Compal confidential

Schematics Document

ClawHammer AMD K8 with nVIDIA Chrush K8

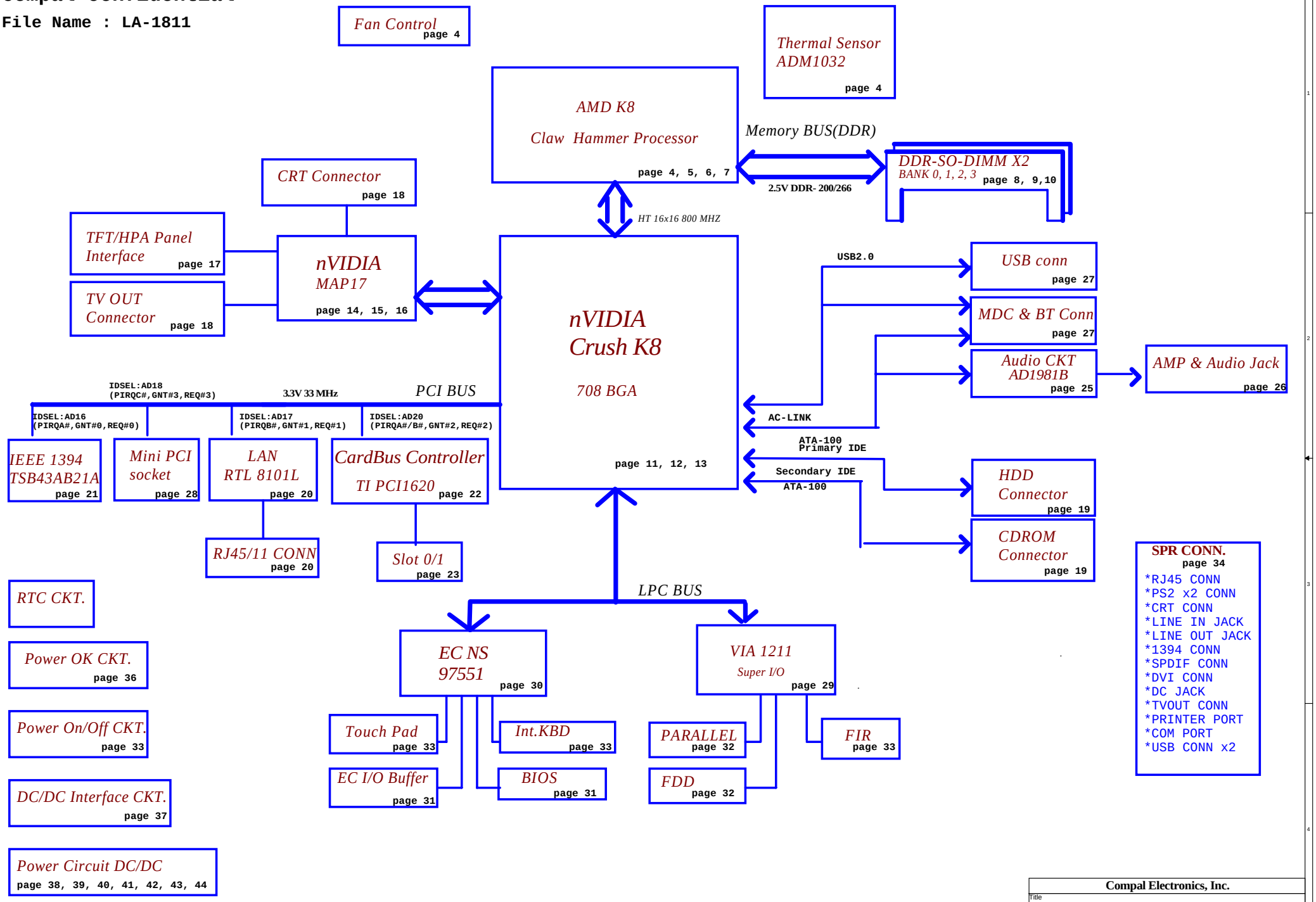
2004-04-16

REV: 0.1

Compal Electronics, Inc.		
Title: Cover Sheet		
Size	Document Number: LA-2392	Rev: 0.1
Date: Friday, April 16, 2004	Sheet 1 of 53	

Compal confidential

File Name : LA-1811



Compal Electronics, Inc.		
Title: Block Diagram		
Size	Document Number: LA-2392	Rev: 0.1
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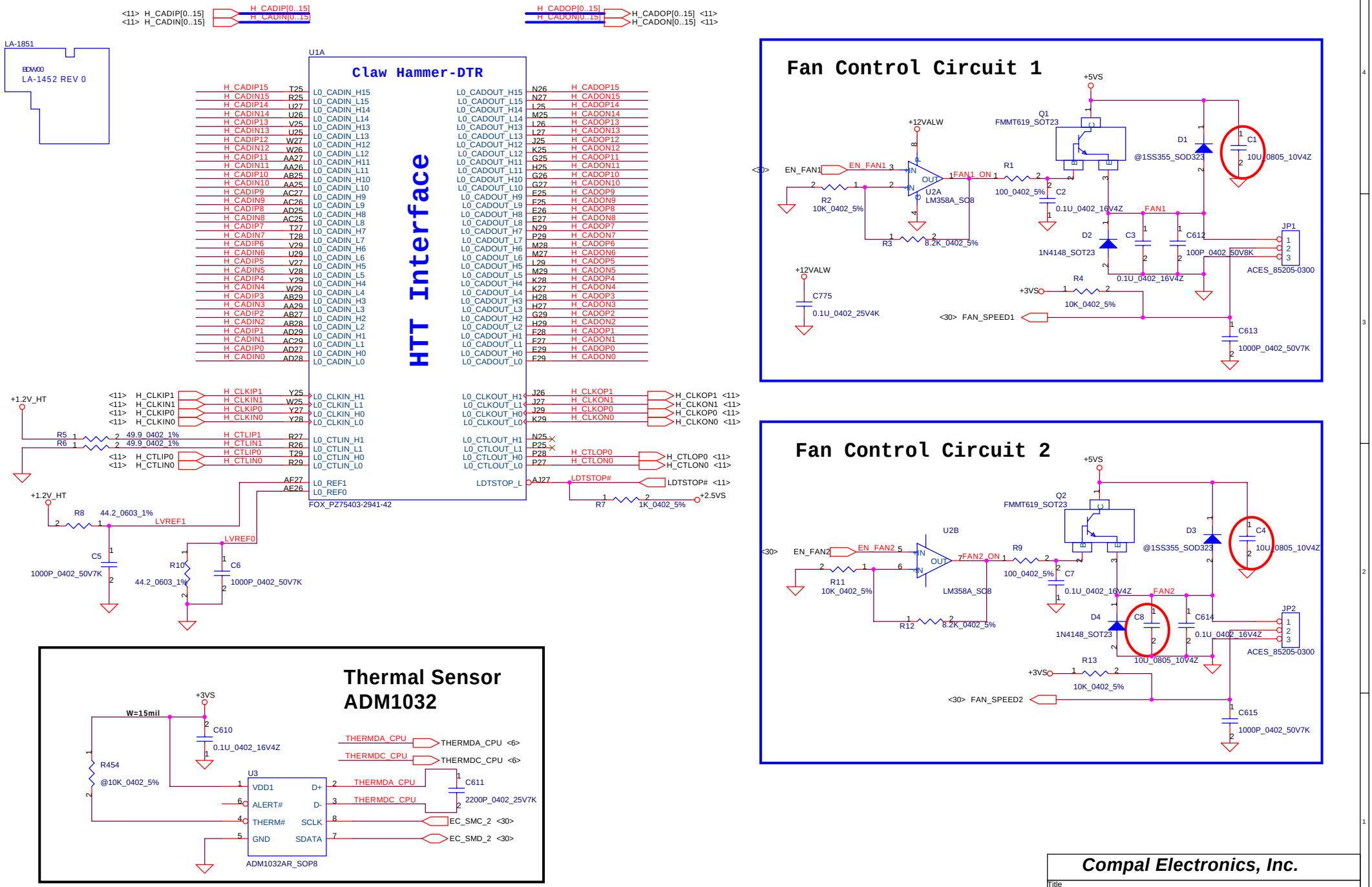
Voltage Rails

power plane / State	+1.2VALW +3VALW +5VALW 12VALW	+1.25V +2.5V +3V +5V	+1.2V_HT +1.2VS +1.5VS +2.5VS +3VS +5VS
S0	O	O	O
S1	O	O	O
S3	O	O	X
S5 S4/AC	O	X	X
S5 S4/AC don't exist	X	X	X

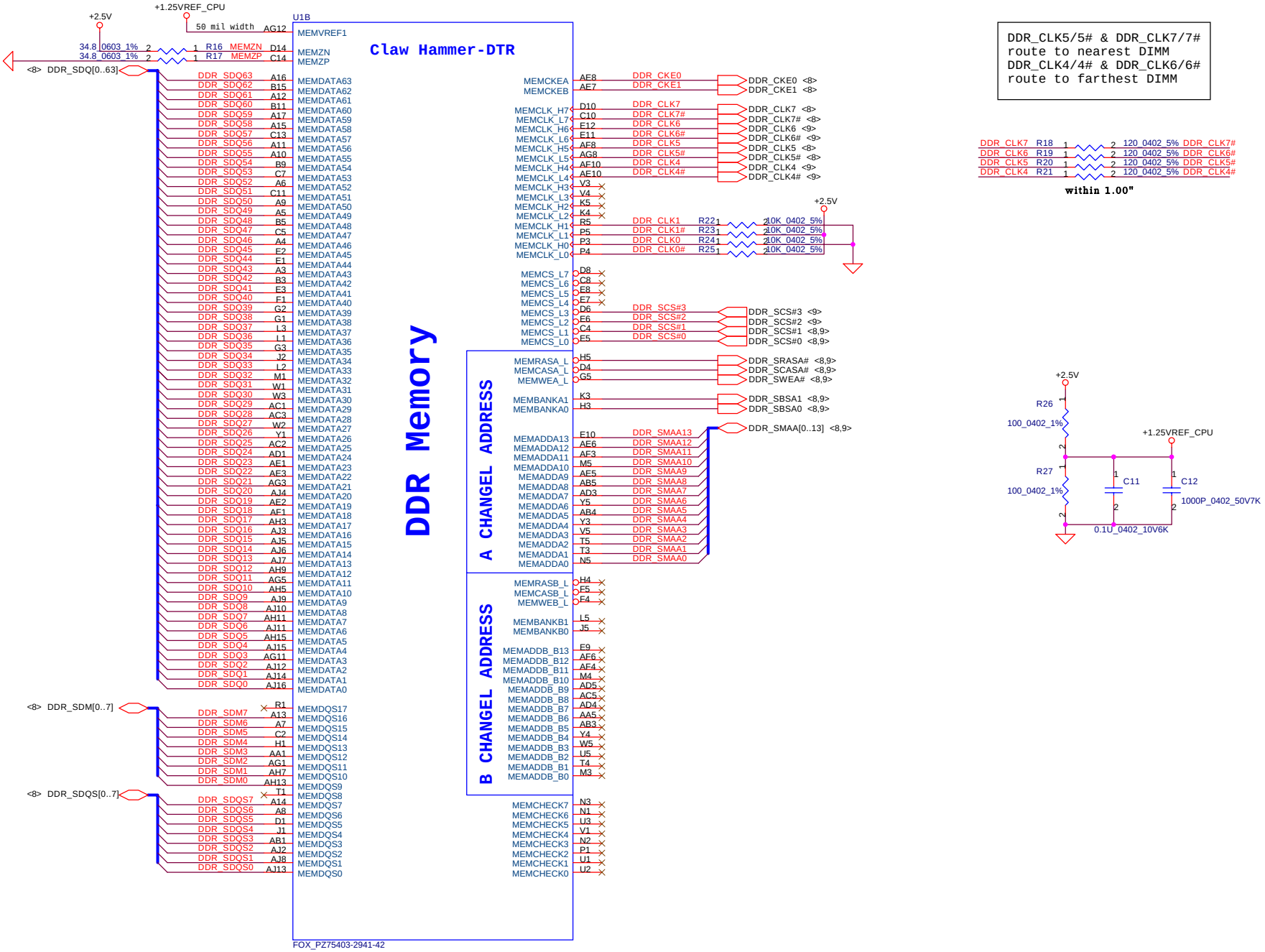
O MEANS ON
X MEANS OFF

PCI Devices

DEVICE	PCI Device ID	IDSEL #	REQ/GNT #	PIRQ
INTERNAL				
USB 2.0	2	AD13	N/A	G
AC97 MODEM	6	AD17	N/A	M
AC97	6	AD17	N/A	L
ATA 100	8	AD20	N/A	
ETHERNET	5	AD16	N/A	K
LPC I/F	1	AD12	N/A	
SMBUS	1	AD12	N/A	F
EXTERNAL				
VGA	0	AD16	N/A	E
1394	0	AD16	0	A
LAN	1	AD17	1	B
CARD BUS	4	AD20	2	A, B
Wireless LAN	2	AD18	3	C
Mini-PCI (no use)	3	AD19	4	D

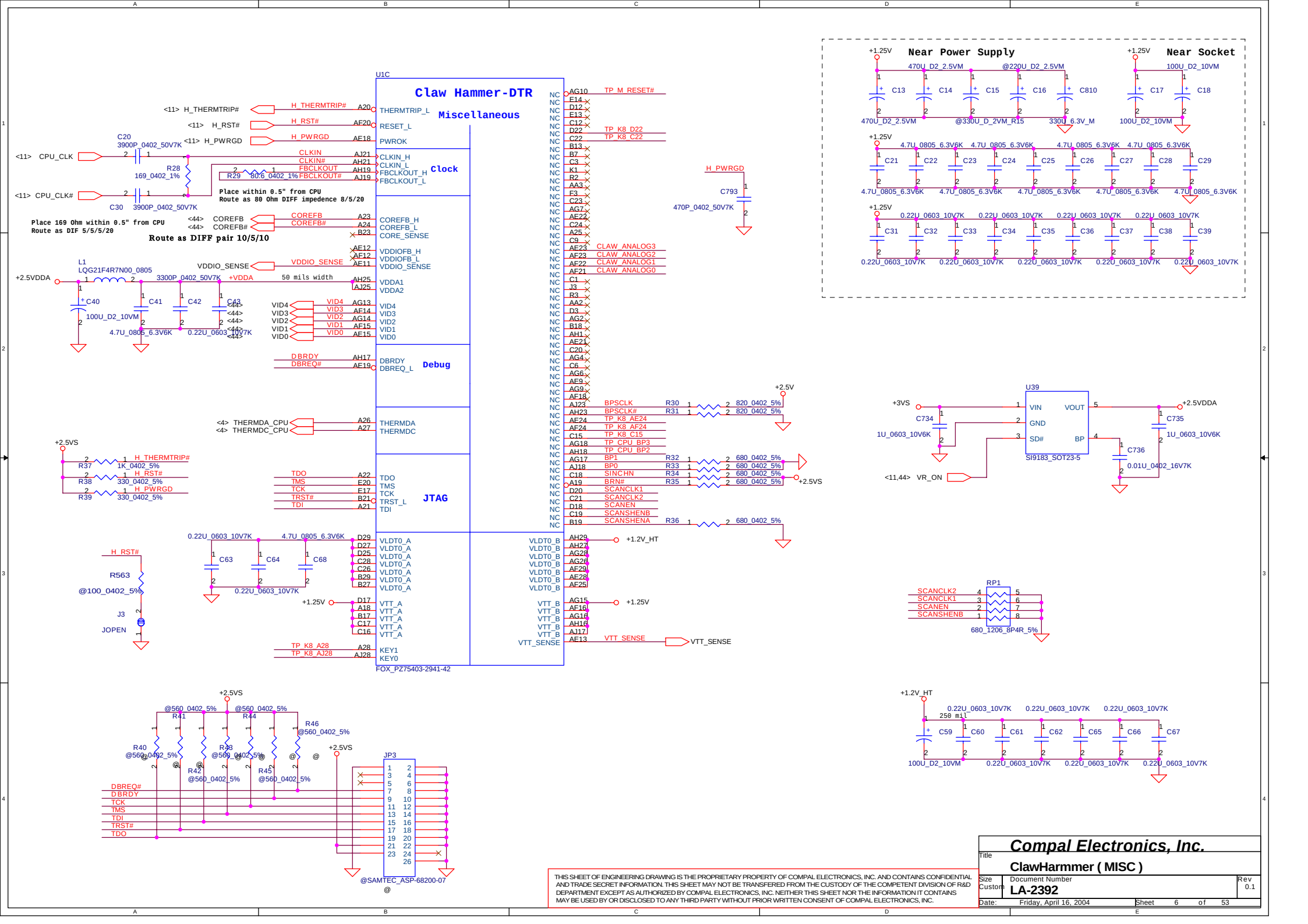


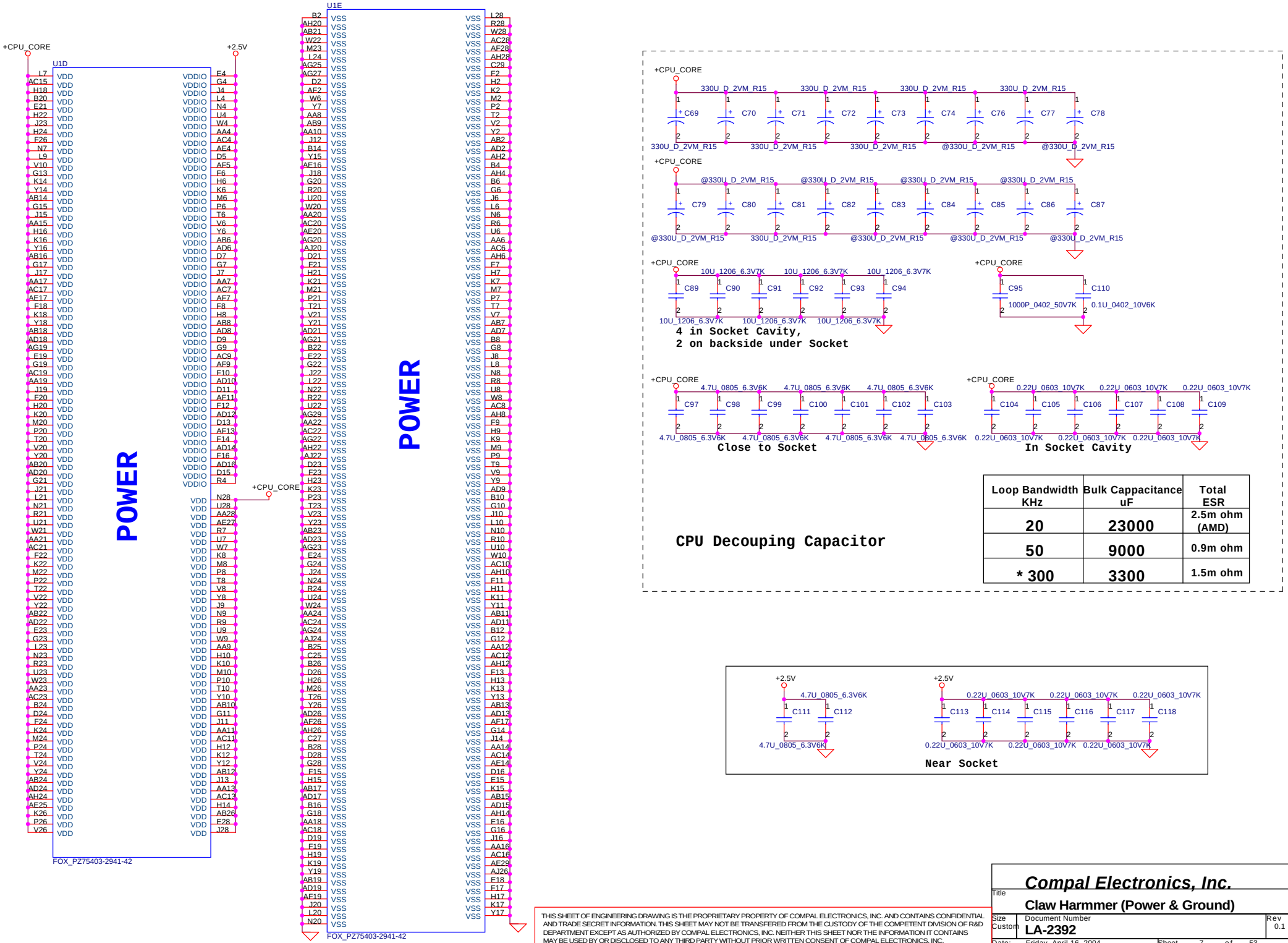
Size: Custom	Document Number: LA-2392	Rev: 0.1	
Date: Friday, April 16, 2004	Sheet 4 of 53		



Compal Electronics, Inc.

Title	Claw Harmmer (MEMORY BUS)	
Size: Custom	Document Number: LA-2392	Rev: 0.1
Date: Friday, April 16, 2004	Sheet 5 of 53	


Claw Hammer-DTR
Miscellaneous
Clock
Debug
JTAG
Near Power Supply
Near Socket
Route as DIFF pair 10/5/10
Place within 0.5" from CPU
Route as 80 Ohm DIFF impedence 8/5/20
Place 169 Ohm within 0.5" from CPU
Route as DIF 5/5/5/20
FOX_PZ75403-2941-42
@SAMTEC_ASP-68200-07
Compal Electronics, Inc.
ClawHarmmer (MISC)
LA-2392
Friday, April 16, 2004



Compal Electronics, Inc.

Title: **Claw Harmmer (Power & Ground)**

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RP2
DDR_SDQ1 1 8 DDR_DQ1
DDR_SDQ5 2 7 DDR_DQ5
DDR_SDQ4 3 6 DDR_DQ4
DDR_SDQ0 4 5 DDR_DQ0
10_0804_8P4R_5%
RP3
DDR_SDQ37 1 8 DDR_DQ37
DDR_SDQ32 2 7 DDR_DQ32
DDR_SDQ36 3 6 DDR_DQ36
DDR_SDQ33 4 5 DDR_DQ33
10_0804_8P4R_5%
RP4
DDR_SDQS0 1 4 DDR_DQS0
DDR_SDM0 2 3 DDR_DM0
10_0404_4P2R_5%
RP5
DDR_SDQS4 1 4 DDR_DQS4
DDR_SDM4 2 3 DDR_DM4
10_0404_4P2R_5%
RP6
DDR_SDQ6 1 8 DDR_DQ6
DDR_SDQ3 2 7 DDR_DQ3
DDR_SDQ7 3 6 DDR_DQ7
DDR_SDQ2 4 5 DDR_DQ2
10_0804_8P4R_5%
RP7
DDR_SDQ38 1 8 DDR_DQ38
DDR_SDQ34 2 7 DDR_DQ34
DDR_SDQ35 3 6 DDR_DQ35
DDR_SDQ39 4 5 DDR_DQ39
10_0804_8P4R_5%
RP8
DDR_SDQ13 1 8 DDR_DQ13
DDR_SDQ9 2 7 DDR_DQ9
DDR_SDQ8 3 6 DDR_DQ8
DDR_SDQ12 4 5 DDR_DQ12
10_0804_8P4R_5%
RP9
DDR_SDQ44 1 8 DDR_DQ44
DDR_SDQ40 2 7 DDR_DQ40
DDR_SDQ41 3 6 DDR_DQ41
DDR_SDQ45 4 5 DDR_DQ45
10_0804_8P4R_5%
RP10
DDR_SDQS1 1 4 DDR_DQS1
DDR_SDM1 2 3 DDR_DM1
10_0404_4P2R_5%
RP11
DDR_SDQS5 1 4 DDR_DQS5
DDR_SDM5 2 3 DDR_DM5
10_0404_4P2R_5%
RP12
DDR_SDQ15 1 8 DDR_DQ15
DDR_SDQ14 2 7 DDR_DQ14
DDR_SDQ11 3 6 DDR_DQ11
DDR_SDQ10 4 5 DDR_DQ10
10_0804_8P4R_5%
RP13
DDR_SDQ46 1 8 DDR_DQ46
DDR_SDQ42 2 7 DDR_DQ42
DDR_SDQ47 3 6 DDR_DQ47
DDR_SDQ43 4 5 DDR_DQ43
10_0804_8P4R_5%
RP14
DDR_SDQ19 1 8 DDR_DQ19
DDR_SDQ20 2 7 DDR_DQ20
DDR_SDQ21 3 6 DDR_DQ21
DDR_SDQ17 4 5 DDR_DQ17
10_0804_8P4R_5%
RP15
DDR_SDQ49 1 8 DDR_DQ49
DDR_SDQ48 2 7 DDR_DQ48
DDR_SDQ53 3 6 DDR_DQ53
DDR_SDQ52 4 5 DDR_DQ52
10_0804_8P4R_5%
RP16
DDR_SDQS2 1 4 DDR_DQS2
DDR_SDM2 2 3 DDR_DM2
10_0404_4P2R_5%
RP17
DDR_SDQS6 1 4 DDR_DQS6
DDR_SDM6 2 3 DDR_DM6
10_0404_4P2R_5%
RP18
DDR_SDQ22 1 8 DDR_DQ22
DDR_SDQ18 2 7 DDR_DQ18
DDR_SDQ16 3 6 DDR_DQ16
DDR_SDQ23 4 5 DDR_DQ23
10_0804_8P4R_5%
RP19
DDR_SDQ55 1 8 DDR_DQ55
DDR_SDQ54 2 7 DDR_DQ54
DDR_SDQ50 3 6 DDR_DQ50
DDR_SDQ51 4 5 DDR_DQ51
10_0804_8P4R_5%
RP20
DDR_SDQ28 1 8 DDR_DQ28
DDR_SDQ24 2 7 DDR_DQ24
DDR_SDQ25 3 6 DDR_DQ25
DDR_SDQ29 4 5 DDR_DQ29
10_0804_8P4R_5%
RP21
DDR_SDQ56 1 8 DDR_DQ56
DDR_SDQ60 2 7 DDR_DQ60
DDR_SDQ57 3 6 DDR_DQ57
DDR_SDQ61 4 5 DDR_DQ61
10_0804_8P4R_5%
RP22
DDR_SDQS3 1 4 DDR_DQS3
DDR_SDM3 2 3 DDR_DM3
10_0404_4P2R_5%
RP23
DDR_SDQS7 1 4 DDR_DQS7
DDR_SDM7 2 3 DDR_DM7
10_0404_4P2R_5%
RP24
DDR_SDQ30 1 8 DDR_DQ30
DDR_SDQ26 2 7 DDR_DQ26
DDR_SDQ31 3 6 DDR_DQ31
DDR_SDQ27 4 5 DDR_DQ27
10_0804_8P4R_5%
RP25
DDR_SDQ58 1 8 DDR_DQ58
DDR_SDQ63 2 7 DDR_DQ63
DDR_SDQ59 3 6 DDR_DQ59
DDR_SDQ62 4 5 DDR_DQ62
10_0804_8P4R_5%

Note:
DDR_SMAA13 Recommend for AMD

Layout note

Place these resistors close to DIMM0, all trace length<500 mil

<5> DDR_SDQS[0..7] DDR_SDQS[0..7]
<5> DDR_SDQ[0..63] DDR_SDQ[0..63]
<5> DDR_SDM[0..7] DDR_SDM[0..7]
<5,9> DDR_SMAA[0..13] DDR_SMAA[0..13]

<5> DDR_CKE0 — R47 10_0402_5% — DDR_CKE0_SR — DDR_CKE0_SR <9>
<5> DDR_CKE1 — R48 10_0402_5% — DDR_CKE1_SR — DDR_CKE1_SR <9>

+2.5V
+2.5V
20mil
+1.25VREF_MEM
C119 0.1U_0402_10V6K

JP4

	1	VREF	VREF	2	
	3	VSS	VSS	4	
DDR_DQ5 DDR_DQ1	5	DQ0	DQ4	6	DDR_DQ0 DDR_DQ4
	7	DQ1	DQ5	8	
	9	VDD	VDD	10	
DDR_DQS0 DDR_DQ2	11	DQS0	DM0	12	DDR_DM0 DDR_DQ7
	13	DQ2	DQ6	14	
	15	VSS	VSS	16	
DDR_DQ6 DDR_DQ8	17	DQ3	DQ7	18	DDR_DQ3 DDR_DQ12
	19	DQ8	DQ12	20	
	21	VDD	VDD	22	
DDR_DQ9 DDR_DQS1	23	DQ9	DQ13	24	DDR_DQ13 DDR_DM1
	25	DQS1	DM1	26	
	27	VSS	VSS	28	
DDR_DQ14 DDR_DQ15	29	DQ10	DQ14	30	DDR_DQ10 DDR_DQ11
	31	DQ11	DQ15	32	
	33	VDD	VDD	34	
<5> DDR_CLK5	35	CK0	VDD	36	
<5> DDR_CLK5#	37	CK0#	VSS	38	
	39	VSS	VSS	40	
DDR_DQ20 DDR_DQ16	41	DQ16	DQ20	42	DDR_DQ17 DDR_DQ21
	43	DQ17	DQ21	44	
DDR_DQS2 DDR_DQ18	45	VDD	VDD	46	
	47	DQS2	DM2	48	DDR_DM2 DDR_DQ19
	49	DQ18	DQ22	50	
DDR_DQ22 DDR_DQ24	51	VSS	VSS	52	
	53	DQ19	DQ23	54	DDR_DQ23 DDR_DQ29
	55	DQ24	DQ28	56	
DDR_DQ28 DDR_DQS3	57	VDD	VDD	58	
	59	DQ25	DQ29	60	DDR_DQ25 DDR_DM3
	61	DQS3	DM3	62	
DDR_DQ26 DDR_DQ30	63	VSS	VSS	64	
	65	DQ26	DQ30	66	DDR_DQ27 DDR_DQ31
	67	DQ27	DQ31	68	
	69	VDD	VDD	70	
	71	CB0	CB4	72	
	73	CB1	CB5	74	
	75	VSS	VSS	76	
	77	DQS8	DM8	78	
	79	CB2	CB6	80	
	81	VDD	VDD	82	
	83	CB3	CB7	84	
	85	DU	DU/RESET#	86	
	87	VSS	VSS	88	
	89	CK2	VSS	90	
	91	CK2#	VDD	92	
DDR_CKE0_SR	93	VDD	VDD	94	
	95	CKE1	CKE0	96	DDR_CKE0_SR
	97	DU/A13	DU/BA2	98	
DDR_SMAA12	99	A12	A11	100	DDR_SMAA11
DDR_SMAA9	101	A9	A8	102	DDR_SMAA8
	103	VSS	VSS	104	
DDR_SMAA7	105	A7	A6	106	DDR_SMAA6
DDR_SMAA5	107	A5	A4	108	DDR_SMAA4
DDR_SMAA3	109	A3	A2	110	DDR_SMAA2
DDR_SMAA1	111	A1	A0	112	DDR_SMAA0
	113	VDD	VDD	114	
DDR_SMAA10	115	A10/AP	BA1	116	DDR_SBSA1 — DDR_SBSA1 <5,9>
<5,9> DDR_SBSA0 DDR_SBSA0	117	BA0	RAS#	118	DDR_SRASA# — DDR_SRASA# <5,9>
<5,9> DDR_SWEA# DDR_SWEA#	119	WE#	CAS#	120	DDR_SCASA# — DDR_SCASA# <5,9>
<5,9> DDR_SCS#0 DDR_SCS#0	121	S0#	S1#	122	DDR_SCS#1 — DDR_SCS#1 <5,9>
DDR_SMAA13	123	DU	DU	124	
	125	VSS	VSS	126	
DDR_DQ33	127	DQ32	DQ36	128	DDR_DQ32
DDR_DQ36	129	DQ33	DQ37	130	DDR_DQ37
	131	VDD	VDD	132	
DDR_DQS4	133	DQS4	DM4	134	DDR_DM4
DDR_DQ34	135	DQ34	DQ38	136	DDR_DQ39
	137	VSS	VSS	138	
DDR_DQ38	139	DQ35	DQ39	140	DDR_DQ35
DDR_DQ40	141	DQ40	DQ44	142	DDR_DQ45
	143	VDD	VDD	144	
DDR_DQ44	145	DQ41	DQ45	146	DDR_DQ41
DDR_DQS5	147	DQS5	DM5	148	DDR_DM5
	149	VSS	VSS	150	
DDR_DQ42	151	DQ42	DQ46	152	DDR_DQ43
DDR_DQ46	153	DQ43	DQ47	154	DDR_DQ47
	155	VDD	VDD	156	
	157	VDD	CK1#	158	DDR_CLK7# <5>
	159	VSS	CK1	160	DDR_CLK7 <5>
	161	VSS	VSS	162	
DDR_DQ48	163	DQ48	DQ52	164	DDR_DQ52
DDR_DQ49	165	DQ49	DQ53	166	DDR_DQ53
	167	VDD	VDD	168	
DDR_DQS6	169	DQS6	DM6	170	DDR_DM6
DDR_DQ54	171	DQ50	DQ54	172	DDR_DQ51
	173	VSS	VSS	174	
DDR_DQ55	175	DQ51	DQ55	176	DDR_DQ50
DDR_DQ60	177	DQ56	DQ60	178	DDR_DQ61
	179	VDD	VDD	180	
DDR_DQ56	181	DQ57	DQ61	182	DDR_DQ57
DDR_DQS7	183	DQ57	DM7	184	DDR_DM7
	185	VSS	VSS	186	
DDR_DQ63	187	DQ58	DQ62	188	DDR_DQ62
DDR_DQ58	189	DQ59	DQ63	190	DDR_DQ59
	191	VDD	VDD	192	
<9,12> DIMM_SMDATA	193	SDA	SA0	194	
<9,12> DIMM_SMCLK	195	SCL	SA1	196	
+3VS	197	VDD_SPD	SA2	198	
	199	VDD_ID	DU	200	

AMP_1565918-1

DDR_DQ[0..63] — DDR_DQ[0..63] <9>
DDR_DQS[0..7] — DDR_DQS[0..7] <9>
DDR_DM[0..7] — DDR_DM[0..7] <9>

SO-DIMM0
REVERSE

Compal Electronics, Inc.
Title: DDR-SODIMM SLOT0
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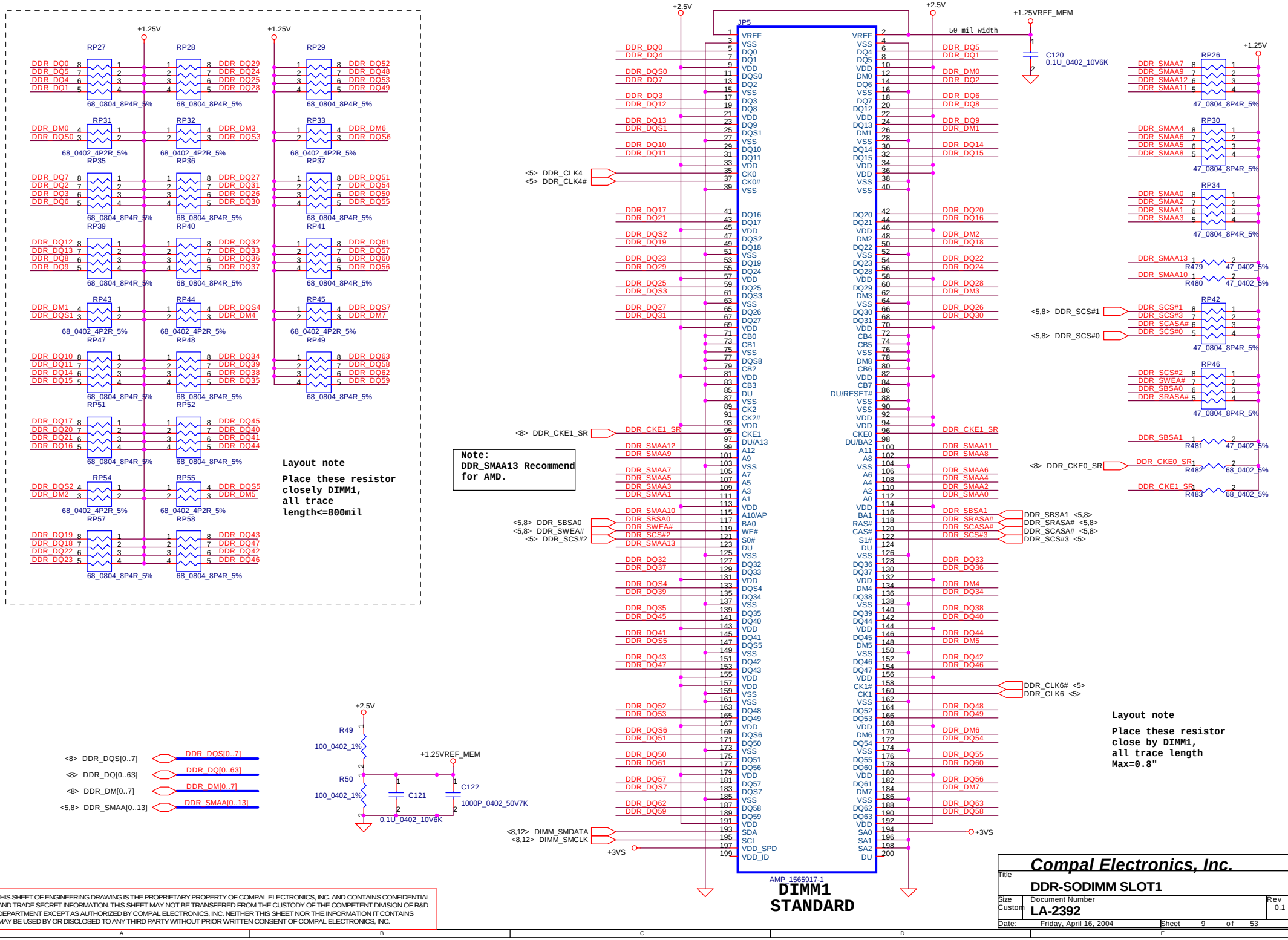

Compal Electronics, Inc.

Title: DDR-SODIMM SLOT1

Size: Custom | Document Number: LA-2392 | Rev: 0.1

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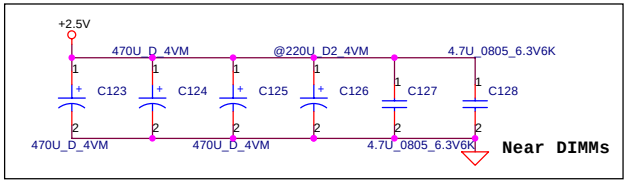
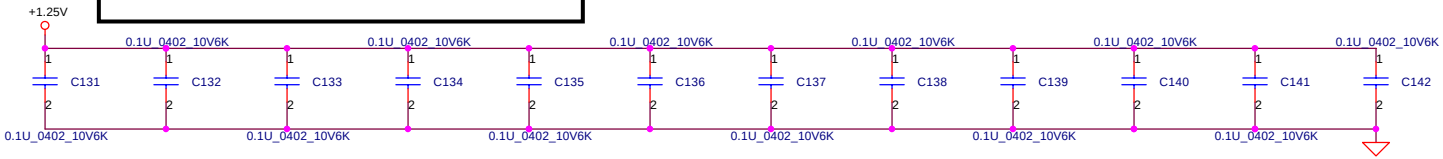
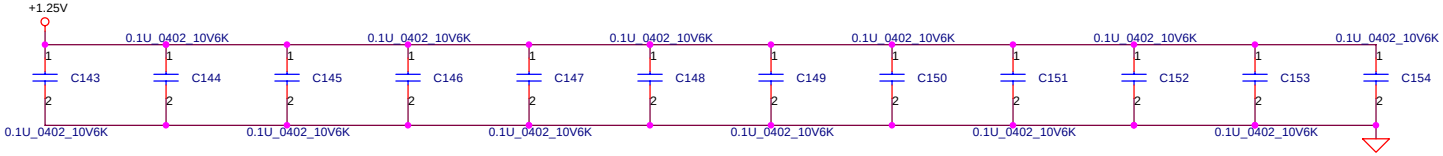
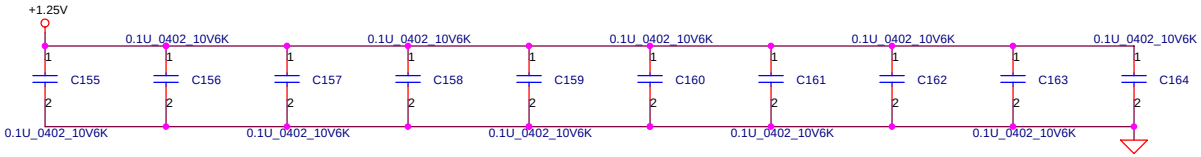


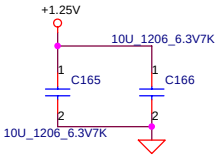
Layout note :

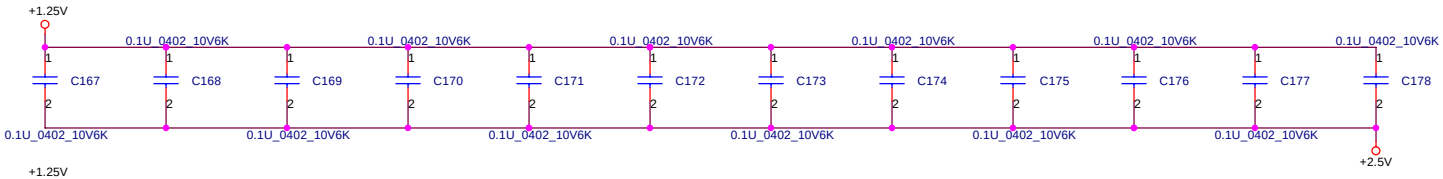
Place one cap close to every 2 pull up resistors termination to +1.25VS

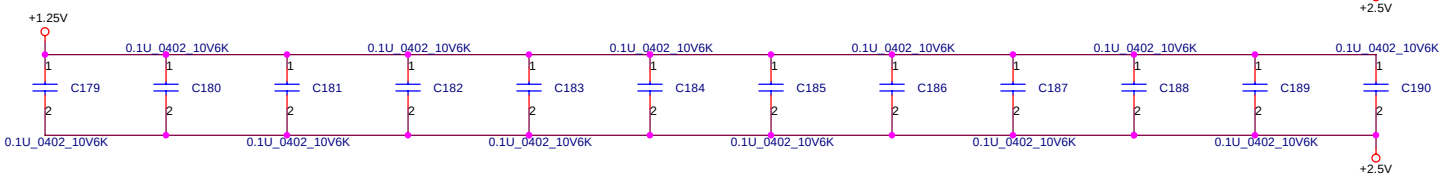


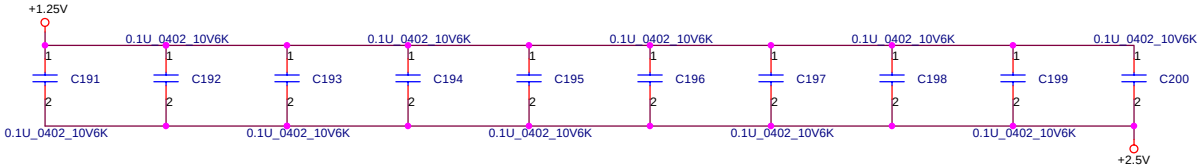












Compal Electronics, Inc.

Title: **DDR SODIMM Decoupling**

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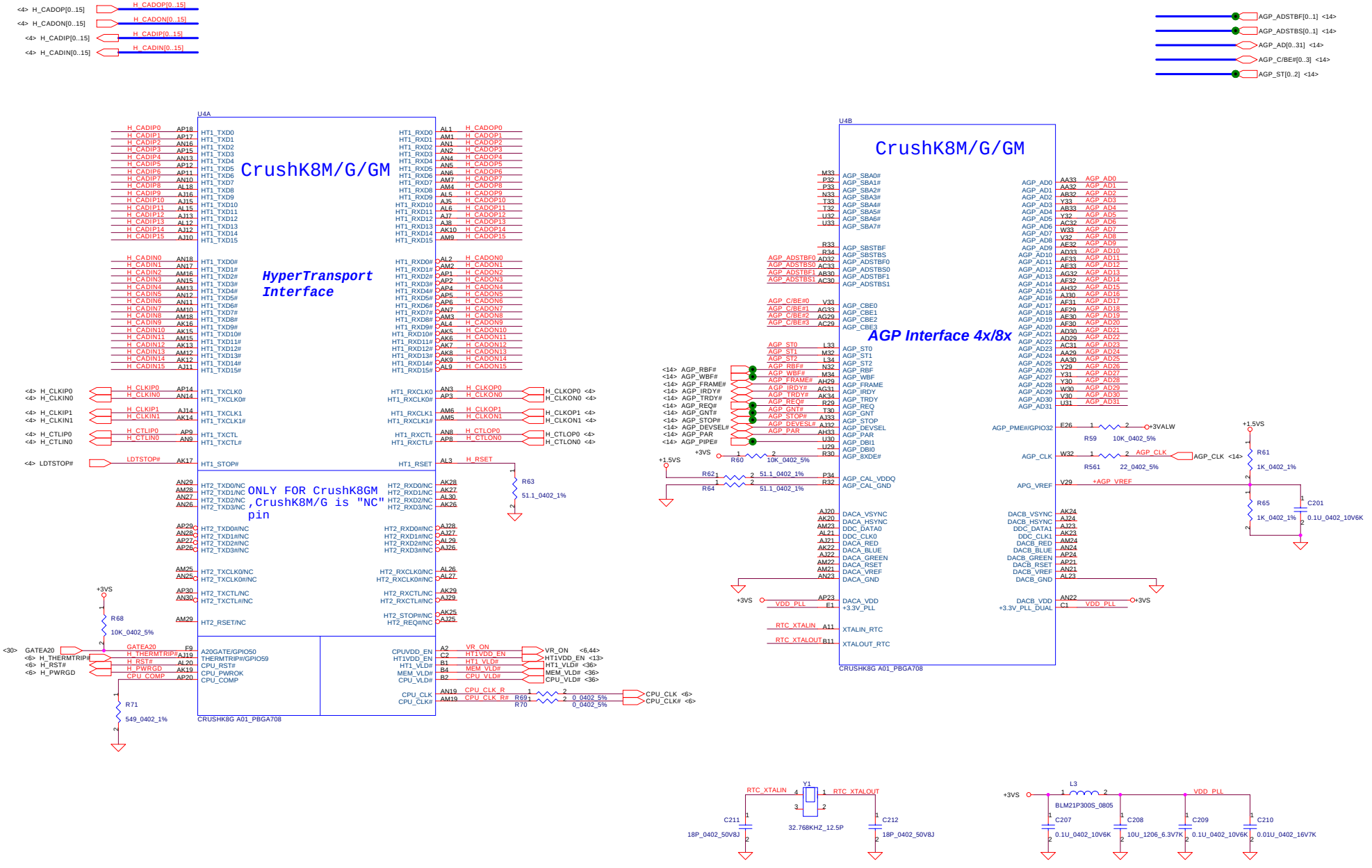

Compal Electronics, Inc.

Title: nVIDIA CrushK8 (Host & AGP Bus)

Size: C | Document Number: LA-2392 | Rev: 0.1

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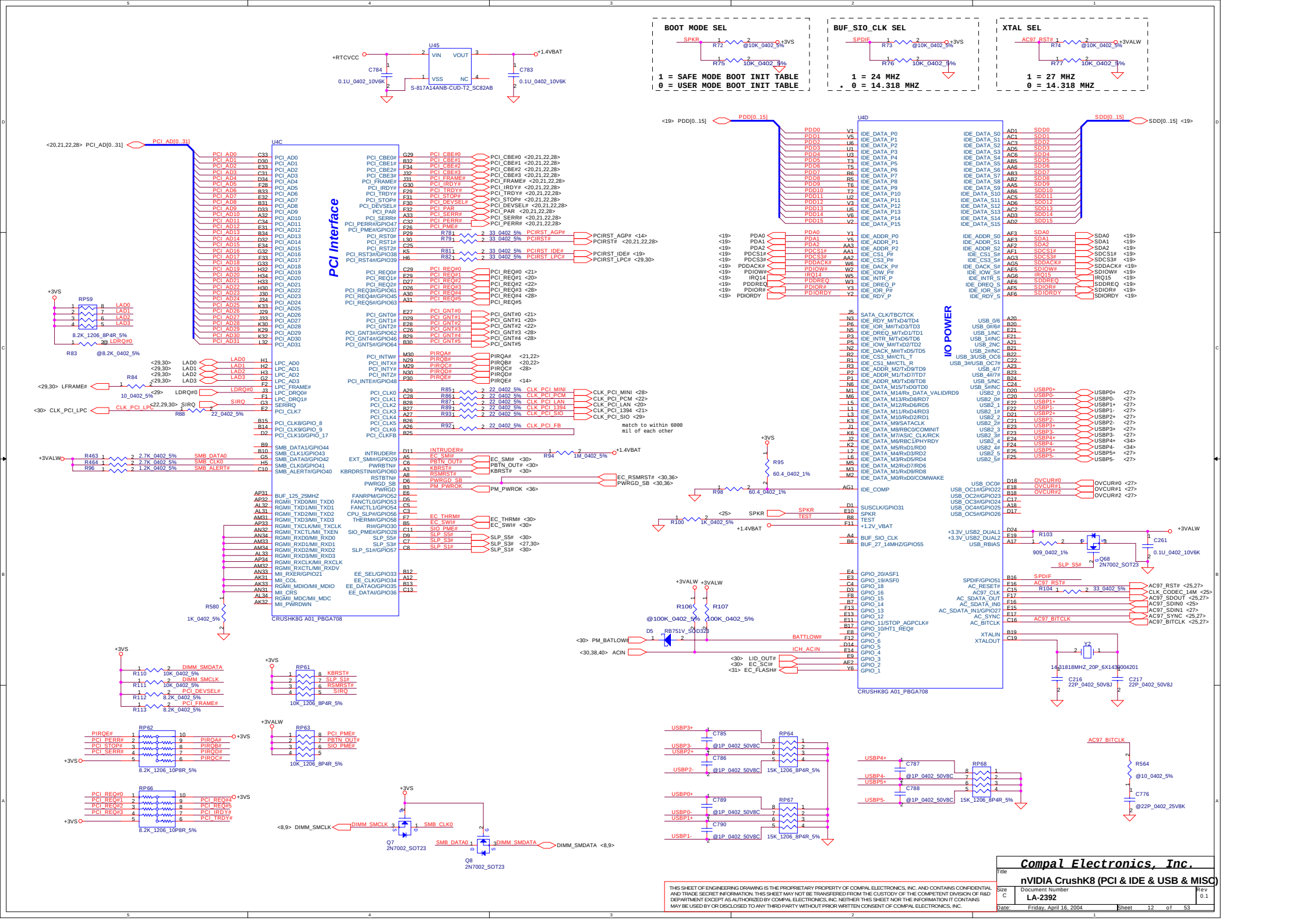
BOOT MODE SEL
1 = SAFE MODE BOOT INIT TABLE
0 = USER MODE BOOT INIT TABLE
BUF_SIO_CLK SEL
1 = 24 MHZ
0 = 14.318 MHZ
XTAL SEL
1 = 27 MHZ
0 = 14.318 MHZ
U45
S-817A14ANB-CUD-T2_SC82AB
U4C
CRUSHK8G A01_PBGA708
PCI Interface
U4D
I/O POWER
CRUSHK8G A01_PBGA708
Compal Electronics, Inc.
nVIDIA CrushK8 (PCI & IDE & USB & MISC)
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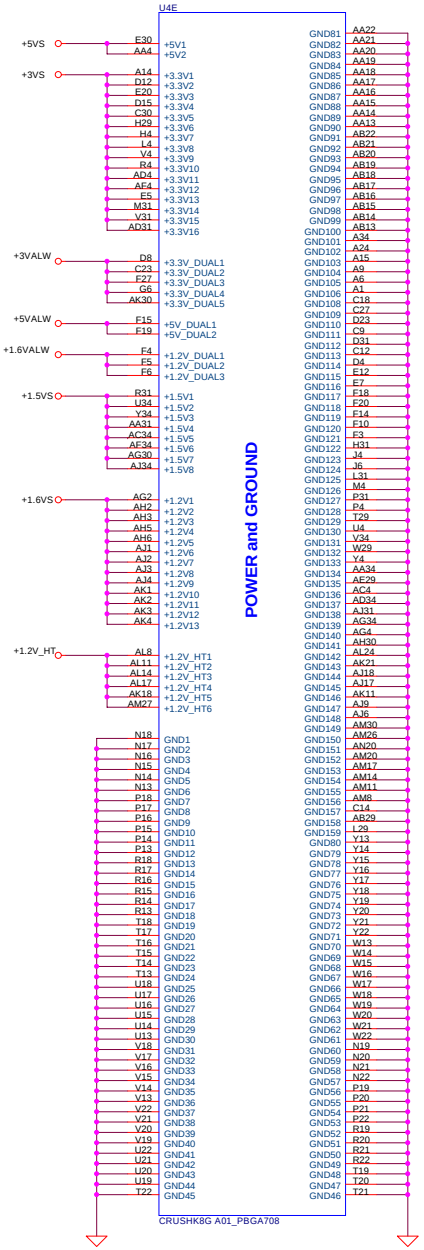

Compal Electronics, Inc.

Title: nVIDIA CrushK8 (Power & Ground)

Size: C | Document Number: LA-2392 | Rev: 0.1

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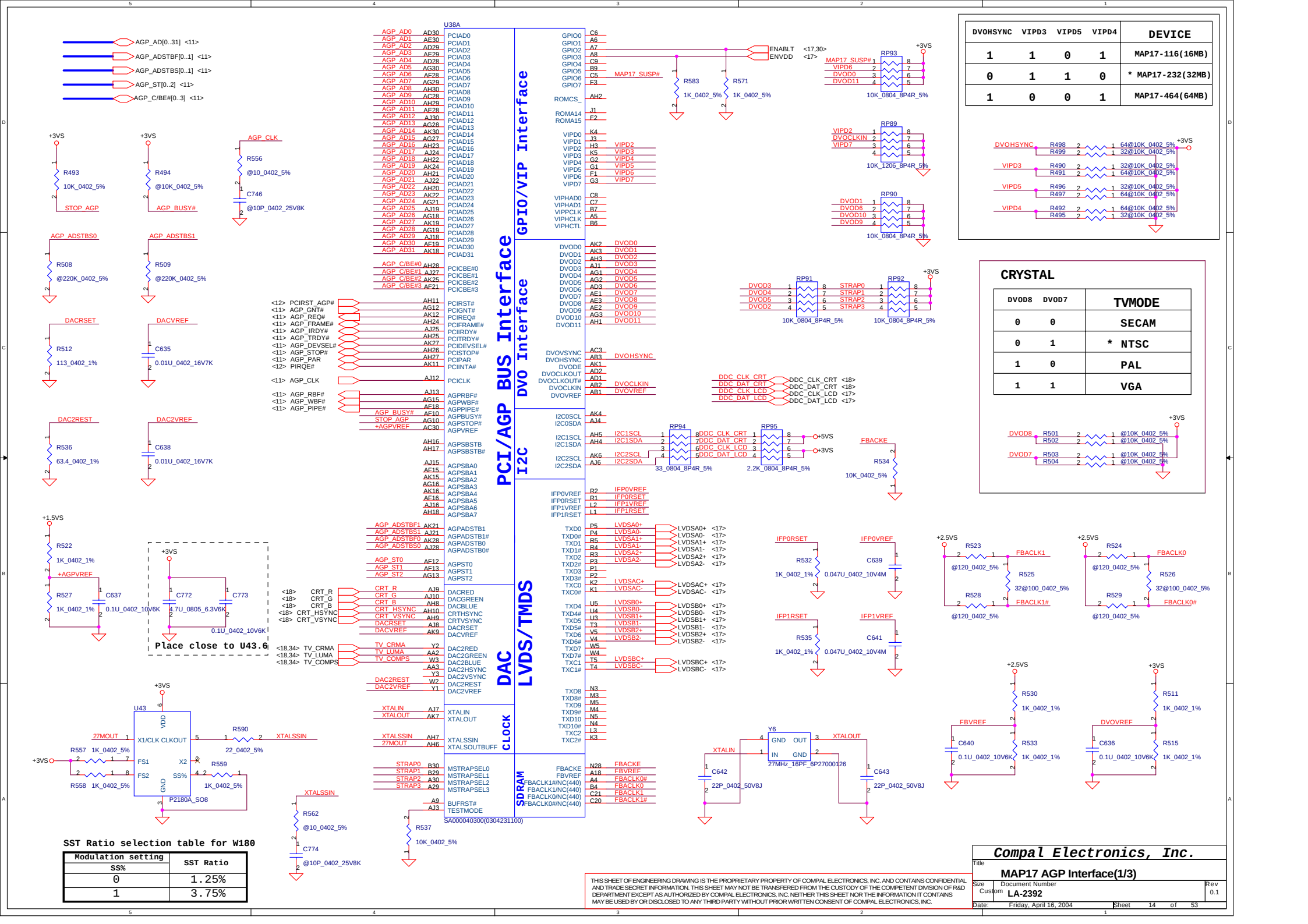

DVOHSYNC	VIPD3	VIPD5	VIPD4	DEVICE
1	1	0	1	MAP17-116(16MB)
0	1	1	0	* MAP17-232(32MB)
1	0	0	1	MAP17-464(64MB)

CRYSTAL

DVOD8	DVOD7	TVMODE
0	0	SECAM
0	1	* NTSC
1	0	PAL
1	1	VGA

SST Ratio selection table for W180

Modulation setting SS%	SST Ratio
0	1.25%
1	3.75%

Compal Electronics, Inc.

Title: MAP17 AGP Interface(1/3)

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	MAP17-116/232	MAP17-464
+VGA_CORE	* +1.2VS	+1.35VS

+1.2VS
+1.35VS
JOPEN1
JOPEN2
near JOPEN1,2
+VGA_CORE
C743 22U_1206_10V4Z
C663 4.7U_0805_6.3V6K
C664 0.1U_0402_10V6K

+2.5VS
1.5A
C646 C647 C648 C649 C650 C651 C652 C644 C645
0.1U_0402_10V6K 0.1U_0402_10V6K 10P_0402_50V8K 0.1U_0402_10V6K
4.7U_0805_6.3V6K 1000P_0402_50V7K 0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K
C665 C666 C667 C668 C669 C670 C671 C672 C673
0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K 1000P_0402_50V7K
0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K 10P_0402_50V8K
C747 C748 C749 C750 C751 C752 C753 C754 C755
0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K
0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K

+VGA_CORE
3.3A
C682 C683 C684 C685 C686 C687
4.7U_0805_6.3V6K 1000P_0402_50V7K 0.1U_0402_10V6K
4.7U_0805_6.3V6K 0.1U_0402_10V6K 10P_0402_50V8K
C695 C696 C697 C698 C699 C700
1000P_0402_50V7K 0.1U_0402_10V6K 10P_0402_50V8K
0.1U_0402_10V6K 10P_0402_50V8K 1000P_0402_50V7K
C760 C761 C762 C763 C764 C765
0.1U_0402_10V6K 1000P_0402_50V7K 0.1U_0402_10V6K
0.1U_0402_10V6K 0.1U_0402_10V6K 10P_0402_50V8K
C766 C767 C768 C769 C770 C771
0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K
0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K

U38B
SA000040300(0304231100)

+2.5VS	E4 G4 J4 AD4 AF4 D5 E5 D7 E6 AB27 AD27 AF27 AE26 D9 D22 D24 AG24 E25 AE25 D26 E26 AG26 E27 G27 J27 AG5 AF6 AG7 AE5	VDDFBIO	
	L6 P6 U6 Y6 D11 E11 AE11 D14 F14 AE14 D17 F17 AE17 D20 F20 AE20 L25 P25 U25 Y25 L27 P27 U27 Y27	VDD	
		VDDAGP	AG14 AK14 AG17 AK17 AG20 AK20 AK23 AK26 AK29 AF30 → +1.5VS
		VDDFBC	J25 G6 J6 F22 F24 F7 G25 F9 AB6 AD6 AE7 AE9 AE22 AE24 AB25 AD25 → +2.5VS
		NC/VDDFBC(440)	
		VDD33	E1 H1 AC1 AF1 L4 Y4 → +3VS
		VD50CLAMP	D4 AG11 → +5VS
		DACVDD	AK10 → +3VS
		DAC2VDD	AA1 → +3VS
		PLLVDD	AK5 → +3VS
		VDDDVO	AF3 AG4 → +3VS (C707 0.1U_0402_16V4Z)
		IFPAIOAVDD	T1 → +3VS
		IFPAIOBVDD	U1 → +IFPBIOVDD
		IFPBIOVDD	M1
		IFPAPLLVDD	V1 → +2.8VS
		IFPBPLLVDD	N1 → +IFPBPLLVDD

+1.5VS
C653 C654 C655 C656 C657 C658 C659 C660 C661 C662
0.1U_0402_10V6K
10P_0402_50V8K 1000P_0402_50V7K 0.1U_0402_10V6K 0.1U_0402_10V6K 4.7U_0805_6.3V6K

+2.5VS
2.1A
C674 C675 C676 C681 C678 C679 C680 C677
0.1U_0402_10V6K
0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K 4.7U_0805_6.3V6K
C756 C689 C694 C690 C691 C688 C692 C693
0.1U_0402_10V6K
0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K 0.1U_0402_10V6K

+3VS
C757 C714 C715 C716 C717 C718
0.1U_0402_10V6K
4.7U_0805_6.3V6K
0.1U_0402_10V6K 0.1U_0402_10V6K

+5VS
C758 C759
0.1U_0402_10V6K
0.1U_0402_10V6K

+3VS
C799 C800 C805 C806
1000P_0402_50V7K
+VGA_CORE

C733 C731 C732 → +3VS
10P_0402_50V8K 4700P_0402_25V7K 1U_0603_10V6K
Close to pin#AK10

C710 C708 C709 → +2.8VS
10P_0402_50V8K 4700P_0402_25V7K 1U_0603_10V6K
Close to pin#V1

C730 C728 C729 → +3VS
10P_0402_50V8K 4700P_0402_25V7K 1U_0603_10V6K
Close to pin#AA1

+IFPBIOVDD → R581 10K_0402_5%
+IFPBPLLVDD → R582 10K_0402_5%

C706 C704 C705 → +3VS
10P_0402_50V8K 4700P_0402_25V7K 1U_0603_10V6K
Close to pin#T1

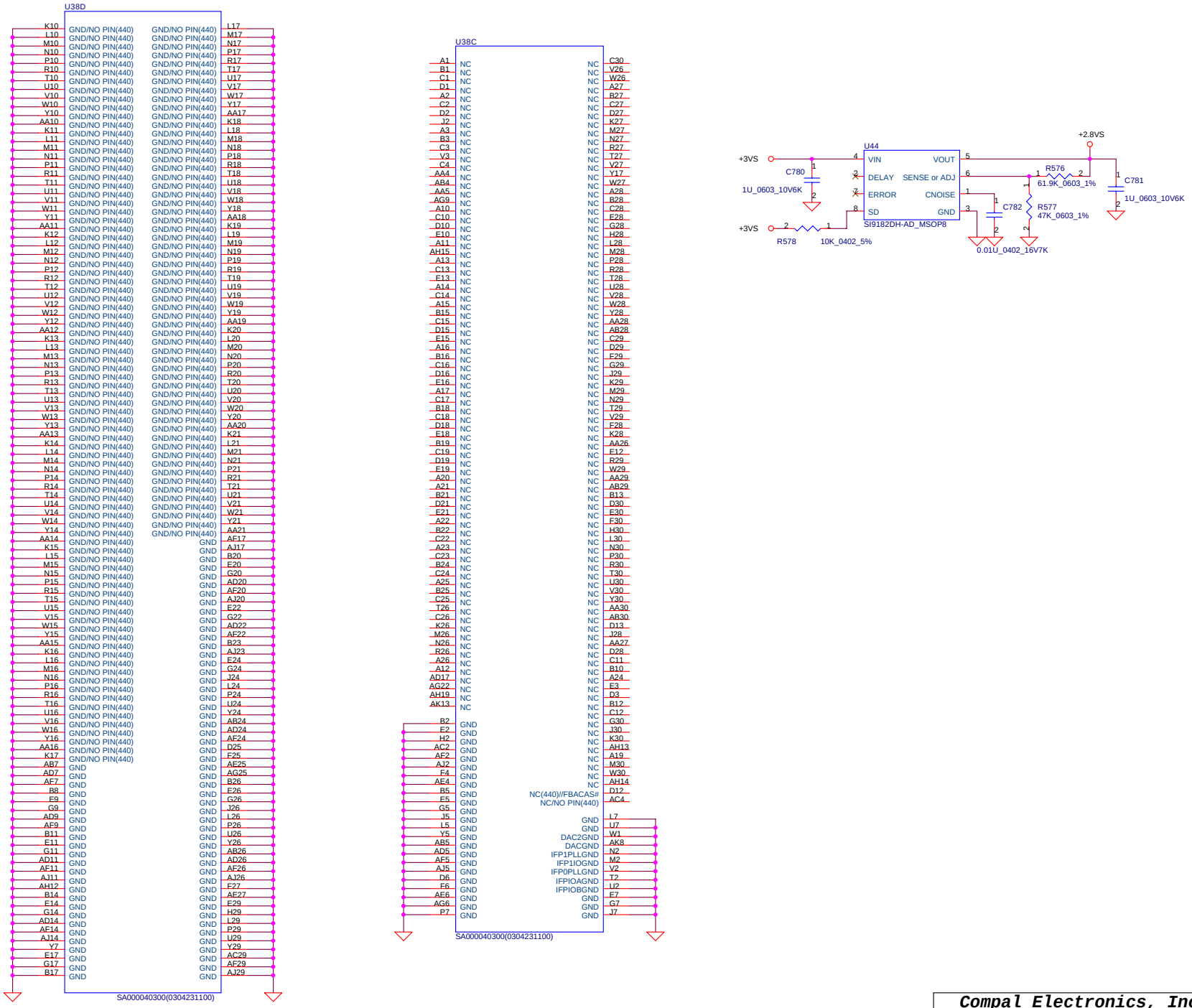
+PLL_VDD
C724 C722 C723 → +3VS
10P_0402_50V8K 4700P_0402_25V7K 1U_0603_10V6K
Close to pin#AK5

Compal Electronics, Inc.

Title: MAP17 Power (2/3)

Size: Custom | Document Number: LA-2392 | Rev: 0.1

Date: Friday, April 16, 2004 | Sheet 15 of 53



Compal Electronics, Inc.

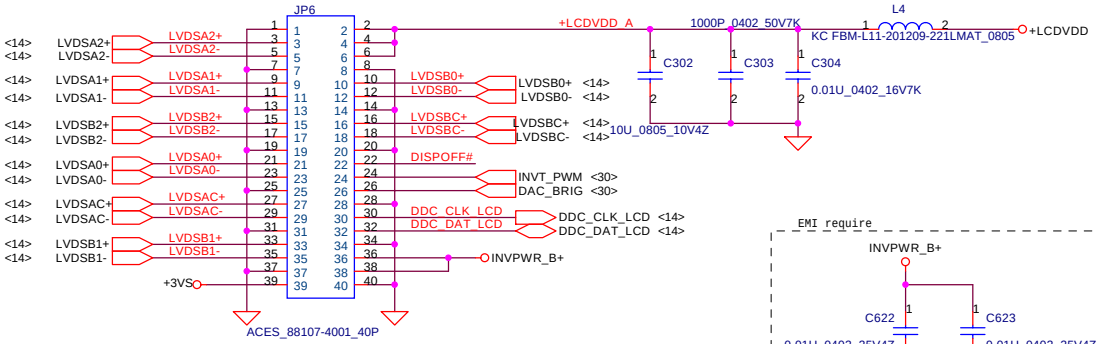
Title: **MAP17 NC/GND(3/3)**

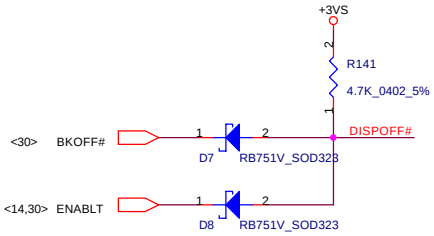
Size	Document Number	Rev
Custom	LA-2392	0.1

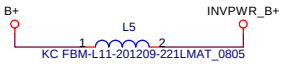
Date: Friday, April 16, 2004 Sheet 16 of 53

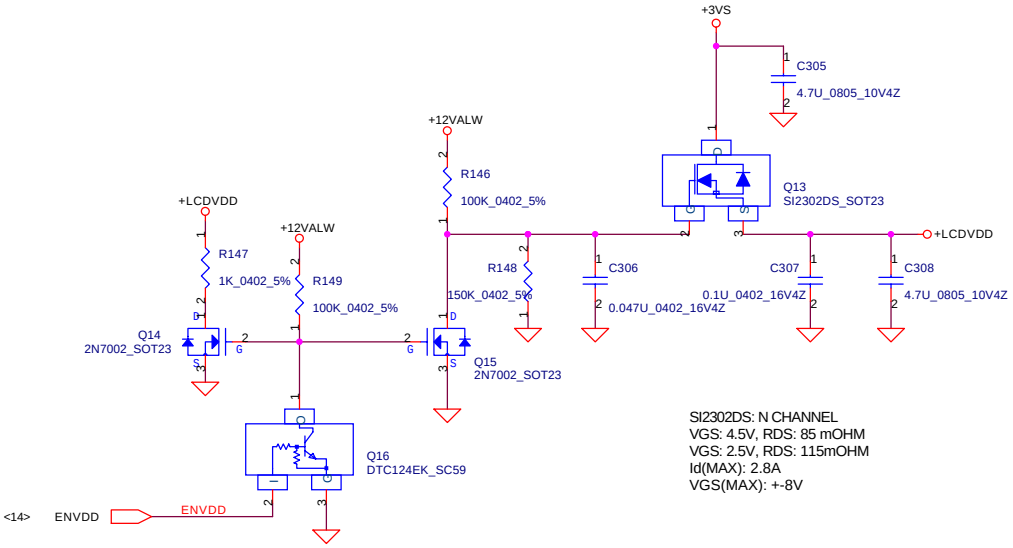
LCD Panel Connector

The cap.'s colsely to LCD CONN.





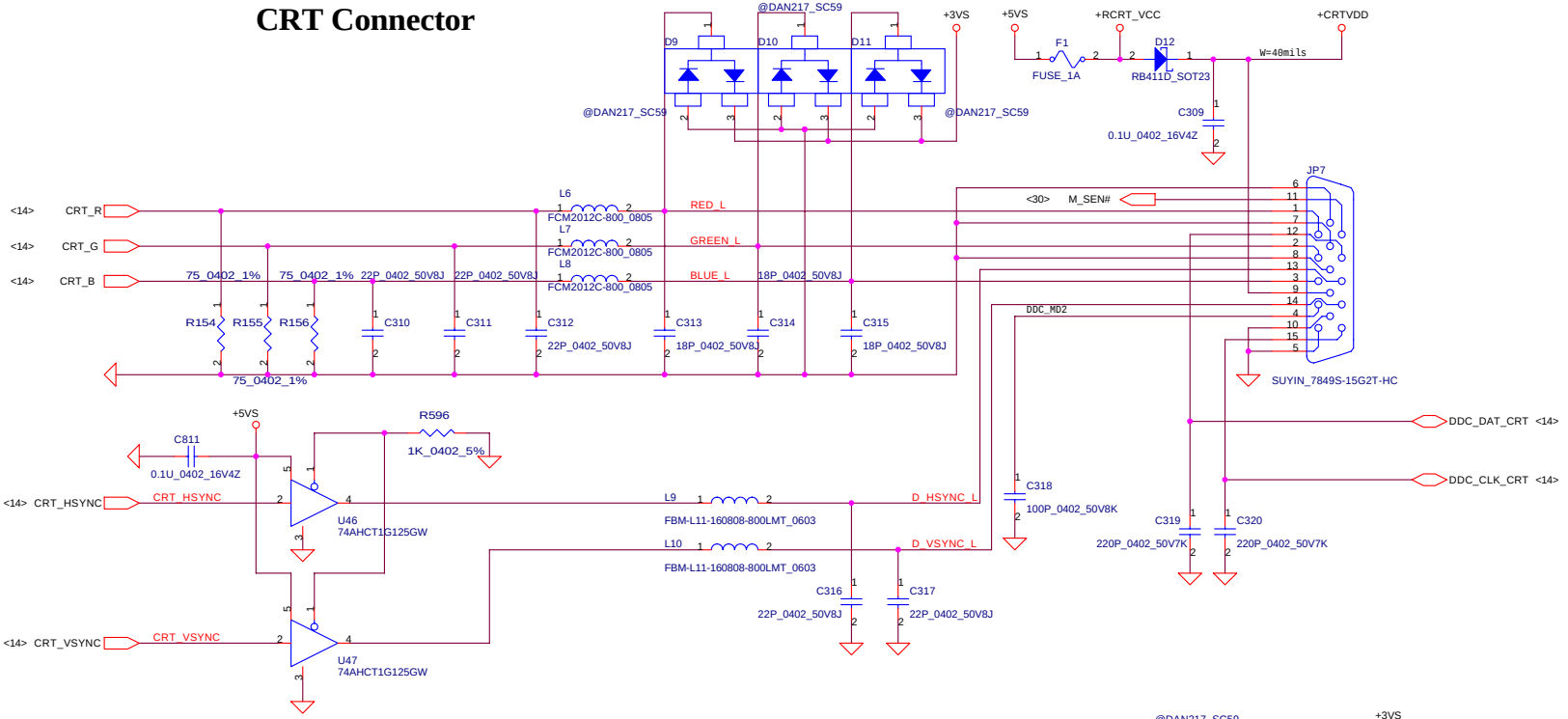




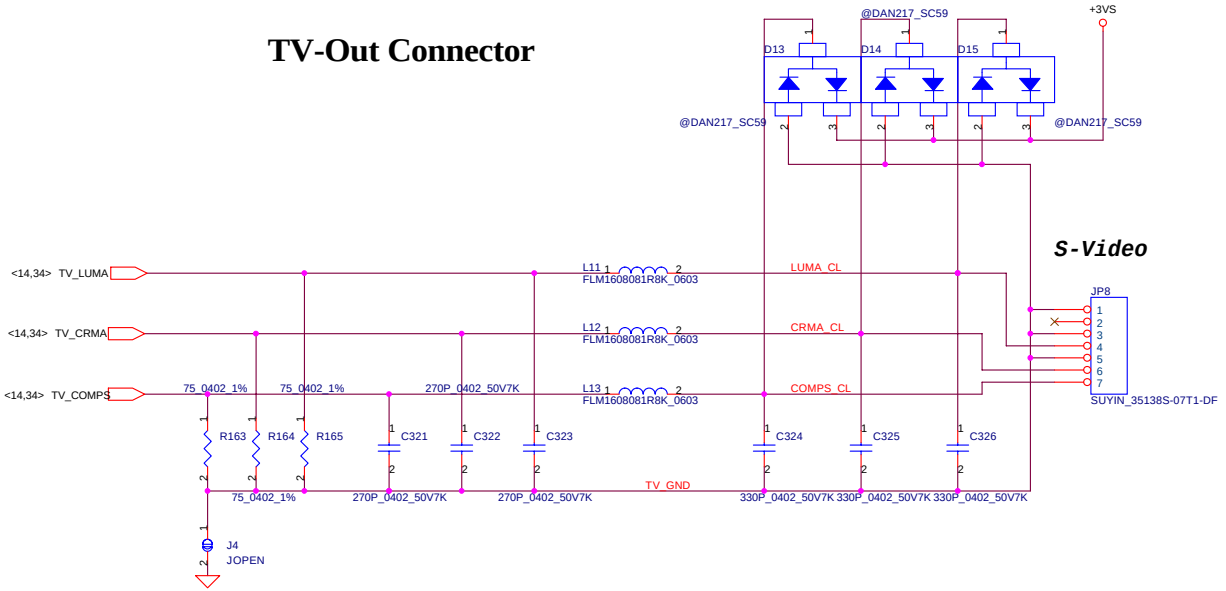
SI2302DS: N CHANNEL
VGS: 4.5V, RDS: 85 mOHM
VGS: 2.5V, RDS: 115mOHM
Id(MAX): 2.8A
VGS(MAX): +-8V

Compal Electronics, Inc.		
Title: LVDS Connector		
Size	Document Number: LA-2392	Rev: 0.1
Date: Friday, April 16, 2004	Sheet 17 of 53	

CRT Connector

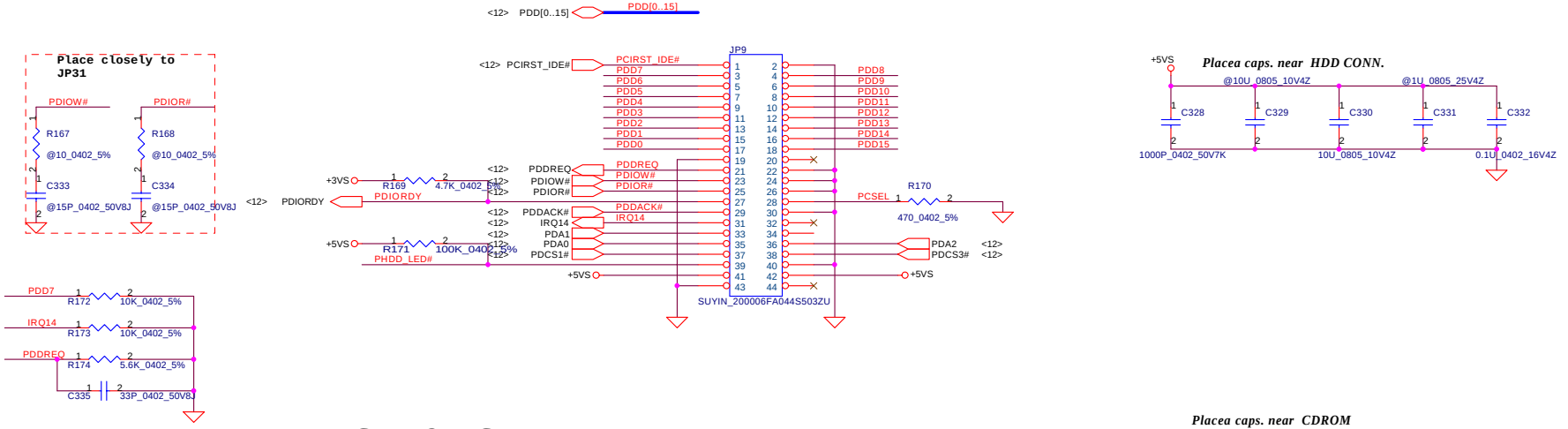


TV-Out Connector

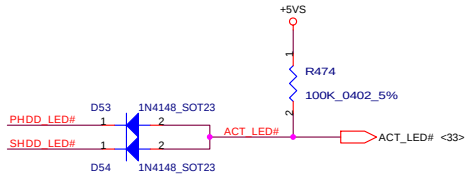


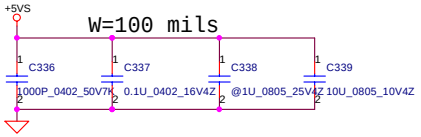
Compal Electronics, Inc.	
Title	CRT & TVout Connector
Size	Document Number: LA-2392
Rev	0.1
Date:	Friday, April 16, 2004
Sheet	18 of 53

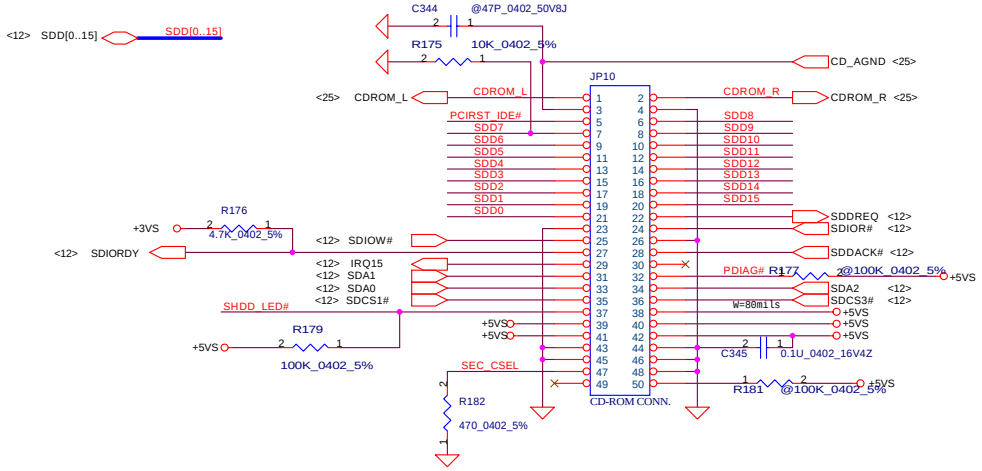
HDD Connector

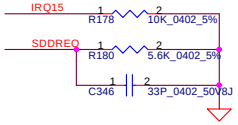


CD-ROM Connector







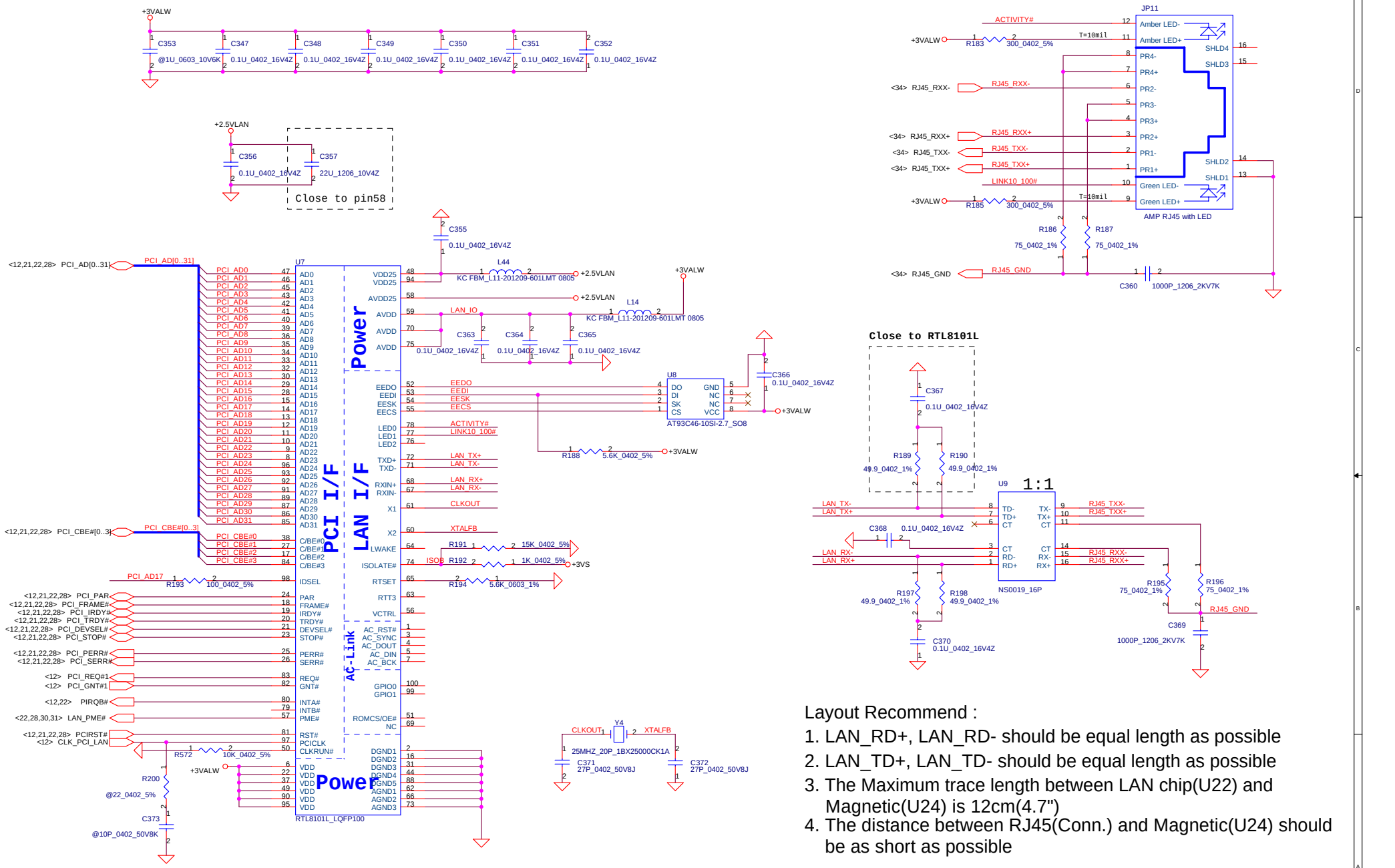


Compal Electronics, Inc.

Title: IDE/FDD/CD-ROM Module

Size: Custom | Document Number: LA-2392 | Rev: 0.1

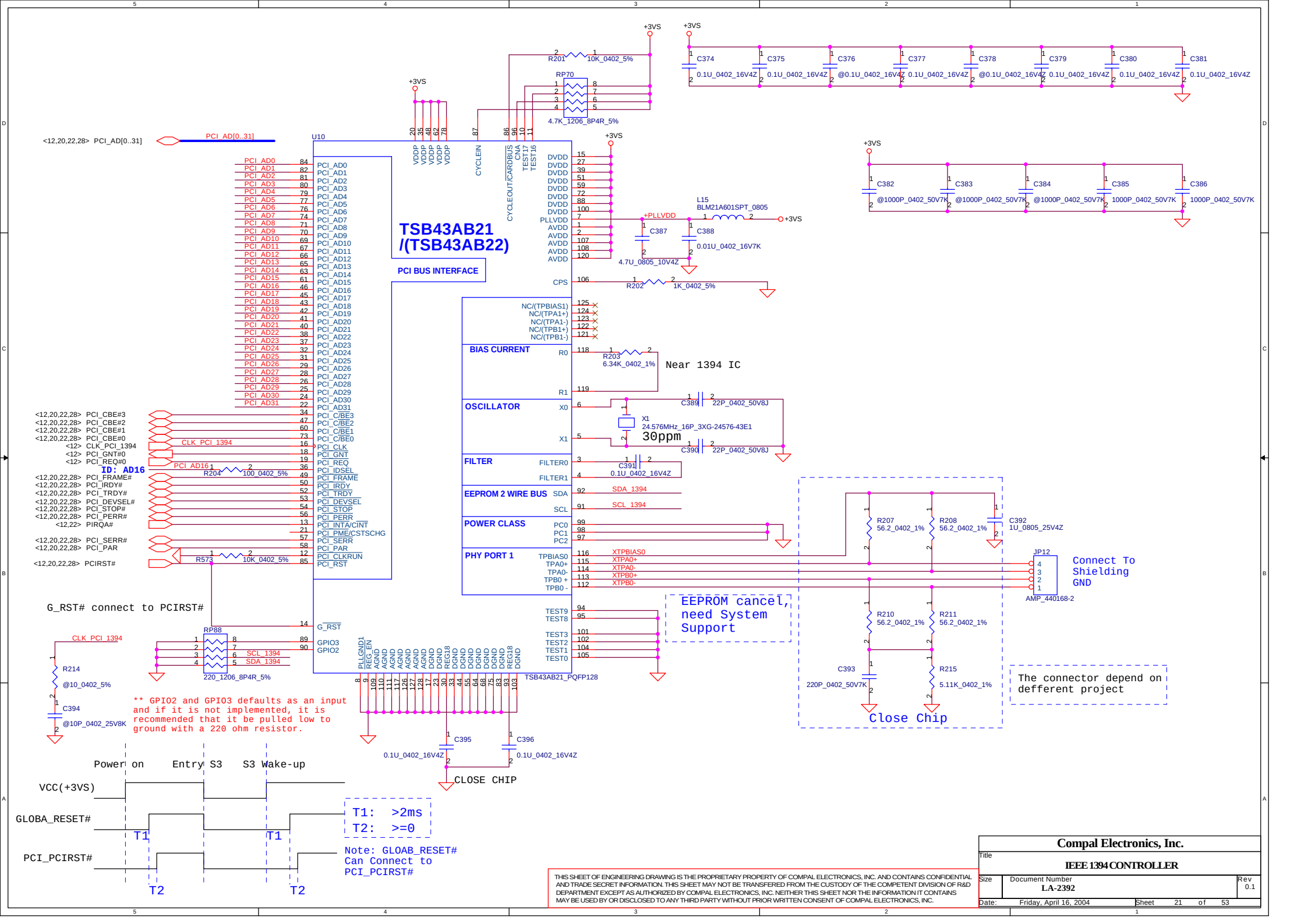
Date: Friday, April 16, 2004 | Sheet 19 of 53



Layout Recommend :

1. LAN_RD+, LAN_RD- should be equal length as possible
2. LAN_TD+, LAN_TD- should be equal length as possible
3. The Maximum trace length between LAN chip(U22) and Magnetic(U24) is 12cm(4.7")
4. The distance between RJ45(Conn.) and Magnetic(U24) should be as short as possible

Compal Electronics, Inc.		
Title	LAN RealTech8100BL	
Size	Document Number LA-2392	Rev 0.1
Date: Friday, April 16, 2004	Sheet 20 of 53	



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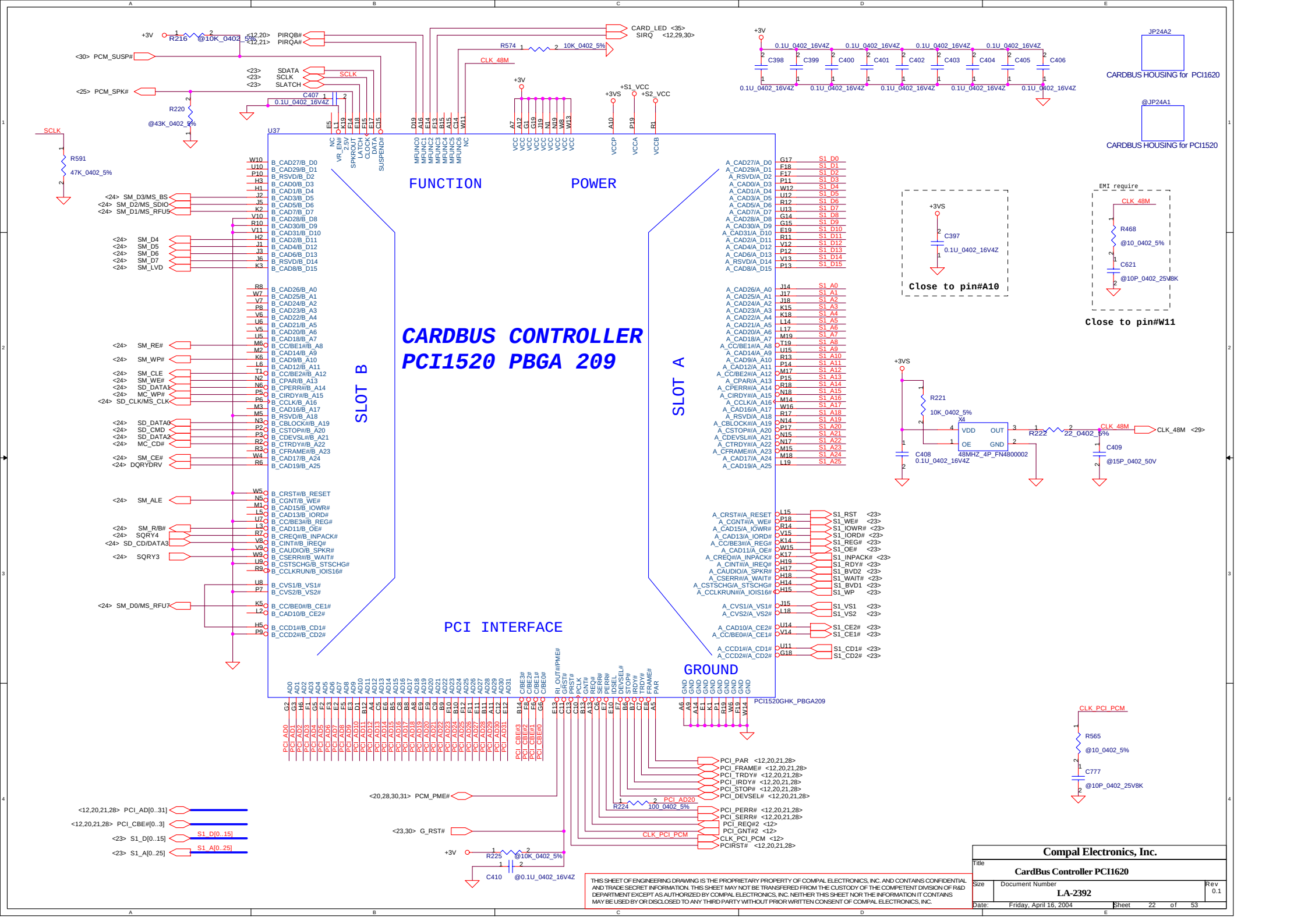
Compal Electronics, Inc.		
Title	IEEE 1394 CONTROLLER	
Size	Document Number LA-2392	Rev 0.1
Date: Friday, April 16, 2004	Sheet 21 of 53	


CARDBUS CONTROLLER
PCI1520 PBGA 209
FUNCTION
POWER
SLOT B
SLOT A
PCI INTERFACE
GROUND
U37
PCI1520GHK_PBGA209
CARDBUS HOUSING for PCI1620
CARDBUS HOUSING for PCI1520
Close to pin#A10
Close to pin#W11
EMI require
Compal Electronics, Inc.
CardBus Controller PCI1620
LA-2392
Friday, April 16, 2004
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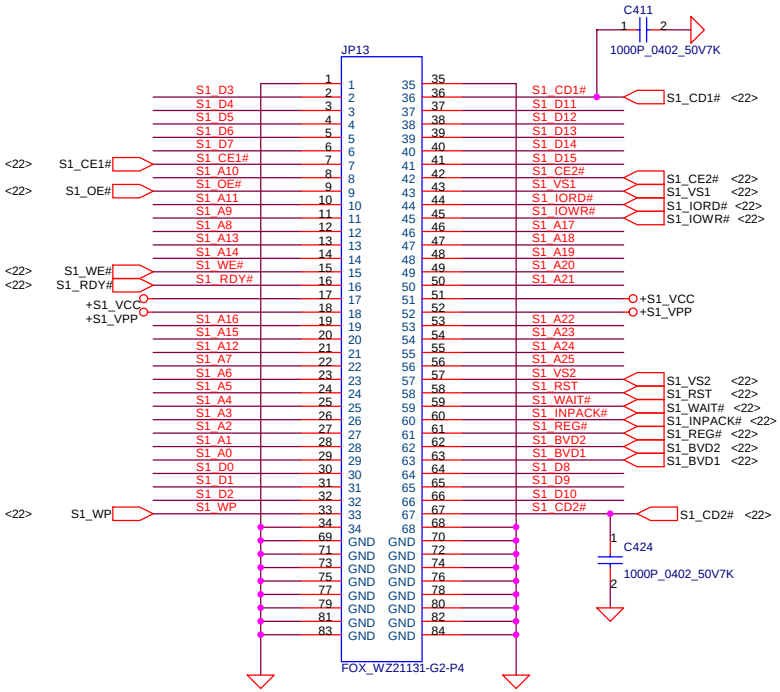
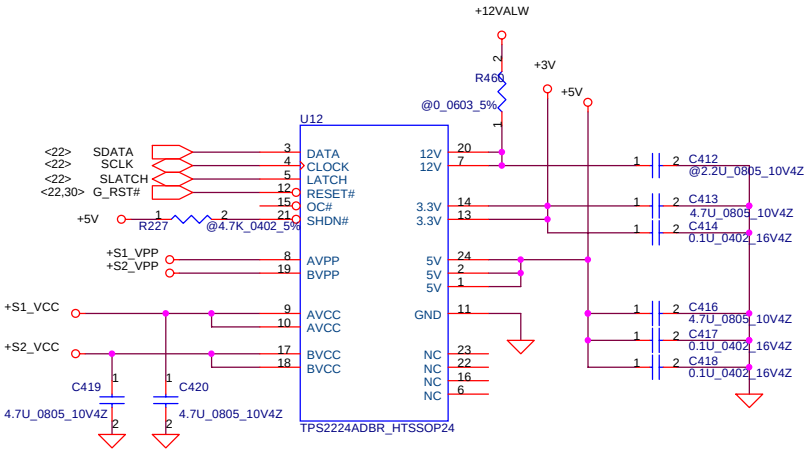
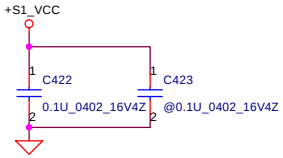
CARDBUS SOCKET

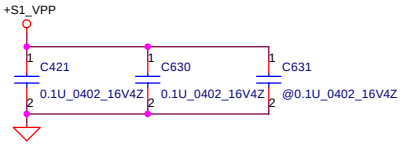
<22> S1_D[0..15] S1_D[0..15]
<22> S1_A[0..25] S1_A[0..25]

PCMCIA POWER CTRL.

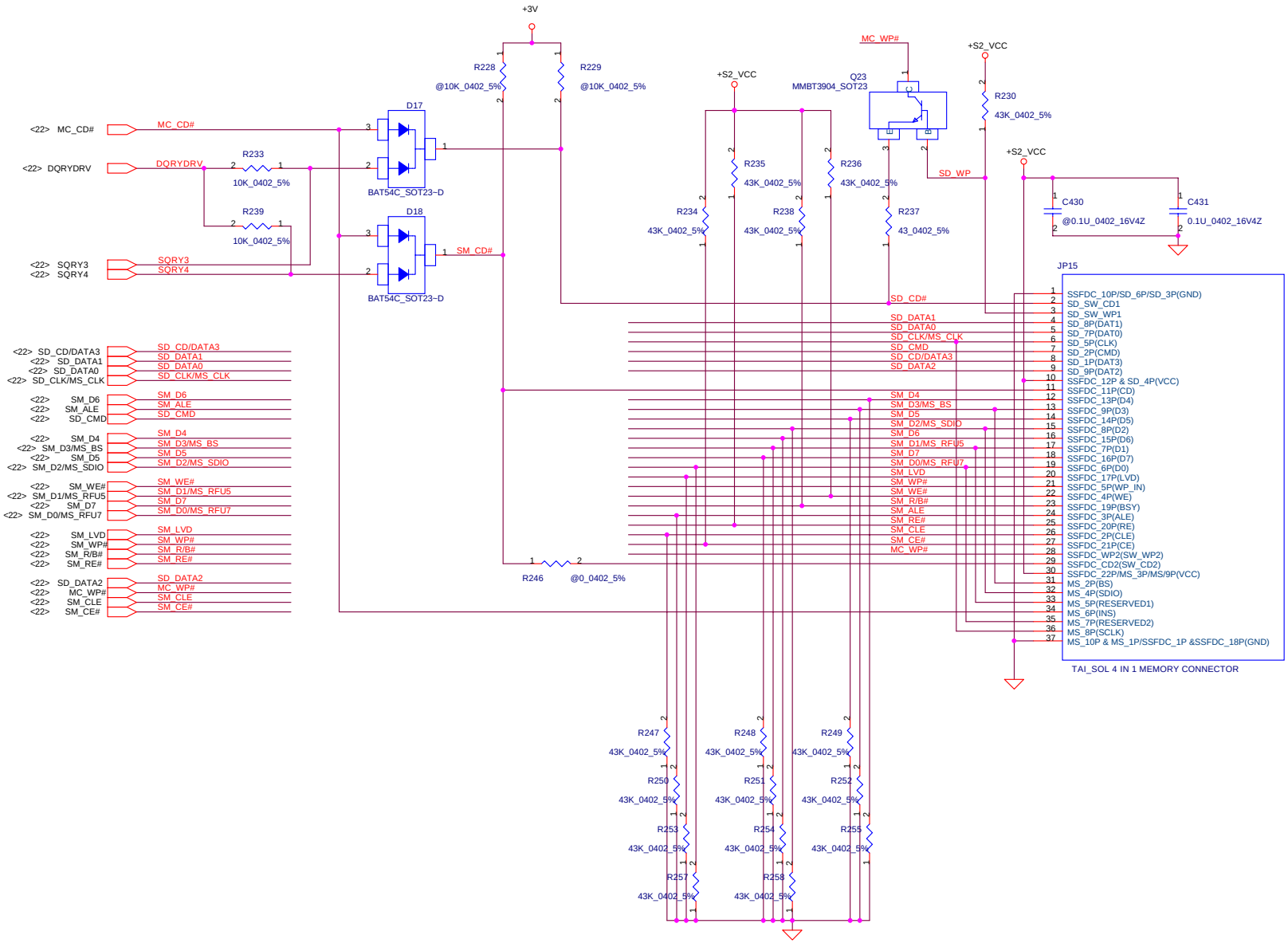








Compal Electronics, Inc.		
Title: CARD BUS SOCKET		
Size: B	Document Number: LA-2392	Rev: 0.1
Date: Friday, April 16, 2004	Sheet 23 of 53	

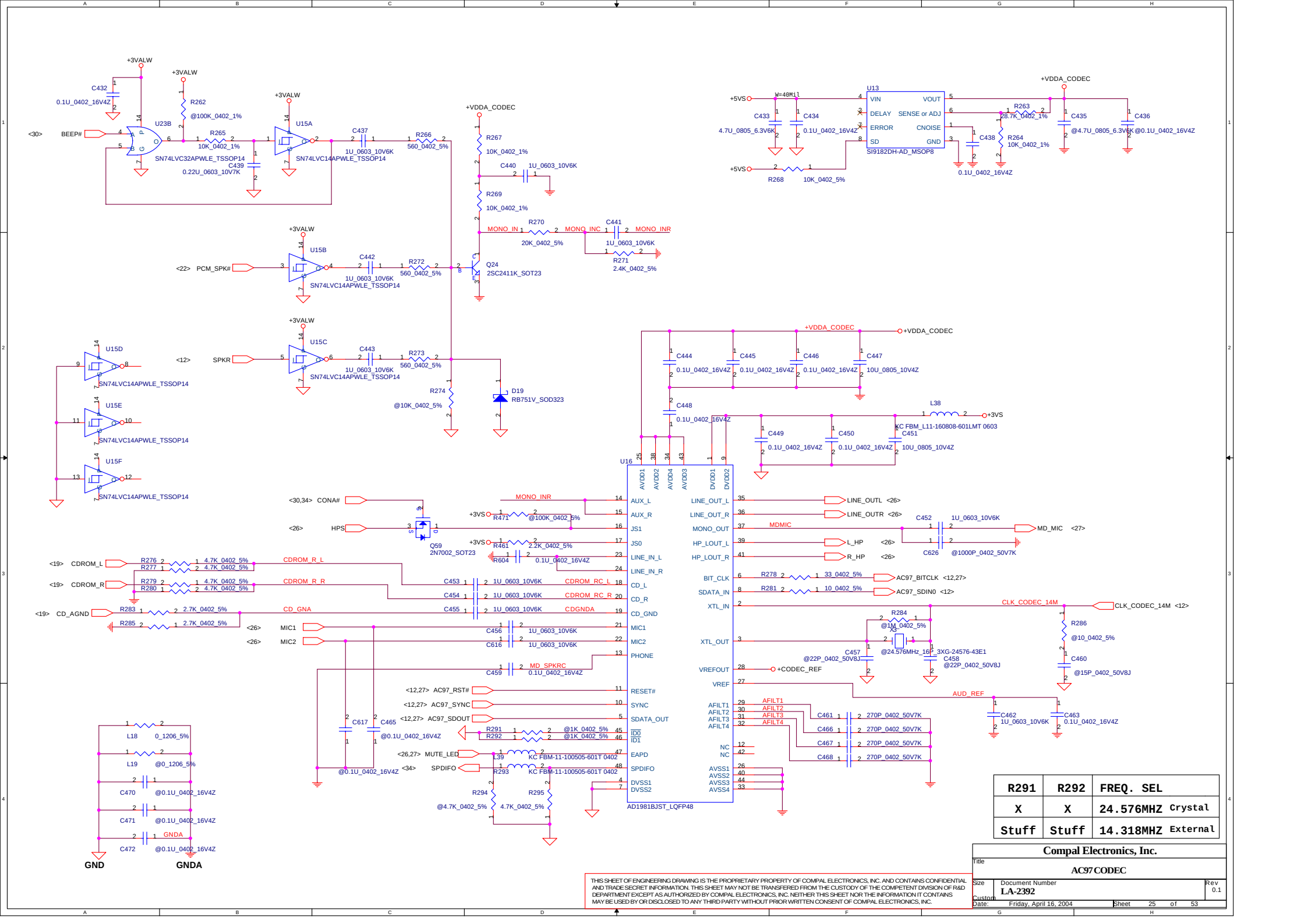


Compal Electronics, Inc.

Title: 4 IN 1 CARD READER SOCKET

Size | Document Number: LA-2392 | Rev: 0.1

Date: Friday, April 16, 2004 | Sheet 24 of 53



R291	R292	FREQ. SEL
X	X	24.576MHZ Crystal
Stuff	Stuff	14.318MHZ External

Compal Electronics, Inc.

Title: AC97 CODEC

Size	Document Number	Rev
Custom	LA-2392	0.1

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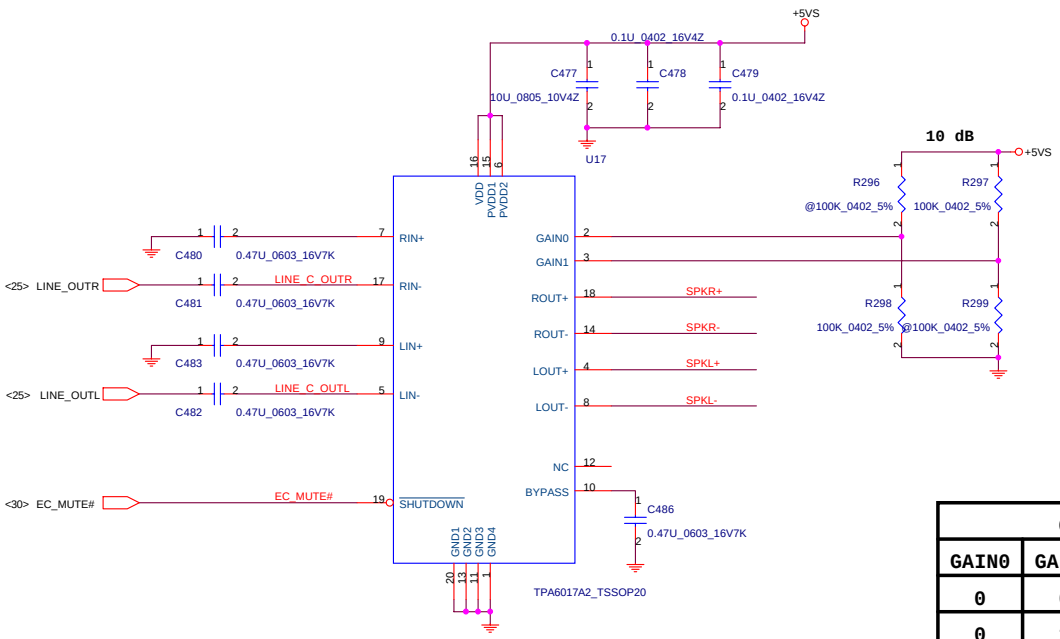
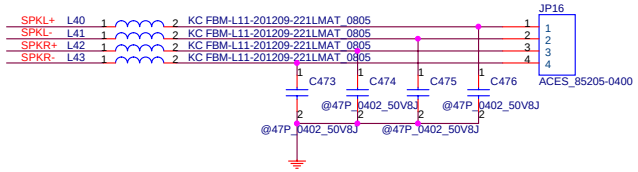
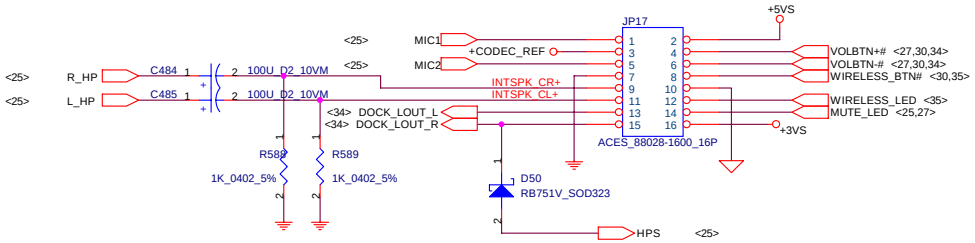




Gain Settings		
GAIN0	GAIN1	Av(inv)
0	0	6 dB
0	1	10 dB
1	0	15.6 dB
1	1	21.6 dB

AUDIO CONNECTOR



Compal Electronics, Inc.

Title: AMP & Audio Jack

Size: Custom | Document Number: LA-2392 | Rev: 0.1

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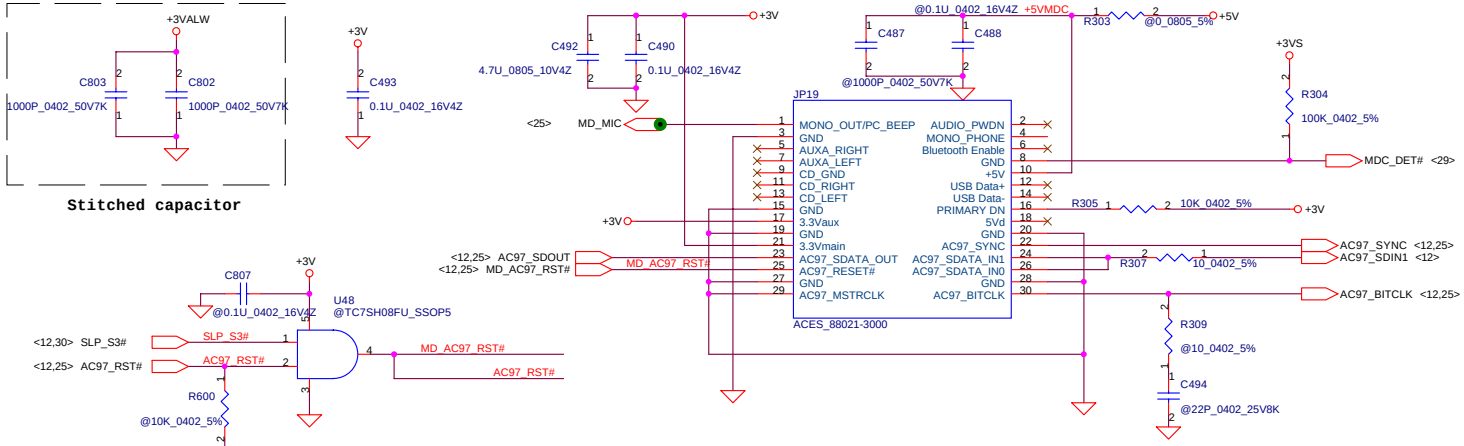
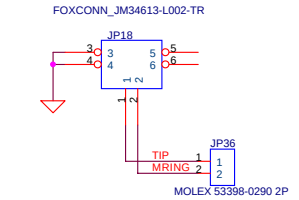
MDC Conn.



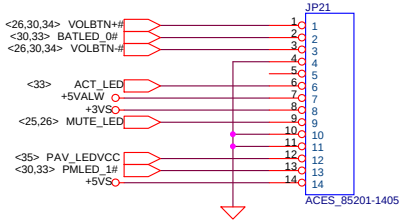
RJ11 CONN.

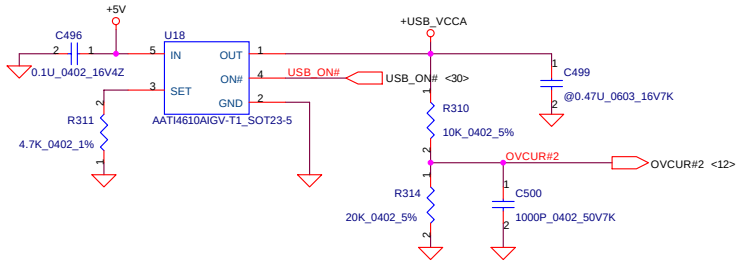


0: Have primary CODEC on mother board

Front Board CONNECTOR

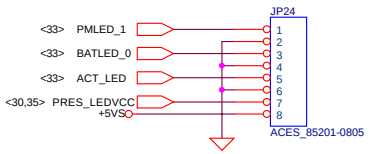
Pavilion only

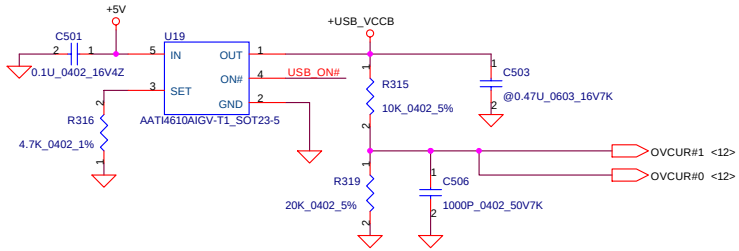




Front Boand CONNECTOR

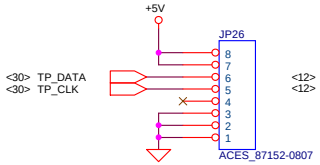
PRESARIO only



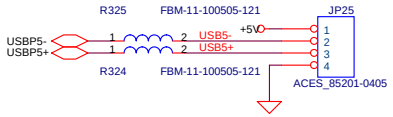


Note: PLACE CLOSE TO EACH USB PORT

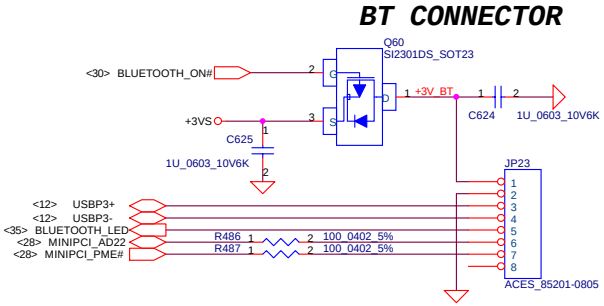
TP CONNECTOR



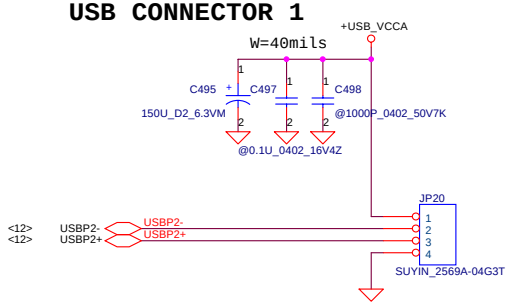
USB KEY



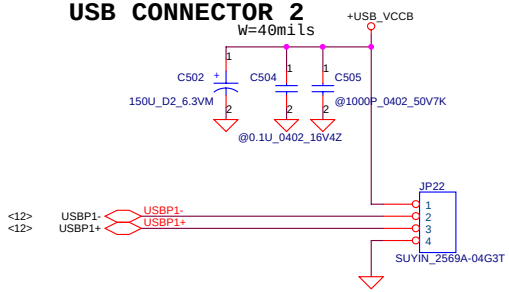
BT CONNECTOR



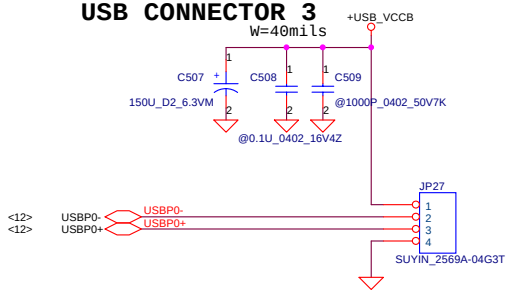
USB CONNECTOR 1



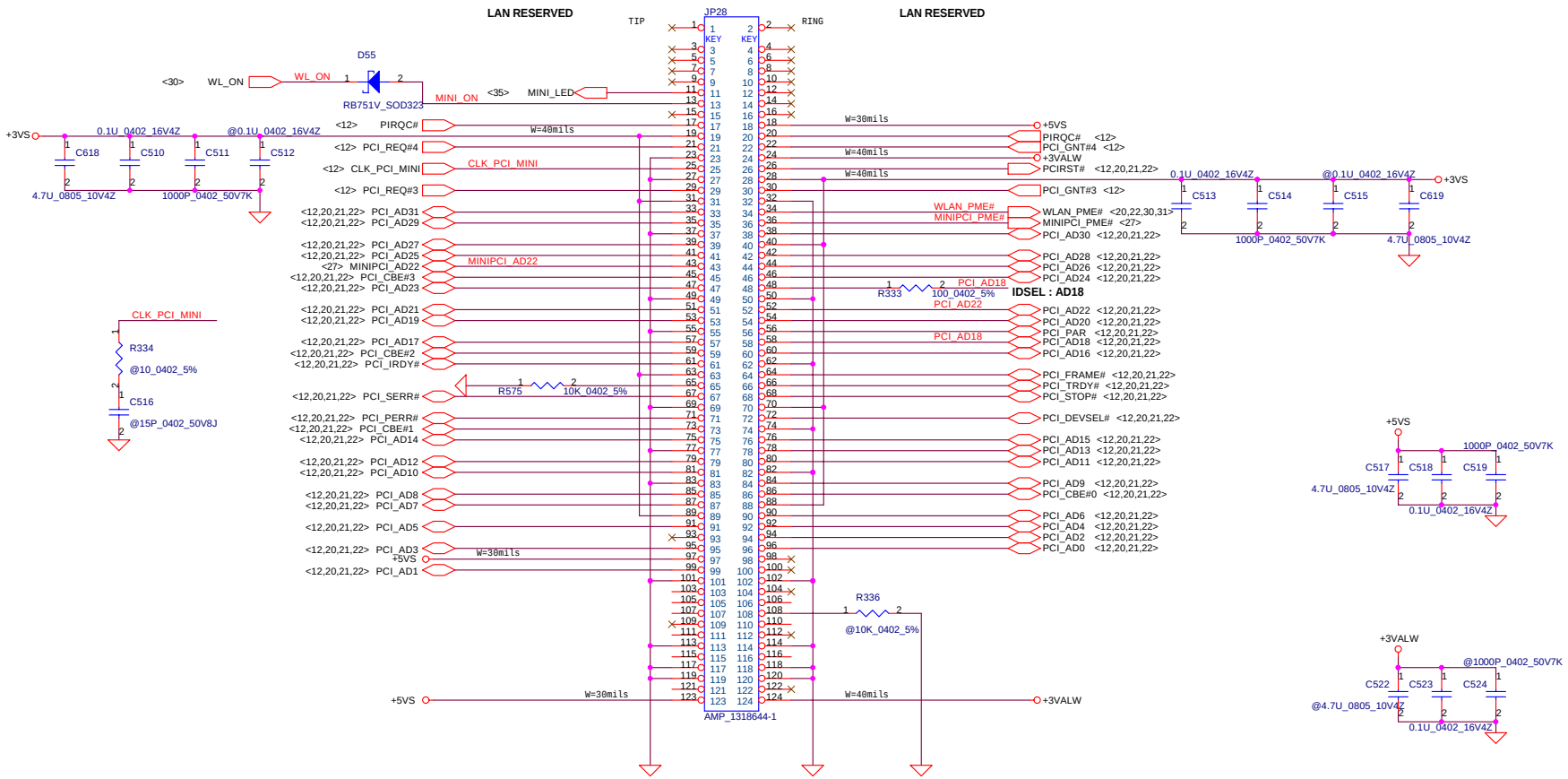
USB CONNECTOR 2



USB CONNECTOR 3



Compal Electronics, Inc.		
Title: MDC , Bluetooth & USB CONN.		
Size	Document Number: LA-2392	Rev: 0.1
Date: Friday, April 16, 2004	Sheet 27 of 53	

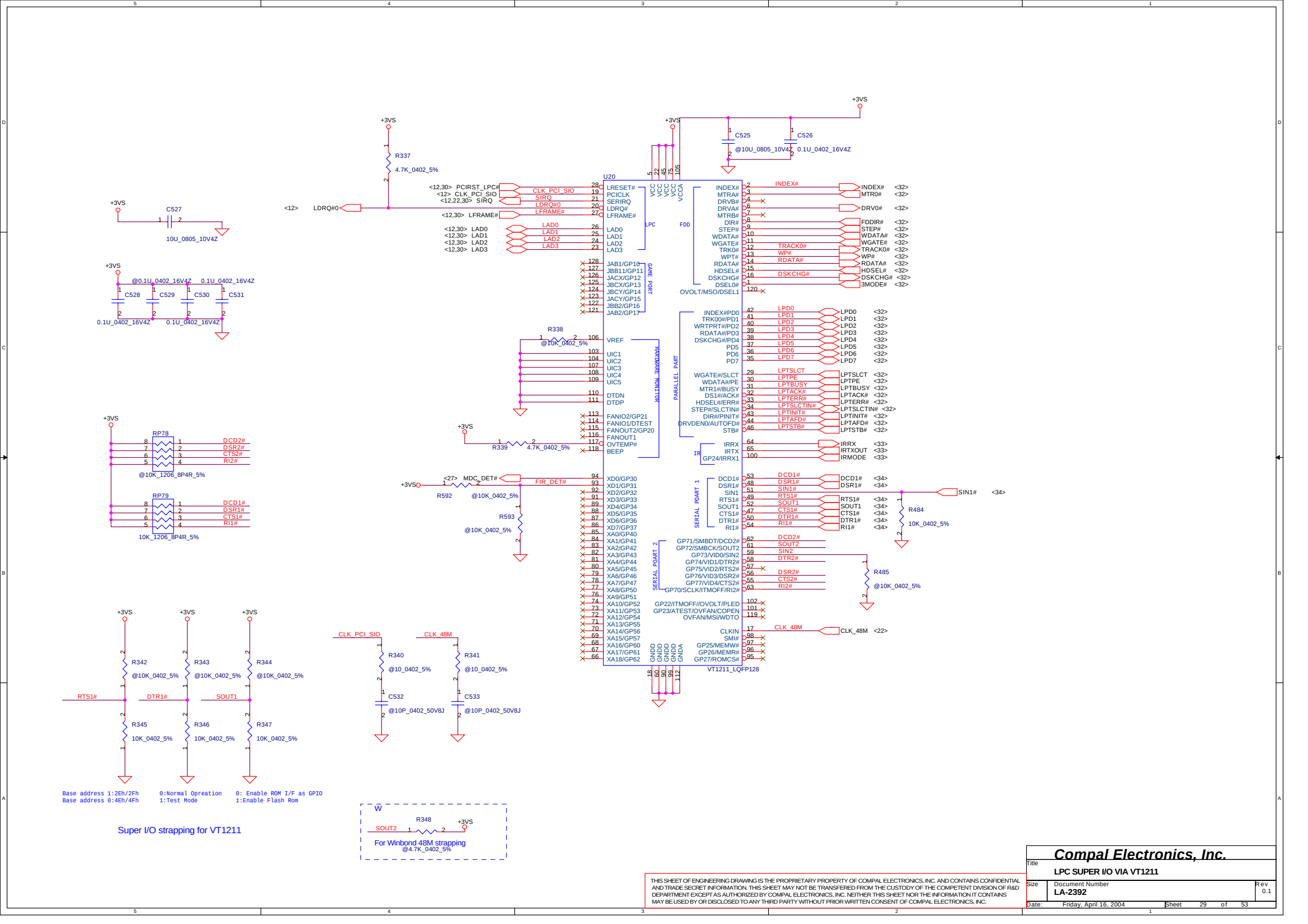


Compal Electronics, Inc.

Title: **Mini PCI Slot**

Size: | Document Number: **LA-2392** | Rev: 0.1

Date: Friday, April 16, 2004 | Sheet 28 of 53



Compal Electronics, Inc.

Title: LPC SUPER I/O VIA VT1211

Size: | Document Number: LA-2392 | Rev: 0.1

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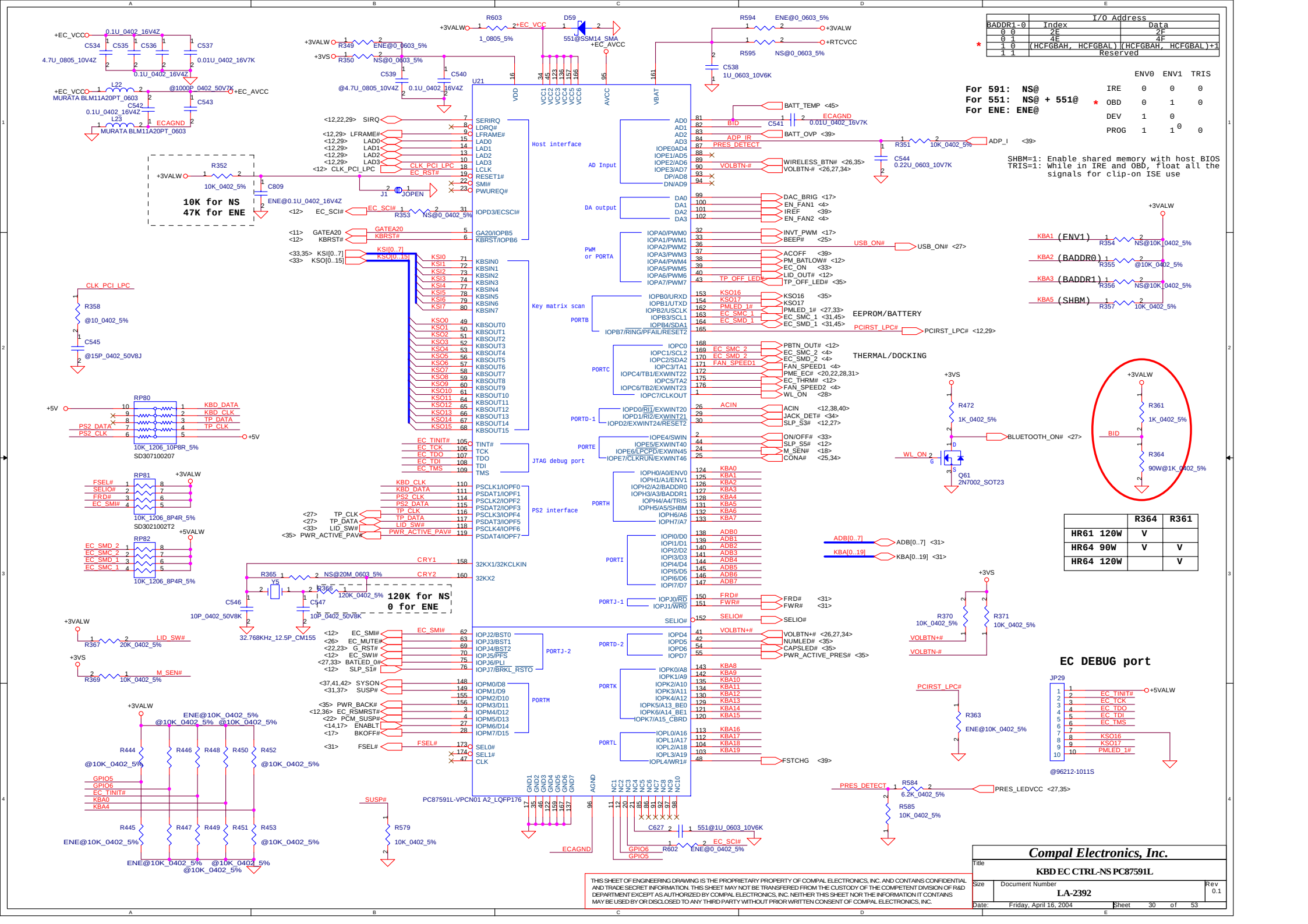
U21
PC87591L-VPCN01 A2_LQFP176
Host interface
AD Input
DA output
PWM or PORTA
Key matrix scan
PORTB
PORTC
PORTD-1
PORTE
JTAG debug port
PS2 interface
PORTH
PORTI
PORTJ-1
PORTJ-2
PORTD-2
PORTK
PORTM
PORTL
EEPROM/BATTERY
THERMAL/DOCKING
EC DEBUG port
10K for NS
47K for ENE
120K for NS
0 for ENE
For 591: NS@
For 551: NS@ + 551@
For ENE: ENE@
SHBM=1: Enable shared memory with host BIOS
TRIS=1: While in IRE and OBD, float all the signals for clip-on ISE use
I/O Address
BADDR1-0 | Index | Data
0 0 | 2E | 2F
0 1 | 4E | 4F
1 0 | (HCFGBAH, HCFGBAL) | (HCFGBAH, HCFGBAL)+1
1 1 | Reserved
ENV0 ENV1 TRIS
IRE 0 0 0
OBD 0 1 0
DEV 1 0
PROG 1 1 0
HR61 120W V
HR64 90W V V
HR64 120W V
R364 R361
Compal Electronics, Inc.
KBD EC CTRL-NS PC87591L
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Friday, April 16, 2004
Sheet 30 of 53

INPUT

OUTPUT

<30> ADB[0..7] ADB[0..7]

<30> KBA[0..19] KBA[0..19]

U23A

SN74LVC32APWLE_TSSOP14

U23D

SN74LVC32APWLE_TSSOP14

U24

512K8-90_PLCC32

C550 0.1U_0402_16V4Z

+3VALW

U23C

SN74LVC32APWLE_TSSOP14

FWE#

R373 100K_0402_5%

SUSP# <30,37>

Q28 2N7002 1N_SOT23

EC_FLASH# <12>

FWR# <30>

R374 4.7K_0402_5%

<20,22,28,30> PCM_PME#

<20,22,28,30> LAN_PME#

<20,22,28,30> WLAN_PME#

PME_EC# <20,22,28,30>

U25

@SST39VF080-70_TSOP40

C552 @0.1U_0402_16V4Z

RESET#

R385 @100K_0402_5%

<30> FSEL#

<30> FRD#

JP30

@SUYIN-80065A-040G2T

C551 0.1U_0402_16V4Z

U26

AT24C164-10SC_SO8

<30,45> EC_SMC_1

<30,45> EC_SMD_1

R382 100K_0402_5%

R383 100K_0402_5%

Compal Electronics, Inc.

Title: **BIOS & EC I/O Port**

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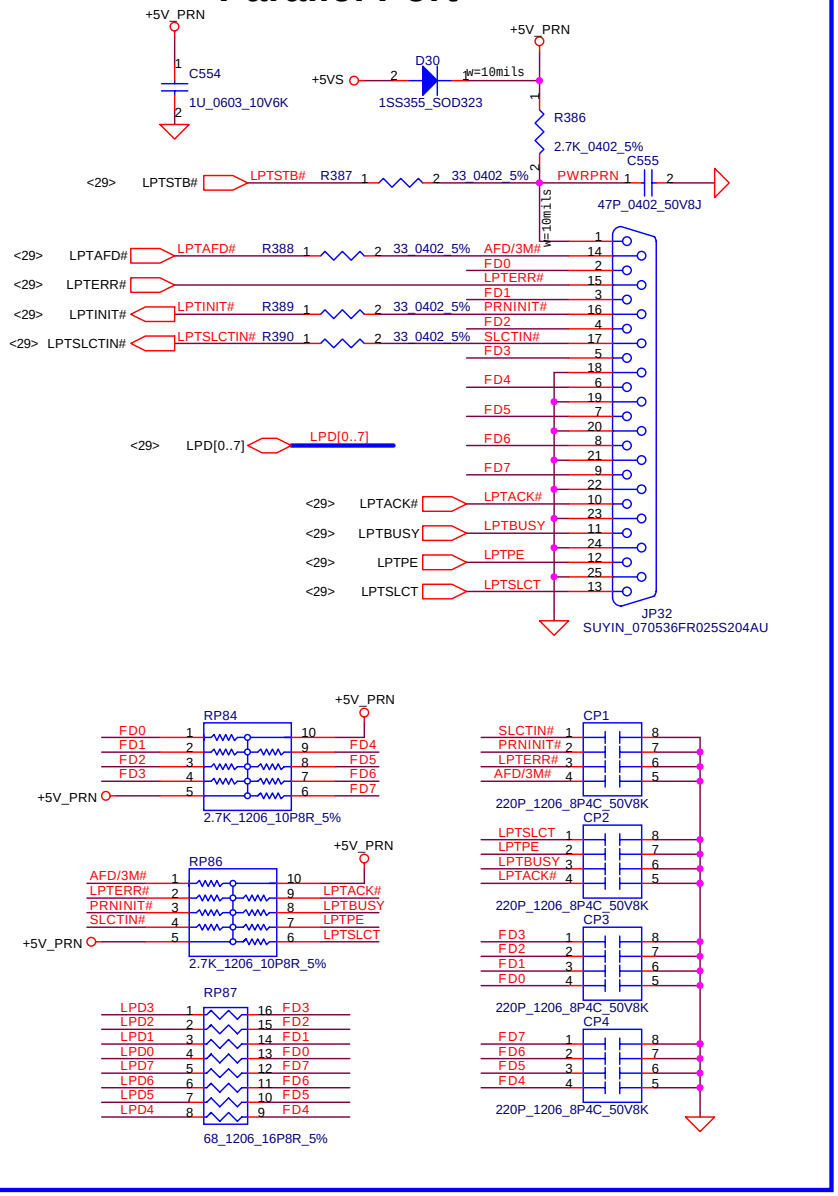
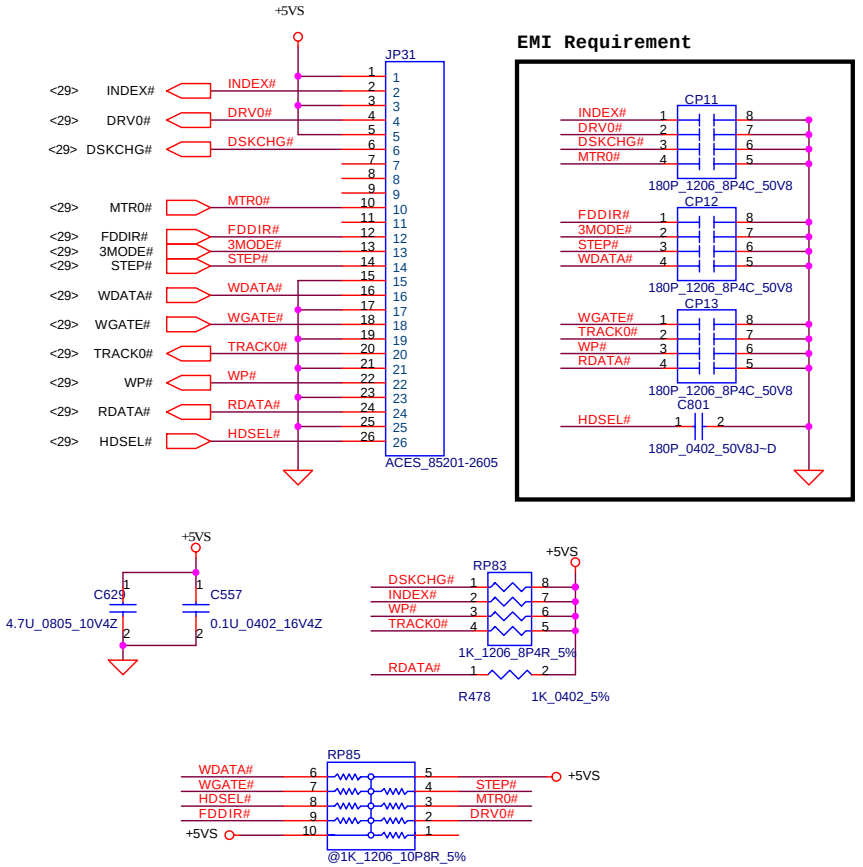
Date: Friday, April 16, 2004 | Sheet 31 of 53

Parallel Port



FDD CONN.



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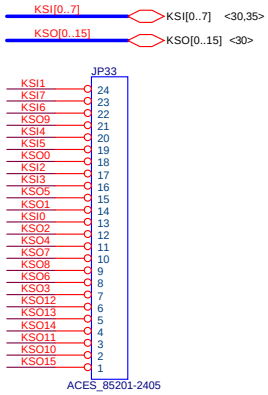
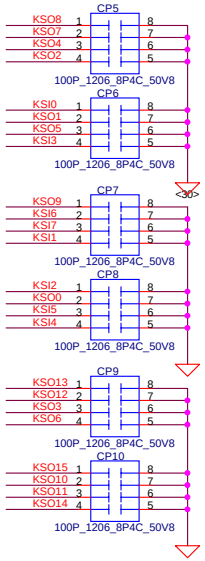
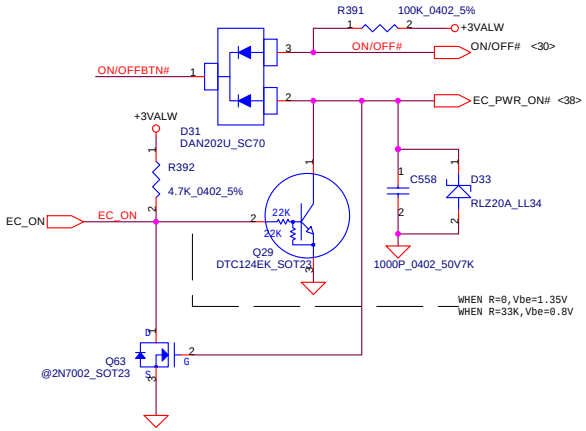
Title	Parallel port & FDD Connector	
Size B	Document Number LA-2392	Rev 0.1
Date: Friday, April 16, 2004	Sheet 32 of 53	

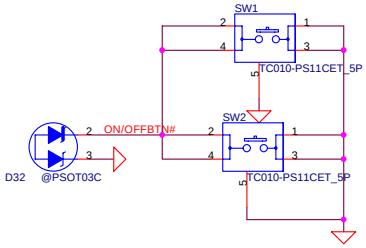
INT_KBD CONN.

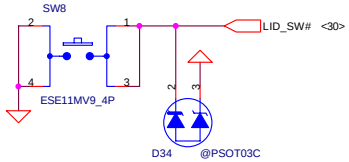




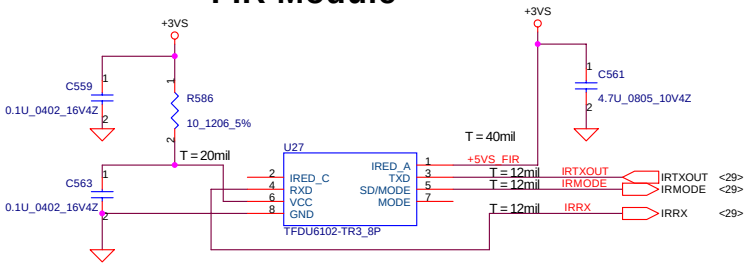
Power BTN



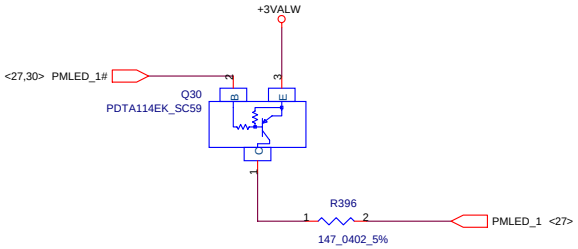


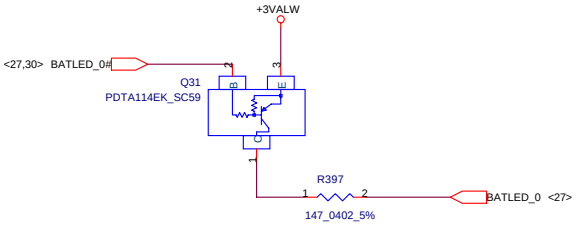


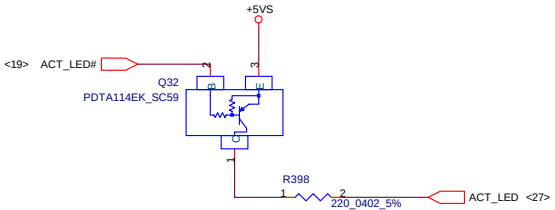
FIR Module



Touch Pad & Status LED Conn.







Compal Electronics, Inc.		
Title: KBD,ON/OFF,T/P,LED & FIR		
Size	Document Number: LA-2392	Rev: 0.1
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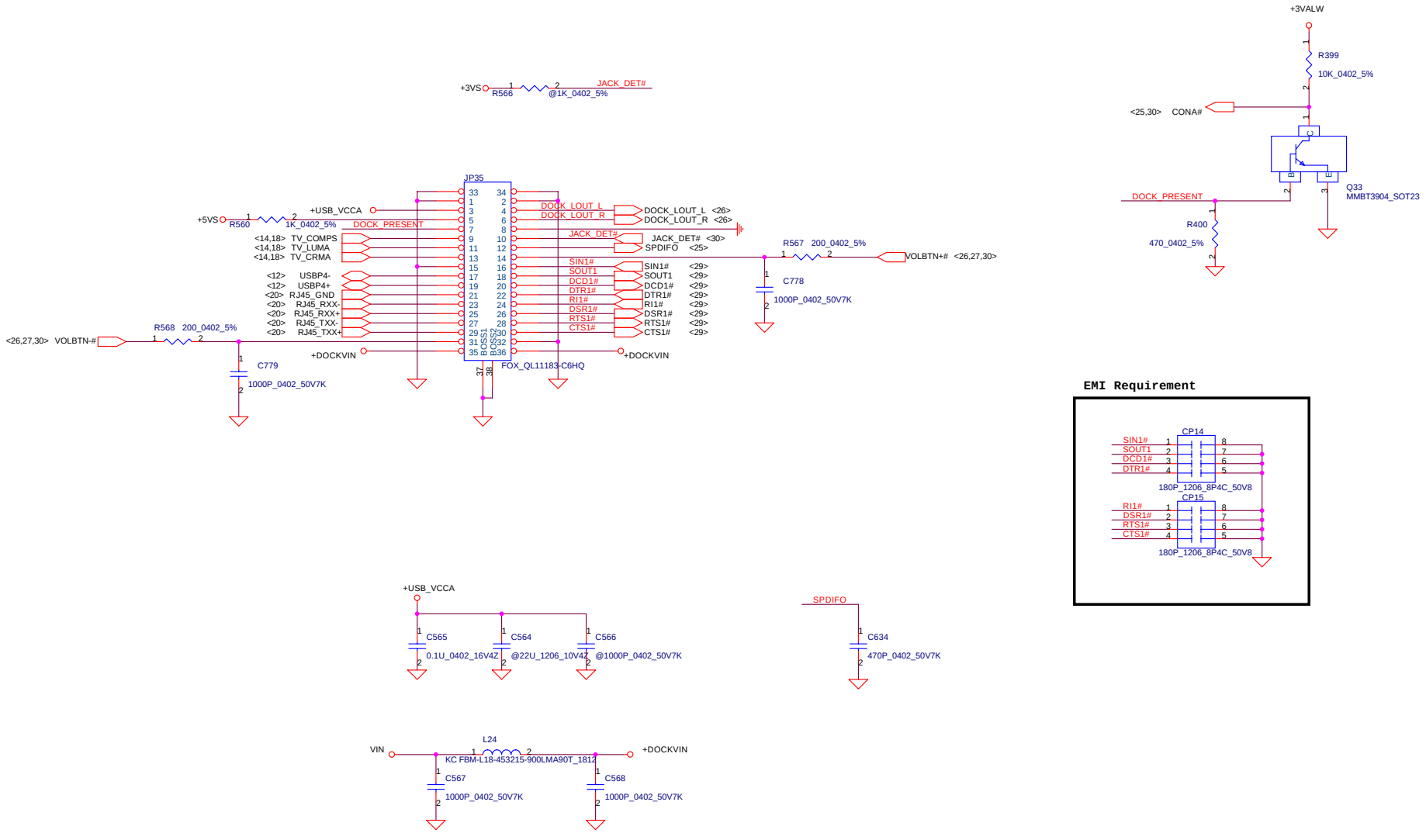
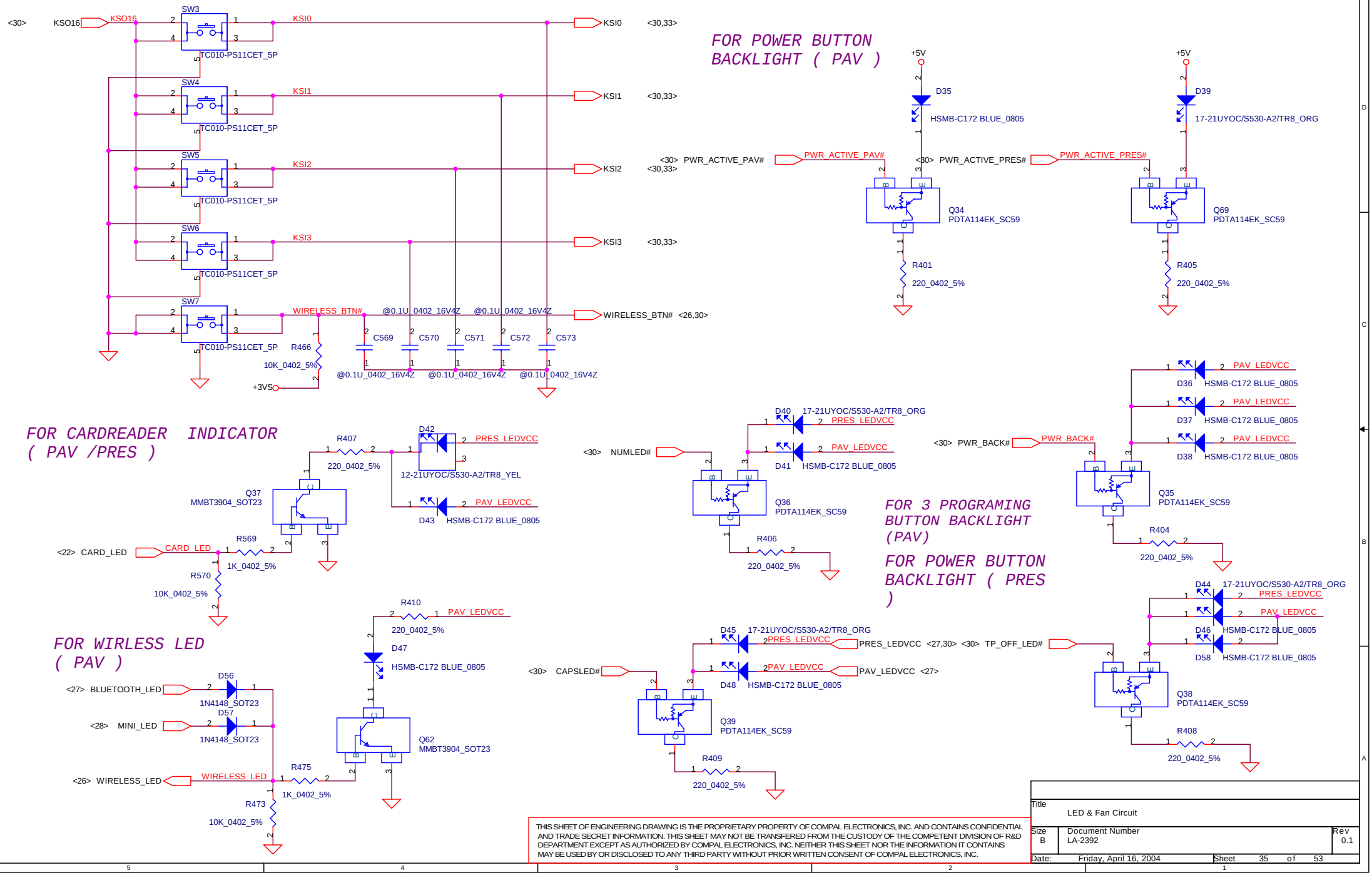
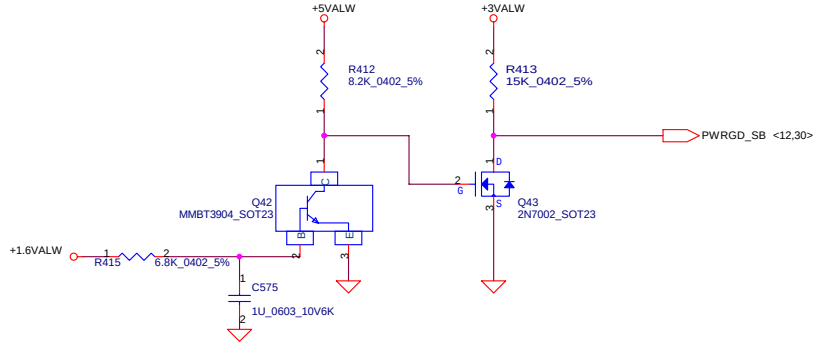


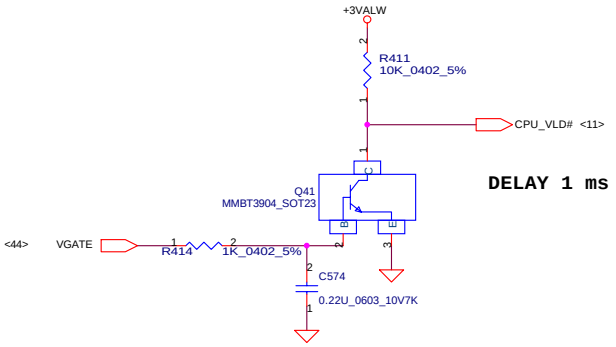
Compal Electronics, Inc.

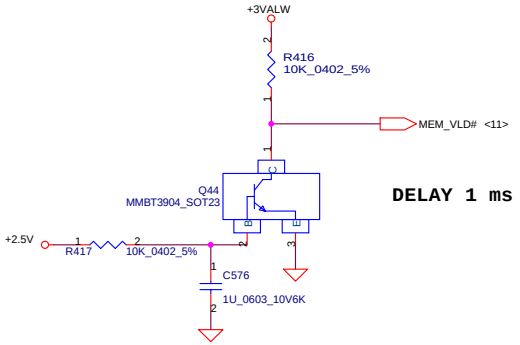
Title	SPR Connector	
Size	Document Number: LA-2392	Rev: 0.1
Date: Friday, April 16, 2004	Sheet 34 of 53	

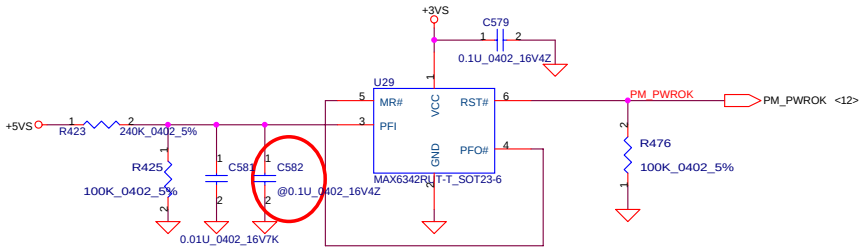


Title	LED & Fan Circuit	
Size B	Document Number LA-2392	Rev 0.1
Date: Friday, April 16, 2004	Sheet 35 of 53	

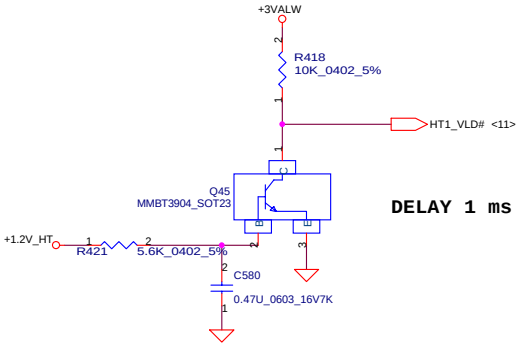








Delay 100 ms



Compal Electronics, Inc.

Title: **Power OK/Reset Conn.& MUTE Switch**

Size: Custom | Document Number: **LA-2392** | Rev: 0.1

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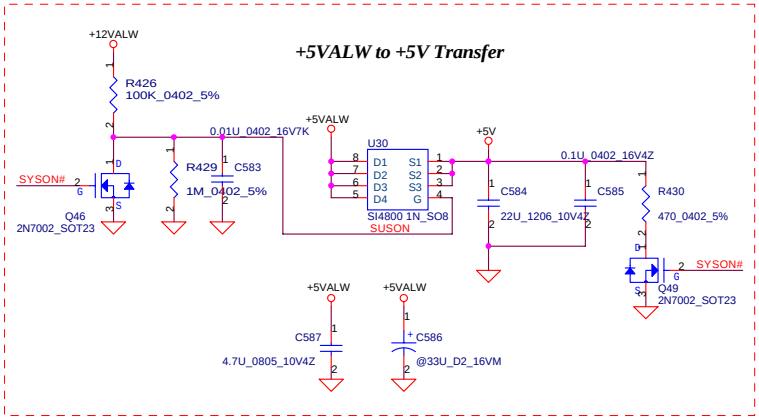
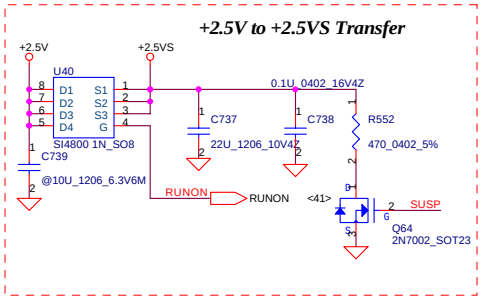
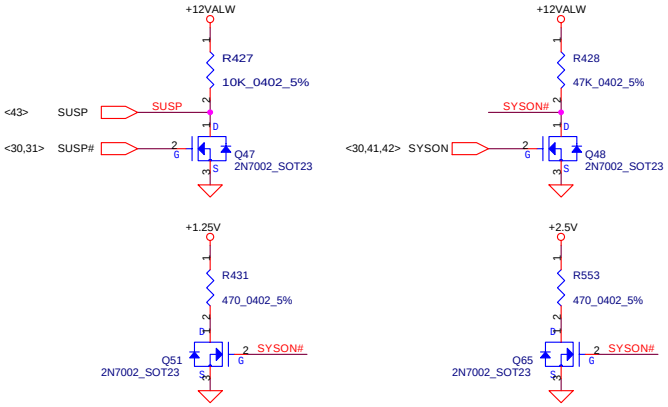
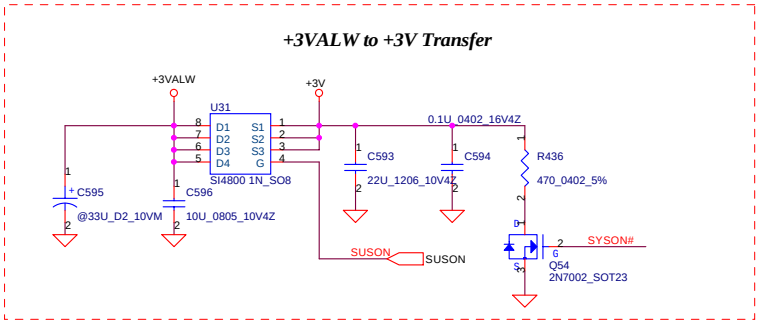
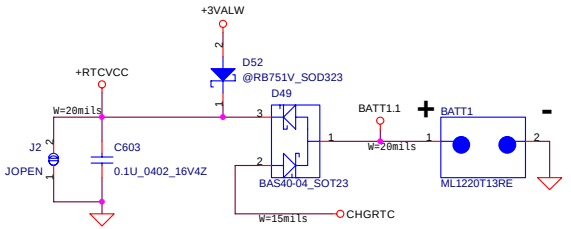


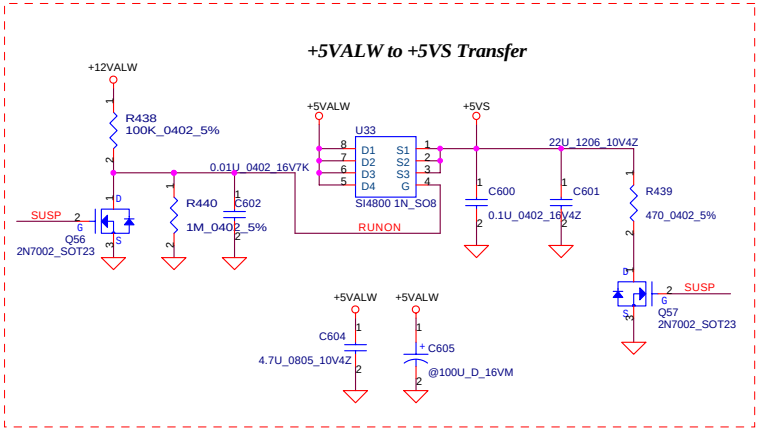


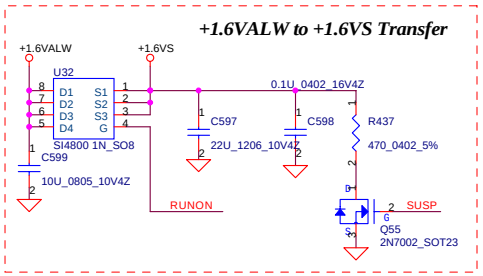


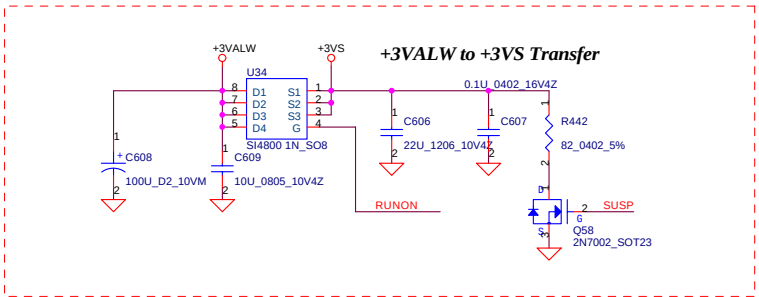


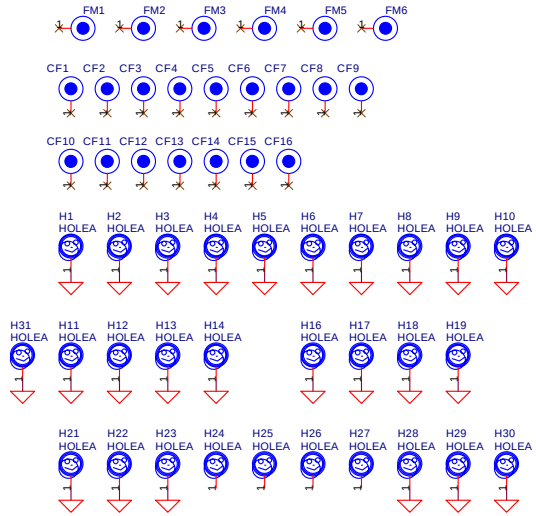


For customer request ,they don't wanna charge RTC









Compal Electronics, Inc.

Title: DC/DC Circuit

Size	Document Number	Rev
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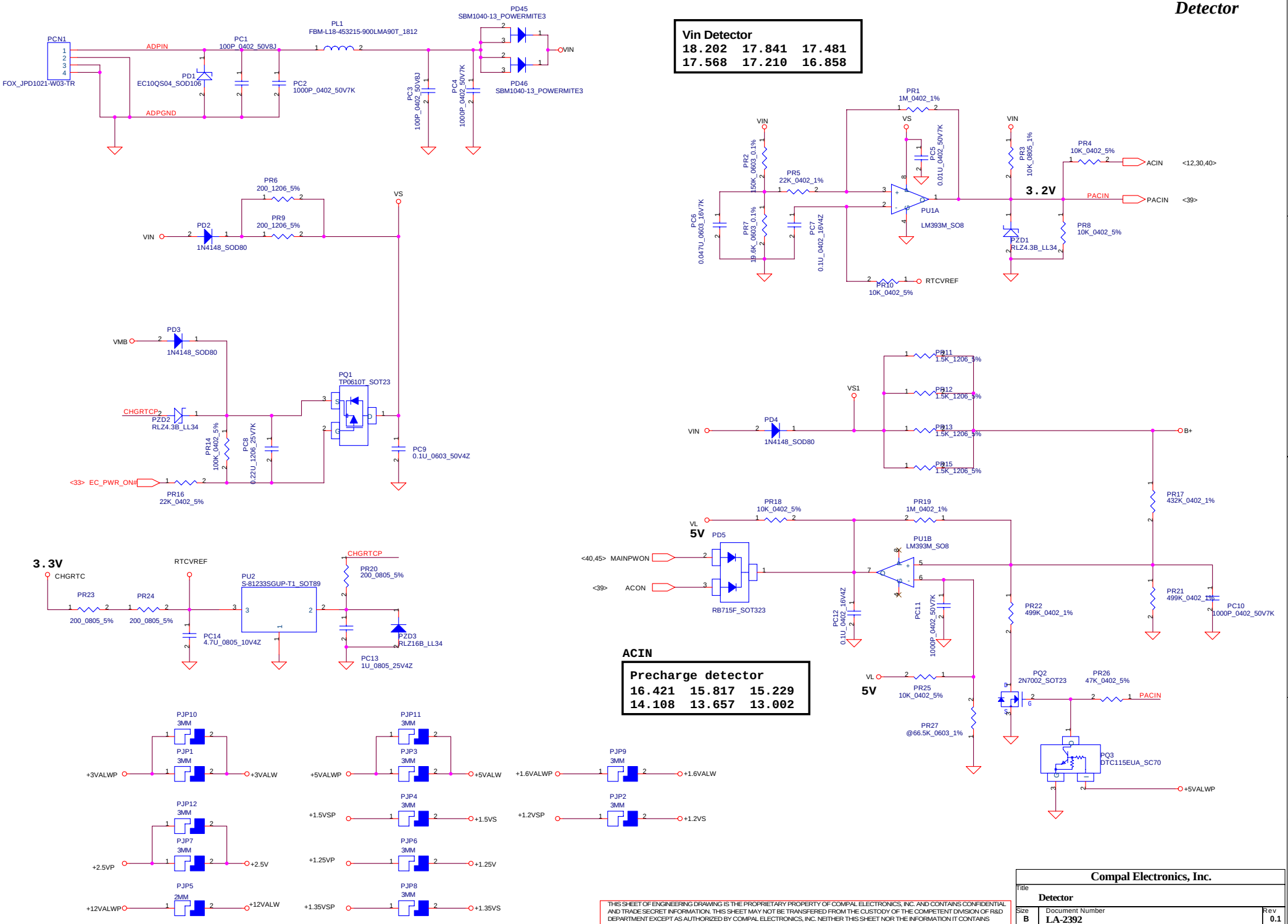
Detector



Compal Electronics, Inc.		
Title: Detector		
Size: B	Document Number: LA-2392	Rev: 0.1
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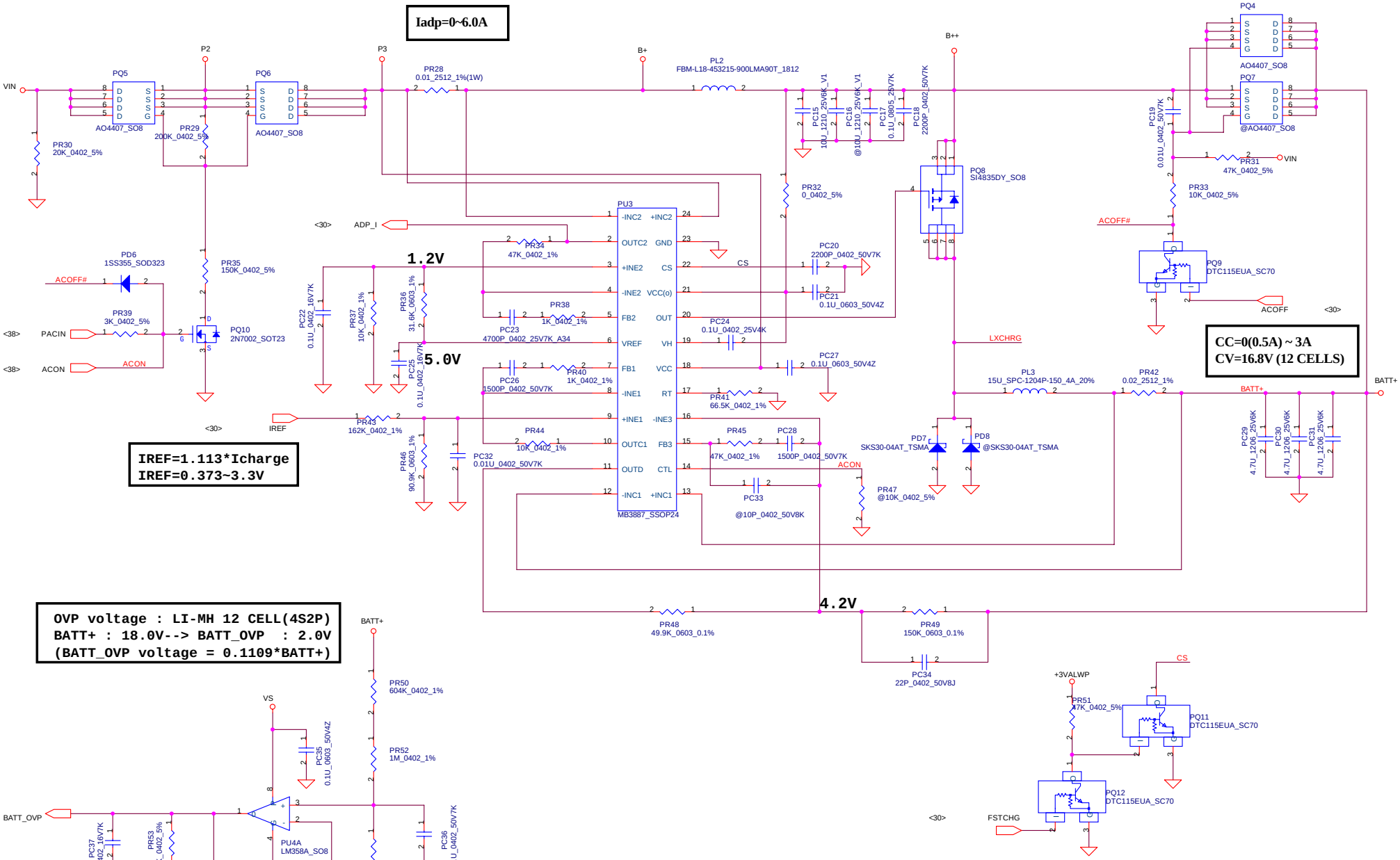
Charger



Compal Electronics, Inc.		
Title: Charger		
Size: B	Document Number: LA-2392	Rev: 0.1
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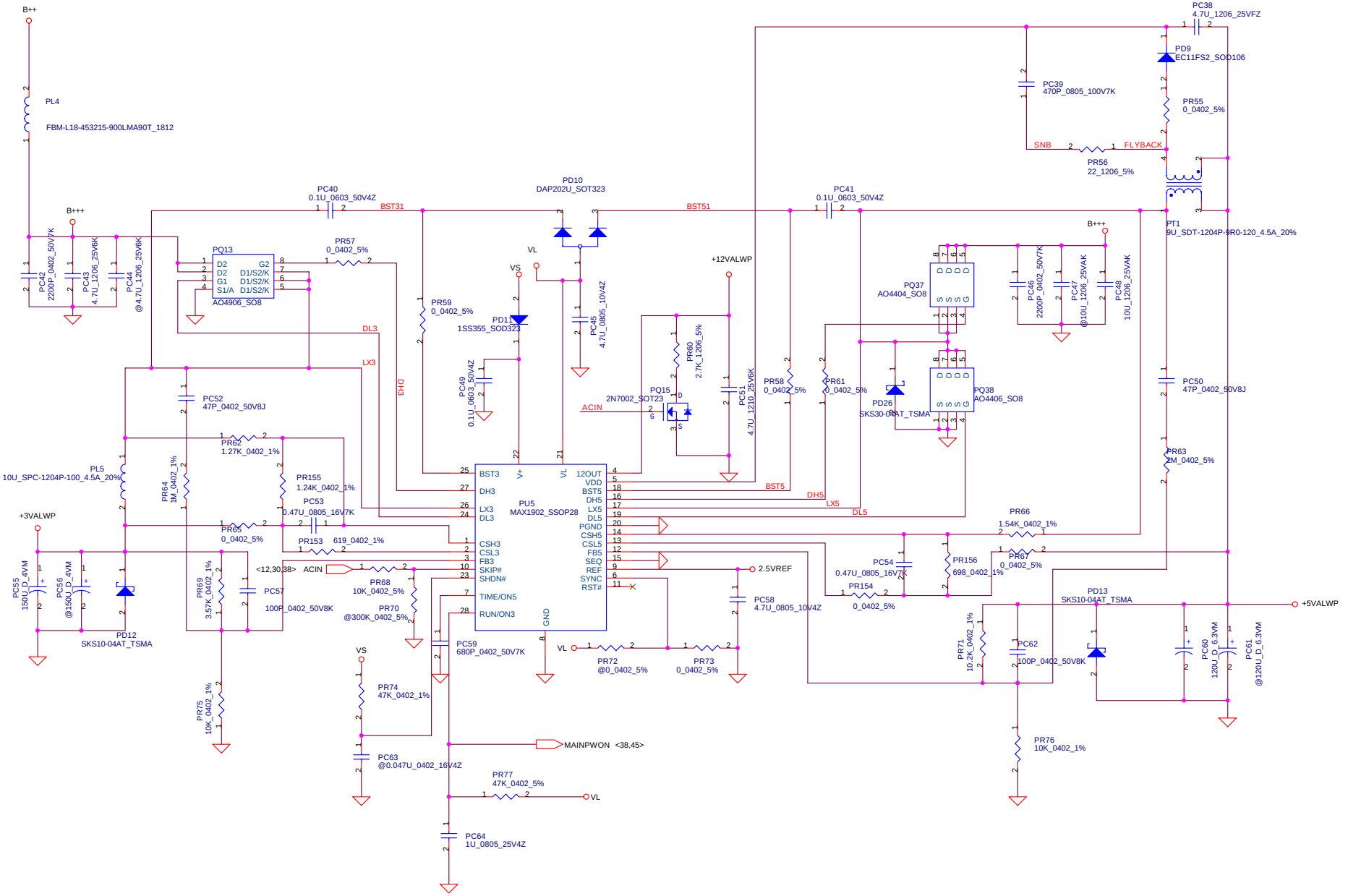
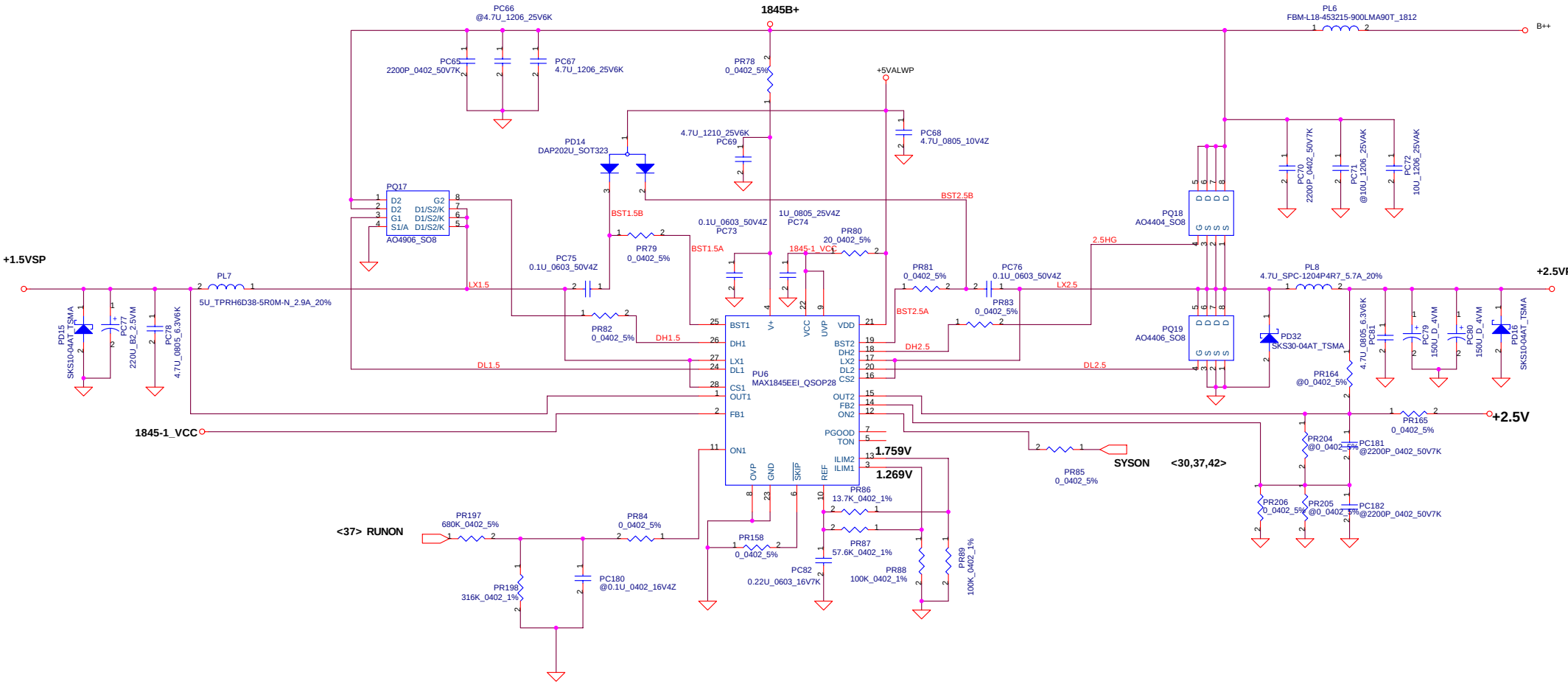
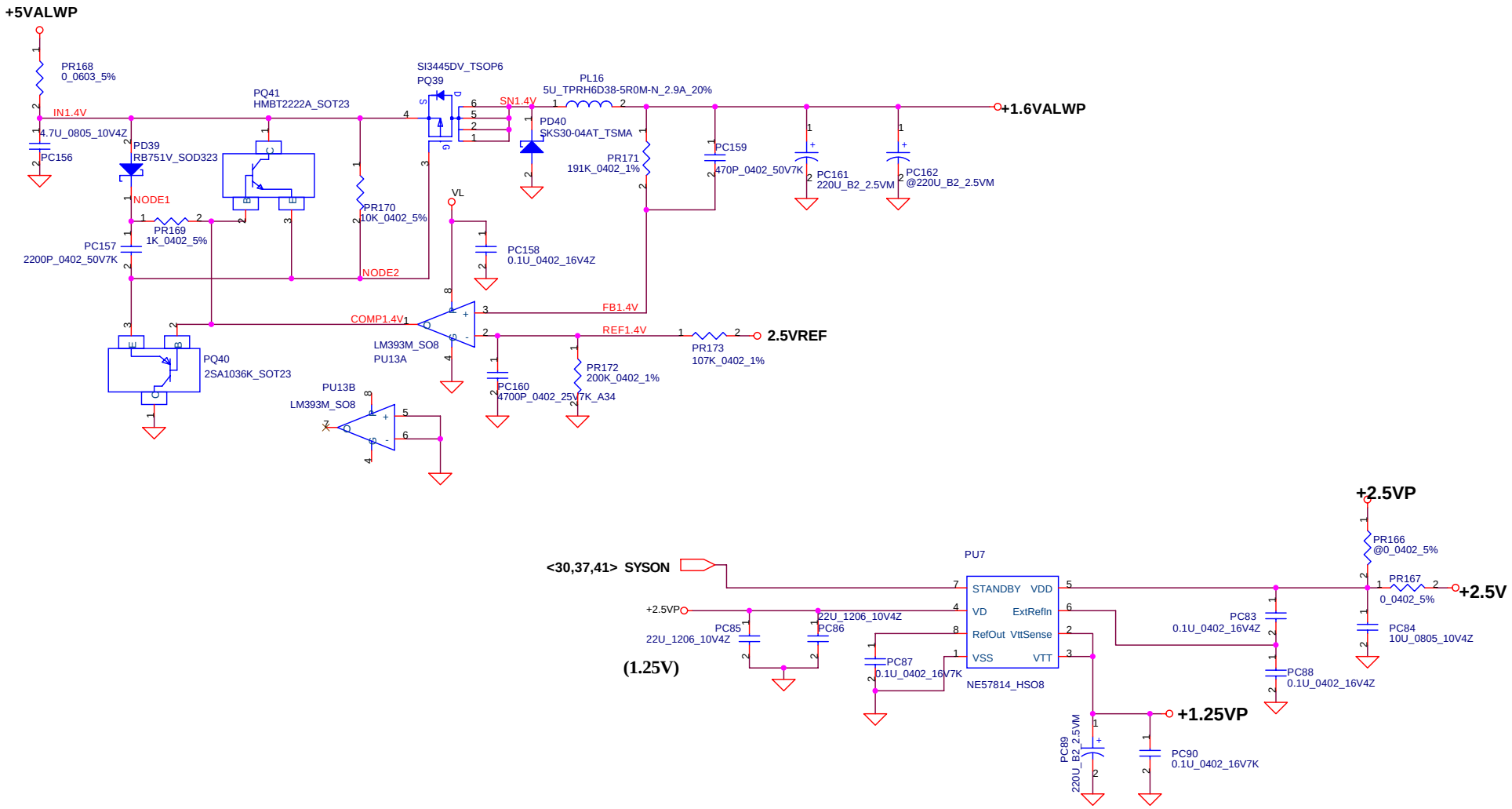
+3.3V/+5V/+12V



Compal Electronics, Inc.		
Title: 3.3V / 5V / 12V		
Size: B	Document Number: LA-2392	Rev: 1.0
Date: Friday, April 16, 2004	Sheet 40 of 53	



COMPAL ELECTRONICS, INC		
Title: DDR POWER 2.5VP & +1.5VALWP		
Size: B	Document Number: LA-2392	Rev: 0.1
Date: Friday, April 16, 2004	Sheet 41 of 53	



COMPAL ELECTRONICS, INC	
Title	+1.6VALWP & +1.25VP
Size: B	Document Number: LA-2392
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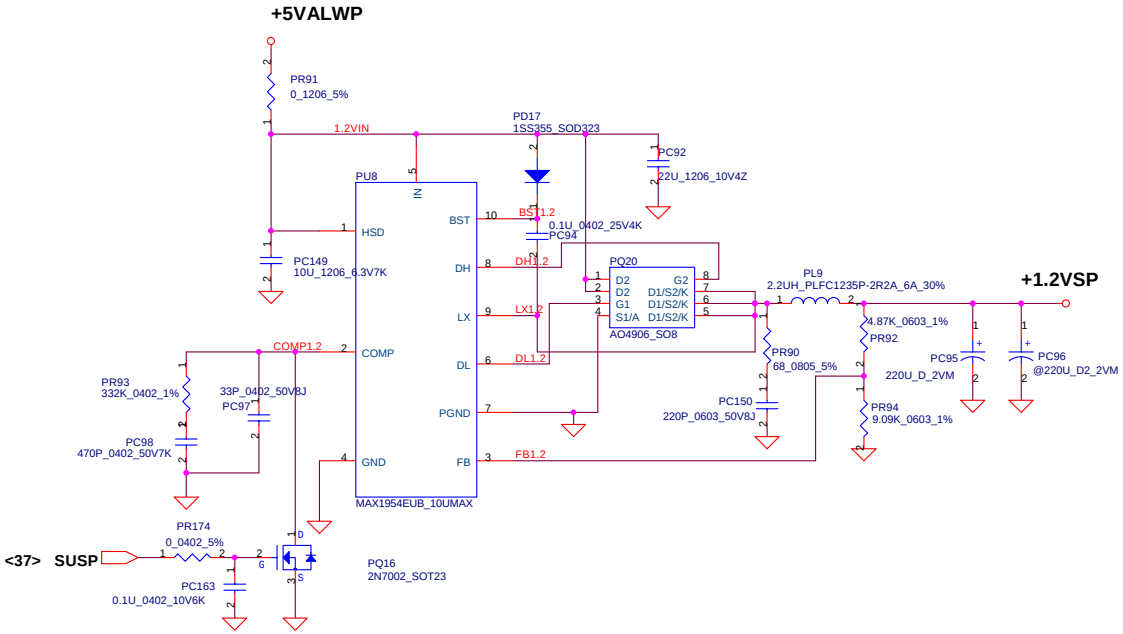
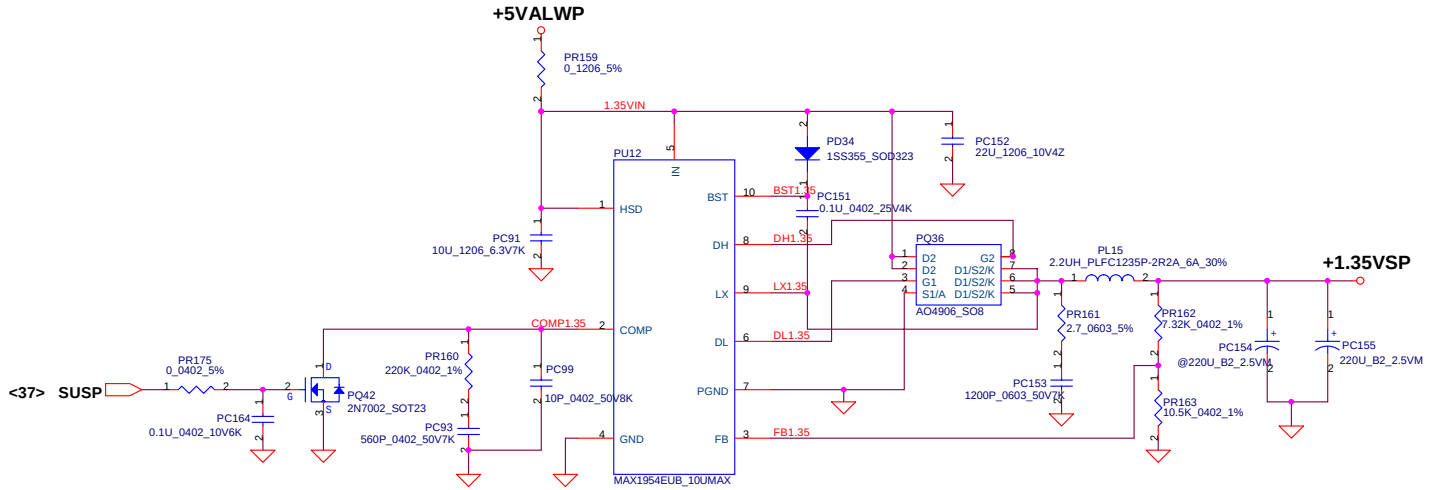
Date: Friday, April 16, 2004	Sheet 42 of 53





COMPAL ELECTRONICS, INC

Title: 1.25V / VGA_CORE

Size | Document Number: LA-2392 | Rev: 0.1

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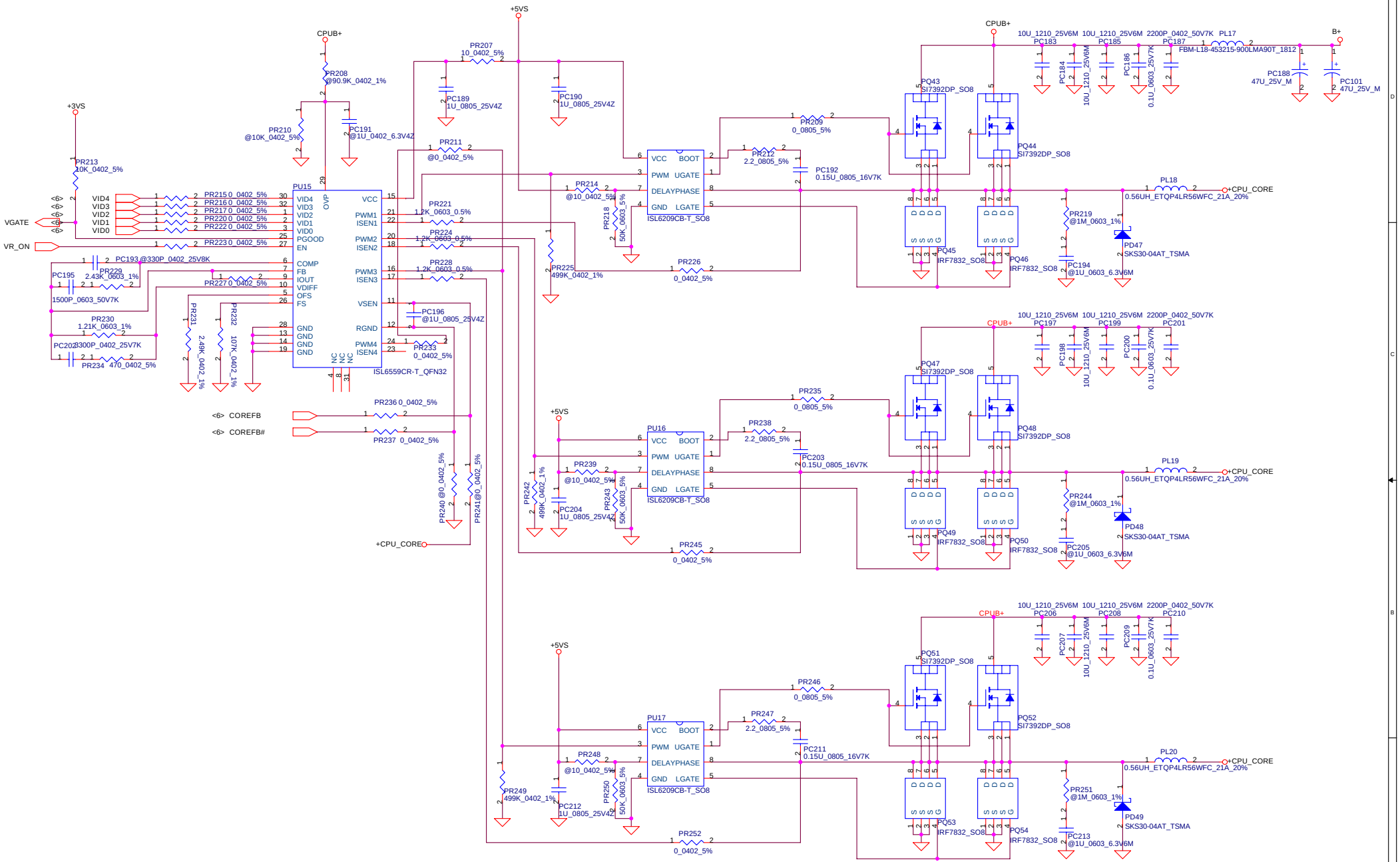


COMPAL ELECTRONICS, INC

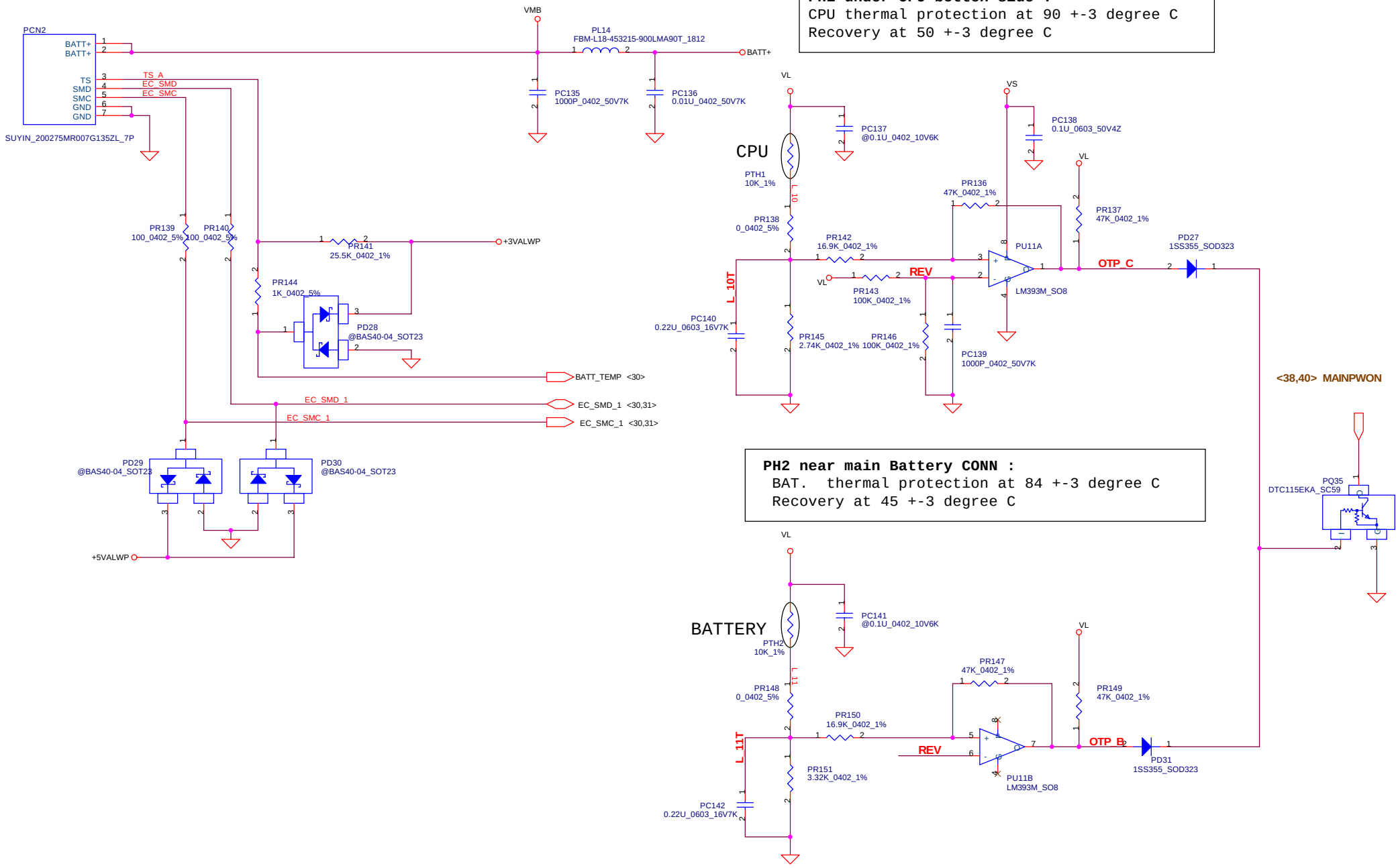
Title: **+CPU_CORE**

Size: B | Document Number | Rev: 0.1

Date: Friday, April 16, 2004 | Sheet 44 of 53

PH1 under CPU botten side :
CPU thermal protection at 90 +-3 degree C
Recovery at 50 +-3 degree C

PH2 near main Battery CONN :
BAT. thermal protection at 84 +-3 degree C
Recovery at 45 +-3 degree C



COMPAL ELECTRONICS, INC

Title: BATTERY CONN / OTP

Size	Document Number	Rev
B	LA-2392	1.0

Date: Friday, April 16, 2004 | Sheet 45 of 53

POWER PIR LIST

PHASE	page	Reason for change	Modify list
DB2	40	Modify 3V / 5V Vout and OCP	Change PR66 from 6.49K_0603_1% to 1.54K_0603_1% Change PR156 from 11.8K_0402_1% to 698_0402_1% Change PR154 from 4.12K_0603_1% to 0_0603_5% Change PC54, PC53 from 0.1U_0805_25V7K to 0.47U_0805_25V4Z Change PR62 from 5.76K_0603_1% to 1.27K_0603_1% Change PR155 from 27K_0603_1% to 1.24K_0603_1% Change PR153 from 4.7K_0402_1% to 619_0402_1%
	44,45	For CPU_CORE thermal issue	Change PQ21, PQ26, PQ31, PQ46 From IRLR7821 to SI7392DP Delete PD23, PD43, SC11N4148T8
	42	For 1.6V voltage accuracy	Change PR173 from 113K_0402_1% to 107K_0402_1%
	42	For layout pad issue	Change PC85, PC86 from 22U_1210_10V4Z to 22U_1206_10V4Z
	41	For power sequence setting	Add PR197, 680K_0603_1% Add PR198, 316K_0603_1%
	38	For solving cable dock shutdown issue	Add PD45, SKS80-04CT
SI	38	For thermal issue	Change PD45 from SKS80-04CT to SBM1040
	38	Change VIN detector sensing point because of DOCK issue	Change PR2 from 174k_0603_1% to 150k_0603_0.1% Change PR7 from 75k_0402_1% to 66.5k_0402_1%
	39	Improvment noise issue	
	41	Modify 2.5V / 1.5V OCP	Change PR87 from 24.9k_0402_1% to 57.6k_0402_1% Change PR88 from 0_0603_1% to 13.7k_0402_1% Add PR89, 100k_0402_1%
	43	VGA with 32M VRAM	Remove 1.35V regulator that is for VGA with 64M VRAM
	44,45	Modify CPU_CORE current balance issue	Change the connection of PC122 and PC168 from 14 pin of PU9 to ground. Remove PD22 and PD44.
PV	38	Improve the VIN detector accuracy.	Change PR1, PR2, PR5, PR7, PC6, and re-connect the reference voltage that is VL connected to PR10 to RTC charger output.
	39	Improve the accuracy of Constant Voltage mode of charger.	Change PR48, PR49
	41	reserve devices for the adjustment of 2.5V	Add PR204, PR205, PR206, PC181, PC182
	44	Improve the transient response	Add PR203, PC111, and remove PR202
PV-2	46	Improve the compensation	Change PC168 and PR183
	46	Modify the control signal of MAX1980 (strat the MAX1980 at the same time with MAX1937)	Delete PR180 and add PR208 from pin 13 of MAX1937 to pin 13 of MAX1980

POWER PIR LIST

PHASE	page	Reason for change	Modify list
DB2	40	Modify 3V / 5V Vout and OCP	Change PR66 from 6.49K_0603_1% to 1.54K_0603_1% Change PR156 from 11.8K_0402_1% to 698_0402_1% Change PR154 from 4.12K_0603_1% to 0_0603_5% Change PC54, PC53 from 0.1U_0805_25V7K to 0.47U_0805_25V4Z Change PR62 from 5.76K_0603_1% to 1.27K_0603_1% Change PR155 from 27K_0603_1% to 1.24K_0603_1% Change PR153 from 4.7K_0402_1% to 619_0402_1%
	44,45	For CPU_CORE thermal issue	Change PQ21, PQ26, PQ31, PQ46 From IRLR7821 to SI7392DP Delete PD23, PD43, SC11N4148T8
	42	For 1.6V voltage accuracy	Change PR173 from 113K_0402_1% to 107K_0402_1%
	42	For layout pad issue	Change PC85, PC86 from 22U_1210_10V4Z to 22U_1206_10V4Z
	41	For power sequence setting	Add PR197, 680K_0603_1% Add PR198, 316K_0603_1%
	38	For solving cable dock shutdown issue	Add PD45, SKS80-04CT
SI	38	For thermal issue	Change PD45 from SKS80-04CT to SBM1040
	38	Change VIN detector sensing point because of DOCK issue	Change PR2 from 174k_0603_1% to 150k_0603_0.1% Change PR7 from 75k_0402_1% to 66.5k_0402_1%
	39	Improvment noise issue	
	41	Modify 2.5V / 1.5V OCP	Change PR87 from 24.9k_0402_1% to 57.6k_0402_1% Change PR88 from 0_0603_1% to 13.7k_0402_1% Add PR89, 100k_0402_1%
	43	VGA with 32M VRAM	Remove 1.35V regulator that is for VGA with 64M VRAM
	44,45	Modify CPU_CORE current balance issue	Change the connection of PC122 and PC168 from 14 pin of PU9 to ground. Remove PD22 and PD44.
PV	38	Improve the VIN detector accuracy.	Change PR1, PR2, PR5, PR7, PC6, and re-connect the reference voltage that is VL connected to PR10 to RTC charger output.
	39	Improve the accuracy of Constant Voltage mode of charger.	Change PR48, PR49
	41	reserve devices for the adjustment of 2.5V	Add PR204, PR205, PR206, PC181, PC182
	44	Improve the transient response	Add PR203, PC111, and remove PR202
PV-2	46	Improve the compensation	Change PC168 and PR183
	46	Modify the control signal of MAX1980 (strat the MAX1980 at the same time with MAX1937)	Delete PR180 and add PR208 from pin 13 of MAX1937 to pin 13 of MAX1980

POWER PIR LIST (2)

PHASE	page	Reason for change	Modify list
	39	Modify charger for using 90W adapter	Change PR34 from 47K_0402_1% To 10K_0402_1% Change PR38 from 1K_0402_1% To 10K_0402_1% Change PR28 from 0.01_2512_1% To 0.012_2512_1% Change PR36 from 31.6K_0603_1% To 37.4K_0603_1% Change DC Jack
	39,40,41	Change capacitor size for cost down	Change PC48, PC72 from 10u_1210_25V to 10u_1206_25V Change PC29, PC30, PC31, PC43, PC67 from 4.7u_1210_25V to 4.7u_1206_25V

Version change list (P.I.R. List)

Item	Fixed Issue	Reason for change	PAGE	Modify List	M.B. Ver.
1		Fixed USB 1.1 rising/falling time error	P12	Delete C785, C786, C787, C788, C789, & C790	0.3
2		Fixed TV-out no display	P14	Swap TV_CRMA and TV_COMPS	0.3
3		Prevent PCI1620 latched up	P22	Reserve G_RST# to pin U37.C11	0.3
4		Design change (solve for HR60 audio issue)	P26	Move two load resistors from sub-board to M/B and swap JP17.2 and JP17.3	0.3
5		Supported wake up from TP	P27	Change TP connector JP26's power pin from +5VS to +5V	0.3
6		EMI required (solve for 48 MHz noise from FDD connector)	P32	Add CP11, CP12, CP13, and C801	0.3
7		Design change (TFDU6102 design guide)	P33	Delete C560 and C562 & add R586 Change C561 from 10uf to 4.7uf	0.3
8		EMI required (solve for 48 MHz noise from serial port)	P34	Add CP14, and CP15	0.3
9		ID required (for Pavillion)	P35	Add D58	0.3
10		EMI required	P25	Add L38, and L39	0.3
11		Add bypass cap. to solve for AC97 link cross a split plane	P27	Add C802, C803, C804, C805, and C806	0.3
12		Design change (reserve space for power placement and no need too many caps.)	P07	Delete C75, and C88	0.3
13		RealTech 8101L design guide	P20	Change R194 to 5.6K +/- 1%	0.3
14		Solve for SPDIF no output	P34	Delete C634	0.3
15		CPU_CLK is current drive from CK8. So, delete damping resistors.	P11	Change R69, and R70 from 15 ohm to 0 ohm	0.3
16		Solve for burst frequency error	P14	Change C642, and C643 from 18 pF to 22 pF	0.3
17		Solve for chrominance and burst level	P18	Change L11, L12, and L13 to 1.8uH	0.3

Version change list (P.I.R. List)

Item	Fixed Issue	Reason for change	PAGE	Modify List	M.B. Ver.
1		AMD change Tdiode spec up to 127 degree	P4	Change U3 from MAX6649 to ADM1032	0.4
2		Support wake from Lan	P20	Populate R188	0.4
3		To avoid PCI1620 unknow action	P22	Reserve R591	0.4
4		To restrain audio noise	P25	Change R267 pull up to +5VAMP_CODEC, and delete C626	0.4
5		USB_OC# high should be between 2.5V to 5.5V	P27	Change R310 and R315 to 10K / R314 and R319 to 20K	0.4
6		To detect FIR	P29	Add R592 and R593	0.4
7		TP should be pull up to +5V	P30	RP80 pull up to +5V	0.4
8		In order to compatible with NS97551 -- changing pin87 ~ 90 to GPIO	P30	BID routed from pin88 to pin82	0.4
9		In order to compatible with NS97551 -- removing +RTCVCC	P30	Add R594 and R595	0.4
10		To prevent noise generated from FAN to +5VS cause audio noise while shut down	P4	Delete D1 and D3 / add C3, C8, C612, and C614	0.4
11		Solve for PCI1620 working abnormal -- fine tune G_RST# timming	P22	Populate R587, delete R225, C410	0.4
12		Double mount issue, already exist at audio board.	P30	Delete D28 and D29	0.4
13		Fast power on for battery only	P33	Change R392 from 100K to 4.7K	0.4
14		Presario LED color should be amber	P35	Change D39, D40, D42, D44, and D45 from XX_GRN to XX_ORG	0.4
15		To develop SI9182 max effect	P25	Change C438 from 0.01UF to 0.1UF	0.4
16		For EMI	P26	Add L40, L41, L42, and L43 / delete C473, C474, C475, and C476	0.4
17		For VGA HSYNC/VSYNC average peak to peak issue	P18	Add R159 and R160	0.4
18		For 512MB non-JEDEC module (16 chips)	P9	Change RP42, RP46, and R481 from 68 Ohm to 47 Ohm	0.4

Version change list (P.I.R. List)

Item	Fixed Issue	Reason for change	PAGE	Modify List	M.B. Ver.
1		To use the same source as HR60	P4	Change U3 footprint to SOP8	0.5
2		To reset CK8 while boot up control by EC	P12	Add R97 to link EC_RSMRST# and PWRGD_SB	0.5
3		For EMI	P15	Change C648, C672, C685, C696, C699, C763, and C656 to 1000P Change C651, C673, C686, C697, C700, C764, C654, C733, C710, C730, C706, and C724 to 10P	0.5
4		To solve voltage level of HSYNC and VSYNC is over spec	P18	Add U46 and U47, and R596, R597, and R598 on CRT_HSYNC and CRT_VSYNC	0.5
5		Solve for data lost while transfer data from LAN	P20	Change U9 from NS0013 to NS0019	0.5
6		TI recommandation --- avoid unknow state while initiate	P22	Populate R591	0.5
7		Mechanical restricted area	P25	R263 and R264 change footprint to R_0402	0.5
8		For EMI	P25	L39 and R293 change to CHB1608U301_0402	0.5
9		For EMI	P26	L40, L41, L42, and L43 change to KC FBM-L11-201209-221LMAT_0805	0.5
10		nVIDIA recommandation for WOR	P27	Add U48, C807, R599, and R600	0.5
11		Due to MD_SPK is no longer use, so prevent input pin floating.	P25	Delete R287 and change R288 to 0_0402_5%. Also add C808.	0.5
12		Due to USB data has leakage problem, so need to delay USB_VCC power up timing controlled by EC to solve for unknow device while power on with battery only.	P27 P30	Wired R368.2 to U18.4 and U19.4	1.0

Item	Fixed Issue	Reason for change	PAGE	Modify List	M.B. Ver.
1		Cost Down	P4	Change C1, C4, C8, C330, C339, C447, C596, C599, C609 from 10U_1206_10V4Z to 10U_0805_10V4Z	0.5C
2		Cost Down	P6	Delete C15 (330U_D_2VM_R15), Add C810 (330U_6.3V_M)	0.5C
3		Cost Down	P12 P25 P14 P26 P15 P27 P18 P29 P20 P30 P22 P31	Delete 0_0402_5% -- R97, R105, R108, R282, R288, R289, R300, R312, R313, R317, R318, R320, R321, R326, R327, R359, R368, R375, R377, R381, R393, R469, R587, R597, R598, R219 Delete 0_0603_5% -- R462, L26, L27, L30, L32, L33, L34 Delete 0_0805_5% -- R459, R465, L16, L20, Delete 0_1206_5% -- R394,	0.5C
4		Cost Down (VBIOS can cover it)	P14	Delete R502 and R503	0.5C
6		Improve reliability	P18	Add C811	0.5C
7		Cost Down	P18	Change D12 from RB491D_SOT23 to RB411D_SOT23	0.5C
8		Cost Down (RTL8101L integrate those parts)	P20	Delete Q22, C353, C354, C358, C359 and add L44	0.5C
9		Cost Down	P21	Delete C376, C378, C382, C383, C384	0.5C
10		Cost Down (EC can control it)	P22	Delete D16 and R218	0.5C
11		Internal pull up	P23	Delete R227	0.5C
12		Cost Down	P23	Delete C423 and C631	0.5C
13		Cost Down (No reserve PCI1520)	P24	Delete R231, R232, R240, R241, R242, R243, R244, R245, R256, R259, R260, RP71, RP71, RP73, RP74, RP75, RP76, RP77, C430	0.5C
14		Cost Down	P25	Delete C435, C436, C808, and add R604	0.5C
15		Cost Down	P28	Delete C512, C515, C522, C524	0.5C
16		Cost Down	P29	Delete C525, C529	0.5C
17		Cost Down	P30	Change U21 from 87591L to 97551, delete C539 and C543, add R603, D59, C627	0.5C
19		Cost Down	P43	Delete C564, C566	0.5C

Add/Del/Change	Loc	Old Description	New Description	Function	H/W	Compal Comment
Change	C1	10U_1206_10V4Z	10U_0805_10V4Z	FAN	Minor layout modification	Same material, only size change
	C4	10U_1206_10V4Z	10U_0805_10V4Z	FAN	Minor layout modification	Same material, only size change
	C8	10U_1206_10V4Z	10U_0805_10V4Z	FAN	Minor layout modification	Same material, only size change
	C330	10U_1206_10V4Z	10U_0805_10V4Z	HDD	Minor layout modification	Same material, only size change
	C339	10U_1206_10V4Z	10U_0805_10V4Z	ODD	Minor layout modification	Same material, only size change
	C447	10U_1206_10V4Z	10U_0805_10V4Z	Audio	Minor layout modification	Same material, only size change
	C596	10U_1206_10V4Z	10U_0805_10V4Z	+3VALW to +3V	Minor layout modification	Same material, only size change
	C599	10U_1206_10V4Z	10U_0805_10V4Z	+1.6VALW to +1.6VS	Minor layout modification	Same material, only size change
	C609	10U_1206_10V4Z	10U_0805_10V4Z	+3VALW to +3VS	Minor layout modification	Same material, only size change
	U21	NS87591	NS97551	EC	Minor layout modification	Pin to pin compatible, delete some GPIOs not use in HR61 at all
	D12	RB491D_SOT23	RB411D_SOT23	CRT	Minor layout modification	Max. current 1A --> 0.5A, it is as same as Ford.
	C357	0.1U_0402_16V4Z	22U_1206_10V4Z	LAN Power	Minor layout modification	Follow Realtek design guide, it is same as Ford.
	PR34	47K_0402_1%	10K_0402_1%	Charger	BOM change	For 90W adapter, modify the CP mode of charger
	PR38	1K_0402_1%	10K_0402_1%	Charger	BOM change	For 90W adapter, modify the CP mode of charger
	PR28	0.01_2512_1%	0.12_2512_1%	Charger	BOM change	For 90W adapter, modify the CP mode of charger
	PC23	4700P_0402_25V7K	2200P_0402_25V7K	Charger	BOM change	For 90W adapter, modify the CP mode of charger
	PR36	31.6K_0603_1%	37.4K_0603_1%	1.8V	BOM change	For 90W adapter, modify the CP mode of charger
	PCN1	DC Jack for 120W	DC Jack for 90W	DC Input	BOM change	Change the DC jack for 90W adapter
	PC78	10U_1210_25V	10U_1206_25V	+1.5VSP	Minor layout modification	Same material, only size change
	PC72	10U_1210_25V	10U_1206_25V	1845B+	Minor layout modification	Same material, only size change
	PC29	4.7U_1210_25V	4.7U_1206_25V	BATT+	Minor layout modification	Same material, only size change
	PC30	4.7U_1210_25V	4.7U_1206_25V	BATT+	Minor layout modification	Same material, only size change
	PC31	4.7U_1210_25V	4.7U_1206_25V	BATT+	Minor layout modification	Same material, only size change
	PC43	4.7U_1210_25V	4.7U_1206_25V	BATT+	Minor layout modification	Same material, only size change
	PC67	4.7U_1210_25V	4.7U_1206_25V	1845B+	Minor layout modification	Same material, only size change
	R594	@10K_0402_5%	@0_0603_5%	EC	Minor layout modification	Reserve for ENE
Add	C811		0.1U_0402_16V4Z	CRT	Minor layout modification	The capacitor is located close to Vcc pin
	L44		KC FBM_L11-201209-601LMT 0805	LAN Power (+2.5V)	Minor layout modification	Follow Realtek design guide, it is same as Ford.
	C627		1U_0603_10V6K	EC	BOM change	Follow NS97551 design guide.
	R603		1_0805_5%	EC	Minor layout modification	Follow NS97551 design guide.
	D59		SSM14_SMA	EC	Minor layout modification	Follow NS97551 design guide.
	C810		330U_6.3V_M	DDR	Minor layout modification	VTT decoupling capacitor, low ESR requirement, it is same as Lopze
	R602		@0_0402_5%	EC	Minor layout modification only	Reserve for ENE
Del	C15	330U_D_2VM_R15		DDR	BOM change	Replace C810
	R97	0_0402_5%		CK8	Minor layout modification	No EMI concern
	R105	0_0402_5%		CK8	Minor layout modification	No EMI concern
	R108	0_0402_5%		CK8	Minor layout modification	No EMI concern
	R282	0_0402_5%		Audio CLK	Minor layout modification	No EMI concern
	R288	0_0402_5%		Audio	Minor layout modification	No EMI concern
	R289	0_0402_5%		Audio	Minor layout modification	No EMI concern
	R300	0_0402_5%		Audio AMP	Minor layout modification	No EMI concern
	R312	0_0402_5%		USB	Minor layout modification	No EMI concern
	R313	0_0402_5%		USB	Minor layout modification	No EMI concern
	R317	0_0402_5%		USB	Minor layout modification	No EMI concern
	R318	0_0402_5%		USB	Minor layout modification	No EMI concern
	R320	0_0402_5%		USB	Minor layout modification	No EMI concern
	R321	0_0402_5%		USB	Minor layout modification	No EMI concern
	R326	0_0402_5%		USB	Minor layout modification	No EMI concern
	R327	0_0402_5%		USB	Minor layout modification	No EMI concern
	R359	0_0402_5%		EC	Minor layout modification	No EMI concern
	R368	0_0402_5%		EC	Minor layout modification	No EMI concern
	R375	0_0402_5%		EC I/O Port	Minor layout modification	No EMI concern
	R377	0_0402_5%		EC I/O Port	Minor layout modification	No EMI concern
	R381	0_0402_5%		EC I/O Port	Minor layout modification	No EMI concern
	R393	0_0402_5%		Power BTN	Minor layout modification	No EMI concern
	R469	0_0402_5%		CardBus Controller PCI1620	Minor layout modification	No reserve for PCI1520
	R587	0_0402_5%		CardBus Controller PCI1620	Minor layout modification	No reserve for PCI1520
	R597	0_0402_5%		CRT	Minor layout modification	No EMI concern
	R598	0_0402_5%		CRT	Minor layout modification	No EMI concern
	R219	0_0402_5%		CardBus Controller PCI1620	Minor layout modification	No reserve for PCI1520
	R462	0_0603_5%		TV-GND	Minor layout modification	No EMI concern
	L26	0_0603_5%		VGA Power	Minor layout modification	No EMI concern
	L27	0_0603_5%		VGA Power	Minor layout modification	No EMI concern
	L30	0_0603_5%		VGA Power	Minor layout modification	No EMI concern
	L32	0_0603_5%		VGA Power	Minor layout modification	No EMI concern
	L33	0_0603_5%		VGA Power	Minor layout modification	No EMI concern
	L34	0_0603_5%		SSC Power	Minor layout modification	No EMI concern
	R459	0_0805_5%		LAN	Minor layout modification	Follow Realtek design guide, it is same as Ford.
	R465	0_0805_5%		LPC(VT1211)	Minor layout modification	No EMI concern
	L16	0_0805_5%		Audio Power	Minor layout modification	No EMI concern
	L20	0_0805_5%		Audio AMP Power	Minor layout modification	No EMI concern
	R394	0_1206_5%		FIR	Minor layout modification	Follow Vishay design guide.
	R502	10K_0402_5%		VGA	BOM change	VBIOS can cover it
	R503	10K_0402_5%		VGA	BOM change	VBIOS can cover it
	Q22	2SA1036K_SOT23		LAN Power	Minor layout modification	Follow Realtek design guide, it is same as Ford.
	C353	1U_0603_10V6K		LAN Power	BOM change	Follow Realtek design guide, it is same as Ford.
	C354	1U_0603_10V6K		LAN Power	Minor layout modification	Follow Realtek design guide, it is same as Ford.
	C358	10U_0805_10V4Z		LAN Power	Minor layout modification	Follow Realtek design guide, it is same as Ford.
	C359	0.1U_0402_16V4Z		LAN Power	Minor layout modification	Follow Realtek design guide, it is same as Ford.
	C376	0.1U_0402_16V4Z		1394	BOM change	Confirmed by TI
	C378	0.1U_0402_16V4Z		1394	BOM change	Confirmed by TI
	C382	1000P_0402_50V7K		1394	BOM change	Confirmed by TI
	C383	1000P_0402_50V7K		1394	BOM change	Confirmed by TI
	C384	1000P_0402_50V7K		1394	BOM change	Confirmed by TI
	D16	RB751V_SOD323		CardBus Controller PCI1620	Minor layout modification	EC can control it
	R218	10K_0402_5%		CardBus Controller PCI1620	Minor layout modification	EC can control it
	R227	4.7K_0402_5%		PCMCIA POWER CTRL.	BOM change	Follow PCI1620 design guide
	C423	0.1U_0402_16V4Z		PCMCIA POWER	BOM change	Follow PCI1620 design guide
	C631	0.1U_0402_16V4Z		PCMCIA POWER	BOM change	Follow PCI1620 design guide
	R231	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R232	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R240	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R241	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R242	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R243	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R244	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R245	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R256	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R259	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	R260	0_0402_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	RP71	0_1206_8P4R_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	RP72	0_1206_8P4R_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	RP73	0_1206_8P4R_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	RP74	0_1206_8P4R_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	RP75	0_1206_8P4R_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	RP76	0_1206_8P4R_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	RP77	0_1206_8P4R_5%		CardReader socket	Minor layout modification	No reserve for PCI1520
	C430	0.1U_0402_16V4Z		CardReader socket	Minor layout modification	No reserve for PCI1520
	C435	4.7U_0805_6.3V6K		Audio	BOM change	Follow AD1981 design guide
	C436	0.1U_0402_16V4Z		Audio	BOM change	Follow AD1981 design guide
	C512	0.1U_0402_16V4Z		Mini-PCI	BOM change	Verified by test
	C515	0.1U_0402_16V4Z		Mini-PCI	BOM change	Verified by test
	C522	4.7U_0805_10V4Z		Mini-PCI	BOM change	Verified by test
	C524	1000P_0402_50V7K		Mini-PCI	BOM change	Verified by test
	C525	10U_1206_10V4Z		LPC(VT1211)	BOM change	Verified by test
	C529	0.1U_0402_16V4Z		LPC(VT1212)	BOM change	Verified by test
	C539	4.7U_0805_10V4Z		EC	BOM change	Verified by test
	C543	1000P_0402_50V7K		EC	BOM change	Verified by test
	C564	22U_1206_10V4Z		SPR_USB	BOM change	This is control pin, not power pin, so reduce
	C566	1000P_0402_50V7K		SPR_USB	BOM change	This is control pin, not power pin, so reduce
	C329	10U_1206_10V4Z		HDD	BOM change	Verified by test, it is same as Lopze
	C331	1U_0805_25V4Z		HDD	BOM change	Verified by test, it is same as Lopze
	C338	1U_0805_25V4Z		CDROM	BOM change	Verified by test, it is same as Lopze
	R226	@0_0402_5%		CardBus Controller PCI1620	Minor layout modification only	No reserve for PCI1520
	R470	@0_0402_5%		CardBus Controller PCI1620	Minor layout modification only	No reserve for PCI1520
	JP14	@FOX_WZ21131-G2-P4		CardBus socket	Minor layout modification only	No reserve for PCI1520
	C427	@1000P_0402_50V7K		CardBus socket	Minor layout modification only	No reserve for PCI1520
	C429	@1000P_0402_50V7K		CardBus socket	Minor layout modification only	No reserve for PCI1520
	C425	@0.1U_0402_16V4Z		CardBus socket	Minor layout modification only	No reserve for PCI1520
	C426	@0.1U_0402_16V4Z		CardBus socket	Minor layout modification only	No reserve for PCI1520
	C428	@0.1U_0402_16V4Z		CardBus socket	Minor layout modification only	No reserve for PCI1520
	C632	@0.1U_0402_16V4Z		CardBus socket	Minor layout modification only	No reserve for PCI1520
	C633	@0.1U_0402_16V4Z		CardBus socket	Minor layout modification only	No reserve for PCI1520
	R287	@0_0402_5%		Audio	Minor layout modification only	No support Mono phone
	R288	0_0402_5%		Audio	Minor layout modification	No support Mono phone
	C464	@0.1U_0402_16V4Z		Audio	Minor layout modification only	No support Mono phone
	U22	@SN74HCT273PW_TSSOP20		EC	Minor layout modification only	No reserve purpose
	C548	@0.1U_0402_16V4Z		EC	Minor layout modification only	No reserve purpose
	C549	@1U_0603_10V6K		EC	Minor layout modification only	No reserve purpose
	R372	@20K_0402_5%		EC	Minor layout modification only	No reserve purpose
	R384	100K_0402_5%		EC	Minor layout modification	Wire pull down resistor together
	JP2	ACES_85205-0300		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	Q2	FMMT619_SOT23		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	C4	10U_0805_10V4Z		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	C7	0.1U_0402_16V4Z		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	R13	10K_0402_5%		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	R9	100_0402_5%		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	R12	8.2K_0402_5%		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	D4	1N4148_SOT23		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	C8	10U_0805_10V4Z		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	C614	0.1U_0402_16V4Z		FAN2	BOM change	For 90W adapter, only support one Fan1 only.
	C615	1000P_0402_50V7K		FAN2	BOM change	For 90W adapter, only support one Fan1 only.

Note: In order to identify different PCA from Diaz-1.0, Diaz-1.1 90W and Diaz-1.1 120W. We suggest to implement BID function.

Add	R361	1K_0402_5%		EC	BOM change	For 90W and 120W adapter
Delete	R364	1K_0402_5%		EC	BOM change	For 120W adapter only

Compal Electronics, Inc.

Title: **Cost Down PIR (customer)**

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