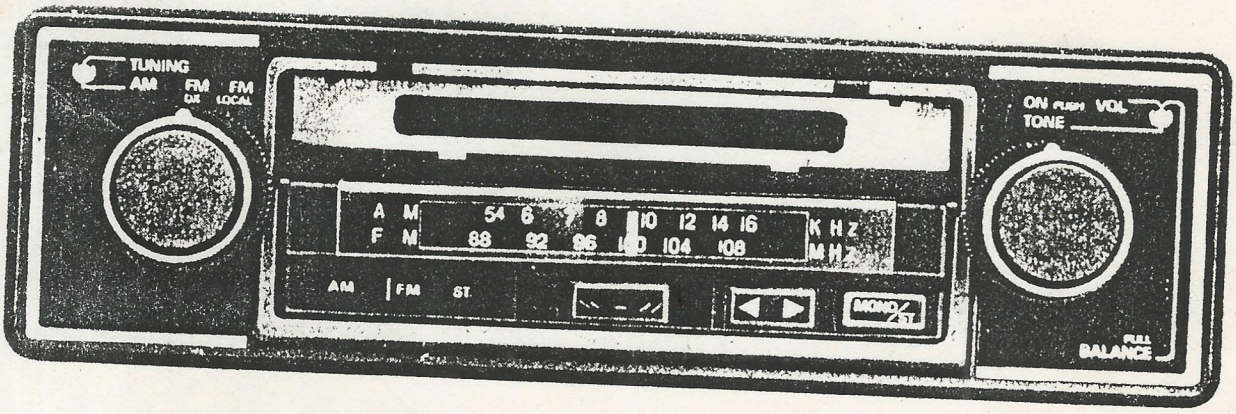
Service Manual

IN-DASH
AUTOREVERSE CASSETTE
AM/FM STEREO RADIO
ADJUSTABLE SHAFTS · LOCAL/DX
STEREO SWITCH

MODEL MCC-7002R

eurovox



Dimensions: 178 x 44 x 150 mm

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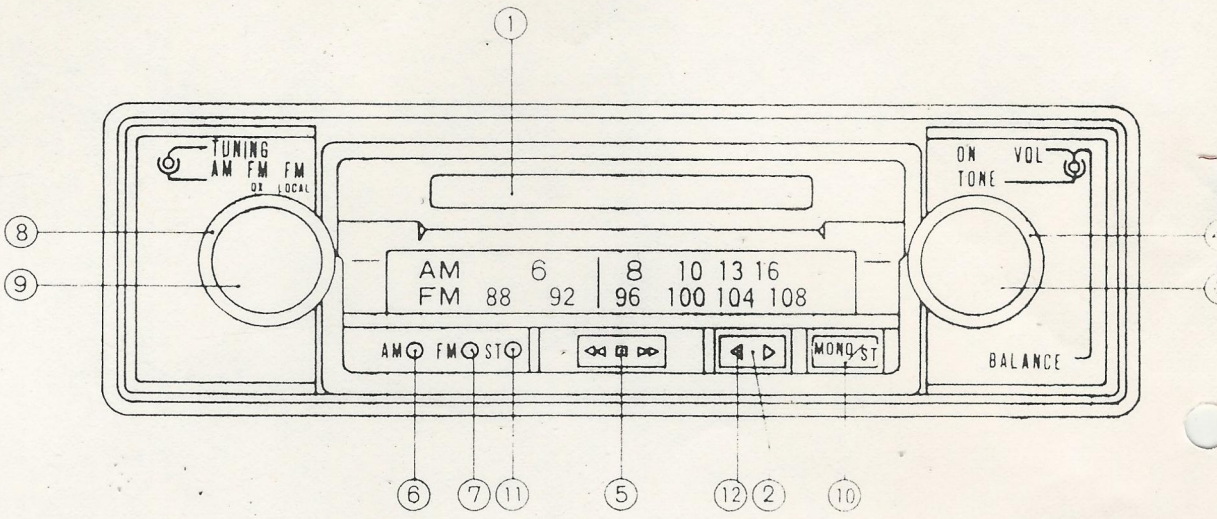


(1) CASSETTE SLOT
(2) PROGRAM SELECTOR BUTTON
(3) VOLUME AND BALANCE CONTROL KNOB
(4) TONE CONTROL KNOB
(5) FAST FORWARD, REWIND AND CASSETTE EJECTION
(6) WAVE BAND INDICATOR LAMP - AM
(7) WAVE BAND INDICATOR LAMP - FM
(8) WAVE BAND SELECTOR KNOB
(9) TUNING KNOB
(10) STEREO/MONO MODE SWITCH BUTTON
(11) STEREO INDICATOR LAMP
(12) PROGRAM INDICATOR LAMPS

SPECIFICATIONS:

AM Radio section

Circuit system:	Superheterodyne
Frequency coverage:	520 KHz – 1640 KHz
Tuning system:	Manual μ tuning
Intermediate frequency:	455 KHz
Maximum sensitivity:	20 μV
Quieting sensitivity:	20 μV (at 20 dB S/N)
Image ratio:	70 dB
IF Rejection ratio:	50 dB

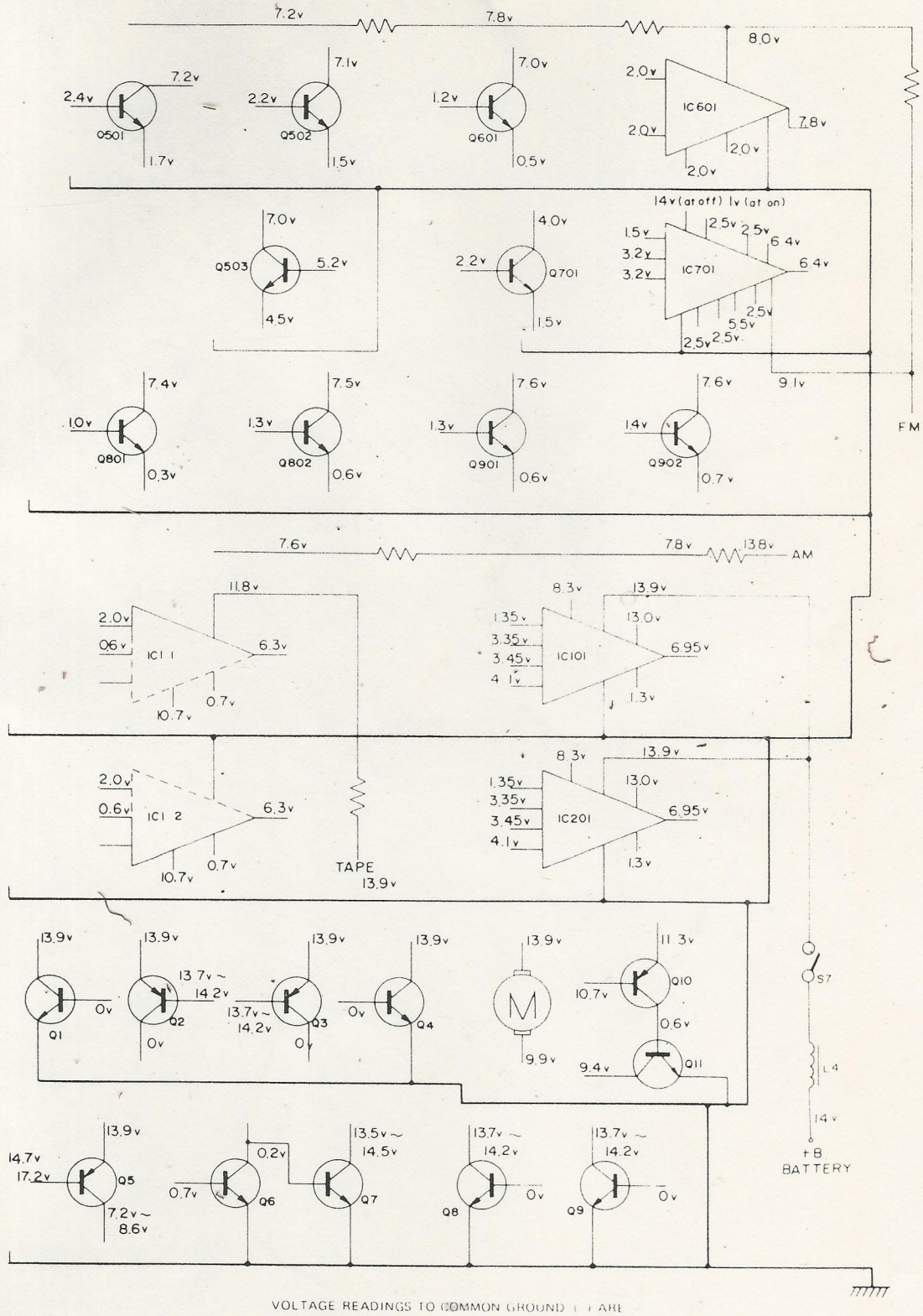
FM Radio section

Circuit system:	Superheterodyne
Frequency coverage:	87.5 MHz – 109 MHz
Tuning system:	Manual μ tuning
Intermediate frequency:	10.7 MHz
Maximum sensitivity:	5 μV
Quieting sensitivity:	5 μV (at 30 dB S/N)
–3 dB Limiting sensitivity:	10 μV
Image ratio:	48 dB
IF Rejection ratio:	90 dB
Stereo separation:	FM MPX, 30 dB (at 1 KHz)

Tape section

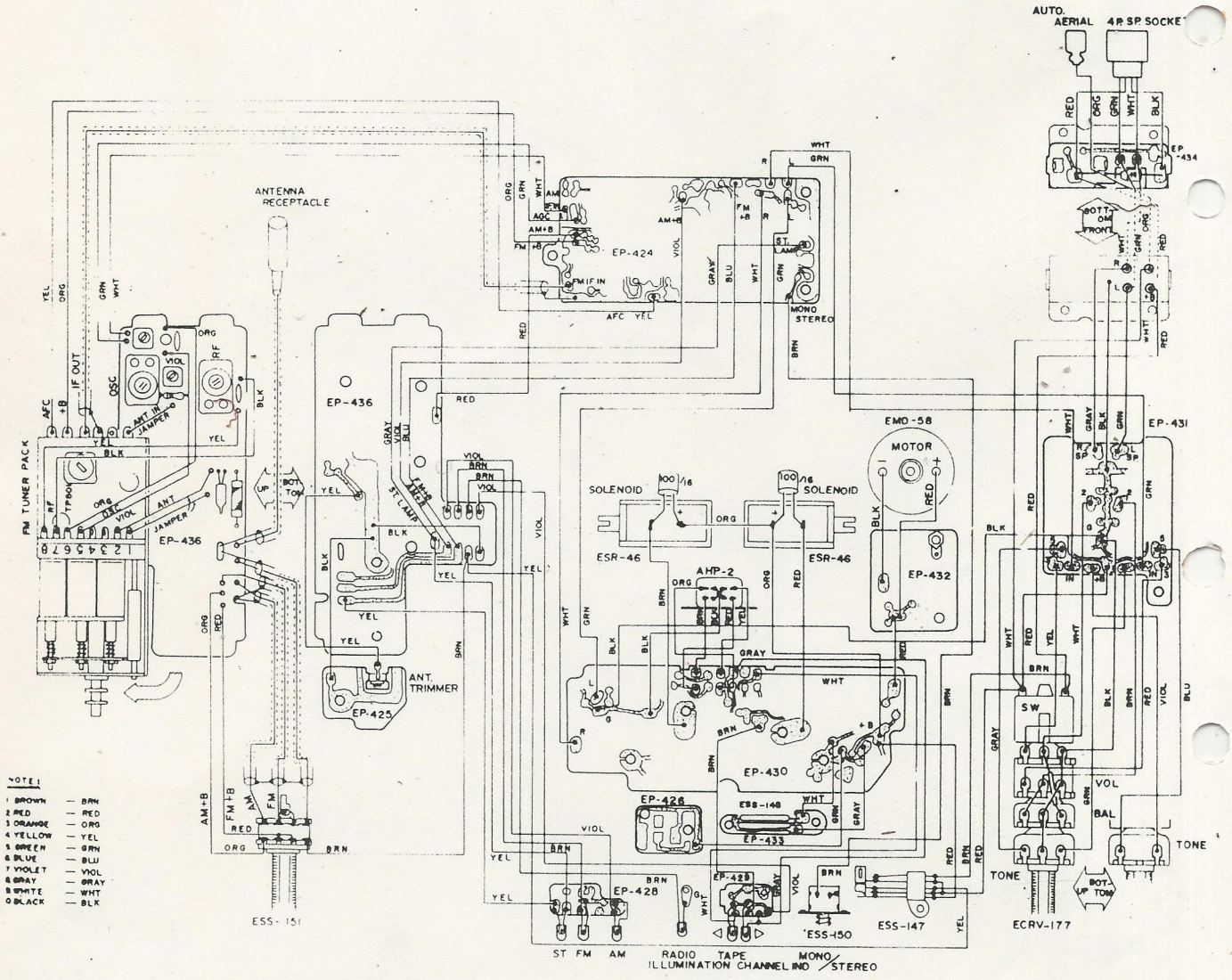
System:	Auto reverse 2 program 2 chann stereo tape player
Tape speed:	1-7/8 ips. (4.75 cm/sec)
FF. REW. Time:	Max. 90 sec (C-60)
Wow and flutter:	0.25% RMS (JIS)
Program crosstalk:	Better than 40 dB
Channel crosstalk:	Better than 30 dB
S/N ratio:	Better than 55 dB
Total harmonic distortion:	1% (at 1W Output power)
Output:	7W x 2 (Maximum output)
Output impedance:	4 ohm x 2
Reproduction frequency response:	50 Hz – 10 KHz ± 6 (Tone max.)
Tone control:	Bassboost 7 dB (at 125 Hz) High cut 13 dB (at 6.3 KHz)
Power supply voltage:	DC 14V (11V – 16V)
Polarity:	Negative ground
Max current drain:	5A
Weight:	1.8 Kg net
Dimension:	Width 178mm, Height 44mm Depth 150mm

RADIO AND AUDIO VOLTAGE

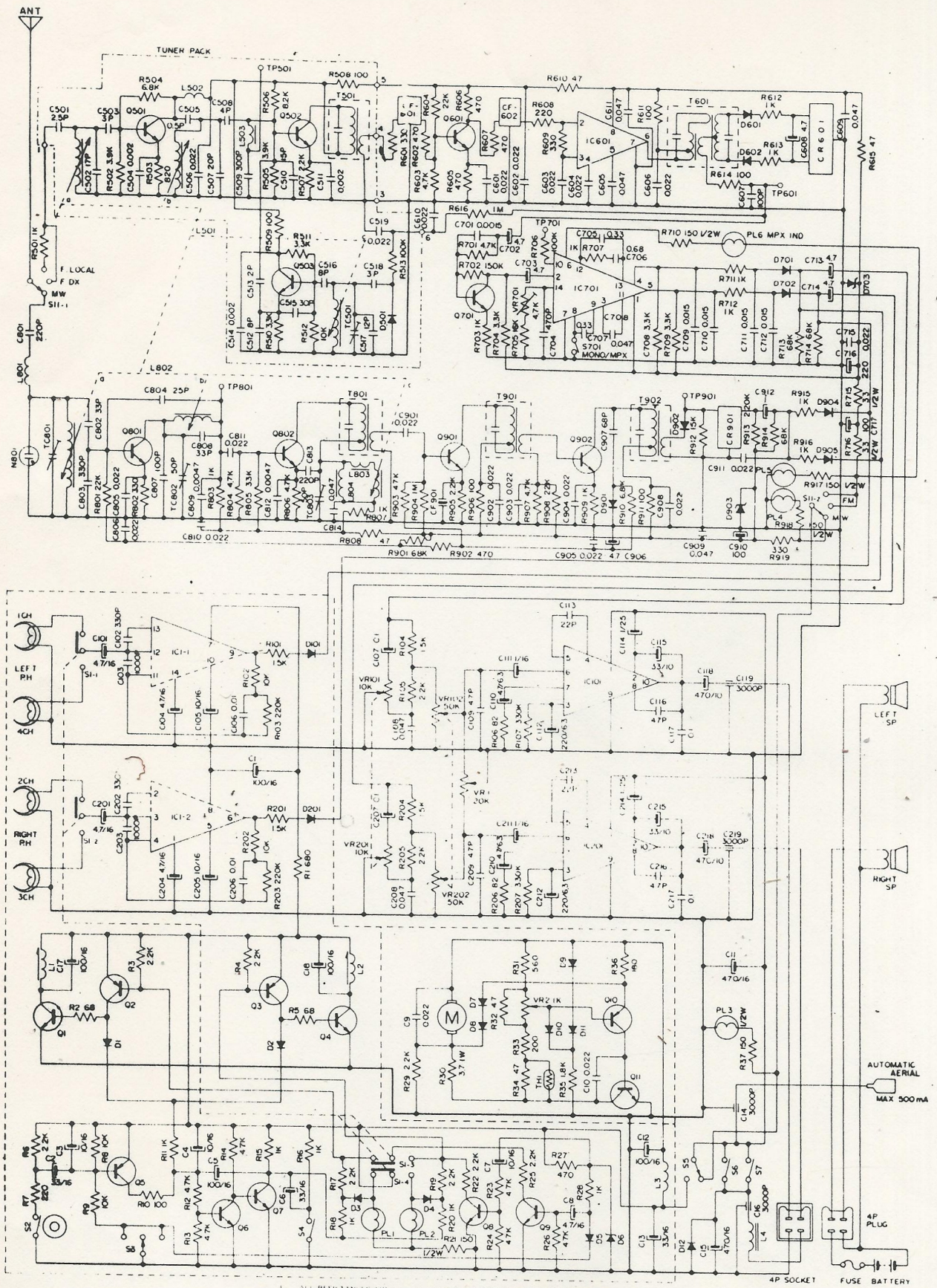


VOLTAGE READINGS TO COMMON GROUND ( ) ARE
MEASURED WITH DC V.T.V.M. UNDER NO SIGNAL

WIRING LAYOUT

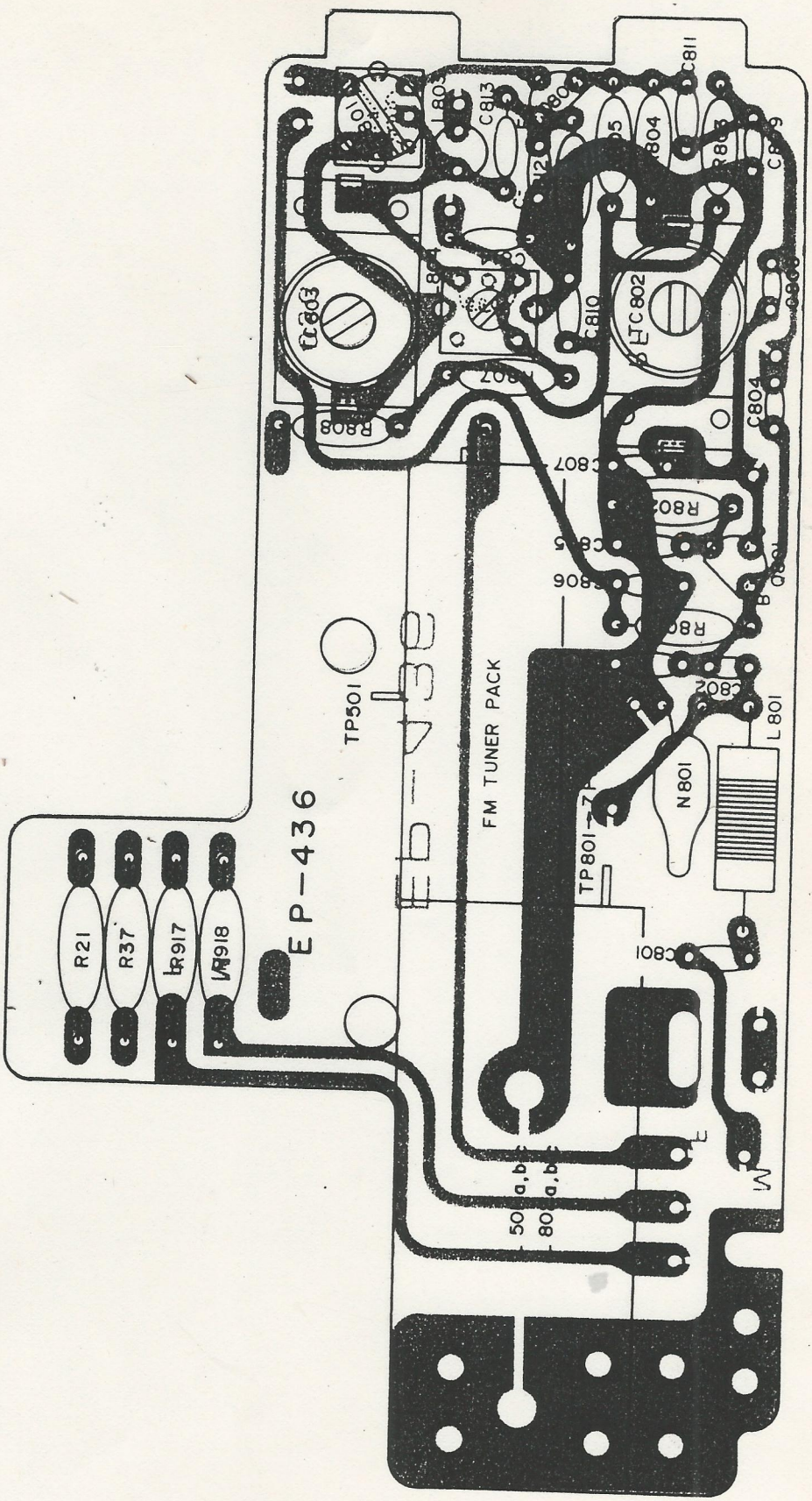


SCHEMATIC DIAGRAM



1. ALL RESISTANCES ARE ± 5% 1/4W UNLESS OTHERWISE NOTED. VALUES ARE IN OHMS, K (1000) OR M (1000K).
2. ALL CAPACITANCES VALUE ARE IN MICRO FARAD P MICRO MICRO FARAD.
3. ELECTROLYTIC CAPACITANCES NEGATIVE END SHOWN.

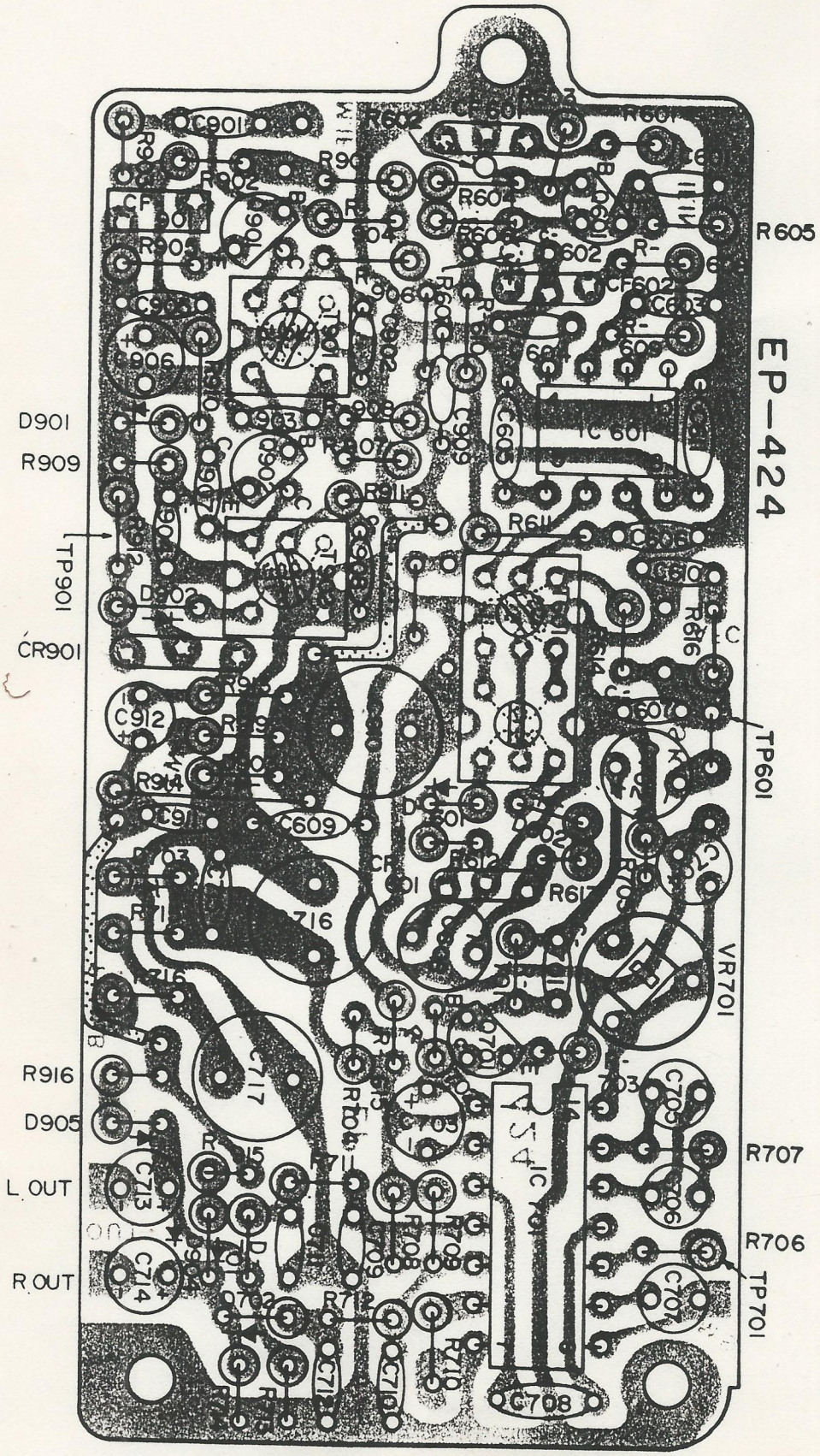
AM. FM. TUNER COMPONENT LOCATION GUIDE



REF. NO.	PART NO.	DESCRIPTION
1.	AA-281	Reel table chassis
2.	AA-282	Tension arm
3.	AA-283	Bracket
4.	AA-284	Cassette head table
5.	AA-285	Slot in arm (R)
6.	AA-286	Slot in arm (L)
7.	AA-312	Cassette eject lever
8.	AA-288	Brake lever
9.	AA-289	Idler arm
10.	AA-290	Cassette tray
11.	AA-291	Control lever
12.	AA-292	Switch arm
13.	AA-293	Chassis
14.	AA-294	Sub chassis
15.	AA-295	Play arm (R)
16.	AA-296	Play arm (L)
17.	AA-287	Lock arm
18.	AA-273	Pinch roller (L)
19.	AA-2[illegible]2K	Pinch roller (R)
20.	AA-275	Reel table
21.	AA-297	Magnet
22.	*AA-307	Electric speed regulator circuit board ass'y
23.	*AA-308	Pre Amp–A.T.R. Circuit board ass'y
24.	*AA-309	Lead switch circuit board ass'y
25.	CC-789	2.6 ϕ x 4 ϕ Sleeve
26.	CC-792	Spacer
27.	CC-796	Bushing
28.	CC-797	F – R Roller
29.	CS-416	Slot in bar
30.	CS-417	Stop bar
31.	CS-419	Hex. bolt
32.	CC-809	Bushing
33.	CC-810	Spacer
34.	CC-822	Flywheel
35.	CC-823	Pin
36.	CC-824	Spacer
37.	PL-1938	Spring holder
38.	PL-1939	Head table
39.	PL-1944	Stop arm (R)
40.	PL-1945	Stop arm (L)
41.	PL-1948	Catch lever (R)
42.	PL-1949	Catch lever (L)
43.	PL-1970	Stopper linkage
44.	PL-1973	Switch leaf
45.	PP-244	2.1 ϕ x 7 ϕ washer
46.	PP-415	Linkage
47.	PL-445	Lug terminal
48.	PN-213	Polyslider washer
49.	PN-215	Stop ring
50.	PN-220	Polyslider washer
51.	PN-445	Insulating paper
52.	PD-263	Head stabilizer
53.	MP-1087	Idler
54.	MP-1098	Cassette guide (L)
55.	MP-1099	Cassette guide (R)
56.	MC-107	Idler release arm (R)
57.	MC-108	Idler release arm (L)
58.	MC-109	Take up idler
59.	MP-1121	Bushing
60.	MR-182	Rubber belt
61.	MR-183	Brake pad
62.	SC-256	Back tension spring
63.	SC-257	Spring
64.	SC-258	Stop arm spring (R)
65.	SC-259	Stop arm spring (L)
66.	SC-263	Idler tension spring
67.	SC-261	Catch lever spring
68.	SC-142	Lock arm return spring
69.	SC-264	Head return spring
70.	SC-265	Cassette release spring
71.	SB-55	Restitution spring
72.	SB-56	Restitution spring
73.	SB-57	Pinch roller tension spring (L)
74.	SB-58	Pinch roller tension spring (R)
75.	SB-59	Play arm return spring (R)
76.	SB-60	Play arm return spring (L)
77.	SB-61	Brake tension spring
78.	SC-266	Cassette eject spring
79.	ESS-147	Leaf switch
80.	AHP-2	Play back head
81.	EMD-58	Motor
82.	*AA-330	Solenoid ass'y
83.	EP-426	Switch circuit board
84.	AA-317	Front chassis
85.	AA-318	Side cover
86.	AA-319	Tuner mounting bracket (Upper)
87.	AA-320	Tuner mounting bracket (Lower)
88.	AA-321	Pulley holder
89.	*AA-314	Antenna trimmer ass'y
90.	*AA-315	AM. FM Tuner circuit board ass'y
91.	*AA-316	IF. MPX circuit board ass'y
92.	*AA-327	Noise filter circuit board ass'y
93.	*AA-328	Indicator lamp circuit board ass'y
94.	*AA-329	Selector switch circuit board ass'y
95.	*AA-310	Power amplifier circuit board ass'y
96.	PL-1922	Dogleg locating washer
97.	PL-1957	Switch bracket
98.	PL-1961	Lamp holder
99.	PL-1962	Guide plate
100.	PP-228	Lug
101.	PN-451	Cushion
102.	PD-222	Cord clamp
103.	PD-239	Cord clamp
104.	PQ-265	Side cover
105.	CS-424	Stud
106.	CS-427	Hex. nut
107.	MP-1078	Oldham's coupling (A)
108.	MP-1079	Oldham's coupling (B)
109.	MP-1097	Pulley
110.	MR-184	Lamp cap
111.	MR-185	Lamp cap
112.	SC-222	Spring
113.	XS-68	Dial thread
114.	PL-1981	Snap in spring
115.	PL-1983	Black plate
116.	MP-1088	Control button
117.	AA-276	Dial pointer
118.	AH-102	4P Socket set
119.	AH-133	Auto antenna connection
120.	WTB-6-30	Vinyl tube
121.	AH-136	Aerial socket
122.	ECRV-177	Potentiometer
123.	*AA-331	Function switch ass'y
124.	ESS-150	Push button switch
125.	*AA-322	Select button
126.	*AA-323	Push button
127.	MP-1105	Spacer
128.	PL-1969	Top cover
129.	PD-266	Bottom cover
130.	PL-1979	Snap in bracket
131.	PL-1980	Bracket for 52mm cutout
132.	PL-1964	Nose piece (Aluminum)
133.	PL-1965	Door
134.	HHB-916	Spacer
135.	CC-813	Door shaft
136.	SC-255	Door spring
137.	AA-324	Nose piece (Plastics)
138.	MP-1094	Trimplate
139.	HPN-853	Inlay plate 130mm (R)
	HPN-855	Inlay plate 142mm (R)
	HPN-857	Inlay plate 148mm (R)
140.	HPN-854	Inlay plate 130mm (L)
	HPN-856	Inlay plate 142mm (L)
	HPN-858	Inlay plate 148mm (L)
141.	CS-383X2	Decoration nut
142.	AA-325	Outer knob with SB-47 spring
143.	AA-326	Inner knob with PL-1986 spring
144.	MP-1095	Nose piece flange
145.	EIL-35	Pilot lamp
146.	AH-147	4P speaker wire set
147.	MR-187	Rear suspension bushing
148.	PL-1982	Rear suspension bracket
A.	006204	2 x 4 Screw
B.	006206	2 x 6 Screw
C.	006208	2 x 8 Screw
D.	006263	2.6 x 3 Screw
E.	006264	2.6 x 4 Screw
F.	006266	2.6 x 6 Screw
G.	006268	2.6 x 8 Screw
H.	0062616	2.6 x 16 Screw
I.	006304	3 x 4 Screw
J.	006305	3 x 5 Screw
L.	006310	3 x 10 Screw
M.	0863042	3 x 4 Tapping screw
N.	0863052	3 x 5 Tapping screw
O.	0863062	3 x 6 Tapping screw
Q.	002204	2 x 4 Flat head screw
R.	002233	2.3 x 3 Flat head screw
S.	002304	3 x 4 Flat head screw
V.	0112705	2.6ϕ Spring washer
W.	0113106	3ϕ Spring washer
X.	030154	1.5ϕ E-ring
Y.	030194	1.9ϕ E-ring
Z.	030236	2.3ϕ E-ring
b.	010101	10ϕ Flat washer
d.	014303	3ϕ Lock washer
h.	060002	Steel ball
i.	020650	6ϕ Hexagon nut
j.	0116115	6ϕ Spring washer
k.	0106508	6ϕ Flat washer

* marked parts in the parts list designate assemblies.
Refer to other page for particulars.

IF. MPX. COMPONENT LOCATION GUIDE



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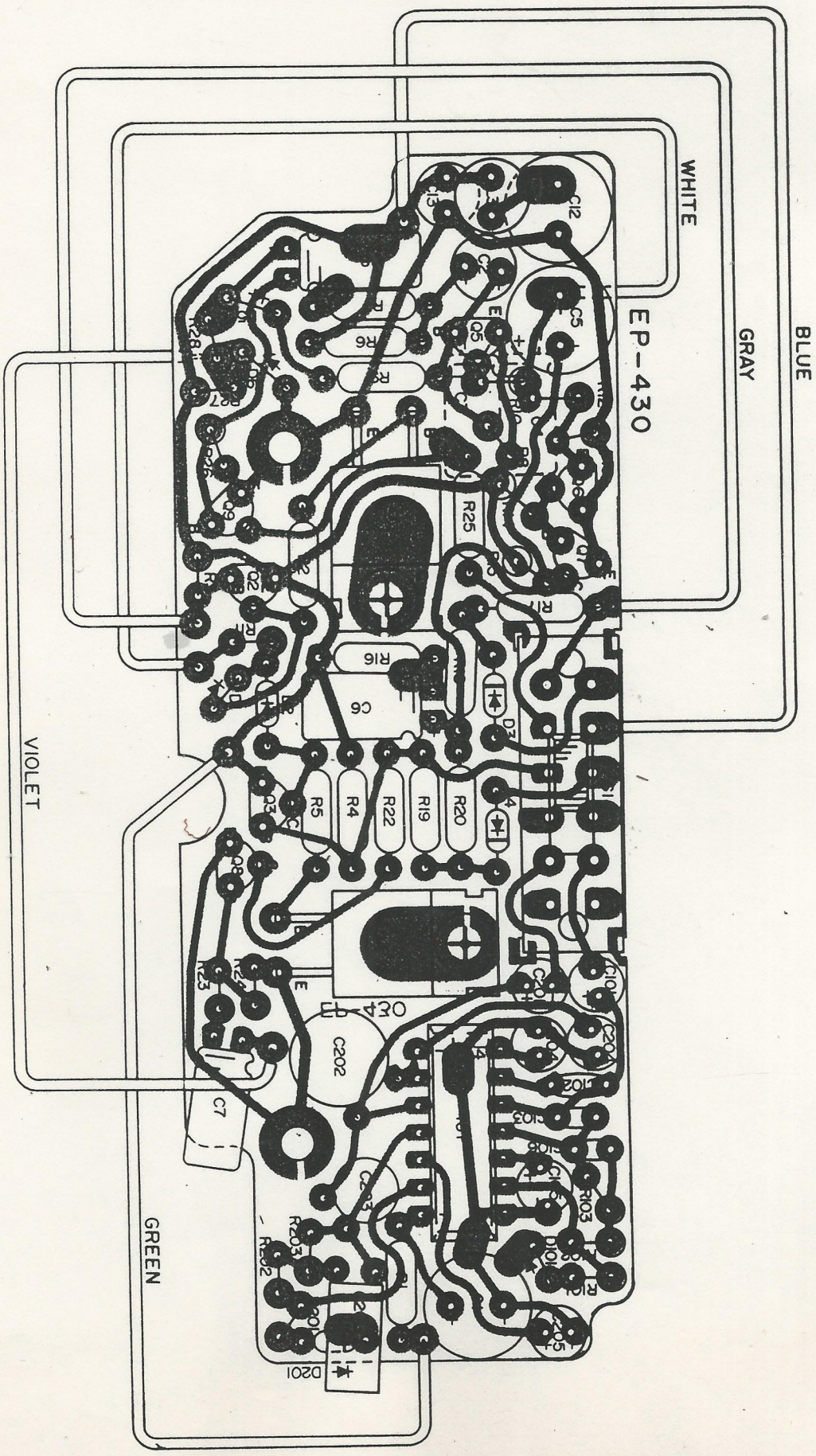
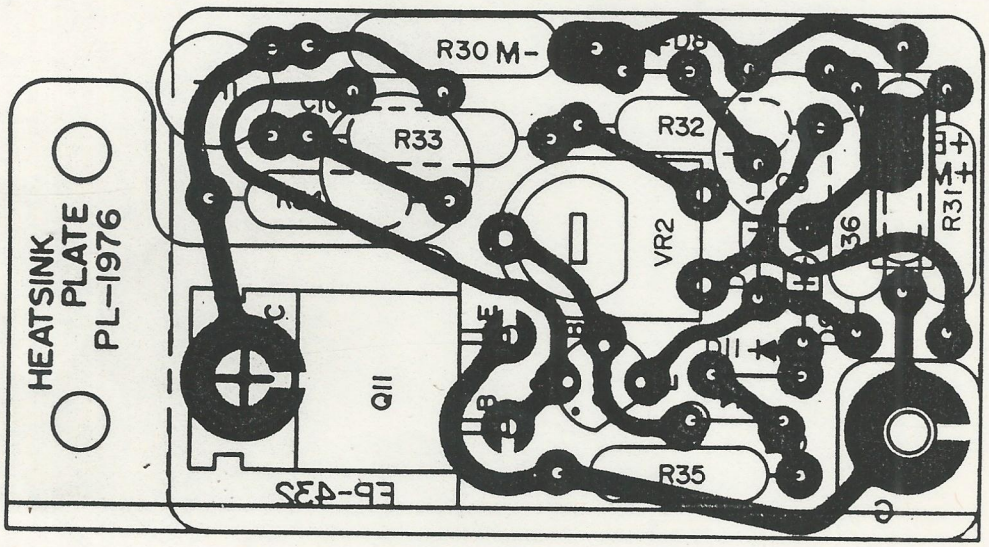
91 *AA-316 IF. MPX. CIRCUIT BOARD PARTS LIST

EF. NO.	PART NO.	DESCRIPTION
	EP-424	Printed circuit board
Q601, 901, 902	ETTC	Transistor 2SC-930D
Q701	ETTC	Transistor 2SC-536E
IC601	ETI-21	IF I.C. LA-1111P
IC701	ETI-22	MPX I.C. HA-1156
D601, 602, 901, 902	ETD	Diode 1N-60
D701, 702, 904, 905	ETD	Diode SG-9150 or equivalent
D703	ETD	Zener diode-RD-9.1FB
D903	ETD	Zener diode HZ-7C
T601	ELD-107	FM IFT
T901	ELD-80	AM IFT
T902	ELD-81	AM IFT
CF601, 602	EOP-6	FM Ceramic filter 10.7MHz
CF901	EOP-4	AM Ceramic filter 455KHz
C907	ECC	Ceramic capacitor 68P
C607	ECC	Ceramic capacitor 100P
C601, 602,603, 604, 606, 610, 715, 901, 902, 903, 904, 905, 908, 911	ECC	Ceramic capacitor 0.022MF
C605, 609, 611, 909	ECC	Ceramic capacitor 0.047MF
C704	ECC	Polystyrene film capacitor 470PF
C705, 707	ECC	Tantalum electrolytic capacitor 0.033MF
C706	ECC	Tantalum electrolytic capacitor 0.068MF
C701	ECC	Polystyrene film capacitor 0.0015MF
C709, 710, 711, 712	ECC	Polystyrene film capacitor 0.015MF
C708	ECC	Polystyrene film capacitor 0.047MF
C912	ECC	Electrolytic capacitor 25V-1MF
C608, 702, 703, 713, 714, 906	ECC	Electrolytic capacitor 16V-4.7MF
C717, 910	ECC	Electrolytic capacitor 16V-100MF
C716	ECC	Electrolytic capacitor 10V-220MF
R715, 716	ECR	Resistor 1/2W 33-ohm
R610, 615	ECR	Resistor 1/4W 47-ohm
R611, 614, 906, 911	ECR	Resistor 1/4W 100-ohm
R710	ECR	Resistor 1/2W 150-ohm
R601, 609, 919	ECR	Resistor 1/4W 330-ohm
R605, 606, 902	ECR	Resistor 1/4W 470-ohm
R608	ECR	Resistor 1/4W 220-ohm
R602, 607	ECR	Resistor 1/16W 470-ohm
R612, 613, 703, 707, 711, 712, 909, 915, 916	ECR	Resistor 1/4W 1K-ohm
R905	ECR	Resistor 1/4W 2.2K-ohm
R704, 708, 709	ECR	Resistor 1/4W 3.3K-ohm
R603, 701, 907	ECR	Resistor 1/4W 4.7K-ohm
R910	ECR	Resistor 1/4W 6.8K-ohm
R912	ECR	Resistor 1/4W 15K-ohm
R705	ECR	Resistor 1/4W 16K-ohm
R604, 908	ECR	Resistor 1/4W 22K-ohm
R903	ECR	Resistor 1/4W 47K-ohm
R713, 714, 901, 914	ECR	Resistor 1/4W 68K-ohm
R706	ECR	Resistor 1/4W 100K-ohm
R702	ECR	Resistor 1/4W 150K-ohm
R913	ECR	Resistor 1/4W 220K-ohm
R616, 904	ECR	Resistor 1/4W 1M-ohm
CR-601	ECX-1	CR Couplates
CR-901	ECX-2	CR Couplates
VR-701	ECRV-176	Semi potentiometer 4.7K-ohm

PRE-AMPLIFIER AND A.T.R. COMPONENT LOCATION GUIDE



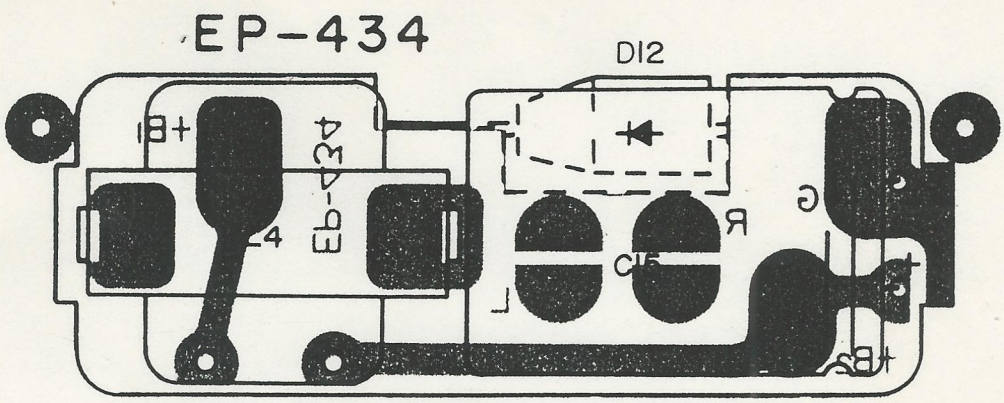
EP-432



22 *AA-307 ELECTRIC SPEED REGULATOR CIRCUIT BOARD PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
	EP-432	Printed circuit board
Q11	ETTD	Transistor 2SD-235
Q10	ETTA	Transistor NJ-101 or equivalent
D7, 8	ETD	Diode CDG-21 or equivalent
D9, 10, 11	ETD	Diode 1S2788 or equivalent
TH1	ETS	Thermistor D-1A
VR2	ECRV-124	Semi potentiometer 1K-ohm
C9, 10	ECC	Ceramic capacitor 0.022MF
R29	ECR	Resistor 1/4W 2.2K-ohm
R35	ECR	Resistor 1/4W 1.8K-ohm
R31	ECR	Resistor 1/4W 560-ohm
R33	ECR	Resistor 1/4W 200-ohm
R36	ECR	Resistor 1/4W 180-ohm
R32, 34	ECR	Resistor 1/4W 47-ohm
R30	ECR	Resistor 1W 3.7-ohm
	PL-1976	Heatsink plate
	PN-444	Insulating paper
	PP-35	Lug
	0863062	3 x 6 Tapping screw
	006308	3 x 8 Screw

NOISE FILTER COMPONENT LOCATION GUIDE



92 *AA-327 NOISE FILTER CIRCUIT BOARD PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
	EP-434	Printed circuit board
L4	ELS-94	Choke transformer
D12	ETD	Diode DS-130N
C15	ECC	Electrolytic capacitor 16V-470MF
C14, 16, 119, 219	ECC	Feed throught ceramic capacitor 3000PF
	PL-1977	Shield case

24 *AA-309 LEAD SWITCH CIRCUIT BOARD PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
	EP-433	Printed circuit board
S2	ESS-148	Lead switch

82 *AA-330 SOLENOID ASS'Y PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
L1, 2	ESR-46	Solenoid
C17, 18	ECC	Electrolytic capacitor 16V-100MF

89 *AA-314 ANTENNA TRIMMER ASS'Y PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
TC801	ECCV-14	Trimmer capacitor
	PL-1978	Trimmer bracket

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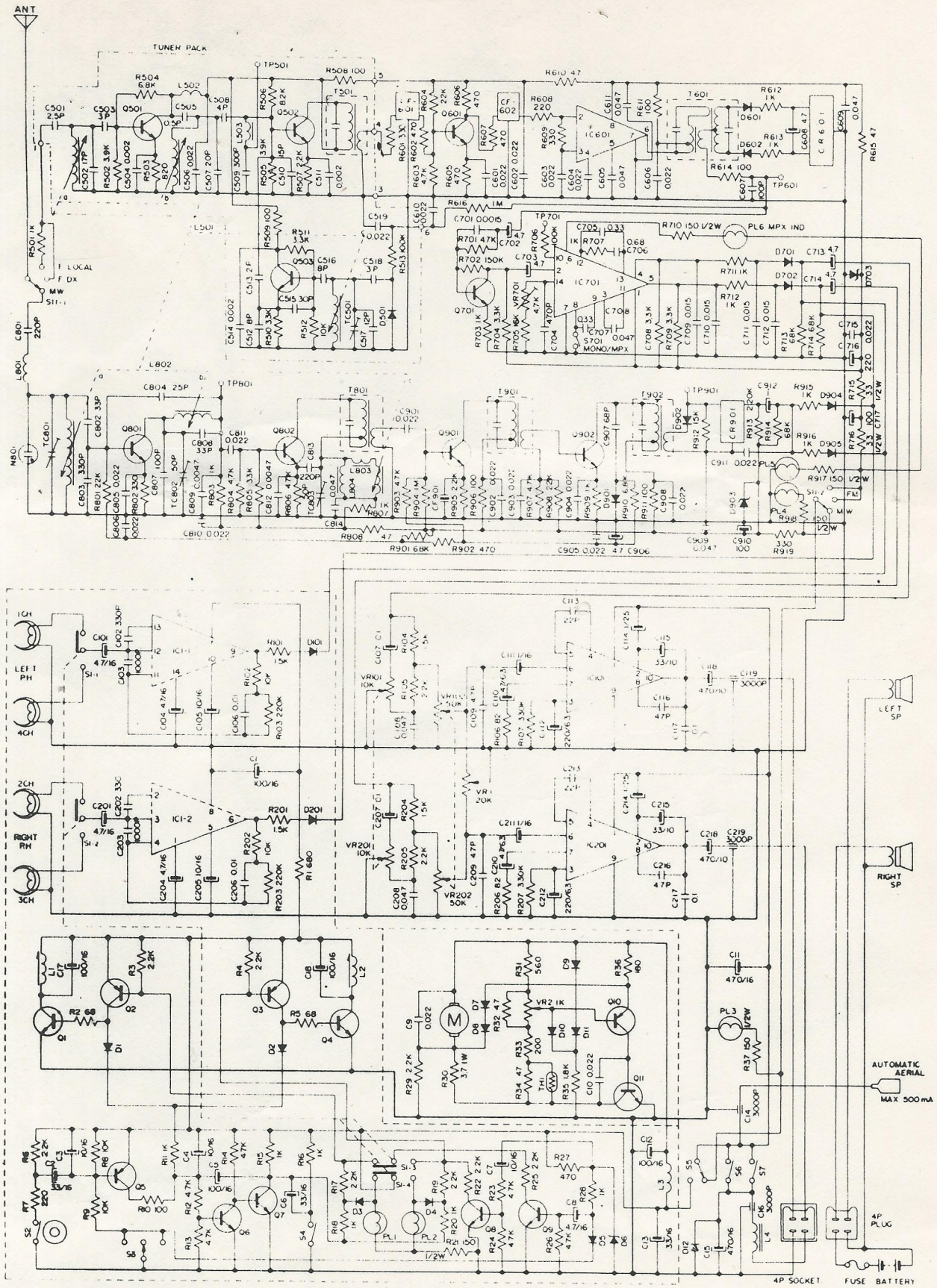
SCHEMATIC DIAGRAM

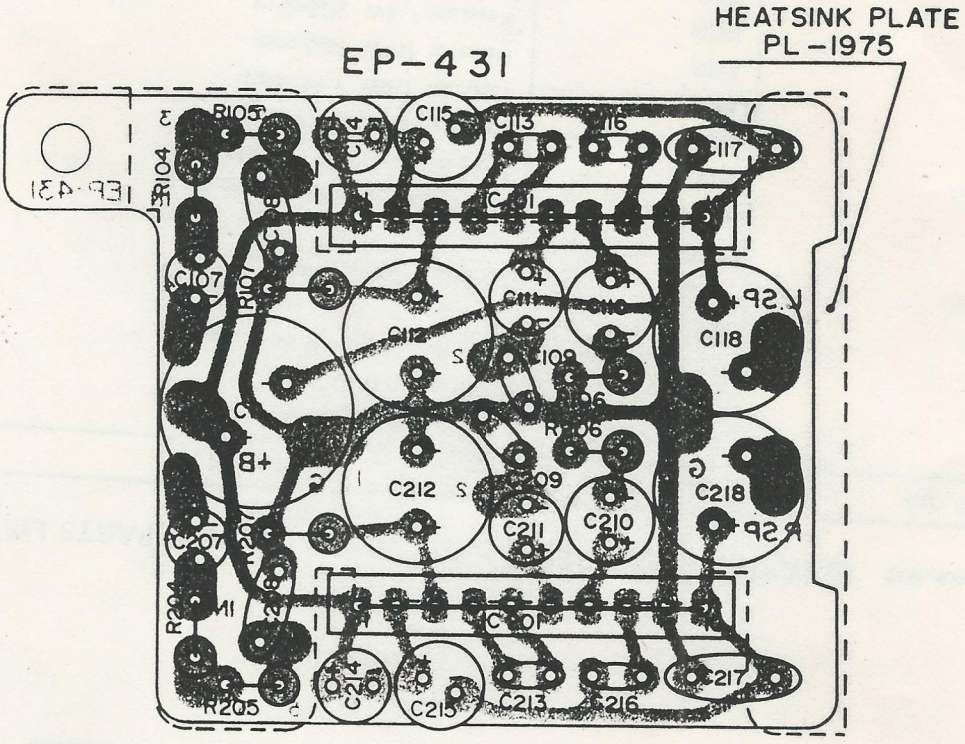


1. ALL RESISTANCES ARE IN OHMS UNLESS OTHERWISE NOTED. VALUES ARE IN OHMS, K FOR K OHM, M FOR MEGOHM.
2. ALL CAPACITANCES VALUE ARE IN MICROFARAD P MICRO MICRO FARAD.
3. ELECTROLYTIC CAPACITANCES NEGATIVE END SHOWN.

PRE-AMPLIFIER AND A.T.R. CIRCUIT BOARD PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
	EP-430	Printed circuit board
IC1	ETI-13	I.C. TA-7108P
Q1, 4	ETTD	Transistor 2SD-235
Q2, 3, 5	ETTA	Transistor 2SA-854 or equivalent
Q6, 7, 8, 9	ETTC	Transistor 2SC-945 or equivalent
D1, 2, 3, 4, 5, 101, 201	ETD	Diode 1S2788 or equivalent
D6	ETD	Zener diode RD7.5E
S1	ESS-119	Slide switch
L3	ELD-61	Inductor 1mH
C1, 5, 12	ECC	Electrolytic capacitor 16V-100MF
C2, 6, 13	ECC	Electrolytic capacitor 16V-33MF
C3, 4, 7, 105, 205	ECC	Electrolytic capacitor 16V-10MF
C8, 101, 104, 201, 204	ECC	Electrolytic capacitor 16V-4.7MF
C106, 206	ECC	Polyester film capacitor 0.01MF
C103, 203	ECC	Ceramic capacitor 1000PF
C102, 202	ECC	Ceramic capacitor 330PF
R103, 203	ECR	Resistor 1/4W 220K-ohm
R8, 9, 102, 202	ECR	Resistor 1/4W 10K-ohm
R12, 13, 14, 23, 24, 26	ECR	Resistor 1/4W 4.7K-ohm
R3, 4, 6, 17, 19, 22, 25	ECR	Resistor 1/4W 2.2K-ohm
R101, 201	ECR	Resistor 1/4W 1.5K-ohm
R11, 15, 16, 18, 20, 28	ECR	Resistor 1/4W 1K-ohm
R1	ECR	Resistor 1/4W 680-ohm
R27	ECR	Resistor 1/4W 470-ohm
R7	ECR	Resistor 1/4W 220-ohm
R10	ECR	Resistor 1/4W 100-ohm
R2, 5	ECR	Resistor 1/4W 68-ohm
	006305	3 x 5 Screw
	0203020	3 ø Nut

POWER AMPLIFIER COMPONENT LOCATION GUIDE



95 *AA-310 POWER AMPLIFIER CIRCUIT BOARD PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
	EP-431	Printed circuit board
IC101, 201	ETI-23	I.C. TA-7205P
C11	ECC	Electrolytic capacitor 16V-470MF
C118, 218	ECC	Electrolytic capacitor 10V-470MF
C112, 212	ECC	Electrolytic capacitor 6.3V-220MF
C110, 210	ECC	Electrolytic capacitor 6.3V-47MF
C115, 215	ECC	Electrolytic capacitor 10V-33MF
C111, 114, 211, 214	ECC	Electrolytic capacitor 16V-1MF
C107, 207	ECC	Tantalum electrolytic capacitor 16V-0.1MF
C117, 217	ECC	Polystyrene film capacitor 0.1MF
C108, 208	ECC	Polystyrene film capacitor 0.047MF
C109, 116, 209, 216	ECC	Ceramic capacitor 47PF
C113, 213	ECC	Ceramic capacitor 22PF
R107, 207	ECR	Resistor 1/4W 330K-ohm
R105, 205	ECR	Resistor 1/4W 2.2K-ohm
R104, 204	ECR	Resistor 1/4W 1.5K-ohm
R106, 206	ECR	Resistor 1/4W 82-ohm
	PL-1975	Heatsink plate