Service Manual Supplement

for HP 54112D

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Component-level Information Packet

for HP 54111D, 54112D, 54120A/B

Power Supply Assemblies

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1	0160-4962	1	1	CAPACITOR-FXD 1UF +-20% 250VAC(RMS)	28480	0160-4962
C2	0160-4355	6	2	CAPACITOR-FXD 0.01UF +-20% 250VAC(RMS)	28480	0160-4355
C3	0160-4355	6		CAPACITOR-FXD 0.01UF +-20% 250VAC(RMS)	28480	0160-4355
C4	0180-3652	6	4	CAPACITOR-FXD 680UF+30-10% 250VDC AL	28480	0180-3652
C5	0180-3652	6		CAPACITOR-FXD 680UF+30-10% 250VDC AL	28480	0180-3652
C6	0180-3652	6		CAPACITOR-FXD 680UF+30-10% 250VDC AL	28480	0180-3652
C7	0180-3652	6		CAPACITOR-FXD 680UF+30-10% 250VDC AL	28480	0180-3652
C8	0160-6029	5	3	CAPACITOR-FXD 2.2UF +-10% 400VDC	28480	0160-6029
C9	0160-6029	5		CAPACITOR-FXD 2.2UF +-10% 400VDC	28480	0160-6029
C10-11				NOT ASSIGNED		
C12	0180-2866	2	1	CAPACITOR-FXD 22UF+100-10% 50VDC AL	28480	0180-2866
C13	0160-6029	5		CAPACITOR-FXD 2.2UF +-10% 400VDC	28480	0160-6029
C14	0160-4822	2	1	CAPACITOR-FXD 1000PF +-5% 100VDC CER	28480	0160-4822
C15				NOT ASSIGNED		
C16	0180-3845	9	1	CAPACITOR-FXD 4.7UF+-10% 35VDC TA	28480	0180-3845
C17	0160-5467	3	2	CAPACITOR-FXD 0.01UF +-10% 63VDC	28480	0160-5467
C18	0160-4808	4	2	CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C19	0160-5469	5	1	CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C20	0160-5471	9	4	CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C21	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C22	0160-6192	3	1	CAPACITOR-FXD 0.047UF +-10% 63VDC	28480	0160-6192
C23	0160-4812	0	1	CAPACITOR-FXD 220PF +-5% 100VDC CER	28480	0160-4812
C24	0160-5468	4	1	CAPACITOR-FXD 0.47UF +-10% 50VDC	28480	0160-5468
C25	0160-6333	4	1	CAPACITOR-FXD 2200PF +-5% 1KVDC POLYP	28480	0160-6333
C26	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C27	0180-3653	7	2	CAPACITOR-FXD 56UF+100-10% 200VDC AL	28480	0180-3653
C28	0160-5467	3		CAPACITOR-FXD 0.01UF +-10% 63VDC	28480	0160-5467
C29	0160-4808	4		CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C30	0160-5211	5	2	CAPACITOR-FXD 0.1UF +-5% 250VDC MET-POLYE	28480	0160-5211
C31	0180-3653	7		CAPACITOR-FXD 56UF+100-10% 200VDC AL	28480	0180-3653
C32	0160-5211	5		CAPACITOR-FXD 0.1UF +-5% 250VDC MET-POLYE	28480	0160-5211
C33	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C34	0160-3878	6	1	CAPACITOR-FXD 1000PF +-20% 100VDC CER	28480	0160-3878
C35	0160-4281	7	1	CAPACITOR-FXD 2200PF +-20% 250VAC(RMS)	C0633	PME271Y422
CB1	3105-0230	5	1	CIRCUIT BREAKER 2-POLE 7.5A 250VAC	28480	3105-0230
CR1	1906-0224	3	1	DIODE-FW BRDG 600V 25A	04713	MDA2506
CR2	1901-1065	2	6	DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR3	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR4	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR5	1901-0995	5	3	DIODE-HV RECT 1KV 1A 100NS DO-41	1B546	TG-10
CR6	1901-0995	5		DIODE-HV RECT 1KV 1A 100NS DO-41	1B546	TG-10
CR7	1901-0995	5		DIODE-HV RECT 1KV 1A 100NS DO-41	1B546	TG-10
CR8	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR9	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR10	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR11				NOT ASSIGNED		
CR12	1901-1087	8	1	DIODE-PWR RECT 600V 3A 200NS	04713	MR856
DS1	1990-0451	5	2	LED-LAMP LUM-INT=300UCD IF=20MA-MAX	28480	5082-4468
DS2	1990-0451	5		LED-LAMP LUM-INT=300UCD IF=20MA-MAX	28480	5082-4468

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
V1	1970-0050	8	2	TUBE-ELECTRON SURGE V PROTECTOR	28480	1970-0050
V2	1970-0050	8		TUBE-ELECTRON SURGE V PROTECTOR	28480	1970-0050
VR1				NOT ASSIGNED		
VR2	1902-0939	9	1	DIODE-VOLTAGE SUPPRESSOR VR=5.0V	04713	1N5908
VR3	1902-0244	9	1	DIODE-ZNR 30V 5% PD=1W IR=5UA	28480	1902-0244

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1	0160-6028	4	1	CAPACITOR-FXD 1.5UF +-10% 400VDC	28480	0160-6028
C2	0160-4808	4	4	CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C3	0160-4808	4		CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C4	0160-5471	9	13	CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C5	0180-0228	6	1	CAPACITOR-FXD 22UF+-10% 15VDC TA	56289	150D226X9015B2
C6	0160-4832	4	1	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-4832
C7	0160-4808	4		CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C8	0160-5469	5	9	CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C9				NOT ASSIGNED		
C10	0160-4812	0	1	CAPACITOR-FXD 220PF +-5% 100VDC CER	28480	0160-4812
C11	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C12	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C13	0160-5466	2	6	CAPACITOR-FXD 1000PF +-5% 1KVDC POLYP	28480	0160-5466
C14	0160-5466	2		CAPACITOR-FXD 1000PF +-5% 1KVDC POLYP	28480	0160-5466
C15	0160-6192	3	1	CAPACITOR-FXD 0.047UF +-10% 63VDC	28480	0160-6192
C16	0160-4355	6	1	CAPACITOR-FXD 0.01UF +-20% 250VAC(RMS)	28480	0160-4355
C17	0160-5466	2		CAPACITOR-FXD 1000PF +-5% 1KVDC POLYP	28480	0160-5466
C18	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C19	0160-5466	2		CAPACITOR-FXD 1000PF +-5% 1KVDC POLYP	28480	0160-5466
C20	0160-4808	4		CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C21	0160-5468	4	1	CAPACITOR-FXD 0.47UF +-10% 50VDC	28480	0160-5468
C22	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C23	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C24	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C25	0180-2755	8	2	CAPACITOR-FXD 900UF+75-10% 25VDC AL	00853	300GJ901U025B
C26	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C27	0180-2755	8		CAPACITOR-FXD 900UF+75-10% 25VDC AL	00853	300GJ901U025B
C28	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C29	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C30	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C31	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C32	0160-5466	2		CAPACITOR-FXD 1000PF +-5% 1KVDC POLYP	28480	0160-5466
C33	0160-5466	2		CAPACITOR-FXD 1000PF +-5% 1KVDC POLYP	28480	0160-5466
C34-36				NOT ASSIGNED		
C37	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C38	0180-2866	2	1	CAPACITOR-FXD 22UF+100-10% 50VDC AL	28480	0180-2866
C39	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C40	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C41	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C42	0180-3250	0	2	CAPACITOR-FXD 2000UF+75-10% 12VDC AL	28480	0180-3250
C43	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C44	0180-3250	0		CAPACITOR-FXD 2000UF+75-10% 12VDC AL	28480	0180-3250
C45	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C46	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C47	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C48	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
CR1	1901-1148	2	3	DIODE-PWR RECT 1KV 1A 750NS	04713	MR818
CR2	1901-1148	2		DIODE-PWR RECT 1KV 1A 750NS	04713	MR818
CR3				NOT ASSIGNED		
CR4	1901-1065	2	4	DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR5	1901-1148	2		DIODE-PWR RECT 1KV 1A 750NS	04713	MR818

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
CR6	1906-0261	8	2	DIODE-CT-RECT 150V 16A	28480	1906-0261
CR7	1901-0050	3	8	DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR8	1906-0261	8		DIODE-CT-RECT 150V 16A	28480	1906-0261
CR9				NOT ASSIGNED		
CR10	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR11	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR12	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR13				NOT ASSIGNED		
CR14	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR15	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR16	1906-0262	9	2	DIODE-CT-RECT 100V 3A	9N171	UES 2402
CR17	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR18	1906-0262	9		DIODE-CT-RECT 100V 3A	9N171	UES 2402
CR19	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR20	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR21				NOT ASSIGNED		
CR22	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR23	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
DS1	1990-0451	5	1	LED-LAMP LUM-INT=300UCD IF=20MA-MAX	28480	5082-4468
E1	0340-1074	2	5	INSULATOR-XSTR THRM-CNDCT TO-220	28480	0340-1074
E2	0340-1080	0	1	INSULATOR-XSTR THRM-CNDCT TO-3 (Q2)	28480	0340-1080
H1	0515-0372	2	9	SCREW-MACH M3 8MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
H2	0515-0664	5	12	SCREW-MACH M3 12MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
H3	3050-1140	1	5	WASHER-SHOULDER	00000	ORDER BY DESCRIPTION
H4	0380-1238	4	1	STANDOFF M3 X 0.5	00000	ORDER BY DESCRIPTION
H5	0380-1239	5	2	STANDOFF	00000	ORDER BY DESCRIPTION
H6	0380-1701	6	1	SPACER 0.25-IN	00000	ORDER BY DESCRIPTION
H7	3050-1071	7	6	RECTANGLE-METAL 10.3MM X 5.6MM	00000	ORDER BY DESCRIPTION
H8	0515-1038	9	1	SCREW-MACH M3 35MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
H9	2190-0763	7	1	WASHER-FLAT	28480	2190-0763
HS1	54110-01101	6	1	HEAT SINK-PRIMARY	28480	54110-01101
HS2	54100-01103	6	1	HEAT SINK-SECONDARY	28480	54100-01103
HS3	54100-21101	6	2	HEAT SINK (EXTENSION TO HS2)	28480	54100-21101
HS4	54100-21101	6		HEAT SINK (EXTENSION TO HS2)	28480	54100-21101
J1	1251-8457	1	1	CONN-POST TYPE 0.197-PIN-SPCG 3-CONT	28480	1251-8457
L1	9140-0891	4	1	INDUCTOR-FIXED 27uH +/- 15%	28480	9140-0891
L2	9140-1077	0	1	INDUCTOR-FIXED	28480	9140-1077
L3	9140-0865	2	1	INDUCTOR-FIXED	28480	9140-0865
MP1	1400-0679	0	1	CLAMP CABLE	28480	1400-0679
MP2	54110-01208	4	1	BRACKET-SUPPORT	28480	54110-01208
P1	1251-8856	4	1	CONN-POST TYPE 0.156-PIN-SPCG 19-CONT	28480	1251-8856
Q1	1855-0512	3	1	TRANSISTOR MOSFET N-CHAN E-MODE TO-220	72799	RCA9212A
Q2	1854-1071	9	1	TRANSISTOR NPN SI TO-3 PD=175W	04713	MJ16018
Q3	1853-0036	2	1	TRANSISTOR PNP SI PD=310MW FT=250MHZ	27014	2N3906
Q4				NOT ASSIGNED		
Q5	1854-0575	6	1	TRANSISTOR NPN SI PD=625MW FT=50MHZ	04713	MPS-A42

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R1	0757-0473	6	2	RESISTOR 221K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2213-F
R2	0757-0473	6		RESISTOR 221K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2213-F
R3	0698-4539	7	2	RESISTOR 402K 1% 0.125W TF TC=0+-100	28480	0698-4539
R4	0698-4539	7		RESISTOR 402K 1% 0.125W TF TC=0+-100	28480	0698-4539
R5	0757-0289	2	2	RESISTOR 13.3K 1% 0.125W TF TC=0+-100	19701	5033R-1/8-T0-1332-F
R6	0757-0442	9	5	RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R7	0757-0289	2		RESISTOR 13.3K 1% 0.125W TF TC=0+-100	19701	5033R-1/8-T0-1332-F
R8	0757-0440	7	3	RESISTOR 7.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-7501-F
R9	0757-0452	1	1	RESISTOR 27.4K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2742-F
R10	0757-0449	6	4	RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R11	0698-3451	0	1	RESISTOR 133K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1333-F
R12	0698-3167	5	1	RESISTOR 25K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2502-F
R13	0757-0283	6	5	RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R14	0757-0384	8	1	RESISTOR 20 1% 0.125W TF TC=0+-100	19701	5033R-1/8-T0-20R0-F
R15	0698-4002	9	11	RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R16	0757-0449	6		RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R17	0757-0401	0	3	RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R18	0757-0283	6		RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R19	0699-1075	2	1	RESISTOR 0.1 3% 3W MFS TC=0+-337	28480	0699-1075
R20	0816-0003	4	1	RESISTOR 500 5% 10W PW TC=0+-260	91637	HL12-02Z-10W-501-J
R21	0683-0475	1	2	RESISTOR 4.7 5% 0.25W CF TC=0-400	19701	(CR-25) 1-4-5P-4E7
R22	0757-0440	7		RESISTOR 7.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-7501-F
R23	0698-3690	9	2	RESISTOR 22 5% 1W MO TC=0+-200	28480	0698-3690
R24	0699-1153	7	4	RESISTOR 0.02 3% 3W TF TC=0+-337	01686	L0-3-0.02-3
R25	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R26	0757-0461	2	2	RESISTOR 68.1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-6812-F
R27	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R28	0698-3690	9		RESISTOR 22 5% 1W MO TC=0+-200	28480	0698-3690
R29	0698-4421	6	1	RESISTOR 249 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-249R-F
R30	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R31	0757-0416	7	1	RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F
R32	0757-0284	7	1	RESISTOR 150 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-151-F
R33				NOT ASSIGNED		
R34	0698-3446	3	1	RESISTOR 383 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-383R-F
R35	0698-6250	3	1	RESISTOR 2.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2501-F
R36	0698-3498	5	1	RESISTOR 8.66K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-866R-F
R37	0757-0443	0	1	RESISTOR 11K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1102-F
R38	0698-3159	5	1	RESISTOR 26.1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2612-F
R39	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R40	0757-0449	6		RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R41	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R42	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R43	0757-0427	0	1	RESISTOR 1.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1501-F
R44	0699-1313	1	1	RESISTOR 14K 0.1% 0.125W TF TC=0+-25	28480	0699-1313
R45	0698-6362	8	1	RESISTOR 1K 0.1% 0.125W TF TC=0+-25	28480	0698-6362
R46	0811-0041	0	1	RESISTOR 169 1% 4W PW TC=0+-20	28480	0811-0041
R47	0757-0283	6		RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R48	0699-1153	7		RESISTOR 0.02 3% 3W TF TC=0+-337	01686	L0-3-0.02-3
R49	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R50	0757-0465	6	1	RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R51	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R52	0698-3631	8	1	RESISTOR 330 5% 2W MO TC=0+-200	28480	0698-3631
R53	0757-0283	6		RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R54				NOT ASSIGNED		
R55	0699-1153	7		RESISTOR 0.02 3% 3W TF TC=0+-337	01686	LO-3-0.02-3
R56	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R57	0757-0461	2		RESISTOR 68.1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-6812-F
R58	0698-3684	1	2	RESISTOR 12 5% 1W MO TC=0+-200	28480	0698-3684
R59	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R60	0698-3684	1		RESISTOR 12 5% 1W MO TC=0+-200	28480	0698-3684
R61	2100-3154	7	1	RESISTOR TRMR 10K 10% C SIDE ADJ 17-TURN	32997	3006P-1-102
R62	0698-4455	6	1	RESISTOR 536 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-536R-F
R63	0699-1203	8	1	RESISTOR 120 0.1% 0.125W TF TC=0+-25	28480	0699-1203
R64	0698-3178	8	1	RESISTOR 487 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-487R-F
R65	0757-0280	3	4	RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R66	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R67-68				NOT ASSIGNED		
R69	0683-0475	1		RESISTOR 4.7 5% 0.25W CF TC=0-400	19701	(CR-25) 1-4-5P-4E7
R70	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R71	0757-0283	6		RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R72	0699-1153	7		RESISTOR 0.02 3% 3W TF TC=0+-337	01686	LO-3-0.02-3
R73	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R74	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R75	0757-0459	8	1	RESISTOR 56.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5622-F
R76	0757-0443	0	1	RESISTOR 11K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1102-F
R77	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R78	0811-3662	7	2	RESISTOR 82 5% 2W PW TC=0+-400	28480	0811-3662
R79	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R80	0811-3662	7		RESISTOR 82 5% 2W PW TC=0+-400	28480	0811-3662
R81	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R82-91				NOT ASSIGNED		
R92	0757-0449	6		RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R93	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R94	0757-0440	7		RESISTOR 7.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-7501-F
R95	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
RT1	0837-0260	9	1	THERMISTOR-SWITCHING RESISTANCE: 100	28480	0837-0260
RT2	0837-0341	7	1	THERMISTOR DISC 50-OHM	28480	0837-0341
T1	9100-4383	3	1	TRANSFORMER	28480	9100-4383
T2	9100-4477	6	1	TRANSFORMER-POWER PRIMARY	28480	9100-4477
TP1	0360-1971	0	12	TERMINAL-TEST POINT	28480	0360-1971
TP2	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP3	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP4	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP5	0360-0042	4	1	TERMINAL-SLDR LUG	28480	0360-0042
TP6	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP7	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP8	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP9	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP10	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP11	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP12	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971
TP13	0360-1971	0		TERMINAL-TEST POINT	28480	0360-1971

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U1	1826-1120	0	1	IC MISC 20-DIP-C PKG	28480	1826-1120
U2	1990-1044	4	2	OPTO-ISOLATOR LED-PXSTR IF=60MA-MAX	04713	MOC8111(SELECTED)
U3	1990-1044	4		OPTO-ISOLATOR LED-PXSTR IF=60MA-MAX	04713	MOC8111(SELECTED)
U4	1826-0524	6	1	IC OP AMP GP QUAD 14-DIP-P PKG	27014	LM324AN
U5	1826-1126	6	1	IC OP AMP SPCL 8-DIP-P PKG	27014	LM392N
U6	1826-0643	0	1	IC V RGLTR-V-REF-ADJ 3/30V TO-92 PKG	01295	TL431CLP
U7	1826-0890	9	1	IC OP AMP GP DUAL 8-DIP-P PKG	27014	LM358AN
U8	1826-0774	8	1	IC V RGLTR-V-REF-FXD 1.22/1.24V TO-92	27014	LM385BZ-1.2
U9-12				NOT ASSIGNED		
U13	1826-1216	5	1	IC V RGLTR-ADJ-POS 1.2/33V TO-220 PKG		LT350AT
VR1	1902-0939	9	1	DIODE-VOLTAGE SUPPRESSOR VR=5.0V,VC=8V	04713	1N5908
VR2	1902-0185	7	1	DIODE-ZNR 27.4V 5% DO-35 PD=.4W	28480	1902-0185
VR3	1902-3066	9	1	DIODE-ZNR 4.02V 2% DO-35 PD=.4W	28480	1902-3066
W1	54100-61612	8	1	CABLE-INPUT POWER	28480	54100-61612
XQ1	1200-0911	9	1	SOCKET-TRANSISTOR	28480	1200-0911
XQ2	1200-1101	1	1	SOCKET TO-3	28480	1200-1101

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1	0160-6028	4	1	CAPACITOR-FXD 1.5UF +-10% 400VDC	28480	0160-6028
C2	0160-5471	9	12	CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C3	0160-4808	4	4	CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C4	0160-4808	4		CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C5	0180-0309	4	1	CAPACITOR-FXD 4.7UF+-20% 10VDC TA	56289	150D475X0010A2
C6	0160-5469	5	5	CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C7				NOT ASSIGNED		
C8	0160-4812	0	1	CAPACITOR-FXD 220PF +-5% 100VDC CER	28480	0160-4812
C9	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C10	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C11	0160-4808	4		CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
C12	0160-4832	4	2	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-4832
C13	0160-5466	2	2	CAPACITOR-FXD 1000PF +-5% 1KVDC POLYP	28480	0160-5466
C14	0160-5466	2		CAPACITOR-FXD 1000PF +-5% 1KVDC POLYP	28480	0160-5466
C15	0160-6192	3	1	CAPACITOR-FXD 0.047UF +-10% 63VDC	28480	0160-6192
C16	0160-5377	4	2	CAPACITOR-FXD 2.2UF +-10% 63VDC	28480	0160-5377
C17	0160-6030	8	2	CAPACITOR-FXD 0.01UF +-5% 400VDC POLYP	28480	0160-6030
C18	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C19	0160-5847	3	2	CAPACITOR-FXD 0.22UF +-10% 100VDC	28480	0160-5847
C20	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C21	0160-5377	4		CAPACITOR-FXD 2.2UF +-10% 63VDC	28480	0160-5377
C22	0160-6030	8		CAPACITOR-FXD 0.01UF +-5% 400VDC POLYP	28480	0160-6030
C23	0160-5847	3		CAPACITOR-FXD 0.22UF +-10% 100VDC	28480	0160-5847
C24	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C25	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C26	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C27	0180-2866	2	1	CAPACITOR-FXD 22UF+100-10% 50VDC AL	28480	0180-2866
C28	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C29	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C30	0180-2890	2	2	CAPACITOR-FXD 7500UF+75-10% 6.3VDC AL	28480	0180-2890
C31	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C32	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C33	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C34	0160-4574	1	1	CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C35	0160-4832	4		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-4832
C36	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C37	0180-2890	2		CAPACITOR-FXD 7500UF+75-10% 6.3VDC AL	28480	0180-2890
C38	0160-5469	5		CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C39	0160-5471	9		CAPACITOR-FXD 0.1UF +-5% 50VDC MET-POLYE	28480	0160-5471
C40	0160-4355	6	1	CAPACITOR-FXD 0.01UF +-20% 250VAC(RMS)	28480	0160-4355
C41	0160-4808	4		CAPACITOR-FXD 470PF +-5% 100VDC CER	28480	0160-4808
CR1	1901-1148	2	3	DIODE-PWR RECT 1KV 1A 750NS	04713	MR818
CR2	1901-1148	2		DIODE-PWR RECT 1KV 1A 750NS	04713	MR818
CR3	1901-1148	2		DIODE-PWR RECT 1KV 1A 750NS	04713	MR818
CR4	1901-1065	2	4	DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR5	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR6	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR7	1906-0239	0	2	DIODE-CT-S-BARR 45V 30A	1B546	VSK3040T
CR8	1906-0051	4	2	DIODE-FW BRDG 100V 1A	28480	1906-0051
CR9	1901-0050	3	10	DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR10	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
CR11	1906-0239	0		DIODE-CT-S-BARR 45V 30A	1B546	VSK3040T
CR12	1906-0051	4		DIODE-FW BRDG 100V 1A	28480	1906-0051
CR13	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR14	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR15	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR16	1901-1065	2		DIODE-PWR RECT 1N4936 400V 1A 200NS	04713	1N4936
CR17	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR18	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR19	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR20	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR21	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
DS1	1990-0451	5	1	LED-LAMP LUM-INT=300UCD IF=20MA-MAX	28480	5082-4468
E1	0340-0884	0	2	INSULATOR-XSTR THRM-CNDCT TO-3 (CR7,11)	28480	0340-0884
E2	0340-1074	2	3	INSULATOR-XSTR THRM-CNDCT TO-220	28480	0340-1074
E3	0340-1080	0	1	INSULATOR-XSTR THRM-CNDCT TO-3 (Q2)	28480	0340-1080
E4	0340-1103	8	4	INSULATOR	28480	0340-1103
H1	0515-0372	2	10	SCREW-MACH M3 8MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
H2	0515-0664	5	13	SCREW-MACH M3 12MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
H3	3050-1140	1	5	WASHER-SHOULDER	00000	ORDER BY DESCRIPTION
H4	0380-1238	4	1	STANDOFF M3 X 0.5	00000	ORDER BY DESCRIPTION
H5	0380-1239	5	4	STANDOFF	00000	ORDER BY DESCRIPTION
H6	0380-1701	6	1	SPACER 0.25-IN	00000	ORDER BY DESCRIPTION
H7	3050-1071	7	3	RECTANGLE-METAL 10.3MM X 5.6MM	00000	ORDER BY DESCRIPTION
HS1	54110-01101	6	1	HEAT SINK-PRIMARY	28480	54110-01101
HS2	54100-01102	5	1	HEAT SINK-SECONDARY	28480	54110-01102
HS3	54100-21101	6	2	HEAT SINK (EXTENSION TO HS2)	28480	54100-21101
HS4	54100-21101	6		HEAT SINK (EXTENSION TO HS2)	28480	54100-21101
J1	1251-8457	1	1	CONN-POST TYPE 0.197-PIN-SPCG 3-CONT	28480	1251-8457
L1	9140-0891	4	1	INDUCTOR-FIXED 27uH +/- 15%	28480	9140-0891
L2	9140-0870	9	1	INDUCTOR FIXED	28480	9140-0870
L3	9140-0867	4	1	INDUCTOR FIXED	28480	9140-0867
MP1	1400-0249	0	2	CLAMP CABLE	28480	1400-0249
MP2	54110-01209	5	1	BRACKET-SUPPORT	28480	54110-01209
P1	1251-8856	4	1	CONN-POST TYPE 0.156-PIN-SPCG 19-CONT	28480	1251-8856
Q1	1855-0512	3	1	TRANSISTOR MOSFET N-CHAN E-MODE TO-220	72799	RCA9212A
Q2	1854-1071	9	1	TRANSISTOR NPN SI TO-3 PD=175W	04713	MJ16018
Q3	1854-0970	5	2	TRANSISTOR NPN SI DARL TO-220AB PD=2W	01295	TIP102
Q4	1854-0970	5		TRANSISTOR NPN SI DARL TO-220AB PD=2W	01295	TIP102
R1	0757-0473	6	2	RESISTOR 221K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2213-F
R2	0757-0473	6		RESISTOR 221K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2213-F
R3	0698-4539	7	2	RESISTOR 402K 1% 0.125W TF TC=0+-100	28480	0698-4539
R4	0698-4539	7		RESISTOR 402K 1% 0.125W TF TC=0+-100	28480	0698-4539
R5	0757-0289	2	2	RESISTOR 13.3K 1% 0.125W TF TC=0+-100	19701	5033R-1/8-T0-1332-F
R6	0757-0442	9	5	RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R7	0757-0289	2		RESISTOR 13.3K 1% 0.125W TF TC=0+-100	19701	5033R-1/8-T0-1332-F
R8	0757-0440	7	3	RESISTOR 7.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-7501-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R9	0757-0452	1	1	RESISTOR 27.4K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2742-F
R10	0757-0449	6	4	RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R11	0698-3451	0	1	RESISTOR 133K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1333-F
R12	0757-0283	6	3	RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R13	0757-0384	8	1	RESISTOR 20 1% 0.125W TF TC=0+-100	19701	5033R-1/8-T0-20R0-F
R14	0757-0283	6		RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R15	0757-0401	0	4	RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R16	0698-4002	9	9	RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R17	0757-0449	6		RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R18	0698-3167	5	2	RESISTOR 25K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2502-F
R19	0816-0003	4	1	RESISTOR 500 5% 10W PW TC=0+-260	91637	HL12-02Z-10W-501-J
R20	0757-0449	6		RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R21	0683-0475	1	2	RESISTOR 4.7 5% 0.25W CF TC=0-400	19701	(CR-25) 1-4-5P-4E7
R22	0699-1075	2	1	RESISTOR 0.1 3% 3W MFS TC=0+-337	28480	0699-1075
R23	0757-0440	7		RESISTOR 7.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-7501-F
R24	0698-0093	0	2	RESISTOR 10 5% 1W MO TC=0+-200	28480	0698-0093
R25	0699-1118	4	2	RESISTOR 0.005 3% 5W MFS TC=0+-337	28480	0699-1118
R26	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R27	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R28	0698-3460	1	3	RESISTOR 422K 1% 0.125W TF TC=0+-100	28480	0698-3460
R29	0698-3460	1		RESISTOR 422K 1% 0.125W TF TC=0+-100	28480	0698-3460
R30	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R31	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R32	0761-0057	1	2	RESISTOR 560 5% 1W MO TC=0+-200	28480	0761-0057
R33	0757-0123	3	4	RESISTOR 34.8K 1% 0.125W TF TC=0+-100	28480	0757-0123
R34	0698-3499	6	1	RESISTOR 40.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-4022-F
R35	0698-3456	5	1	RESISTOR 287K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2873-F
R36	0698-0093	0		RESISTOR 10 5% 1W MO TC=0+-200	28480	0698-0093
R37	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R38	0761-0057	1		RESISTOR 560 5% 1W MO TC=0+-200	28480	0761-0057
R39	0757-0123	3		RESISTOR 34.8K 1% 0.125W TF TC=0+-100	28480	0757-0123
R40	0698-4421	6	1	RESISTOR 249 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-249R-F
R41	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R42	0698-3159	5	1	RESISTOR 26.1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2612-F
R43	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R44	0757-0416	7	1	RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F
R45	0757-0427	0	1	RESISTOR 1.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1501-F
R46	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R47	0698-3446	3	1	RESISTOR 383 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-383R-F
R48	0698-6250	3	2	RESISTOR 2.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2501-F
R49	0757-0434	9	2	RESISTOR 3.65K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3651-F
R50	0757-0434	9		RESISTOR 3.65K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3651-F
R51	0698-6250	3		RESISTOR 2.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2501-F
R52	0683-0475	1		RESISTOR 4.7 5% 0.25W CF TC=0-400	19701	(CR-25) 1-4-5P-4E7
R53	0757-0449	6		RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R54	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R55	0699-0124	0	1	RESISTOR 10.2K 0.1% 0.125W TF TC=0+-25	28480	0699-0124
R56	2100-3123	0	1	RESISTOR-TRMR 500 10% TKF SIDE-ADJ	32997	3006P-1-501
R57	0698-6360	6	3	RESISTOR 10K 0.1% 0.125W TF TC=0+-25	28480	0698-6360
R58	0757-0123	3		RESISTOR 34.8K 1% 0.125W TF TC=0+-100	28480	0757-0123
R59	0757-0123	3		RESISTOR 34.8K 1% 0.125W TF TC=0+-100	28480	0757-0123
R60	0757-0439	4	2	RESISTOR 6.81K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-6811-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R61	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R62	0698-3167	5		RESISTOR 25K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2502-F
R63	0757-0439	4		RESISTOR 6.81K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-6811-F
R64	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R65	0699-0241	2	2	RESISTOR 2.4K 0.1% 0.125W TF TC=0+-25	28480	0699-0241
R66	0698-6360	6		RESISTOR 10K 0.1% 0.125W TF TC=0+-25	28480	0698-6360
R67	0698-6360	6		RESISTOR 10K 0.1% 0.125W TF TC=0+-25	28480	0698-6360
R68	0699-0241	2		RESISTOR 2.4K 0.1% 0.125W TF TC=0+-25	28480	0699-0241
R69	0812-0070	7	2	RESISTOR 10 5% 5W PW TC=0+-20	28480	0812-0070
R70	0757-0280	3	2	RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R71	0699-1118	4		RESISTOR 0.005 3% 5W MFS TC=0+-337	28480	0699-1118
R72	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R73	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R74	0698-3460	1		RESISTOR 422K 1% 0.125W TF TC=0+-100	28480	0698-3460
R75	0757-0441	8	1	RESISTOR 8.25K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-8251-F
R76	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R77	0698-3158	4	1	RESISTOR 23.7K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2372-F
R78	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R79	0698-6624	5	2	RESISTOR 2K 0.1% 0.125W TF TC=0+-25	28480	0698-6624
R80	0698-6624	5		RESISTOR 2K 0.1% 0.125W TF TC=0+-25	28480	0698-6624
R81	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R82	0812-0070	7		RESISTOR 10 5% 5W PW TC=0+-20	28480	0812-0070
R83	0757-0283	6		RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R84	0757-0440	7		RESISTOR 7.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-7501-F
RT1	0837-0260	9	1	THERMISTOR-SWITCHING RESISTANCE: 100	28480	0837-0260
T1	9100-4383	3	1	TRANSFORMER	28480	9100-4383
T2	9100-4545	9	1	TRANSFORMER-POWER PRIMARY	28480	9100-4545
T3	9140-0866	3	2	TRANSFORMER	28480	9140-0866
T4	9140-0866	3		TRANSFORMER	28480	9140-0866
TP1-4				NOT ASSIGNED		
TP5	0360-0042	4	2	TERMINAL-SLDR LUG	28480	0360-0042
TP6	0360-0042	4		TERMINAL-SLDR LUG	28480	0360-0042
TP7	0360-0042	4		TERMINAL-SLDR LUG	28480	0360-0042
U1	1826-1120	0	1	IC MISC 20-DIP-C PKG	28480	1826-1120
U2	1990-1044	4	2	OPTO-ISOLATOR LED-PXSTR IF=60MA-MAX	04713	MOC8111(SELECTED)
U3	1990-1044	4		OPTO-ISOLATOR LED-PXSTR IF=60MA-MAX	04713	MOC8111(SELECTED)
U4	1826-0524	6	2	IC OP AMP GP QUAD 14-DIP-P PKG	27014	LM324AN
U5	1826-0524	6		IC OP AMP GP QUAD 14-DIP-P PKG	27014	LM324AN
U6	1826-0774	8	1	IC V RGLTR-V-REF-FXD 1.22/1.24V TO-92	27014	LM385BZ-1.2
U7	1826-1126	6	1	IC OP AMP SPCL 8-DIP-P PKG	27014	LM392N
U8	1826-0890	9	1	IC OP AMP GP DUAL 8-DIP-P PKG	27014	LM358AN
U9	1826-0643	0	2	IC V RGLTR-V-REF-ADJ 3/30V TO-92 PKG	01295	TL431CLP
U10	1826-0643	0		IC V RGLTR-V-REF-ADJ 3/30V TO-92 PKG	01295	TL431CLP
VR1	1902-0939	9	1	DIODE-VOLTAGE SUPPRESSOR VR=5.0V,VC=8V	04713	1N5908
VR2	1902-3393	5	2	DIODE-ZNR 75V 5% DO-7 PD=.4W TC=+.077%	28480	1902-3393
VR3	1902-3393	5		DIODE-ZNR 75V 5% DO-7 PD=.4W TC=+.077%	28480	1902-3393
W1	54100-61612	8	1	CABLE-INPUT POWER	28480	54100-61612
XQ1	1200-0911	9	1	SOCKET-TRANSISTOR	28480	1200-0911
XQ2	1200-1101	1	1	SOCKET TO-3	28480	1200-1101

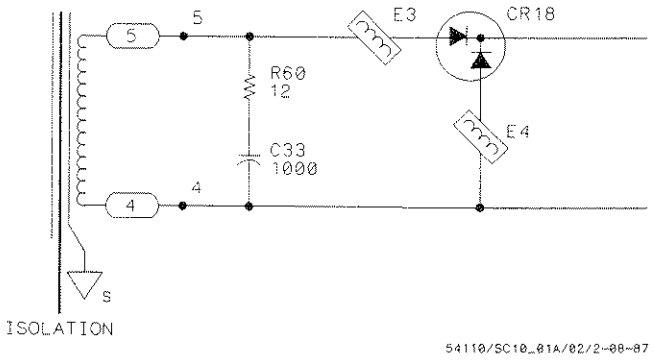
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CHANGE 1 for 54110-66510, Analog Supply

Schematic 3

To reduce system noise two changes were made.The center lead of CR18 was cut off and beads were added to the two other leads. R76 was changed from 11K to 6.19K. The assembly number was changed from 54110-66507 to 54110-66510. The partial schematic shows the location of the added beads.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	R76 to	0757-0290	5	RESISTOR 6.19K 1% 0.125W	24546	CT4-1/8-T0
ADD:						
	E3	9170-0759	6	FERRITE BEAD	28480	9170-0759
	E4	9170-0759	6	FERRITE BEAD	28480	9170-0759



CHANGE 2 for 54110-66510, Analog Supply

Schematic 4

The adjustment for fan voltage was no longer needed so the potentiometer was replaced by a fixed resistor. There was no change to the assembly part number.

	HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:					
R61 to	0698-3441	8	RESISTOR 215 1% 0.125W	24546	CT4-1/8-T0-215R-F

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P/O PRIMARY POWER SUPPLY

REAR PANEL

FL1

EMI

AC LINE

L N

908

54

98

P/O W1

CB1/LINE SWITCH

7.5A

918

928

54

P/O W1

SAFETY GROUND

918

9

928

RT1 5

RT2 5

RV1

C1 1μF

L1

1

2

3

4

R1 383K

C3 0.01μF

CR1

C2 0.01μF

C4 680μF

C5 680μF

C6 680μF

C7 680μF

V1 230VDC

V2 230VDC

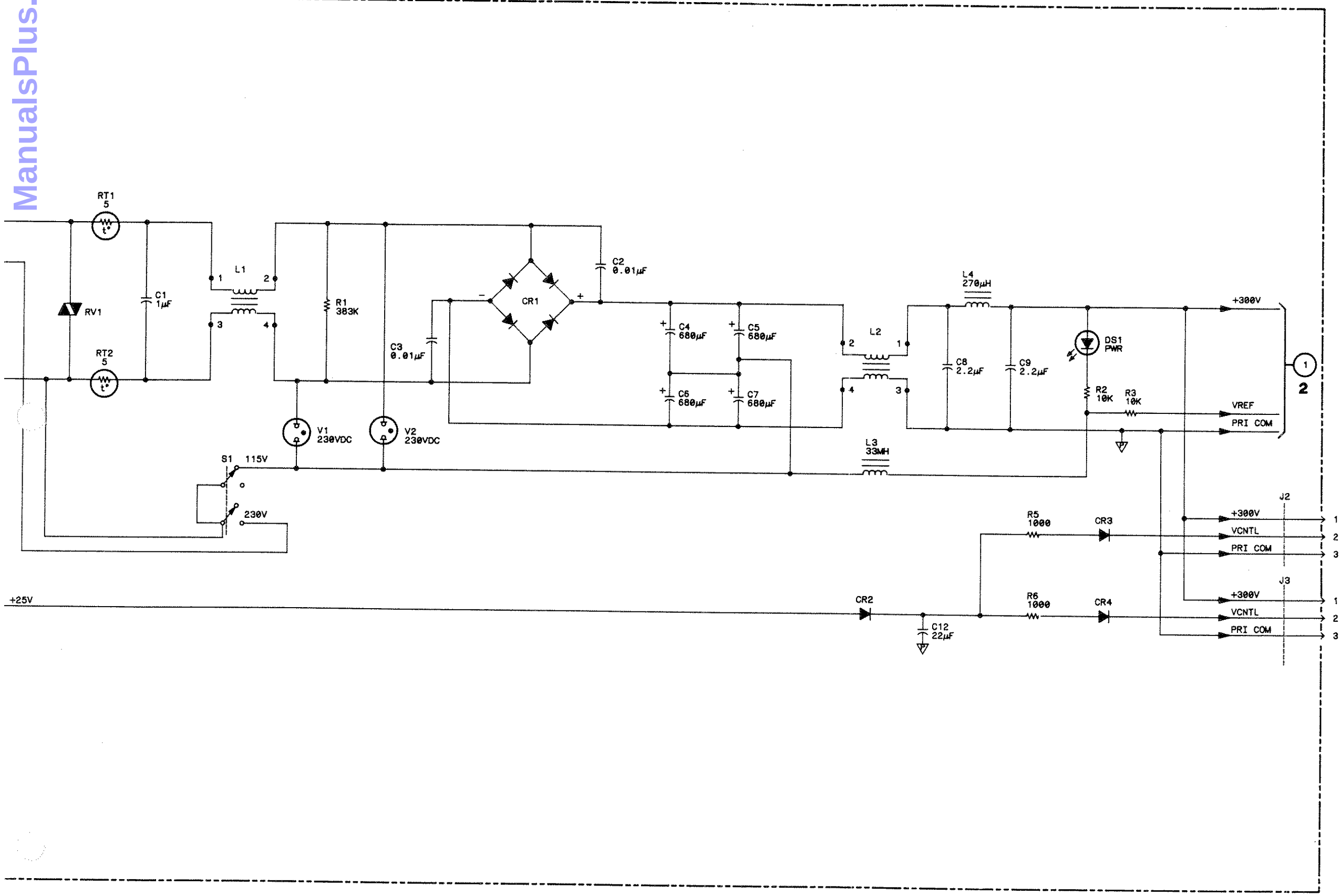
S1 115V

230V

2 (2) +25V

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NOTES:

1. ⏚ IS PRIMARY COMMON
2. ⏚ IS CHASSIS GROUND

PARTS ON THIS SCHEMATIC	
AC POWER SUPPLY	
C1–9,12	S1
CB1	V1,2
CR1–4	
DS1	
FL1	
J2,3	
L1–4	
R1–3,5,6	
RT1,2	
RV1	

54110/SC13_01/02/7-87

1

54110–66513

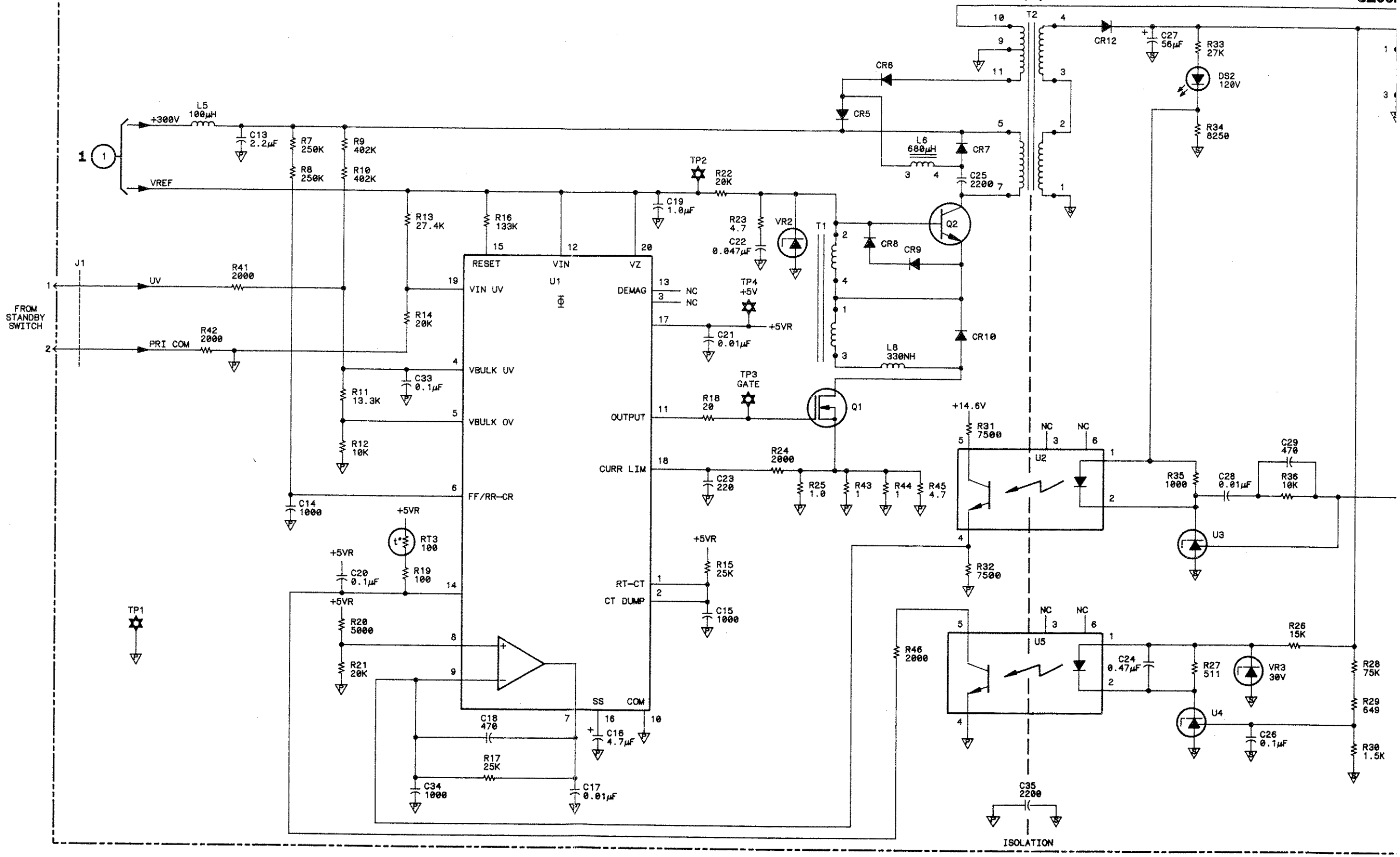
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P/O PRIMARY POWER SUPPLY

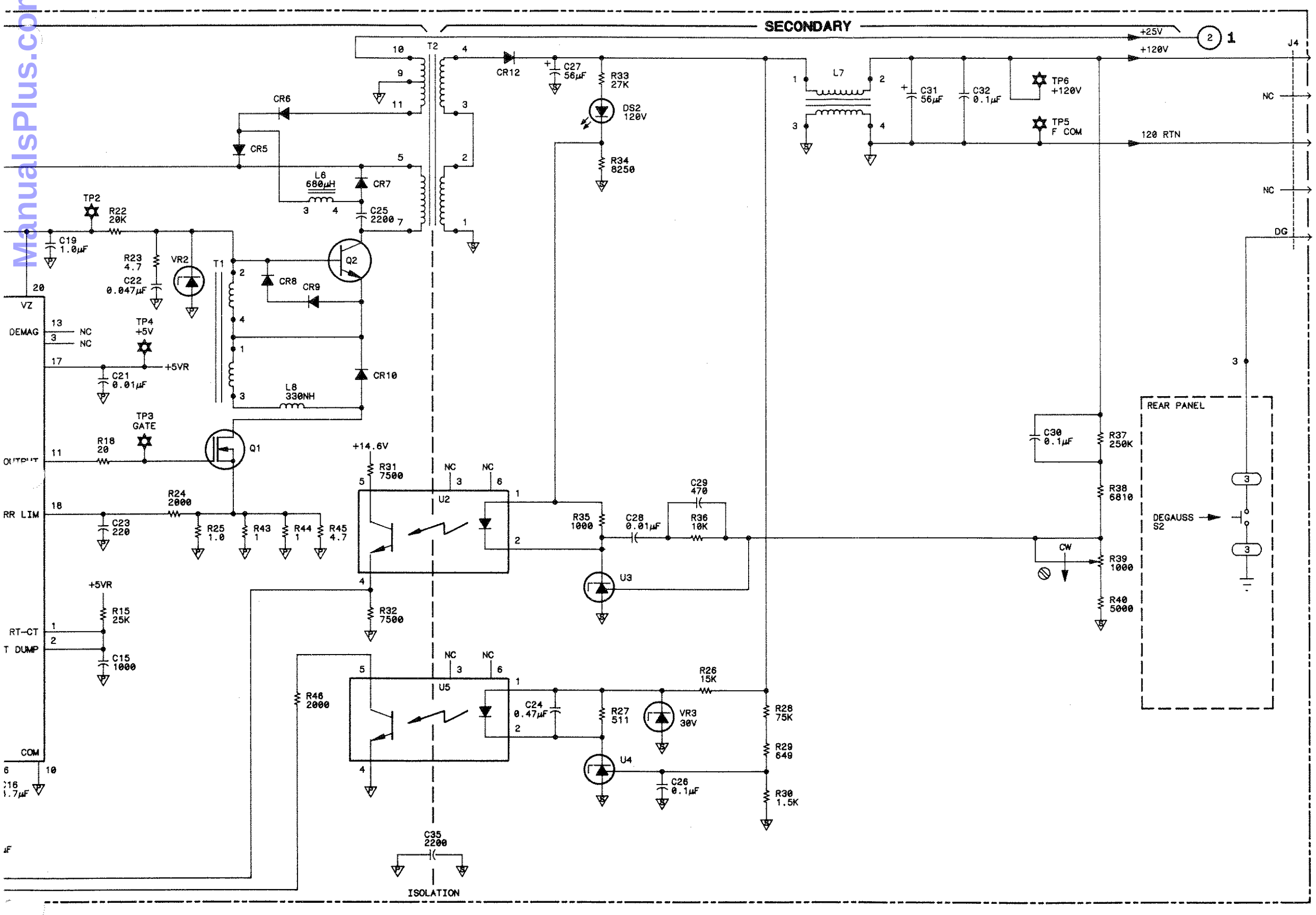
PRIMARY

SECO



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NOTES:

1. ⏚ IS PRIMARY COMMON
2. ⏚ IS SECONDARY COMMON
3. ⏚ IS CHASSIS GROUND
4. U3 AND U4 TOP VIEW

5. POWER SWITCH (ON/STBY) IS BETWEEN J1-1 AND J1-2.

PARTS ON THIS SCHEMATIC	
P/O AC POWER SUPPLY	
C13-21,22-35	U1-5
CR5-10,12	VR2,3
DS2	
J1,4	
L5-8	
Q1,2	
R7-46	
RT3	
S2	
T1,2	
TP1-6	

54110/SC13_02/02/01-89

2

54110-66513

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P/O ANALOG POWER SUPPLY

PRIMARY

SECONDARY

J1
V BULK
PRI COM
VCONTL
L1 27
C1 1.5UF
TP1
TP2
V BULK
+300V
+14.6V
R20 500
CR5
C8 1.0UF
R95 10K
R92 20K
C13 1000
C14 1000
TP5
CR1
R13 2000
CR2
R9 27.4K
R11 133K
R10 20K
R1 221K
R2 221K
R3 402K
R4 402K
U1
RSET
VIN
VZ
VIN UV
V BULK UV
V BULK OV
FF/RR-CR
OVP/OTP
DEMAG
OUTPUT
CURR LIM
CT DUMP
RT-CT
SS
COM
C4 0.1UF
R5 13.3K
R6 10K
C2 470
0VP
R17 100
C11 0.1UF
RT1 100°C
TP4
+5VR
C12 0.1UF
R15 5000
R16 20K
ISD
C7 470
R12 25K
C6 0.01UF
C5 4.7UF
R7 13.3K
R8 7500
C3 470
T1
14T
3T
CR22 CR23
CR4
VR1 6V
R21 4.7
C15 0.047UF
Q2
Q1
TP3 GATE
R14 20
R18 2000
C10 220
R19 0.1
T2
CR6
C17 1000
R23 22
ILIM(+18.5V)
TP8
C25 900UF
R46 169
+1.2VRB
R27 5000
C18 0.1UF
R25 5000
R26 68.1K
R24 .02
U4
CR7
P/O L2
R50 100K
R48 .02
R49 5000
CR8
R28 22
C19 1000
CR16
CR19
R58 12
C32 1000
R69 4.7
R70 100
TP10 +26BIAS
R93 5000
+26BIAS
ILIM(+8.5V)
C38 22UF
R71 2000
Q5
C39 0.1UF
VR2 27.4V
C37 0.1UF
R59 5000
R57 68.1K
R56 5000
R55 .02
CR17
CR18
R60 12
C33 1000
C42 2000UF
R73 100
R74 5000
R72 .02
R75 56.2K
R76 11K
C16 0.01UF
TP7
"Y"
ISOLATION

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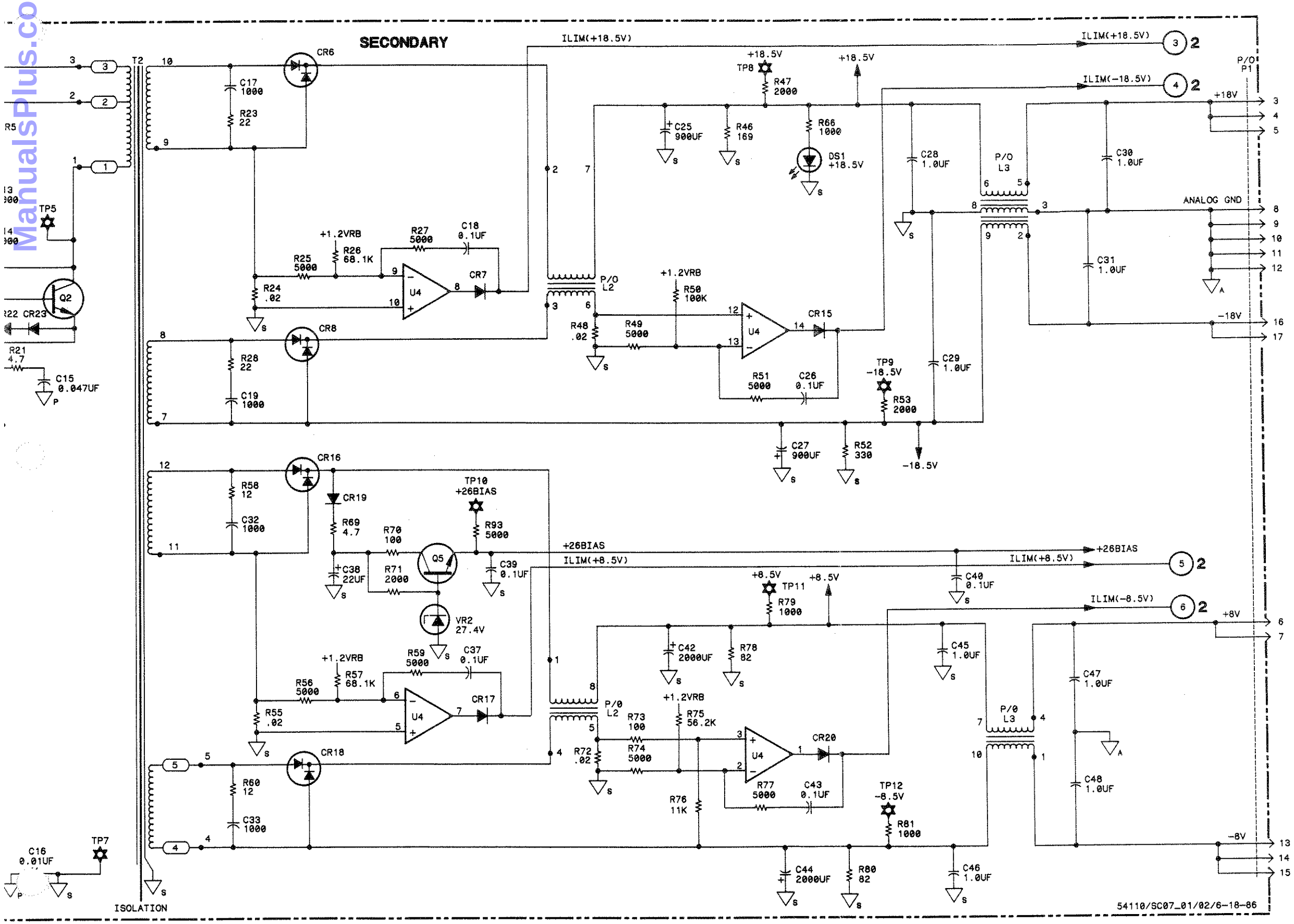
ANALOG POWER SUPPLY

IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+26V SEC GND	4 11	U4

NOTES:

1. ∇_P IS PRIMARY COMMON
2. ∇_S IS SECONDARY COMMON
3. ∇_A IS ANALOG COMMON



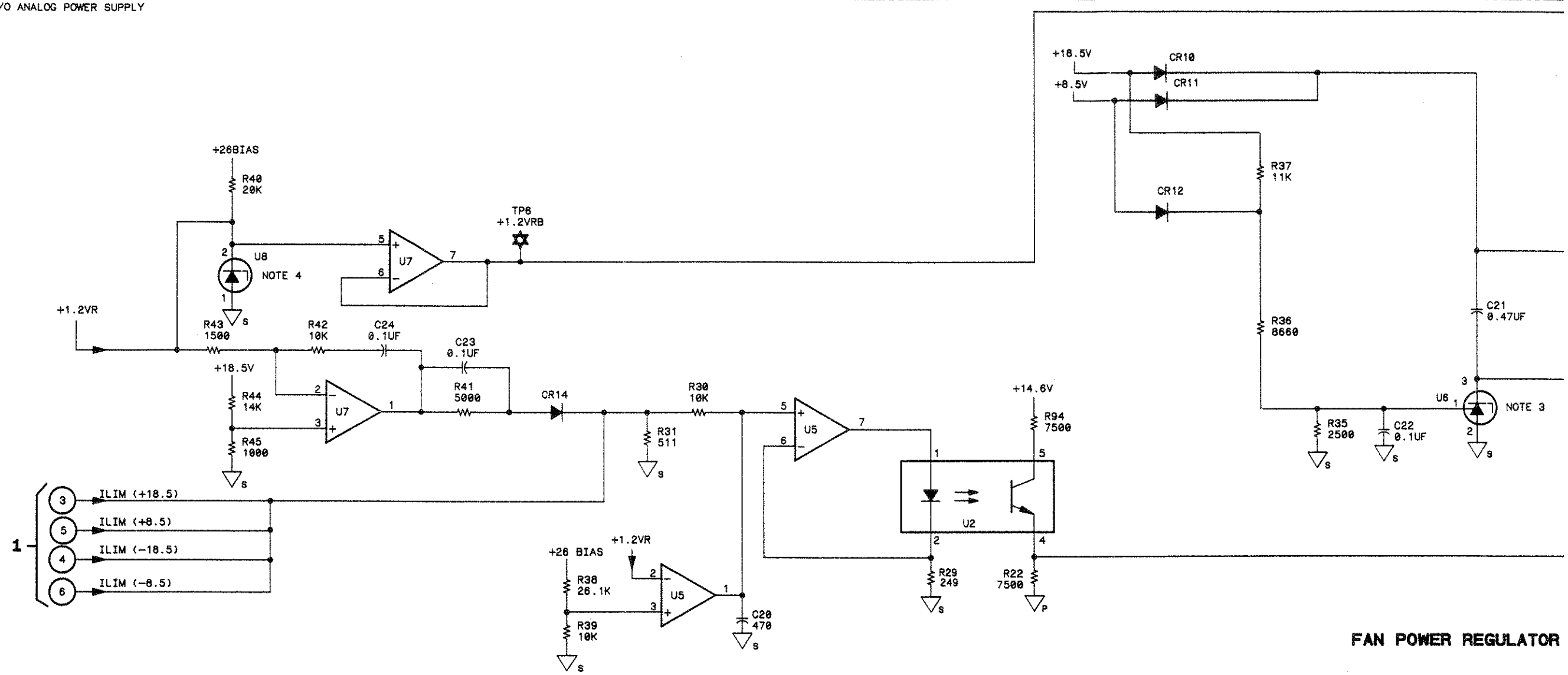
PARTS ON THIS SCHEMATIC	
C1-8,10-19,25-33, C37-40,42-48 CR1,2,4-8,15-20,22,23 DS1 L1-3 P/O P1 Q2,5	R1-21,23-28,46-53, R55-60,66,69-81, R92,93,95 RT1 T1,2 TP1-5,7-12 U1,4 VR1,2

1

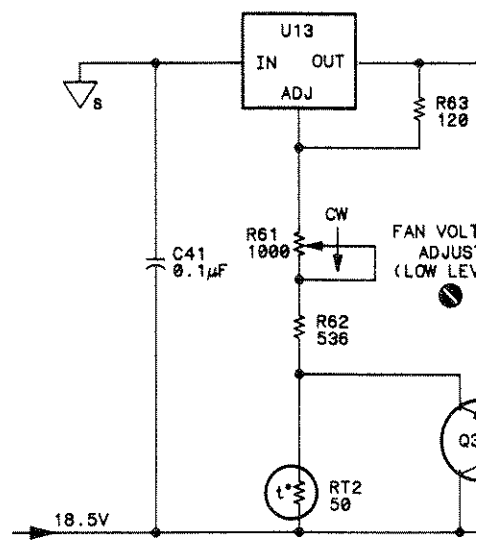
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P/O ANALOG POWER SUPPLY



FAN POWER REGULATOR



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+1.2VRB

+18.5V
+8.5V
CR10
CR11
CR12
R37
11K
R36
8660
C21
0.47UF
R34
383
U3
OVP
1
1
R35
2500
C22
0.1UF
U6
NOTE 3

R30
10K
U5
+14.6V
R94
7500
U2
R29
249
R22
7500
ISD
2
1
C20
470

FAN POWER REGULATOR

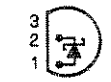
TP13
FAN (+)
R65
1000
U13
IN OUT
ADJ
R63
120
P/O
P1
FAN (+)
18
C41
0.1μF
R61
1000
CW
FAN VOLTAGE
ADJUST
(LOW LEVEL)
R64
487
R62
536
Q3
RT2
50
VR3
4.02V
18.5V
FAN (-)
19

IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+26BIAS GND	8 4	U5,7,9
-18.5V GND	4 8	U12

NOTES:

1. ⏚ IS PRIMARY COMMON
2. ⏚ IS SECONDARY COMMON
3. TOP VIEW OF U6



4. TOP VIEW OF U8

PARTS ON THIS SCHEMATIC

C20–24,34–35,41
CR9–14
P/O P1
Q3
R22,29–32,38–44,61–66,94
RT2
TP6,13
U2,3,5–8
VR3

54110/SC07_02/02/6-21-86

2

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P/O DIGITAL POWER SUPPLY

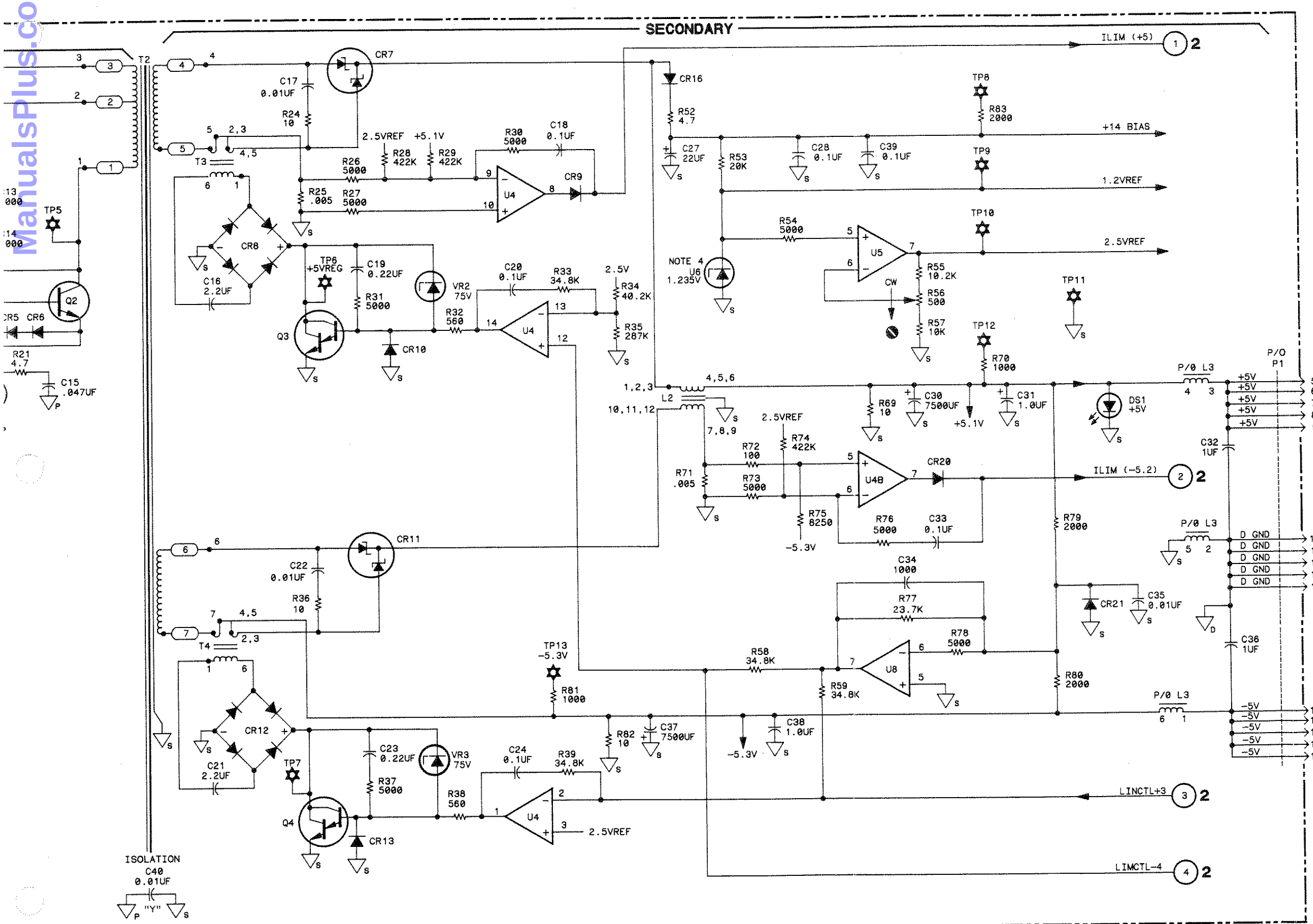
PRIMARY

SECONDARY

J1
V BULK
PRI COM
V CNTL
L1 27
C1 1.5UF
TP1
TP2
+14.6V
C6 1.0UF
R9 27.4K
R11 133K
R10 20K
R1 221K
R2 221K
R3 402K
R4 402K
R5 13.3K
R6 10K
C2 0.1UF
C3 470
R12 2K
CR1
CR2
R19 500
CR3
C13 1000
C14 1000
TP5
T1
R20 20K
Q2
CR5
CR6
CR4
VR1 6V
R21 4.7
C15 .047UF
TP3 GATE
Q1
R13 20
R14 2000
R22 0.1
C8 220
U1
RSET
VIN
VZ
VIN UV
DEMAG
V BULK UV
V BULK OV
FF/RR-CR
OUTPUT
CURR LIM
OVP
OVP/OTP
R15 100
C9 0.1UF
RT1 100*
TP4
+5VR
C10 0.1UF
R16 5000
R17 20K
OSC OUT
NC
CT DUMP
RT-CT
R7 13.3K
R8 7500
C4 470
SS
COM
C11 470
R18 25K
C12 0.01UF
C5 4.7UF
+5V
+300V
V BULK
T2
C17 0.01UF
CR7
R24 10
T3
R26 5000
R25 .005
R27 5000
2.5VREF
+5.1V
R28 422K
R29 422K
R30 5000
C18 0.1UF
U4
CR9
CR8
C16 2.2UF
TP6 +5VREG
C19 0.22UF
R31 5000
Q3
CR10
VR2 75V
R32 560
C20 0.1UF
R33 34.8K
2.5V
R34 40.2K
R35 287K
CR16
R52 4.7
C27 22UF
R53 20K
R54 5000
NOTE 4
U6 1.235V
L2
R72 100
R74 422K
R71 .005
R73 5000
-5.3V
CR11
C22 0.01UF
R36 10
T4
CR12
C21 2.2UF
TP7
C23 0.22UF
VR3 75V
R37 5000
Q4
CR13
R38 560
C24 0.1UF
R39 34.8K
TP13 -5.3V
R81 1000
R82 10
C37 7500UF
R58 34.8K
C38 1.0UF
ISOLATION
C40 0.01UF
"Y"

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
PRIMARY COMMON +14.6	10 20	U1
+14BIAS SEC GND	4 11	U4,5
+14BIAS SEC GND	8 4	U8

NOTES:

1. ▽P IS PRIMARY GROUND
2. ▽S IS SECONDARY GROUND
3. ▽D IS DIGITAL GROUND
4. TOP VIEW OF U6

PARTS ON THIS SCHEMATIC

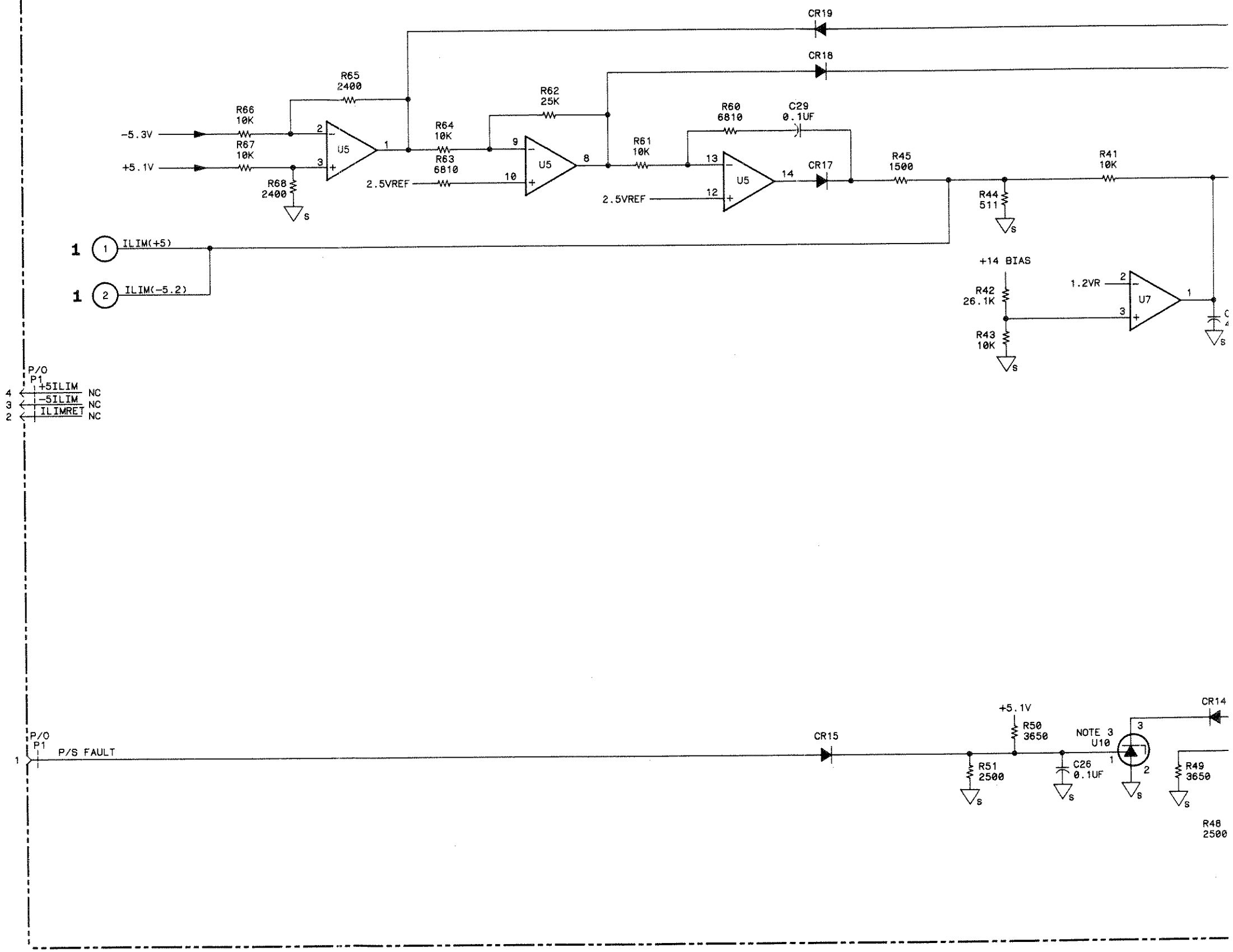
C1-6,8-24,27,28,30-40
CR1-13,16,20,21
DS1
J1
L1,2
P/O P1
L3
Q1-4
R1-22,24-39,52-59
R69-83
RT1
T1-4
TP1-13
U1,4-6,8
VR1-3

54110/SC06_01/02/6/20/86

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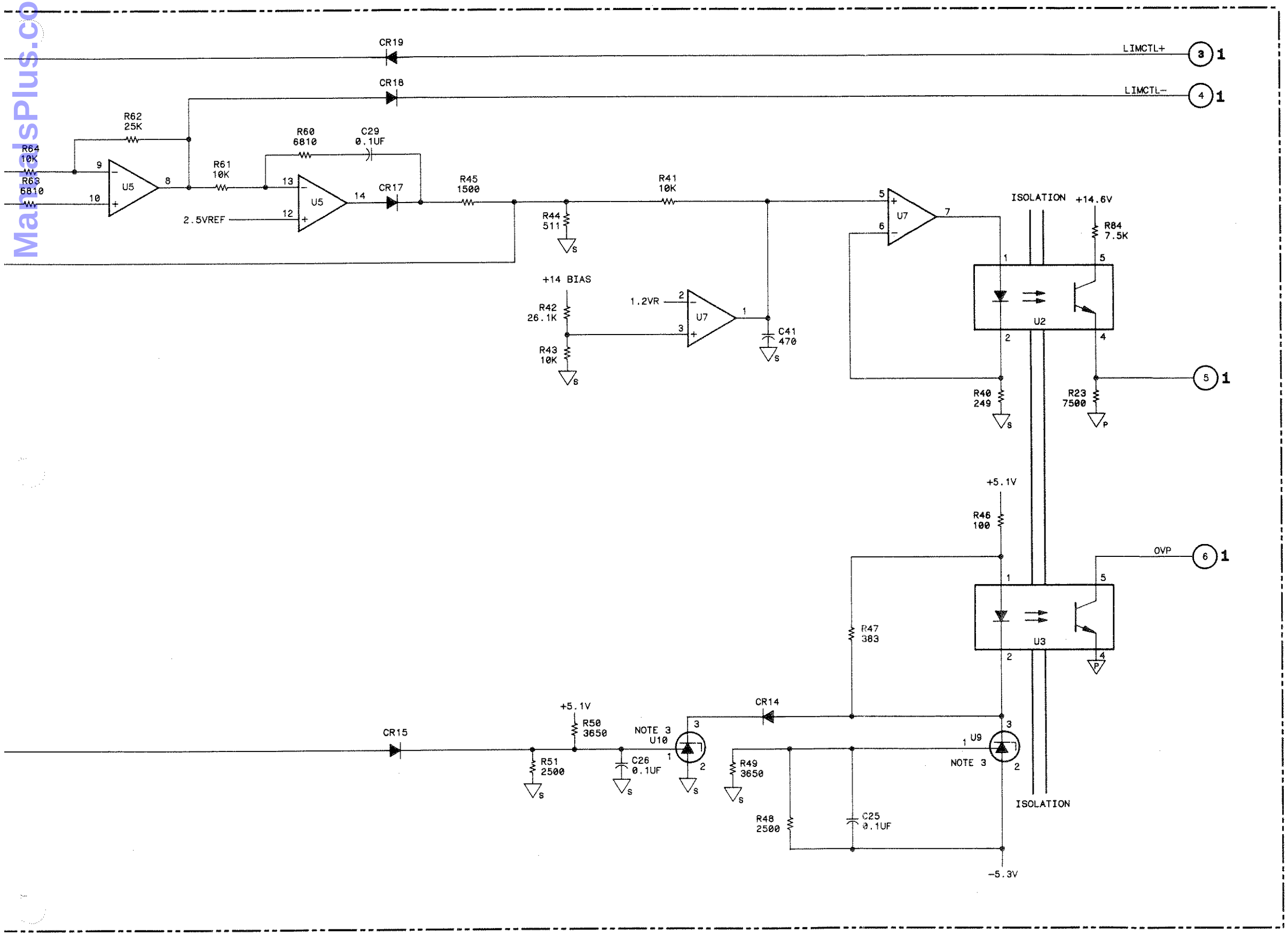
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P/O DIGITAL POWER SUPPLY



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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+14BIAS SEC GND	8 4	U7
+14BIAS SEC GND	4 11	U5

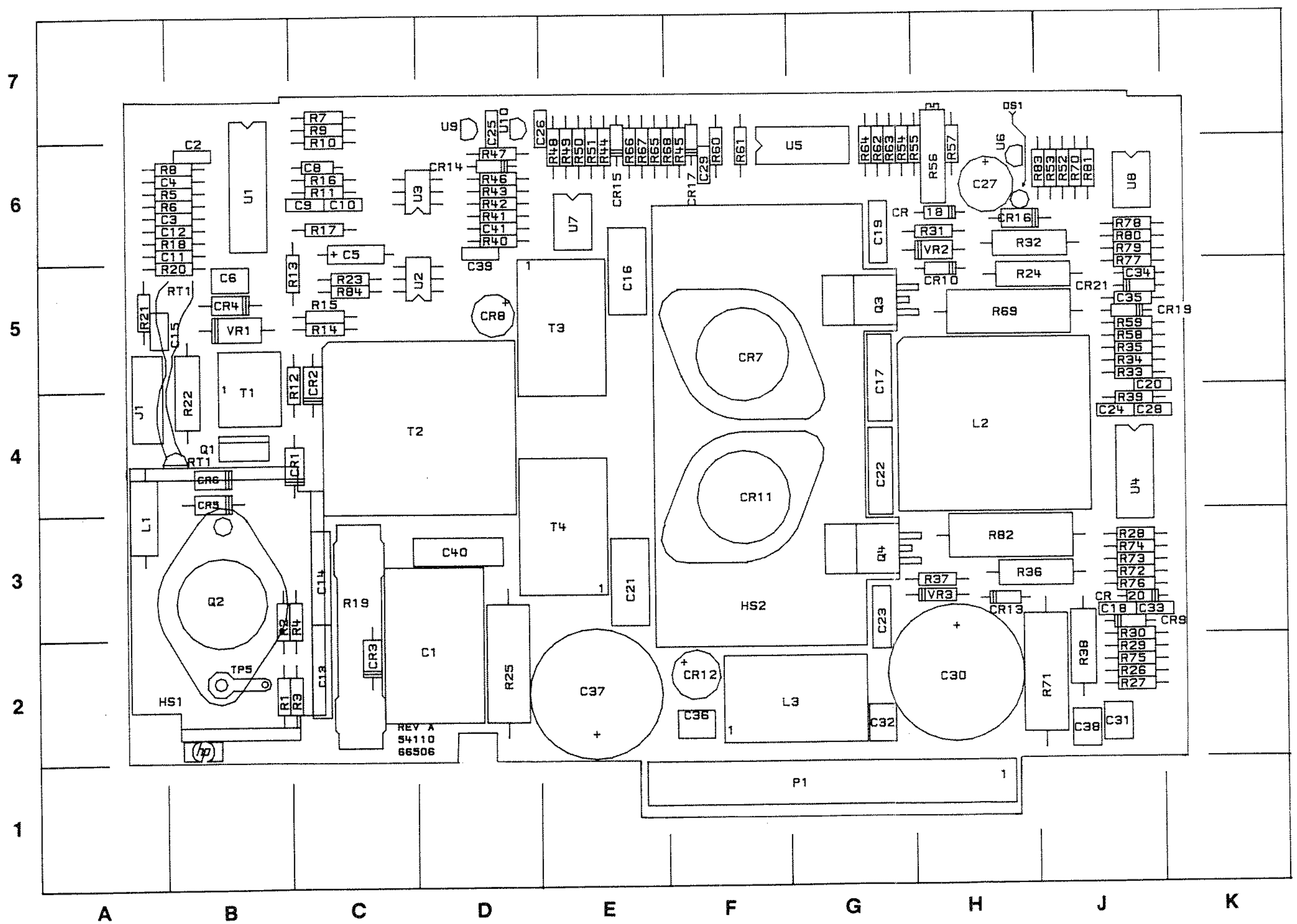
NOTES:

1. ⏚S IS SECONDARY SIDE GROUND.
2. ⏚P IS PRIMARY SIDE GROUND.
3. U9,10 TOP VIEW

PARTS ON THIS SCHEMATIC

C25,26,29,41
CR14,15,17-19
P/O P1
R23,40-51,60-68,84
U2,3,5,7,9,10

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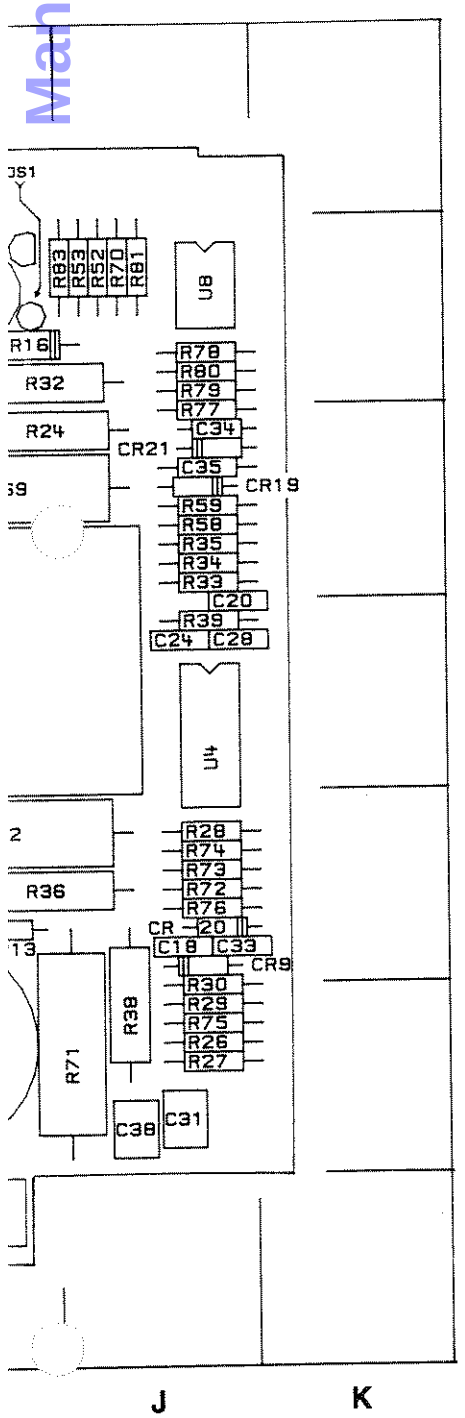
54110-66506 Digital Supply Cor

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C1	D-2	C26	D-7	CR8	D-5			R20	
C2	B-6	C27	H-6	CR9	J-3	Q1	B-4	R21	
C3	B-6	C28	J-4	CR10	H-5	Q3	G-5	R22	
C4	B-6	C29	F-6	CR11	F-4	Q4	G-3	R23	
C5	C-6	C30	H-2	CR12	F-2			R24	
C6	B-5	C31	J-2	CR13	H-3	R1	B-2	R25	
C8	C-6	C32	G-2	CR14	D-6	R2	B-3	R26	
C9	C-6	C33	J-3	CR15	E-6	R3	B-2	R27	
C10	C-6	C34	J-5	CR16	H-6	R4	B-3	R28	
C11	B-6	C35	J-5	CR17	F-6	R5	B-6	R29	
C12	B-6	C36	F-2	CR18	H-6	R6	B-6	R30	
C13	C-2	C37	E-2	CR19	J-5	R7	C-7	R31	
C14	C-3	C38	J-2	CR20	J-3	R8	B-6	R32	
C15	A-5	C39	D-6	CR21	J-5	R9	C-7	R33	
C16	E-5	C40	D-3			R10	C-7	R34	
C17	G-5	C41	D-6	DS1	H-6	R11	C-6	R35	
C18	J-3					R12	B-5	R36	
C19	G-6	CR1	B-4	J1	A-4	R13	C-5	R37	
C20	J-5	CR2	C-5			R14	C-5	R38	
C21	E-3	CR3	C-2	L1	A-3	R15	C-5	R39	
C22	G-4	CR4	B-5	L2	H-4	R16	C-6	R40	
C23	G-3	CR5	B-4	L3	F-2	R17	C-6	R41	
C24	J-4	CR6	B-4			R18	B-6	R42	
C25	D-7	CR7	F-5	P1	G-1	R19	C-3	R43	

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C15	A-5	C42	G-3	CR20	K-3	R6	A-6	R30	D-6	R56	J-2	R92	A-5	U6	H-4
C16	D-3	C43	K-3	CR22	B-4	R7	B-7	R31	D-6	R57	L-3	R93	J-6	U13	G-4
C17	D-5	C44	G-2	CR23	B-4	R8	A-6	R32	E-7	R58	D-5	R94	C-5		
C18	K-3	C45	J-3			R9	B-7	R34	D-6	R59	L-3	R95	B-6	VR1	B-5
C19	D-4	C46	F-2	DS1	K-6	R10	B-6	R35	D-7	R60	E-4			VR2	H-6
C20	D-6	C47	J-2			R11	B-6	R36	E-7	R61	K-6	RT1	A-4	VR3	L-5
C21	D-6	C48	H-2	J1	A-4	R12	A-6	R37	F-6	R62	L-6	RT2	K-2		
C22	D-7					R13	B-5	R38	D-6	R63	L-5				
C23	H-7	CR1	B-4	L1	A-3	R14	B-5	R39	D-6	R64	L-5	T1	B-5		
C24	H-6	CR2	B-5	L2	H-4	R15	B-6	R40	J-6	R65	L-6	T2	C-4		
C25	G-3	CR4	B-5	L3	H-2	R16	B-6	R41	H-6	R66	K-5				



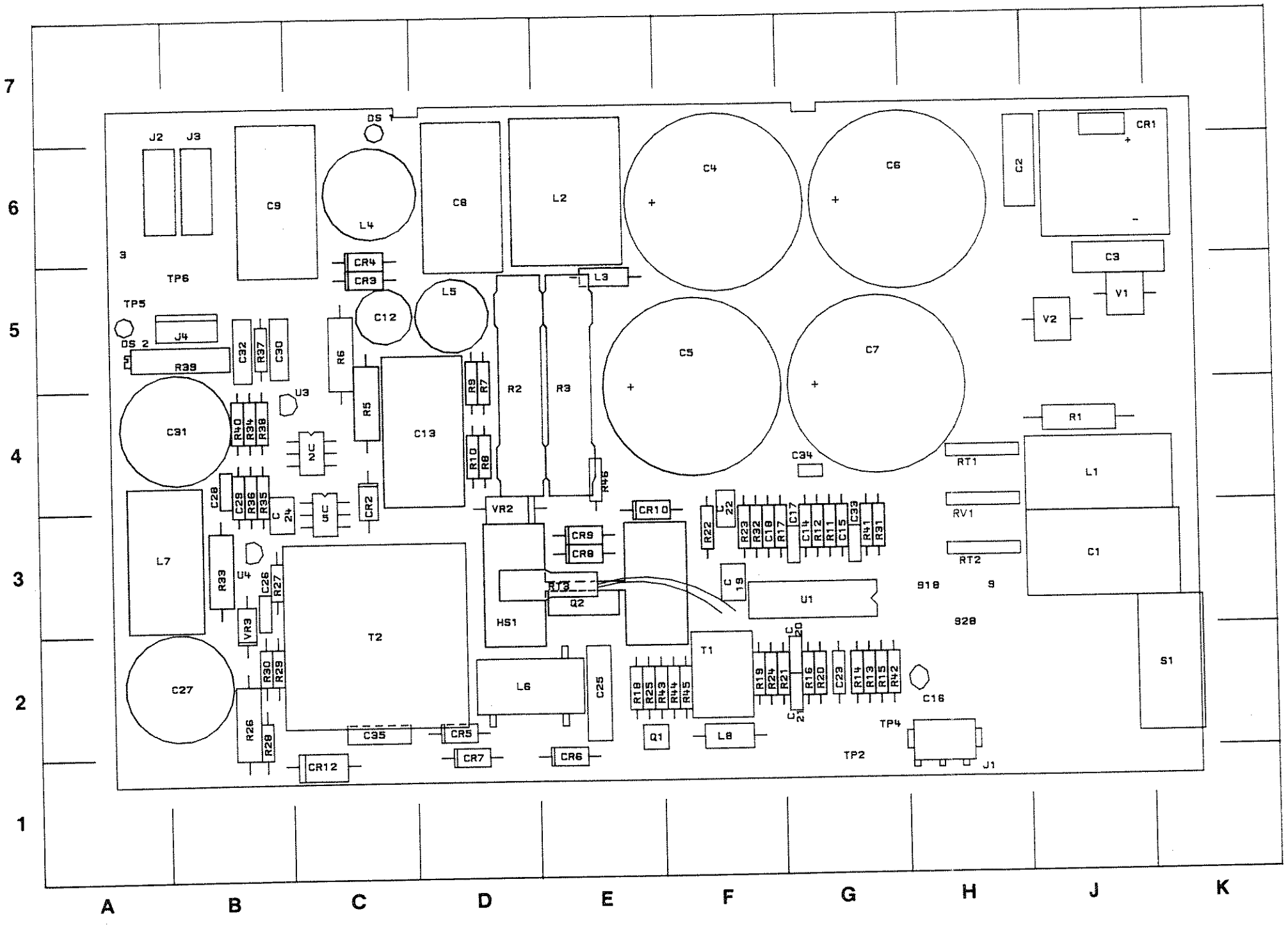
54110-66506 Digital Supply Component Locator

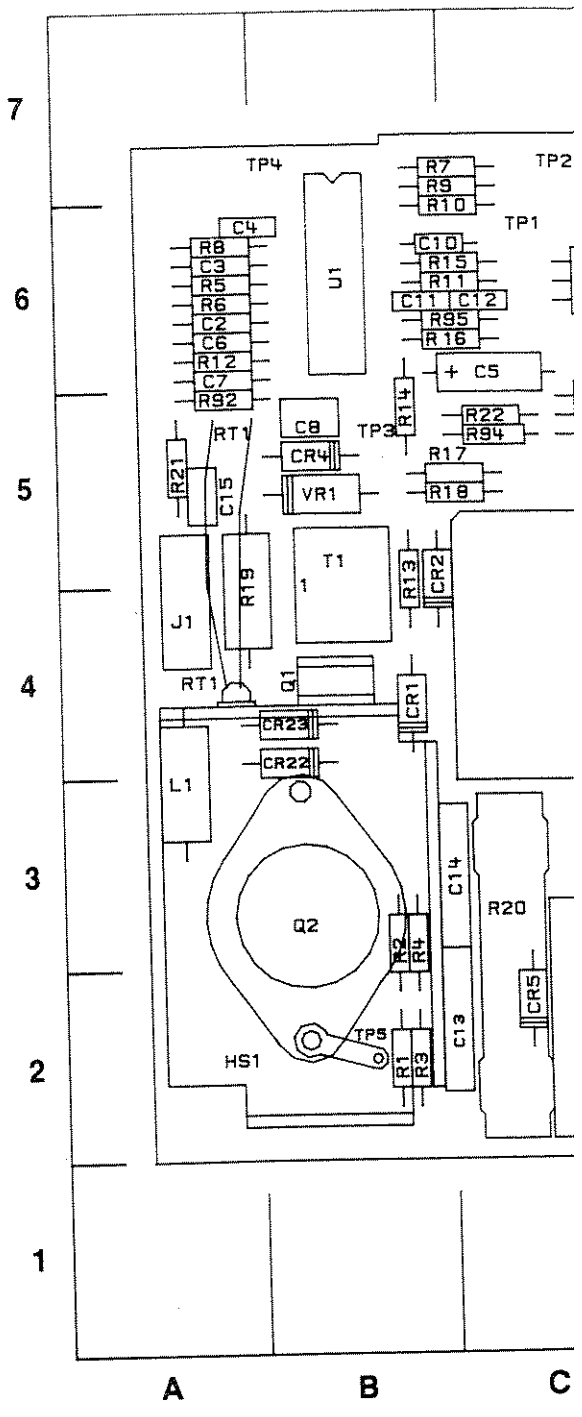
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C1	D-2	C26	D-7	CR8	D-5			R20	B-6	R44	E-6	R68	E-6		
C2	B-6	C27	H-6	CR9	J-3	Q1	B-4	R21	A-5	R45	F-6	R69	H-5	TP5	B-3
C3	B-6	C28	J-4	CR10	H-5	Q3	G-5	R22	B-4	R46	D-6	R70	J-6		
C4	B-6	C29	F-6	CR11	F-4	Q4	G-3	R23	C-5	R47	D-6	R71	J-2	U1	B-6
C5	C-6	C30	H-2	CR12	F-2			R24	H-5	R48	E-6	R72	J-3	U2	C-5
C6	B-5	C31	J-2	CR13	H-3	R1	B-2	R25	D-2	R49	E-6	R73	J-3	U3	C-6
C8	C-6	C32	G-2	CR14	D-6	R2	B-3	R26	J-2	R50	E-6	R74	J-3	U4	J-4
C9	C-6	C33	J-3	CR15	E-6	R3	B-2	R27	J-2	R51	E-6	R75	J-2	U5	G-6
C10	C-6	C34	J-5	CR16	H-6	R4	B-3	R28	J-3	R52	J-6	R76	J-3	U6	H-6
C11	B-6	C35	J-5	CR17	F-6	R5	B-6	R29	J-2	R53	J-6	R77	J-6	U7	E-6
C12	B-6	C36	F-2	CR18	H-6	R6	B-6	R30	J-3	R54	G-6	R78	J-6	U8	J-6
C13	C-2	C37	E-2	CR19	J-5	R7	C-7	R31	H-6	R55	G-6	R79	J-6	U9	D-7
C14	C-3	C38	J-2	CR20	J-3	R8	B-6	R32	H-6	R56	H-6	R80	J-6	U10	D-7
C15	A-5	C39	D-6	CR21	J-5	R9	C-7	R33	J-5	R57	H-6	R81	J-6		
C16	E-5	C40	D-3			R10	C-7	R34	J-5	R58	J-5	R82	H-3	VR1	B-5
C17	G-5	C41	D-6	DS1	H-6	R11	C-6	R35	J-5	R59	J-5	R83	J-6	VR2	H-6
C18	J-3					R12	B-5	R36	H-3	R60	F-6	R84	C-5	VR3	H-3
C19	G-6	CR1	B-4	J1	A-4	R13	C-5	R37	H-3	R61	F-6				
C20	J-5	CR2	C-5			R14	C-5	R38	J-2	R62	G-6	RT1	B-4		
C21	E-3	CR3	C-2	L1	A-3	R15	C-5	R39	J-4	R63	G-6				
C22	G-4	CR4	B-5	L2	H-4	R16	C-6	R40	D-6	R64	G-6	T1	B-5		
C23	G-3	CR5	B-4	L3	F-2	R17	C-6	R41	D-6	R65	E-6	T2	C-4		
C24	J-4	CR6	B-4			R18	B-6	R42	D-6	R66	E-6	T3	E-5		
C25	D-7	CR7	F-5	P1	G-1	R19	C-3	R43	D-6	R67	E-6	T4	E-3		

C13	B-2	C40	K-2	CR18	E-3	R4	B-3	R28	E-4	R55	E-6	R80	F-2	U7	G-6
C14	B-3	C41	L-6	CR19	G-5	R5	A-6	R29	D-5	R55	D-2	R81	J-6	U8	H-6

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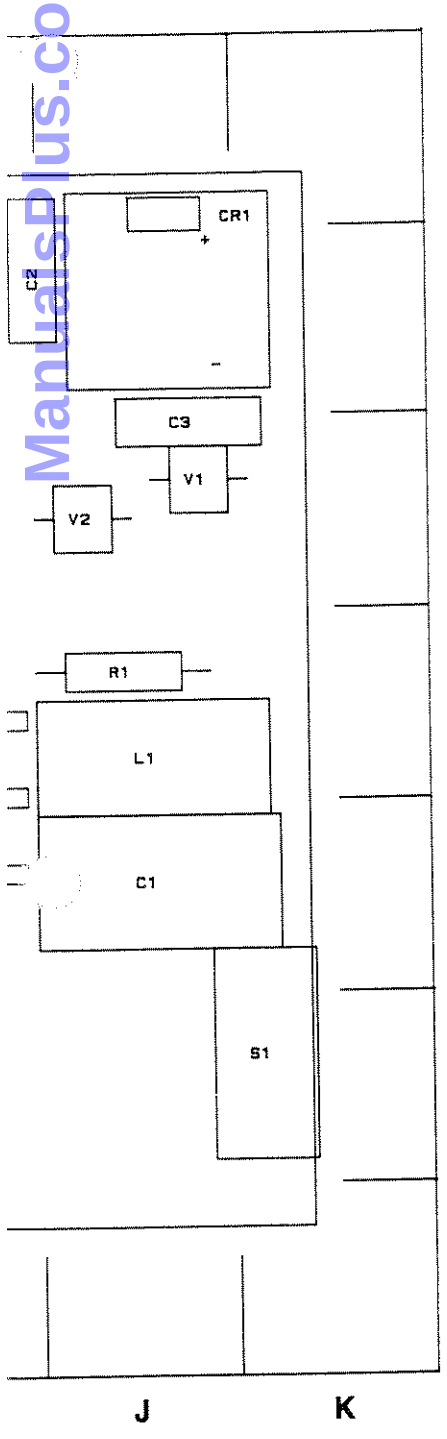
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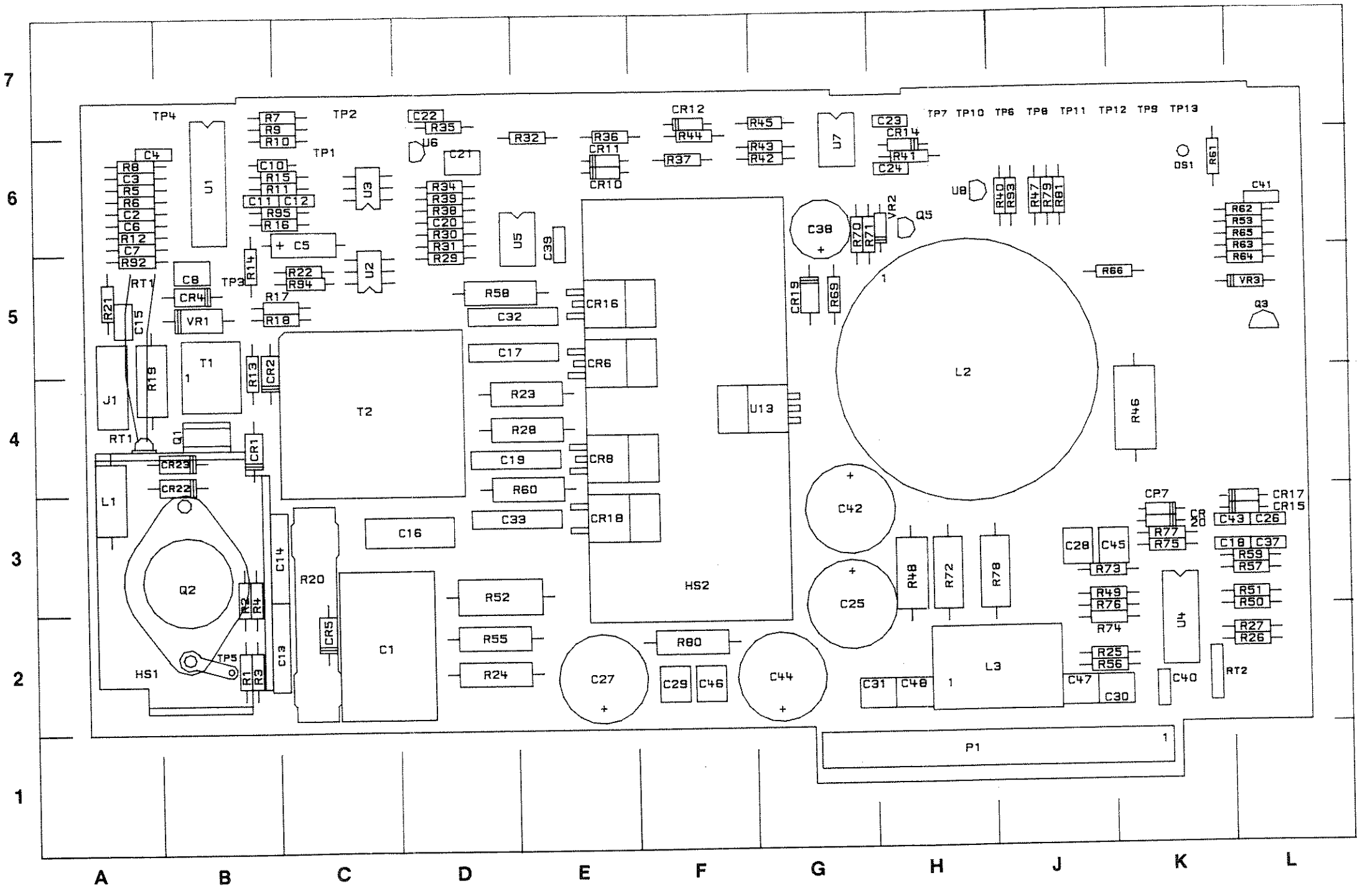
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C1	J-3	C20	G-2	CR1	J-7	J2	A-6	R3	E-4	R21	F-2	R38	B-4	TP3	E-2
C2	H-6	C21	G-2	CR2	C-4	J3	B-6	R5	C-4	R22	F-3	R39	B-5	TP4	G-2
C3	J-5	C22	F-3	CR3	C-5	J4	B-5	R6	C-5	R23	F-3	R40	B-4	TP5	B-5
C4	F-6	C23	G-2	CR4	C-6			R7	D-4	R24	F-2	R41	G-2	TP6	B-5
C5	F-5	C24	B-3	CR5	D-1	L1	J-4	R8	D-4	R25	E-2				
C6	G-6	C25	E-2	CR6	D-1	L2	E-6	R9	D-4	R26	B-2			U1	G-3
C7	G-5	C26	B-3	CR7	D-2	L3	E-5	R10	D-4	R27	B-3	RT1	H-4	U2	C-4
C8	D-6	C27	B-2	CR8	E-3	L4	C-6	R11	G-3	R28	B-2	RT2	H-3	U3	B-4

REF DES	GR LO
C1	C-
C2	A-
C3	A-
C4	A-
C5	C-
C6	A-
C7	A
C8	B
C10	B

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54110-66507 Analog Supply Component Locator

REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC
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C2	A-6	C27	E-2	CR6	E-5	P1	H-1	R18	B-5	R43	G-6	R70	G-6	TP2	C-7
C3	A-6	C28	J-3	CR7	K-3			R19	A-5	R44	F-7	R71	G-6	TP3	B-5
C4	A-6	C29	F-2	CR8	E-4	Q1	B-4	R20	C-3	R45	G-7	R72	H-2	TP4	B-7
C5	C-6	C30	J-2	CR10	E-6	Q2	B-3	R21	A-5	R46	K-4	R73	J-3	TP5	B-3
C6	A-6	C31	G-2	CR11	E-6	Q3	L-5	R22	C-5	R47	J-6	R74	J-2		
C7	A-6	C32	D-5	CR12	F-7	Q5	H-6	R23	E-4	R48	H-2	R75	K-3	U1	B-6
C8	B-5	C33	D-3	CR14	H-6			R24	D-2	R49	J-3	R76	J-3	U2	C-5
														U3	C-6

REF DES	GRID LOC
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TP5	B-5
TP6	B-5
U1	G-3
U2	C-4

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Component-Level Information Packets

for HP 54111D, 54112D, 54120A/B

Mainframe Assemblies

Power Supplies
Motherboard and Keyboards
Input/Output Assembly
Microprocessor Assembly
Color Display Assembly

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While this document may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate. The configuration of some assemblies may differ from that indicated in this document.

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General Information

Introduction

This package provides component level information for the HP 54111D, 54112D, or 54120A/B Digitizing Oscilloscopes. Hewlett-Packard's repair policy for these instruments is by exchange of assemblies. Techniques for troubleshooting these instruments to the assembly level are provided in the appropriate instrument service manuals. This package is not intended to be a comprehensive component-level troubleshooting aid. Other information and special equipment may be necesary to fully test assemblies after a component-level repair.

Note

This package is considered to be an aid to general understanding of the operation of an instrument. Information is provided at the convenience of Hewlett-Packard for the convenience of the user. Though it may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate.

ACCORDINGLY, HEWLETT-PACKARD SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY ARISING FROM THE USE OF THIS DOCUMENT.

Safety

Warning

The information in this package is for the use of trained service personnel. To avoid electrical shock, do not service unless you are qualified.

Warning

The Service Manual provides safety information that must be followed to avoid personal injury or damage to the instrument. Do not use this information without following all pertinent safety information in the Service Manual.

Supplement Description

This package consists of an initial section of general information and sections with specific information covering other assemblies.

The general information includes general warnings, cautions, and conventions.

Assembly information includes the following: additional warnings and cautions if applicable, parts lists, component locators, and schematics. Instrument level parts lists, since they must kept current, are in the service manual only.

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Manufacturers' Codes

A list of manufacturers' codes is given in table 1. The codes are given for parts in the parts lists. The table gives the manufacturer and address for each code.

Table 1. List of Manufacturers' Codes

Mfr. No.	Name	Address		
A3500	SGS Ates	Milan	IT	
C0633	RIFA	Bromma	SE	
S0545	Nippon Electric Co	Tokyo	JP	
S4013	Hitachi America Ltd	Sunnyvale	CA	94086
00000	Any satisfactory supplier			
00853	Sangamo Weston Inc	Norcross	GA	30071
01121	Allen-Bradley Co	Milwaukee	WI	53204
01295	Texas Instr Inc Semicond Cmpnt Div	Dallas	TX	75222
01686	RCL Electronics Inc	Northbrook	IL	60062
04713	Motorola Semiconductor Products	Phoenix	AZ	85008
06665	Precision Monolithics Inc	Santa Clara	CA	95050
07263	Fairchild Semiconductor Div	Mountain View	CA	94042
1B546	Varo Semiconductor Inc	Garland	TX	75040
11236	CTS Corp Berne Div	Berne	IN	46711
17856	Siliconix Inc	Santa Clara	CA	95054
18324	Signetics Corp	Sacramento	CA	95834
19701	Mepco/Electra Corp	Mineral Wells	TX	76067
2M627	R-ohm Corp	Irvine	CA	92713
24355	Analog Devices Inc	Norwood	MA	02062
24546	Corning Glass Works (bradford)	Bradford	PA	16701
27014	National Semiconductor Corp	Palo Alto	CA	94304
28480	Hewlett-Packard Co Corporate Hq	Palo Alto	CA	94304
32997	Bourns Inc	Riverside	CA	92507
34335	Advanced Micro Devices Inc	Sunnyvale	CA	94086
34649	Intel Corp	Mountain View	CA	95051
56289	Sprague Electric Co	North Adams	MA	01247
72799	General Electric Co	Fairfield	CT	06430
73138	Beckman Industrial Corp	Fullerton	CA	92634
9N171	Unitrode Computer Products Corp	Methuen	MA	01844
91637	Dale Electronics	Columbus	NE	68601

Reference Designators

Reference designators are based on current ANSI and IEEE standards. A list of reference designators is part of table 2.

Abbreviations

A list of commonly used abbreviations is part of table 2. Differences in use of upper and lower case depends on the where the abbreviation is used. For example, all text in parts lists and on schematics is upper case.

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Table 2. Reference Designators and Abbreviations

REFERENCE DESIGNATORS

A	= assembly	F	= fuse	Q	= transistor;SCR; triode thyristor	U	= integrated circuit; microcircuit
B	= fan;motor	FL	= filter	R	= resistor	V	= electron tube; glow lamp
BT	= battery	H	= hardware	RT	= thermistor	VR	= voltage regulator; breakdown diode
C	= capacitor	J	= electrical connector (stationary portion);jack	S	= switch;jumper	W	= cable
CR	= diode;diode thyristor; varactor	L	= coil;inductor	T	= transformer	X	= socket
DL	= delay line	MP	= misc. mechanical part	TB	= terminal board	Y	= crystal unit(piezo-electric or quartz)
DS	= annunciator;lamp;LED	P	= electrical connector (moveable portion);plug	TP	= test point		
E	= misc. electrical part						

ABBREVIATIONS

A	= amperes	DWL	= dowel	MFR	= manufacturer	RND	= Round
A/D	= analog-to-digital	ECL	= emitter coupled logic	MICPROC	= microprocessor	ROM	= read-only memory
AC	= alternating current	ELAS	= elastomeric	MINTR	= miniature	RPG	= rotary pulse generator
ADJ	= adjust(ment)	EXT	= external	MISC	= miscellaneous	RX	= receiver
AL	= aluminum	F	= farads;metal film (resistor)	MLD	= molded	S	= Schottky-clamped; seconds(time)
AMPL	= amplifier			MM	= millimeter		
ANLG	= analog	FC	= carbon film/ composition	MO	= metal oxide	SCR	= screw;silicon controlled rectifier
ANSI	= American National Standards Institute			MTG	= mounting		
		FD	= feed	MTLC	= metallic	SEC	= second(time);secondary
ASSY	= assembly	FEM	= female	MUX	= multiplexer		
ASTIG	= astigmatism	FF	= flip-flop	MW	= milliwatt	SEG	= segment
ASYNCHRO	= asynchronous	FL	= flat	N	= nano(10-9)	SEL	= selector
ATTEN	= attenuator	FM	= foam;from	NC	= no connection	SGL	= single
AWG	= American wire gauge	FR	= front	NMOS	= n-channel metal-oxide-semiconductor	SHF	= shift
BAL	= balance	FT	= gain bandwidth product			SI	= silicon
BCD	= binary-code decimal			NPN	= negative-positive-negative	SIP	= single in-line package
BD	= board	FW	= full wave				
BFR	= buffer	FXD	= fixed	NPRN	= neoprene	SKT	= skirt
BIN	= binary	GEN	= generator	NRFR	= not recommended for field replacement	SL	= slide
BRDG	= bridge	GND	= ground(ed)			SLDR	= solder
BSHG	= bushing	GP	= general purpose	NSR	= not separately replaceable	SLT	= slot(ted)
BW	= bandwidth	GRAT	= graticule			SOLD	= solenoid
C	= ceramic;cermet (resistor)	GRV	= groove	NUM	= numeric	SPCL	= special
		H	= henries;high	OBD	= order by description	SQ	= square
CAL	= calibrate;calibration	HD	= hardware	OCTL	= octal	SREG	= shift register
CC	= carbon composition	HDND	= hardened	OD	= outside diameter	SRQ	= service request
CCW	= counterclockwise	HG	= mercury	OP AMP	= operational amplifier	STAT	= static
CER	= ceramic	HGT	= height	OSC	= oscillator	STD	= standard
CFM	= cubic feet/minute	HLCL	= helical	P	= plastic	SYNCHRO	= synchronous
CH	= choke	HORIZ	= horizontal	P/O	= part of	TA	= tantalum
CHAM	= chamfered	HP	= Hewlett-Packard	PC	= printed circuit	TBAX	= tubeaxial
CHAN	= channel	HP-IB	= Hewlett-Packard Interface Bus	PCB	= printed circuit board	TC	= temperature coefficient
CHAR	= character			PD	= power dissipation	TD	= time delay
CM	= centimeter	HR	= hour(s)	PF	= picofarads	THD	= thread(ed)
CMOS	= complementary metal-oxide-semiconductor	HV	= high voltage	PI	= plug in	THK	= thick
		HZ	= Hertz	PL	= plate(d)	THRU	= through
CMR	= common mode rejection	I/O	= input/output	PLA	= programmable logic array	TP	= test point
		IC	= integrated circuit			TPG	= tapping
CNDCT	= conductor	ID	= inside diameter	PLST	= plastic	TPL	= triple
CNTR	= counter	IN	= inch	PNP	= positive-negative-positive	TRANS	= transformer
CON	= connector	INCL	= include(s)			TRIG	= trigger(ed)
CONT	= contact	INCAND	= incandescent	POLYE	= polyester	TRMR	= trimmmer
CRT	= cathode-ray tube	INP	= input	POS	= positive;position	TRN	= turn(s)
CW	= clockwise	INTEN	= intensity	POT	= potentiometer	TTL	= transistor-transistor
D	= diameter	INTL	= internal	POZI	= pozidrive	TX	= transmitter
D/A	= digital-to-analog	INV	= inverter	PP	= peak-to-peak	U	= micro(10-6)
DAC	= digital-to-analog converter	JFET	= junction field-effect transistor	PPM	= parts per million	UL	= Underwriters Laboratory
				PRCN	= precision		
DARL	= darlington	JKT	= jacket	PREAMP	= preamplifier	UNREG	= unregulated
DAT	= data	K	= kilo(103)	PRGMBL	= programmable	VA	= voltampere
DBL	= double	L	= low	PRL	= parallel	VAC	= volt,ac
DBM	= decibel referenced to 1mW	LB	= pound	PROG	= programmable	VAR	= variable
		LCH	= latch	PSTN	= position	VCO	= voltage-controlled oscillator
DC	= direct current	LCL	= local	PT	= point		
DCDR	= decoder	LED	= light-emitting diode	PW	= potted wirewound	VDC	= volt,dc
DEG	= degree			PWR	= power	VERT	= vertical
DEMUX	= demultiplexer	LG	= long	R-S	= reset-set	VF	= voltage,filtered
DET	= detector	LI	= lithium	RAM	= random-access memory	VS	= versus
DIA	= diameter	LK	= lock			W	= watts
DIP	= dual in-line package	LKWR	= lockwasher	RECT	= rectifier	W/	= with
DIV	= division	LS	= low power Schottky	RET	= retainer	W/O	= without
DMA	= direct memory access	LV	= low voltage	RF	= radio frequency	WW	= wirewound
DPDT	= double-pole, double-throw	M	= mega(106);megohms; meter(distance)	RGLTR	= regulator	XSTR	= transistor
				RGTR	= register	ZNR	= zener
DRC	= DAC refresh controller	MACH	= machine	RK	= rack	oC	= degree Celsius (Centigrade)
DRVR	= driver	MAX	= maximum	RMS	= root-mean-square		
						oF	= degree Fahrenheit
						oK	= degree Kelvin

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Logic Symbols

Logic symbols are based on current ANSI and IEEE standards. These standards may be unfamiliar to some people. Figure 1 (next page) gives a brief explanation of the principles used for these symbols and an example with explanations.

Logic Convention

The convention used is positive logic, as follows:

- HIGH (H) - 1 - True, active, or asserted state (more positive)
- LOW (L) - 0 - False, inactive, or unasserted state (more negative)

Signals may be either HIGH true or LOW true. They are assumed to be HIGH true unless indicated by an "L" at the beginning of the mnemonic or an overline across all or part of the mnemonic.

Most circuitry uses TTL or ECL technology. Some custom ICs use other technology with various logic levels.

• TTL	LOW	below +0.8 V	HIGH	above +2.0 V
• ECL	LOW	below -1.50 V	HIGH	above -1.10 V

Parts Lists

Parts lists include parts used at the time of the first shipments. Changes from that time are covered in change information (see Changes and Updates).

Component Locators

Component locators include a drawing with a locator grid and a table giving grid locations of components.

Changes and Updates

Unless otherwise noted, the basis for information in this package is the configuration of the instrument or assembly when it was first shipped to customers. This includes the parts lists, schematics, and other information. Changes to this package are provided at the convenience of Hewlett-Packard and there may be delays between the occurence of changes in the instrument and the provision of update information.

Change pages may be part of the original printed supplement or part of an update document. The update document is changed periodically to reflect changes since the package was printed. The update document includes replacement or insert pages for the package, as well as the instructions for including the new pages. For ease of use, incorporate updates into this package as soon as you receive them.

In addition to change information, the update may contain information for correcting errors in the package. Hewlett-Packard recommends that you periodically request the latest update. The update is identified by the print date and part number of this document, both of which appear on the cover page. Complimentary copies of the update are available from Hewlett-Packard.

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Figure 1. Logic Symbols (1 of 3)

GENERAL

All signals flow from left to right, relative to the symbol's orientation with inputs on the left side of the symbol, and outputs on the right side of the symbol (the symbol may be reversed if the dependency notation is a single term.)

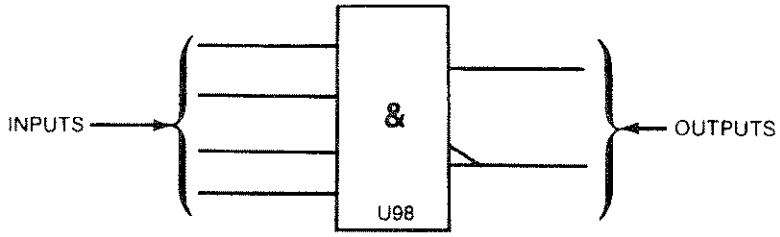
All dependency notation is read from left to right (relative to the symbol's orientation).

An external state is the state of an input or output outside the logic symbol.

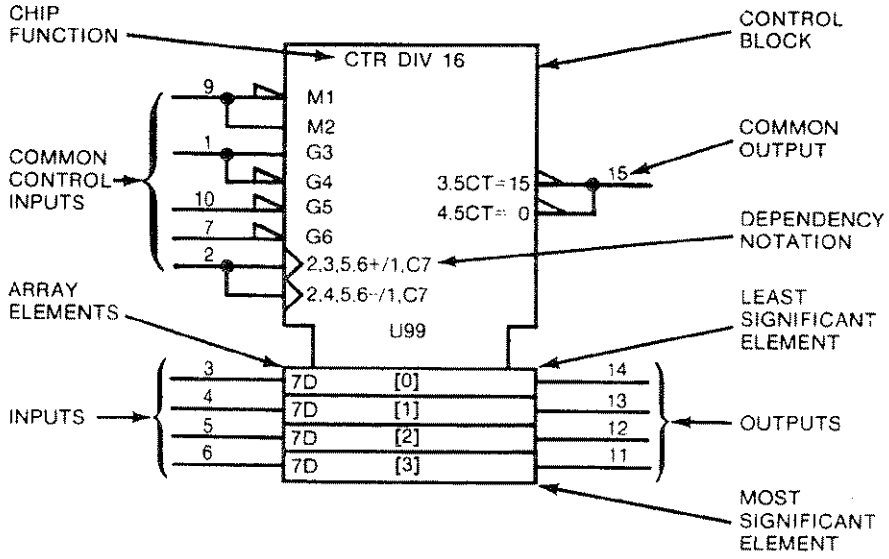
An internal state is the state of an input or output inside the logic symbol. All internal states are True = High.

SYMBOL CONSTRUCTION

Some symbols consist of an outline or combination of outlines together with one or more qualifying symbols, and the representation of input and output lines.



Some have a common Control Block with an array of elements:



CONTROL BLOCK - All inputs and dependency notation affect the array elements directly. Common outputs are located in the control block. (Control blocks may be above or below the array elements.)

ARRAY ELEMENTS -All array elements are controlled by the control block as a function of the dependency notation. Any array element is independent of all other array elements. Unless indicated, the least significant element is always closest to the control block. The array elements are arranged by binary weight. The weights are indicated by powers of 2 (shown in [ ]).

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Figure 1. Logic Symbols (2 of 3)

OTHER SYMBOLS

Analog Signal	Inversion	Shift Right (or down)
& AND	○ Negation	/ Solidus (allows an input or output to have more than one function)
Bit Grouping	Nonlogic Input/Output	▽ Tri-State
Buffer	Open Circuit (external resistor)	, Causes notation and symbols to effect inputs/outputs in an AND relationship, and to occur in the order read from left to right.
! Compare	Open Circuit (external resistor)	( ) Used for factoring terms using algebraic techniques.
Dynamic	≥1 OR	[ ] Information not defined.
=1 Exclusive OR	Passive Pull Down (internal resistor)	Φ Logic symbol not defined due to complexity.
Hysteresis	Passive Pull Up (internal resistor)	
? Interrogation	Postponed	
— Internal Connection	Shift Left (or up)	

LABELS

BG	Borrow Generate	CO	Carry Output	J	J Input
BI	Borrow Input	CP	Carry Propagate	K	K Input
BO	Borrow Output	CT	Content	P	Operand
BP	Borrow Propagate	D	Data Input	T	Transition
CG	Carry Generate	E	Extension (input or output)	+	Count Up
CI	Carry Input	F	Function	–	Count Down

MATH FUNCTIONS

Σ	Adder	>	Greater Than
ALU	Arithmetic Logic Unit	<	Less Than
COMP	Comparator	CPG	Look Ahead Carry Generator
DIV	Divide By	π	Multiplier
=	Equal To	P-Q	Subtractor

CHIP FUNCTIONS

BCD	Binary Coded Decimal	DIR	Directional	RAM	Random Access Memory
BIN	Binary	DMUX	Demultiplexer	RCVR	Line Receiver
BUF	Buffer	FF	Flip-Flop	ROM	Read Only Memory
CTR	Counter	MUX	Multiplexer	SEG	Segment
DEC	Decimal	OCT	Octal	SRG	Shift Register

DELAY and MULTIVIBRATORS

	Astable
100 ns	Delay
1	Nonretriggerable Monostable
NV	Nonvolatile
	Retriggerable Monostable

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INPUTS - Inputs are located on the left side of the symbol and are affected by their dependency notation.

Common control inputs are located in the control block and control the inputs/outputs to the array elements according to the dependency notation.

Inputs to the array elements are located with the corresponding array element with the least significant element closest to the control block.

OUTPUTS - Outputs are located on the right side of the symbol and are effected by their dependency notation.

Common control outputs are located in the control block.

Outputs of array elements are located in the corresponding array element with the least significant bit closest to the control block.

CHIP FUNCTION - The labels for chip functions are defined, i.e., CTR - counter, MUX - multiplexer.

DEPENDENCY NOTATION

Dependency notation is always read from left to right relative to the symbol's orientation.

Dependency notation indicates the relationship between inputs, outputs, or inputs and outputs. Signals having a common relationship will have a common number, i.e., C7 and 7D....C7 controls D. Dependency notation 2,3,5,6+/1.C7 is read as when 2 and 3 and 5 and 6 are true, the input will cause the counter to increment by one count....or (/) the input (C7) will control the loading of the input value (7D) into the D flip-flops.

The following types of dependencies are defined:

a. AND (G), OR (V), and Negate (N) denote Boolean relationship between inputs and outputs in any combination.

b. Interconnection (Z) indicates connections inside the symbol.

c. Control (C) identifies a timing input or a clock input of a sequential element and indicates which inputs are controlled by it.

d. Set (S) and Reset (R) specify the internal logic states (outputs) of an RS bistable element when the R or S input stands at its internal 1 state.

e. Enable (EN) identifies an enable input and indicates which inputs and outputs are controlled by it (which outputs can be in their high impedance state).

f. Mode (M) identifies an input that selects the mode of operation of an element and indicates the inputs and outputs depending on that mode.

g. Address (A) identifies the address inputs.

h. Transmission (X) identifies bi-directional inputs and outputs that are connected together when the transmission input is true.

DEPENDENCY NOTATION SYMBOLS

A	Address (selects inputs/outputs) (indicates binary range)	N	Negate (complements state)
C	Control (permits action)	R	Reset Input
EN	Enable (permits action)	S	Set Input
G	AND (permits action)	V	OR (permits action)
M	Mode (selects action)	Z	Interconnection
		X	Transmission

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Schematics

The schematics are provided on large folded sheets. They can be kept in the pocket provided. Schematics for an individual assembly are sequentially numbered by the large bold number at each schematic. These numbers are used to cross reference signal connections between the schematics.

At the schematic is a table giving the reference designators of components on that schematic. Another table shows the power connections, power grounds, and non-functional pins of ICs (integrated circuits). This helps avoid non-functional clutter on the schematic and gives one place to show IC power connections when IC sections are split between schematics.

Unless otherwise noted, the following component values apply:

- Resistance is in ohms.
- Capacitance is in microfarads.
- Inductance is in microhenries.

Notes specific to a particular schematic are located on the schematic.

Symbols on schematics are based on current ANSI and IEEE standards.

Additional schematic symbols are shown below:



Tool-aided adjustment.



Numbered test point.
Measurement aid provided.



Lettered test point. No measurement aid provided.



Signal reference.

15 Schematic reference.

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Component-level Information Packet

for HP 54111D, 54112D, 54120A/B

Motherboard and Keyboards

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While this document may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate. The configuration of some assemblies may differ from that indicated in this document.

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
				Motherboard 54110-66511		
C1	0160-5467	3	4	CAPACITOR-FXD 0.01UF +-10% 63VDC	28480	0160-5467
C2	0160-5467	3		CAPACITOR-FXD 0.01UF +-10% 63VDC	28480	0160-5467
C3	0160-5467	3		CAPACITOR-FXD 0.01UF +-10% 63VDC	28480	0160-5467
C4	0160-5467	3		CAPACITOR-FXD 0.01UF +-10% 63VDC	28480	0160-5467
H1	0515-0430	3	4	SCREW-MACH M3 6MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
J1	1251-8855	3	2	CONN-POST TYPE 0.156-PIN-SPCG 19-CONT	28480	1251-8855
J2	1251-8855	3		CONN-POST TYPE 0.156-PIN-SPCG 19-CONT	28480	1251-8855
J3	1252-1072	4	1	CONN-POST TYPE 0.150-PIN-SPCG 60-CONT	28480	1252-1072
J4	1251-8097	5	9	CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J5	1251-8097	5		CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J6	1251-8097	5		CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J7	1251-8097	5		CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J8	1251-8097	5		CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J9	1251-8097	5		CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J10	1251-8097	5		CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J11	1251-8097	5		CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J12	1251-8097	5		CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1251-8097
J13	1252-0161	0	2	CONN-POST TYPE 0.156-PIN-SPCG 2-CONT	28480	1252-0161
J14	1252-0161	0		CONN-POST TYPE 0.156-PIN-SPCG 2-CONT	28480	1252-0161
MP1	0160-5374	1	1	CAPACITOR-FXD (NOT USED ELECTRICALLY)	28480	0160-5374
RP1	1810-0685	7	4	NETWORK-RES 6-SIP 47.0 OHM X 5	28480	1810-0685
RP2	1810-0685	7		NETWORK-RES 6-SIP 47.0 OHM X 5	28480	1810-0685
RP3	1810-0685	7		NETWORK-RES 6-SIP 47.0 OHM X 5	28480	1810-0685
RP4	1810-0685	7		NETWORK-RES 6-SIP 47.0 OHM X 5	28480	1810-0685
RP5	1810-0681	3	4	NETWORK-RES 6-SIP MULTI-VALUE	28480	1810-0681
RP6	1810-0681	3		NETWORK-RES 6-SIP MULTI-VALUE	28480	1810-0681
RP7	1810-0681	3		NETWORK-RES 6-SIP MULTI-VALUE	28480	1810-0681
RP8	1810-0681	3		NETWORK-RES 6-SIP MULTI-VALUE	28480	1810-0681
				Control Keyboard 54100-66505		
J1	1251-8474	2	1	CONN-POST TYPE 0.100-PIN-SPCG 34-CONT	28480	1251-8474
J2	1251-8671	1	2	CONN-POST TYPE 0.100-PIN-SPCG 10-CONT	28480	1251-8671
J3	1251-8671	1		CONN-POST TYPE 0.100-PIN-SPCG 10-CONT	28480	1251-8671
J4	1251-4837	3	1	CONN-POST TYPE 2.5-PIN-SPCG 4-CONT	28480	1251-4837
MP1				NOT ASSIGNED		
MP2	1251-5595	2	1	POLARIZING KEY POST CONNECTOR	28480	1251-5595
MP3	5041-0268	5	7	KEYCAP	28480	5041-0268
MP4	5041-0268	5		KEYCAP	28480	5041-0268
MP5	5041-0268	5		KEYCAP	28480	5041-0268
MP6	5041-0268	5		KEYCAP	28480	5041-0268
MP7	5041-0268	5		KEYCAP	28480	5041-0268
MP8	5041-0268	5		KEYCAP	28480	5041-0268
MP9	5041-0268	5		KEYCAP	28480	5041-0268
MP10	5041-0906	8	1	KEYCAP 0	28480	5041-0906

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
				Control Keyboard 54100-66505 (cont'd)		
MP11	5041-0907	9	1	KEYCAP 1	28480	5041-0907
MP12	5041-0908	0	1	KEYCAP 2	28480	5041-0908
MP13	5041-0909	1	1	KEYCAP 3	28480	5041-0909
MP14	5041-0910	4	1	KEYCAP 4	28480	5041-0910
MP15	5041-0911	5	1	KEYCAP 5	28480	5041-0911
MP16	5041-0912	6	2	KEYCAP 6,9	28480	5041-0912
MP17	5041-0913	7	1	KEYCAP 7	28480	5041-0913
MP18	5041-0914	8	1	KEYCAP 8	28480	5041-0914
MP19	5041-0984	2	1	KEYCAP CLEAR	28480	5041-0984
MP20	5041-2942	6	1	KEYCAP USEC	28480	5041-2942
MP21	5041-2943	7	1	KEYCAP NSEC	28480	5041-2943
MP22	5041-2944	8	1	KEYCAP PSEC	28480	5041-2944
MP23	5041-2945	9	1	KEYCAP MSEC/MV	28480	5041-2945
MP24	5041-2946	0	1	KEYCAP SEC/VOLT	28480	5041-2946
MP25	5041-4547	1	2	KEYCAP ARROWS	28480	5041-4547
MP26	5041-4548	2	1	KEYCAP (.)	28480	5041-4548
MP27	5041-4549	3	1	KEYCAP (-)	28480	5041-4549
S1	3101-2947	7	27	SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S2	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S3	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S4	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S5	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S6	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S7	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S8	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S9	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S10	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S11	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S12	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S13	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S14	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S15	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S16	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S17	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S18	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S19	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S20	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S21	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S22	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S23	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S24	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S25	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S26	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S27	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
Function Keyboard 54110-66502						
MP1	5041-0400	7	6	KEYCAP	28480	5041-0400
MP2	5041-0400	7		KEYCAP	28040	5041-0400
MP3	5041-0400	7		KEYCAP	28040	5041-0400
MP4	5041-0400	7		KEYCAP	28040	5041-0400
MP5	5041-0400	7		KEYCAP	28040	5041-0400
MP6	5041-0400	7		KEYCAP	28040	5041-0400
S1	3101-2947	7	8	SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S2	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S3	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S4	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S5	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S6	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
W1	54100-61605	9	1	CABLE	28480	54100-61605
Menu Keyboard 54100-66520						
MP1	5041-0400	7	8	KEYCAP	28480	5041-0400
MP2	5041-0400	7		KEYCAP	28040	5041-0400
MP3	5041-0400	7		KEYCAP	28040	5041-0400
MP4	5041-0400	7		KEYCAP	28040	5041-0400
MP5	5041-0400	7		KEYCAP	28040	5041-0400
MP6	5041-0400	7		KEYCAP	28040	5041-0400
MP7	5041-0400	7		KEYCAP	28040	5041-0400
MP8	5041-0400	7		KEYCAP	28040	5041-0400
S1	3101-2947	7	8	SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S2	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S3	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S4	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S5	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S6	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S7	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
S8	3101-2947	7		SWITCH-PB SPST MOM 0.01A 12 VDC	28480	3101-2947
W1	54100-61605	9	1	CABLE	28480	54100-61605

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
				Display Control 54110-66509		
H1	2950-0071	2	2	NUT-HEX 1/4-32	00000	ORDER BY DESCRIPTION
H2	2190-0060	7	2	WASHER-INT LCK 0.25IN-ID 0.4IN-OD	00000	ORDER BY DESCRIPTION
J1	1251-4837	3	1	CONN-POST TYPE 2.5-PIN-SPCG 4-CONT	28480	1251-4837
R1	2100-4119	6	2	RESISTOR-VAR CONTROL CP 10K 10% LIN	28480	2100-4119
R2	2100-4119	6		RESISTOR-VAR CONTROL CP 10K 10% LIN	28480	2100-4119
				Display Control 54111-66514		
H1	2950-0071	2	2	NUT-HEX 1/4-32	00000	ORDER BY DESCRIPTION
H2	2190-0060	7	2	WASHER-INT LCK 0.25IN-ID 0.4IN-OD	00000	ORDER BY DESCRIPTION
J1	1251-6000	6	1	CONN-POST TYPE 2.5-PIN-SPCG 5-CONT	28480	1251-6000
R1	2100-4119	6	2	RESISTOR-VAR CONTROL CP 10K 10% LIN	28480	2100-4119
R2	2100-4119	6		RESISTOR-VAR CONTROL CP 10K 10% LIN	28480	2100-4119

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CONTROL KEYBOARD

J1

11 SC7
12 SC6
9 SC5
10 SC4
7 SC3
8 SC2
24 RL0
26 RL1
28 RL2
30 RL3
23 RL4
25 RL5
27 RL6
29 RL7

CLEAR DISPLAY
RUN
STOP/ SINGLE
SAVE
RECALL
LOCAL
AUTO-SCALE
STEP DECR
STEP INCR
7
8
9
sec volt
4
5
6
msec MV
1
2
3
µsec
0
.
-
nsec
CLEAR
psec

1 +5V
2 +5V
3 +5V
4 +5V
21 NC
22 NC
15 NC
31 NC
32 NC
19 LED+
20 LED-
16 ILSTROBE NC
17 RPG 901
18 RPG 902
5 SC1
6 SC0
13 ILD0 NC
14 ILDSTROBE NC
33 NC
34 NC

J3
SC0 1
SC1 2
RL0 3
RL1 4
RL2 5
RL3 6
RL4 7
RL5 8
J2 NC 9
NC 10
SC1 1
RL7 2
RL6 3
RL5 4
RL4 5
RL3 6
RL2 7
LED+ 8
LED- 9
NC 10

J4
92 4
0 1
901 2
902 3

54100/SC05_01/01/9-15-86
54100-66505

MOTHERBOARD ASSEMBLY (1 OF 2)

MOTHERBOARD ASSEMBLY

RP1 RP2 RP5 RP6

C2 0.01UF
C1,3 0.01UF
+5V
-5V

S7 S6 S4

SLOT 8 J12
SLOT 7 J11
SLOT 6 J10
SLOT 5 J9
SLOT 4 J8

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AUTO-SCALE

J3

SC0 → 1
SC1 → 2
RL0 → 3
RL1 → 4
RL2 → 5
RL3 → 6
RL4 → 7
RL5 → 8
J2 NC → 9
NC → 10
SC1 → 1
RL7 → 2
RL6 → 3
RL5 → 4
RL4 → 5
RL3 → 6
RL2 → 7
LED+ → 8
LED- → 9
NC → 10

J4

92 → 4
0 → 1
901 → 2
902 → 3

54100/SC05_01/01/9-15-86

54100-66505

MOTHERBOARD ASSEMBLY (1 0F 2)

MOTHERBOARD ASSEMBLY

RP1 RP2 RP5 RP6 RP8 RP7 RP4 RP3

C2 0.01UF
C1,3 0.01UF
C4 0.01UF

+5V
-5V
AGND
NC
D
A

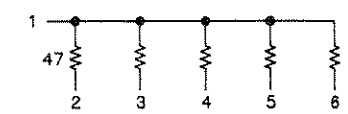
S7 S6 S4 S3 S2 S1

J3 TO DISPLAY BD.

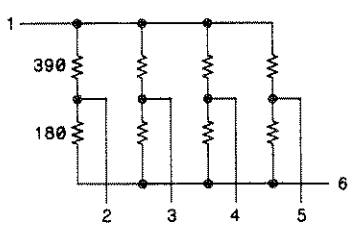
SLOT 8	SLOT 7	SLOT 6	SLOT 5	SLOT 4	SLOT 3	SLOT 2	SLOT 1	SLOT 0
J12	J11	J10	J9	J8	J7	J6	J5	J4

NOTES:

1. A IS TO ANALOG GROUND
   D IS TO DIGITAL GROUND
2. RP1-4



RP5-8



3. ⊘ SCREWS TO CHASSIS OF INSTRUMENT

PARTS ON THIS SCHEMATIC

C1-4
P/O J3-12
RP1-8

54110/SC11_01/02/4-87

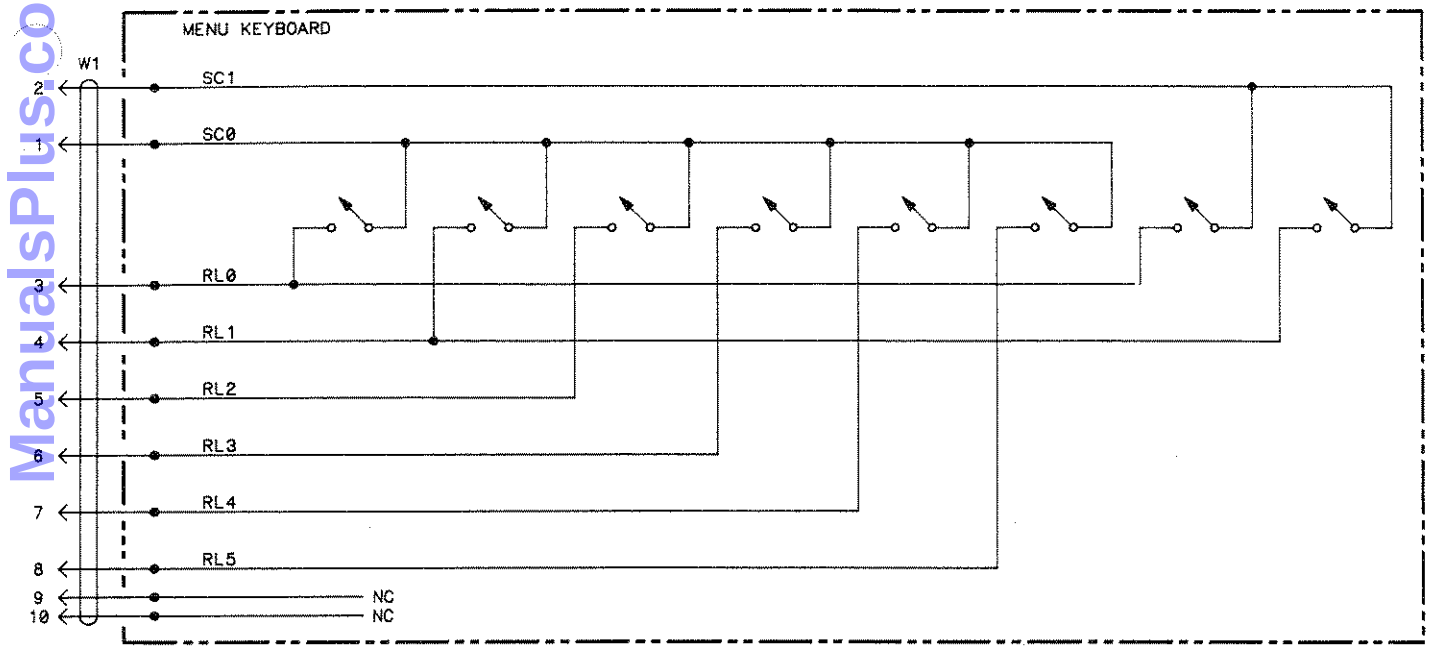
1

Motherboard (Part 1)

54110-66501

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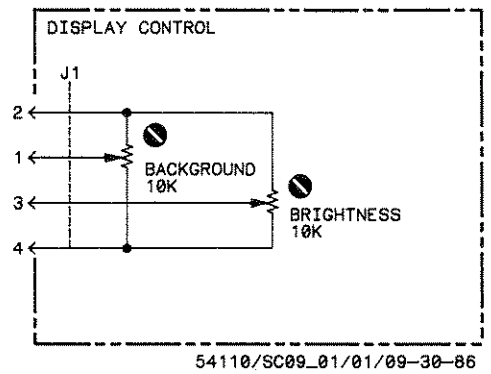
ManualsPlus.com

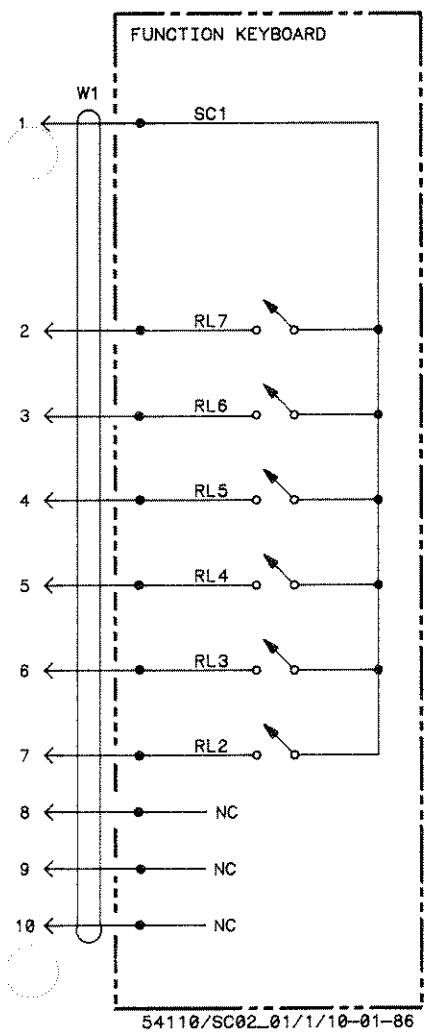


54100-66520

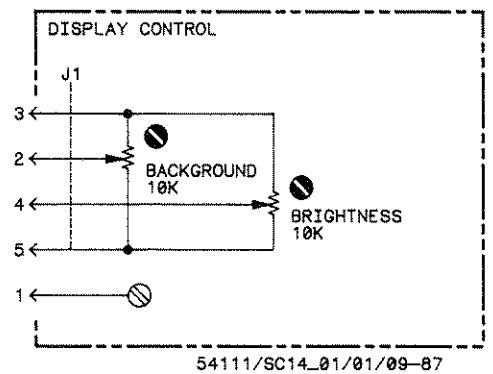
DISPLAY CONTROL FOR:
54111D
54120A/D

54110-66509



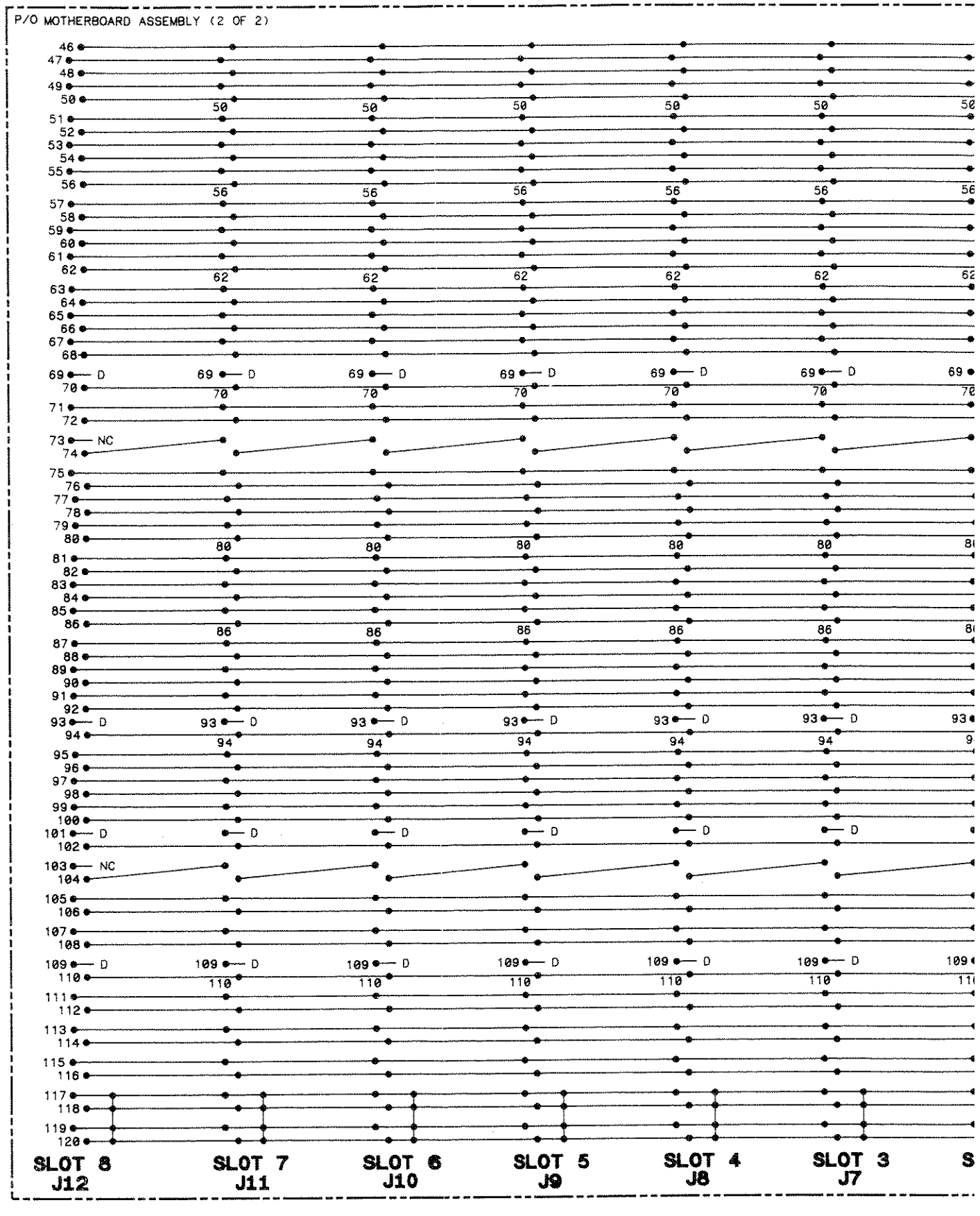


54110-66502



DISPLAY CONTROL FOR:
54112D

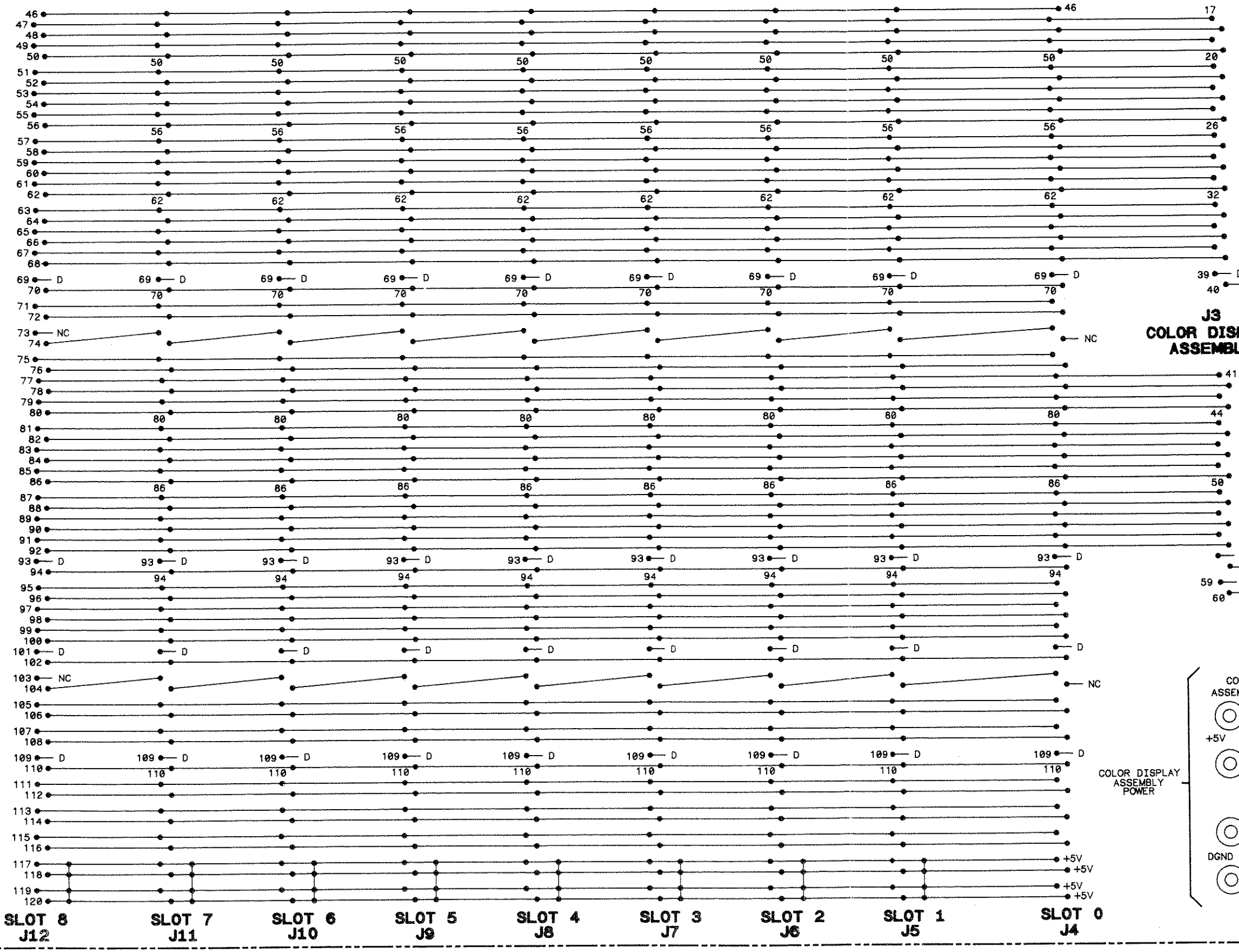
54111-66514

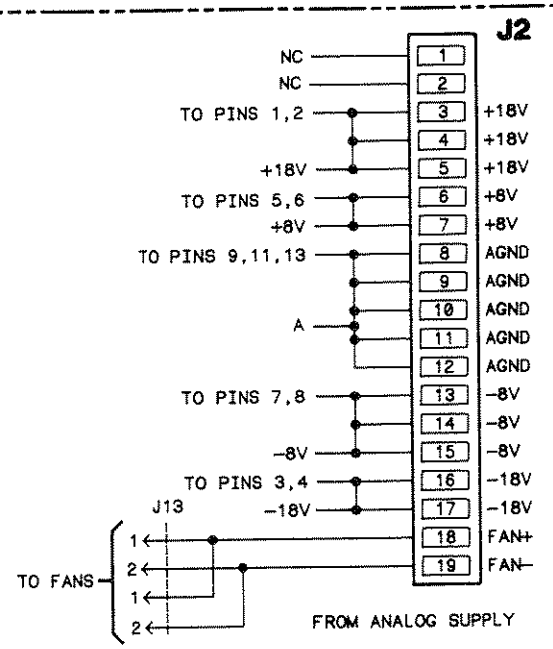


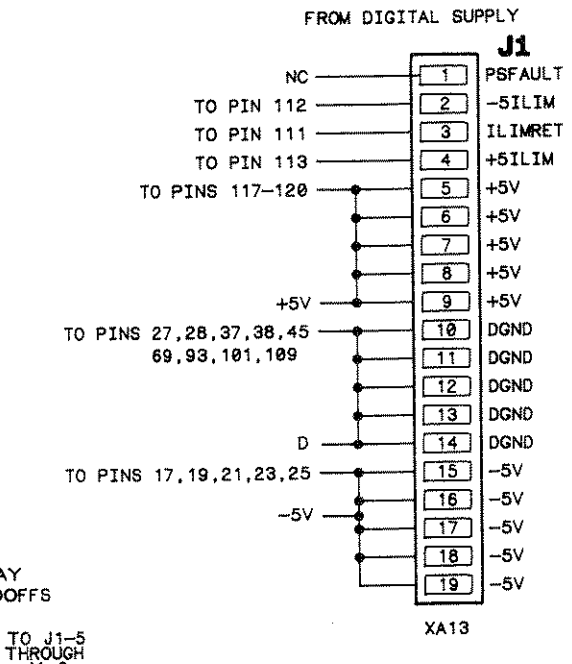
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P/O MOTHERBOARD ASSEMBLY (2 OF 2)







PARTS ON THIS SCHEMATIC

J1,2,13,14
P/O J4-12

54110/SC11_02/02/4-87

2

Motherboard (Part 2)

54110-66511

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Component-Level Information Packet

for HP 54112D

ADC Assembly

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While this document may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate. The configuration of some assemblies may differ from that indicated in this document.

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Contents

This packet consists of the following information:

- Parts list
- Changes
- Component locator
- Schematics – four schematics on two large sheets

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1	0160-6500	7	64	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C2	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C3	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C4				NOT ASSIGNED		
C5	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C6	0180-3831	3	12	CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C7	0160-6623	5	12	CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C8	0160-4801	7	5	CAPACITOR-FXD 100PF +-5% 100VDC CER	28480	0160-4801
C9	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C10	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C11	0160-4786	7	1	CAPACITOR-FXD 27PF +-5% 100VDC CER 0+-30	28480	0160-4786
C12	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C13	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C14	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C15	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C16	0160-5469	5	1	CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C17	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C18	0160-4574	1	2	CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C19	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C20	0180-3848	2	2	CAPACITOR-FXD 33UF+-10% 16VDC TA	28480	0180-3848
C21	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C22	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C23	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C24	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C25	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C26	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C27	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C28	0160-4801	7		CAPACITOR-FXD 100PF +-5% 100VDC CER	28480	0160-4801
C29	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C30	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C31	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C32	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C33	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C34	0160-4801	7		CAPACITOR-FXD 100PF +-5% 100VDC CER	28480	0160-4801
C35	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C36	0160-4801	7		CAPACITOR-FXD 100PF +-5% 100VDC CER	28480	0160-4801
C37	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C38	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C39	0160-4886	8	2	CAPACITOR-FXD 13PF +-2% 200VDC CER 0+-30	28480	0160-4886
C40	0160-3873	1	1	CAPACITOR-FXD 4.7PF +-.5PF 200VDC CER	28480	0160-3873
C41	0160-4886	8		CAPACITOR-FXD 13PF +-2% 200VDC CER 0+-30	28480	0160-4886
C42	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C43	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C44	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C45	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C46	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C47	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C48	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C49	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C50	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C51	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C52	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C53	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C54	0180-3848	2		CAPACITOR-FXD 33UF+-10% 16VDC TA	28480	0180-3848
C55	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C56	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C57	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C58	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C59	0160-4801	7		CAPACITOR-FXD 100PF +-5% 100VDC CER	28480	0160-4801
C60	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C61	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C62	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C63	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C64	0180-3784	5	4	CAPACITOR-FXD 22UF+-20% 25VDC TA	28480	0180-3784
C65	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C66	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C67	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C68	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C69	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C70	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C71	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C72	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C73	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C74	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C75	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C76	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C77	0180-3784	5		CAPACITOR-FXD 22UF+-20% 25VDC TA	28480	0180-3784
C78	0180-3784	5		CAPACITOR-FXD 22UF+-20% 25VDC TA	28480	0180-3784
C79	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C80	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C81	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C82	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C83	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C84	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C85	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C86	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C87	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C88	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C89	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C90	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C91	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C92	0180-3771	0	5	CAPACITOR-FXD 1UF+-10% 35VDC TA	28480	0180-3771
C93	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C94	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C95	0180-3771	0		CAPACITOR-FXD 1UF+-10% 35VDC TA	28480	0180-3771
C96	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C97	0180-3771	0		CAPACITOR-FXD 1UF+-10% 35VDC TA	28480	0180-3771
C98	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C99	0180-3770	9	2	CAPACITOR-FXD 2.2UF+-10% 35VDC TA	28480	0180-3770
C100	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C101	0180-3770	9		CAPACITOR-FXD 2.2UF+-10% 35VDC TA	28480	0180-3770
C102	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C103	0180-3771	0		CAPACITOR-FXD 1UF+-10% 35VDC TA	28480	0180-3771
C104	0180-3831	3		CAPACITOR-FXD 10UF+-10% 35VDC TA	28480	0180-3831
C105	0180-3771	0		CAPACITOR-FXD 1UF+-10% 35VDC TA	28480	0180-3771

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C106	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C107	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C108	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C109	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C110	0180-3784	5		CAPACITOR-FXD 22UF+-20% 25VDC TA	28480	0180-3784
C111	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C112	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C113	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C114	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C115	0160-4795	8	1	CAPACITOR-FXD 4.7PF +-.5PF 100VDC CER	28480	0160-4795
CR1	1901-0050	3	21	DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR2	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR3	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR4	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR5	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR6	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR7	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR8	1901-1081	2	2	DIODE-PWR RECT 100V 3A	04713	MR501
CR9	1901-1081	2		DIODE-PWR RECT 100V 3A	04713	MR501
CR10	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR11	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR12	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR13	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR14	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR15	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR16	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR17	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR18	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR19	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR20	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR21	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR22	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR23	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
J1				NOT ASSIGNED		
J2	1251-5971	8	1	CONN-POST TYPE 2.5-PIN-SPCG 3-CONT	28480	1251-5971
J3	1251-8347	8	1	CONN-POST TYPE 0.100-PIN-SPCG 26-CONT	28480	1251-8347
J4	1252-1707	2	1	CONN-POST TYPE 0.100-PIN-SPCG 10-CONT	28480	1252-1707
J5	1252-1920	1	1	CONN-POST TYPE 0.100-PIN-SPCG 10-CONT	28480	1252-1920
J6	1250-2201	9	1	CONNECTOR-RF SMB M PC 50-OHM	28480	1250-2201
L1	9135-0071	1	1	INDUCTOR RF-CH-MLD 62NH +-5.806%	28480	9135-0071
L2				NOT ASSIGNED		
L3	9140-1227	2	1	INDUCTOR 1MH +-10%	28480	9140-1227
L4	5081-7682	5	9	CHOKE-RF	28480	5081-7682
L5	5081-7682	5		CHOKE-RF	28480	5081-7682
L6	5081-7682	5		CHOKE-RF	28480	5081-7682
L7	5081-7682	5		CHOKE-RF	28480	5081-7682
L8	5081-7682	5		CHOKE-RF	28480	5081-7682
L9	5081-7682	5		CHOKE-RF	28480	5081-7682
L10	5081-7682	5		CHOKE-RF	28480	5081-7682
L11	5081-7682	5		CHOKE-RF	28480	5081-7682
L12	5081-7682	5		CHOKE-RF	28480	5081-7682

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
P1	1252-0198	3	1	CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1252-0198
Q1-3				NOT ASSIGNED		
Q4	1854-0591	6	1	TRANSISTOR NPN SI PD=180MW FT=4GHZ	04713	BFR90
Q5	1854-0092	2	1	TRANSISTOR NPN SI PD=200MW FT=600MHZ	28480	1854-0092
R1	0757-0280	3	4	RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R2	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R3	0757-0465	6	4	RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R4	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R5	0757-0394	0	4	RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R6	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R7	0698-7528	0	1	RESISTOR 375K 0.1% 0.125W TF TC=0+-50	19701	5033R-1/8-T2-3753-B
R8	0698-4511	5	1	RESISTOR 86.6K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-8662-F
R9	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R10	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R11	0698-3430	5	1	RESISTOR 21.5 1% 0.125W TF TC=0+-100	28480	0698-3430
R12	0698-3438	3	3	RESISTOR 147 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-147R-F
R13	0698-3438	3		RESISTOR 147 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-147R-F
R14	0757-0440	7	1	RESISTOR 7.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-7501-F
R15	0698-3156	2	1	RESISTOR 14.7K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1472-F
R16				NOT ASSIGNED		
R17	0757-0276	7	2	RESISTOR 61.9 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-6192-F
R18	0757-0276	7		RESISTOR 61.9 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-6192-F
R19	0757-0401	0	4	RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R20	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R21	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R22	0698-5437	6	1	RESISTOR 12K 0.1% 0.125W TF TC=0+-50	28480	0698-5437
R23	0698-3136	8	1	RESISTOR 17.8K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1782-F
R24	0698-3271	2	1	RESISTOR 115K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1153-F
R25	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R26	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R27	0698-4158	6	1	RESISTOR 100K 0.1% 0.125W TF TC=0+-50	28480	0698-4158
R28	0698-3158	4	1	RESISTOR 23.7K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2372-F
R29	0757-0441	8	1	RESISTOR 8.25K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-8251-F
R30	0757-0442	9	5	RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R31	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R32	0698-4002	9	1	RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R33	0698-7529	1	1	RESISTOR 150K 0.1% 0.125W TF TC=0+-50	19701	5033R-1/8-T2-1503-B
R34	0698-8958	2	1	RESISTOR 511K 1% 0.125W TF TC=0+-100	28480	0698-8958
R35				NOT ASSIGNED		
R36	0683-1025	9	1	RESISTOR 1K 5% 0.25W CF TC=0-400	19701	(CR-25) 1-4-5P-1K
R37	0757-0407	6	8	RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R38	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R39	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R40	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R41	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R42	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R43	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R44	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R45	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R46	0698-3155	1	2	RESISTOR 4.64K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-4641-F
R47	0698-8961	7	1	RESISTOR 909K 1% 0.125W TF TC=0+-100	28480	0698-8961
R48	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R49	0698-3155	1		RESISTOR 4.64K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-4641-F
R50	8159-0005	0	1	RESISTOR ZERO-OHMS	28480	8159-0005
R51	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R52	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R53	0757-0408	7	1	RESISTOR 243 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-243R-F
R54	0698-3438	3		RESISTOR 147 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-147R-F
R55	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R56	0757-0429	2	1	RESISTOR 1.82K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1821-F
R57	0811-1666	7	1	RESISTOR 1 5% 2W PW TC=0+-800	28480	0811-1666
R58	2100-3161	6	1	RESISTOR-TRMR 20K 10% TKF SIDE-ADJ	32997	3006P-1-203
R59				NOT ASSIGNED		
R60	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R61	0698-4367	9	1	RESISTOR 20.5 1% 0.125W TF TC=0+-100	28480	0698-4367
RP1	1810-0411	7	3	NETWORK-RES 10-SIP 50.0 OHM X 9	28480	1810-0411
RP2	1810-0124	9	1	NETWORK-RES 16-DIP 200.0 OHM X 8	28480	1810-0124
RP3	1810-0411	7		NETWORK-RES 10-SIP 50.0 OHM X 9	28480	1810-0411
RP4	1810-0411	7		NETWORK-RES 10-SIP 50.0 OHM X 9	28480	1810-0411
RP5	1810-0275	1	2	NETWORK-RES 10-SIP 1.0K OHM X 9	28480	1810-0275
RP6	1810-0275	1		NETWORK-RES 10-SIP 1.0K OHM X 9	28480	1810-0275
U1	1826-0635	0	4	IC OP AMP LOW-OFS 8-DIP-P PKG	06665	OP-07CP
U2	1826-1379	1	1	D/A 8-DGT 20-PLASTIC CMOS	24355	AD7226KN
U3	1826-0635	0		IC OP AMP LOW-OFS 8-DIP-P PKG	06665	OP-07CP
U4	1826-1246	1	2	D/A 12-BIT 28-CERDIP BPLR	24355	AD667AD
U5	1820-4685	6	1	IC FF ECL D-M/S POS-EDGE-TRIG COM CLOCK	52648	SP9131DG
U6	1820-1298	1	6	IC MUXR/DATA-SEL TTL LS 8-TO-1-LINE	01295	SN74LS251N
U7	1818-4016	2	24	IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U8	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U9	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U10	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U11	1820-1298	1		IC MUXR/DATA-SEL TTL LS 8-TO-1-LINE	01295	SN74LS251N
U12	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U13	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U14	1826-1381	5	1	IC OP AMP LOW-BIAS-H-IMPD 8-DIP-P PKG	00000	LT1012CN8
U15	1826-1246	1		D/A 12-BIT 28-CERDIP BPLR	24355	AD667AD
U16	1820-2715	9	3	IC-INTERFACE DRVR BCD NAND DUAL	01295	SN75447P
U17	1820-2715	9		IC-INTERFACE DRVR BCD NAND DUAL	01295	SN75447P
U18	1820-2715	9		IC-INTERFACE DRVR BCD NAND DUAL	01295	SN75447P
U19	1826-0890	9	1	IC OP AMP GP DUAL 8-DIP-P PKG	27014	LM358AN
U20	1NB7-8094	5	1	IC HYBRID ANALOG-TO-DIGITAL CONVERTER	28480	1NB7-8094
U21	1820-1199	1	2	IC INV TTL LS HEX 1-INP	01295	SN74LS04N
U22	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U23	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U24	1820-1941	1	1	ANALOG SWITCH 4 SPST 16 -DIP-P	27014	LF13201N
U25	1820-3124	6	1	IC XLTR ECL TTL-TO-ECL QUAD	04713	MC10124P
U26	1820-1298	1		IC MUXR/DATA-SEL TTL LS 8-TO-1-LINE	01295	SN74LS251N
U27	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U28	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U29	1826-0635	0		IC OP AMP LOW-OFS 8-DIP-P PKG	06665	OP-07CP
U30	1826-0635	0		IC OP AMP LOW-OFS 8-DIP-P PKG	06665	OP-07CP

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U31	1820-4152	2	2	IC FF CMOS/74HC D-TYPE POS-EDGE-TRIG COM	01295	SN74HCT574N
U32	1820-3670	7	1	IC GATE CMOS/74HC NAND 13-INP	04713	MC74HC133N
U33	1820-1195	7	2	IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS175N
U34	1820-4142	0	1	IC BFR TTL AS NAND QUAD 2-INP	01295	SN74AS1000AN
U35	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U36	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U37				NOT ASSIGNED		
U38	1820-4152	2		IC FF CMOS/74HC D-TYPE POS-EDGE-TRIG COM	01295	SN74HCT574N
U39	1820-3664	9	1	IC GATE CMOS/74HC NAND QUAD 2-INP	18324	74HCT00N
U40	1820-1298	1		IC MUXR/DATA-SEL TTL LS 8-TO-1-LINE	01295	SN74LS251N
U41	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U42	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U43	1826-0175	3	1	IC COMPARATOR GP DUAL 14-DIP-P PKG	27014	LM319N
U44	1820-2711	5	4	IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS541N
U45	1820-4944	0	1	IC GATE-ARRAY ECL	34335	AMD3550GC
U46	1820-1211	8	2	IC GATE TTL LS EXCL-OR QUAD 2-INP	01295	SN74LS86AN
U47	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U48	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U49	1820-0495	8	1	IC DCDR TTL 4-TO-16-LINE 4-INP	01295	SN74154N
U50	1820-1298	1		IC MUXR/DATA-SEL TTL LS 8-TO-1-LINE	01295	SN74LS251N
U51	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U52	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U53	1820-1208	3	1	IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U54	1820-2711	5		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS541N
U55	1820-1211	8		IC GATE TTL LS EXCL-OR QUAD 2-INP	01295	SN74LS86AN
U56	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U57	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U58	1826-0635	0	1	IC OP AMP LOW-OFS 8-DIP-P PKG	06665	OP-07CP
U59	1820-1246	9	1	IC GATE TTL LS AND QUAD 2-INP	01295	SN74LS09N
U60	1820-2711	5		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS541N
U61	1820-2711	5		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS541N
U62	1820-1199	1		IC INV TTL LS HEX 1-INP	01295	SN74LS04N
U63	1820-1298	1		IC MUXR/DATA-SEL TTL LS 8-TO-1-LINE	01295	SN74LS251N
U64	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U65	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U66	1826-0393	7	1	IC V RGLTR-ADJ-POS 1.2/37V TO-220 PKG	01295	LM317KC
U67	1826-0147	9	1	IC V RGLTR-FXD-POS 11.5/12.5V TO-220 PKG	04713	UA7812UC
U68	1826-0106	0	1	IC V RGLTR-FXD-POS 14.4/15.6V TO-220 PKG	04713	MC7815CT
U69	1826-0214	1	1	IC V RGLTR-FXD-NEG 14.4/15.6V TO-220 PKG	S0545	UPC7915H
U70	1826-0294	7	1	IC V RGLTR-FXD-NEG 4.8/5.2V TO-220 PKG	04713	MC7905CT
U71	1826-0527	9	1	IC V RGLTR-ADJ-NEG 1.2/37V TO-220 PKG	27014	LM337T
U72	1826-0122	0	1	IC V RGLTR-FXD-POS 4.8/5.2V TO-220 PKG	04713	MC7805CT
U73	1820-1195	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS175N
U74	1820-1419	8	1	IC COMPTR TTL LS MAGTD 4-BIT	01295	SN74LS85N
U75	1820-2075	4	2	IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U76	1820-2075	4		IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U77	1820-1244	7	1	IC MUXR/DATA-SEL TTL LS 4-TO-1-LINE DUAL	01295	SN74LS153N
U78	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U79	1818-4016	2		IC CMOS 16384 (16K) STAT RAM 25-NS 3-S	00000	CY7C168-25PC
U80	1826-1099	2	1	IC V RGLTR-ADJ-NEG TO-92 PKG	27014	LM337LZ

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Schematic 1

A capacitor was changed to optimize performance. There was no change in the part number of the assembly.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	C93 to	0180-3770	9	CAPACITOR-FXD 2.2UF +-10%	28480	0180-3770

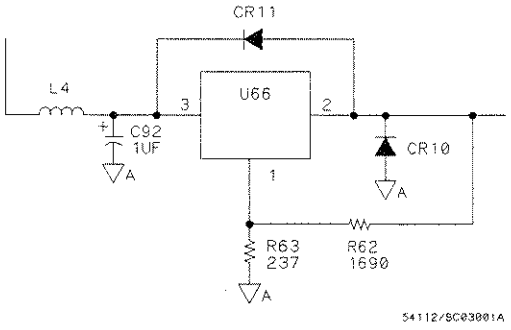
CHANGE 2, for 54112-66504

Schematics 1 and 4

The reference voltage of a voltage regulator was changed to correct an oscillation problem. The diagram shows the circuitry changed on schematic 1. In addition, on schematic 4, this change eliminates the +10VREF connection from U15 (lower left corner) to schematic 1.

DELETE: C91 and U58

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
ADD:						
	R62	0698-4228	1	RESISTOR 1.69K 1% 0.125W	28480	0698-4228
	R63	0698-3442	9	RESISTOR 237 1% 0.125W	24546	CT4-1/8-T0-237R-F



CHANGE 3, for 54112-66504

Schematic 4

To optimize the self-calibration routines, a resistor was changed in the offset circuitry. The new part is preferred, and should be used to replace the old part if there is a vertical calibration failure or if the attenuator is replaced.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	R24 to	0757-0466	7	RESISTOR 110K 1% 0.125W	28480	0757-0466

CHANGE 4, for 54112-66504

Schematic 1

The raw PC board was changed to solve minor manufacturing issues. The only significant change was the elimination of R50, a 0 Ω resistor.

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Schematic 1

A change was made to optimize performance of the decelerator, U45. Two diodes, in a supply line, were replaced with 0 Ω resistors.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE CR8 and CR9 to:						
	R64	8159-0005	0	RESISTOR ZERO-OHMS	28480	8159-0005
	R65	8159-0005	0	RESISTOR ZERO-OHMS	28480	8159-0005

Schematic 4

A part change was made to correct false indications of input overload.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	C74 to	0160-4802	8	CAPACITOR-FXD 82PF 100V	28480	0160-4802
	R47 to	0757-0280	3	RESISTOR 1K 1% 0.125W	24546	CT4-1/8-TO-1001-F

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NOTES:

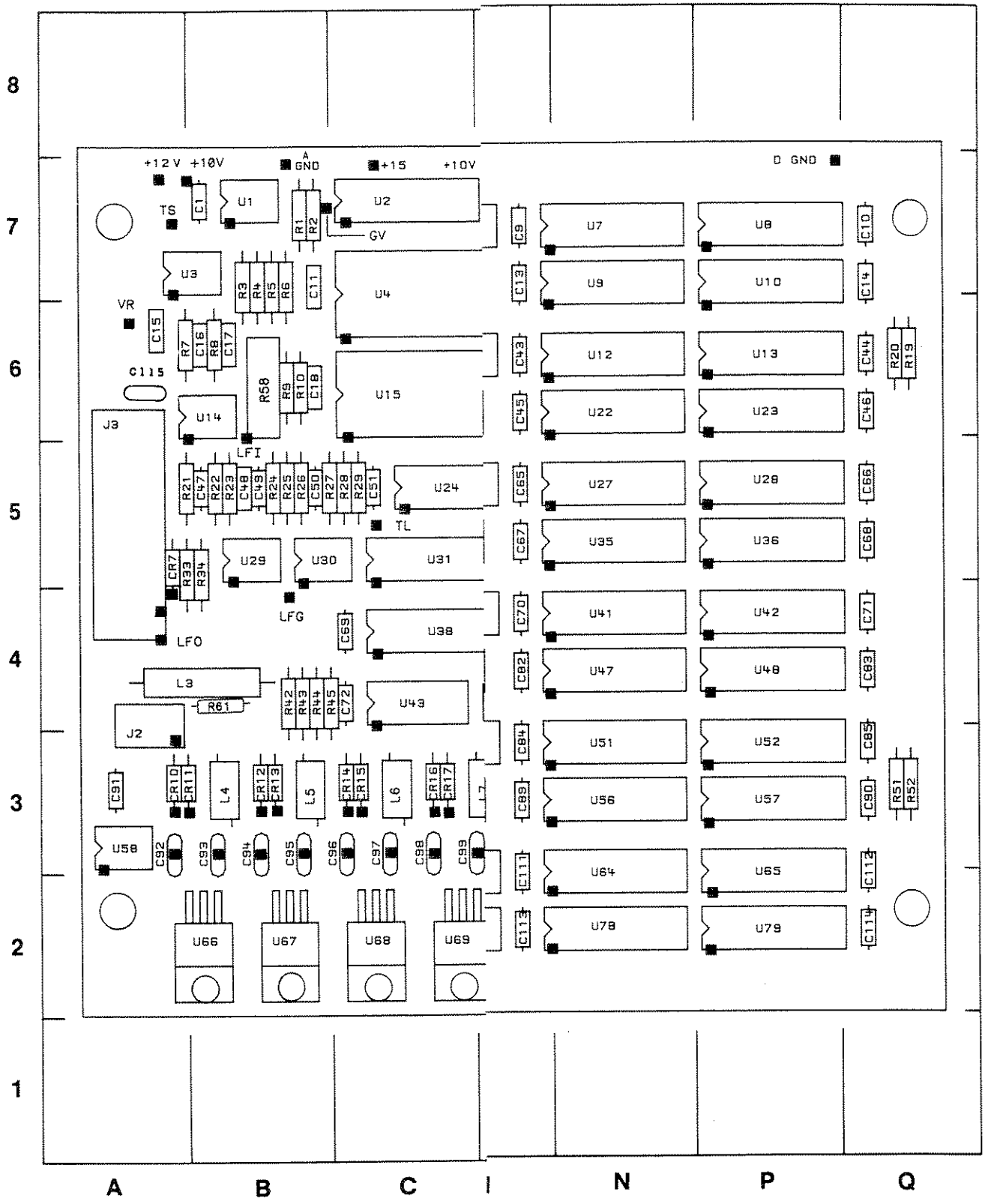
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NOTES

REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC
C1	B-7	C42	L-5	C82	M-4	CR6	F-6	Q5	D-4	R41	F-4	U3	B-7	U44	F-4
C2	D-7	C43	M-6	C83	Q-4	CR7	A-5			R42	B-4	U4	C-7	U45	K-4
C3	D-7	C44	Q-6	C84	M-3	CR8	F-4	R1	B-7	R43	B-4	U5	H-7	U46	M-4
C5	G-7	C45	M-6	C85	Q-3	CR9	F-4	R2	B-7	R44	B-4	U6	M-7	U47	N-4
C6	G-7	C46	Q-6	C86	J-3	CR10	A-3	R3	B-7	R45	B-4	U7	N-7	U48	P-4
C7	G-7	C47	B-5	C87	J-3	CR11	A-3	R4	B-7	R46	D-4	U8	P-7	U49	G-3
C8	G-7	C48	B-5	C88	K-3	CR12	B-3	R5	B-7	R47	D-4	U9	N-7	U50	M-3
C9	M-7	C49	B-5	C89	M-3	CR13	B-3	R6	B-7	R48	D-4	U10	P-7	U51	N-3
C10	Q-7	C50	B-5	C90	Q-3	CR14	C-3	R7	A-6	R49	D-4	U11	M-6	U52	P-3
C11	B-7	C51	C-5	C91	A-3	CR15	C-3	R8	B-6	R50	H-3	U12	N-6	U53	F-3
C12	D-7	C52	D-5	C92	A-3	CR16	C-3	R9	B-6	R51	Q-3	U13	P-6	U54	J-3
C13	M-7	C53	D-5	C93	B-3	CR17	C-3	R10	B-6	R52	Q-3	U14	B-6	U55	M-3
C14	Q-7	C54	D-5	C94	B-3	CR18	D-3	R11	H-6	R53	E-3	U15	C-6	U56	N-3
C15	A-6	C55	E-5	C95	B-3	CR19	D-3	R12	H-6	R54	E-3	U16	E-6	U57	P-3
C16	B-6	C56	F-5	C96	C-3	CR20	D-3	R13	H-6	R55	L-2	U17	E-6	U58	A-3
C17	B-6	C57	F-5	C97	C-3	CR21	D-3	R14	H-6	R56	L-2	U18	F-6	U59	F-2
C18	B-6	C58	G-5	C98	C-3	CR22	F-3	R15	H-6	R57	D-6	U19	G-6	U60	G-3
C19	D-6	C59	G-5	C99	C-3	CR23	F-3	R17	J-6	R58	B-6	U20	H-5	U61	J-2
C20	D-6	C60	G-5	C100	D-2			R18	J-6	R60	K-6	U21	M-6	U62	K-3
C21	D-6	C61	G-5	C101	D-3	J2	A-3	R19	Q-6	R61	B-4	U22	N-6	U63	M-2
C22	D-6	C62	J-5	C102	E-2	J3	A-6	R20	Q-6			U23	P-6	U64	N-2
C23	F-6	C63	J-5	C103	E-3	J4	E-7	R21	A-5	RP1	H-7	U24	C-5	U65	P-2
C24	F-6	C64	K-5	C104	E-3	J5	J-7	R22	B-5	RP2	F-4	U25	F-5	U66	B-2
C25	G-6	C65	M-5	C105	E-3	J6	K-7	R23	B-5	RP3	J-4	U26	M-5	U67	B-2
C26	G-6	C66	Q-5	C106	G-2			R24	B-5	RP4	J-4	U27	N-5	U68	C-2
C27	G-6	C67	M-5	C107	G-2	L1	K-6	R25	B-5	RP5	G-2	U28	P-5	U69	C-2
C28	G-6	C68	Q-5	C108	J-2	L3	A-4	R26	B-5	RP6	K-2	U29	B-5	U70	D-2
C29	G-6	C69	C-4	C109	J-2	L4	B-3	R27	B-5			U30	B-5	U71	E-2
C30	G-6	C70	M-4	C110	K-3	L5	B-3	R28	C-5	TPBA	G-4	U31	C-5	U72	E-2
C31	G-6	C71	Q-4	C111	M-2	L6	C-3	R29	C-5	TPDT	F-2	U32	D-5	U73	F-2
C32	G-5	C72	C-4	C112	Q-2	L7	D-3	R30	G-6	TPGV	C-7	U33	F-5	U74	G-2
C33	H-6	C73	D-4	C113	M-2	L8	D-3	R31	G-6	TPTS	A-7	U34	M-5	U75	J-2
C34	J-6	C74	D-4	C114	Q-2	L9	E-3	R32	G-6	TPLFI	B-5	U35	N-5	U76	K-2
C35	J-6	C75	D-4	C115	A-6	L10	E-3	R33	A-5	TPLFO	A-4	U36	P-5	U77	M-2
C36	J-6	C76	F-4			L11	F-3	R34	B-5	TPLFG	B-4	U38	C-4	U78	N-2
C37	J-6	C77	G-4	CR1	E-6	L12	L-2	R36	E-4	TPTL	C-5	U39	D-4	U79	P-2
C38	J-6	C78	G-3	CR2	E-6			R37	E-4	TPVR	A-6	U40	M-4	U80	G-6
C39	J-6	C79	J-4	CR3	E-6	P1	H-1	R38	F-4			U41	N-4		
C40	K-6	C80	J-4	CR4	E-6			R39	F-4	U1	B-7	U42	P-4		
C41	K-6	C81	J-3	CR5	F-6	Q4	G-6	R40	F-4	U2	C-7	U43	C-4		

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54112-66503 ADC Assembly Component Locator



Component Locator for ADC Assembly

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P/O ACQUISITION ASSEMBLY (1 OF 4)

ADC

ADC U20

DECELERATOR P/O U45

(FOR THE OUTPUTS OF U45 SEE SHEET 2)

J5 FFCLK−, FFCLKGND, FFCLK+

NC

R11 21.5, Q4, +5A, R13 147, R12 147

C40 4.7, L1 62NH, R60 200

ANTI-ALIAS FILTER

RP1 50, (1), −2V

ANALOG DITHER

J6 VIN, C41 13, C39 13, R18 61.9, R17 61.9

R14 7500, R15 14.7K

U5

TTL/ECL U25, G1, +5A

4 (8) LADITHEN

P/O P1 106 LADCRST 5−8, U62D 10

1−5, 1−6, 1−8, 1−4, 1−3, 1−9

C58 0.01UF

4 (12) ADCVREF

C59 100, C60 0.1UF, C61 10UF

U80, −5A, −S

C28 100, C29 0.1UF, C30 10UF

STICK CONTROL

+0.57V, R31 10K, R32 5000

U19B, U19A, C57 0.01UF, 0.0V

R30 10K, −0.57V

C32 0.1UF, C31 0.1UF, C27 0.1UF

P/O P1 (40) LPWRONRST

2,3 (1) 8 BD0−7

3 (5) 2

ICD1, CLKPK, VINPK, IBUF ICD3, OVF, UNF, MCLK

FF−, FFG, FF+, VIN, ADCRST, VREF, VCT, −S, +S

D0, D1, D2, D3, D4, D5

ENREG, ICLK, ENIO, RESET, PWRONRST

BD0 D1, BD1 D2, BD2 A3, BD3 B3, BD4 C3, BD5 B1, BD6 C1, BD7 C2

DECICLK B4, DECIOEN B6

A4 D, A6, C5

DECELERATOR

P/O P1

+18V: L6, CR15, U68, C97 1UF, CR14, C96 10UF, +15V, C2,15,19,22,47,51 0.01UF

+12V: L5, CR13, U67, C95 1UF, CR12, C94 10UF

+10V: L4, CR11, U66, C92 1UF, CR10, C93 10UF, C91 0.01UF, U58

4 (13) +10VREF

+8V: L10, CR23, U72, C105 1UF, CR22, C38,104 10UF, C36 100, C37 0.1UF

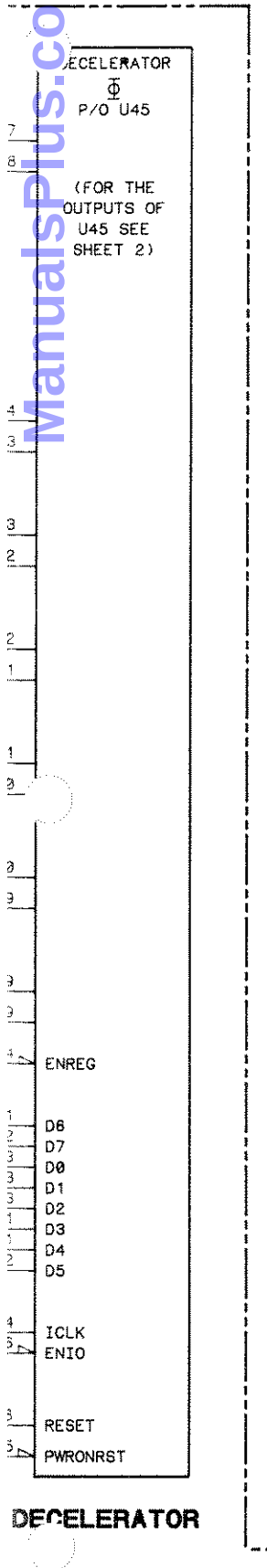
−8V: L8, CR18, U70, C101 2.2UF, CR19, C6,35,100 10UF, C8,34 100, C7,33 0.1UF

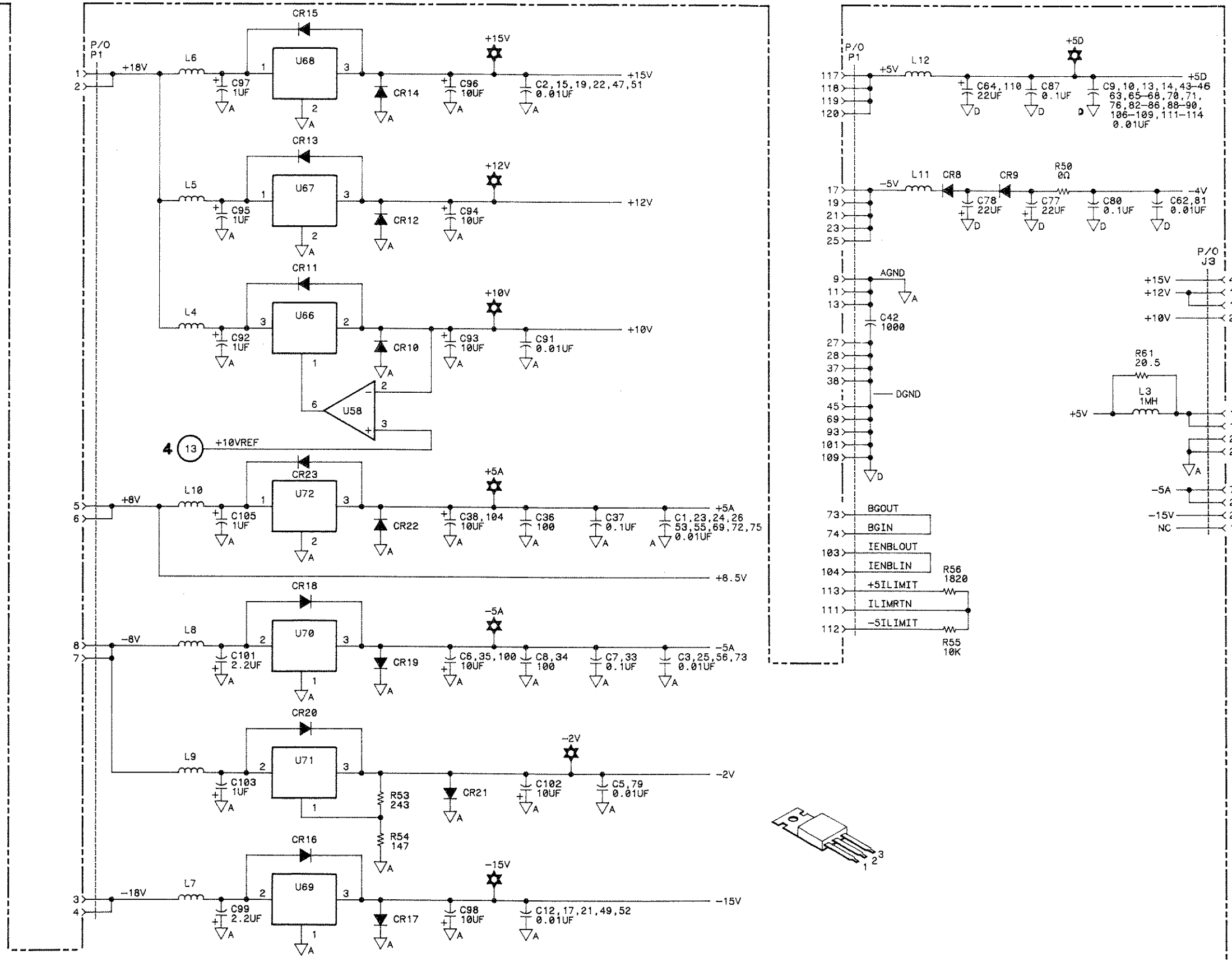
−2V: L9, CR20, U71, C103 1UF, R53 243, CR21, C102 10UF, C5,79 0.01UF, R54 147

−18V: L7, CR16, U69, C99 2.2UF, CR17, C98 10UF, −15V, C12,17,21,49,52 0.01UF

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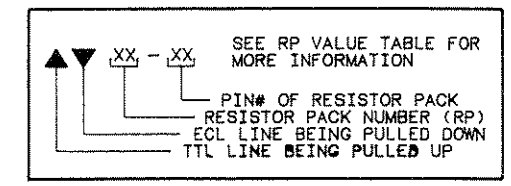


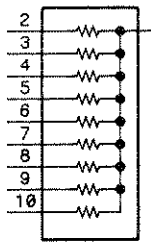


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
-5A AGND	8 1,16	U5
+5A -5A	8 4	U19
+5A -5A AGND	39 4 1,12,21,32	U20
+5A -5A AGND	9 8 16	U25
+5D -4V -2V DGND	C4,7;D16;E3, J1,15;R11 A2;B2,17;G3,15-17; T12,17; U17 B8;C14 A1,5,7,10,13,15-17 B5,14,15; C6,8,11,12,16,17 D4;E2;G1; K17;L1,3,15,16,17 M2;P2,15; R6,7,9,15 T16;U1,2,4,12,16	U45
+15V AGND NC	7 4 1,5,8	U58
+5D DGND	14 7	U62

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
1,3,4	50X9	1,10	-2V
5	1KX9	1,10	+5D

PARTS ON THIS SCHEMATIC

C1-3,5-10,12-15,17,19,21-47,49,51-53, 55-73,75-114
CR8-23
J5,6
P/O J3
L1,3-12
P/O P1
Q4
R11-15,17,18,30-32,50,53-56,60,61
RP1,3,4
P/O RP5
U5,19,20,25,58,66-72,80
P/O U45,62

54112/SC03_1/4/9-87

1

Analog Input, ADC, Decelerator, Power Supplies and Decoupling
54112-66503

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TABLE 1. MEMORY BANK 1, DATA IN/OUT CONNECTIONS

RAM	RAM DATA PINS 15	14	13	12	RAM	RAM DATA PINS 12	13	14	15
U7	WD0	WD1	WD2	WD3	U9	WD4	WD5	WD6	WD7
U12	WD8	WD9	WD10	WD11	U22	WD12	WD13	WD14	WD15
U27	WD16	WD17	WD18	WD19	U35	WD20	WD21	WD22	WD23
U41	WD24	WD25	WD26	WD27	U47	WD28	WD29	WD30	WD31
U51	WD32	WD33	WD34	WD35	U56	WD36	WD37	WD38	WD39
U64	WD40	WD41	WD42	WD43	U78	WD44	WD45	WD46	WD47

TABLE 2. MEMORY BANK 2, DATA IN/OUT CONNECTIONS

RAM	RAM DATA PINS 12	13	14	15	RAM	RAM DATA PINS 15	14	13	12
U8	WD0	WD1	WD2	WD3	U10	WD4	WD5	WD6	WD7
U13	WD8	WD9	WD10	WD11	U23	WD12	WD13	WD14	WD15
U28	WD16	WD17	WD18	WD19	U36	WD20	WD21	WD22	WD23
U42	WD24	WD25	WD26	WD27	U48	WD28	WD29	WD30	WD31
U52	WD32	WD33	WD34	WD35	U57	WD36	WD37	WD38	WD39
U65	WD40	WD41	WD42	WD43	U79	WD44	WD45	WD46	WD47

TABLE 3. CHIP ENABLE INPUTS (PIN 9)

MEMORY BANK 1		MEMORY BANK 2	
LR1EN1	LR1EN2	LR2EN1	LR2EN2
U41	U7	U8	U42
U47	U9	U10	U48
U51	U12	U13	U52
U56	U22	U23	U57
U64	U27	U28	U65
U78	U35	U36	U79

MEMORY BANK 1 (*FOR DATA I/O SEE TABLE 1)

MEMORY BANK 2 (ΔFOR DATA I/O SEE TABLE 2)

MULTIPLEXER

DECELERATOR

DECELERATOR P/O U45 (FOR THE INPUTS TO U45 SEE SHEET 1)

CHIP ENABLES SEE TABLE 3

LR1EN1 LR1EN2 LR2EN1 LR2EN2 MEMEN LRAMWE LENU54 LDMUXWE LDDITHEN +5D

R51 100 R19 100 R20 100 R52 100

U34 U21 U62C U50 U26 U6

RAM 4096 X 4

A1D ▽3 A2Z3

G1[WRITE] G2[READ]

NC

3 6 2
4 7 2

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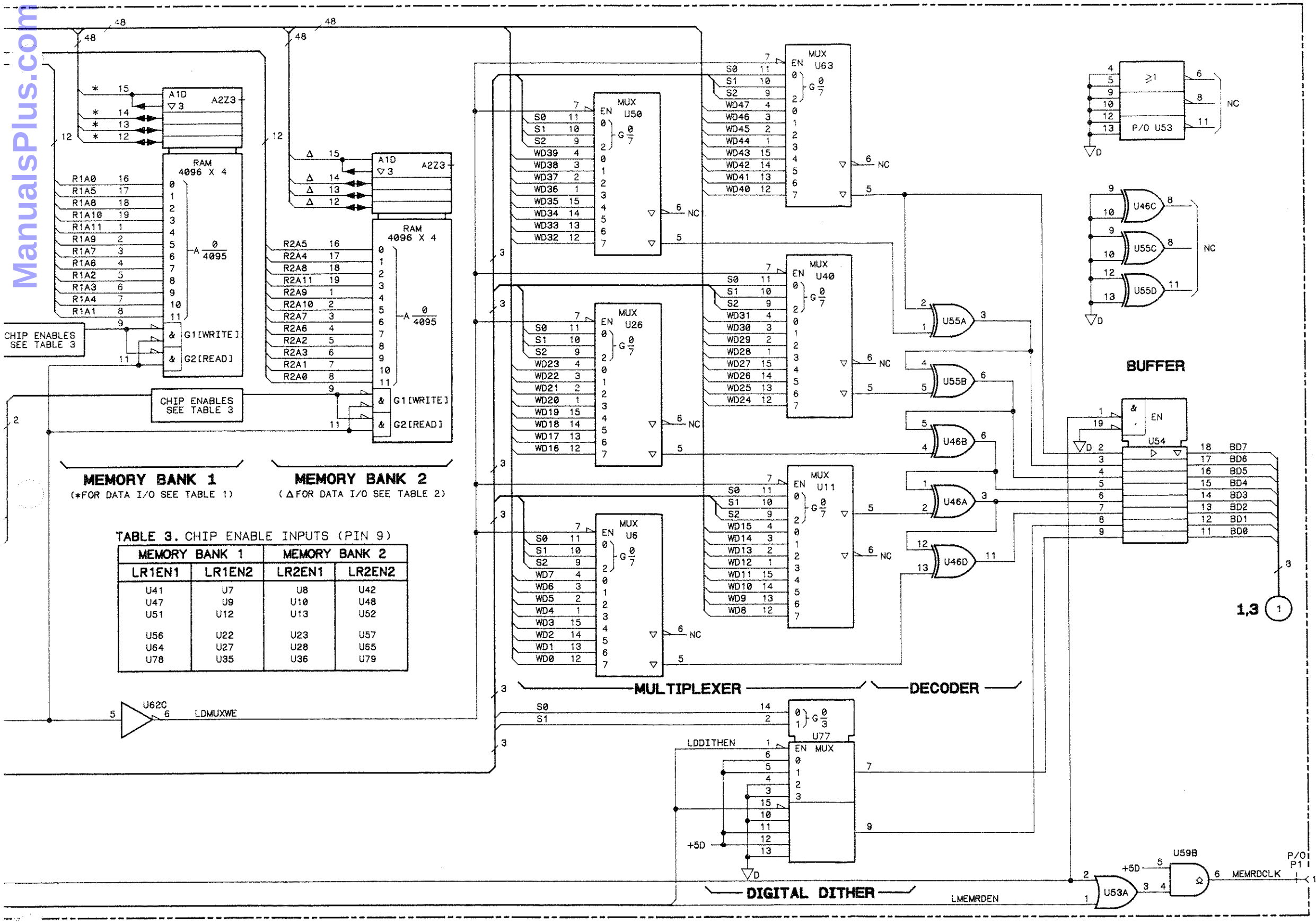


TABLE 3. CHIP ENABLE INPUTS (PIN 9)

MEMORY BANK 1		MEMORY BANK 2	
LR1EN1	LR1EN2	LR2EN1	LR2EN2
U41	U7	U8	U42
U47	U9	U10	U48
U51	U12	U13	U52
U56	U22	U23	U57
U64	U27	U28	U65
U78	U35	U36	U79

IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5D DGND	16 8	U6,11,26,40, 50,63,77
+5D DGND	20 10	U7–10,12,13, 22,23,27,28, 35,36,41,42, 47,48,51,52, 54,56,57,64, 65,78,79
+5D DGND	14 7	U21,34,46,53, 55,59
+5D –4V –2V DGND	C4,7;D16;E3 J1,15;R11 A2;B2,17; G3,15–17; T12,17; U17 B8;C14 A1,5,7,10,13, 15–17; B5,14,15; C6,8,11,12, 16,17; D4;E2;G1; K17;L1,3,15, 16,17; M2;P2,15; R6,7,9,15 T16;U1,2,4, 12,16	U45

PARTS ON THIS SCHEMATIC

P/O P1
R19,20,51,52
U6–13,21–23,26–28,34–36,40–42,46–48,
50–57,63–65,77–79
P/O U45,59,62

54112/SC03_2/4/9–87

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P/O ACQUISITION ASSEMBLY (3 OF 4)

SLOT ID

P/O P1

A19 63, A21 65, A20 64, A22 66, SELECT 75, IDO 41, ID2 ▲5–2 43, ID1 ▲5–3 42, ID3 ▲5–4 44, ▲5–5

COMP U74 (P, Q, =, <, >)

P > Q, P < Q, P = Q → NC → U62A

P/O U62

BA, DT

U59A: +5D, LDTACK

DECODER

U60 (EN, A)

LLDS 34, R/LW 36, A12 58, A13 59, A14 60, A15 61, A16 62, A17 63

BA12, BA13, ▲5–9

ADDRESS BUFFER

X/Y U49

DECICLK, DECIOEN, LENU54, NC, CLKU73, LENU44, CLKU31, CLKU38, LENU4, LENU15, LENU2, NC, LOVLDRST

LAS 30

LPWRONRST (40)

U61 (EN): BD7, BD6, BD5, BD4, BD3, BD2, BD1, BD0

+5D

U73: R, C1, 1D, MEMEN, NC

+8.5V

ATTENUATOR SOLENOID DRIVE

U33: R, C1, 1D, IBD7, IBD6, IBD5, IBD4, NC

D0–D17

U75 (G3, 3EN1, 3EN2): D0–D7 → BD0–BD7

RP2 200: BD0–BD7 → IBD0–IBD7

BOARD TYPE U61

U76 (G3, 3EN1, 3EN2): D8–D15 → BD8–BD15

R38–R41 200Ω: BD8–BD11 → IBD8–IBD11

RP6 1000

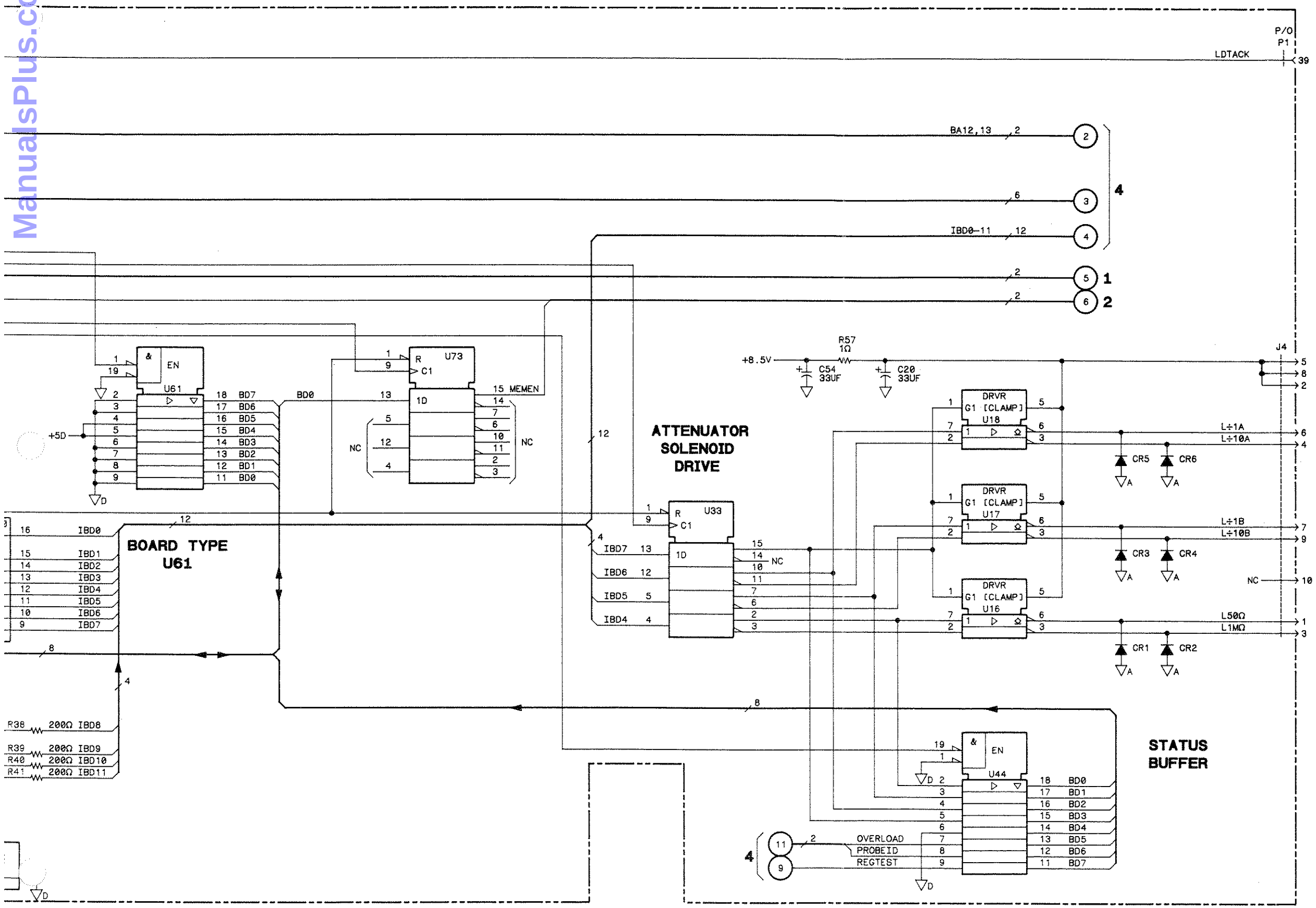
DATA BUFFERS U75,76

1,2 (1) BD0–7 8

4 (11) (9)

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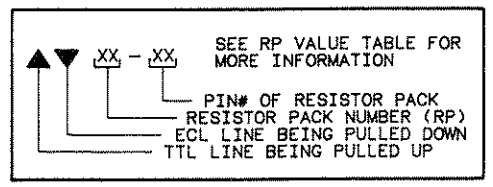
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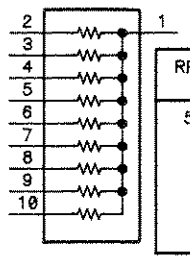


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5D AGND	8 4	U16–18
+5D DGND	16 8	U33,73,74
+5D DGND	20 10	U44,60,61,75,76
+5D DGND	24 12	U49
+5D DGND	14 7	U59,62

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
5	1KX9	1,10	+5D

PARTS ON THIS SCHEMATIC

C20,54
CR1–6
J4
P/O P1
R38–41,57
RP2,6
P/O RP5
TP–BA,DT
U16–18,33,44,49,60,61,73–76
P/O U59,62

54112/SC03_3/4/9–87

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P/O ACQUISITION ASSEMBLY (4 OF 4)

ANALOG CONTROL REGISTERS U31,38

REGISTER TEST

QUAD DAC

PROBE II

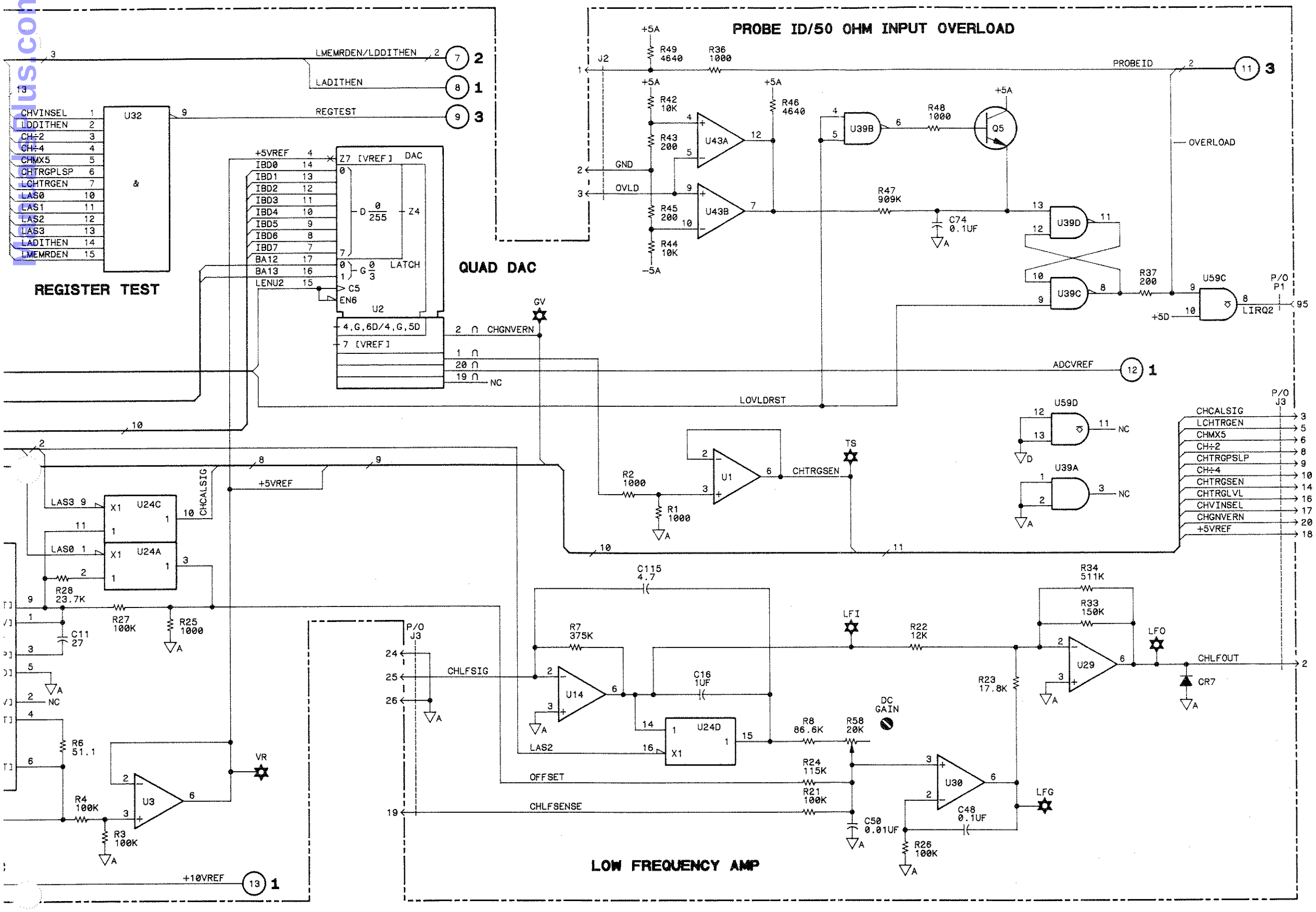
TRIGGER LEVEL DAC

CAL/OFFSET DAC

LOW FREQUENCY AMP

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5A −5A NC	7 4 1,5,8	U1
+15V −5A AGND	18 3 5,6	U2
+15V AGND NC	7 4 1,5,8	U3
+15V −15V AGND	8 10 5,16	U4,15
+15V −15V NC	7 4 1,5,8	U14,29,30
+15V −15V AGND NC	13 4 5 12	U24
+5A AGND	20 10	U31,38
+5A AGND	14 7	U39
+5A −5A AGND NC	11 6 3,8 1,2,13,14	U43
+5D DGND	14 7	U59

PARTS ON THIS SCHEMATIC

C11,16,18,48,50,74,115
CR7
J2
P/O J3
P/O P1
Q5
R1−10,21−29,33,34,36,37,42−49,58,
TP−GV,LFG,LFI,LFO,TL,TS,VR
U1−4,14,15,24,29−32,38,39,43
P/O U59

54112/SC03_4/4/9−87

4

D/A Converters, Probe ID/50 OHM Overload, Low Frequency Amplifier
54112−66503

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Component-level Information Packet

for HP 54111D, 54112D, 54120A/B

Input/Output Assembly

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While this document may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate. The configuration of some assemblies may differ from that indicated in this document.

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
BT1	1420-0273	2	1	BATTERY 3V 1.2A-HR LITHIUM POLYCARBON	28480	1420-0273
C1	0160-6500	7	69	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C2	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C3	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C4	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C5	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C6	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C7	0160-4574	1	5	CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C8	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C9	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C10	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C11	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C12	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C13	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C14	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C15	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C16	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C17	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C18	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C19	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C20	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C21	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C22	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C23	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C24	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C25	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C26	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C27	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C28	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C29	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C30	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C31	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C32	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C33	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C34	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C35	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C36	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C37	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C38	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C39	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C40	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C41-42				NOT ASSIGNED		
C43	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C44	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C45	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C46	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C47				NOT ASSIGNED		
C48	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C49				NOT ASSIGNED		
C50	0180-0229	7	5	CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C51	0180-0229	7		CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C52	0180-0229	7		CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C53	0180-0229	7		CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C54	0180-0229	7		CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C55	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C56				NOT ASSIGNED		
C57	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C58	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C59	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C60	0180-0228	6	1	CAPACITOR-FXD 22UF+-10% 15VDC TA	56289	150D226X9015B2
C61	0160-5469	5	1	CAPACITOR-FXD 1UF +-10% 50VDC MET-POLYE	28480	0160-5469
C62	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C63	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C64	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C65	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C66	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C67	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C68	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C69	0160-4810	8	1	CAPACITOR-FXD 330PF +-5% 100VDC CER	28480	0160-4810
C70	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C71	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C72	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C73	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C74	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C75	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C76	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C77	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C78	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C79	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C80	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C81	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C82	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C83	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C84	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C85	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C86	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C87	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
CR1	1901-0050	3	24	DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR2	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR3	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR4	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR5	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR6	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR7	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR8	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR9	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR10	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR11	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR12	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR13	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR14	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR15	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
CR16	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR17	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR18	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR19	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR20	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR21	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR22	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR23	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR24	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
DL1	1813-0262	2	1	DELAY LINE ACTIVE DEVICE W/DUAL IN-LINE	56289	FSDM1-180
DL2	1813-0263	3	1	DELAY LINE ACTIVE DEVICE W/DUAL IN-LINE	56289	DSP-223
DS1	1990-0485	5	1	LED-LAMP LUM-INT=2MCD IF=30MA-MAX BVR=5V	28480	HLMP-1503
F1	2110-0384	0	1	FUSE 0.062A 125V AX	28480	2110-0384
H1	0515-0372	2	1	SCREW MACH M3 8MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
J1	1251-8474	2	1	CONN-POST TYPE 0.1-PIN-SPCG 34-CONT	28480	1251-8474
J2	1252-0003	9	1	CONN-POST TYPE 0.1-PIN-SPCG 24-CONT	28480	1252-0003
L1	5081-7682	5	1	CHOKE RF	28480	5081-7682
MP1	54111-00604	1	1	SHIELD I/O ASSEMBLY	28480	54111-00604
MP2	54111-45004	1	1	EXTRACTOR RIGHT	28480	54111-45004
MP3	54111-45005	2	1	EXTRACTOR LEFT	28480	54111-45005
P1	1252-0198	3	1	CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1252-0198
Q1	1854-0215	1	2	TRANSISTOR NPN SI TO-92 PD=350MW	2M627	2N3904
Q2	1853-0234	2	1	TRANSISTOR PNP SI PD=65W FT=3MHZ	01295	TIP42A
Q3	1854-0215	1		TRANSISTOR NPN SI TO-92 PD=350MW	2M627	2N3904
R1	0698-6631	4	1	RESISTOR 2.5K 0.1% 0.125W TF TC=0+-25	28480	0698-6631
R2	0699-1000	3	1	RESISTOR 4.25K 0.1% 0.125W TF TC=0+-25	28480	0699-1000
R3	0698-6688	1	2	RESISTOR 99.8K 0.1% 0.125W TF TC=0+-25	28480	0698-6688
R4	0698-6688	1		RESISTOR 99.8K 0.1% 0.125W TF TC=0+-25	28480	0698-6688
R5	0757-0442	9	3	RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R6	0698-3443	0	1	RESISTOR 287 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-287R-F
R7	0757-0280	3	1	RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R8	0699-0241	2	1	RESISTOR 2.4K 0.1% 0.125W TF TC=0+-25	28480	0699-0241
R9	0699-1011	6	1	RESISTOR 3.32K 0.1% 0.125W TF TC=0+-25	28480	0699-1011
R10	0698-4421	6	2	RESISTOR 249 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-249R-F
R11	0757-0274	5	1	RESISTOR 1.21K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1211-F
R12	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R13	0757-0283	6	3	RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R14	0757-0449	6	1	RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R15	0757-0283	6		RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R16	0757-0283	6		RESISTOR 2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2001-F
R17				NOT ASSIGNED		
R18	0698-0082	7	1	RESISTOR 464 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-4640-F
R19	0698-3540	8	1	RESISTOR 15.4K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1542-F
R20	0757-0438	3	1	RESISTOR 5.11K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5111-F
R21				NOT ASSIGNED		
R22	0757-0273	4	16	RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R23	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R24	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R25	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R26	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R27	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R28	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R29	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R30	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R31	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R32	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R33	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R34	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R35	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R36	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R37	0757-0273	4		RESISTOR 3.01K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3011-F
R38	0757-0407	6	5	RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R39	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R40	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R41	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R42	0757-0407	6		RESISTOR 200 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-201-F
R43	0698-4421	6		RESISTOR 249 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-249R-F
R44	0757-0454	3	8	RESISTOR 33.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3322-F
R45	0757-0454	3		RESISTOR 33.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3322-F
R46	0757-0454	3		RESISTOR 33.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3322-F
R47	0698-3460	1	1	RESISTOR 422K 1% 0.125W TF TC=0+-100	28480	0698-3460
R48	0757-0454	3		RESISTOR 33.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3322-F
R49	0757-0472	5	1	RESISTOR 200K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2003-F
R50	0757-0454	3		RESISTOR 33.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3322-F
R51	0698-4519	3	1	RESISTOR 140K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1403-F
R52	0757-0454	3		RESISTOR 33.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3322-F
R53	0698-3158	4	1	RESISTOR 23.7K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2372-F
R54	0757-0454	3		RESISTOR 33.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3322-F
R55	0698-4501	3	1	RESISTOR 59K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5902-F
R56	0757-0454	3		RESISTOR 33.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3322-F
R57	0698-3243	8	1	RESISTOR 178K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1783-F
R58	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R59	0757-0410	1	2	RESISTOR 301 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-301R-F
R60	0757-0346	2	1	RESISTOR 10 1% 0.125W TF TC=0+-100	28480	0757-0346
R61	0757-0416	7	2	RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F
R62	0757-0416	7		RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F
R63	0683-2225	3	1	RESISTOR 2.2K 5% 0.25W CF TC=0-400	19701	(CR-25) 1-4-5P-2K2
R64	0757-0180	2	1	RESISTOR 31.6 1% 0.125W TF TC=0+-100	28480	0757-0180
R65	0757-0410	1		RESISTOR 301 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-301R-F
RP1	1810-0231	9	1	NETWORK-RES 8-SIP 2.2K OHM X 7	28480	1810-0231
RP2	1810-0275	1	6	NETWORK-RES 10-SIP 1.0K OHM X 9	28480	1810-0275
RP3	1810-0275	1		NETWORK-RES 10-SIP 1.0K OHM X 9	28480	1810-0275
RP4	1810-0275	1		NETWORK-RES 10-SIP 1.0K OHM X 9	28480	1810-0275
RP5	1810-0275	1		NETWORK-RES 10-SIP 1.0K OHM X 9	28480	1810-0275
RP6	1810-0275	1		NETWORK-RES 10-SIP 1.0K OHM X 9	28480	1810-0275
RP7	1810-0275	1		NETWORK-RES 10-SIP 1.0K OHM X 9	28480	1810-0275
RP8	1810-0533	4	3	NETWORK-RES 16-DIP 33.0 OHM X 8	28480	1810-0533
RP9	1810-0533	4		NETWORK-RES 16-DIP 33.0 OHM X 8	28480	1810-0533
RP10	1810-0533	4		NETWORK-RES 16-DIP 33.0 OHM X 8	28480	1810-0533

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
S1	3101-2671	4	1	SWITCH-PB SPST-NO MOM 0.02A	28480	3101-2671
U1	1820-2548	6	1	IC-GENERAL PURPOSE INTERFACE BUS ADAPTER	01295	TMS9914ANL
U2	1826-0138	8	4	IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U3	1820-2686	3	1	IC GATE TTL F AND QUAD 2-INP	04713	MC74F08P
U4	1820-3431	8	1	IC-INTERFACE XCVR BCD UP/DOWN INSTRUMENT	27014	DS75160AN
U5	1820-3518	2	1	IC-INTERFACE XCVR BCD UP/DOWN INSTRUMENT	27014	DS75162AN
U6	1820-2024	3	4	IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U7	1826-0138	8		IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U8	1820-1307	3	1	IC SCHMITT-TRIG TTL S NAND QUAD 2-INP	01295	SN74S132N
U9				NOT ASSIGNED		
U10	1820-2695	4	3	IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	04713	MC74F158N
U11	1820-2695	4		IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	04713	MC74F158N
U12	1820-1216	3	3	IC DCDR TTL LS 3-TO-8-LINE 3-INP	01295	SN74LS138N
U13	1820-1112	8	2	IC FF TTL LS D-TYPE POS-EDGE-TRIG	01295	SN74LS74AN
U14	1820-2096	9	3	IC CNTR TTL LS BIN DUAL 4-BIT	01295	SN74LS393N
U15	1820-1423	4	1	IC MV TTL LS MONOSTBL RETRIG DUAL	01295	SN74LS123N
U16	1820-1112	8		IC FF TTL LS D-TYPE POS-EDGE-TRIG	01295	SN74LS74AN
U17				NOT ASSIGNED		
U18	1820-2688	5	1	IC GATE TTL F AND TPL 3-INP	04713	MC74F11N
U19	1820-2096	9		IC CNTR TTL LS BIN DUAL 4-BIT	01295	SN74LS393N
U20	1826-0138	8		IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U21	1820-2150	6	1	IC-PROGRAMMABLE KEYBOARD/DISPLAY	34649	D8279-5
U22	1820-1199	1	3	IC INV TTL LS HEX 1-INP	01295	SN74LS04N
U23	1820-1216	3		IC DCDR TTL LS 3-TO-8-LINE 3-INP	01295	SN74LS138N
U24	1820-1451	8	1	IC GATE TTL S NAND QUAD 2-INP	01295	SN74S38N
U25	1820-2691	0	1	IC FF TTL F D-TYPE POS-EDGE-TRIG	04713	MC74F74N
U26	1826-0138	8		IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U27	1820-1197	9	1	IC GATE TTL LS NAND QUAD 2-INP	01295	SN74LS00N
U28	1820-1216	3		IC DCDR TTL LS 3-TO-8-LINE 3-INP	01295	SN74LS138N
U29	1820-2690	9	1	IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U30	1820-2763	7	2	IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	04713	MC74F258N
U31	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U32	1820-2075	4	3	IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U33	1820-1453	0	1	IC CNTR TTL S BIN SYNCHRO POS-EDGE-TRIG	01295	SN74S163N
U34	1820-1208	3	1	IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U35	1820-1195	7	2	IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS175N
U36	1820-2096	9		IC CNTR TTL LS BIN DUAL 4-BIT	01295	SN74LS393N
U37	1820-1195	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS175N
U38	1820-2763	7		IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	04713	MC74F258N
U39	1820-1199	1		IC INV TTL LS HEX 1-INP	01295	SN74LS04N
U40	1820-1568	8	1	IC BFR TTL LS BUS QUAD	01295	SN74LS125AN
U41	1820-1281	2	1	IC DCDR TTL LS 2-TO-4-LINE DUAL	01295	SN74LS139AN
U42	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U43	1820-0618	7	1	IC BFR TTL NON-INV HEX	01295	SN7417N
U44	1820-2699	8	1	IC DRVR TTL F LINE DRVR OCTL	07263	74F241PC
U45	1820-1419	8	2	IC COMPTR TTL LS MAGTD 4-BIT	01295	SN74LS85N
U46	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U47	1820-2075	4		IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U48	1820-1199	1		IC INV TTL LS HEX 1-INP	01295	SN74LS04N
U49	1820-2075	4		IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U50	1820-2695	4		IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	04713	MC74F158N

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U51	1820-1419	8		IC COMPTR TTL LS MAGTD 4-BIT	01295	SN74LS85N
U52	1818-3538	1	16	DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U53	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U54	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U55	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U56	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U57	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U58	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U59	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U60	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U61	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U62	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U63	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U64	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U65	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U66	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
U67	1818-3538	1		DRAM 64KX4 150 NS PLSTC 5V	S0545	UPD41464C-15
VR1	1826-0643	0	2	IC V RGLTR-V-REF-ADJ 3/30V TO-92 PKG	01295	TL431CLP
VR2	1826-0643	0		IC V RGLTR-V-REF-ADJ 3/30V TO-92 PKG	01295	TL431CLP
XU1	1200-1310	4	2	SOCKET-IC 40-CONT DIP DIP-SLDR	28480	1200-1310
XU2-20				NOT ASSIGNED		
XU21	1200-1310	4		SOCKET-IC 40-CONT DIP DIP-SLDR	28480	1200-1310
Y1	1813-0130	3	1	CLOCK-OSCILLATOR-XTAL 16-MHZ 0.05% TTL	04713	RASCO PLUS-16MHZ

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P/O I/O ASSEMBLY (1 OF 5)

STROBE BUFFER

P/O P1
+5V 19 EN U44B
34 LLDS 15 → 5 BLLDS
32 LUDS 13 → 7 BLUDS
36 R/LW 17 → 3 BR/LW
30 LAS 11 → 9 BLAS

BLLDS, BLUDS, BR/LW, BLAS → U27B 4,5,6 → DS → (4) 4,2
BR/LW → (3) 4,5
(2) 2
(1) 4

2 (9) BLDTACK → U27A 1,2,3

WATCHDOG TIMER

U27A 3 → L8MHZ
R19 15.4K: +5V, +5V 3
C40 0.01UF
U15A: & 1,2; R 3; RX/CX 15; CX 14; 13 → NC; 4 → NC
U40D: EN 1▷ 12; ▽D; 11 → LBUSERR ▲RP2-2

U15B: & 9,10; R 11; CX 6; RX/CX 7; 9 → NC; 12 → NC

U16B: S 10; C1 11; 1D 12; R 13; 9 → NC; 8 → NC

U22F: 13 → NC; 12 → NC

TP6

+5V 14 → Y1 16 MHZ OSC Φ: 8 → NC; 7 → D

CTRDIV16 U33: +5V 1; 5CT=0; M1 9; M2 10; G3 7; G4 2; C5/2,3,4+; 3CT=15 → 15 NC
1,5D [1] 3 → 14
[2] 4 → 13
[4] 5 → 12
[8] 6 → 11 NC
▽D

EN U44A: ▽D 1; 2 → 18 16MHZ; 8 → 12 8MHZ; 6 → 14 4MHZ; 4 → 16 2MHZ
(5) 4

TP1 TP3
2MHZA
8MHZA
2 → (6) 2

SYSTEM CLOCK GENERATOR

2,3 (12) LRESET → 19 LRESET

LWSC, LD0, +5V 4 → U16A: S 4; C1 3; 1D 2; R 1; 5; 6 NC

2 (7) 8 → 1
LD7 17
LD6 16
LD5 15
LD4 14
LD3 13
LD2 12
LD1 11
LD0 10

2 (8) 4 → LRHPIB → U22A 1,2 → 5 DBIN

LEN
LWHPIB

4MHZA → 18 Lφ

NC 1
+5V 2
ACCGR 3
LCE 4
LWE

2 (10) 3 → LA1 6, LA2 7, LA3 8 → RL0, RL1, RL2

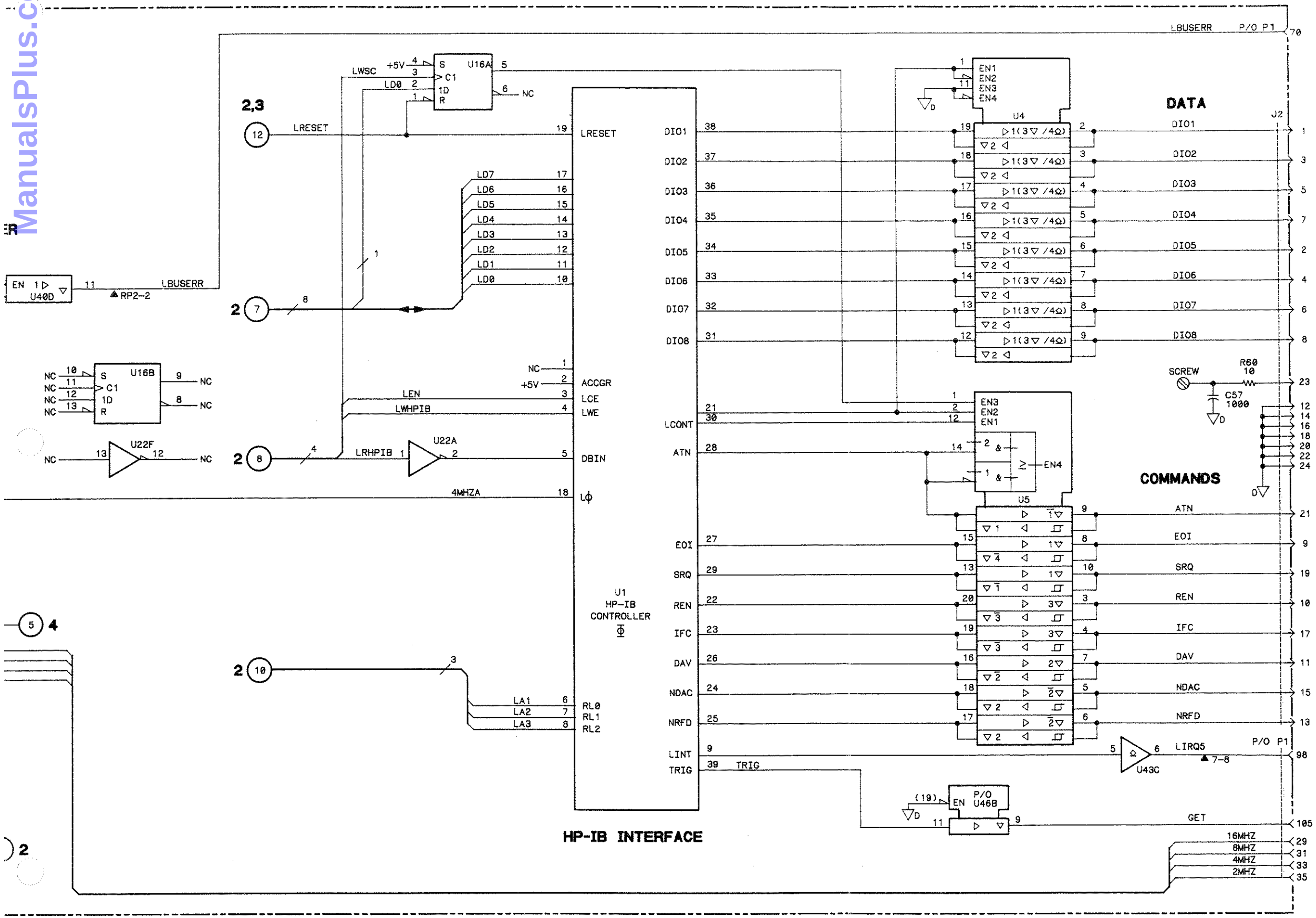
U1 HP-IB CONTROLLER Φ

DIO1	38
DIO2	37
DIO3	36
DIO4	35
DIO5	34
DIO6	33
DIO7	32
DIO8	31
LCONT	21, 30
ATN	28
EOI	27
SRQ	29
REN	22
IFC	23
DAV	26
NDAC	24
NRFD	25
LINT	9
TRIG	39 TRIG

HP-IB INTERFACE

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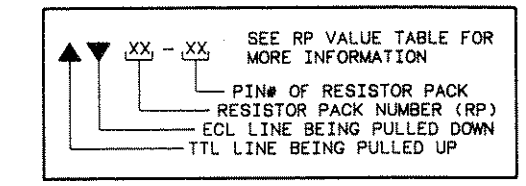
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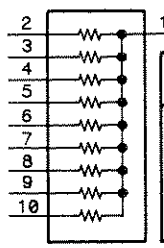


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	14 7	U16,22,27,40,43
+5V DGND	16 8	U15,33
+5V DGND	20 10	U4,44,46
+5V DGND	40 20	U1
+5V DGND	22 11	U5

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
RP2,7	1000	1	+5V

PARTS ON THIS SCHEMATIC

C40,57
J2
P/O P1
R19,60
P/O RP2,7
TP1,3,6
U1,4,5,15,16,33,44
P/O U22,27,40,43,46
Y1

54111/SC06_01/5/09-87

1

Watchdog Timer, System Clock Generator, HP-IB Interface

54111-66506

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P/O I/O ASSEMBLY (2 OF 5)

BOARD TYPE

KEYBOARD CONTROLLER

KEYBC

RPG READ CIR

SLOT ID

DECODER

SHIFT REGISTER

DECODER

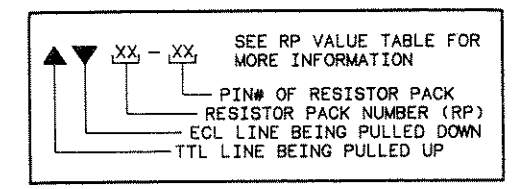
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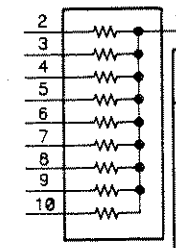
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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	14 7	U13,14,22,27,34, 39,40,43
+5V DGND	16 8	U12,23,28,35,45
+5V DGND	20 10	U6,42,46,47
+5V DGND	40 20	U21

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
RP1	2200	1	+5V
RP2,7	1000	1	+5V

PARTS ON THIS SCHEMATIC

CR1–21
P/O J1
P/O P1
R22–42
P/O RP1,2,7
TP2,4,7
U6,12–14,21,23,28,34,35,39,42,45,47
P/O U22,27,40,43,46

54111/SC06_02/5/09–87

KEYBOARD DMUX

KEYBOARD CONTROLLER

RPG READ CIRCUIT

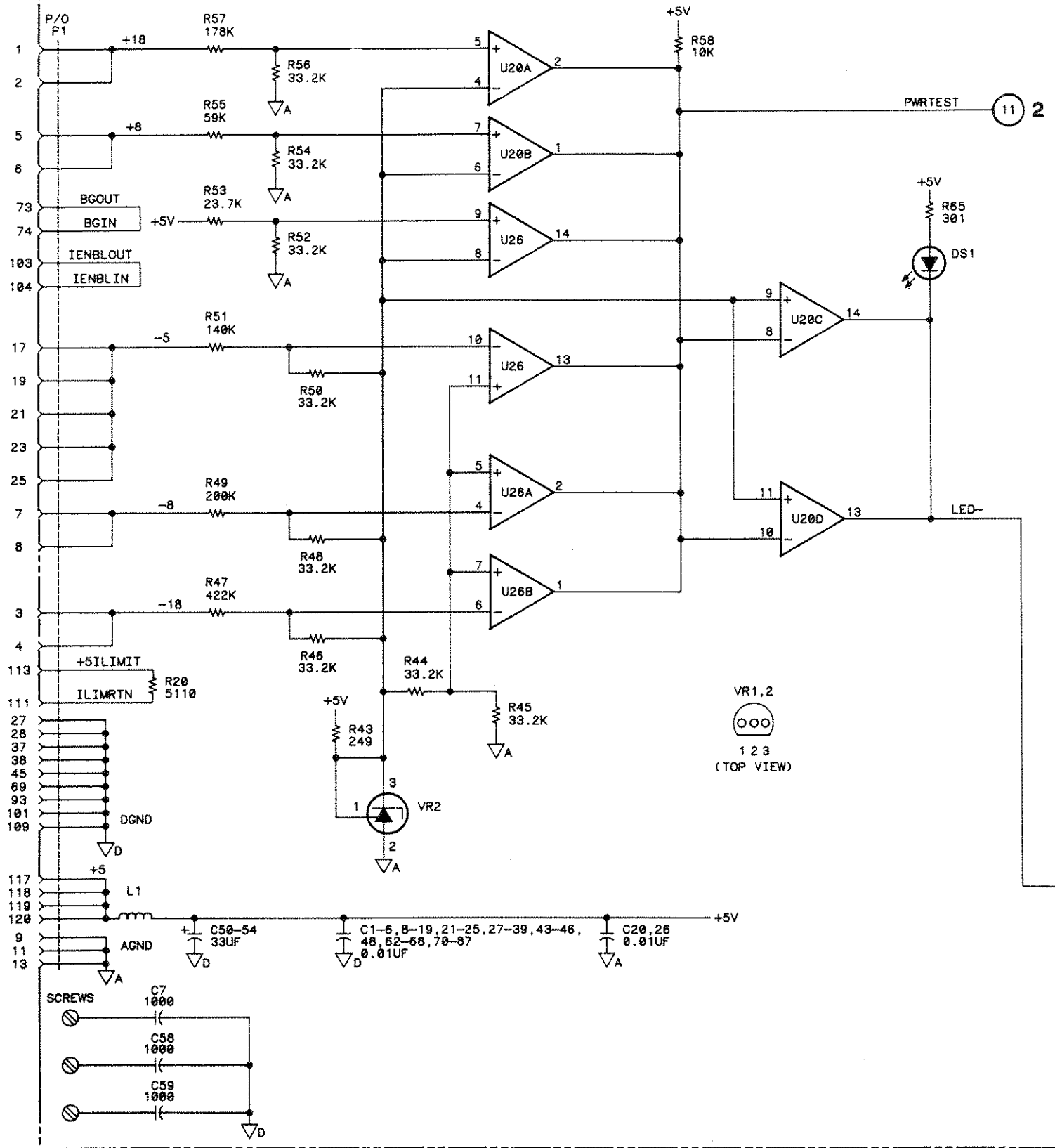
DECODER

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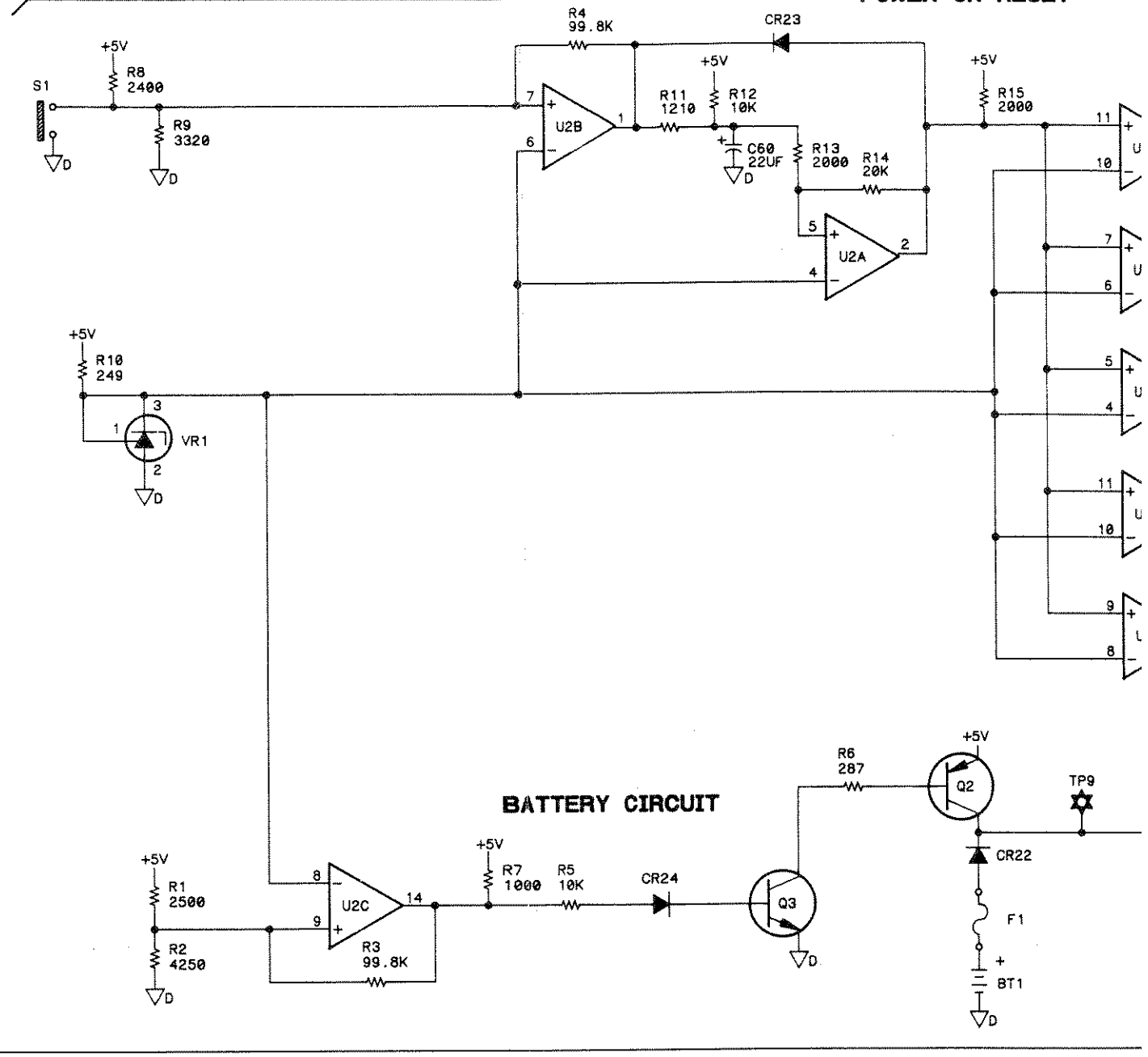
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P/O I/O ASSEMBLY (3 OF 5)

POWER TEST CIRCUIT

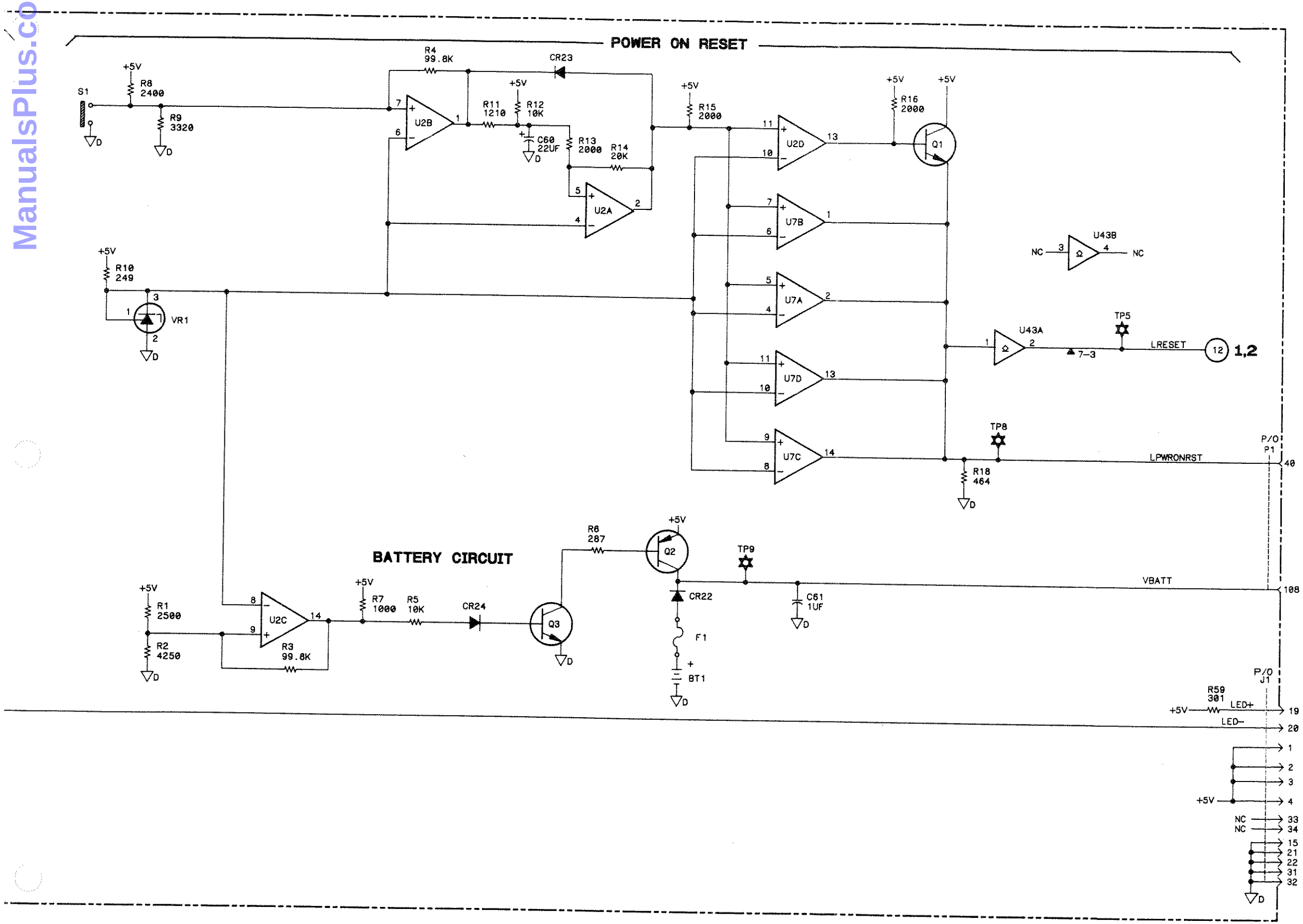


POWER ON RESET



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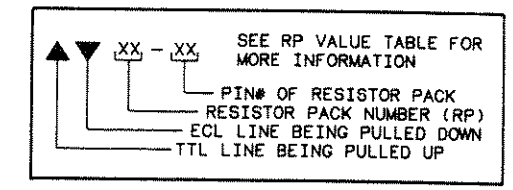
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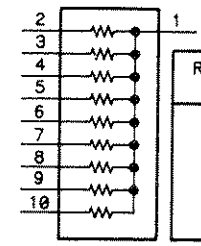


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	14 7	U43
+5V DGND	3 12	U2,7
+5V AGND	3 12	U20,26

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
7	1000	1	+5V

PARTS ON THIS SCHEMATIC

BT1	Q1-3
C1-39,43-46,49, 50-54,58-68,70-87	R1-16,18,20,43-59,65
CR22-24	P/O RP7
DS1	S1
F1	TP5,8,9
L1	U2,7,20,26
P/O J1	P/O U43
P/O P1	VR1,2

54111/SC06_03/5/09-87

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P/O I/O ASSEMBLY (4 OF 5)

P/O P1

D0 77
D1 78
D2 79
D3 80
D4 81
D5 82
D6 83
D7 84
D8 85
D9 86
D10 87
D11 88
D12 89
D13 90
D14 91
D15 92

LIACK 102
LBGACK 71
LBR 72
SLAVEBKT 76
NC

1,2 3 BR/LW

BLUDS 11
BLLDS 5
U22E
U22C

1 1 2

1,2 4 DS

1 5 16MHZ

RAMEN

U18A
U18C

3EN1 3EN2 G3 U32
3EN1 3EN2 G3 U49

D0 (18) D1 17 D2 16 D3 15 D4 14 D5 13 D6 12 D7 11
D8 (18) D9 17 D10 16 D11 15 D12 14 D13 13 D14 12 D15 11

(2) BD0 BD1 BD2 BD3 BD4 BD5 BD6 BD7
(2) BD8 BD9 BD10 BD11 BD12 BD13 BD14 BD15

A18 U29B
A17 U43D
A18 U48E
U29D

EN G1 U10 MUX
EN G1 U50 MUX

P/O RP8 33 LCAS1 LCAS2 LCAS4 LCAS3
P/O RP10 33 LCAS5 LCAS6 LCAS8 LCAS7

COLUMN STROBES

A17 A18 X/Y U41 NC U48

ROW STR

20

U3D
RAMEN U8B
U8D U8C
DL2 35ns 55ns 180ns
+5V R61 511 R62 511 C69 330
RAMEN U24D
U29C U8A
U18B
U29A

P/O P1

A1 47
A2 48
A3 49
A4 50
A5 51
A6 52
A7 53
A8 54
A9 55
A10 56
A11 57
A12 58
A13 59
A14 60
A15 61
A16 62
A17 63
A18 64
A19 65
A20 66
A21 67
A22 68

A19 A20 A21 A22 COMP U51 P = Q P > Q P < Q NC NC NC
DS +5V NC NC

RAM ID

CTRDIV16 U36 CT CT=0 NC
+5V R63 2200

R S 1D C1 U25

C1 R 1D U37

U3C
U24C

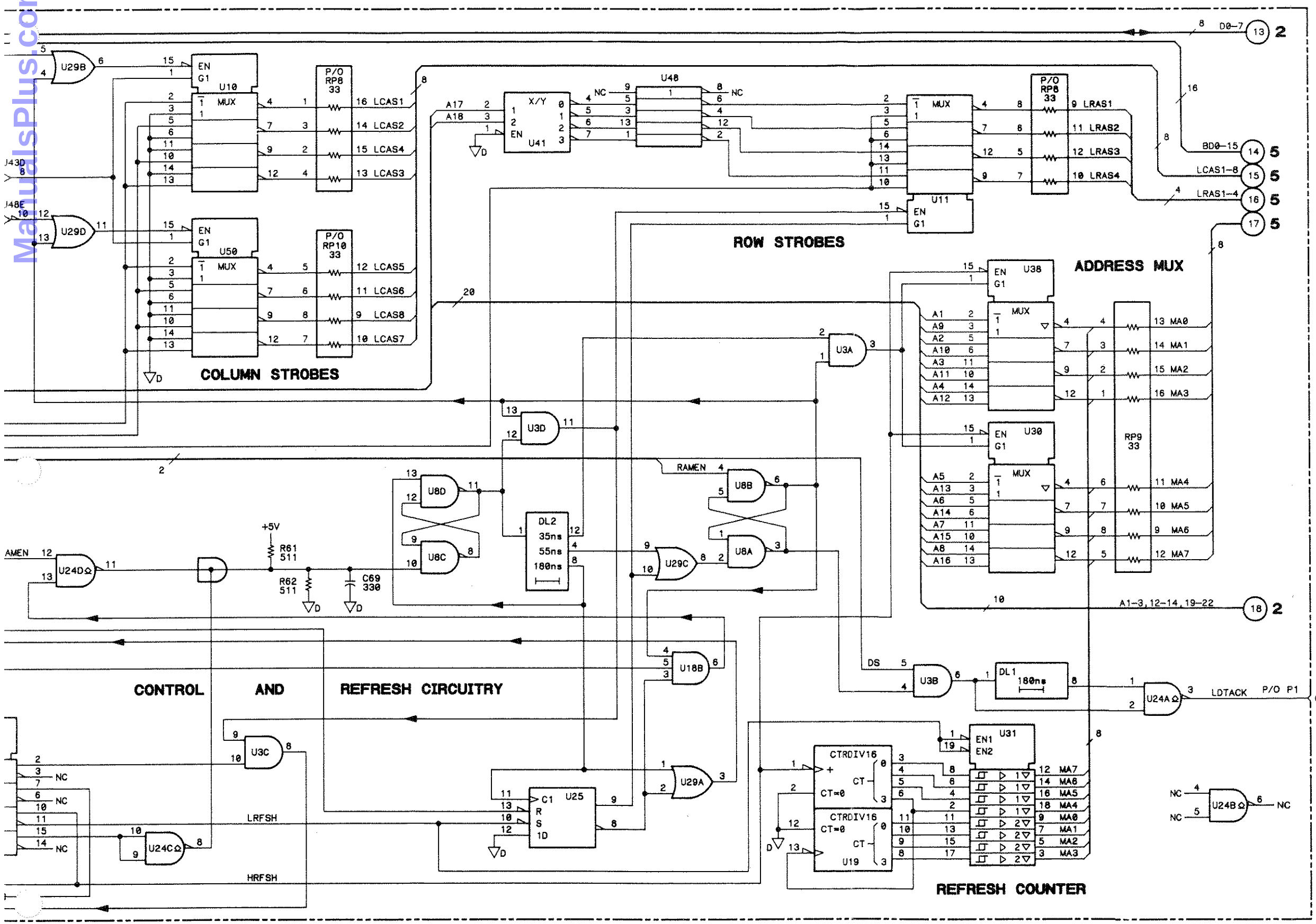
LRFSH
HRFSH

CONTROL AND REFRESH CIRCUITRY

C1 R S 1D U25

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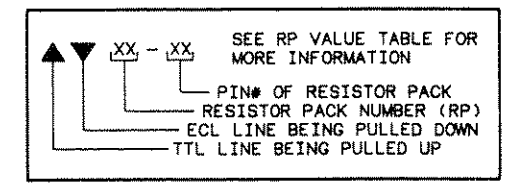
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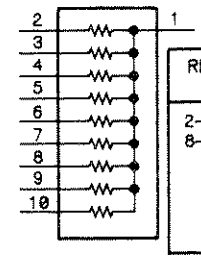


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	14 7	DL1,2 U3,8,18,19,22,24 25,29,36,43,48
+5V DGND	16 8	U10,11,30,37, 38,41,50,51
+5V DGND	20 10	U31,32,49

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
2–6 8–10	1000 33	1	+5V

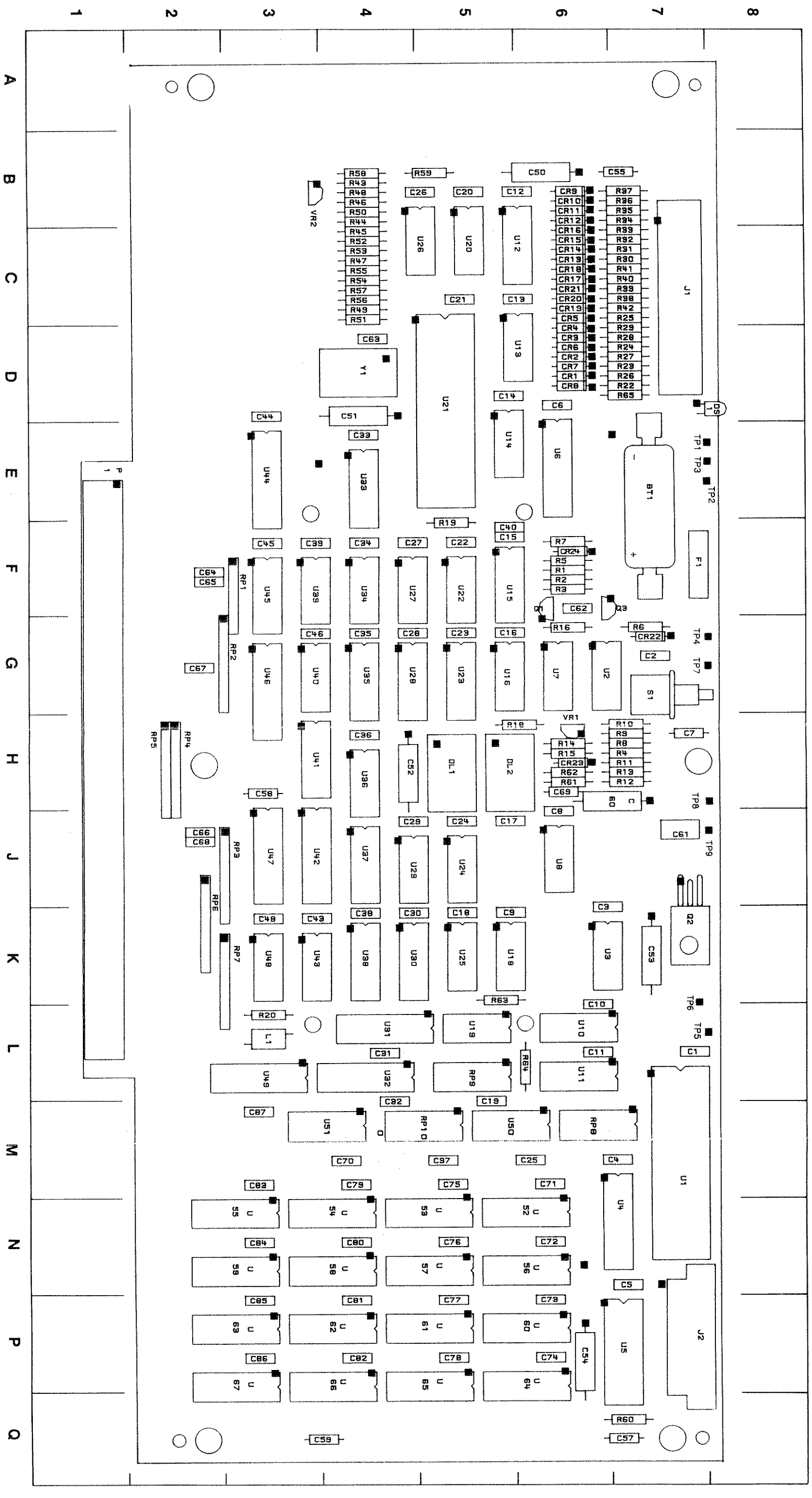
PARTS ON THIS SCHEMATIC

C69
DL1,2
P/O P1
R61–63
RP3–6,8,9
P/O RP2
U3,8,10,11,18,19,24,25,29–32,36–38,41,
48–51
P/O U22,43

54111/SC06_04/5/09–87

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REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC
BT1	E-7	C51	D-4	CR12	B-6	R18	H-6	RP1	F-3	U28	G-4
		C52	H-4	CR13	C-6	R19	F-5	RP2	G-3	U29	J-4
C1	L-7	C53	K-7	CR14	C-6	R20	L-3	RP3	J-3	U30	K-4
C2	G-7	C54	P-6	CR15	C-6	R22	D-7	RP4	H-2	U31	L-4
C3	K-6	C55	B-7	CR16	C-6	R23	D-7	RP5	H-2	U32	L-4
C4	M-7	C57	Q-7	CR17	C-6	R24	D-7	RP6	J-2	U33	E-4
C5	N-7	C58	H-3	CR18	C-6	R25	C-7	RP7	K-3	U34	F-4
C6	D-6	C59	Q-4	CR19	C-6	R26	D-7	RP8	M-6	U35	G-4
C7	H-7	C60	H-6	CR20	C-6	R27	D-7	RP9	L-5	U36	H-4
C8	J-6	C61	J-7	CR21	C-6	R28	D-7	RP10	M-5	U37	J-4
C9	K-5	C62	F-6	CR22	G-7	R29	D-7			U38	K-4
C10	L-6	C63	D-4	CR23	H-6	R30	C-7	S1	G-7	U39	F-3
C11	L-6	C64	F-2	CR24	F-6	R31	C-7			U40	G-3
C12	B-6	C65	F-2			R32	C-7	TP1	E-7	U41	H-3
C13	C-6	C66	J-2	DL1	H-5	R33	C-7	TP2	E-7	U42	J-3
C14	D-5	C67	G-2	DL2	H-5	R34	B-7	TP3	E-7	U43	K-3
C15	F-5	C68	J-2			R35	B-7	TP4	G-7	U44	E-3
C16	G-5	C69	H-6	DS1	D-7	R36	B-7	TP5	L-6	U45	F-3
C17	J-5	C70	M-4			R37	B-7	TP6	L-6	U46	G-3
C18	K-5	C71	M-6	F1	F-7	R38	C-7	TP7	G-7	U47	J-3
C19	M-5	C72	N-6			R39	C-7	TP8	H-7	U48	K-3
C20	B-5	C73	P-6	J1	C-7	R40	C-7	TP9	J-7	U49	L-3
C21	C-5	C74	P-6	J2	P-7	R41	C-7			U50	M-5
C22	F-5	C75	M-5			R42	C-7	U1	M-7	U51	M-4
C23	G-5	C76	N-5	L1	L-3	R43	B-4	U2	G-6	U52	N-6
C24	J-5	C77	P-5			R44	B-4	U3	K-6	U53	N-5
C25	M-6	C78	P-5	P1	E-1	R45	C-4	U4	N-7	U54	N-4
C26	B-5	C79	M-4			R46	B-4	U5	P-7	U55	N-3
C27	F-4	C80	N-4	Q1	F-6	R47	C-4	U6	E-6	U56	N-6
C28	G-4	C81	P-4	Q2	K-7	R48	B-4	U7	G-6	U57	N-5
C29	J-4	C82	P-4	Q3	F-7	R49	C-4	U8	J-6	U58	N-4
C30	K-4	C83	M-3			R50	B-4	U10	L-6	U59	N-3
C31	L-4	C84	N-3	R1	F-6	R51	C-4	U11	L-6	U60	P-6
C32	M-4	C85	P-3	R2	F-6	R52	C-4	U12	C-6	U61	P-5
C33	E-4	C86	P-3	R3	F-6	R53	C-4	U13	D-6	U62	P-4
C34	F-4	C87	M-3	R4	H-7	R54	C-4	U14	E-5	U63	P-3
C35	G-4			R5	F-6	R55	C-4	U15	F-5	U64	P-6
C36	H-4	CR1	D-6	R6	G-7	R56	C-4	U16	G-5	U65	P-5
C37	M-5	CR2	D-6	R7	F-6	R57	C-4	U18	K-5	U66	P-4
C38	K-4	CR3	D-6	R8	H-7	R58	B-4	U19	L-5	U67	P-3
C39	F-3	CR4	D-6	R9	H-7	R59	B-5	U20	C-5		
C40	F-5	CR5	C-6	R10	H-7	R60	Q-7	U21	D-5	VR1	H-6
C43	K-3	CR6	D-6	R11	H-7	R61	H-6	U22	F-5	VR2	B-3
C44	D-3	CR7	D-6	R12	H-7	R62	H-6	U23	G-5		
C45	F-3	CR8	D-6	R13	H-7	R63	K-5	U24	J-5	Y1	D-4
C46	G-3	CR9	B-6	R14	H-6	R64	L-6	U25	K-5		
C48	K-3	CR10	B-6	R15	H-6	R65	D-7	U26	C-5		
C50	B-6	CR11	B-6	R16	G-6			U27	F-4		

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P/O I/O ASSEMBLY (5 OF 5)

4 (17) MA0–7 8

4 (16) LRAS1–4

1,2,4 (3) BR/LW

R64 31.6

4 (15) LCAS1–8

4 (14) BD0–15 16

RAM 64K X 4 20D8/21D0 U52

MA0 14, MA1 13, MA2 12, MA3 11, MA4 8, MA5 7, MA6 6, MA7 10

A 0/65535

20D15/21D7

C20[ROW]

G23/[REFRESH ROW]

24[PWR DWN]

C21[COL]

G24

LRAS1 5

LCAS1 16

& 23C22

4, 1

23,21D 24,25EN

G25

D

BD0 2, BD1 3, BD2 15, BD3 17

A,22D ▽26 A,Z26

RAM 64K X 4 20D8/21D0 U53

MA0 14, MA1 13, MA2 12, MA3 11, MA4 8, MA5 7, MA6 6, MA7 10

A 0/65535

20D15/21D7

C20[ROW]

G23/[REFRESH ROW]

24[PWR DWN]

C21[COL]

G24

LRAS1 5

LCAS1 16

& 23C22

4, 1

23,21D 24,25EN

G25

D

BD4 2, BD5 3, BD6 15, BD7 17

A,22D ▽26 A,Z26

RAM 64K X 4 20D8/21D0 U54

MA0 14, MA1 13, MA2 12, MA3 11, MA4 8, MA5 7, MA6 6, MA7 10

A 0/65535

20D15/21D7

C20[ROW]

G23/[REFRESH ROW]

24[PWR DWN]

C21[COL]

G24

LRAS1 5

LCAS2 16

& 23C22

4, 1

23,21D 24,25EN

G25

D

BD8 2, BD9 3, BD10 15, BD11 17

A,22D ▽26 A,Z26

RAM 64K X 4 20D8/21D0 U55

MA0 14, MA1 13, MA2 12, MA3 11, MA4 8, MA5 7, MA6 6, MA7 10

A 0/65535

20D15/21D7

C20[ROW]

G23/[REFRESH ROW]

24[PWR DWN]

C21[COL]

G24

LRAS1 5

LCAS2 16

& 23C22

4, 1

23,21D 24,25EN

G25

D

BD12 2, BD13 3, BD14 15, BD15 17

A,22D ▽26 A,Z26

U56 SAME AS U52

MA0–7, LRAS2 5, LCAS3 16, 4, 1, D, BD0–3

U57 SAME AS U53

MA0–7, LRAS2 5, LCAS3 16, 4, 1, D, BD4–7

U60 SAME AS U52

MA0–7, LRAS3 5, LCAS5 16, 4, 1, D, BD0–3

U61 SAME AS U53

MA0–7, LRAS3 5, LCAS5 16, 4, 1, D, BD4–7

U58 SAME AS U54

MA0–7, LRAS2 5, LCAS4 16, 4, 1, D, BD8–11

U59 SAME AS U55

MA0–7, LRAS2 5, LCAS4 16, 4, 1, D, BD12–15

U62 SAME AS U54

MA0–7, LRAS3 5, LCAS6 16, 4, 1, D, BD8–11

U63 SAME AS U55

MA0–7, LRAS3 5, LCAS6 16, 4, 1, D, BD12–15

LCAS1,3,5,7

LCAS2,4,6,8

BD0–7

BD8–15

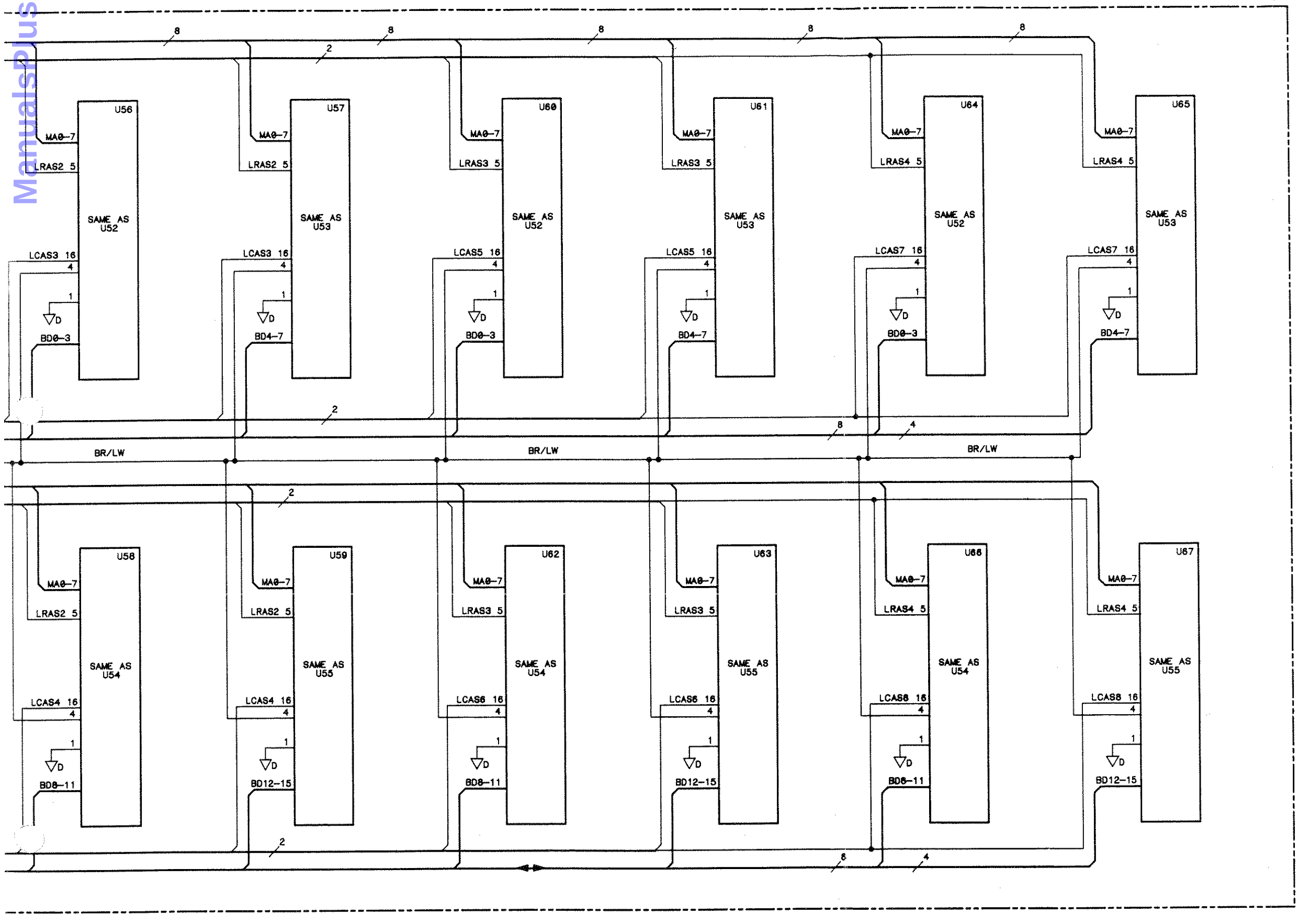
BR/LW

MA0–7

LRAS1–4

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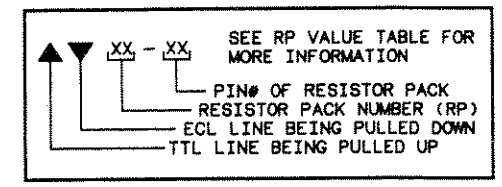
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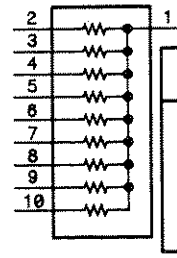


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	9 18	U52–67

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE

PARTS ON THIS SCHEMATIC

U52–67
R64

54111/SC05_05/5/09–87

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Component-level Information Packet

for HP 54111D and 54120A/B Microprocessor

54111-66507
54111-66510
54111-66517
54111-66522
54111-66525

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While this document may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate. The configuration of some assemblies may differ from that indicated in this document.

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1	0160-6500	7	51	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C2	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C3	0160-6041	1	2	CAPACITOR-FXD 0.1UF +-10% 50VDC MET-POLYE	28480	0160-6041
C4	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C5	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C6	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C7	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C8	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C9	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C10	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C11	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C12	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C13	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C14	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C15	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C16	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C17	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C18	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C19	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C20	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C21	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C22	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C23	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C24	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C25	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C26	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C27	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C28	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C29	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C30	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C31	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C32	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C33	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C34	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C35	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C36	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C37	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C38	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C39	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C40	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C41	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C42	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C43	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C44	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C45	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C46	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C47	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C48	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C49	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C50	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C51	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C52	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C53	0160-4574	1	1	CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C54	0160-4575	1	5	CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C55	0160-4575	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C56	0160-4575	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C57	0160-4575	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C58	0160-4575	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C59	0180-0309	4	2	CAPACITOR-FXD 4.7UF+-20% 10VDC TA	56289	150D475X0010A2
C60	0180-0309	4		CAPACITOR-FXD 4.7UF+-20% 10VDC TA	56289	150D475X0010A2
C61	0180-0229	7	1	CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C62				NOT ASSIGNED		
C63	0160-6041	1		CAPACITOR-FXD 0.1UF +-10% 50VDC MET-POLYE	28480	0160-6041
H1	0515-0372	2	1	SCREW MACH M3 8MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
L1	5081-7682	5	1	CHOKE RF	28480	5081-7682
MP1	54111-00605	2	1	SHIELD-PROCESSOR	28480	54111-00605
MP2	54111-45004	1	1	EXTRACTOR RIGHT	28480	54111-45004
MP3	54111-45005	2	1	EXTRACTOR LEFT	28480	54111-45005
P1	1252-0198	3	1	CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1252-0198
R1-32				NOT ASSIGNED		
R33	0757-0442	9	2	RESISTOR 10K 1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1002-F
R34	0757-0280	3	2	RESISTOR 1K 1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1001-F
R35	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1001-F
R36	0757-0442	9		RESISTOR 10k +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1002-F
R37	0757-0438	3	1	RESISTOR 5.11K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5111-F
RP1	1810-0280	8	2	NETWORK-RES 10-SIP 10.0K OHM X 9	28480	1810-0280
RP2	1810-0280	8		NETWORK-RES 10-SIP 10.0K OHM X 9	28480	1810-0280
RP3	1810-0696	0	4	NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP4	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP5	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP6	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP7	1810-0350	3	6	NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP8	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP9	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP10	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP11	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP12	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
TP1	0360-1653	5	18	CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP2	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP3	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP4	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP5	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP6	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP7	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP8	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP9	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP10	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP11	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP12	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP13	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
TP14	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP15	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP16	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP17	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP18	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
U1	1820-1730	6	1	IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS273N
U2	1820-3347	5	1	IC-10 MHZ PROGRAMMABLE INTERVAL TIMER	34649	P8254-2
U3	1820-2505	5	1	IC-MPU; CLK FREQ=8MHZ, INSTRUCTION	04713	MC68000L8
U4	1820-2075	4	2	IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U5	1820-2795	5	7	IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U6	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U7	54111-80001	2	1	IC ROM	28480	54111-80001
U8	54111-80003	4	1	IC ROM	28480	54111-80003
U9	54111-80005	6	1	IC ROM	28480	54111-80005
U10	54111-80007	8	1	IC ROM	28480	54111-80007
U11	54111-80009	0	1	IC ROM	28480	54111-80009
U12	54111-80011	4	1	IC ROM	28480	54111-80011
U13	54111-80013	6	1	IC ROM	28480	54111-80013
U14	54111-80015	8	1	IC ROM	28480	54111-80015
U15	1818-3183	2	4	IC CMOS 65536 (64K) STAT RAM 150-NS 3-S	S0545	UPD4364C-15L
U16	1818-3183	2		IC CMOS 65536 (64K) STAT RAM 150-NS 3-S	S0545	UPD4364C-15L
U17	1820-1208	3	3	IC GATE TTL LS OR QUAD 2-INP	01295	SN75LS32N
U18	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN75LS32N
U19	1820-1216	3	1	IC DCDR TTL LS 3-TO-8-LINE 3-INP	01295	SN74LS138N
U20	1820-1204	9	1	IC GATE TTL LS NAND DUAL 4-INP	01295	SN74LS20N
U21	1820-2075	4		IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U22	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U23	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U24	54111-80002	3	1	IC ROM	28480	54111-80002
U25	54111-80004	5	1	IC ROM	28480	54111-80004
U26	54111-80006	7	1	IC ROM	28480	54111-80006
U27	54111-80008	9	1	IC ROM	28480	54111-80008
U28	54111-80010	3	1	IC ROM	28480	54111-80010
U29	54111-80012	5	1	IC ROM	28480	54111-80012
U30	54111-80014	7	1	IC ROM	28480	54111-80014
U31	54111-80016	9	1	IC ROM	28480	54111-80016
U32	1818-3183	2		IC CMOS 65536 (64K) STAT RAM 150-NS 3-S	S0545	UPD4364C-15L
U33	1818-3183	2		IC CMOS 65536 (64K) STAT RAM 150-NS 3-S	S0545	UPD4364C-15L
U34	1820-1851	2	1	IC ENCDR TTL LS	01295	SN74LS148N
U35	1820-2690	9	2	IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U36	1820-2861	6	1	IC DCDR TTL F 3-TO-8-LINE	04713	MC74F138N
U37	1820-2506	6	2	IC INV TTL F HEX	04713	MC74F04N
U38	1820-2690	9		IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U39	1820-2506	6		IC INV TTL F HEX	04713	MC74F04N
U40	1820-1201	6	1	IC GATE TTL LS AND QUAD 2-INP	01295	SN74LS08N
U41	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U42	1820-2685	2	1	IC GATE TTL F NOR QUAD 2-INP	04713	MC74F02N
U43	1820-1917	1	1	IC DRVR TTL LS LINE OCTL	01295	SN74LS240N
U44	1820-2024	3	1	IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U45	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U46	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U47	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U48	1820-3224	7	2	IC TRANSCEIVER TTL F BUS OCTL	07263	74F245PC
U49	1820-3224	7		IC TRANSCEIVER TTL F BUS OCTL	07263	74F245PC
U50	1820-2686	3	1	IC GATE TTL F AND QUAD 2-INP	04713	MC74F08P
U51	1820-0629	0	1	IC FF TTL S J-K NEG-EDGE-TRIG	01295	SN74S112N
U52	1820-0684	7	1	IC INV TTL S HEX 1-INP	01295	SN74S05N
XU1-6				NOT ASSIGNED		
XU7	1200-0861	8	16	SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU8	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU9	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU10	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU11	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU12	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU13	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU14	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU15-23				NOT ASSIGNED		
XU24	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU25	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU26	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU27	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU28	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU29	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU30	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU31	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861

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CHANGE 1 for 54111-66510, Microprocessor

Schematic 2

ROM was changed to make a new assembly for use in the HP 54120A. Except for the different ROM the assembly is identical to the 54111-66507.

The 54111-66510 was superceded by the 54111-66522. To use later ROM in an HP 54120A that uses the 54111-66510, the Horizontal Control Board must be modified. refer to Service Note 54120A-02.

	HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:					
U7 to	54120-80001	3	IC ROM	28480	54120-80001
U8 to	54120-80003	5	IC ROM	28480	54120-80003
U9 to	54120-80005	7	IC ROM	28480	54120-80005
U10 to	54120-80007	9	IC ROM	28480	54120-80007
U11 to	54120-80009	1	IC ROM	28480	54120-80009
U12 to	54120-80011	5	IC ROM	28480	54120-80011
U24 to	54120-80002	4	IC ROM	28480	54120-80002
U25 to	54120-80004	6	IC ROM	28480	54120-80004
U26 to	54120-80006	8	IC ROM	28480	54120-80006
U27 to	54120-80008	0	IC ROM	28480	54120-80008
U28 to	54120-80010	4	IC ROM	28480	54120-80010
U29 to	54120-80012	6	IC ROM	28480	54120-80012

CHANGE 1 for 54111-66517, Microprocessor

Schematic 2

ROM was changed to update the firmware of the HP 54111D. The Microprocessor assembly part number was changed from 54111-66507 to 54111-66517.

The 54111-66517 was superceded by the 54111-66519 which is covered in a different information packet.

	HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:					
U7 to	54111-80017	0	IC ROM	28480	54111-80017
U8 to	54111-80019	2	IC ROM	28480	54111-80019
U9 to	54111-80021	6	IC ROM	28480	54111-80021
U10 to	54111-80023	8	IC ROM	28480	54111-80023
U11 to	54111-80025	0	IC ROM	28480	54111-80025
U12 to	54111-80027	2	IC ROM	28480	54111-80027
U13 to	54111-80029	4	IC ROM	28480	54111-80029
U14 to	54111-80031	8	IC ROM	28480	54111-80031
U24 to	54111-80018	1	IC ROM	28480	54111-80018
U25 to	54111-80020	5	IC ROM	28480	54111-80020
U26 to	54111-80022	7	IC ROM	28480	54111-80022
U27 to	54111-80024	9	IC ROM	28480	54111-80024
U28 to	54111-80026	1	IC ROM	28480	54111-80026
U29 to	54111-80028	3	IC ROM	28480	54111-80028
U30 to	54111-80030	7	IC ROM	28480	54111-80030
U31 to	54111-80032	9	IC ROM	28480	54111-80032

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CHANGE 1 for 54111-66522, Microprocessor

Schematic 2

ROM was changed to update the firmware of the HP 54120B. The Microprocessor assembly part number was changed from 54111-66510 to 54111-66522. The 54111-66522 was superceded by the 54111-66525.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	U7 to	54122-80001	5	IC ROM	28480	54122-80001
	U8 to	54122-80003	7	IC ROM	28480	54122-80003
	U9 to	54122-80005	9	IC ROM	28480	54122-80005
	U10 to	54122-80007	1	IC ROM	28480	54122-80007
	U11 to	54122-80009	3	IC ROM	28480	54122-80009
	U12 to	54122-80011	7	IC ROM	28480	54122-80011
	U13 to	54122-80013	9	IC ROM	28480	54122-80013
	U24 to	54122-80002	6	IC ROM	28480	54122-80002
	U25 to	54122-80004	8	IC ROM	28480	54122-80004
	U26 to	54122-80006	0	IC ROM	28480	54122-80006
	U27 to	54122-80008	2	IC ROM	28480	54122-80008
	U28 to	54122-80010	6	IC ROM	28480	54122-80010
	U29 to	54122-80012	8	IC ROM	28480	54122-80012
	U30 to	54122-80014	0	IC ROM	28480	54122-80014

CHANGE 1 for 54111-66525, Microprocessor

Schematic 2

ROM was changed to update the firmware of the HP 54120B and updated HP 54120A. (See service note 54120A-02 to update an HP 54120A). The Microprocessor assembly part number was changed from 54111-66522 to 54111-66525.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	U7 to	54123-80001	6	IC ROM	28480	54123-80001
	U8 to	54123-80003	8	IC ROM	28480	54123-80003
	U9 to	54123-80005	0	IC ROM	28480	54123-80005
	U10 to	54123-80007	2	IC ROM	28480	54123-80007
	U11 to	54123-80009	4	IC ROM	28480	54123-80009
	U12 to	54123-80011	8	IC ROM	28480	54123-80011
	U13 to	54123-80013	0	IC ROM	28480	54123-80013
	U24 to	54123-80002	7	IC ROM	28480	54123-80002
	U25 to	54123-80004	9	IC ROM	28480	54123-80004
	U26 to	54123-80006	1	IC ROM	28480	54123-80006
	U27 to	54123-80008	3	IC ROM	28480	54123-80008
	U28 to	54123-80010	7	IC ROM	28480	54123-80010
	U29 to	54123-80012	9	IC ROM	28480	54123-80012
	U30 to	54123-80014	1	IC ROM	28480	54123-80014

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P/O MICROPROCESSOR ASSEMBLY (1 OF 3)

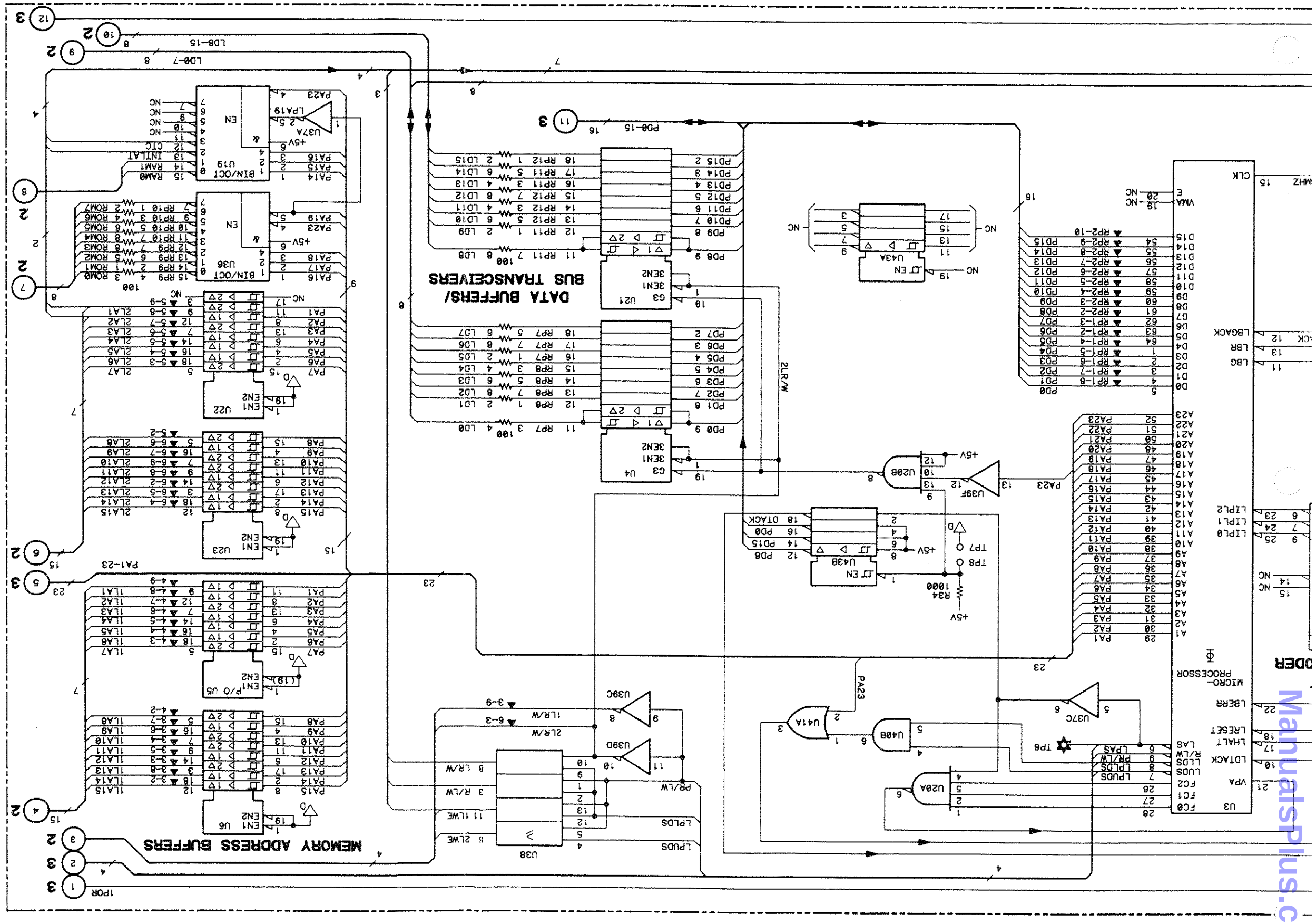
INTERRUPT PRIORITY ENCODER

INTERRUPT CIRCUITRY

COUNTER/TIMER

DATA BUS

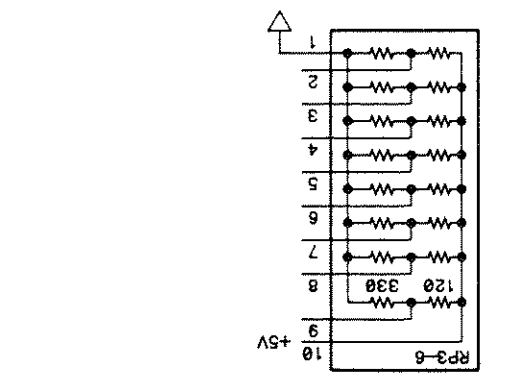
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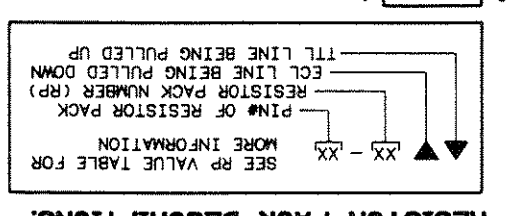
PARTS ON THIS SCHEMATIC

P/O P1
R34-36
RP1-12
U1-6,17-23,34,36,38,40,43
P/O U35,37,39,41,42,44
TP1-10,15-18

54111/SC07_01/3/04-87



RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
1,2	10K	10	+5V



RESISTOR PACK DESCRIPTIONS:

NOTES:

IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V	14	U17,18,20,35,
DGND	7	37-42
+5V	16	U19,34,36
DGND	8	
+5V	20	U1,4-6,21-23,43,
DGND	10	44
+5V	24	U2
DGND	12	
+5V	14,49	U3
DGND	16,53	

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P/O MICROPROCESSOR ASSEMBLY (2 OF 3)

RAM

ROM

1LWE

1LR/W

1LA1–15

P/O P1

108

VBATT

U15

U16

U7

U8

U9

U10

U11

SAME AS U7

1LA1–1LA13

1LA1–1LA15

1LR/W (22)

(22)

1LWE 27

RAM 0 20

RAM1 20

ROM 0 20

ROM 1

ROM 2

ROM 3

ROM 4

& G1

& G2

& EN

C15 0.01

C16 0.01

LD0–7

LD0

P/O P1

(40)

LPWRONRST

RAM0,1

ROM0–7

2LA1–15

U32

U33

U24

U25

U26

U27

U28

SAME AS U32

SAME AS U24

2LA1–2LA13

2LA1–2LA15

2LR/W (22)

2LWE 27

RAM1 20

ROM 0 20

ROM 1 20

ROM 2 20

ROM 3 20

ROM 4 20

C32 0.01

C33 0.01

LD8–15

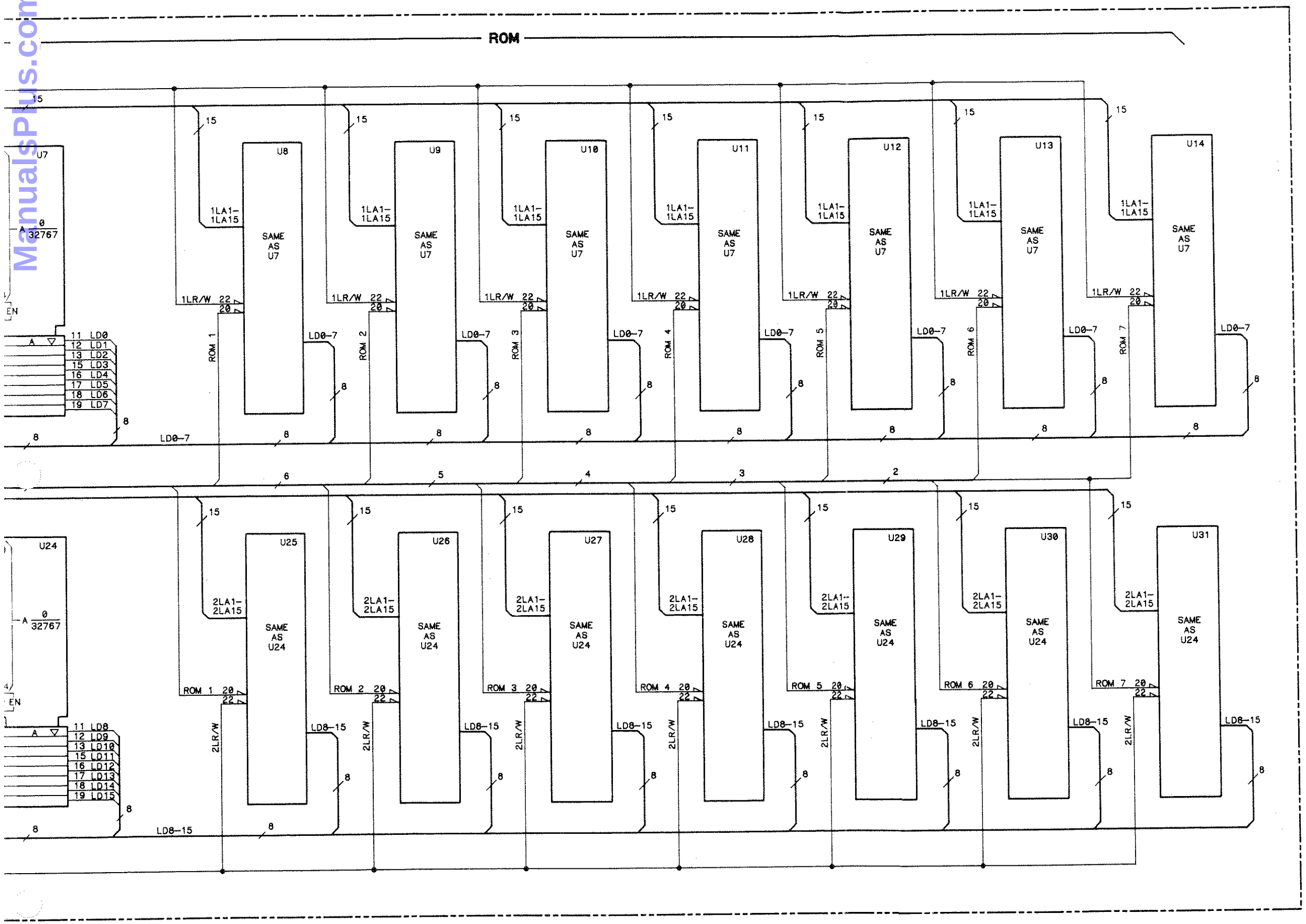
LD8

2LWE

2LR/W

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	1,28 14	U7–14,24–31
VBATT DGND	28 14	U15,16,32,33

NOTES:

1. GATES ARE SYMBOLIZED ACCORDING TO CIRCUIT FUNCTION.

PARTS ON THIS SCHEMATIC

C15,16,32,33
P/O P1
U7–16,24–33

54111/SC07_02/3/04–87

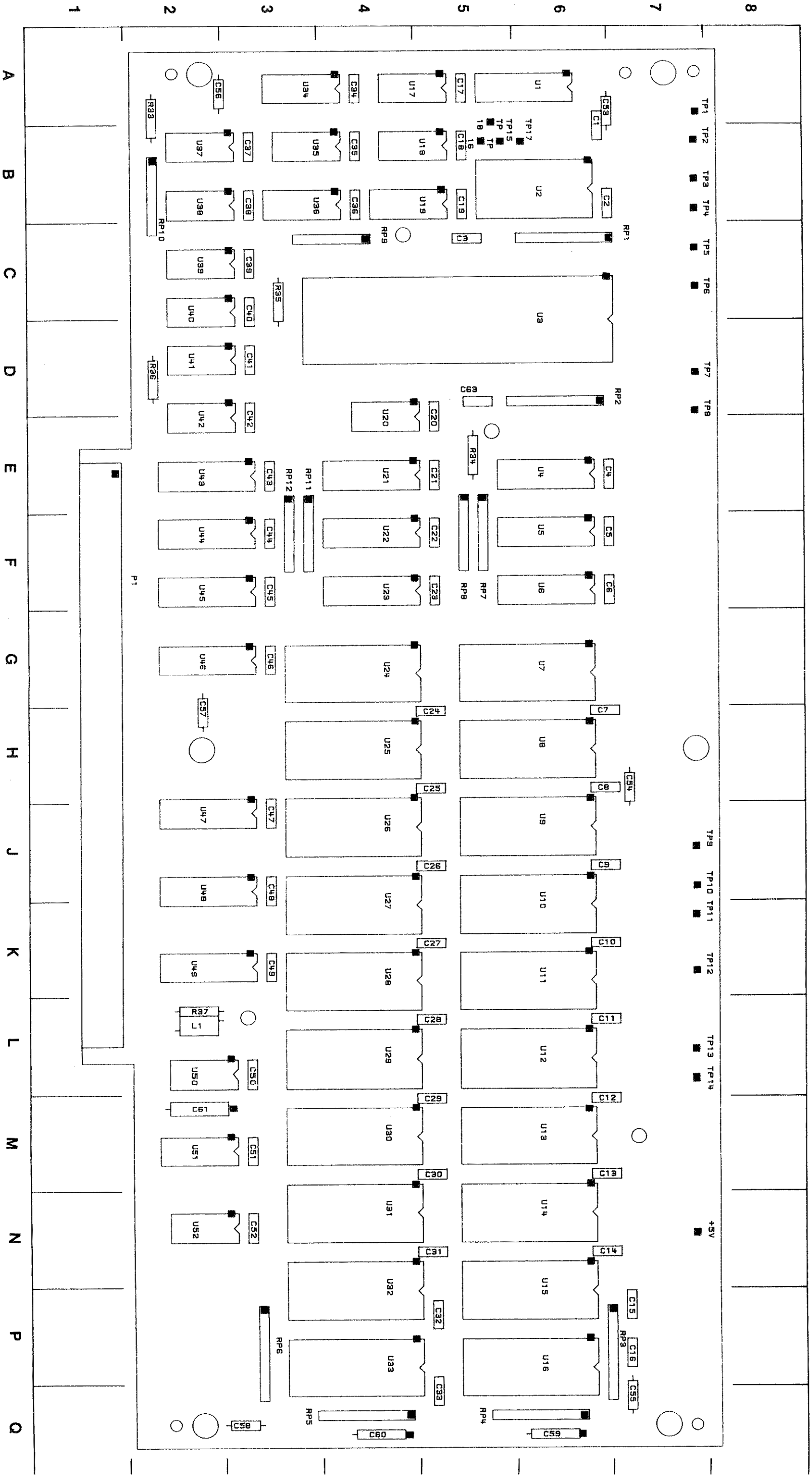
2

CPU ROM, RAM

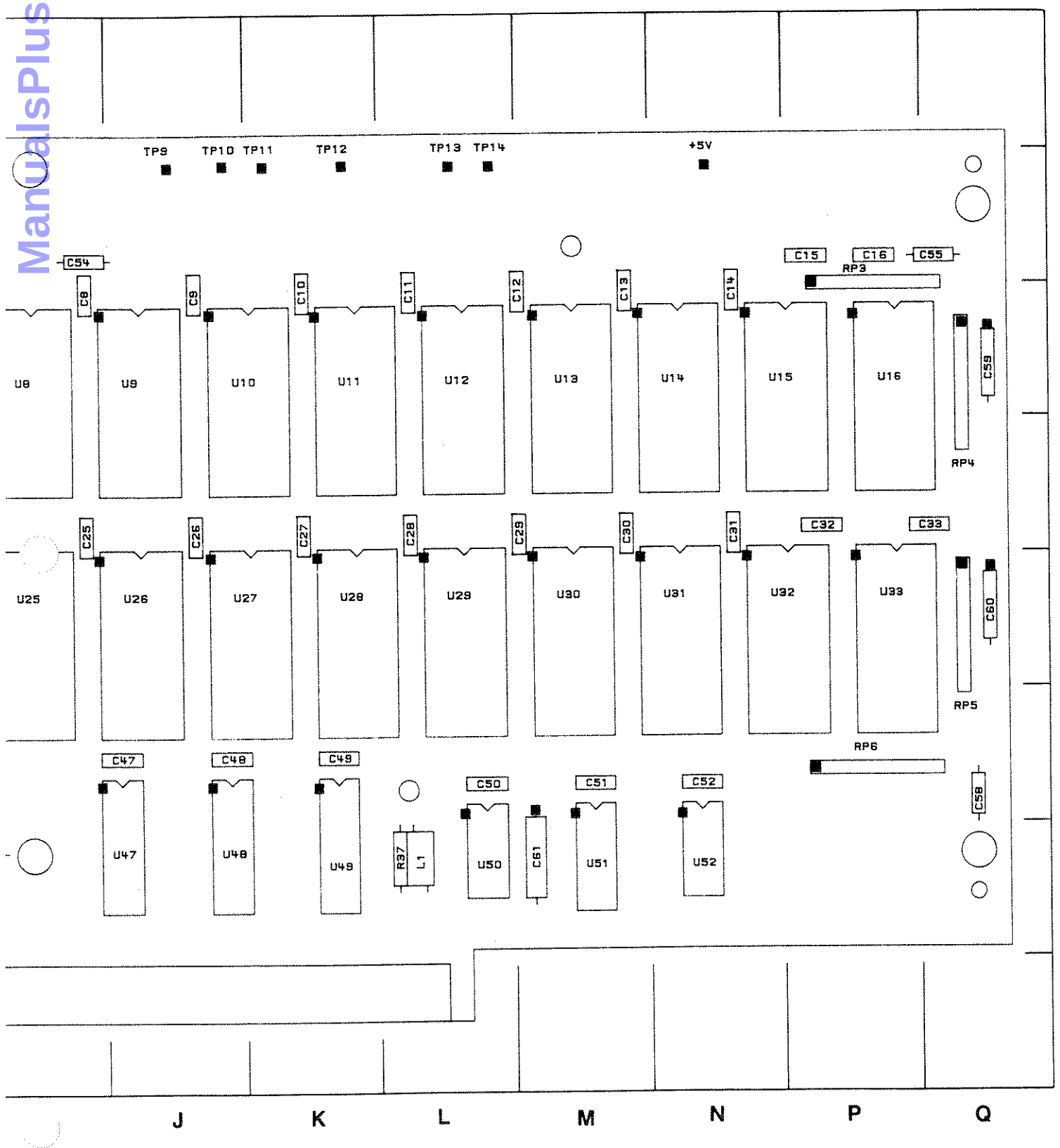
54111–66507

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REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC
C1	A-6	C41	D-3	RP8	F-5	U16	P-6
C2	B-6	C42	E-3	RP9	C-4	U17	A-5
C3	C-5	C43	E-3	RP10	C-2	U18	B-5
C4	E-6	C44	F-3	RP11	E-3	U19	B-5
C5	F-6	C45	F-3	RP12	E-3	U20	E-4
C6	F-6	C46	G-3			U21	E-4
C7	H-6	C47	J-3	TP1	A-8	U22	F-4
C8	H-6	C48	J-3	TP2	B-8	U23	F-4
C9	J-6	C49	K-3	TP3	B-8	U24	G-4
C10	K-6	C50	L-3	TP4	B-8	U25	H-4
C11	L-6	C51	M-3	TP5	C-8	U26	J-4
C12	M-6	C52	N-3	TP6	C-8	U27	K-4
C13	M-6	C53	A-7	TP7	D-8	U28	K-4
C14	N-6	C54	H-7	TP8	D-8	U29	L-4
C15	P-7	C55	Q-7	TP9	J-8	U30	M-4
C16	P-7	C56	A-2	TP10	J-8	U31	N-4
C17	A-5	C57	H-2	TP11	K-8	U32	P-4
C18	B-5	C58	Q-3	TP12	K-8	U33	P-4
C19	B-5	C59	Q-6	TP13	L-8	U34	A-3
C20	E-5	C60	Q-4	TP14	L-8	U35	B-3
C21	E-5	C61	M-2	TP15	B-5	U36	B-3
C22	F-5	C63	D-5	TP16	B-5	U37	B-2
C23	F-5			TP17	B-6	U38	B-2
C24	H-5	L1	L-2	TP18	A-5	U39	C-2
C25	H-5					U40	C-2
C26	J-5	P1	F-2	U1	A-6	U41	D-2
C27	K-5			U2	B-6	U42	E-2
C28	L-5	R33	A-2	U3	C-6	U43	E-2
C29	M-5	R34	E-5	U4	E-6	U44	F-2
C30	M-5	R35	C-3	U5	F-6	U45	F-2
C31	N-5	R36	D-2	U6	F-6	U46	G-2
C32	P-5	R37	L-2	U7	G-6	U47	J-2
C33	Q-5			U8	H-6	U48	J-2
C34	A-4	RP1	C-7	U9	J-6	U49	K-2
C35	B-4	RP2	D-7	U10	K-6	U50	L-2
C36	B-4	RP3	P-7	U11	K-6	U51	M-2
C37	B-3	RP4	Q-5	U12	L-6	U52	N-2
C38	B-3	RP5	Q-3	U13	M-6		
C39	C-3	RP6	P-3	U14	N-6		
C40	C-3	RP7	F-5	U15	P-6		

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P/O MICROPROCESSOR ASSEMBLY (3 OF 3)

STROBE BUFFER

BUS ARBITRATION CIRCUIT

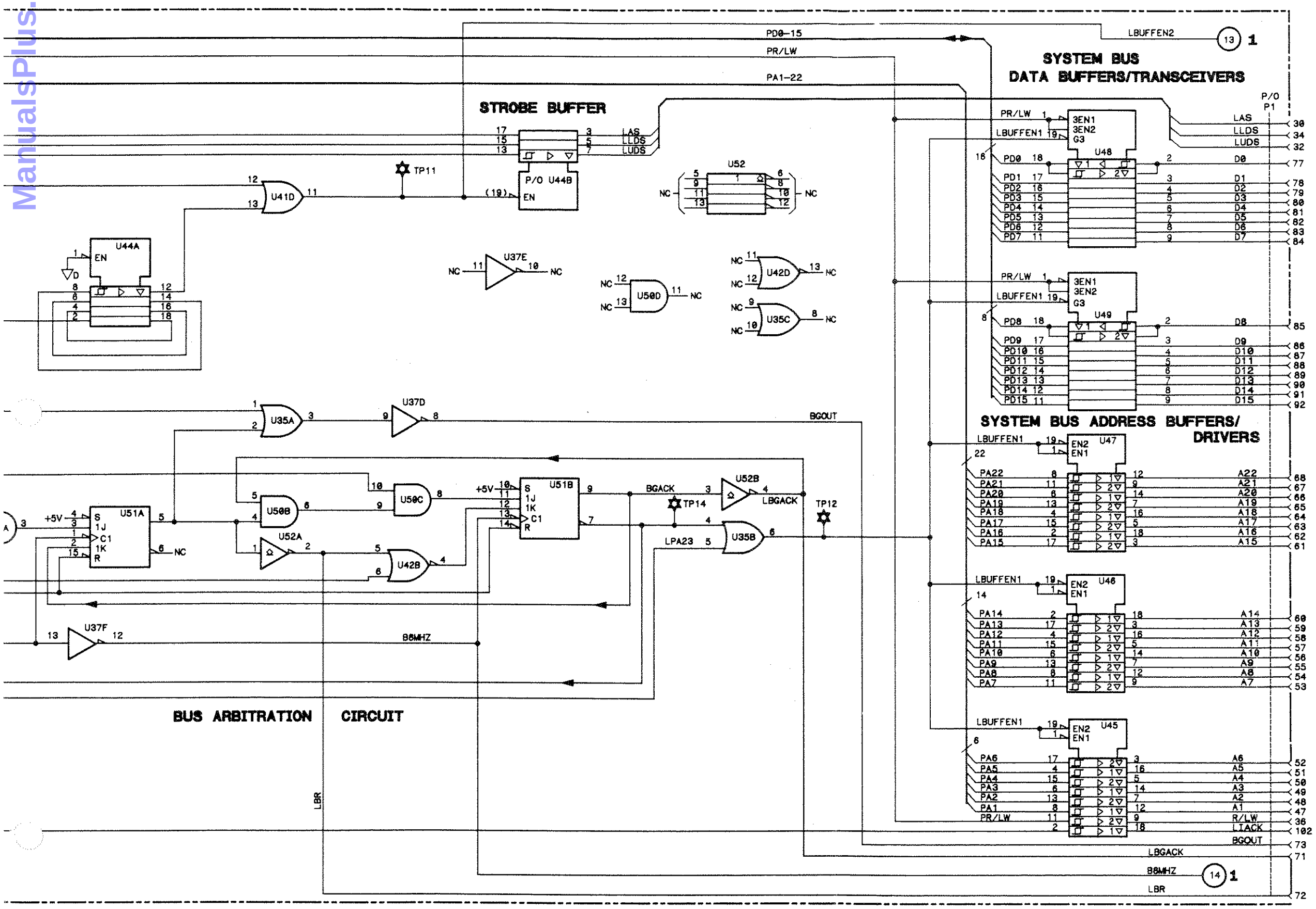
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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	14 7	U35,37,39,41, 42,50,52
+5V DGND	16 8	U51
+5V DGND	20 10	U44–49

NOTES:



PARTS ON THIS SCHEMATIC

C1–14,17–31,34–61,63
L1
P/O P1
R33,37
TP11–14
U45–52
P/O U35,37,39,41,42,44

54111/SC07_03/3/04–87

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Component-level Information Packet

for HP 54112D

Microprocessor

54111-66511
54111-66521
54111-66524

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While this document may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate. The configuration of some assemblies may differ from that indicated in this document.

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1	0160-6500	7	51	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C2	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C3	0160-6623	5	2	CAPACITOR-FXD 0.1UF +-10% 50VDC MET-POLYE	28480	0160-6623
C4	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C5	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C6	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C7	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C8	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C9	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C10	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C11	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C12	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C13	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C14	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C15	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C16	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C17	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C18	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C19	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C20	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C21	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C22	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C23	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C24	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C25	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C26	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C27	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C28	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C29	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C30	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C31	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C32	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C33	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C34	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C35	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C36	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C37	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C38	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C39	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C40	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C41	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C42	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C43	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C44	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C45	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C46	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C47	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C48	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C49	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C50	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C51	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C52	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C53	0160-4574	1	1	CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C54	0160-4575	1	5	CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C55	0160-4575	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C56	0160-4575	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C57	0160-4575	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C58	0160-4575	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C59	0180-3845	9	2	CAPACITOR-FXD 4.7UF+-20% 10VDC TA	56289	150D475X0010A2
C60	0180-0309	4		CAPACITOR-FXD 4.7UF+-20% 10VDC TA	56289	150D475X0010A2
C61	0180-3848	2	1	CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C62				NOT ASSIGNED		
C63	0160-6623	5		CAPACITOR-FXD 0.1UF +-10% 50VDC MET-POLYE	28480	0160-6623
H1	0515-0372	2	1	SCREW MACH M3 8MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
L1	5081-7682	5	1	CHOKE RF	28480	5081-7682
MP1	54111-00605	2	1	SHIELD-PROCESSOR	28480	54111-00605
MP2	54111-45004	1	1	EXTRACTOR RIGHT	28480	54111-45004
MP3	54111-45005	2	1	EXTRACTOR LEFT	28480	54111-45005
P1	1252-0198	3	1	CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1252-0198
Q1	1854-0215	1	1	TRANSISTOR NPN SI TO-92 PD=350MW	04713	2N3904
R1-32				NOT ASSIGNED		
R33	0757-0442	9	2	RESISTOR 10K 1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1002-F
R34	0757-0280	3	2	RESISTOR 1K 1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1001-F
R35	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1001-F
R36	0757-0442	9		RESISTOR 10k +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1002-F
R37	0757-0438	3	1	RESISTOR 5.11K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5111-F
R38	0698-7212	9	2	RESISTOR 100 1% 0.05W TF TC=0+-100	28480	0698-7212
R39	0757-0419	0	2	RESISTOR 681 1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-6810-F
RP1	1810-0280	8	2	NETWORK-RES 10-SIP 10.0K OHM X 9	28480	1810-0280
RP2	1810-0280	8		NETWORK-RES 10-SIP 10.0K OHM X 9	28480	1810-0280
RP3	1810-0696	0	4	NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP4	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP5	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP6	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP7	1810-0350	3	6	NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP8	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP9	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP10	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP11	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP12	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
TP1	0360-1653	5	18	CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP2	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP3	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP4	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP5	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP6	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP7	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP8	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP9	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP10	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
TP11	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP12	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP13	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP14	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP15	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP16	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP17	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP18	0360-1653	5		CONN-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
U1	1820-1730	6	1	IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS273N
U2	1820-3347	5	1	IC-10 MHZ PROGRAMMABLE INTERVAL TIMER	34649	P8254-2
U3	1820-2505	5	1	IC-MPU; CLK FREQ=8MHZ, INSTRUCTION	04713	MC68000L8
U4	1820-2075	4	2	IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U5	1820-2795	5	7	IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U6	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U7	54112-80001	3	1	IC ROM	28480	54112-80001
U8	54112-80003	5	1	IC ROM	28480	54112-80003
U9	54112-80005	7	1	IC ROM	28480	54112-80005
U10	54112-80007	9	1	IC ROM	28480	54112-80007
U11	54112-80009	1	1	IC ROM	28480	54112-80009
U12	54112-80011	5	1	IC ROM	28480	54112-80011
U13	54112-80013	7	1	IC ROM	28480	54112-80013
U15	1818-3183	2	4	IC CMOS 65536 (64K) STAT RAM 150-NS 3-S	S0545	UPD4364C-15L
U16	1818-3183	2		IC CMOS 65536 (64K) STAT RAM 150-NS 3-S	S0545	UPD4364C-15L
U17	1820-1208	3	3	IC GATE TTL LS OR QUAD 2-INP	01295	SN75LS32N
U18	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN75LS32N
U19	1820-1216	3	1	IC DCDR TTL LS 3-TO-8-LINE 3-INP	01295	SN74LS138N
U20	1820-1204	9	1	IC GATE TTL LS NAND DUAL 4-INP	01295	SN74LS20N
U21	1820-2075	4		IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U22	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U23	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U24	54112-80002	4	1	IC ROM	28480	54112-80002
U25	54112-80004	6	1	IC ROM	28480	54112-80004
U26	54112-80006	8	1	IC ROM	28480	54112-80006
U27	54112-80008	0	1	IC ROM	28480	54112-80008
U28	54112-80010	4	1	IC ROM	28480	54112-80010
U29	54112-80012	6	1	IC ROM	28480	54112-80012
U30	54112-80014	8	1	IC ROM	28480	54112-80014
U32	1818-3183	2		IC CMOS 65536 (64K) STAT RAM 150-NS 3-S	S0545	UPD4364C-15L
U33	1818-3183	2		IC CMOS 65536 (64K) STAT RAM 150-NS 3-S	S0545	UPD4364C-15L
U34	1820-1851	2	1	IC ENCDR TTL LS	01295	SN74LS148N
U35	1820-2690	9	2	IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U36	1820-2861	6	1	IC DCDR TTL F 3-TO-8-LINE	04713	MC74F138N
U37	1820-2506	6	2	IC INV TTL F HEX	04713	MC74F04N
U38	1820-2690	9		IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U39	1820-2506	6		IC INV TTL F HEX	04713	MC74F04N
U40	1820-1201	6	1	IC GATE TTL LS AND QUAD 2-INP	01295	SN74LS08N
U41	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U42	1820-2685	2	1	IC GATE TTL F NOR QUAD 2-INP	04713	MC74F02N
U43	1820-1917	1	1	IC DRVR TTL LS LINE OCTL	01295	SN74LS240N
U44	1820-2024	3	1	IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U45	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U46	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U47	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U48	1820-3224	7	2	IC TRANSCEIVER TTL F BUS OCTL	07263	74F245PC
U49	1820-3224	7		IC TRANSCEIVER TTL F BUS OCTL	07263	74F245PC
U50	1820-2686	3	1	IC GATE TTL F AND QUAD 2-INP	04713	MC74F08P
U51	1820-0629	0	1	IC FF TTL S J-K NEG-EDGE-TRIG	01295	SN74S112N
U52	1820-0684	7	1	IC INV TTL S HEX 1-INP	01295	SN74S05N
XU1-6				NOT ASSIGNED		
XU7	1200-0861	8	16	SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU8	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU9	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU10	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU11	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU12	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU13	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU14	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU15-23				NOT ASSIGNED		
XU24	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU25	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU26	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU27	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU28	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU29	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU30	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861
XU31	1200-0861	8		SOCKET-IC 28-CONT DIP DIP-SLDR	28480	1200-0861

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CHANGE 1 for 54111-66521, Microprocessor

Schematic 2

ROM was changed to update the firmware of the HP 54112D. The Microprocessor assembly part number was changed from 54111-66511 to 54111-66521. The 54111-66521 was superceded by the 54111-66524.

CHANGE:		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
	U7 to	54112-80015	9	IC ROM	28480	54112-80015
	U8 to	54112-80017	1	IC ROM	28480	54112-80017
	U9 to	54112-80019	3	IC ROM	28480	54112-80019
	U10 to	54112-80021	7	IC ROM	28480	54112-80021
	U11 to	54112-80023	9	IC ROM	28480	54112-80023
	U12 to	54112-80025	1	IC ROM	28480	54112-80025
	U13 to	54112-80027	3	IC ROM	28480	54112-80027
	U24 to	54112-80016	0	IC ROM	28480	54112-80016
	U25 to	54112-80018	2	IC ROM	28480	54112-80018
	U26 to	54112-80020	6	IC ROM	28480	54112-80020
	U27 to	54112-80022	8	IC ROM	28480	54112-80022
	U28 to	54112-80024	0	IC ROM	28480	54112-80024
	U29 to	54112-80026	2	IC ROM	28480	54112-80026
	U30 to	54112-80028	4	IC ROM	28480	54112-80028

CHANGE 1 for 54111-66524, Microprocessor

Schematic 2

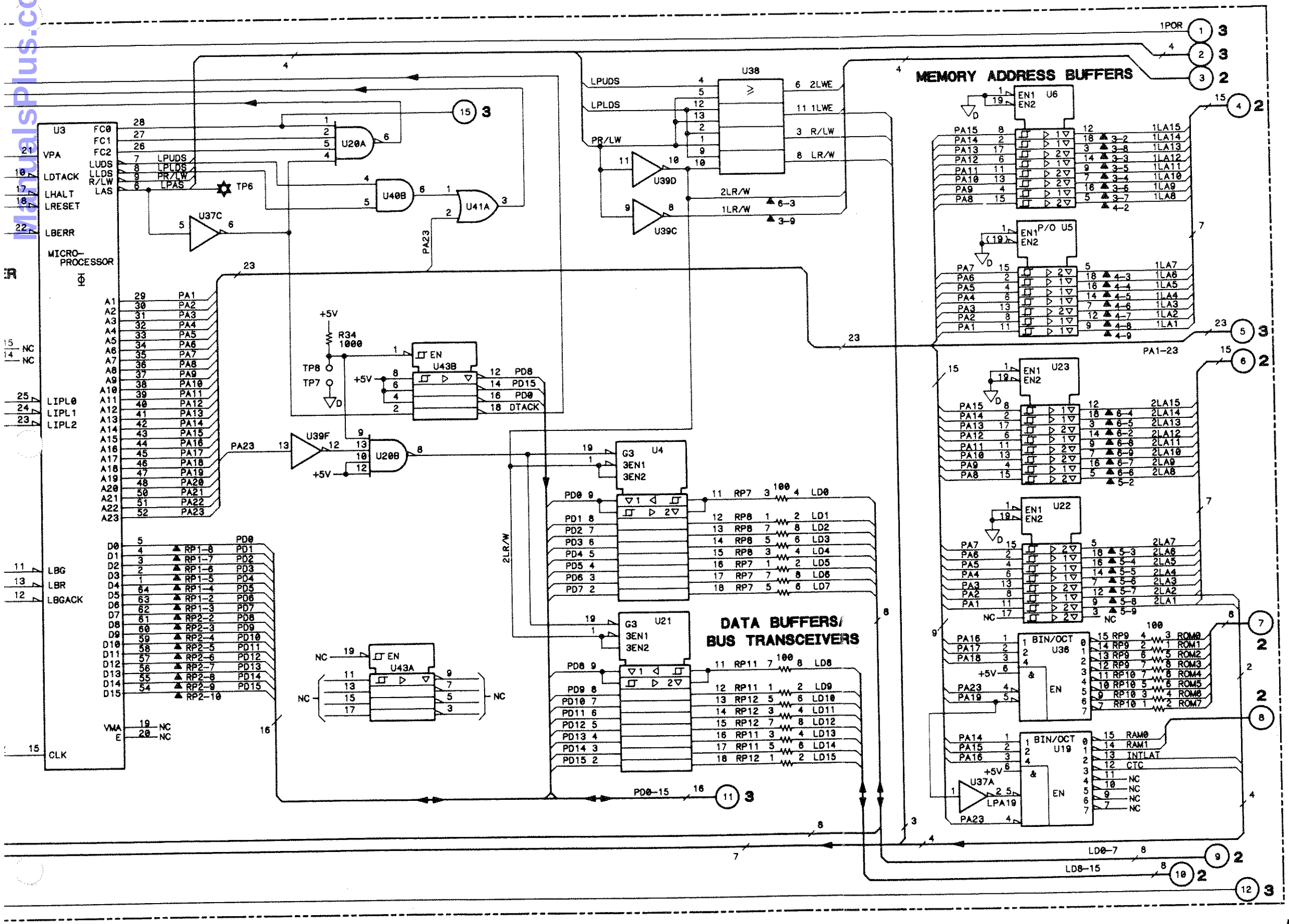
ROM was changed to update the firmware of the HP 54112D. The Microprocessor assembly part number was changed from 54111-66521 to 54111-66524.

CHANGE:		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
	U7 to	54112-80043	3	IC ROM	28480	54112-80043
	U8 to	54112-80045	5	IC ROM	28480	54112-80045
	U9 to	54112-80047	7	IC ROM	28480	54112-80047
	U10 to	54112-80049	9	IC ROM	28480	54112-80049
	U11 to	54112-80051	3	IC ROM	28480	54112-80051
	U12 to	54112-80053	5	IC ROM	28480	54112-80053
	U13 to	54112-80055	7	IC ROM	28480	54112-80055
	U24 to	54112-80044	4	IC ROM	28480	54112-80044
	U25 to	54112-80046	6	IC ROM	28480	54112-80046
	U26 to	54112-80048	8	IC ROM	28480	54112-80048
	U27 to	54112-80050	2	IC ROM	28480	54112-80050
	U28 to	54112-80052	4	IC ROM	28480	54112-80052
	U29 to	54112-80054	6	IC ROM	28480	54112-80054
	U30 to	54112-80056	8	IC ROM	28480	54112-80056

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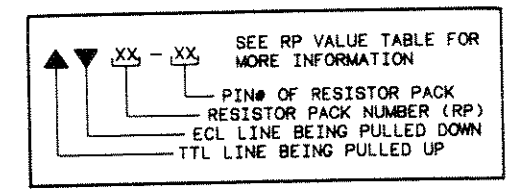


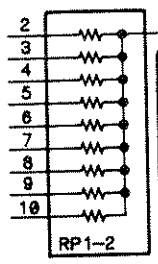
IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V	14	U17,18,20,35,
DGND	7	37-42
+5V	16	U19,34,36
DGND	8	
+5V	20	U1,4-6,21-23,43,
DGND	10	44
+5V	24	U2
DGND	12	
+5V	14,49	U3
DGND	16,53	

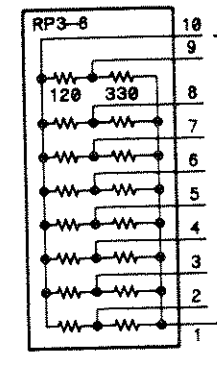
NOTES:

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
1,2	10K	10	+5V

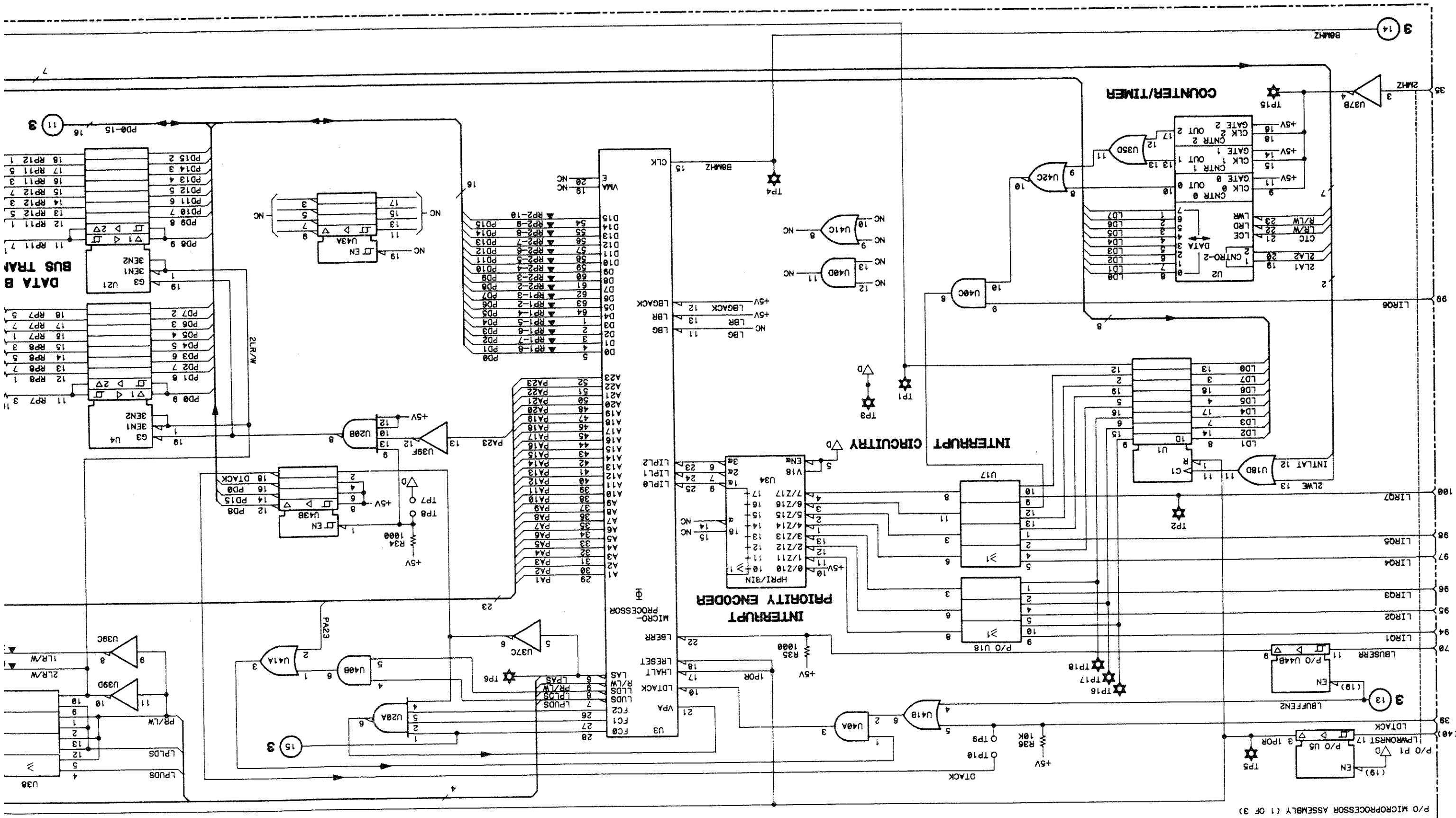


PARTS ON THIS SCHEMATIC

P/O P1
R34-36
RP1-12
U1-6,17-23,34,36,38,40,43
P/O U35,37,39,41,42,44
TP1-10,15-18

54111/SC11_01/3/9-87

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P/O MICROPROCESSOR ASSEMBLY (2 OF 3)

RAM

ROM

P/O P1 — VBATT

P/O P1 — LDØ–7, LPWRONRST, RAMØ,1, ROMØ–7, 2LA1–15, LD8–15, 2LWE, 2LR/W

1LWE, 1LR/W, 1LA1–15

2LA1–15

U15, U16, U7, U8, U9, U10, U11

U32, U33, U24, U25, U26, U27, U28

SAME AS U15 / SAME AS U7 / SAME AS U32 / SAME AS U24

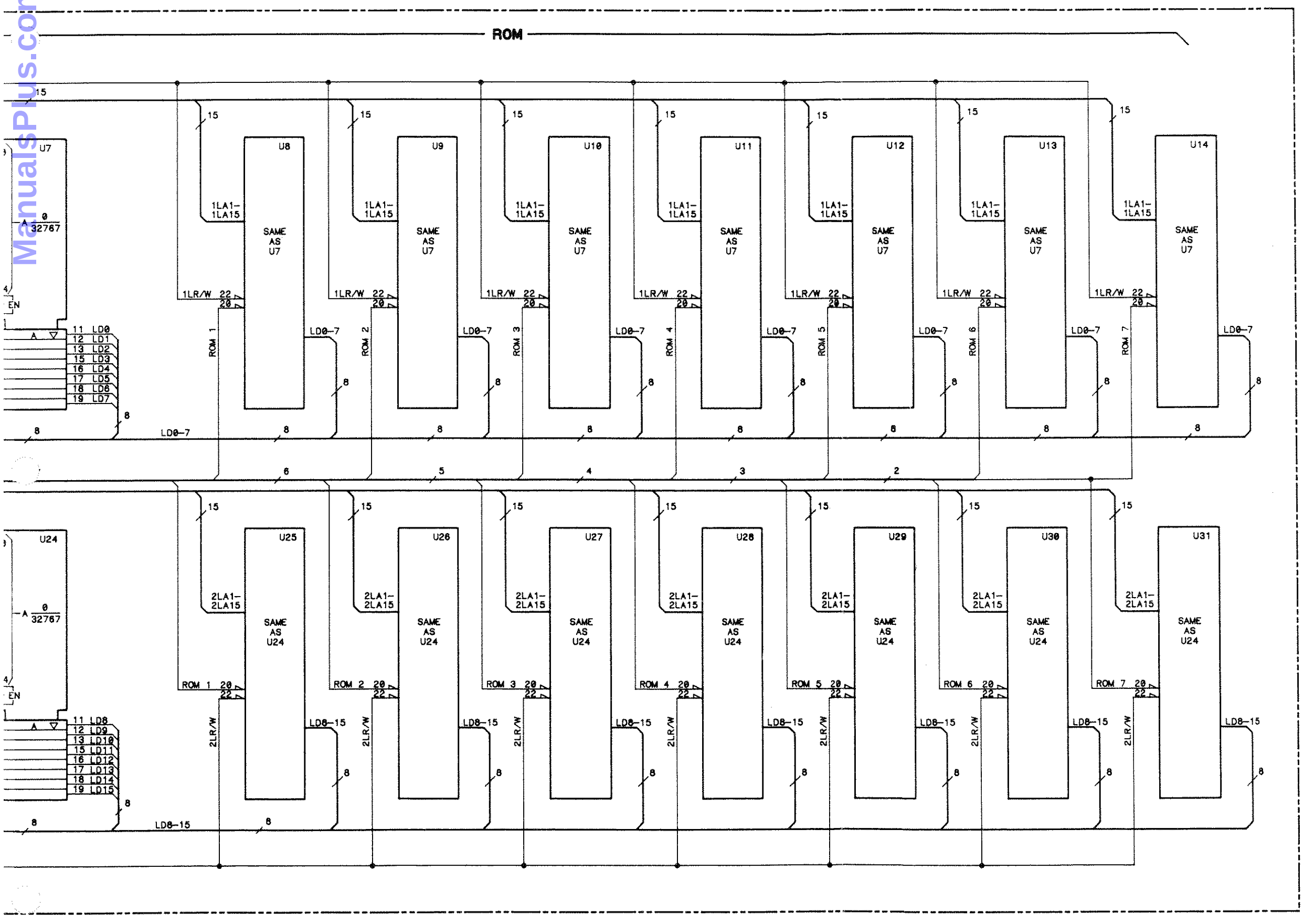
VBATT, C15 0.01, C16 0.01, C32 0.01, C33 0.01

1LA1–1LA13, 1LR/W (22), 1LWE 27, RAM1 20, ROM 0 20, 1LA1–1LA15, 1LR/W 22, ROM 1 20, ROM 2 20, ROM 3 20, ROM 4 20

2LA1–2LA13, 2LR/W (22), 2LWE 27, RAM1 20, ROM 0 20, 2LA1–2LA15, 2LR/W 22, ROM 1 20, ROM 2 20, ROM 3 20, ROM 4 20

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	1,28 14	U7–14,24–31
VBATT DGND	28 14	U15,16,32,33

NOTES:

1. GATES ARE SYMBOLIZED ACCORDING TO CIRCUIT FUNCTION.

PARTS ON THIS SCHEMATIC

C15,16,32,33
P/O P1
U7–16,24–33

54111/SC11_02/3/9–87

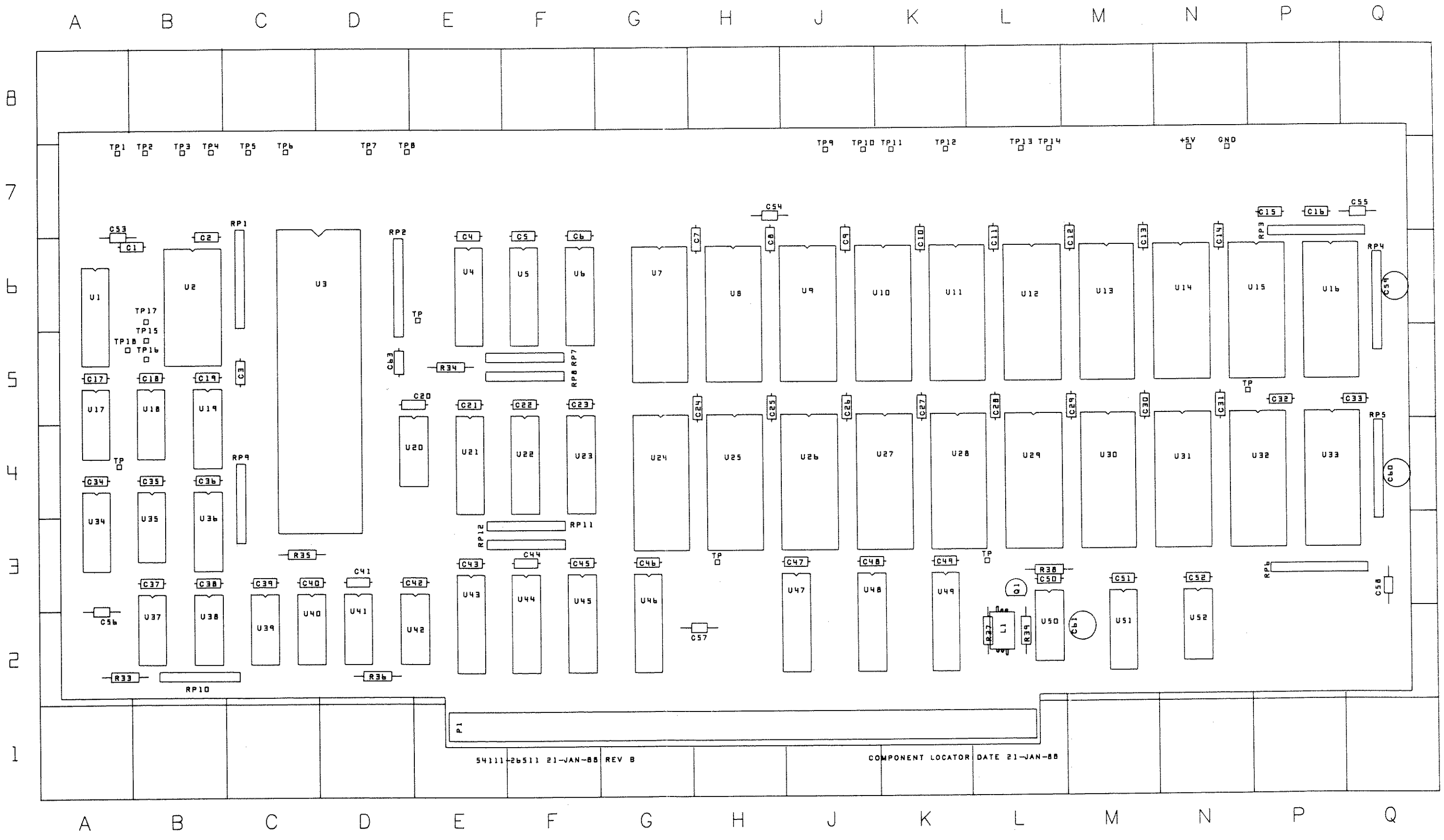
2

CPU ROM, RAM

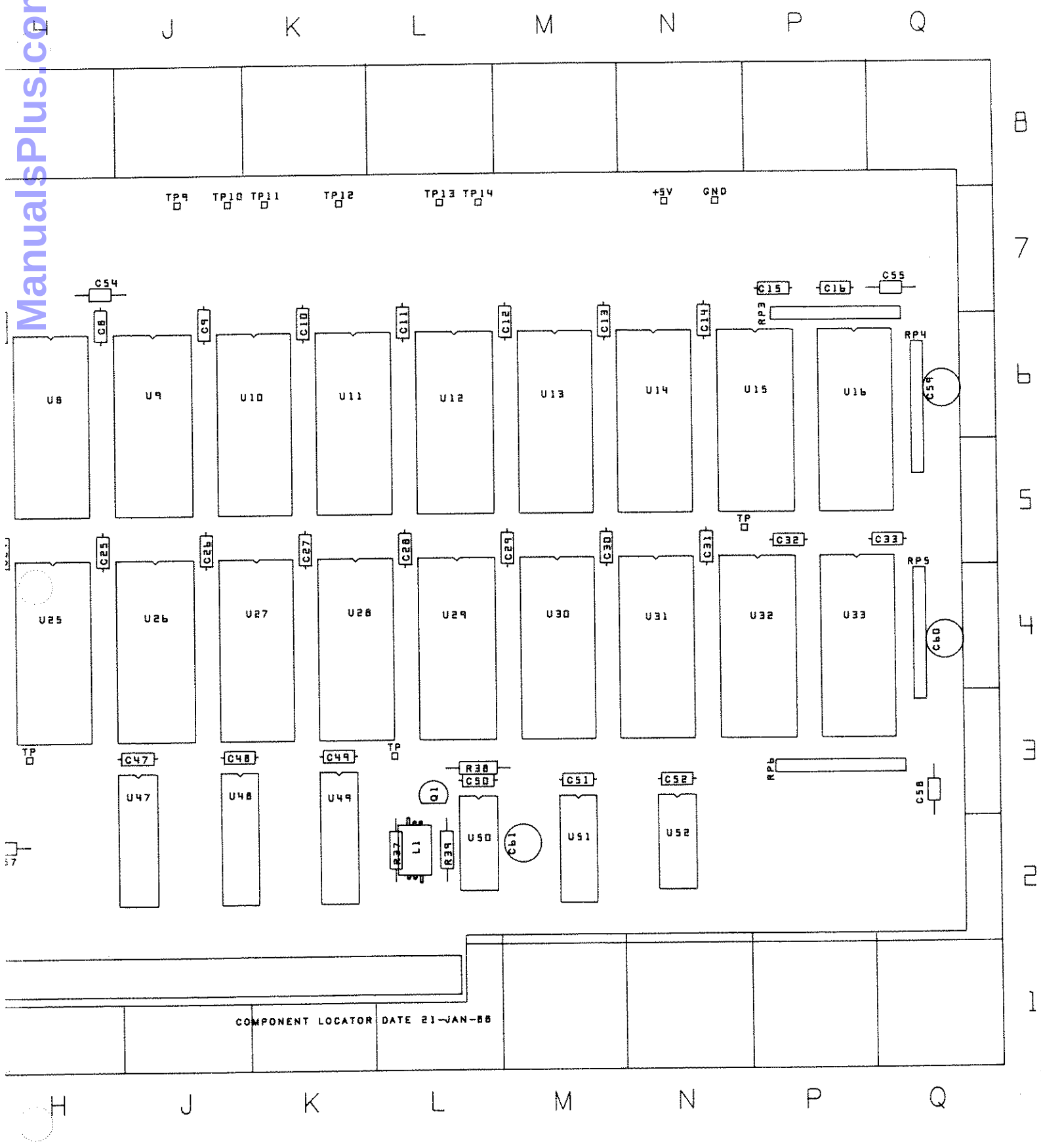
54111–66511

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REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC
C1	B-6	C42	E-3	RP6	P-3	U15	P-6
C2	B-6	C43	E-3	RP7	F-5	U16	P-6
C3	C-5	C44	F-3	RP8	F-5	U17	A-5
C4	E-6	C45	F-3	RP9	C-4	U18	B-5
C5	F-6	C46	G-3	RP10	B-2	U19	B-5
C6	F-6	C47	J-3	RP11	F-3	U20	E-4
C7	H-6	C48	J-3	RP12	E-3	U21	E-4
C8	H-6	C49	K-3			U22	F-4
C9	J-6	C50	L-3	TP1	A-7	U23	F-4
C10	K-6	C51	M-3	TP2	B-7	U24	G-4
C11	L-6	C52	N-3	TP3	B-7	U25	H-4
C12	M-6	C53	A-7	TP4	B-7	U26	J-4
C13	M-6	C54	H-7	TP5	C-7	U27	K-4
C14	N-6	C55	Q-7	TP6	C-7	U28	K-4
C15	P-7	C56	A-2	TP7	D-7	U29	L-4
C16	P-7	C57	H-2	TP8	D-7	U30	M-4
C17	A-5	C58	Q-3	TP9	J-7	U31	N-4
C18	B-5	C59	Q-6	TP10	J-7	U32	P-4
C19	B-5	C60	Q-4	TP11	K-7	U33	P-4
C20	E-5	C61	M-2	TP12	K-7	U34	A-3
C21	E-5	C63	D-5	TP13	L-7	U35	B-3
C22	F-5			TP14	L-7	U36	B-3
C23	F-5	L1	L-2	TP15	B-6	U37	B-2
C24	H-5			TP16	B-5	U38	B-2
C25	H-5	P1	E-2	TP17	B-6	U39	C-2
C26	J-5			TP18	A-5	U40	C-2
C27	K-5	Q1	L-3			U41	D-2
C28	L-5			U1	A-6	U42	E-2
C29	M-5	R33	A-1	U2	B-6	U43	E-3
C30	M-5	R34	E-5	U3	D-6	U44	F-3
C31	N-5	R35	C-3	U4	E-6	U45	F-3
C32	P-5	R36	D-2	U5	F-6	U46	G-3
C33	Q-5	R37	L-2	U6	F-6	U47	J-3
C34	A-4	R38	L-3	U7	G-6	U48	J-3
C35	B-4	R39	L-2	U8	H-6	U49	K-3
C36	B-4			U9	J-6	U50	L-2
C37	B-3	RP1	C-7	U10	K-6	U51	M-2
C38	B-3	RP2	D-7	U11	K-6	U52	N-2
C39	C-3	RP3	P-7	U12	L-6		
C40	C-3	RP4	Q-6	U13	M-6		
C41	D-3	RP5	Q-5	U14	N-6		

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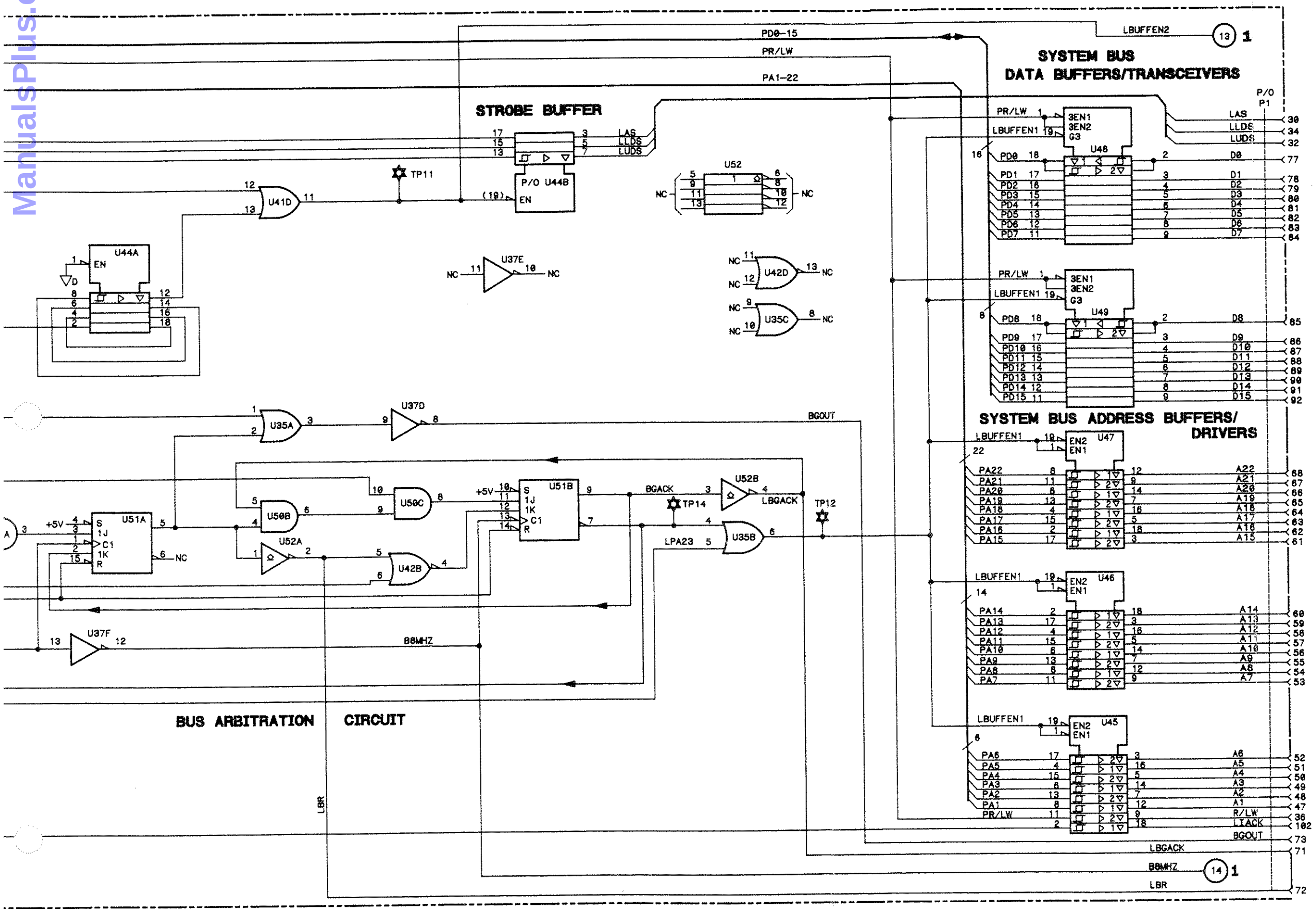
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P/O MICROPROCESSOR ASSEMBLY (3 OF 3)

PD0–15
PA1–23
P/O P1
+5
L1
+5V
C61 33UF
C3,63 0.1UF
C1,2,4–14, 17–31,34–52 0.01UF
C59,60 4.7UF
DGND
SCREWS
C53 1000
C54 1000
C55 1000
C56 1000
C57 1000
C58 1000
R33 10K
BGIN
R38 100
Q1
R39 681
U50D
U39A
U42A
TP13
LPAS
LPDS
LPUDS
LPA23
1POR
8MHZ
IENBLIN
IENBLOUT
+5ILIMIT
ILIMRTN
R37 5110
U39C
U39B
U50A
U51A
U37F
U35A
U37D
U50B
U50C
U52A
U42B
U51B
U52B
U35B
TP14
BGACK
LBGACK
LPA23
B8MHZ
LBR
PD0–15
PR/LW
PA1–22
STROBE BUFFER
LAS
LLDS
LUDS
TP11
P/O U44B
EN
U44A
U41D
U37E
U42D
U35C
U52
BUS ARBITRATION CIRCUIT

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	14 7	U35,37,39,41, 42,50,52
+5V DGND	16 8	U51
+5V DGND	20 10	U44–49

NOTES:

PARTS ON THIS SCHEMATIC

C1–14,17–31,34–61,63
L1
P/O P1
Q1
R33,37–39
TP11–14
U45–52
P/O U35,37,39,41,42,44

54111/SC11_03/3/9–87

3

Data and Address Buffers
Bus Arbitration
54111–66511

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Component-level Information Packet

for HP 54111D

Microprocessor

54111-66519
54111-66526

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While this document may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate. The configuration of some assemblies may differ from that indicated in this document.

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1	0160-6623	5	2	CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C2	0160-6623	5		CAPACITOR-FXD 0.1UF +-20% 50VDC CER	28480	0160-6623
C3	0180-0309	4	2	CAPACITOR-FXD 4.7UF+-20% 10VDC TA	56289	150D475X0010A2
C4	0180-0309	4		CAPACITOR-FXD 4.7UF+-20% 10VDC TA	56289	150D475X0010A2
C5	0180-0229	7	1	CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C6	0160-4574	1	6	CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C7	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C8	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C9	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C10	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C11	0160-4574	1		CAPACITOR-FXD 1000PF +-10% 100VDC CER	28480	0160-4574
C12	0160-6500	7	45	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C13	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C14	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C15	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C16	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C17	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C18	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C19	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C20	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C21	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C22	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C23	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C24	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C25	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C26	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C27	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C28	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C29	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C30	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C31	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C32	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C33	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C34	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C35	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C36	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C37	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C38	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C39	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C40	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C41	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C42	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C43	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C44	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C45	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C46	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C47	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C48	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C49	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C50	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C51	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C52	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C53	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C54	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C55	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C56	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
H1	0515-0372	2	1	SCREW MACH M3 8MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
L1	5081-7682	5	1	CHOKE RF	28480	5081-7682
MP1	54111-00605	2	1	SHIELD-PROCESSOR	28480	54111-00605
MP2	54111-45004	1	1	EXTRACTOR RIGHT	28480	54111-45004
MP3	54111-45005	2	1	EXTRACTOR LEFT	28480	54111-45005
P1	1252-0198	3	1	CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1252-0198
Q1	1854-0215	1	2	TRANSISTOR NPN SI TO-92 PD=350MW	2M627	2N3904
Q2	1854-0215	1		TRANSISTOR NPN SI TO-92 PD=350MW	2M627	2N3904
R1	0757-0419	0	1	RESISTOR 681 +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-681R-F
R2	0757-0438	3	1	RESISTOR 5.11K +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-5111-F
R3	0757-0280	3	4	RESISTOR 1K +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1001-F
R4	0757-0442	9	2	RESISTOR 10K +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1002-F
R5	0757-0442	9		RESISTOR 10K +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1002-F
R6	0757-0437	2	1	RESISTOR 4.75K +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-4751-F
R7	0757-0280	3		RESISTOR 1K +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1001-F
R8	0757-0280	3		RESISTOR 1K +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1001-F
R9	0757-0280	3		RESISTOR 1K +-1% 0.125W TF TC=0+-100	2M627	CT4-1/8-T0-1001-F
RP1	1810-0280	8	2	NETWORK-RES 10-SIP 10.0K OHM X 9	28480	1810-0280
RP2	1810-0280	8		NETWORK-RES 10-SIP 10.0K OHM X 9	28480	1810-0280
RP3	1810-0696	0	4	NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP4	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP5	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP6	1810-0696	0		NETWORK-RES 10-SIP MULTI-VALUE	28480	1810-0696
RP7	1810-0350	3	5	NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP8	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP9	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP10	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
RP11	1810-0350	3		NETWORK-RES 8-SIP 100.0 OHM X 4	11236	750-83-R100
TP1	0360-1653	5	21	CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP2	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP3	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP4	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP5	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP6	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP7	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP8	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP9	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP10	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP11	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP12-14				NOT ASSIGNED		
TP15	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP16	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP17	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653
TP18	0360-1653	5		CONNECTOR-SGL CONT PIN 0.045-IN-BSC-SZ SQ	28480	0360-1653

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U1	1820-1730	6	1	IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS273N
U2	1820-3347	5	1	IC-10 MHZ PROGRAMMABLE INTERVAL TIMER	34649	P8254-2
U3	1820-2505	5	1	IC-MPU; CLK FREQ=8MHZ, INSTRUCTION	04713	MC68000L8
U4	1820-2075	4	2	IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U5	1820-2795	5	8	IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U6	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U7	54111-80033	0	1	IC ROM	28480	54111-80033
U8	54111-80035	2	1	IC ROM	28480	54111-80035
U9-13				NOT ASSIGNED		
U14	1818-4228	8	6	IC CMOS 262144 (256K) STAT RAM 120-NS	S4013	HM62256LP-12SL
U15	1818-4228	8		IC CMOS 262144 (256K) STAT RAM 120-NS	S4013	HM62256LP-12SL
U16	1818-4228	8		IC CMOS 262144 (256K) STAT RAM 120-NS	S4013	HM62256LP-12SL
U17	1820-1208	3	3	IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U18	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U19	1820-3220	3	1	IC DCDR TTL F BIN 2-TO-4-LINE DUAL	04713	MC74F139N
U20	1820-1204	9	1	IC GATE TTL LS NAND DUAL 4-INP	01295	SN74LS20N
U21	1820-2075	4		IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U22	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U23	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U24	54111-80034	1	1	IC ROM	28480	54111-80034
U25	54111-80036	3	1	IC ROM	28480	54111-80036
U26-29				NOT ASSIGNED		
U30	1820-2686	3	1	IC GATE TTL F AND QUAD 2-INP	04713	MC74F08P
U31	1818-4228	8		IC CMOS 262144 (256K) STAT RAM 120-NS	S4013	HM62256LP-12SL
U32	1818-4228	8		IC CMOS 262144 (256K) STAT RAM 120-NS	S4013	HM62256LP-12SL
U33	1818-4228	8		IC CMOS 262144 (256K) STAT RAM 120-NS	S4013	HM62256LP-12SL
U34	1820-1851	2	1	IC ENCDR TTL LS	01295	SN74LS148N
U35	1820-2690	9	2	IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U36	1820-2861	6	1	IC DCDR TTL F 3-TO-8-LINE	04713	MC74F138N
U37	1820-2506	6	2	IC INV TTL F HEX	04713	MC74F04N
U38	1820-2690	9		IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U39	1820-2506	6		IC INV TTL F HEX	04713	MC74F04N
U40	1820-1201	6	1	IC GATE TTL LS AND QUAD 2-INP	01295	SN74LS08N
U41	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U42	1820-2685	2	1	IC GATE TTL F NOR QUAD 2-INP	04713	MC74F02N
U43	1820-1917	1	1	IC DRVR TTL LS LINE OCTL	01295	SN74LS240N
U44	1820-2024	3	1	IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U45	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U46	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U47	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U48	1820-3224	7	2	IC TRANSCEIVER TTL F BUS OCTL	07263	74F245PC
U49	1820-3224	7		IC TRANSCEIVER TTL F BUS OCTL	07263	74F245PC
U50	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U51	1820-2688	5	1	IC GATE TTL F AND TPL 3-INP	04713	MC74F11N
U52	1820-4721	1	1	IC GATE CMOS/74HC OR QUAD 2-INP	18324	74HCT32N
XU1-6				NOT ASSIGNED		
XU7	1200-1351	3	4	SOCKET-IC 32-CONT DIP DIP-SLDR	28480	1200-1351
XU8	1200-1351	3		SOCKET-IC 32-CONT DIP DIP-SLDR	28480	1200-1351
XU9-23				NOT ASSIGNED		
XU24	1200-1351	3		SOCKET-IC 32-CONT DIP DIP-SLDR	28480	1200-1351
XU25	1200-1351	3		SOCKET-IC 32-CONT DIP DIP-SLDR	28480	1200-1351

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CHANGE 1 for 54111-66526, Microprocessor

Schematic 2

ROM was changed to update the firmware of the HP 54111D. The Microprocessor assembly part number was changed from 54111-66519 to 54111-66526.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	U7 to	54111-80037	4	IC ROM	28480	54111-80037
	U8 to	54111-80039	6	IC ROM	28480	54111-80039
	U24 to	54111-80038	5	IC ROM	28480	54111-80038
	U25 to	54111-80040	9	IC ROM	28480	54111-80040

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P/O MICROPROCESSOR ASSEMBLY (1 OF 3)

P/O P1

(40) LPWRONRST — (19) EN P/O U5 — 1POR — TP5 — +5V R4 10K

39 LDTACK

TP10 — TP9 — LBUFFEN1 — U41B — U40A — LTDTACK

(19) EN P/O U44B — +5V R3 1000 — 1POR

70 LBUSERR

94 LIRQ1

95 LIRQ2

96 LIRQ3

97 LIRQ4

98 LIRQ5

100 LIRQ7

TP16 TP17 TP18

P/O U18 — U17

TP2 TP3

INTLAT — U18D — 2LWE

U1 R C1 1D — LD1 LD2 LD3 LD4 LD5 LD6 LD7 LD0

+5V +5V R8 1000 R7 1000

71 LBGACK

72 LBR

99 LIRQ6

U2 CNTR0–2 — 2LA1 2LA2 CTC LR/W R/LW — LCE LRD LWR — DATA — LD0 LD1 LD2 LD3 LD4 LD5 LD6 LD7

CLK 0 CNTR 0 GATE 0 OUT 0 — CLK 1 CNTR 1 GATE 1 OUT 1 — CLK 2 CNTR 2 GATE 2 OUT 2

U40C — U42C — U35D

U37B — 2MHZ — 8MHZ — TP15

HPRI/BIN — 0/Z10 1/Z11 2/Z12 3/Z13 4/Z14 5/Z15 6/Z16 7/Z17 — V18 ENα — NC NC — LIPL0 LIPL1 LIPL2

U44A — NC NC

TP1

U39A U39B — TP4 — B8MHZ — CLK

MICRO-PROCESSOR

LBERR — LBGACK — LBR — LBG

VPA FC0 FC1 FC2 LDS LLDS R/LW LAS — LDTACK LHALT LRESET

A1 PA1 … A23 PA23

D0 PD0 … D15 PD15

VMA E — NC NC

TP6 — U37C — PAS

U20A U40B U41A — PA23

LPUDS LPLDS PR/LW

U39D U39C

LBUFFEN1

+5V R9 1000 — TP8 TP7 — U43B — PD8 PD15 PD10 LTDTACK

Q1 — R1 681 — U30A

2LR/W

U39F — U20B — PA23

U4 G3 3EN1 3EN2 — PD0 PD1 PD2 PD3 PD4 PD5 PD6 PD7

U21 G3 3EN1 3EN2 — PD8 PD9 PD10 PD11 PD12 PD13 PD14 PD15

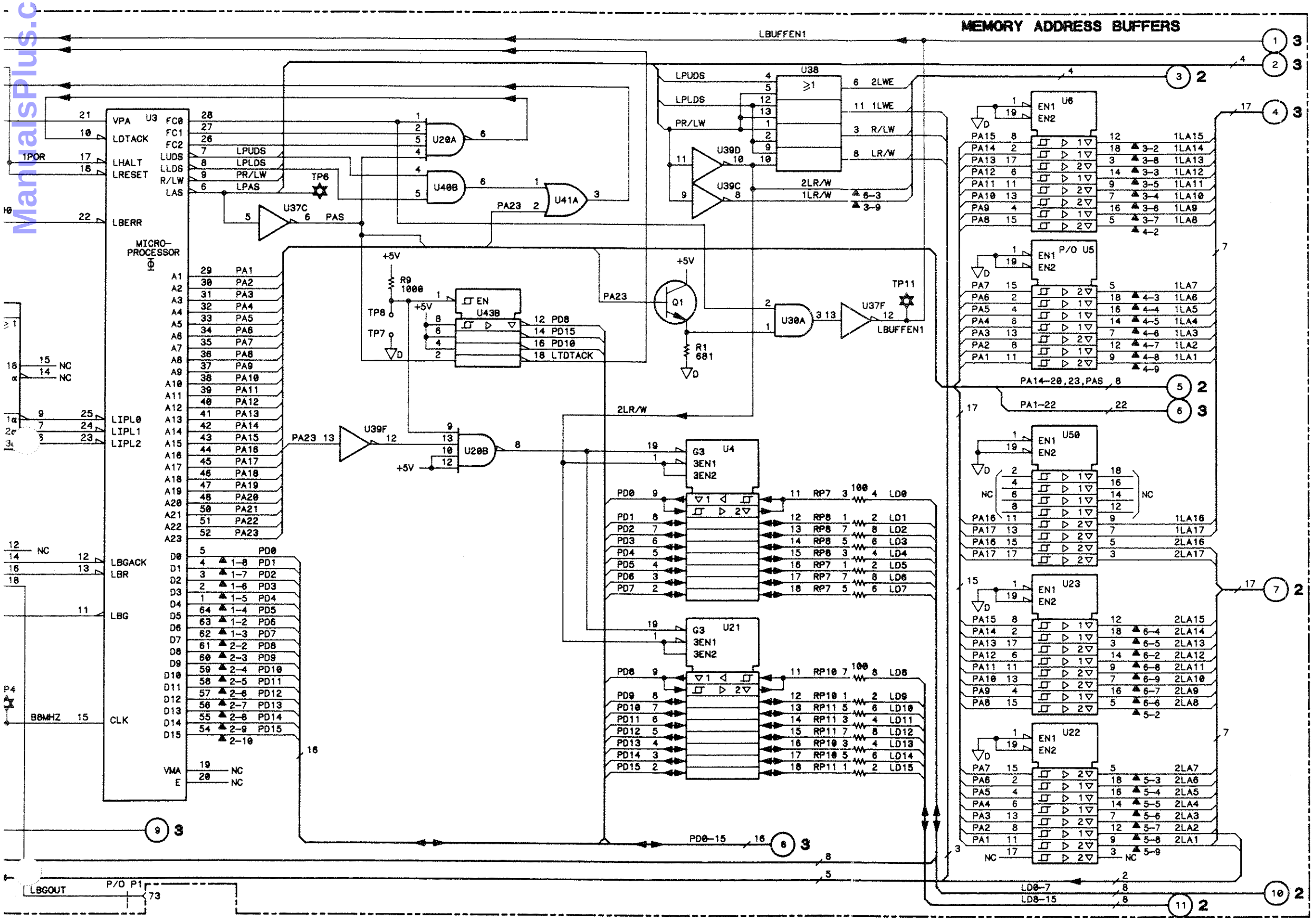
PD0–15

(12) 2 — (9) 3 — (8)

P/O P1 73 — LBGOUT

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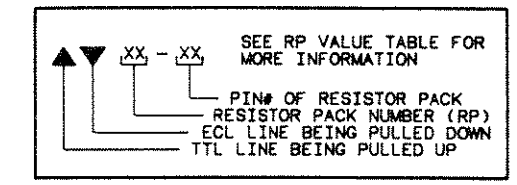
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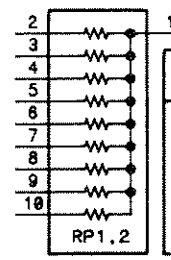


IC DEVICE POWER CONNECTIONS

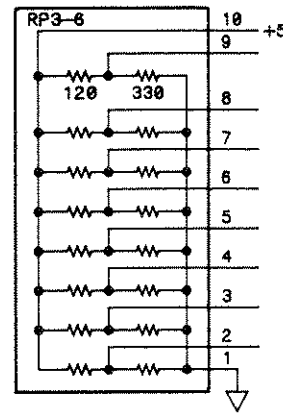
SUPPLY	PIN NO.	IC GROUP
+5V DGND	20 10	U1,4–6,21–23, 43,44,50
+5V DGND	24 12	U2
+5V DGND	14,49 16,53	U3
+5V DGND	14 7	U17,18,20,30, 35,37–42
+5V DGND	16 8	U34

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
1,2	10K	10	+5V



PARTS ON THIS SCHEMATIC

P/O P1
Q1
R1,3,4,7-9
RP1-8,10,11
TP1-11,15-18
U1-6,17,18,20-23,34,38,50
P/O U30,35,39-44

54111/SC19_01/3/10-88

1

Microprocessor Interrupt Circuits
Memory Bus Drivers
54111-66519

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P/O MICROPROCESSOR ASSEMBLY (2 OF 3)

1 3 4
1 4 17 1LA1-17

P/O P1
100 VBATT +3V
C21-23,35-37 0.01µF
VBATT TO U14-16,31-33 PIN 28 U52 PIN 14 R5

1 10 8 LD0-7

1 7 17 2LA1-17
1 5 9

PA18 1
PA19 2
PA20 3
BIN/OCT U36 EN
PA23 6
PA5 4
5
RP9 100
LROM0 3
LROM1 1
LROM2 5
LROM3 7
NC 12
NC 11
NC 9
NC 7

PA14 2
PA15 3
PA16 14
PA17 13
15
X/Y U19 EN
LINTLAT 6
CTC 7
U51A
U52 ≥1
LRAMEN0 3
LRAMEN1 6
LRAMEN2 8
NC 11
NC 12
NC 10
NC 9

VBATT
R5 10K
P/O P1 (40) LPWRONRST
R6 4750
Q2

12 2

1LA1 10
1LA2 9
1LA3 8
1LA4 7
1LA5 6
1LA6 5
1LA7 4
1LA8 3
1LA9 25
1LA10 24
1LA11 21
1LA12 23
1LA13 2
1LA14 26
1LA15 1
LRAMEN0 20
1LR/W 22
1LWE 27
RAM 32768 X 8
A 0/32767
EN
& G1[WRITE]
& G2[READ]
U14
LD0 11
LD1 12
LD2 13
LD3 15
LD4 16
LD5 17
LD6 18
LD7 19
A1D ▽3
A2Z3

1LR/W
1LA1-15
LRAMEN1
1LR/W
1LWE
LD0-7
U15 SAME AS U14

1LR/W
1LA1-15
LRAMEN2
1LR/W
1LWE
LD0-7
U16 SAME AS U14

1LA1 12
1LA2 11
1LA3 10
1LA4 9
1LA5 8
1LA6 7
1LA7 6
1LA8 5
1LA9 27
1LA10 26
1LA11 23
1LA12 25
1LA13 4
1LA14 28
1LA15 29
1LA16 3
1LA17 2
1LR/W 24
LROM0 22
ROM 131072 X 8
A 0/131071
& EN
U7
A▽
13 LD0
14 LD1
15 LD2
17 LD3
18 LD4
19 LD5
20 LD6
21 LD7
8

1LA1-
1LR/W
1LROM

2LA1 10
2LA2 9
2LA3 8
2LA4 7
2LA5 6
2LA6 5
2LA7 4
2LA8 3
2LA9 25
2LA10 24
2LA11 21
2LA12 23
2LA13 2
2LA14 26
2LA15 1
LRAMEN0 20
2LR/W 22
2LWE 27
RAM 32768 X 8
A 0/32767
EN
& G1[WRITE]
& G2[READ]
U31
LD8 11
LD9 12
LD10 13
LD11 15
LD12 16
LD13 17
LD14 18
LD15 19
A1D ▽3
A2Z3

2LR/W
2LA1-15
LRAMEN1
2LR/W
2LWE
LD8-15
U32 SAME AS U31

2LR/W
2LA1-15
LRAMEN2
2LR/W
2LWE
LD8-15
U33 SAME AS U31

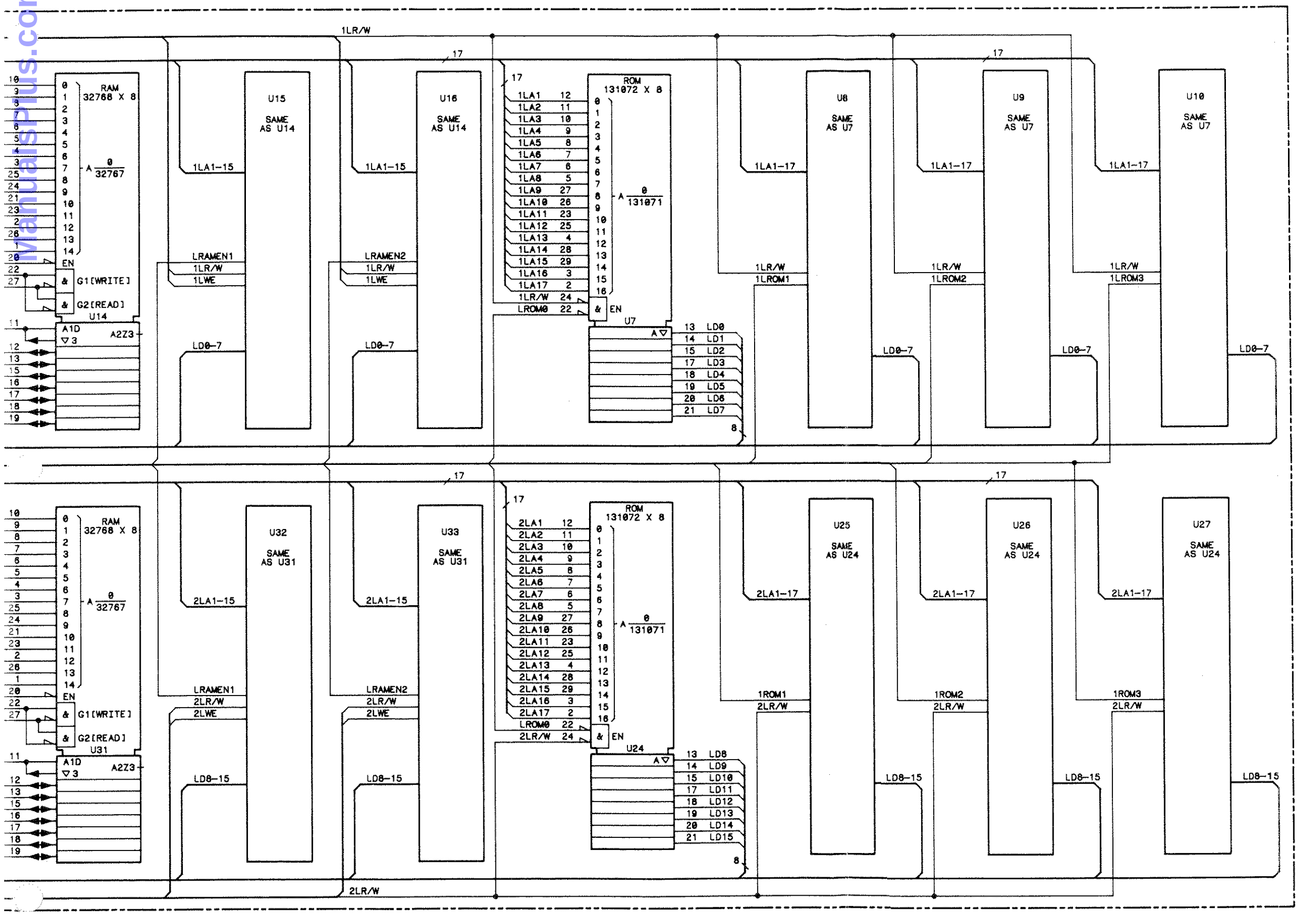
2LA1 12
2LA2 11
2LA3 10
2LA4 9
2LA5 8
2LA6 7
2LA7 6
2LA8 5
2LA9 27
2LA10 26
2LA11 23
2LA12 25
2LA13 4
2LA14 28
2LA15 29
2LA16 3
2LA17 2
LROM0 22
2LR/W 24
ROM 131072 X 8
A 0/131071
& EN
U24
A▽
13 LD8
14 LD9
15 LD10
17 LD11
18 LD12
19 LD13
20 LD14
21 LD15
8

2LA1-
1ROM1
2LR/W

1 11 8
2LR/W

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	1,32 16	U7–10,24–27
VBATT DGND	28 14	U14–16,31–33
+5V DGND	16 8	U19,36
+5V DGND	14 8	U51,52

PARTS ON THIS SCHEMATIC

C21–23,35–37
P/O P1
Q2
R5,6
RP9
U7–10,14–16,19,24–27,31–33,36,52
P/O U51

54111/SC19_02/3/10–88

2

CPU ROM and RAM

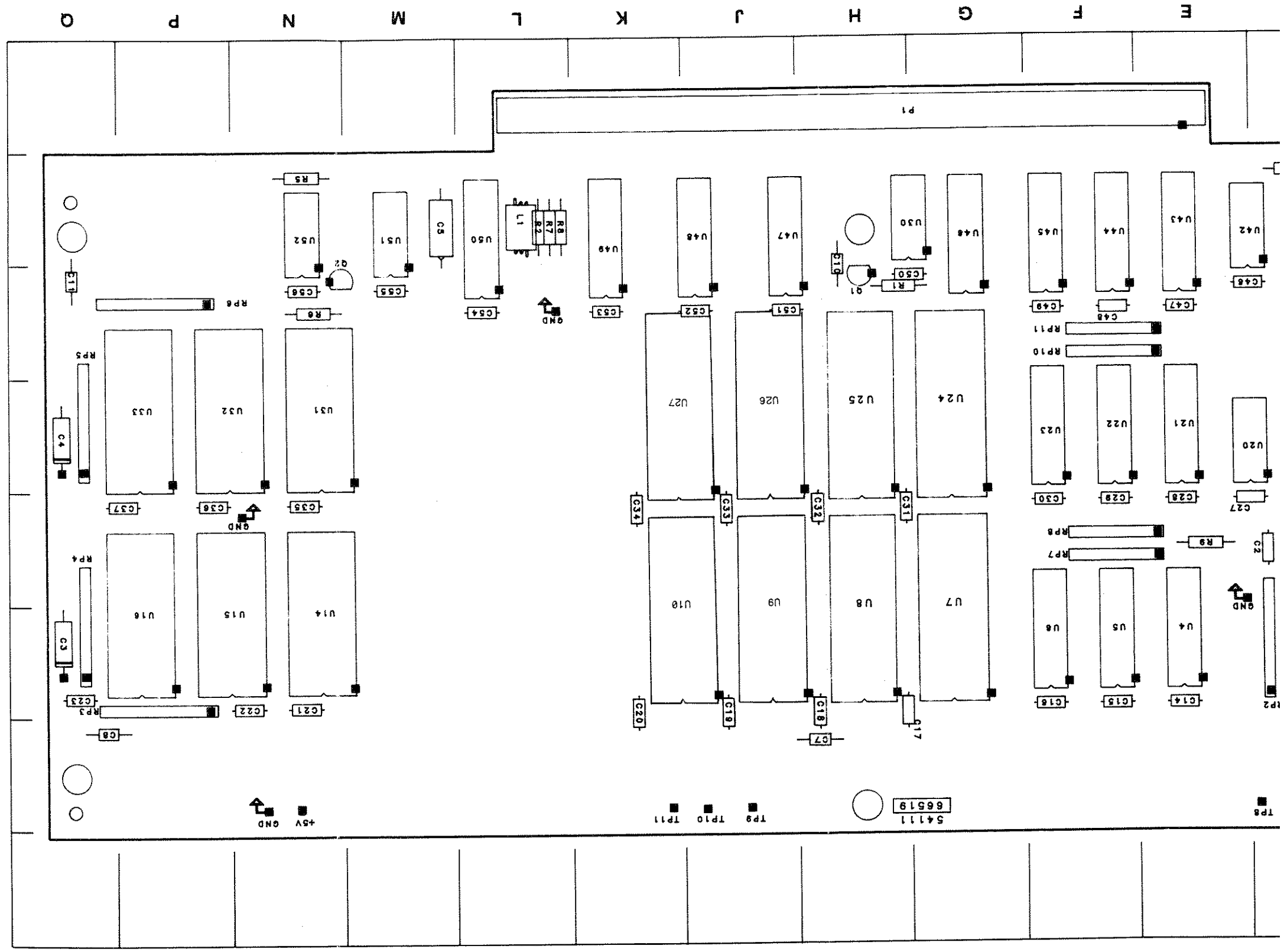
54111–66519

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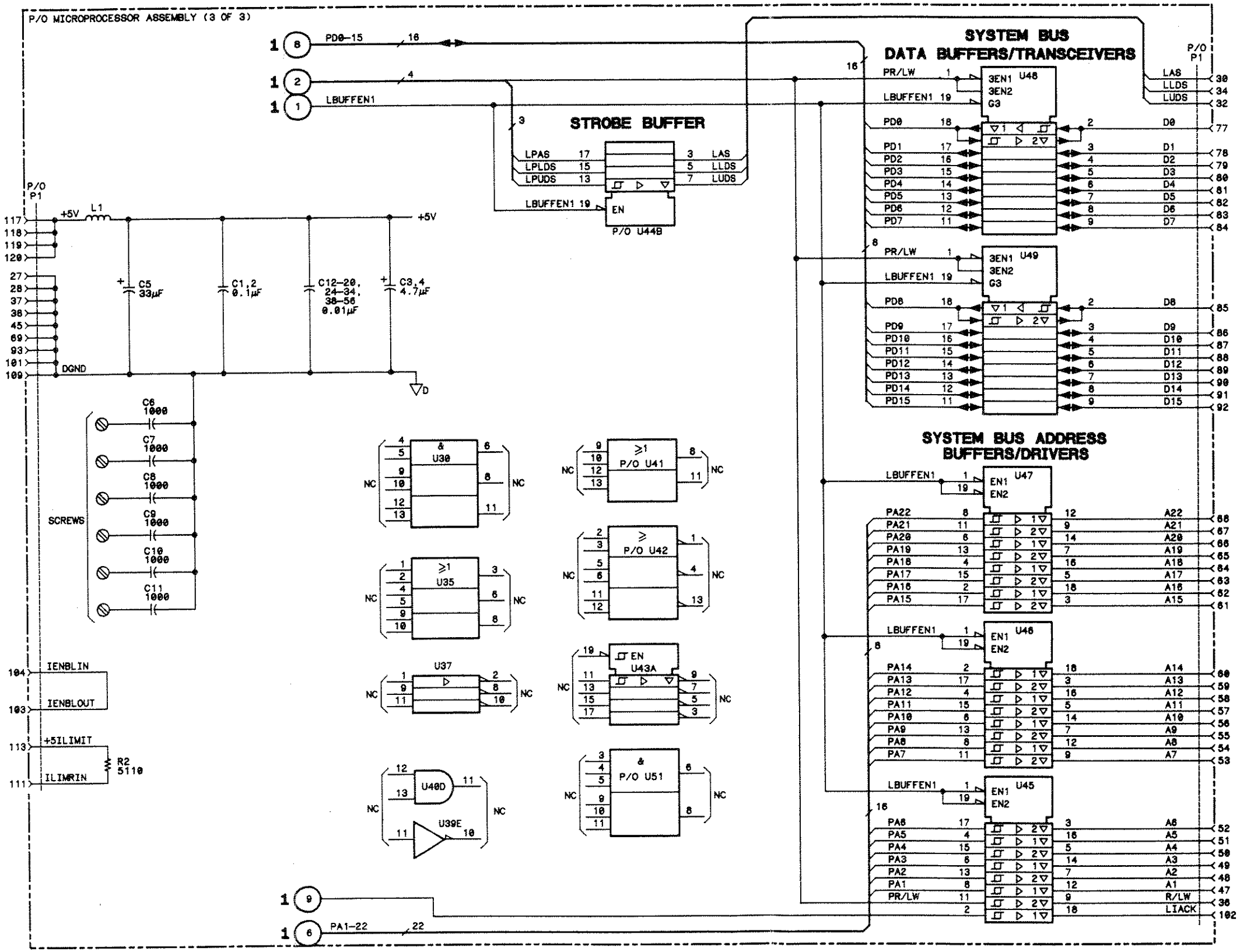


REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC
C1	C-5	C52	J-3		
C2	D-5	C53	K-3	U1	A-6
C3	Q-6	C54	L-3	U2	B-6
C4	Q-4	C55	M-3	U3	C-5
C5	M-2	C56	N-3	U4	E-6
C6	A-6			U5	F-6
C7	H-7	L1	L-2	U6	F-6
C8	Q-7			U7	G-6
C9	A-2	P1	G-1	U8	H-6
C10	H-3			U9	J-6
C11	Q-3	Q1	H-3	U10	K-6
C12	B-6	Q2	N-2	U14	N-6
C13	B-6			U15	N-6
C14	E-6	R1	H-3	U16	P-6
C15	F-6	R2	L-2	U17	A-4
C16	F-6	R3	C-3	U18	B-4
C17	G-7	R4	D-2	U19	B-4
C18	H-6	R5	N-2	U20	D-4
C19	J-6			U21	E-4
C20	K-6	R6	N-3	U22	F-4
C21	N-6	R7	L-2	U23	F-4
C22	N-6	R8	L-2	U24	G-4
C23	Q-6	R9	E-5	U25	H-4
C24	A-5			U26	J-4
C25	B-5	RP1	C-7	U27	K-4
C26	B-5	RP2	D-6	U30	G-2
C27	E-5	RP3	Q-6	U31	N-4
C28	E-5	RP4	Q-5	U32	N-4
C29	F-5	RP5	Q-3	U33	P-4
C30	F-5	RP6	N-3	U34	A-3
C31	H-5	RP7	F-5	U35	B-3
C32	H-5	RP8	F-5	U36	B-3
C33	J-5	RP9	C-4	U37	B-2
C34	K-5	RP10	F-3	U38	B-2
C35	N-5	RP11	F-3	U39	C-2
C36	P-5			U40	C-2
C37	P-5	TP1	A-7	U41	D-2
C38	A-4	TP2	B-7	U42	D-2
C39	B-4	TP3	B-7	U43	E-2
C40	B-4	TP4	B-7	U44	F-2
C41	B-3	TP5	C-7	U45	F-2
C42	B-3	TP6	C-7	U46	G-2
C43	C-3	TP7	D-7	U47	J-2
C44	C-3	TP8	D-7	U48	J-2
C45	D-3	TP9	J-7	U49	K-2
C46	D-3	TP10	J-7	U50	L-2
C47	E-3	TP11	K-7	U51	M-2
C48	F-3	TP15	B-5	U52	N-2
C49	F-3	TP16	B-5		
C50	G-3	TP17	B-6		
C51	J-3	TP18	A-5		

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V DGND	14 7	U30,35,37, 39–42,51
+5V DGND	20 10	U44–49



PARTS ON THIS SCHEMATIC

C1–20,24–34,38–56
L1
P/O P1
R2
U45–49
P/O U30,35,37,39–44,51

54111/SC19_03/3/19–88

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Component-level Information Packet

for HP 54111D, 54112D, 54120A/B

Color Display Assembly

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1	0160-6500	7	79	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C2	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C3	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C4	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C5	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C6	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C7	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C8	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C9	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C10	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C11	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C12	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C13	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C14	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C15	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C16	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C17	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C18	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C19	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C20	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C21	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C22	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C23	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C24	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C25	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C26	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C27	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C28	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C29	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C30	0180-0229	7	5	CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C31	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C32	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C33	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C34	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C35	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C36	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C37	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C38	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C39	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C40	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C41	0180-0229	7		CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C42	0180-0229	7		CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C43	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C44	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C45	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C46	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C47	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C48	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C49	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C50	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C51	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C52	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C53	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C54	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C55	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C56	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C57	0180-0229	7		CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C58	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C59	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C60	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C61	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C62	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C63	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C64	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C65	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C66	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C67	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C68	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C69	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C70	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C71	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C72	0180-0229	7		CAPACITOR-FXD 33UF+-10% 10VDC TA	56289	150D336X9010B2
C73	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C74	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C75	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C76	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C77	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C78	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C79	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C80	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C81	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C82	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C83	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C84	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
DS1	1990-0486	6	1	LED-LAMP LUM-INT=2MCD IF=25MA-MAX BVR=5V	28480	HLMP-1301
E1	1252-1157	6	2	CONNECTOR-PIN ASSEMBLY	28480	1252-1157
E2	1252-1157	6		CONNECTOR-PIN ASSEMBLY	28480	1252-1157
H1	0515-0664	5	2	SCREW MACH M3 12MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
J1	1252-1072	4	1	CONN-POST TYPE 0.150-PIN-SPCG 60-CONT	28480	1252-1072
J2	1251-8158	9	1	CONN-POST TYPE 0.100-PIN-SPCG 40-CONT	28480	1251-8158
L1	5081-7682	5	1	CHOKE RF	28480	5081-7682
MP1	54110-40503	4	1	GUIDE-CONNECTOR	28480	54110-40503
R1	0757-0410	1	1	RESISTOR 301 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-301R-F
R2	0757-0280	3	1	RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
RP1	1810-0279	5	1	NETWORK-RES 10-SIP 4.7K OHM X 9	28480	1810-0279
U1	1818-3214	0	24	DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U2	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U3	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U4	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U5	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U6	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U7	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U8	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U9	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U10	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U11	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U12	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U13	1813-0285	9	1	CLOCK-OSCILLATOR-XTAL 20.0000-MHZ 0.01%	04713	RASCO PLUS-20MHZ
U14	1820-1195	7	2	IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS175N
U15	1820-1112	8	2	IC FF TTL LS D-TYPE POS-EDGE-TRIG	01295	SN74LS74AN
U16	1820-3348	6	1	IC CNTR TTL F BIN SYNCHRO POS-EDGE-TRIG	07263	74F163APC
U17	1820-2686	3	2	IC GATE TTL F AND QUAD 2-INP	04713	MC74F08P
U18	1820-2691	0	6	IC FF TTL F D-TYPE POS-EDGE-TRIG	04713	MC74F74N
U19	1820-2691	0		IC FF TTL F D-TYPE POS-EDGE-TRIG	04713	MC74F74N
U20	1820-1457	4	2	IC SHF-RGTR TTL S D-TYPE PRL-IN PRL-OUT	01295	SN74S299N
U21	1820-1457	4		IC SHF-RGTR TTL S D-TYPE PRL-IN PRL-OUT	01295	SN74S299N
U22	1820-2685	2	1	IC GATE TTL F NOR QUAD 2-INP	04713	MC74F02N
U23	1820-2506	6	3	IC INV TTL F HEX	04713	MC74F04N
U24	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U25	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U26	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U27	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U28	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U29	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U30	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U31	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U32	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U33	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U34	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U35	1818-3214	0		DRAM 16KX4 150 NS PLSTC 5V	01295	TMS4416-15NL
U36	1820-2506	6		IC INV TTL F HEX	04713	MC74F04N
U37	1820-2691	0		IC FF TTL F D-TYPE POS-EDGE-TRIG	04713	MC74F74N
U38	1820-1207	2	1	IC GATE TTL LS NAND 8-INP	01295	SN74LS30N
U39	1820-1208	3	8	IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U40	1820-2690	9	6	IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U41	1820-1112	8		IC FF TTL LS D-TYPE POS-EDGE-TRIG	01295	SN74LS74AN
U42	1820-2690	9		IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U43	1820-2691	0		IC FF TTL F D-TYPE POS-EDGE-TRIG	04713	MC74F74N
U44	1820-2692	1	1	IC GATE TTL F EXCL-OR QUAD 2-INP	07263	74F86PC
U45	1810-0828	0	1	DELAY LINE ACTIVE DEVICE W/DUAL IN-LINE	28480	1810-0828
U46	1820-2826	3	1	IC-INTERFACE DRVR BCD UP/DOWN MEMORY	34335	AM2966PC (SELECTED)
U47	1820-2654	5	6	IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	07263	74F157PC
U48	1820-2654	5		IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	07263	74F157PC
U49	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U50	1820-2690	9		IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U51	1820-4177	1	1	IC-INTERFACE MISC-DGTL CMOS	18324	SCN2672BC4N40
U52	1820-1997	7	19	IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U53	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U54	1820-2691	0		IC FF TTL F D-TYPE POS-EDGE-TRIG	04713	MC74F74N
U55	1820-1922	8	1	IC SHF-RGTR TTL LS PRL-IN SERIAL-OUT	01295	SN74LS166AN
U56	1820-1199	1	1	IC INV TTL LS HEX 1-INP	01295	SN74LS04N
U57	1820-5177	3	12	IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U58	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U59	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U60	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U61	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U62	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U63	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U64	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U65	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U66	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U67	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U68	1820-5177	3		IC SHF-RGTR SYNC/ASYNC PRL-IN SERIAL-OUT	18324	74HCT597N
U69	1820-2654	5		IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	07263	74F157PC
U70	1820-2654	5		IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	07263	74F157PC
U71	1820-2654	5		IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	07263	74F157PC
U72	1820-1216	3	2	IC DCDR TTL LS 3-TO-8-LINE 3-INP	01295	SN74LS138N
U73	1820-1196	8	1	IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS174N
U74	1818-1611	7	2	IC CMOS 16384 (16K) STAT RAM 150-NS 3-S	34335	AM9128-15PC
U75	1818-1611	7		IC CMOS 16384 (16K) STAT RAM 150-NS 3-S	34335	AM9128-15PC
U76	54110-80018	0	1	IC CHARACTER ROM	28480	54110-80018
U77	1820-2024	3	18	IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U78	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U79	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U80	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U81	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U82	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U83	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U84	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U85	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U86	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U87	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U88	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U89	1820-2654	5		IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	07263	74F157PC
U90	1820-1989	7	2	IC CNTR TTL LS BIN DUAL 4-BIT	07263	74LS393PC
U91	1820-1989	7		IC CNTR TTL LS BIN DUAL 4-BIT	07263	74LS393PC
U92	1816-0724	7	4	IC TTL S 64-BIT STAT RAM 35-NS 3-S	01295	SN74S189N
U93	1816-0724	7		IC TTL S 64-BIT STAT RAM 35-NS 3-S	01295	SN74S189N
U94	1820-1195	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG COM	01295	SN74LS175N
U95	1820-0697	2	1	IC DRVR TTL S NAND LINE DUAL 4-INP	01295	SN74S140N
U96	1820-2684	1	2	IC GATE TTL F NAND QUAD 2-INP	04713	MC74F00N
U97	1820-2701	3	4	IC FF TTL F D-TYPE POS-EDGE-TRIG COM	04713	MC74F374N
U98	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U99	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U100	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U101	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U102	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U103	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U104	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U105	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U106	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U107	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U108	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U109	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U110	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N

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U111	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U112	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U113	1820-2701	3		IC FF TTL F D-TYPE POS-EDGE-TRIG COM	04713	MC74F374N
U114	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U115	1820-1072	9	2	IC DCDR TTL S 2-TO-4-LINE DUAL 2-INP	01295	SN74S139N
U116	1816-0724	7		IC TTL S 64-BIT STAT RAM 35-NS 3-S	01295	SN74S189N
U117	1816-0724	7		IC TTL S 64-BIT STAT RAM 35-NS 3-S	01295	SN74S189N
U118	1820-0690	5	1	IC BFR TTL S NAND DUAL 4-INP	01295	SN74S40N
U119	1820-2795	5	2	IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U120	1820-2701	3		IC FF TTL F D-TYPE POS-EDGE-TRIG COM	04713	MC74F374N
U121	1820-2506	6		IC INV TTL F HEX	04713	MC74F04N
U122	1810-0829	1	1	DELAY LINE ACTIVE DEVICE W/DUAL IN-LINE	28480	1810-0829
U123	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U124	1820-1997	7		IC FF TTL LS D-TYPE POS-EDGE-TRIG PRL-IN	01295	SN74LS374N
U125	1820-1197	9	1	IC GATE TTL LS NAND QUAD 2-INP	01295	SN74LS00N
U126	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U127				NOT ASSIGNED		
U128	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U129				NOT ASSIGNED		
U130	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U131	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U132	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U133	1820-1208	3		IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U134	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U135	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U136	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U137	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U138	1820-2024	3		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS244N
U139	1820-2075	4	2	IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U140	1820-2075	4		IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U141	1820-1419	8	1	IC COMPTR TTL LS MAGTD 4-BIT	01295	SN74LS85N
U142	1820-2701	3		IC FF TTL F D-TYPE POS-EDGE-TRIG COM	04713	MC74F374N
U143	1820-2795	5		IC DRVR TTL F LINE DRVR OCTL	04713	MC74F244N
U144	1820-2684	1		IC GATE TTL F NAND QUAD 2-INP	04713	MC74F00N
U145	1826-1536	2	1	D/A 4-BIT 24-DIP-C CMOS	33967	RGBDAC3404
U146	1820-2686	3		IC GATE TTL F AND QUAD 2-INP	04713	MC74F08P
U147	1820-1072	9		IC DCDR TTL S 2-TO-4-LINE DUAL 2-INP	01295	SN74S139N
U148	1820-1201	6	3	IC GATE TTL LS AND QUAD 2-INP	01295	SN74LS08N
U149	1820-2690	9		IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U150	1820-2690	9		IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U151	1820-1201	6		IC GATE TTL LS AND QUAD 2-INP	01295	SN74LS08N
U152	1820-1201	6		IC GATE TTL LS AND QUAD 2-INP	01295	SN74LS08N
U153	1820-2690	9		IC GATE TTL F OR QUAD 2-INP	04713	MC74F32P
U154	1820-1216	3		IC DCDR TTL LS 3-TO-8-LINE 3-INP	01295	SN74LS138N
U155	1820-2691	0		IC FF TTL F D-TYPE POS-EDGE-TRIG	04713	MC74F74N
U156	1820-1448	3	1	IC GATE TTL S AND QUAD 2-INP	01295	SN74S09N
UR1-126				NOT ASSIGNED		
UR127	1810-0533	4	2	NETWORK-RES 16-DIP 33.0 OHM X 8	28480	1810-0533
UR128				NOT ASSIGNED		
UR129	1810-0533	4		NETWORK-RES 16-DIP 33.0 OHM X 8	28480	1810-0533

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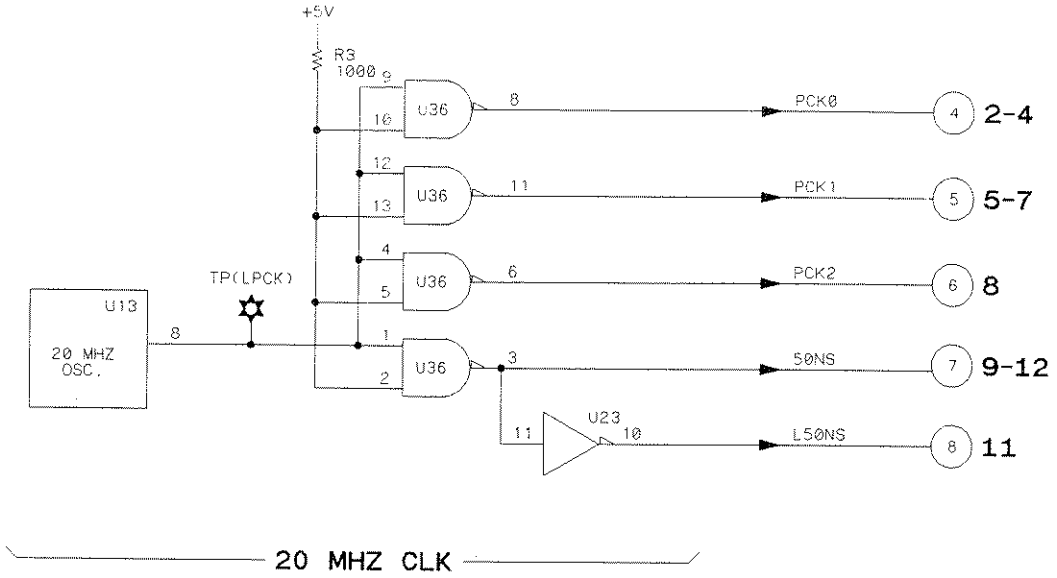
CHANGE 1 for 54110-66514, Color Display Assembly

The 54110-66512 Color Display assembly was replaced by the 54110-66514. There are changes for three schematics.

Schematic 1

On schematic 1, the change involves the clock distribution and supply filter capacitors. A partial schematic is provided below.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	U36 to C30,41 42,57,72	1820-2684	1	IC GATE TTL F NAND QUAD 2-INP	07263	74F00PC
		0180-3848	2	CAP-FXD 33UF	28480	0180-3848



54110/SC12_01A/9-88

Schematic 8

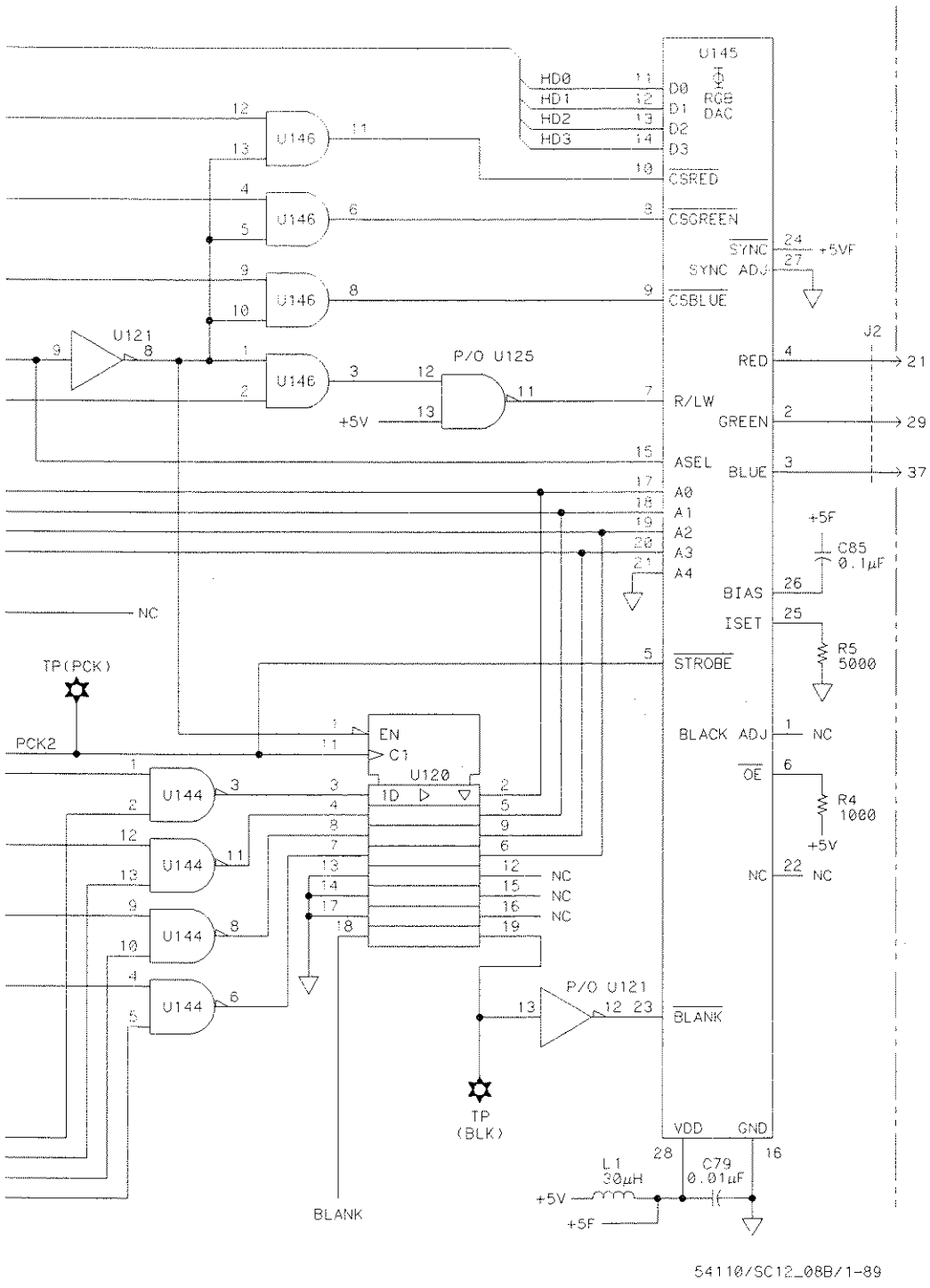
For schematic 8, the change involves the RGB DAC and associated circuitry. A partial schematic is provided on the next page.

DELETE: U122

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	U145 to	1826-1928	6	IC DAC RGB 3405SW	28480	1826-1928
ADD:						
	C85	0160-6623	5	CAP-FXD 0.1UF+-20% 50VDC	28480	0160-6623
	R4	0757-0280	3	RESISTOR 1K +-1% 0.125W TF	2M627	CT4-1/8-T0-1001-F
	R5	0698-4002	9	RESISTOR 5K +-1% 0.125W TF	2M627	CT4-1/8-T0-5001-F

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Changes to schematic 8 for 54110-66514.

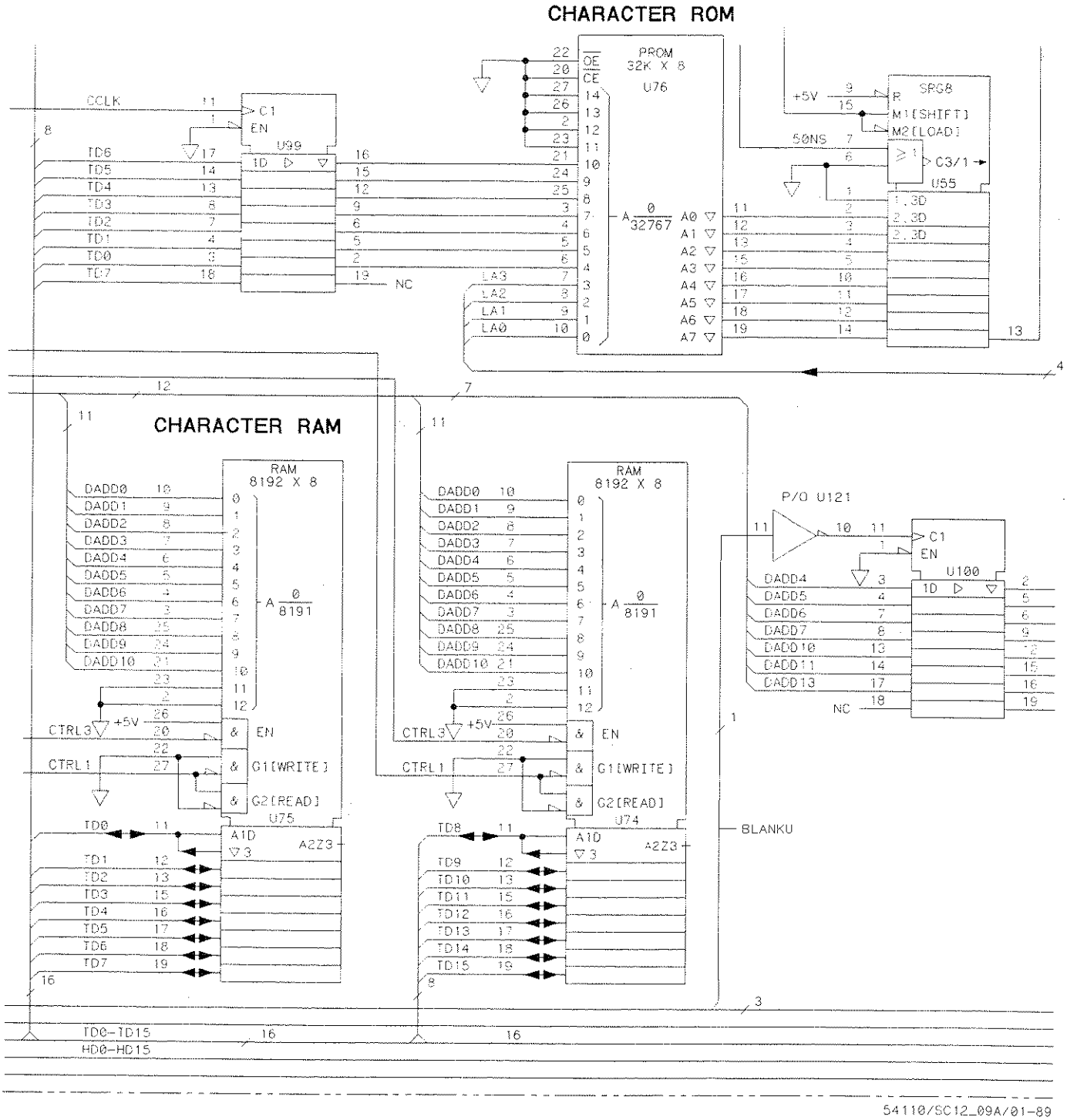


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Schematic 9

For schematic 9, the change involves the Character ROM and RAM. A partial schematic is provided below.

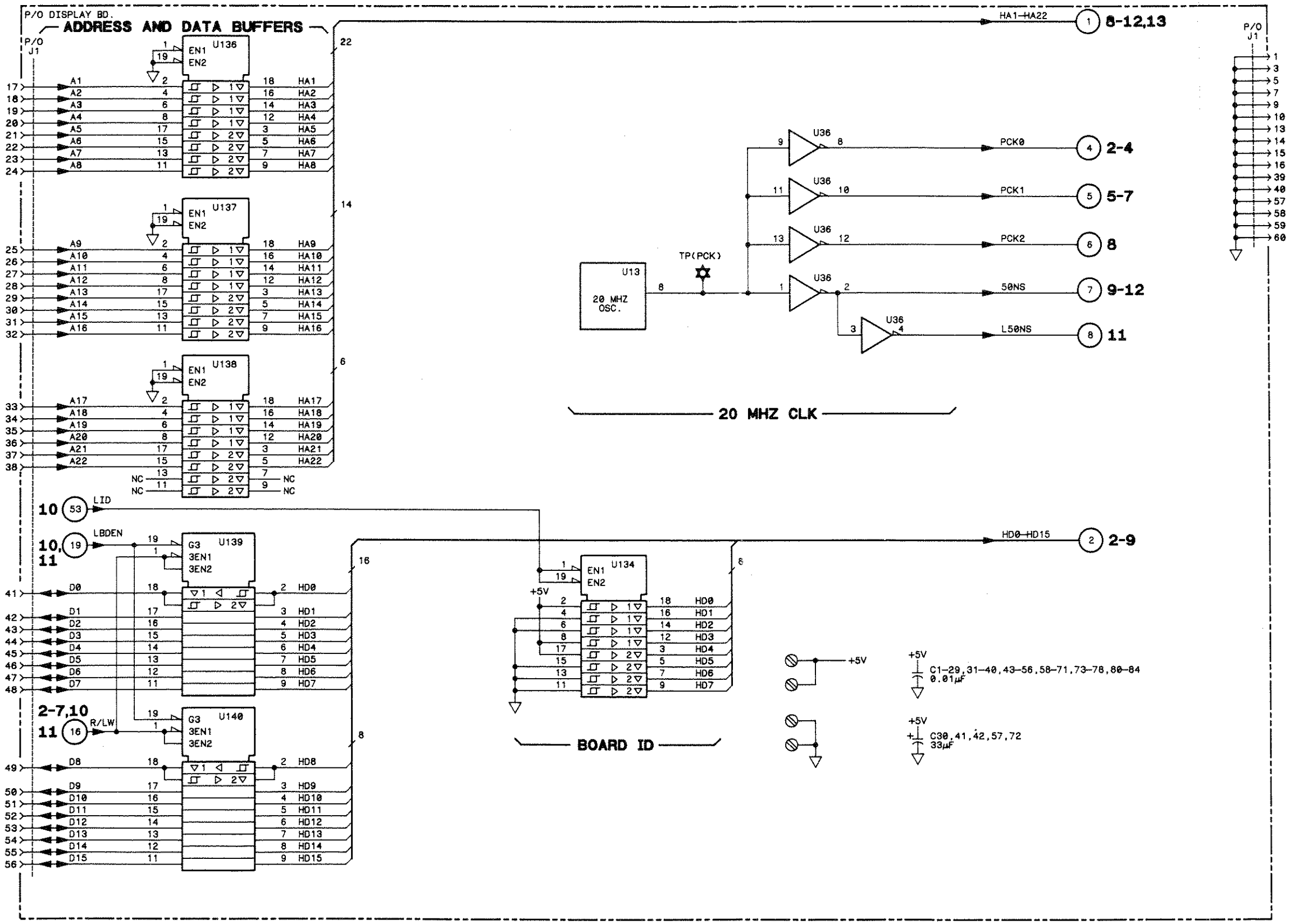
	HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:					
U74 to	1818-3183	2	IC CMOS 8K STATIC RAM	28480	1818-3183
U75 to	1818-3183	2	IC CMOS 8K STATIC RAM	28480	1818-3183
U76 to	54110-80027	1	IC CHARACTER ROM	28480	54110-80027



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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	14 7	U13,36
+5V GND	20 10	U134,136–140

PARTS ON THIS SCHEMATIC

C1–78,80–84
P/O J1
P/O U23
TP (PCLK)
U13,36,134,136–140

54110/SC12_01/1/10–89

1

Address and Data Buffers, 20Mhz Oscillator

54110–66512

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P/O DISPLAY BD.

MEMORY PLANE 0

3-7,12 (27) LATCH68K
12 (25) LSEL0
3-7,10,11 (17) LR/W
1,3-9 (2) HD0–HD15
3-7,13 (35) MA0–MA7
12 (26) LRAS0
12 (29) LCAS0
3-7,12 (21) LWRUA
1,3-12 (16) R/LW
3-7,12 (23) LWRLA

U126

U77 EN1 EN2
HD8 2 HD9 4 HD10 6 HD11 8 HD12 17 HD13 15 HD14 13 HD15 11
1 19 1▽ 2▽
18 0MD8 16 0MD9 14 0MD10 12 0MD11 3 0MD12 5 0MD13 7 0MD14 9 0MD15

U101 EN1 EN2
HD0 2 HD1 4 HD2 6 HD3 8 HD4 17 HD5 15 HD6 13 HD7 11
1 19 1▽ 2▽
18 0MD0 16 0MD1 14 0MD2 12 0MD3 3 0MD4 5 0MD5 7 0MD6 9 0MD7

RAM 16K X 4 — U2 / U25 / U24 / U1

MA0 14 MA1 13 MA2 12 MA3 11 MA4 8 MA5 7 MA6 6 MA7 10
20D6 20D7/21D0 20D12/21D5 20D13
A 0 / 16383
C20[ROW] G23/[REFRESH ROW] 24[PWR DOWN] C21[COL] G24
LRAS0 5 LCAS0 16 LWRL 4 LWRU 4
& 23C22
23,21D 24,25EN
1 G25
0MD0 2 0MD1 3 0MD2 15 0MD3 17 0MD4 2 0MD5 3 0MD6 15 0MD7 17 0MD8 2 0MD9 3 0MD10 15 0MD11 17 0MD12 2 0MD13 3 0MD14 15 0MD15 17
A,22D ▽26 A,Z26

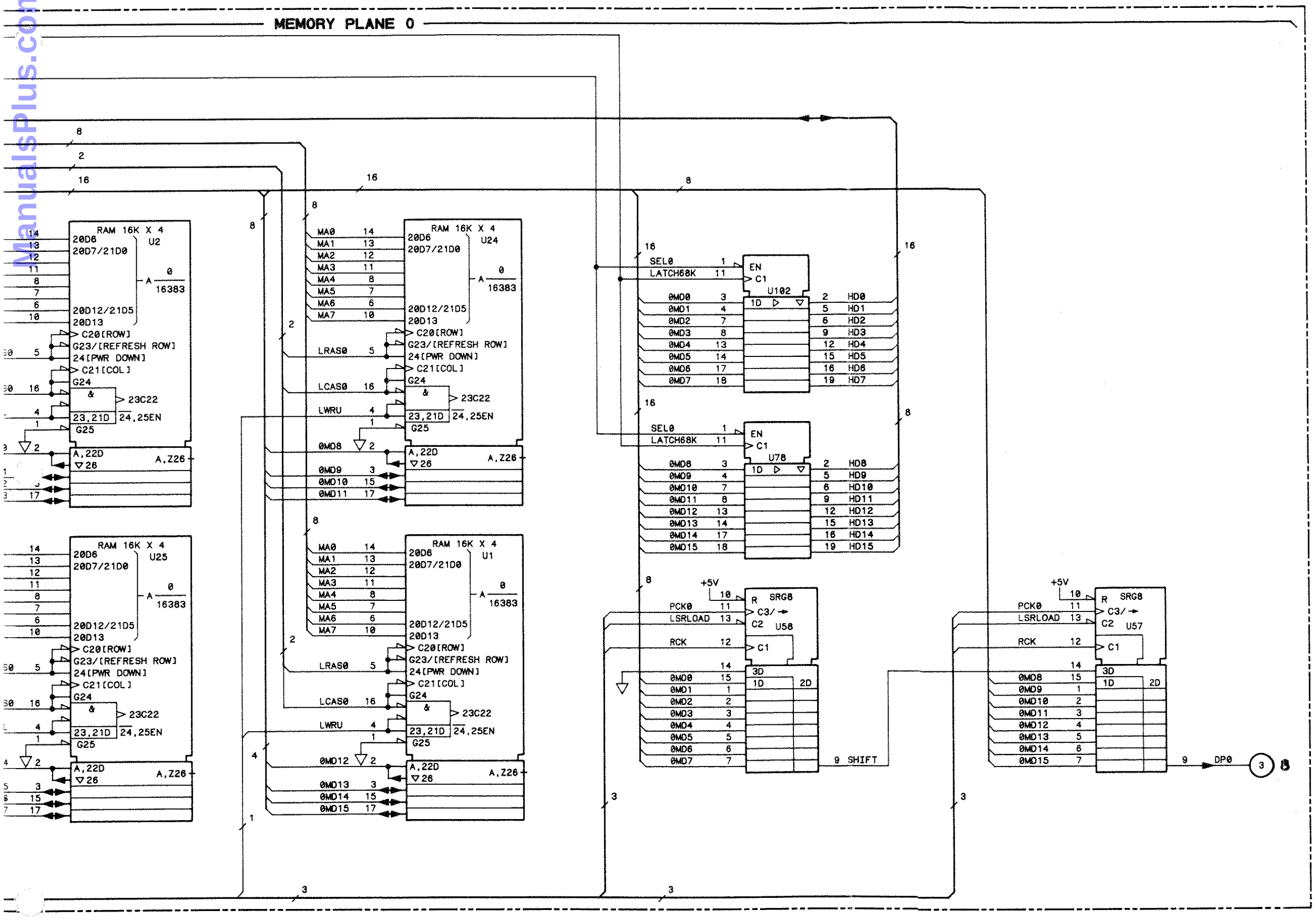
U102 / U78
SEL0 1 LATCH68K 11 EN C1 1D
0MD0 3 0MD1 4 0MD2 7 0MD3 8 0MD4 13 0MD5 14 0MD6 17 0MD7 18
0MD8 3 0MD9 4 0MD10 7 0MD11 8 0MD12 13 0MD13 14 0MD14 17 0MD15 18

+5V 10
SRG8 R C3/→ C2 C1
U58
PCK0 11 LSRLOAD 13 RCK 12
3D 1D 2D
0MD0 15 0MD1 1 0MD2 2 0MD3 3 0MD4 4 0MD5 5 0MD6 6 0MD7 7

1,3,4 (4) PCK0
3-7,11 (33) LSRLOAD
3-7,11 (32) RCK
3-7,12 (24) LWRL
3-7,12 (22) LWRU

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	9 18	U1,2,24,25
+5V GND	16 8	U57,58
+5V GND	20 10	U77,78,101,102
+5V GND	14 7	U126

PARTS ON THIS SCHEMATIC

U1,2,24,25,57,58,77,78,101,102,126

54110/SC12_02/13/8-88

2

Memory Plane 0

54110-66512

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MEMORY PLANE 1

P/O DISPLAY BD.

2,4-7,12 (27) LATCH68K
12 (66) LSEL1
2,4-7,10,11 (17) LR/W
1,2,4-9 (2) HD0-HD15
2,4-7,13 (35) MA0-MA7
12 (76) LRAS1
12 (71) LCAS1
2,4-7,12 (21) LWRUA
1,2,4-7,10-12 (16) R/LW
2,4-7,12 (23) LWRLA
1,2,4 (4) PCK0
2,4-7,11 (33) LSRLOAD
2,4-7,11 (32) RCK
2,4-7,12 (24) LWRL
2,4-7,12 (22) LWRU

U128 U128 U128 U128

U80 EN1 EN2
HD8 2 HD9 4 HD10 6 HD11 8 HD12 17 HD13 15 HD14 13 HD15 11
1MD8 18 1MD9 16 1MD10 14 1MD11 12 1MD12 3 1MD13 5 1MD14 7 1MD15 9

U104 EN1 EN2
HD0 2 HD1 4 HD2 6 HD3 8 HD4 17 HD5 15 HD6 13 HD7 11
1MD0 18 1MD1 16 1MD2 14 1MD3 12 1MD4 3 1MD5 5 1MD6 7 1MD7 9

RAM 16K X 4 U3
RAM 16K X 4 U26
RAM 16K X 4 U27
RAM 16K X 4 U4
MA0 14 MA1 13 MA2 12 MA3 11 MA4 8 MA5 7 MA6 6 MA7 10
20D6 20D7/21D0 20D12/21D5 20D13
A 0 16383
C20[ROW] G23/[REFRESH ROW] 24[PWR DOWN] C21[COL] G24
LRAS1 5 LCAS1 16 LWRL 4 LWRU 4
& 23C22 23,21D 24,25EN G25
1MD0 1MD1 1MD2 1MD3 1MD4 1MD5 1MD6 1MD7 1MD8 1MD9 1MD10 1MD11 1MD12 1MD13 1MD14 1MD15
A,22D ▽26 A,Z26

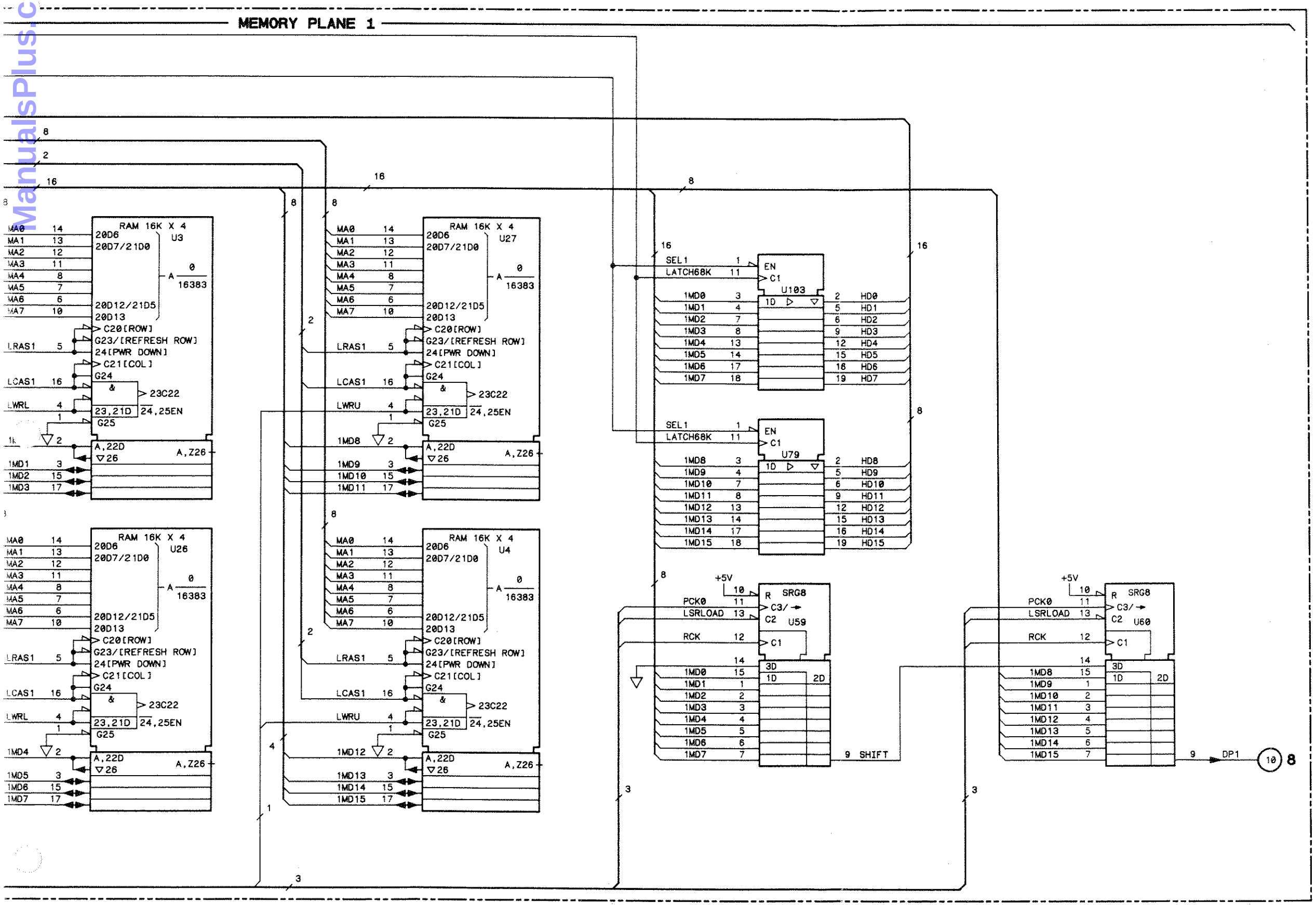
SEL1 LATCH68K EN C1 1D U103
SEL1 LATCH68K EN C1 1D U79
1MD0 1MD1 1MD2 1MD3 1MD4 1MD5 1MD6 1MD7
1MD8 1MD9 1MD10 1MD11 1MD12 1MD13 1MD14 1MD15

+5V 10
PCK0 11 LSRLOAD 13 RCK 12
R SRG C3/→ C2 U5 C1 3D 1D

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MEMORY PLANE 1



IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	9 18	U3,4,26,27
+5V GND	16 8	U59,60
+5V GND	20 10	U79,80,103,104
+5V GND	14 7	U128

PARTS ON THIS SCHEMATIC

U3,4,26,27,59,60,79,80,103,104,128

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P/O DISPLAY BD.

MEMORY PLANE 2

2,3,5-7,12 (27) LATCH68K
12 (67) LSEL2
2,3,5-7,10,11 (17) LR/W
1-3,5-9 (2) HD0-HD15
2,3,5-7,13 (35) MA0-MA7
12 (77) LRAS2
12 (72) LCAS2
2,3,5-7,12 (21) LWRUA
1-3,5-7,10-12 (16) R/LW
2,3,5-7,12 (23) LWRLA
1-3 (4) PCK0
2,3,5-7,11 (33) LSRLOAD
2,3,5-7,11 (32) RCK
2,3,5-7,12 (24) LWRL
2,3,5-7,12 (22) LWRU

U130

U81: HD8 2 → 2MD8 18; HD9 4 → 2MD9 16; HD10 6 → 2MD10 14; HD11 8 → 2MD11 12; HD12 17 → 2MD12 3; HD13 15 → 2MD13 5; HD14 13 → 2MD14 7; HD15 11 → 2MD15 9

U105: HD0 2 → 2MD0 18; HD1 4 → 2MD1 16; HD2 6 → 2MD2 14; HD3 8 → 2MD3 12; HD4 17 → 2MD4 3; HD5 15 → 2MD5 5; HD6 13 → 2MD6 7; HD7 11 → 2MD7 9

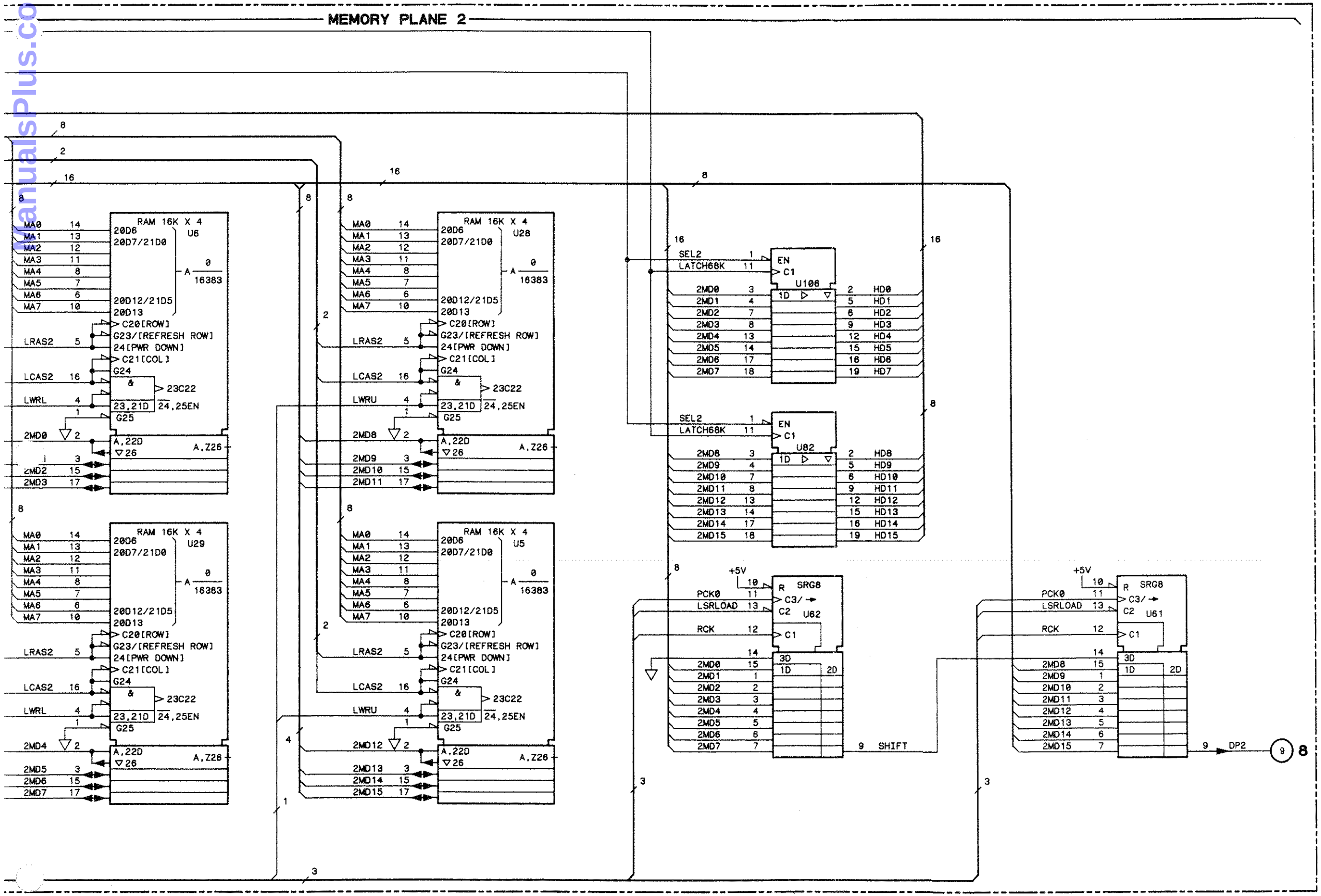
RAM 16K X 4 — U6, U28, U29, U5

MA0 14, MA1 13, MA2 12, MA3 11, MA4 8, MA5 7, MA6 6, MA7 10
20D6
20D7/21D0
20D12/21D5
20D13
A 0 / 16383
C20[ROW]
G23/[REFRESH ROW]
24[PWR DOWN]
C21[COL]
G24
&
23C22
23,21D 24,25EN
G25
LRAS2 5
LCAS2 16
LWRL 4 (U6, U29) / LWRU 4 (U28, U5)
2MD0 2 (U6) / 2MD4 2 (U29) / 2MD8 2 (U28) / 2MD12 2 (U5)
A,22D ▽26
A,Z26
2MD1 3, 2MD2 15, 2MD3 17 (U6)
2MD5 3, 2MD6 15, 2MD7 17 (U29)
2MD9 3, 2MD10 15, 2MD11 17 (U28)
2MD13 3, 2MD14 15, 2MD15 17 (U5)

SEL2 1, LATCH68K 11, EN, C1
2MD0 3, 2MD1 4, 2MD2 7, 2MD3 8, 2MD4 13, 2MD5 14, 2MD6 17, 2MD7 18
2MD8 3, 2MD9 4, 2MD10 7, 2MD11 8, 2MD12 13, 2MD13 14, 2MD14 17, 2MD15 18
+5V 10, PCK0 11, LSRLOAD 13, RCK 12, C3/, C2, C1, 3D, 1D

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	9 18	U5,6,28,29
+5V GND	16 8	U61,62
+5V GND	20 10	U81,82,105,106
+5V GND	14 7	U130

PARTS ON THIS SCHEMATIC

U5,6,28,29,61,62,81,82,105,106,130

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MEMORY PLANE 3

P/O DISPLAY BD.

2-4,6,7,12 (27) LATCH68K
12 (68) LSEL3
2-4,6,7,10,11 (17) LR/W
1-4,6-9 (2) HD0-HD15
2-4,6,7,13 (35) MA0-MA7
12 (78) LRAS3
12 (73) LCAS3
2-4,6,7,12 (21) LWRUA
1-4,6,7,10-12 (16) R/LW
2-4,6,7,12 (23) LWRLA

U131 U84 U108

HD0 2 HD1 4 HD2 6 HD3 8 HD4 17 HD5 15 HD6 13 HD7 11
3MD0 18 3MD1 16 3MD2 14 3MD3 12 3MD4 3 3MD5 5 3MD6 7 3MD7 9
3MD8 18 3MD9 16 3MD10 14 3MD11 12 3MD12 3 3MD13 5 3MD14 7 3MD15 9

RAM 16K X 4 U7 U30 U31 U8

MA0 14 MA1 13 MA2 12 MA3 11 MA4 8 MA5 7 MA6 6 MA7 10
20D6 20D7/21D0 20D12/21D5 20D13
A 0 16383
C20[ROW] G23/[REFRESH ROW] 24[PWR DOWN] C21[COL] G24
LRAS3 5 LCAS3 16 LWRL 4 LWRU 4
& 23C22 23,21D 24,25EN G25
3MD0 2 3MD1 3 3MD2 15 3MD3 17 3MD4 2 3MD5 3 3MD6 15 3MD7 17 3MD8 2 3MD9 3 3MD10 15 3MD11 17 3MD12 2 3MD13 3 3MD14 15 3MD15 17
A,22D ▽26 A,Z26

SEL3 1 LATCH68K 11 EN C1 U107 U83
3MD0 3 3MD1 4 3MD2 7 3MD3 8 3MD4 13 3MD5 14 3MD6 17 3MD7 18
3MD8 3 3MD9 4 3MD10 7 3MD11 8 3MD12 13 3MD13 14 3MD14 17 3MD15 18
1D

+5V 10 R SRG8 U63
PCK1 11 C3/→ C2
LSRLOAD 13
RCK 12 C1
14 3D 1D
3MD0 15 3MD1 1 3MD2 2 3MD3 3 3MD4 4 3MD5 5 3MD6 6 3MD7 7

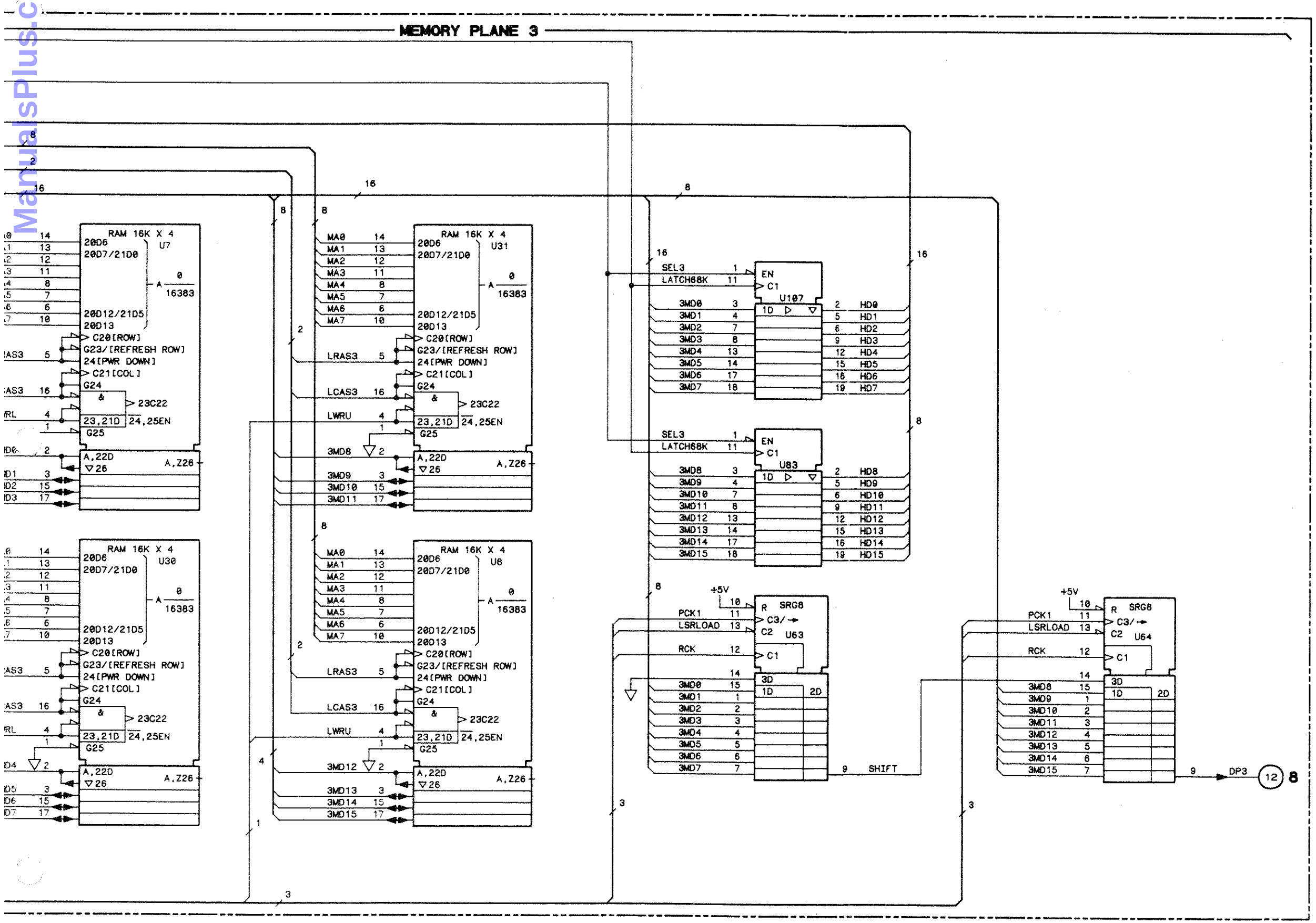
1,6,7 (5) PCK1
2-4,6,7,11 (33) LSRLOAD
2-4,6,7,11 (32) RCK
2-4,6,7,12 (24) LWRL
2-4,6,7,12 (22) LWRU

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	9 18	U7,8,30,31
+5V GND	16 8	U63,64
+5V GND	20 10	U83,84,107,108
+5V GND	14 7	U131



PARTS ON THIS SCHEMATIC

U7,8,30,31,63,64,83,84,107,108,131

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P/O DISPLAY BD.

MEMORY PLANE 4

2-5,7,12 (27) LATCH68K

12 (69) LSEL4

2-5,7,10,11 (17) LR/W

U132

1-5,7-9 (2) HD0–HD15

2-5,7,13 (35) MA0–MA7

12 (79) LRAS4

12 (74) LCAS4

2-5,7,12 (21) LWRUA

U132

1-5,7,10-12 (16) R/LW

U132

2-5,7,12 (23) LWRLA

U132

U85 EN1 EN2

HD8	2	18	4MD8
HD9	4	16	4MD9
HD10	6	14	4MD10
HD11	8	12	4MD11
HD12	17	3	4MD12
HD13	15	5	4MD13
HD14	13	7	4MD14
HD15	11	9	4MD15

U109 EN1 EN2

HD0	2	18	4MD0
HD1	4	16	4MD1
HD2	6	14	4MD2
HD3	8	12	4MD3
HD4	17	3	4MD4
HD5	15	5	4MD5
HD6	13	7	4MD6
HD7	11	9	4MD7

RAM 16K X 4 — U10 — 20D6 20D7/21D0 — A 0–16383 — 20D12/21D5 20D13 — C20[ROW] G23/[REFRESH ROW] 24[PWR DOWN] C21[COL] G24 — & 23C22 — 23,21D 24,25EN — G25 — A,22D ▽26 A,Z26

RAM 16K X 4 — U33 — 20D6 20D7/21D0 — A 0–16383 — 20D12/21D5 20D13 — C20[ROW] G23/[REFRESH ROW] 24[PWR DOWN] C21[COL] G24 — & 23C22 — 23,21D 24,25EN — G25 — A,22D ▽26 A,Z26

RAM 16K X 4 — U32 — 20D6 20D7/21D0 — A 0–16383 — 20D12/21D5 20D13 — C20[ROW] G23/[REFRESH ROW] 24[PWR DOWN] C21[COL] G24 — & 23C22 — 23,21D 24,25EN — G25 — A,22D ▽26 A,Z26

RAM 16K X 4 — U9 — 20D6 20D7/21D0 — A 0–16383 — 20D12/21D5 20D13 — C20[ROW] G23/[REFRESH ROW] 24[PWR DOWN] C21[COL] G24 — & 23C22 — 23,21D 24,25EN — G25 — A,22D ▽26 A,Z26

SEL4 LATCH68K — EN C1 — U110 1D

4MD0	3
4MD1	4
4MD2	7
4MD3	8
4MD4	13
4MD5	14
4MD6	17
4MD7	18

SEL4 LATCH68K — EN C1 — U86 1D

4MD8	3
4MD9	4
4MD10	7
4MD11	8
4MD12	13
4MD13	14
4MD14	17
4MD15	18

+5V — R SRGB — PCK1 C3/→ — LSRLOAD C2 — U66 — RCK C1 — 3D 1D 2D

4MD0	15
4MD1	1
4MD2	2
4MD3	3
4MD4	4
4MD5	5
4MD6	6
4MD7	7

1,5,7 (5) PCK1

2-5,7,11 (33) LSRLOAD

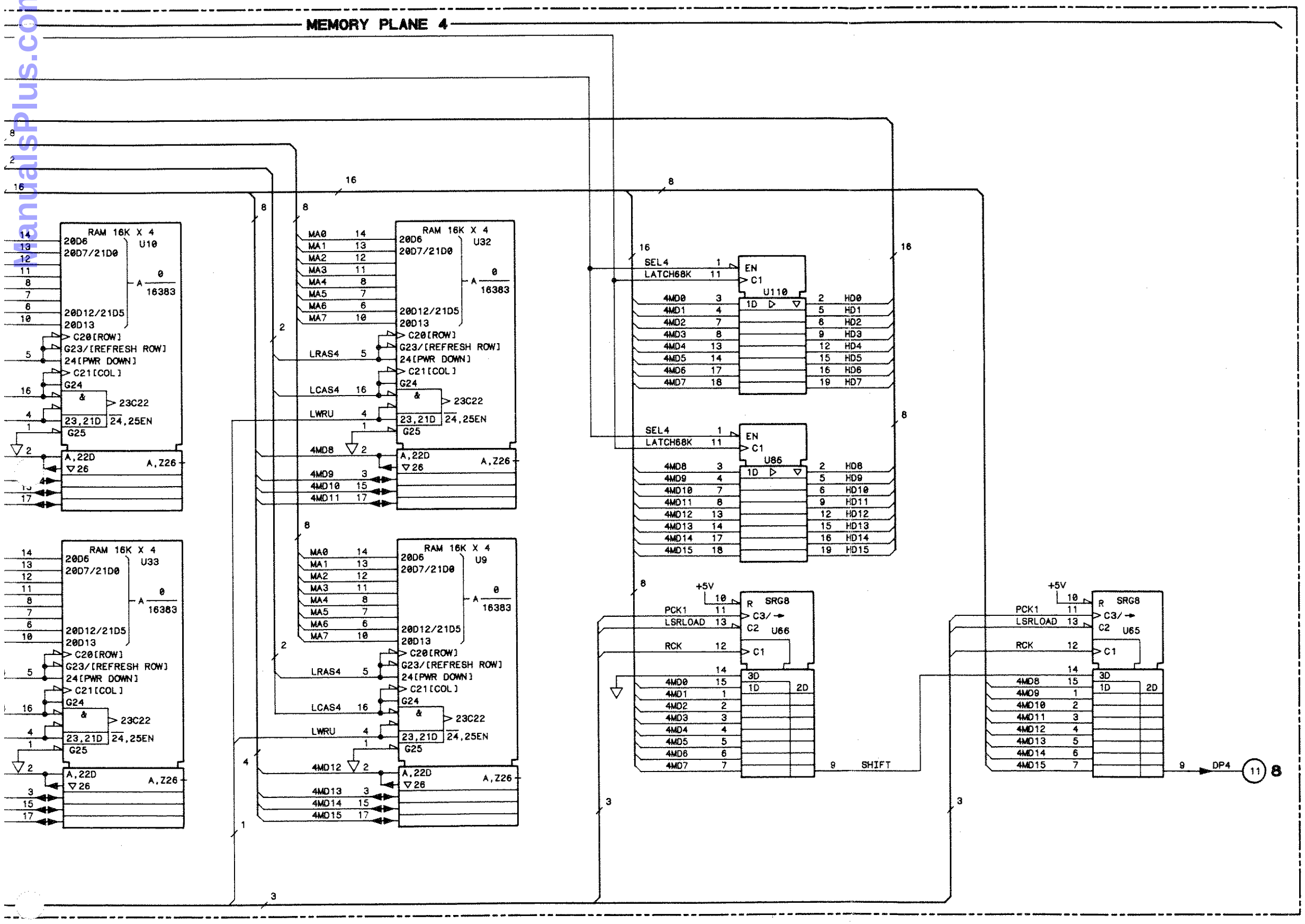
2-5,7,11 (32) RCK

2-5,7,12 (24) LWRL

2-5,7,12 (22) LWRU

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	9 18	U9,10,32,33
+5V GND	16 8	U65,66
+5V GND	20 10	U85,86,109,110
+5V GND	14 7	U132

PARTS ON THIS SCHEMATIC

U9,10,32,33,65,66,85,86,109,110,132

54110/SC12_06/13/8-88

6

Memory Plane 4

54110-66512

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MEMORY PLANE 5

P/O DISPLAY BD.

2-6,12 (27) LATCH68K
12 (70) LSEL5
2-6,10,11 (17) LR/W
1-6,8,9 (2) HD0–HD15
2-6,13 (35) MA0–MA7
12 (80) LRAS5
12 (75) LCAS5
3-6,12 (21) LWRUA
1-6,10-12 (16) R/LW
2-6,12 (23) LWRLA
1,5,6 (5) PCK1
2-6,11 (33) LSRLOAD
2-6,11 (32) RCK
2-6,12 (24) LWRL
2-6,12 (22) LWRU

U133

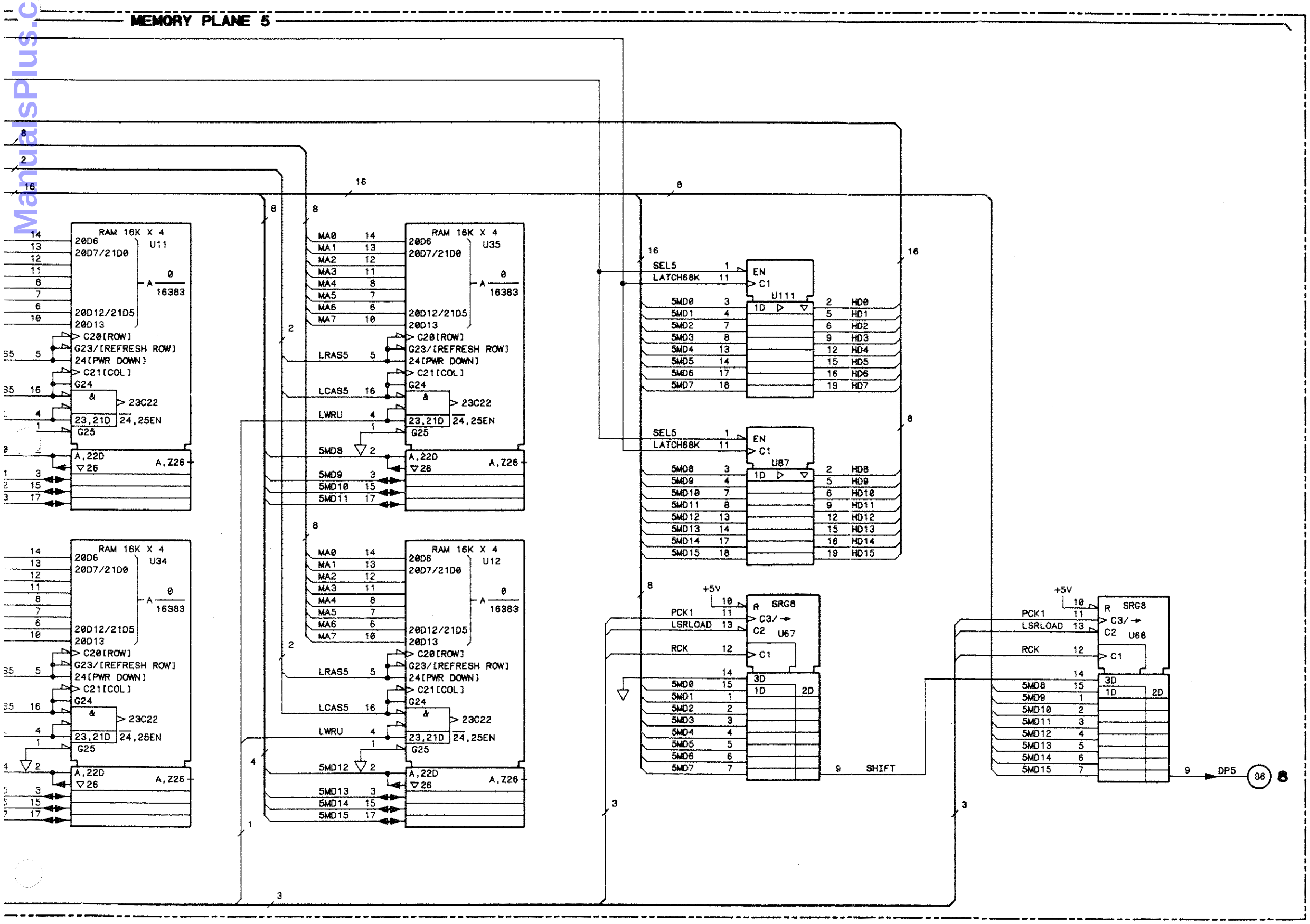
U88: HD8–HD15 → 5MD8–5MD15
U112: HD0–HD7 → 5MD0–5MD7

RAM 16K X 4 — U11, U34, U35, U12
MA0–MA7
20D6
20D7/21D0
20D12/21D5
20D13
C20[ROW]
G23/[REFRESH ROW]
24[PWR DOWN]
C21[COL]
G24
23C22
23,21D
24,25EN
G25
A,22D
A,Z26
A 0–16383

U111: SEL5, LATCH68K → 5MD0–5MD7
U87: SEL5, LATCH68K → 5MD8–5MD15
U67: SRG8 (+5V, PCK1, LSRLOAD, RCK → 5MD0–5MD7)

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	9 18	U11,12,34,35
+5V GND	16 8	U67,68
+5V GND	20 10	U87,88,111,112
+5V GND	14 7	U133

PARTS ON THIS SCHEMATIC

U11,12,34,35,67,68,87,88,111,112,133

54110/SC12_07/13/8-88

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P/O DISPLAY BD.

VIDEO INTERFACE

45 LPRIRE
52 LCOLORMAP
48 LDACWR
37 H1PR1
6 PCK2
2 HD0–HD3
1-7,9

1,9,13 HA1 HA2 HA3 HA4 HA5 HA6

U114 EN1 EN2 — HA1–HA6 → BA1–BA6; NC NC

P/O U121

51 LPRIORITY

U113 EN C1 1D — DP0 DP1 DP2 DP3 DP4 DP5 → BA1–BA6; NC NC

U115 DMUX — BA5 BA6 → 4 5 6 7

43 LPRIWR

P/O U40

U116 RAM 16X4 — BA1–BA4; HD0–HD3 → D0–D3; A 0/15; G1; 1 EN[READ]; 1 C2 [WRITE]; A,2D

U92 RAM 16X4 — BA1–BA4; HD0–HD3 → D0–D3; A 0/15; G1; 1 EN[READ]; 1 C2 [WRITE]; A,2D

U93 RAM 16X4 — BA1–BA4; HD0–HD3 → D0–D3; A 0/15; G1; 1 EN[READ]; 1 C2 [WRITE]; A,2D

U117 RAM 16X4 — BA1–BA4; HD0–HD3 → D0–D3; A 0/15; G1; 1 EN[READ]; 1 C2 [WRITE]; A,2D

LPRIRE → U119 EN — D0–D3 → HD0–HD3

PCK2 → U142 C1 EN 1D — D0 D1 D3 D2

H1PR1 → U143 EN — LGR0 LGR1 LGR3 LGR2

LCOLORMAP → U147 DMUX — HA5 HA6 → NC

LDACWR → P/O U121 → COLORMAP DACWR

U119 EN — HA1–HA4

P/O U121 → PCK2

P/O U118

U143 EN — LTXD0 LTXD1 LTXD3 LTXD2

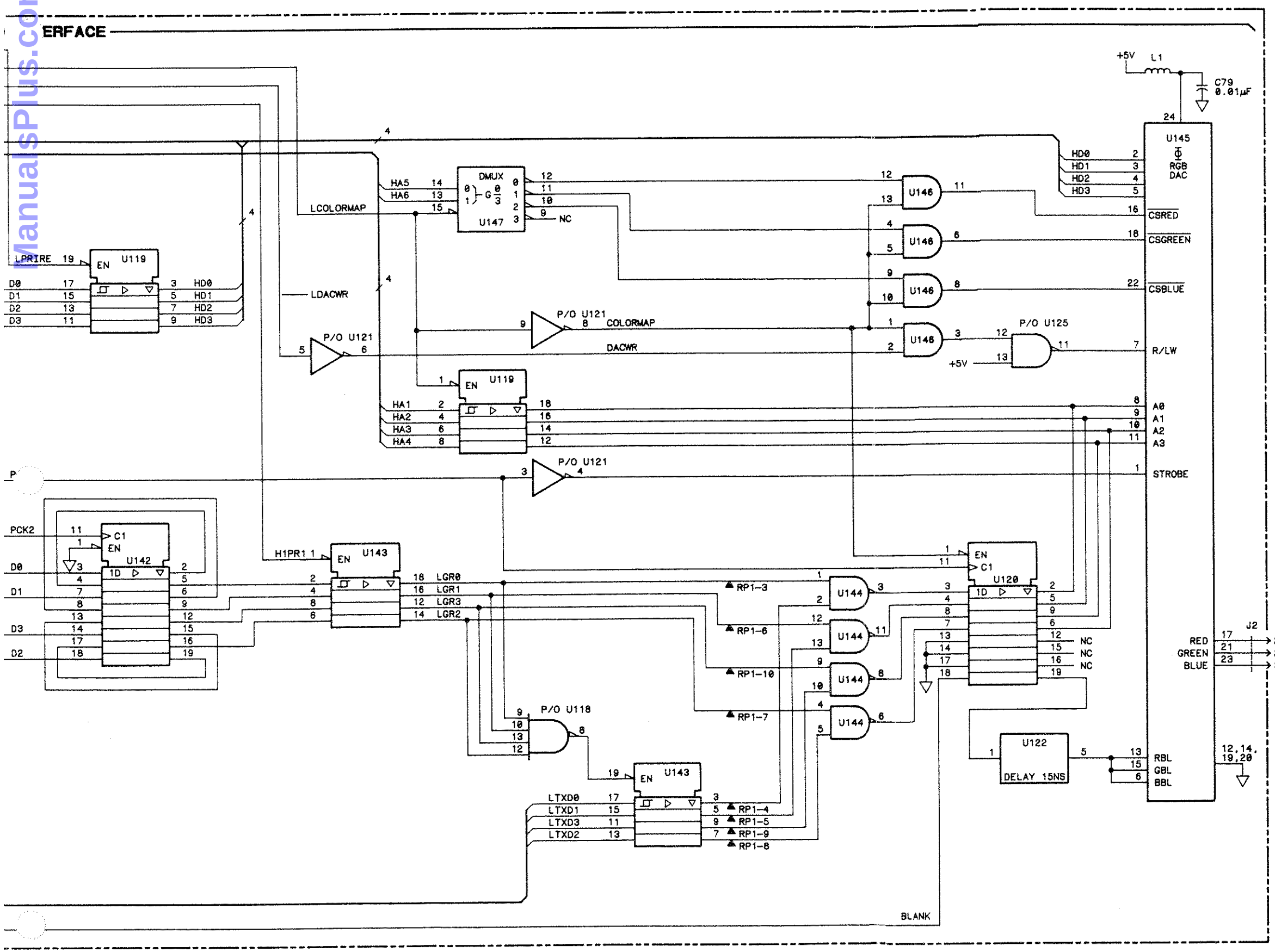
RP1-3 RP1-6 RP1-10 RP1-7 RP1-4 RP1-5 RP1-9 RP1-8

9 38 LTXD0–LTXD3

39 BLANK

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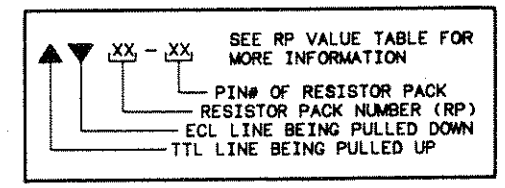
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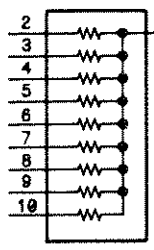


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	14 7	U40,118,121,125, 144,146
+5V GND	16 8	U92,93,115–117, 147
+5V GND	20 10	U113,114,119, 120,142,143
+5V GND	8 4	U122

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
RP1	4700	1	+5V

PARTS ON THIS SCHEMATIC

C79
L1
P/O J2
P/O U40,118,121,125
RP1
U92,93,113–117,119,120,122,142–147

54110/SC12_08/13/1–89

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P/O DISPLAY BD.

CRT CONTROLLER

CHARACTER RAM

CHARACTER ROM
U76 SEE ASSEMBLY HISTORY 2

U51 VIDEO TIMING CONTROL

U52 U123 U99 U98 U97 U75 U74 U76 U55 U100 U53 U124 U73

RAM 2048 X 8

PROM 4096X8 [PWRDWN]

SRG8 M1[SHIFT] M2[LOAD]

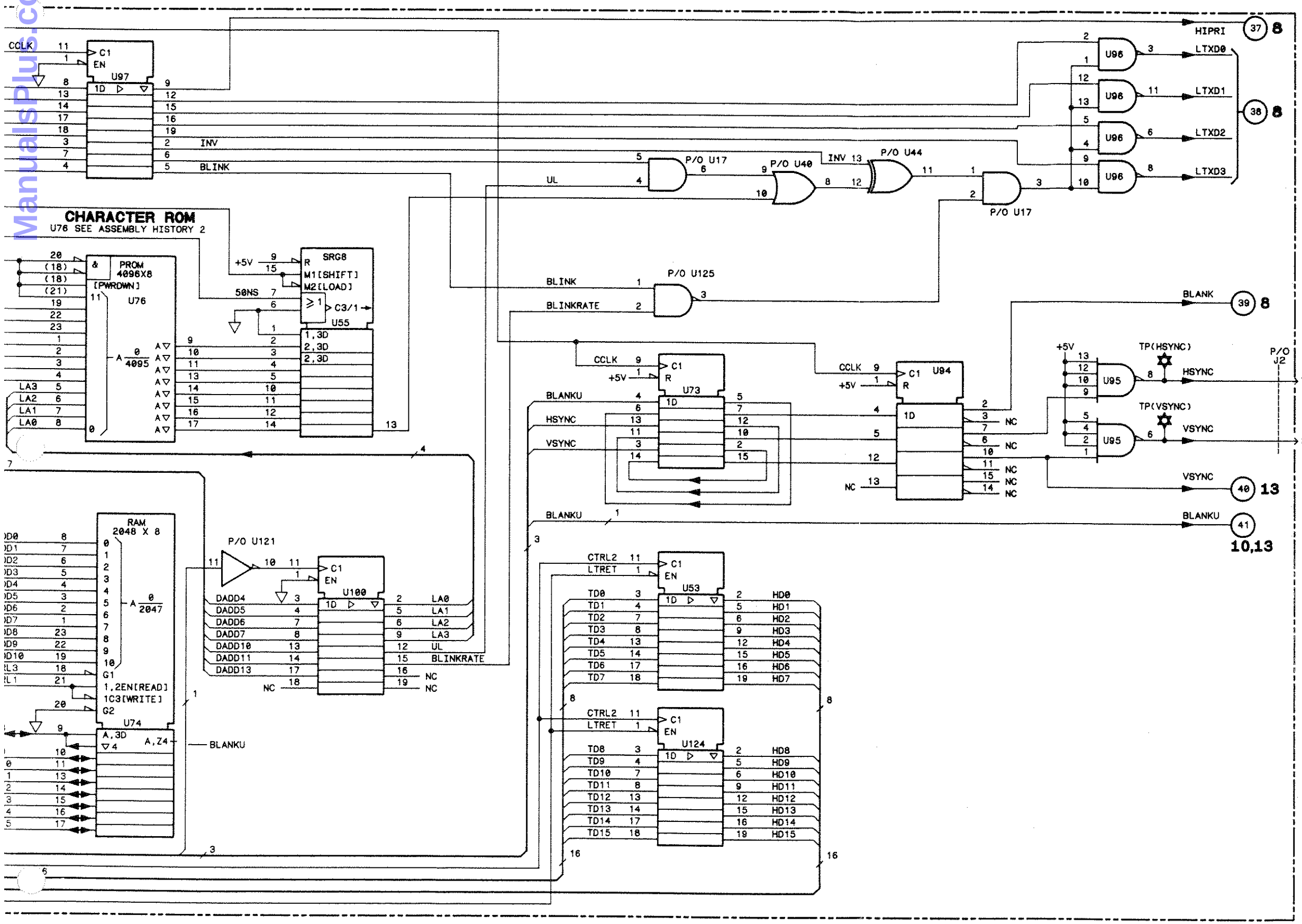
P/O U22 P/O U17 P/O U40 P/O U125 P/O U121

10 47 TWRT
11 30 DL3
11 31 DL11
7 50NS
1,10-12
10 55 CCLK
1,8, 10-13 1 HA1 HA2 HA3
10 44 LTWR
10 49 LTRE
10 50 LCRTC
1, 2-8 2 HD0–HD15
10 46 LTRET

CTRL1 HD0 HD1 HD2 HD3 HD4 HD5 HD6 HD7 TD0 TD1 TD2 TD3 TD4 TD5 TD6 TD7
HD8 HD9 HD10 HD11 HD12 HD13 HD14 HD15 TD8 TD9 TD10 TD11 TD12 TD13 TD14 TD15
CCLK TD11 TD12 TD13 TD14 TD15 TD8 TD10 TD9 INV BLINK
TD6 TD5 TD4 TD3 TD2 TD1 TD0 TD7 NC
+5V 50NS LA3 LA2 LA1 LA0
DADD0 DADD1 DADD2 DADD3 DADD4 DADD5 DADD6 DADD7 DADD8 DADD9 DADD10 DADD11 DADD13 NC
CTRL3 CTRL1 CTRL2 VSYNC HSYNC BLANKU
TD0–TD15 HD0–HD15
UL BLINKRATE BLINK BLINKRATE BLANKU

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	14 7	U17,22,40,44,95, 96,121,125
+5V GND	40 20	U51
+5V GND	20 10	U52,53,97–100, 123,124
+5V GND	16 8	U55,73,94
+5V GND	24 12	U74–76

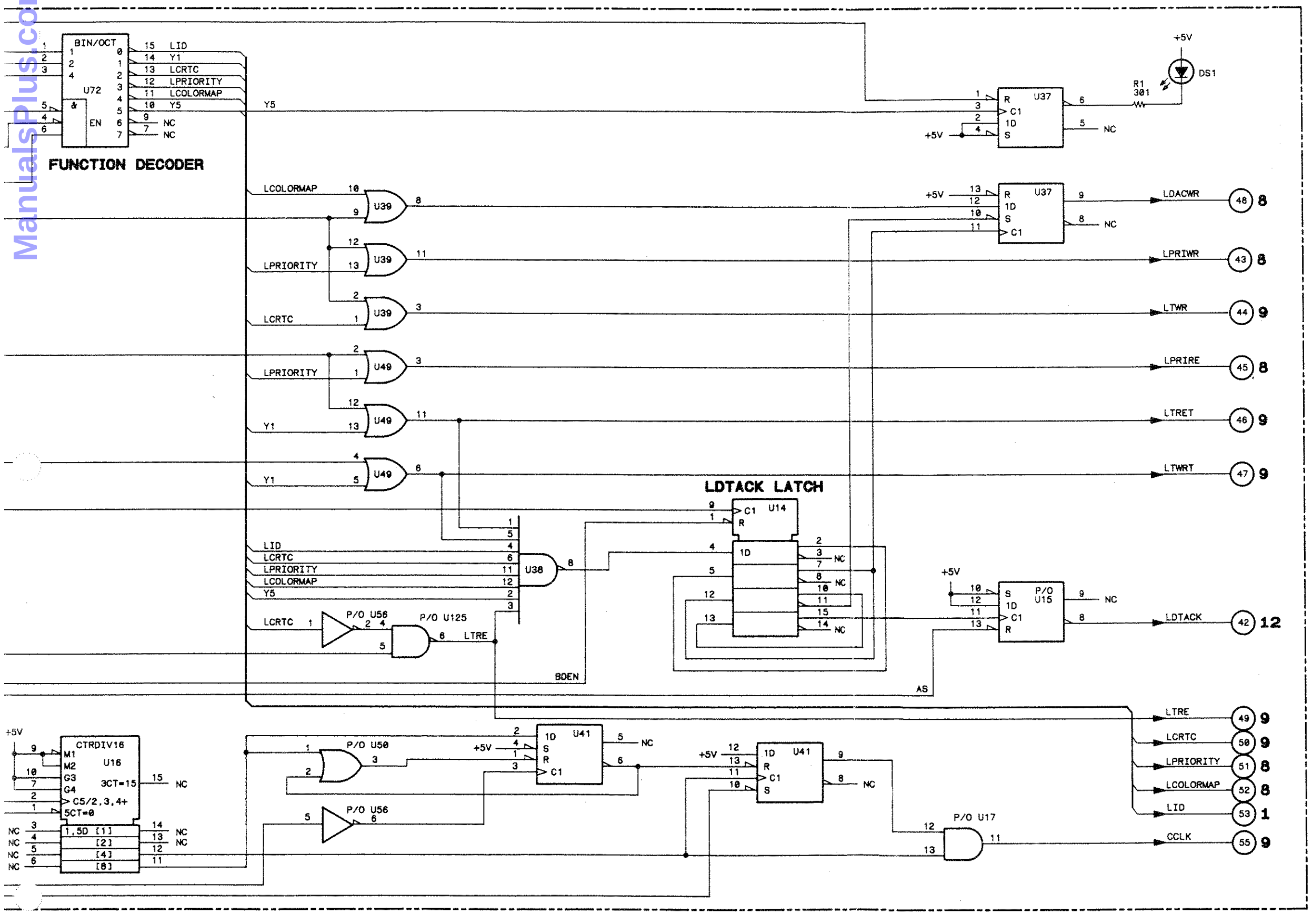
PARTS ON THIS SCHEMATIC

P/O J2
P/O U17,22,40,44,121,125
U51–53,55,73–76,94–100,123,124

541.10/SC12_09/13/1–89

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	16 8	U14,16,72
+5V GND	14 7	U15,17,37–39,41 49,50,56,125,148

PARTS ON THIS SCHEMATIC

DS1
R1
P/O U15,17,50,56,125,148
U14,16,37–39,41,49,72

54110/SC12_10/13/12/1–89

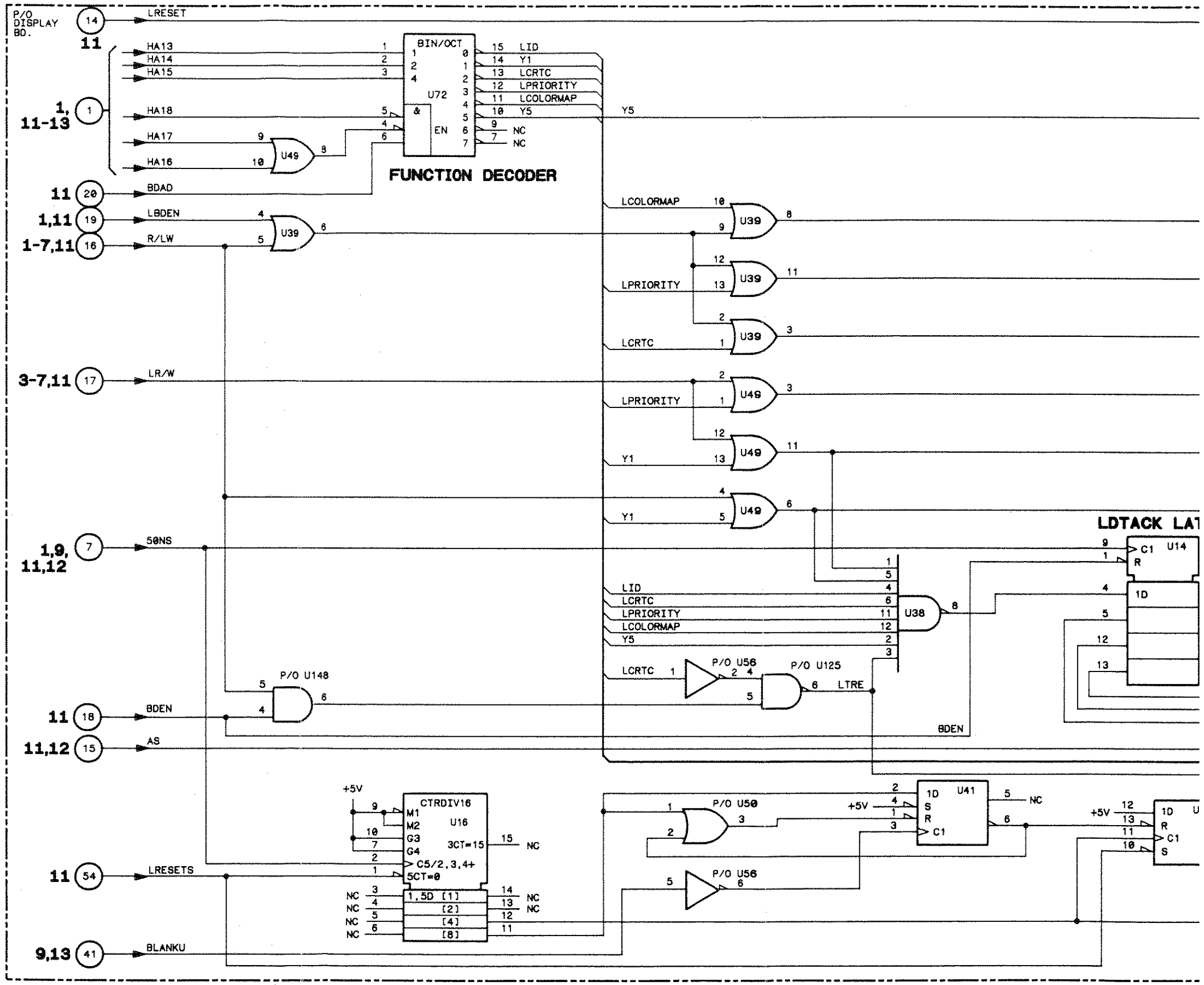
10

Function Decoder, LDTACK Latch

54110–66512

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P/O DISPLAY BD.

BOARD SELECT

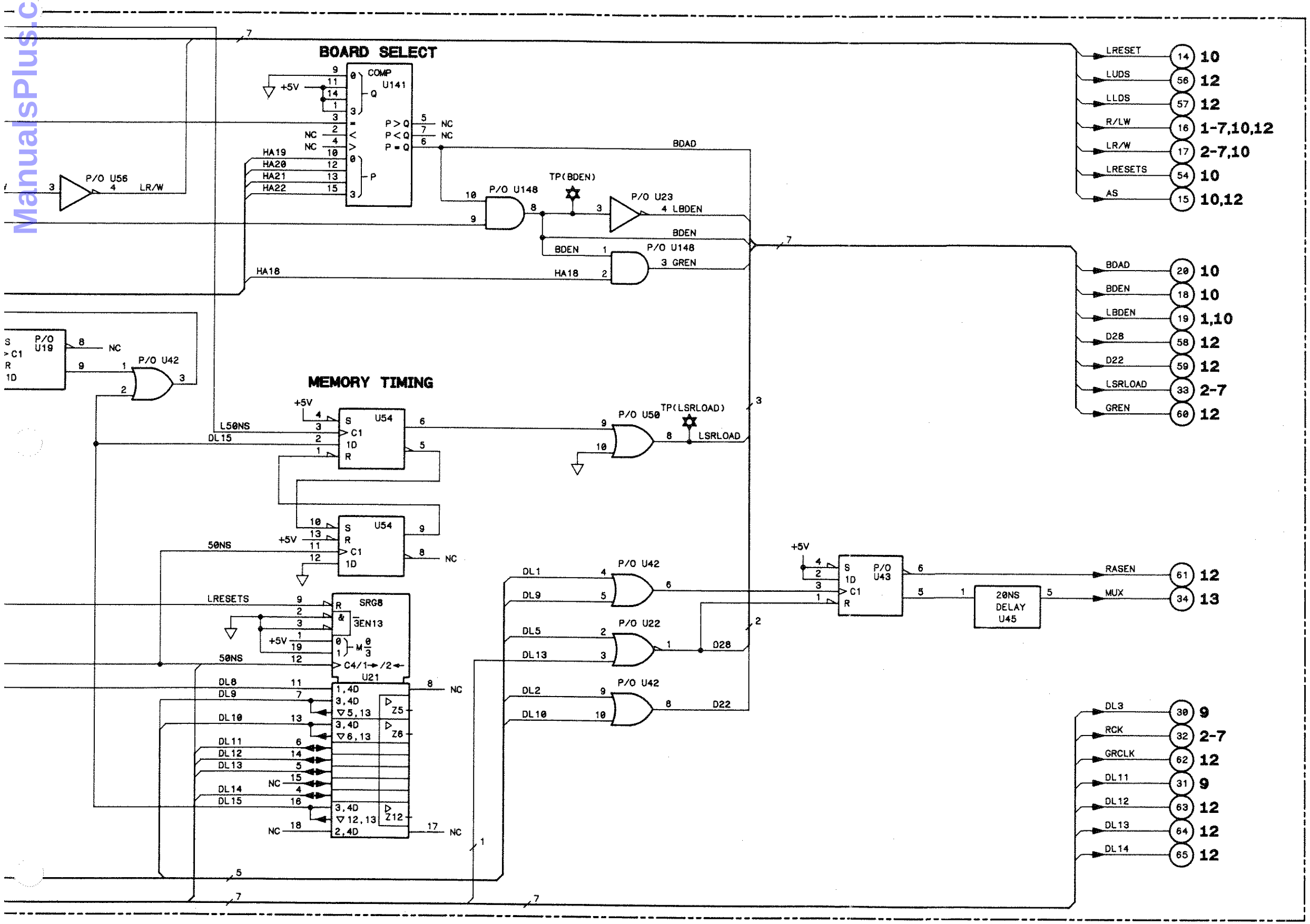
MEMORY TIMING

1,10,12,13

1,8,9,12

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IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	14 7	U19,22,23,42,43, 50,54,56,125, 148,155
+5V GND	20 10	U20,21,135
+5V GND	8 4	U45
+5V GND	16 8	U141

PARTS ON THIS SCHEMATIC

P/O J1
P/O U19,22,23,42,43,50,56,125,148,155
U20,21,45,54,135,141

54110/SC12_11/13/1-89

11

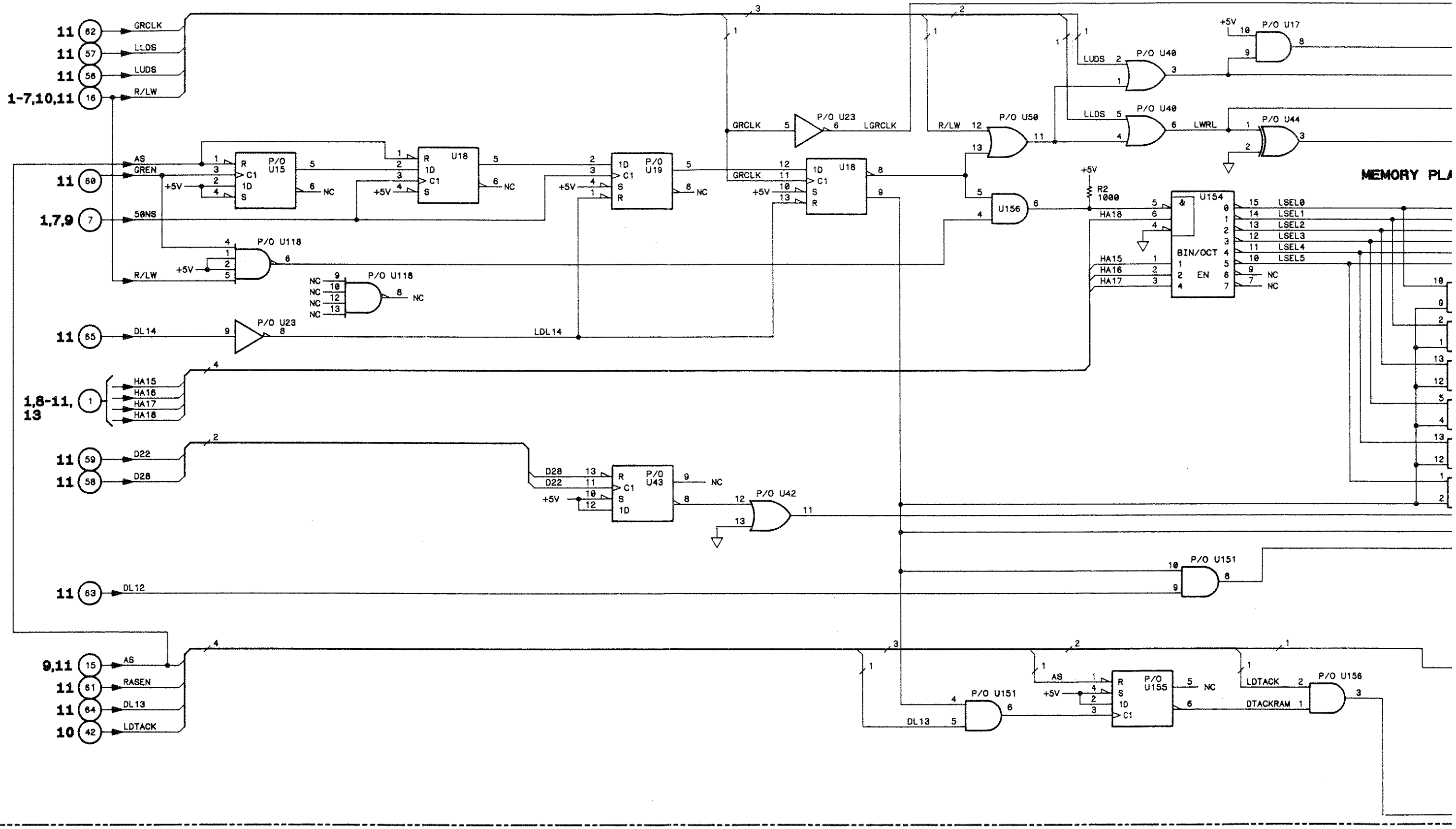
Board Select, Memory Timing

54110-66512

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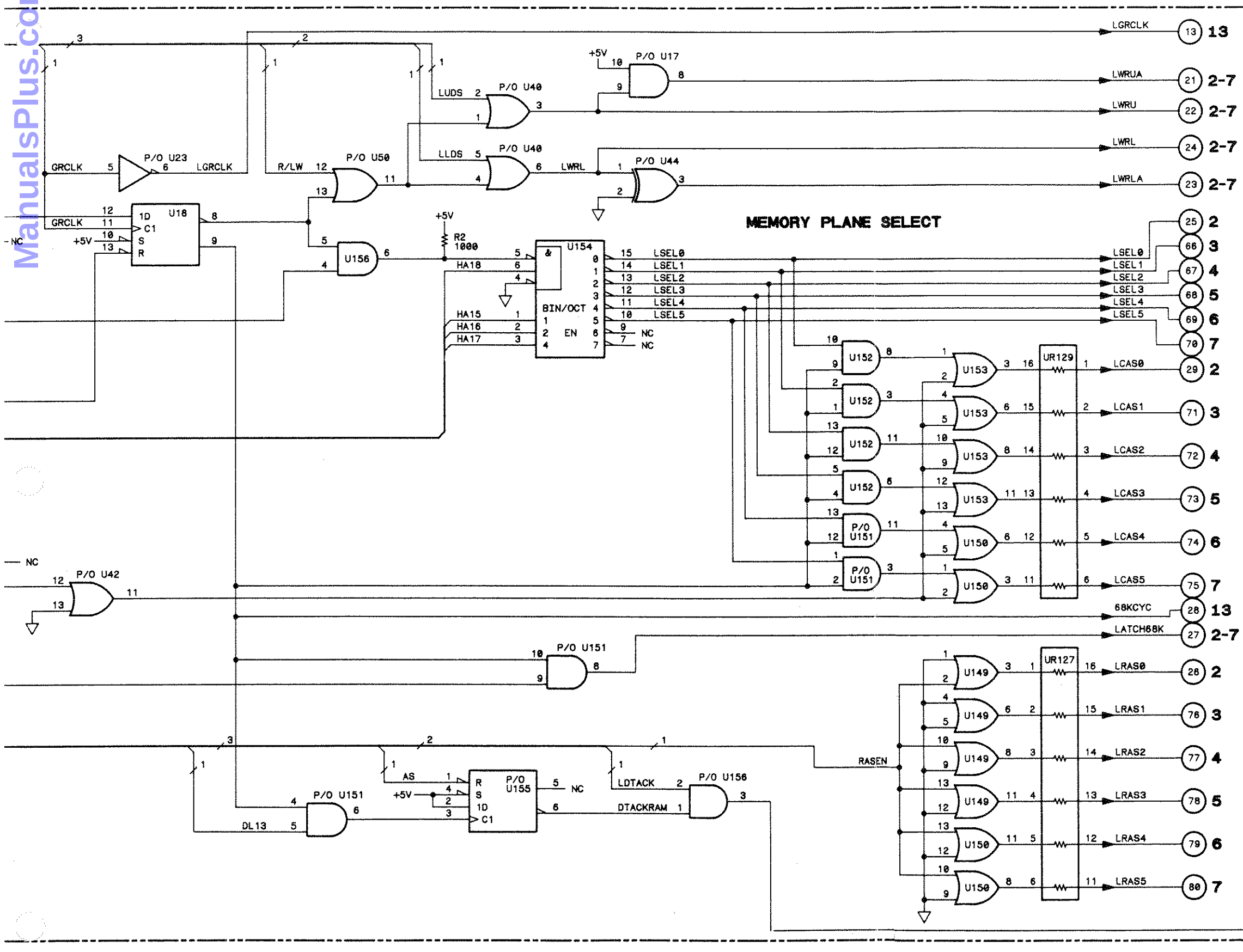
P/O DISPLAY BD.



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MEMORY PLANE SELECT



IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	14 7	U15,17–19,23,40 42–44,50,118, 149–153,155,156
+5V GND	16 8	U154

RESISTOR PACK DESCRIPTIONS:

RP#	RESISTOR VALUE
UR127,129	33

PARTS ON THIS SCHEMATIC

P/O J1
P/O U15,17,19,23,40,42–44,50,118,155
R2
U18,149–154,156
UR127,129

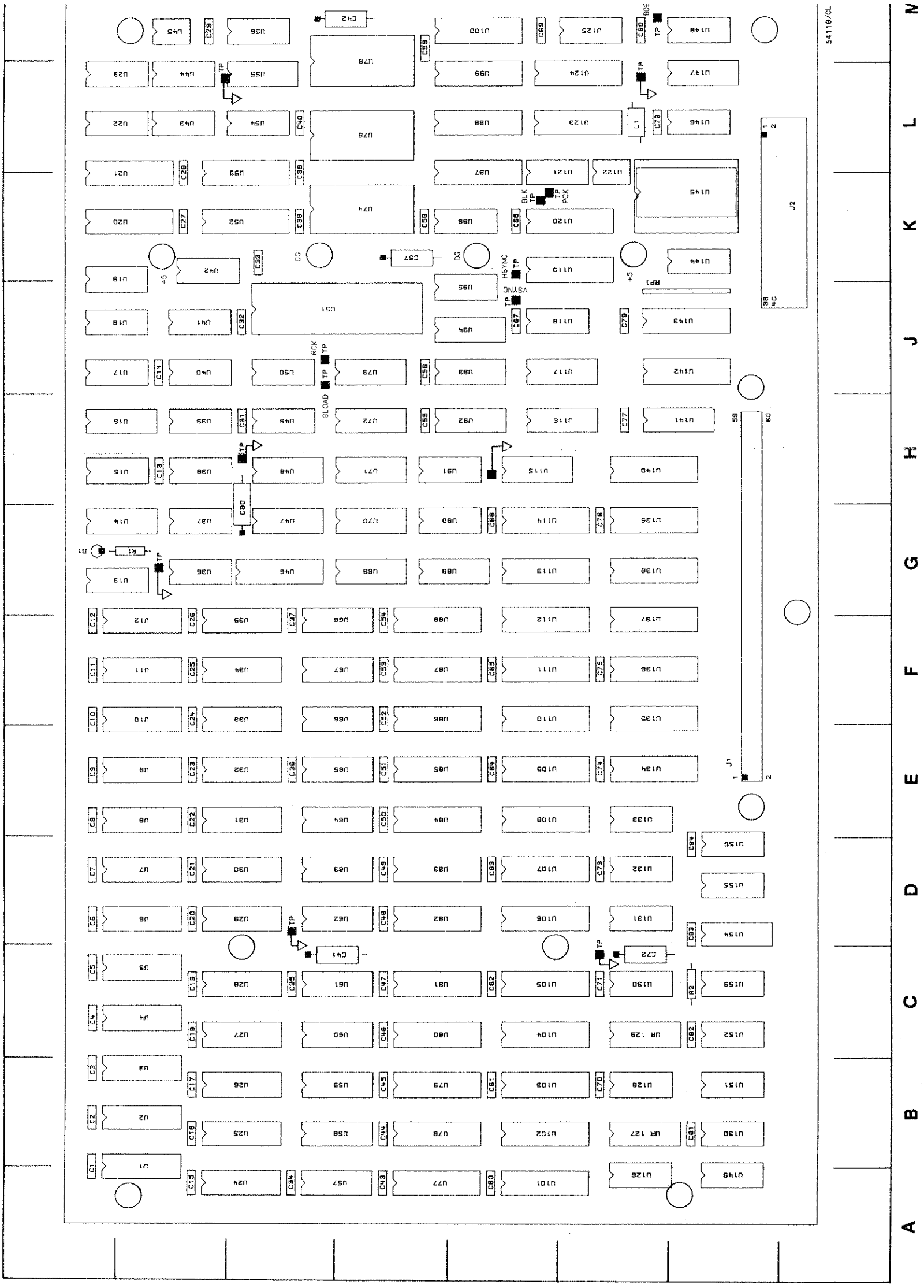
54110/SC12_12/13/1–89

12

Memory Plane Select

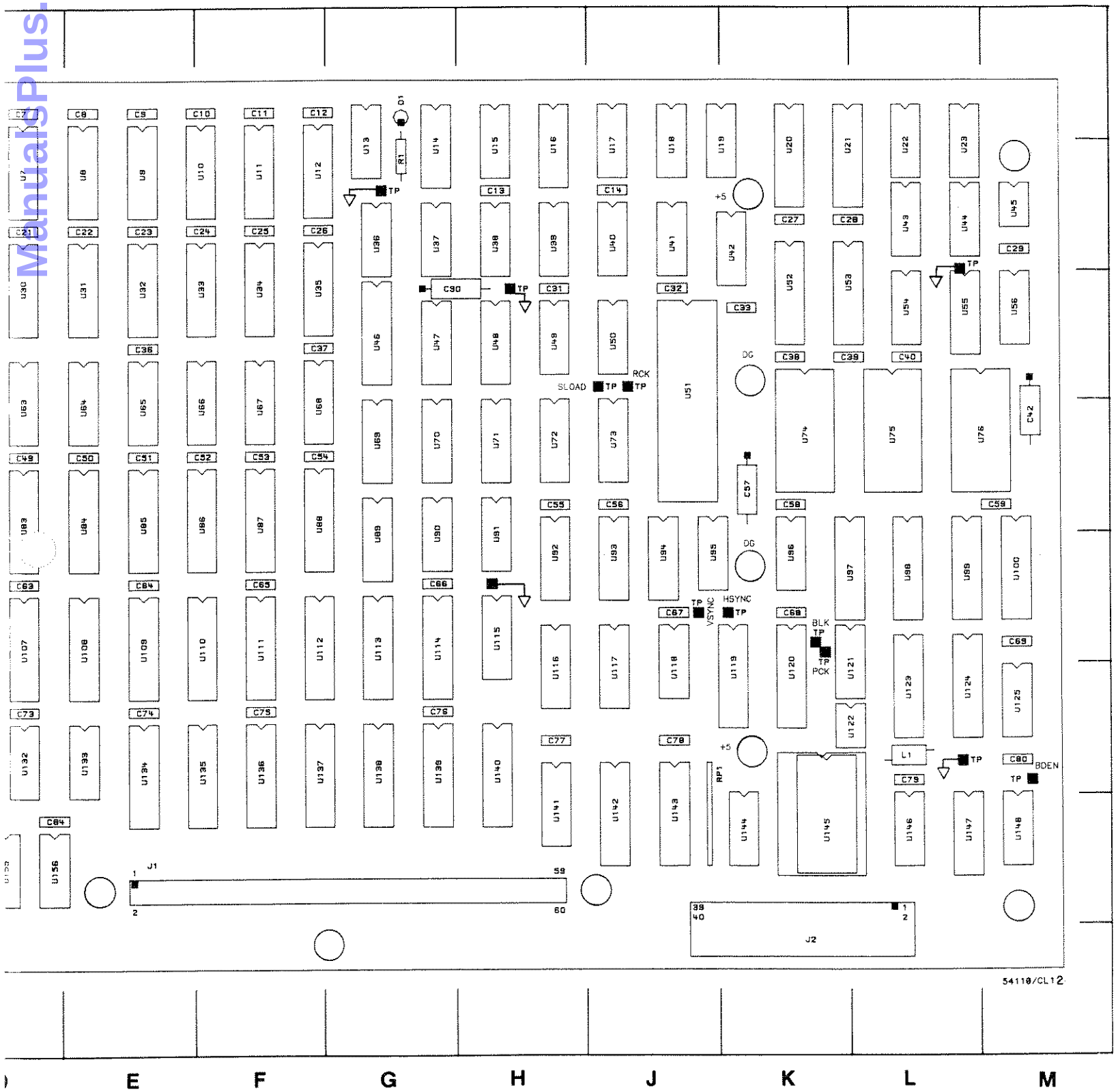
54110–66512

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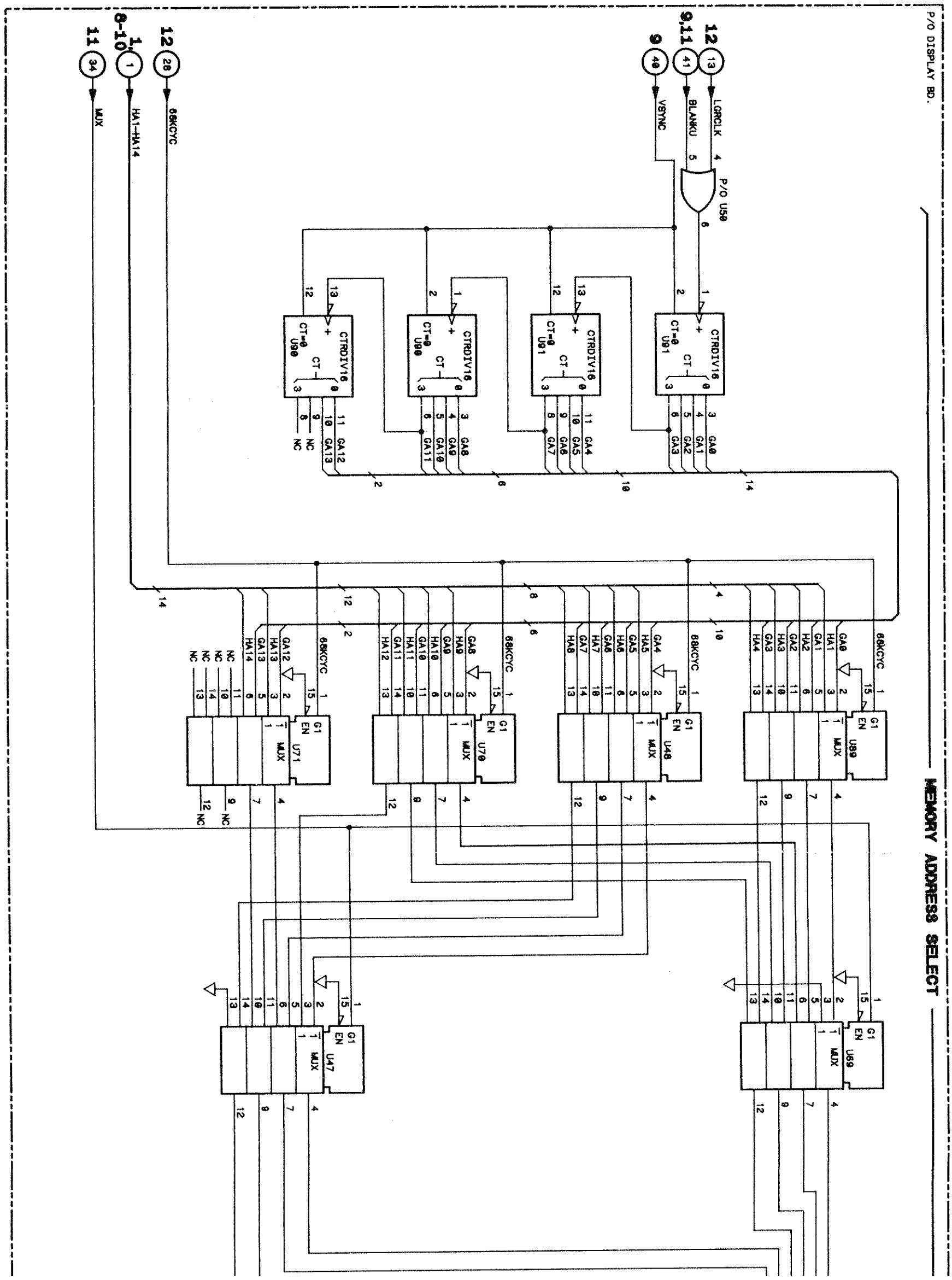


REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC
C1	A-8	C45	B-5	J2	K-1	U37	G-7	U81	C-5	U125	M-3
C2	B-8	C46	C-5			U38	H-7	U82	D-5	U126	A-3
C3	B-8	C47	C-5	L1	L-3	U39	H-7	U83	D-5	U128	B-3
C4	C-8	C48	D-5			U40	J-7	U84	E-5	U130	C-3
C5	C-8	C49	D-5	R1	G-7	U41	J-7	U85	E-5	U131	D-3
C6	D-8	C50	E-5	R2	C-2	U42	K-7	U86	F-5	U132	D-3
C7	D-8	C51	E-5			U43	L-7	U87	F-5	U133	E-3
C8	E-8	C52	F-5	RP1	J-3	U44	L-7	U88	F-5	U134	E-3
C9	E-8	C53	F-5			U45	M-7	U89	G-5	U135	F-3
C10	F-8	C54	F-5	U1	A-7	U46	G-6	U90	G-5	U136	F-3
C11	F-8	C55	H-5	U2	B-7	U47	G-6	U91	H-5	U137	F-3
C12	F-8	C56	J-5	U3	B-7	U48	H-6	U92	H-4	U138	G-3
C13	H-7	C57	K-5	U4	C-7	U49	H-6	U93	J-4	U139	G-3
C14	J-7	C58	K-5	U5	C-7	U50	J-6	U94	J-4	U140	H-3
C15	A-7	C59	M-5	U6	D-7	U51	J-6	U95	J-4	U141	H-2
C16	B-7	C60	A-4	U7	D-7	U52	K-6	U96	K-4	U142	J-2
C17	B-7	C61	B-4	U8	E-7	U53	L-6	U97	L-4	U143	J-2
C18	C-7	C62	C-4	U10	E-7	U54	L-6	U98	L-4	U144	K-2
C19	C-7	C63	D-4	U11	F-7	U55	L-6	U99	L-4	U145	K-2
C20	D-7	C64	E-4	U12	F-7	U56	M-6	U100	M-4	U146	L-2
C21	D-7	C65	F-4	U13	G-7	U57	A-5	U101	A-4	U147	L-2
C22	E-7	C66	G-4	U14	G-7	U58	B-5	U102	B-4	U148	M-2
C23	E-7	C67	J-4	U15	H-7	U59	B-5	U103	B-4	U149	A-2
C24	F-7	C68	K-4	U16	H-7	U60	C-5	U104	C-4	U150	B-2
C25	F-7	C69	M-4	U17	J-7	U61	C-5	U105	C-4	U151	B-2
C26	F-7	C70	B-3	U18	J-7	U62	D-5	U106	D-4	U152	C-2
C27	K-7	C71	C-3	U19	K-7	U63	D-5	U107	D-4	U153	C-2
C28	L-7	C72	C-3	U20	K-7	U64	E-5	U108	E-4	U154	D-2
C29	M-7	C73	D-3	U21	L-7	U65	E-5	U109	E-4	U155	D-2
C30	H-6	C74	E-3	U22	L-7	U66	F-5	U110	F-4	U156	D-2
C31	H-6	C75	F-3	U23	L-7	U67	F-5	U111	F-4		
C32	J-6	C76	G-3	U24	A-6	U68	F-5	U112	F-4	UR127	B-3
C33	K-6	C77	H-3	U25	B-6	U69	G-5	U113	G-4	UR129	C-3
C34	A-6	C78	J-3	U26	B-6	U70	G-5	U114	G-4		
C35	C-6	C79	L-3	U27	C-6	U71	H-5	U115	H-4	BDEN	M-3
C36	E-6	C80	M-3	U28	C-6	U72	H-5	U116	H-4	BLK	K-4
C37	F-6	C81	B-2	U29	D-6	U73	J-5	U117	J-4	HSYNC	K-4
C38	K-6	C82	C-2	U30	D-6	U74	K-5	U118	J-4	PCK	K-3
C39	L-6	C83	D-2	U31	E-6	U75	L-5	U119	K-4	RCK	J-6
C40	L-6	C84	D-2	U32	E-6	U76	M-5	U120	K-4	SLOAD	H-6
C41	C-5			U33	F-6	U77	A-5	U121	L-4	VSYNC	J-4
C42	M-5	DS1	G-8	U34	F-6	U78	B-5	U122	L-3		
C43	A-5			U35	F-6	U79	B-5	U123	L-3		
C44	B-5	J1	E-2	U36	G-7	U80	C-5	U124	L-3		

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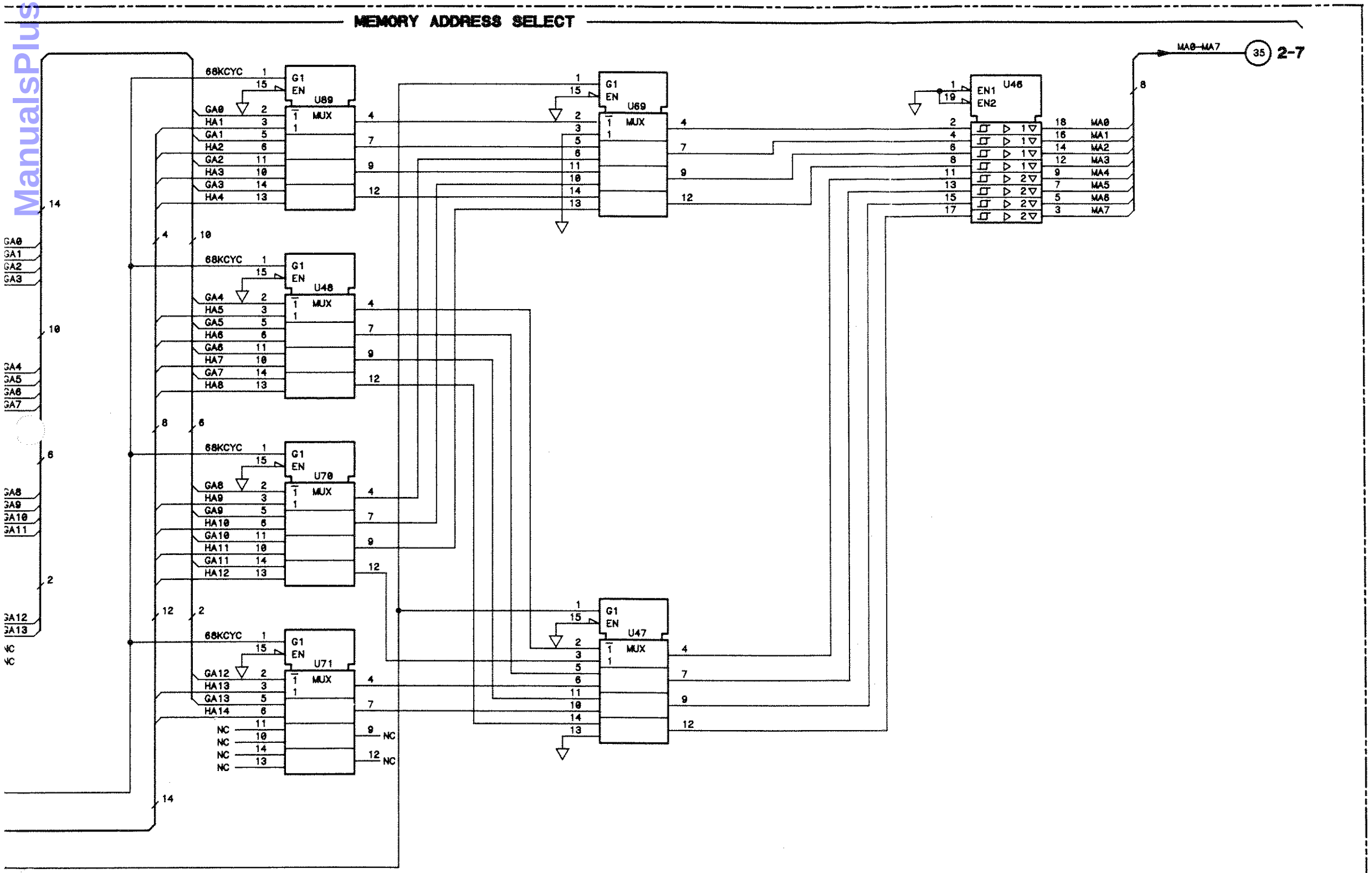
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MEMORY ADDRESS SELECT



IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V GND	20 10	U46,48,69–71,89
+5V GND	16 8	U47
+5V GND	14 7	U50,90,91

PARTS ON THIS SCHEMATIC

P/O U50
U46–48,69–71,89–91

54110/SC12_13/13/1–89

13

Memory Address Select

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Component-Level Information Packet

for HP 54112D

Timebase/Trigger Assembly

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While this document may provide a certain degree of information concerning changes, it is not subject to a revision or change program intended to keep it current or accurate. The configuration of some assemblies may differ from that indicated in this document.

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Contents

This packet consists of the following information:

- Parts list
- Changes
- Component locator
- Schematics – four schematics on two large sheets

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C1-9				NOT ASSIGNED		
C10	0180-3741	4	13	CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C11	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C12	0160-6500	7	83	CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C13	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C14	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C15	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C15	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C16	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C17	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C18	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C19	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C20	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C21	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C22	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C23	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C24	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C25	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C26	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C27	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C28	0160-3802	6	1	CAPACITOR-FXD 150PF +-10% 100VDC CER	28480	0160-3802
C29	0160-3713	8	1	CAPACITOR-FXD 4700PF +-10% 250VDC	28480	0160-3713
C30	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C31	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C32	0160-3874	2	6	CAPACITOR-FXD 10PF +-.5PF 200VDC CER	28480	0160-3874
C33	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C34	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C35	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C36	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C37	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C38	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C39	0160-4787	8	1	CAPACITOR-FXD 22PF +-5% 100VDC CER 0+-30	28480	0160-4787
C40	0160-5467	3	1	CAPACITOR-FXD 0.01UF +-10% 63VDC	28480	0160-5467
C41	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C42	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C43	0160-3878	6	2	CAPACITOR-FXD 1000PF +-20% 100VDC CER	28480	0160-3878
C44	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C45	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C46				NOT ASSIGNED		
C47	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C48	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C49	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C50	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C51	0160-4389	6	2	CAPACITOR-FXD 100PF +-5% 200VDC CER	28480	0160-4389
C52-70				NOT ASSIGNED		
C71	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C72	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C73	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C74	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C75	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C76	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C77	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C78	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500

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54112-69505 1700 - 925 = 775.00

Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C79	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C80	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C81	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C82	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C83	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C84	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C85	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C86	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C87	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C88				NOT ASSIGNED		
C89	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C90	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C91	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C92	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C93	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C94	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C95	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C96	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C97	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C98	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C99	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C100	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C101	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C102	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C103	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C104	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C105	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C106	0160-3879	7	11	CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C107	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C108	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C109	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C110	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C111	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C112	0160-3878	6		CAPACITOR-FXD 1000PF +-20% 100VDC CER	28480	0160-3878
C113	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C114	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C115	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C116	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C117				NOT ASSIGNED		
C118	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C119	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C120	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C121	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C122				NOT ASSIGNED		
C123	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C124	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C125	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C126	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C127	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C128	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C129	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C130	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
C131	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C132	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C133	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C134	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C135	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C136	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C137	0160-3873	1	1	CAPACITOR-FXD 4.7PF +-.5PF 200VDC CER	28480	0160-3873
C138	0160-3874	2		CAPACITOR-FXD 10PF +-.5PF 200VDC CER	28480	0160-3874
C139	0160-3874	2		CAPACITOR-FXD 10PF +-.5PF 200VDC CER	28480	0160-3874
C140	0160-3874	2		CAPACITOR-FXD 10PF +-.5PF 200VDC CER	28480	0160-3874
C141	0160-3874	2		CAPACITOR-FXD 10PF +-.5PF 200VDC CER	28480	0160-3874
C142	0160-3874	2		CAPACITOR-FXD 10PF +-.5PF 200VDC CER	28480	0160-3874
C143	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C144	0180-3741	4		CAPACITOR-FXD 2.2UF+-20% 25VDC TA	28480	0180-3741
C145	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C146	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C147	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C148	0160-3879	7		CAPACITOR-FXD 0.01UF +-20% 100VDC CER	28480	0160-3879
C149	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C150	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C151	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C152	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C153	0160-6500	7		CAPACITOR-FXD 0.01UF +-10% 100VDC CER	28480	0160-6500
C154	0160-4389	6		CAPACITOR-FXD 100PF +-5% 200VDC CER	28480	0160-4389
CR1	1901-0047	8	8	DIODE-SWITCHING 20V 75MA 10NS DO-35	28480	1901-0047
CR2	1901-0047	8		DIODE-SWITCHING 20V 75MA 10NS DO-35	28480	1901-0047
CR3	1901-0047	8		DIODE-SWITCHING 20V 75MA 10NS DO-35	28480	1901-0047
CR4	1901-0047	8		DIODE-SWITCHING 20V 75MA 10NS DO-35	28480	1901-0047
CR5	1901-0050	3	8	DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR6	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR7-8				NOT ASSIGNED		
CR9	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR10	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR11	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR12	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR13	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR14	1901-0050	3		DIODE-SWITCHING 80V 200MA 2NS DO-35	9N171	1N4150
CR15				NOT ASSIGNED		
CR16	1901-0535	9	2	DIODE-SCHOTTKY SM SIG	28480	1901-0535
CR17	1901-0047	8		DIODE-SWITCHING 20V 75MA 10NS DO-35	28480	1901-0047
CR18	1901-0535	9		DIODE-SCHOTTKY SM SIG	28480	1901-0535
CR19	1901-0047	8		DIODE-SWITCHING 20V 75MA 10NS DO-35	28480	1901-0047
CR20	1901-0047	8		DIODE-SWITCHING 20V 75MA 10NS DO-35	28480	1901-0047
CR21	1901-0047	8		DIODE-SWITCHING 20V 75MA 10NS DO-35	28480	1901-0047
DL1	1810-1069	3	1	DELAY LINE PASSIVE DEVICE W/SINGLE	28480	1810-1069
DL2	1810-0841	7	1	DELAY LINE PASSIVE DEVICE W/SINGLE	28480	1810-0841
E1	9170-0029	3	1	CORE-SHIELDING BEAD	28480	9170-0029
E2	0340-1074	2	3	INSULATOR TO-220	28480	0340-1074
H1	0515-0372	2	6	SCREW MACH M3 8MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
H2	0515-0664	5	3	SCREW MACH M3 12MM-LG PAN-HD T10	00000	ORDER BY DESCRIPTION
H3	5041-2676	3	2	WASHER-SHOULDER	00000	ORDER BY DESCRIPTION

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
J1	1251-4836	2	1	CONN-POST TYPE 2.5-PIN-SPCG 2-CONT	28480	1251-4836
J2	1250-1368	7	12	CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J3	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J4	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J5	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J6	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J7	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J8	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J9	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J10	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J11	1252-1920	1	1	CONN-POST TYPE 0.100-PIN-SPCG 10-CONT	28480	1252-1920
J12	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J13	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
J14	1250-1368	7		CONNECTOR-RF SMB M PC 50-OHM	28480	1250-1368
L1	5081-7682	5	8	CHOKE RF	28480	5081-7682
L2	5081-7682	5		CHOKE RF	28480	5081-7682
L3	5081-7682	5		CHOKE RF	28480	5081-7682
L4	5081-7682	5		CHOKE RF	28480	5081-7682
L5	5081-7682	5		CHOKE RF	28480	5081-7682
L6	5081-7682	5		CHOKE RF	28480	5081-7682
L7	5081-7682	5		CHOKE RF	28480	5081-7682
L8	9170-1366	3	14	CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L9	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L10	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L11	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L12	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L13	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L14	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L15	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L16	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L17	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L18				NOT ASSIGNED		
L19	5081-7682	5		CHOKE RF	28480	5081-7682
L20	9100-2251	0	1	INDUCTOR RF-CH-MLD 220NH +-10%	28480	9100-2251
L21	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L22	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L23	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
L24	9170-1366	3		CORE-MAGNETIC SHIELDING BEAD; IMPEDANCE	28480	9170-1366
MP1	54112-00602	2	1	SHIELD-TIMEBASE/TRIGGER	28480	54112-00602
MP2	54111-45004	1	1	EXTRACTOR-RIGHT	28480	54111-45004
MP3	54111-45005	2	1	EXTRACTOR-LEFT	28480	54111-45005
MP4	54112-21101	0	3	HEATSINK	28480	54112-21101
P1	1252-0198	3	1	CONN-POST TYPE 0.100-PIN-SPCG 120-CONT	28480	1252-0198
Q1	1855-0020	8	1	TRANSISTOR J-FET N-CHAN D-MODE TO-18 SI	04713	SFE793
Q2	1854-0636	0	9	TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q3	1854-0215	1	3	TRANSISTOR NPN SI TO-92 PD=350MW	2M627	2N3904
Q4	1853-0036	2	1	TRANSISTOR PNP SI PD=310MW FT=250MHZ	27014	2N3906
Q5	1854-0215	1		TRANSISTOR NPN SI TO-92 PD=350MW	2M627	2N3904
Q6	1855-0540	7	2	TRANSISTOR J-FET P-CHAN D-MODE TO-18 SI	17856	2N5115(SEL)
Q7	1854-0248	0	1	TRANSISTOR-DUAL NPN 2N4044 TO-77	72799	2N4044
Q8	1855-0540	7		TRANSISTOR J-FET P-CHAN D-MODE TO-18 SI	17856	2N5115(SEL)

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
Q9	1854-0296	8	3	TRANSISTOR NPN SI TO-92 PD=350W	04713	MPS6543 SELECTED
Q10	1854-0296	8		TRANSISTOR NPN SI TO-92 PD=350W	04713	MPS6543 SELECTED
Q11	1854-0296	8		TRANSISTOR NPN SI TO-92 PD=350W	04713	MPS6543 SELECTED
Q12-13				NOT ASSIGNED		
Q14	1854-0636	0		TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q15	1854-0636	0		TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q16	1854-0636	0		TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q17	1854-0636	0		TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q18	1854-0636	0		TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q19	1854-0636	0		TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q20	1854-0636	0		TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q21	1854-0636	0		TRANSISTOR NPN SI TO-92 PD=350MW	28480	1854-0636
Q22	1854-0215	1		TRANSISTOR NPN SI TO-92 PD=350MW	2M627	2N3904
R1-6				NOT ASSIGNED		
R7	0698-3442	9	5	RESISTOR 237 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-237R-F
R8	0698-4422	7	1	RESISTOR 1.27K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1271-F
R9-10				NOT ASSIGNED		
R11	0698-3442	9		RESISTOR 237 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-237R-F
R12	0698-3446	3	3	RESISTOR 383 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-383R-F
R13	0698-3442	9		RESISTOR 237 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-237R-F
R14	0698-3438	3	1	RESISTOR 147 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-147R-F
R15	0698-3442	9		RESISTOR 237 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-237R-F
R16	0698-3446	3		RESISTOR 383 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-383R-F
R17	0698-3442	9		RESISTOR 237 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-237R-F
R18	0698-3700	2	1	RESISTOR 715 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-715R-F
R19	0757-0465	6	7	RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R20	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R21	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R22	0757-0398	4	16	RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R23	0698-3498	5	1	RESISTOR 8.66K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-866R-F
R24	0698-8827	4	1	RESISTOR 1M 1% 0.125W TF TC=0+-100	28480	0698-8827
R25	0757-0442	9	5	RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R26	0757-0444	1	1	RESISTOR 12.1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1212-F
R27	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R28	0698-3457	6	1	RESISTOR 316K 1% 0.125W TF TC=0+-100	28480	0698-3457
R29	0757-0472	5	1	RESISTOR 200K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2003-F
R30	0757-0288	1	1	RESISTOR 9.09K 1% 0.125W TF TC=0+-100	19701	5033R-1/8-T0-9091-F
R31	0757-0438	3	1	RESISTOR 5.11K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5111-F
R32	0698-3444	1	2	RESISTOR 316 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-316R-F
R33	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R34	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R35	0757-0401	0	20	RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R36	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R37	0698-3226	7	1	RESISTOR 6.49K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-6491-F
R38	0757-0346	2	1	RESISTOR 10 1% 0.125W TF TC=0+-100	28480	0757-0346
R39				NOT ASSIGNED		
R40	0757-0280	3	14	RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R41	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R42	0757-0459	8	1	RESISTOR 56.2K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5622-F
R43	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R44	0757-0394	0	19	RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R45	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R46	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R47	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R48	0757-0467	8	1	RESISTOR 121K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1213-F
R49	0757-0465	6		RESISTOR 100K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1003-F
R50	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R51	0698-4431	8	2	RESISTOR 2.05K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2051-F
R52	0698-4431	8		RESISTOR 2.05K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2051-F
R53	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R54	2100-3123	0	1	RESISTOR-TRMR 500 10% TKF SIDE-ADJ	32997	3006P-1-501
R55	0757-0418	9	1	RESISTOR 619 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-619R-F
R56	0698-4418	1	1	RESISTOR 205 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-205R-F
R57	0757-0411	2	19	RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R58	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R59	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R60	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R61	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R62	0757-0397	3	19	RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R63	0757-0416	7	4	RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F
R64	0757-0416	7		RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F
R65	0757-0399	5	6	RESISTOR 82.5 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-82R5-F
R66	0757-0399	5		RESISTOR 82.5 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-82R5-F
R67	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R68	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R69-73				NOT ASSIGNED		
R74	0698-0085	0	2	RESISTOR 2.61K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2611-F
R75	0757-0399	5		RESISTOR 82.5 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-82R5-F
R76	0757-0399	5		RESISTOR 82.5 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-82R5-F
R77				NOT ASSIGNED		
R78	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R79	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R80	0757-0410	1	2	RESISTOR 301 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-301R-F
R81	0757-0410	1		RESISTOR 301 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-301R-F
R82	0757-0442	9		RESISTOR 10K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1002-F
R83	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R84	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R85	0698-0085	0		RESISTOR 2.61K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2611-F
R86	0698-8959	3	1	RESISTOR 619K 1% 0.125W TF TC=0+-100	28480	0698-8959
R87	0698-3156	2	1	RESISTOR 14.7K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1472-F
R88	0698-3444	1		RESISTOR 316 1% 0.125W TF TC=0+-100	28480	0698-3444
R89	0698-4002	9	2	RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R90	0757-0449	5		RESISTOR 20K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-2002-F
R91	0698-4002	9		RESISTOR 5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-5001-F
R92	0698-8958	2	1	RESISTOR 511K 1% 0.125W TF TC=0+-100	28480	0698-8958
R93	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R94	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R95	0757-0399	5		RESISTOR 82.5 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-82R5-F
R96	0757-0399	5		RESISTOR 82.5 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-82R5-F
R97	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R98	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R99	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R100	0757-0416	7	1	RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R101-108				NOT ASSIGNED		
R109	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R110	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R111	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R112	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R113	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R114	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R115	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R116	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R117	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R118	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R119	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R120	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R121	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R122	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R123	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R124	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R125				NOT ASSIGNED		
R126	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R127				NOT ASSIGNED		
R128	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R129	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R130				NOT ASSIGNED		
R131	0757-0427	0	5	RESISTOR 1.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1501-F
R132				NOT ASSIGNED		
R133	0757-0427	0		RESISTOR 1.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1501-F
R134-135				NOT ASSIGNED		
R136	0757-0427	0		RESISTOR 1.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1501-F
R137	0757-0427	0		RESISTOR 1.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1501-F
R138				NOT ASSIGNED		
R139	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R140	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R141	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R142	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R143-144				NOT ASSIGNED		
R145	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R146	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R147	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R148-149				NOT ASSIGNED		
R150	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R151	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R152-154				NOT ASSIGNED		
R155	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R156	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R157-158				NOT ASSIGNED		
R159	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R160	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R161	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R162	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R163	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R164	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R165	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R166	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R167	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R168	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R169	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R170	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R171	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R172	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R173	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R174	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R175	0757-0427	0		RESISTOR 1.5K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1501-F
R176				NOT ASSIGNED		
R177	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R178	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R179	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R180	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R181	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R182	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R183	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R184	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R185	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R186	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R187	0757-0398	4		RESISTOR 75 1% 0.125W TF TC=0+-100	28480	0757-0398
R188	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R189	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R190	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R191	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R192	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R193	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F
R194				NOT ASSIGNED		
R195	0757-0411	2		RESISTOR 332 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-332R-F
R196-197				NOT ASSIGNED		
R198	0757-0401	0		RESISTOR 100 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-101-F
R199	0698-3446	3		RESISTOR 383 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-383R-F
R200	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R201	0757-0984	4	2	RESISTOR 10 1% 0.5W TF TC=0+-100	28480	0757-0984
R202	0757-0984	4		RESISTOR 10 1% 0.5W TF TC=0+-100	28480	0757-0984
R203	0698-3398	4	1	RESISTOR 46.4 1% 0.5W TF TC=0+-100	28480	0698-3398
R204				NOT ASSIGNED		
R205	2100-3103	6	1	RESISTOR-TRMR 10K 10% TKF SIDE-ADJ	32997	3006P-1-103
R206	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R207	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R208	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R209	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R210	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R211	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R212	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R213-214				NOT ASSIGNED		
R215	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R216	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R217	0698-3427	0	1	RESISTOR 13.3 1% 0.125W TF TC=0+-100	28480	0698-3427
R218	0698-6295	6	1	RESISTOR 300 0.1% 0.125W TF TC=0+-50	28480	0698-6295
R219	0699-1203	8	1	RESISTOR 120 0.1% 0.125W TF TC=0+-25	28480	0699-1203
R220	0757-0397	3		RESISTOR 68.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-68R1-F

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
R221	0757-0400	9	1	RESISTOR 90.9 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-90R9-F
R222	0757-0416	7		RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F
R223	0757-0416	7		RESISTOR 511 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-511R-F
R224	0698-3430	5	2	RESISTOR 21.5 1% 0.125W TF TC=0+-100	28480	0698-3430
R225	0698-3430	5		RESISTOR 21.5 1% 0.125W TF TC=0+-100	28480	0698-3430
R226	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R227				NOT ASSIGNED		
R228	0698-0082	7	2	RESISTOR 464 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-4640-F
R229	0698-0082	7		RESISTOR 464 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-4640-F
R230	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
R231	0757-0394	0		RESISTOR 51.1 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-51R1-F
R232	0698-4458	9	1	RESISTOR 590 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-590R-F
R233	0698-3405	4	1	RESISTOR 422 1% 0.5W TF TC=0+-100	28480	0698-3405
R234	0757-0453	2	1	RESISTOR 30.1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-3012-F
R235	0757-0280	3		RESISTOR 1K 1% 0.125W TF TC=0+-100	24546	CT4-1/8-T0-1001-F
RP1	1810-0204	6	4	NETWORK-RES 8-SIP 1.0K OHM X 7	28480	1810-0204
RP2	1810-0204	6		NETWORK-RES 8-SIP 1.0K OHM X 7	28480	1810-0204
RP3	1810-0204	6		NETWORK-RES 8-SIP 1.0K OHM X 7	28480	1810-0204
RP4	1810-0204	6		NETWORK-RES 8-SIP 1.0K OHM X 7	28480	1810-0204
RP5	1810-0272	8	4	NETWORK-RES 10-SIP 330.0 OHM X 9	28480	1810-0272
RP6	1810-0272	8		NETWORK-RES 10-SIP 330.0 OHM X 9	28480	1810-0272
RP7	1810-0272	8		NETWORK-RES 10-SIP 330.0 OHM X 9	28480	1810-0272
RP8	1810-0272	8		NETWORK-RES 10-SIP 330.0 OHM X 9	28480	1810-0272
RP9	1810-0332	1	1	NETWORK-RES 8-SIP 680.0 OHM X 7	28480	1810-0332
RP10				NOT ASSIGNED		
RP11	1810-0318	3	1	NETWORK-RES 6-SIP 1.0K OHM X 5	28480	1810-0318
U1	1826-0271	0	1	IC OP AMP GP 8-DIP-P PKG	01295	UA741CP
U2	1820-1197	9	1	IC GATE TTL LS NAND QUAD 2-INP	01295	SN74LS00N
U3	1820-1052	5	1	IC XLTR ECL ECL-TO-TTL QUAD 2-INP	04713	MC10125L
U4	1NB7-8142	4	1	IC HYBRID MUX-SYNC	28480	1NB7-8142
U5	1820-2654	5	1	IC MUXR/DATA-SEL TTL F 2-TO-1-LINE QUAD	07263	74F157PC
U6	1820-3461	4	2	IC RCVR ECL/10KH LINE RCVR QUAD	04713	MC10H115P
U7	1820-3461	4		IC RCVR ECL/10KH LINE RCVR QUAD	04713	MC10H115P
U8	1820-1208	3	1	IC GATE TTL LS OR QUAD 2-INP	01295	SN74LS32N
U9	1820-2715	9	1	IC-INTERFACE DRVR BCD NAND DUAL	01295	SN75447P
U10	1813-0247	3	1	CLOCK-OSCILLATOR-XTAL 32.768-KHZ 0.0045%	28480	1813-0247
U11	1NB4-5008	9		IC HYBRID 24-BIT COUNTER	28480	1NB4-5008
U12	1820-3337	3	2	IC GATE ECL/10KH AND QUAD 2-INP	04713	MC10H104P
U13	1820-3337	3		IC GATE ECL/10KH AND QUAD 2-INP	04713	MC10H104P
U14	1820-2823	0	6	IC GATE ECL/10KH NOR QUAD 2-INP	04713	MC10H102P
U15	1820-2823	0		IC GATE ECL/10KH NOR QUAD 2-INP	04713	MC10H102P
U16	1820-1112	8	1	IC FF TTL LS D-TYPE POS-EDGE-TRIG	01295	SN74LS74AN
U17	1820-2849	0	2	IC FF ECL/10KH D-M/S DUAL	04713	MC10H131P
U18	1820-2823	0		IC GATE ECL/10KH NOR QUAD 2-INP	04713	MC10H102P
U19	1820-2823	0		IC GATE ECL/10KH NOR QUAD 2-INP	04713	MC10H102P
U20	1820-2823	0		IC GATE ECL/10KH NOR QUAD 2-INP	04713	MC10H102P
U21	1820-4081	6	1	IC XLTR ECL/10KH TTL-TO-ECL QUAD	04713	MC10H124P
U22	1826-0890	9	1	IC OP AMP GP DUAL 8-DIP-P PKG	27014	LM358AN
U23	1820-0810	1	1	IC RCVR ECL LINE RCVR TPL 2-INP	04713	MC10116P
U24	1SE6-0056	0	1	IC HYBRID TIMEBASE	28480	1SE6-0056
U25	1813-0546	5	1	OSCILLATOR-CRYSTALOUTPUT:400MHZ,ECL;TEMP	28480	1813-0546

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Reference Designator	HP Part Number	CD	Qty	Description	Mfr Code	Mfr Part Number
U26	1826-0524	6	1	IC OP AMP GP QUAD 14-DIP-P PKG	27014	LM324AN
U27	1826-1018	5	1	IC ANALOG SWITCH 4 SPST 16 -DIP-P	17856	DG201ACJ
U28	1826-1378	0	1	IC COMPARATOR HS DUAL 16-DIP-C PKG	34335	AM6687DL
U29	1826-0393	7	2	IC V RGLTR-ADJ-POS 1.2/37V TO-220 PKG	01295	LM317KC
U30	1820-2849	0		IC FF ECL/10KH D-M/S DUAL	04713	MC10H131P
U31	1820-2823	0		IC GATE ECL/10KH NOR QUAD 2-INP	04713	MC10H102P
U32	1820-2711	5	4	IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS541N
U33	1826-0138	8	5	IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U34	1826-0138	8		IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U35	1820-2757	9	3	IC FF TTL ALS D-TYPE POS-EDGE-TRIG OCTL	01295	SN74ALS574AN
U36	1820-1199	1	1	IC INV TTL LS HEX 1-INP	01295	SN74LS04N
U37	1820-2757	9		IC FF TTL ALS D-TYPE POS-EDGE-TRIG OCTL	01295	SN74ALS574AN
U38	1826-0883	0	1	IC COMPARATOR HS 16-DIP-C PKG	34335	AM685DL
U39	1826-0281	2	1	IC V RGLTR-FXD-NEG 14.3/15.7V TO-92 PKG	04713	MC79L15ACP
U40	1826-0527	9	4	IC V RGLTR-ADJ-NEG 1.2/37V TO-220 PKG	27014	LM337T
U41	1826-0393	7	1	IC V RGLTR-ADJ-POS 1.2/37V TO-220 PKG	01295	LM317KC
U42	1826-0138	8		IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U43	1826-0138	8		IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U44	1820-2757	9		IC FF TTL ALS D-TYPE POS-EDGE-TRIG OCTL	01295	SN74ALS574AN
U45	1820-1198	0	1	IC GATE TTL LS NAND QUAD 2-INP	01295	SN74LS03N
U46	1820-2711	5		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS541N
U47	1826-0274	3	1	IC V RGLTR-FXD-POS 14.4/15.6V TO-92 PKG	04713	MC78L15ACP
U48	1826-0138	8		IC COMPARATOR GP QUAD 14-DIP-P PKG	01295	LM339N
U49	1820-0495	8	1	IC DCDR TTL 4-TO-16-LINE 4-INP	01295	SN74154N
U50	1820-1419	8	1	IC COMPTR TTL LS MAGTD 4-BIT	01295	SN74LS85N
U51	1826-1246	1	1	IC D/A CONVERTER12-BIT 28-CERDIP BPLR	24355	AD667AD
U52	1826-0527	9		IC V RGLTR-ADJ-NEG 1.2/37V TO-220 PKG	27014	LM337T
U53	1826-0527	9		IC V RGLTR-ADJ-NEG 1.2/37V TO-220 PKG	27014	LM337T
U54	1826-0215	2	1	IC V RGLTR-FXD-NEG 5/5.4V TO-220 PKG	04713	MC7905.2CT
U55	1820-2711	5		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS541N
U56	1820-2711	5		IC DRVR TTL LS LINE DRVR OCTL	01295	SN74LS541N
U57	1820-2075	4	2	IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U58	1820-2075	4		IC TRANSCEIVER TTL LS BUS OCTL	01295	SN74LS245N
U59	1820-0668	7	1	IC BFR TTL NON-INV HEX 1-INP	01295	SN7407N
U60	1826-0527	9		IC V RGLTR-ADJ-NEG 1.2/37V TO-220 PKG	27014	LM337T
XU1	1200-0690	1	3	SOCKET-XSTR 3-CONT DIP-SLDR	28480	1200-0690
XU2	1200-0690	1		SOCKET-XSTR 3-CONT DIP-SLDR	28480	1200-0690
XU3	1200-0690	1		SOCKET-XSTR 3-CONT DIP-SLDR	28480	1200-0690

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CHANGE 1, for 54112-66502

Schematic 3

Three resistors were changed to optimize the performance of the Fine Interpolator. There was no change in the part number of the assembly.

Three resistors (R90, R92, and R100) were changed to increase stability in the current sources of the fine interpolator. The three resistor values are interdependent. Replace a resistor with the same value as the original, unless resistors are being changed to correct interpolator failure. If you are correcting an interpolator failure, replace all three resistors with the new values.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	R90 to	0757-0442	9	RESISTOR 10K 1% 0.125W	24546	CT4-1/8-T0-1002-F
	R92 to	0757-0486	1	RESISTOR 750K 1% 0.125W	24546	CT4-1/8-T0-7503-F
	R100 to	0757-0420	3	RESISTOR 750 1% 0.125W	24546	CT4-1/8-T0-750R-F

CHANGE 2, for 54112-66502

Three resistors were changed to optimize the performance. There was no change in the part number of the assembly.

Schematic 1

Resistor R55 was changed to center the adjustment of the calibrator output.

Schematic 3

Resistors R88 and R100 were replaced to optimize performance of the fine interpolator.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	R55 to	0757-0421	4	RESISTOR 825 1% 0.125W	24546	CT4-1/8-T0-825R-F
	R88 to	0757-0407	6	RESISTOR 200 1% 0.125W	24546	CT4-1/8-T0-201-F
	R100 to	0757-0421	4	RESISTOR 825 1% 0.125W	24546	CT4-1/8-T0-825R-F

CHANGE 3, for 54112-66502

Schematic 3

The Mux/Sync hybrid, U4, was changed to a selected part. There was no change in the part number of the assembly. U4 was changed again in CHANGE 4.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	U4 to	54112-89501	6	IC HYBRID MUX/SYNC	28480	54112-89501

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CHANGE 4, for 54112-66505

Schematic 3

The Mux/Sync hybrid, U4, was changed and an adjustment was eliminated. If U4 is being replaced on an assembly which has the adjustment, make the following changes to accomodate the new mux/sync hybrid. If you have questions, consult your HP customer service representative.

Delete R205

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
CHANGE:						
	R199 to	0698-3443	0	RESISTOR 287 1% 0.125W	24546	CT4-1/8-T0-287R-F
	U4 to	1NB7-8189	9	IC HYBRID MUX/SYNC	28480	1NB7-8189

CHANGE 5, for 54112-66505

Schematic 4

A capacitor was added to control noise. C46 was added between U50 pin 6 and AGND.

		HP PART NUMBER	CD	DESCRIPTION	MFR CODE	MFR PART NUMBER
ADD:						
	C46	0160-4574	1	CAPACITOR-FXD 1000PF 100V	28480	0160-4574

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NOTES:

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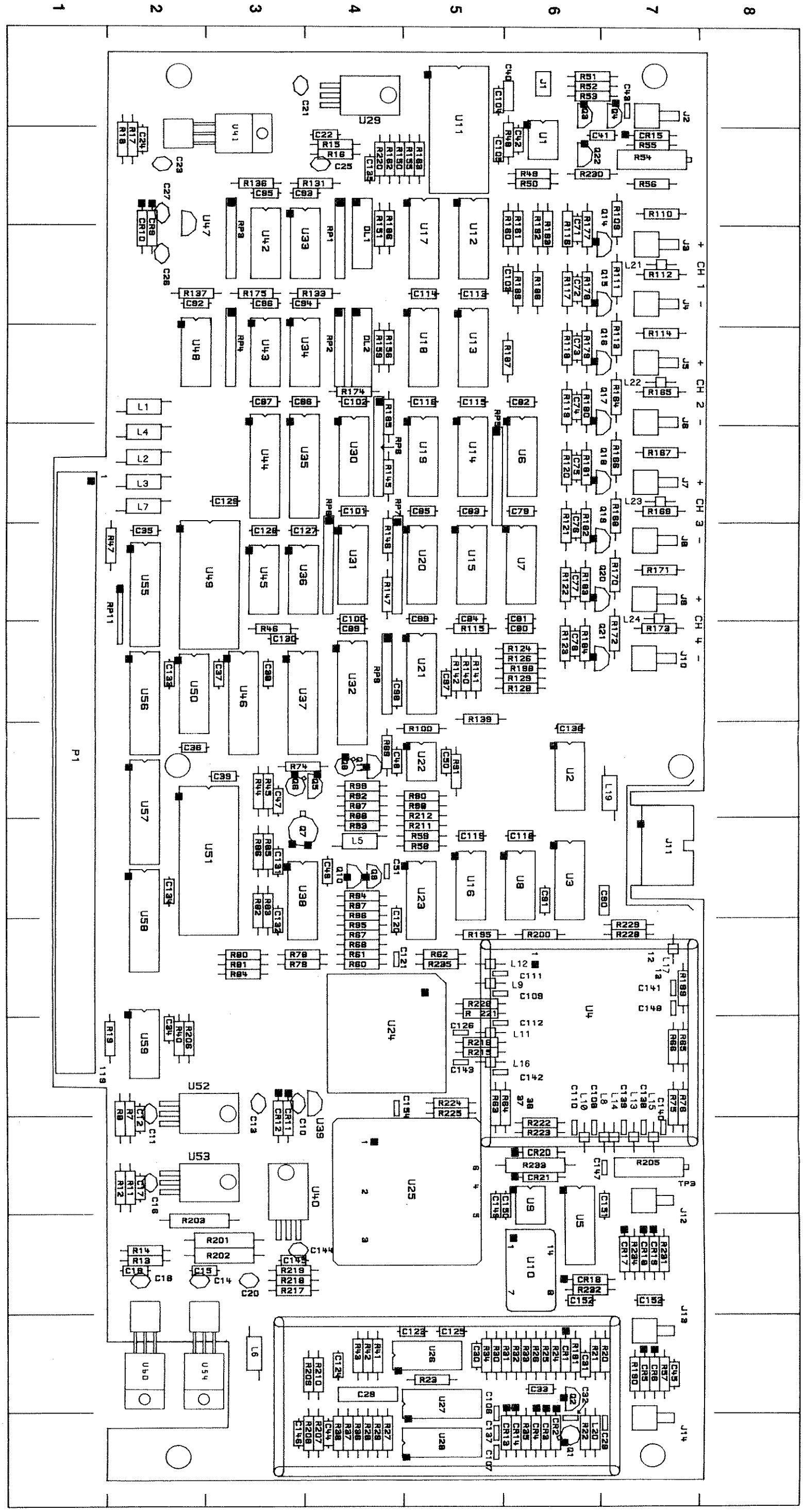
NOTES:

REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC	REF DES	GRID LOC
C10	M-3	C90	J-7	C151	M-7	L15	L-7	R35	Q-6	R109	B-6	R185	D-4	U2	H-6
C11	M-2	C91	J-6	C152	N-6	L16	L-6	R36	Q-4	R110	B-6	R186	C-4	U3	J-6
C12	L-2	C92	C-2	C153	N-7	L17	K-7	R37	Q-4	R111	C-7	R187	D-6	U4	K-6
C13	M-3	C93	B-3	C154	L-5	L19	H-7	R38	Q-4	R112	C-7	R188	C-6	U5	N-6
C14	N-3	C94	C-3			L20	Q-6	R40	L-2	R113	D-7	R189	C-6	U6	E-6
C15	N-2	C95	B-3	CR1	P-6	L21	C-7	R41	P-4	R114	D-7	R190	P-7	U7	F-6
C16	M-2	C96	C-3	CR2	Q-6	L22	D-7	R42	P-4	R115	G-5	R191	P-6	U8	J-6
C17	M-2	C97	G-5	CR3	Q-6	L23	E-7	R43	P-4	R116	C-6	R192	C-6	U9	M-6
C18	N-2	C98	G-4	CR4	Q-6	L24	F-7	R44	H-3	R117	C-6	R193	C-6	U10	N-6
C19	N-2	C99	F-5	CR5	P-7			R45	H-3	R118	D-6	R195	K-5	U11	A-5
C20	N-3	C100	F-4	CR6	P-7	P1	H-1	R46	G-3	R119	D-6	R198	G-6	U12	C-5
C21	A-3	C101	E-4	CR9	B-2			R47	F-2	R120	E-6	R199	K-7	U13	D-5
C22	B-4	C102	D-4	CR10	B-2	Q1	Q-6	R48	B-6	R121	E-6	R200	K-6	U14	E-5
C23	B-2	C103	C-6	CR11	M-3	Q2	P-6	R49	B-6	R122	F-6	R201	N-3	U15	F-5
C24	B-2	C104	A-5	CR12	M-3	Q3	A-6	R50	B-6	R123	G-6	R202	N-3	U16	J-5
C25	B-4	C105	B-5	CR13	Q-6	Q4	A-7	R51	A-6	R124	G-6	R203	N-2	U17	C-5
C26	C-2	C106	P-5	CR14	Q-6	Q5	H-4	R52	A-6	R126	G-6	R205	M-7	U18	D-5
C27	B-2	C107	Q-5	CR15	B-7	Q6	H-3	R53	A-6	R128	G-6	R206	L-2	U19	E-5
C28	Q-7	C108	L-6	CR16	N-6	Q7	J-3	R54	B-6	R129	G-6	R207	Q-4	U20	F-5
C29	P-4	C109	K-6	CR17	N-7	Q8	H-4	R55	B-6	R131	B-4	R208	Q-4	U21	G-5
C30	P-5	C110	L-6	CR18	N-7	Q9	J-4	R56	B-6	R133	C-4	R209	P-4	U22	H-5
C31	P-6	C111	K-6	CR19	N-7	Q10	J-4	R57	P-7	R136	B-3	R210	P-4	U23	J-5
C32	P-6	C112	L-6	CR20	M-6	Q11	H-4	R58	J-5	R137	C-2	R211	J-5	U24	L-4
C33	P-6	C113	C-5	CR21	M-6	Q14	B-7	R59	J-5	R139	G-5	R212	H-5	U25	M-5
C34	L-2	C114	C-5			Q15	C-7	R60	K-4	R140	G-5	R215	L-5	U26	P-5
C35	F-2	C115	D-5	DL1	C-4	Q16	D-7	R61	K-4	R141	G-5	R216	L-5	U27	P-5
C36	H-2	C116	D-5	DL2	D-4	Q17	D-7	R62	K-5	R142	G-5	R217	N-3	U28	Q-5
C37	G-3	C118	J-6			Q18	E-7	R63	L-5	R145	E-4	R218	N-3	U29	A-4
C38	G-3	C119	J-5	E1	P-6	Q19	E-7	R64	L-5	R146	F-4	R219	N-3	U30	E-4
C39	H-3	C120	K-4			Q20	F-7	R65	L-7	R147	F-4	R220	B-4	U31	F-4
C40	A-6	C121	K-4	J1	A-6	Q21	G-7	R66	L-7	R150	B-4	R221	K-5	U32	G-4
C41	B-6	C123	P-5	J2	A-7	Q22	B-6	R67	K-4	R151	C-4	R222	M-6	U33	C-3
C42	B-6	C124	P-4	J3	C-7			R68	K-4	R155	B-5	R223	M-6	U34	D-3
C43	A-7	C125	P-5	J4	C-7	R7	L-2	R74	H-3	R156	D-4	R224	L-5	U35	E-3
C44	Q-4	C126	L-5	J5	D-7	R8	L-2	R75	L-7	R159	D-4	R225	L-5	U36	F-3
C45	P-7	C127	F-3	J6	D-7	R11	M-2	R76	L-7	R160	C-6	R226	K-5	U37	G-3
C47	H-3	C128	F-3	J7	E-7	R12	M-2	R78	K-3	R161	C-6	R228	K-7	U38	J-3
C48	H-4	C129	E-3	J8	F-7	R13	N-2	R79	K-3	R162	B-4	R229	K-7	U39	L-4
C49	J-4	C130	G-3	J9	F-7	R14	N-2	R80	K-3	R163	B-5	R230	B-6	U40	M-4
C50	H-5	C131	H-3	J10	G-7	R15	B-4	R81	K-3	R164	D-7	R231	N-7	U41	B-3
C51	J-4	C132	K-3	J11	J-7	R16	B-4	R82	J-3	R165	D-7	R232	N-6	U42	C-3
C71	C-6	C133	G-2	J12	M-7	R17	B-2	R83	J-3	R166	E-7	R233	M-6	U43	D-3
C72	C-6	C134	J-2	J13	N-7	R18	B-2	R84	K-3	R167	E-7	R234	N-7	U44	E-3
C73	D-6	C135	B-4	J14	Q-7	R19	L-2	R85	J-3	R168	E-7	R235	K-5	U45	F-3
C74	D-6	C136	H-6			R20	P-7	R86	J-3	R169	E-7			U46	G-3
C75	E-6	C137	Q-5	L1	D-2	R21	P-6	R87	H-4	R170	F-7	RP1	C-4	U47	B-2
C76	E-6	C138	L-7	L2	E-2	R22	Q-6	R88	H-4	R171	F-7	RP2	D-4	U48	D-2
C77	F-6	C139	L-7	L3	E-2	R23	P-5	R89	H-4	R172	G-7	RP3	C-2	U49	F-3
C78	G-6	C140	L-7	L4	E-2	R24	P-6	R90	H-5	R173	G-7	RP4	D-2	U50	G-2
C79	E-6	C141	K-7	L5	J-4	R25	P-6	R91	H-5	R174	D-4	RP5	D-5	U51	J-3
C80	G-6	C142	L-6	L6	P-3	R26	P-6	R92	H-4	R175	C-3	RP6	E-4	U52	L-2
C81	F-6	C143	L-5	L7	E-2	R27	Q-4	R93	J-4	R177	C-6	RP7	E-4	U53	M-2
C82	D-6	C144	N-4	L8	L-7	R28	Q-4	R94	J-4	R178	C-6	RP8	E-4	U54	N-3
C83	E-5	C145	N-3	L9	K-6	R29	Q-4	R95	K-4	R179	D-6	RP9	G-4	U55	F-2
C84	F-5	C146	Q-3	L10	L-6	R30	P-5	R96	J-4	R180	D-6	RP11	F-2	U56	G-2
C85	E-5	C147	M-6	L11	L-6	R31	P-6	R97	J-4	R181	E-6			U57	H-2
C86	D-3	C148	K-7	L12	K-6	R32	P-6	R98	H-5	R182	E-6	TP3	M-7	U58	J-2
C87	D-3	C149	M-5	L13	L-7	R33	P-6	R99	H-4	R183	F-6			U59	L-2
C89	G-4	C150	M-6	L14	L-7	R34	P-5	R100	H-5	R184	G-6	U1	B-6	U60	N-2

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54112-66502 Timebase/Trigger Assembly Component Locator

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Component Locator for Timebase/Trigger Assembly

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P/O TIMEBASE/TRIGGER ASSEMBLY (1 OF 4)

INTERNAL TRIGGER SELECT

TRIGGER BUFFERS

EXTERNAL TRIGGER AMP

EXTERNAL TRIGGER SHAPER

3 (5) CALSIGCNT

4 (12) 14

J3 CH1+TRG — R109 100 — Q14 — R177 332 — R116 68.1
J4 CH1−TRG — R110 51.1 — L21 — R112 51.1 — R111 100 — Q15 — R178 332 — R117 68.1
J5 CH2+TRG — R113 100 — Q16 — R179 332 — R118 68.1
J6 CH2−TRG — R114 51.1 — L22 — R165 51.1 — R164 100 — Q17 — R180 332 — R119 68.1
J7 CH3+TRG — R166 100 — Q18 — R181 332 — R120 68.1
J8 CH3−TRG — R167 51.1 — L23 — R169 51.1 — R168 100 — Q19 — R182 332 — R121 68.1
J9 CH4+TRG — R170 100 — Q20 — R183 332 — R122 68.1
J10 CH4−TRG — R171 51.1 — L24 — R173 51.1 — R172 100 — Q21 — R184 332 — R123 68.1
All +5V supplies; all −5.2V returns; all A grounds.

U6 TRIGGER BUFFERS: 5 4 6 7 12 13 11 10 → 2 5−2, 3 5−3, 15 5−4, 14 5−5; RCVR 9 NC; VBB
Q14−21: B, E, C

LCH1A, LCH2A, LCH3A, LCH4A
LCH1B, LCH2B, LCH3B, LCH4B

U14: ≥1 — 4 5 12 13 6 7 10 11 → 2 15 3 14 → 5−6
U19: ≥1 — 5 4 6 7 12 13 11 10 → 2 3 15 14 → R115 332 −5.2V

C40 0.01UF A

J14 EXTTRIG — T — R20 100K — C28 150 — L20 220NH — R22 75
R21 100K T
U26C: 10 + 9 −, 8 — R23 8660
U26B: 5 + 6 −, 7 — R24 1M — R25 10K — R26 12.1K — C30 0.01UF T
U26A: 3 + 2 −, 1 — R29 200K — R41 10K — R42 56.2K T
C29 4700
U27A: 2, 1 X1 1, 3 T
R28 316K T
R27 100K
U27B: 6, 8 X1 1, 1, 7
TRGLVL
4 (11) 2
U45CQ: 9, 10 → 8
R43 1000 +5V
TRGCNTL

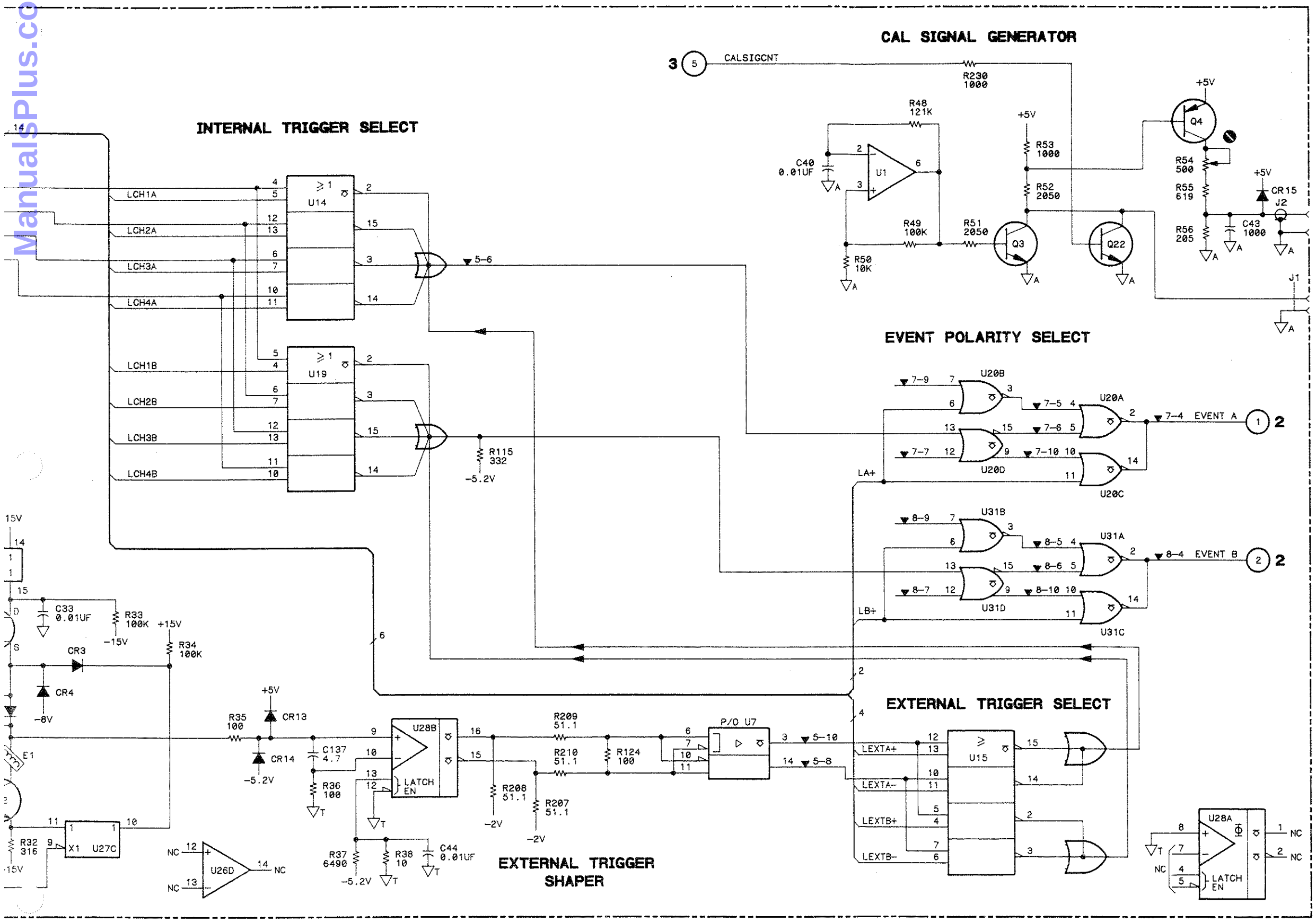
CR1 — R191 332 — C31 0.01UF — −15V
CR2
CR3
CR4 — −8V
R30 9090 T — E1 — Q2 — R31 5110 −15V
U27D: 16, 14, 1 X1 1, 15
C33 0.01UF — R33 100K — −15V
Q1: G, D, S
C32 10
R34 100K +15V
U27C: 11, 1 X1 1, 10 — R32 316 9 — −15V
U26D: NC 12 +, NC 13 −, 14 NC

R35 100 — CR13 +5V — CR14 −5.2V
C137 4.7 — R36 100 T
U26B: 9 +, 10 −, 13 LATCH EN, 12 — 16 15
R37 6490 −5.2V — R38 10 T — C44 0.01UF T
R208 51.1 −2V
R207 51.1 −2V
R209 51.1
R210 51.1
R124 100
P/O U7: 6 7 10 11 → 3 5−10, 14 5−8

6

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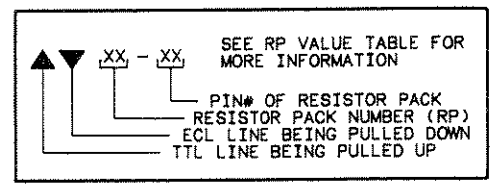
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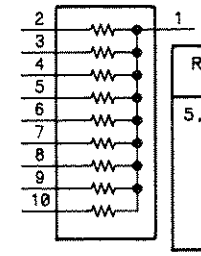


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V −5.2V	7 4	U1
−5.2V AGND	8 1,16	U6,7,14,15,19, 20,31
+15V −15V	4 11	U26
+15V TGND −15V NC	13 5 4 12	U27
+5V TGND −5.2V	11 3,14 6	U28
+5V AGND	14 7	U45

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
5,7,8	330X9	1	-5.2V

PARTS ON THIS SCHEMATIC

C28–33,40,43,44,137
CR1–4,13–15
E1
J1–10,14
L20–24
Q1–4,14–22
R20–38,41–43,48–56,109–124,164–173,
177–184,191,207–210,230
P/O RP5,7,8
U1,6,14,15,19,20,26–28,31
P/O U7,45

54112/SC02_01/4/9–87

1

External Trigger Amp, Trigger Select, Cal Signal Generator

54112–66502

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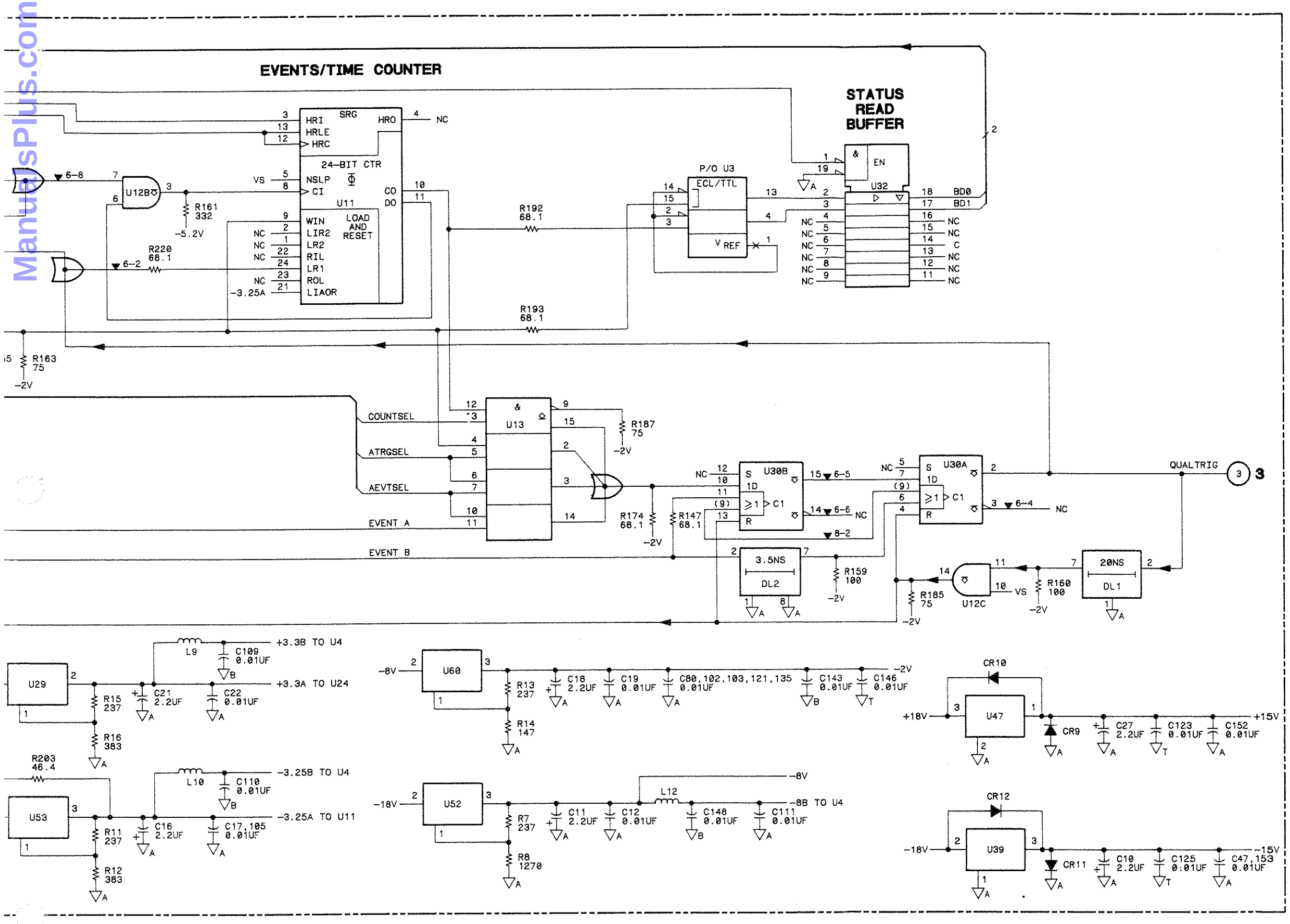
EVENTS/TIME COUNTER

P/O TIMEBASE/TRIGGER ASSEMBLY (2 OF 4)

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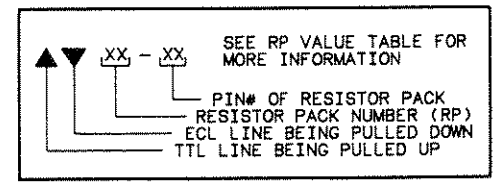
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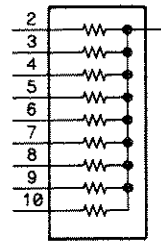


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
−5.2V AGND	8 16	U3
+5V AGND −3.25V NC	20 6,19 7,18 14−17	U11
−5.2V AGND	8 1,16	U12,13,17,18,30
+5V AGND −5.2V	9 16 8	U21
+5V AGND	20 10	U32

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
6,8	330X9	1	−5.2V
9	680X7	1	−5.2V

PARTS ON THIS SCHEMATIC

C10−27,34−38,41,42,47,71−87,89−116, 118−121,123−136,143,146,148−153
CR9−12
DL1,2
L1−4,6−12,19
P/O P1
R7,8,11−19,139−142,145−147,155,158−161, 163,174,185−189,192,193,201−203,220
P/O RP6,8,9
U11−13,18,21,29,30,32,39,41,47,52−54,60
P/O U3,17

54112/SC02_02/4/9−87

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TIMEBASE

P/O TIMEBASE/TRIGGER ASSEMBLY (3 OF 4)

TRIGGER ARMING

FINE INTERPOLATOR

400 MHZ OSCILLATOR

DEMO SIGNAL CIRCUIT

TOP VIEWS

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P/O TIMEBASE/TRIGGER ASSEMBLY (4 OF 4)

LPWRONRST

SLOT ID

ADDRESS BUFFER

DATA BUFFERS

DECODER

BOARD TYPE

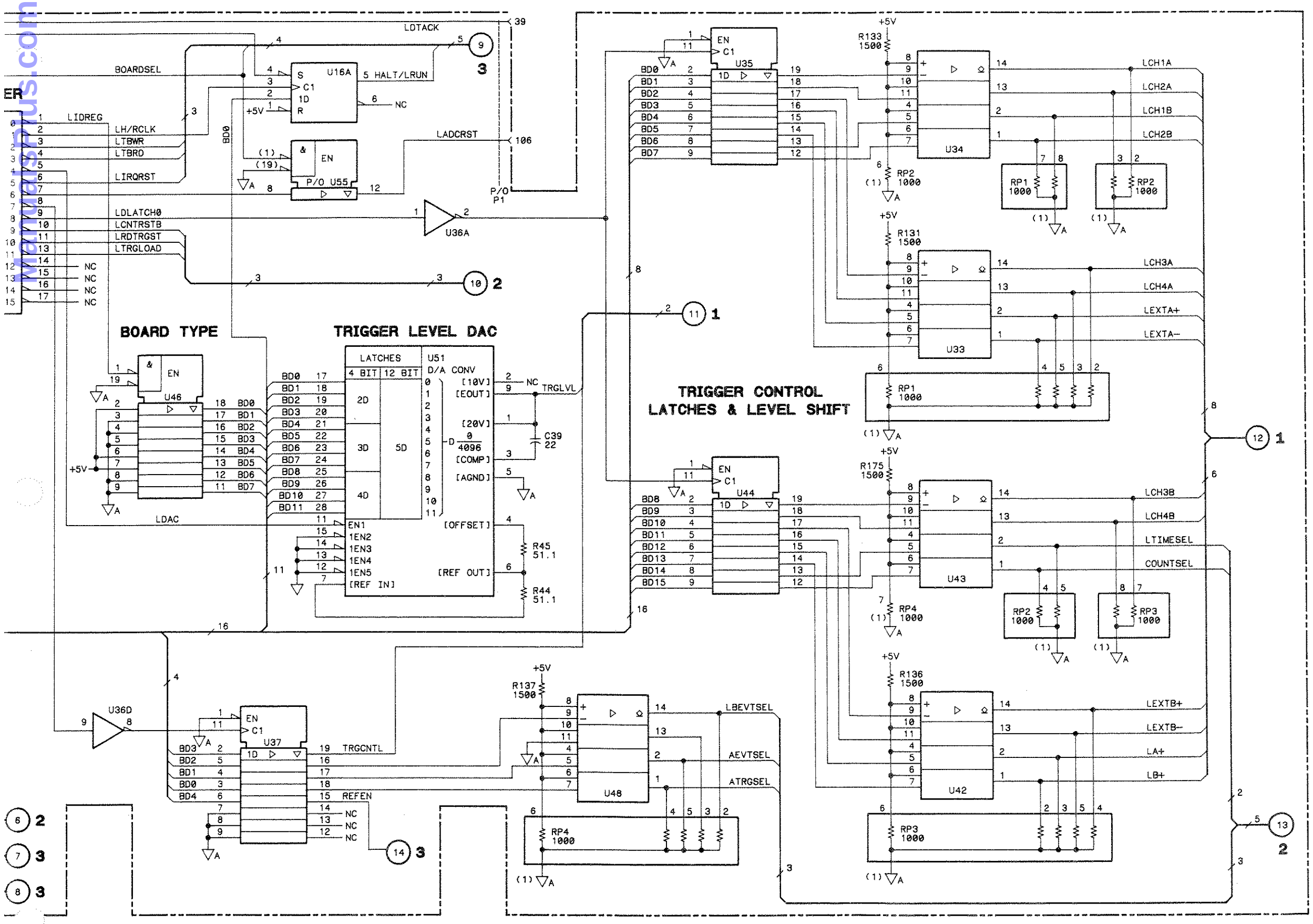
TRIGGER LEVEL DAC

TRIGGER CONTROL LATCHES & LEVEL S

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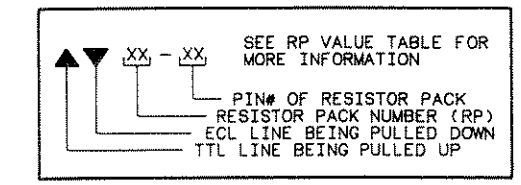
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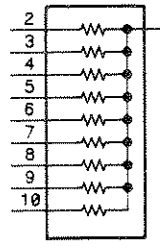


IC DEVICE POWER CONNECTIONS

SUPPLY	PIN NO.	IC GROUP
+5V AGND	14 7	U2,16,36
+5V −2V	3 12	U33,34,42,43,48
+5V AGND	20 10	U35,37,44,46, 56–58
+5V AGND	24 12	U49
+5V AGND	16 8	U50
+5V AGND −15V	8 16 10	U51

RESISTOR PACK DESCRIPTIONS:





RP#	RESISTOR VALUE	POWER PIN	VOLTAGE
11	1000X5	1	+5V

PARTS ON THIS SCHEMATIC

C39
P/O P1
R44–47,131,133,136,137,175
RP1–4,11
U33–37,42–44,46,48–51,56–58
P/O U2,16,45,55

54112/SC02_04/4/9–87

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