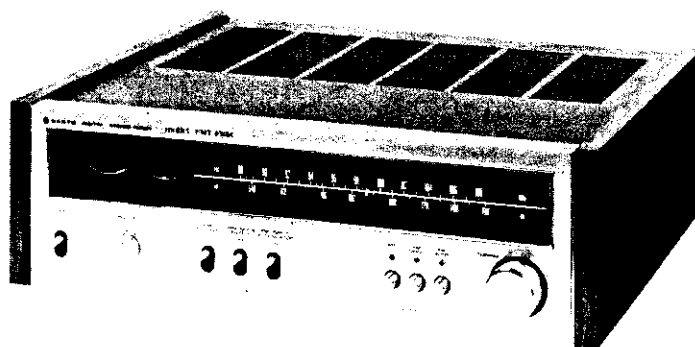




SANYO STEREO TUNER FMT-450K (SEV) SERVICE MANUAL



SPECIFICATIONS

FM SECTION

Tuning Frequency Range:	88 to 108MHz
IF:	10.7MHz
Usable Sensitivity:	1.9 μ V
Capture Ratio:	1.0dB
Selectivity (IHF):	More than 65dB
Signal to Noise Ratio:	More than 70dB
Image Rejection:	More than 100dB
Spurious Rejection:	More than 95dB
AM Suppression:	55dB
Harmonic Distortion:	Mono: Less than 0.2%
IF Rejection:	More than 100dB
Frequency Response:	Mono: 20Hz to 15kHz +0dB, -2dB
Muting Sensitivity:	25 μ V

FM MPX SECTION

Stereo Separation:	More than 40dB (1kHz)
	More than 30dB (50Hz to 10kHz)
Frequency Response:	50Hz to 10kHz +0.2dB, -0.5dB
Harmonic Distortion:	Stereo: Less than 0.3%
Signal to Noise Ratio:	Stereo: Less than 65dB
Sub Carrier Suppression:	70dB

FM/FM MPX SECTION

Antenna Input:	300 ohms balanced
	75 ohms unbalanced
Antenna Input Level Switch:	-20dB

AM SECTION

Tuning Frequency Range:	535 to 1605kHz
Usable Sensitivity:	200 μ V/m at 20dB Quieting
	10 μ V (IHF)
Selectivity (IHF):	35dB
Signal to Noise Ratio:	50dB
Image Rejection:	More than 65dB
Harmonic Distortion:	Less than 0.6%
IF Rejection:	65dB

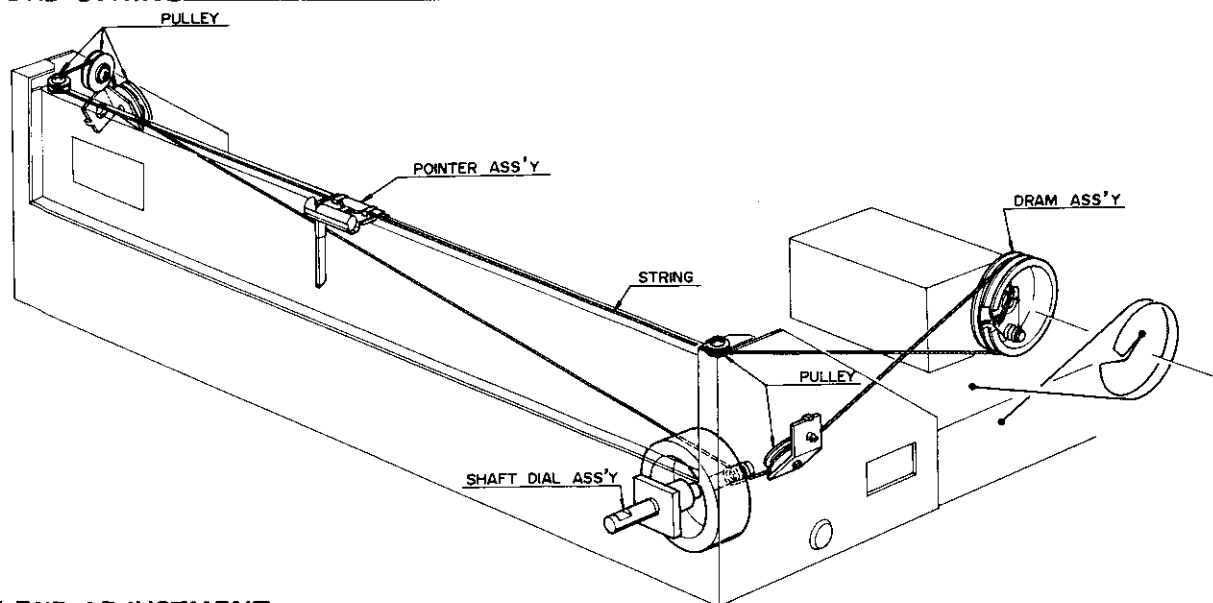
AUDIO SECTION

Output (Level/Impedance)	
Fixed:	700mV/3K ohms
Variable:	0 to 1000mV/1K ohms

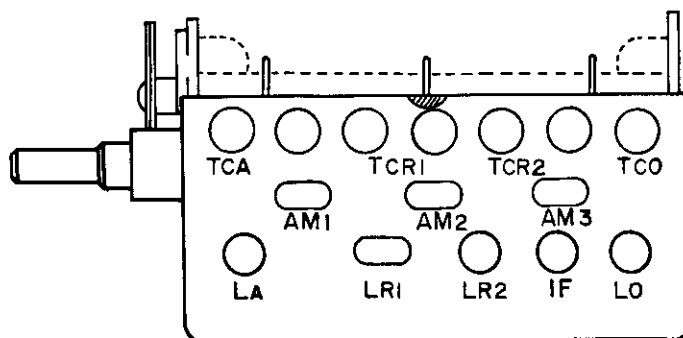
MISCELLANEOUS

Power Requirements:	(Switchable) 120V, 220V. 50/60Hz
SEV/FTZ version:	
Dimensions (overall):	Wide 420mm
	Height 130mm
	Depth 330mm
Weight:	7.3kg

DIAL CORD STRING

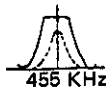


FRONT END ADJUSTMENT



ADJUSTMENT

AM ADJUSTMENT

Step	Adjusting circuit	Connections		SG. frequency	Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to VC5.	Connect oscilloscope to AM Output (PIN NO. 7)	455kHz (Range 30% modulation)	Near max. capacity of VC. at position with no unrequired signal	AM Detector 9-21300 AM IF 9-21200	
2	RF	Connect standard loop antenna to output terminals of SG. Place receiver 2 feet from loop antenna.	Connect V.T.V.M. to Output Terminal	600kHz (400Hz, 30% modulation)	600kHz	AM ANT COIL 9-210500 AM OSC COIL 9-20740	Max.
3				1400kHz (400Hz, 30% modulation)	1400kHz	TC5 TC6 TC7	Max.
4	Repeat adjustments.						

PREPARE

1. Variable capacitor completely closed.
2. Set the dial pointer to very left line dial scale.
3. Connect sweep generator SG, V.T.V.M. and oscilloscope.

4. Selector switch to "AM".
5. Use a screwdriver with plastic grip for all adjustments.

FM ADJUSTMENT

Step	Adjusting circuit	Connections		SG. frequency	Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to test point TP1 through 0.01 μ F.	Connect oscilloscope to TP.2	10.7MHz Range	Near max. capacity of VC. at position with no unrequired signal.	Front End IF Position	 10.7MHz
2	Ratio Det.		Connect oscilloscope to IF P.C.B. PIN NO. 8 or 10			FM DET 9-21000	
3	RF	Connect FM SG. to FM ANT. terminals.	Connect V.T.V.M. to output terminal	90MHz (400Hz, 30% modulation)	90MHz	FM ANT Coil (LA) FM OSC Coil (LO) RF Coil (LR1) RF Coil (LR2)	Max.
4				106MHz (400Hz, 30% modulation)	106MHz	TCO TCR.1, TCR.2 TCA	Max.
5	Repeat adjustments.						

PREPARE

1. Variable capacitor completely closed.
2. Set the dial pointer to very left line of dial scale.
3. Connect sweep generator, FM SG, V.T.V.M. and oscilloscope.

4. Selector switch to "FM"
5. Use a screwdriver with plastic grip for all adjustments.

FM MPX ADJUSTMENT

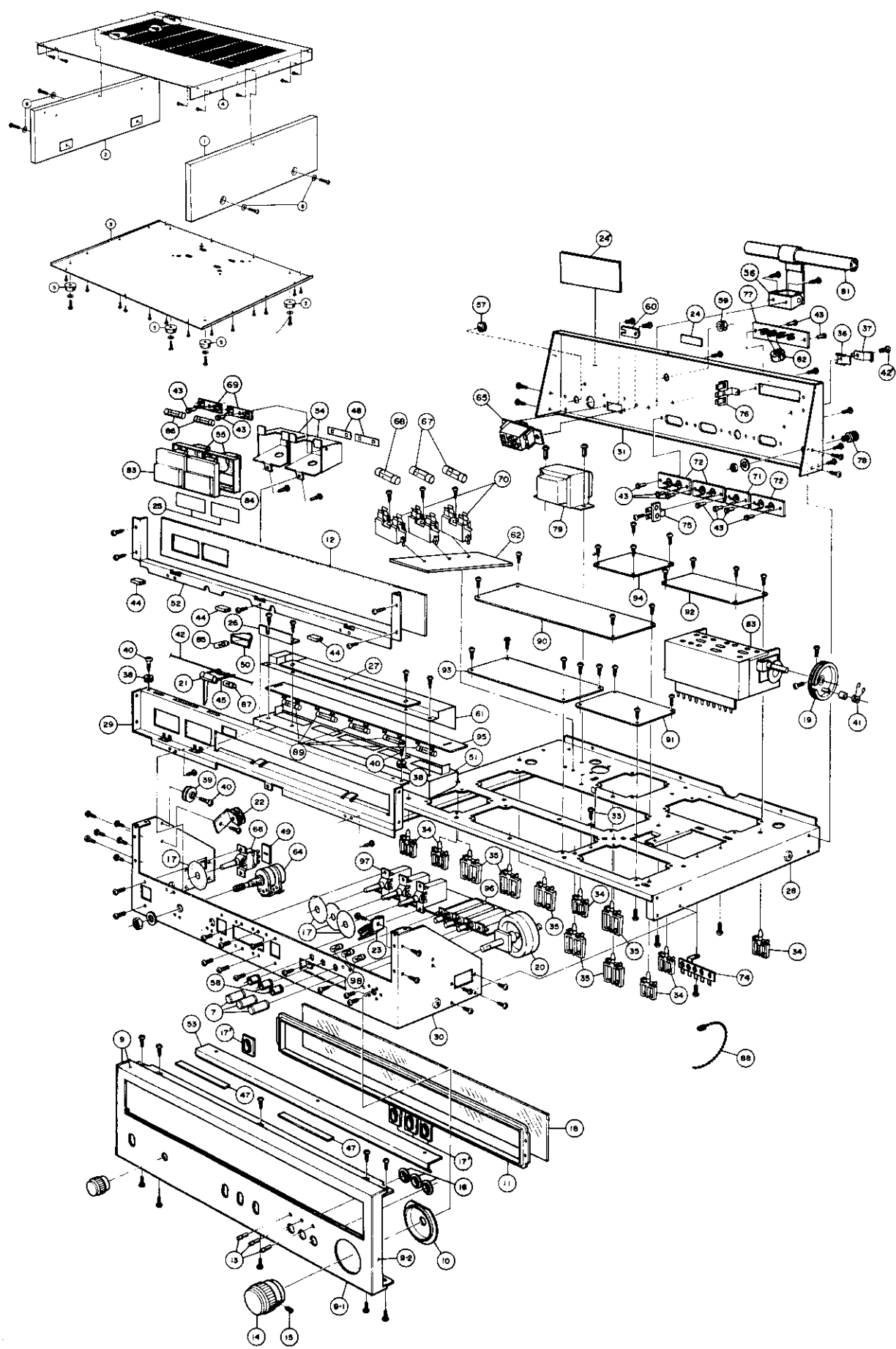
Step	Adjusting Circuit	Connections		Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output			
1	38kHz	Connect FM stereo SG to FM ANT terminals. 19kHz signal ON. Main channel, sub channel signal ON. Add 1000Hz signal from L Ch.	Connect V.T.V.M. to test point TP.3	Near max. capacity of VC. at position with no unrequired signal.	19kHz 9-20210 (Black) 38kHz 9-20220 (White)	Max.
2	FM stereo signal separation		Connect V.T.V.M. to R output terminal.		① max VR1 ② Cross talk 9-20210 9-20202	Max.
3		Connect FM stereo SG to FM ANT terminals. 19kHz signal ON. Main channel, sub channel signal ON. Add 1000Hz signal from R Ch.	Connect V.T.V.M. to L output terminal.		③ Cross talk VR1	min.
4	Repeat steps 3 — 4. Set at position with max. channel separation.					

PREPARE

1. Variable capacitor completely closed.
2. Connect FM stereo SG. and V.T.V.M.

3. Function switch to "STEREO AFC".
4. Use a screwdriver with plastic grip for all adjustments.

EXPLODED VIEW



PARTS LIST

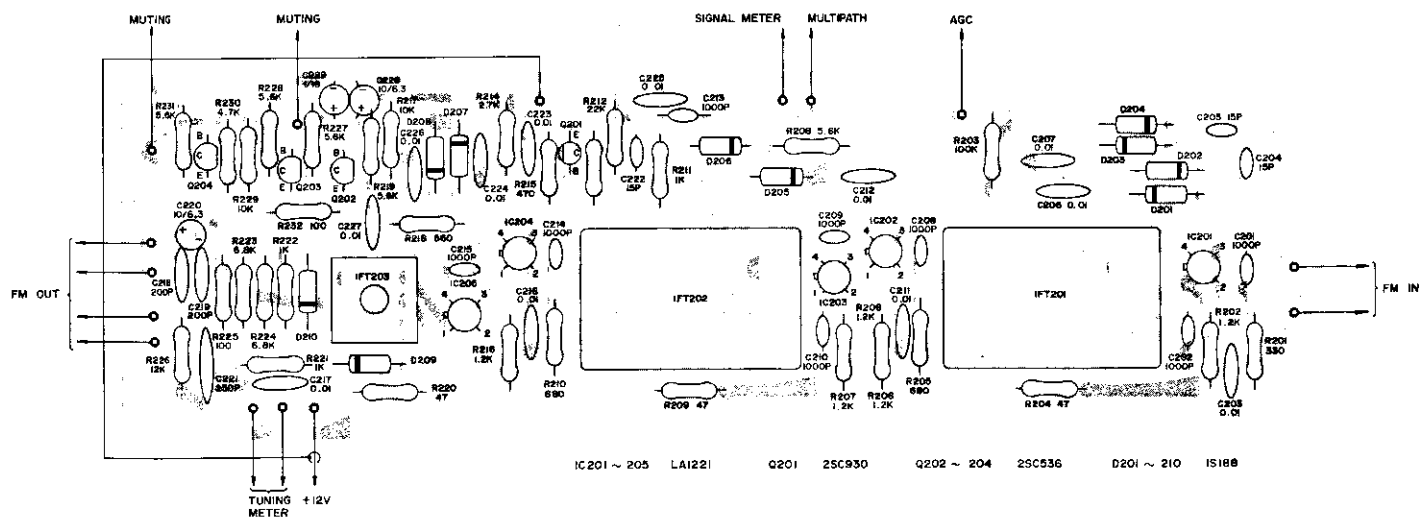
Key No.	Part No.	Description	Q'ty
PACKING			
	131 2 5205 13400	Cushion	2
	131 6 1139 48112	Box corrugate exp	1
	131 6 2119 01440	Bag polyethylene-exp	1
	131 6 3009 18600	Pad	2
	131 6 3069 16050	Patching sheet	1
	131 6 4559 10100	Manufacturing No	2
ACCESSORY			
	4 2449 20230	Antenna, FM	1
	131 0 4004 11501	W pin cord	1
	131 6 2719 10600	Bag fan	1
	131 6 4119 36506	Explanatory booklet	1
CABINET			
1	131 2 1101 25300	Cabinet	1
2	131 2 1101 25400	Cabinet	1
3	131 2 1105 13100	Plate, Bottom	1
4	131 2 1312 11100	Grill	1
5	131 2 1801 13300	Leg	4
6	131 2 4203 84204	Washer, 4.2 x 14 x 1mm	4
	131 2 7103 19800	Label, Plate bottom	1
	131 2 7103 19900	Caution label, Cabinet L side	1
APPEARANCE			
7	131 0 1001 26900	Knob assy, Push	3
8	131 0 1001 27000	Knob assy	1
9	131 0 1016 18303	Panel decorate assy	1
9-1	131 2 1203 29403	Panel control	1
9-2	131 2 1311 33800	Sash	2
10	131 2 1116 12700	Frame	1
11	131 2 1116 12800	Frame	1
12	131 2 1201 24601	Plate, Dial	1
13	131 2 1504 10902	Plate, Sign lamp, Function ind.	3
14	131 2 1601 30900	Knob, Tuning	1
15	131 2 4201 12400	Screw, Tuning knob	1
16	131 2 6111 13600	Bushing, Push knob	3
17	131 2 6113 11400	Shelter, Lever SW	4
17'	131 2 6113 16300	Shelter, Lever SW	4
18	131 2 6308 15900	Filter, Grass	1
CHASSIS			
19	131 0 3002 10800	Drum assy	1
20	131 0 3003 16400	Shaft dial assy	1
56	131 0 3008 11700	Support antenna assy	1
21	131 0 3011 14700	Pointer assy	1
22	131 0 3020 02600	Pully assy	1
23	131 0 3020 03800	Pully assy	1
24	131 2 1110 17001	Plate decorate, Rear panel AC out	1
24'	131 2 1310 21817	Name plate	1
25	131 2 1406 11600	Plate color, Meter	2
26	131 2 3101 19700	Metal mount, FM steres ind	1
27	131 2 3101 30300	Metal mount, Pilot PCB	1
28	131 2 3301 17300	Chassis	1
29	131 2 3304 16000	Plate dial rear	1
30	131 2 3305 17200	Panel front	1
31	131 2 3306 17003	Panel rear	1
33	131 2 3608 11200	Cramp wire, Pointer wire	1
34	131 2 3608 11700	Cramp wire	7
35	131 2 3608 11701	Cramp wire	5
36	131 2 3621 00400	Metal cramp wire	1
37	131 2 3621 00500	Metal cramp wire	1
38	131 2 4107 10200	Pulley	2
39	131 2 4107 10300	Pulley	1
40	131 2 4108 10300	Spindle pulley	3
41	131 2 4111 00300	Rope, Spring	1
42	131 2 4112 10200	Rope, 0.5mm	1
42'	131 2 4201 12701	Screw	1
43	131 2 4221 00100	Rivet	12
44	131 2 5205 11800	Cushion	3
45	131 2 5205 12000	Cushion	1
47	131 2 5205 13500	Cushion, Grass	2
48	131 2 6107 13900	Plate sever, Metal lamp holder	2
49	131 2 6107 14200	Plate sever, Power SW	1

Key No.	Part No.	Description	Q'ty
CHASSIS			
50	131 2 6110 20100	Shelter light, Steres ind	1
51	131 2 6110 20900	Shelter light, Dial pilot	1
52	131 2 6110 22500	Shelter light, Pilot Dial	1
53	131 2 6110 22600	Shelter light, Panel control	1
54	131 2 6110 22700	Shelter light, Meter lamp	2
55	131 2 6110 22800	Shelter light, Meter cover	2
57	131 2 6111 11300	Bushing, AC cord	1
58	131 2 6111 11600	Bushing, Function ind	3
59	131 2 6111 14200	Bushing, ANT wire	1
61	131 2 6113 16400	Shelter, Pilot PCB	1
62	131 2 7103 21600	Label (fuse)	1
	131 2 7103 21700	Label (FTZ)	1
60	131 2 7104 00101	Plate pad switch	1
ELECTRICAL PARTS			
63	4 1259 20280	Front end	1
64	4 2229 23860	VR B-10K	1
65	4 2319 21531	Switch slide 6P 110V-220V	1
66	4 2319 23470	Lever SW, Power	1
67	4 2349 20450	Fuse 0.2A	2
68	4 2349 21200	Fuse 2A 6.3V	1
69	4 2359 20160	Fuse holder, Meter lamp	2
70	4 2359 21021	Fuse holder, AC	3
71	4 2359 21440	1P phono socket	1
72	4 2359 21480	Socket phono 2P	3
75	4 2379 20251	Terminal 1-1PL	1
74	4 2379 20440	Terminal lug 1-4P	1
76	4 2379 20910	Terminal lug 2P, ANT	1
77	4 2379 21050	Terminal antenna	1
78	4 2379 21060	Terminal G	1
	4 2439 20521	Power cord) or	1
	4 2439 20550	Power cord	1
79	4 2519 23092	Power trans	1
	4 2539 20150	Choke coil, AM	1
81	4 2579 21023	Bar antenna, AM	1
82	4 2599 20300	Balun	1
83	4 5119 20343	Signal meter	1
84	4 5119 20352	Tuning meter	1
85	4 6129 20154	Pilot lamp, Steres ind	1
86	4 6129 20280	Pilot lamp	2
87	4 6129 20360	Pilot lamp, Pointer	1
C901	C2E H RM 103A--	MP Con 0.01mF ±20% 250V	1
C904	C1C R E-10 8A--	Electrolytic 1000mF 16V	1
C903,904,905	C1H V DZ10 3A--	Ceramic 0.01mF +80 -20% 50V	3
C902	C1H Y SM10 3R--	Ceramic 0.01mF ±20% 50V	1
R902	R2E D PJ22 2A	Carbon 2.2K ohm ±5% 1/4W	1
R901	R2E D PJ10 4A	Carbon 100K ohm ±5% 1/4W	1
88	131 2 3608 11300	Cramp wire	4
D01	205 5 9043 44210	Diode DS-442	1

PARTS LIST

Key No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
FM IF PCB ASSY				FM IF PCB ASSY			
90	131 0 4001 50400	FM IF PCB Assy	1	R211,221, 222	R2E D SJ10 2A	Carbon 1K ohm $\pm 5\%$ 1/4W	3
IFT203	4 2569 21000	FM IFT	1	R202,206, 207,216	R2E D SJ12 2A	Carbon 1.2K ohm $\pm 5\%$ 1/4W	4
IFT201,202	4 2569 21103	FM IF Filter	2	R214	R2E D SJ27 2A	Carbon 2.7K ohm $\pm 5\%$ 1/4W	1
C204,205, 222	C1H C SK15 OSL-	Ceramic 15pF $\pm 10\%$ 50V	3	R213	R2E D SJ33 2A	Carbon 3.3K ohm $\pm 5\%$ 1/4W	1
C218,219	C1H C SK20 1SL-	Ceramic 200pF $\pm 10\%$ 50V	2	R230	R2E D SJ47 2A	Carbon 4.7K ohm $\pm 5\%$ 1/4W	1
C221	C1H C SK25 1SL-	Ceramic 250pF $\pm 10\%$ 50V	1	R208,219, 227,228, 231	R2E D SJ56 2A	Carbon 5.6K ohm $\pm 5\%$ 1/4W	5
C220,228	C0J R B-10 6A--	Electrolytic 10mF 6.3V	2	R223,224	R2E D SJ68 2A	Carbon 6.8K ohm $\pm 5\%$ 1/4W	2
C229	C1C U BM10 5A--	Alsicon 1mF $\pm 20\%$ 16V	1	R217,229	R2E D SJ10 3A	Carbon 10K ohm $\pm 5\%$ 1/4W	2
C201,202, 208,209, 210,213, 214,215	C1H Y SZ10 2A--	Ceramic 0.001mF $+80 -20\%$ 50V	8	R226	R2E D SJ12 3A	Carbon 12K ohm $\pm 5\%$ 1/4W	1
C203,206, 207,211, 212,216, 217,223, 224,225, 226,227	C1H Y SZ10 3A--	Ceramic 0.01mF $+80 -20\%$ 50V	12	R212	R2E D SJ22 3A	Carbon 22K ohm $\pm 5\%$ 1/4W	1
R204,209, 220	R2E D SJ47 0A	Carbon 47 ohm $\pm 5\%$ 1/4W	3	R203	R2E D SJ10 4A	Carbon 100K ohm $\pm 5\%$ 1/4W	1
R225,232	R2E D SJ10 1A	Carbon 100 ohm $\pm 5\%$ 1/4W	2	D201,202, 203,204, 205,206, 207,208, 209,210	202 5 9110 18820	Diode 1S 188FM1-A	10
R201	R2E D SJ33 1A	Carbon 330 ohm $\pm 5\%$ 1/4W	1	Q202,203, 204	203 5 5100 53640	Transistor 2SC 536	3
R215	R2E D SJ47 1A	Carbon 470 ohm $\pm 5\%$ 1/4W	1	Q201	203 5 5510 93040	Transistor 2SC 930	1
R218	R2E D SJ56 1A	Carbon 560 ohm $\pm 5\%$ 1/4W	1	IC201,202, 203,204, 205	206 5 0121 22110	IC LA 1221	5
R205,210	R2E D SJ68 1A	Carbon 680 ohm $\pm 5\%$ 1/4W	2				

FM IF PCB ASSY TOP VIEW

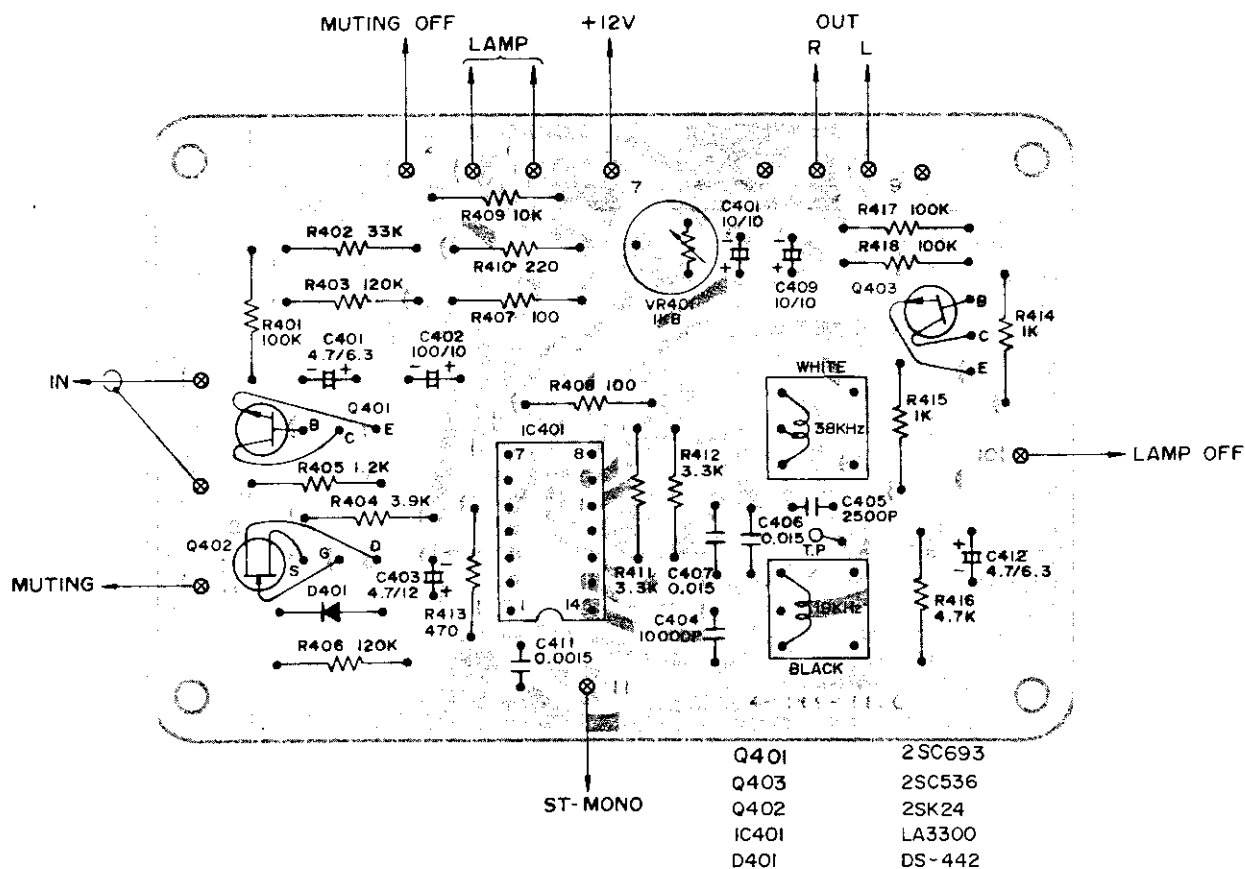


PARTS LIST

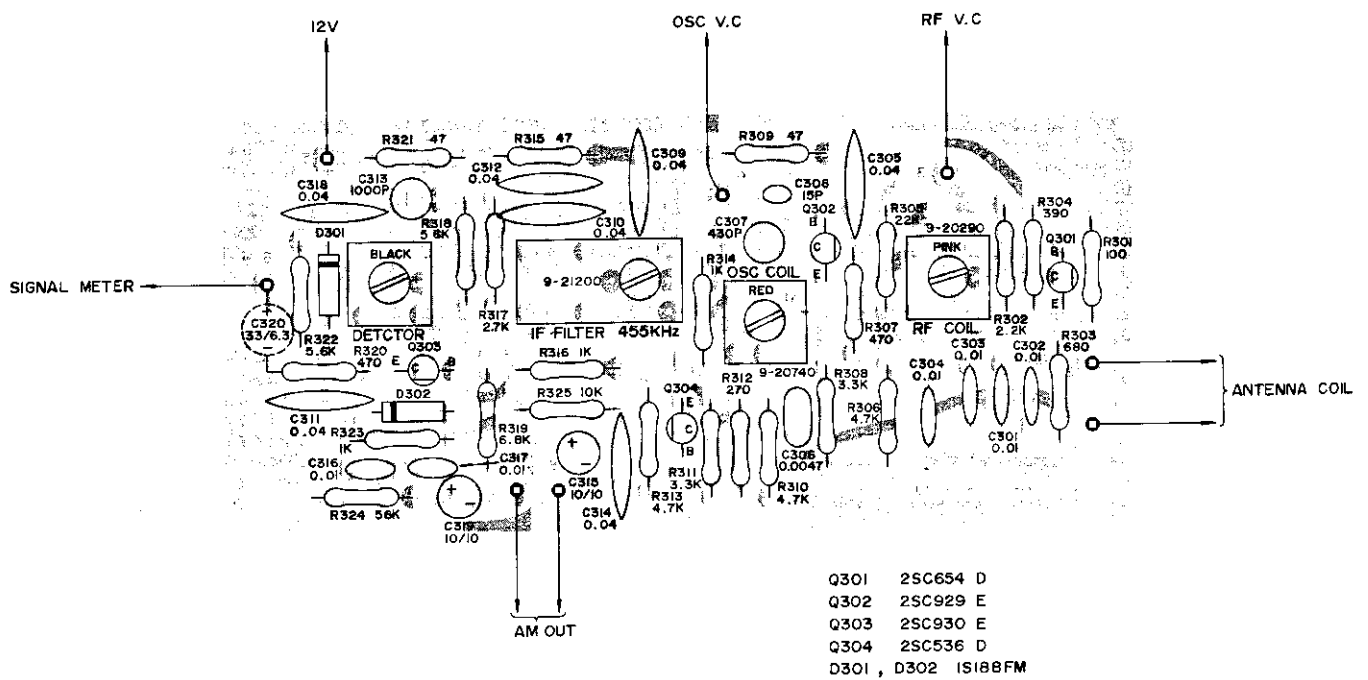
Key No.	Part No.	Description	Q'ty
MPX PCB ASSY			
91	131 0 4001 50600	MPX PCB Assy	1
	4 2229 22910	SVR B-1K, Separation	1
	4 2379 21120	Terminal, Test point	1
	4 2659 20210	Multiplex coil 19KHz	1
	4 2659 20220	Multiplex coil 38KHz	1
C411	C1H F AK15 2A--	Mylar 0.0015mF ±10% 50V	1
C406,407	C1H F AK15 3A--	Mylar 0.015mF ±10% 50V	2
C401,412	C0J R B-47 5A--	Electrolytic 4.7mF 6.3V	2
C403	C1C R B-47 5A--	Electrolytic 4.7mF 16V	1
C409,410	C1A R B-10 6A--	Electrolytic 10mF 10V	2
C402	C1C R B-10 7A--	Electrolytic 100mF 16V	1
C405	C1H S EK25 2A--	Styrol 2500pF ±10% 50V	1
C404	C1H S EK10 3A--	Styrol 10000pF ±10% 50V	1
R407,408	R2E D SJ10 1A	Carbon 100 ohm ±5% 1/4W	2
R410	R2E D SJ22 1A	Carbon 220 ohm ±5% 1/4W	1
R413	R2E D SJ47 1A	Carbon 470 ohm ±5% 1/4W	1

Key No.	Part No.	Description	Q'ty
MPX PCB ASSY			
R414,415	R2E D SJ10 2A	Carbon 1K ohm ±5% 1/4W	2
R405	R2E D SJ12 2A	Carbon 1.2K ohm ±5% 1/4W	1
R411,412	R2E D SJ33 2A	Carbon 3.3K ohm ±5% 1/4W	2
R404	R2E D SJ39 2A	Carbon 3.9K ohm ±5% 1/4W	1
R416	R2E D SJ47 2A	Carbon 4.7K ohm ±5% 1/4W	1
R409	R2E D SJ10 3A	Carbon 10K ohm ±5% 1/4W	1
R402	R2E D SJ33 3A	Carbon 33K ohm ±5% 1/4W	1
R401,417,418	R2E D SJ10 4A	Carbon 100K ohm ±5% 1/4W	3
R403,406	R2E D SJ12 4A	Carbon 120K ohm ±5% 1/4W	2
Q403	203 5 5100 53640	Transistor 2SC 536	1
Q401	203 5 5100 69372	Transistor 2SC 693	1
Q402	203 5 8500 02440	Transistor 2SK 24D	1
D401	205 5 9040 44210	Diode DS-442	1
IC401	206 5 0663 30010	IC LA 3300	1

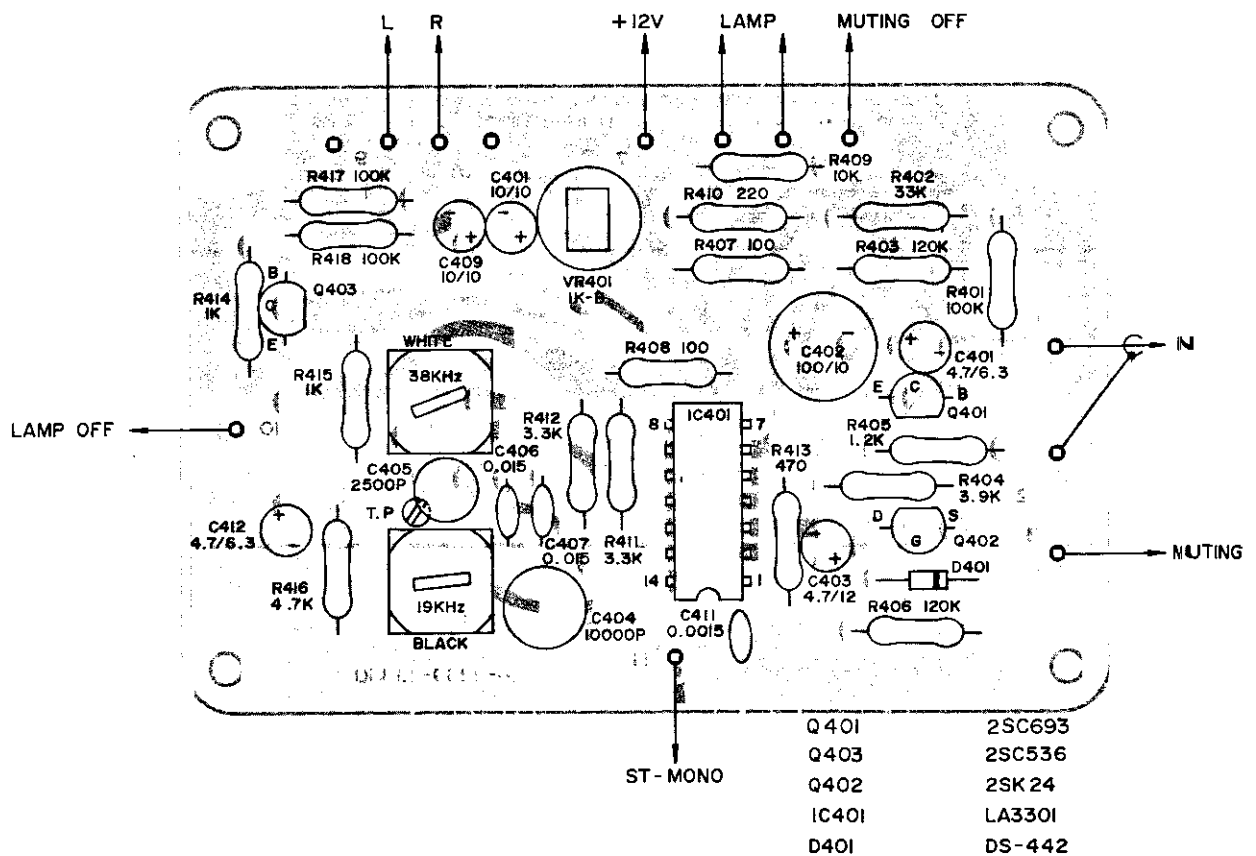
MPX PCB ASSY BOTTOM VIEW



AM PCB ASSY TOP VIEW



MAX PCB ASSY TOP VIEW

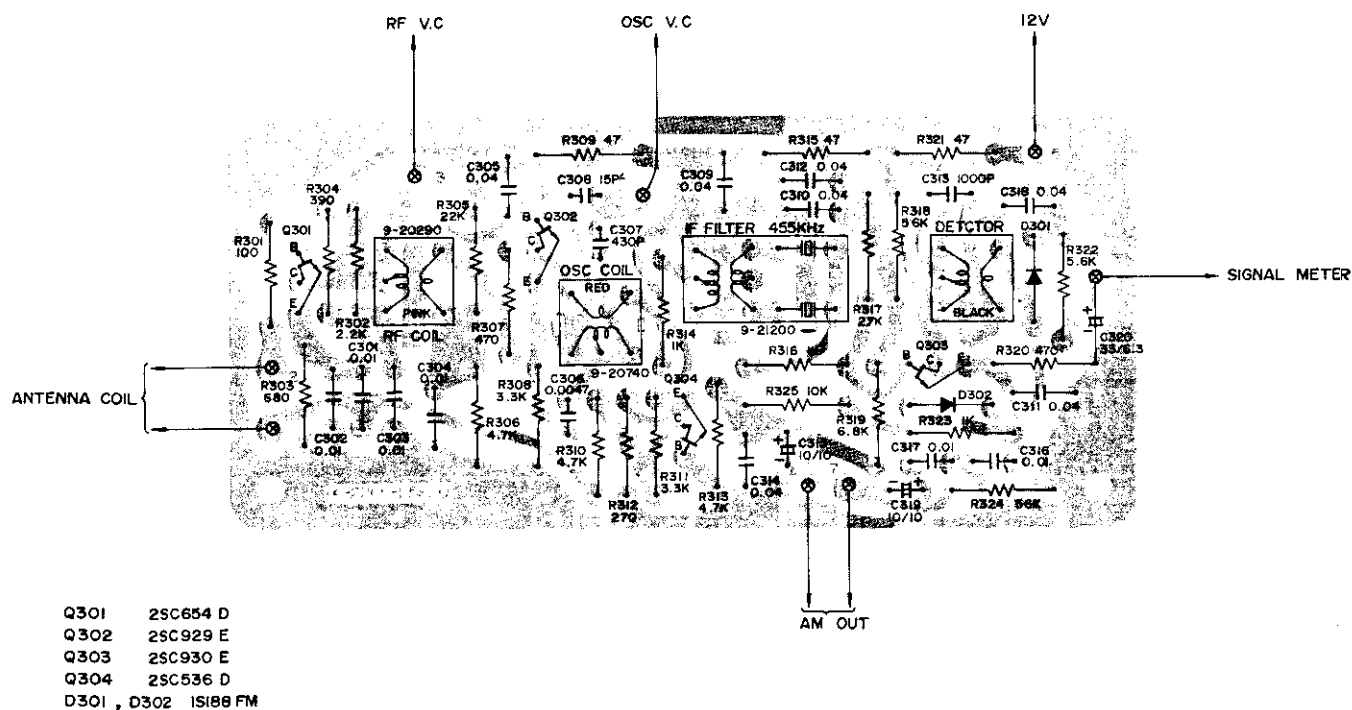


PARTS LIST

Key No.	Part No.	Description	Q'ty
AM PCB ASSY			
92	131 0 4001 50500	AM PCB Assy	1
	4 2569 21200	AM IF Trans	1
	4 2569 21300	AM Detector Trans	1
	4 2569 20740	AM OSC Coil	1
	4 2599 20290	AM RF Coil	1
C308	C1H C SK15 0SL	Ceramic 15pF ±10% 50V	1
C306	C1H F AM47 2A--	Mylar 0.0047mF ±20% 50V	1
C316,317	C1H F AM10 3A--	Mylar 0.01mF ±20% 50V	2
C315,319	C1A R B-10 6A--	Electrolytic 10mF 10V	2
C320	C0J R E-33 6A--	Electrolytic 33mF 6.3V	1
C307	C1H S EK43 1A--	Styrol 430pF ±10% 50V	1
C313	C1H S EK10 2A--	Styrol 1000pF ±10% 50V	1
C301,302,	C1H Y SZ10 3A--	Ceramic 0.01mF +80 -20% 50V	4
303,304 }			
C305,309,	C1H Y SZ40 3A--	Ceramic 0.04mF +80 -20% 50V	7
310,311,			
312,314,			
318			
R309,315,	R2E D SK47 0A	Carbon 47 ohm ±10% 1/4W	3
321 }			
R301	R2E D SK10 1A	Carbon 100 ohm ±10% 1/4W	1

Key No.	Part No.	Description	Q'ty
AM PCB ASSY			
R312	R2E D SK27 1A	Carbon 270 ohm ±10% 1/4W	1
R304	R2E D SK39 1A	Carbon 390 ohm ±10% 1/4W	1
R307,320	R2E D SK47 1A	Carbon 470 ohm ±10% 1/4W	2
R303	R2E D SK68 1A	Carbon 680 ohm ±10% 1/4W	1
R314,316,	R2E D SK10 2A	Carbon 1K ohm ±10% 1/4W	3
323 }			
R302	R2E D SK22 2A	Carbon 2.2K ohm ±10% 1/4W	1
R317	R2E D SK27 2A	Carbon 2.7K ohm ±10% 1/4W	1
R308,311	R2E D SK33 2A	Carbon 3.3K ohm ±10% 1/4W	2
R306,310,	R2E D SK47 2A	Carbon 4.7K ohm ±10% 1/4W	3
313 }			
R322	R2E D SK56 2A	Carbon 5.6K ohm ±10% 1/4W	1
R319	R2E D SK68 2A	Carbon 6.8K ohm ±10% 1/4W	1
R325	R2E D SK10 3A	Carbon 10K ohm ±10% 1/4W	1
R305	R2E D SK22 3A	Carbon 22K ohm ±10% 1/4W	1
R318,324	R2E D SK56 3A	Carbon 56K ohm ±10% 1/4W	2
D301,302	202 5 9110 18820	Diode 1S 188FM1	2
Q01	203 5 4500 67440	Transistor 2SC674D	1
Q04	203 5 5100 53640	Transistor 2SC 536	1
Q02	203 5 5510 92950	Transistor 2SC929I	1
Q03	203 5 5510 93050	Transistor 2SC 930	1

AM PCB ASSY BOTTOM VIEW

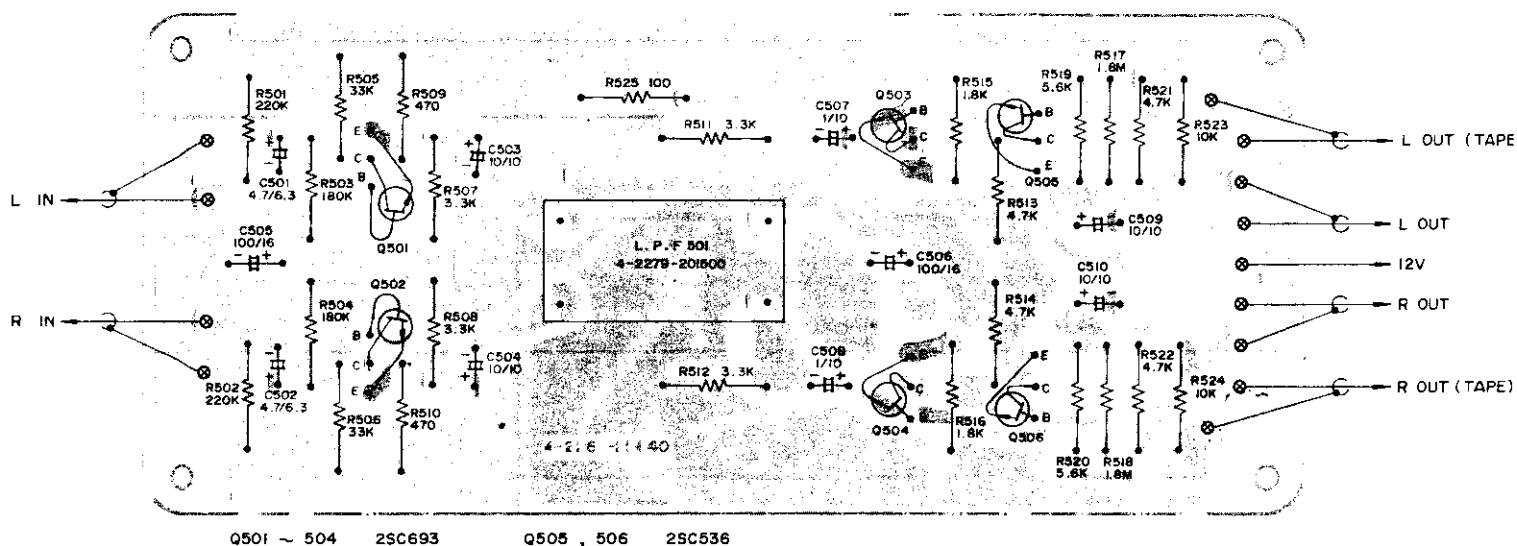


PARTS LIST

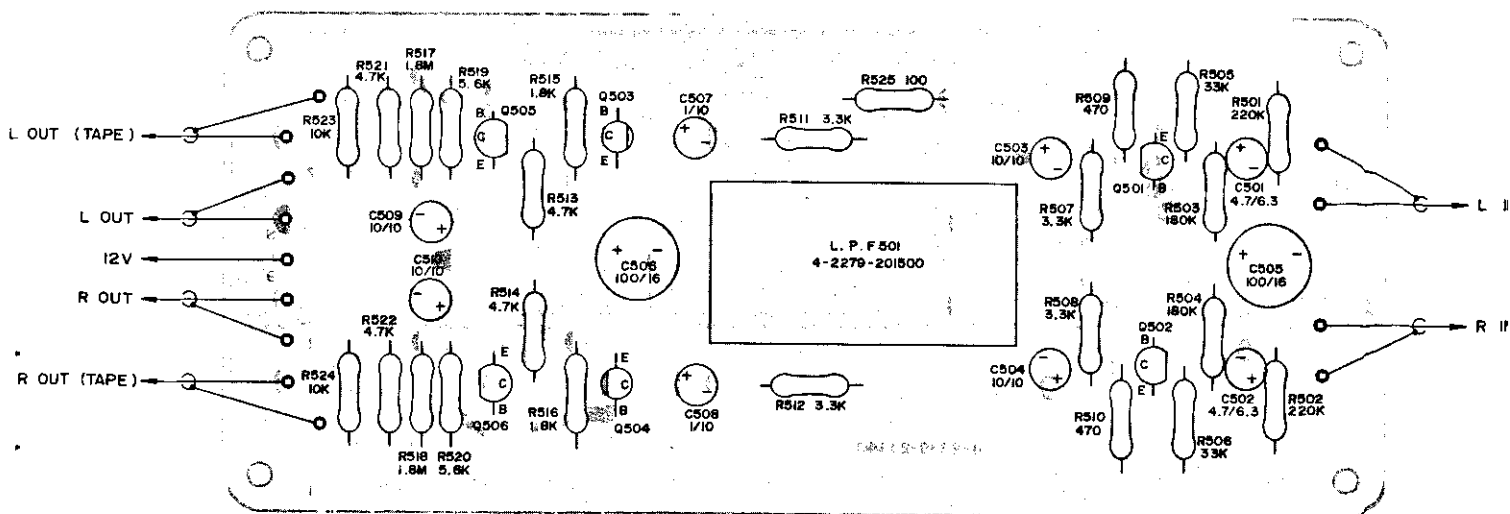
Key No.	Part No.	Description	Q'ty
AUDIO PCB ASSY			
93	131 0 4001 50700	Audio PCB Assy	1
	4 2279 20150	Low pass filter	1
C501,502	C0J R B-47 5A--	Electrolytic 4.7mF 6.3V	2
C503,504, 509,510	C1A R B-10 6A--	Electrolytic 10mF 10V	4
C505,506	C1C R B-10 7A--	Electrolytic 100mF 16V	2
C507,508	C1A U BM10 5A--	Alsicon 1mF $\pm 20\%$ 10V	2
R525	R2E D SK10 1A	Carbon 100 ohm $\pm 10\%$ 1/4W	1
R509,510	R2E D SK47 1A	Carbon 470 ohm $\pm 10\%$ 1/4W	2
R515,516	R2E D SK18 2A	Carbon 1.8K ohm $\pm 10\%$ 1/4W	2
R507,508, 511,512	R2E D SK33 2A	Carbon 3.3K ohm $\pm 10\%$ 1/4W	4

Key No.	Part No.	Description	Q'ty
AUDIO PCB ASSY			
R513,514, 521,522	R2E D SK47 2A	Carbon 4.7K ohm $\pm 10\%$ 1/4W	4
R519,520	R2E D SK56 2A	Carbon 5.6K ohm $\pm 10\%$ 1/4W	2
R523,524	R2E D SK10 3A	Carbon 10K ohm $\pm 10\%$ 1/4W	2
R505,506	R2E D SK33 3A	Carbon 33K ohm $\pm 10\%$ 1/4W	2
R503,504	R2E D SK18 4A	Carbon 180K ohm $\pm 10\%$ 1/4W	2
R501,502	R2E D SK22 4A	Carbon 220K ohm $\pm 10\%$ 1/4W	2
R517,518	R2E D SK18 5A	Carbon 1.8M ohm $\pm 10\%$ 1/4W	2
Q505,506	203 5 5100 53643	Transistor 2SC 536	2
Q501,502, 503,504	203 5 5100 69372	Transistor 2SC 693	4

AUDIO PCB ASSY BOTTOM VIEW



AUDIO PCB ASSY TOP VIEW

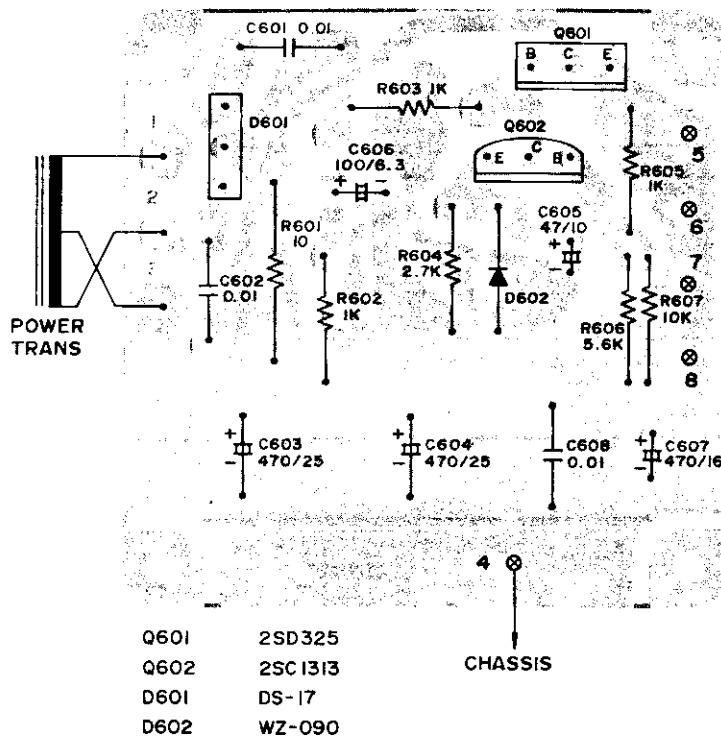


PARTS LIST

Key No.	Part No.	Description	Q'ty
POWER SUPPLY PCB ASSY			
94	131 0 4001 50800	Power Supply PCB Assy	1
C605	C1A R B-47 6A--	Electrolytic 47mF 10V	1
C606	C0J R B-10 7A--	Electrolytic 100mF 6.3V	1
C607	C1C R B-47 7A--	Electrolytic 470mF 16V	1
C603,604	C1E R B-47 7A--	Electrolytic 470mF 25V	2
C601,602, 608	C1H Y SZ10 3A--	Ceramic 0.01mF +80 -20% 50V	3
R601	R2E D PK10 0A	Carbon 10 ohm $\pm 10\%$ 1/4W	1
R602,603, 605	R2E D SK10 2A	Carbon 1K ohm $\pm 10\%$ 1/4W	3
R604	R2E D SK27 2A	Carbon 2.7K ohm $\pm 10\%$ 1/4W	1
R606	R2E D SK56 2A	Carbon 5.6K ohm $\pm 10\%$ 1/4W	1
R607	R2E D SK10 3A	Carbon 10K ohm $\pm 10\%$ 1/4W	1
Q602	TMM - 2SC1 313-G	Transistor 2SC1313	1
Q601	203 5 8210 32540	Transistor 2SD 325	1
D601	202 5 2300 01710	Diode DS-17	1
D602	DJJ - W-0 90--	Zener Diode WZ-090	1

Key No.	Part No.	Description	Q'ty
DIAL LAMP PCB ASSY			
95	131 0 4001 42001	Dial Lamp PCB Assy	1
89	4 2359 20930	Fuse holder	10
R701	4 6129 20280	Pilot lamp	5
	R2E D SK6R 8A	Carbon 6.8 ohm $\pm 10\%$ 1/4W	1
PUSH SWITCH PCB ASSY			
96	131 0 4001 51000	Push Switch PCB Assy	1
98	4 2319 33560	Switch push	1
	4 6129 20217	Pilot lamp, 6.3V 80mA	3
LEVER SWITCH PCB ASSY			
97	131 0 4001 50902	Lever Switch PCB Assy	1
C801	4 2319 23400	Lever Tape SW 6P	3
R801	C1H F AK15 3A--	Mylar 0.015mF $\pm 10\%$ 50V	1
R802,803	R2E D SK15 0A	Carbon 15 ohm $\pm 10\%$ 1/4W	1
	R2E D SK68 0A	Carbon 68 ohm $\pm 10\%$ 1/4W	2

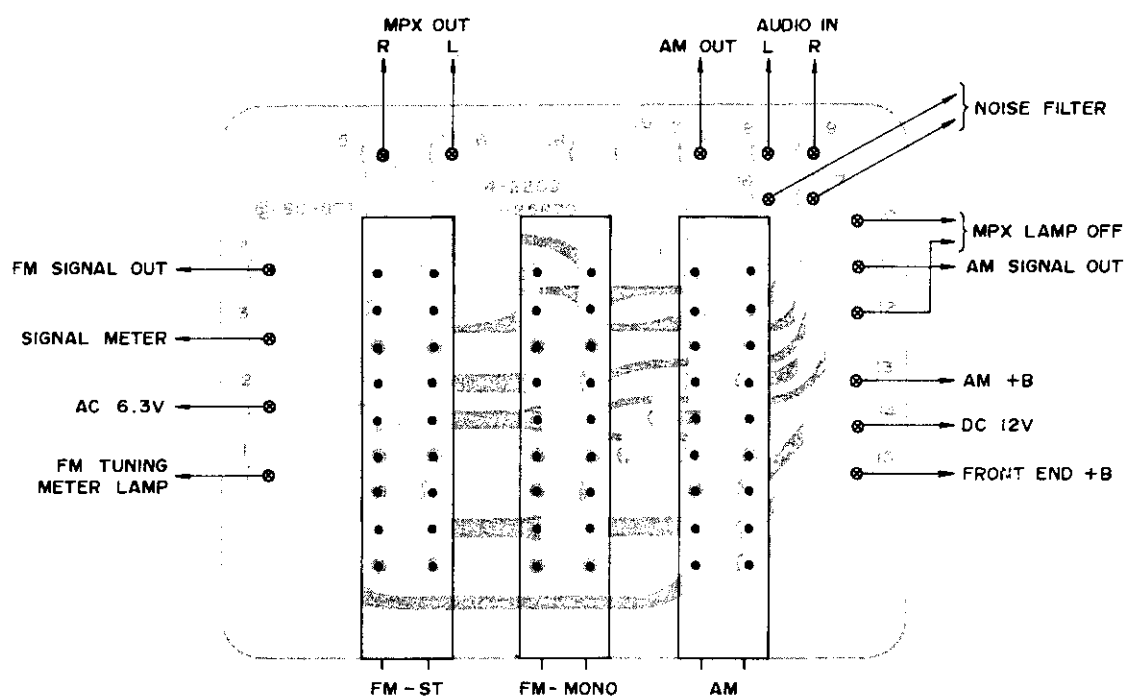
POWER PCB ASSY BOTTOM VIEW



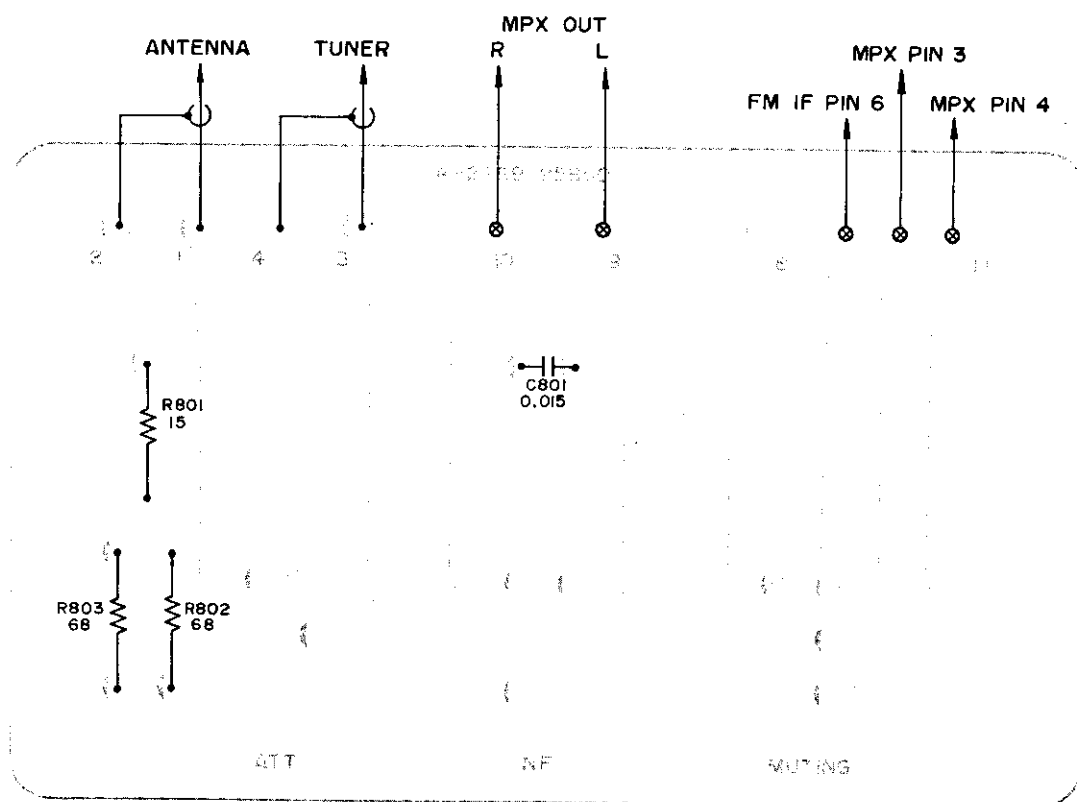
DIAL LAMP PCB ASSY BOTTOM VIEW



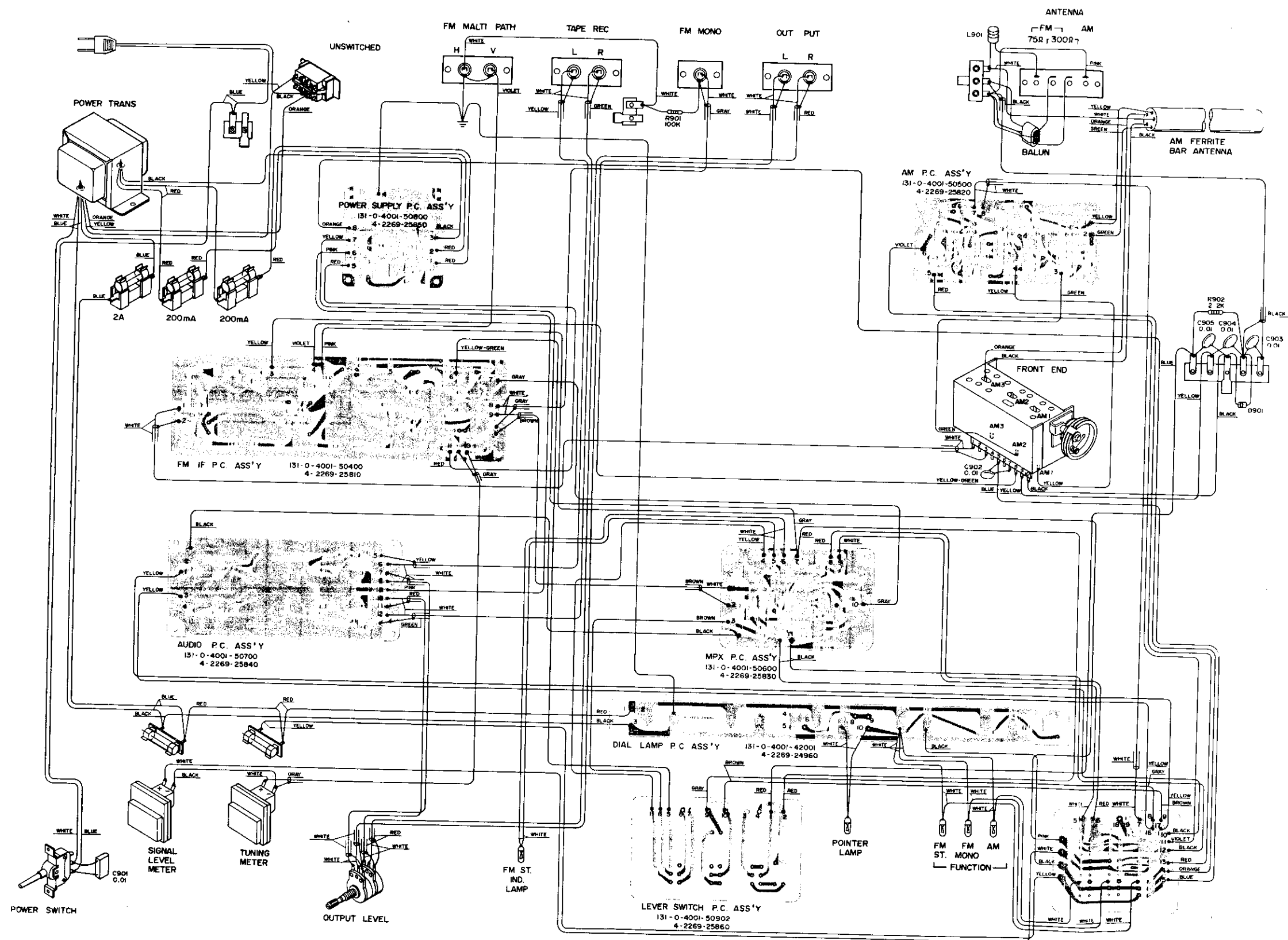
PUSH SWITCH PCB ASSY BOTTOM VIEW



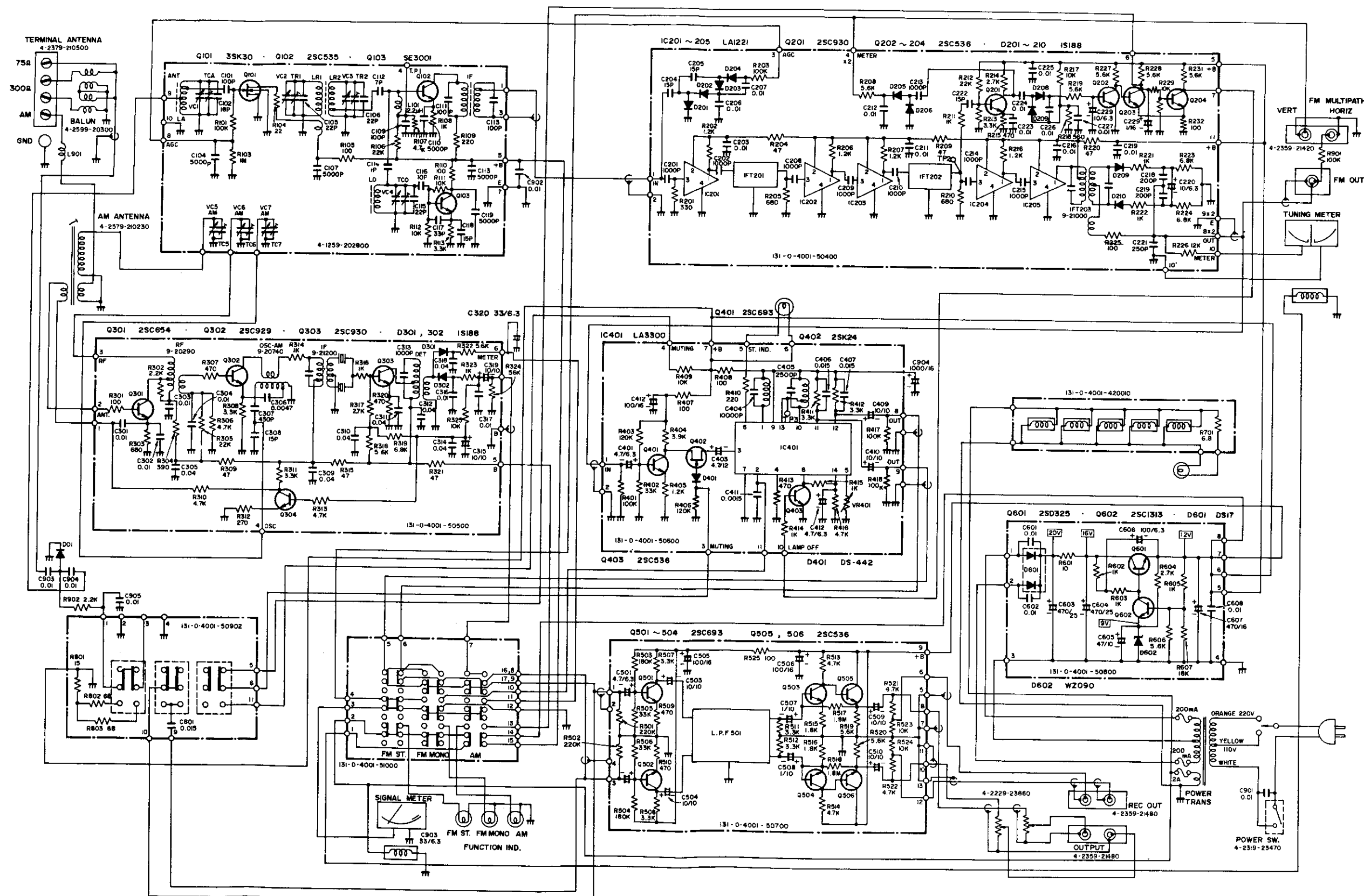
LEVER SWITCH PCB ASSY BOTTOM VIEW



WIRING DIAGRAM



SCHEMATIC DIAGRAM



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