

**service manual**

**912**

P.A. MIXER-AMP

**acoustic control corporation**

7949 WOODLEY AVENUE  
VAN NUYS, CA 91406  
(213) 997-6631

## SPECIFICATIONS

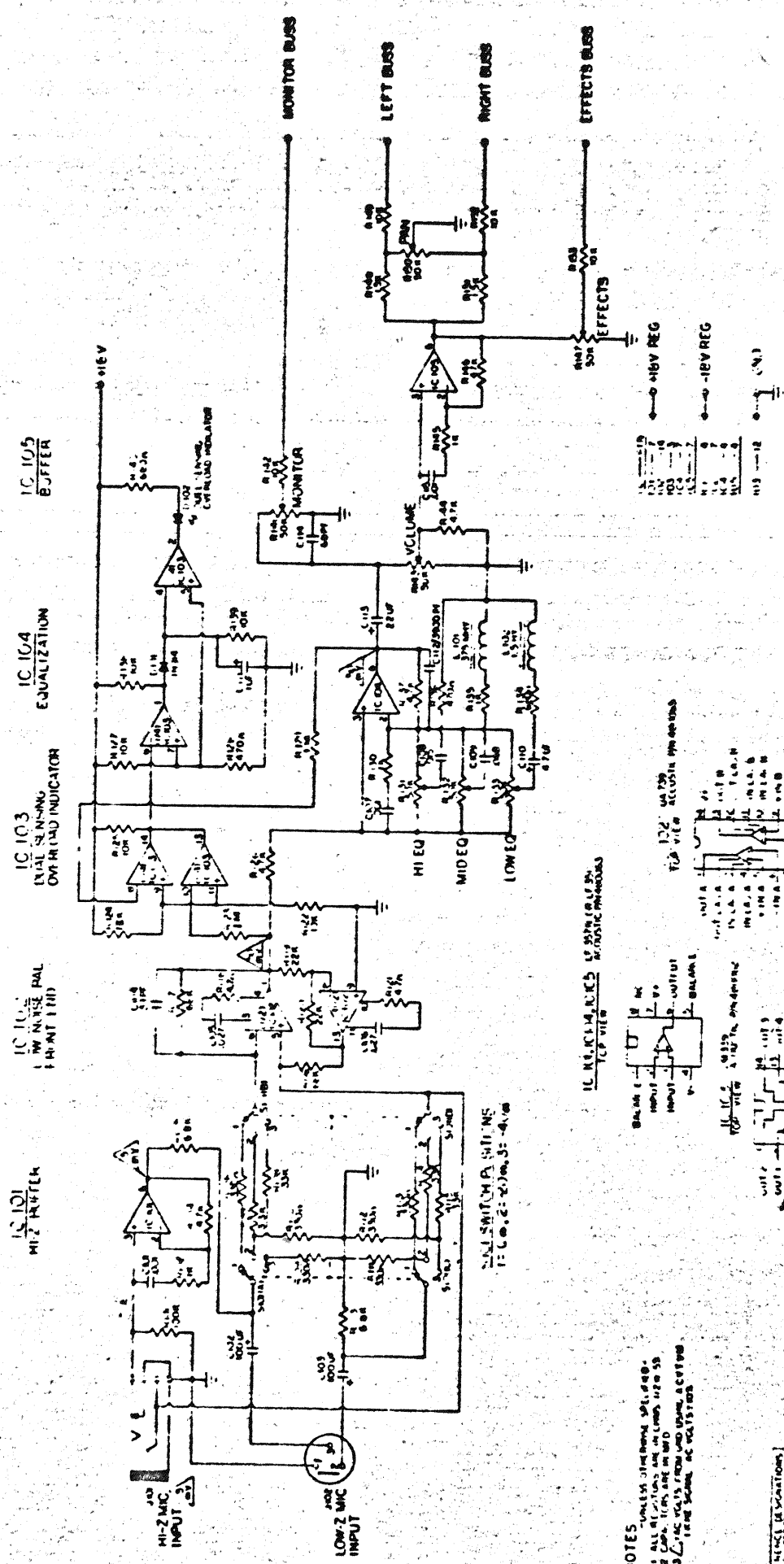
### PRE-AMP SECTION

1. FREQUENCY RESPONSE ..... 20 to 20 KHz + .5 dB
2. DISTORTION ..... 0.1%  
(THD@ "0", 1 KHz, Low Z Input, Max. Gain, EQ Flat)
3. SENSITIVITY (For 1 Volt Output)
  - Low Z (Gain Switch 0) ..... 0.6 Millivolts
  - Low Z (Gain Switch -20) ..... 6 Millivolts
  - Low Z (Gain Switch -40) ..... 60 Millivolts
  - High Z (Gain Switch 0) ..... 6 Millivolts
  - High Z (Gain Switch -20) ..... 60 Millivolts
  - High Z (Gain Switch -40) ..... 600 Millivolts
4. MAXIMUM GAIN (For 1 Volt Output)
  - Low Z Input ..... 66 dB
  - High Z Input ..... 46 dB
5. HEADROOM (Above Nominal)
  - Channel ..... 40 dB
  - Master ..... 18 dB
6. EQUIVALENT INPUT NOISE (200 OHMS Source)
  - Low Z ..... 122dBm

### POWER AMP SECTION

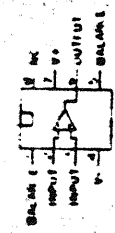
7. FREQUENCY RESPONSE ..... 20 to 20 KHz + .5 dB
8. DISTORTION (THD@ 1KHz, 4 OHMS, 200 Watts) ..... 0.2%
9. POWER BANDWIDTH ..... 20 to 15 KHz @ 200 Watts RMS into  
4 OHMS @ less than 0.3% THD
10. SENSITIVITY ..... 1.0 Volts for 200 Watts into 4 OHMS

MODEL 312 P. F. A. I. A. F. CHANNEL 1-8  
SINGLE CHANNEL 20 WATT (P.P.E.)

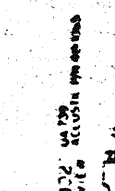


NOTES  
 1. UNLESS OTHERWISE SPECIFIED  
 2. ALL RESISTORS ARE IN OHMS UNLESS OTHERWISE SPECIFIED  
 3. CAPS. VALUES ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED  
 4. 10K = 10,000 OHMS  
 5. 100K = 100,000 OHMS  
 6. 1M = 1,000,000 OHMS

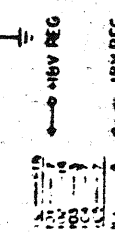
IC 101 MIC BUFFER  
 TOP VIEW



IC 103 INITIAL SENSING OVERLOAD INDICATOR  
 TOP VIEW



IC 104 EQUALIZATION  
 TOP VIEW



IC 105 BUFFER  
 TOP VIEW



IC	DESCRIPTION	MANUFACTURER	PART NO.
IC 101	MIC BUFFER	TI	5962-101-01
IC 103	INITIAL SENSING OVERLOAD INDICATOR	TI	5962-103-01
IC 104	EQUALIZATION	TI	5962-104-01
IC 105	BUFFER	TI	5962-105-01

**Acoustic control corp.**  
 10000 E. 10th Ave., Littleton, CO 80120

**SCHEMATIC, M92 PREAMP**

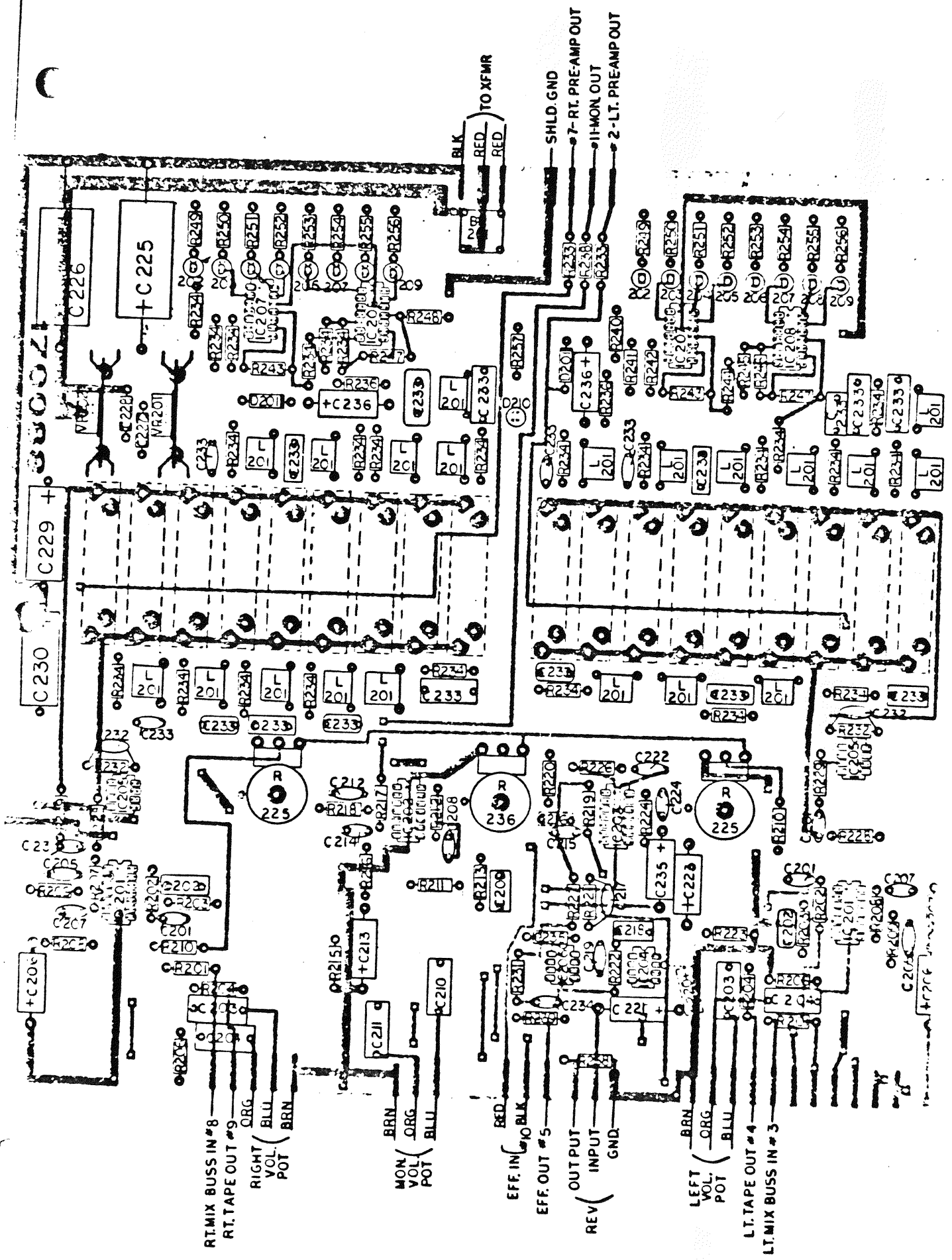
REV. 1683

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PARTS LIST  
912 PRE-AMP ASS'Y 830068  
SCHFMATIC DI683

Schematic Reference	DESCRIPTION	Acoustic Part No.
PCB	Printed Circuit Board	170089
C 101	Capacitor, Disc, .001	157011
C 102	Capacitor, Electrolytic, 100uf	159007
C 103	Capacitor, Electrolytic, 100uf	159007
C 104	Capacitor, Disc, 39pf	157004
C 105	Capacitor, MM, .027uf	158002
C 106	Capacitor, MM, .027uf	158002
C 107	Capacitor, Disc, .001	157011
C 108	Capacitor, MM, .015	158001
C 109	Capacitor, MM, .068	158004
C 110	Capacitor, Electrolytic, 4.7uf, 50V	159003
C 111	Capacitor, Electrolytic, 1uf, 50V	159001
C 112	Capacitor, Disc, 3900pf	157014
C 113	Capacitor, Electrolytic, 22uf	159005
C 114	Capacitor, Disc, 68pf	157005
C 115	Capacitor, Disc, .001	157011
R 101	Resistor, 100K ohm, 1/2watt	476410
R 102	Resistor, 1K ohm, 1/2watt	476210
R 103	Resistor, 6.8K ohm, 1/2watt	476268
R 104	Resistor, 4.7K ohm, 1/2watt	476247
R 105	Resistor, 6.8K ohm, 1/2watt	476268
R 106	Resistor, 330 ohm, 1/2watt	476133
R 107	Resistor, 3.3K ohm, 1/2watt	476233
R 108	Resistor, 33K ohm, 1/2watt	476333
R 109	Resistor, 330 ohm, 1/2watt	476133
R 110	Resistor, 330 ohm, 1/2watt	476133
R 111	Resistor, 330 ohm, 1/2watt	476133
R 112	Resistor, 330 ohm, 1/2watt	476133
R 113	Resistor, 330 ohm, 1/2watt	476133
R 114	Resistor, 3.3K ohm, 1/2watt	476233
R 115	Resistor, 33K ohm, 1/2watt	476333
R 116	Resistor, 68K ohm, 1/2watt	476368
R 117	Resistor, 68K ohm, 1/2watt	476368
R 118	Resistor, 4.7 ohm, 1/2watt	476947
R 119	Resistor, 22K ohm, 1/2watt	476322
R 120	Resistor, 22K ohm, 1/2watt	476322
R 121	Resistor, 4.7 ohm, 1/2watt	476947
R 122	Resistor, 10K ohm, 1/2watt	476310
R 123	Resistor, 470K ohm, 1/2watt	476447
R 124	Resistor, 12K ohm, 1/2watt	476312
R 125	Resistor, 10K ohm, 1/2watt	476310
R 126	Resistor, 4.7K ohm, 1/2watt	476247
R 127	Resistor, 10K ohm, 1/2watt	476310
R 128	Resistor, 470 ohm, 1/2watt	476147
R 129	Resistor, 470K ohm, 1/2watt	476447
R 130	Resistor, 1K ohm, 1/2watt	476210
R 131	Pot, 50K Linear	475057
R 132	Pot, 50K Linear	475057
R 133	Pot, 50K Linear	475057
R 134	Resistor, 680 ohm, 1/2watt	476168
R 135	Resistor, 1K ohm, 1/2watt	476210

Schematic Reference	DESCRIPTION	Acoustic Part No.
R 136	Resistor, 470 ohm, 1/2watt	476147
R 137	Resistor, 4.7K ohm, 1/2watt	476247
R 138	Resistor, 10K ohm, 1/2watt	476310
R 139	Resistor, 10K ohm, 1/2watt	476310
R 140	Resistor, 680 ohm, 1/2watt	476168
R 141	Pot, 50K Linear	475057
R 142	Resistor, 10K ohm, 1/2watt	476310
R 143	Slide Pot, 50K Linear	475028
R 144	Resistor, 4.7K ohm, 1/2watt	476247
R 145	Resistor, 1K ohm, 1/2watt	476210
R 146	Resistor, 4.7K ohm, 1/2watt	476247
R 147	Pot, 50K Linear	475057
R 148	Resistor, 1.5K ohm, 1/2watt	476215
R 149	Resistor, 10K ohm, 1/2watt	476310
R 150	Pot, 50K Linear	475057
R 151	Resistor, 1.5K ohm, 1/2watt	476215
R 152	Resistor, 10K ohm, 1/2watt	476310
R 153	Resistor, 10K ohm, 1/2watt	476310
L 101	Inductor 375 MHY	180004
L 102	Inductor 1.5 HY	180002
IC 101	IC, LF357N or LF351	480063
IC 102	IC, UA739	480065
IC 103	IC, LM339	480065
IC 104	IC, LF357N or LF351	480063
IC 105	IC, LF357N or LF351	480063
D 101	Diode, IN914	480005
D 102	Red LED	480066
S 101	Toggle Switch 4P3T	510059



RT. MIX IN #8

RT. TAPE OUT #9

RIGHT VOL POT (ORG, BLU, BRN)

MON VOL POT (ORG, BLU)

EFF. IN #5

EFF. OUT #5

REV. OUTPUT INPUT GND

LEFT VOL POT (ORG, BLU)

LT. TAPE OUT #4

LT. MIX IN #3

TO XFMR

SHLD. GND

7-RT. PREAMP OUT

11-MON OUT

2-LT. PREAMP OUT

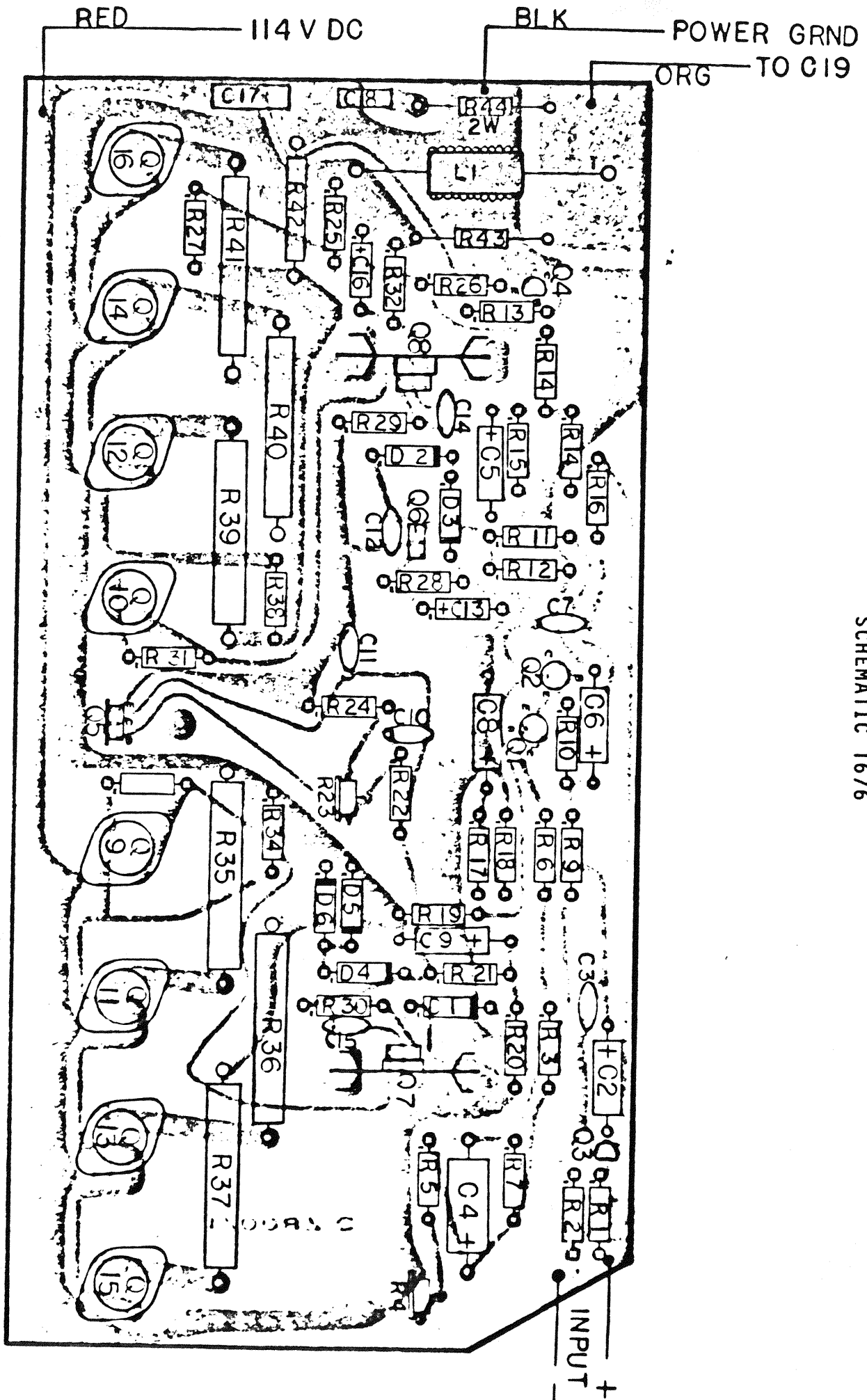


912 MASTER SUM AMP ASSEMBLY R30065  
 SCHEMATIC D1684

PARTS LIST

Schematic Reference	DESCRIPTION	Acoustic Part No.
PC8	Printed Circuit Board	170088
C 201	Capacitor, Disc, 270pf	157008
C 202	Capacitor, MM, .027	158002
C 203	Capacitor, MM, .68	158009
C 204	Capacitor, MM, .27	158007
C 205	Capacitor, Disc, .01	157016
C 206	Capacitor, Electrolytic, 22uf, 50V	159005
C 207	Capacitor, Disc, 100pf	157006
C 208	Capacitor, Disc, 270pf	157008
C 209	Capacitor, MM, .027pf	158002
C 210	Capacitor, MM, .68pf	158009
C 211	Capacitor, MM, .27	158007
C 212	Capacitor, Disc, .01	157016
C 213	Capacitor, Electrolytic, 22uf, 50V	159005
C 214	Capacitor, Disc, 100pf	157006
C 215	Capacitor, Disc, 390pf	157009
C 216	Capacitor, MM, .027uf	158002
C 217	Capacitor, Disc, 390pf	157009
C 218	Capacitor, MM, .1	158005
C 219	Capacitor, Disc, .01	157016
C 220	Capacitor, Electrolytic, 1uf, 50V	159001
C 221	Capacitor, Electrolytic, 10uf, 50V	159004
C 222	Capacitor, Disc, .01	157016
C 223	Capacitor, Electrolytic, 10uf, 50V	159004
C 224	Capacitor, Disc, 6800pf	157015
C 225	Capacitor, Electrolytic, 1000uf	159009
C 226	Capacitor, Electrolytic, 1000uf	159009
C 227	Capacitor, Tantalum, .39uf, 35V	154001
C 228	Capacitor, Tantalum, .39uf, 35V	154001
C 229	Capacitor, Electrolytic, 220uf	157011
C 230	Capacitor, Electrolytic, 220uf	157004
C 231	Capacitor, Disc, .001	157011
C 232	Capacitor, Disc, 390pf	157004
C 233	(See Table A Schematic D1684)	
C 234	Capacitor, Disc, .001	157011
C 235	Capacitor, Electrolytic, 10uf, 50V	159044
C 236	Capacitor, Electrolytic, 10uf, 50V	159044
BR 201	Bridge Rectifier VS148, 100V	480004
L 201	Inductor (See Table A Schematic D1684)	
VR 201	Voltage Regulator 7818 CP	480046
VR 202	Voltage Regulator 7918 CP	480047
D 201	Germanium Diode 1N34A	480068
D 202	LED Red	480066
D 203	LED Red	480066
D 204	LED Green	480061
D 205	LED Green	480061
D 206	LED Green	480061
D 207	LED Green	480061
D 208	LED Green	480061
D 209	LED Green	480061
C 210	LED Red	480066

Schematic Reference	DESCRIPTION	Acoustic Part No.
L 201	Inductor (See Table A Schematic D 1684)	
IC 201	IC UA739	480065
IC 202	IC UA739	480065
IC 203	IC UA739	480065
IC 204	IC LM380N	480064
IC 205	IC LF357N or LF351	480063
IC 206	IC LF357N or LF351	480063
IC 207	IC LM339	480062
IC 208	IC LM339	480062
R 201	Resistor, 10K ohm, 1/2watt	476310
R 202	Resistor, 10K ohm, 1/2watt	476310
R 203	Resistor, 4.7 ohm, 1/2watt	476947
R 204	Resistor, 4.7Kohm, 1/2watt	476247
R 205	Slide Pot, 50K ohm	475028
R 206	Resistor, 100K ohm, 1/2watt	476410
R 207	Resistor, 1.8K ohm, 1/2watt	476218
R 208	Resistor, 33K ohm, 1/2watt	476333
R 209	Resistor, 33 ohm, 1/2watt	476033
R 210	Resistor, 10K ohm, 1/2watt	476310
R 211	Resistor, 10K ohm, 1/2watt	476310
R 212	Resistor, 10K ohm, 1/2watt	476310
R 213	Resistor, 10K ohm, 1/2watt	476310
R 214	Resistor, 4.7 ohm, 1/2watt	476947
R 215	Slide Pot 50K	475028
R 216	Resistor, 100K ohm, 1/2watt	476410
R 217	Resistor, 1.8K ohm, 1/2watt	476218
R 218	Resistor, 33K ohm, 1/2watt	476333
R 219	Resistor, 33 ohm, 1/2watt	476033
R 220	Resistor, 10K ohm, 1/2watt	476310
R 221	Resistor, 4.7 ohm, 1/2watt	476947
R 222	Resistor, 100K ohm, 1/2watt	476410
R 223	Resistor, 1.8K ohm, 1/2watt	476218
R 224	Resistor, 100 ohm, 1/2watt	476110
R 225	Resistor, 10K ohm, 1/2watt	476310
R 226	Pot 50K Linear	476057
R 227	Resistor, 33 ohm, 1/2watt	476033
R 228	Resistor, 10K ohm, 1/2watt	476310
R 229	Resistor, 10K ohm, 1/2watt	476310
R 230	Resistor, 1K ohm, 1/2watt	476210
R 231	Slide Pot 50K ohm	475059
R 232	Resistor 1K ohm, 1/2watt	476210
R 233	Resistor, 10K ohm, 1/2watt	476310
R 234	Resistor, 100 ohm, 1/2watt	476110
R 235	Resistor, 1K ohm, 1/2watt	476210
R 236	Resistor, 10K ohm, 1/2watt	476310
R 237	Pot 50K Linear	476057
R 238	Resistor, 10K ohm, 1/2watt	476310
R 239	Resistor, 100 ohm, 1/2watt	476110
R 240	Resistor, 100 ohm, 1/2watt	476110
R 241	Resistor, 560K ohm, 1/2watt	476456
R 242	Resistor, 27K ohm, 1/2watt	476327
R 242	Resistor, 18K ohm, 1/2watt	476318



COMPONENT LAYOUT  
 912 POWER AMP ASSEMBLY 830064  
 SCHEMATIC 1676



PAR, J LIST  
POWER AMP ASSEMBLY 830064  
SCHEMATIC C1676

Schematic Reference	DESCRIPTION	Acoustic Part No.
PCB	Printed Circuit Board	170087
C 1	Capacitor, Electrolytic, 5900uf, 125V	153035
C 2	Capacitor, Electrolytic, luf, 50V	159001
C 3	Capacitor, Disc, 150pf, 10%	157007
C 4	Capacitor, Electrolytic, 22uf, 50V	159005
C 5	Capacitor, Electrolytic, luf, 50V	159001
C 6	Capacitor, 10uf, 100V	159008
C 7	Capacitor, Disc, .01uf, 10%	157016
C 8	Capacitor, Electrolytic, 4.7uf, 50V	159003
C 9	Capacitor, Electrolytic, 10uf, 50V	159004
C 10	Capacitor, Disc, .001uf, 10%	157011
C 11	Capacitor, Disc, .01uf, 10%	157016
C 12	Capacitor, Disc, 27pf, 10%	157003
C 13	Capacitor, Tantalum, luf, 35V, 10%	154004
C 14	Capacitor, Disc, 270pf, 10%	157008
C 15	Capacitor, Disc, 270pf, 10%	157008
C 16	Capacitor, Tantalum, 2.2uf, 35V, 10%	154005
C 17	Capacitor, luf, 250V, 10%	152026
C 18	Capacitor, MH, .luf, 10%	158005
C 19	Capacitor, Electrolytic, 5900uf, 125V	153035
C 20	Capacitor, AC Line UL Disc	151015
L 1	Choke Micro 2MHY	180008
R 1	Resistor, 27K 5% 1/4W	476327
R 2	Resistor, 100K 5% 1/4W	476410
R 3	Resistor, 100K 5% 1/4W	476410
R 4	Pot Trim Linear 100K	475009
R 5	Resistor, 180K 5% 1/4W	476418
R 6	Resistor, 1K 5% 1/4W	476210
R 7	Resistor, 39K 5% 1/4W	476339
R 8	Resistor, 1M 5% 1/4W	476510
R 9	Resistor, 15K 5% 1/4W	476310
R 10	Resistor, 10K 5% 1/4W	476222
R 11	Resistor, 2.2K 5% 1/4W	476210
R 12	Resistor, 1K 5% 1/4W	476568
R 13	Resistor, 6.8M 5% 1/4W	476310
R 14	Resistor, 10K 5% 1/4W	476510
R 15	Resistor, 1M 5% 1/4W	476510
R 16	Resistor, 1M 5% 1/4W	476510
R 17	Resistor, 4.7K 5% 1/4W	476247
R 18	Resistor, 100K 5% 1/4W	476410
R 19	Resistor, 220K 5% 1/4W	476422
R 20	Resistor, 3.3K 5% 1/4W	476233
R 21	Resistor, 3.3K 5% 1/4W	476233
R 22	Resistor, 1.5K 5% 1/4W	476215
R 23	Pot Trim 500 ohm Linear	475058
R 24	Resistor, 390 ohm 5% 1/4W	476139
R 25	Resistor, 33K 5% 1/4W	476333
R 26	Resistor, 390 ohm 5% 1/4W	476139
R 27	Resistor, 270 ohm 5% 1/4W	476127
R 28	Resistor, 18 ohm 5% 1/4W	476018
R 29	Resistor, 100 ohm 5% 1/4W	476110

Schematic Reference	DESCRIPTION	Acoustic Part No.
R 30	Resistor, 100 ohm 5% 1/4W	476110
R 31	Resistor, 47 ohm 5% 1/4W	476047
R 32	Resistor, 10 ohm 5% 1/4W	476010
R 33	Resistor, 47 ohm 5% 1/4W	476047
R 34	Resistor, 1 ohm 5% 1/4W CC	478001
R 35	Resistor, .1 ohm 10% 7M WW	461004
R 36	Resistor, .1 ohm 10% 7M WW	461004
R 37	Resistor, .1 ohm 10% 7M WW	461004
R 38	Resistor, 10 ohm 5% 1/4W CC	478001
R 39	Resistor, .1 ohm 10% 7M WW	461004
R 40	Resistor, .1 ohm 10% 7M WW	461004
R 41	Resistor, .1 ohm 10% 7M WW	461004
R 42	Resistor, .05 ohm 5% 5W	467750
R 43	Resistor, 10 ohm 10% 2W	472010
R 44	Resistor, 22 ohm 10% 2W	472022
D 1	Diode, 1N914	480005
D 2	Diode, 1N914	480005
D 3	Diode, 1N914	480005
D 4	Diode, 4.3V Zener	480036
D 5	Diode, 1N914	480005
D 6	Diode, 1N914	480005
Q 1	Transistor, 2N4248	480032
Q 2	Transistor, 2N4248	480032
Q 3	Transistor, 2N4360	480033
Q 4	Transistor, 2N2484	480023
Q 5	Transistor, 2N6476 NPN	480056
Q 6	Transistor, MJE 341	480039
Q 7	Transistor, 2N6476 NPN	480056
Q 8	Transistor, 2N6476 PNP	480057
Q 9	Transistor, 1805	480051
Q 10	Transistor, 1805	480051
Q 11	Transistor, 1805	480051
Q 12	Transistor, 1805	480051
Q 13	Transistor, 1805	480051
Q 14	Transistor, 1805	480051
Q 15	Transistor, 1805	480051
Q 16	Transistor, 1805	480051
S 1	Switch Rocker SPDT 10A $\frac{1}{2}$ (on/off)	510055
S 2	Switch DPDT Slot Kno	510032
BR 1	Bridge Rectifier 10A $\frac{1}{2}$	480054
T 1	Power Transformer 912	560029
UPDATES		
C21	Capacitor, Electrolytic, luf, 50V	159001
R45	Resistor, 100k ohm 5% 1/4W	476410
R46	Resistor, 100k ohm 5% 1/4W	476410
Q17	Transistor, 2N2484	480023

