

APPENDIX B

OPTIONS PARTS LISTS AND DIAGRAMS

B.1 GENERAL HANDLER INTERFACE CIRCUIT ASSEMBLY (P/N 47895)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
	PC BOARD, HANDLER INTERFACE	46902
C1-C5	CAPACITOR, 0.01 microfarad, 50V CERAMIC	12144
C6,C7	CAPACITOR, 6.8 microfarad, 35V TANTALUM	43792
C8	CAPACITOR, 100 microfarad, 25V ELECTROLYTIC	13683
J2	CONNECTOR, 36 PIN, FEMALE	15739
K1-K13	RELAY, 1 FORM A, 5VDC, 14 PIN DIP	24804
R2	RESISTOR, 120 ohm, 1/4W, 10%	13908
U1,U2,U10	RESISTOR, NETWORK, SIP, 10 PIN, 2.2 kilohm	45846
U3,U4,U5	IC, 7407	24076
U6	IC, 7406	20678
U7	IC, TIL119, OPTO-ISOLATOR	44224
U8	IC, 4N28 OPTO-ISOLATOR	20674
U9	IC, 8304	45262
U11	IC, 8131	45527
U12	IC, 3881	47884
	BRACKET, CONNECTOR, MTG	45166
	BRACKET, GROUND	45951
	SOCKET, IC, 6 PIN DIP	45831
	SOCKET, IC, 14 PIN DIP	19189
	SOCKET, IC, 16 PIN DIP	20860
	SOCKET, IC, 20 PIN DIP	45660
	SOCKET, IC, 40 PIN DIP	41342

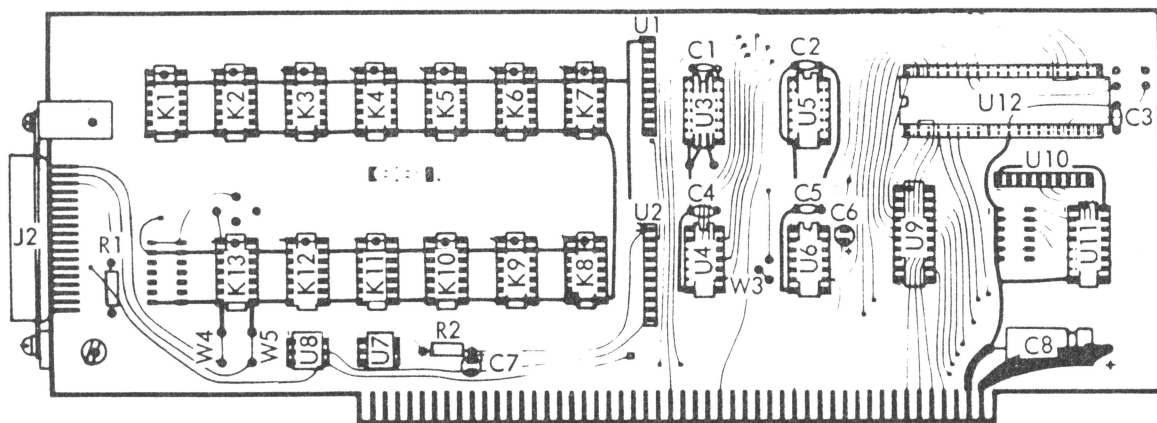


Figure B-1. General Handler Interface Circuit Assembly (P/N 47895)

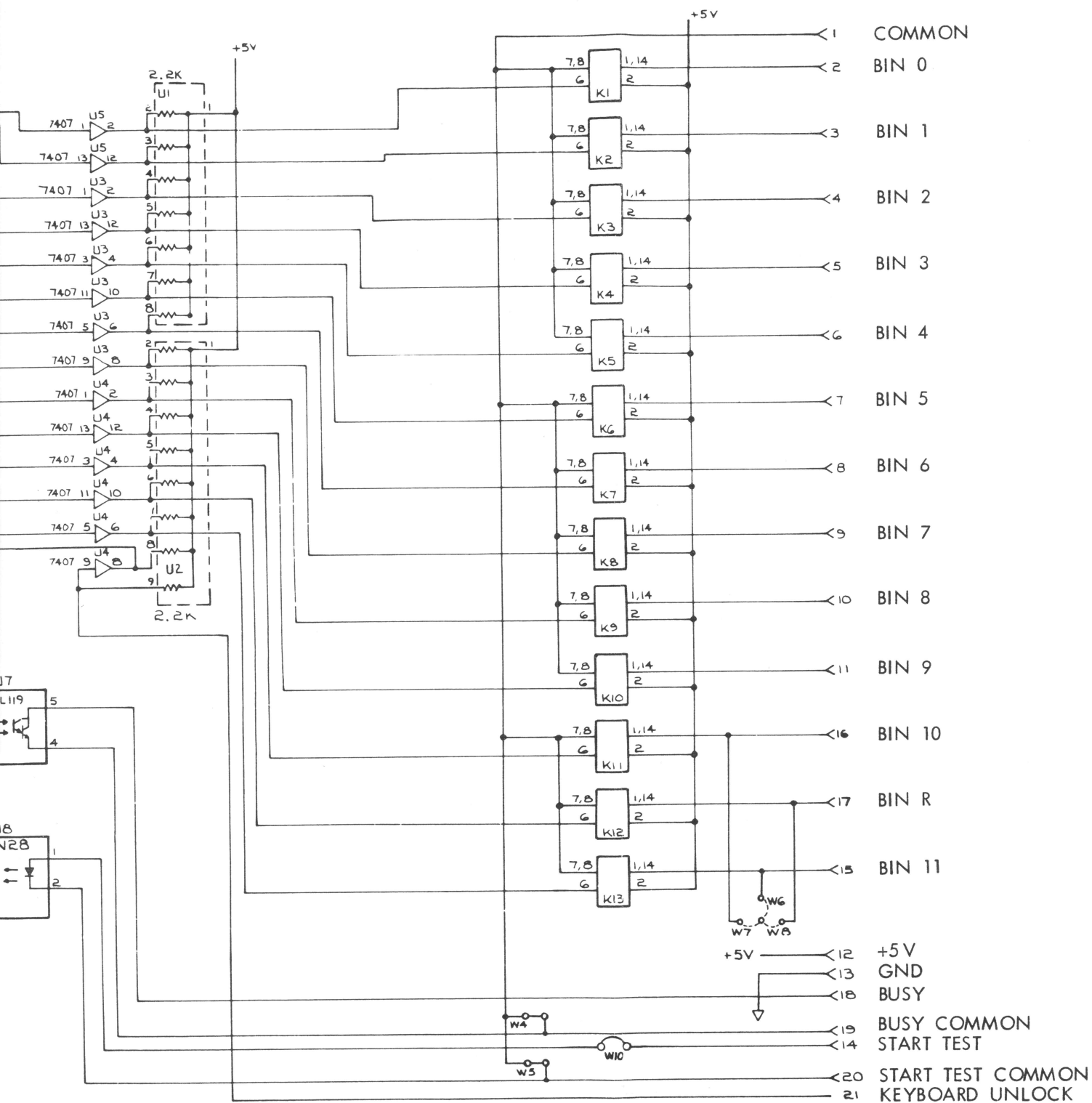
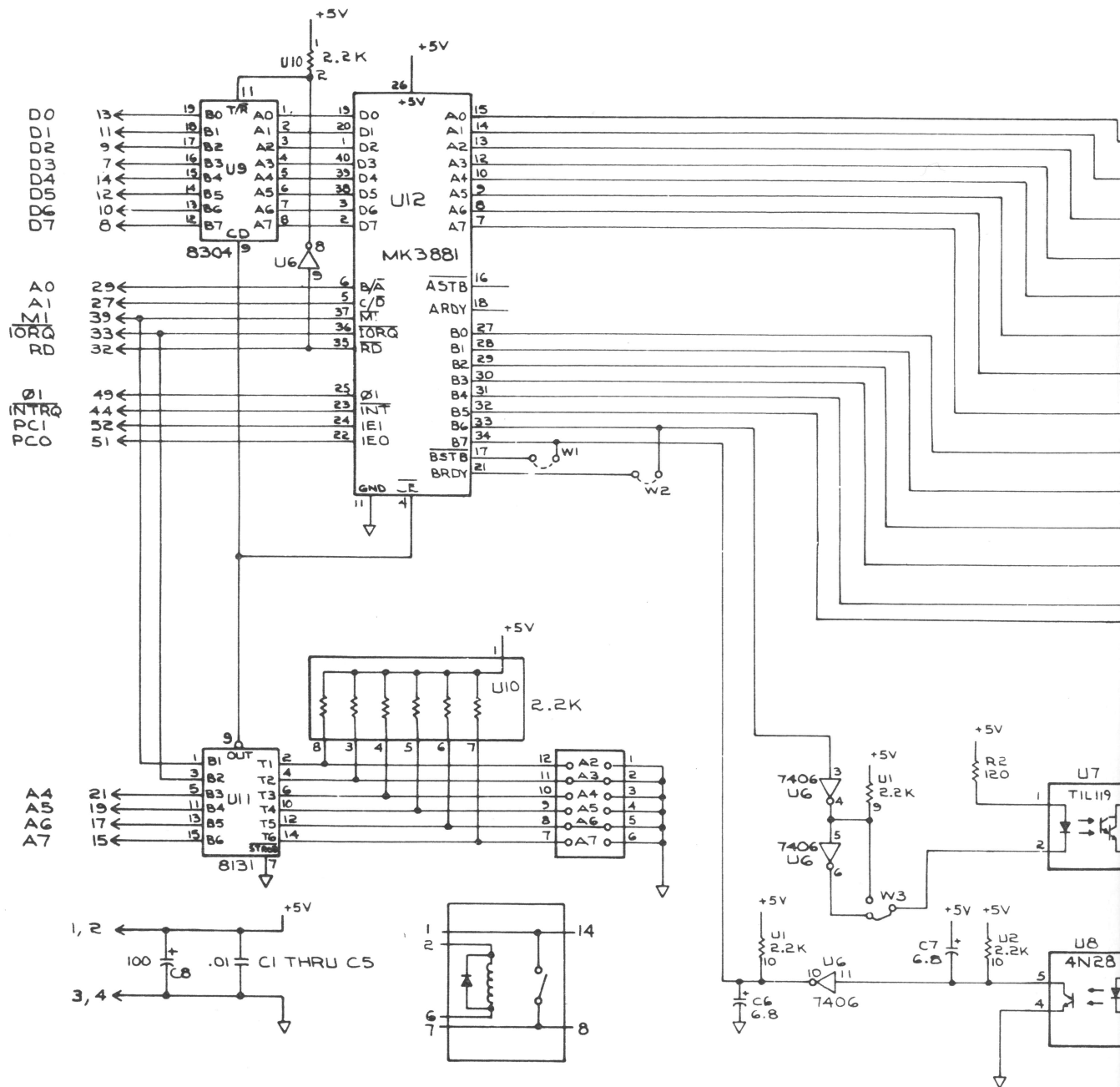


Figure B-1. General Handler Interface Circuit Assembly (P/N 47895) (cont)



K1-K13 TYP.

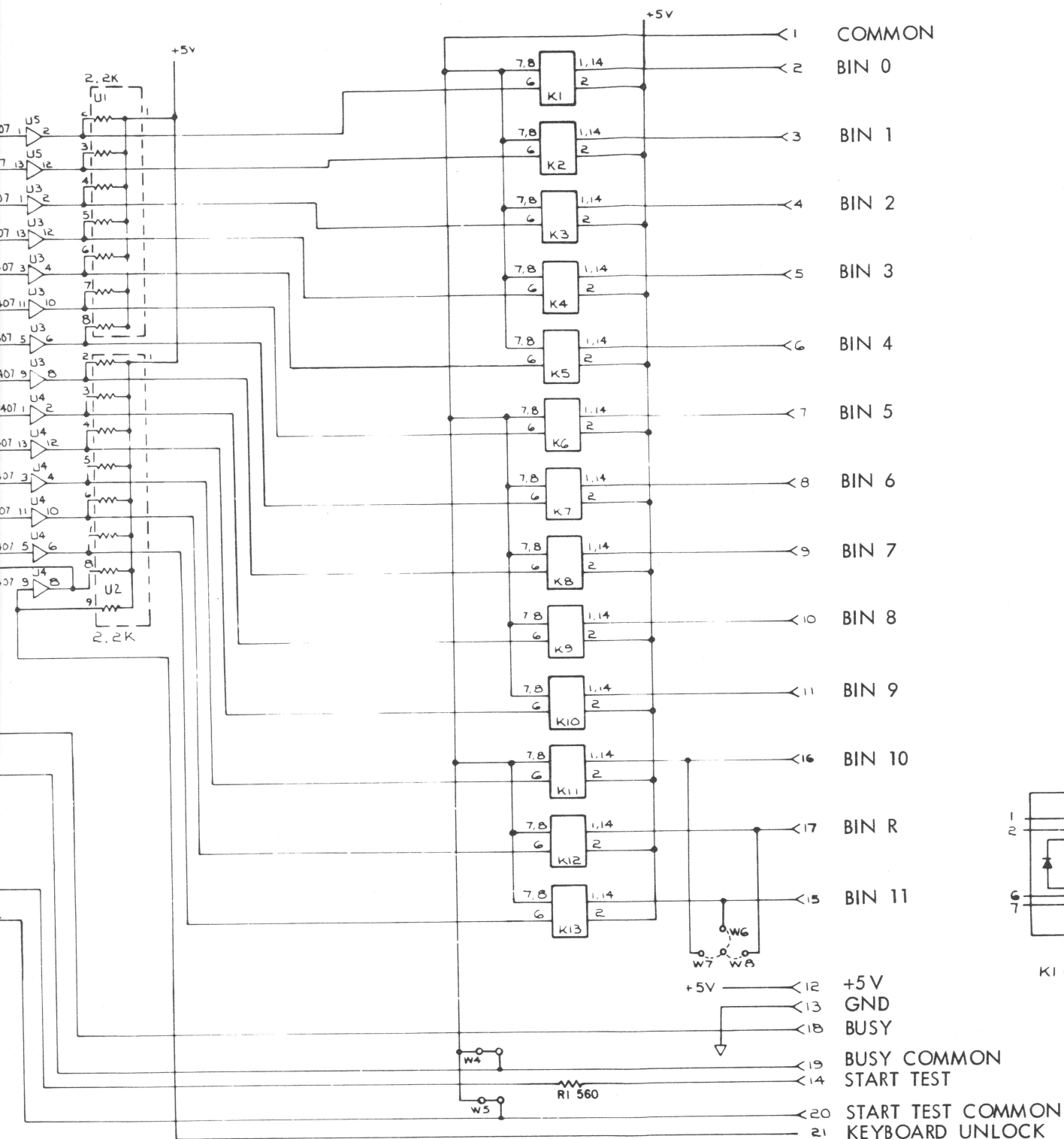
NOTE:

1. ALL RESISTOR VALUES ARE IN OHMS, 1/4 W, 10% UNLESS OTHERWISE STATED.
2. ALL CAPACITORS ARE IN μ F UNLESS OTHERWISE STATED.

REF. DES.	TYPE	+5V	GND
U3, U4, U5	7407	14	7
U6	7406	14	7
U9	8304	20	10
U1, U2, U10	2.2K RES.	1	—
U11	8131	16	8
U12	3881	26	11

B.2 HANDLER INTERFACE CIRCUIT ASSEMBLY (MCT BROWNE) (P/N 47897)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
	PC BOARD, HANDLER INTERFACE	46902
C1-C5	CAPACITOR, 0.01 microfarad, 50V CERAMIC	12144
C6,C7	CAPACITOR, 6.8 microfarad, 35V TANTALUM	43792
C8	CAPACITOR, 100 microfarad, 25V ELECTROLYTIC	13683
J2	CONNECTOR, 36 PIN, FEMALE	15739
K1-K13	RELAY, 1 FORM A, 5VDC, 14 PIN DIP	24804
R1	RESISTOR, 560 ohm, 1/4W, 10%	13916
R2	RESISTOR, 120 ohm, 1/4W, 10%	13908
U1,U2,U10	RESISTOR, NETWORK, SIP, 10 PIN, 2.2 kilohm	45846
U3,U4,U5	IC, 7407	24076
U6	IC, 7406	20678
U7,U8	IC, 4N28 OPTO-ISOLATOR	20674
U9	IC, 8304	45262
U11	IC, 8131	45527
U12	IC, 3881	47884
	BRACKET, CONNECTOR, MTG	45166
	BRACKET, GROUND	45951
	SOCKET, IC, 6 PIN DIP	45831
	SOCKET, IC, 14 PIN DIP	19189
	SOCKET, IC, 16 PIN DIP	20860
	SOCKET, IC, 20 PIN DIP	45660
	SOCKET, IC, 40 PIN DIP	41342

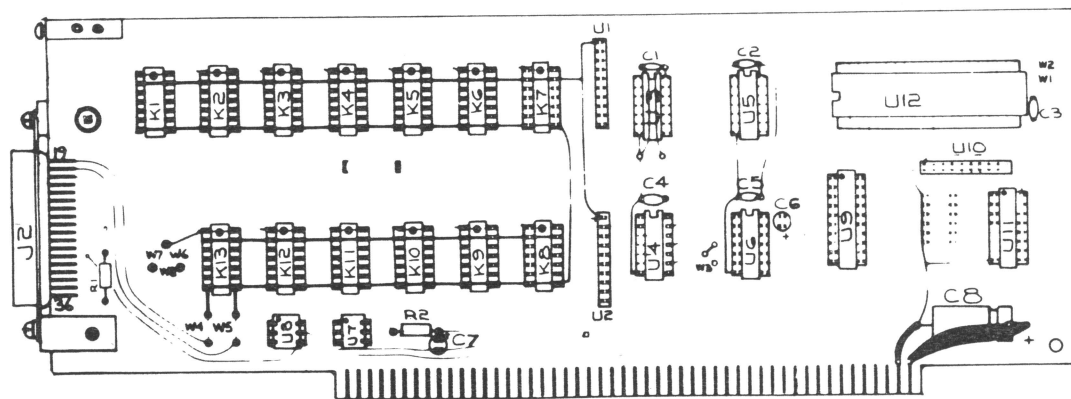
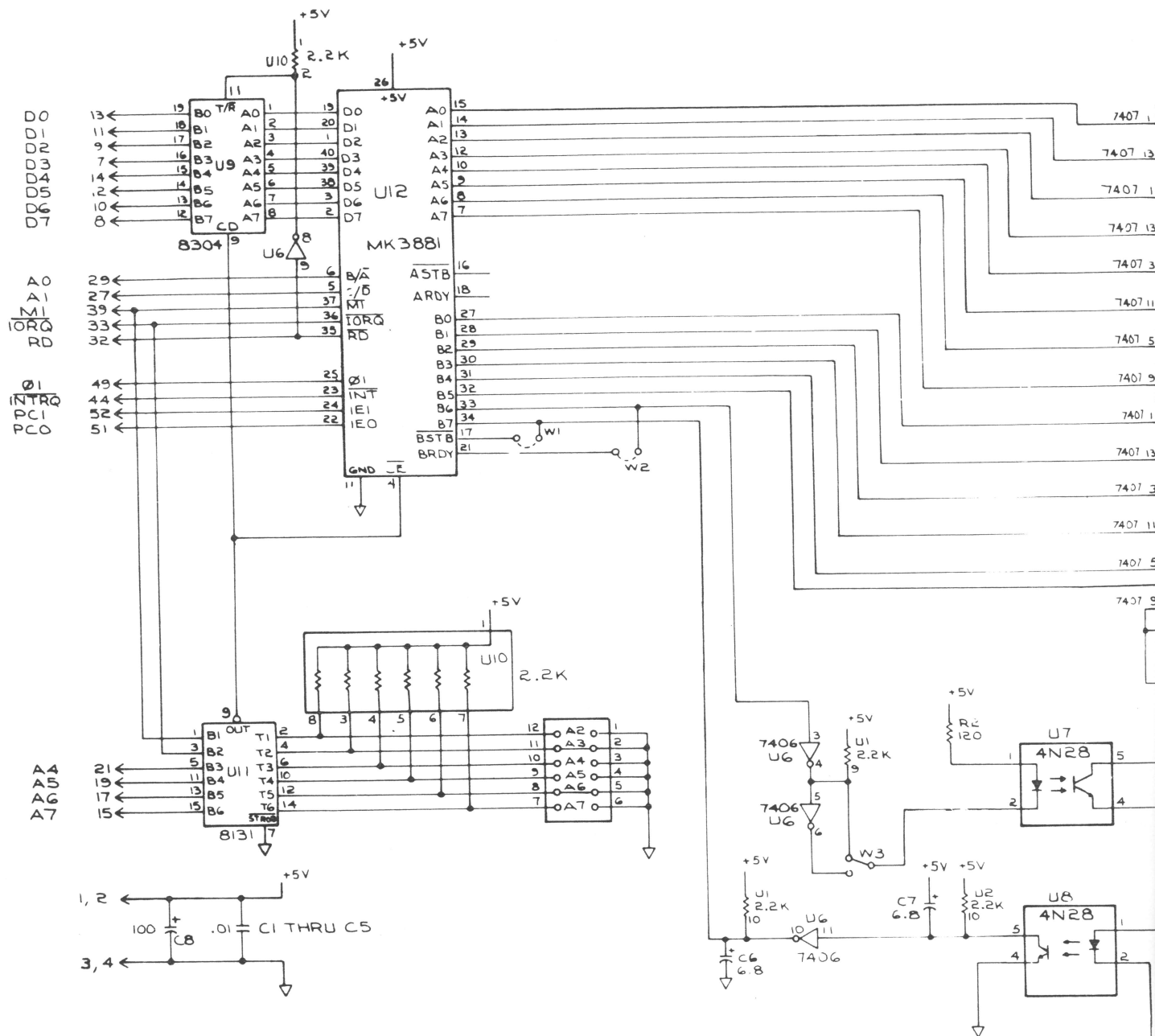


NOTE:

1. ALL RESISTOR VALUES ARE IN OHMS.
1/4 W, 10% UNLESS OTHERWISE STATED.
2. ALL CAPACITORS ARE IN μ F UNLESS
OTHERWISE STATED.

REF. DES.	TYPE	+5V	GND
U3, U4, U5	7407	14	7
U6	7406	14	7
U9	8304	20	10
U1, U2, U10	2.2K RES.	1	—
U11	8131	16	8
U12	3881	26	11

Figure B-2. MCT Browne Handler Interface Circuit Assembly (P/N 47897)



B.3 HANDLER INTERFACE CIRCUIT ASSEMBLY (DAYMARC) (P/N 47896)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
	PC BOARD, HANDLER INTERFACE	46902
C1-C5	CAPACITOR, 0.01 microfarad, 50V CERAMIC	12144
C6,C7	CAPACITOR, 6.8 microfarad, 35V TANTALUM	43792
C8	CAPACITOR, 100 microfarad, 25V ELECTROLYTIC	13683
J2	CONNECTOR, 36 PIN, FEMALE	15739
K1-K13	RELAY, 1 FORM A, 5VDC, 14 PIN DIP	24804
R1	RESISTOR, 560 ohm, 1/4W, 10%	13916
R2	RESISTOR, 120 ohm, 1/4W, 10%	13908
U1,U2,U10	RESISTOR, NETWORK, SIP, 10 PIN, 2.2 kilohm	45846
U3,U4,U5	IC, 7407	24076
U6	IC, 7406	20678
U7,U8	IC, 4N28 OPTO-ISOLATOR	20674
U9	IC, 8304	45262
U11	IC, 8131	45527
U12	IC, 3881	47884
	BRACKET, CONNECTOR, MTG	45166
	BRACKET, GROUND	45951
	SOCKET, IC, 6 PIN DIP	45831
	SOCKET, IC, 14 PIN DIP	19189
	SOCKET, IC, 16 PIN DIP	20860
	SOCKET, IC, 20 PIN DIP	45660
	SOCKET, IC, 40 PIN DIP	41342

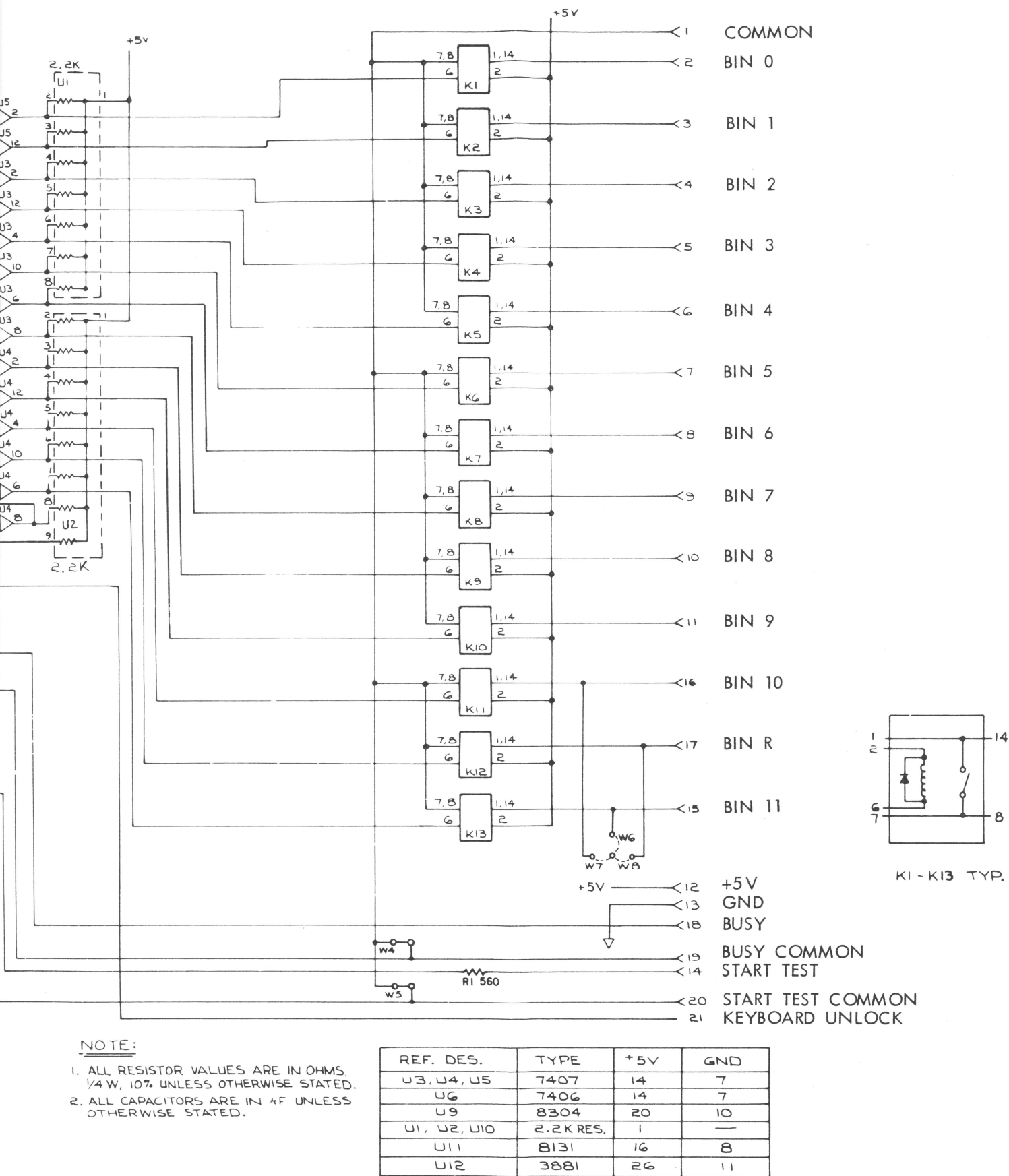


Figure B-3. Daymarc Handler Interface Circuit Assembly (P/N 47896)

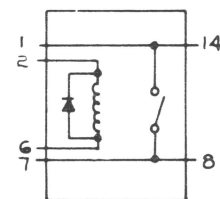
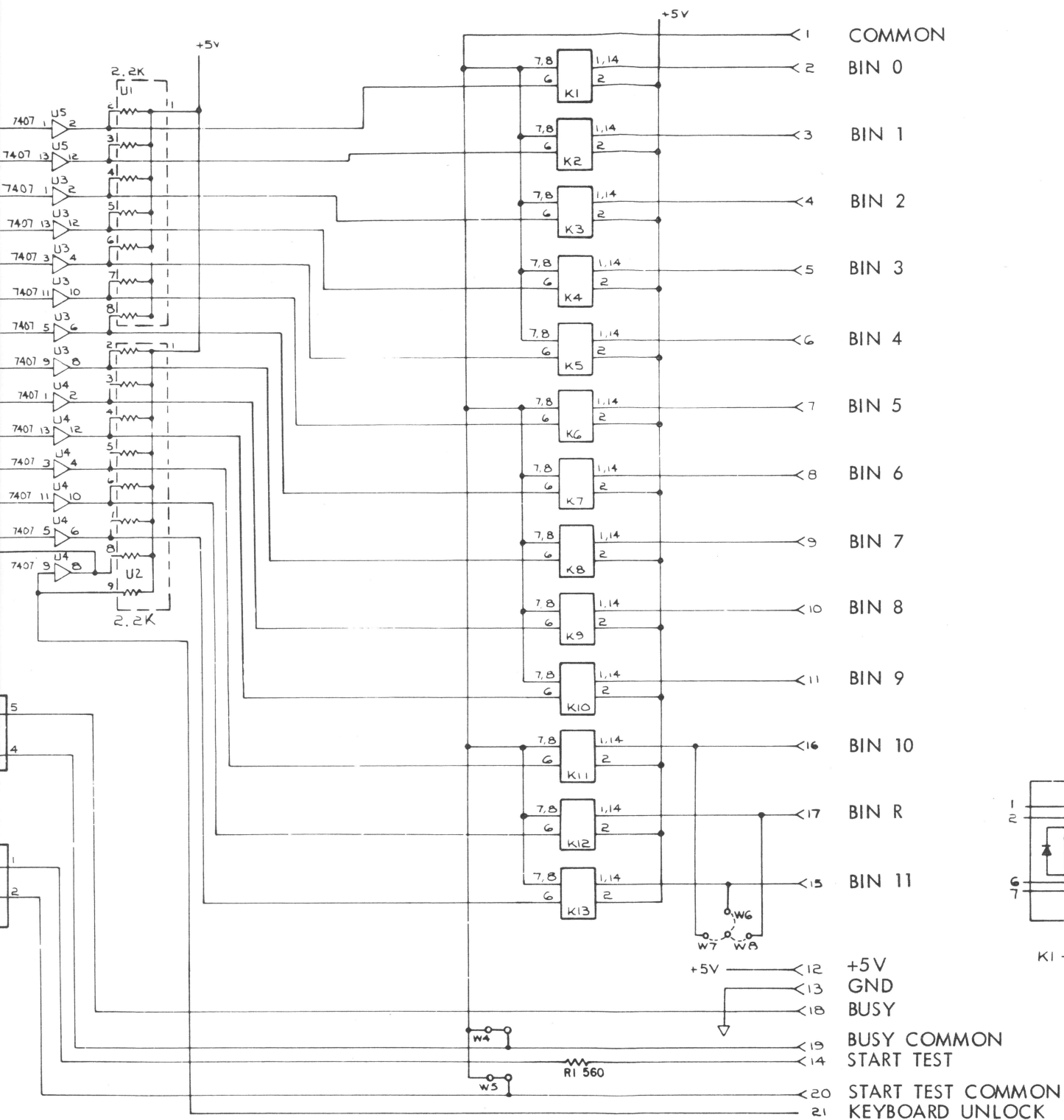
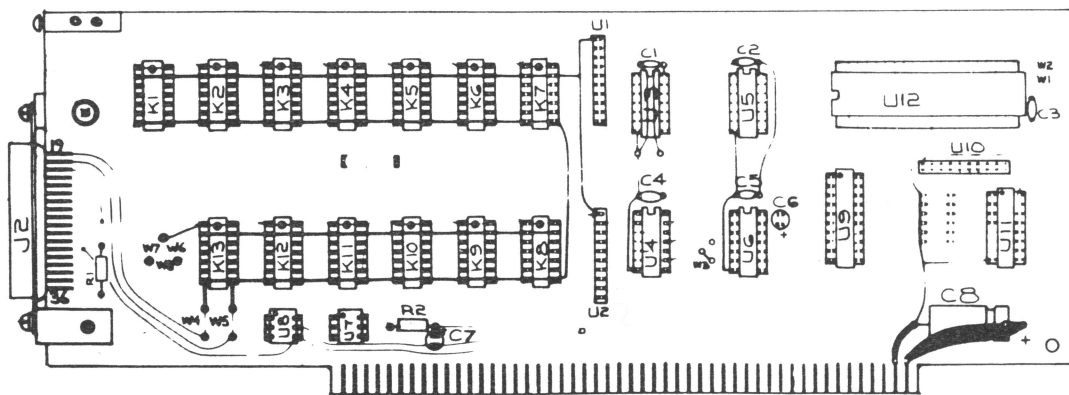
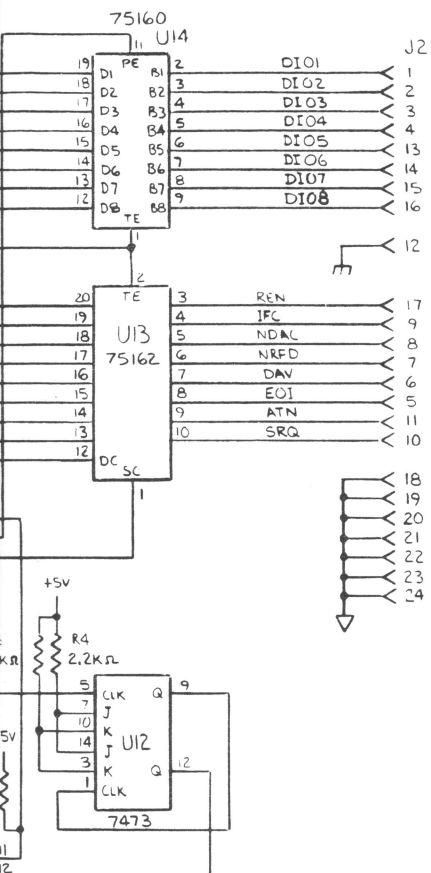


Figure B-3. Daymarc Handler Interface Circuit Assembly (P/N 47896)



**B.4 GENERAL PURPOSE INTERFACE BUS (IEEE-488) INTERFACE CIRCUIT
ASSEMBLY (P/N 46114)**

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
	PC BOARD, GPIB INTERFACE - IEEE - 488	46113
C1	CAPACITOR, 100 microfarad, ELECT 25V	13683
C2-C11	CAPACITOR, 0.01 microfarad, CERAMIC 50V	12144
J2	CONNECTOR, 24 PIN, FEMALE	42407
S1	SWITCH, DIP 8 POSITION	43863
U1,U2	IC, 8304	45262
U3	IC, DM8131	45527
U4	IC, TMS 9914 GPIB CONTROLLER	47843
U5	IC, Z80 CTC MK3882	46407
U6	IC, 74LS373	46201
U7	IC, 7402	20602
U8	IC, 7404	20695
U9	IC, 7420	20604
U10	IC, 7400	20600
U11	IC, 7432	47790
U12	IC, 7473	20613
U13	IC, 75162 IEEE BUS MNGR	47841
U14	IC, 75160 IEEE BUS XCVR	47842
UR1	RESISTOR NETWORK, SIP, 10 PIN, 2.2 kilohm	45846
UR2	RESISTOR NETWORK, SIP, 6 PIN, 2.2 kilohm	45847
	BRACKET, GROUNDING	45951
	BRACKET, IEEE CONNECT	45165
	BUSS STRIP	23997
	SOCKET, IC 14 PIN DIP	19189
	SOCKET, IC 16 PIN DIP	20860
	SOCKET, IC 40 PIN DIP	41342
	SOCKET, IC 28 PIN DIP	43844
	SOCKET, IC 20 PIN DIP	45660
	SOCKET, IC 22 PIN DIP	47874
	STANDOFF, STUD MOUNT	42392



REF	DES	TYPE	+5V	GND
U1, U2	8304	20	10	
U3	8131	16	8	
U4	TMS9914	40	20	
U5	MK3882	24	5	
U6	74LS373	20	10	
U7	7402	14	7	
U8	7404	14	7	
U9	7420	14	7	
U10	7400	14	7	
U11	7432	14	7	
U12	7473	4	11	
U13	75162	22	11	
U14	75160	20	10	

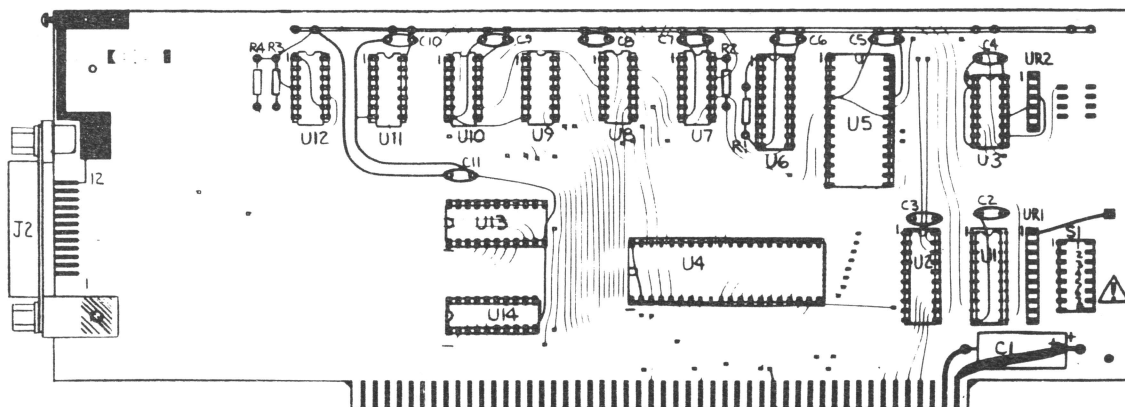
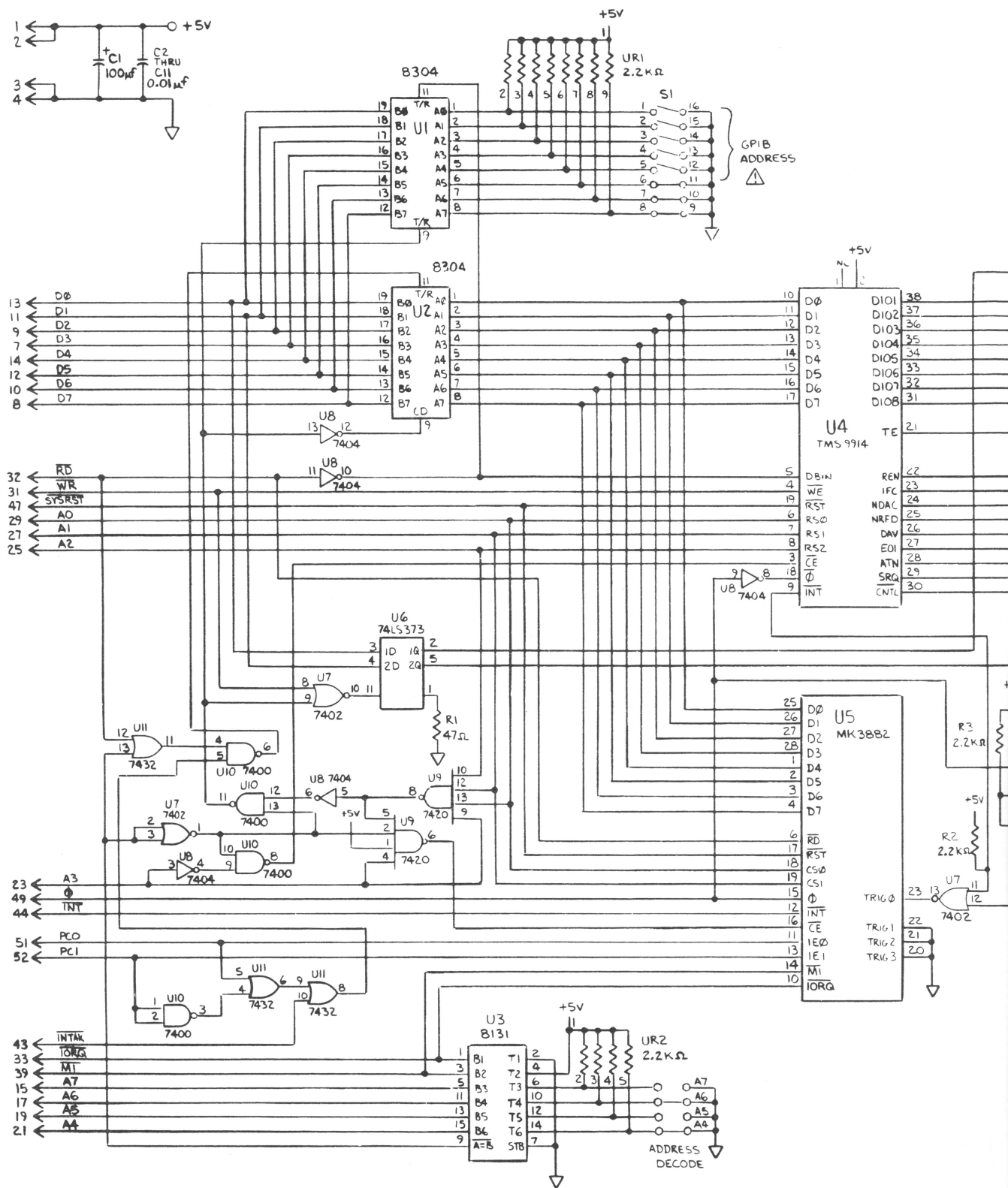


Figure B-4. General Purpose Interface Bus (IEEE-488) Circuit Assembly (P/N 46114)



Fig

B.5 RS-232C INTERFACE CIRCUIT ASSEMBLY (P/N 46724)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
	PC BOARD, RS-232/CASSETTE INTERFACE	52673
C1-C11	CAPACITOR, 0.01 microfarad, 50V, 20%	45658
J701	CONNECTOR, DB255	45983
R1	RESISTOR, 1 kilohm, 1/4W, 10%	13920
R2	RESISTOR, 15 megohm, 1/4W, 20%	13976
R3	RESISTOR, 6.8 kilohm, 1/4W,10%	13930
S1,S2	SWITCH, 10 POSITION DIP	52711
UR1,UR2	RESISTOR, SIP, SR, 2.2 kilohm	45847
U1	IC, 74LS00	52760
U2	IC, 74LS32	52582
U3	IC, 8131	45527
U5	IC, 74LS139	45656
U6,U11	IC, 8304	45262
U8	IC, 3882N-4	49183
U9	IC, 74LS74	52761
U10	IC, 74LS86	52762
U12	IC, 74LS174	43681
U13	IC, 3884N-4, Z80-SIO	49184
U14	IC, MC 14411	42933
U15	IC, MC 1488L	42301
U16	IC, MC 1489L	42302
Y1	CRYSTAL, 1.8432MHz, 0.05%	45974
	SOCKET, 14 PIN DIP	19189
	SOCKET, 16 PIN DIP	20860
	SOCKET, 40 PIN DIP	41342
	SOCKET, 24 PIN DIP	41492
	SOCKET, 20 PIN DIP	45660
	SOCKET, 28 PIN DIP	43844
	BRACKET, RS-232	45815
	BRACKET, GROUND	45951
	LABEL,	47813
	CONNECTOR, SLDR 0.025	26422

B.5 RS-232C INTERFACE CIRCUIT ASSEMBLY (P/N 46724) (cont)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
	CONNECTOR, SLDR	26430
	BAG	49245
	BOX	18612

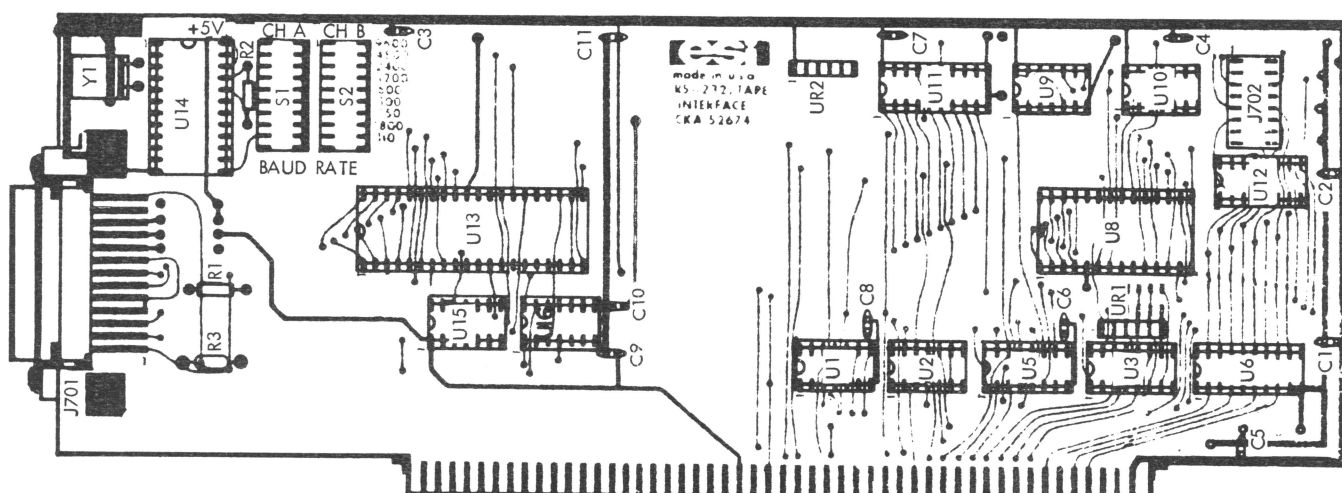


Figure B-5. RS-232C Interface Circuit Assembly (P/N 46724)

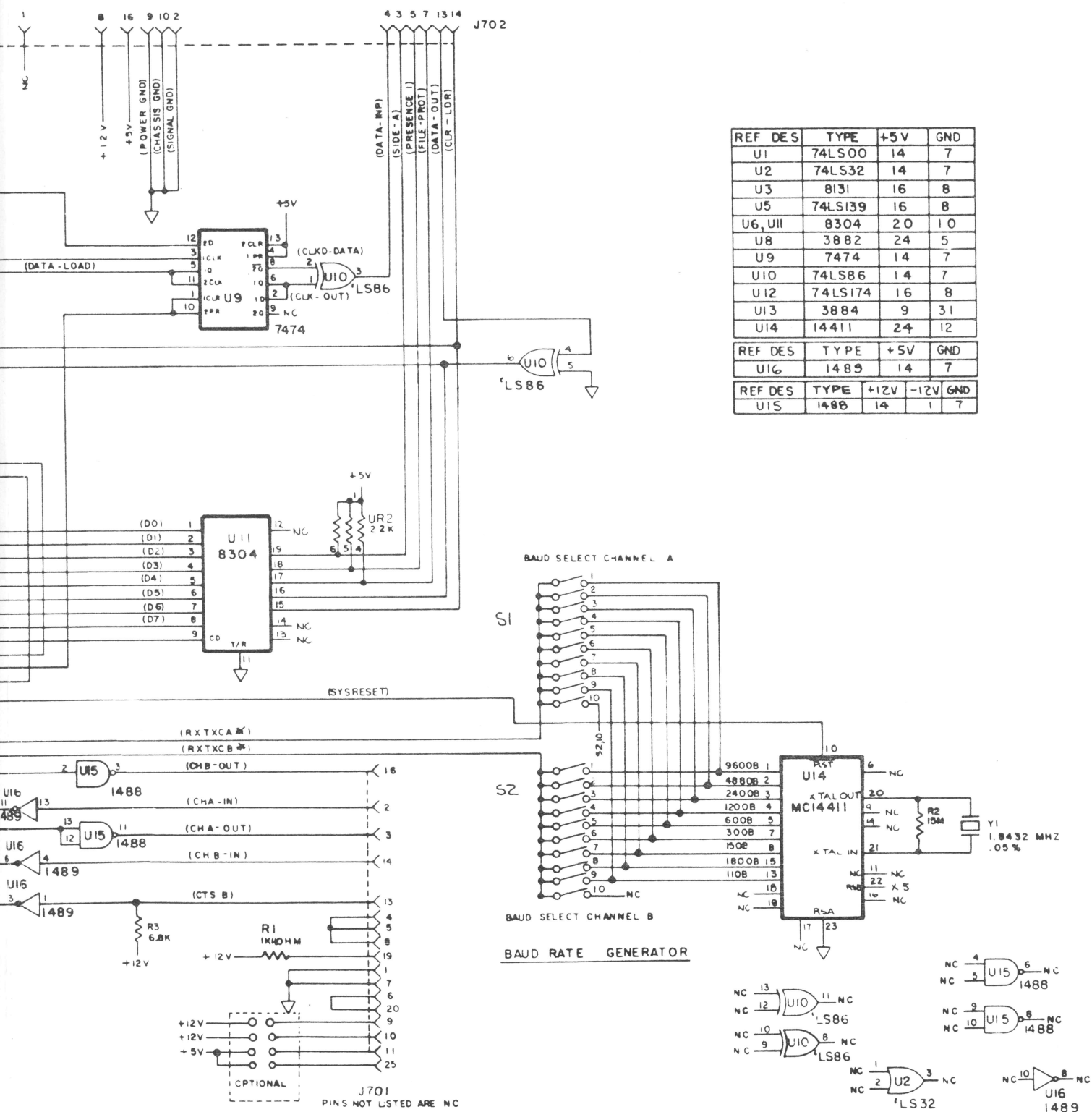
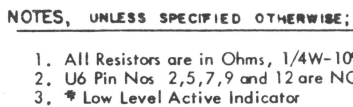


Figure B-5. RS-232C Interface Circuit Assembly (P/N 46724) (cont)



B.6 SP5240 (+200V DC BIAS OPTION) CIRCUIT ASSEMBLY (P/N 56482)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
	PC BOARD, ANALOG	53674
	PANEL, CONNECTOR	45162
	SWING LUG, BINDING POST	03247
	BRACKET, CONNECTOR PANEL	45161
	HEAT SINK, 14-16 PIN DIP	54740
	BUS, POWER STRIP	23997
	SOCKETS, 14 PIN DIP	19189
	SOCKETS, 16 PIN DIP	20860
	SOCKETS, 8 PIN DIP	52188
	SOCKETS, 8 PIN DIP	22410
	SOCKETS, 10 PIN DIP	46481
	SOCKET, 20 PIN DIP	45660
	CONNECTOR, BNC ISOLATED	41820
	FUSE CARRIER, GRAY 3AG	45966
	POST, FUSE BODY, HI PROFILE	45968
	JACK 1/8" PHONO	47082
	PLUG, MALE PIN PHONO	47083
	POST, BINDING	01435
	FUSE CARRIER ALT METRIC 5 x 20 BLK	45965
	INSULATOR, TRANSFORMER MTG	47275
C1,C3,C5,C6, C12,C13,C15, C16,C21,C22, C24-C28,C30, C31,C34,C35, C36,C43,C56	CAPACITOR, 0.1 microfarad, 50V, DIP	51268
C2,C8,C20	CAPACITOR, 30 picofarads, POLY	20242
C4,C29	CAPACITOR, 0.47 microfarad, 250V	56473
C14,C23	CAPACITOR, 0.47 microfarad, 100V	45645

B.6 SP5240 (+200V DC BIAS OPTION) CIRCUIT ASSEMBLY (cont)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
C7	CAPACITOR, 100 picofarad, POLY	18760
C9,C10,C19	CAPACITOR, 220 picofarad, POLY	29297
C11,C39	CAPACITOR, 470 picofarad, POLY	44711
C17	CAPACITOR, 0.022 microfarad, 200V, MYLAR	48665
C18	CAPACITOR, 0.022 microfarad,	12399
C37,C38	CAPACITOR, 390 picofarad, POLY	29299
C40,C41	CAPACITOR, 0.01 microfarad, 50V CERAMIC	78032
C44,C48	CAPACITOR, 8.2 picofarad, DISC	02127
C45	CAPACITOR, 25 microfarad, 25V ELECTROLYTIC	01941
C46,C47	CAPACITOR, 6.8 microfarad, TANT 35V	43792
C50,C51	CAPACITOR, 0.047 microfarad, 63VDC, FILM	54696
C52,C53	CAPACITOR, 0.0022 microfarad, 100VDC, FILM	54697
C54,C55	CAPACITOR, 0.0047 microfarad, 100VDC, MYLAR	54694
C57	CAPACITOR, 150 picofarad, POLY	29606
C58	CAPACITOR, 500 picofarad, CERAMIC, 1000V	01920
C59	CAPACITOR, 47 picofarad,	29605
C60,C61	CAPACITOR, 0.047 microfarad, 63VDC, FILM	54695
C62	CAPACITOR, 10 microfarad, 20V, TANT	43856
C63	CAPACITOR, 10 picofarad, 1kV, 5%	43277
CR1,CR2,CR5,	DIODE, 1N4005, 500V PIV	13654
CR6,CR7,CR9,		
CR10		
CR12,CR13,	DIODE, 1N914A, 75V PIV	12356
CR16-CR19,		
CR24,CR25,		
CR30-CR35		
CR22	SURGE ARRESTOR, GAS	56474
CR23	VARISTOR, 10V LIMIT	42632
CR26,CR27	DIODE, IN5355A, ZENER, 18V, 5 OWT	29033
F2	FUSE, 0.5A, 250V, 3AG, FAST-BLOW	01802

B.6 SP5240 (+200V DC BIAS OPTION) CIRCUIT ASSEMBLY (cont)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
K1,K4,K6	RELAY, FORM 1A, 5V, SIP	53599
K2,K5	RELAY, GB 822	26667
K3	RELAY, 1805 B-300 ELECTRODYNE	46286
Q1,Q2	XSTR, PNP/NPN ARRAY (WITH HEAT SINK)	55067
R1	RESISTOR, 8.2 kilohm, 1/2W, 5%	06181
R2	RESISTOR, 22 kilohm, 1/2W, 10%	02453
R3	RESISTOR, 820 ohm, 1W, 10%	26836
R4	RESISTOR, 47 ohm, 1W, 10%	53593
R5,R6	RESISTOR, 100 kilohm, 1/4W, 10%	13945
R7	RESISTOR, 18 ohm, 1W, 5%	55845
R8	RESISTOR, 90 kilohm, 0.01%	53953
R9	RESISTOR, 10 ohm, ESI QB, 0.005%	53952
R10	RESISTOR, 90 ohm, ESI QB, 0.005%	53954
R11	RESISTOR, 900 ohm, ESI QB, 0.005%	53956
R12	RESISTOR, 9 kilohm, ESI QB, 0.005%	53955
R13,R18,R25, R33-R35,R41	RESISTOR, 10 kilohm, 1/4W, 10%	13933
R14,R16,R24, R36	RESISTOR, 2 megohm, 1%	21772
R15	RESISTOR, 500 kilohm, VARIABLE, 20T	54104
R17	RESISTOR, 15 megohm, 10%	13976
R19-R23	RESISTOR, 2 kilohm, VARIABLE, 1/4W	46388
R26	RESISTOR, 2.55 ohm, 1/4W, 1%	21761
R27	RESISTOR, 1 kilohm, 1/4W, 1%	21730
R30,R42,R43	RESISTOR, 10 kilohm, 1%	21740
R31	RESISTOR, 9.53 kilohm, 1/4W, 1%	21762
R32,R49,R51, R60-R63	RESISTOR, 2.2 kilohm, 1/4W, 10%	13924

B.6 SP5240 (+200V DC BIAS OPTION) CIRCUIT ASSEMBLY (cont)

<u>CIRCUIT NO.</u>	<u>DESCRIPTION</u>	<u>ESI PART NO.</u>
R37-R40	RESISTOR, 2.7 ohm, 1/4W, 10%	13887
R44	RESISTOR, 4.99 kilohm, 1/4W, 1%	21737
R45,R46	RESISTOR, 10 kilohm, VARIABLE	46204
R47	RESISTOR, 150 ohm, 1/4W, 10%	13909
R48,R52,R53	RESISTOR, 1 kilohm, 1/4W, 10%	13920
R58		
R54,R55	RESISTOR, 10 kilohm, VARIABLE, 20T	41902
R56,R57	RESISTOR, 10 ohm, 1/4W, 10%	13895
R65,R66	RESISTOR, 100 ohm, 1/4W, 10%	13907
R68	RESISTOR, 2.7 kilohm, 1/4W, 10%	13925
T1	TRANSFORMER	46480
TP1-TP8	TERMINAL, TURRET	52073
U1,U19	IC, HA5115	53895
U2,U3,U6,U8	IC, LF356N	41473
U4,U10,U20	IC, 4052AE	20743
U5	IC, CD4051	40841
U7	IC, LM311	29544
U11,U13	IC, TL074	43299
U12	IC, 74S472, PROGRAMMED	53960
U14,U17	IC, AD7524JN DAC	45652
U15	IC, DIP RESISTORS R698-3-R10K	43077
U16	IC, SIP RESISTORS	47328
U18,U21	IC, 7475N	20614
U22	IC, AD7548 DAC	54174
U23	IC, 7406	20678
U24	IC, 74LS373	46201

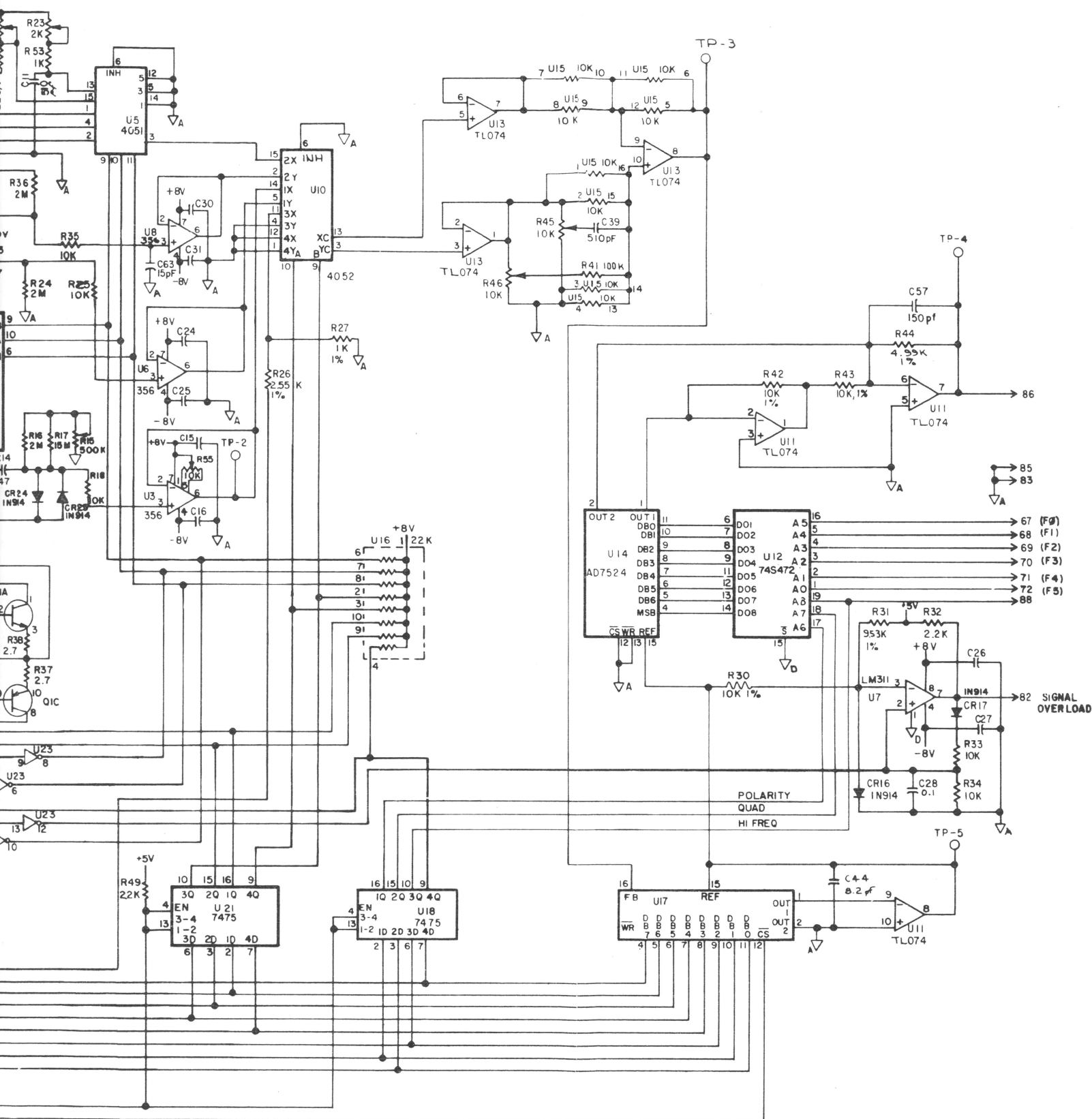
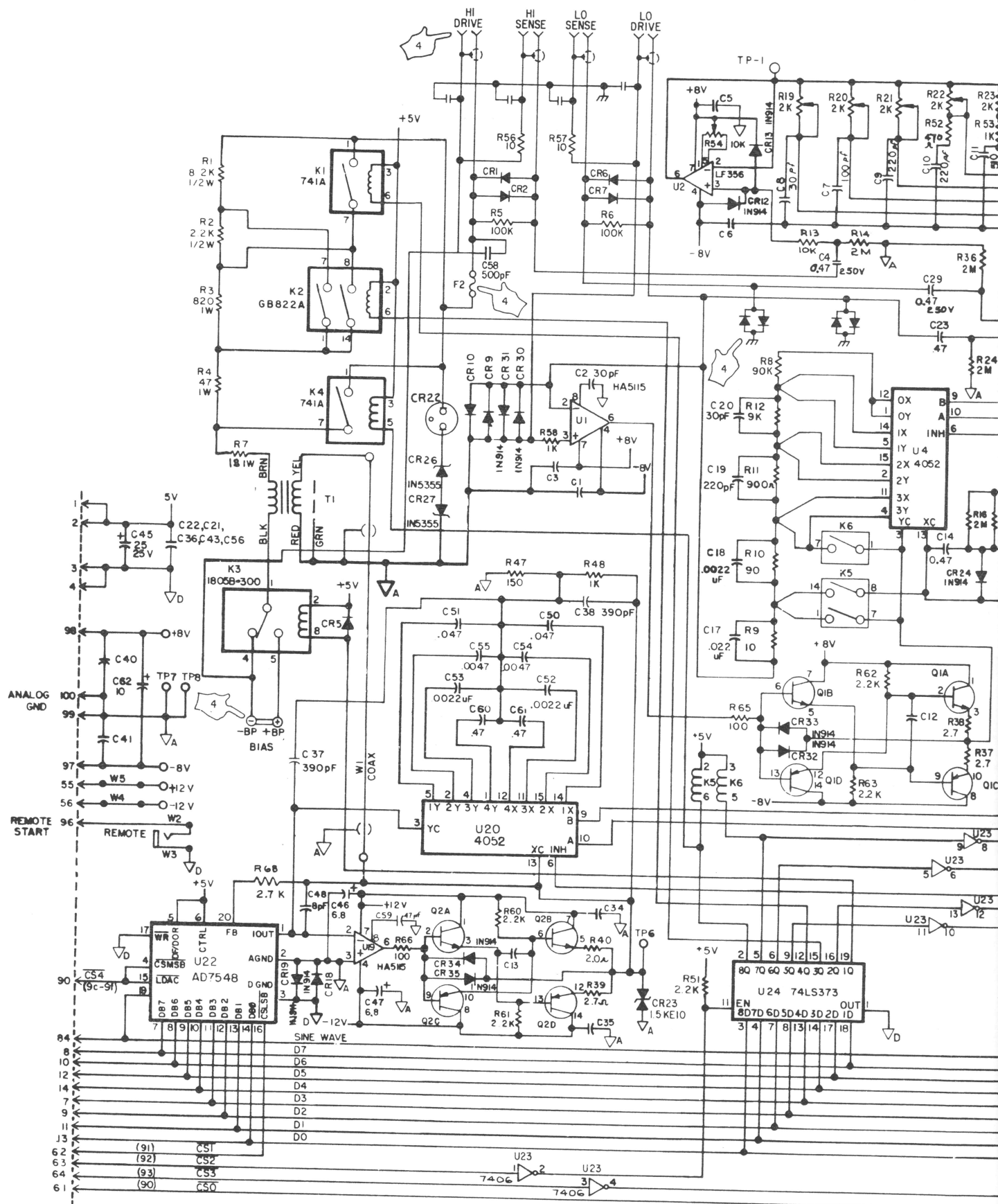


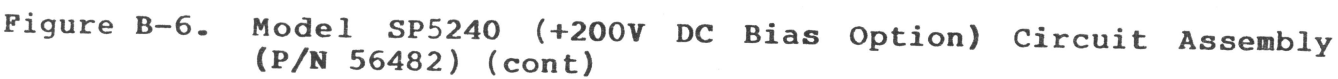
Figure B-6. Model SP5240 (+200V DC Bias Option) Circuit Assembly (P/N 56482)



NOTES: UNLESS OTHERWISE SPECIFIED:

1. ALL RESISTOR VALUES ARE IN OHMS, 1/4 W, 10%.
2. ALL CAPACITORS ARE IN μF , UNLISTED VALUES ARE 0.1 μF .
3. ALL DIODES ARE IN4005.

COMPONENTS NOTED ARE MOUNTED ON THE REAR PANEL.



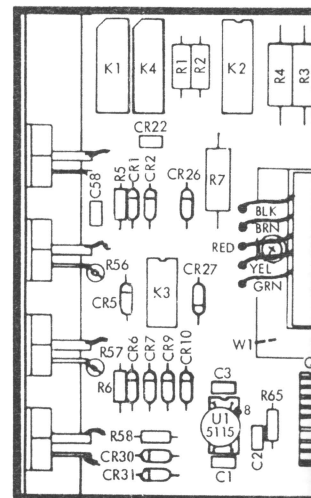


Figure B-

WARRANTY OF TRACEABILITY

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Final calibration of this instrument was performed with reference to the mean values of the ESI reference standards or to ratio devices that were verified at the time and place of use.

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