BTQ00 Rev0.1 Schematics Document

Intel Prescott uFCPGA-478 / P4 Northwood

with Springdale / ICH5 / nVIDIA NV18/34/31M chipset

2003/02/20

Compal Electronics, Inc.		
Title: Cover Sheet		
Size: B	Document Number: LA-1841	Rev: 0.1
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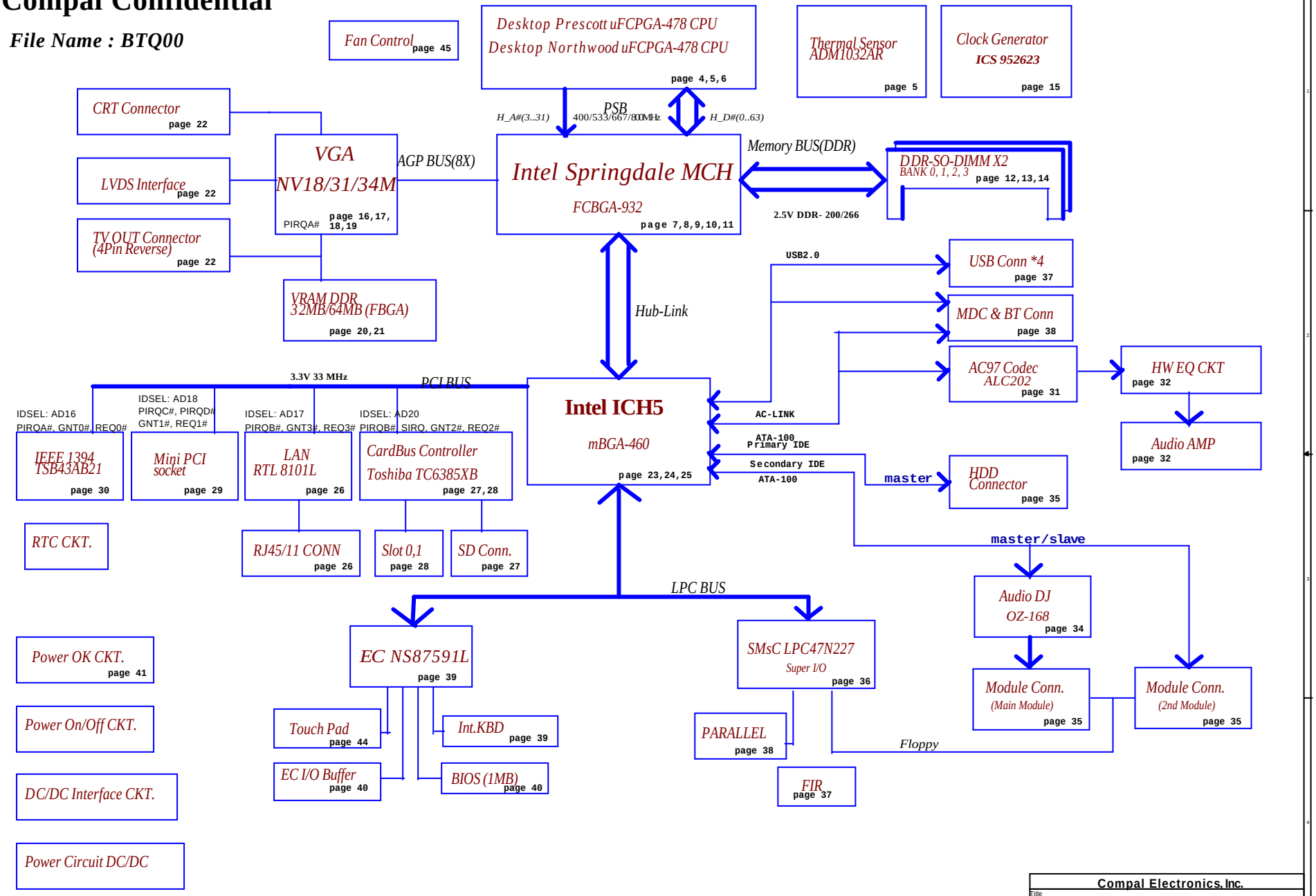
Compal Confidential

File Name : BTQ00



Compal Electronics, Inc.		
Title: Block Diagram		
Size	Document Number: LA-1841	Rev: 0.1
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Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	N/A	N/A	N/A
B+	AC or battery power rail for power circuit.	N/A	N/A	N/A
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+CPU_VID	1.2V switched power rail for CPU AGTL Bus	ON	OFF	OFF
+VTT_GMCH	+1.225V (Prescott) / +1.45V (Northwood)	ON	OFF	OFF
+VGA_CORE	1.2V switched power rail for VGA chip	ON	OFF	OFF
+1.25VS	1.25V switched power rail	ON	OFF	OFF
+1.5VS	AGP 4X/8X	ON	OFF	OFF
+2.5V	2.5V power rail	ON	ON	OFF
+2.5VS	2.5V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V	3.3V power rail	ON	ON	OFF
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5V	5V power rail	ON	ON	OFF
+5VS	5V switched power rail	ON	OFF	OFF
+12VALW	12V always on power rail	ON	ON	ON*
+RTCVCC	RTC power	ON	ON	ON

Note : ON* means that this power plane is ON only with AC power available, otherwise it is OFF.

External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts
VGA			PIRQA
CardBus	AD20	2	PIRQA/PIRQB
LAN	AD17	3	PIRQB
Mini-PCI	AD18	1/4	PIRQC/PIRQD
1394	AD16	0	PIRQA
SD	AD22		

EC SM Bus1 address

Device	Address
Smart Battery	0001 011X b
EEPROM(24C1602)	1010 000X b
(24C04)	1011 000Xb

EC SM Bus2 address

Device	Address
ADM1032	1001 110X b
OZ168	0011 0100 b

ICH4 SM Bus address

Device	Address
Clock Generator (ICS 952623)	1101 001Xb
DDR DIMM0	1001 000Xb
DDR DIMM1	1001 001Xb

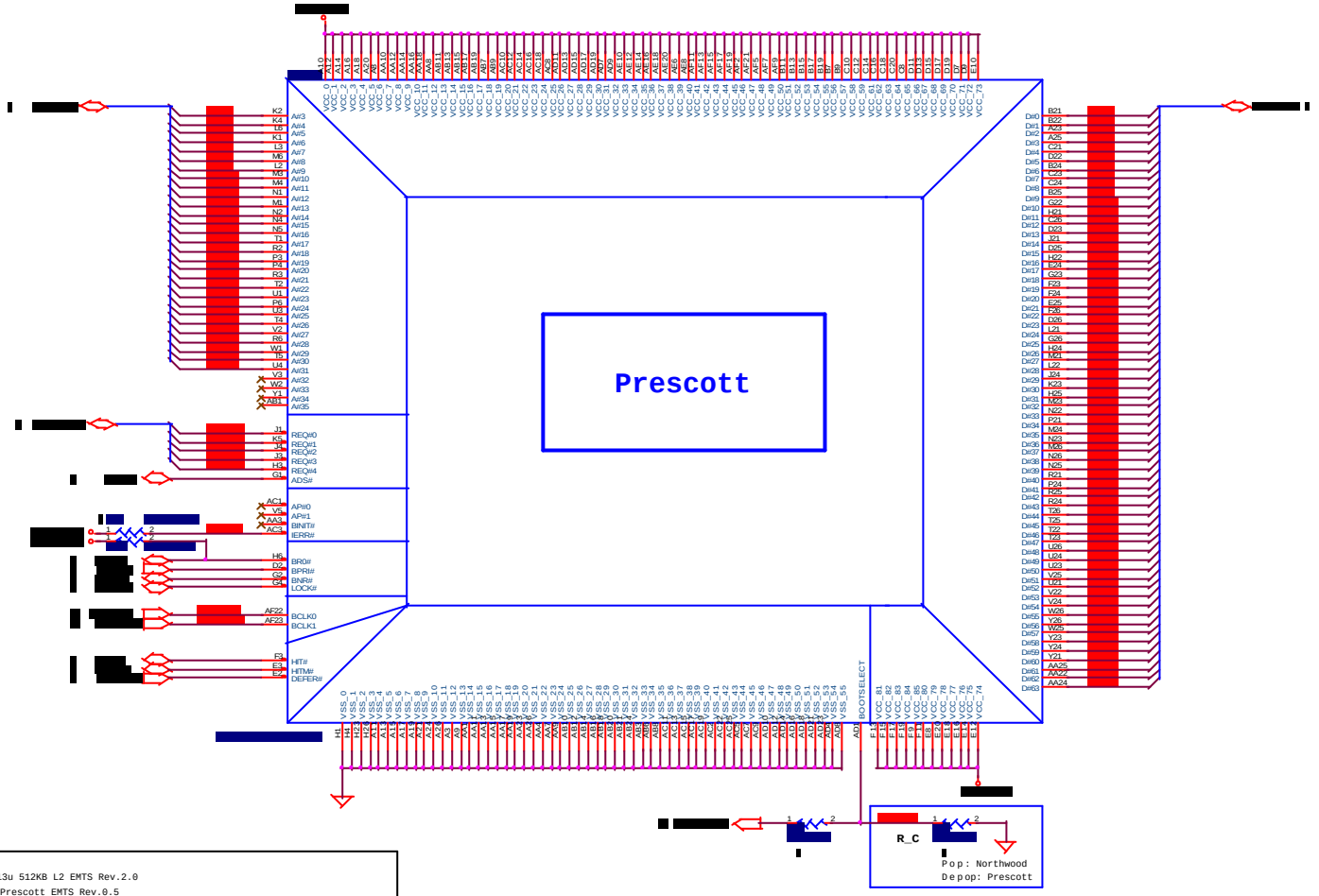
STATE \ SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	LOW	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

Board ID Table for AD channel

Vcc	3.3V +/- 5%
Ra	100K +/- 5%

Board ID	Rb	V_{AD_BID} min	V_{AD_BID} typ	V_{AD_BID} max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

Board ID	PCB Revision
0	0.1
1	
2	
3	
4	
5	
6	
7	

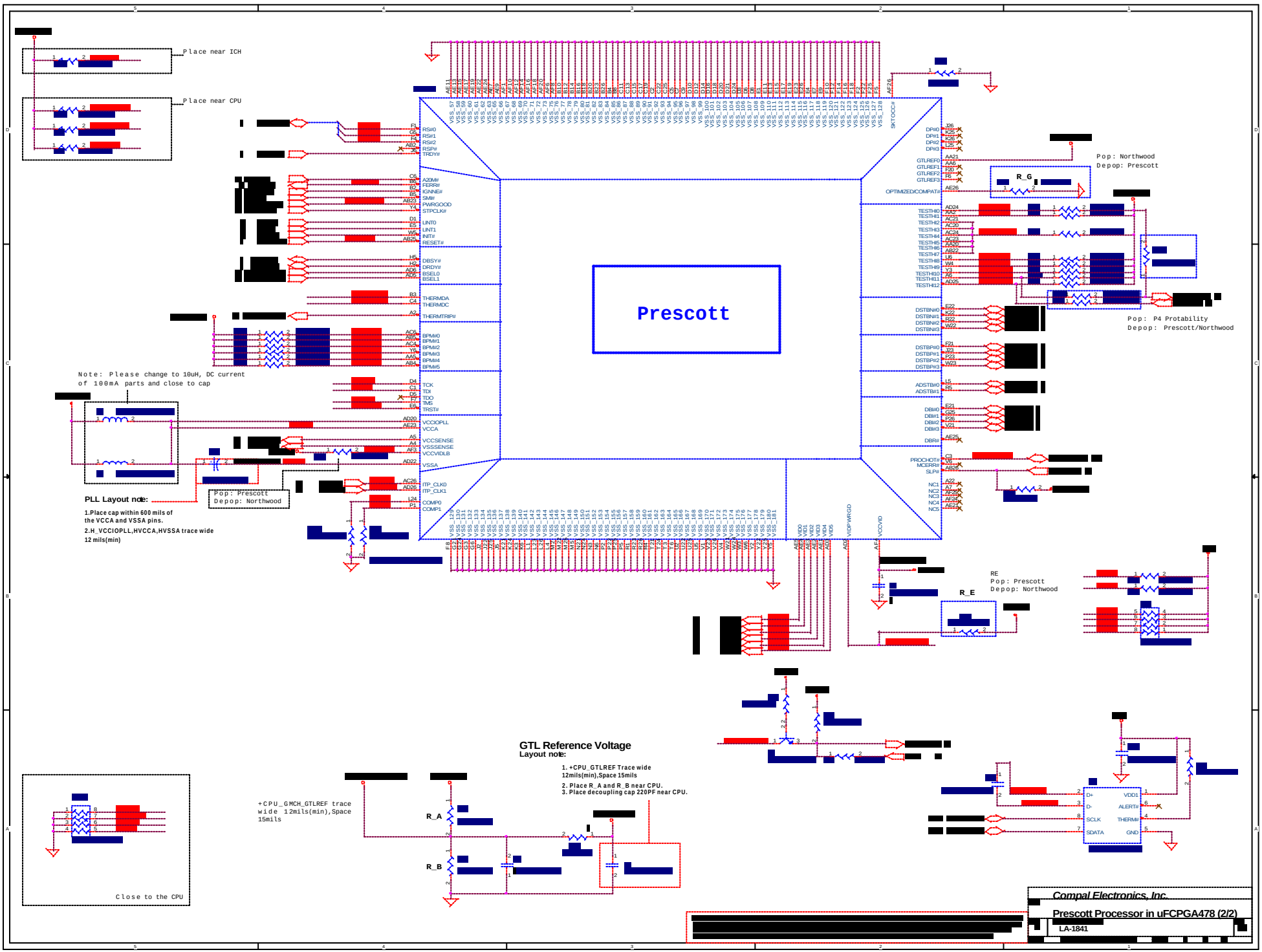


Reference Intel document
Desktop P4 Spec.: 10988 P4 0.13u 512KB L2 EMTS Rev.2.0
Desktop Prescott Spec.: 11910 Prescott EMTS Rev.0.5

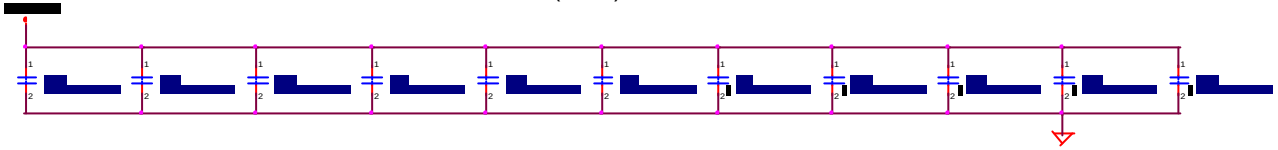
Pin number	Northwood Pin name	Commend	Prescott Pin name	Commend	Northwood	Prescott
B6	FERR#	Pull-up 62ohm to +VCC_CORE	FERR#/PBE#	Pull-up 62ohm to +VCC_CORE	Pop	Pop
AA20	ITPCLKOUT0	Pull-up56ohm to +VCC_CORE	TESTHI6	Pull-up 62ohm to +VCC_CORE	Pop	Pop
AB22	ITPCLKOUT1	Pull-up 56ohm to +VCC_CORE	TESTHI7	Pull-up 62ohm to +VCC_CORE	Pop	Pop
AD2	NC	float	VIDPWRGD	Pull-up 8.2Kohm to +VCCVID	Depop	Pop
AD3	NC	float	VID5	Pull-up1Kohm to +3VRUN & connect to PWRIC	Depop	Pop
AF3	NC	float	VCCVIDLB	Connect to +VCCVID	Depop	Pop
AD20	VCCA	Connect to CPU Filter	VCCIOPLL	Connect to CPU Filter		
AF23	VCCIOPLL	Connect to CPU Filter	VCCA	Connect to CPU Filter		
AD1	VSS	Connect to GND	BOOTSELECT	CPU determine	Pop	Depop
AE26	VSS	Connect to GND	OPTIMIZED/ COMPAT#	float	Pop	Depop

[redacted]

Compal Electronics, Inc.
Prescott Processor in uFCPGA478 (1/2)
LA-1841

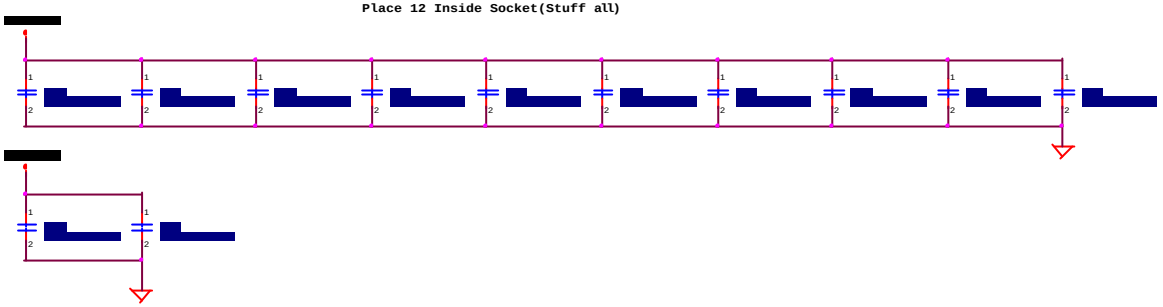

Place near ICH
Place near CPU
Prescott
Note: Please change to 10uH, DC current of 100mA parts and close to cap
PLL Layout note:
1.Place cap within 600 mils of the VCCA and VSSA pins.
2.H_VCCIOPLL,HVCCA,HVSSA trace wide 12 mils(min)
Pop: Prescott
Depop: Northwood
Pop: Northwood
Depop: Prescott
R_G
Pop: P4 Protability
Depop: Prescott/Northwood
RE
Pop: Prescott
Depop: Northwood
R_E
GTL Reference Voltage
Layout note:
1. +CPU_GTLREF Trace wide 12mils(min),Space 15mils
2. Place R_A and R_B near CPU.
3. Place decoupling cap 220PF near CPU.
+CPU_GMCH_GTLREF trace wide 12mils(min),Space 15mils
R_A
R_B
Close to the CPU
Compal Electronics, Inc.
Prescott Processor in uFCPGA478 (2/2)
LA-1841

Place 11 North of Socket(Stuff 8)

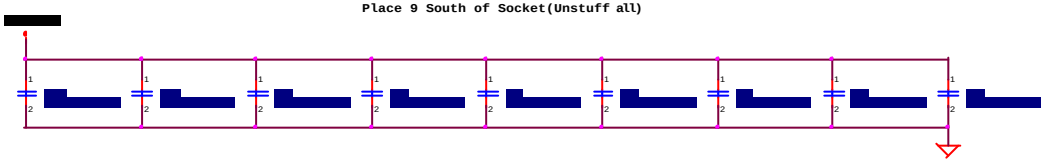


22uF depop reference
Springdale Customer Schematic R1.2 page82

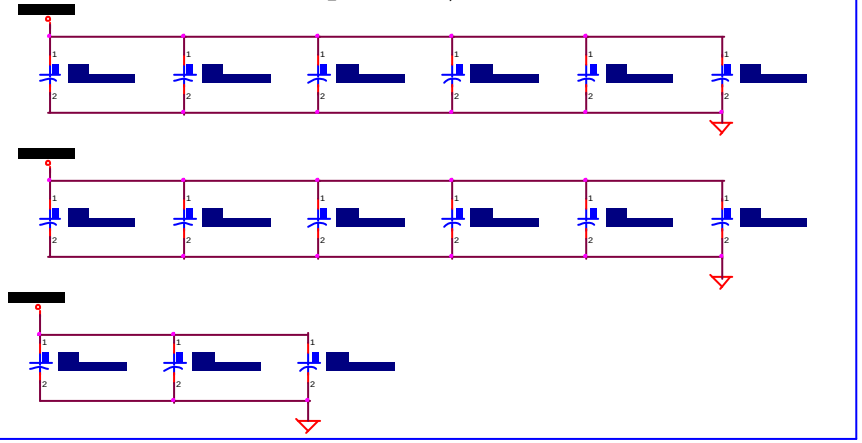
Place 12 Inside Socket(Stuff all)



Place 9 South of Socket(Unstuff all)



470uF _ERS10m ohm* 15, ESR=0.5m ohm

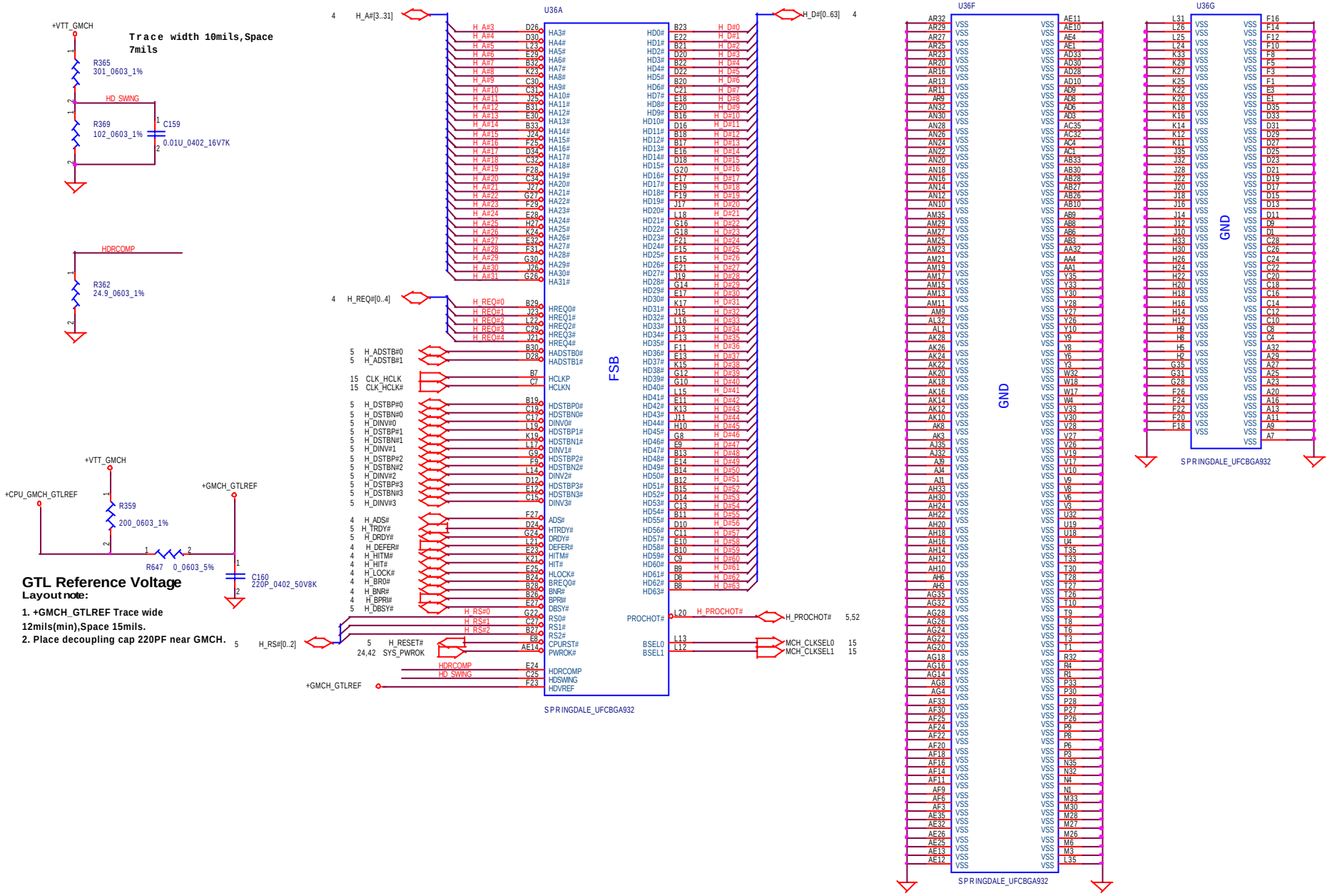


Decoupling Reference Document:
Springdale Chipset Platform Design guide Rev1.11 (12474)page239

Decoupling Reference Requirement:
560uF Polymer, ESR:5m ohm(each) * 10
22uF X5R * 32

[redacted]

Compal Electronics, Inc.
CPU Decoupling
LA-1841



Compal Electronics, Inc.

Title: Springdale-Host/GND (1/4)

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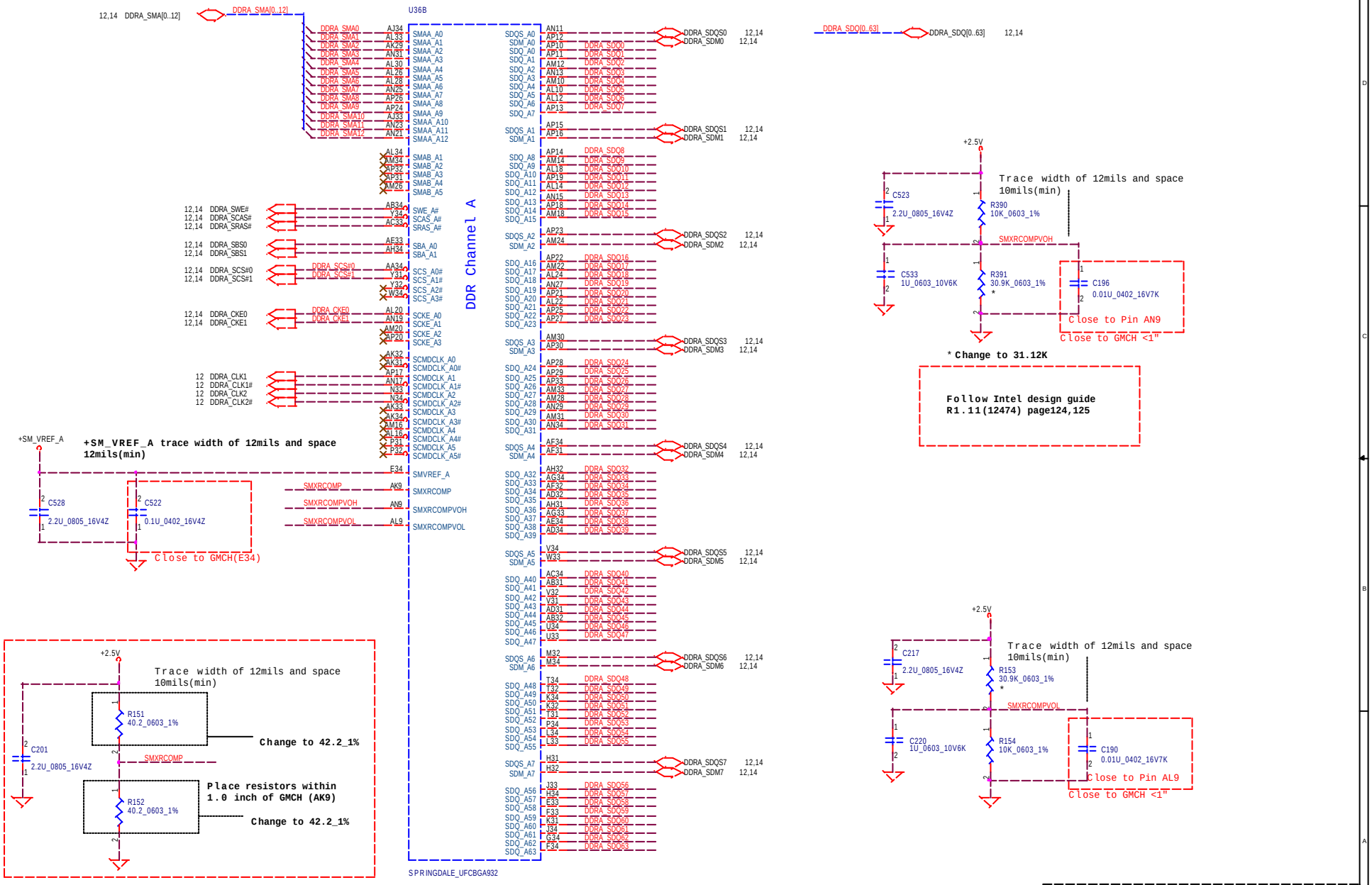

Compal Electronics, Inc.

Title: Springdale-DDR Interface-A(2/5)

Size	Document Number	Rev
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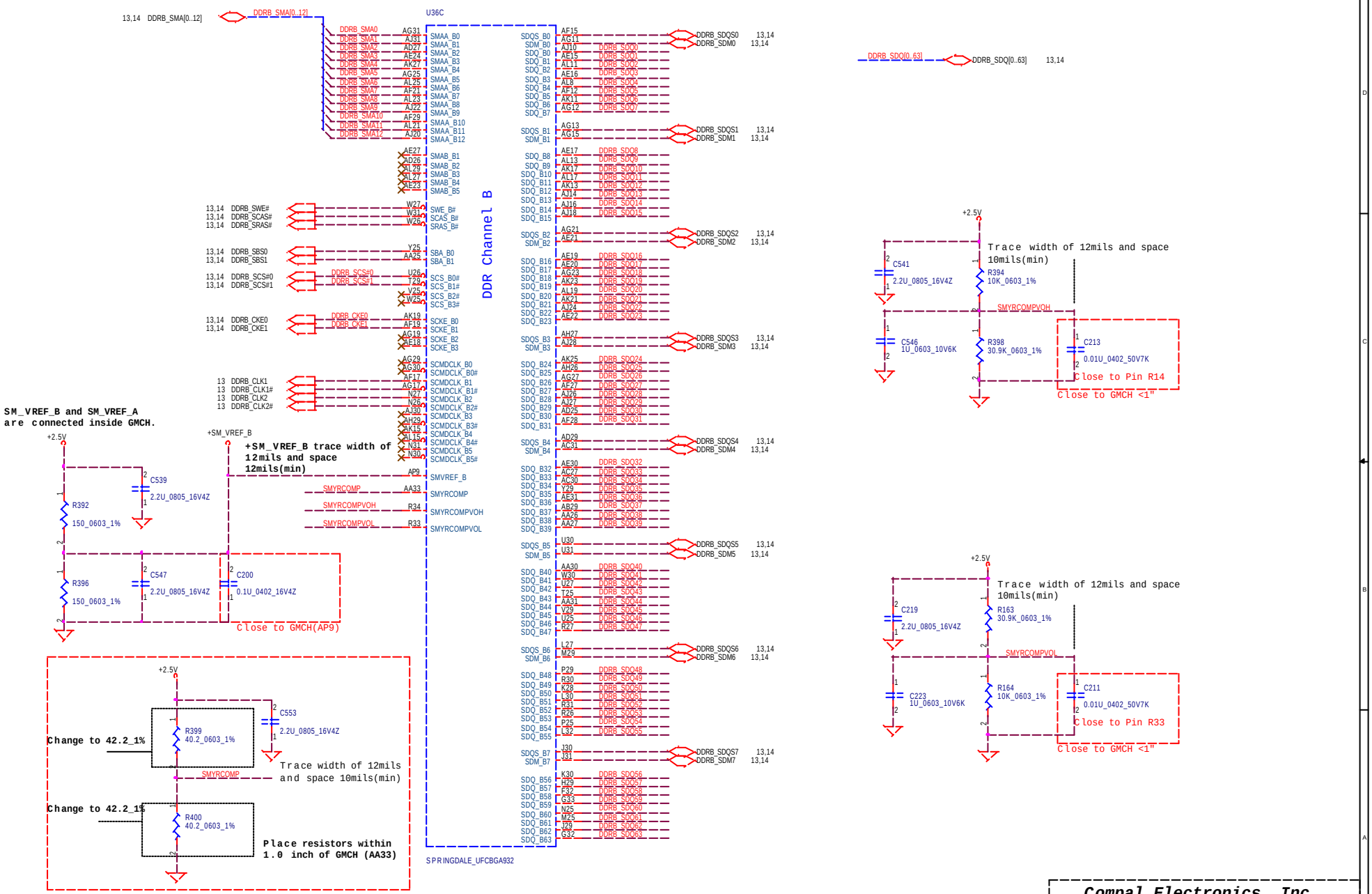
Date: Thursday, February 20, 2003 Sheet 8 of 57



Compal Electronics, Inc.

Title: Springdale-DDR Interface-B(3/5)

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Change to 43.2_1%

Change to 52.3_1%

1: External AGP
0: Internal Graphics

Note:
HI_SWING_MCH, HI_VREF_MCH trace width of 10mils and space 7mils

Close to GMCH(AE3)
Close to GMCH ball <250mils
Close to GMCH(AE2)
Close to GMCH ball <250mils

Note:
CI_SWING_MCH, CI_VREF_MCH trace width of 10mils and space 20mils

0.8V
Close to GMCH(AF2)
Close to GMCH ball <250mils
0.35V
Close to GMCH(AF4)
Close to GMCH ball <250mils

Close GMCH ball (AC3) less than 250mils

Close GMCH ball (AD2) less than 250mils

Follow Springdale Chipset Platform Design guide Rev1.11(12474)

Note:
Springdale Customer Schematic R1.2 page18 AGP_SWING only had 0.1u cap ; But Springdale Chipset Platform Design guide Rev1.11(12474) page138 had a 0.01uf cap. need confirm with Intel.

change to 52.3_1%

U36D

AGP

HUB

CSA

VGA

SPRINGDALE_UFCBGA932

Analog RGB/CRT guidelines for Springdale-P

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Title: **Springdale-AGP/HUB/VGA/CSA (4/5)**

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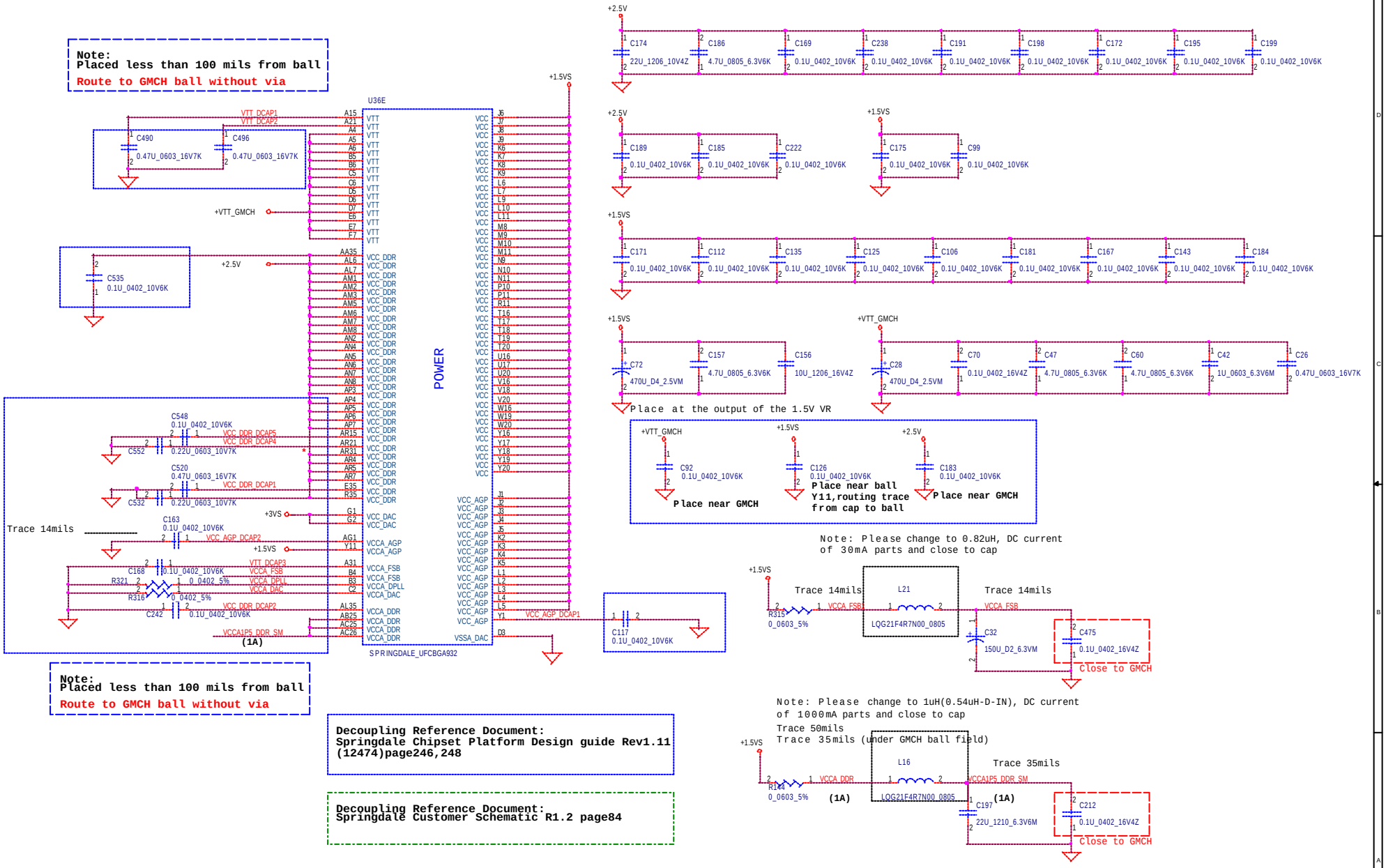
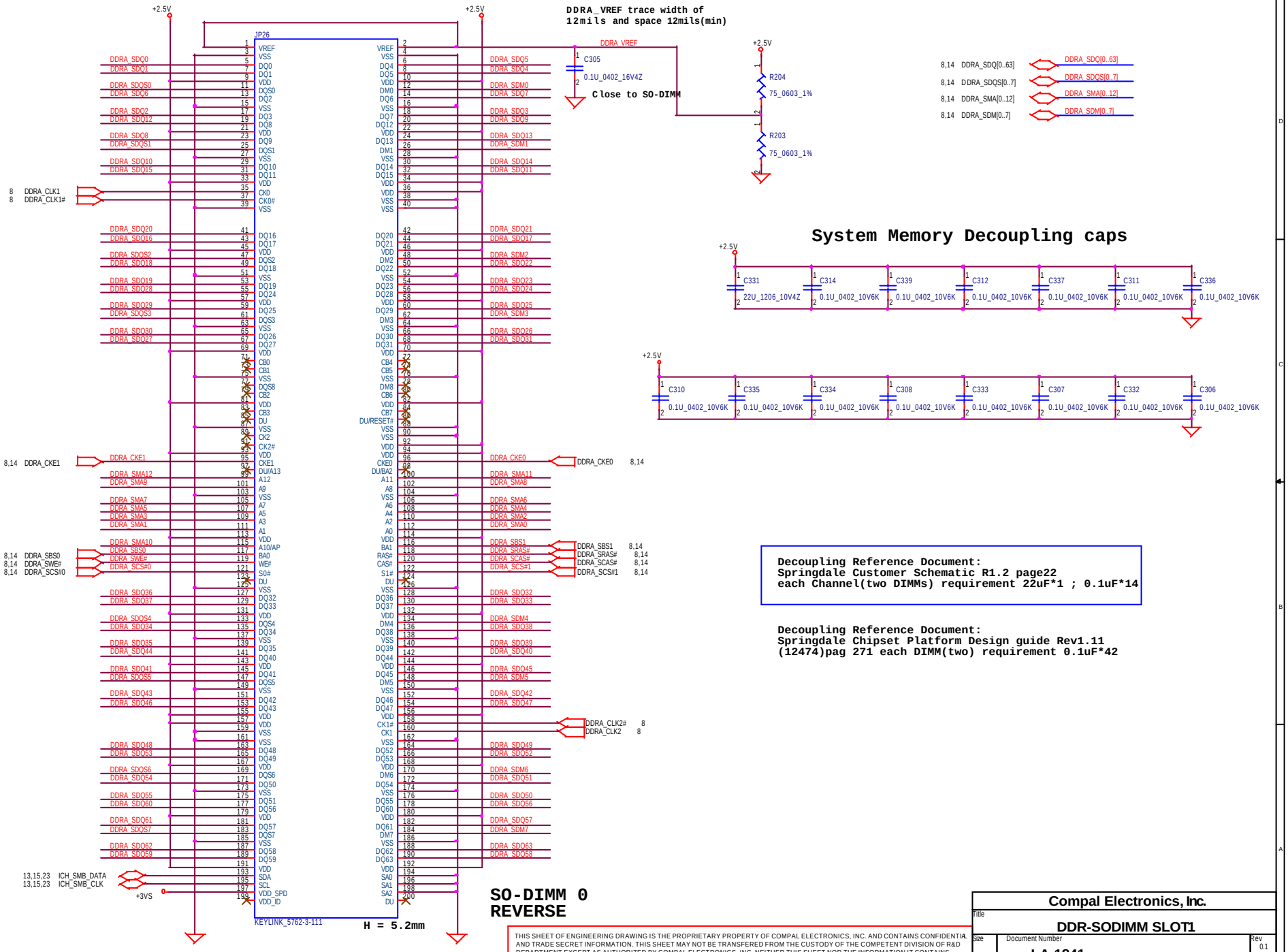


Compal Electronics, Inc.

Title: Springdale-Decoupling (5/5)

Size: B | Document Number: LA-1841 | Rev: 0.1

Date: Thursday, February 20, 2003 | Sheet 11 of 57



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Compal Electronics, Inc.		
Title: DDR-SODIMM SLOT1		
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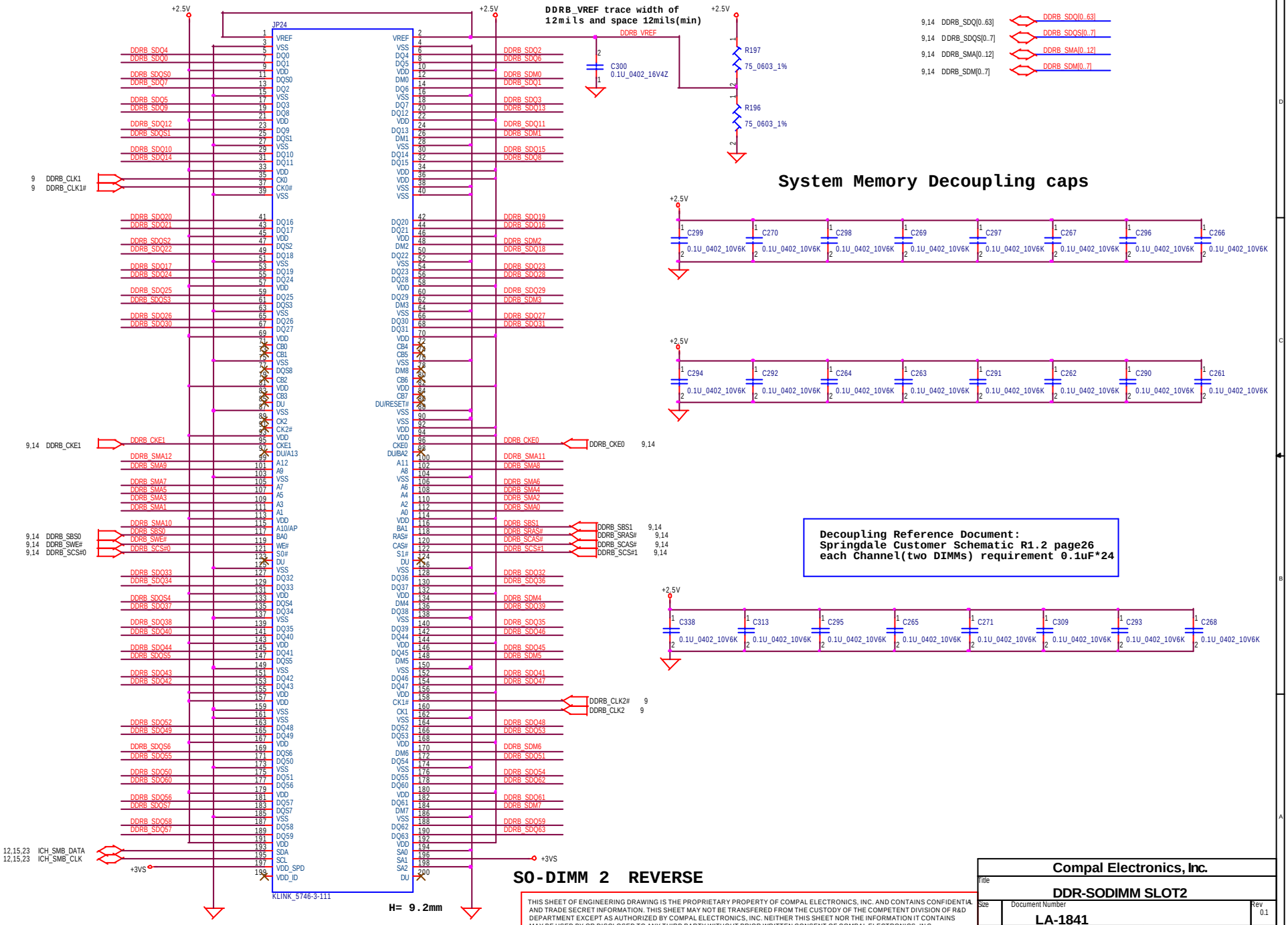

Compal Electronics, Inc.		
Title: DDR-SODIMM SLOT2		
Size	Document Number: LA-1841	Rev: 0.1
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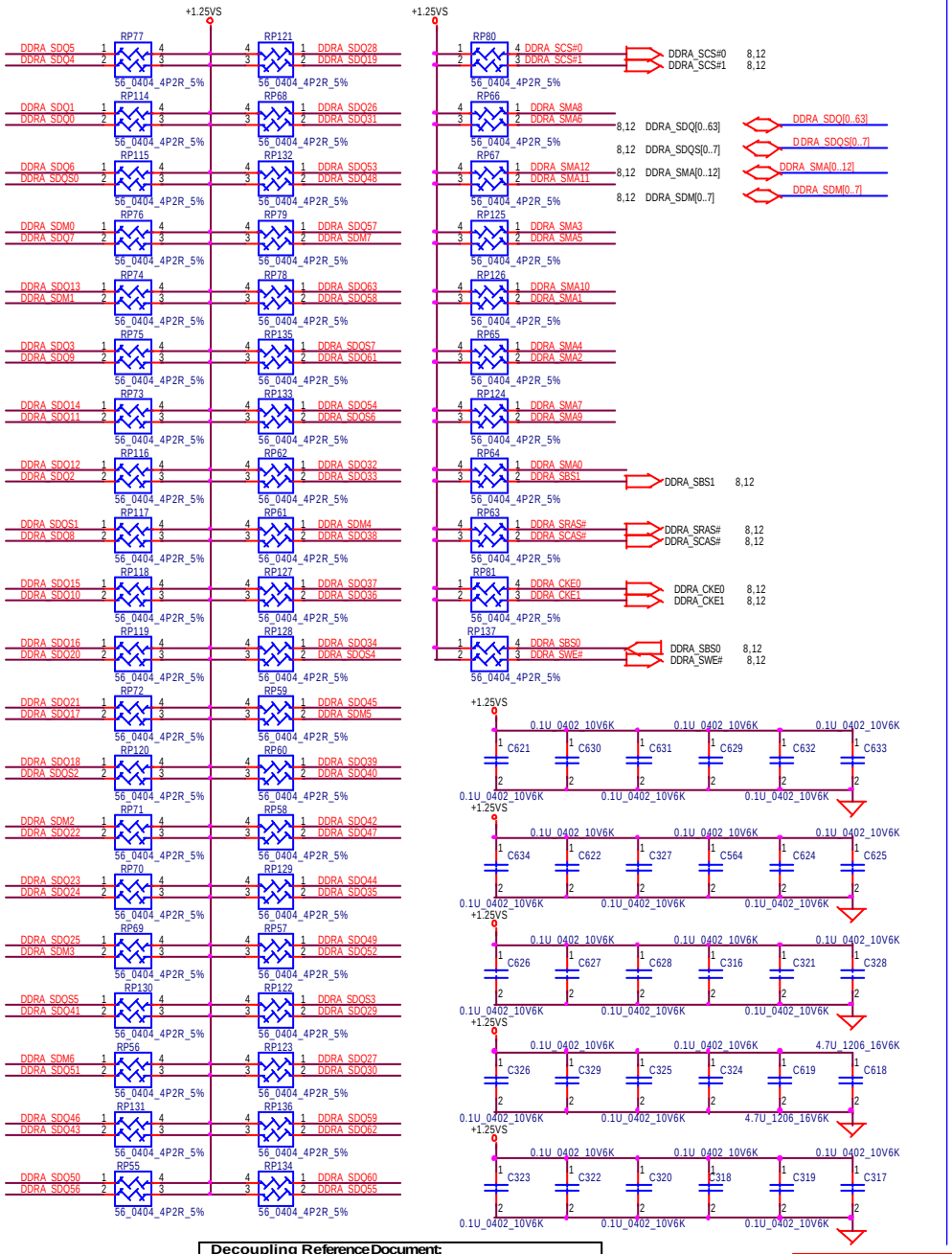
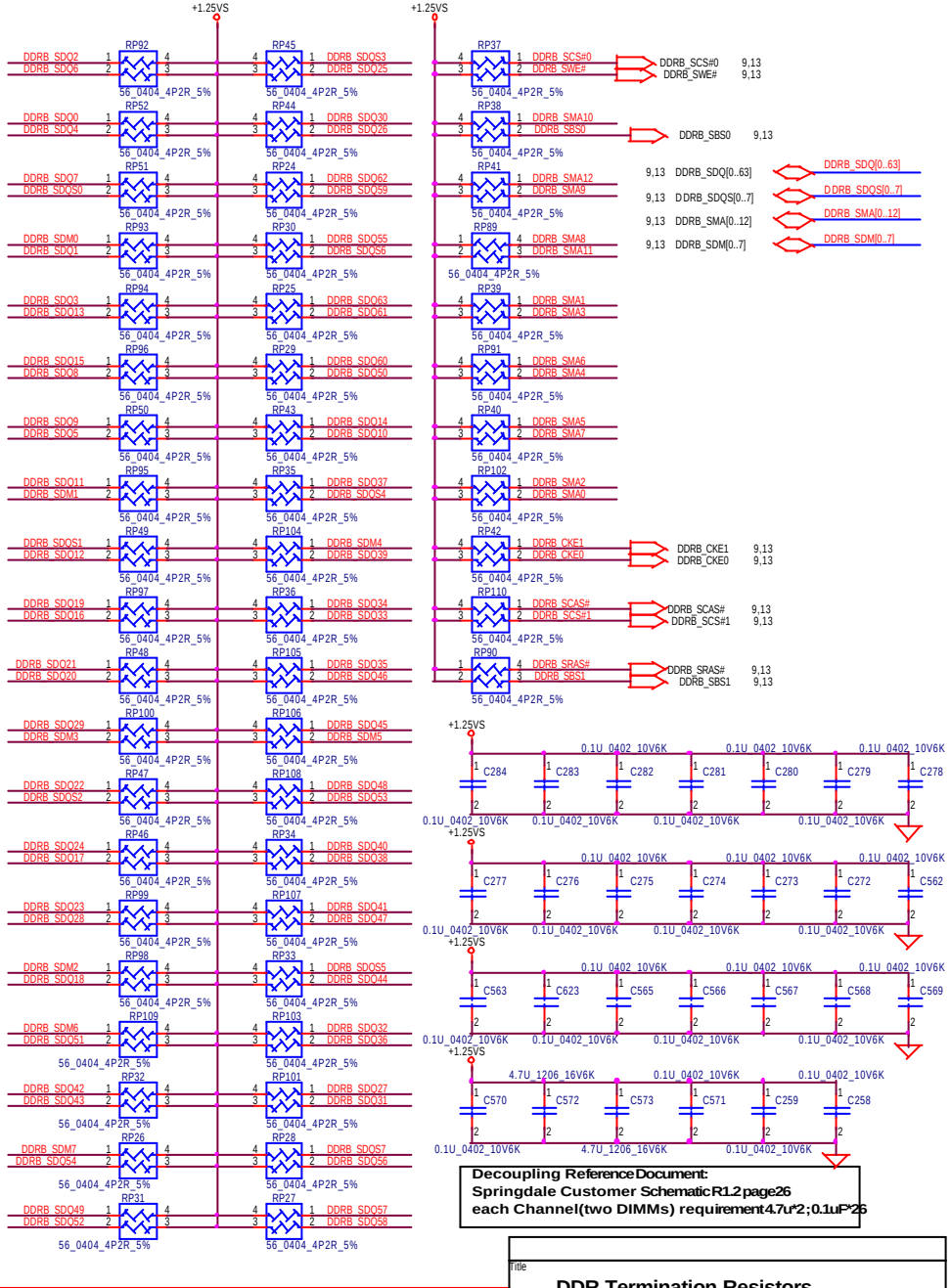
Channel A(DIMM0) Termination resistors & Decoupling caps



Decoupling Reference Document:
Springdale Customer Schematic R1.2 page22
each Channel(two DIMMs) requirement 4.7u*2;0.1uF*28

Channel B(DIMM1) Termination resistors & Decoupling caps



Decoupling Reference Document:
Springdale Customer Schematic R1.2 page26
each Channel(two DIMMs) requirement 4.7u*2;0.1uF*26

Title	DDR Termination Resistors		
Size: B	Document Number: LA-1841		Rev: 0.1
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SEL0	SEL1	CPU	3V66[0..3]	REF0	REF1 SRC	USB/Dot	
0	0	100	66	14.3	14.3	100/200	48
0	MID	REF	REF	REF	REF	REF	REF
0	1	200	66	14.3	14.3	100/200	48
1	0	133	66	14.3	14.3	100/200	48
1	1	166	66	14.3	14.3	100/200	48
1	MID	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z

Place near each pin
W>40 mil

Trace wide=40 mils

Place crystal within
500 mils of CK409

Place near CK409

CK409

Check SPEC (250mA,300 ohm)

ICS952623BG_TSSOP56

Compal Electronics, Inc.

Title: Clock Generator

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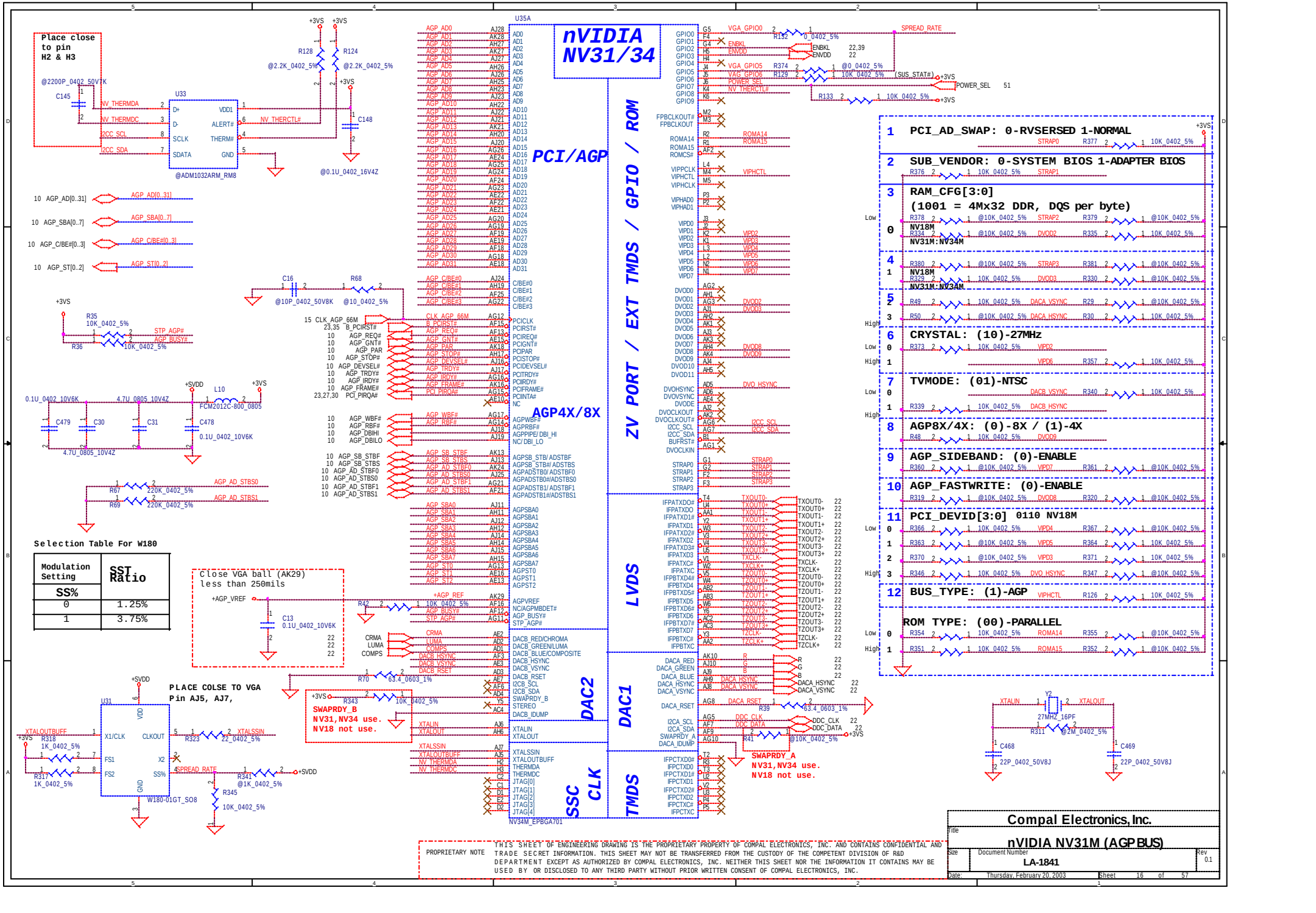
nVIDIA NV31/34
U35A
PCI/AGP
AGP4X/8X
ZV PORT / EXT TMDS / GPIO / ROM
LVDS
DAC2
DAC1
TMDS
SSC CLK
NV34M_EPBGA701
Place close to pin H2 & H3
@2200P_0402_50V7K
C145
U33
@ADM1032ARM_RM8
R128
R124
@2.2K_0402_5%
C148
@0.1U_0402_16V4Z
NV_THERMDA
NV_THERMDC
NV_THERCTL#
2CC_SCL
2CC_SDA
10 AGP_AD[0..31]
10 AGP_SBA[0..7]
10 AGP_C/BE#[0..3]
10 AGP_ST[0..2]
R35
10K_0402_5%
R36
STP_AGP#
AGP_BUSY#
C16
@10P_0402_50V8K
R68
@10_0402_5%
15 CLK_AGP_66M
23,35 B_PCIRST#
10 AGP_REQ#
10 AGP_GNT#
10 AGP_PAR
10 AGP_STOP#
10 AGP_DEVSEL#
10 AGP_TRDY#
10 AGP_IRDY#
10 AGP_FRAME#
23,27,30 PCI_PIRQA#
10 AGP_WBF#
10 AGP_RBF#
10 AGP_DBIHI
10 AGP_DBILO
10 AGP_SB_STBF
10 AGP_SB_STBS
10 AGP_AD_STBF0
10 AGP_AD_STBS0
10 AGP_AD_STBF1
10 AGP_AD_STBS1
+SVDD
+3VS
L10
FCM2012C-800_0805
0.1U_0402_10V6K
4.7U_0805_10V4Z
C479
C30
C31
C478
R67
R69
220K_0402_5%
AGP_AD_STBS0
AGP_AD_STBS1
Selection Table For W180
Modulation Setting
SST Ratio
SS%
0
1.25%
1
3.75%
Close VGA ball (AK29) less than 250mils
+AGP_VREF
C13
0.1U_0402_10V6K
R42
10K_0402_5%
+AGP_REF
AGPVREF
NC/AGPMBDET#
AGP_BUSY#
STP_AGP#
CRMA
LUMA
COMPS
DACB_HSYNC
DACB_VSYNC
DACB_RSET
R70
63.4_0603_1%
PLACE COLSE TO VGA
Pin AJ5, AJ7,
U31
W180-01GT_SO8
XTALOUTBUFF
R318
1K_0402_5%
R317
1K_0402_5%
R323
22_0402_5%
R345
10K_0402_5%
R341
@1K_0402_5%
SPREAD_RATE
R343
SWAPRDY_B
NV31,NV34 use.
NV18 not use.
DACB_RED/CHROMA
DACB_GREEN/LUMA
DACB_BLUE/COMPOSITE
I2CB_SCL
I2CB_SDA
SWAPRDY_B
STEREO
DACB_IDUMP
XTALIN
XTALOUT
XTALSSIN
XTALOUTBUFF
THERMDA
THERMDC
JTAG[0]
JTAG[1]
JTAG[2]
JTAG[3]
JTAG[4]
VGA_GPIO0
R132
0_0402_5%
ENBKL
ENVDD
22,39
VGA_GPIO5
R374
@0_0402_5%
R129
10K_0402_5%
(SUS_STAT#)
POWER_SEL
51
R133
SPREAD_RATE
FPBCLKOUT#
FPBCLKOUT
ROMA14
ROMA15
ROMCS#
VIPPCLK
VIPHCTL
VIPHCLK
VIPHAD0
VIPHAD1
VIPD0
VIPD1
VIPD2
VIPD3
VIPD4
VIPD5
VIPD6
VIPD7
DVOD0
DVOD1
DVOD2
DVOD3
DVOD4
DVOD5
DVOD6
DVOD7
DVOD8
DVOD9
DVOD10
DVOD11
DVOHSYNC
DVOVSYNC
DVODE
DVOCLKOUT
DVOCLKOUT#
I2CC_SCL
I2CC_SDA
BUFRST#
DVOCLKIN
STRAP0
STRAP1
STRAP2
STRAP3
IFPATXD0#
IFPATXD0
IFPATXD1#
IFPATXD1
IFPATXD2#
IFPATXD2
IFPATXD3#
IFPATXD3
IFPATXC#
IFPATXC
IFPBTXD4#
IFPBTXD4
IFPBTXD5#
IFPBTXD5
IFPBTXD6#
IFPBTXD6
IFPBTXD7#
IFPBTXD7
IFPBTXC#
IFPBTXC
TXOUT0-
TXOUT0+
TXOUT1-
TXOUT1+
TXOUT2-
TXOUT2+
TXOUT3-
TXOUT3+
TXCLK-
TXCLK+
TZOUT0-
TZOUT0+
TZOUT1-
TZOUT1+
TZOUT2-
TZOUT2+
TZOUT3-
TZOUT3+
TZCLK-
TZCLK+
DACA_RED
DACA_GREEN
DACA_BLUE
DACA_HSYNC
DACA_VSYNC
DACA_RSET
I2CA_SCL
I2CA_SDA
SWAPRDY_A
DACA_IDUMP
DDC_CLK
DDC_DATA
R39
R41
@10K_0402_5%
SWAPRDY_A
NV31,NV34 use.
NV18 not use.
IFPCTXD0#
IFPCTXD0
IFPCTXD1#
IFPCTXD1
IFPCTXD2#
IFPCTXD2
IFPCTXC#
IFPCTXC
Y2
XTALIN
XTALOUT
27MHZ_16PF
R311
@2M_0402_5%
C468
22P_0402_50V8J
C469
22P_0402_50V8J
1 PCI_AD_SWAP: 0-RVSERSED 1-NORMAL
STRAP0 R377 10K_0402_5%
2 SUB_VENDOR: 0-SYSTEM BIOS 1-ADAPTER BIOS
R376 10K_0402_5% STRAP1
3 RAM_CFG[3:0]
(1001 = 4Mx32 DDR, DQS per byte)
Low 0 NV18M
High 1 NV31M:NV34M
R378 @10K_0402_5% STRAP2
R379 @10K_0402_5%
R334 @10K_0402_5% DVOD2
R335 10K_0402_5%
R380 @10K_0402_5% STRAP3
R381 @10K_0402_5%
R329 10K_0402_5% DVOD3
R330 10K_0402_5%
4 2 1
5 2 3
R49 10K_0402_5% DACA_VSYNC
R29 @10K_0402_5%
R50 @10K_0402_5% DACA_HSYNC
R30 @10K_0402_5%
6 CRYSTAL: (10)-27MHz
Low 0
High 1
R373 10K_0402_5% VIPD2
VIPD6 R357 10K_0402_5%
7 TVMODE: (01)-NTSC
Low 0 DACB_VSYNC R340 10K_0402_5%
High 1 R339 10K_0402_5% DACB_HSYNC
8 AGP8X/4X: (0)-8X / (1)-4X
R48 10K_0402_5% DVOD9
9 AGP_SIDEBAND: (0)-ENABLE
R360 @10K_0402_5% VIPD7 R361 @10K_0402_5%
10 AGP_FASTWRITE: (0)-ENABLE
R319 @10K_0402_5% DVOD8 R320 @10K_0402_5%
11 PCI_DEVID[3:0] 0110 NV18M
Low 0 R366 10K_0402_5% VIPD4 R367 @10K_0402_5%
1 R363 @10K_0402_5% VIPD5 R364 10K_0402_5%
2 R370 @10K_0402_5% VIPD3 R371 10K_0402_5%
High 3 R346 10K_0402_5% DVO_HSYNC R347 @10K_0402_5%
12 BUS_TYPE: (1)-AGP VIPHCTL R126 10K_0402_5%
ROM TYPE: (00)-PARALLEL
Low 0 R354 10K_0402_5% ROMA14 R355 @10K_0402_5%
High 1 R351 10K_0402_5% ROMA15 R352 @10K_0402_5%
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Compal Electronics, Inc.
Title
nVIDIA NV31M (AGP BUS)
Size
Document Number
LA-1841
Rev
0.1
Date: Thursday, February 20, 2003
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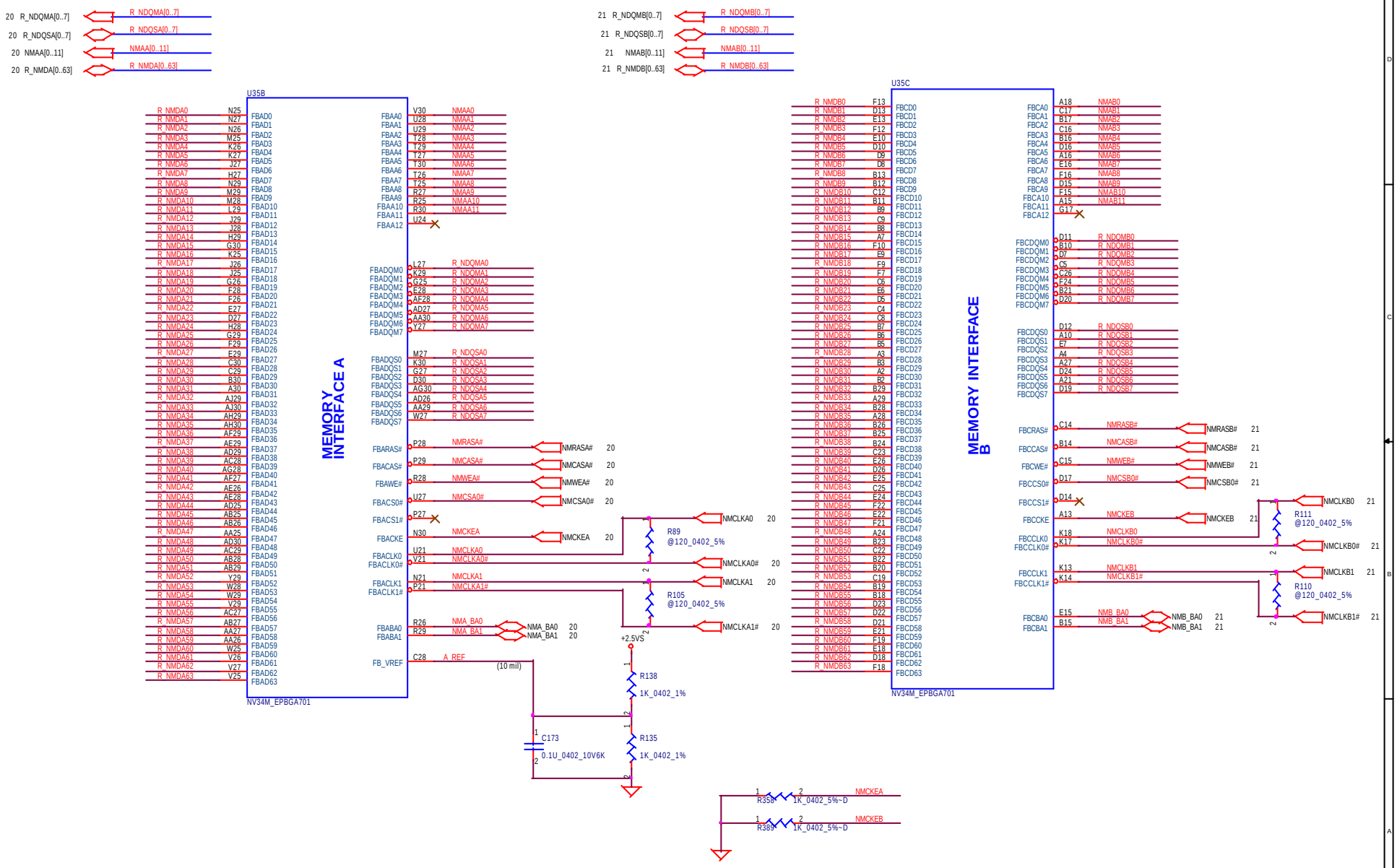
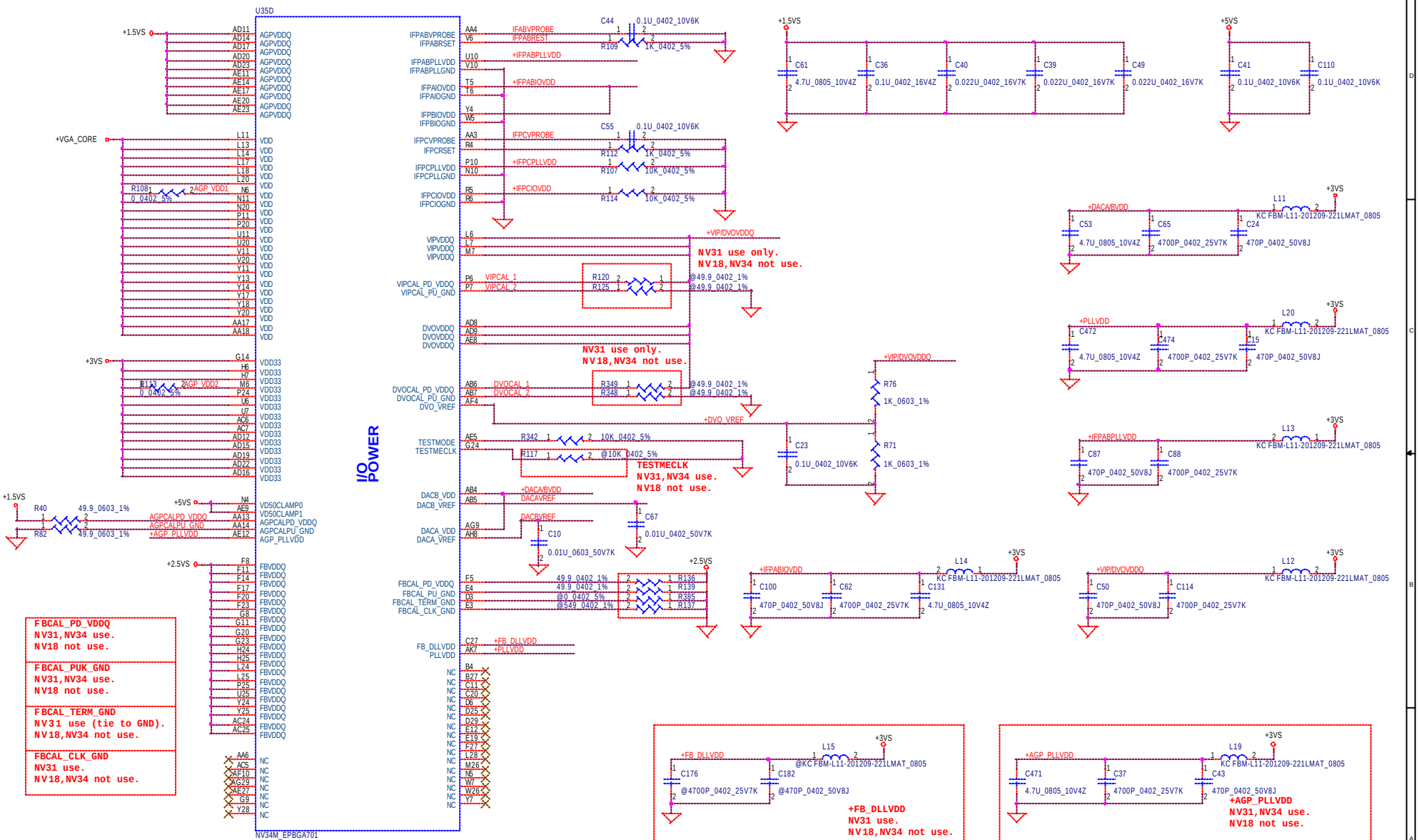


Compal Electronics, Inc.			
Title: nVIDIA NV31M (DDR)			
Size	Document Number: LA-1841		Rev: 0.1
Date: Thursday, February 20, 2003		Sheet 17 of 57	



Compal Electronics, Inc.

Title: nVIDIA NV31M POWER

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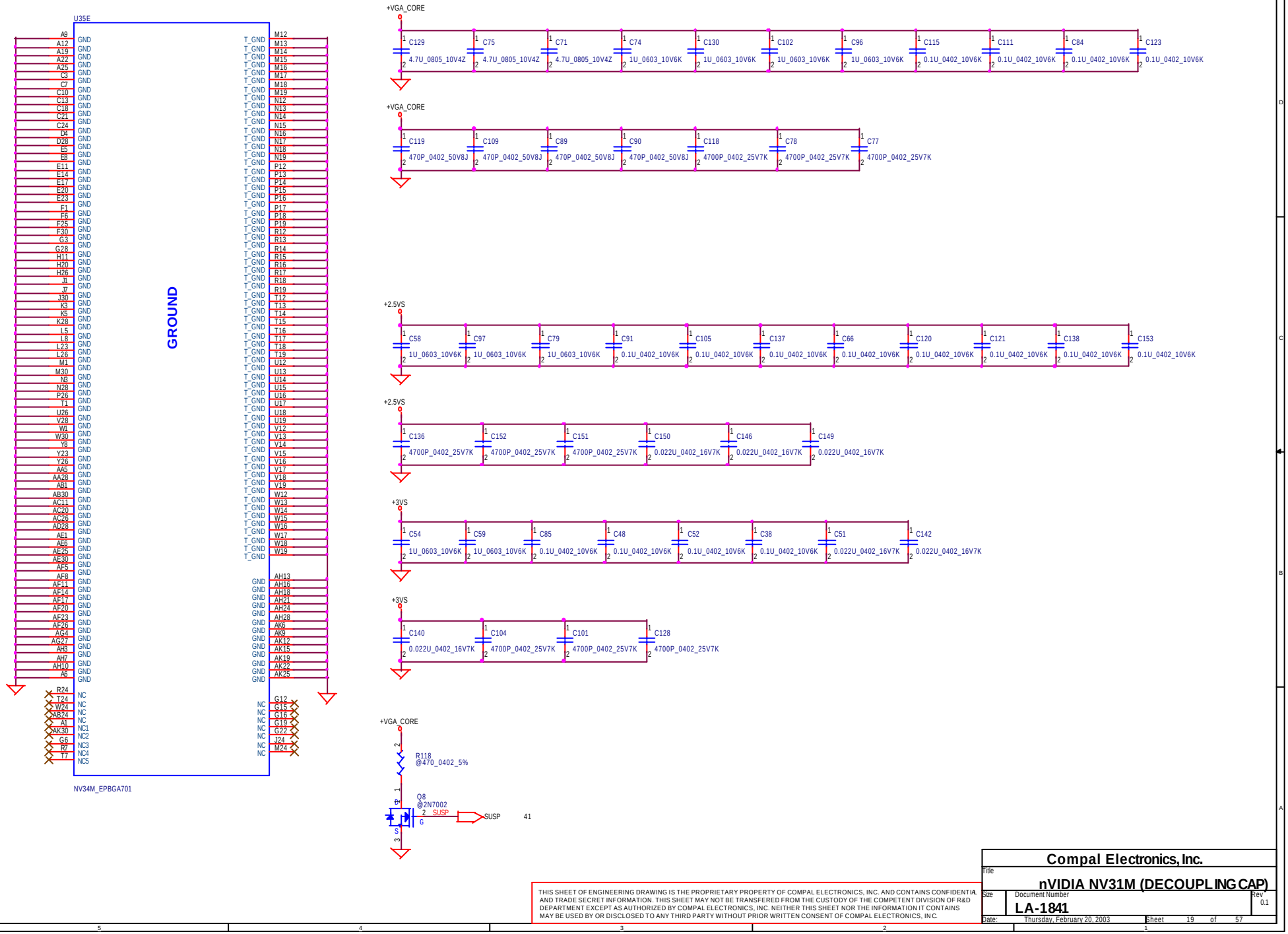

Compal Electronics, Inc.

Title: nVIDIA NV31M (DECOUPLING CAP)

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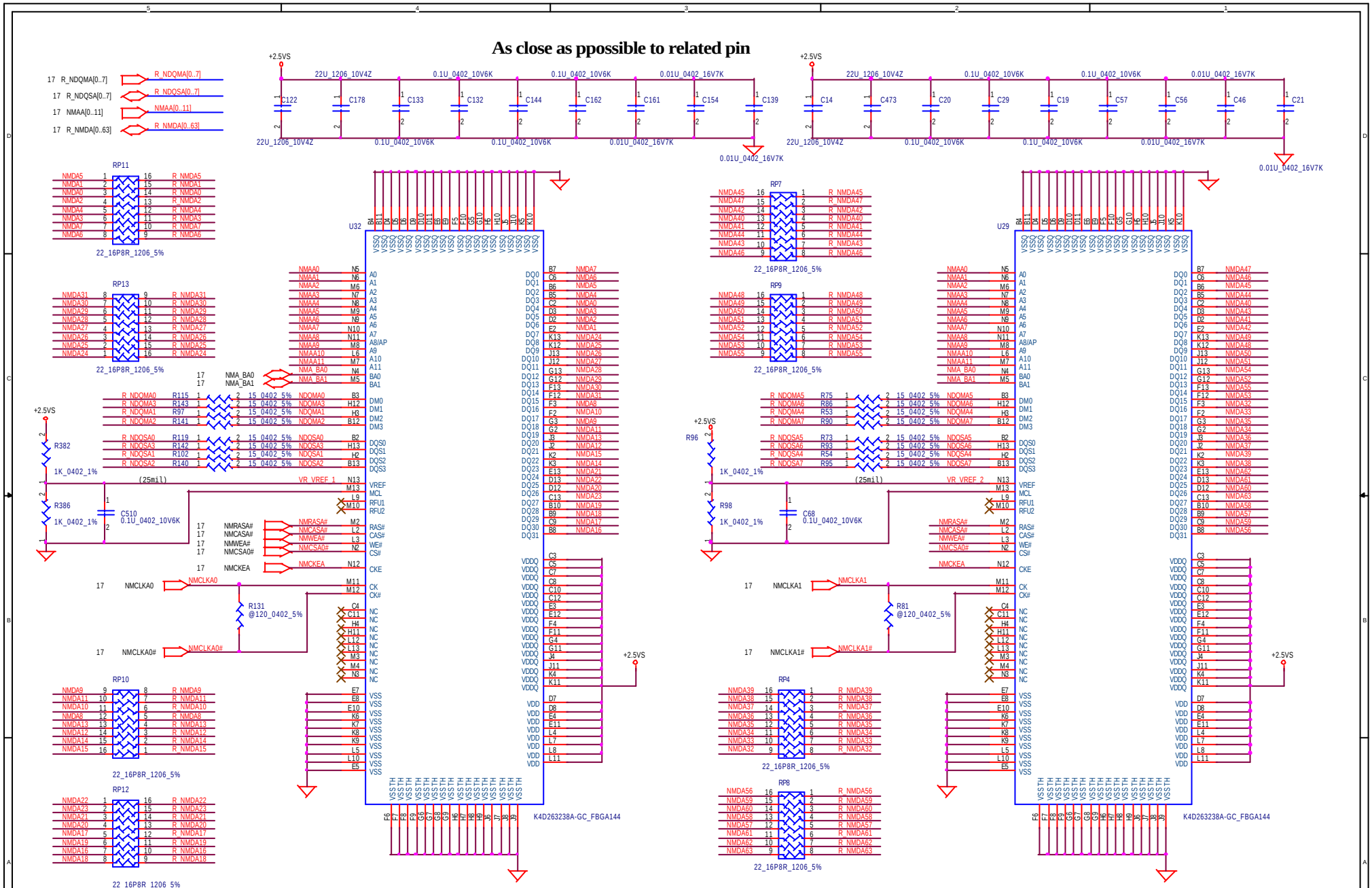
Date: Thursday, February 20, 2003 | Sheet 19 of 57


As close as ppossible to related pin
17 R_NDQMA[0..7]
17 R_NDQSA[0..7]
17 NMAA[0..11]
17 R_NMDA[0..63]
R_NDQMA[0..7]
R_NDQSA[0..7]
NMAA[0..11]
R_NMDA[0..63]
+2.5VS
22U_1206_10V4Z
0.1U_0402_10V6K
0.01U_0402_16V7K
C122
C178
C133
C132
C144
C162
C161
C154
C139
C14
C473
C20
C29
C19
C57
C56
C46
C21
RP11
RP13
RP10
RP12
RP7
RP9
RP4
RP8
22_16P8R_1206_5%
U32
U29
K4D263238A-GC_FBGA144
R382
R386
R96
R98
1K_0402_1%
C510
C68
0.1U_0402_10V6K
(25mil)
VR_VREF_1
VR_VREF_2
R131
R81
@120_0402_5%
NMCLKA0
NMCLKA0#
NMCLKA1
NMCLKA1#
NMA_BA0
NMA_BA1
R_NDQMA0
R_NDQMA3
R_NDQMA1
R_NDQMA2
R_NDQSA0
R_NDQSA3
R_NDQSA1
R_NDQSA2
R_NDQMA5
R_NDQMA6
R_NDQMA4
R_NDQMA7
R_NDQSA5
R_NDQSA6
R_NDQSA4
R_NDQSA7
NMRASA#
NMCASA#
NMWEA#
NMCSA0#
NMCKEA
Compal Electronics, Inc.
VGA DDR FOR CHANNEL A
LA-1841
Thursday, February 20, 2003
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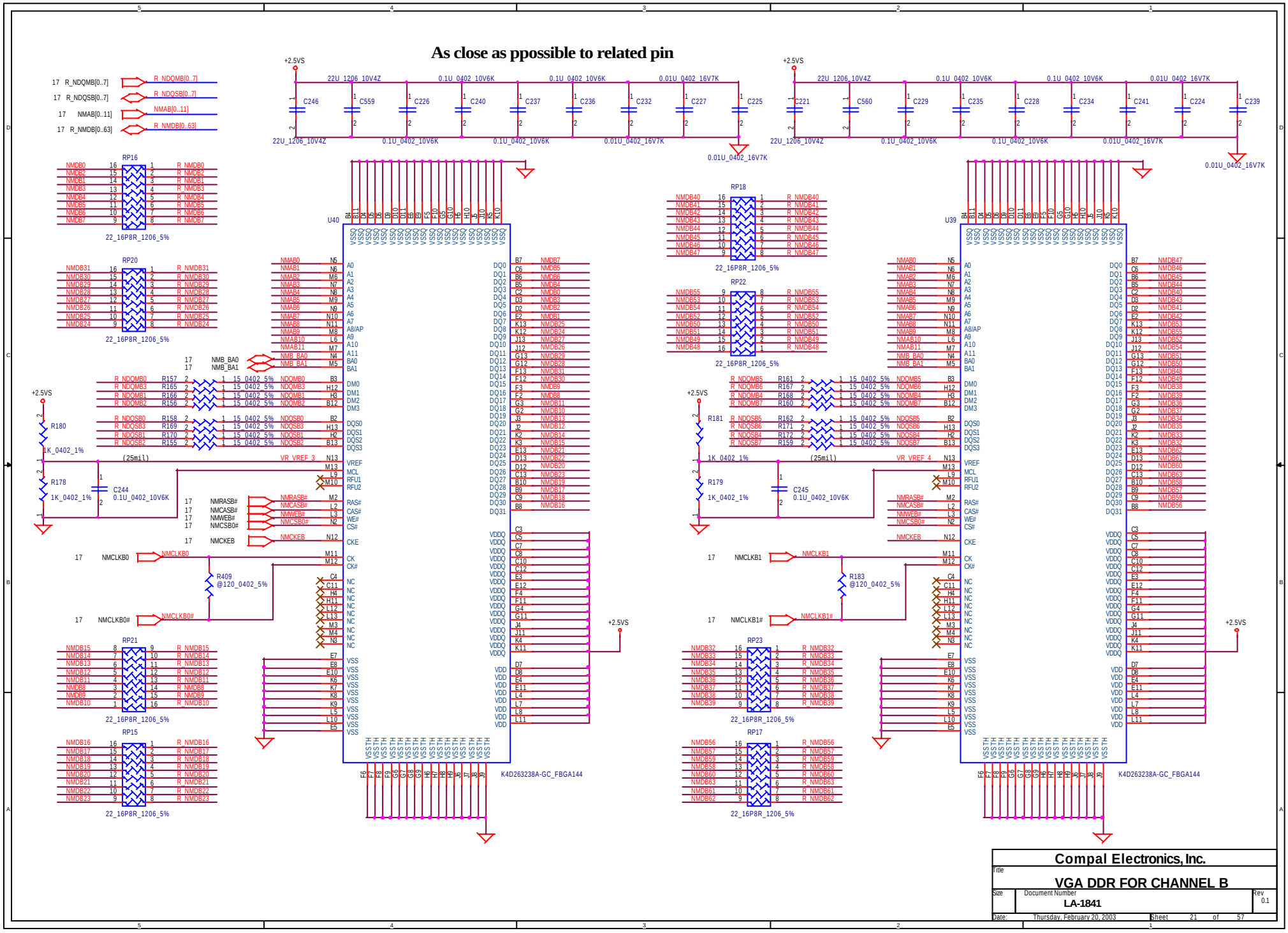
As close as ppossible to related pin
17 R_NDQMB[0..7]
17 R_NDQSB[0..7]
17 NMAB[0..11]
17 R_NMDB[0..63]
R_NDQMB[0..7]
R_NDQSB[0..7]
NMAB[0..11]
R_NMDB[0..63]
+2.5VS
22U_1206_10V4Z
0.1U_0402_10V6K
0.01U_0402_16V7K
C246
C559
C226
C240
C237
C236
C232
C227
C225
C221
C560
C229
C235
C228
C234
C241
C224
C239
RP16
RP18
RP20
RP22
RP21
RP23
RP15
RP17
22_16P8R_1206_5%
U40
U39
K4D263238A-GC_FBGA144
R180
R178
R181
R179
1K_0402_1%
C244
C245
0.1U_0402_10V6K
(25mil)
VR_REF_3
VR_REF_4
R409
R183
@120_0402_5%
NMCLKB0
NMCLKB0#
NMCLKB1
NMCLKB1#
NMB_BA0
NMB_BA1
NMRASB#
NMCASB#
NMWEB#
NMCSB0#
NMCKEB
R_NDQMB0
R_NDQMB3
R_NDQMB1
R_NDQMB2
R_NDQSB0
R_NDQSB3
R_NDQSB1
R_NDQSB2
R_NDQMB5
R_NDQMB6
R_NDQMB4
R_NDQMB7
R_NDQSB5
R_NDQSB6
R_NDQSB4
R_NDQSB7
15_0402_5%
Compal Electronics, Inc.
VGA DDR FOR CHANNEL B
LA-1841
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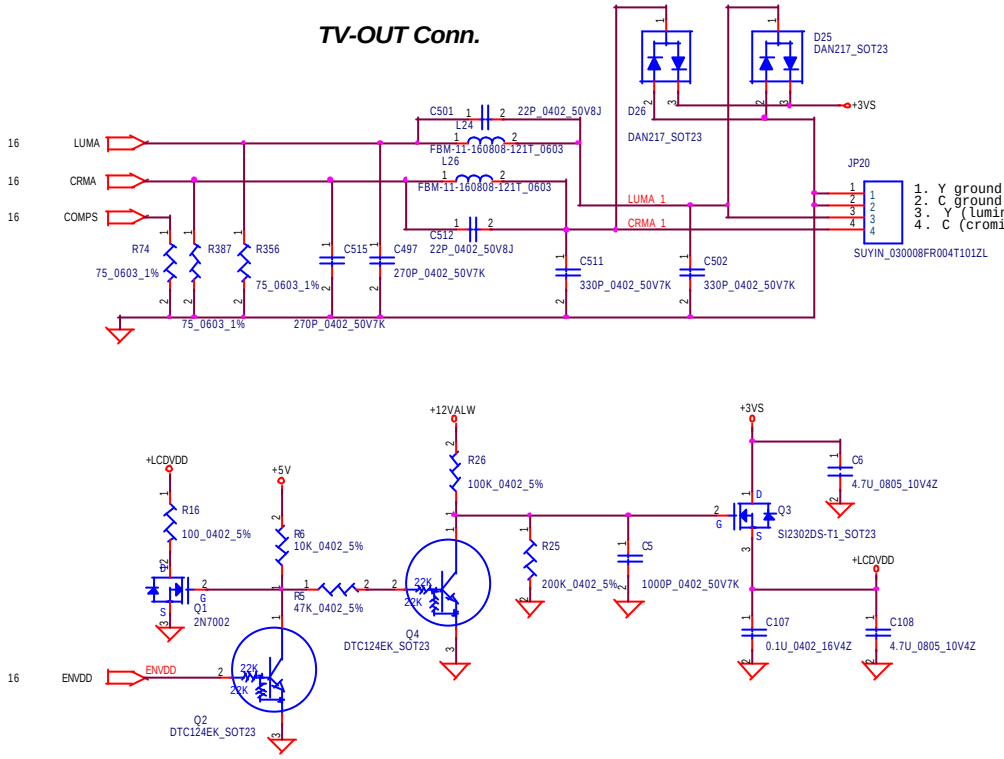
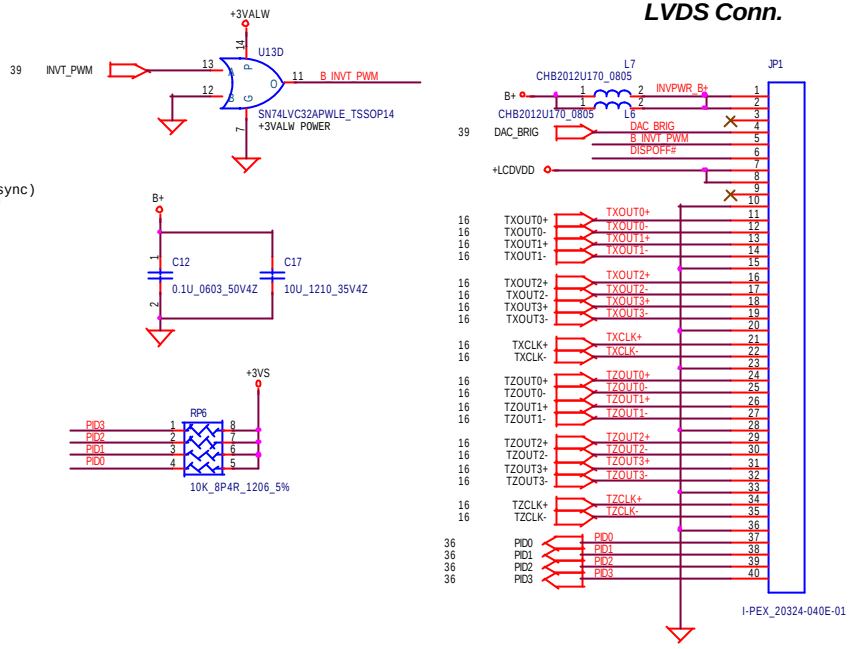
CRT, TV-OUT & LVDS CONNECTOR

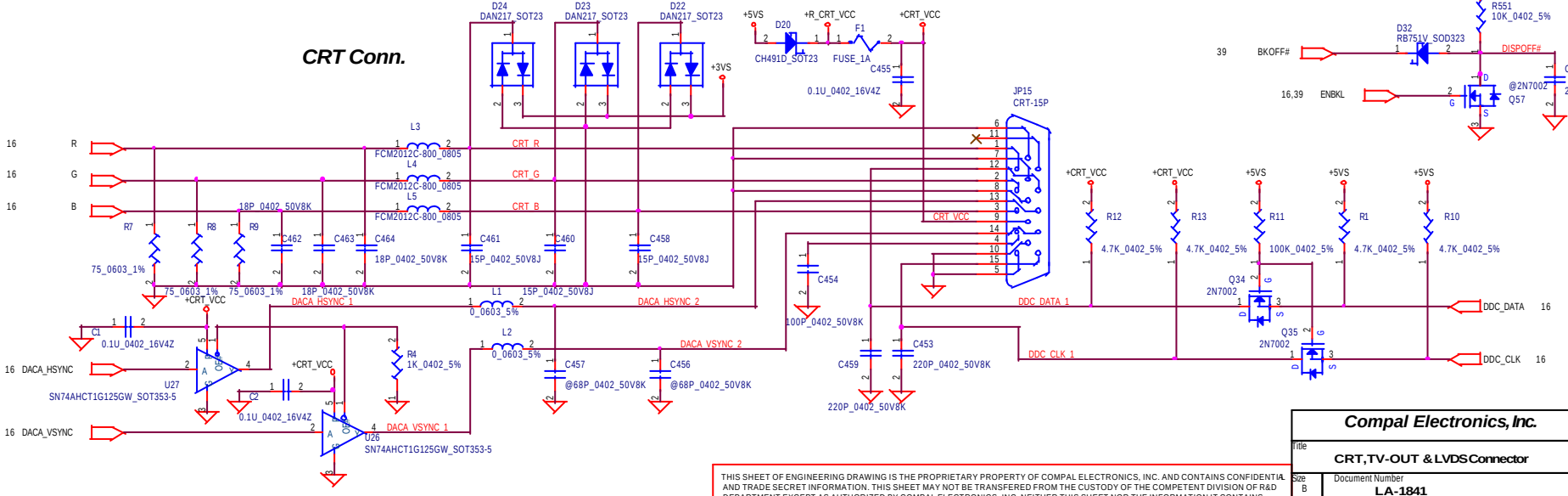
TV-OUT Conn.



LVDS Conn.



CRT Conn.



Compal Electronics, Inc.

Title: CRT,TV-OUT & LVDS Connector

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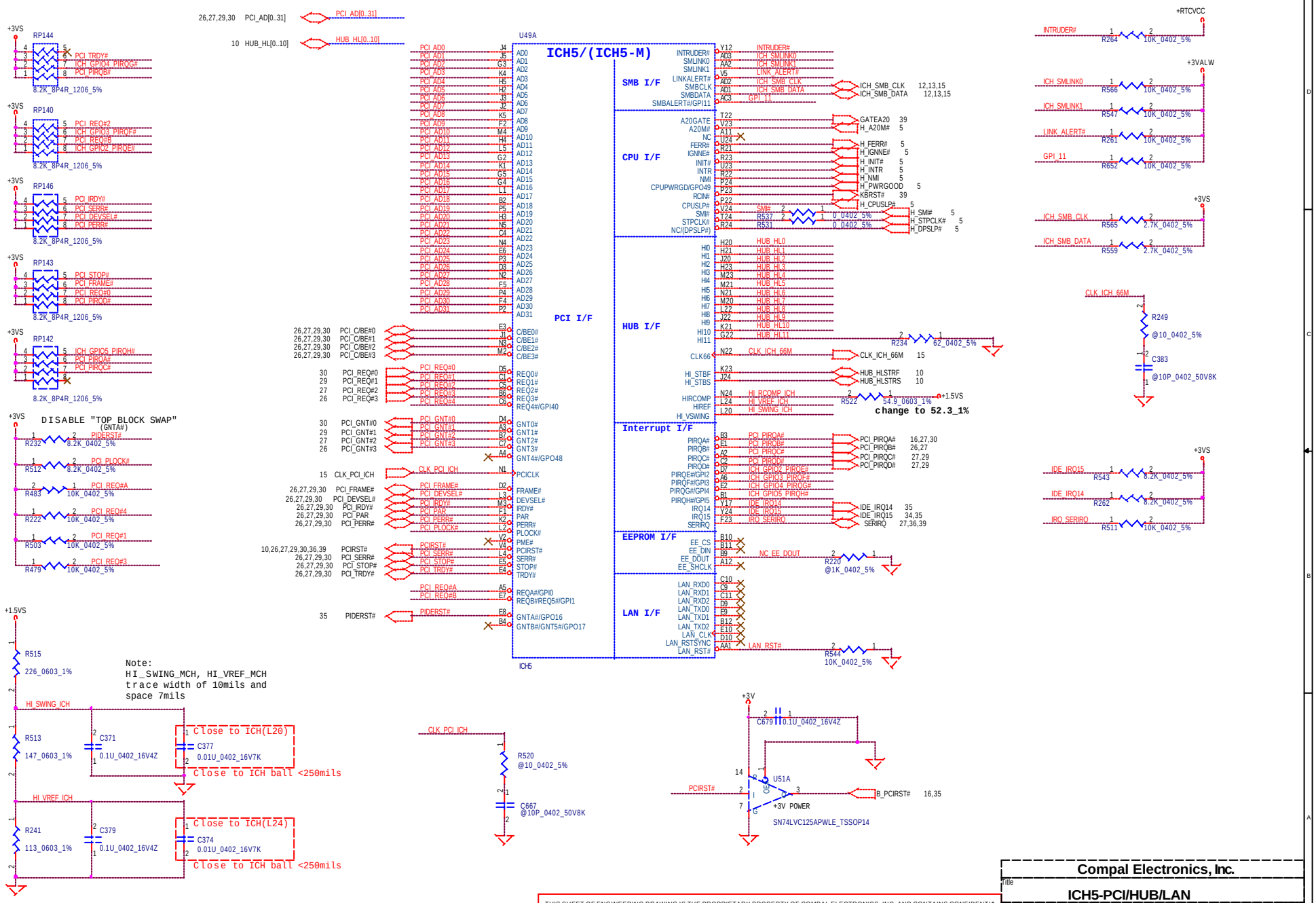
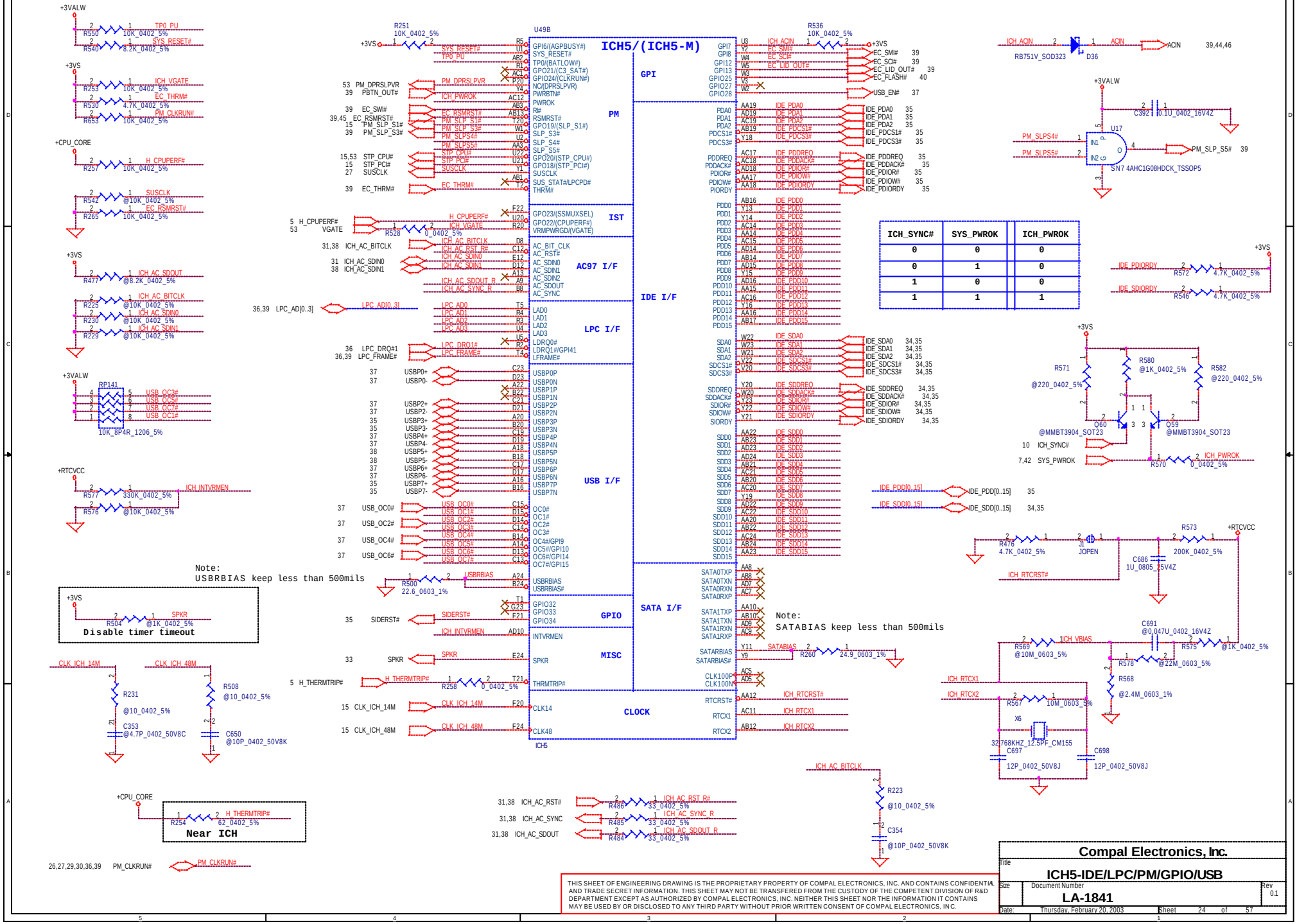
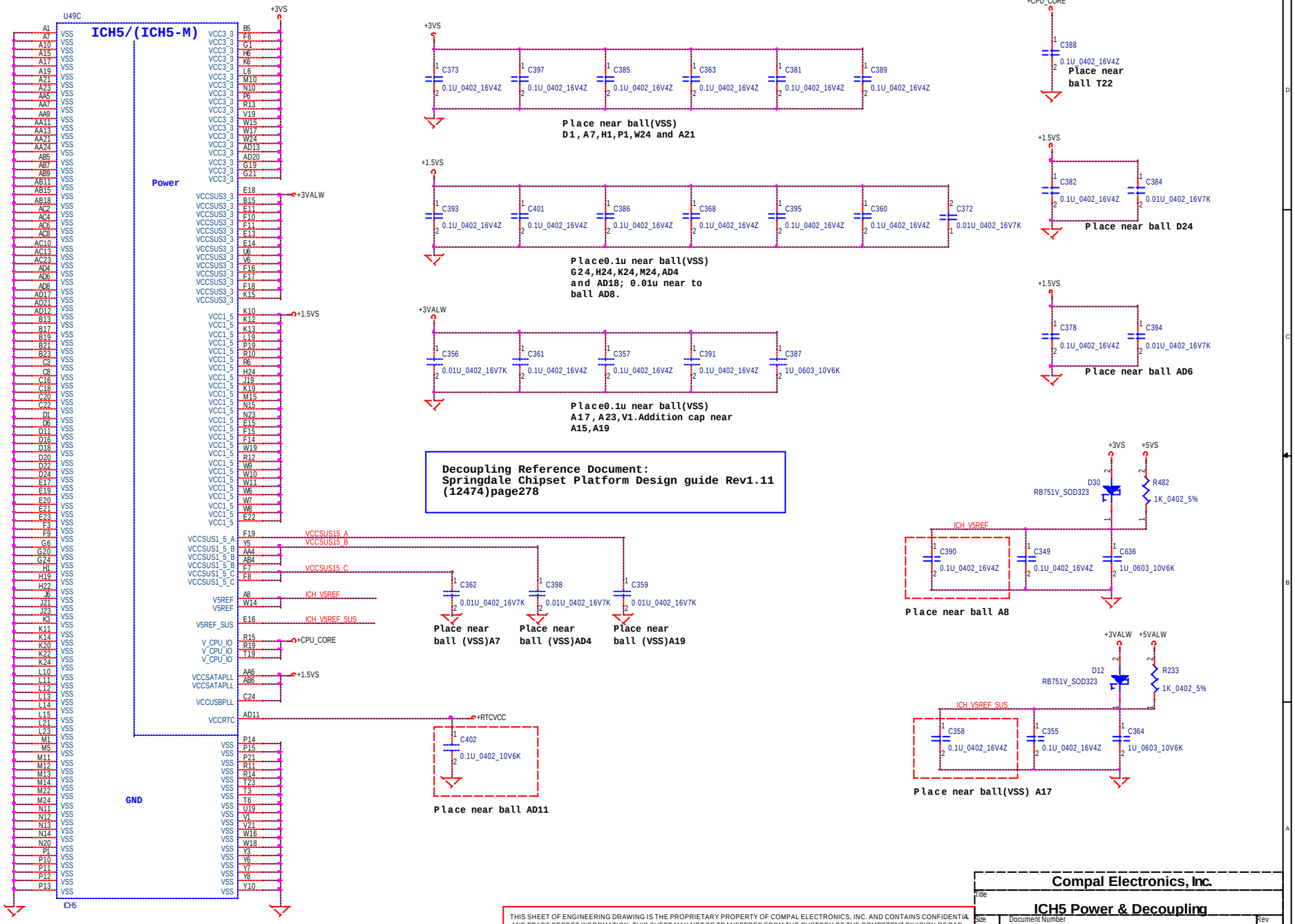




ICH_SYNC#	SYS_PWROK	ICH_PWROK
0	0	0
0	1	0
1	0	0
1	1	1



Compal Electronics, Inc.		
Title: ICH5 Power & Decoupling		
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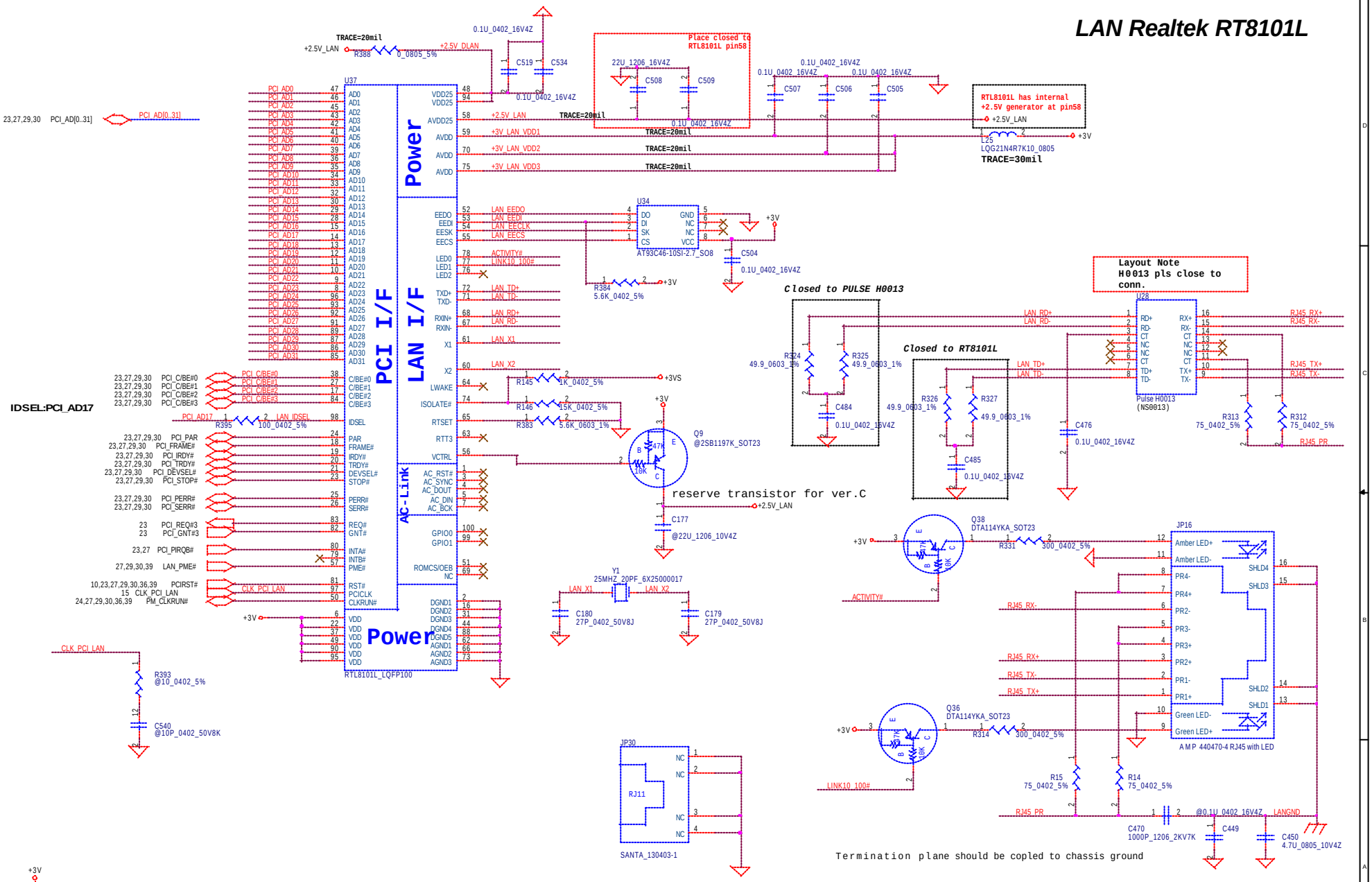
LAN Realtek RT8101L



Compal Electronics, Inc.

Title	LAN REALTEK RTL8101L	
Size	Document Number LA-1841	Rev 0.1
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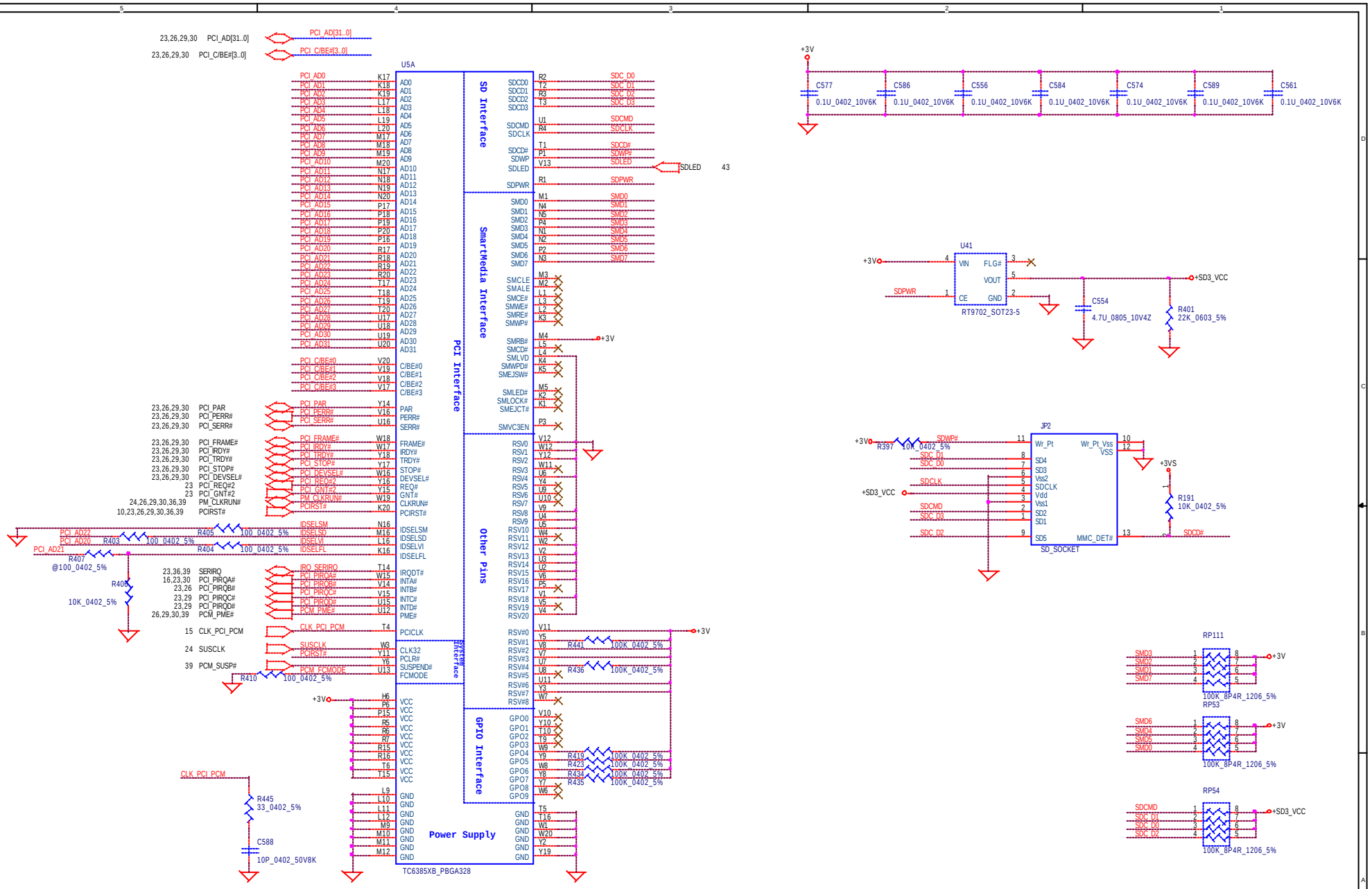

Compal Electronics, Inc.

Title: CARDBUS & SD CONN (1/2)

Size	Document Number	Rev
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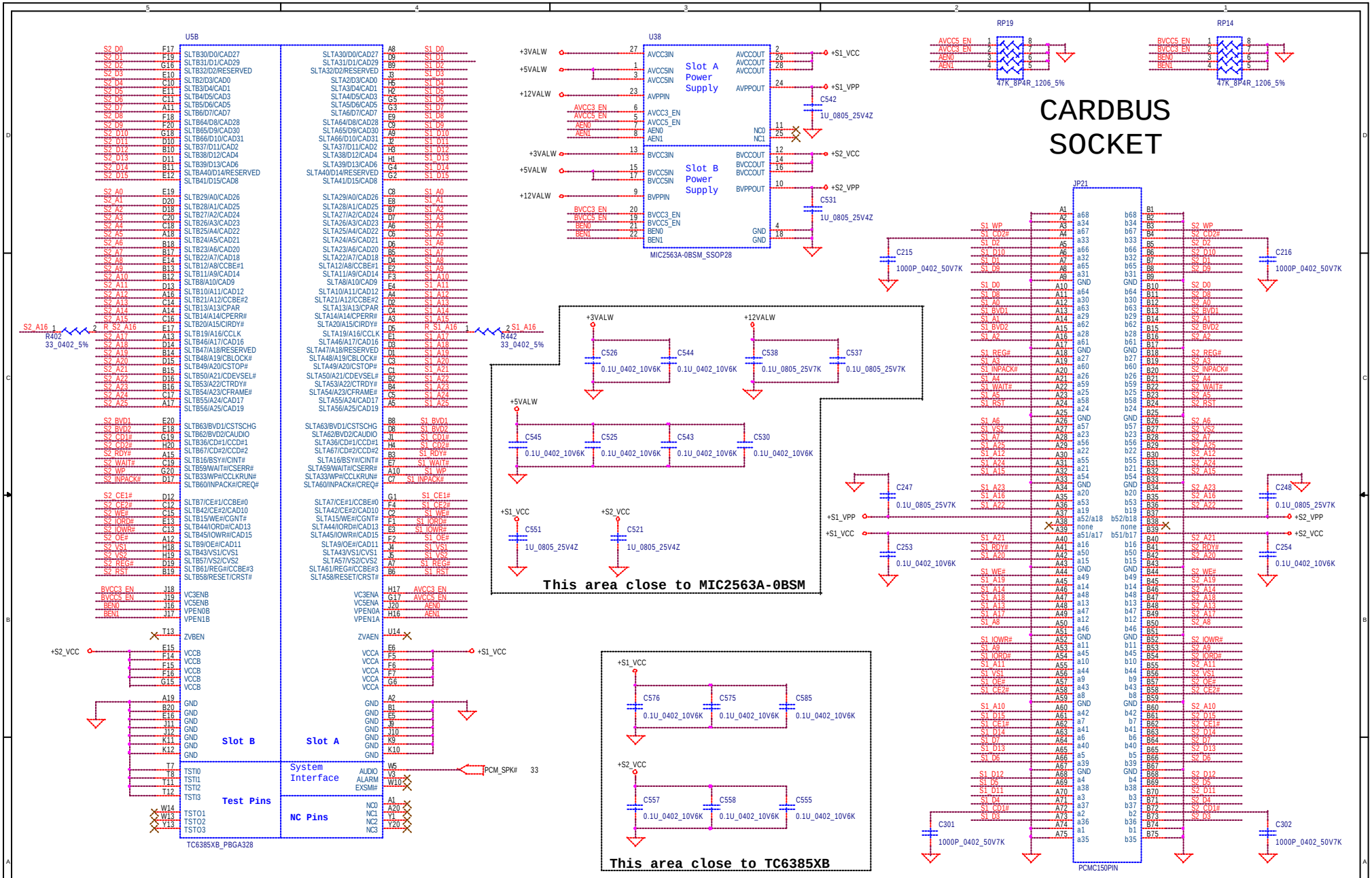

Compal Electronics, Inc.

Title	CARDBUS & PCMCIA (2/2)		
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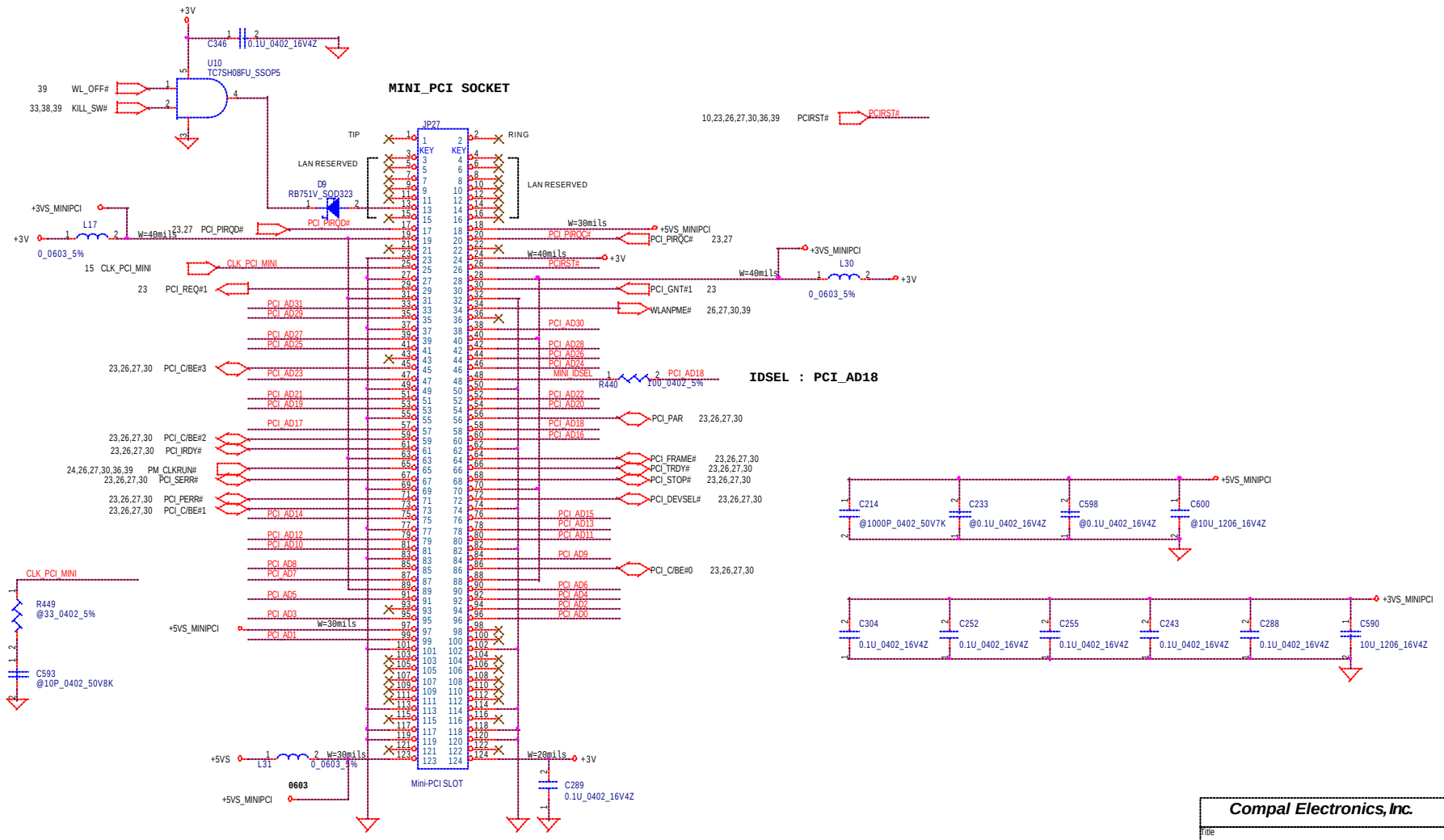

Compal Electronics, Inc.

Title: MINI_PCI

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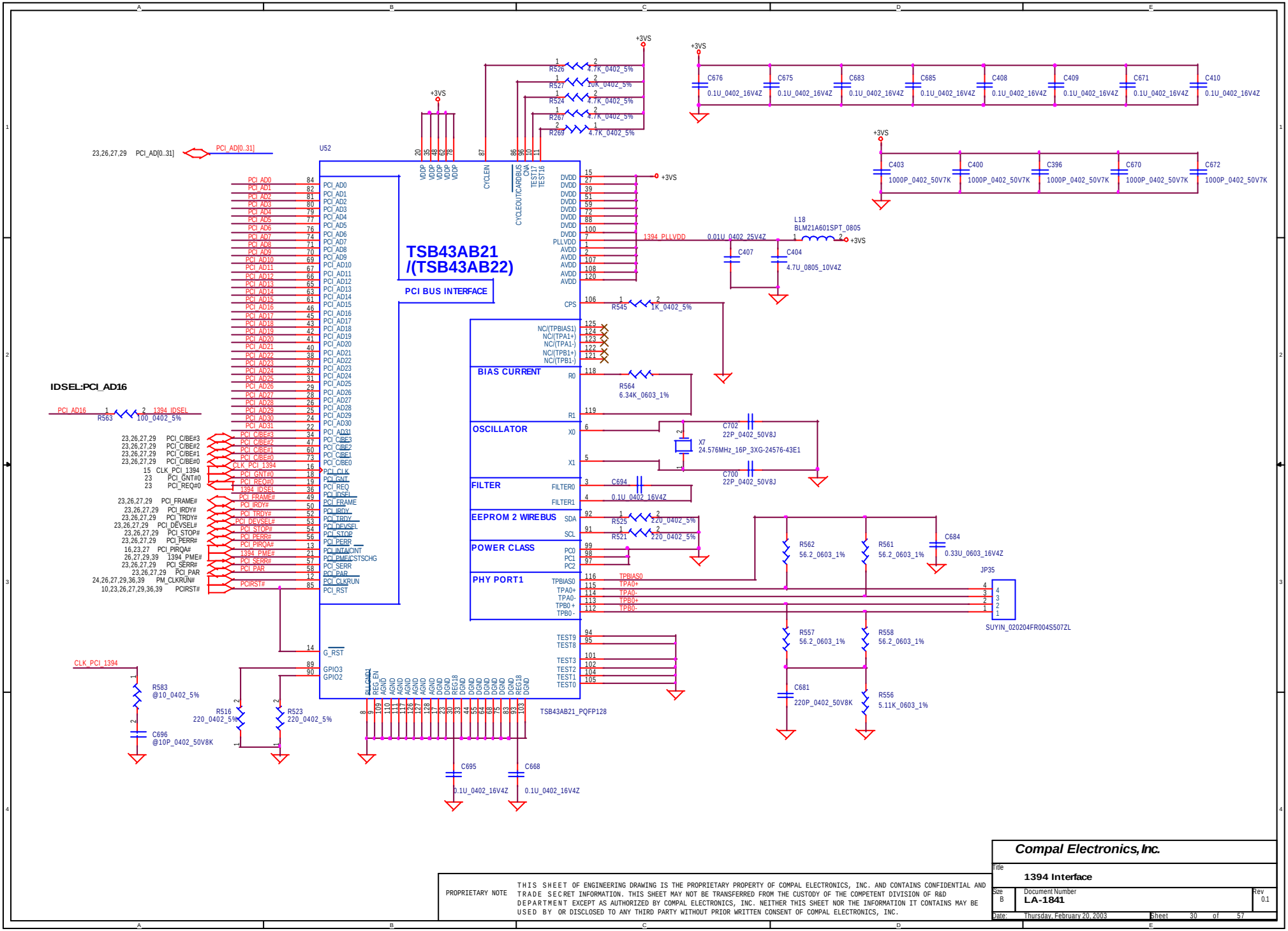
Date: Thursday, February 20, 2003 | Sheet 29 of 57


TSB43AB21
/(TSB43AB22)
PCI BUS INTERFACE
BIAS CURRENT
OSCILLATOR
FILTER
EEPROM 2 WIREBUS
POWER CLASS
PHY PORT1
IDSEL:PCI_AD16
U52
TSB43AB21_PQFP128
SUYIN_020204FR004S507ZL
Compal Electronics, Inc.
1394 Interface
LA-1841
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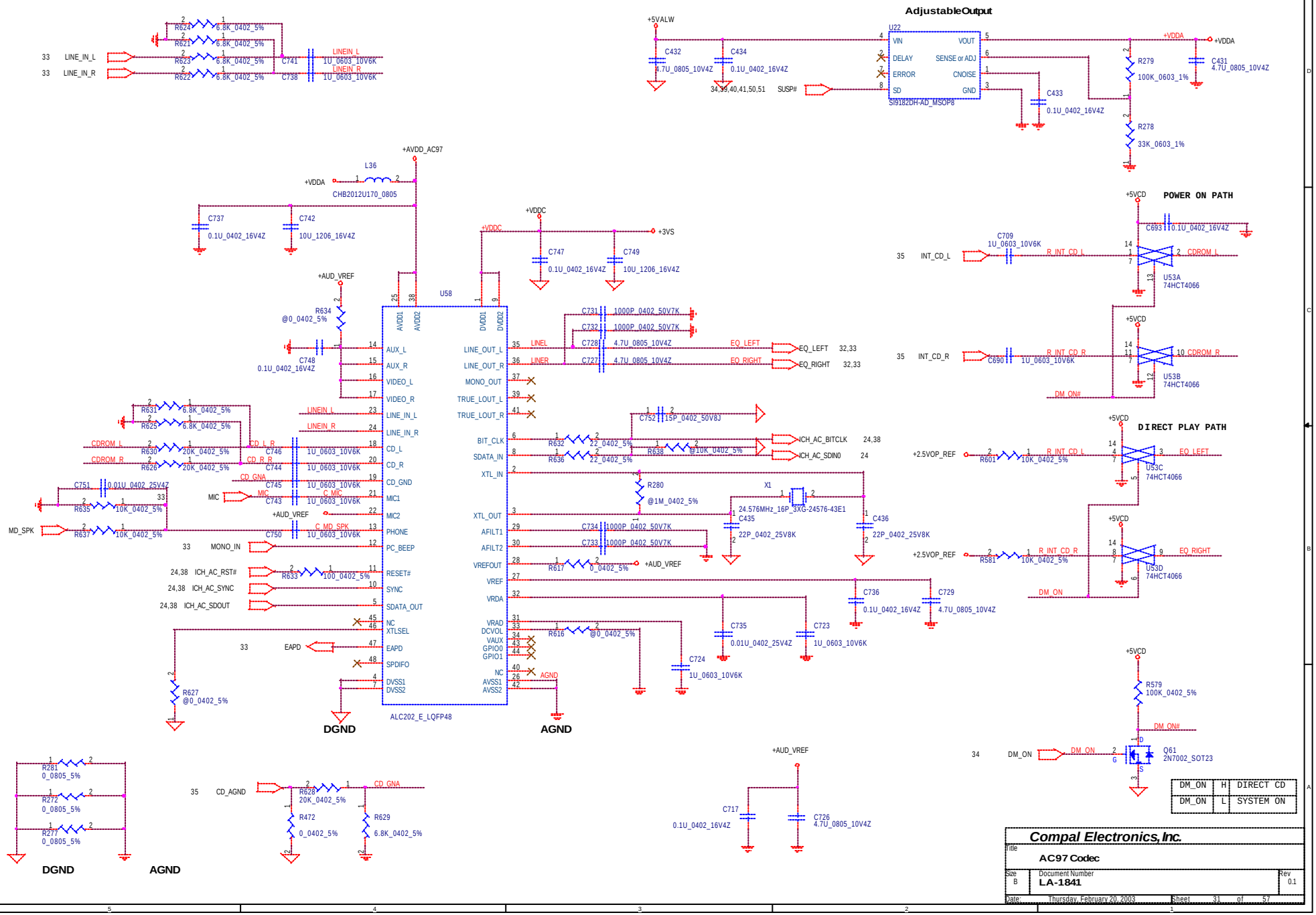
AC97 Codec



DM_ON	H	DIRECT CD
DM_ON	L	SYSTEM ON

Compal Electronics, Inc.

Title	AC97 Codec	
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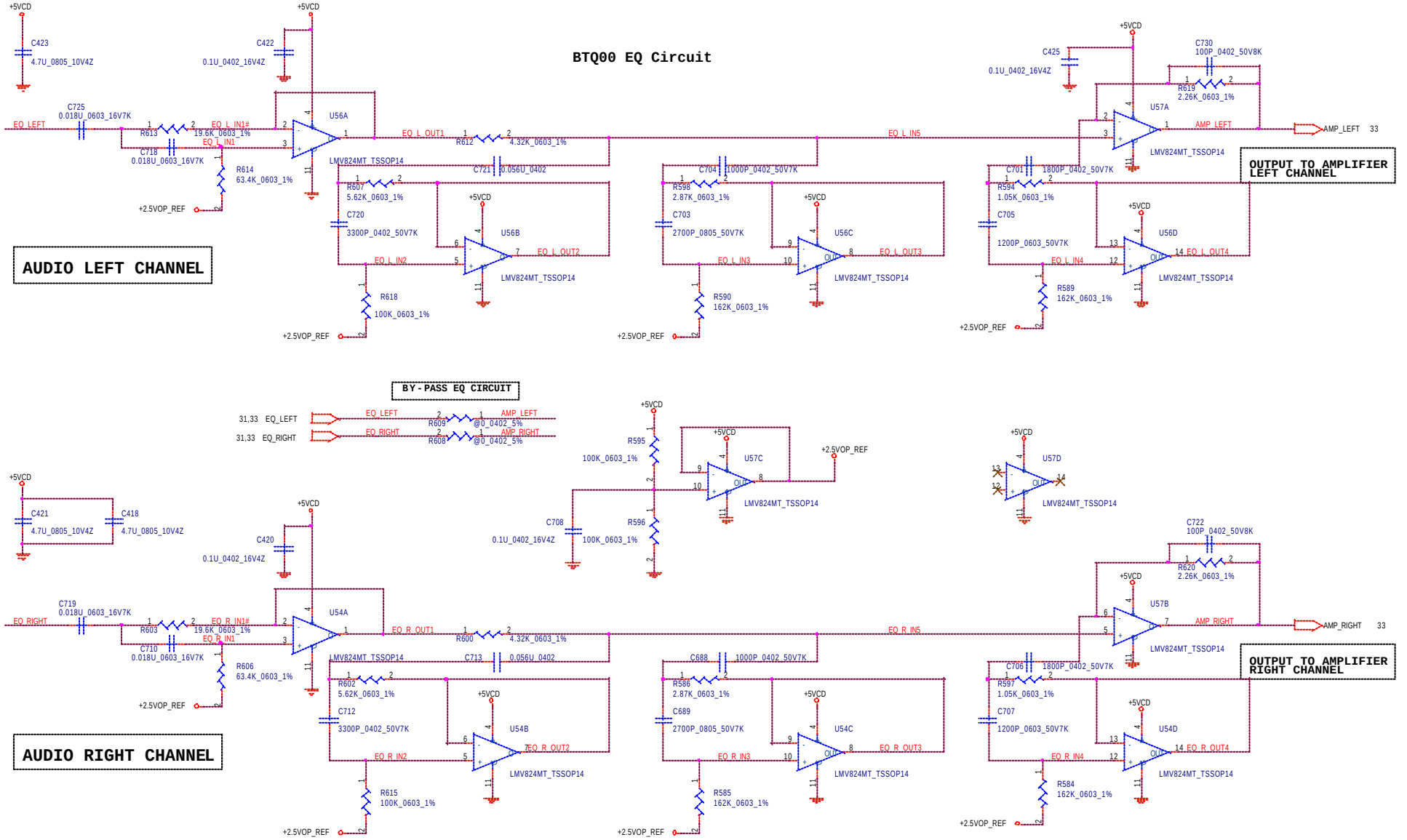
BTQ00 EQ Circuit



Compal Electronics, Inc.

Title	HAREWAREEQ	
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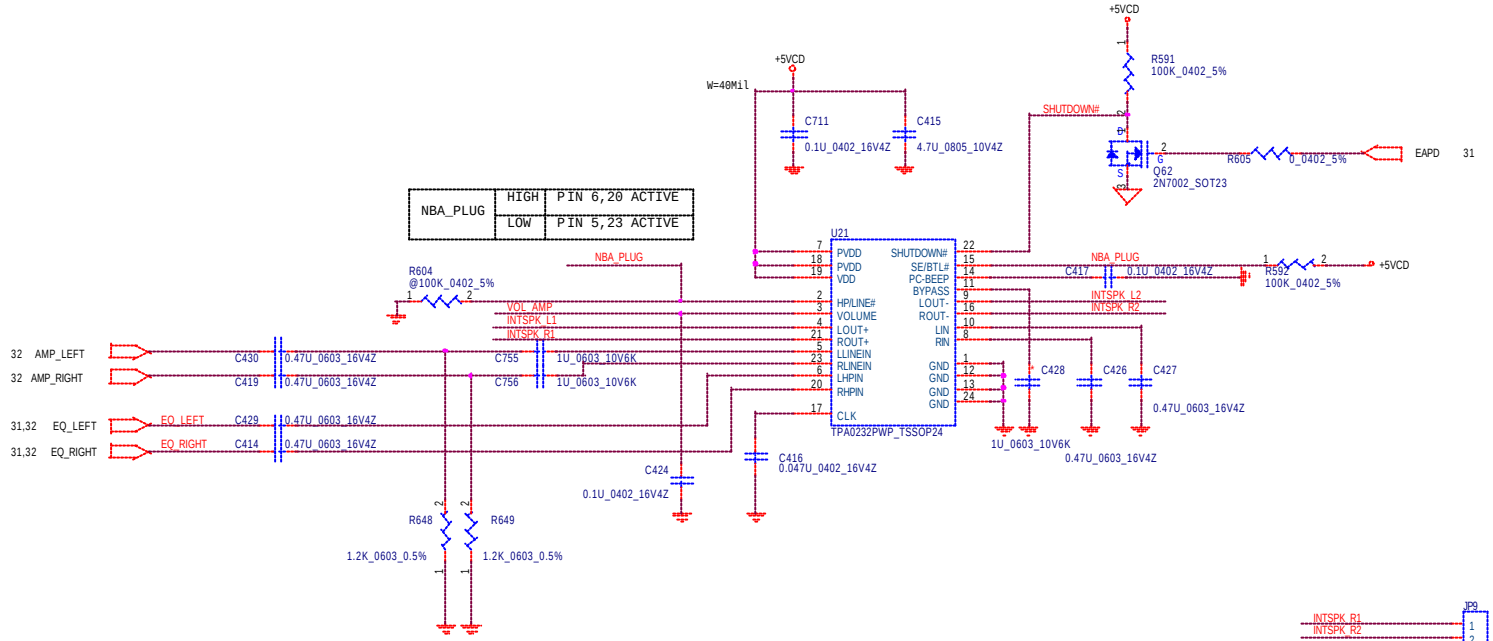
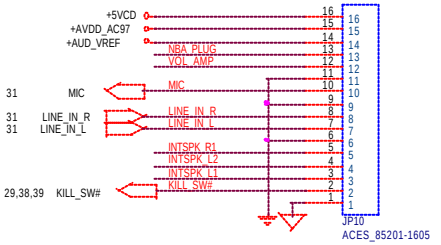
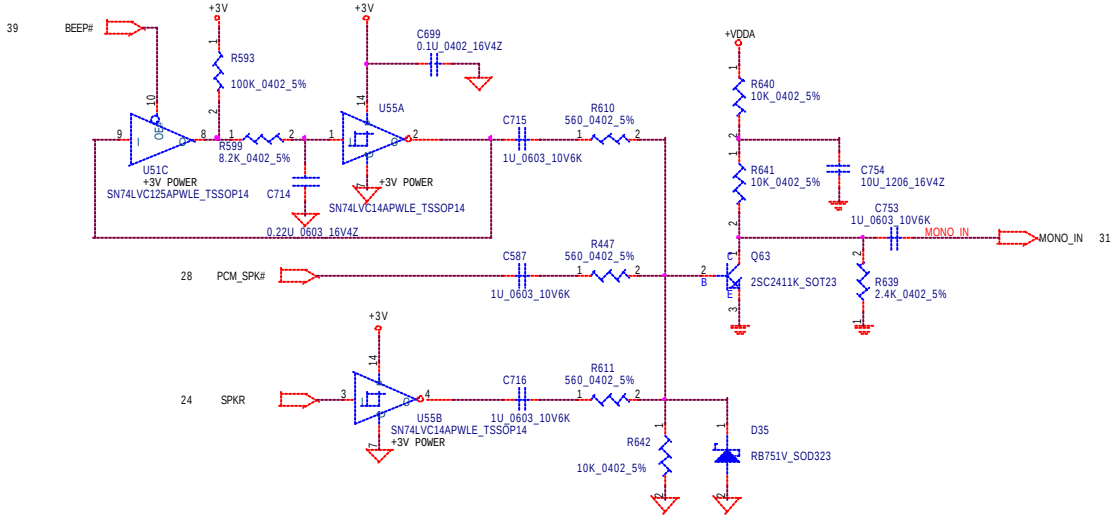
Audio AMP



AUDIO Board Conn.





Compal Electronics, Inc.

Title: **AMP & AudioJack**

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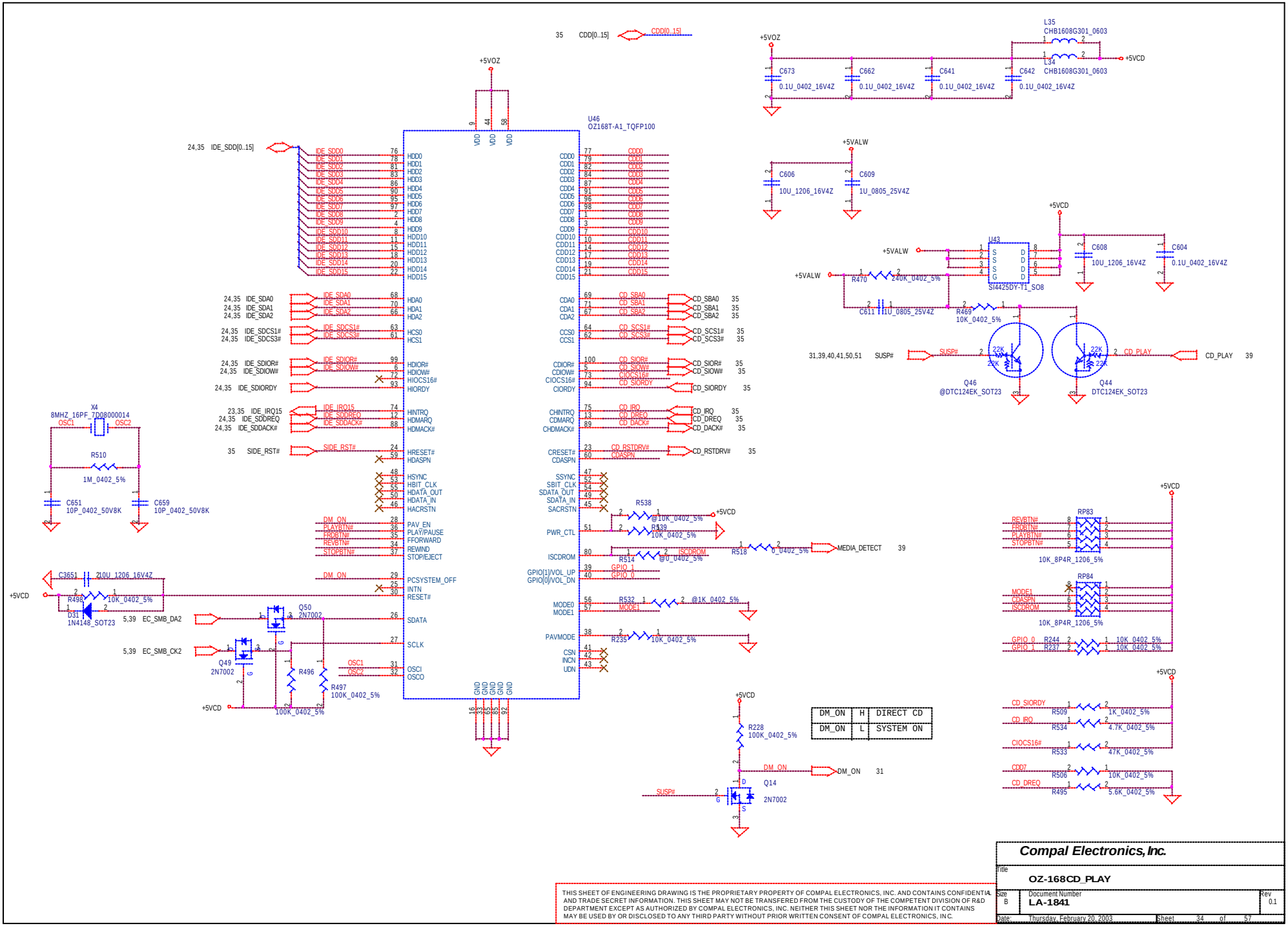
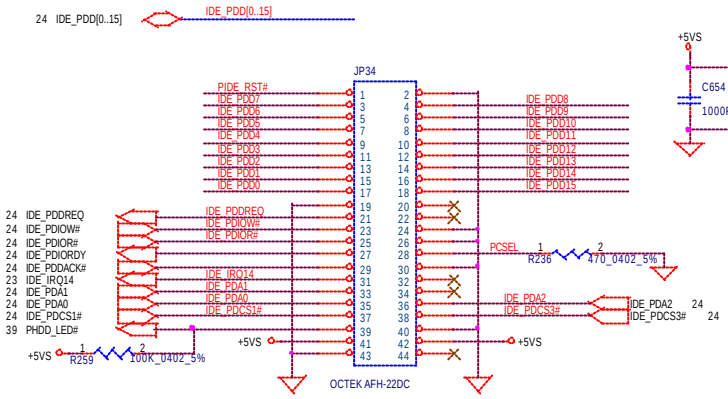
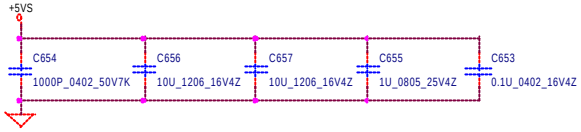


IDE,CD-ROM Module CONN.

HDD CONNECTOR

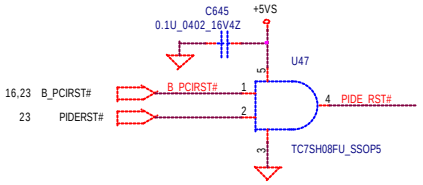


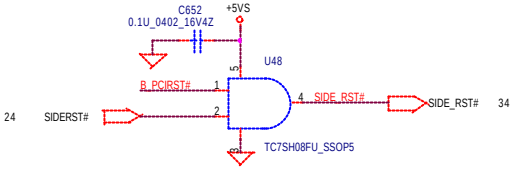
Placea caps. near HDD CONN.



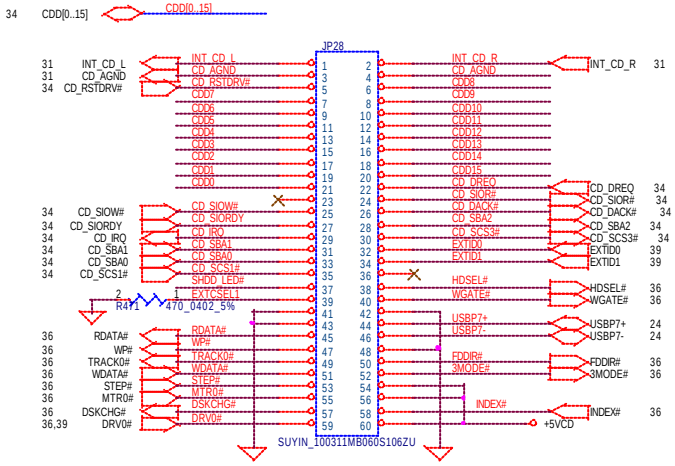
EXTID1	EXTID0	Module
0	0	CDROM
0	1	FDD
1	0	HDD
1	1	TV Tuner/No Module

EXTID3	EXTID2	Module
0	0	CDROM
0	1	FDD
1	0	HDD
1	1	TV Tuner/No Module

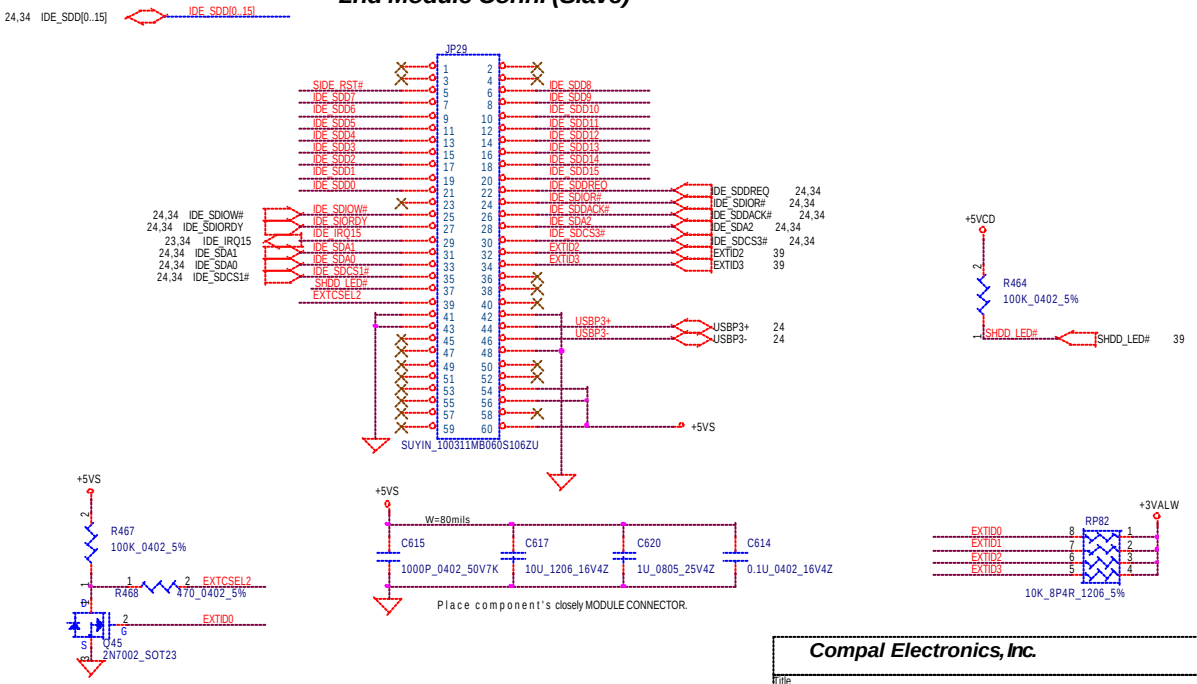




Main Module Conn. (Master)



2nd Module Conn. (Slave)



Compal Electronics, Inc.

Title	IDE/ FDDMODULECONN.	
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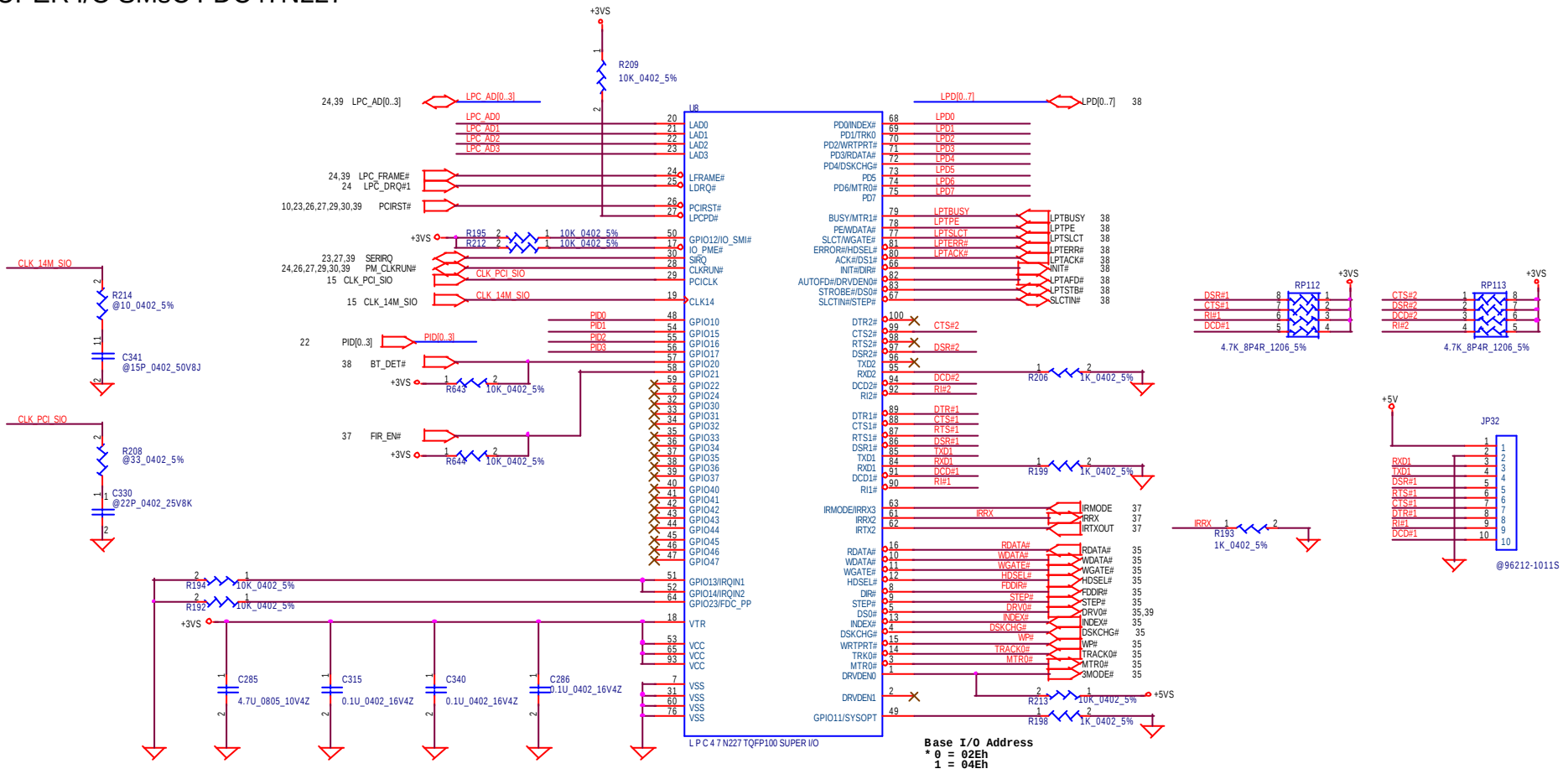
SUPER I/O SMsC FDC47N227



Compal Electronics, Inc.

Title	SUPERIO	
Size: B	Document Number: LA-1841	Rev: 0.1
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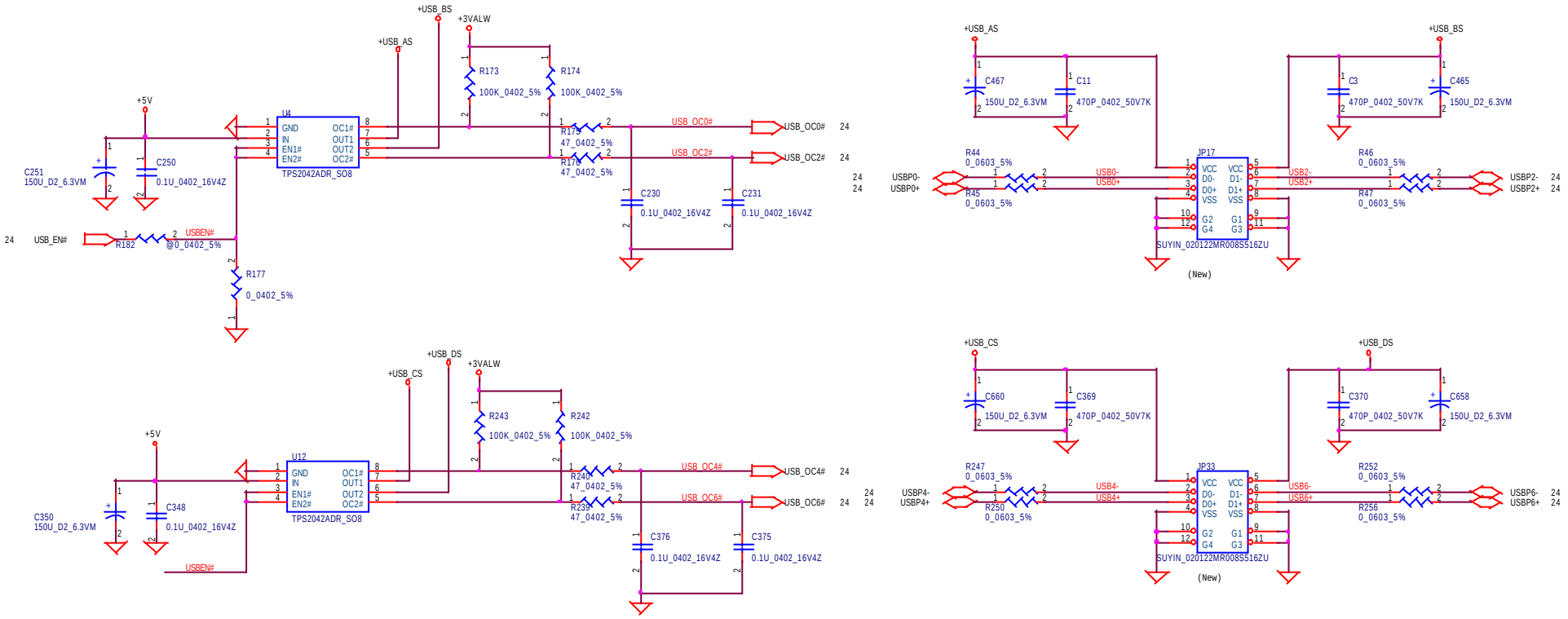
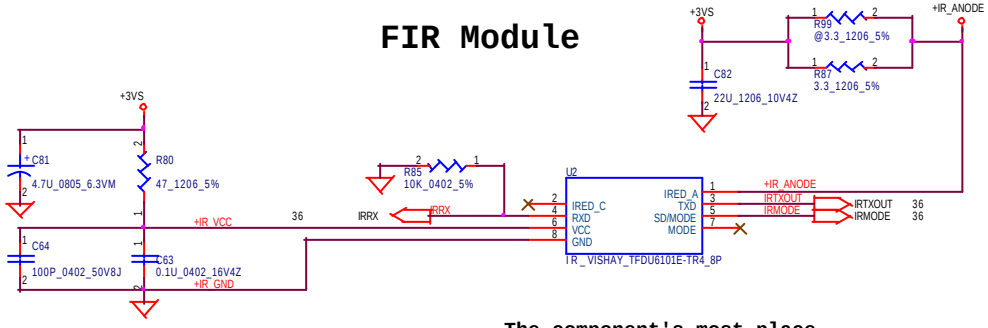


FIR Module



The component's most place cloely IRDA MODULE.

36 FIR_EN#
R643
10K_0402_5%

FIR_EN#
LOW FIR Poped
HIGH FIR Un-Poped

Compal Electronics, Inc.		
Title: USB Conn.		
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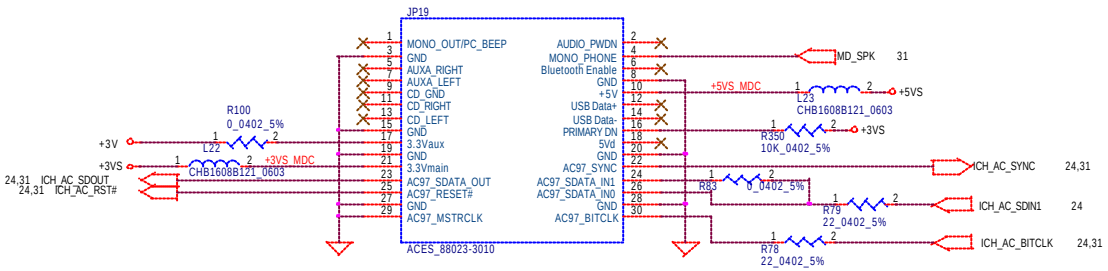
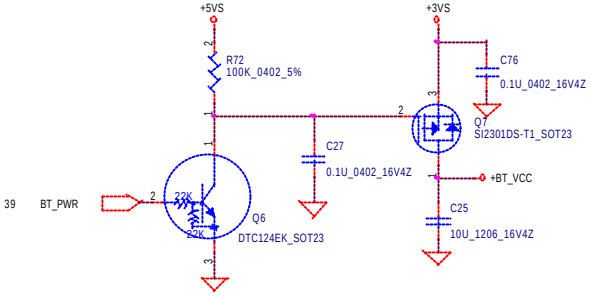
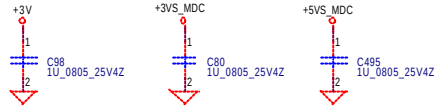
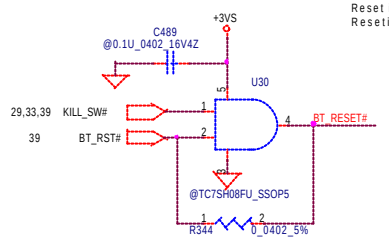
MDC CONN.

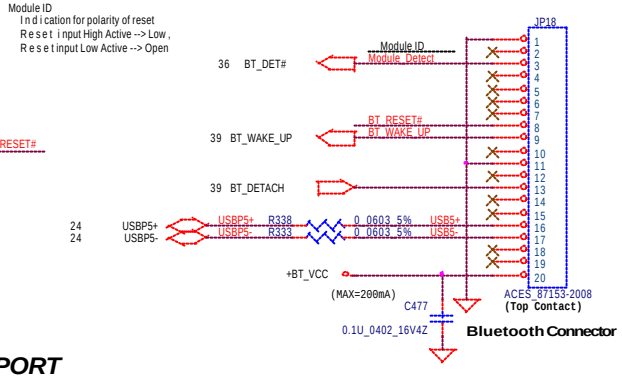


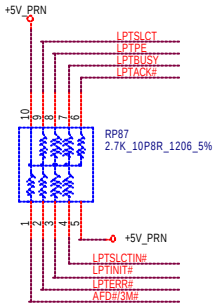
BlueTooth Interface

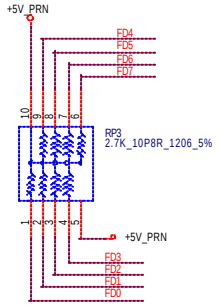


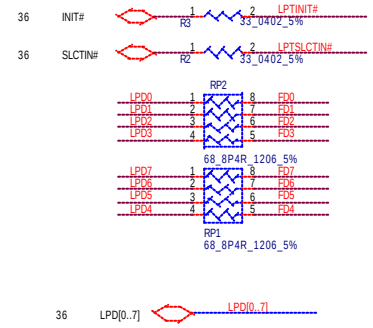




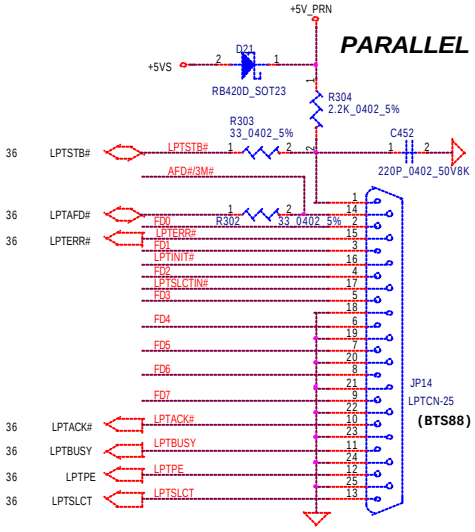


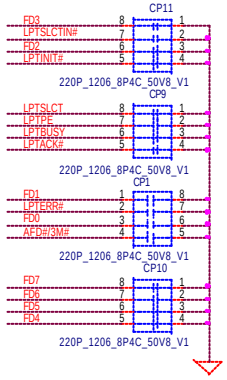






PARALLEL PORT





Compal Electronics, Inc.

Title: PARALLEL/MDC PORT

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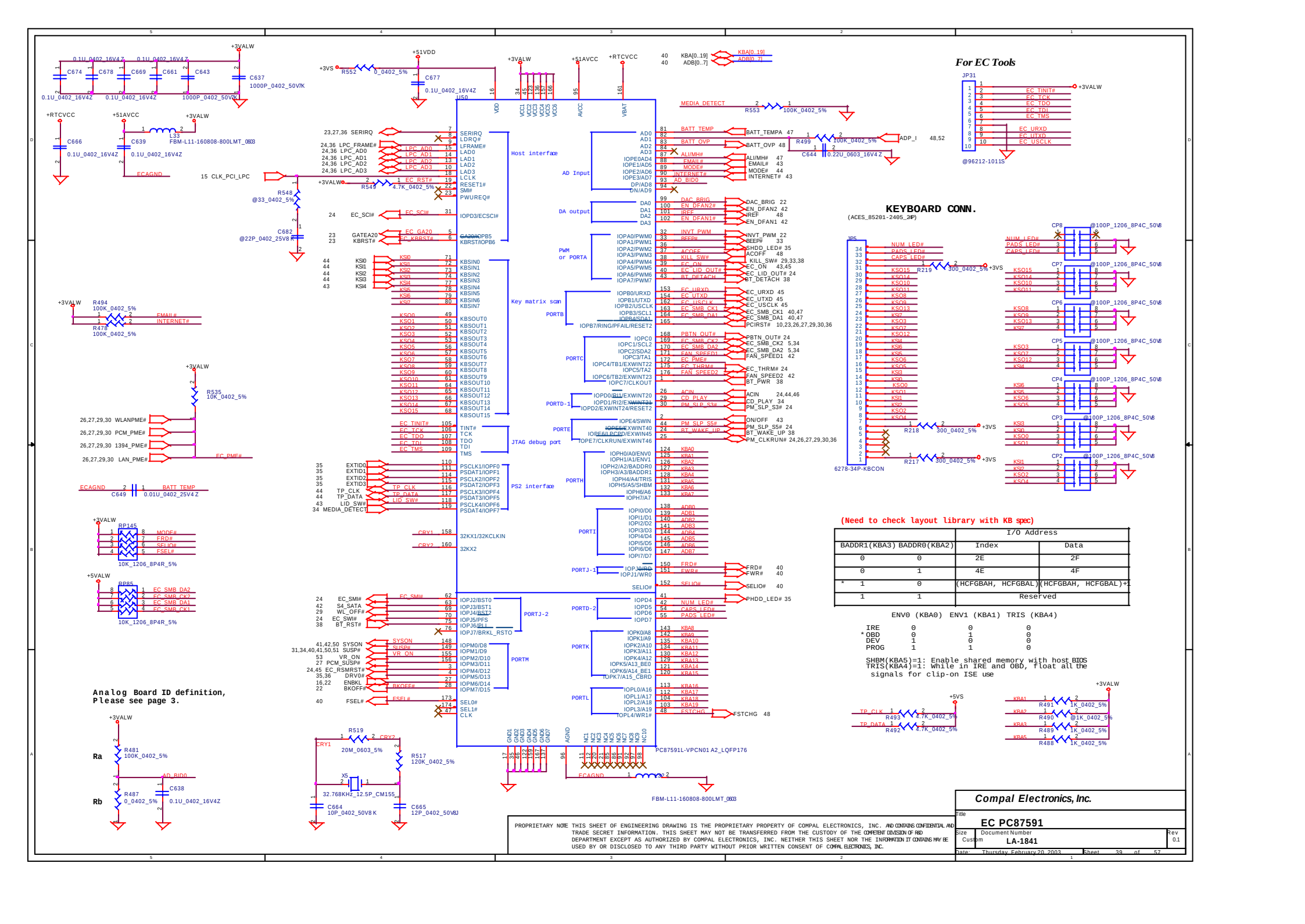
For EC Tools
JP31
EC_TINIT#
EC_TCK
EC_TDO
EC_TDI
EC_TMS
EC_URXD
EC_UTXD
EC_USCLK
@96212-1011S
KEYBOARD CONN.
(ACES_85201-2405_24P)
JP5
6278-34P-KBCON
(Need to check layout library with KB spec)
I/O Address
BADDR1(KBA3) BADDR0(KBA2) Index Data
0 0 2E 2F
0 1 4E 4F
* 1 0 (HCFGBAH, HCFGBAL)(HCFGBAH, HCFGBAL)+1
1 1 Reserved
ENV0 (KBA0) ENV1 (KBA1) TRIS (KBA4)
IRE 0 0 0
*OBD 0 1 0
DEV 1 0 0
PROG 1 1 0
SHBM(KBA5)=1: Enable shared memory with host BIOS
TRIS(KBA4)=1: While in IRE and OBD, float all the signals for clip-on ISE use
Analog Board ID definition,
Please see page 3.
Ra
Rb
U50
PC87591L-VPCN01 A2_LQFP176
Host interface
AD Input
DA output
PWM or PORTA
Key matrix scan
PORTB
JTAG debug port
PS2 interface
PORTC
PORTD-1
PORTE
PORTH
PORTI
PORTJ-1
PORTD-2
PORTJ-2
PORTK
PORTM
PORTL
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Compal Electronics, Inc.
EC PC87591
Size Custom
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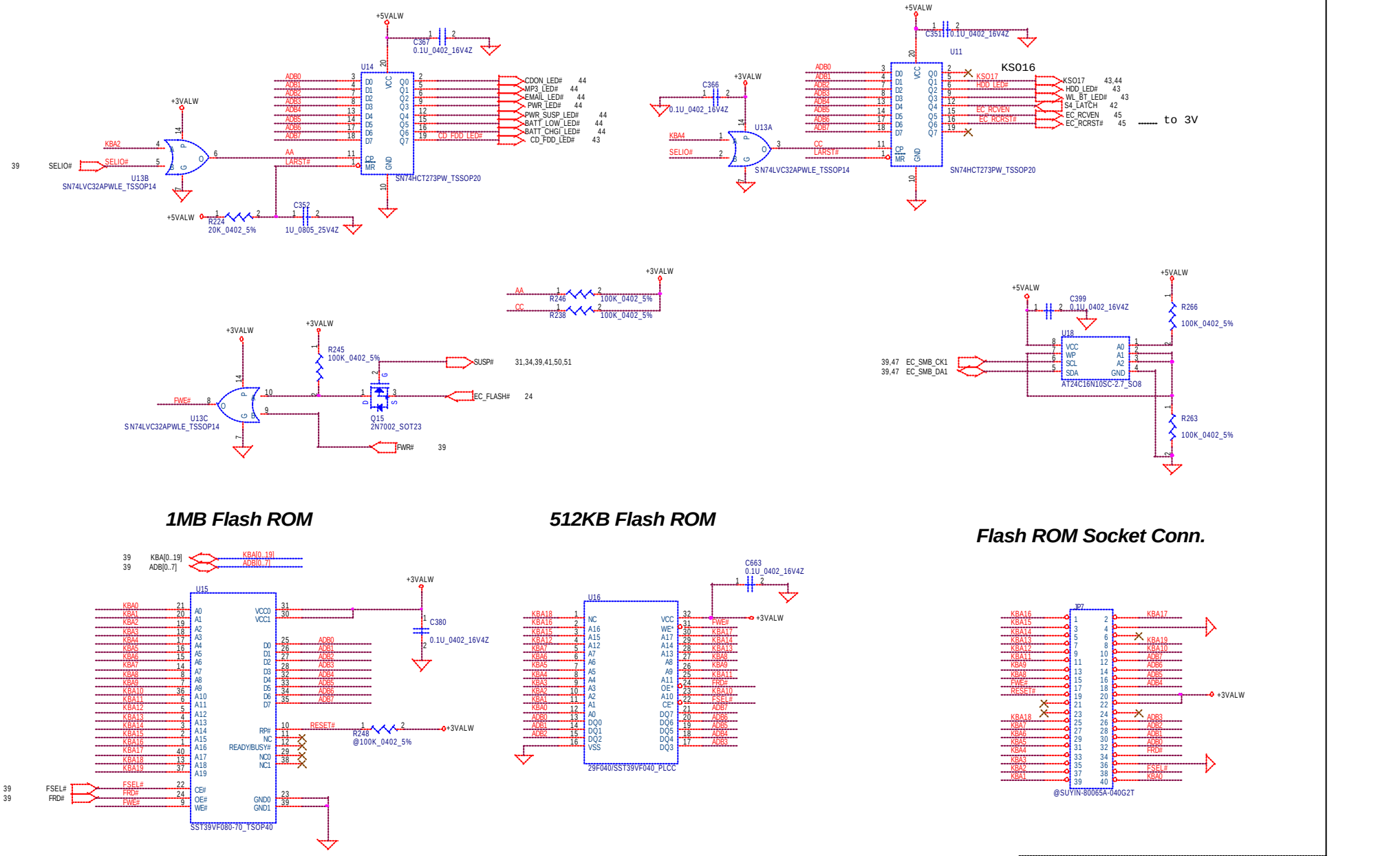

Compal Electronics, Inc.

Title: **BIOS & EXT.IOPORT**

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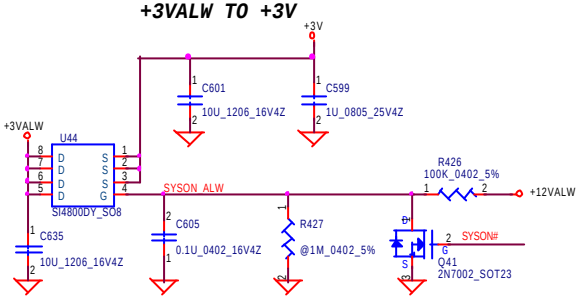
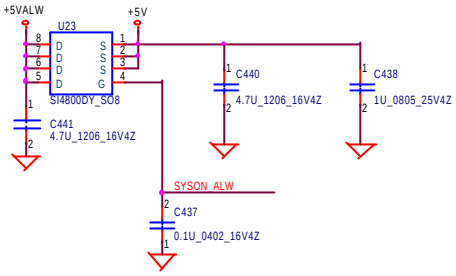
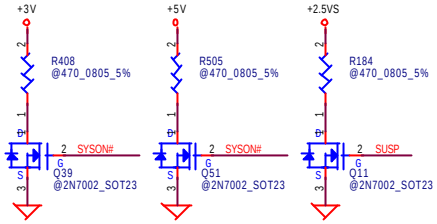
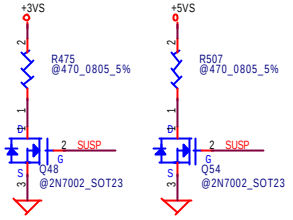
+3VALW TO +3V



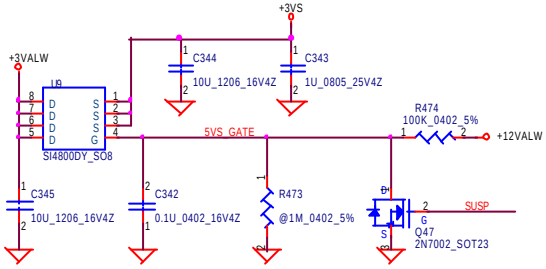
+5VALW TO +5V



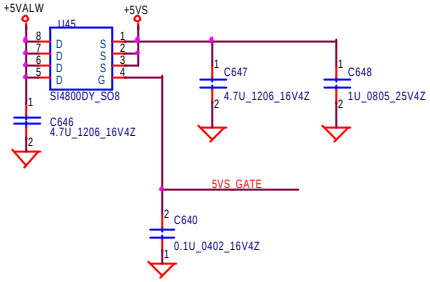


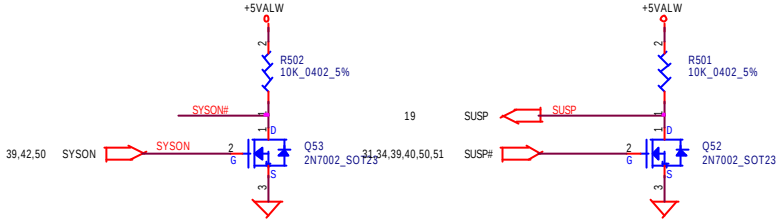


+3VALW TO +3VS

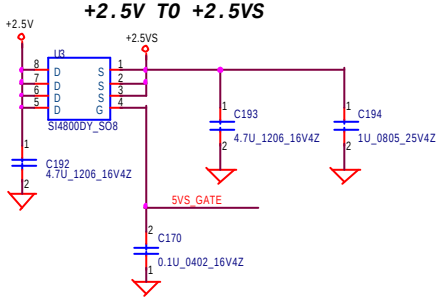


+5VALW TO +5VS





+2.5V TO +2.5VS



Compal Electronics, Inc.

Title: POWER CONTROL CKT

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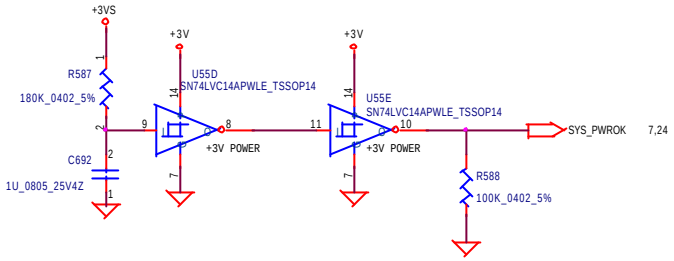
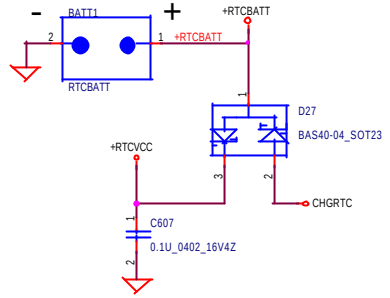
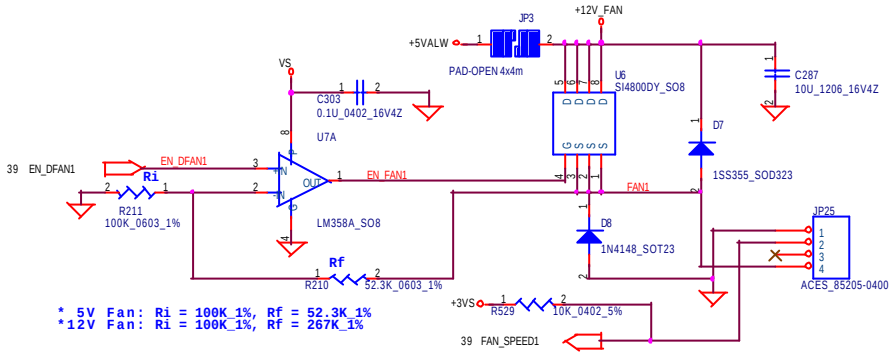
Power ON Circuit



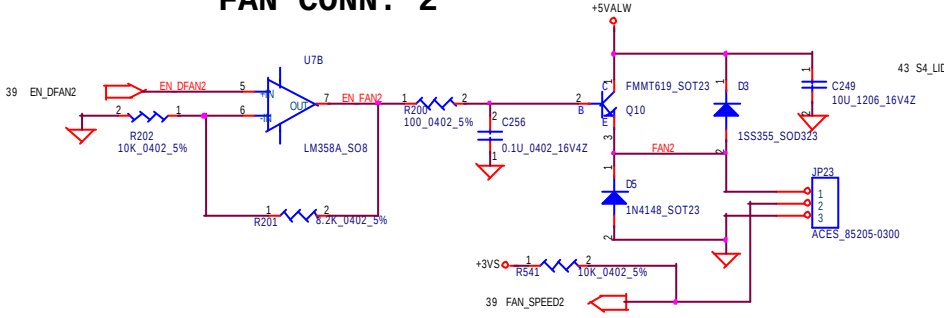
RTC Battery



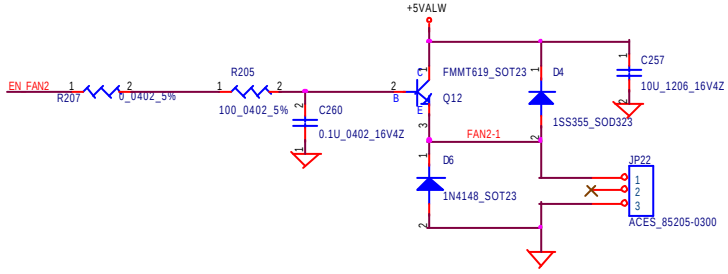
FAN CONN. 1

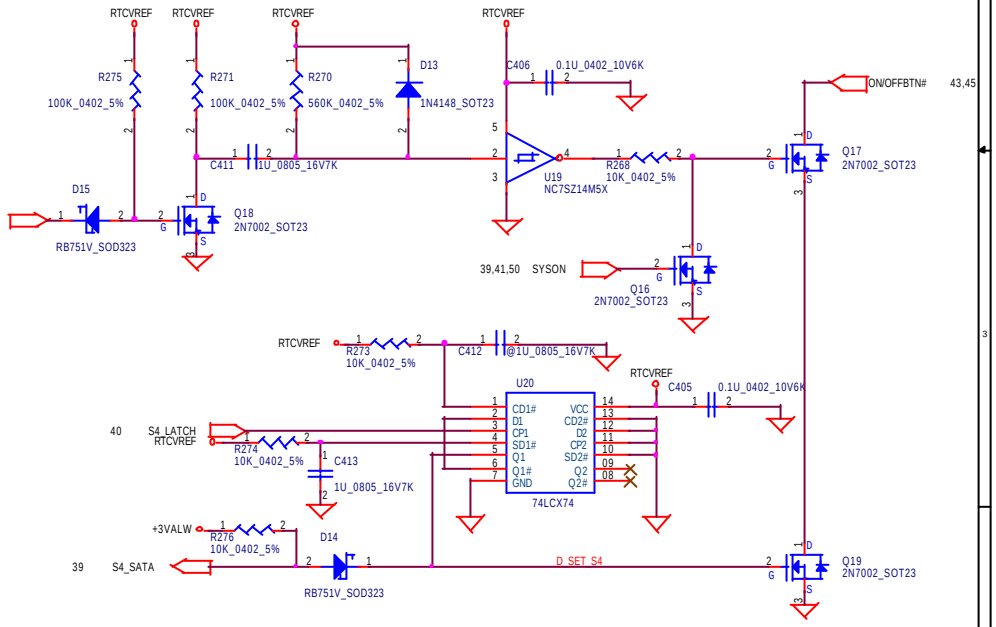


FAN CONN. 2



FAN CONN. 3





Compal Electronics, Inc.		
Title: Power OK/Reset/RTC battery/Lid Switch/Int. KB		
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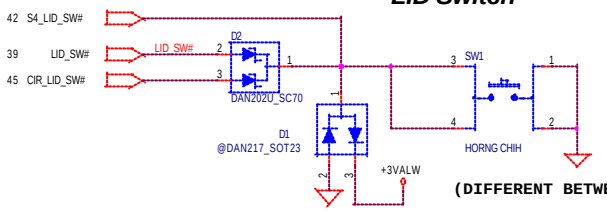
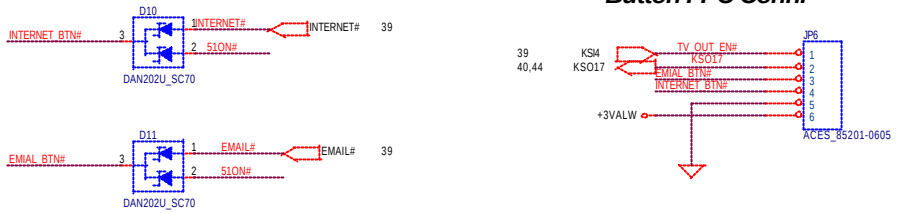
LID Switch

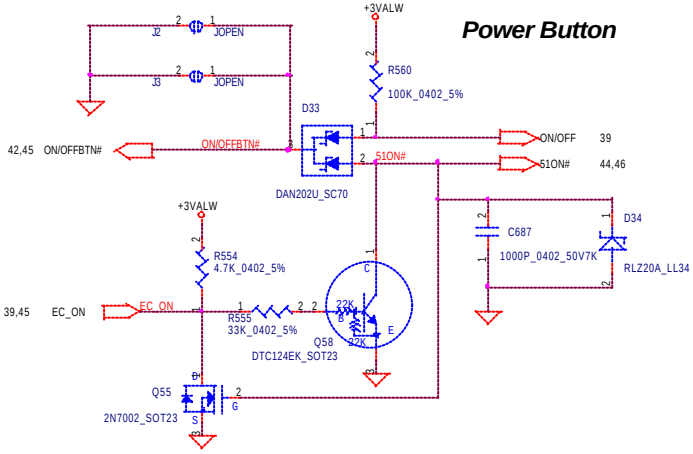


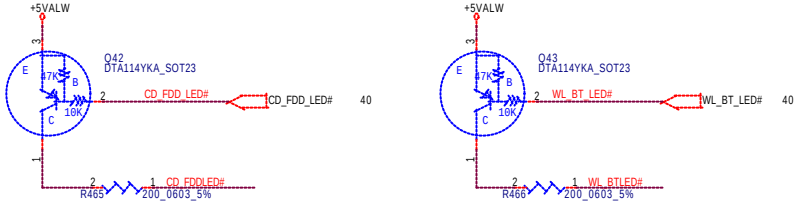
(DIFFERENT BETWEEN MPU-101-81A)

Button FPC Conn.

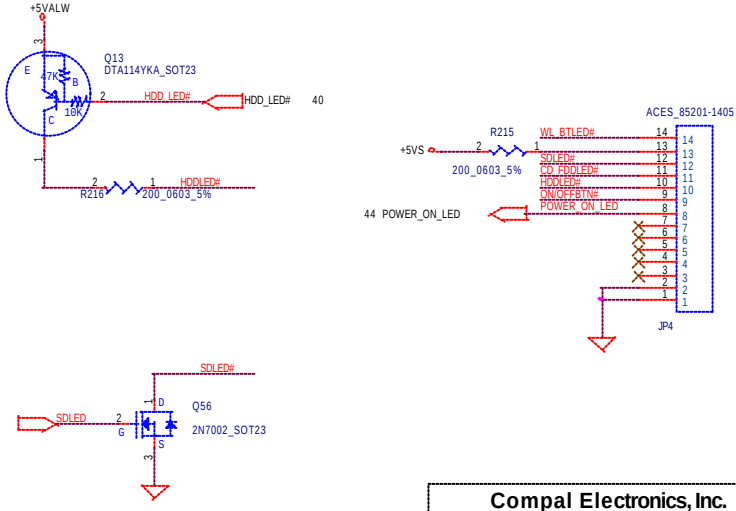


Power Button





Power FPC Conn.



Compal Electronics, Inc.

Title: **Switchs & Connectors**

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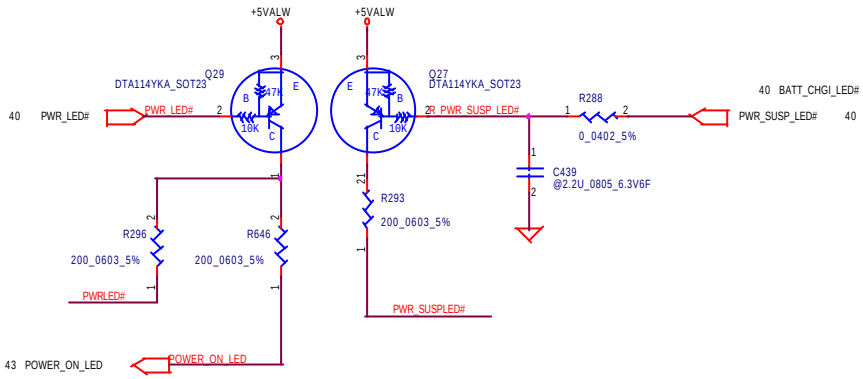
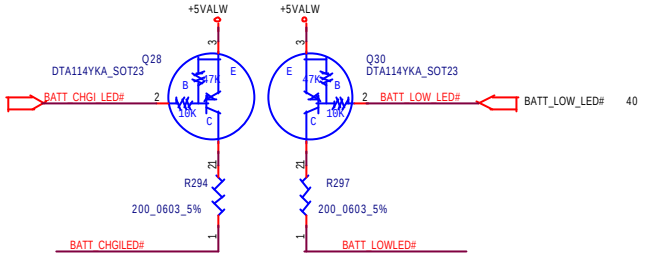
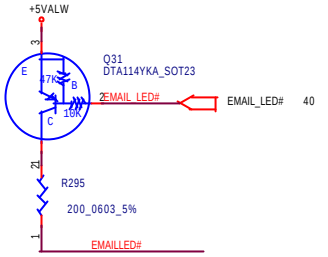


POWER/SUSP LED

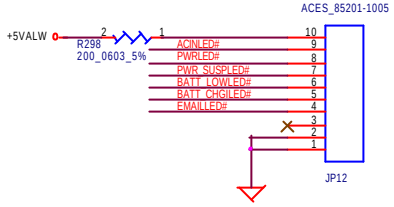


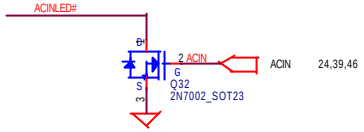
BATTERY CHGI/LOW LED



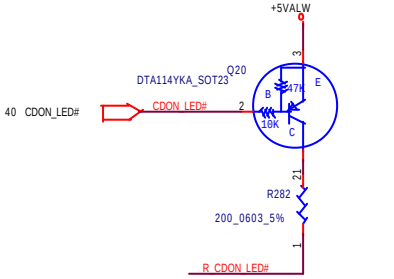
EMAIL LED

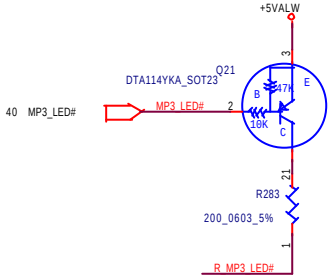
LED FPC Conn.



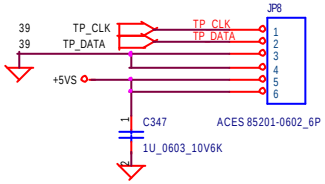


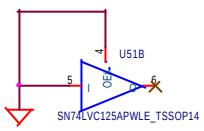
ACIN LED

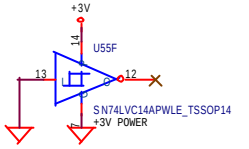


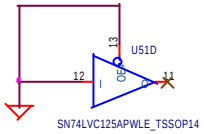


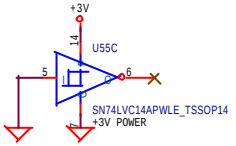
Touch Pad Connector



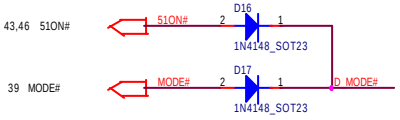


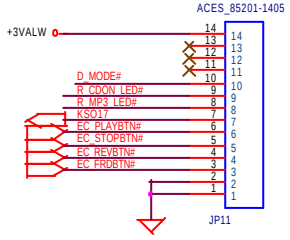






CDPLAY Board Conn.





Compal Electronics, Inc.		
Title: Switchs & Connectors		
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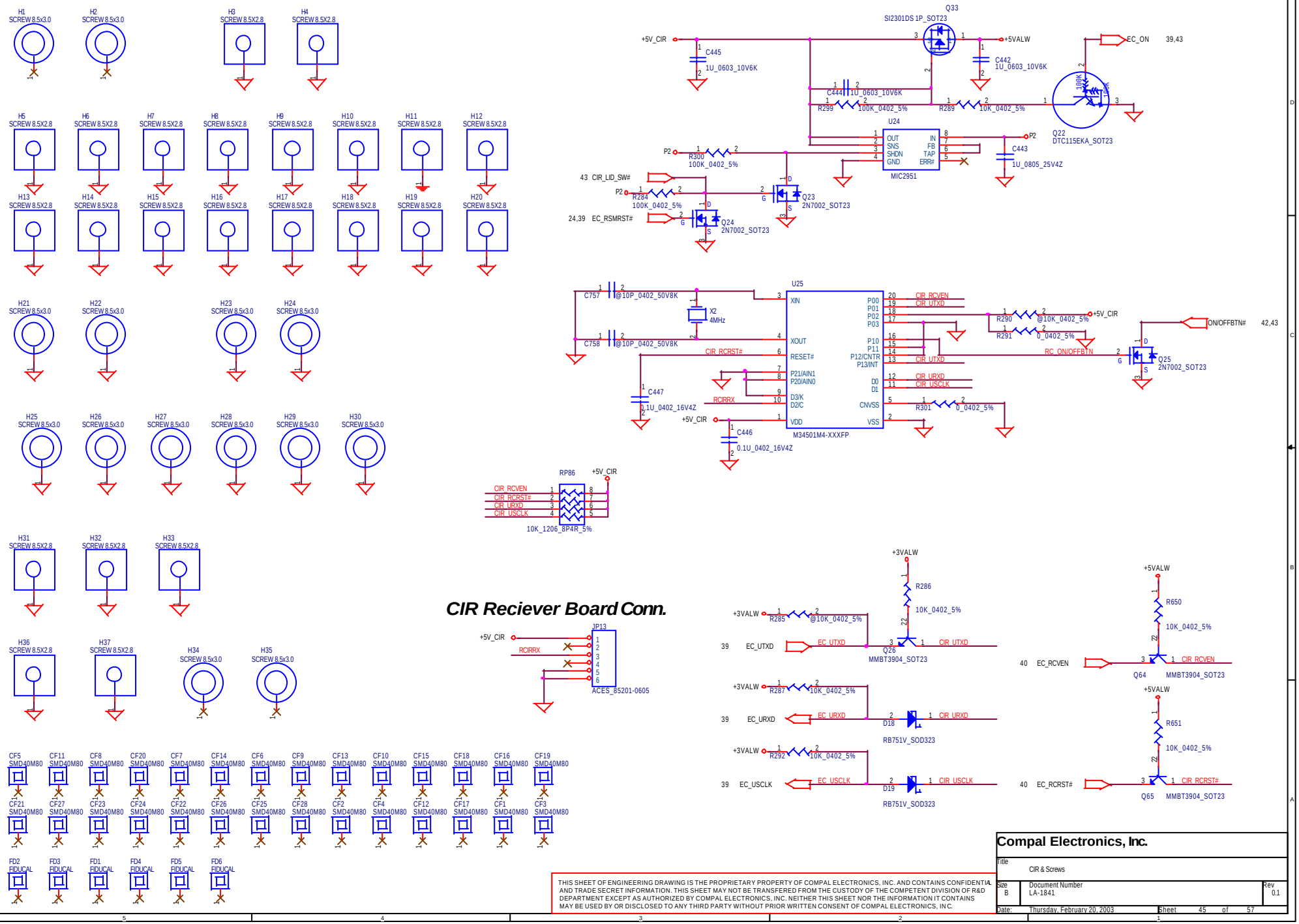

Compal Electronics, Inc.

Title	CIR & Screws	
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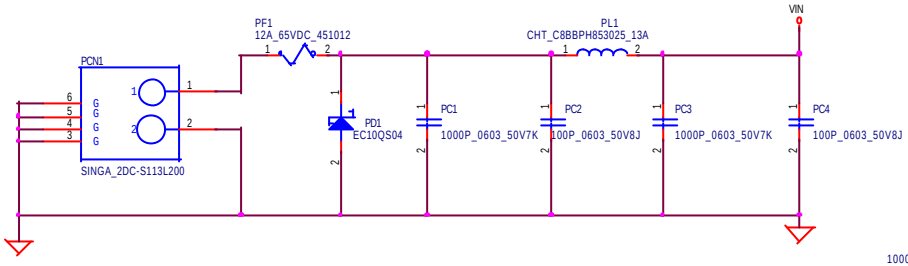
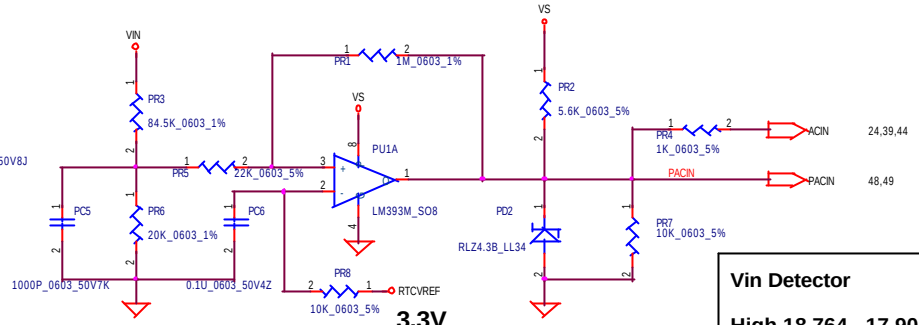
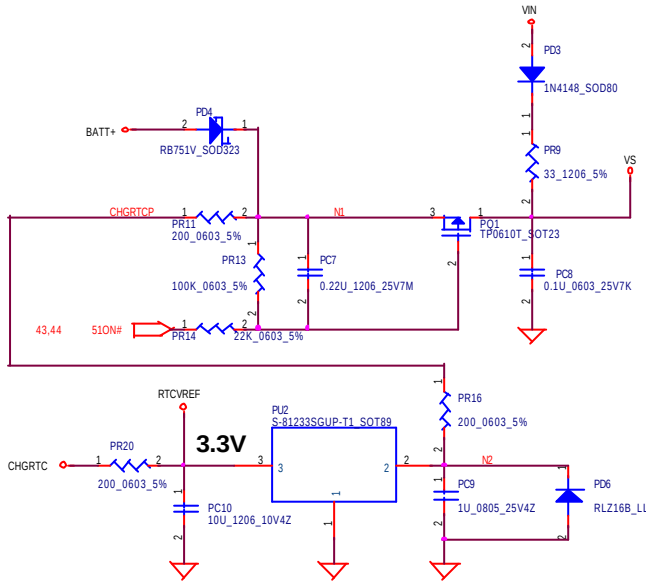
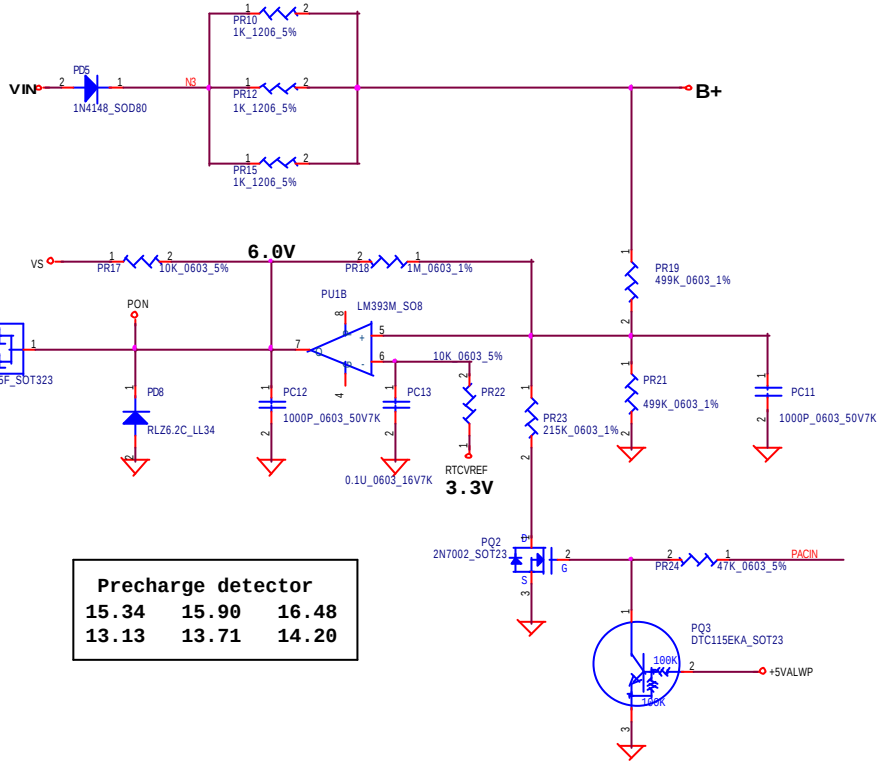




Vin Detector

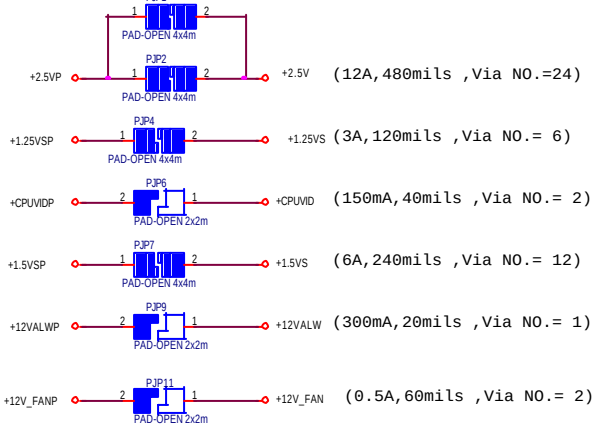
High	**18.764**	**17.901**	**17.063**
Low	**17.745**	**16.903**	**16.038**

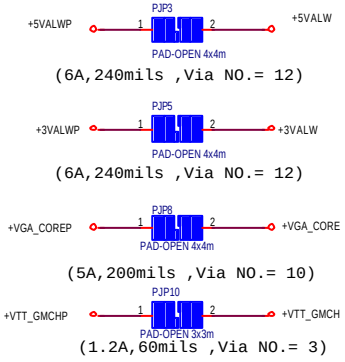




Precharge detector

15.34	**15.90**	**16.48**
13.13	**13.71**	**14.20**





Compal Electronics, Inc.

Title	DCIN&DETECTOR	
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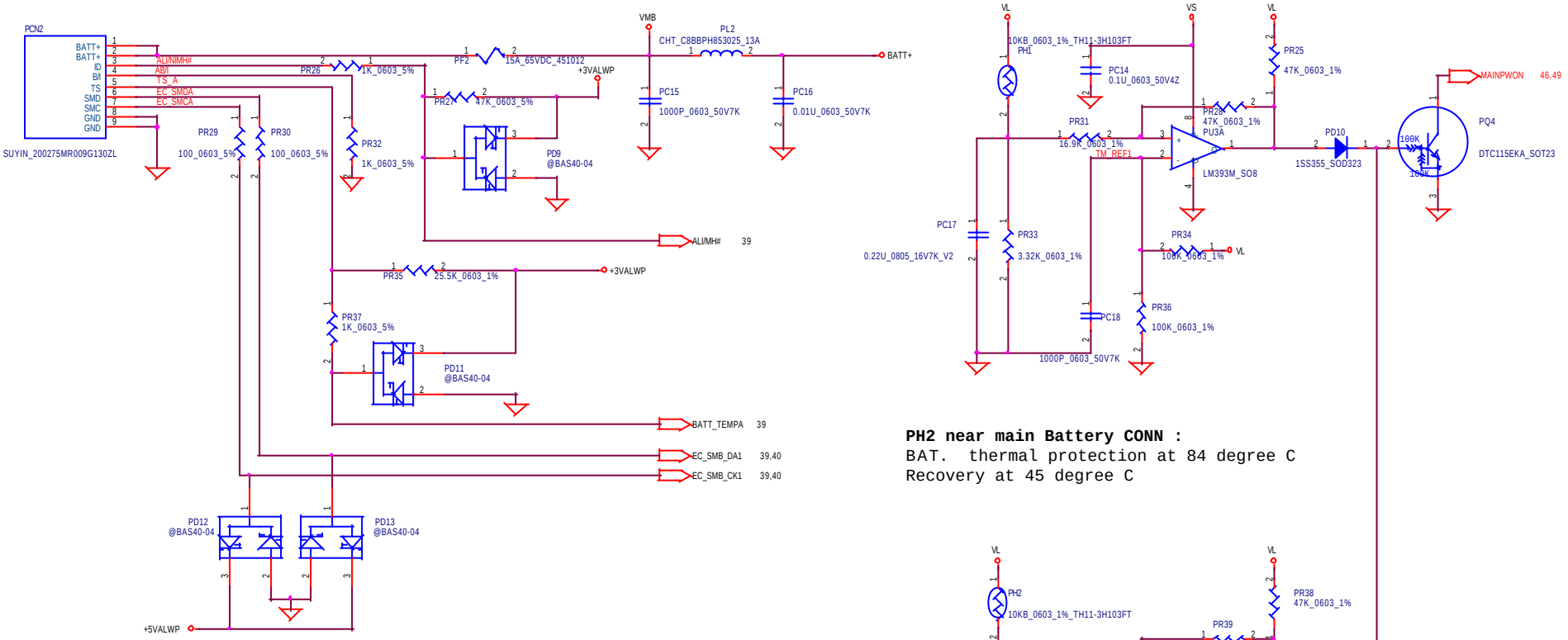
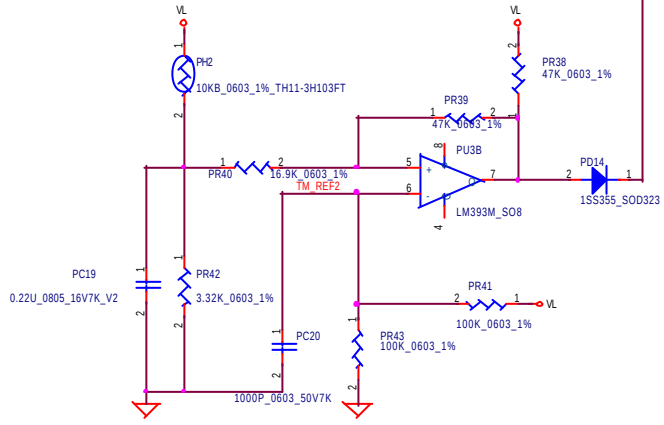
PH1 under CPU botten side :
CPU thermal protection at 84 degree C
Recovery at 45 degree C



PH2 near main Battery CONN :
BAT. thermal protection at 84 degree C
Recovery at 45 degree C



Compal Electronics, Inc.		
Title: BATTERY CONN/OTP		
Size	Document Number: LA-1841	Rev: 0.1
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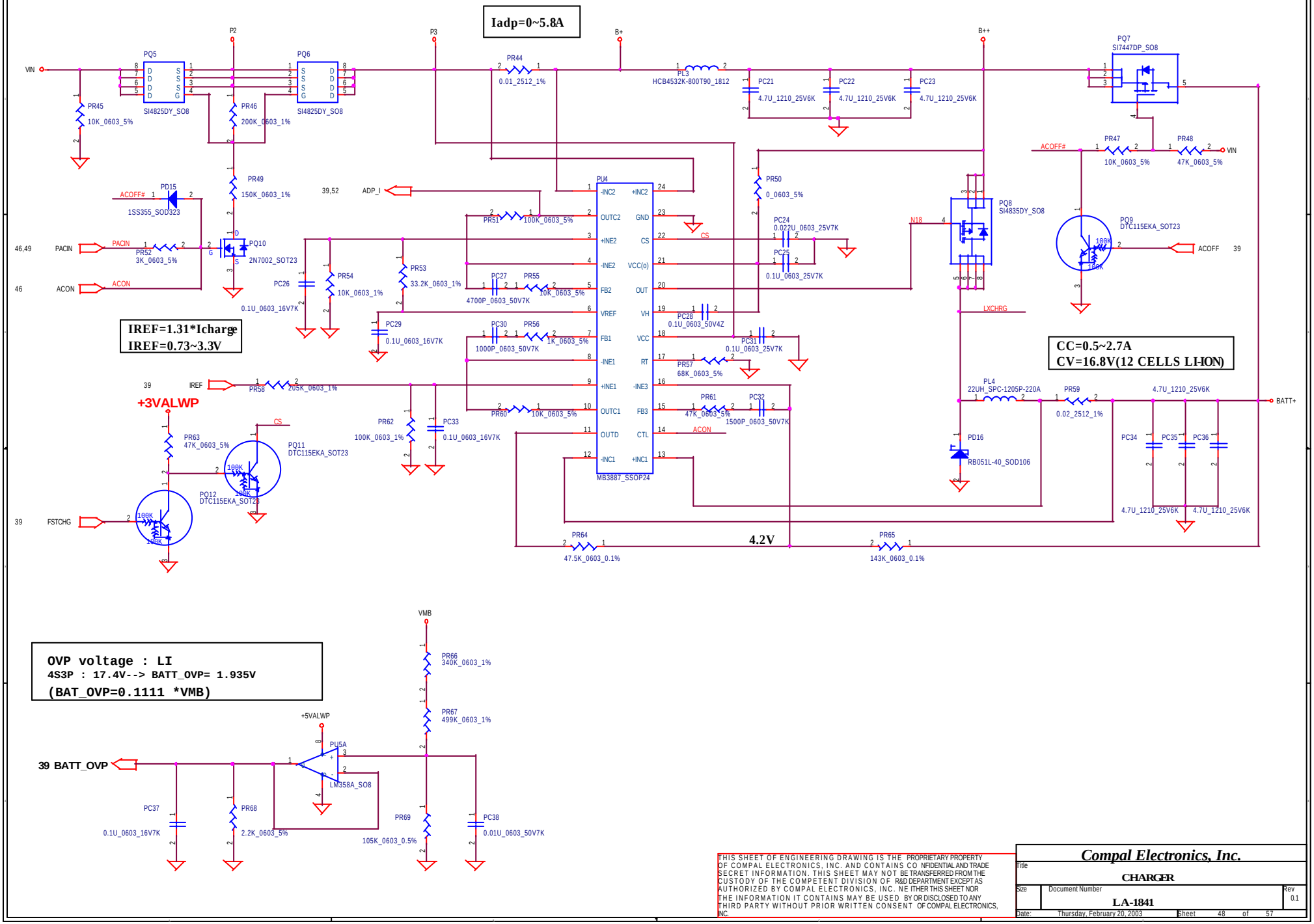
Iadp=0~5.8A
IREF=1.31*Icharge
IREF=0.73~3.3V
CC=0.5~2.7A
CV=16.8V(12 CELLS LI-ION)
4.2V
+3VALWP
+5VALWP
VIN
B+
B++
BATT+
PACIN
ACON
ACOFF
ACOFF#
FSTCHG
IREF
ADP_I
CS
LXCHRG
N18
VMB
PQ5
PQ6
PQ7
PQ8
PQ9
PQ10
PQ11
PQ12
SI4825DY_SO8
SI7447DP_SO8
SI4835DY_SO8
2N7002_SOT23
DTC115EKA_SOT23
PD15
PD16
1SS355_SOD323
RB051L-40_SOD106
PU4
MB3887_SSOP24
PU5A
LM358A_SO8
PL3
HCB4532K-800T90_1812
PL4
22UH_SPC-1205P-220A
PR44
0.01_2512_1%
PR45
10K_0603_5%
PR46
200K_0603_1%
PR47
10K_0603_5%
PR48
47K_0603_5%
PR49
150K_0603_1%
PR50
0_0603_5%
PR51
100K_0603_5%
PR52
3K_0603_5%
PR53
33.2K_0603_1%
PR54
10K_0603_1%
PR55
10K_0603_5%
PR56
1K_0603_5%
PR57
68K_0603_5%
PR58
205K_0603_1%
PR59
0.02_2512_1%
PR60
10K_0603_5%
PR61
47K_0603_5%
PR62
100K_0603_1%
PR63
47K_0603_5%
PR64
47.5K_0603_0.1%
PR65
143K_0603_0.1%
PR66
340K_0603_1%
PR67
499K_0603_1%
PR68
2.2K_0603_5%
PR69
105K_0603_0.5%
PC21
4.7U_1210_25V6K
PC22
4.7U_1210_25V6K
PC23
4.7U_1210_25V6K
PC24
0.022U_0603_25V7K
PC25
0.1U_0603_25V7K
PC26
0.1U_0603_16V7K
PC27
4700P_0603_50V7K
PC28
0.1U_0603_50V4Z
PC29
0.1U_0603_16V7K
PC30
1000P_0603_50V7K
PC31
0.1U_0603_25V7K
PC32
1500P_0603_50V7K
PC33
0.1U_0603_16V7K
PC34
4.7U_1210_25V6K
PC35
4.7U_1210_25V6K
PC36
4.7U_1210_25V6K
PC37
0.1U_0603_16V7K
PC38
0.01U_0603_50V7K
OVP voltage : LI
4S3P : 17.4V--> BATT_OVP= 1.935V
(BAT_OVP=0.1111 *VMB)
39 BATT_OVP
46,49 PACIN
46 ACON
39 FSTCHG
39,52 ADP_I
39 IREF
39 ACOFF
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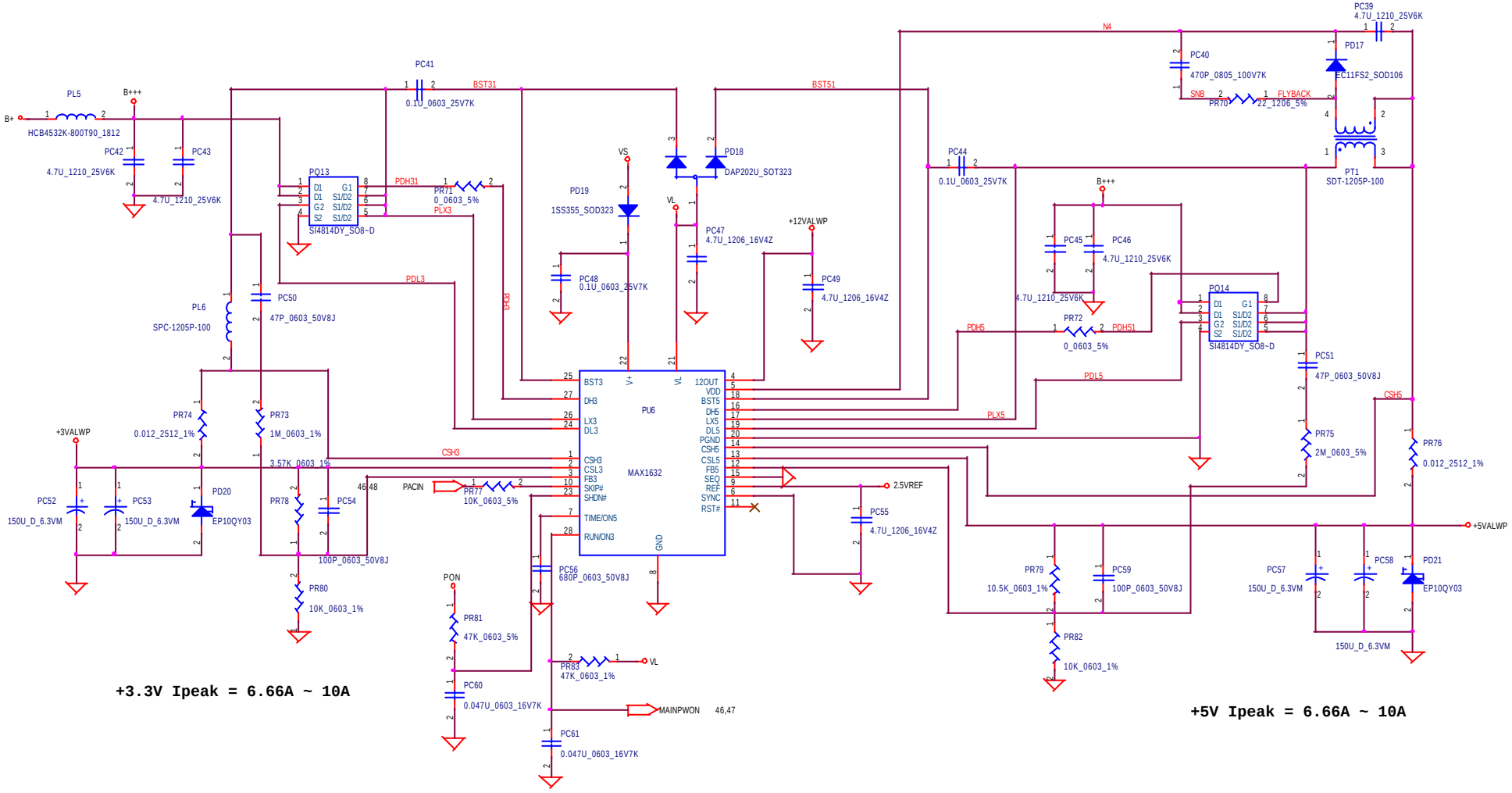
Title
CHARGER
Size
Document Number
LA-1841
Rev
0.1
Date: Thursday, February 20, 2003
Sheet 48 of 57



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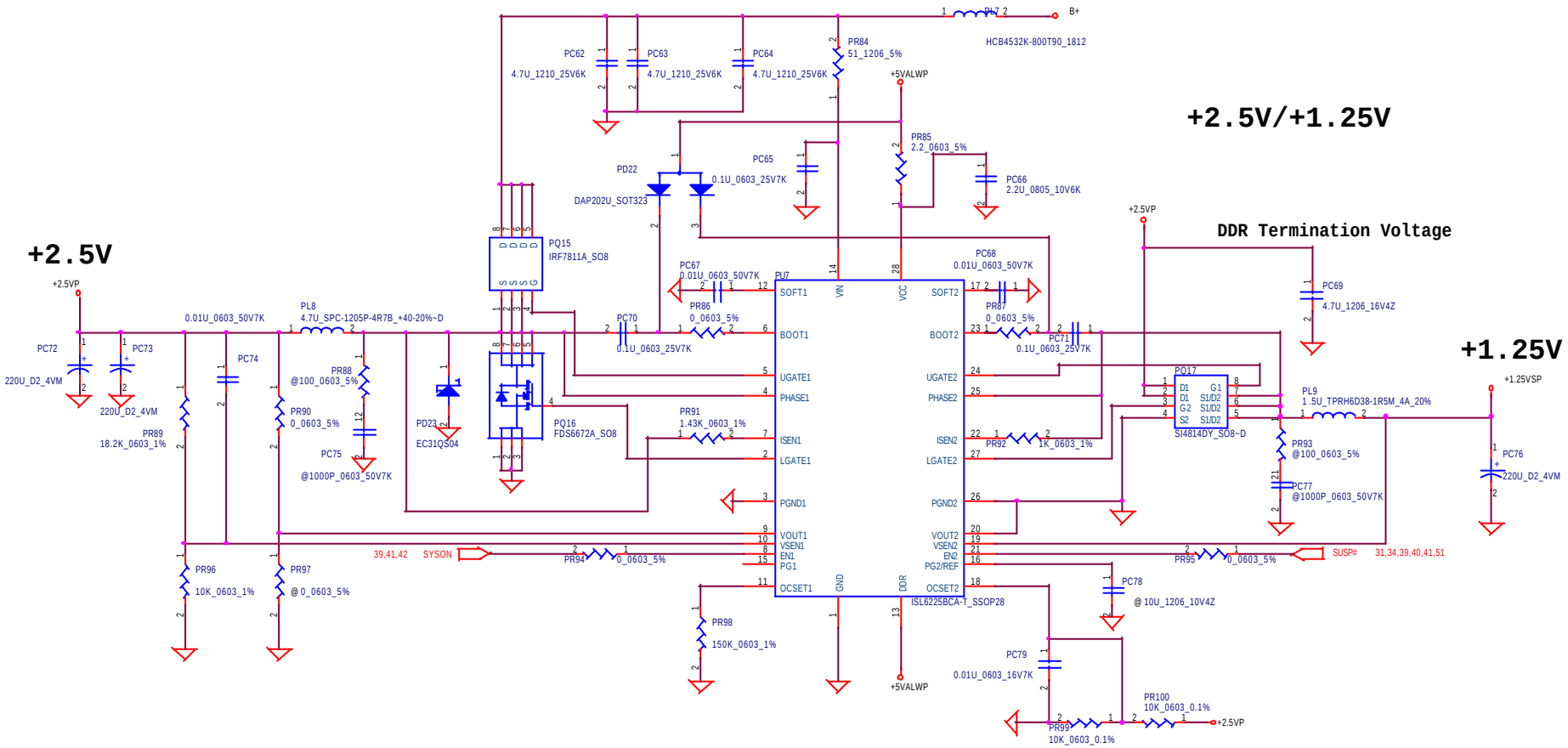
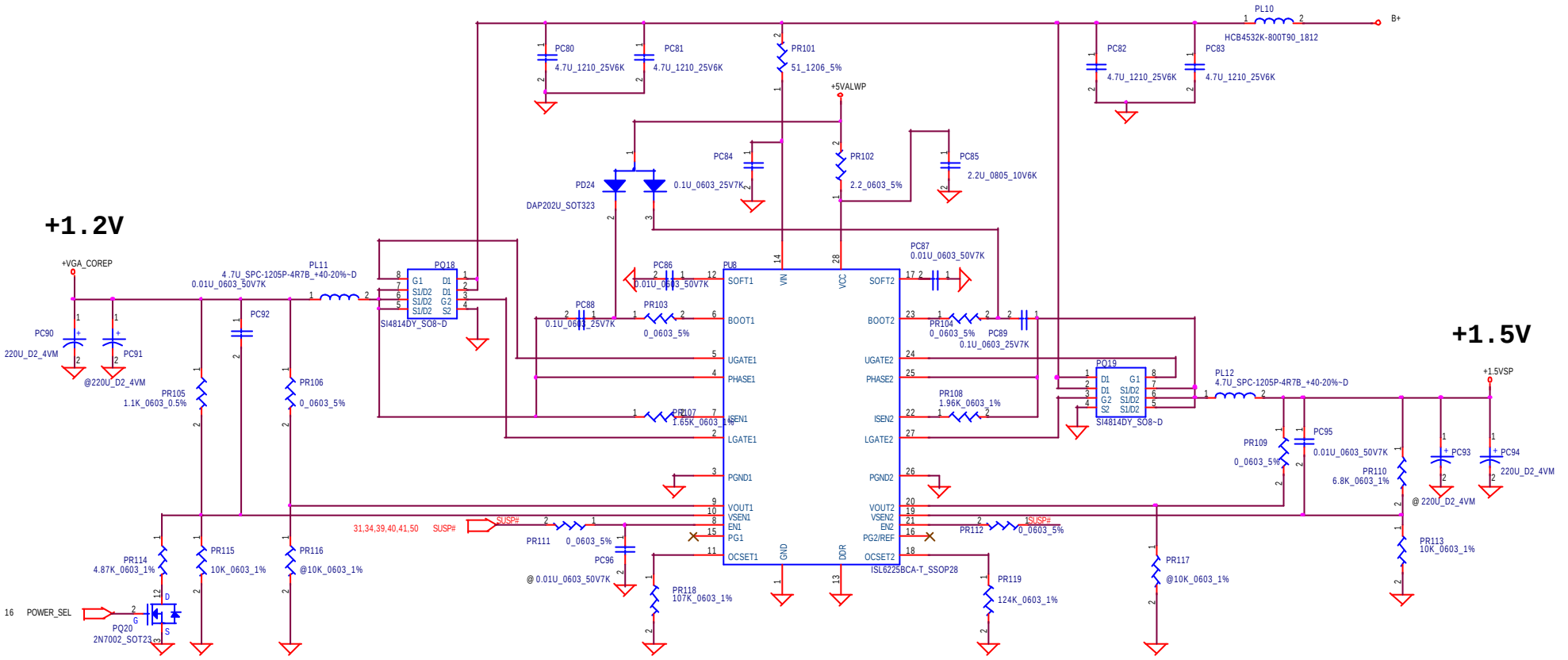
Title	5V/3.3V/12V	
Size	Document Number: LA-1841	Rev: 0.1
Date: Thursday, February 20, 2003	Sheet 49 of 57	

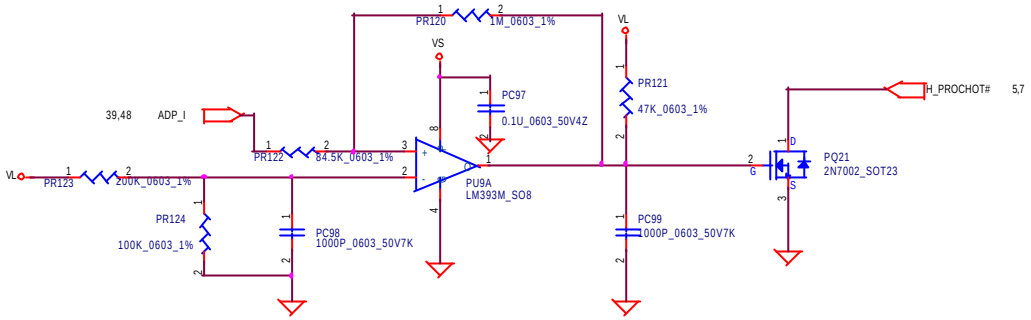


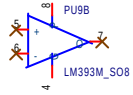
Compal Electronics, Inc.		
Title: DDR/2.5V/1.25V		
Size	Document Number: LA-1841	Rev: 0.1
Date: Thursday, February 20, 2003	Sheet 50 of 57	

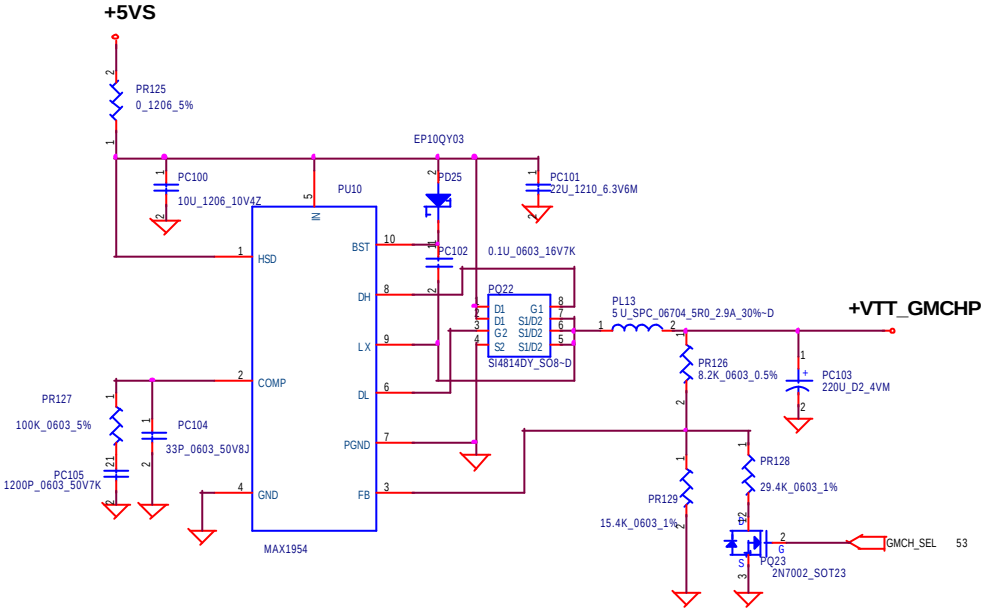


	NV18/NV34	NV31
FIX 1.2V	POWER_SEL=1 VOUT=1.2V POWER_SEL=0 VOUT=1.0V	POWER_SEL=1 VOUT=1.0V POWER_SEL=0 VOUT=0.95V
PR105=3.4K_0603_1% PR115=10K_0603_1% UNPOP PR114 UNPOP PQ20	PR105=1.1K_0603_0.5% PR114=4.87K_0603_1% PR115=10K_0603_1% POP PQ20	PR105=1.1K_0603_0.5% PR114=20.5K_0603_1% PR115=19.6K_0603_1% POP PQ20

Compal Electronics, Inc.
Title: VGA_CORE/1.5V
Size: Document Number: LA-1841 Rev: 0.1
Date: Thursday, February 20, 2003 Sheet 51 of 57







GMCH_SEL=1	VOUT=1.225V FOR PRESCOTT
GMCH_SEL=0	VOUT=1.45V FOR NORTHWOOD

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Title: VTT_GMCH/CLOCKTHROTTLING

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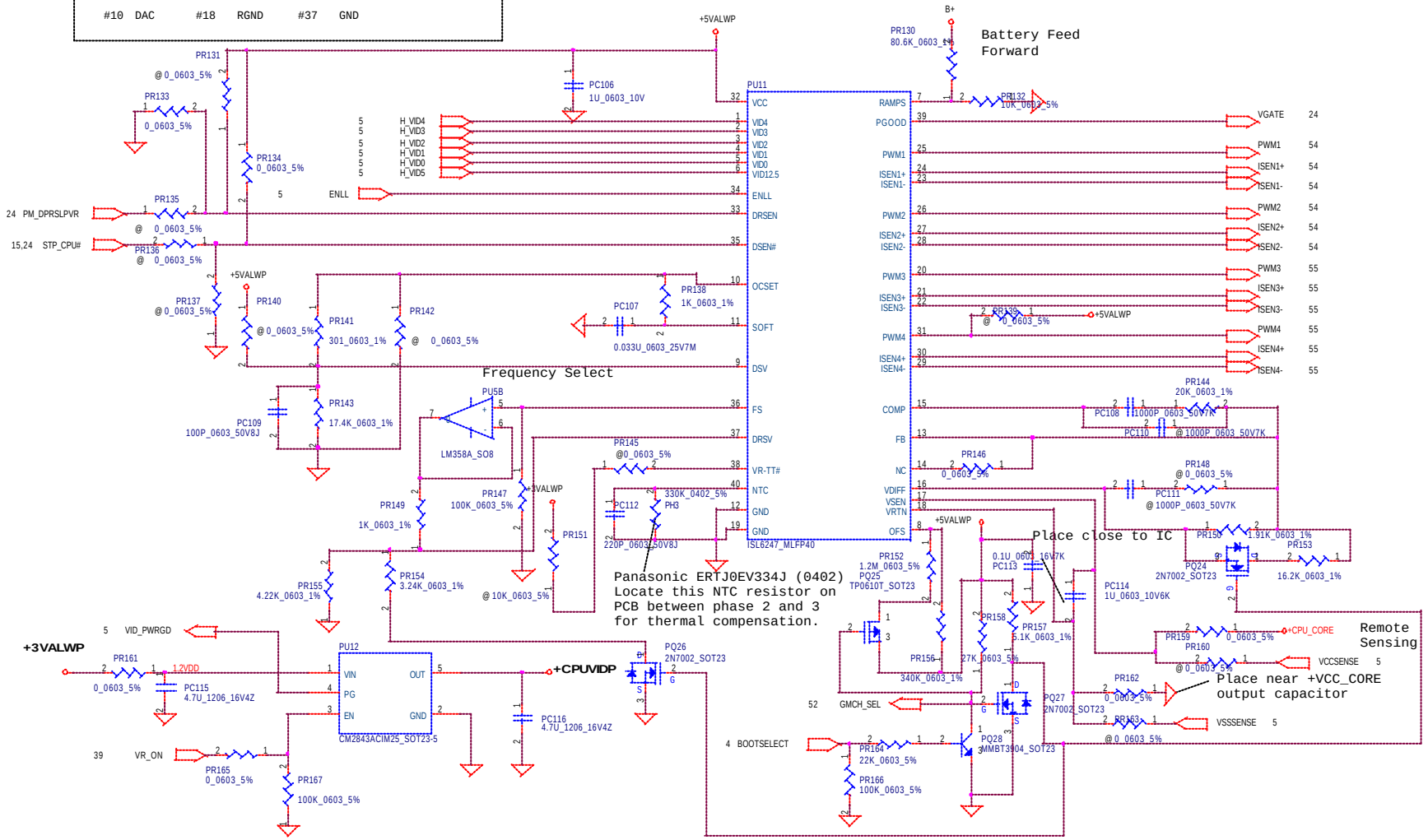
Different Pin Definition for ISL6561 in PU9

#7	GND	#11	REF	#33	EN	#38	OVP
#9	TCOMP	#14	IDROOP	#35	GND	#40	GND
#10	DAC	#18	RGND	#37	GND		



1. When mode control signal is high/ low, the VR will operate to Northwood/ Prescott load line.
2. VID5(12.5) should be pulled high, when the VR operates to Nothwood load line.

BOOTSELECT=1 PRESCOTT
BOOTSELECT=0 NORTHWOOD

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Title: CPU_CORE Controller

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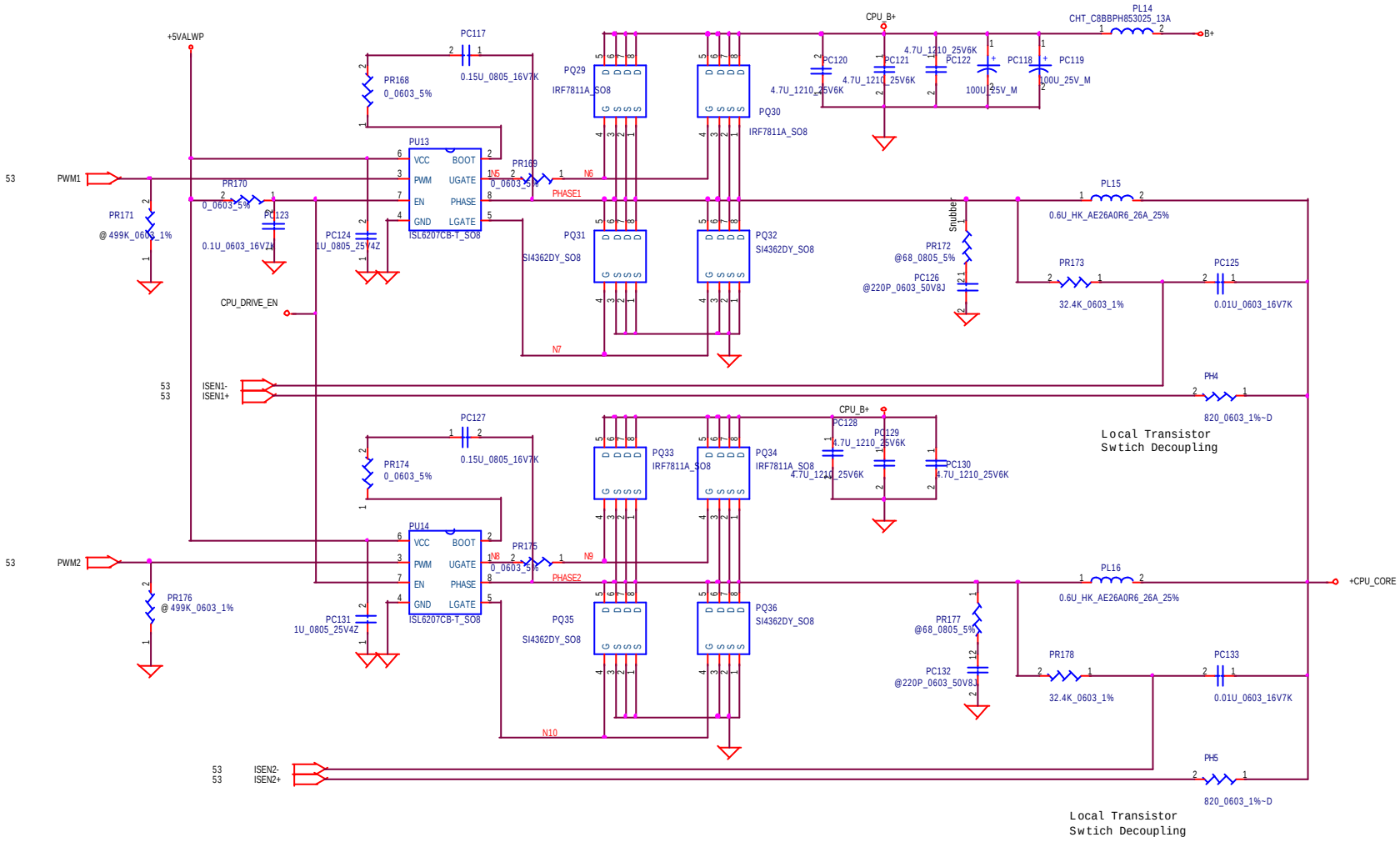

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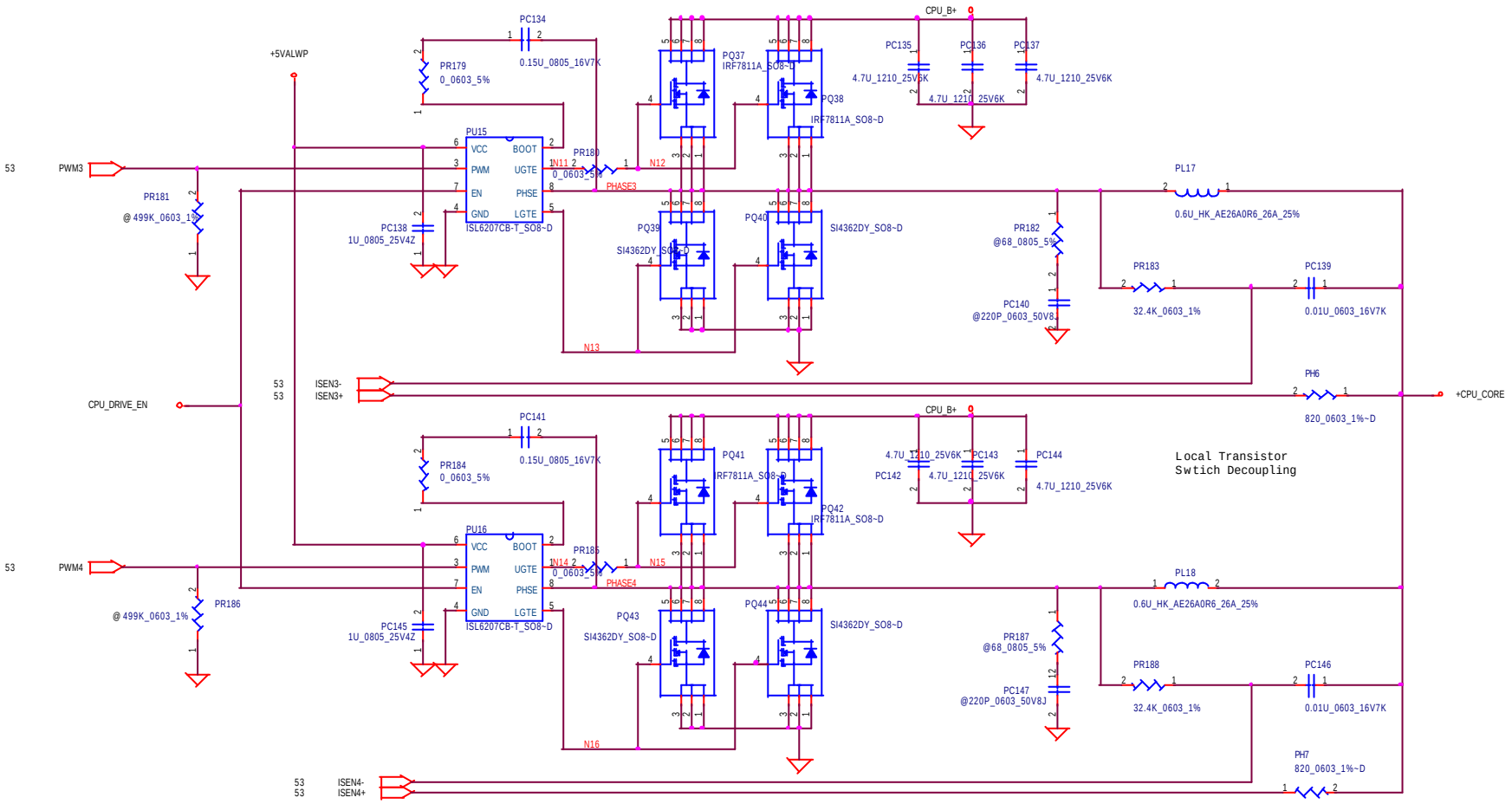
Title	CPU_CORE_Powerstage1	
Size	Document Number: LA-1841	Rev: 0.1
Date: Thursday, February 20, 2003	Sheet 54 of 57	



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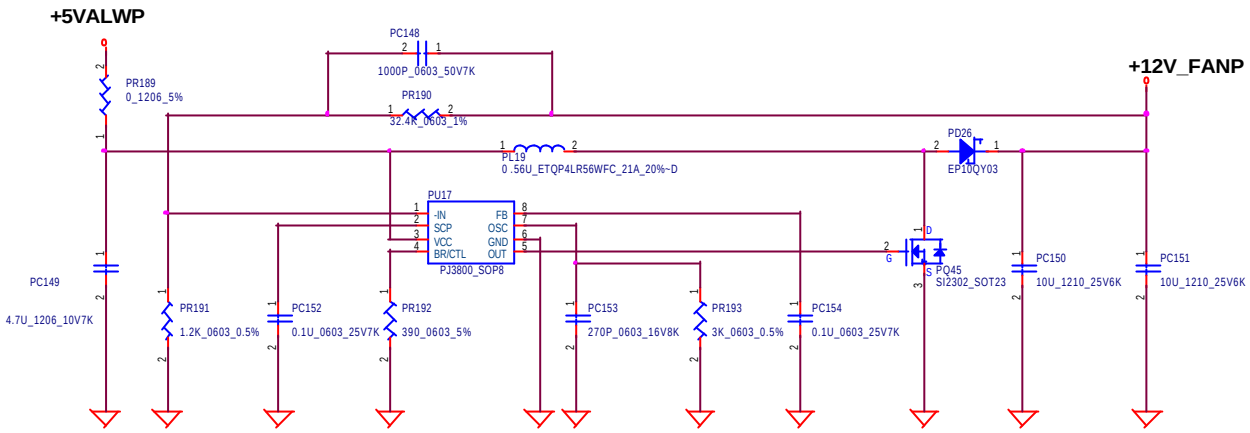
Title	CPU_CORE_Powerstage2	
Size	Document Number: LA-1841	Rev: 0.1
Date: Thursday, February 20, 2003	Sheet 55 of 57	



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Title: 12V_FAN		
Size	Document Number: LA-1841	Rev: 0.1
Date: Thursday, February 20, 2003	Sheet 56 of 57	

BTQ00 PIR LIST

********** Rev0.1 PIR List **********

Compal Electronics, Inc.

Title: BTQ00 PIR LIST

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Date: Thursday, February 20, 2003 | Sheet 57 of 57