

Lindbergh Schematic Document
uFCPGA Northwood

2002-04-23

REV: X00

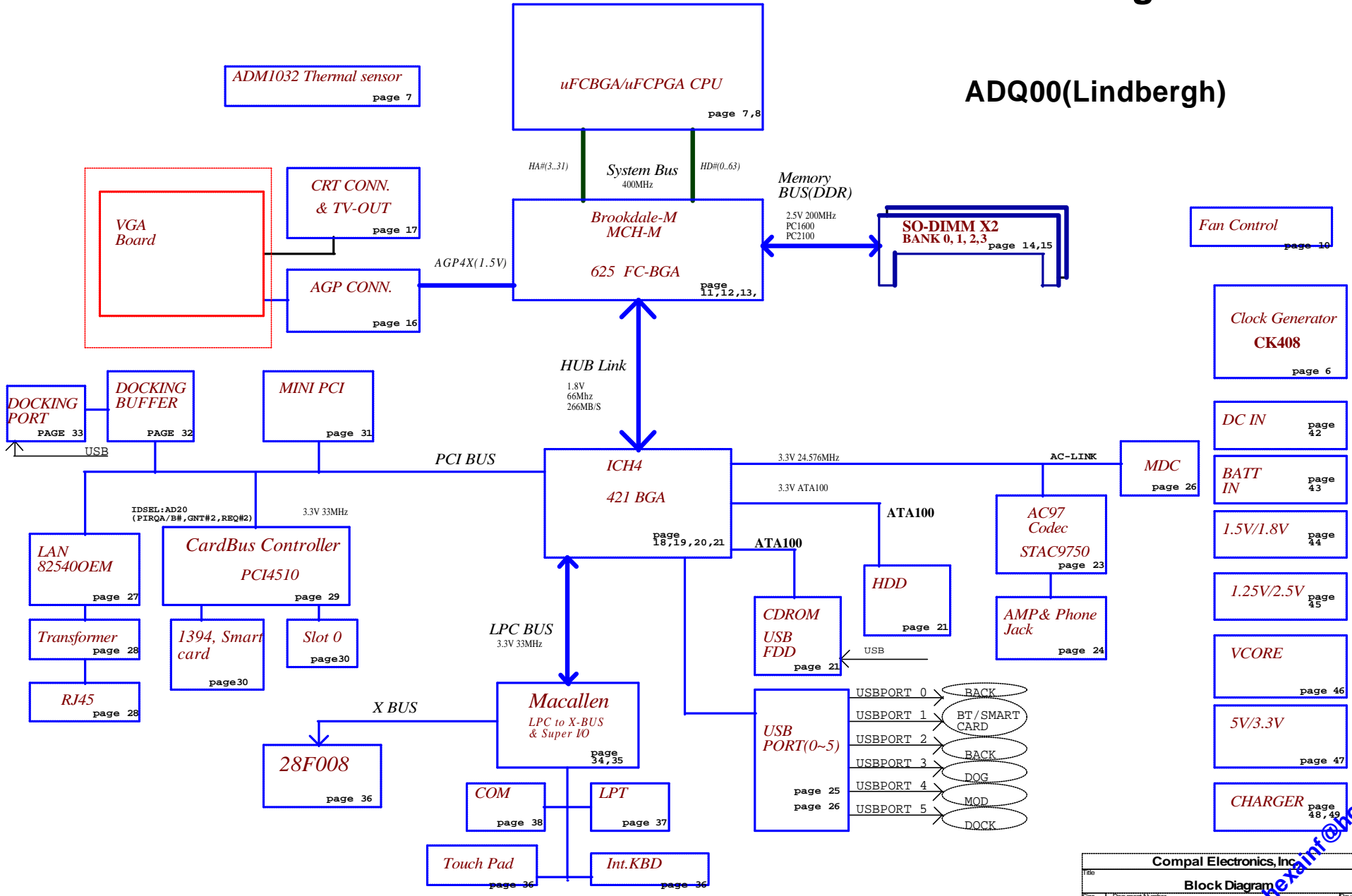
Compal Electronics, Inc.		
Title		
Cover Sheet		
Size	Document Number	Rev
	ADQ00/LA-1351	X00
Date:	星期二, 四月 23, 2002	Sheet 1 of 49

kyran@hotmail.com

Block Diagram

ADQ00(Lindbergh)

Mobile Northwood



Compal Electronics, Inc.		
Title: Block Diagram		
Doc	Document Number	Rev
	ADQ00LA-1351	X00
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hexainf@hotmail.com

PM TABLE

Signal \ State	+3VALW +5VALW +12V	+3VSUS +5VSUS +2.5VSUS +1.8VSUS +1.5VSUS	+3VRUN +5VRUN +1.8VRUN +VCC_CORE
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

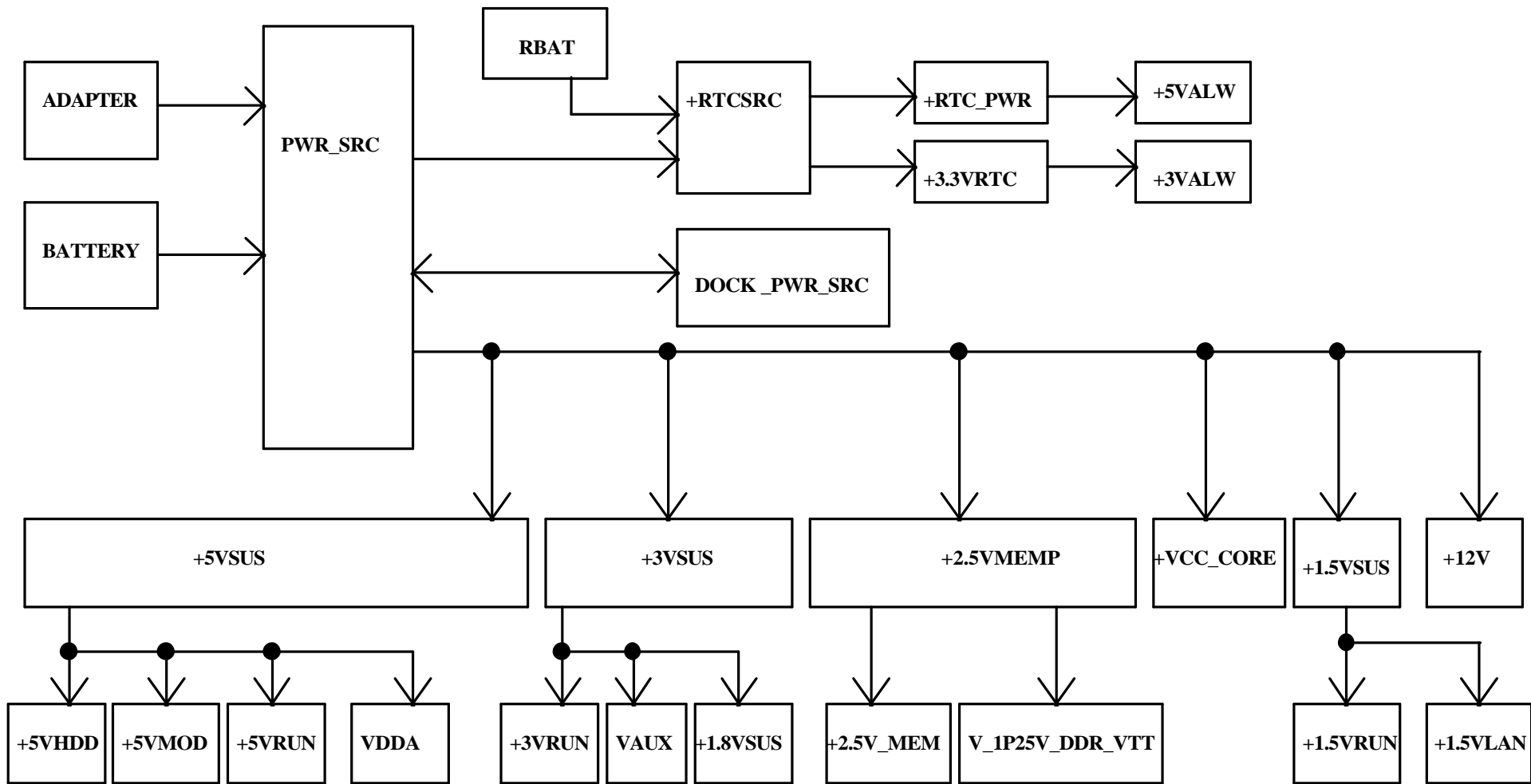
PCI DEVICE	IDSEL	REQ#/GNT#
CARD BUS	AD17	1
LAN	AD16	4
DOCK	AD24	0
MINI PCI	AD19	3

USB TABLE

USB PORT#	DESTINATION
0	BACK
1	BT/SmartCard
2	BACK
3	DOG
4	MOD
5	DOCK

CHANGE LIST

repair@hotmail.com



Compal Electronics, Inc.		
Title		
Power Rail		
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ICH4

ICH_SMBCLK
ICH_SMBDATA

+3VSUS

DIMM0

DIMM1

+3VRUN

CK_SCLK

CLK GEN.

CK_SDATA

V_3P3_LAN

NIC

MPCI

Macallen

CLK_SMB
DAT_SMB

+3VALW

24C02

ADM1032

DH PORT

DOCK_SMB_CLK

DOCK_SMB_DAT

+5VALW

DOCKING

SBAT_SMBCLK

SBAT_SMBDAT

+5VALW

2'nd
BATTERY

PBAT_SMBCLK

PBAT_SMBDAT

+5VALW

VGA

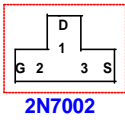
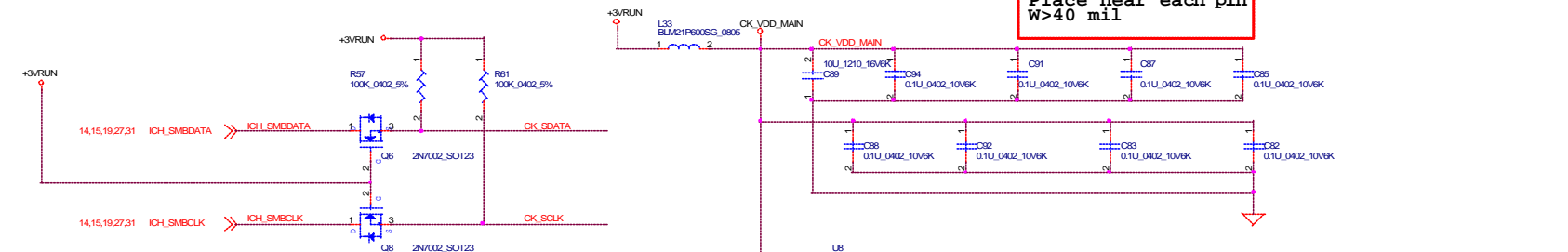
CHARGER

1'nd
BATTERY

Compal Electronics, Inc.		
Title: SMBUSTOPOLOGY		
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Place near each pin
W>40 mil



W=20 mils

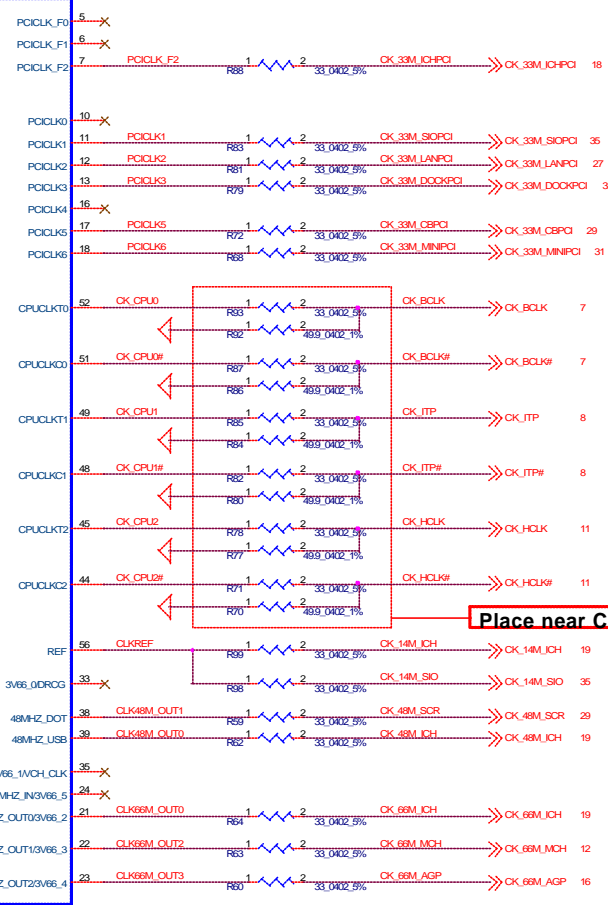
CK408

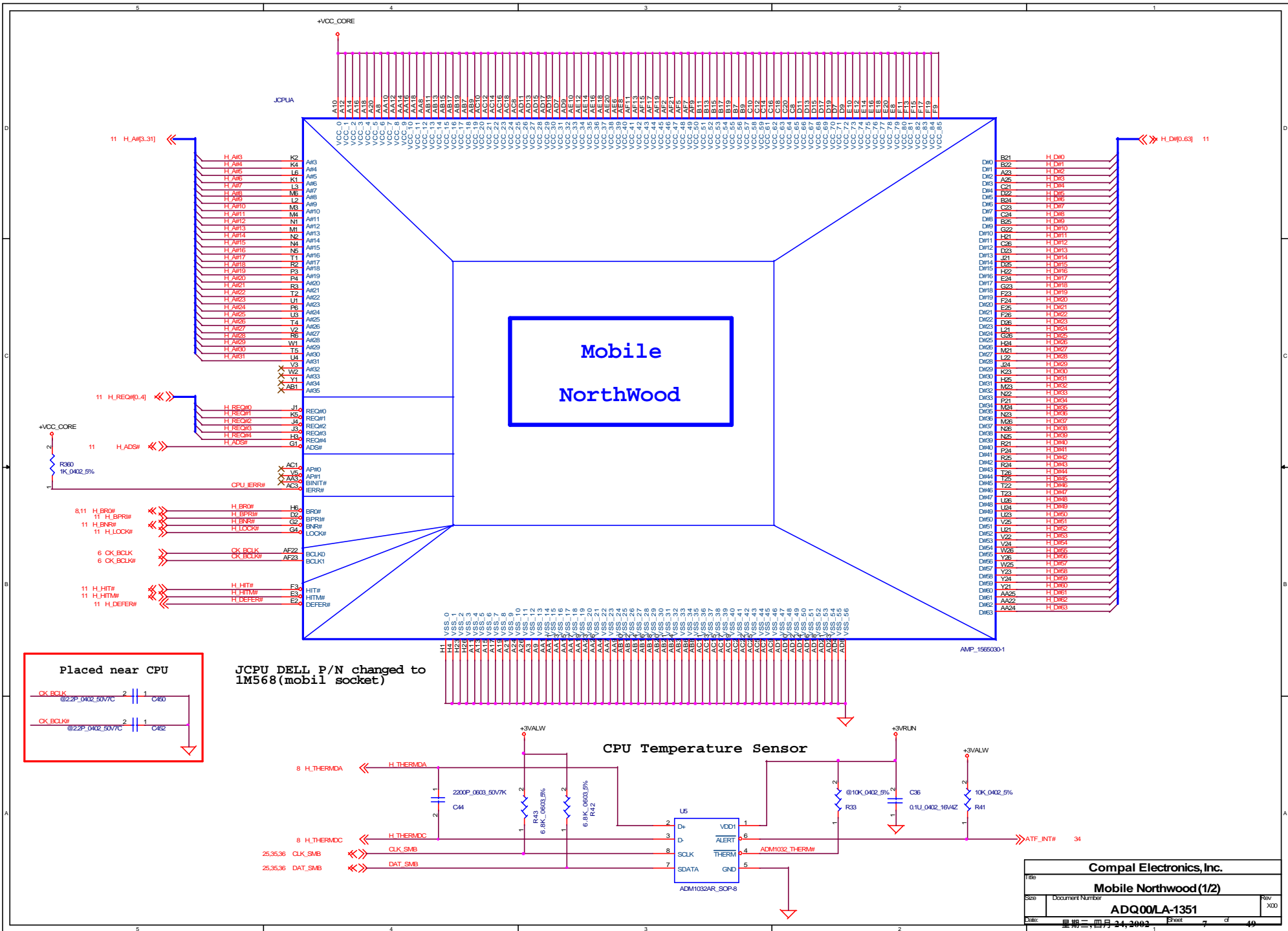
Please closely pin42

Place near CK408

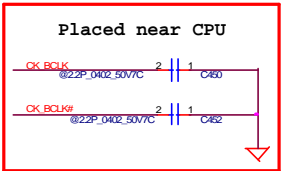
Place crystal within 500 mils of CK408

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



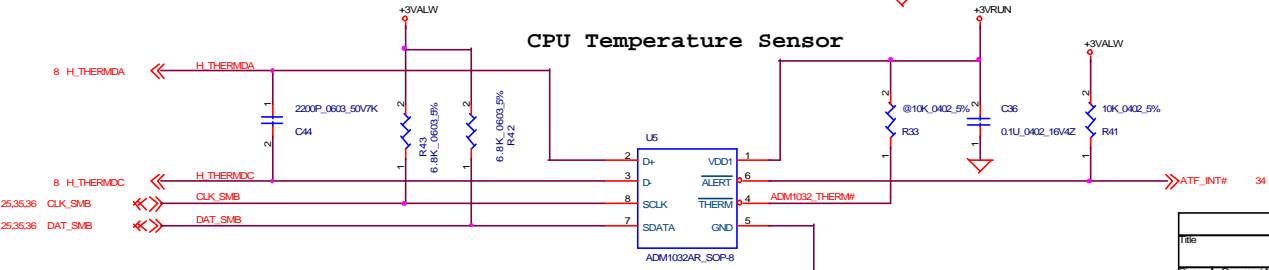


**Mobile
NorthWood**

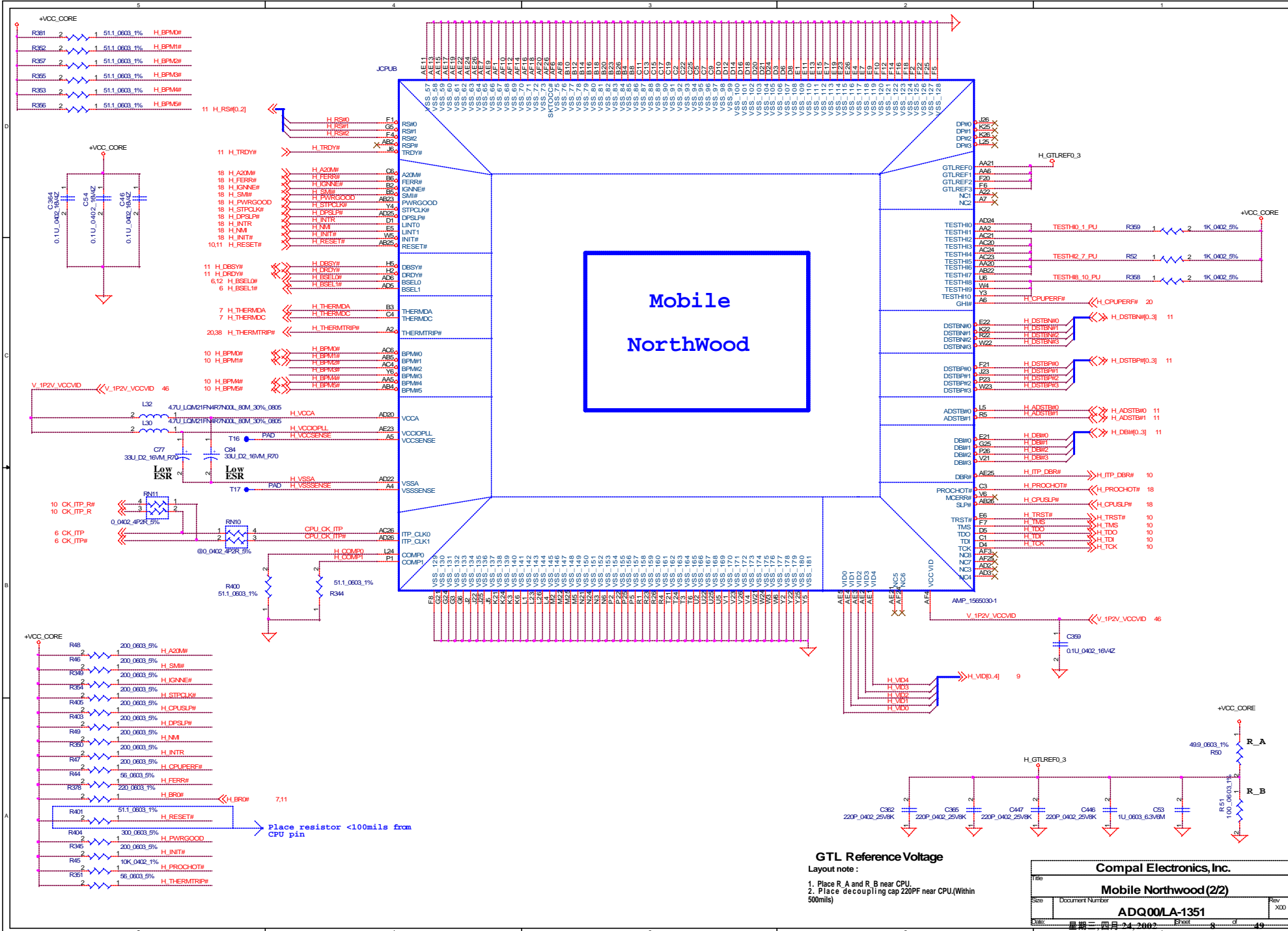


JCPU DELL P/N changed to 1M568(mobil socket)

CPU Temperature Sensor



Mobile NorthWood



11 H_RS0[0:2]

11 H_TRDY#

18 H_A20M#
18 H_FERR#
18 H_IGNNE#
18 H_SM#
18 H_PWRGOOD
18 H_STPCLK#
18 H_DPUSLP#
18 H_INTR
18 H_NMI
18 H_INIT#
10,11 H_RESET#

11 H_DBSY#
11 H_DRDY#
6,12 H_BSEL#
6 H_BSEL1#

7 H_THERMDA
7 H_THERMDC
20,38 H_THERMTRIP#

10 H_BPM0
10 H_BPM1#
10 H_BPM2#
10 H_BPM3#
10 H_BPM4#
10 H_BPM5#

10 H_BPM0#
10 H_BPM1#

10 CK_ITP_R#
10 CK_ITP_R
6 CK_ITP#
6 CK_ITP#

10 CK_ITP_R#
10 CK_ITP_R

6 CK_ITP#
6 CK_ITP#

10 CK_ITP_R#
10 CK_ITP_R

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6 CK_ITP#

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10 CK_ITP_R#
10 CK_ITP_R

6 CK_ITP#
6 CK_ITP#

10 CK_ITP_R#
10 CK_ITP_R

6 CK_ITP#
6 CK_ITP#

Place resistor <100mils from CPU pin

GTL Reference Voltage

Layout note:

1. Place R_A and R_B near CPU.
2. Place decoupling cap 220PF near CPU. (Within 500mils)

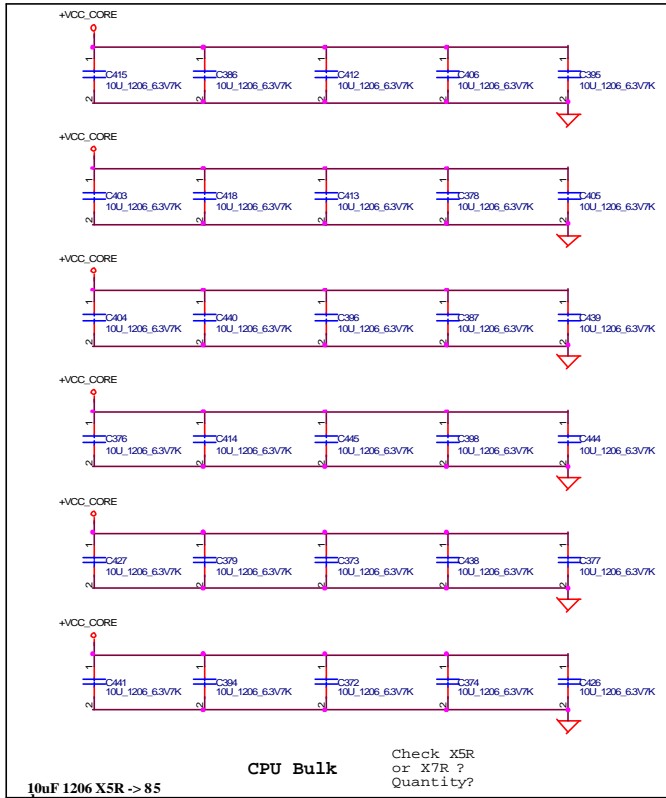
Compal Electronics, Inc.		
File	Mobile NorthWood (2/2)	
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Layout note :

Place close to CPU. Use 2-3 vias per PAD.
Place .22uF caps underneath balls on solder side.
Place 10uF caps on the peripheral near balls.
Use 2-3 vias per PAD.

Layout note :

Place close to CPU power and
ground pin as possible
(<1inch)

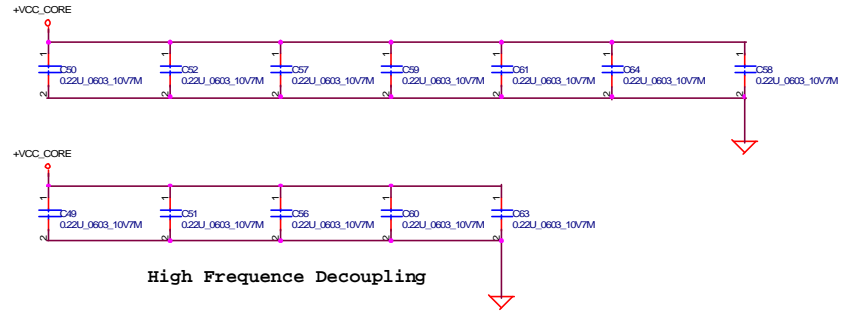


10uF 1206 X5R -> 85 degree

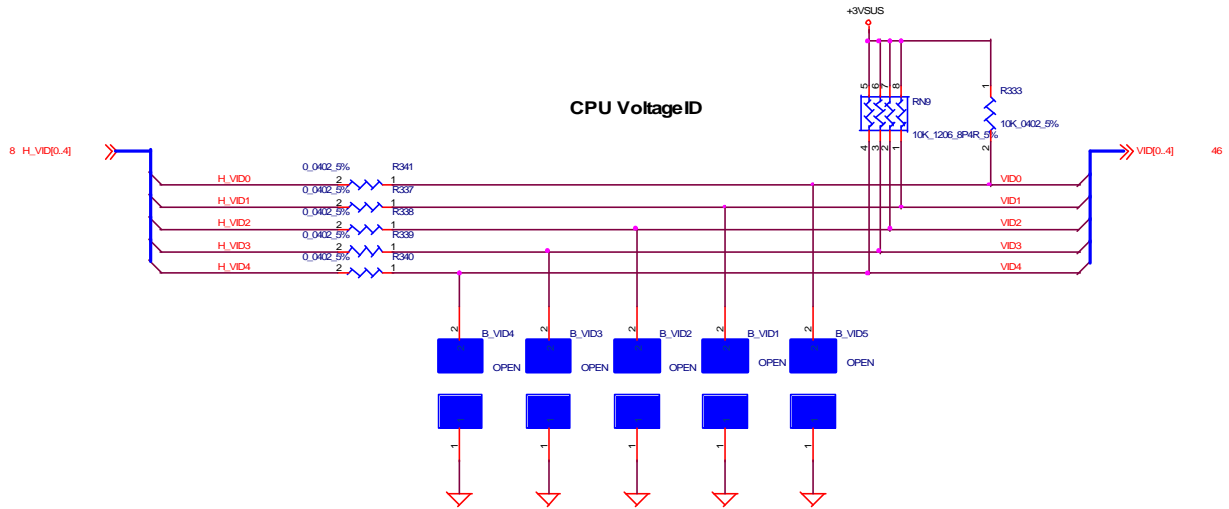
CPU Bulk

Check X5R or X7R ? Quantity?

V I D					Vcore
VID4	VID3	VID2	VID1	VID0	v
0	1	0	0	0	1.350
0	1	0	0	1	1.300
0	1	0	1	0	1.250
0	1	0	1	1	1.200
0	1	1	0	0	1.150
0	1	1	0	1	1.100
0	1	1	1	0	1.050
0	1	1	1	1	1.000
1	0	0	0	0	0.975
1	0	0	0	1	0.950



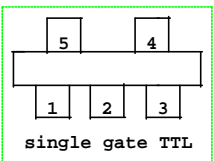
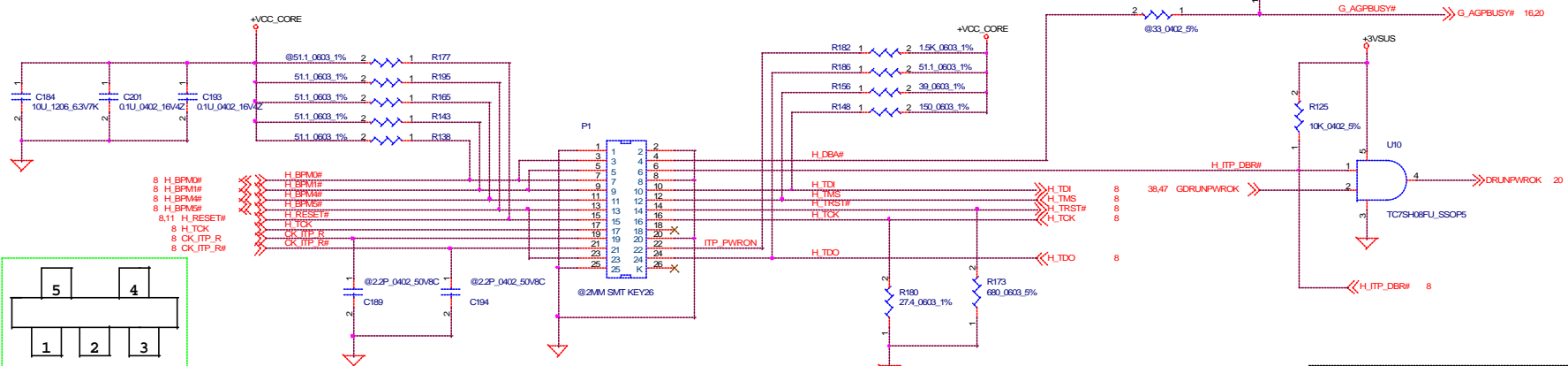
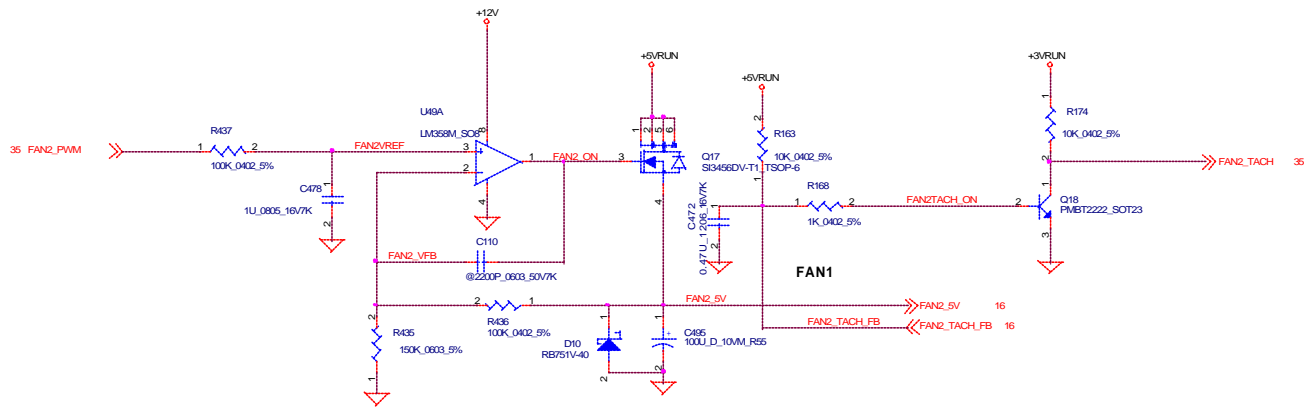
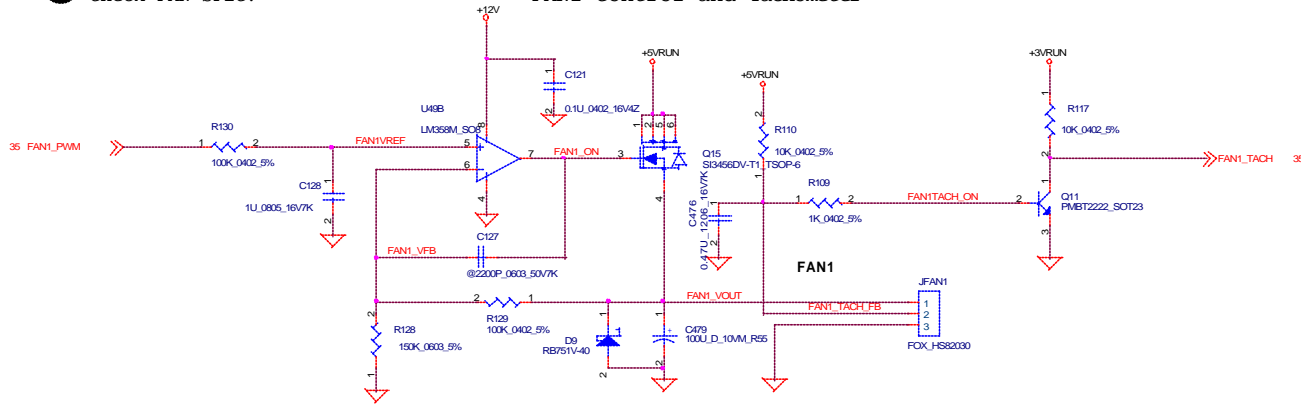
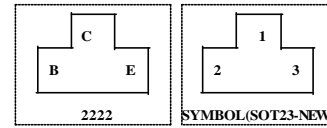
High Frequency Decoupling



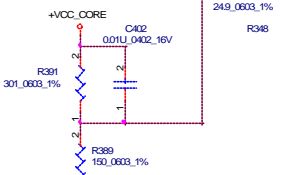
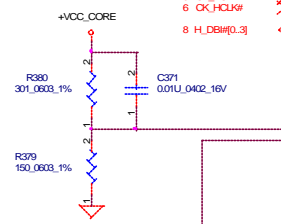
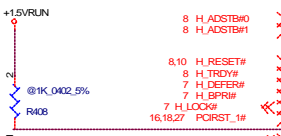
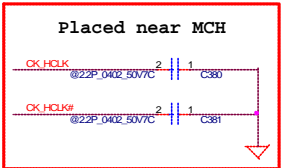
Compal Electronics, Inc.		
Title CPU bypass and CPU VID		
Size	Document Number ADQ00/LA-1351	Rev X00
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● Check FAN SPEC?

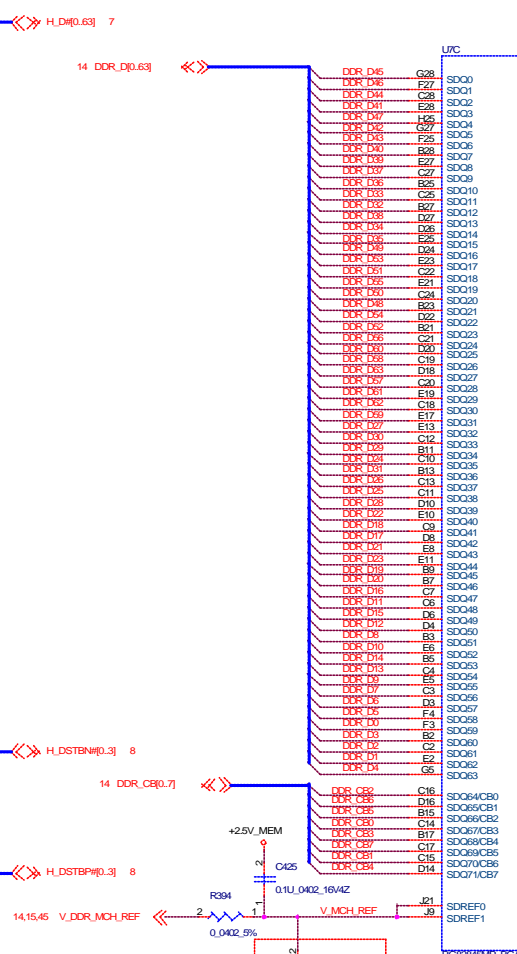
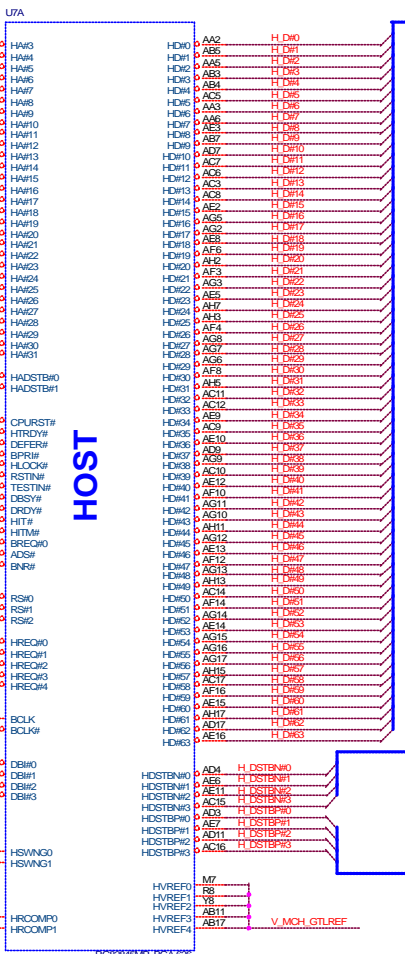
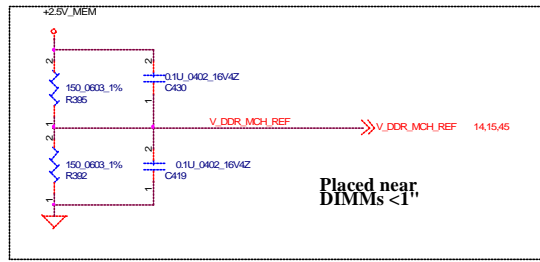
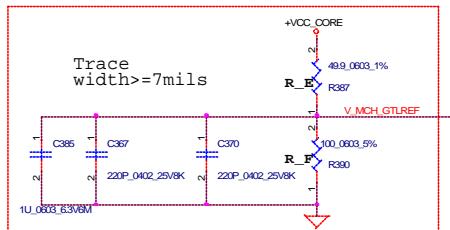
FAN1 Control and Tachometer



Compal Electronics, Inc.		
Title: ITP Debug CONN. & FAN		
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GTL Reference Voltage
Layout note:
1. Place R_E and R_F near MCH
2. Place decoupling cap 220PF near MCH pin.(Within 500mils)



Layout note:
Place R_J closely ball
H3<40mil, Ball H3 to G3 trace
must routing 1"

Layout Note:
Please closely
pin J9 & J21

Layout note:
C431¹
from MCH

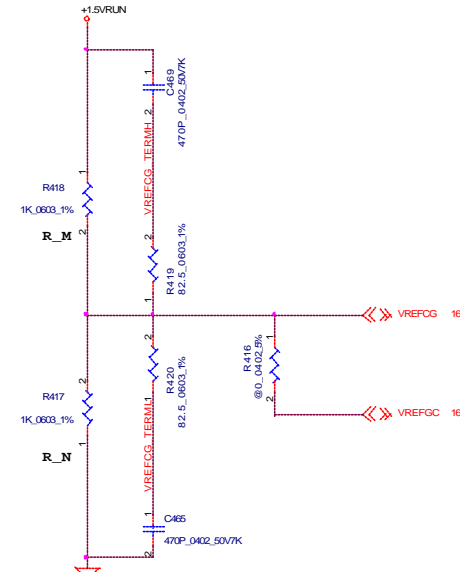
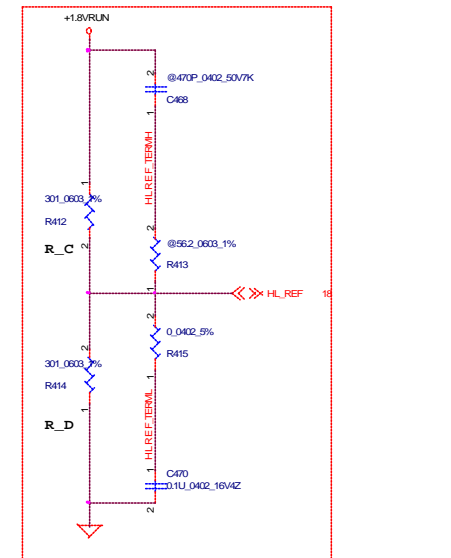
Layout note:
Place R409 closely
pin J28

Compal Electronics, Inc.	
BrookdaleMCH-M(1/3)	
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HUB Interface Reference

Layout note :

1. Place R_C and R_D in middle of Bus.
2. Place capacitors near MCH.



AGP In interface Reference

Place close to MCH-M

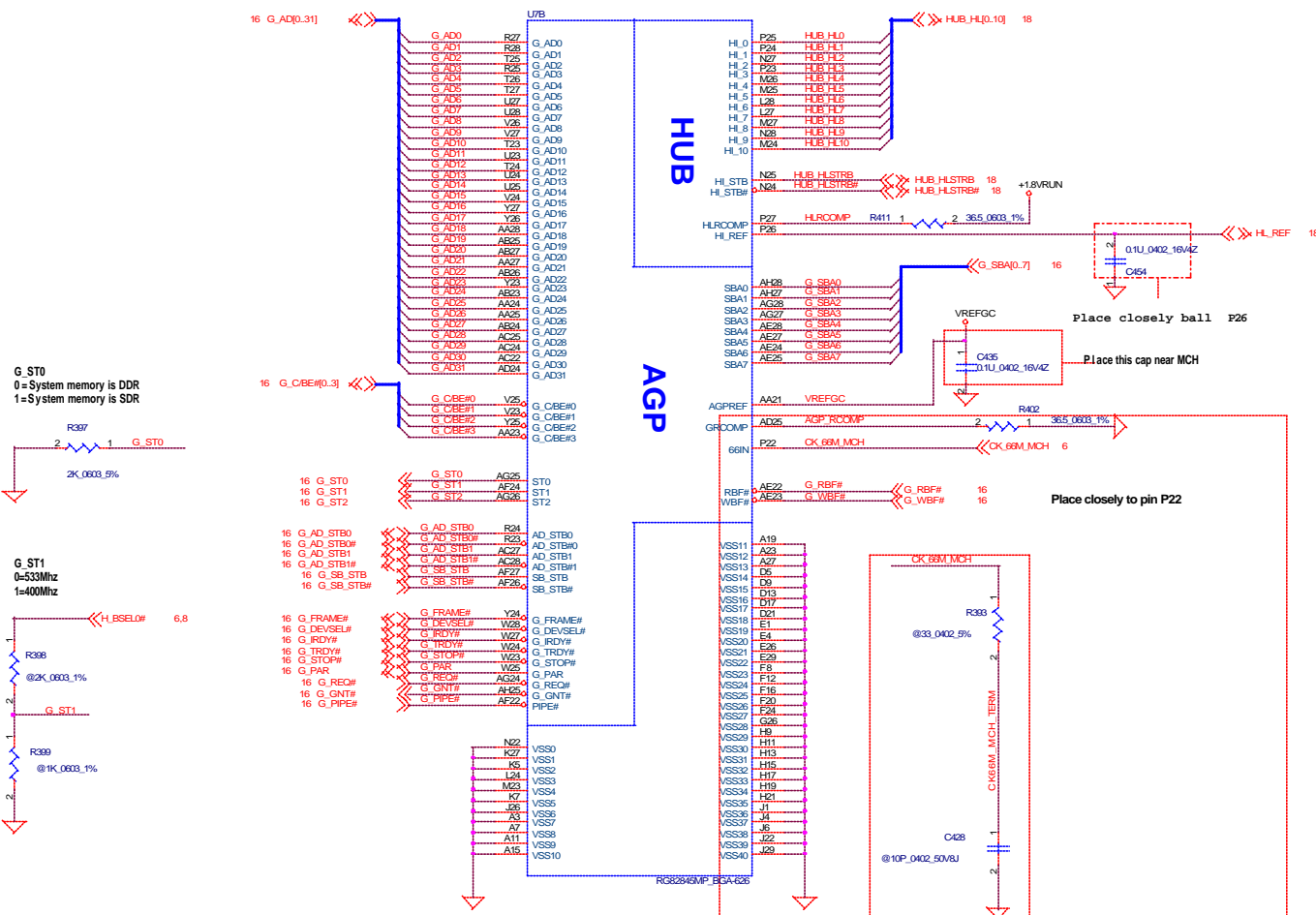
Compal Electronics, Inc.

Table
Brookdale MCH-M (2/3)

Doc# Document Number
ADQ00LA-1351

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G_ST0
0=System memory is DDR
1=System memory is SDR

G_ST1
0=533Mhz
1=400Mhz

H_BSEL0# 6.8

@1K_0603_1%

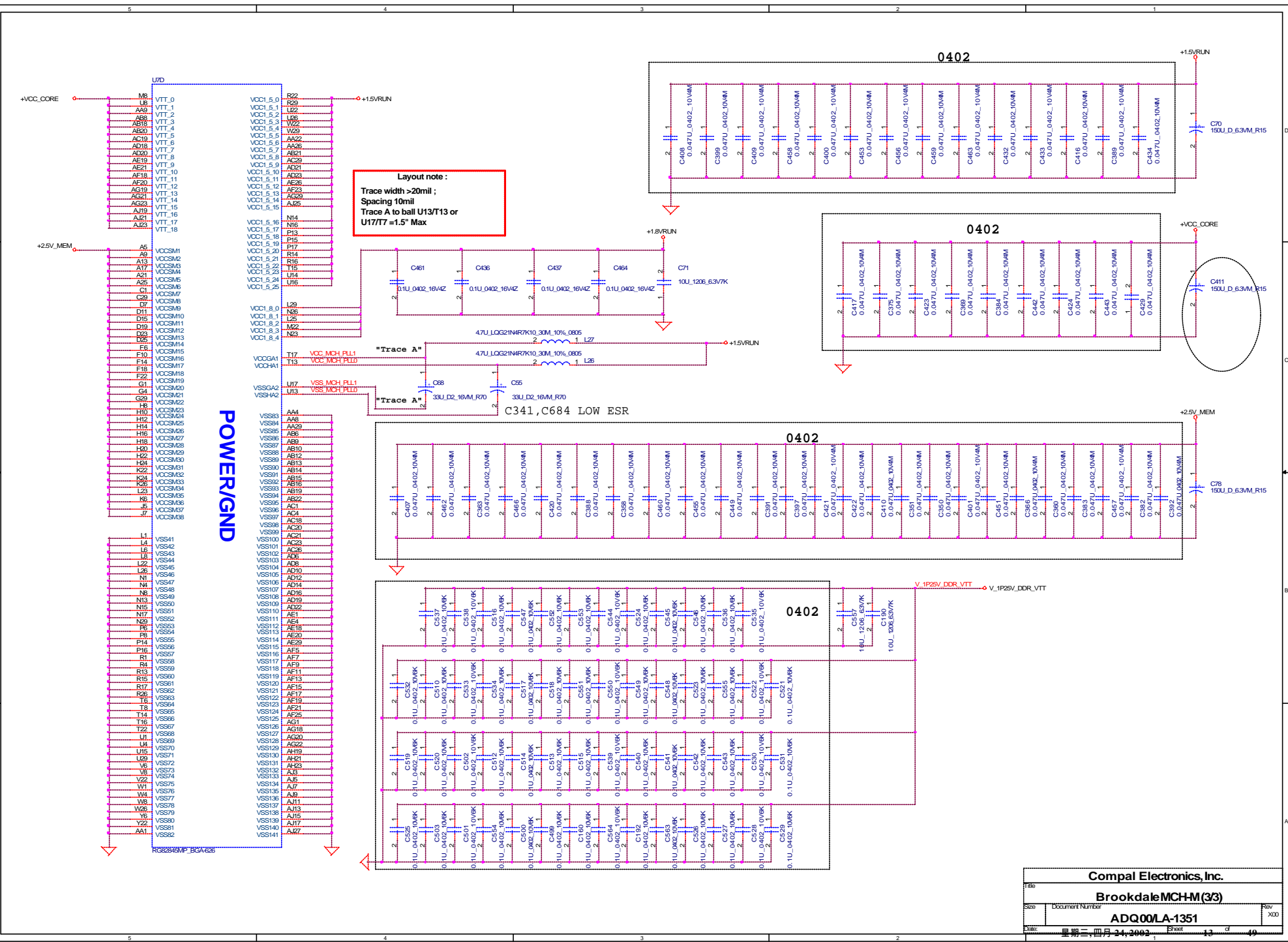
@1K_0603_1%

Place closely to pin P22

Place closely ball P26
Place this cap near MCH

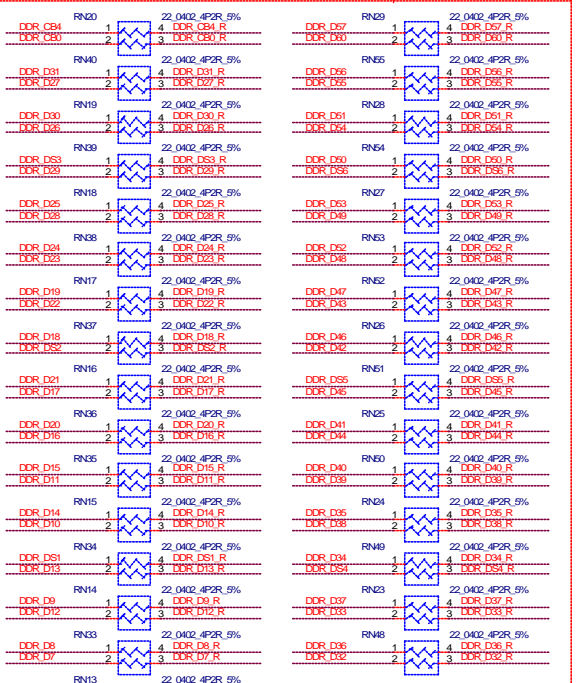
AGP In interface Reference

Place close to MCH-M

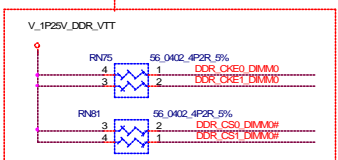


- 11 DDR_D0[6,3] <<<
- 11 DDR_C8[0,7] <<<
- 11 DDR_DS0[8] <<<

Layout Note:
Place these resistor closely DIMM0, all trace length < 750 mil

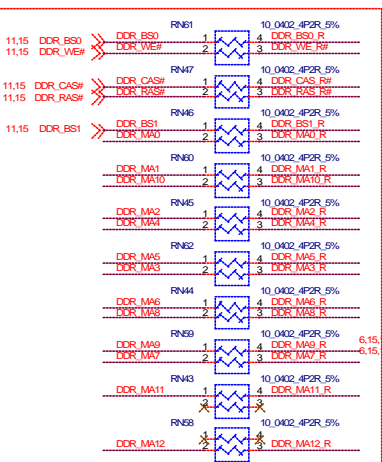
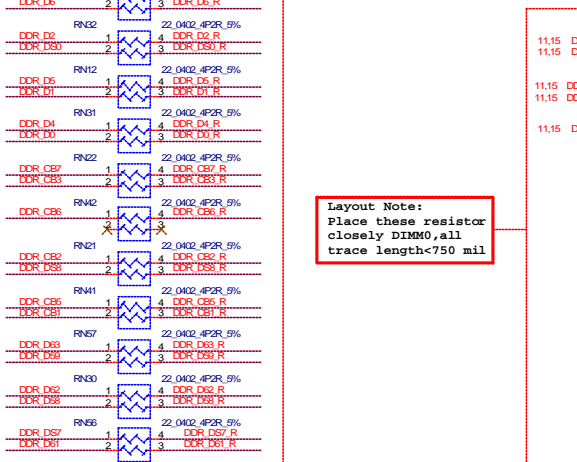


Layout Note:
Place these resistor closely DIMM0, all trace length < 750 mil



11.15 DDR_MA0[12] <<<

Layout Note:
Place these resistor closely DIMM0, all trace length < 750 mil



11.15 DDR_MA0[12] <<<



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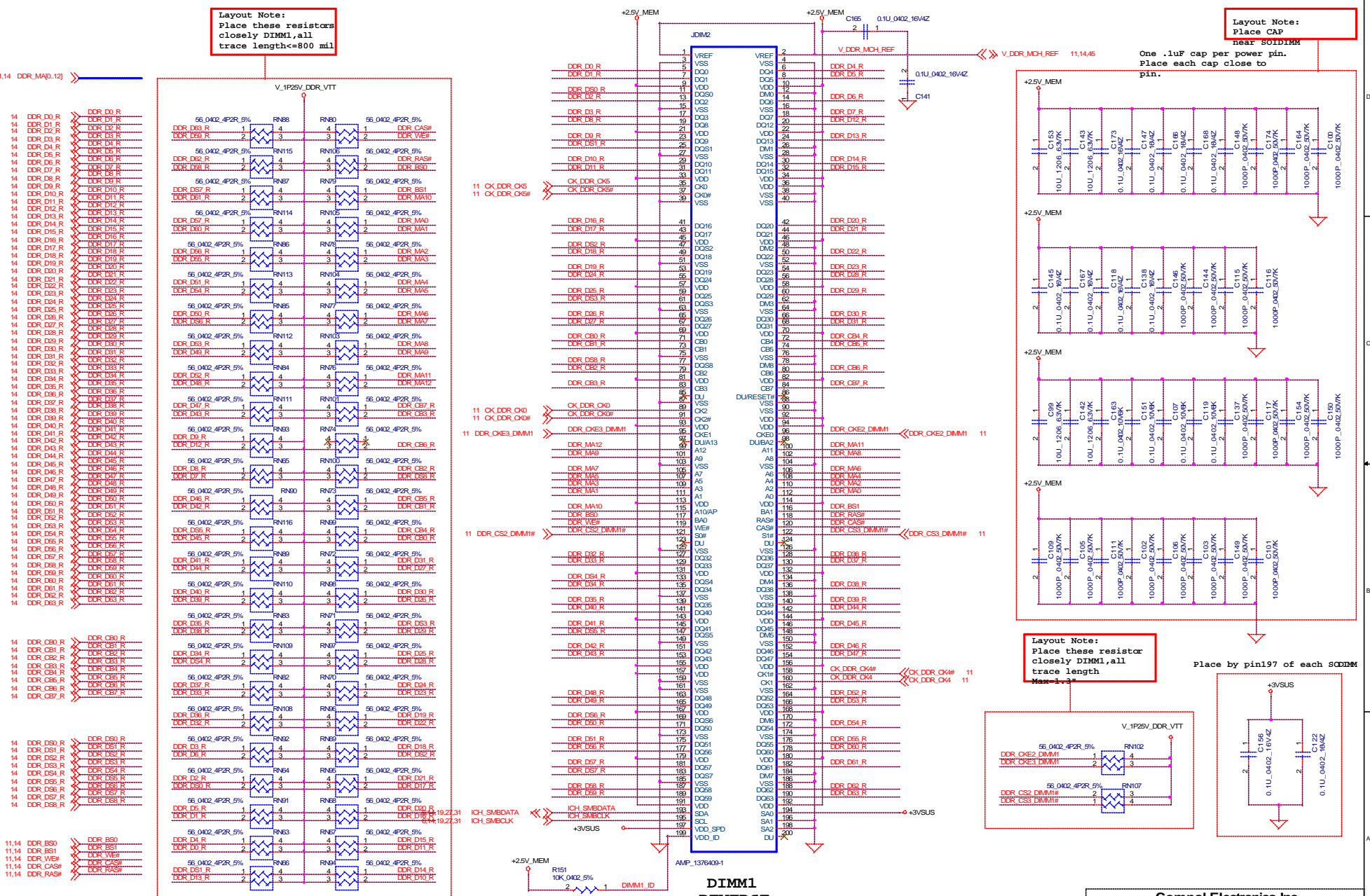
Table: **DDR-SODIMM SLOT1**

Size: Document Number **ADQ00/LA-1351** Rev: X00

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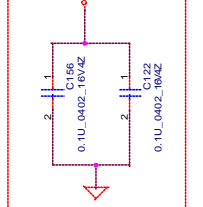
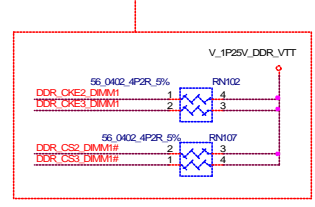
Layout Note:
Place these resistors
closely DIMM1, all
trace length <= 800 ml

Layout Note:
Place CAP
near SODIMM
One .1uF cap per power pin.
Place each cap close to
pin.

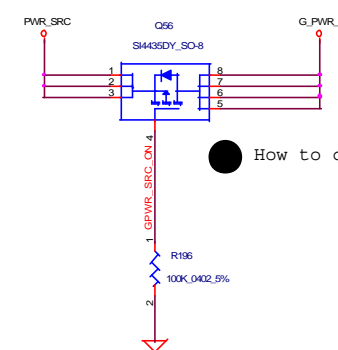
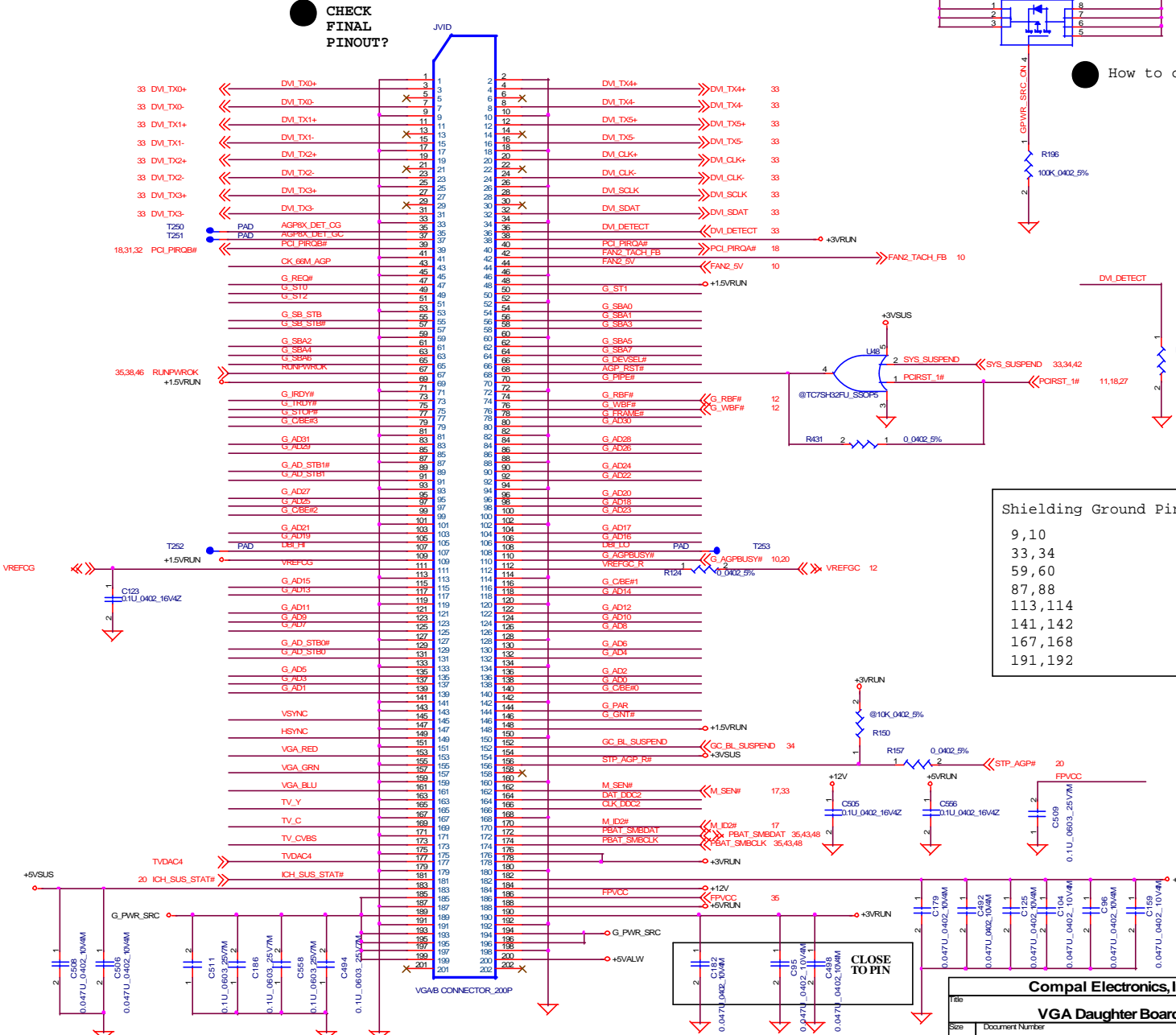
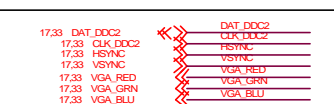
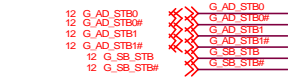
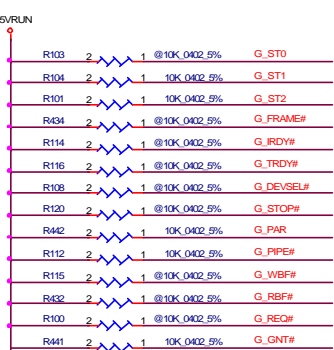
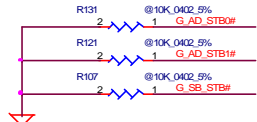
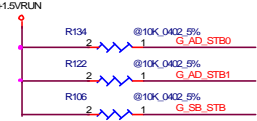
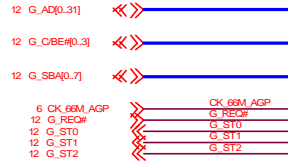


Layout Note:
Place these resistor
closely DIMM1, all
trace length
Max=1.3"

Place by pin197 of each SODIMM



Compal Electronics, Inc.
DDR-SODIMM SLOT2
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Rev. X00



Shielding Ground Pin

9,10
33,34
59,60
87,88
113,114
141,142
167,168
191,192

Compal Electronics, Inc.

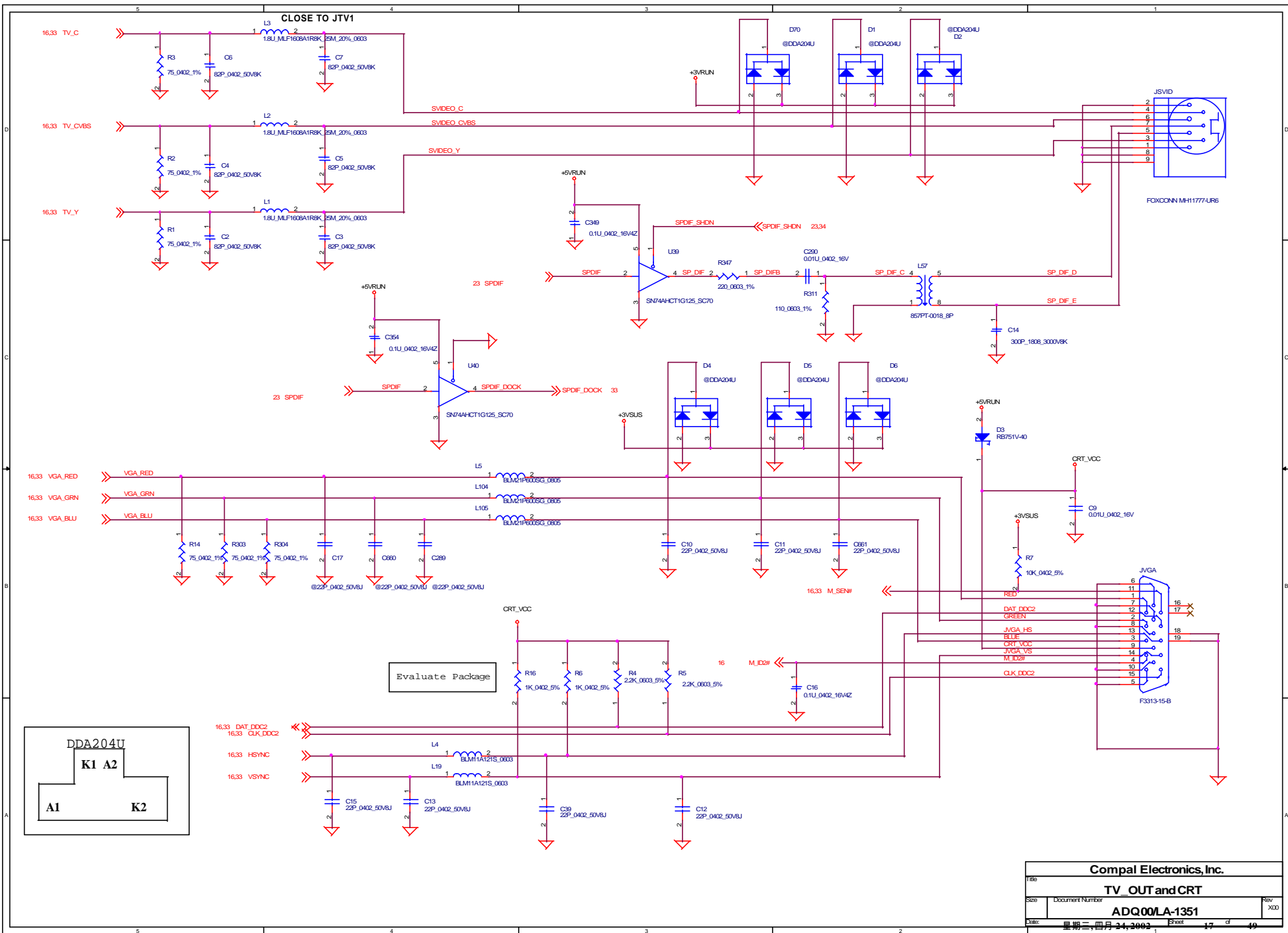
VGA Daughter Board

ADQ00/LA-1351

Rev X00

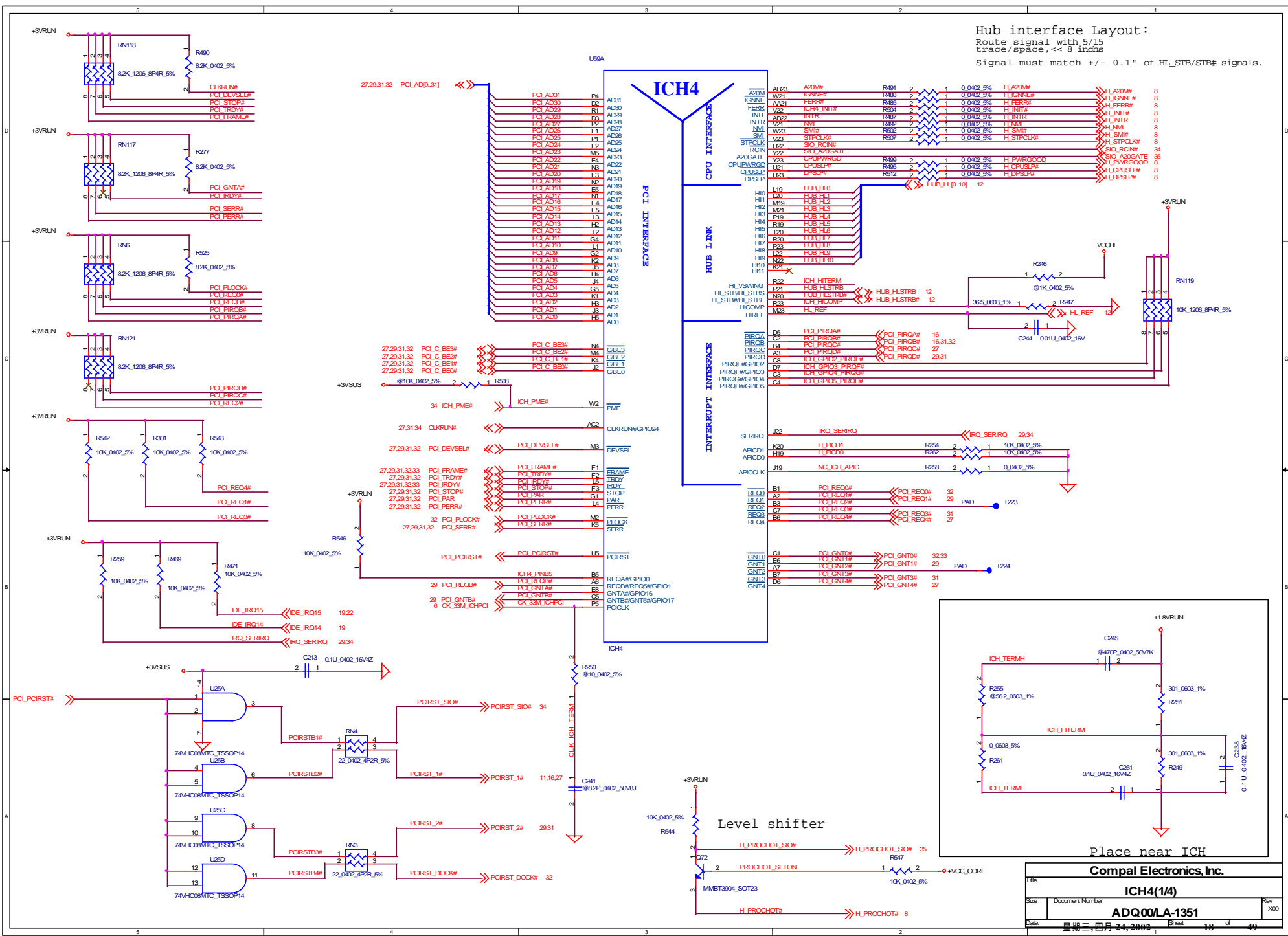
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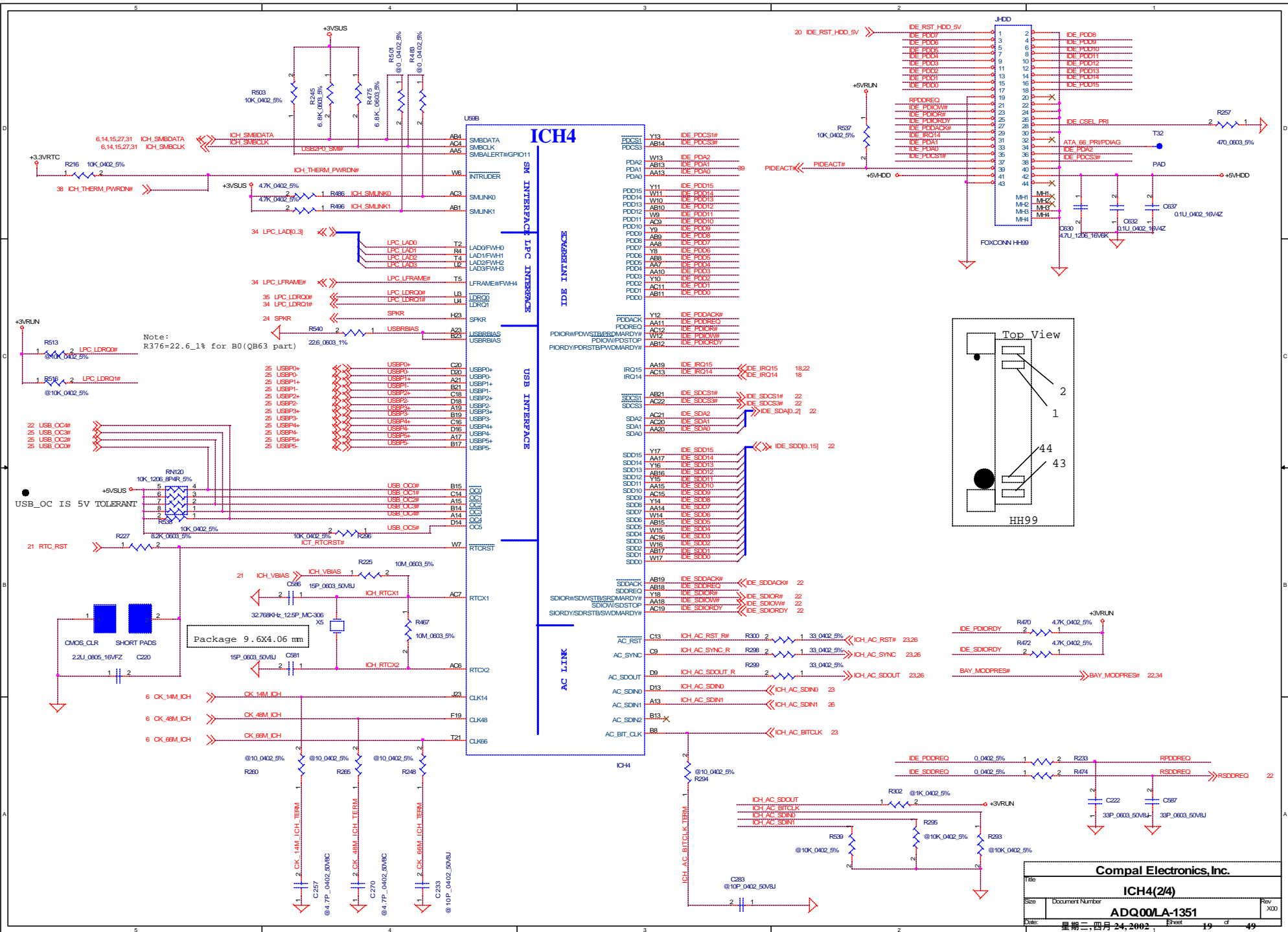


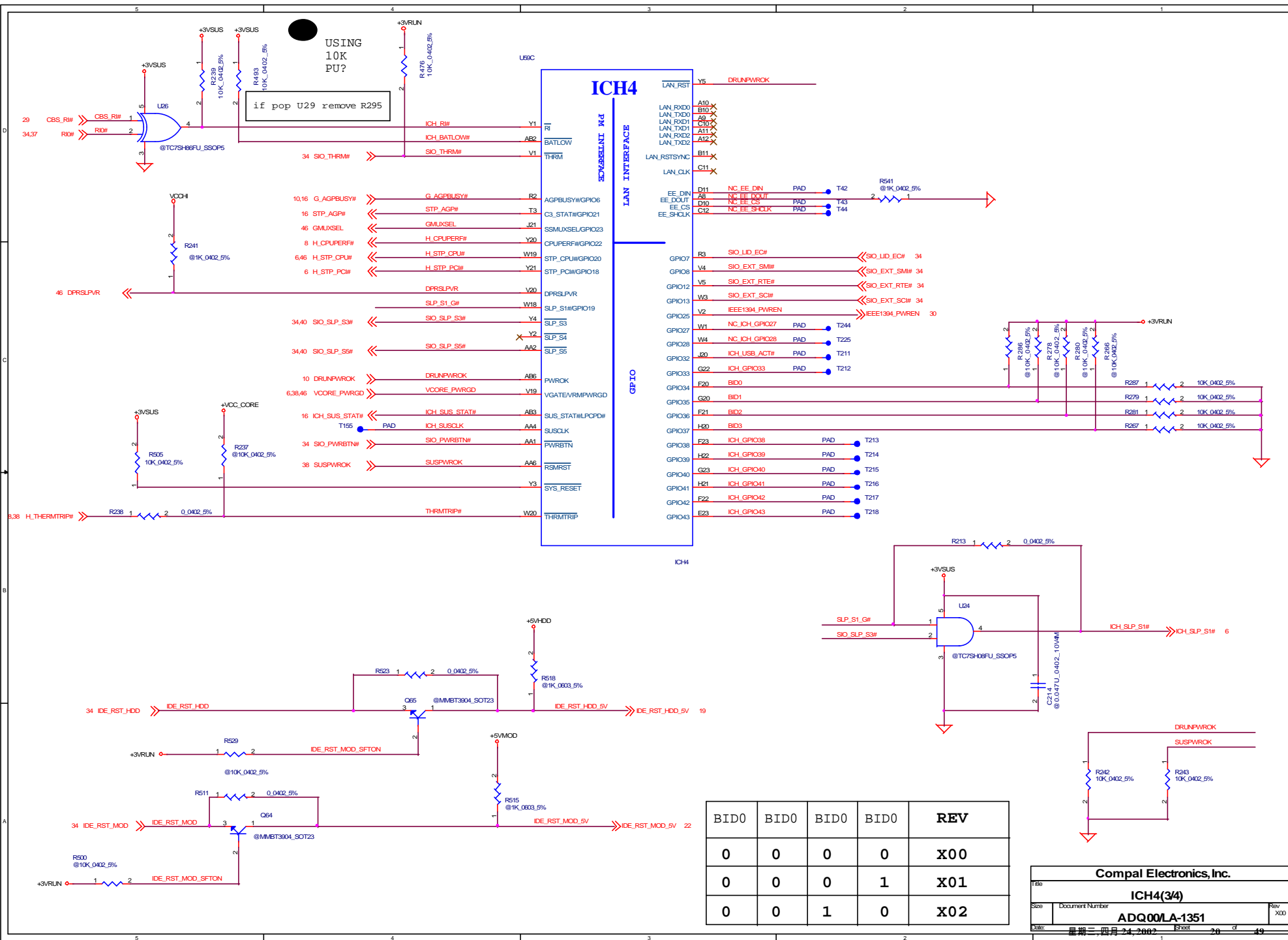
Compal Electronics, Inc.		
TV_OUT and CRT		
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Hub interface Layout:
Route signal with 5/15
trace/space, < 8 inches
Signal must match +/- 0.1" of HL_STB/STB# signals.



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ICH4(1/4)	
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BID0	BID0	BID0	BID0	REV
0	0	0	0	X00
0	0	0	1	X01
0	0	1	0	X02

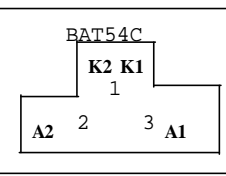
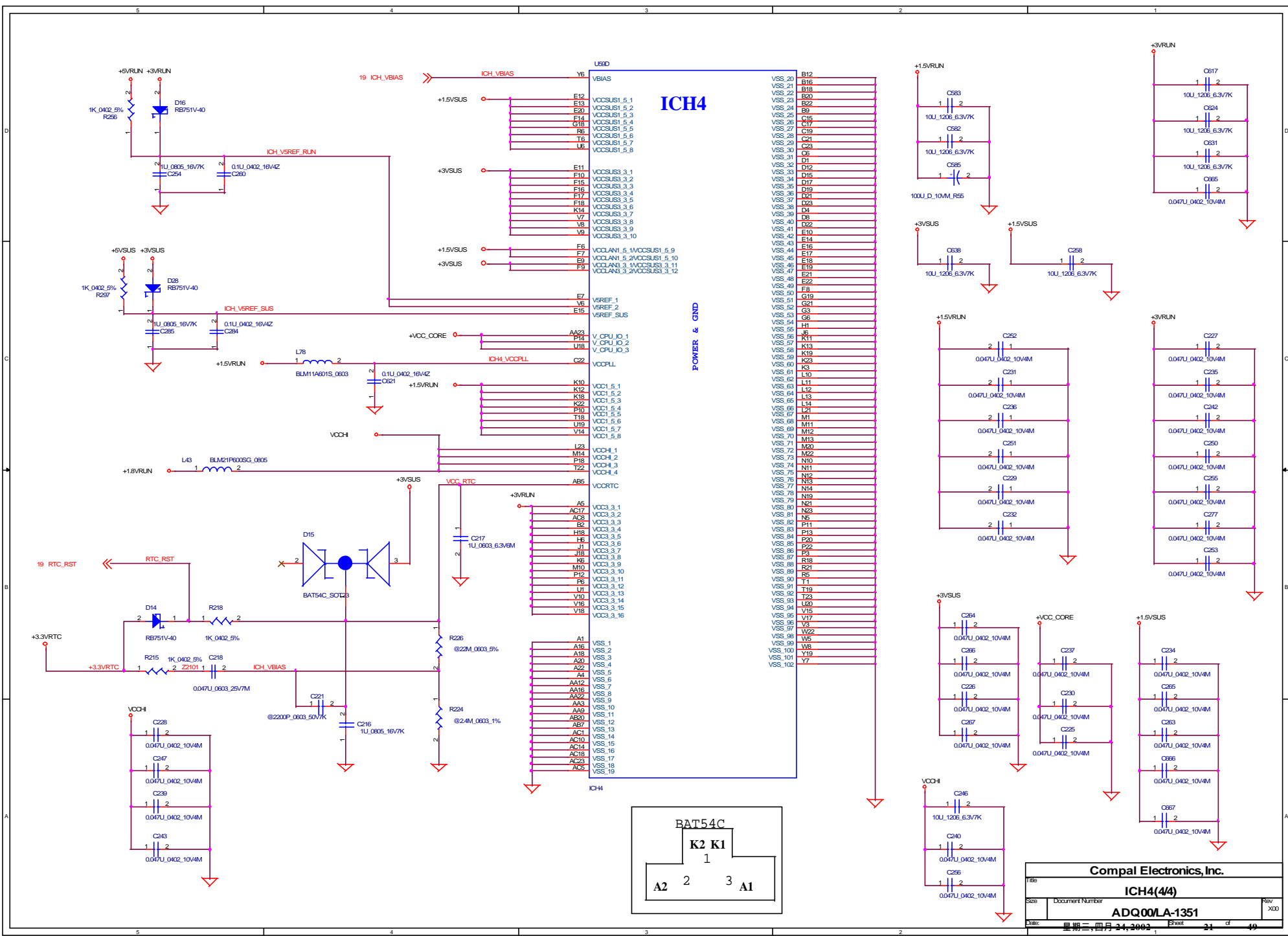
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ICH4(34)

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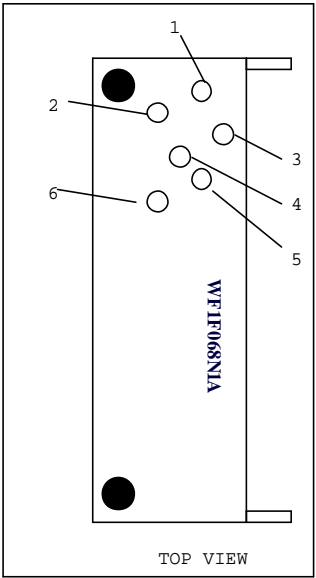
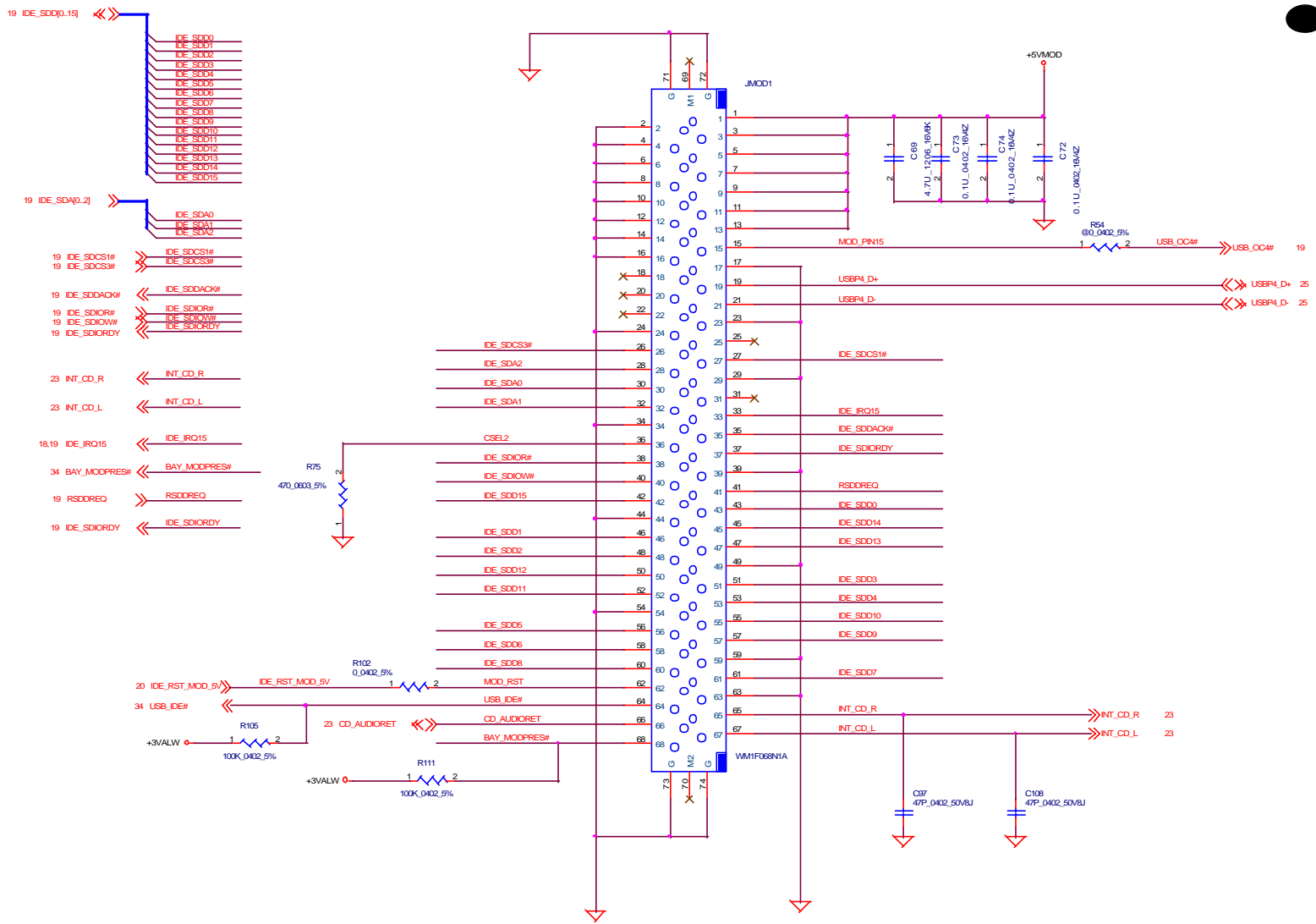
Compal Electronics, Inc.

ICH4(4/4)

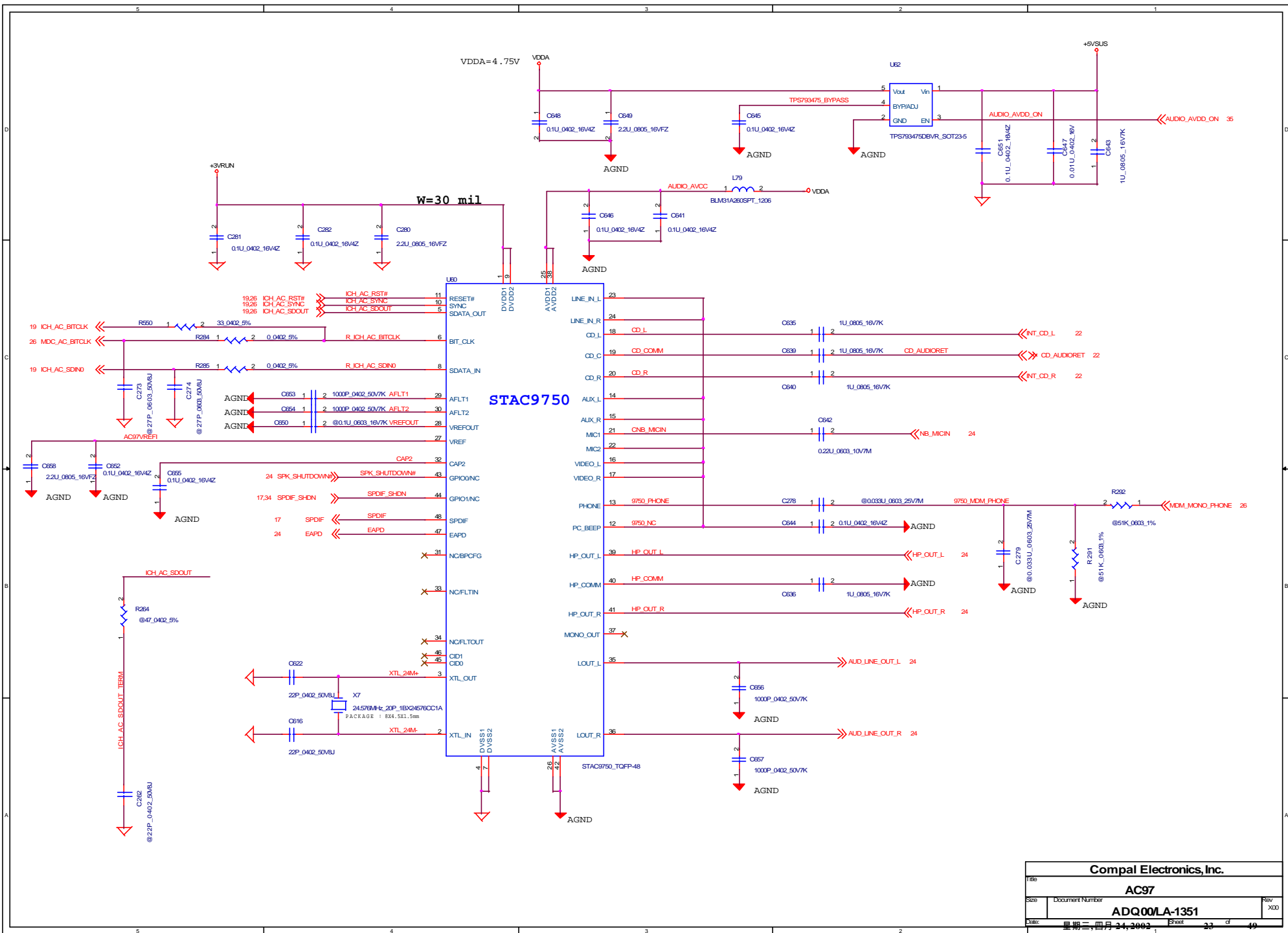
Size: Document Number **ADQ00LA-1351** Rev: X00

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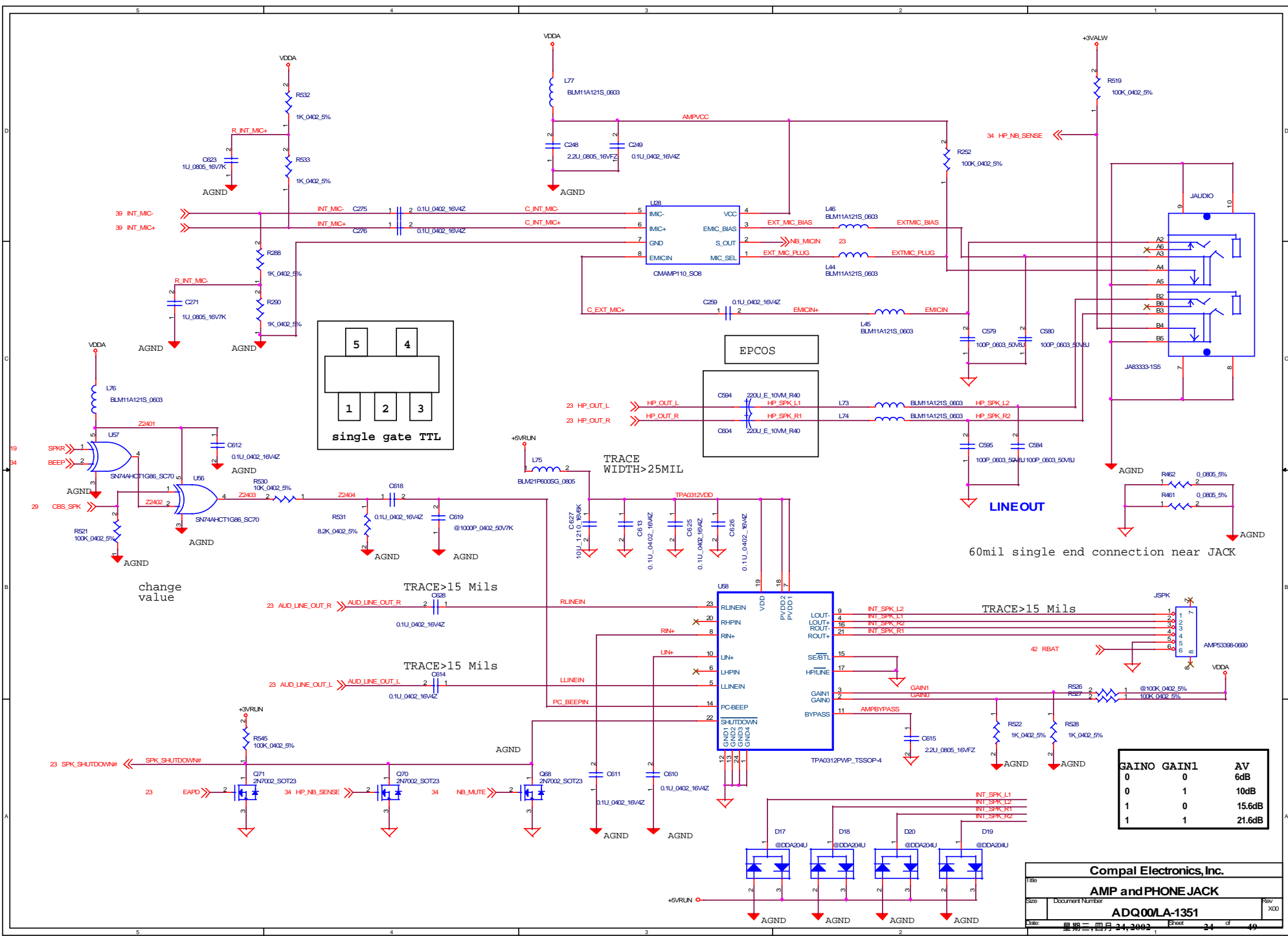
PIN OUT NEED CHECK?



Compal Electronics, Inc.		
Title DVD MODULE		
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Title AC97		
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GAIN0	GAIN1	AV
0	0	6dB
0	1	10dB
1	0	15.6dB
1	1	21.6dB

Compal Electronics, Inc.

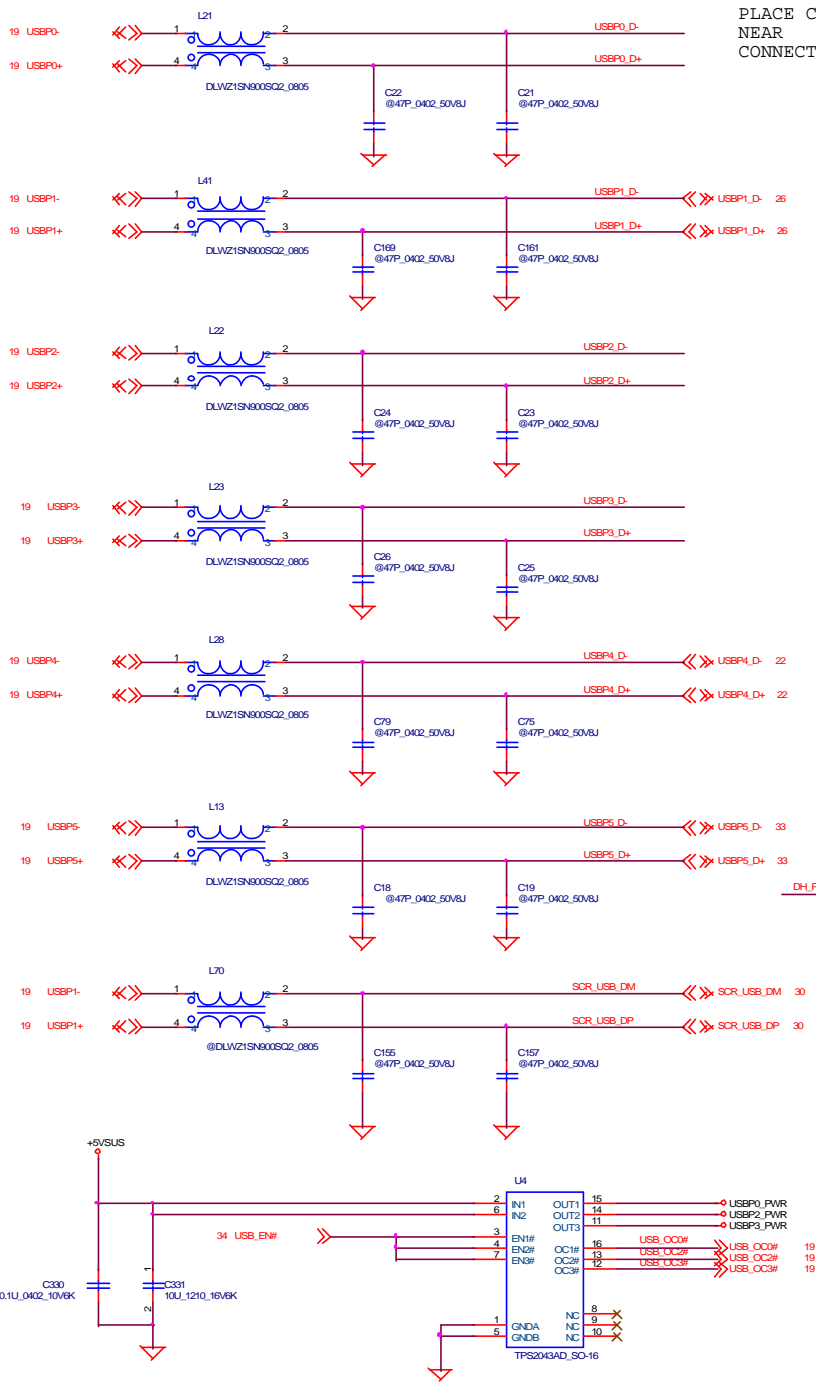
Table

AMP and PHONE JACK

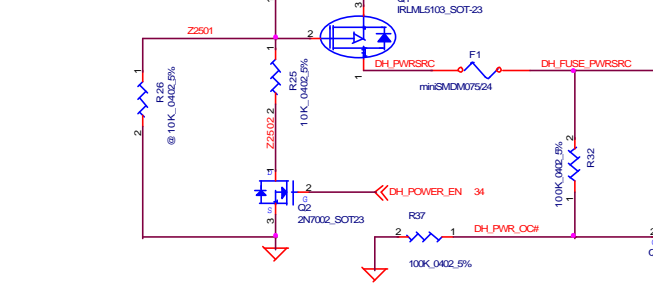
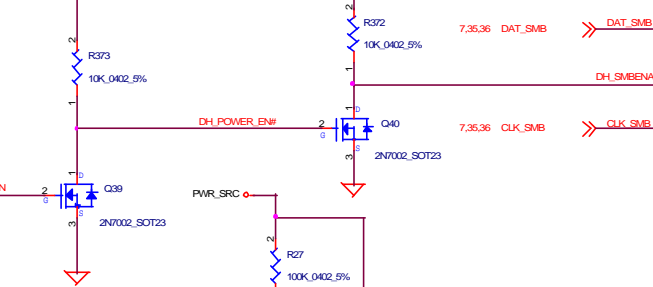
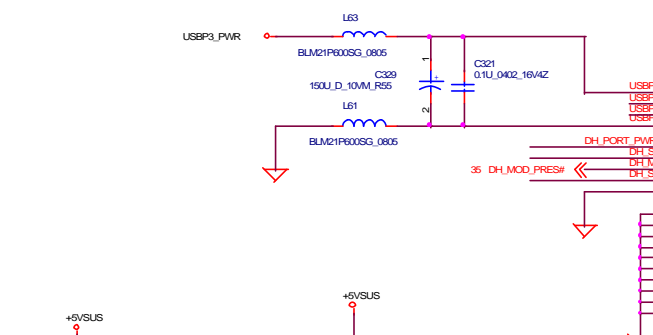
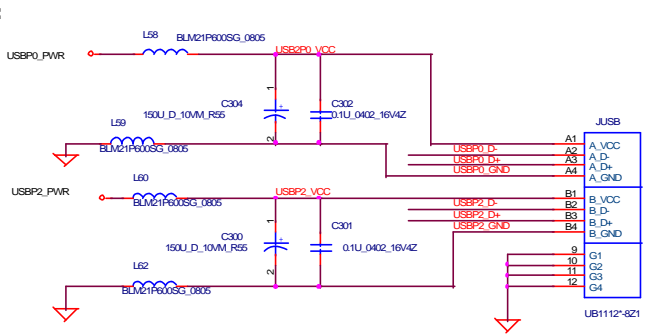
Size Document Number

ADQ00/LA-1351

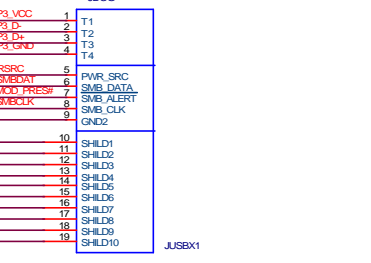
Date: 星期二, 四月 24, 2002 Sheet 24 of 49



PLACE CHOKE
NEAR
CONNECTOR



USB PORT#	DESTINATION
0	BACK
1	BT/SmartCard
2	BACK
3	DOG
4	MOD
5	DOCK



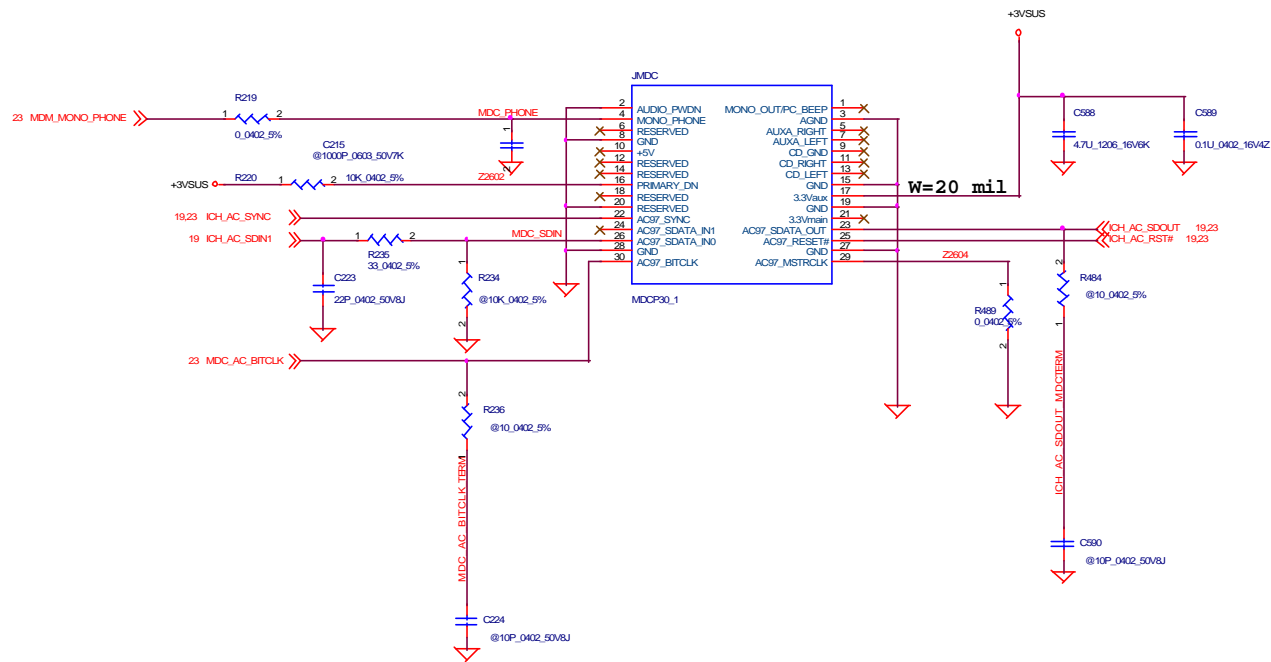
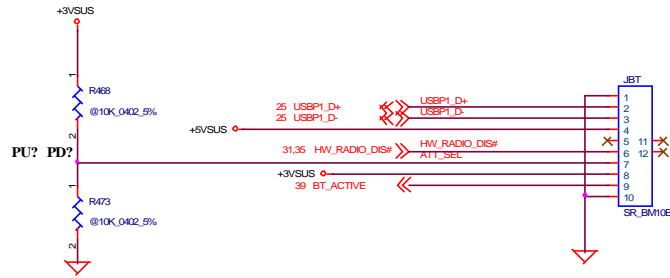
Compal Electronics, Inc.

USB 2.0

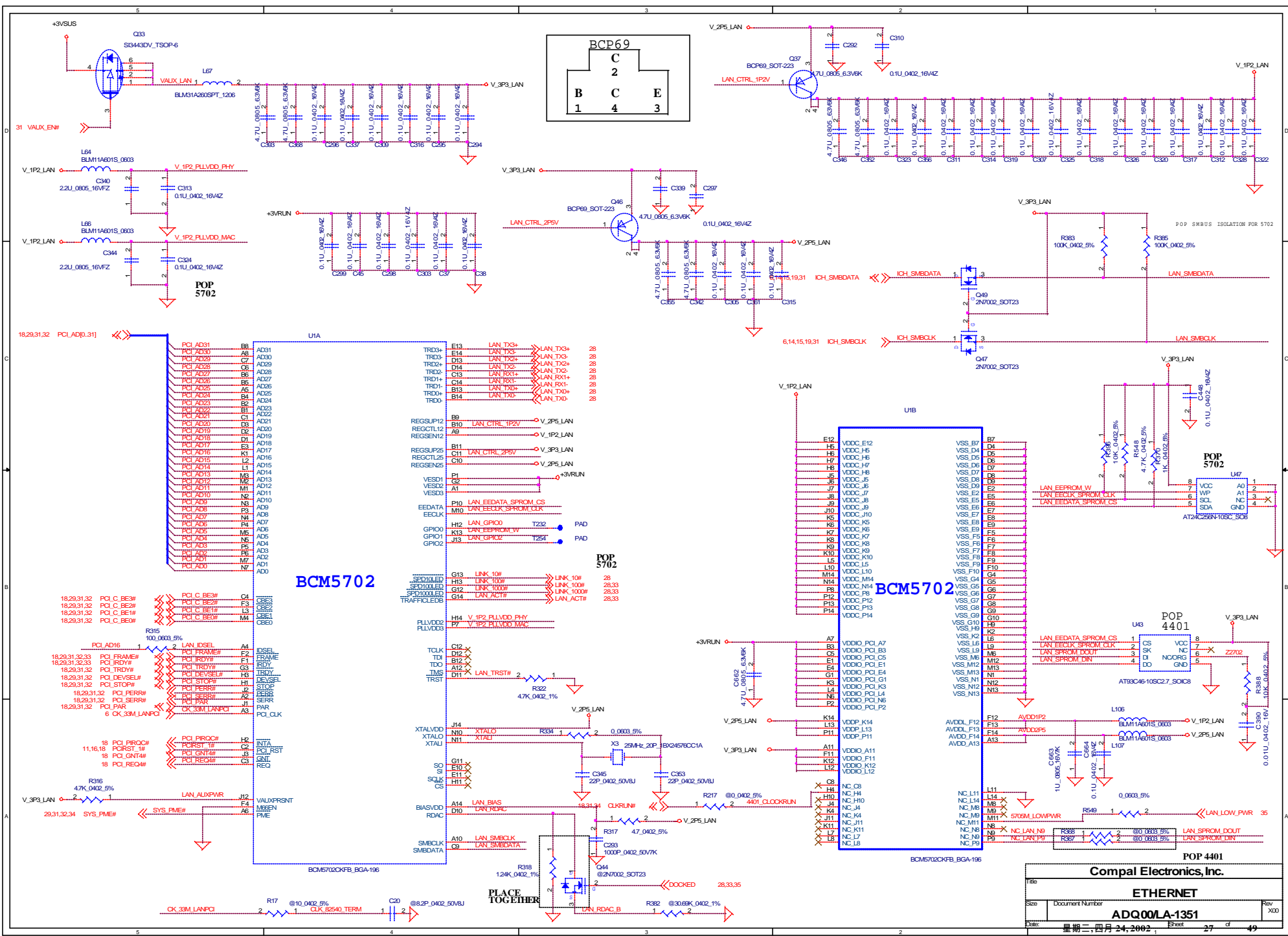
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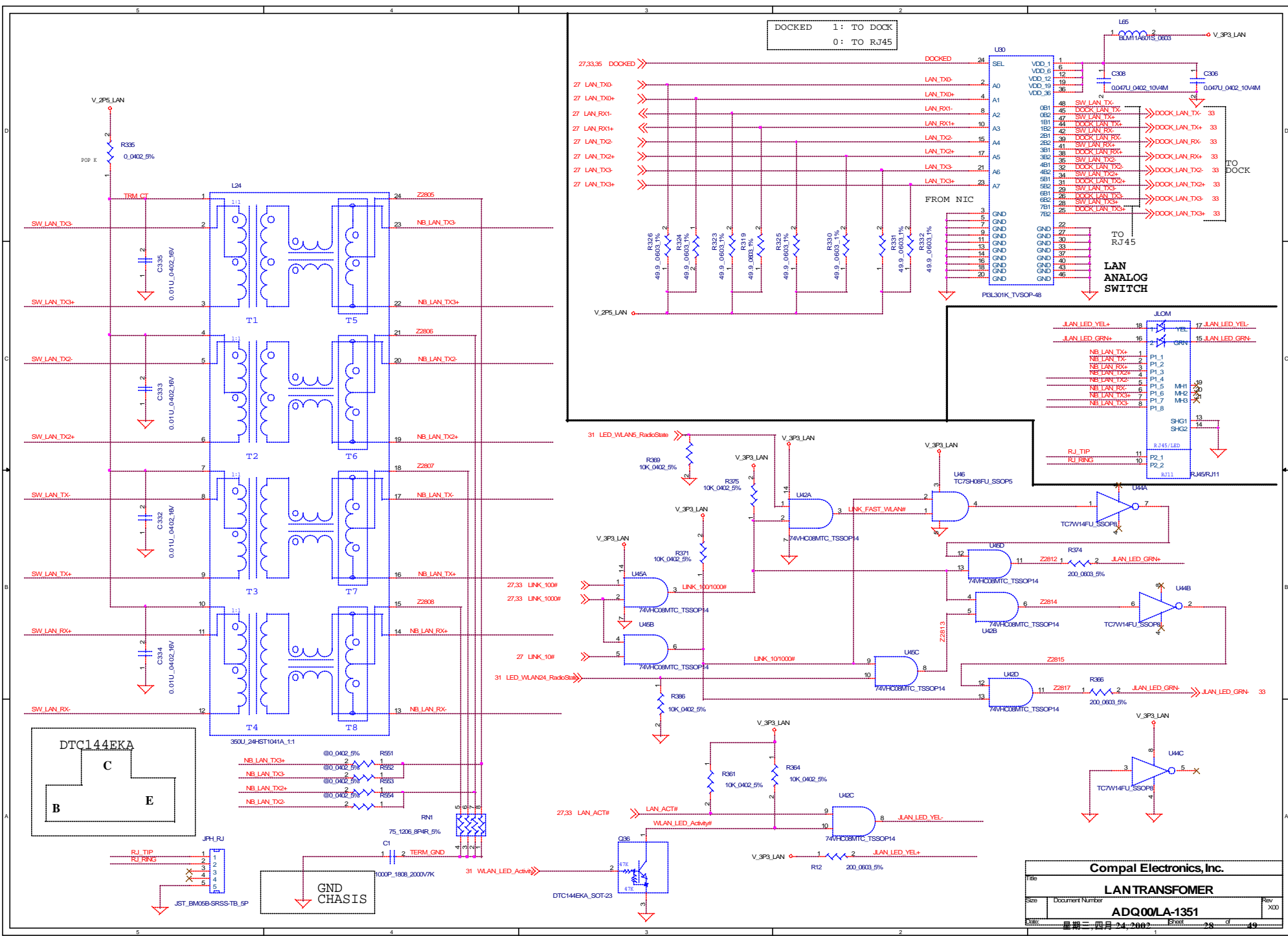
Size: Document Number: **ADQ00/LA-1351** Rev: X00

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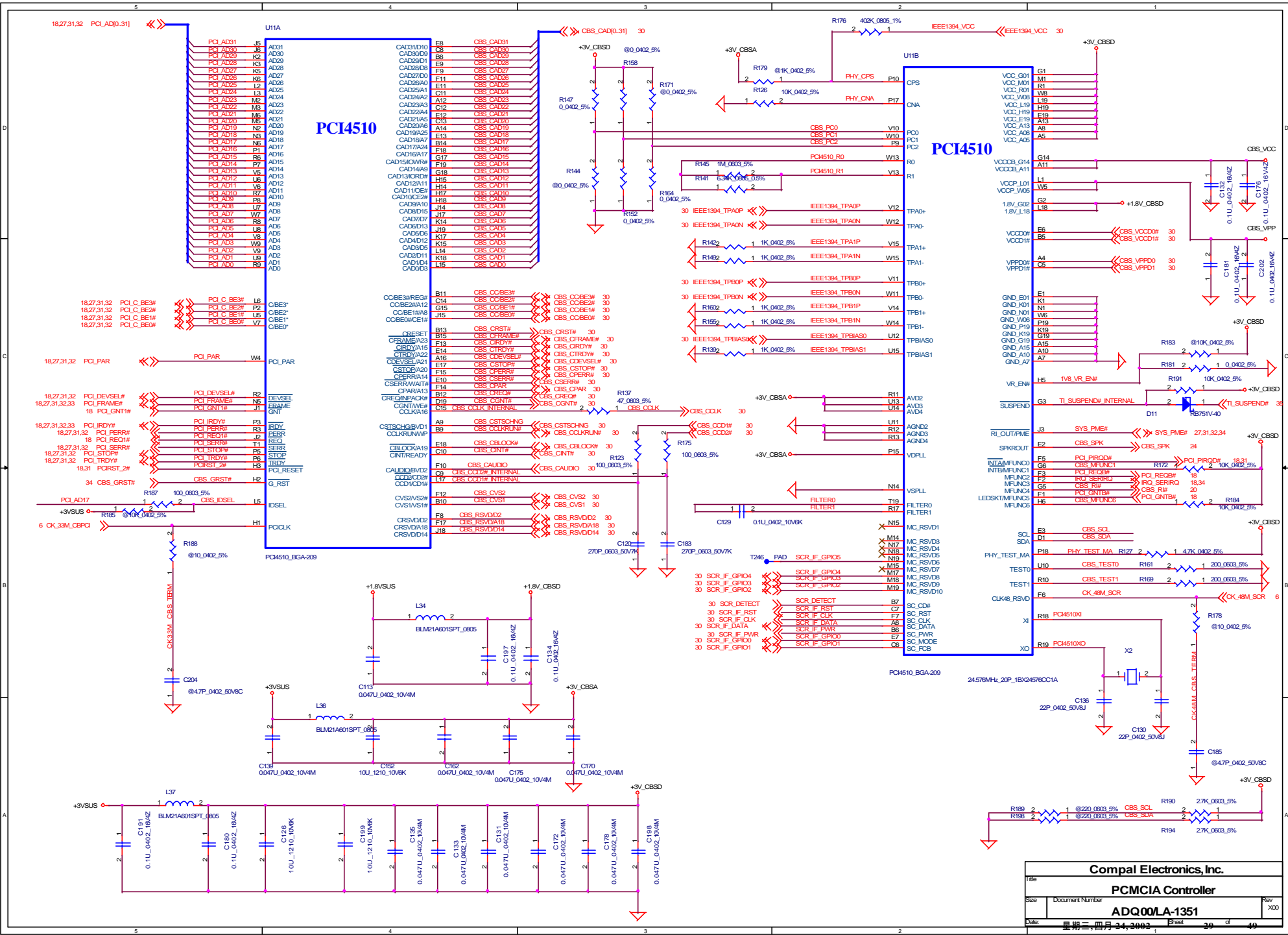
Compal Electronics, Inc.		
Title BT PORT and MDC		
Size	Document Number ADQ00/LA-1351	Rev X00
Date	星期二, 四月 24, 2002	Sheet 26 of 49

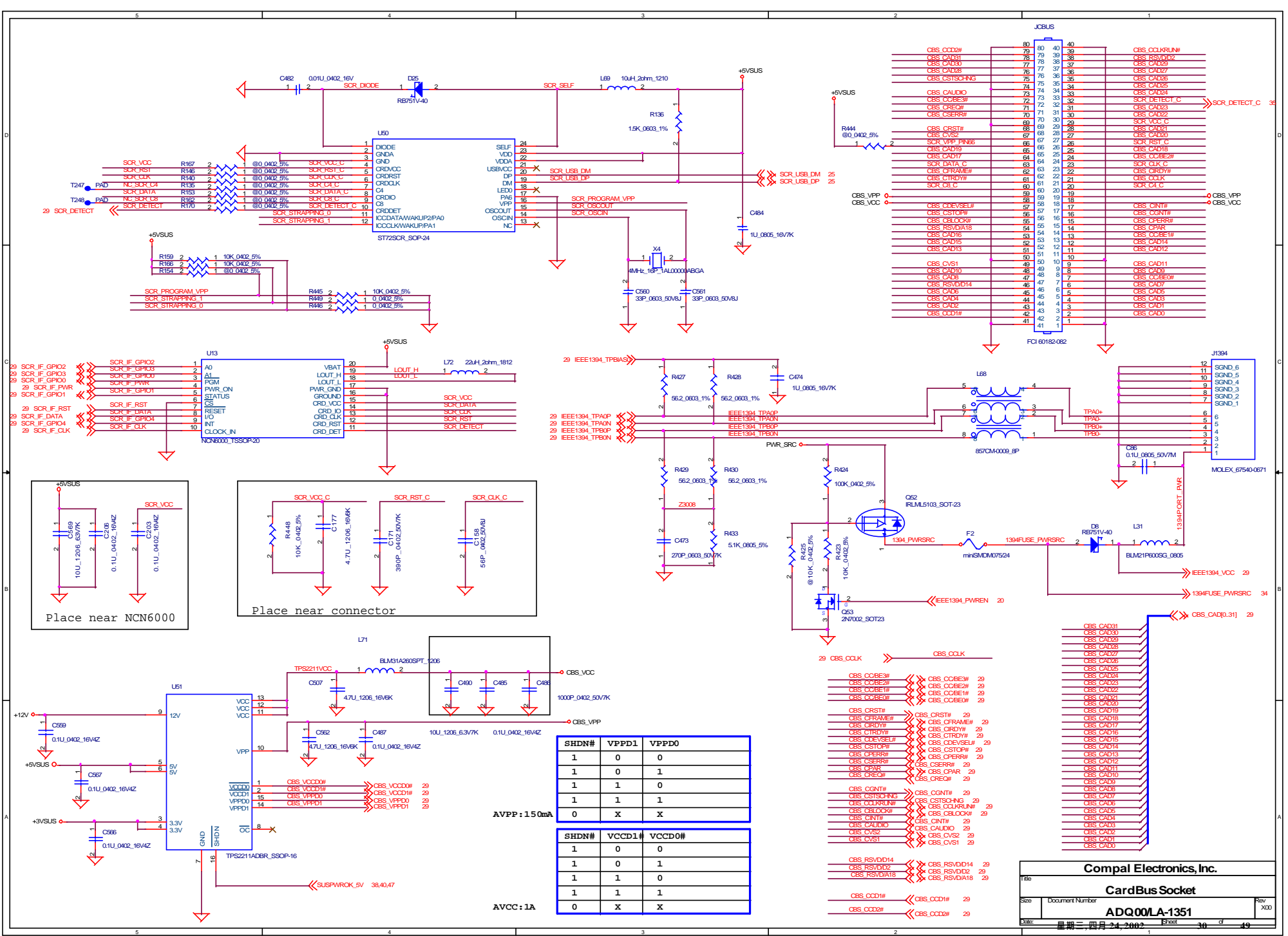




DOCKED 1: TO DOCK
0: TO RJ45

Compal Electronics, Inc.		
LAN TRANSFORMER		
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AVPP : 1.5 0mA

SHDN#	VPPD1	VPPD0
1	0	0
1	0	1
1	1	0
0	1	1

AVCC : 1A

SHDN#	VCCD1#	VCCD0#
1	0	0
1	0	1
1	1	0
1	1	1
0	X	X

CBS_CCD2#	CBS_CCD2#	29
CBS_CCD1#	CBS_CCD1#	29
CBS_CCD0#	CBS_CCD0#	29
CBS_CCD2#	CBS_CCD2#	29
CBS_CCD1#	CBS_CCD1#	29
CBS_CCD0#	CBS_CCD0#	29
CBS_CCD2#	CBS_CCD2#	29
CBS_CCD1#	CBS_CCD1#	29
CBS_CCD0#	CBS_CCD0#	29
CBS_CCD2#	CBS_CCD2#	29
CBS_CCD1#	CBS_CCD1#	29
CBS_CCD0#	CBS_CCD0#	29
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CBS_CCD0#	CBS_CCD0#	29
CBS_CCD2#	CBS_CCD2#	29
CBS_CCD1#	CBS_CCD1#	29
CBS_CCD0#	CBS_CCD0#	29

Compal Electronics, Inc.

CardBus Socket

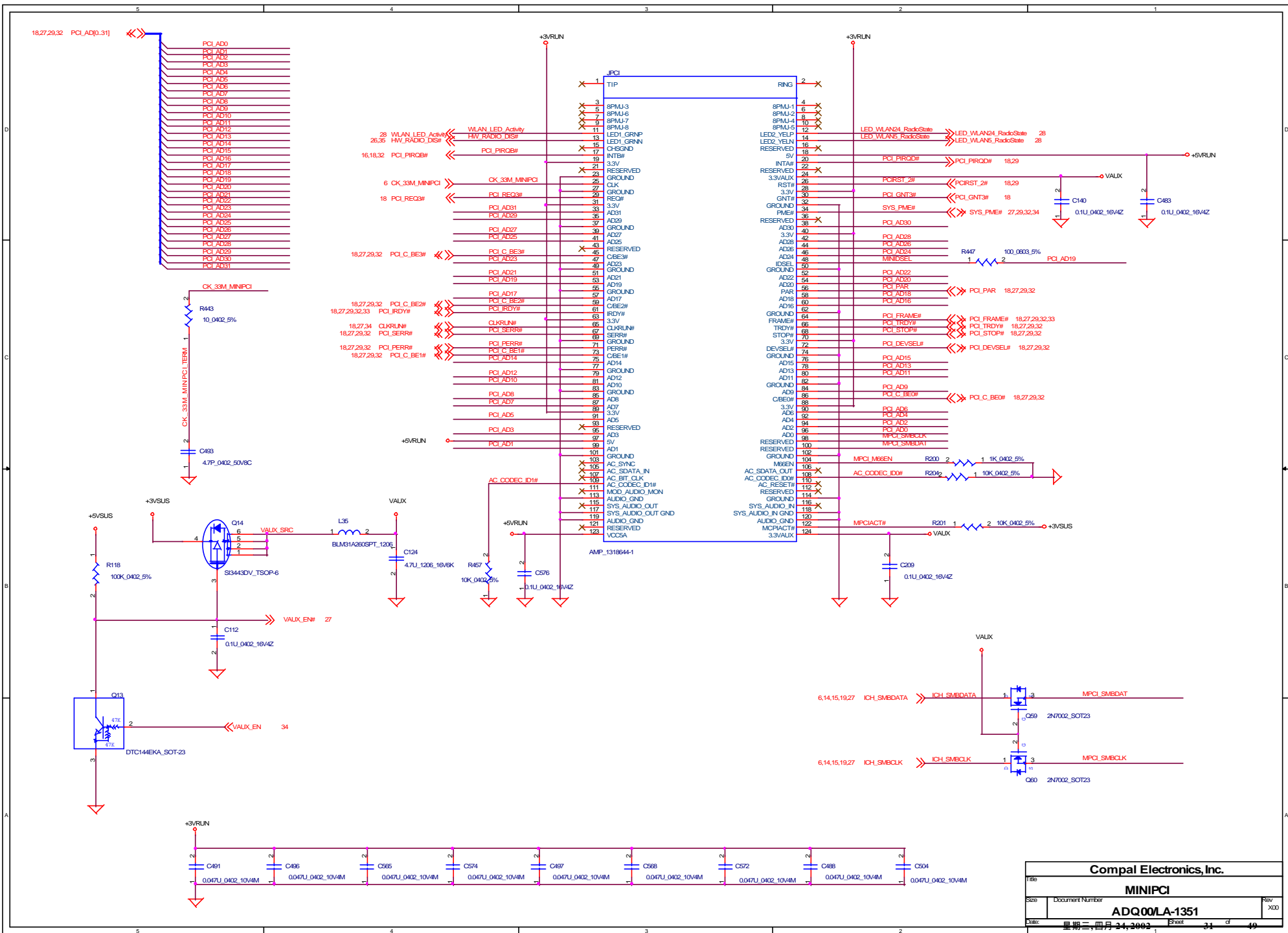
ADQ00LA-1351

File: _____ Rev: X00

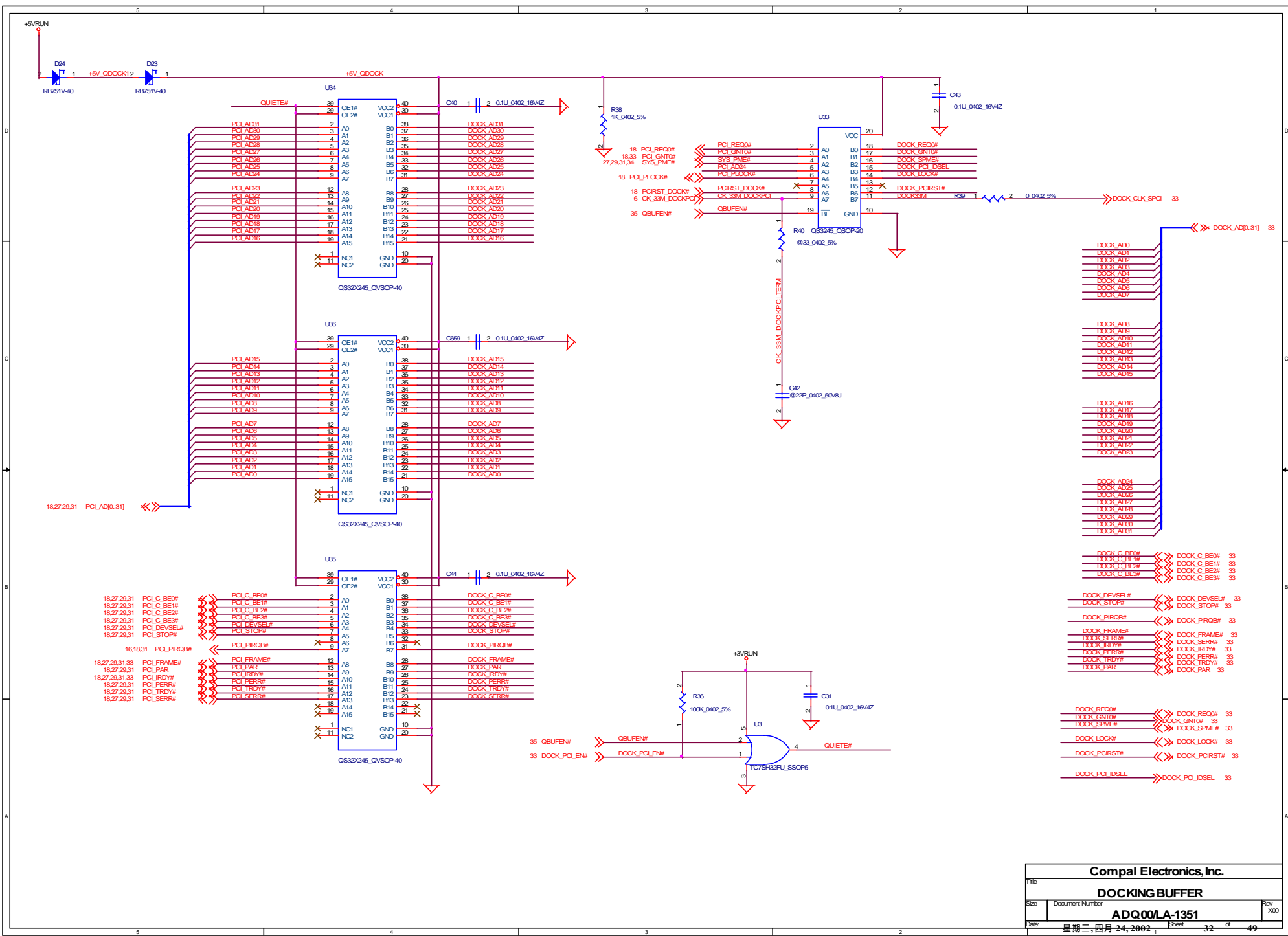
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DATE: 星期二 四月 24, 2002

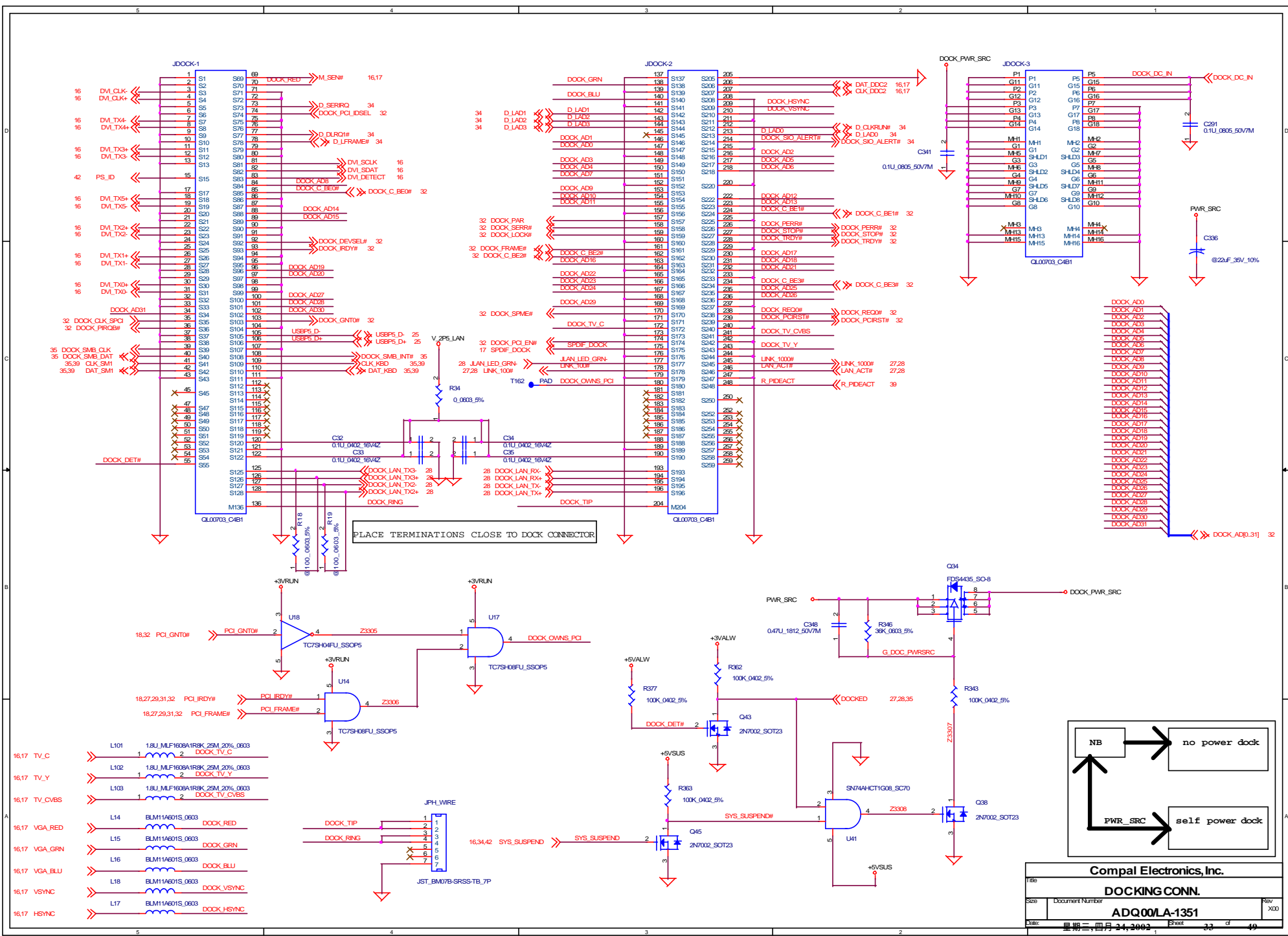
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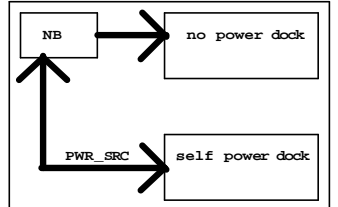
Compal Electronics, Inc.		
MINIPCI		
Table	Document Number	Rev
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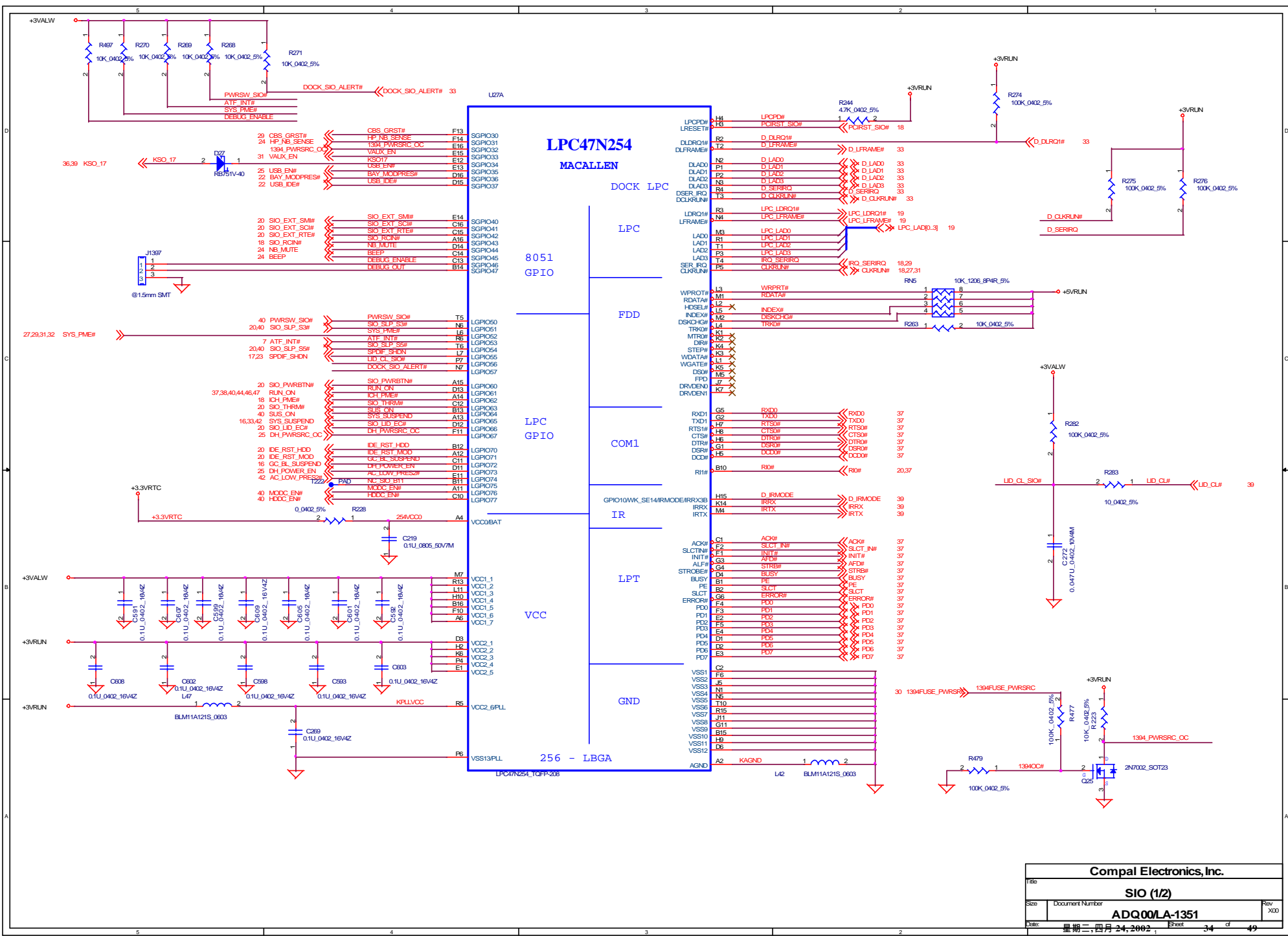


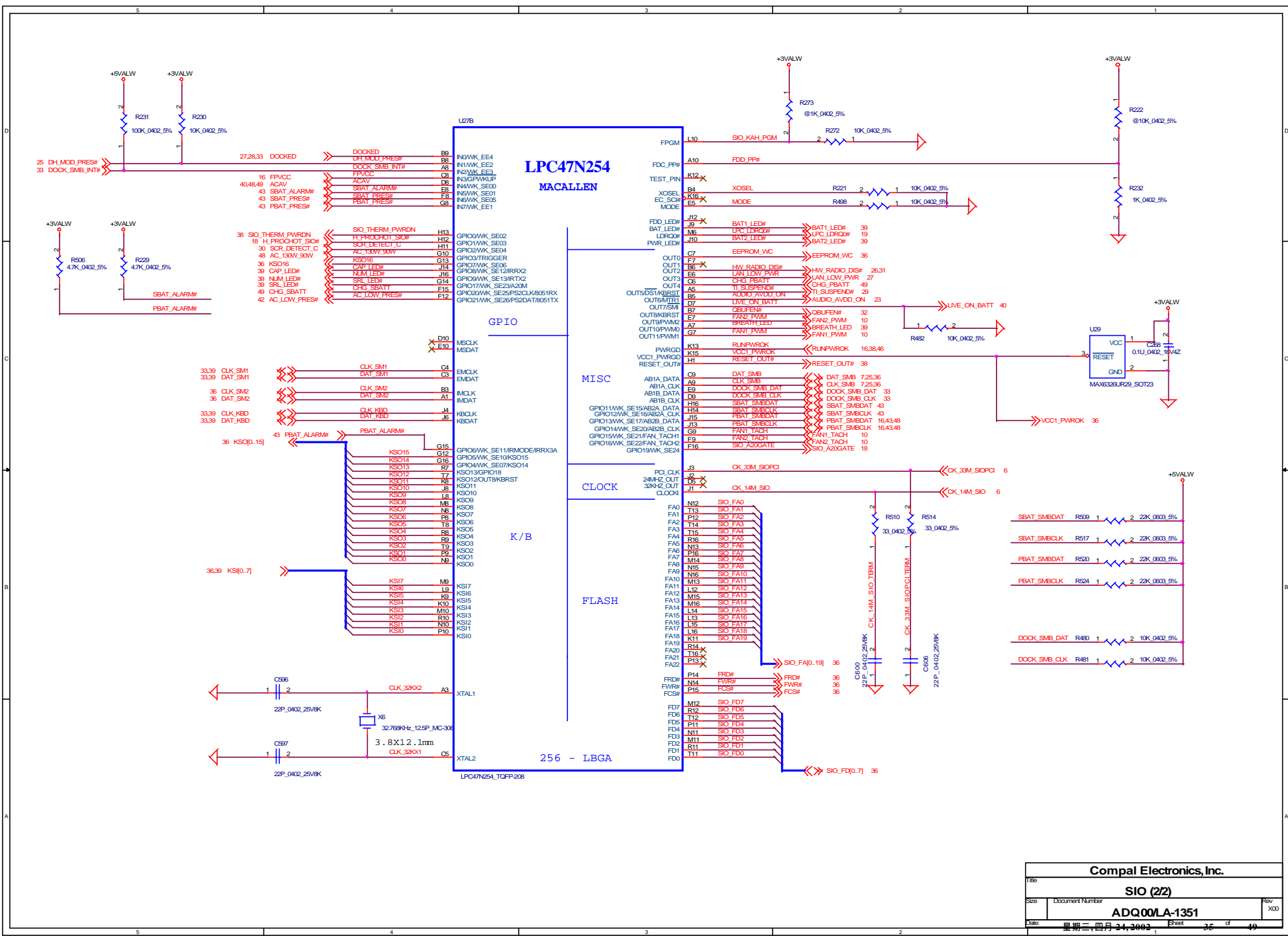
Compal Electronics, Inc.		
DOCKING BUFFER		
Title		
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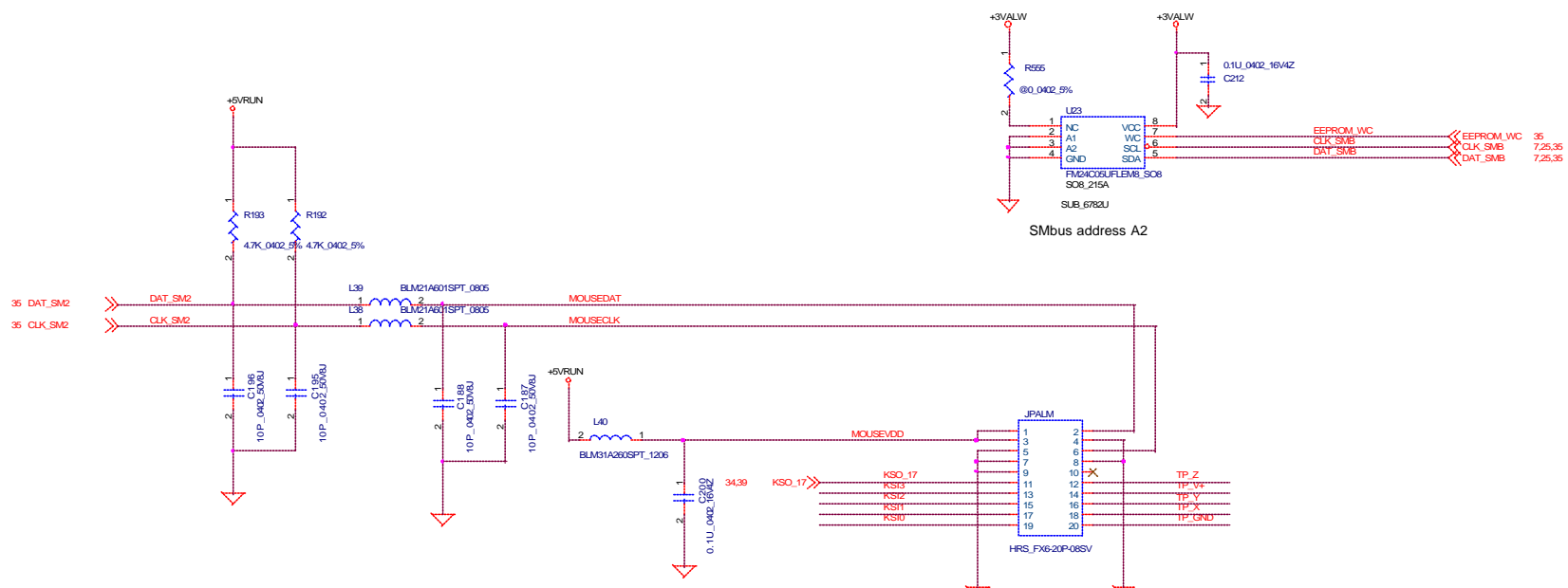


PLACE TERMINATIONS CLOSE TO DOCK CONNECTOR

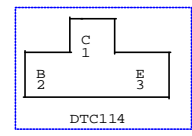
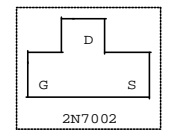
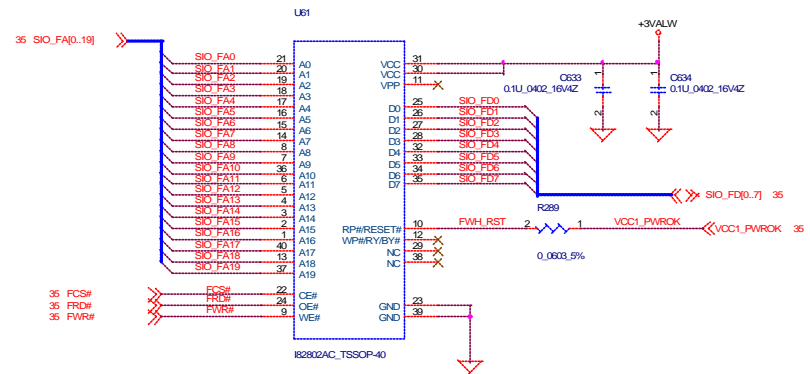
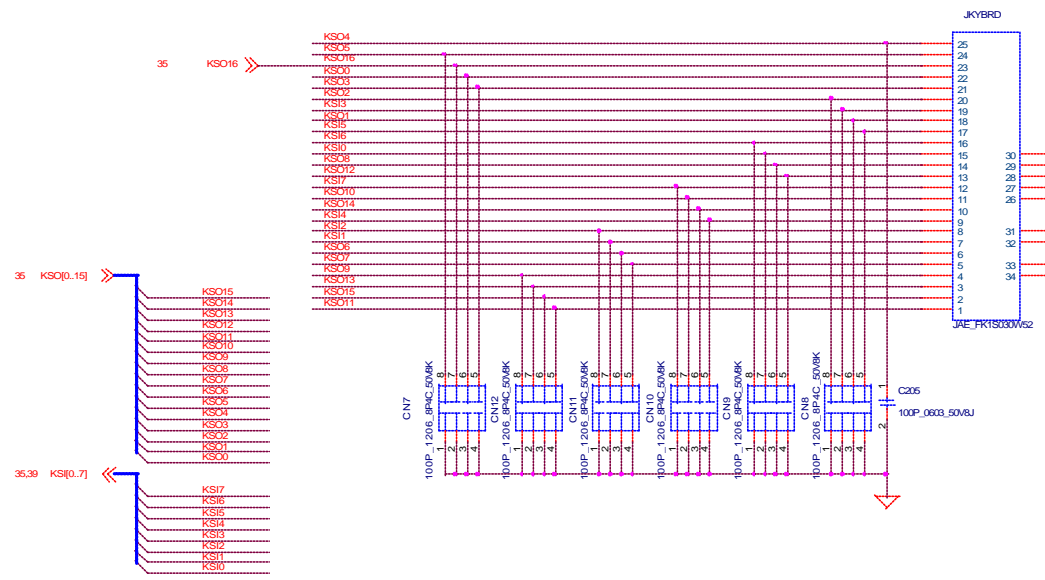




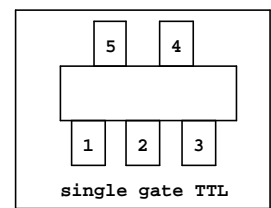
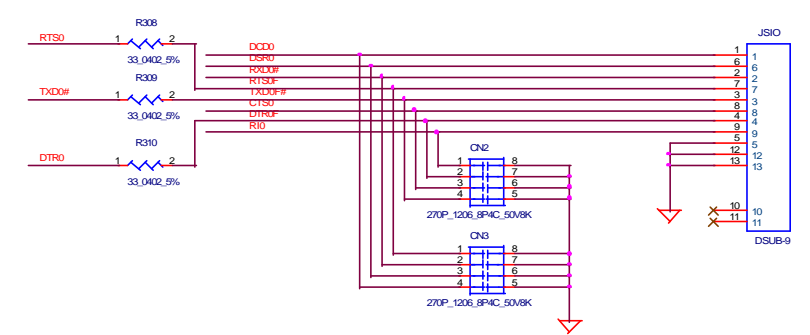
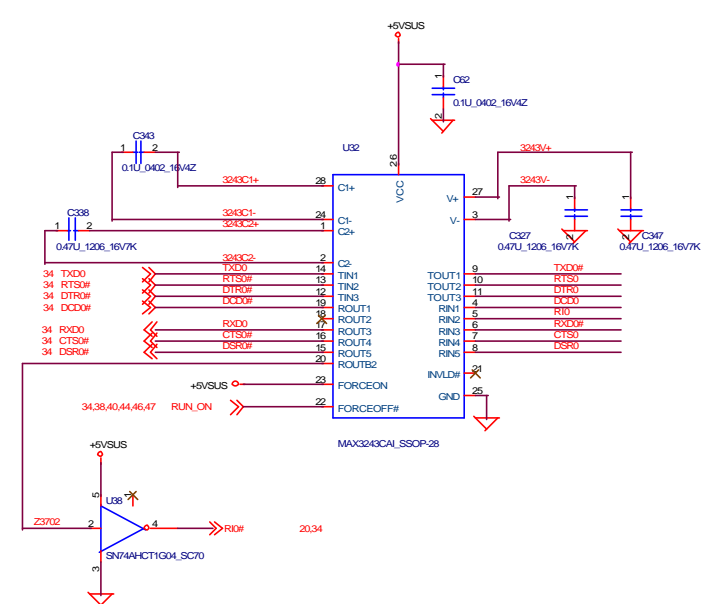
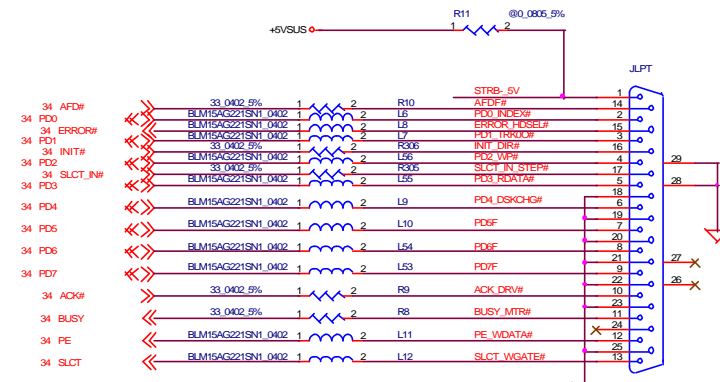
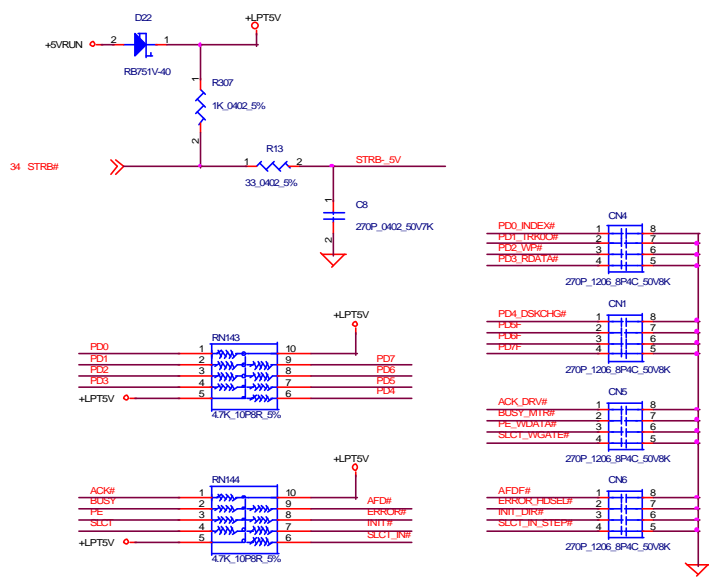




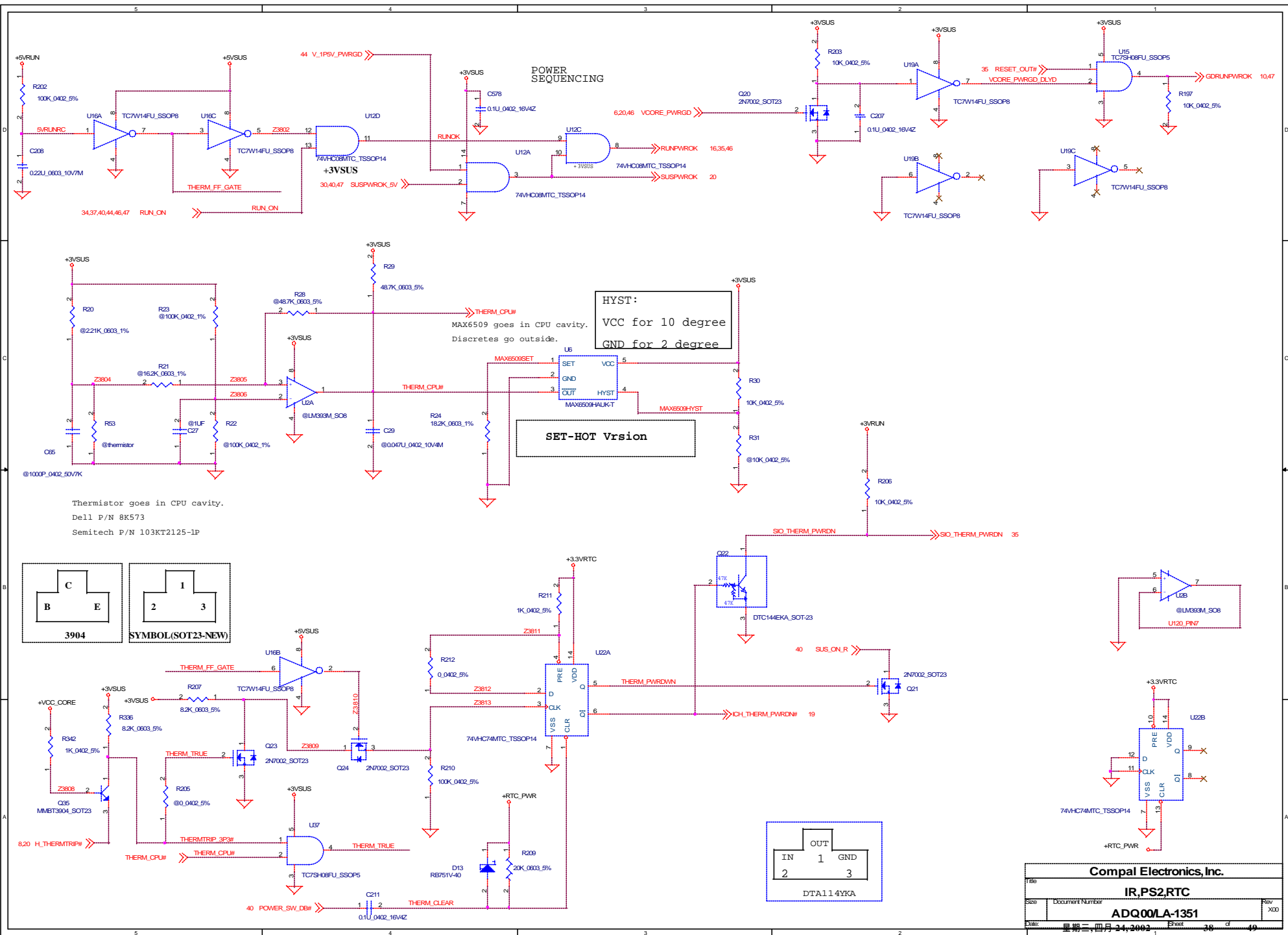
Keep no noise coupled,
Especially the TP_GND



Parallel Port



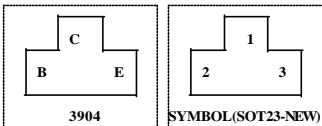
Compal Electronics, Inc.		
Title: LPT		
Size:	Document Number: ADQ00/LA-1351	Rev: X00
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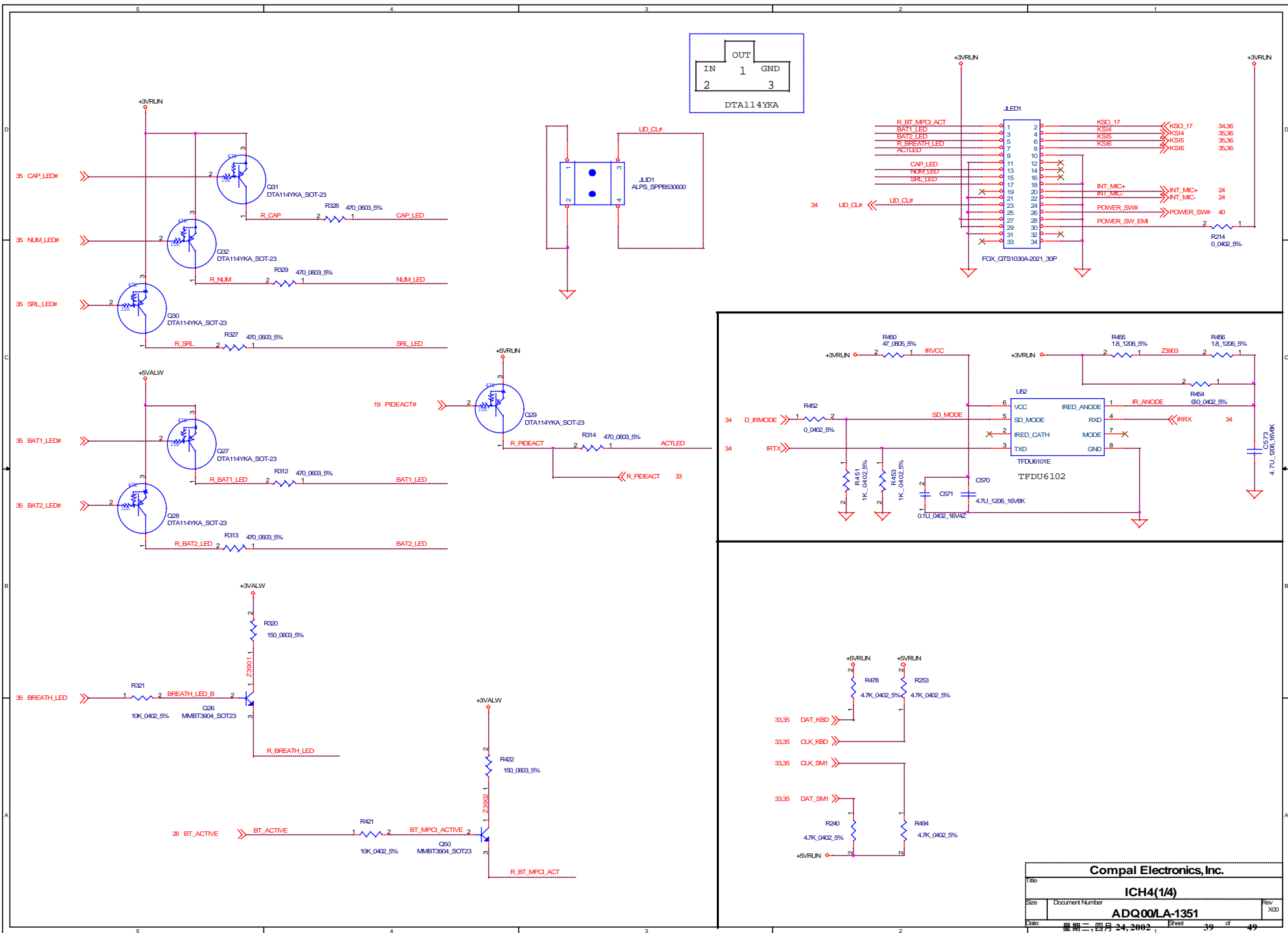
HYST:
VCC for 10 degree
GND for 2 degree

SET-HOT Vrsion

Thermistor goes in CPU cavity.
Dell P/N 8K573
Semitech P/N 103KT2125-1P



Compal Electronics, Inc.		
IR,PS2,RTC		
Table	Document Number	Rev
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Run Planes Enable

+3VRUN Source

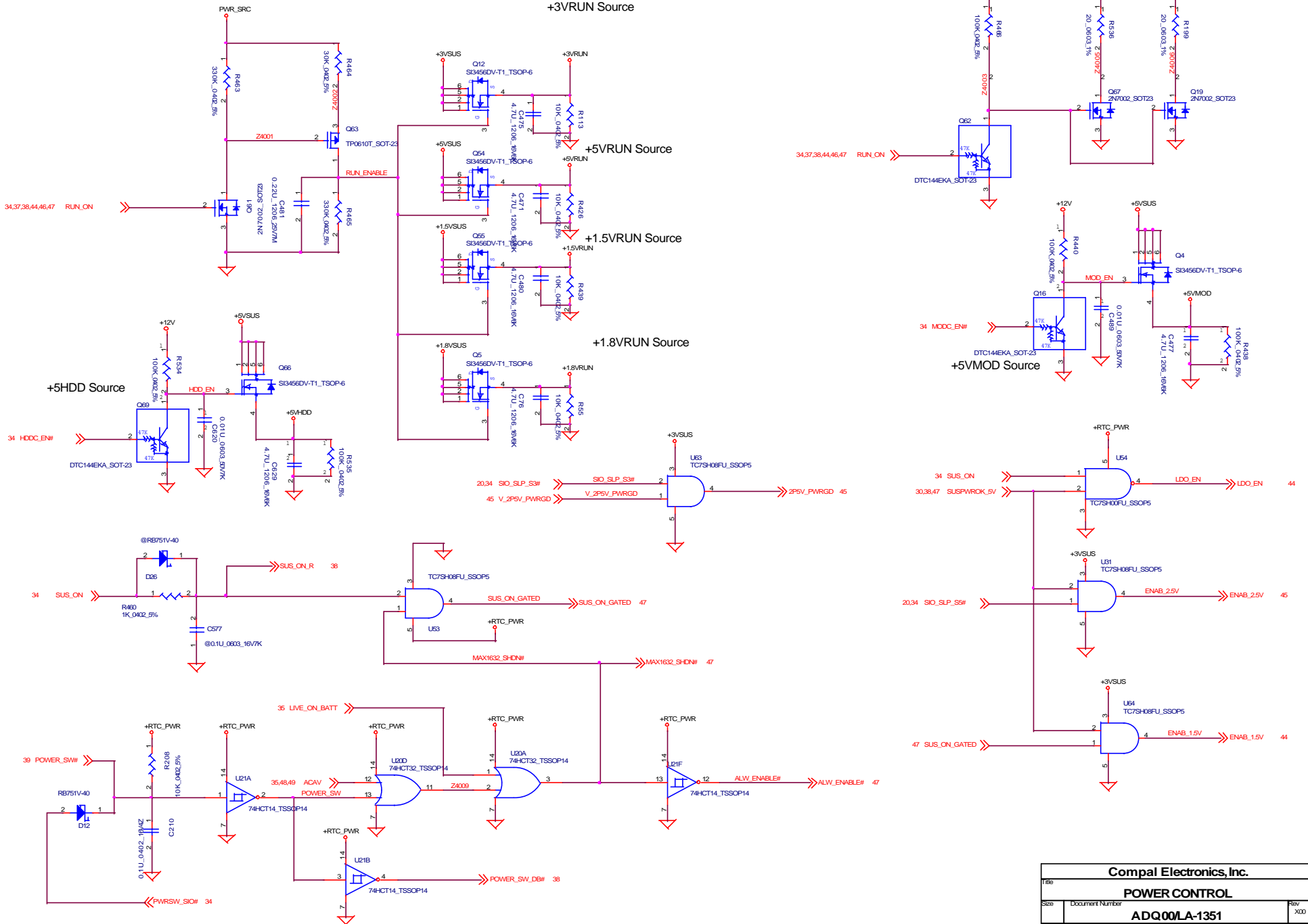
+5VRUN Source

+1.5VRUN Source

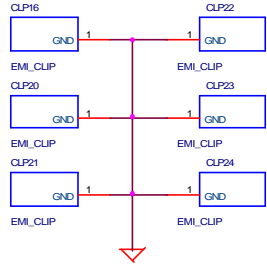
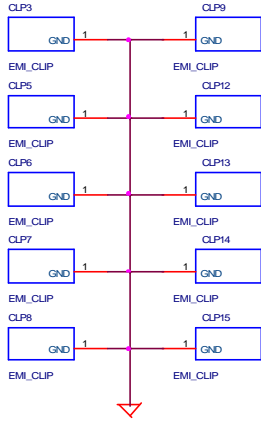
+1.8VRUN Source

+5HDD Source

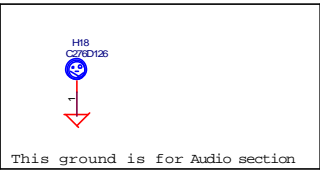
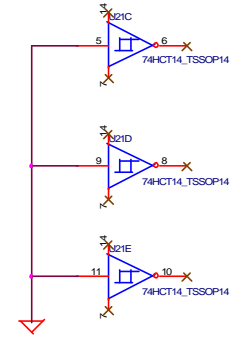
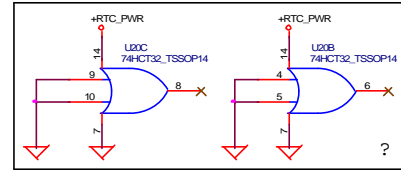
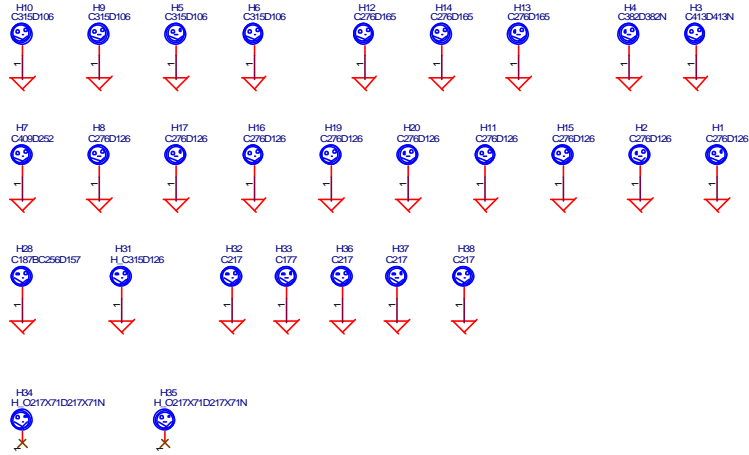
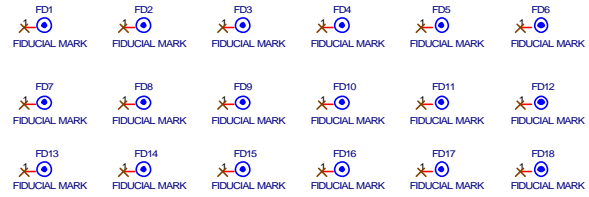
+5VMOD Source



Compal Electronics, Inc.	
POWER CONTROL	
ADQ00LA-1351	Rev. X00



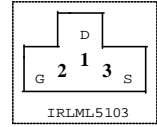
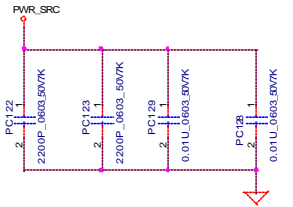
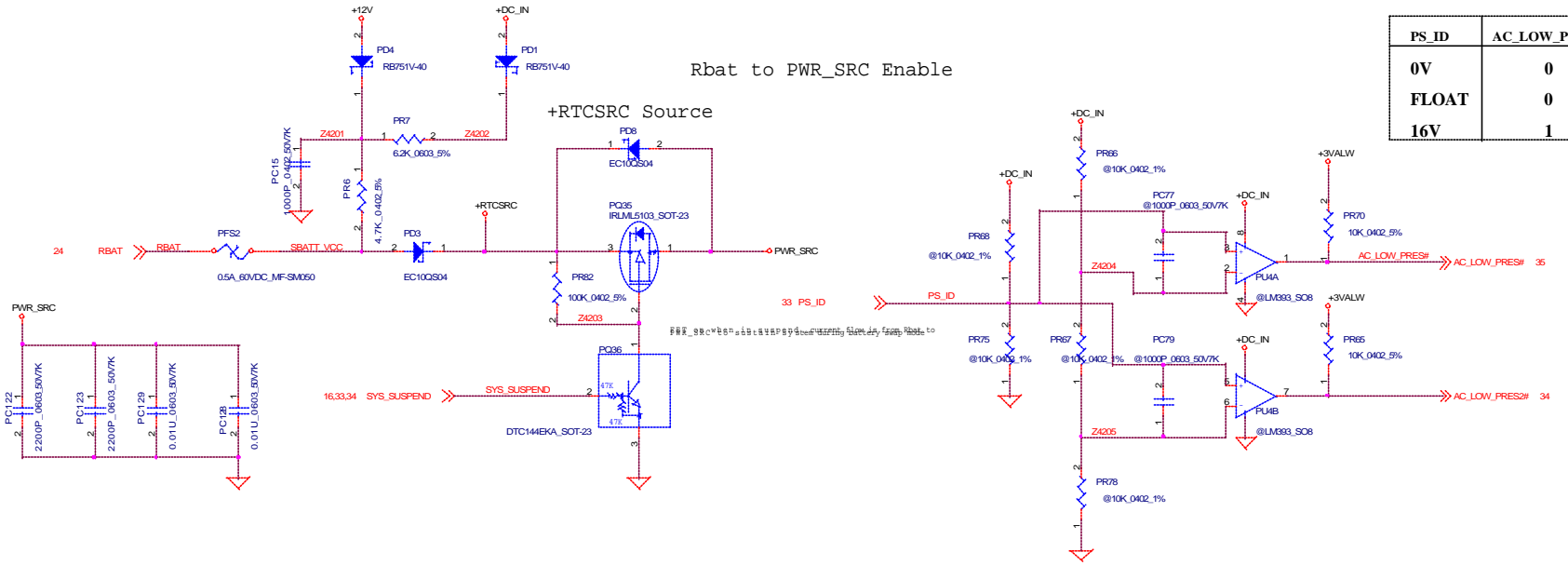
Fiduiial Mark



PS_ID	AC_LOW_PRES#	AC_LOW_PRES#
0V	0	0
FLOAT	0	1
16V	1	1

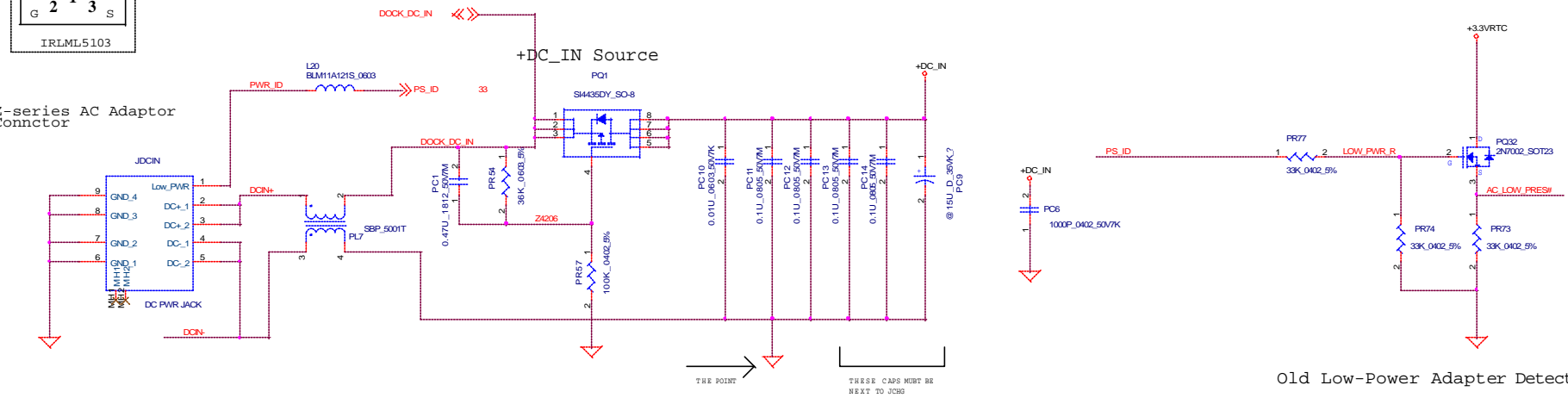
Rbat to PWR_SRC Enable

+RTCSRC Source



Z-series AC Adaptor Connector

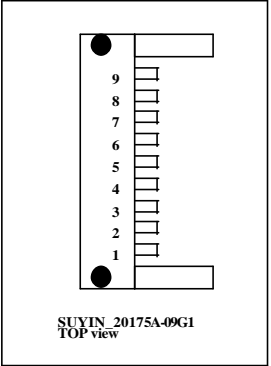
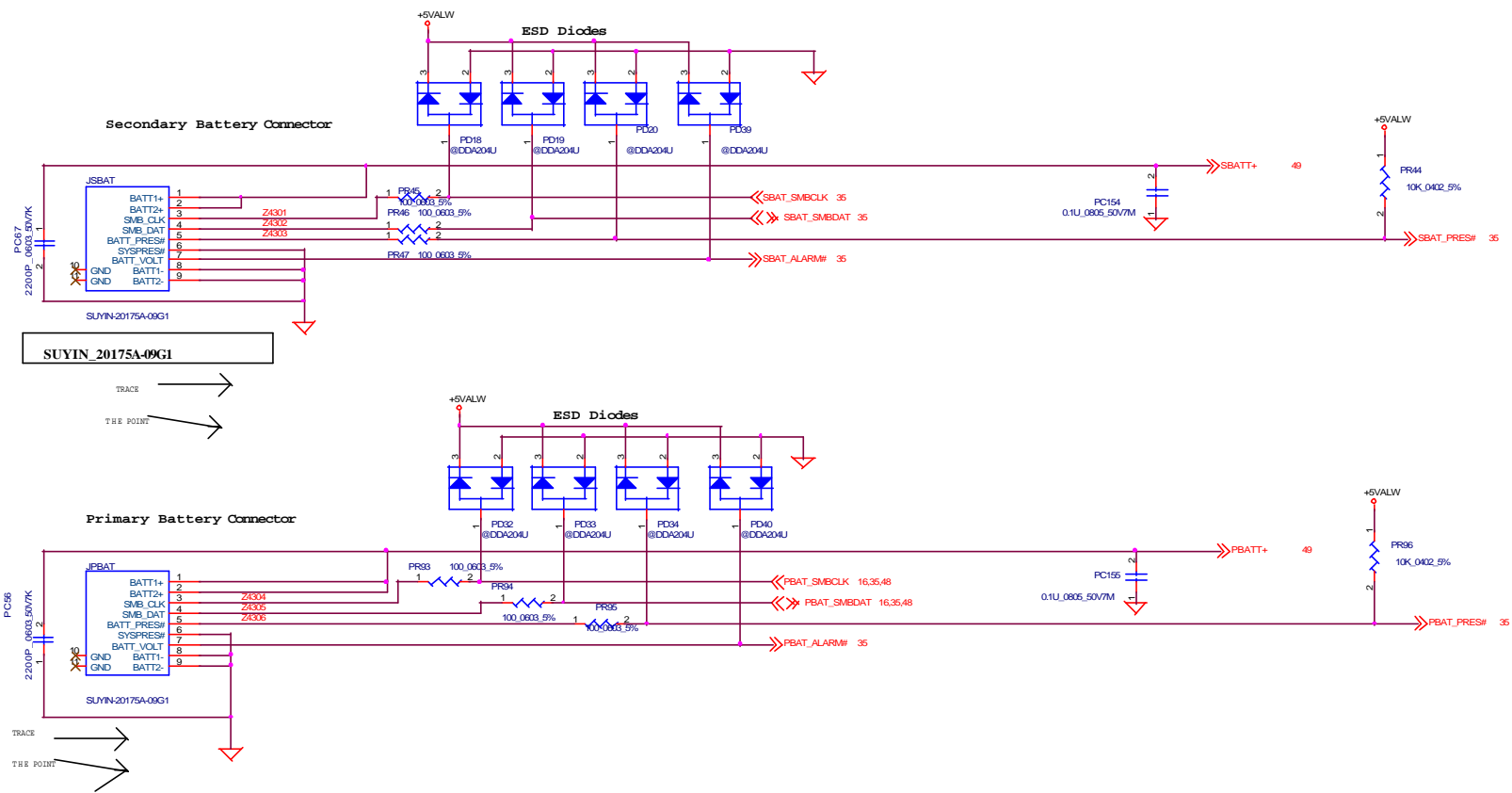
+DC_IN Source



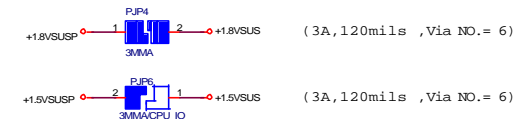
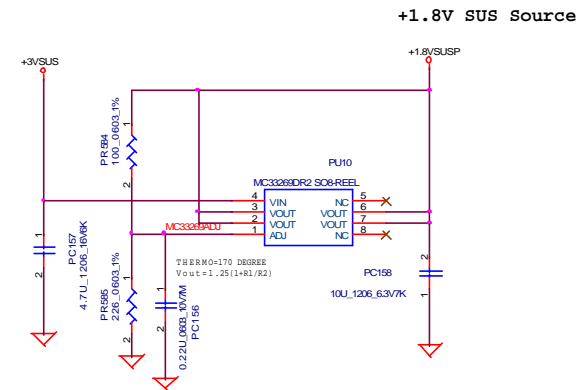
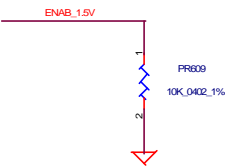
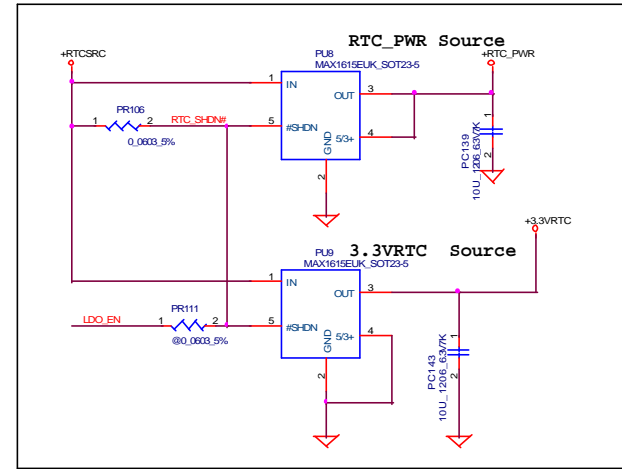
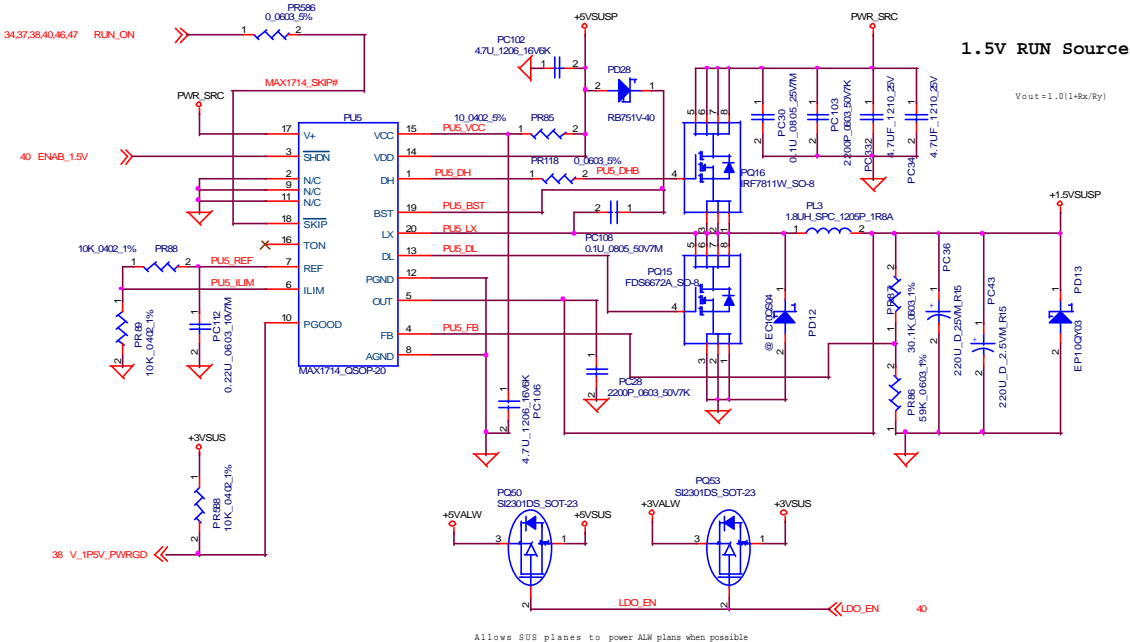
NOTE: *THE POINT LOCATED AT PS MODULE

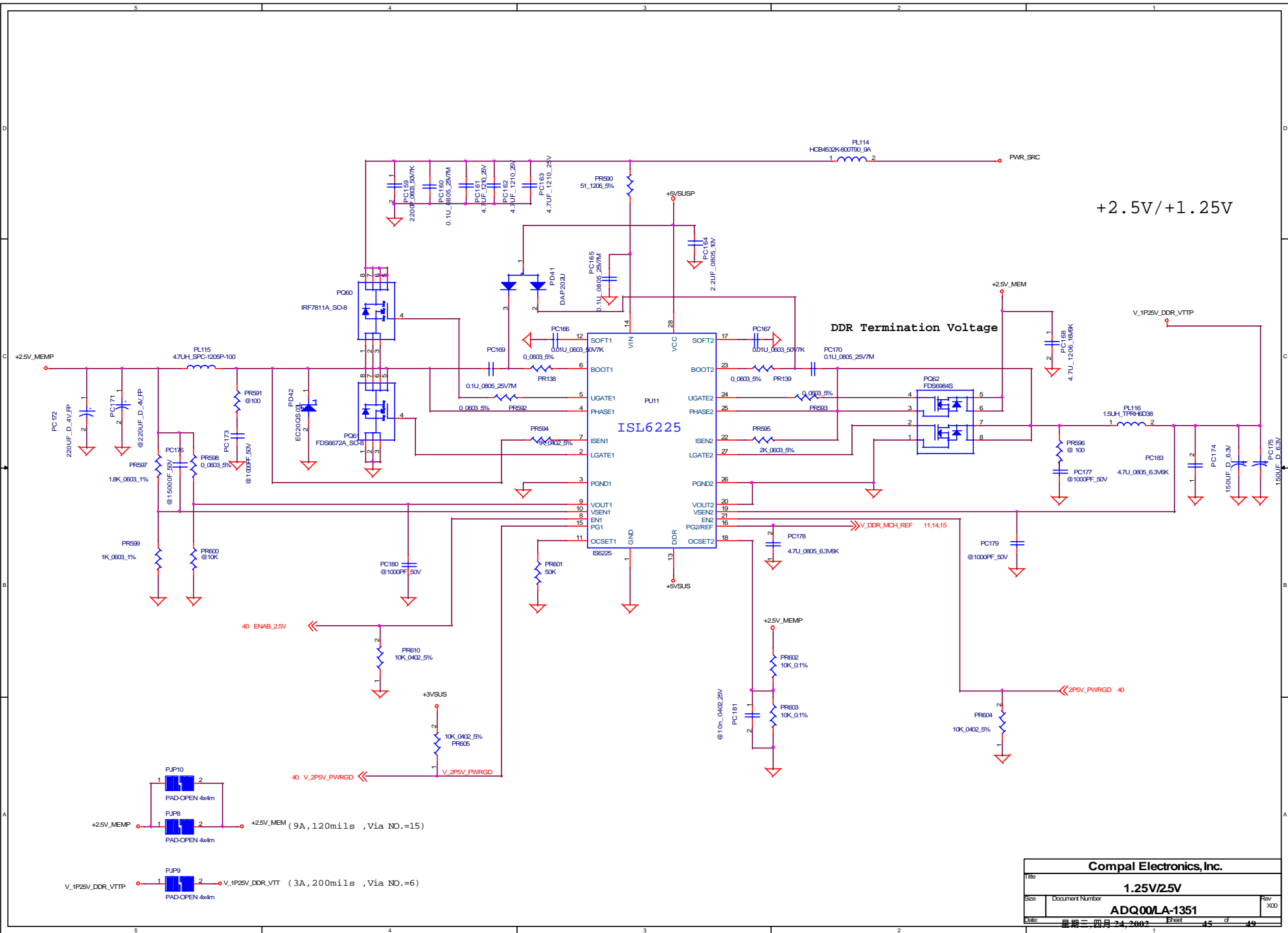
Old Low-Power Adapter Detection

Compal Electronics, Inc.		
Title: DC-IN		
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Compal Electronics, Inc.		
Title	Battery CONN.	
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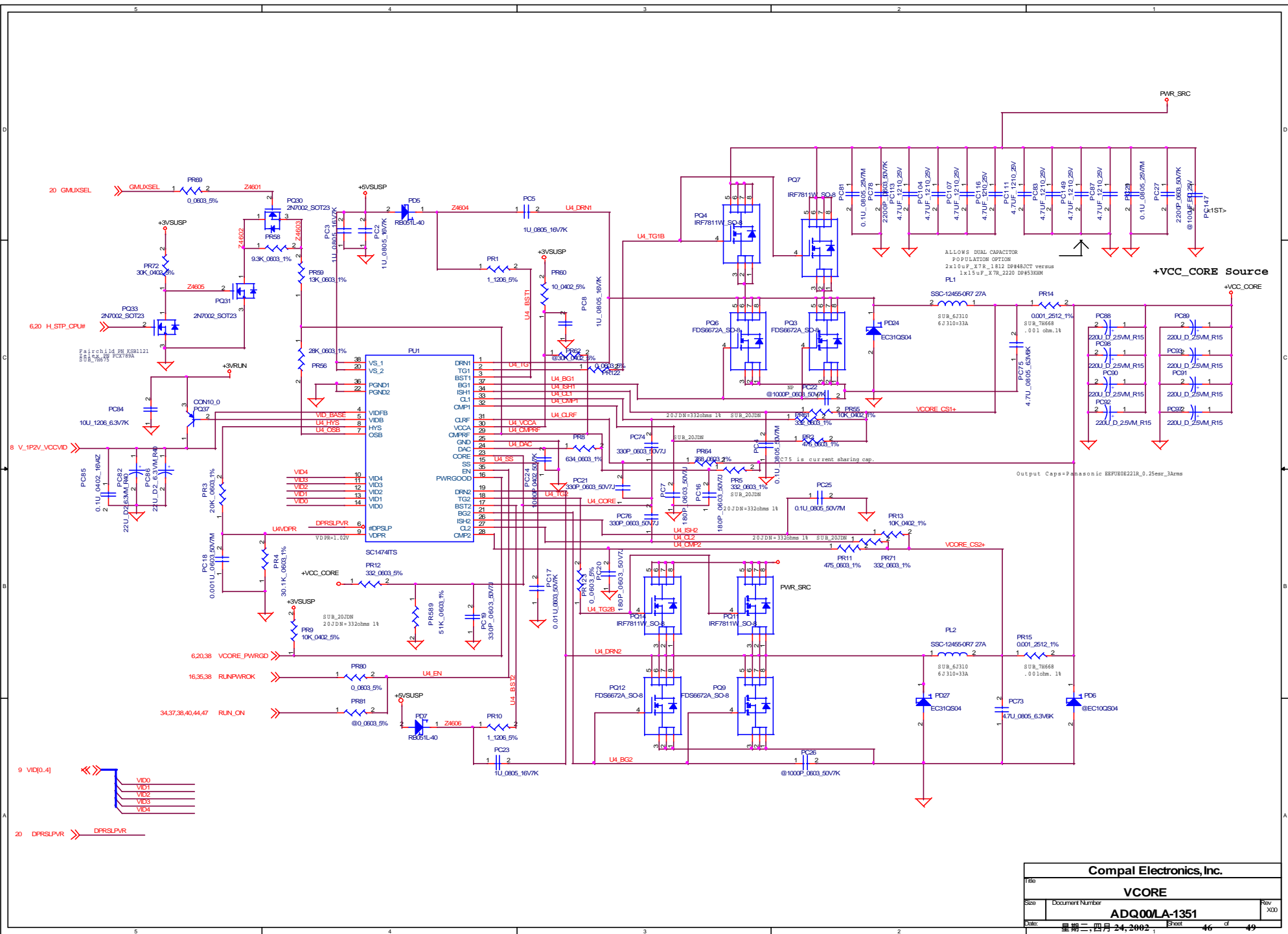


+2.5V/+1.25V

DDR Termination Voltage

ISL6225

Compal Electronics, Inc.		
Title 1.25V/25V		
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Compal Electronics, Inc.		
VCORE		
Size	Document Number	Rev
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