 interface	Change DDR2 interface to DDR1	X00
8	01	Cover	06/10/2004	Dell	ODEM-B Solution with Gilbert Name	Change Sullivan to Gilbert	X00
9	16	AGP/DVI CONN.	06/10/2004	Dell	Support LBK Graphics	Change Sullivan Graphics Connector Type to LBK Graphics Connector Type	X00
10	33	TV Tuner	06/14/2004	Dell	Gilbert not support TV tuner	Deleted JTUNR, JTV1, JTV2, R556, R555, R79, R98, C434, C433, C424, C439, C610, L73, L75, L74, R102, R103, C431, C419, C420, C438, C442.	X00
11	18	ICH4M	06/14/2004	Dell	Gilbert not support TV tuner	Deleted R40.	X00
12	20,32	ICH4M / SIO	06/14/2004	Dell	Gilbert not support TV tuner	Added T88, T89..	X00
13	17	TV Out/CRT	06/14/2004	Dell	Signal Integrity reasons as Sullivan requirements	Pop R4~R6, C8~C10.	X00
14	13	FAN/Guardian	06/14/2004	Dell	Per TT#92358, OTP seeting from 90C to 85C	Changed R421 from 30.1K to 51.1K.	X00
15	30	MINIPCI	06/14/2004	Dell	Per Vsevolod to fix an EMI issue.	Pop R179 and C157	X00
16	22	AC97CODEC	06/15/2004	Dell	Caps nopup as LBK+ and C541, C195, C222 populated as LKB+	No pops C96, C101 Changed C541 to 2.2uF. C196, C197 to 1000pF. C195 to 0.1uF and C222 to 0.22uF.	X00
17	21	ICH4M	06/15/2004	Dell	C894, C903, C934, C935 no pops on LKB+ schematic.	No pops C903, C934, C935 as LBK+. But leave C894 populated for each pin of 5V_REF.	X00
18	22	AC97CODEC	06/15/2004	Dell	1uF cap attached between R210 and GND	Deleted R210 and Added C226	X00
19	13,16	Thermal / VGA Connector	06/18/2004	Compal	VGA Thermaltrip#	JVID PIN 158 Connected to Guardian Pin 8	X00
20	32	SIO	06/18/2004	Dell	Do not need PU by Dell requirements.	No pop R327, R331.	X00
21	19	ICH4M	06/18/2004	Compal	OC#5 wrong connection	Reconnect from pin2 to pin1 of R666.	X00
22	31	SIO	06/18/2004	Dell	GPIO73 (USB_SIDE_EN#) needs to be removed, and you should use GPIO35 (USB_BACK_EN#) in it's place.	Added T90 connected to GPIO73. Pin3 of U20 reconnect to USB_BACK_EN#.	X00
23	31	SIO	06/23/2004	Dell	GPIO70 is labeled on the schematics as an input, needs to be an output.	Change the off-page arrows of IDE_RST_HDD to show that it is an output.	X00
24	31,32	SIO	06/23/2004	Dell	Laguna found current surge on coin cell due to false power switch detected by SIO.	Add pop option to connect +RTC_CELL to U24 pin E2, VCC0. Added R40. Nopop R501. Changed R504 pin 2 from +3.3VX to +RTC_CELL.	X00
25	31	SIO	06/23/2004	Dell	Increase number of 0.1uF capacitors so there is 1 for each VCC1 and VCC2 input pin for Macallan.	Added C7, C12, C79, C87, C88, C90	X00

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Changed-List History 1

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

Item	Page#	Title	Date	Request Owner	Issue Description	Solution Description	Rev.
26	25	USB	06/23/2004	Dell	Implementation for increasing the current capability of the USB ports.	Added PJP20~PJP23, R41, R42, R43, R46. Nopop L36, L42, L9, L12, C278, C576, C19, C16.	X00
27	25	USB	06/24/2004	Dell	Implementation for increasing the current capability of the USB ports.	Deleted PJP22, PJP23. Reconnect PJP20, PJP21 Jumper.	X00
28	35	LED	06/25/2004	Dell	Bluetooth LED is to bright.	R375 value changed from 100 to 1K ohm.	X00
29	35	LED	06/25/2004	Compal	Green LED controll by Macallan-III pin J9, amber LED by Macallan-III pin J10.	Pin 11 of JLED connected to BAT2_LED, pin 10 of JLED connected to BAT1_LED.	X00
30	33	Keyboard	06/30/2004	Dell	KYBD connector c-paks were changed to discrete for cost savings.	Removed CN1~CN6, added C946~C969. Pop C946~C969 and C366.	X00
31	8	Dothan(2/2)	06/30/2004	Dell	Was needed for initial revision of CPUs but is no longer required.	Removed B_VID1~6, RN1, R37, R38, R378~R383.	X00
32	8	Dothan(2/2)	06/30/2004	Dell	Option for 1.8V is legacy for early version of CPU.	Removed PJP5.	X00
33	16	VGA connector	07/01/2004	Dell	By Bo's requirement.	Removed T54. JVID pin 177 connect to G_PWR_SRC.	X00
34	7	Dothan(1/2)	07/01/2004	Dell	Per Intel feedback: DPRSLPVR from the ICH4-M should be a No-Connect to CPU.	Nopop R9.	X00
35	14	DDR1 DIMMA	07/01/2004	Dell	855PM Chipset Platform Design Guide recommends using 56ohm resistors for the pull up.	R718,R719,R720,R723 change value from 10 to 56 ohm.	X00
36	35	RJ11	07/01/2004	Compal	Per Compal EMI guys requirement to fix MDC cable issue.	Added C970, C971.	X00
37	24	SUBWOOFER	07/05/2004	Compal	Change supplier to follow Dell PSL.	C646 change to SANYO 25CV220AX.	X00
38	20,32	ICH4M,SIO	08/18/2004	Compal	Change board ID to X01.	Pop R695,nopop R699. Pop R318,nopop R319.	X01
39	16	VGA connector	08/18/2004	Dell	Slow down the G_PWR_SRC that avoid AC surge current when system on	C518 change value from 1000P to 0.1uF.	X01
40	22, 25	AC97 CODEC and CD-ROM	08/20/2004	Dell	Support instant CD play while powered on.	Added C94, C96, C101, C353, C354.	X01
41	13	Thermal sensor	08/20/2004	Dell	+3VRUN leakage issue from ATI M22	Added R37, Q12 pop and R47 nopop.	X01
42	25	USB2.0 PORT	08/20/2004	Compal	USB port 0 and port 1 swapped according to the schematic notes.	Update USB mapping table.The USB port 0 is on the Bottom of the left side dual stack connector and port 1 is on the top.	X01
43	13	Thermal sensor	08/23/2004	Dell	Need to use 3Vrun instead of VCCP for the BJT base voltage, since thermtrip_VGA#" is a 3V rail	Connect pin 1 of R37 from +VCCP to +3VRUN	X01
44	35	LED	08/26/2004	Dell	LEDs intensity improvement.	R13~18 change value from 470 ohm to 150 ohm.	X01
45	32	SIO	08/26/2004	Compal	Gilbert BIOS use ICH4 GPIO34~37 as Board ID.	Nopop R318, R506, R510, R312.	X01
46	23	Amplifier and Phone Jack	09/02/2004	Dell	Final HW EQ change requests for Gilbert/Sullivan by Doug.	C260, C563 change value from 0.047U to 0.015U.	X01
47	24	SUBWOOFER	09/02/2004	Dell	Final HW EQ change requests for Gilbert/Sullivan by Doug.	C634 change value from 0.22U to 0.1U. R539 change value from 1.21K to 16K.	X01
48	9	CPU Bypass	09/02/2004	Dell	Cost savings for making this change.And it is same as Sullivan.	C415,C416,C85,C665 change value from 220U to 330U. Nopop C207,C215,C525,C532,C85,C665.	X01
49	20	ICH4M	09/24/2004	Compal	Change board ID to A00.	Pop R699,nopop R695. Pop R696,nopop R700.	A00

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

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Version Change List (P. I. R. List) for Power Circuit

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