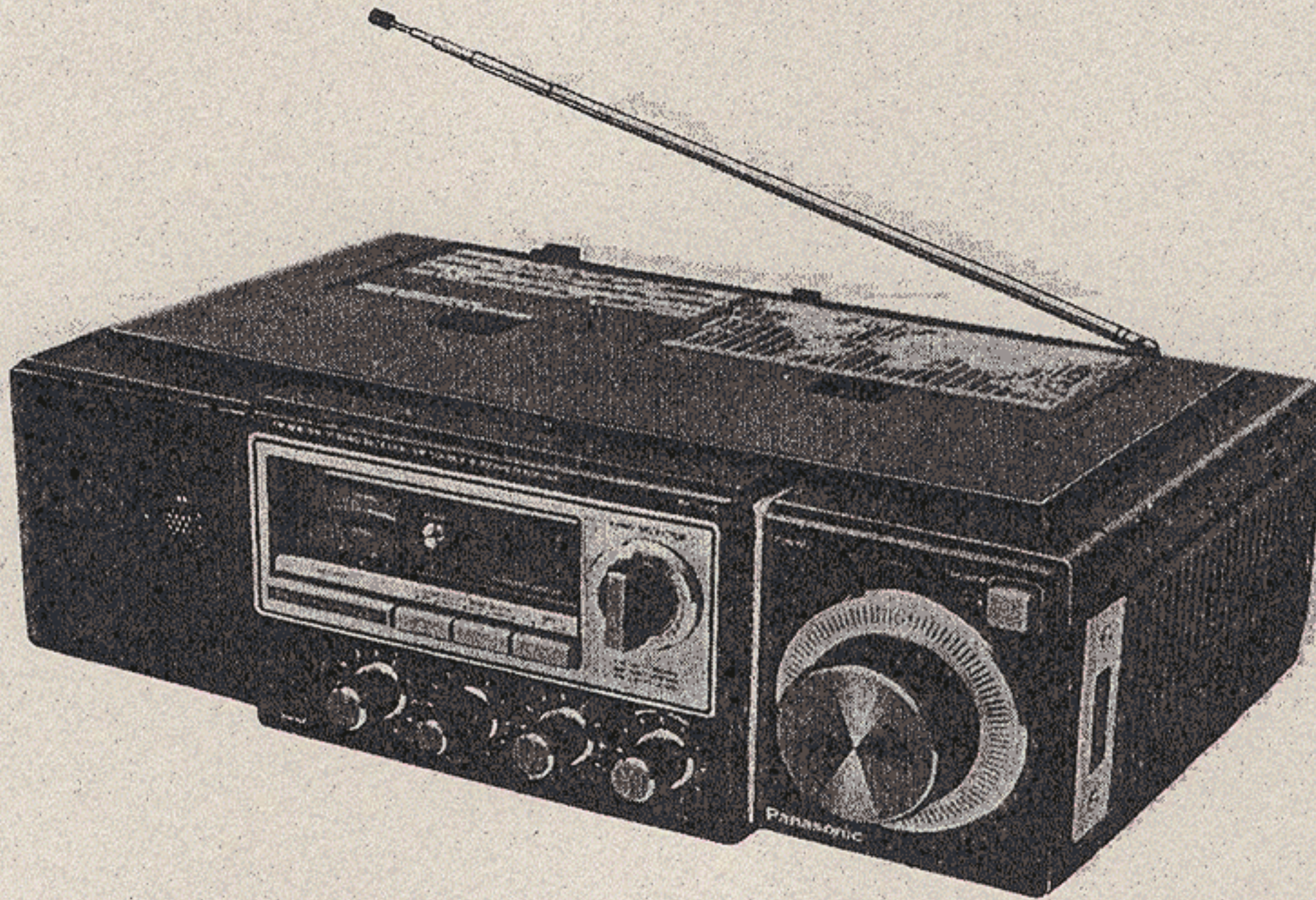


# Service Manual

Radio  
RF-3100/©

FM/MW/SW<sub>1-29</sub> 31-Band Portable Radio  
with PLL Quartz-Synthesized Tuning



## ■ SPECIFICATIONS

Frequency Range:	FM 88~108 MHz MW 525~1610 kHz (571~186 m) SW1 1.6~2.0 MHz (186~150 m) SW2 2.0~3.0 MHz (150~100 m)	Power Source:	AC 120 V, 60 Hz or DC 12 V (Eight "D" size Flashlight Batteries) (Panasonic UM-1 or equivalent)
Intermediate Frequency:	SW29 29.0~30.0 MHz (10.6~10 m) FM 10.7 MHz MW 455 kHz SW1~SW29 1st 10.695 MHz 2nd 455 kHz	Power Consumption:	15 W
Sensitivity:	FM 2.5 $\mu$ V (-3 dB, Limit, Sens) MW 40 $\mu$ V/m (Max. Sens) SW1 2.5 $\mu$ V/ (S/N 10 dB) SW2 2.2 $\mu$ V (S/N 10 dB) SW29 3.2 $\mu$ V (S/N 10 dB)	Power Output:	2.0 mW ... RMS (Max.)
		Speaker:	9 cm (3 1/2") PM Dynamic Speaker
		Dimensions:	371 (W) x 122 (H) x 241 (D) mm (14 5/8 x 4 3/4 x 9 1/2")
		Weight:	3.2 kg (7 lb 1 oz.) without batteries
		Impedance:	Speaker ..... 8 $\Omega$ Recording Output Jack ..... 5 k $\Omega$ Earphone/External Speaker Jack ... 8 $\Omega$

Specifications are subject to change without notice.  
Weights and dimensions shown are approximate.  
(Les poids et dimensions mentionnes sont approximatifs.)

# Panasonic

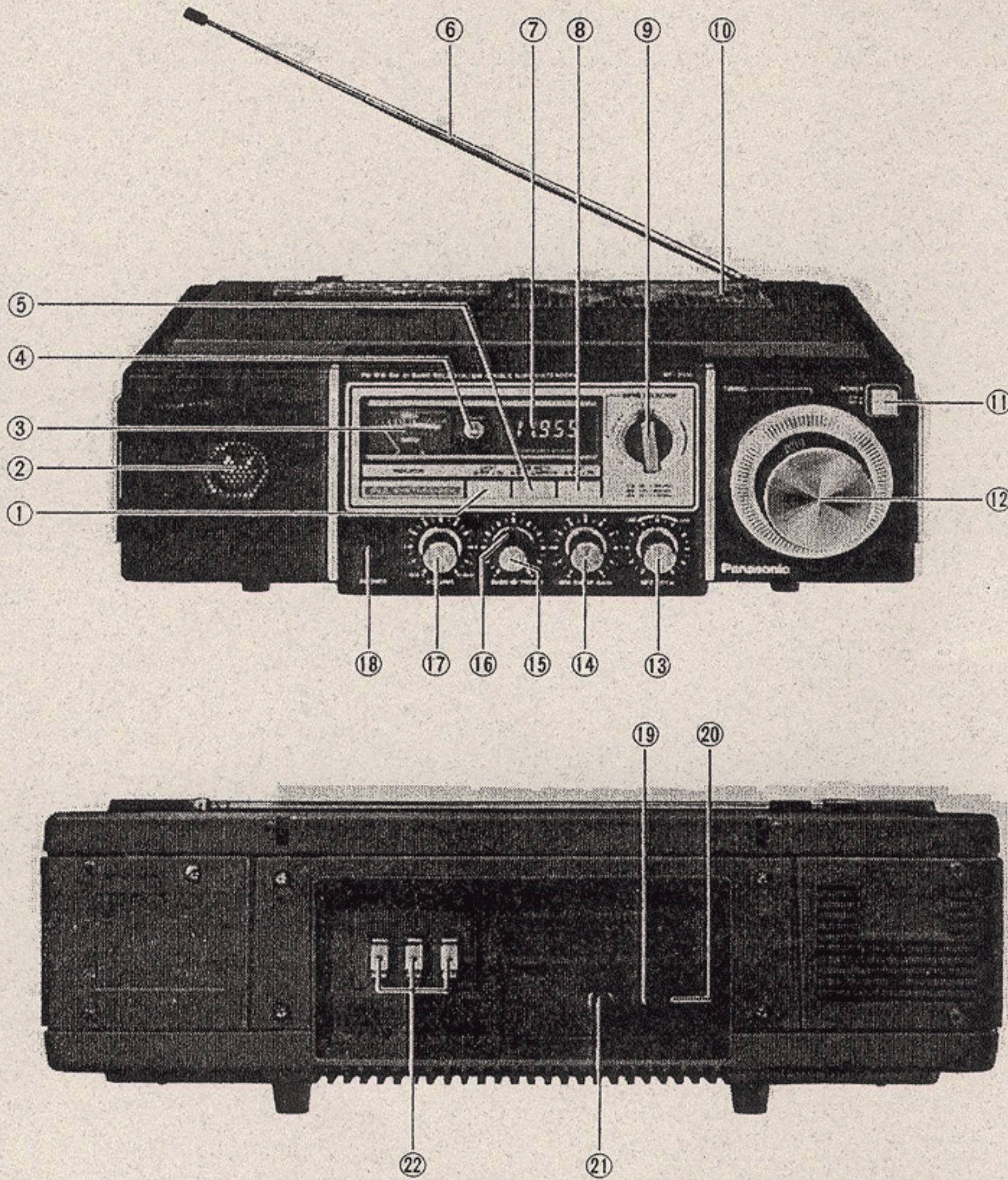
Panasonic Company  
Division of Matsushita Electric  
Corporation of America  
One Panasonic Way, Secaucus,  
New Jersey 07094

Panasonic Hawaii, Inc.  
320 Waiakamilo Road, Honolulu,  
Hawaii 96817

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Division of Matsushita Electric  
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Division of Matsushita Electric  
of Puerto Rico, Inc.  
Ave. 65 De Infanteria, KM 9.7  
Victoria Industrial Park  
Carolina, Puerto Rico 00630

# LOCATION OF CONTROLS AND COMPONENTS



- ① Light Switch
- ② Speaker [9 cm (3 1/2"), 8Ω]
- ③ Signal/Tuning Indicator (INDICATOR)
- ④ Power Indicator (POWER)
- ⑤ Bandwidth Selector (BANDWIDTH)
- ⑥ Telescopic Antenna
- ⑦ Digital Frequency Display (FREQUENCY DISPLAY)
- ⑧ BFO On/Off Switch (BFO)
- ⑨ Band Selector (FM/MW/SW1/SW2 ... SW29)
- ⑩ Battery Compartment Cover
- ⑪ Power Switch (POWER)
- ⑫ Tuning Control (TUNING)
- ⑬ BFO Pitch Control (BFO PITCH)
- ⑭ RF Gain Control (MW, SW RF GAIN)
- ⑮ Treble Control (TREBLE)
- ⑯ Bass Control (BASS)
- ⑰ Volume Control (VOLUME)
- ⑱ Headphone Jack (8Ω)
- ⑲ Recording Output Jack (5 kΩ)
- ⑳ Earphone/External Speaker Jack (8Ω)
- ㉑ Antenna Selector
- ㉒ External Antenna Terminals

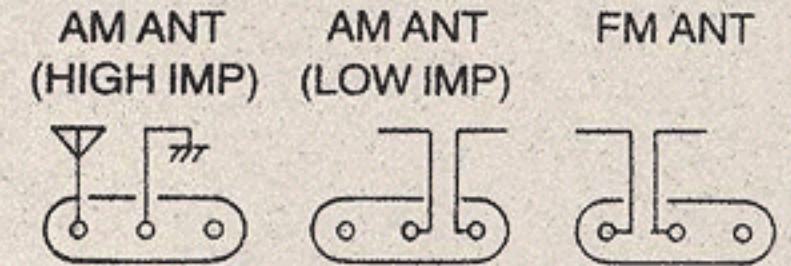


Fig. 1

## DISASSEMBLY INSTRUCTIONS

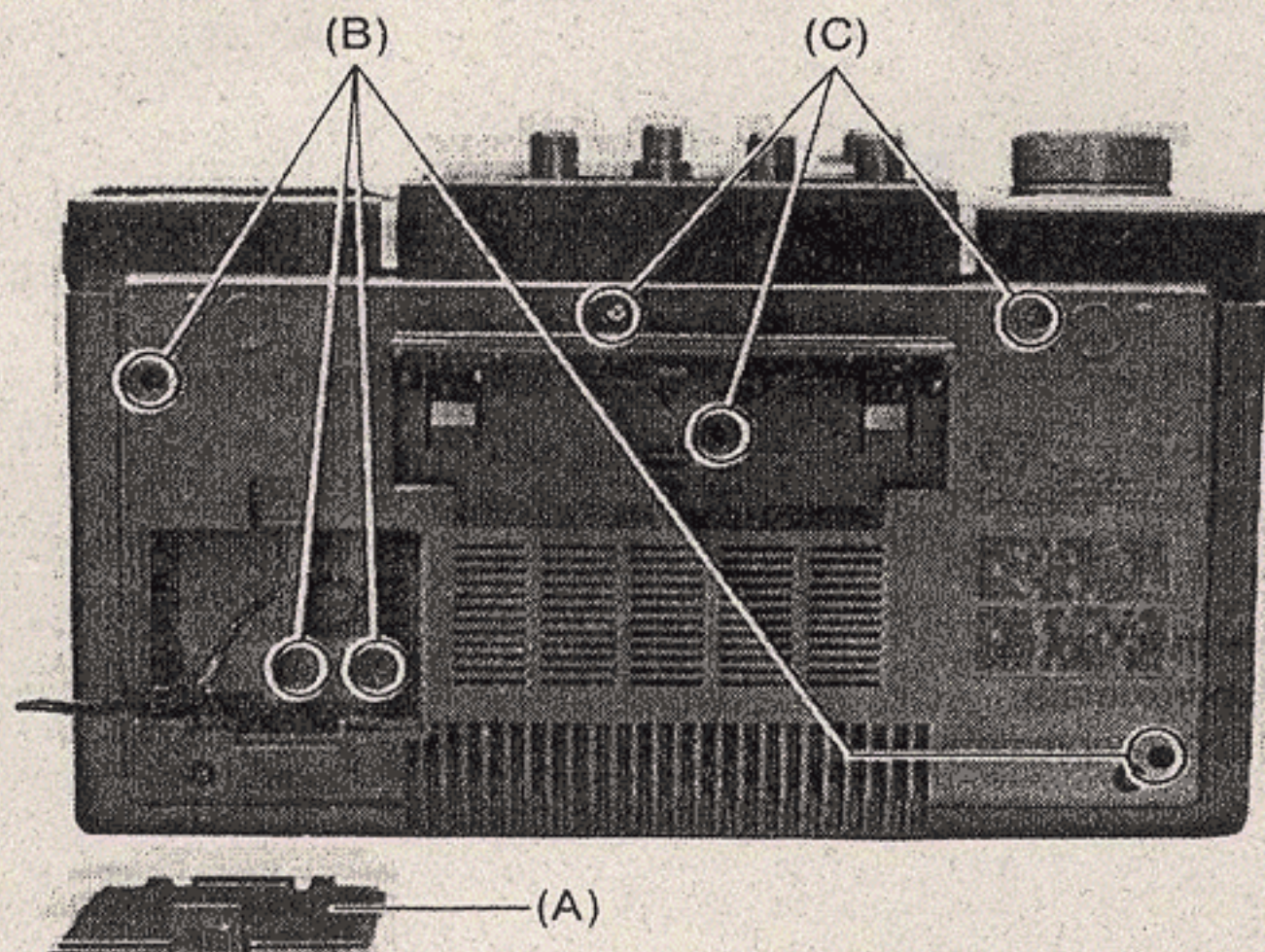


Fig. 2

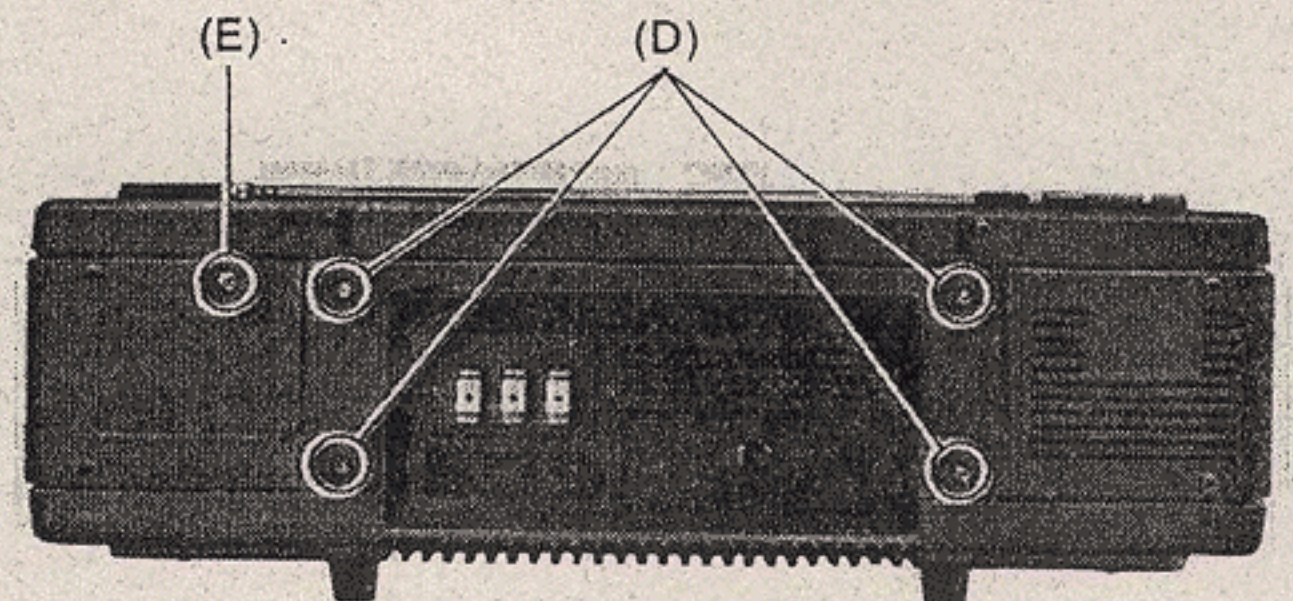


Fig. 3

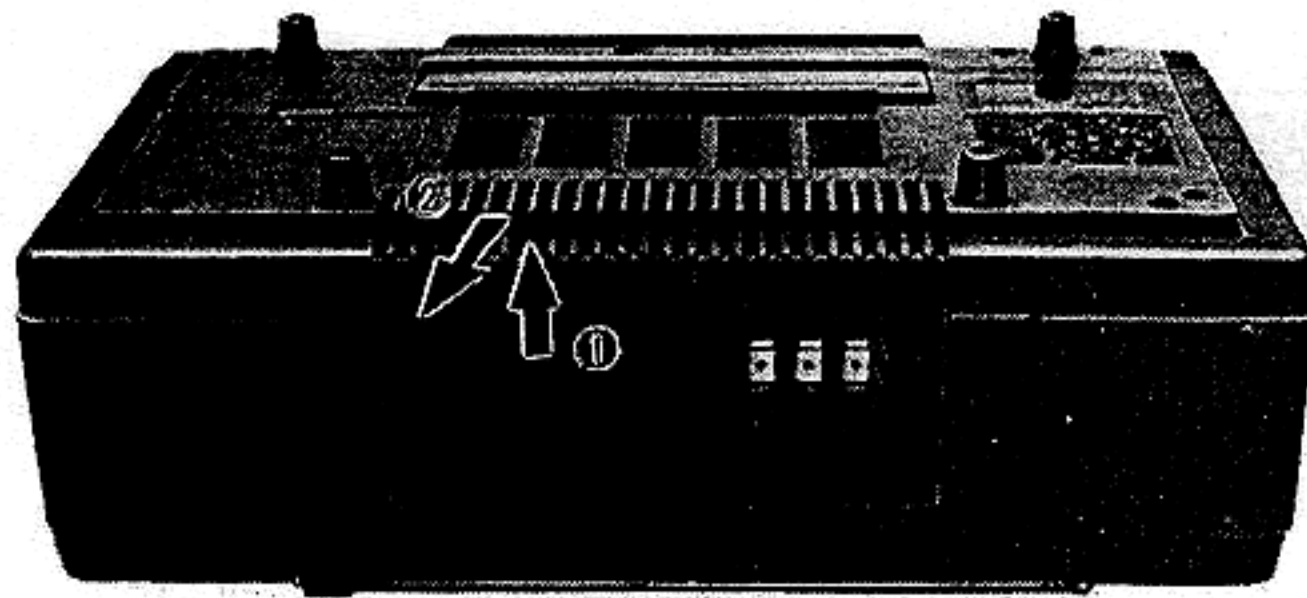


Fig. 4

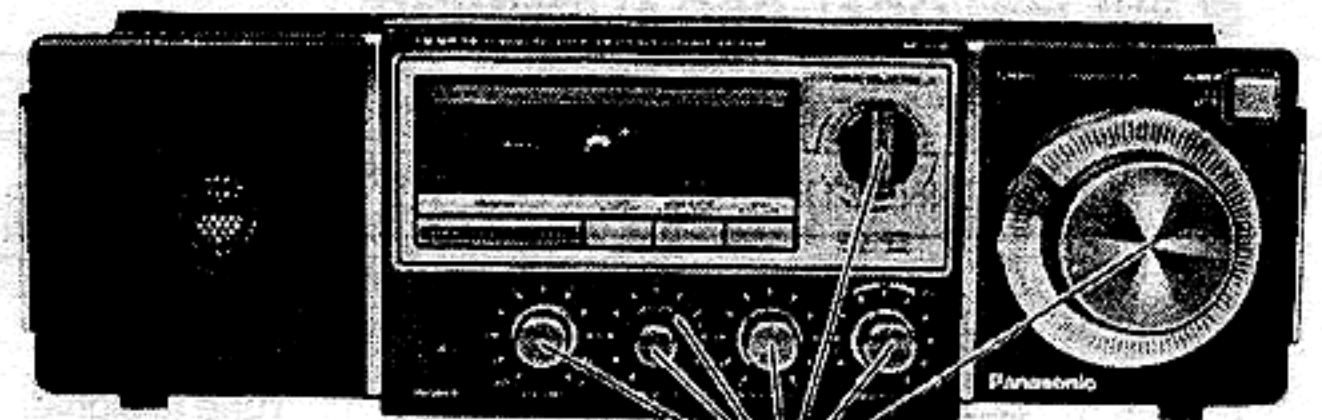


Fig. 5

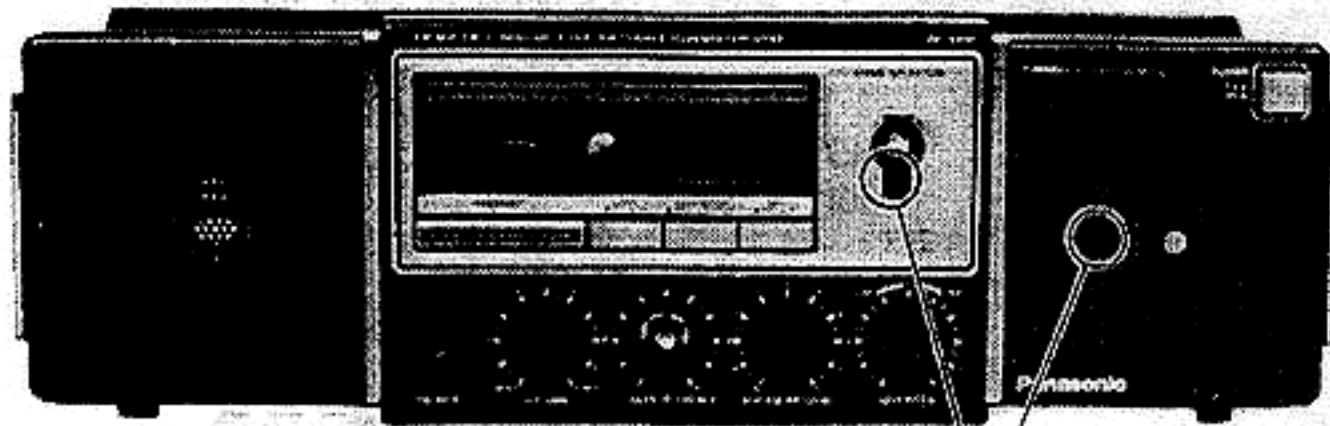


Fig. 6

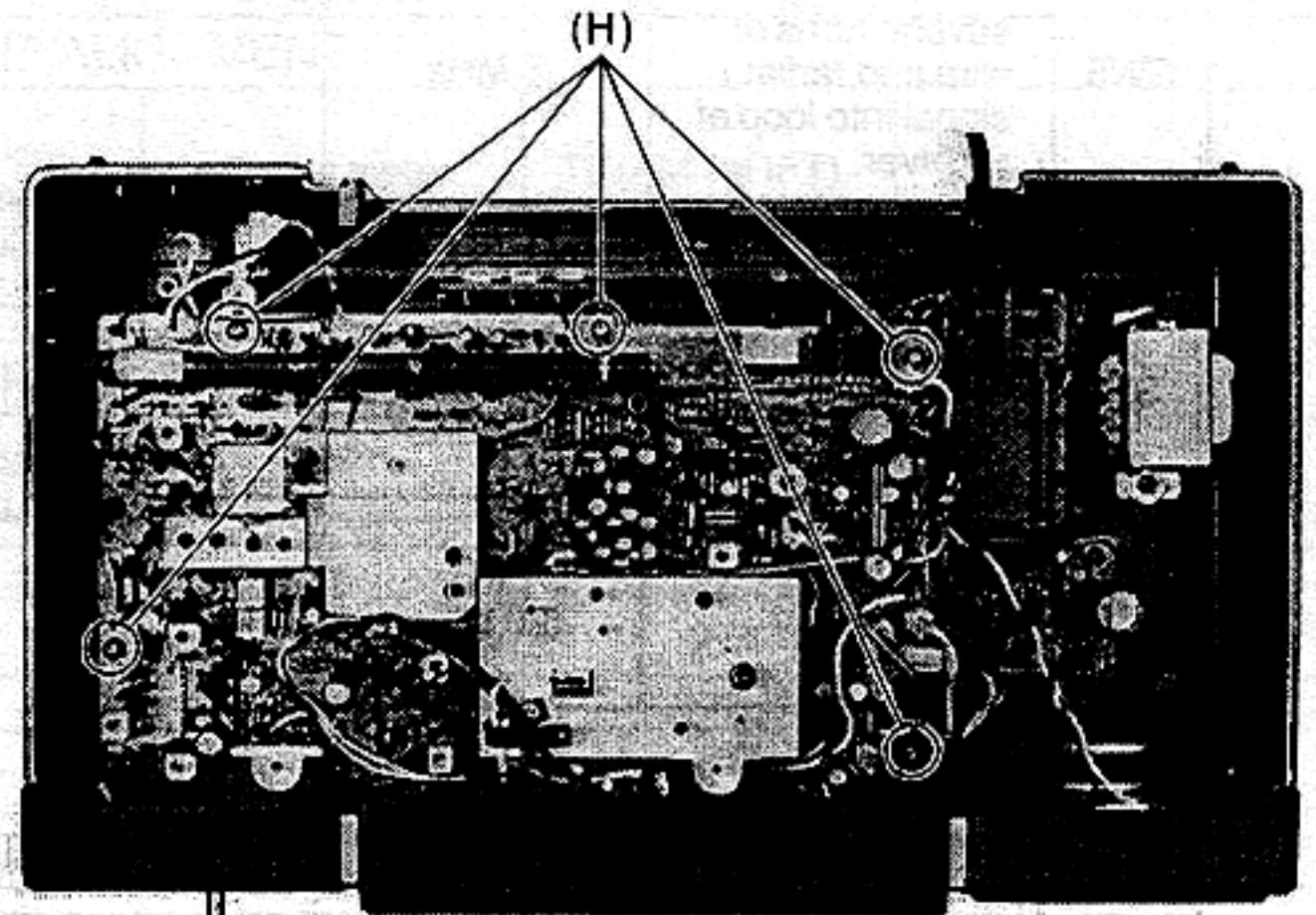


Fig. 7

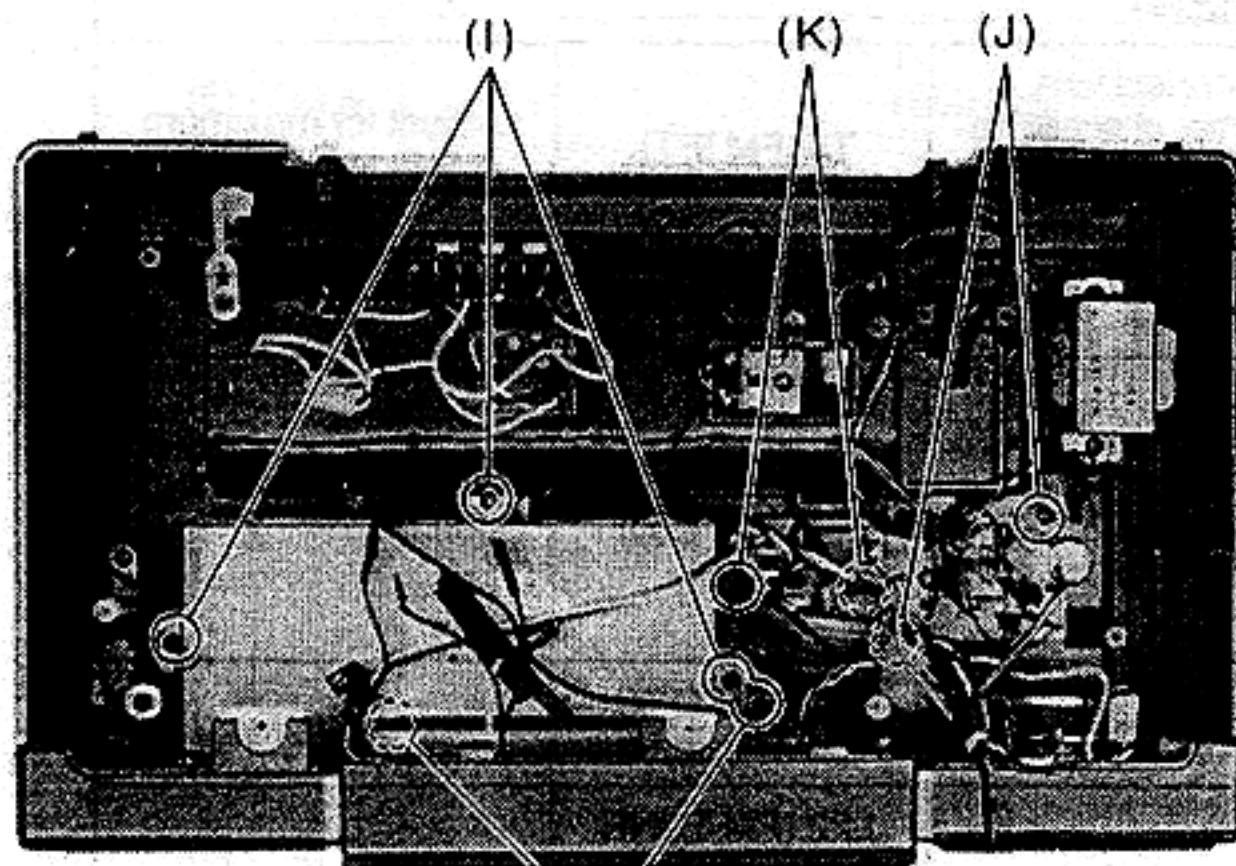


Fig. 8

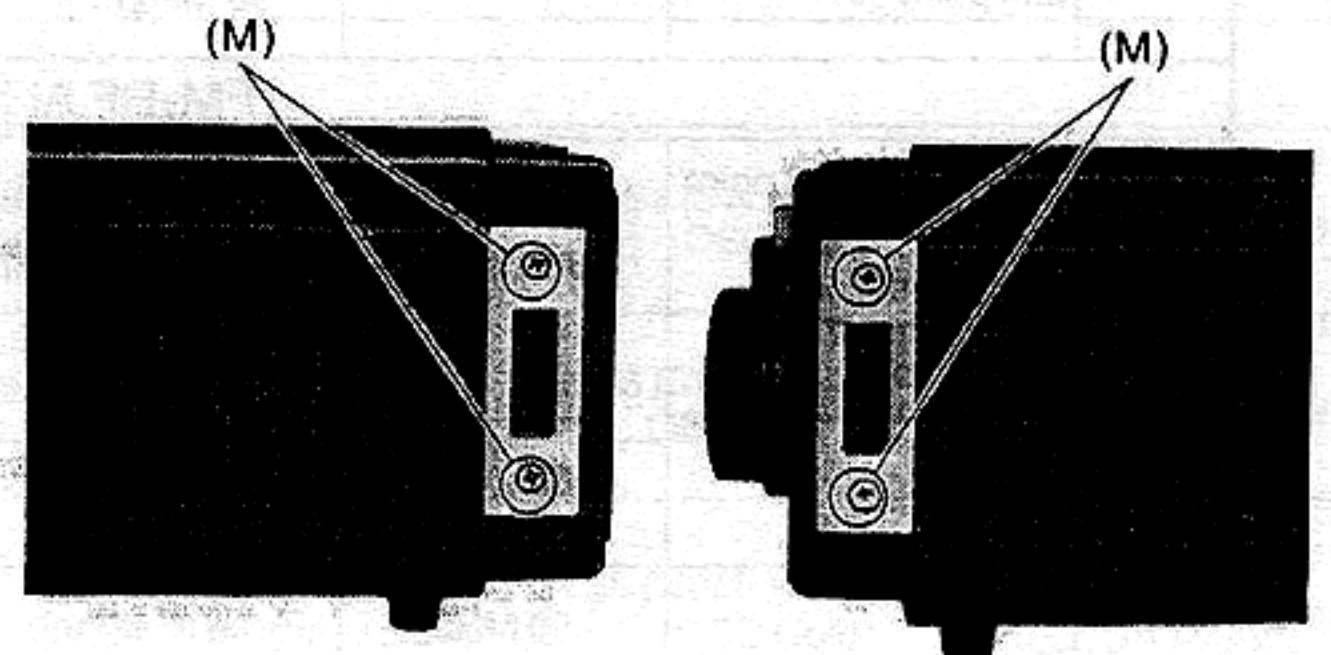


Fig. 9

## DIAL THREADING

Dial Cord length: 110 cm (43  $\frac{5}{16}$ "')

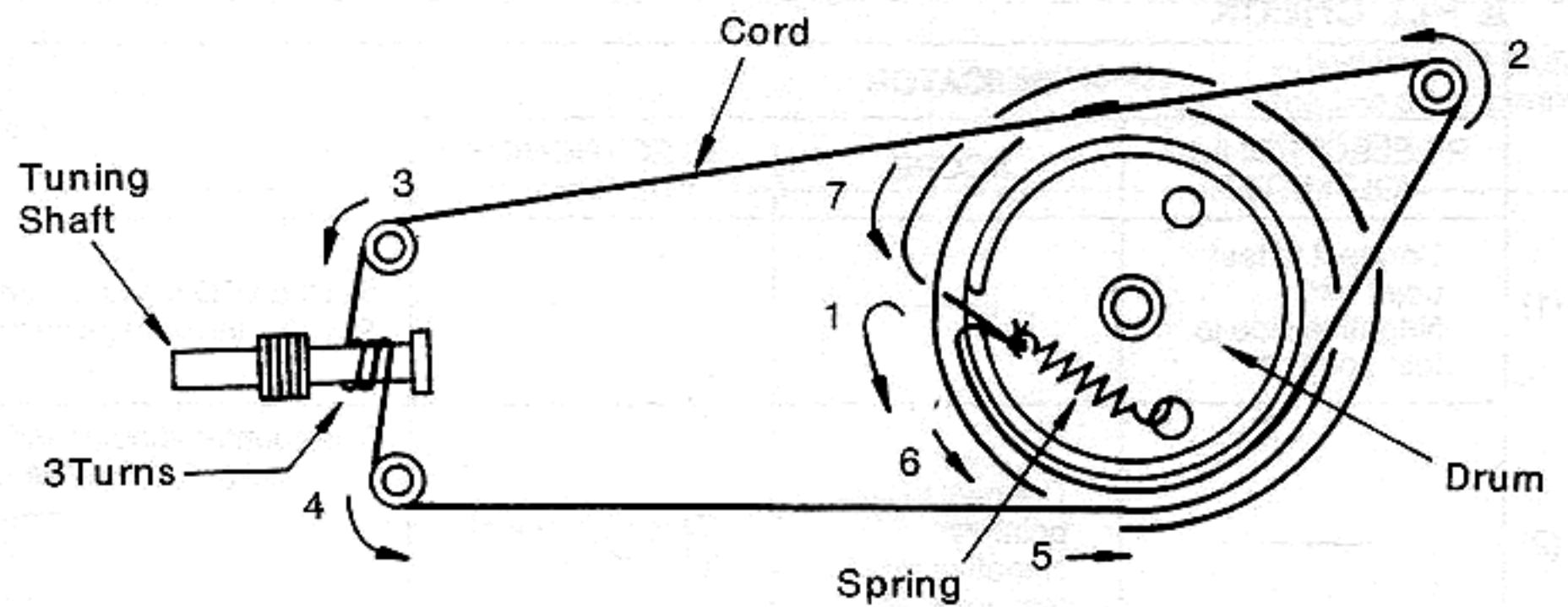


Fig. 10

Procedure	To remove—	Remove—	Shown in Fig.—
1	Bottom Cabinet Ass'y	AC Cord Cover ..... (A)×1	2
2		Screw (3×12) ..... (B)×4	
3		Screw (3×8) ..... (C)×3	3
4		Screw (3×12) ..... (D)×4	
5		Remove the bottom cabinet in the direction of arrows ① and ②.	4
6	Telescopic Antenna	Screw (3×10) ..... (E)×1	3
7	Main Circuit Board	Knob ..... (F)×7	5
8		Screw (3×8) ..... (G)×2	6
9		Screw (3×12) ..... (H)×5	7
10	Display Circuit Board	Screw (3×12) ..... (I)×3	8
11	Circuit Board (Power, OSC Filter)	Screw (3×12) ..... (J)×2	8
12		Screw (3×12) ..... (K)×2	
13	Front Panel	Screw (3×10) ..... (L)×2	8
14		Screw (3×12) ..... (M)×4	9

## ■ CONNECTOR POSITION

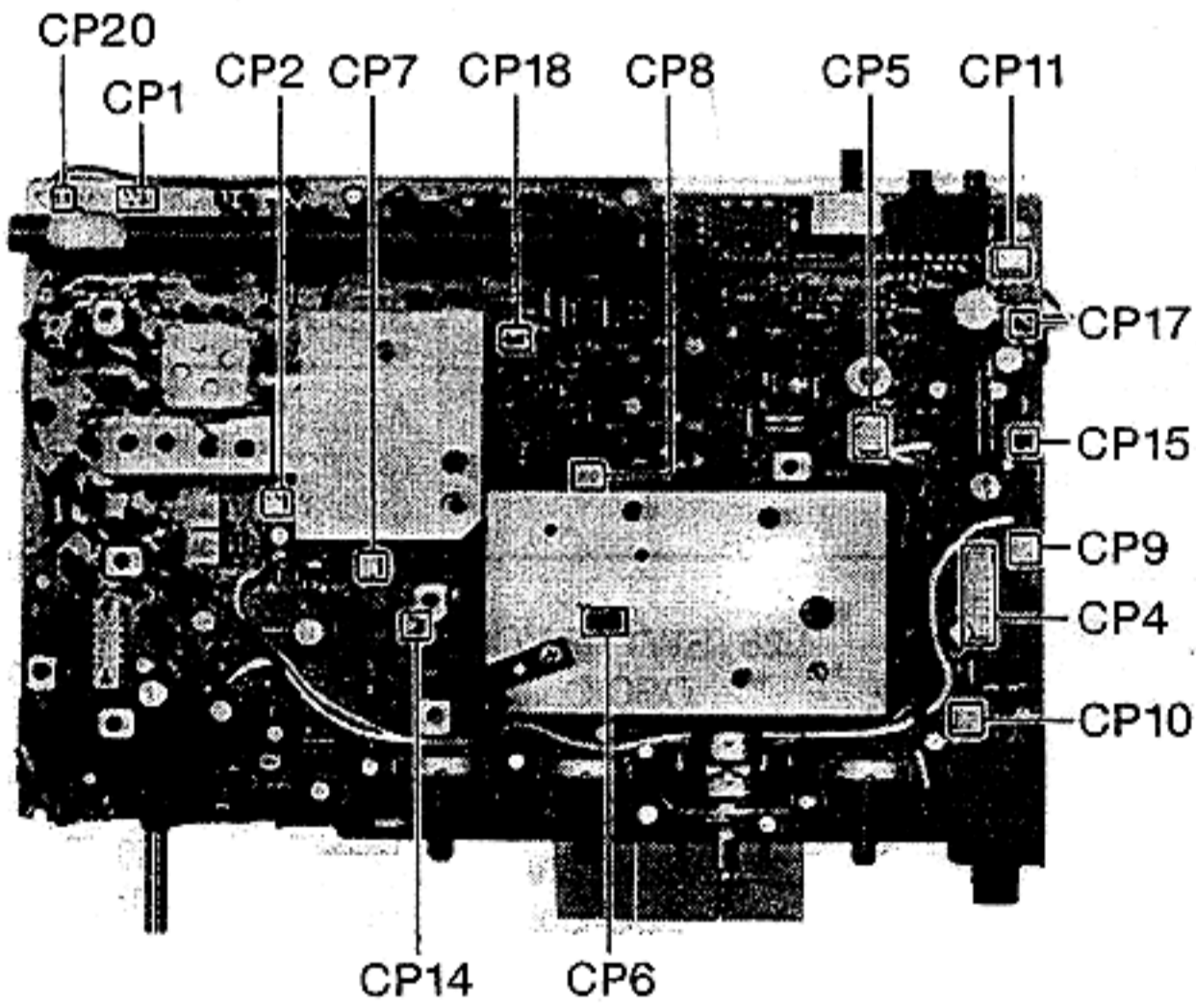


Fig. 11

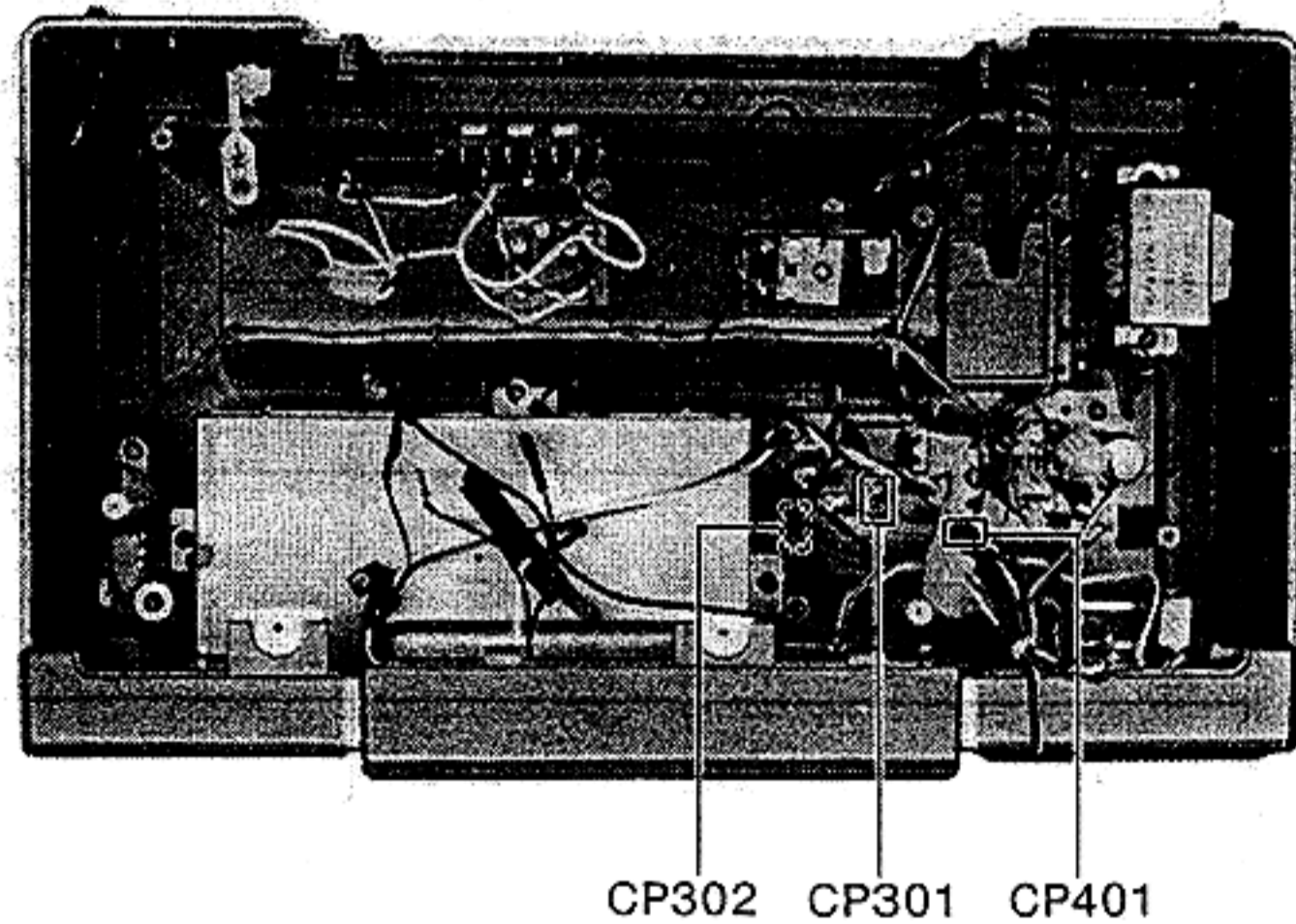


Fig. 12

CP1: EXT. ANT. Connector  
 CP2: FM LOCAL OSC Connector  
 CP4: Counter Block (1) Connector  
 CP5: VCO Control Connector  
 CP6: VCO Connector  
 CP7: VFO/MW LOCAL Connector

CP8: 10.24 MHz OUT Connector  
 CP9: Meter Connector  
 CP10: Pilot Lamp Connector  
 CP11: Speaker Connector  
 CP14: Counter Block (2) Connector  
 CP15: Counter Block (3) Connector

CP17: Counter Block (4) Connector  
 CP18: Counter Block (5) Connector  
 CP20: Counter Block (6) Connector  
 CP301: Regulator Block Connector  
 CP302: 2nd Local Connector  
 CP401: Power Supply Connector

# MEASUREMENTS AND ADJUSTMENTS

## ■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

**Notes:**

1. Set power switch to ON.
2. Set volume control to maximum.
3. Set bass and treble control to maximum.
4. Set AM RF gain control to minimum.
5. Set BFO pitch control to center.
6. Set band switch to MW, SW1~SW29 or FM.
7. Set BFO switch to OFF.
8. Set EXT. ANT. switch to low.
9. Set power source voltage to 12 V DC.
10. Output of signal generator should be no higher than necessary to obtain an output reading.

## ■ MW ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING [FREQUENCY DISPLAY (UNIT)]	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
<b>AM-IF ALIGNMENT</b>						
(1) MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz.	Point of non-interference. (on/about 600 kHz).	Output meter across voice coil.	T3 (AM 1st IFT) T4 (AM 2nd IFT) T6 (AM 3rd IFT)	Adjust for maximum output.
<b>MW-RF ALIGNMENT</b>						
(2) MW	"	511 kHz	Tuning capacitor fully closed.	"	L33 (MW OSC Coil)	"
(3) MW	"	1650 kHz	Tuning capacitor fully open.	"	CT4 (MW OSC Trimmer)	"
(4) MW	"	600 kHz	"600"	"	(*1) L1 (MW ANT Coil)	Adjust for maximum output. Adjust L1 by moving coil bobbin along ferrite core.
(5) MW	"	1500 kHz	"1500"	"	CT3 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).

(\*1) Cement antenna bobbin with wax after completing alignment.

## ■ SW VFO and VCO ALIGNMENT

(1) SW4	—	—	Tuning capacitor fully closed.	—	L34 (SW VFO, OSC Coil)	Adjust for "3,900" reading on frequency display (UNIT).
(2) SW4	—	—	Tuning capacitor fully open.	—	CT5 (SW VFO, OSC Trimmer)	Adjust for "5,900" reading on frequency display (UNIT).
(3) SW7	—	—	"	Connect to test point ▼. Negative side to test point ▼.	L26 (SW1~7 VCO, OSC Coil)	Adjust for $9 \pm 0.05$ V reading on electronics voltmeter.
(4) SW15	—	—	"	"	L27 (SW8~15 VCO, OSC Coil)	Adjust for $8.5 \pm 0.05$ V reading on electronics voltmeter.
(5) SW29	—	—	"	"	L28 (SW16~29 VCO, OSC Coil)	Adjust for $8.5 \pm 0.05$ V reading on electronics voltmeter.

Dial

Dial C

### ■ SW 2nd LOCAL OSC ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING [FREQUENCY DISPLAY (UNIT)]	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
SW5	Connect to test point ▼. Negative side to test point ▼.	5 MHz (Mode 30%, 1000 kHz.)	Tune to signal.	Output meter across voice coil.	T1 (SW 1st OSC Coil) T2 (SW 2nd OSC Coil)	1. Set band width switch to narrow. 2. Set AM RF gain control to maximum. 3. Adjust for maximum output.

### ■ BFO ALIGNMENT

SW5	Fashion loop of several turns of wire and radiate signal into loop of receiver.	5 MHz	"	EXT. SP. JACK	L37 (BFO OSC Coil)	1. Cut off modulation after tune to signal. 2. Set BFO switch to ON. 3. Adjust for "0" beat.
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### ■ TUNING METER ALIGNMENT

SW5	Connect to test point ▼. Negative side to test point ▼.	5 MHz (99 dB/m)	"	Tuning Meter	VR5 (Meter control)	Adjust VR5 so that the indication needle is at the position ㉞ shown in fig. 16.
SW5	"	5 MHz (20 dB/m)	"	"	VR6 (Meter control)	Adjust VR6 so that the indication needle is at the position ㉟ shown in fig. 16.

### ■ FM ALIGNMENT


#### FM-IF ALIGNMENT

(1)	FM	Connect to test point ▼ through 0.001 $\mu$ F. Negative side to test point ▼.	10.7 MHz	Point of non-interference. (on/about 90 MHz).	Connect vert. amp. of scope to test point ▼. Negative side to test point ▼.	T5 (FM IFT) (Secondary)	Adjust for maximum amplitude. (Refer to fig. 13.)
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#### FM-RF ALIGNMENT

(2)	FM	Connect to test point ▼ through FM dummy antenna. Negative side to test point ▼. (Refer to fig. 14.)	87.2 MHz	Tuning capacitor fully closed.	Output meter across voice coil.	L29 (FM OSC Coil)	Adjust for maximum output.
(3)	FM	"	109.2 MHz	Tuning capacitor fully open.	"	CT2 (FM OSC Trimmer)	"
(4)	FM	"	90 MHz	Tune to signal.	"	L22 (FM TUNE Coil)	"
(5)	FM	"	106 MHz	"	"	CT1 (FM TUNE Trimmer)	Adjust for maximum output. Repeat steps (2)~(5)

### ■ PLL CHECK

		INDICATOR		Items for confirmation	
		RF ELECTRONICS VOLTMETER	SCOPE		ELECTRONICS VOLTMETER
(1)		Connect to test point ▼. Negative side to test point ▼.	—	—	Set the VFO to fmax. Turn the dial from bands SW1 through SW29; the voltage should be between 100 mV and 650 mV.
(2)		—	Connect to test point ▼. Negative side to test point ▼.	Output terminal. (SCOPE)	The counter should read 60~88 MHz. The ratio A:B should be less than 6 dB. 

### ■ 2nd LOCAL FILTER ALIGNMENT

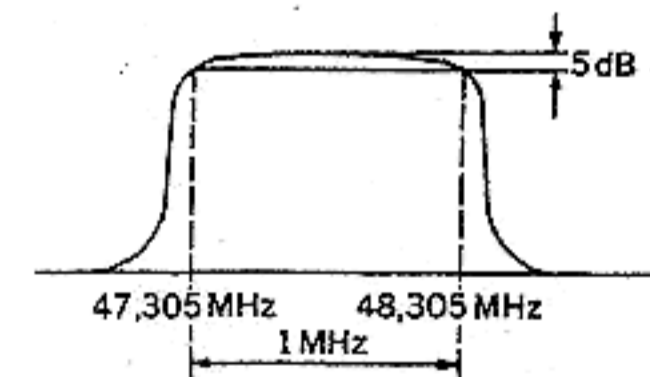
INDICATOR (RF ELECTRONICS VOLTMETER)	REMARKS
Connect to test point $\nabla$ . Negative side to test point $\nabla$ .	① Temporarily set VR301 in the mid-range and rotate T301 and T302; adjust such that the RF electronic voltmeter displays the maximum reading. (Repeat the adjustment of T301 and T302 two or three times.) ② Adjust VR301 such that the RF electronic voltmeter reads 44 mV~46 mV.

### ■ PLL AND COUNTER BLOCK ALIGNMENT

BAND	INDICATOR (RF ELECTRONICS VOLTMETER AND ELECTRONICS COUNTER)	ADJUSTMENT	REMARKS
(1) SW1	Connect to test point $\nabla$ . Negative side to test point $\nabla$ .	T505 [OSC Coil (10.24 MHz)]	1. Adjust for 10.24 MHz $\pm$ 400 Hz reading on electronics counter. 2. Adjust for maximum reading on RF electronics voltmeter.
(2) SW1	Connect to test point $\nabla$ . Negative side to test point $\nabla$ .	T501 [OSC Coil (51.2 MHz)]	1. Adjust for 51.2 MHz (10.24 MHz $\times$ 5) reading on electronics counter. 2. Adjust for maximum reading on RF electronics voltmeter.

### ■ 51.2 MHz and VFO MIX OUT (47.305~48.305 MHz) ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		INDICATOR (RF ELECTRONICS VOLTMETER and ELECTRONICS COUNTER)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY			
SW1	Connect to point CS7 (BLUE). Negative side to test point $\nabla$ .	2.895~3.895 MHz (Mode 0%) (100 dB/m)	Connect to test point $\nabla$ . Negative side to test point $\nabla$ .	T502 [OSC Coil (51.2 MHz)] T503 [OSC Coil (51.2 MHz)]	① Attach the RF electronic voltmeter; positive side to $\nabla$ and negative side to $\nabla$ . Set the signal generator to 3.5 MHz. Insert the cores of T503 and T502. ② While withdrawing the core of T502, adjust such that the RF electronic voltmeter displays the maximum reading. (51.2 MHz-3.2 MHz=a value of 47.7 MHz) ③ While withdrawing the core of T503, adjust such that the RF electronic voltmeter displays the maximum reading. (51.2 MHz-3.5 MHz=a value of 47.7 MHz) ④ Vary the signal generator from 2.895~3.895 MHz; the reading of the RF electronic voltmeter should range $\pm$ 0.5 dB. ⑤ When the signal generator is changed to 100 $\pm$ 0.5 dB, operation should be normal. ⑥ When the counter is attached; positive side to $\nabla$ and negative side to $\nabla$ , the frequency should range from 47.305~48.305 MHz.



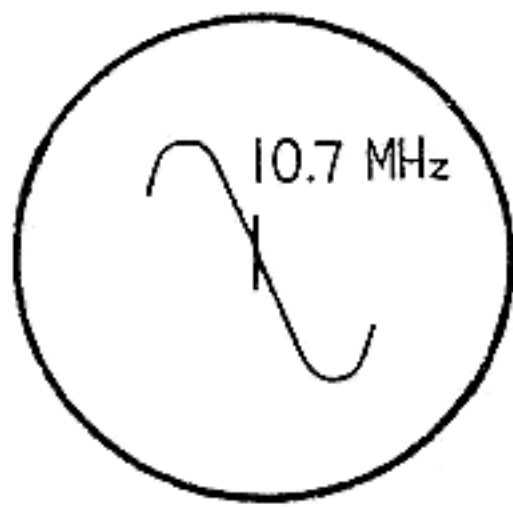


Fig. 13

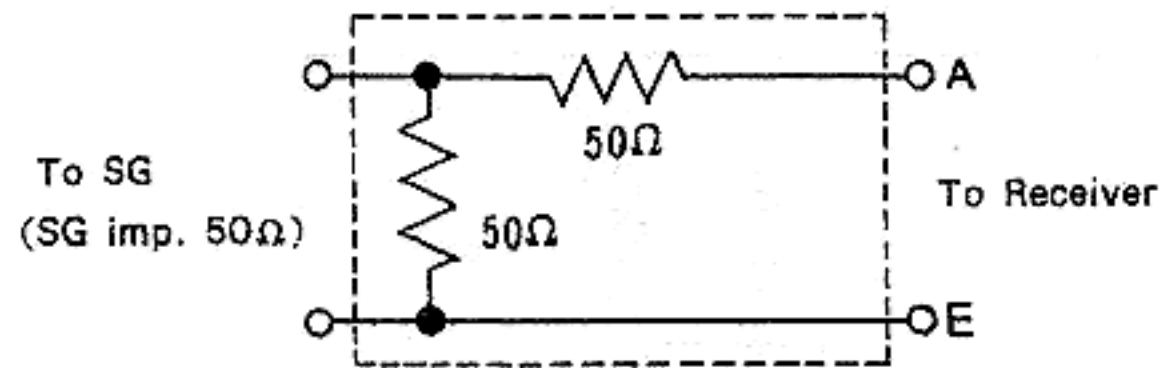


Fig. 14 FM Dummy Antenna

■ ALIGNMENT POINTS

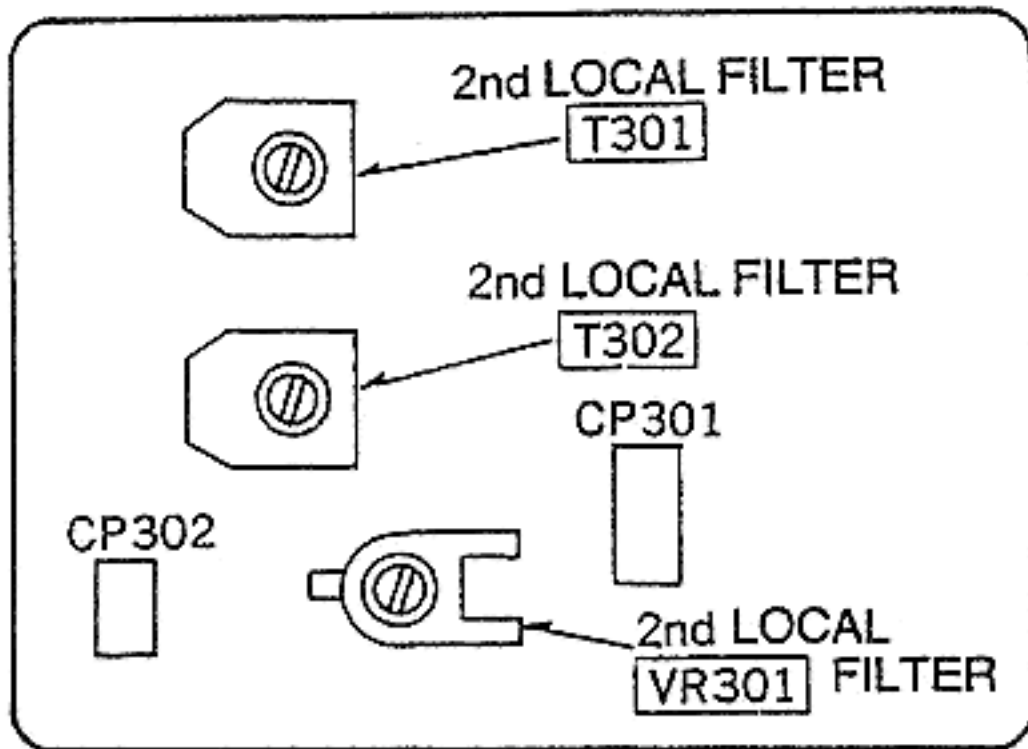


Fig. 15

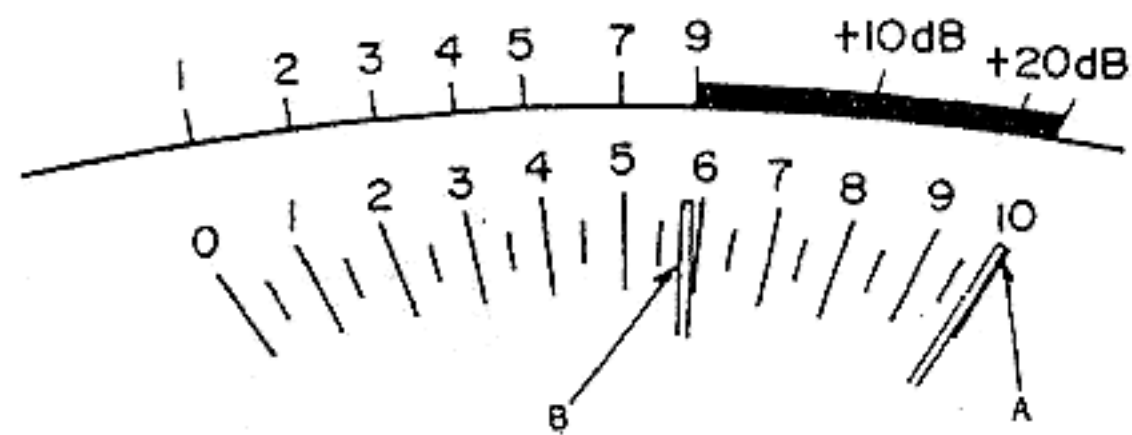


Fig. 16

●Please refer to Circuit Board (COUNTER) in which test point are located.

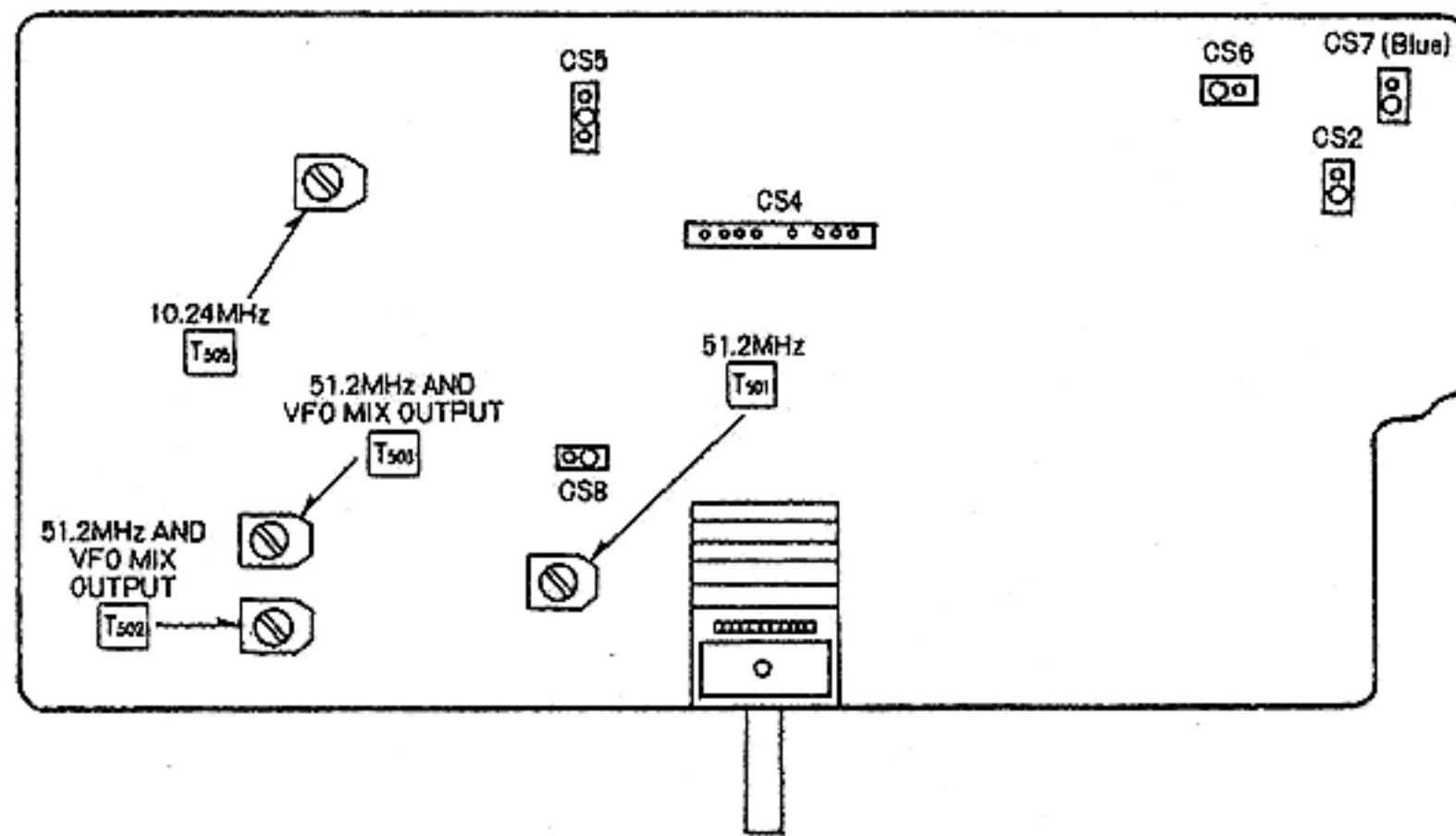


Fig. 17

●Please refer to Circuit Board (RADIO/AUDIO) in which test point 110 and 111 are located.

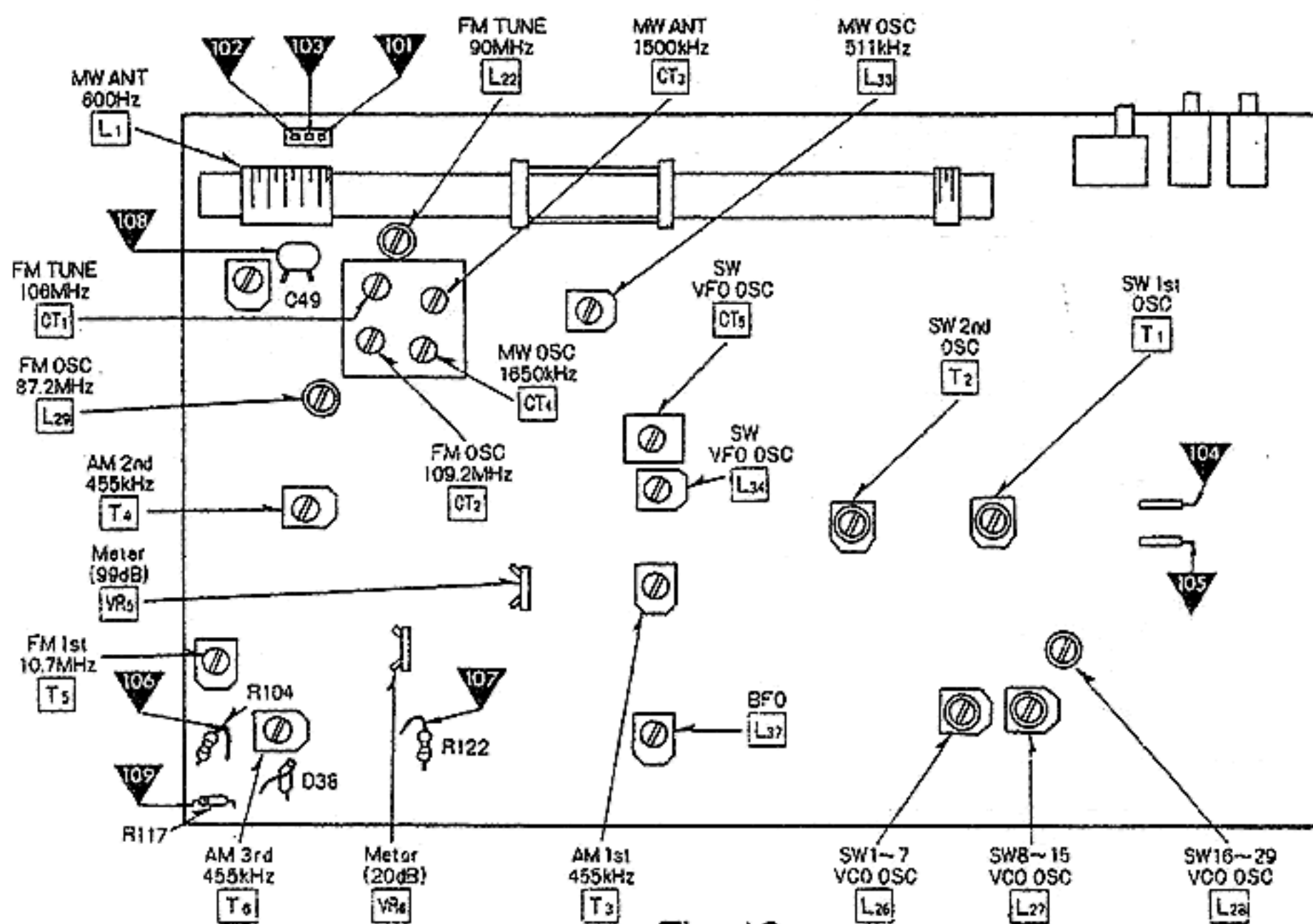
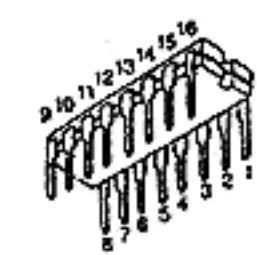

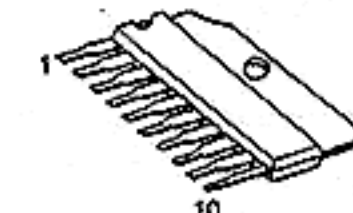
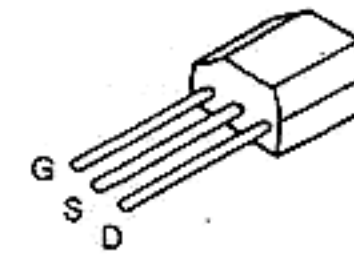

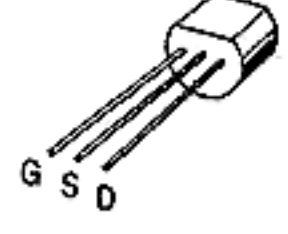
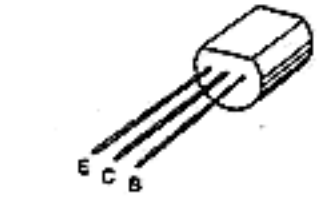
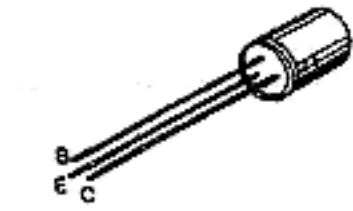
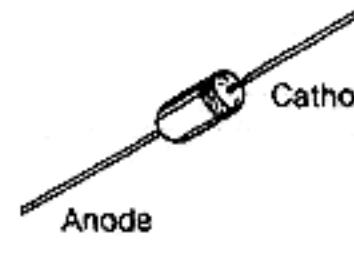
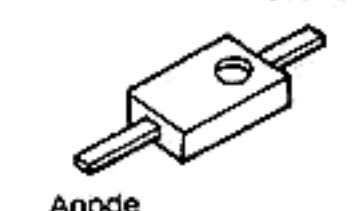

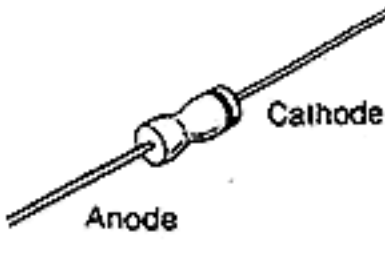
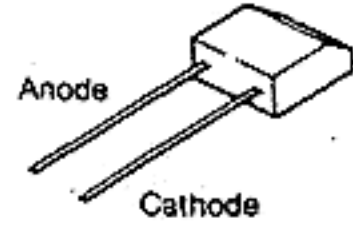


Fig. 18

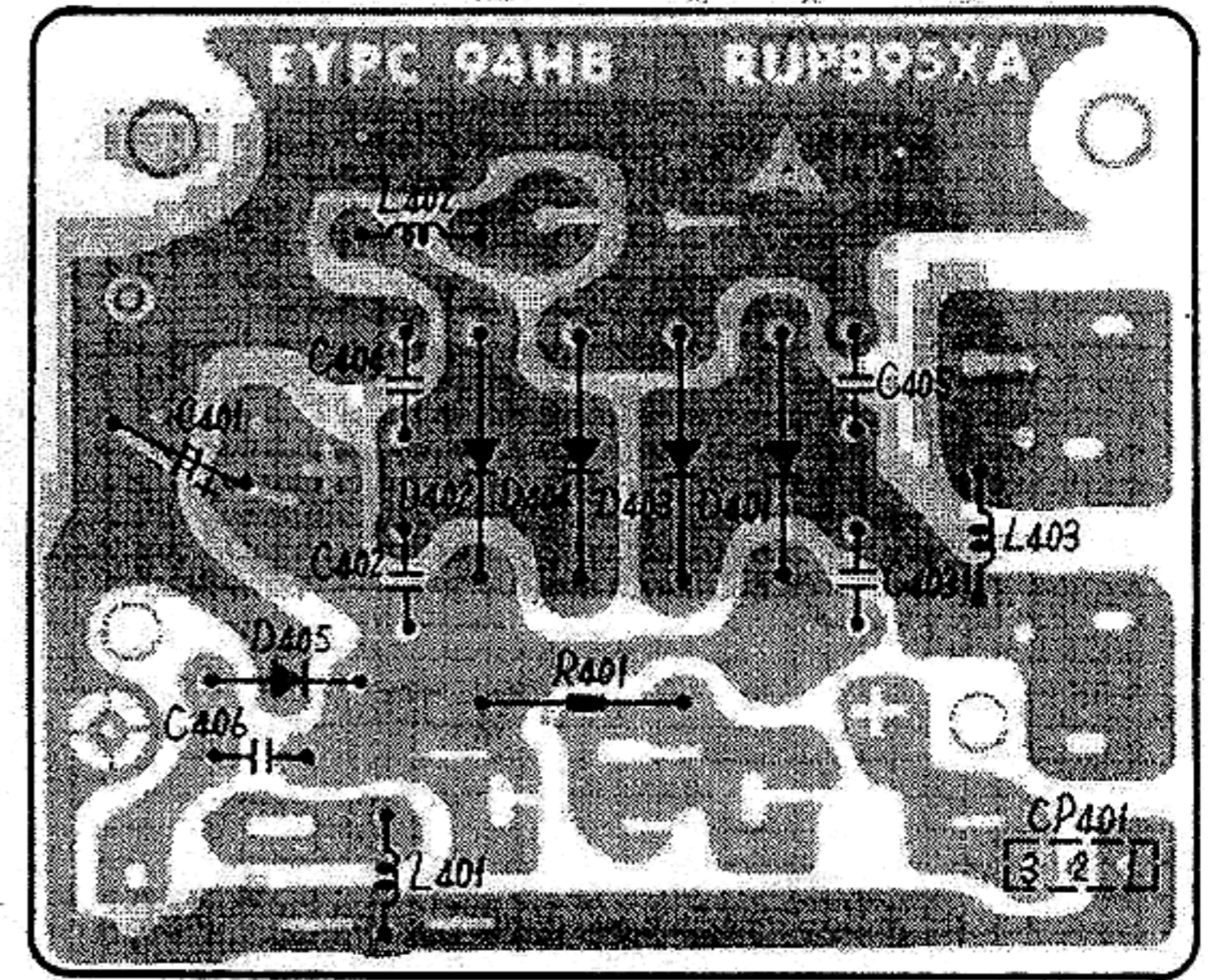
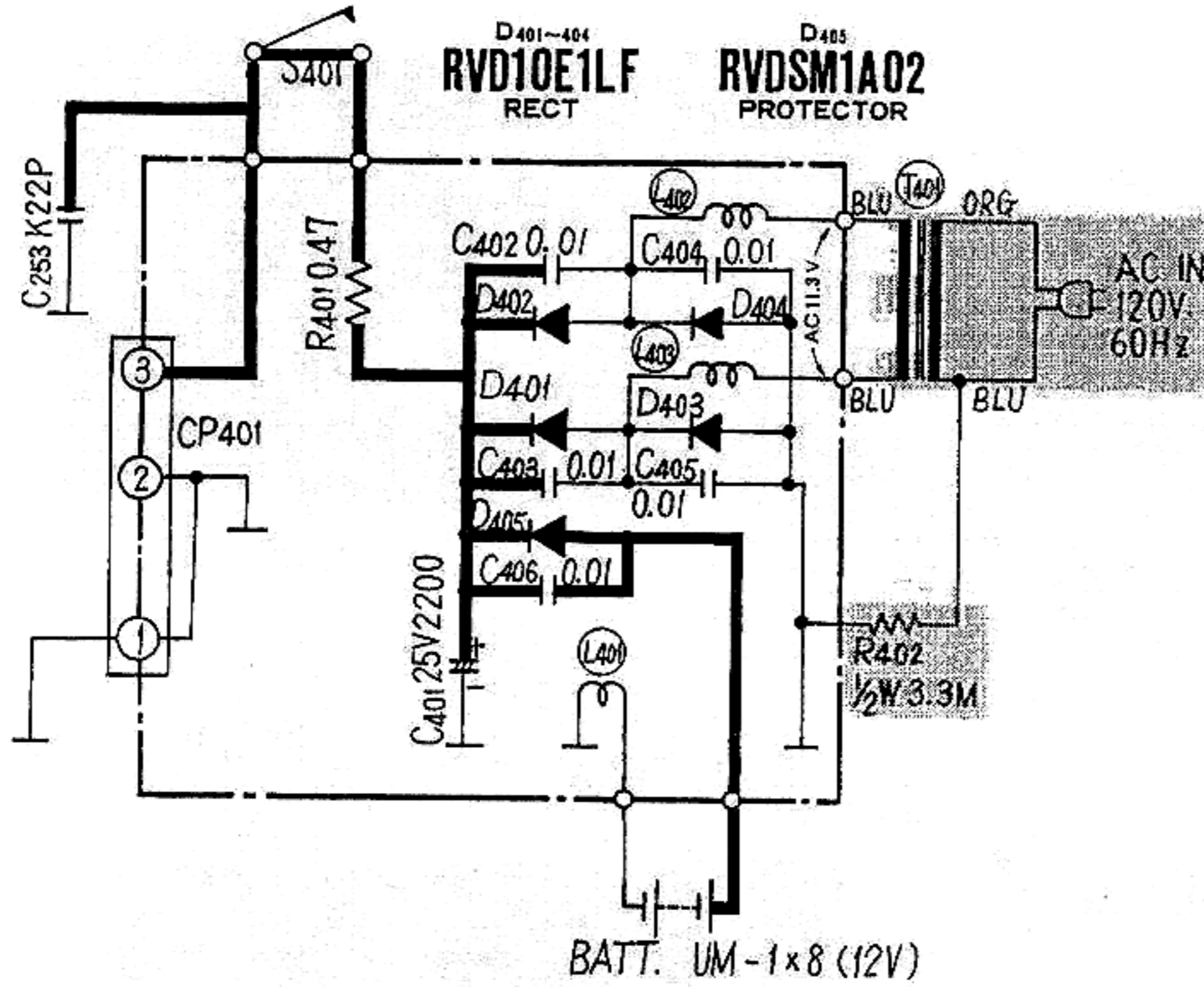


**Notes:**

1. S1: Antenna select switch in "SW/MW LOW" position.  
(1... SW/MW LOW, 2... FM/SW HIGH)
2. S2: BFO ON/OFF switch in "OFF" position.
3. S3: Bandwidth select switch in "WIDE" position.
4. S4: Light ON/OFF switch in "OFF" position.
5. VR1: MW-SW RF gain control.
6. VR2: BFO pitch control.
7. VR3: Bass control.
8. VR4: Volume control.
9. VR5: Meter adjustment VR (+20 dB).
10. VR6: Meter adjustment VR (+9 dB).
11. VR7: Treble control.
12. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.  
(Light SW... OFF, Bandwidth SW... WIDE, BFO SW... OFF, Volume... MIN.,  
(Bass and Treble... MIN, RF Gain... MIN, BFO Pitch... Center position.  
[ ]... FM position, < >... MW position, ( )... SW position.

 <p>IC1</p>	 <p>IC2</p>	 <p>IC3</p>	 <p>Q1, 3, 20</p>	 <p>Q2, 4~7, 9~12, 14~16, 18, 19, 21~30, 32, 33, 35~39, 41, 42, 44, 46</p>
 <p>Q13</p>	 <p>Q17</p>	 <p>Q43</p>	 <p>Anode Cathode</p> <p>D1, 3, 17, 19, 20, 28, 32, 34~37, 39~41, 48, 49, 62</p>	 <p>Cathode</p> <p>Anode</p> <p>D4, 5, 7, 8, 23~25, 43, 44</p>
 <p>Anode Cathode</p> <p>D13, 31, 53</p>	 <p>Anode Cathode</p> <p>D22, 26, 29, 38, 47, 55</p>	 <p>Anode Cathode</p> <p>D27</p>		

■ POWER SUPPLY CIRCUIT



Notes:

1. S401: Power ON/OFF switch in "OFF" position.
2. VR301: 2nd local OSC filter adjustment VR.
3. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.  
[ ] FM position, < > ... MW position,  
( ) ... SW position.
4. Battery current: No signal (MW) ..... 270 mA  
No signal (FM) ..... 240 mA  
Maximum (MW) ..... 480 mA  
Maximum (FM) ..... 465 mA

5. Important safety notice  
The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.  
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

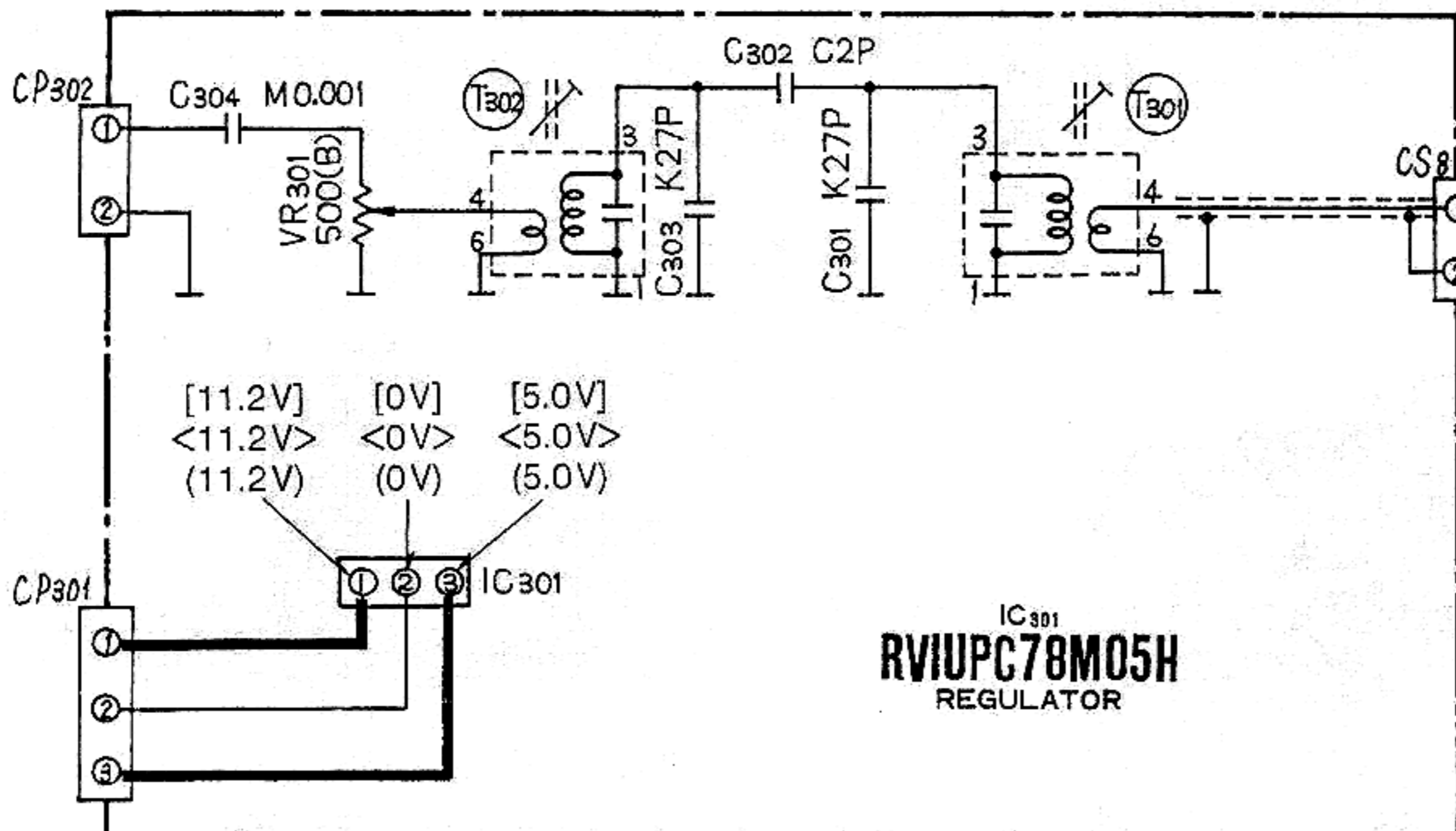
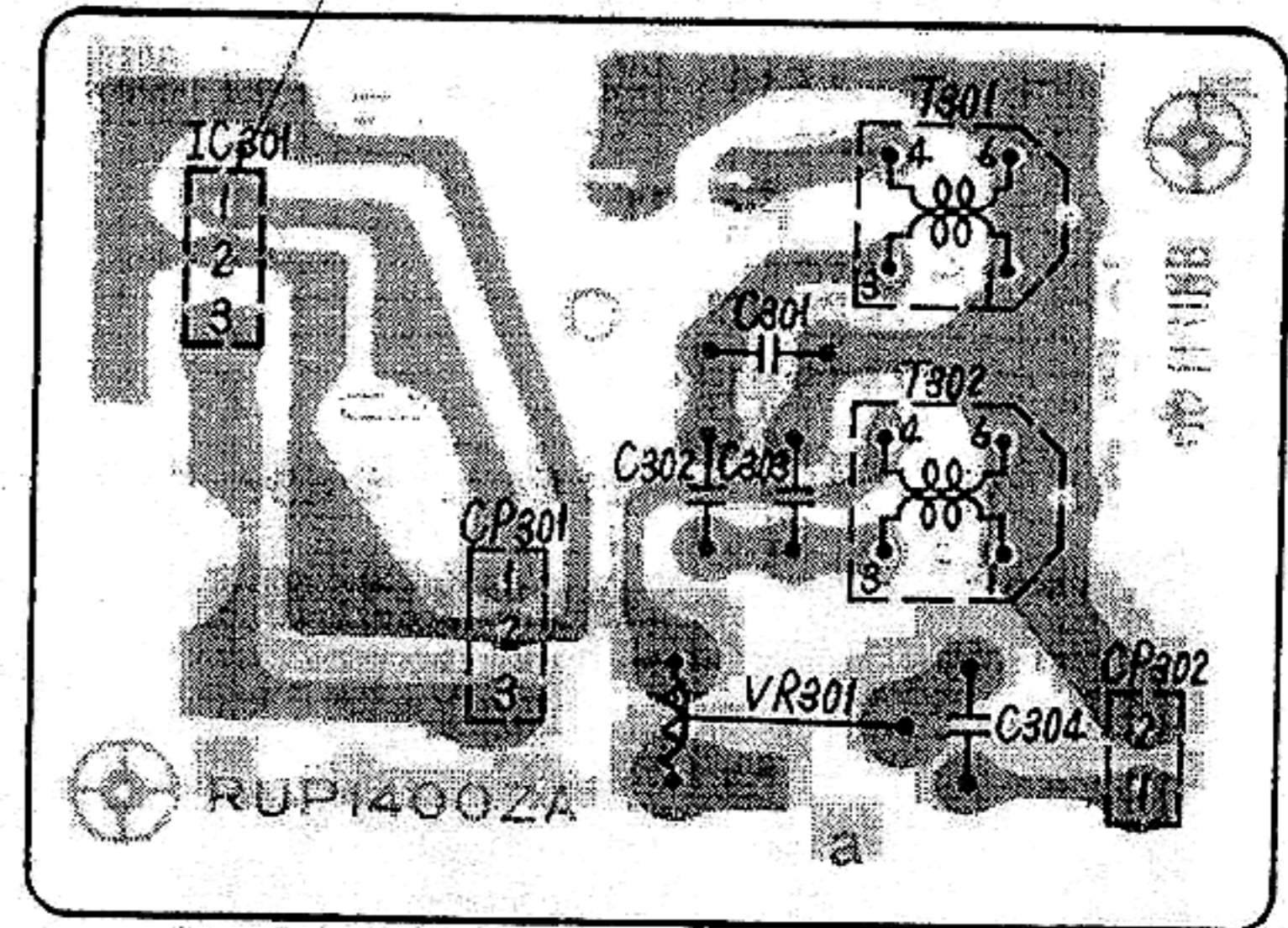
6. Special Notes:  
The secondary AC voltage of power transformer specification (without load).



■ 2nd LOCAL FILTER CIRCUIT

IC301

	FM	MW	SW
1	11.2V	11.2V	11.2V
2	0V	0V	0V
3	5.0V	5.0V	5.0V



# ELECTRICAL PARTS LOCATION

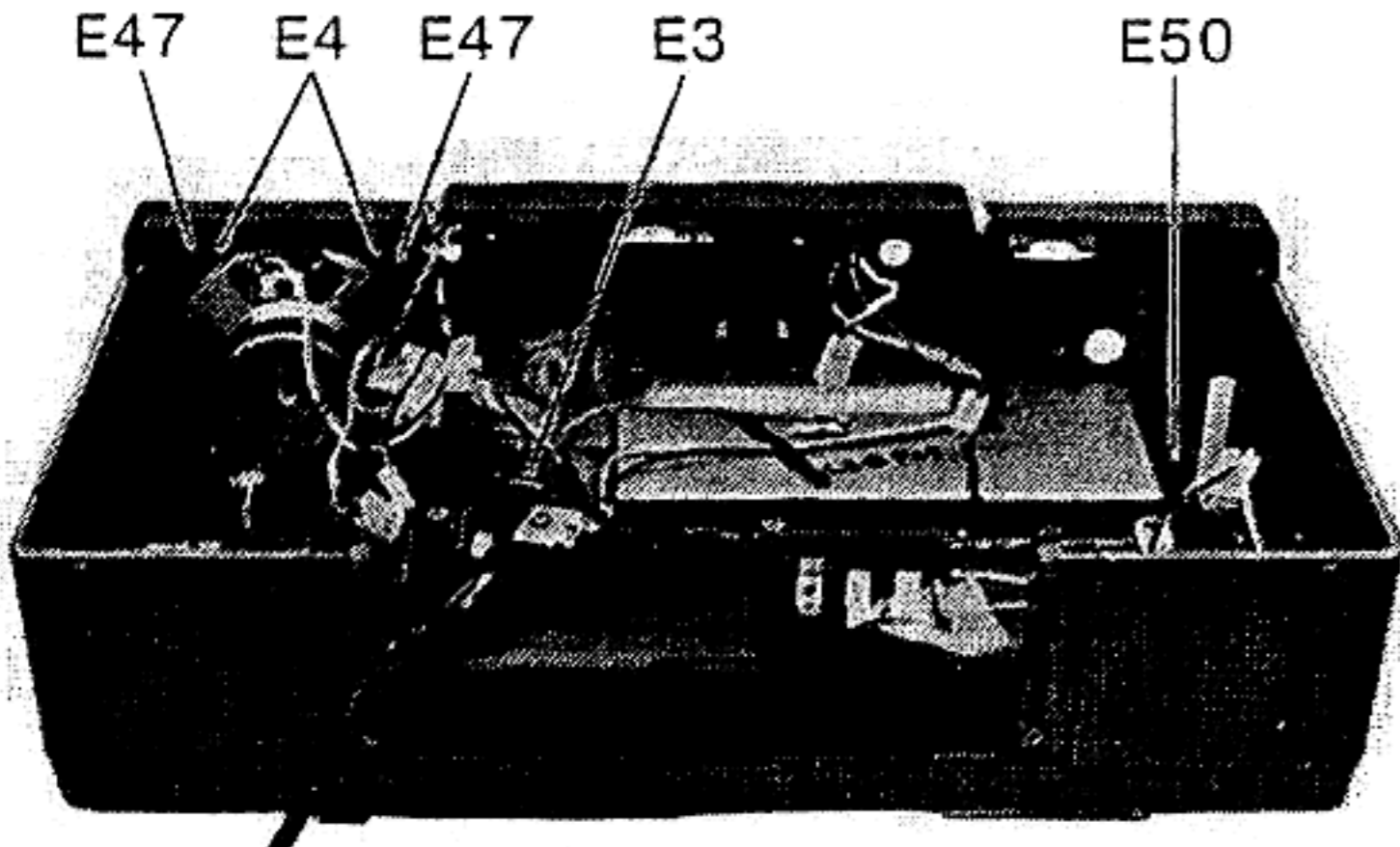


Fig. 19

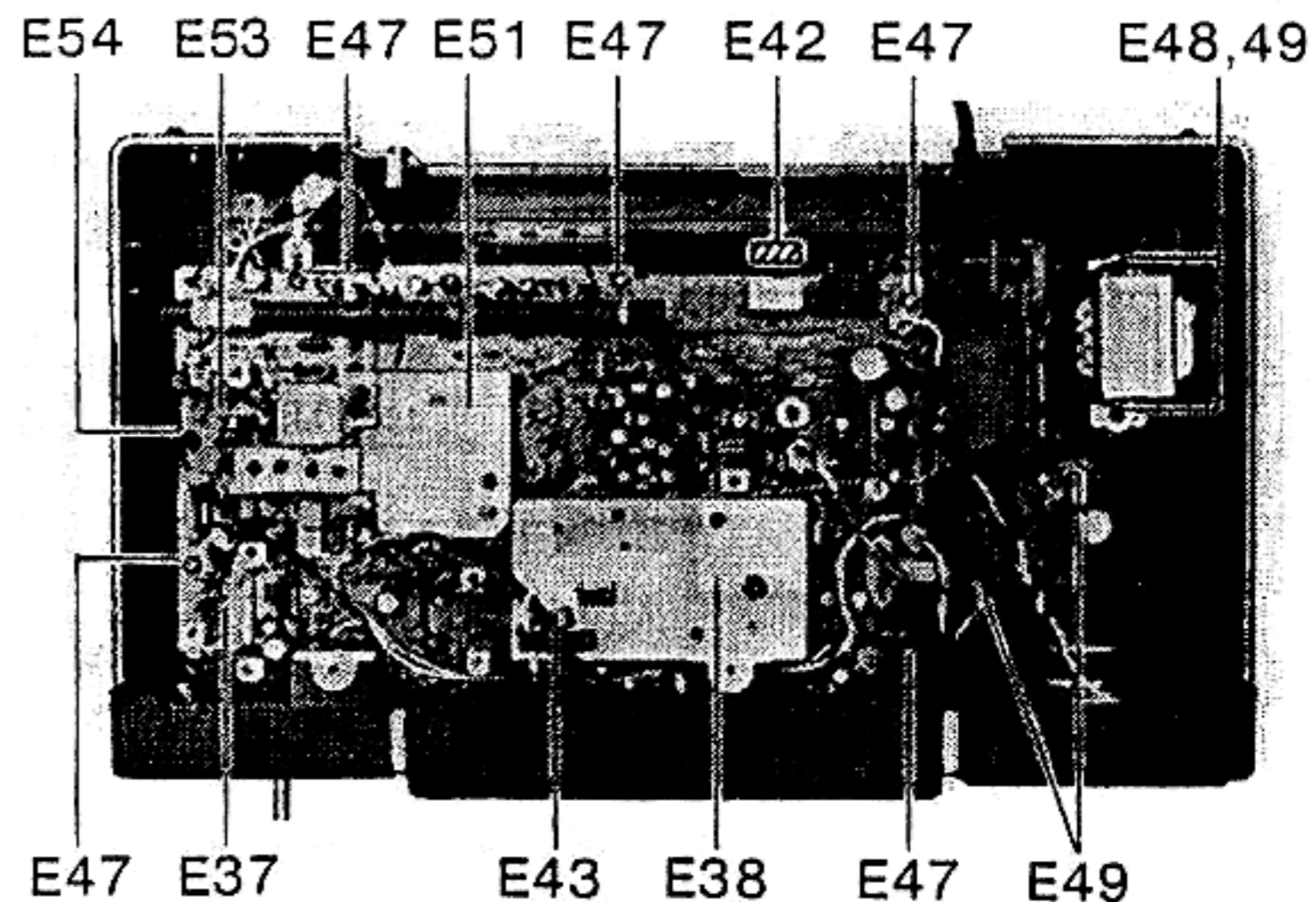


Fig. 20

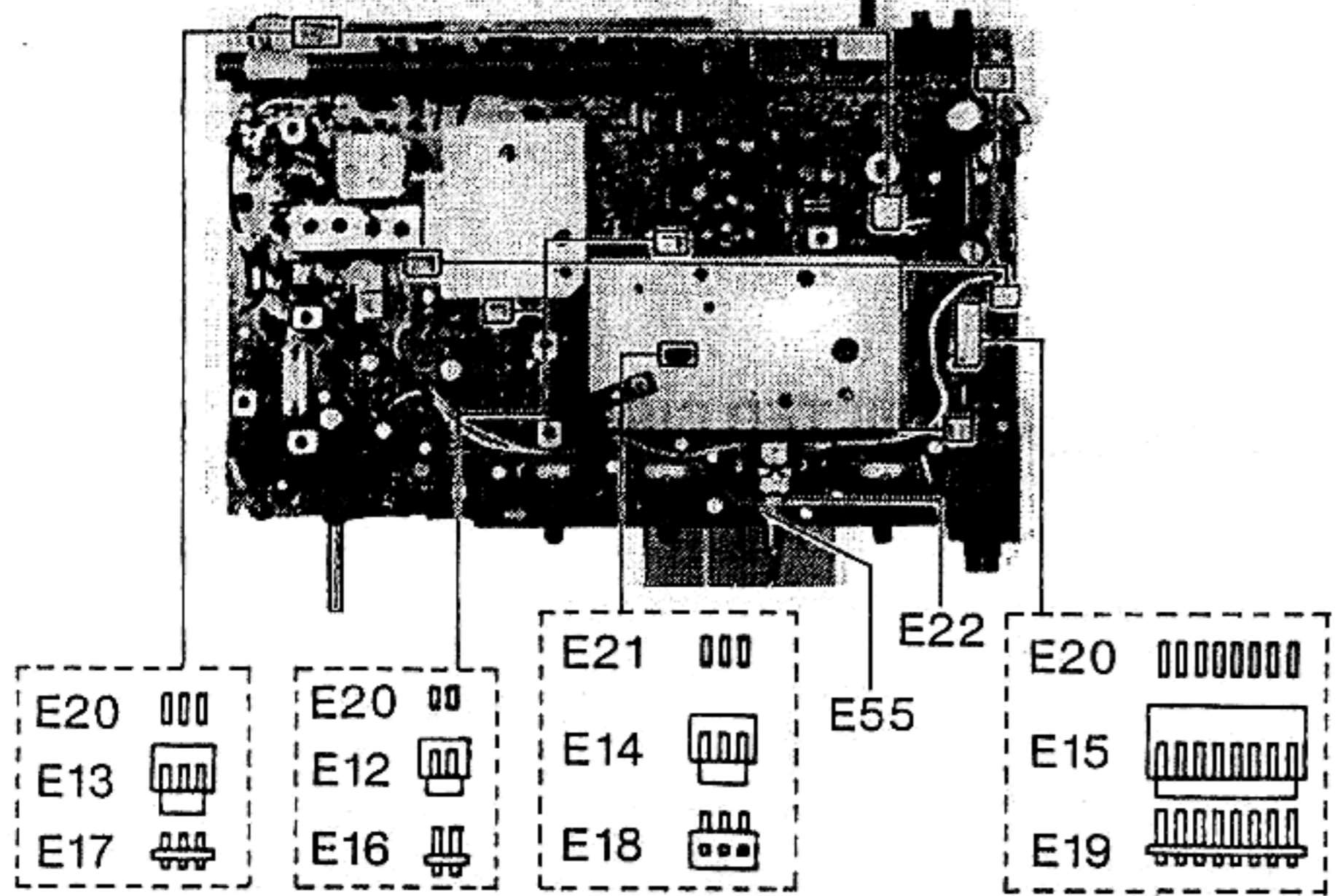


Fig. 21

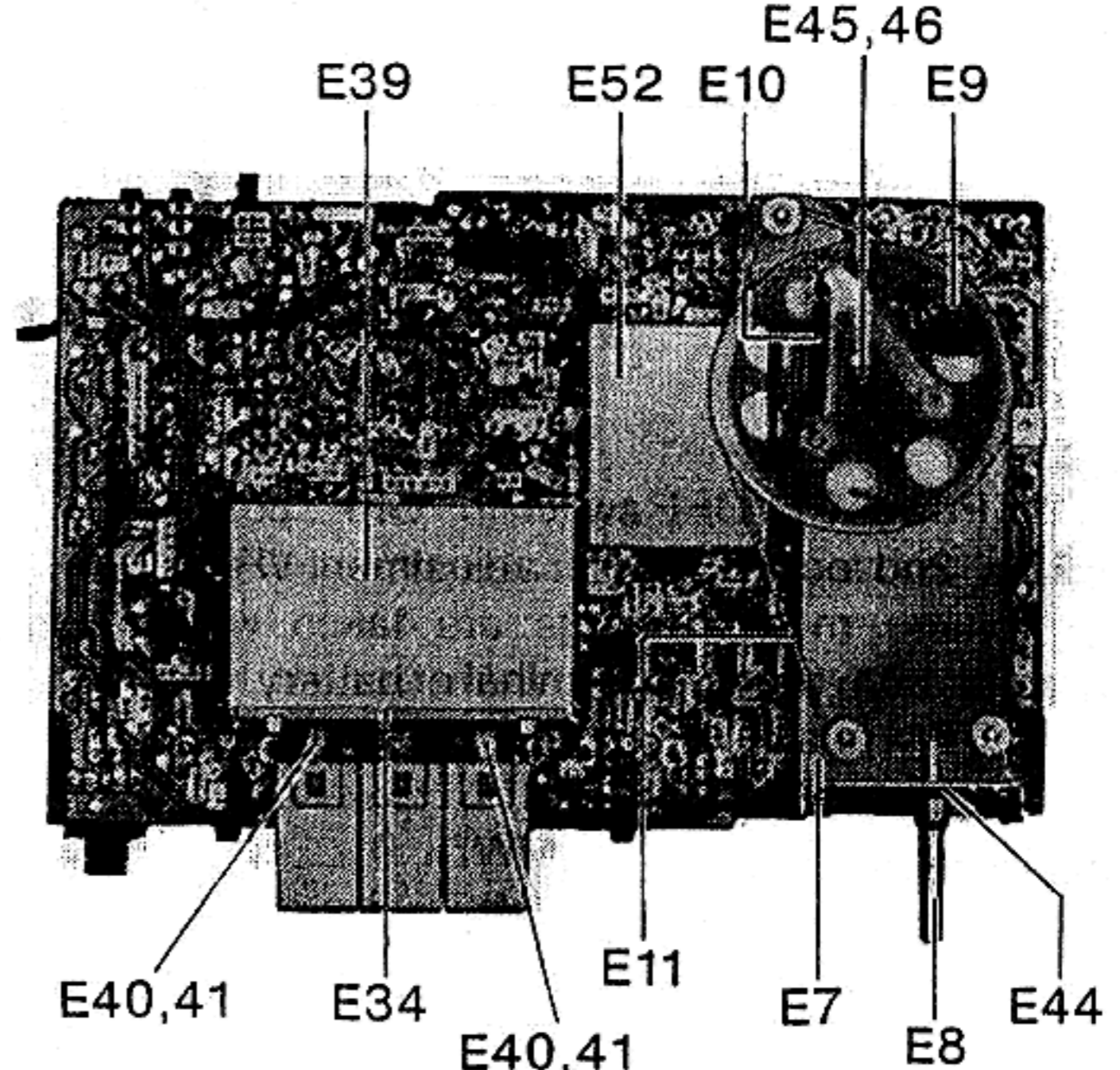


Fig. 22

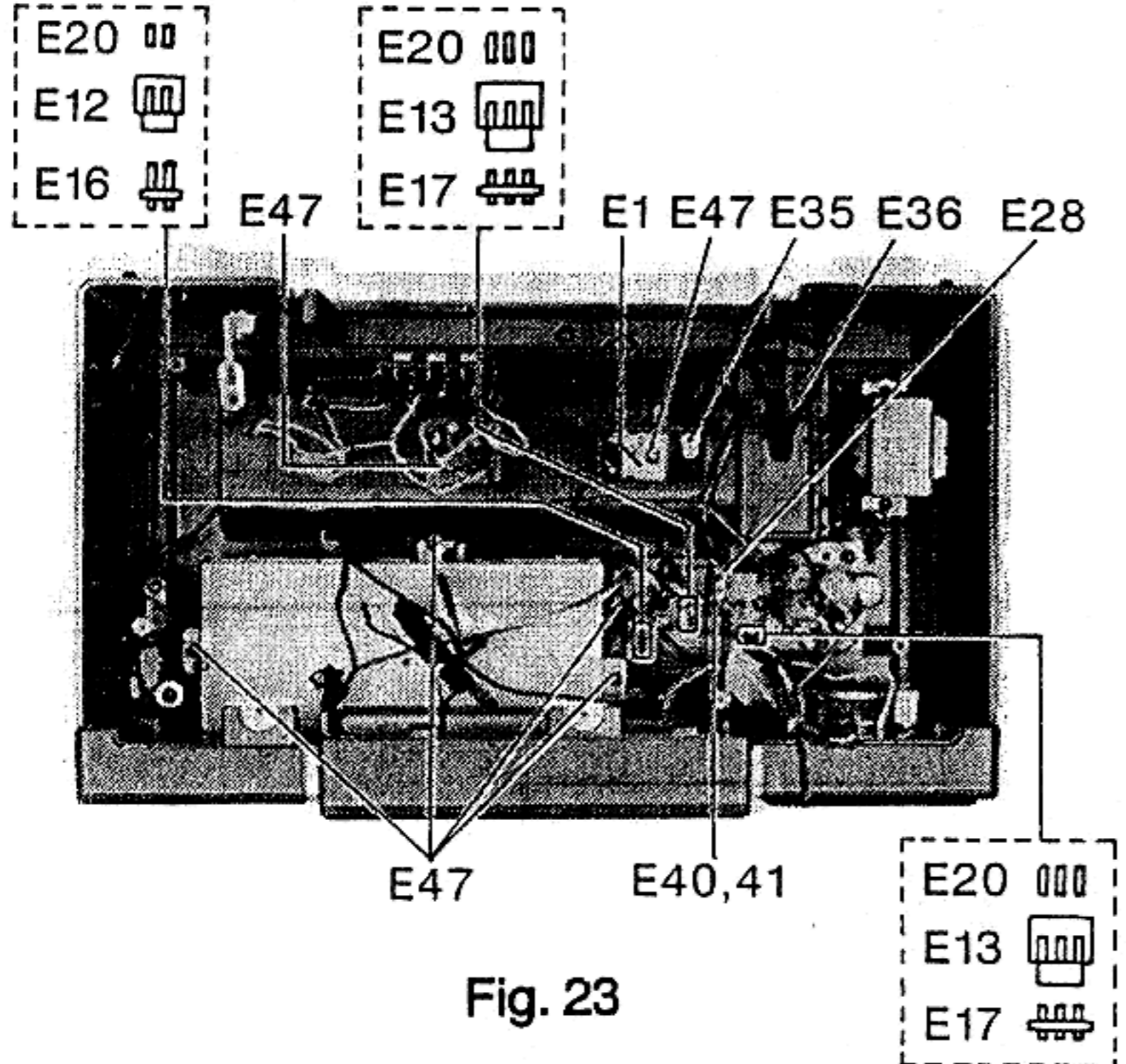


Fig. 23

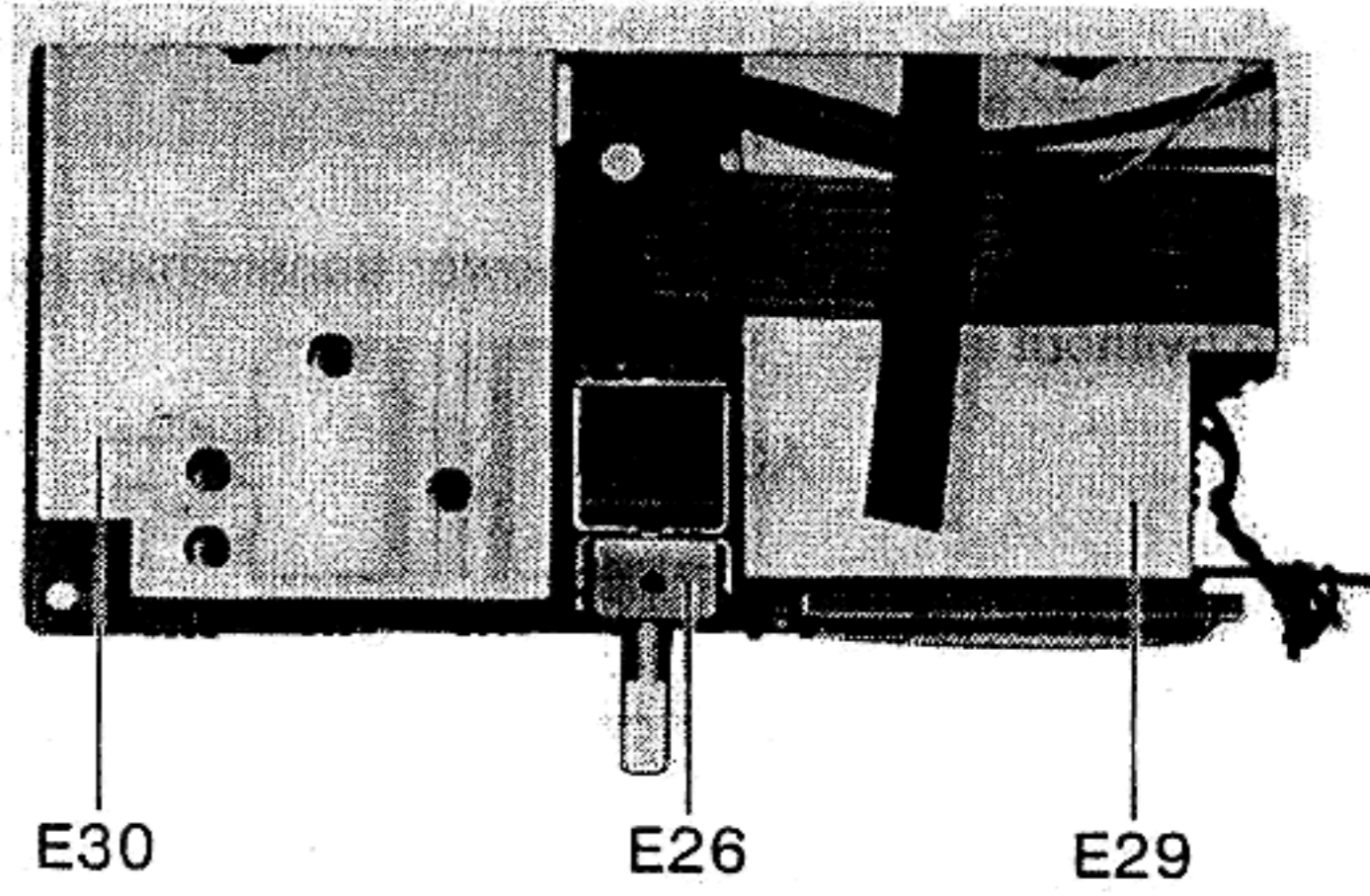


Fig. 24

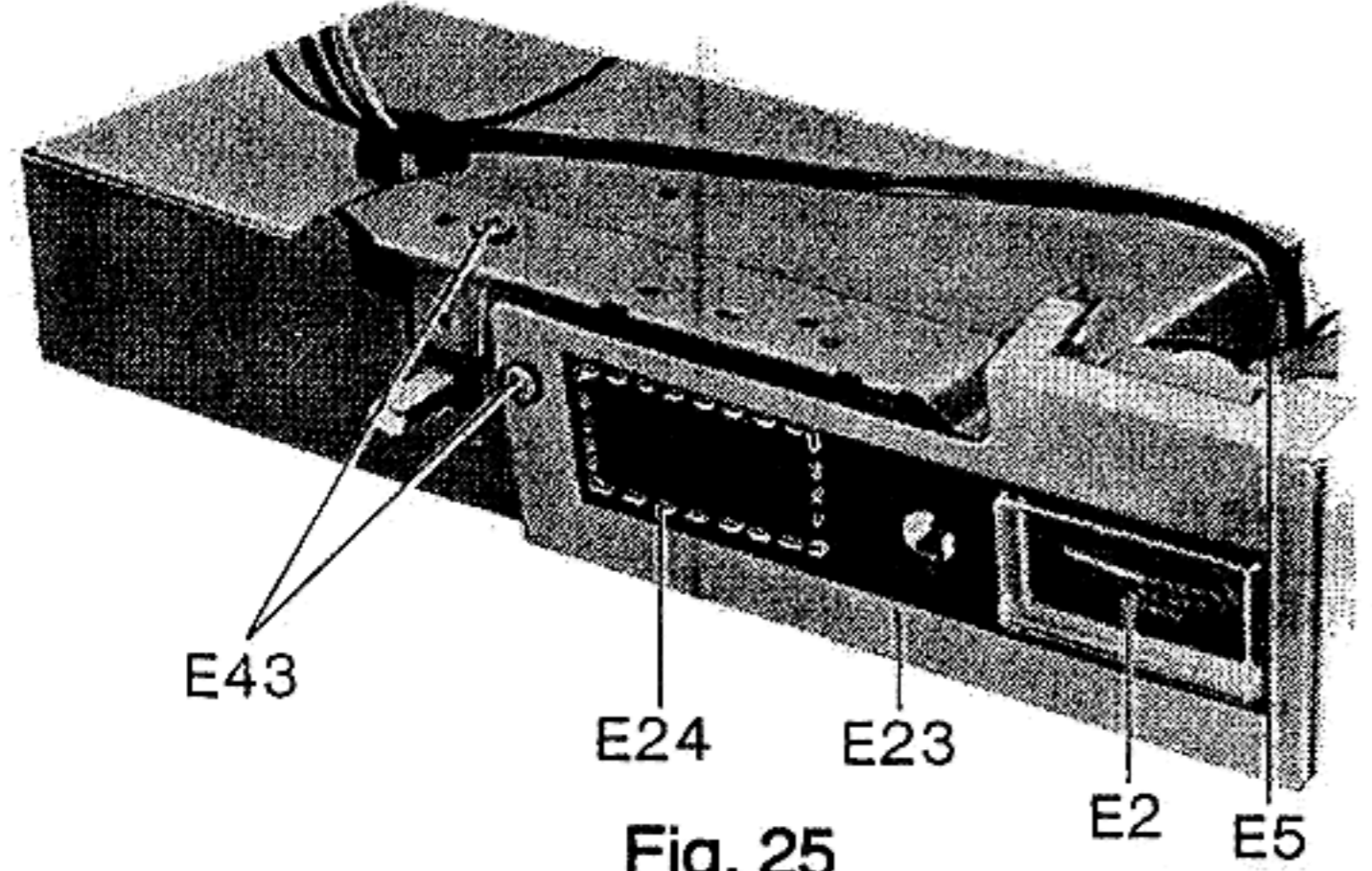


Fig. 25

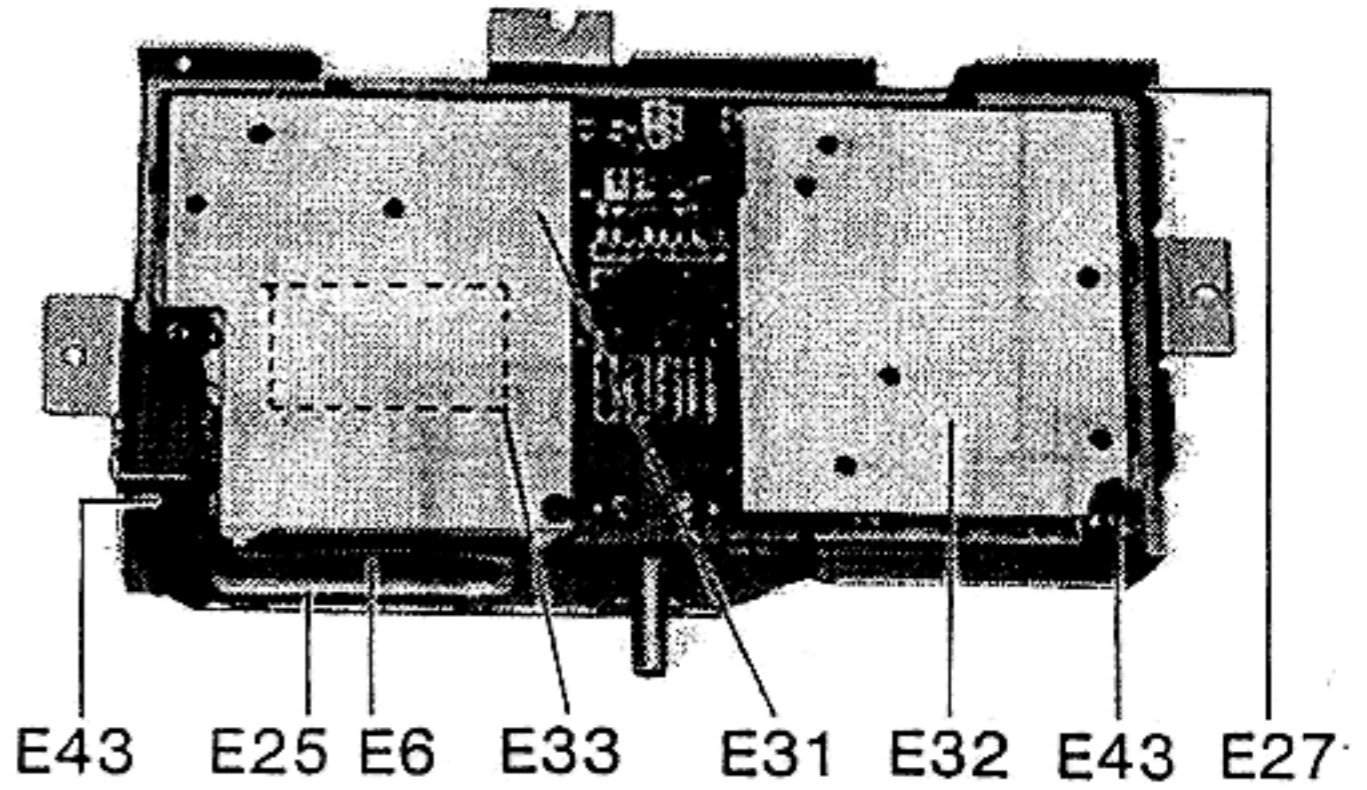
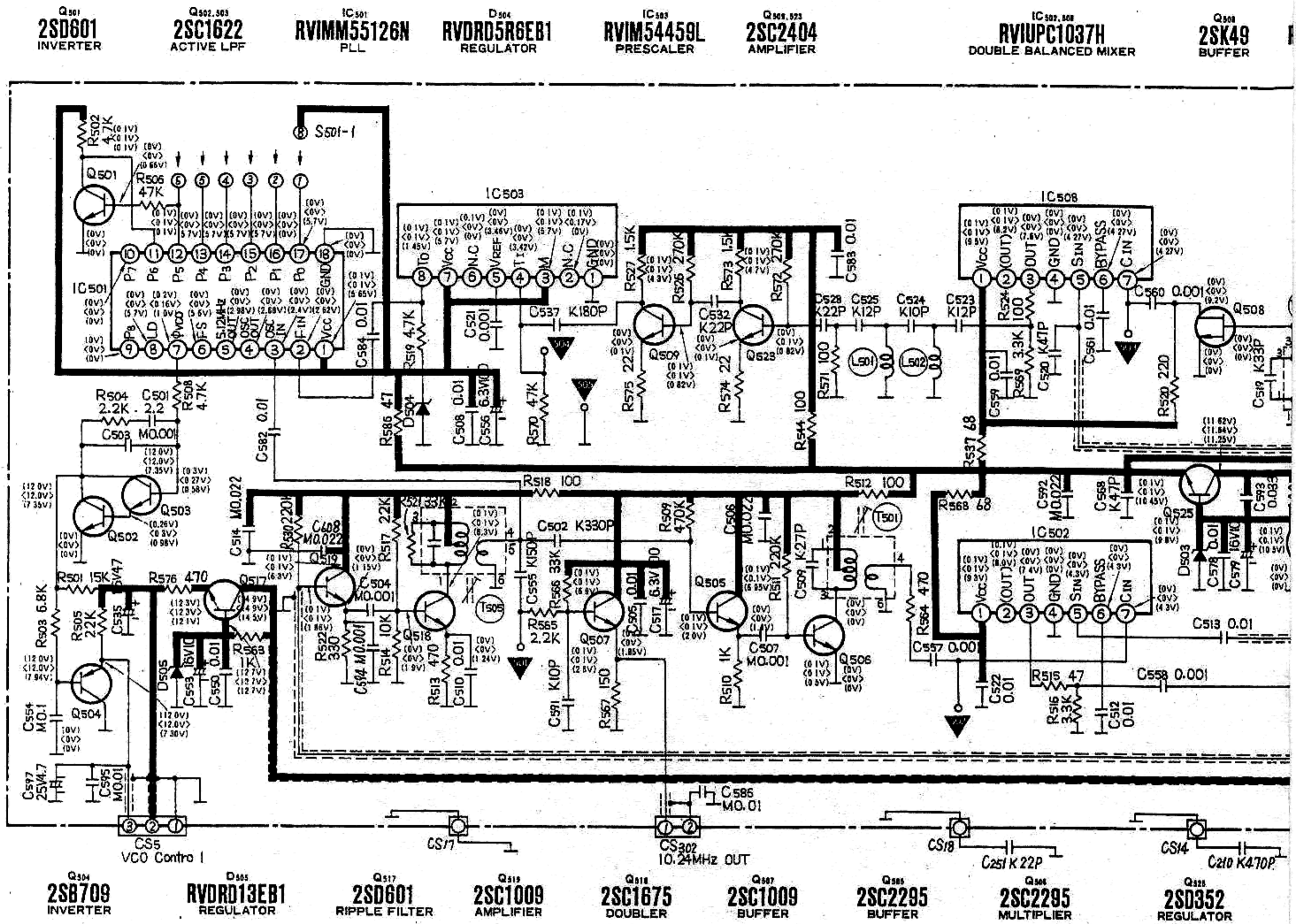


Fig. 26

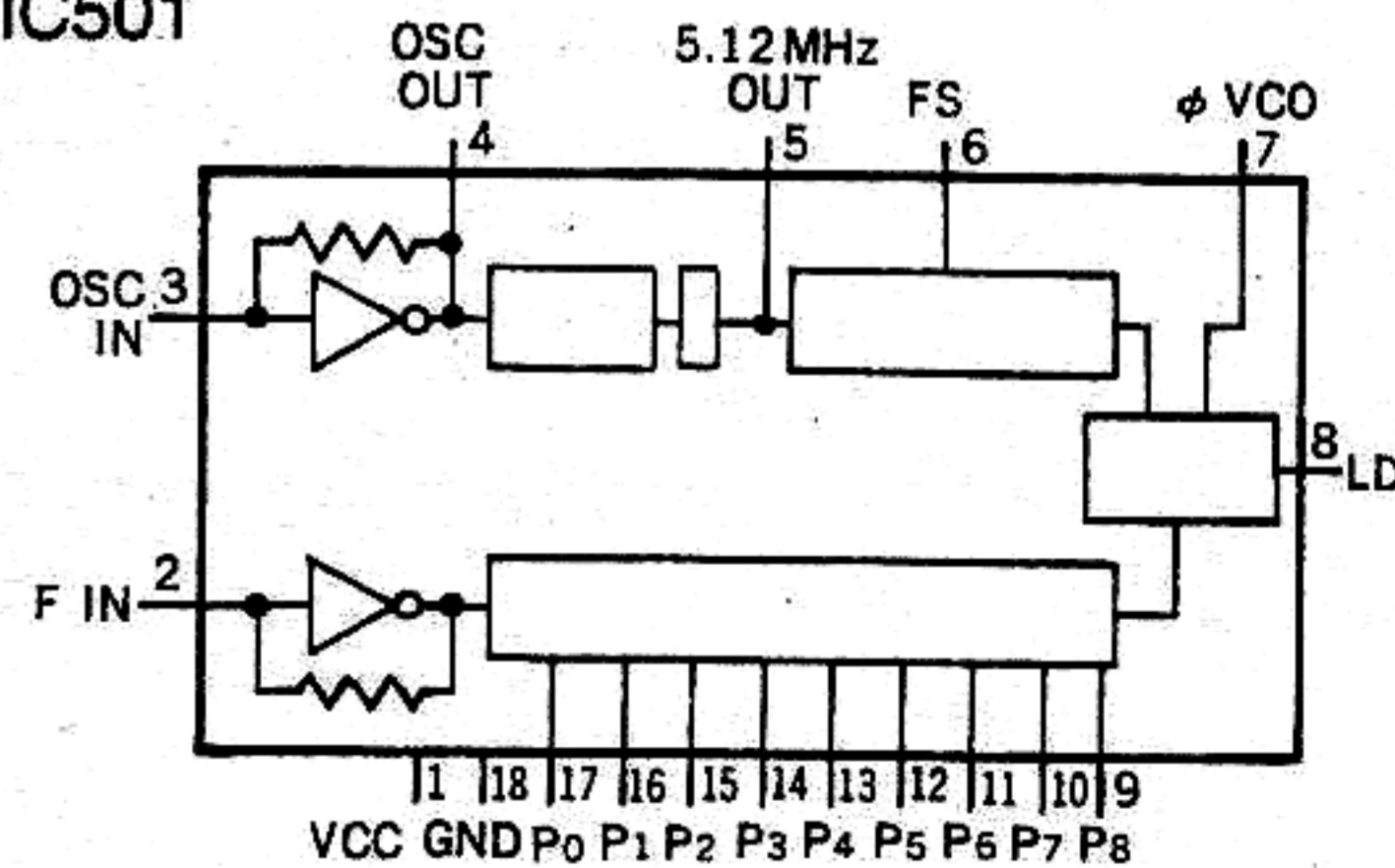
# SCHEMATIC DIAGRAM (COUNT



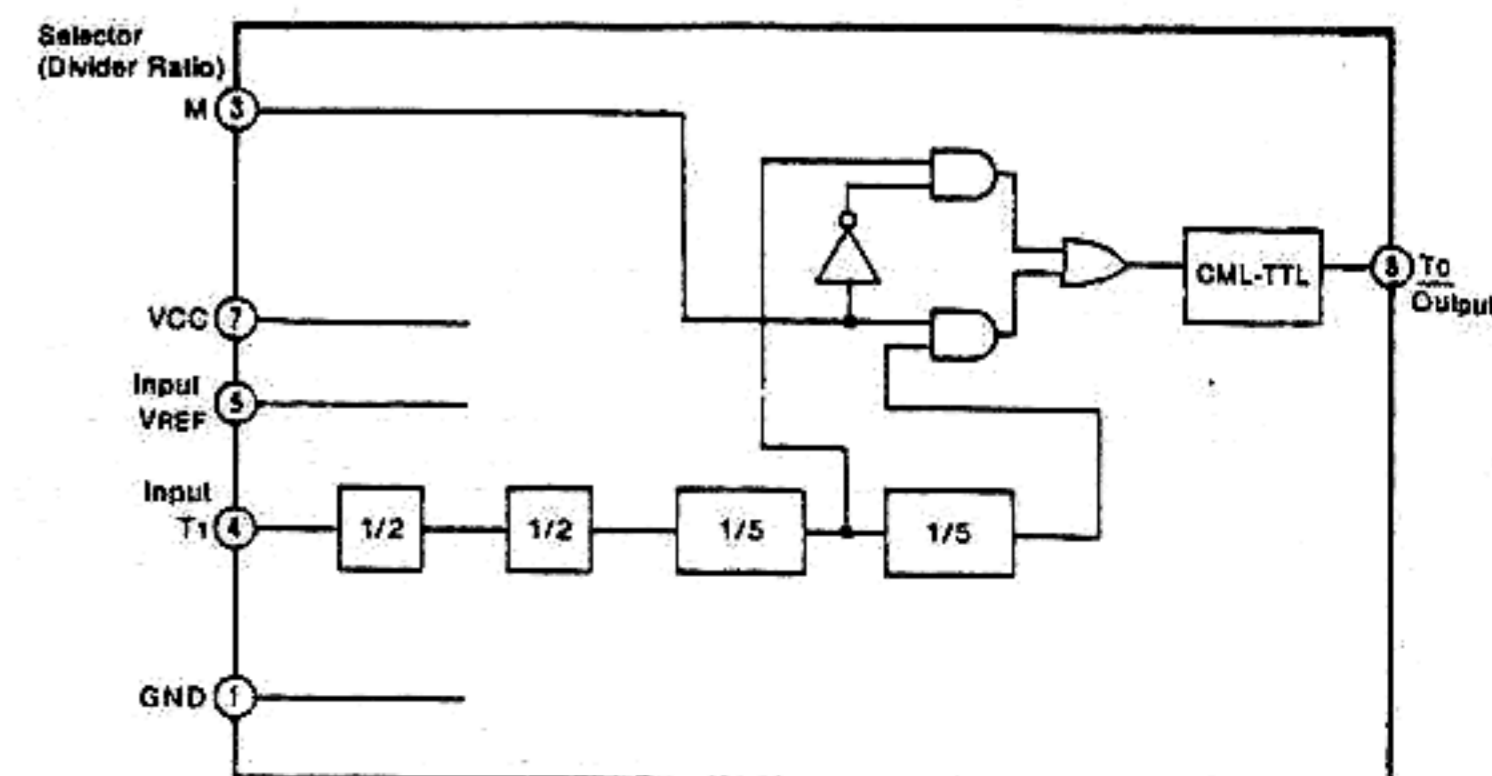
**Notes:**

- S501-1, S501-2: Band select switch in "FM" position.  
(1... SW16~29, 2... SW8~15, 3... SW1~7, 4... MW, 5, 6... FM)
- DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.  
(Light SW... OFF, Bandwidth SW... WIDE, BFO SW... OFF, Volume... MIN, Bass and Treble... MIN, RF Gain... MIN, BFO Pitch... Center position.  
[ ]... FM position, < >... MW position, ( )... SW position.

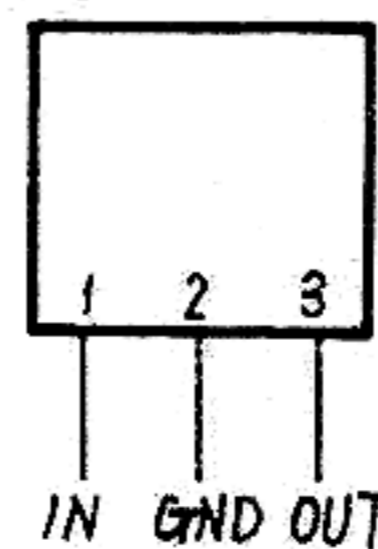
**IC501**



**IC503**



**IC301, 505**



Q504

	FM	MW	SW
C	0V	0V	0V
B	12.0V	12.0V	7.94V
E	12.0V	12.0V	7.3V

Q503

	FM	MW	SW
C	12.0V	12.0V	7.35V
B	0.3V	0.27V	0.58V
E	0.26V	0.3V	0.98V

Q501

	FM	MW	SW
C	0.1V	0.1V	0.1V
B	0V	0V	0.66V
E	0V	0V	0V

Q502

	FM	MW	SW
C	12.0V	12.0V	7.35V
B	0.26V	0.3V	0.98V
E	0V	0V	0V

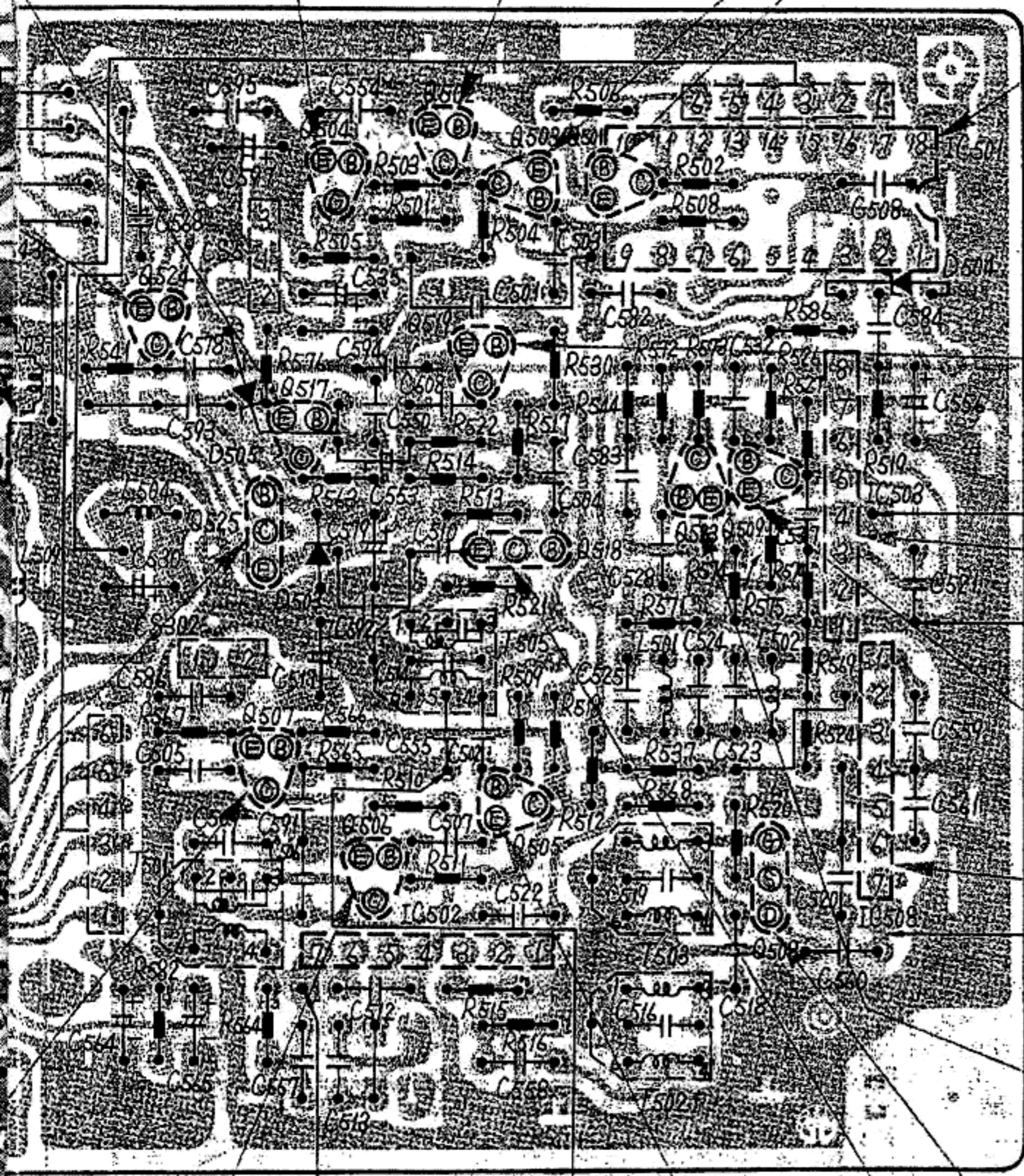
IC501

	FM	MW	SW
1	0.1V	0.1V	5.65V
2	0V	0V	2.62V
3	0V	0V	2.4V
4	0V	0V	2.68V
5	0V	0V	2.98V
6	0V	0V	5.6V
7	0.2V	0.16V	1.0V
8	0V	0V	5.7V
9	0V	0V	0V

501

	FM	MW	SW
10	0V	0V	0V
11	0.1V	0.1V	0.1V
12	0V	0V	5.7V
13	0V	0V	5.7V
14	0V	0V	5.7V
15	0V	0V	5.7V
16	0V	0V	0V
17	0V	0V	5.7V
18	0V	0V	0V

MW	SW
1.9V	14.5V
1.7V	12.7V
1.3V	12.1V



Q519

	FM	MW	SW
C	0.1V	0.1V	6.3V
B	0.1V	0.1V	1.86V
E	0V	0V	1.15V

IC503

	FM	MW	SW
1	0V	0V	0V
2	0.1V	0.17V	0V
3	0.1V	0.1V	5.7V
4	0V	0V	3.42V
5	0V	0V	3.46V
6	0.1V	0V	0V
7	0.1V	0.1V	5.7V
8	0.1V	0.1V	1.45V

Q509

	FM	MW	SW
C	0.1V	0.1V	4.3V
B	0.1V	0.1V	0.82V
E	0V	0V	0.1V

IC508

	FM	MW	SW
1	0.1V	0.1V	9.5V
2	0.1V	0.1V	8.2V
3	0V	0V	7.6V
4	0V	0V	0V
5	0V	0V	4.27V
6	0V	0V	4.27V
7	0V	0V	4.27V

Q523

	FM	MW	SW
C	0.1V	0.1V	4.7V
B	0.1V	0.1V	0.82V
E	0V	0V	0.1V

Q508

	FM	MW	SW
S	0V	0V	0V
G	0V	0V	0V
D	0V	0V	9.2V

Q518

	FM	MW	SW
C	0.1V	0.1V	6.3V
B	0V	0V	1.9V
E	0V	0V	1.24V

IC502

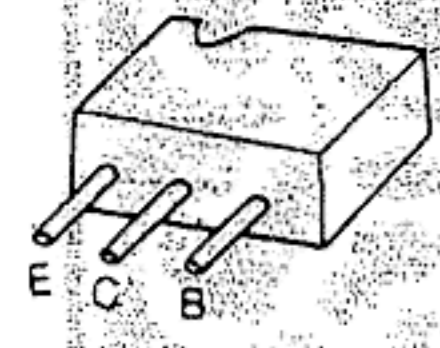
	FM	MW	SW
1	0.1V	0.1V	9.3V
2	0.1V	0.1V	8.0V
3	0V	0V	7.4V
4	0V	0V	0V
5	0V	0V	4.3V
6	0V	0V	4.3V
7	0V	0V	4.3V

Q505

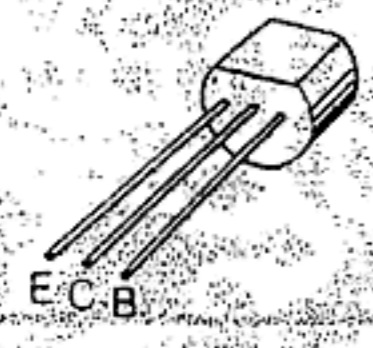
	FM	MW	SW
C	0.1V	0.1V	6.95V
B	0.1V	0.1V	2.0V
E	0V	0V	1.4V

Q506

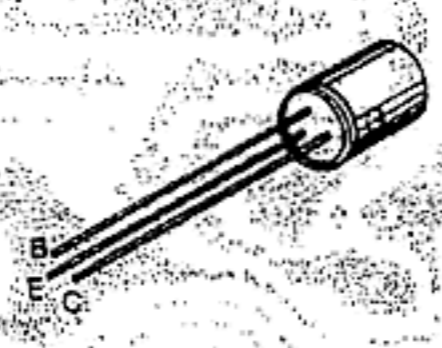
MW	SW
0V	0V
0.1V	0.5V
0V	0V



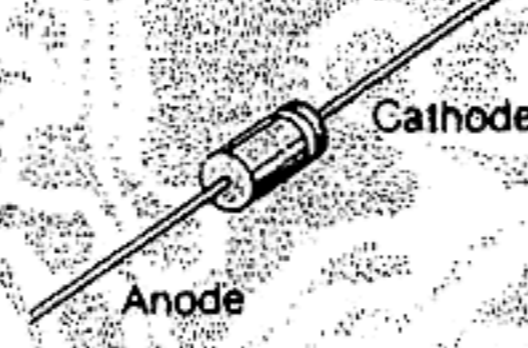
Q515



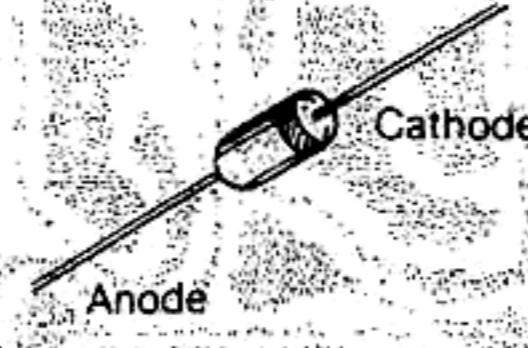
Q516, 518, 526



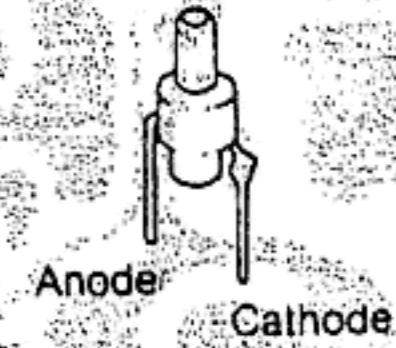
Q525



D401~405



D503~505, 507~509

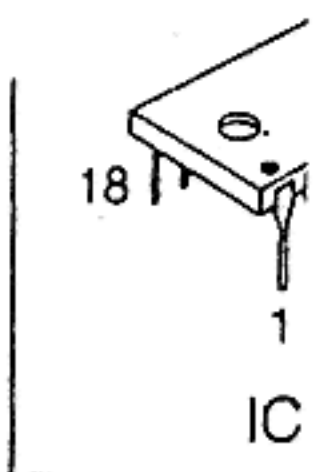
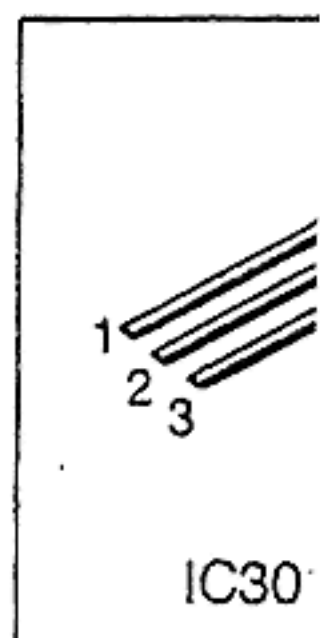


D506

■ SWITCH POSITIONS

○ : ON, No mark: OFF

	S501-2							S501-1					
	1	2	3	4	5	6	7	1	2	3	4	5	6
FM					○		○						
MW				○			○						
SW1			○				○			○	○	○	○
SW2			○				○		○	○	○	○	○
SW3			○				○		○	○	○	○	○
SW4			○				○		○	○	○	○	○
SW5			○				○						
SW6			○				○						
SW7			○				○		○				
SW8		○					○		○	○			
SW9		○					○			○			
SW10		○					○			○			
SW11		○					○		○	○			
SW12		○					○		○	○			
SW13		○					○				○		
SW14		○					○				○		
SW15		○					○		○		○		
SW16	○						○		○		○		
SW17	○						○			○	○		
SW18	○						○			○	○		
SW19	○						○		○	○	○		
SW20	○						○		○	○	○		
SW21	○						○					○	
SW22	○						○					○	
SW23	○						○		○			○	
SW24	○						○		○			○	
SW25	○						○			○		○	
SW26	○						○			○		○	
SW27	○						○		○	○		○	
SW28	○						○		○	○		○	
SW29	○						○			○		○	



# CABINET PARTS LOCATION

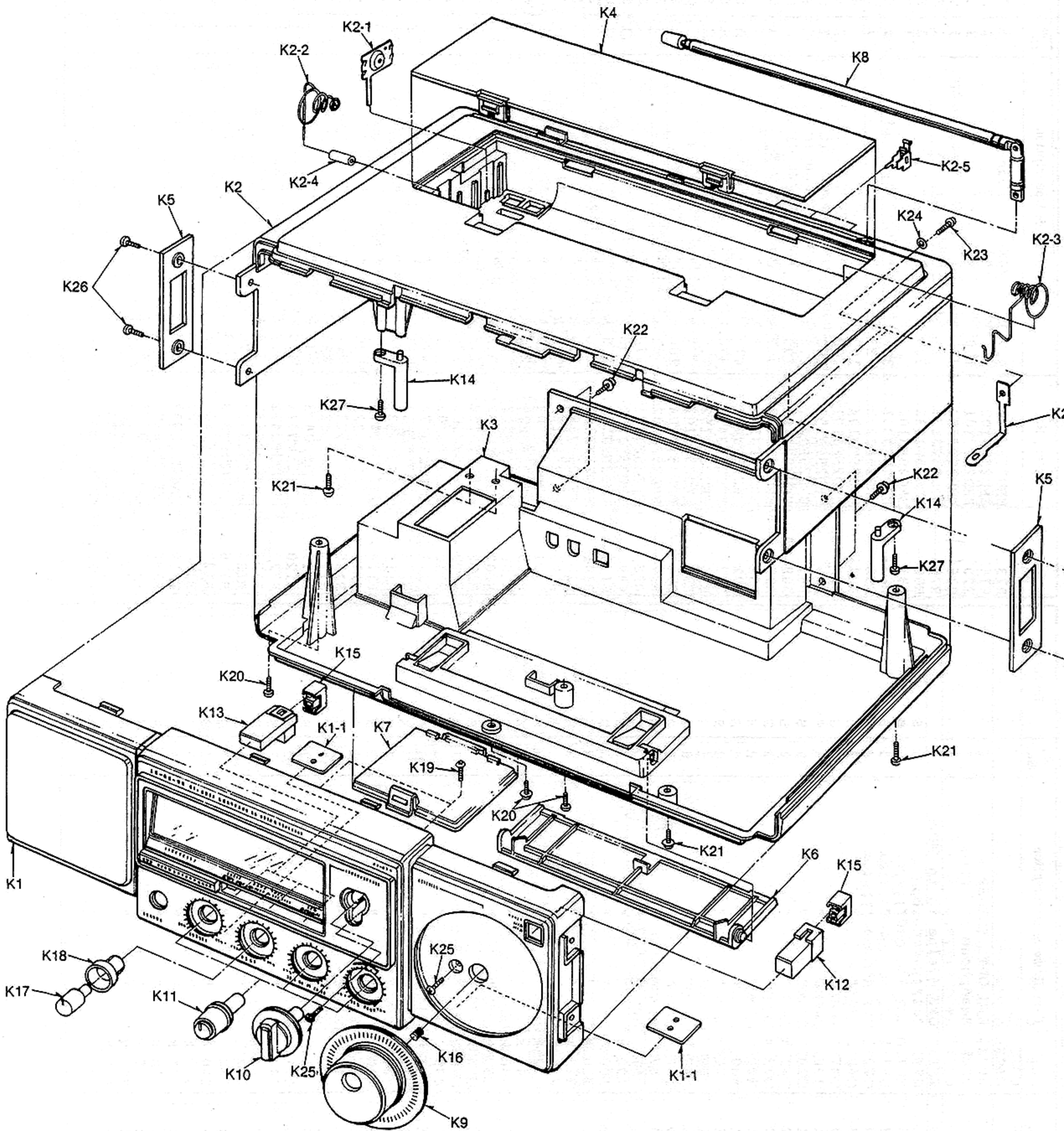


Fig. 27

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks	Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
Q524	2SC1623L5A	Transistor (Si)	1	S	L53	RLQZA470KW	Coil, Choke	1	
Q525	2SD352E	Transistor (Si)	1	S	L62,63	RLQG681K	Coil, Choke	2	
D1,17,19,20,28,34,37,39,40,41,48,54,61,507~509	MA161	Diode (Si)	16	S	L64	RLQZB820K	Coil, Choke	1	
D5,7,8,23,24,25,43,44	MA56	Diode (Si)	8	S	L65	RLQZB5R6K	Coil, Choke	1	
D13,53	RVDKB265G	Diode (Si)	2	S	L503,504	RLQZ222	Coil, Choke	1	
D22,26,29,38	20A90	Diode (Ge)	4	S	L509,510,515,516	RLQZA101K	Coil, Choke	4	
D27	MA381RA	Diode (Si)	1	S	L512	RLQZA331K	Coil, Choke	1	
D31	RVDKB262D	Diode (Si)	1	S	L513	RLQZB101K	Coil, Choke	1	
D32	RVDRD7R5EB3	Diode (Si)	1		T1,2,5,30	RLI4M101	IFT, 2nd Local 10.24MHz	6	S
D35	RVDS113	Diode (Si)	1		T3	RLI2M214	IFT, AM 1st	1	S
D36	RVDRD5R1EB3	Diode (Si)	1		T4	RLI2M205	IFT, AM 2nd	1	S
D47,55	OA95	Diode (Ge)	2	S	T6	RLI2M402	IFT, AM 3rd	1	S
D49	MA27A1	Diode (Si)	1	S	T7	RLI4M103	IFT, FM	1	S
D401~404	SM112	Diode (Si)	4	S	T8	RLA3Z9	IFT, Trap	1	
D405	RVDSM1A02	Diode (Si)	1		T401	RLT5J4M1A	Power Transformer, for USA	1	▲
D503	RVDRD7R5EB2	Diode (Si)	1		T401	RLT5J4C1A	Power Transformer, for Canada	1	▲
D504	RVDRD5R6EB1	Diode (Si)	1		T501~503	RLI9M8	Transformer, 2nd Local Filter	3	
D62,505	RVDRD13EB1	Diode (Si)	2		T504	RLT9F2	DC-DC Converter	1	
D506	RVDSL144B	Diode (Si)	1				VARIABLE RESISTORS		
		THERMISTOR			VR1,2	EWHP0AF20B14	Variable Resistor, 10kΩ (B)	2	
TH1	RRT800	Thermistor	1		VR3	EVKANAF32A14	Variable Resistor, 10kΩ (A)	1	
		CRYSTAL			VR4	EWHP0AF20A14	Variable Resistor, 10kΩ (A)	1	
X501	RVCX5120N5Z	Crystal	1		VR5	EVTT3AA00B15	Preset, 100kΩ (B)	1	S
		COILS AND TRANSFORMERS			VR6	EVTT3AA00B52	Preset, 500Ω (B)	1	S
L1	RLF2F47	Coil, MW Antenna	1		VR301	EVNM4AA00B52	Preset, 500Ω (B)	1	S
L7,46	RLQZG102K	Coil, Choke	2				VARIABLE CAPACITORS		
L8	RLQZB8R2KW	Coil, Choke	1		VC1,2,3,4	RCV4RC2VK	Tuning Capacitor (CT1,2,3,4)	1	
L9	RLQZB2R2KW	Coil, Choke	1		CT5	RCVCTZ51F	Trimmer Capacitor	1	
L10,20	RLQZB1R0KT	Coil, Choke	2				CERAMIC FILTERS		
L12,16	RLQZB3R9KW	Coil, Choke	2		CF1,2,3	RVF107NAR	Ceramic Filter, 10,7MHz	3	
L13	RLQZB3R3KW	Coil, Choke	1		CF4	RVFSFP455K	Ceramic Filter, 455kHz	1	
L14,21	RLQZB1R0KW	Coil, Choke	2		CF5	RVFSFP455H10	Ceramic Filter, 455kHz	1	
L17	RLQZB2R7KW	Coil, Choke	1		CF7	RVFTPA107MB	Ceramic Filter, 10,7MHz	1	
L18	RLQZB6R8KW	Coil, Choke	1		CF8	RVFSFA107MF5	Ceramic Filter, 10,7MHz	1	
L19	RLQZB1R8KW	Coil, Choke	1				COMPONENT COMBINATIONS		
L22	RLD4N30	Coil, Tuning	1		Z1	RXABPWB5	Component Combination (L,C)	1	
L24	RLQZB101KW	Coil, Choke	1		Z2	EXAF203Z471F	Component Combination (C,R)	1	
L26	RLO3M43	Coil, SW1 VCO Oscillator	1		Z3,4	EXRP103P471T	Component Combination (C,R)	2	
L27	RLO3M49	Coil, SW2 VCO Oscillator	1		Z7,8	EXRP103P103T	Component Combination (C,R)	2	
L28	RLA3N14	Coil, SW3 VCO Oscillator	1				SPEAKER		
L29	RLO4N141	Coil, Oscillator	1			RA9P04Z	Speaker, 9cm (3-1/2"), 8Ω	1	
L30,40	RLQZA331KW	Coil, Choke	2				SWITCHES		
L33	RLO2M28	Coil, MW Oscillator	1		S1	RSS2B20Z	Switch, Antenna Select	1	
L34	RLO3M41	Coil, SW VFO Oscillator	1		S2,3,4	RSHX042Z	Switch, BFO, Band Width, Light	1	
L37	RLO9M8	Coil, BFO Oscillator	1		S401	RSH1A10Z	Switch, Power	1	
L42,43	RLQZ102	Coil, Choke	2		S501	RSRX012Y	Switch, Band	1	
L51	RLQZB101KT	Coil, Choke	1						
L52	RLQZA5R6KW	Coil, Choke	1						



Ref. No.	Part No.	Part Name & Description	Per Set	Remarks	Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		<b>JACKS</b>							
J1,2	RJJ19Y	Jack, REC OUT, EXT SP	2		R73	ERD25FJ472	4.7 k 1/4W Carbon	1	S
J3	RJJ1E2Z	Jack, Headphone	1		R74	ERD25FJ102	1 k "	1	S
		<b>RESISTORS (Value is in OHMS)</b>			R75	ERD25FJ101	100 "	1	S
R3	ERD25FJ221	220 1/4W Carbon	1	S	R76	ERD25TJ334	330 k "	1	S
R5	ERD25TJ105	1 M "	1	S	R78	ERD25FJ273	27 k "	1	S
R10	ERD25FJ102	1 k "	1	S	R80	ERD25FJ332	3.3 k "	1	S
R11	ERD25FJ220	22 "	1	S	R81	ERD25FJ102	1 k "	1	S
R15	ERD25FJ473	47 k "	1	S	R82	ERD25FJ331	330 "	1	S
R16	ERD25FJ470	47 "	1	S	R83	ERD25FJ273	27 k "	1	S
R18	ERD25FJ101	100 "	1	S	R84	ERD25TJ104	100 k "	1	S
R19	ERD25FJ221	220 "	1	S	R85	ERD25FJ101	100 "	1	S
R20	ERD25FJ102	1 k "	1	S	R86	ERD25FJ101	100 "	1	S
R21	ERD25FJ332	3.3 k "	1	S	R87	ERD25FJ222	2.2 k "	1	S
R22	ERD25FJ101	100 "	1	S	R88,89	ERD25FJ101	100 "	2	S
R23	ERD25FJ681	680 "	1	S	R90	ERD25FJ472	4.7 k "	1	S
R25	ERD25FJ102	1 k "	1	S	R91	ERD25FJ102	1 k "	1	S
R26	ERD25FJ101	100 "	1	S	R92	ERD25FJ471	470 "	1	S
R27	ERD25FJ473	47 k "	1	S	R93	ERD25TJ474	470 k "	1	S
R28	ERD25FJ680	68 "	1	S	R94	ERD25FJ152	1.5 k "	1	S
R29,30	ERD25FJ470	47 "	2	S	R95	ERD25FJ102	1 k "	1	S
R31	ERD25FJ680	68 "	1	S	R96	ERD25TJ104	100 k "	1	S
R33	ERD25TJ104	100 k "	1	S	R97	ERD25FJ102	1 k "	1	S
R34	ERD25FJ101	100 "	1	S	R98	ERD25FJ471	470 "	1	S
R35	ERD25TJ154	150 k "	1	S	R99	ERD25FJ333	33 k "	1	S
R36	ERD25TJ224	220 k "	1	S	R100	ERD25FJ152	1.5 k "	1	S
R37	ERD25TJ474	470 k "	1	S	R101	ERD25FJ103	10 k "	1	S
R38	ERD25FJ223	22 k "	1	S	R102	ERD25FJ392	3.9 k "	1	S
R40	ERD25FJ473	47 k "	1	S	R103	ERD25FJ153	15 k "	1	S
R41	ERD25TJ334	330 k "	1	S	R104	ERD25FJ103	10 k "	1	S
R43	ERD25TJ154	150 k "	1	S	R105	ERD25FJ222	2.2 k "	1	S
R45	ERD25TJ474	470 k "	1	S	R106	ERD25FJ103	10 k "	1	S
R46	ERD25FJ102	1 k "	1	S	R107	ERD25FJ332	3.3 k "	1	S
R47	ERD25FJ471	470 "	1	S	R108	ERD25FJ152	1.5 k "	1	S
R48	ERD25FJ102	1 k "	1	S	R109	ERD25TJ104	100 k "	1	S
R50	ERD25FJ473	47 k "	1	S	R110	ERD25FJ102	1 k "	1	S
R51	ERD25FJ223	22 k "	1	S	R111	ERD25TJ474	470 k "	1	S
R52~54	ERD25FJ471	470 "	3	S	R112	ERD25TJ684	680 k "	1	S
R55	ERD25FJ331	330 "	1	S	R113	ERD25FJ331	330 "	1	S
R56	ERD25FJ470	47 "	1	S	R114	ERD25FJ473	47 k "	1	S
R57	ERD25FJ101	100 "	1	S	R115	ERD25FJ221	220 "	1	S
R58	ERD25FJ473	47 k "	1	S	R116	ERD25FJ222	2.2 k "	1	S
R59	ERD25FJ472	4.7 k "	1	S	R117	ERD25FJ821	820 "	1	S
R60	ERD25FJ681	680 "	1	S	R119	ERD25FJ473	47 k "	1	S
R61	ERD25FJ102	1 k "	1	S	R120	ERD25FJ471	470 "	1	S
R62	ERD25FJ473	47 k "	1	S	R122	ERD25FJ472	4.7 k "	1	S
R63	ERD25FJ220	22 "	1	S	R123	ERD25FJ682	6.8 k "	1	S
R64	ERD25TJ224	220 k "	1	S	R124	ERD25TJ474	470 k "	1	S
R65	ERD25FJ332	3.3 k "	1	S	R126	ERD25FJ333	33 k "	1	S
R66	ERD25FJ223	22 k "	1	S	R127	ERD25FJ102	1 k "	1	S
R67	ERD25FJ153	15 k "	1	S	R128	ERD25FJ223	22 k "	1	S
R68	ERD25FJ152	1.5 k "	1	S	R129	ERD25FJ332	3.3 k "	1	S
R69	ERD25TJ224	220 k "	1	S	R130	ERD25FJ102	1 k "	1	S
R70	ERD25FJ152	1.5 k "	1	S	R132	ERD25TJ474	470 k "	1	S
R71	ERD25FJ101	100 "	1	S	R133	ERD25FJ103	10 k "	1	S
					R134	ERD25FJ333	33 k "	1	S
					R135,136	ERD25FJ221	220 "	2	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks	Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R137	ERD25FJ103	10 k 1/4W Carbon	1	S	R504	RRD18XK222	2.2 k 1/8W Chip	1	
R138	ERD25FJ333	33 k " "	1	S	R505	RRD18XK223	22 k " "	1	
R139	ERD25TJ104	100 k " "	1	S	R506	RRD18XK473	47 k " "	1	
R140	ERD25FJ102	1 k " "	1	S	R508	RRD18XK472	4.7 k " "	1	
R141	ERD25FJ103	10 k " "	1	S	R509	RRD18XK474	470 k " "	1	
R142	ERD25FJ472	4.7 k " "	1	S	R510	RRD18XK102	1 k " "	1	
R144	ERD25FJ102	1 k " "	1	S	R511	RRD18XK224	220 k " "	1	
R145	ERD25FJ221	220 " "	1	S	R512	RRD18XK101	100 " "	1	
R146	ERD25FJ151	150 " "	1	S	R513	RRD18XK471	470 " "	1	
R147	ERD25FJ271	270 " "	1	S	R514	RRD18XK103	10 k " "	1	
R148	ERD25FJ152	1.5 k " "	1	S	R515	RRD18XK470	47 " "	1	
R149	ERD25FJ152	1.5 k " "	1	S	R516	RRD18XK332	3.3 k " "	1	
R152	ERD25FJ821	820 " "	1	S	R517	RRD18XK223	22 k " "	1	
R153	ERD25FJ220	22 " "	1	S	R518	RRD18XK101	100 " "	1	
R157	ERD25FJ681	680 " "	1	S	R519	RRD18XK472	4.7 k " "	1	
R158	ERD25FJ221	220 " "	1	S	R520	RRD18XK221	220 " "	1	
R159	ERD25TJ224	220 k " "	1	S	R521	ERD25FJ333	33 k 1/4W Carbon	1	S
R160	ERD25FJ222	2.2 k " "	1	S	R522	RRD18XK331	330 1/8W Chip	1	
R162	ERD25FJ222	2.2 k " "	1	S	R524	RRD18XK101	100 " "	1	
R163	ERD25FJ331	330 " "	1	S	R525	ERD25FJ2R2	2.2 1/4W Carbon	1	S
R164	ERD25TJ683	68 k " "	1	S	R526	RRD18XK274	270 k 1/8W Chip	1	
R165,166	ERD25TJ105	1 M " "	2	S	R527	RRD18XK152	1.5 k " "	1	
R167,168	ERD25FJ471	470 " "	2	S	R528	RRD18XK102	1 k " "	1	
R169	ERD25FJ472	4.7 k " "	1	S	R529	ERD25FJ681	680 1/4W Carbon	1	S
R170	ERD25FJ472	4.7 k " "	1	S	R530,531	RRD18XK224	220 k 1/8W Chip	2	
R171	ERD25FJ680	68 " "	1	S	R532	RRD18XK102	1 k " "	1	
R172	ERD25FJ333	33 k " "	1	S	R533	ERD25FJ220	22 1/4W Carbon	1	S
R173	ERD25FJ332	3.3 k " "	1	S	R534	RRD18XK152	1.5 k 1/8W Chip	1	
R174	ERD25FJ102	1 k " "	1	S	R535	RRD18XK154	150 k " "	1	
R175,176	ERD25FJ472	4.7 k " "	2	S	R536	RRD18XK224	220 k " "	1	
R177	ERD25FJ102	1 k " "	1	S	R537	ERD25FJ680	68 1/4W Carbon	1	S
R178	ERD25FJ223	22 k " "	1	S	R538	RRD18XK333	33 k 1/8W Chip	1	
R179	ERD25TJ474	470 k " "	1	S	R539	RRD18XK183	18 k " "	1	
R181	ERD25FJ222	2.2 k " "	1	S	R541	RRD18XK102	1 k " "	1	
R184	ERD25TJ104	100 k " "	1	S	R542	RRD18XK331	330 " "	1	
R186	ERD25FJ332	3.3 k " "	1	S	R544	RRD18XK101	100 " "	1	
R187	ERD25FJ102	1 k " "	1	S	R545,546	RRD18XK222	2.2 k " "	2	
R188	ERD25FJ473	47 k " "	1	S	R547~559	RRD18XK224	220 k " "	13	
R189	ERD25FJ471	470 " "	1	S	R560	RRD18XK222	2.2 k " "	1	
R191	ERD25FJ680	68 " "	1	S	R561~563	RRD18XK102	1 k " "	3	
R192	ERD25FJ101	100 " "	1	S	R564	RRD18XK471	470 " "	1	
R193	ERD25FJ151	150 " "	1	S	R565	RRD18XK222	2.2 k " "	1	
R195	ERD25FJ220	22 " "	1	S	R566	RRD18XK333	33 k " "	1	
R196	ERD25FJ102	1 k " "	1	S	R567	RRD18XK151	150 " "	1	
R197	ERD25FJ152	1.5 k " "	1	S	R568	ERD25FJ680	68 1/4W Carbon	1	S
R198	ERD25FJ221	220 " "	1	S	R569	RRD18XK332	3.3 k 1/8W Chip	1	
R211	ERD25FJ101	100 " "	1	S	R570	RRD18XK473	47 k " "	1	
R220	ERD25FJ102	1 k " "	1	S	R571	RRD18XK101	100 " "	1	
R235	ERD25FJ101	100 " "	1	S	R572	RRD18XK274	270 k " "	1	
R240	ERD25FJ102	1 k " "	1	S	R573	RRD18XK152	1.5 k " "	1	
R290	ERD25FJ222	2.2 k " "	1	S	R574,575	RRD18XK220	22 " "	2	
R401	ERD2FCJR47	0.47 2W " "	1	S	R576	RRD18XK471	470 " "	1	
R402	ERC12ZGM335	3.3 M 1/2W Solid	1		R577~579	RRD18XK223	22 k " "	3	
R501	RRD18XK153	15 k 1/8W Chip	1		R580	ERD25FJ180	18 1/4W Carbon	1	S
R502	RRD18XK472	4.7 k " "	1		R581	RRD18XK223	22 k 1/8W Chip	1	
R503	RRD18XK682	6.8 k " "	1		R582,583	RRD18XK331	330 " "	2	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks	Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R584	RRD18XK104	100 k 1/8W Chip	1		C69	ECCD1H100KC	10 P 50V Ceramic	1	
R585	RRD18XK470	47 " "	1		C70	ECKD1H103ZF	0.01 " "	1	
R586	ERD25FJ470	47 1/4W Carbon	1	S	C71	ECCD1H270KC	27 P " "	1	
R587	RRD18XK103	10 k 1/8W Chip	1		C72	ECCD1H070DC	7 P " "	1	
R588	RRD18XK222	2.2 k " "	1		C73	ECCD1H100KC	10 P " "	1	
R589	ERD2FCJ100	10 2W Carbon	1	S	C74	ECKD1H103ZF	0.01 " "	1	
R590	RRD18XK2R2	2.2 1/8W Chip	1		C75	ECCD1H010C	1 P " "	1	
R701	ERD50FJ102	1 k 1/2W Carbon	1	S	C76	ECKD1H102MD	0.001 " "	1	
R702	ERC12GM103	10 k " Solid	1	S	C77	ECCD1H040C	4 P " "	1	
		CAPACITORS (Value is in MICRO FARADS except P.P=PICO FARADS)			C78	ECMS05221J	220 P " Mica	1	
C1	ECKD1H152MD	0.0015 50V Ceramic	1		C80	ECCD1H050C	5 P " Ceramic	1	
C6	ECCD1H470K	47 P " "	1		C81	ECKD1H103ZF	0.01 " "	1	
C8	ECBT1H103NM	0.01 " Ceramic (Cylinder)	1		C82	ECKD1H103MD	0.01 " "	1	
C9	ECKD1H103ZF	0.01 " Ceramic	1		C83	ECBT1E103NM	0.01 25V Ceramic (Cylinder)	1	
C10	ECCD1H150KC	15 P " "	1		C84	RCQP2A152JZ	0.0015 100V Styrol	1	
C15	ECCD1H330KC	33 P " "	1		C85	ECES1AS101	100 10V Electrolytic	1	S
C16	ECBT1H4R7KC	4.7 P " Ceramic (Cylinder)	1		C86	ECEA1HS100	10 50V "	1	S
C17	ECKD1H103ZF	0.01 " Ceramic	1		C88	ECKD1H103ZF	0.01 " Ceramic	1	
C18	ECBT1H103NM	0.01 " Ceramic (Cylinder)	1		C90~93	ECKD1H103ZF	0.01 " "	4	
C19	RCQP2A681JZ	680 P 100V Styrol	1		C94	ECEA1AS101	100 10V Electrolytic	1	S
C20	ECKD1H332MD	0.0033 50V Ceramic	1		C95	ECFVD473MD	0.047 25V Semi-Conductor	1	
C21	ECCD1H271K	270 P " "	1		C96	ECKD1H103ZF	0.01 50V Ceramic	1	
C22	ECCD1H270KC	27 P " "	1		C97	ECCD1H010C	1 P " "	1	
C23, 24	ECCD1H390KC	39 P " "	2		C98	ECCD1H020C	2 P " "	1	
C25, 26	ECBT1H103NM	0.01 " Ceramic (Cylinder)	2		C99	ECKD1H103ZF	0.01 " "	1	
C27, 28	RCQP2A471JZ	470 P 100V Styrol	2		C100	ECCD1H120KC	12 P " "	1	
C30	ECCD1H181K	180 P 50V Ceramic	1		C101	RCQP2A471JZ	470 P 100V Styrol	1	
C31	ECCD1H101KC	100 P " "	1		C102	ECKD1H103ZF	0.01 50V Ceramic	1	
C32	ECKD1H103ZF	0.01 " "	1		C103	ECKD1H103MD	0.01 " "	1	
C33	ECBT1H102MD	0.001 " Ceramic (Cylinder)	1		C104	ECCD1H100KU	10 P " "	1	
C35	ECCD1H151K	150 P " Ceramic	1		C105	ECQS2B391JZ	390 P 100V Styrol	1	
C36	ECCD1H221K	220 " " "	1		C106	ECCD1H100KC	10 P 50V Ceramic	1	
C37	ECCD1H470KC	47 P " "	1		C108	ECKD1H103ZF	0.01 " "	1	
C38	RCQP2A681JZ	680 P 100V Styrol	1		C109	ECKD1H103MD	0.01 " "	1	
C39	ECFVD103MD	0.01 25V Semi-Conductor	1		C110, 111	ECEA1AS101	100 10V Electrolytic	2	S
C40	ECKD1H102MD	0.001 50V Ceramic	1		C112	ECEA1AS221	220 " "	1	S
C41	ECCD1H101KC	100 P " "	1		C113	ECFVD103MD	0.01 25V Semi-Conductor	1	
C42	ECCD1H470KC	47 P " "	1		C114	ECKD1H103MD	0.01 50V Ceramic	1	
C43	ECCD1H040C	4 P " "	1		C115, 116	ECFVD473MD	0.047 25V Semi-Conductor	2	
C47	ECKD1H103ZF	0.01 " "	1		C117	ECKD1H223ZF	0.022 50V Ceramic	1	
C48	ECKD1H471KB	470 P " "	1		C118	ECKD1H103MD	0.01 " "	1	
C49	ECCD1H050C	5 P " "	1		C119	ECEA1HS100	10 " Electrolytic	1	S
C50	ECEA50Z1	1 " Electrolytic	1	S	C120	ECKD1H223ZF	0.022 " Ceramic	1	
C51	ECBT1H1R5ML	1.5 " Ceramic (Cylinder)	1		C121	ECFVD473MD	0.047 25V Semi-Conductor	1	
C53	ECEA1AS221	220 10V Electrolytic	1	S	C122	ECFVD223MD	0.022 " "	1	
C54	ECCD1H180KC	18 P 50V Ceramic	1		C123	ECFVD223MD	0.022 " "	1	
C55~58	ECKD1H103ZF	0.01 " "	4		C124, 125	ECKD1H103MD	0.01 50V Ceramic	2	
C59	ECCD1H101K	100 P " "	1		C126	ECMS05820K	82 P " Mica	1	
C60	ECKD1H103MD	0.01 " "	1		C127	ECKD1H103MD	0.01 " Ceramic	1	
C61, 62	ECFVD103MD	0.01 25V Semi-Conductor	2		C128	ECEA1CS221	220 16V Electrolytic	1	S
C63	ECEA1AS470	47 10V Electrolytic	1	S	C129	ECFVD103MD	0.01 25V Semi-Conductor	1	
C64	ECEA1AS221	220 " "	1	S	C130	ECEA1CS330	33 16V Electrolytic	1	S
C65, 66	ECEA1AS470	47 " "	2	S	C131	ECES1ES220	22 25V "	1	S
C67, 68	ECKD1H103ZF	0.01 50V Ceramic	2		C132	ECFVD333MD	0.033 " Semi-Conductor	1	
					C133	ECCD1H150KC	15 P 50V Ceramic	1	
					C134	ECEA1ES220	22 25V Electrolytic	1	S

Ref. No.	Part No.	Part Name & Description			Per Set	Remarks	Ref. No.	Part No.	Part Name & Description			Per Set	Remarks
C136	ECMS05151J	150 P	50V	Mica	1		C208	ECKD1H103MD	0.01	50V	Ceramic	1	
C137	ECMS05181J	180 P	"	"	1		C209	ECCD1H150KC	15 P	"	"	1	
C138	ECFVD333MD	0.033	25V	Semi-Conductor	1		C210	ECKD1H471KB	470 P	"	"	1	
C139	ECEA1AS470	47	10V	Electrolytic	1	S	C212	ECCD1H181K	180 P	"	"	1	
C140	ECKD1H103ZF	0.01	50V	Ceramic	1		C222	ECCD1H220K	22 P	"	"	1	
C141	ECFVD223MD	0.022	25V	Semi-Conductor	1		C228	ECEA50ZR47	0.47	"	Electrolytic	1	S
C142	ECEA1AS221	220	10V	Electrolytic	1	S	C251	ECCD1H220K	22 P	"	Ceramic	1	
C143	ECEA1AS470	47	"	"	1	S	C252	ECCD1H330K	33 P	"	"	1	
C145	ECQV05104JZ	0.1	50V	Epoxy	1		C253	ECCD1H220K	22 P	"	"	1	
C146	ECKD1H152MD	0.0015	"	Ceramic	1		C255	ECCD1H101K	100 P	"	"	1	
C147	ECFVD153MD	0.015	25V	Semi-Conductor	1		C260	ECBT1E103NM	0.01	25V	Ceramic (Cylinder)	1	
C149	ECKD1H103ZF	0.01	50V	Ceramic	1		C261	ECEA1AS470	47	10V	Electrolytic	1	S
C150	ECEA1CS330	33	16V	Electrolytic	1	S	C262	ECES1ES470	47	25V	"	1	S
C151	ECEA1CS221	220	"	"	1	S	C263	ECCD1H100KC	10 P	50V	Ceramic	1	
C152	ECFVD473MD	0.047	25V	Semi-Conductor	1		C264	ECKD1H102MD	0.001	"	"	1	
C153	ECEA50ZR22	0.22	50V	Electrolytic	1	S	C266	ECFVD103MD	0.01	25V	Semi-Conductor	1	
C154	ECFVD223MD	0.022	25V	Semi-Conductor	1		C270	ECCD1H100KC	10 P	50V	Ceramic	1	
C155	ECEA1AS470	47	10V	Electrolytic	1	S	C301	ECCD1H270KC	27 P	"	"	1	
C156	ECFVD223MD	0.022	25V	Semi-Conductor	1		C302	ECCD1H020C	2 P	"	"	1	
C157	ECKD1H103MD	0.01	50V	Carbon	1		C303	ECCD1H270KC	27 P	"	"	1	
C158	ECKD1H102MD	0.001	"	"	1		C304	ECKD1H102MD	0.001	"	"	1	
C159	ECEA50ZR33	0.33	"	Electrolytic	1	S	C401	ECEA1ES222	2200	25V	Electrolytic	1	S
C160	ECEA1ES220	22	25V	"	1	S	C402~406	ECKD1H103ZF	0.01	50V	Ceramic	5	
C161	ECEA50ZR1	0.1	50V	"	1	S	C501	ECQE1225KN	2.2	100V	Styrol	1	
C162	ECEA50Z1	1	"	"	1	S	C502	ECUX1H331KD	330 P	50V	Chip	1	
C163	ECEA50ZR1	0.1	"	"	1	S	C503,504	ECUX1H102MD	0.001	"	"	2	
C164	ECCD1H221K	220 P	"	Ceramic	1		C505	ECUX1H103ZF	0.01	"	"	1	
C165	RCQP2A561JZ	560 P	100V	Styrol	1		C506	ECUX1H223MD	0.022	"	"	1	
C167	ECCD1H180KC	18 P	50V	Ceramic	1		C507	ECUX1H102MD	0.001	"	"	1	
C168	ECFVD683MD	0.068	25V	Semi-Conductor	1		C508	ECUX1H103ZF	0.01	"	"	1	
C170	ECCD1H103ZF	0.01	50V	Ceramic	1		C509	ECUX1H270KC	27 P	"	"	1	
C175	ECEA1CS102	1000	16V	Electrolytic	1	S	C510	ECUX1H103ZF	0.01	"	"	1	
C176	ECCD1H101K	100 P	50V	Ceramic	1		C511	ECUX1H070DC	7 P	"	"	1	
C178	ECFVD683MD	0.068	25V	Semi-Conductor	1		C512,513	ECUX1H103ZF	0.01	"	"	2	
C179	ECKD1H103ZF	0.01	50V	Ceramic	1		C514	ECUX1H223MD	0.022	"	"	1	
C180	ECCD1H103ZF	0.01	"	"	1		C515	ECUX1H333ZF	0.033	"	"	1	
C181	ECCD1H100KC	10 P	"	"	1		C516	ECUX1H330KC	33 P	"	"	1	
C182	ECFVD683MD	0.068	25V	Semi-Conductor	1		C517	ECEA1AS101	100	10V	Electrolytic	1	S
C183	ECFVD473MD	0.047	"	"	1		C518	ECUX1H1R5CC	1.5 P	50V	Chip	1	
C184	ECFVD103MD	0.01	"	"	1		C519	ECUX1H330KC	33 P	"	"	1	
C185	ECEA50Z1	1	50V	Electrolytic	1	S	C520	ECUX1H470KC	47 P	"	"	1	
C187	ECKD1H103MD	0.01	"	Ceramic	1		C521	ECUX1H102ZF	0.001	"	"	1	
C188	ECCD1H100KC	10 P	"	"	1		C522	ECUX1H103ZF	0.01	"	"	1	
C189	ECEA50Z3R3	3.3	"	Electrolytic	1	S	C523	ECUX1H120KC	12 P	"	"	1	
C191	ECKD1H103ZF	0.01	"	Ceramic	1		C524	ECUX1H100KC	10 P	"	"	1	
C192	ECKD1H223ZF	0.022	"	"	1		C525	ECUX1H120KC	12 P	"	"	1	
C194	ECEA1AS101	100	10V	Electrolytic	1	S	C526	ECUX1H102ZF	0.001	"	"	1	
C198	ECKD1H102MD	0.001	50V	Ceramic	1		C527	ECUX1H333ZF	0.033	"	"	1	
C200	ECCD1H100KX	10 P	"	"	1		C528	ECUX1H220KC	22 P	"	"	1	
C201	ECEA25Z4R7	4.7	25V	Electrolytic	1	S	C529	ECUX1H102ZF	0.001	"	"	1	
C202	ECBT1E103NM	0.01	"	Ceramic (Cylinder)	1		C530	ECEA0JS471	470	6.3V	Electrolytic	1	S
C203	ECKD1H103MD	0.01	50V	Ceramic	1		C531	ECUX1H102ZF	0.001	50V	Chip	1	
C204	ECCD1H220KC	22 P	"	"	1		C532	ECUX1H220KC	22 P	"	"	1	
C205	ECKD1H103MD	0.01	"	"	1		C533	ECUX1H223ZF	0.022	"	"	1	
C206	ECEA1AS221	220	10V	Electrolytic	1	S	C534	ECEA0JS471	470	6.3V	Electrolytic	1	S
C207	ECFVD683MD	0.068	25V	Semi-Conductor	1		C535	ECEA1ES470	47	25V	"	1	S

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks	Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C536	ECUX1H820KC	82 P 50V Chip	1		C605	ECEALAS101	100 10V Electrolytic	1	S
C537	ECUX1H181KD	180 P "	1		C606	ECEALES101	100 25V "	1	S
C538	ECUX1H101KD	100 P "	1		C607,608	ECUX1H223MD	0.022 50V Chip	2	
C539	ECUX1H103ZF	0.01 " "	1		C701,702	ECCD1H560K	56 P " Ceramic	2	
C540	ECUX1H680KC	68 P " "	1		C703	RCQP2A471JZ	470 P 100V Styrol	1	
C541	ECUX1H103ZF	0.01 " "	1		C704,705	ECKD1H681KB	680 P 50V Ceramic	2	
C542	ECUX1H271KD	270 P " "	1		C706	ECKD1H103ZF	0.01 " "	1	
C543	ECEALCS330	33 16V Electrolytic	1	S			<b>CABINET PARTS</b>		
C545	ECEALAS470	47 10V "	1	S	K1	RYPF3100M	Front Panel Ass'y	1	
C546	ECEALHS0R1	0.1 50V "	1	S	K1-1	RKX111Z	Plate, Front Panel Holding	6	
C547	ECEA0JS471	470 6.3V "	1	S	K2	RYMFB30N7	Upper Cabinet Ass'y	1	
C548	ECUX1H333ZF	0.033 50V Chip	1		K2-1	RJC111A	Terminal, Battery, + Side	1	
C549	ECEALHSR33	0.33 " Electrolytic	1	S	K2-2	RJC512Z	Terminal, Battery, - Side	1	
C550	ECUX1H103ZF	0.01 " Chip	1		K2-3	RJC936Z	Terminal, Battery, + - Side	1	
C551	ECEA25Z4R7	4.7 25V Electrolytic	1	S	K2-4	RJT398Y	Pipe, Battery Spring	1	
C552	ECEALVS330	33 35V "	1	S	K2-5	RJF1065Z	Terminal, EXT, Antenna	3	
C553	ECEALHS100	10 50V "	1	S	K2-6	RJT219Z	Terminal, Antenna	1	
C554	ECFVD104MD	0.1 25V Semi-Conductor	1		K3	RYFF3100M7	Bottom Cabinet Ass'y	1	
C555	ECUX1H151KD	150 P 50V Chip	1		K4	RYNFB30N7	Cover, Battery		
C556	ECEALAS101	100 10V Electrolytic	1	S	K5	RKT127Z	Plate, Handle Holding	1	
C557	ECUX1H102ZF	0.001 50V Chip	1		K6	RKL22Z	Stand	2	
C558	ECUX1H102ZF	0.001 " "	1		K7	RKK92Z7	Cover, AC Cord	1	
C559	ECUX1H103ZF	0.01 " "	1		K8	XEAQCR228FAK	Telescopic Antenna	1	
C560	ECUX1H102ZF	0.001 " "	1		K9	RBN563Y	Knob, Tuning	1	
C561	ECUX1H103ZF	0.01 " "	1		K10	RBS176Y	Knob, Band	1	
C562	ECUX1H333ZF	0.033 " "	1		K11	RBN564Y	Knob, Volume, BFO, RF Gain	1	
C563	ECEA0JS471	470 6.3V Electrolytic	1	S	K12	RBC331Z	Knob, Power	3	
C564	ECEALHS100	10 50V "	1	S	K13	RBC330Z	Knob, BFO, LIGHT, BAND WIDTH	1	
C565	ECEA25Z4R7	4.7 25V "	1	S	K14	RHR1023X	Connecting Pipe	3	
C566	ECUX1H223MD	0.022 50V Chip	1		K15	RBE29Z	Switch Connecting Pipe	2	
C567	ECCD1H101K	100 P " Ceramic	1		K16	RUS295Z	Spring, Tuning Knob	4	
C568	ECCD1H470K	47 P " "	1		K17	RBN565Y	Knob, Treble	1	
C570	ECUX1H103ZF	0.01 " Chip	1		K18	RBN566Z	Knob, Bass	1	
C573	ECUX1H103ZF	0.01 " "	1		K19	XTW3+10F	Screw, 3x10	1	
C577,578	ECUX1H103ZF	0.01 " "	2		K20	XSB3+8BN	Screw, 3x8	2	
C579	ECEALHS100	10 " Electrolytic	1	S	K21	XTV3+12G	Screw, 3x12	3	S
C580	ECUX1H103ZF	0.01 " Chip	1		K22	XTB3+12BFZ	Screw, 3x12	4	
C581	ECUX1H103MD	0.01 " "	1		K23	XSN3+10S	Screw, 3x10	4	
C582~584	ECUX1H103ZF	0.01 " "	3		K24	XWA3B	Washer	1	
C585	ECUX1H223ZF	0.022 " "	1		K25	XTV3+8BFN	Screw, 3x8	1	
C586	ECUX1H103MD	0.01 " "	1		K26	XSB3+12BNS	Screw, 3x12	2	
C587	ECKD1H103ZF	0.01 " Ceramic	1		K27	XTW3+12Q	Screw, 3x12	4	
C588	ECUX1H102MD	0.001 " Chip	1				<b>ELECTRICAL PARTS</b>		
C589	ECUX1H103MD	0.01 " "	1		E1	RJR1B	Connecting Terminal	1	
C590	ECUX1H103ZF	0.01 " "	1		E2	RSM2627Z	Meter	1	
C591	ECCD1H100KC	10 P " Ceramic	1		E3	XAMR82R150A	Pilot Lamp	1	
C592	ECUX1H223ZF	0.022 " Chip	1		E4	RMS12B	Plate, Speaker Holding	2	
C593	ECUX1H333ZF	0.033 " "	1		E5	RUS436Z	Spring, Meter Holding	1	
C594	ECKD1H102MD	0.001 " Ceramic	1		E6	RAD5BT11	Display	1	
C595	ECUX1H103MD	0.01 " Chip	1		E7	RZAFB30N	Dial Chassis Ass'y	1	
C596	ECUX1H333ZF	0.033 " "	1		E8	RDT2401Z	Shaft, Tuning	1	
C597	ECEA25Z4R7	4.7 25V Electrolytic	1	S	E9	RDD700Z	Drum, Dial	1	
C598	ECEALAS470	47 10V "	1	S					
C599	ECFVD683MD	0.068 25V Semi-Conductor	1						
C601	ECEALAS101	100 10V Electrolytic	1	S					
C602~604	ECUX1H223ZF	0.022 50V Chip	3						

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
E10	RDS4170A	Spring, Dial	1	
E11	RDZ05Z	Cord, Dial (110cm)	1	
			ROLL	
E12	RJS2L1Z	Socket, 2P	7	
E13	RJS3L1Z	Socket, 3P	4	
E14	QJS1921TN	Socket, 3P	1	
E15	RJS8L1Z	Socket, 8P	1	
E16	RJP2G1Z	Plug, 2P	7	
E17	RJP3G1Z	Plug, 3P	4	
E18	QJP1921TN	Plug, 3P	1	
E19	RJP8G1Z	Plug, 8P	1	
E20	RJT462Z	Contact	33	
E21	QJT1054	Contact	2	
E22	RMR103Z	Angle, Tone	1	
E23	RZEFB30N	Polarization Plate Ass'y	1	
E24	RHR2014Z	Zebra	1	
E25	RHG223Z	Cushion, Display	1	
E26	RMW211Z	Angle, Band Switch	1	
E27	RJT202B	Terminal, Earth	3	
E28	RMV146Z	Heat Sink	1	
E29	RMC760Z	Shield Plate	1	
E30	RMC761Z	Shield Plate	1	
E31	RMC762Z	Shield Plate	1	
E32	RMC763Z	Shield Plate	1	
E33	RMC779Z	Shield Plate	1	
E34	RMW210Z	Angle, Switch	1	
E35	RHR108A	Wire Connector	2	△
E36	RJA9Y	Power Cord, AC	1	△
E37	RMC171Y	Shield Plate, IC	1	
E38	RMC764Z	Shield Plate	1	
E39	RMC765Z	Shield Plate	1	
E40	XSN3+6S	Screw	3	S
E41	XWA3B	Washer	3	S
E42	RUV293A	Cover, Antenna Switch	1	
E43	XTB3+6BFN	Screw	16	S
E44	XNS9	Nut	1	
E45	XSN26+5	Screw	1	S
E46	XWA26B	Screw	1	S
E47	XTV3+12G	Screw	14	
E48	XWT3	Washer	2	
E49	XTW3+12Q	Screw	4	
E50	XYER3+BG14	Screw	1	
E51	RMC781Z	Shield Plate	1	
E52	RMC782Y	Shield Plate	1	
E53	RMC807Z	Shield Plate	1	
E54	XTW3+6L	Screw	1	
E55	XWV9	Washer	1	S
		ACCESSORY		
A1	RQC9017Z	Belt	1	
		PACKING MATERIALS		
P1	RPK1162Z	Gift Box, for USA	1	
P1	RPK1218Z	Gift Box, for Canada	1	
P2	RPN3324Y	Pad, L, R Side	2	
P3	RPN3338Y	Pad, Rear	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
P4	RPN3367Z	Spacer	1	
P5	XZB50X40A04	Poly Bag	1	S
		PRINTED MATERIALS		
Y1	RQX6758Z	Instruction Book, for USA	1	
Y1	RQX6806Z	Instruction Book, for Canada	1	

**REPLACEMENT PARTS LIST** ..... Model RF-3100/©  
(RD81071895C1)

**NOTES:** 1. Important safety notice.  
Components identified by  $\Delta$  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.  
2. The S mark indicates service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		<b>INTEGRATED CIRCUITS, TRANSISTORS AND DIODES</b>		
IC1	RVILA1210	IC	1	
IC2	AN7254	IC	1	
IC3	QVIBA524	IC	1	
IC301	RVIUPC78M05H	IC	1	
IC501	RVIMM55126N	IC	1	
IC502,508	RVIUPC1037H	IC	2	
IC503	RVIM54459L	IC	1	
IC504	RVIM54451P	IC	1	
IC505	RVIUPC78L05A	IC	1	
IC507	RVIM54830P	IC	1	
Q1,3,20	2SK212D	Transistor (Si)	3	
Q2,10,12,14,15	2SC1047-C	Transistor (Si)	5	S
Q4	2SC1684S	Transistor (Si)	1	S
Q5,16,19,25,29,30,37,41,44,46	2SC1685-Q	Transistor (Si)	10	S
Q6	2SA838-B	Transistor (Ge)	1	S
Q7,9,11,23,24,28,35,36,39,526	2SC1359B	Transistor (Si)	10	S
Q13	2SK104F	Transistor (Si)	1	S
Q17	2SC1360	Transistor (Si)	1	S
Q18	2SC1675	Transistor (Si)	1	S
Q21,22,38	2SC829-B	Transistor (Si)	3	S
Q26,42	2SA722-S	Transistor (Ge)	2	S
Q27	2SC2001K2	Transistor (Si)	1	S
Q32	2SC945-Q	Transistor (Si)	1	S
Q33	2SC2001L1	Transistor (Si)	1	S
Q43	2SB175-B	Transistor (Ge)	1	S
Q501	2SD601Q	Transistor (Si)	1	S
Q502,503	2SC1622	Transistor (Si)	2	S
Q504	2SB709Q	Transistor (Ge)	1	S
Q505,506,513	2SC2295B	Transistor (Si)	3	S
Q507	2SC1009F3	Transistor (Si)	1	S
Q508	2SK49F1	Transistor (Si)	1	S
Q509,510,512,523	2SC2404C	Transistor (Si)	4	S
Q514	2SB624BV3	Transistor (Ge)	1	S
Q515	2SC2021F	Transistor (Si)	1	S
Q516	2SC1788RDR2	Transistor (Si)	1	S
Q517	2SD601R	Transistor (Si)	1	S
Q518	2SC1675K1	Transistor (Si)	1	S
Q519	2SC1009F4	Transistor (Si)	1	S

## ACCESSORY AND PACKING MATERIALS

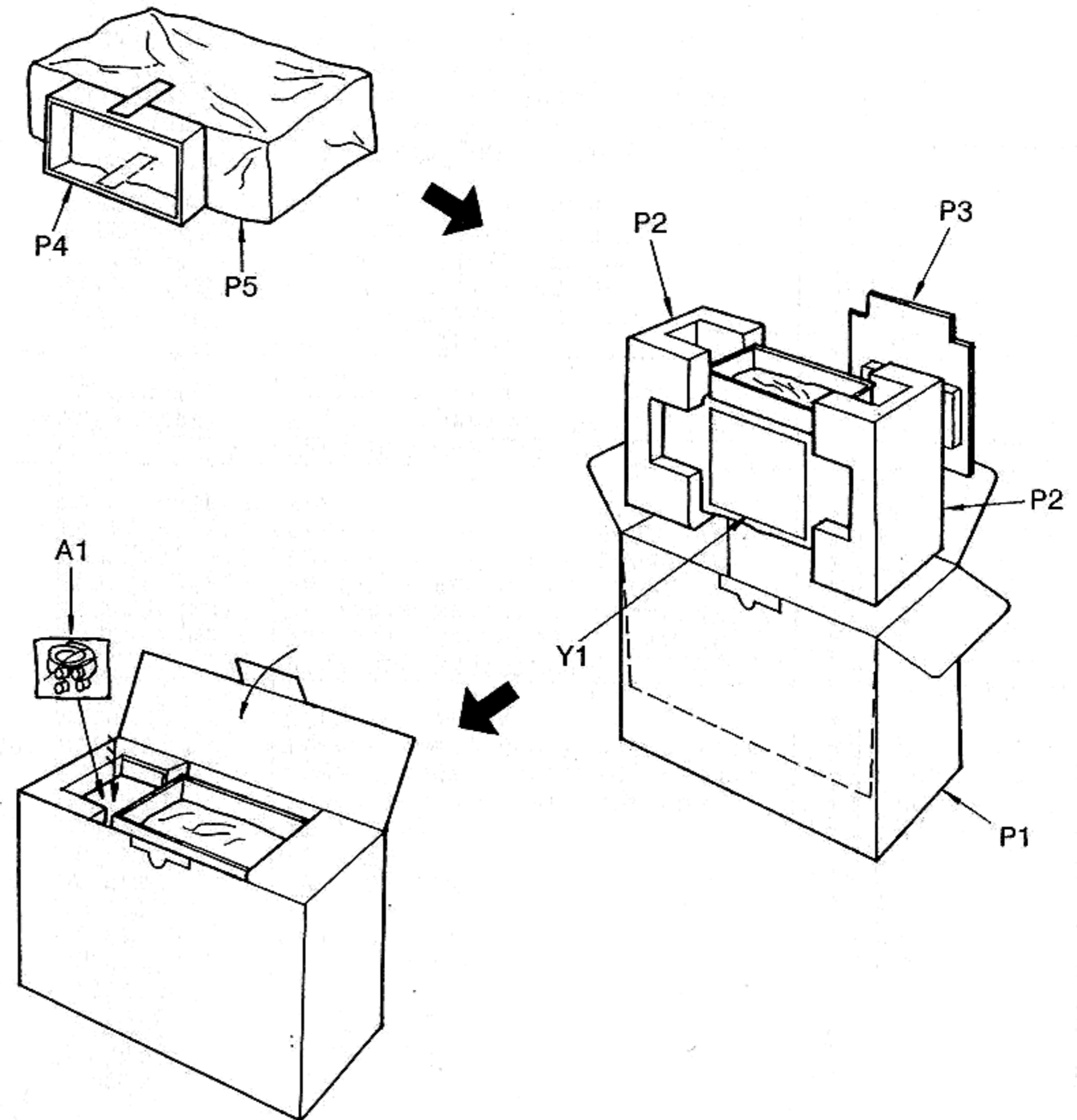
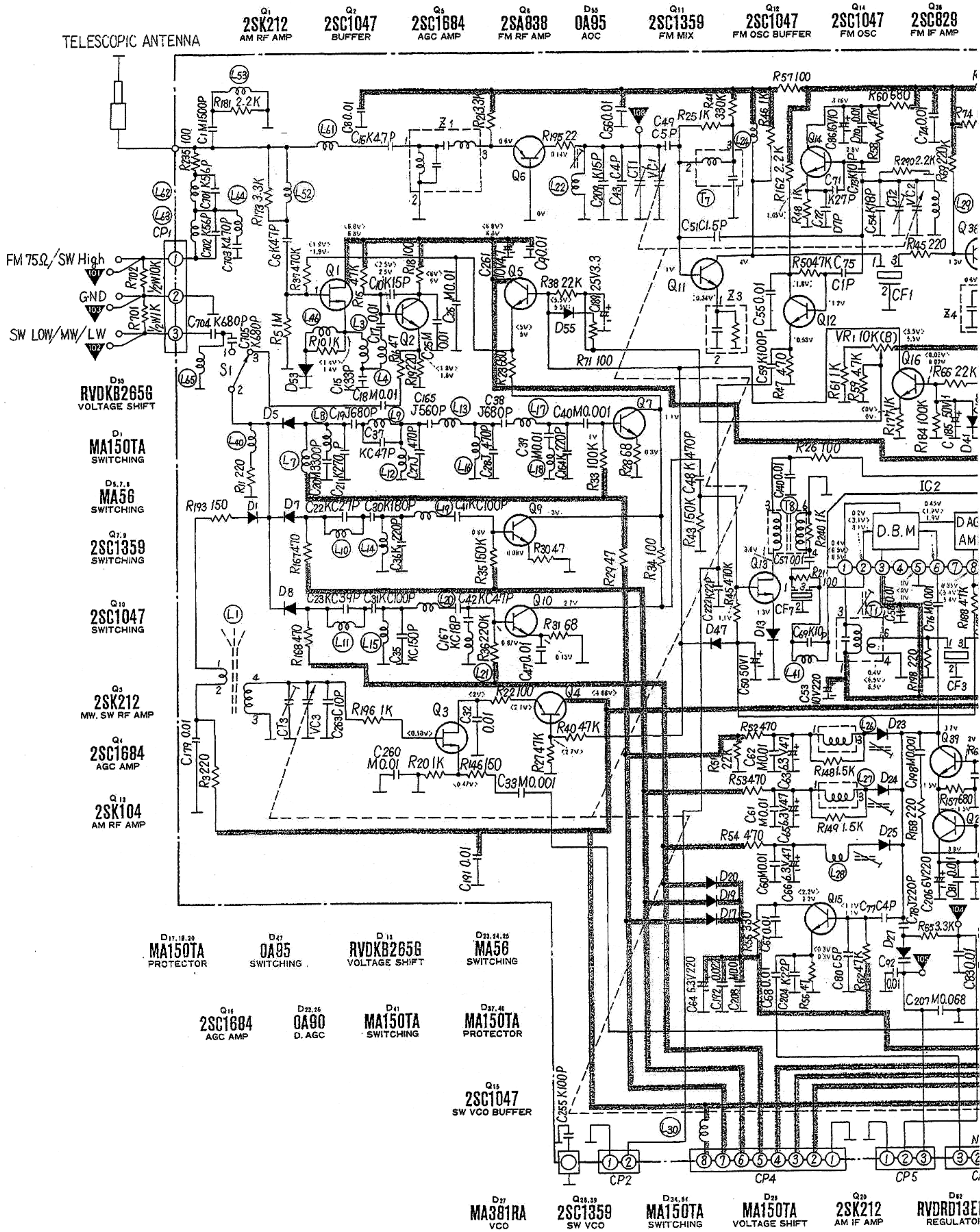
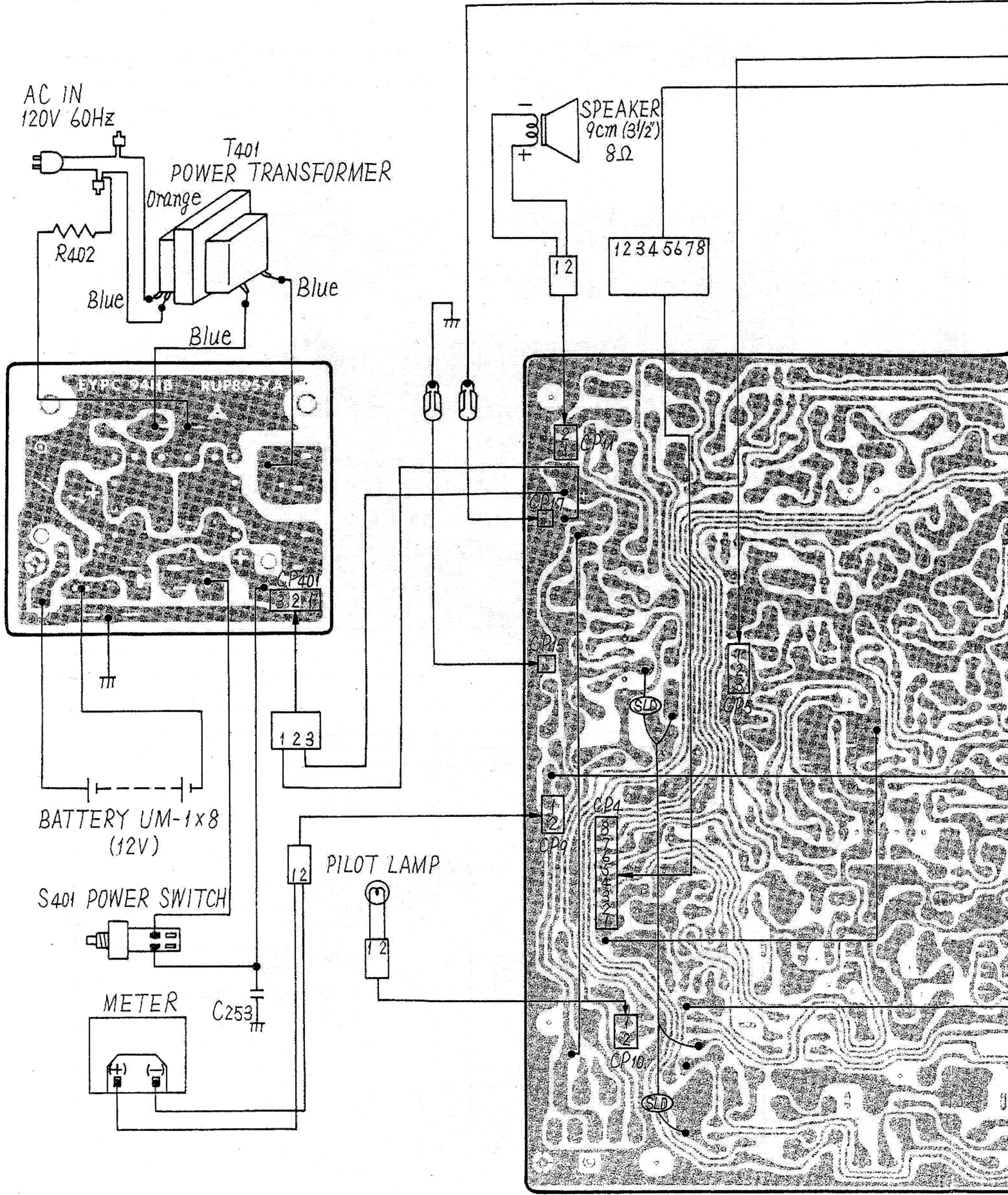


Fig. 28

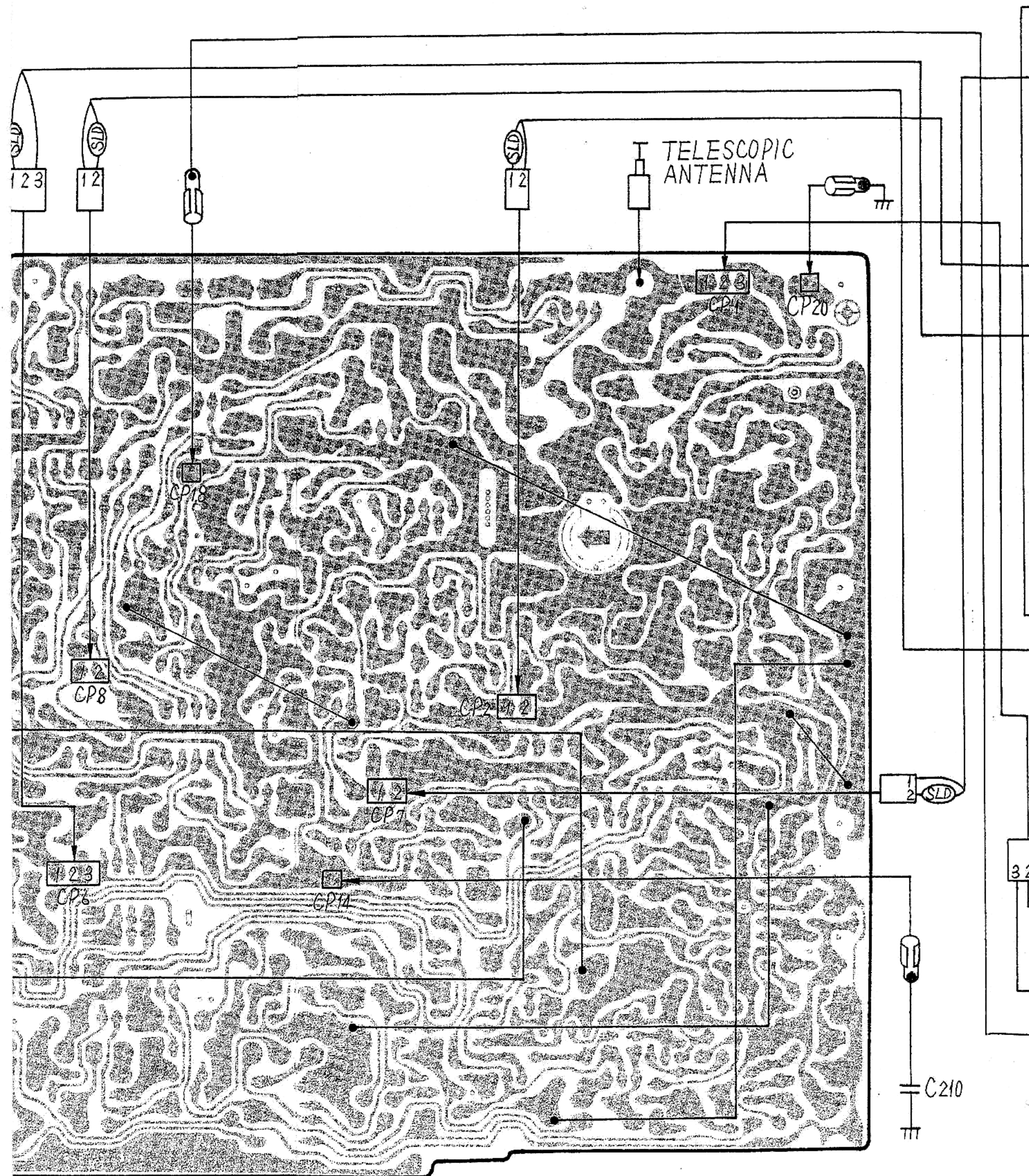
# SCHEMATIC DIAGRAM (RADIO/AUDIO)

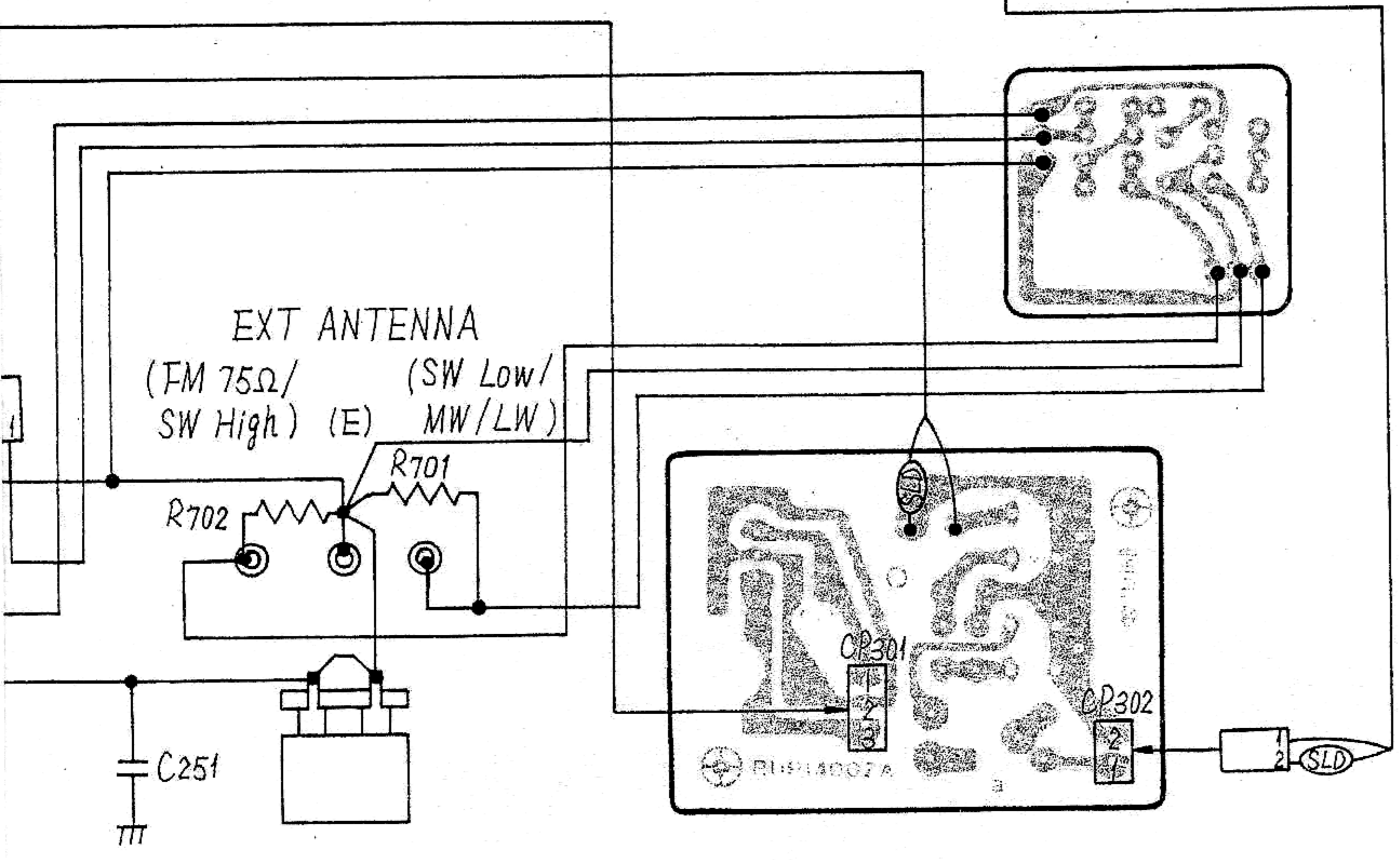
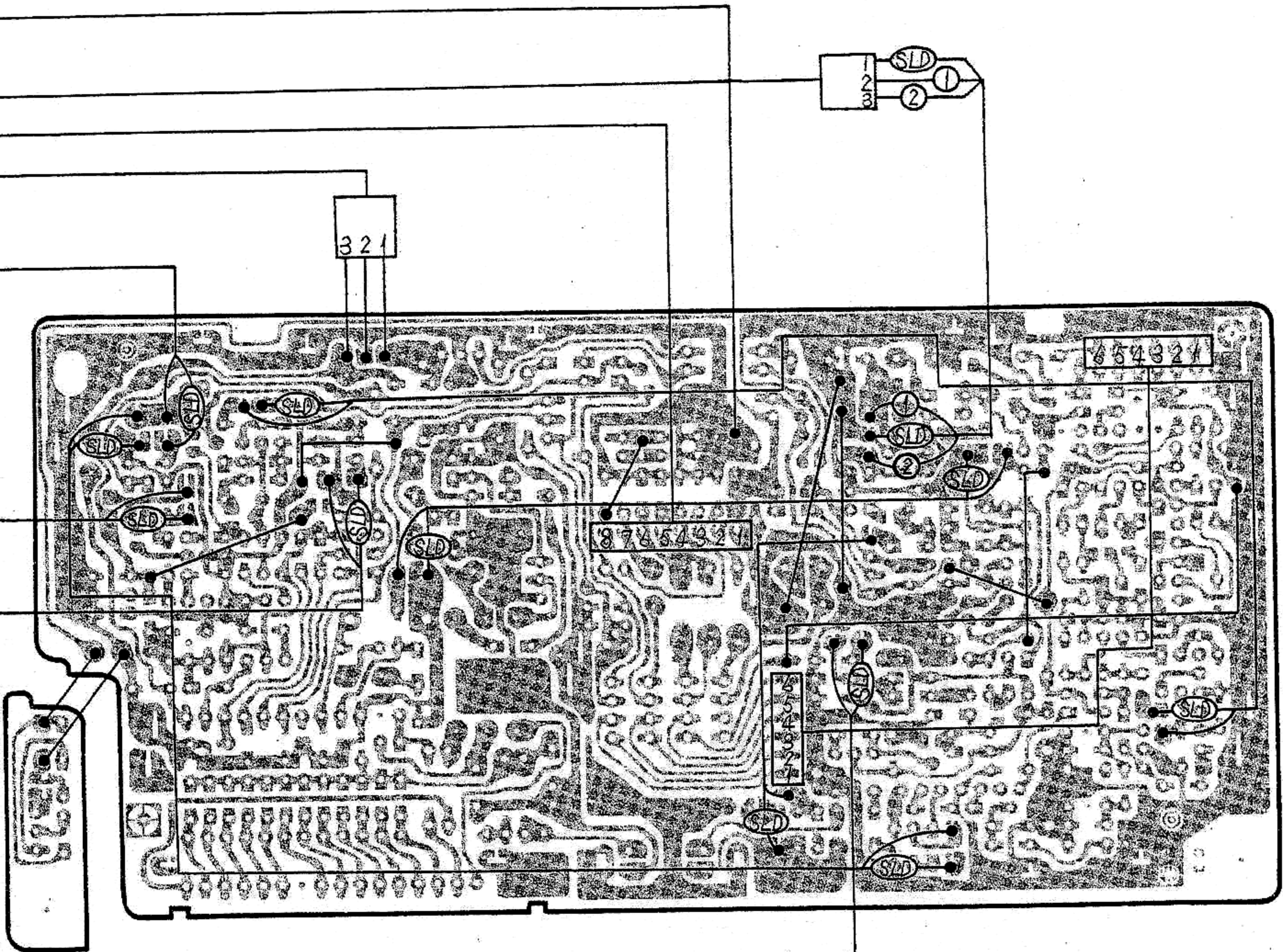






# RING CONNECTION DIAGRAM MODEL RF-3100/©





# MODEL RF-3100/©

Q19  
**2SC1684**  
AGC AMP

Q21,22  
**2SC829**  
SWITCHING

Q43  
**2SB175**  
METER AMP

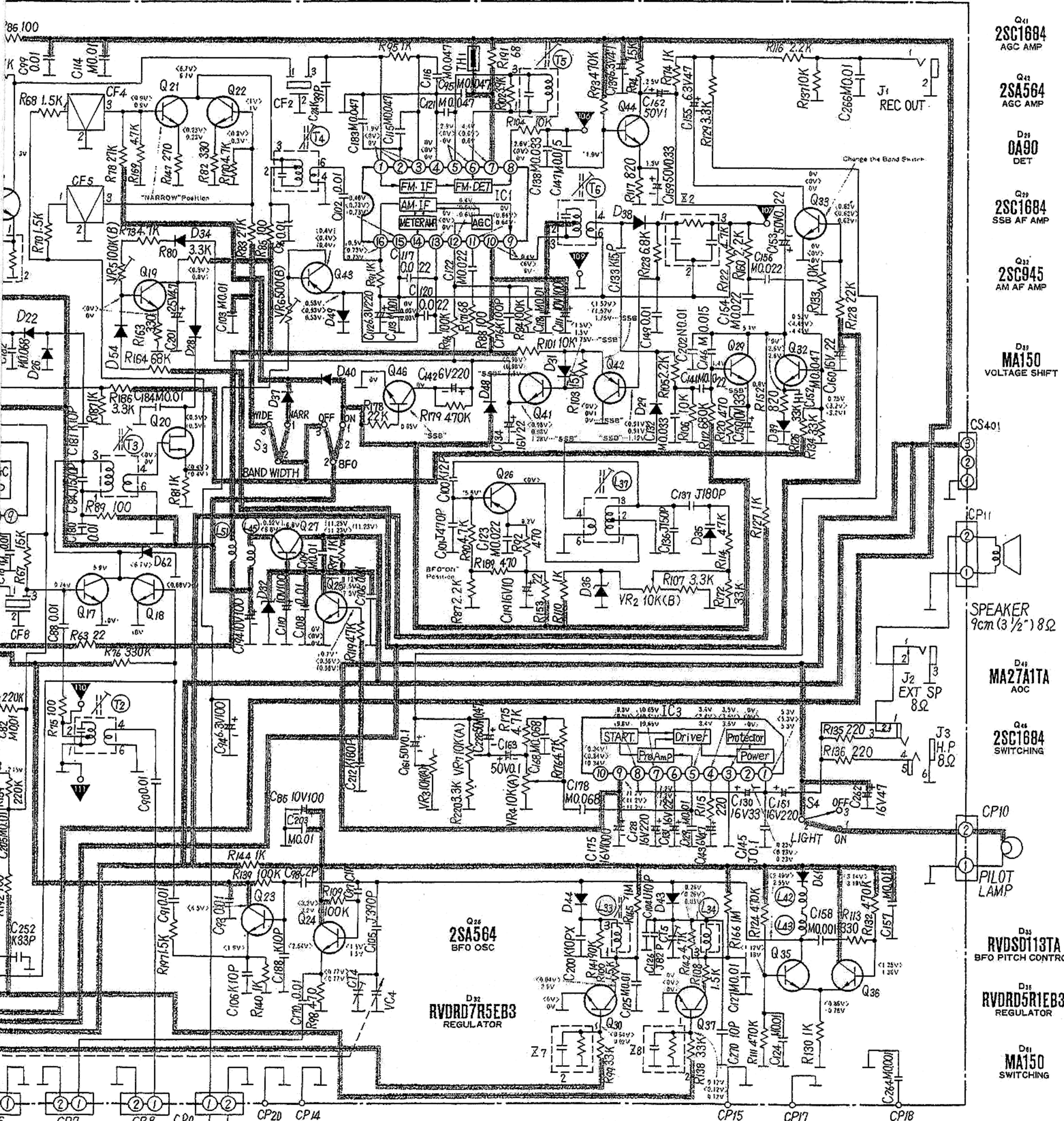
IC1  
**RV1A1210**  
FM IF/DET & AM IF/METER

Q44  
**2SC1684**  
FM AF AMP

D31  
**0A90**  
AM DET

Q33  
**2SC2001**  
MUTING

D31  
**RVDKB262D**  
AGC



Q41  
**2SC1684**  
AGC AMP

Q42  
**2SA564**  
AGC AMP

D31  
**0A90**  
DET

Q43  
**2SC1684**  
SSB AF AMP

Q32  
**2SC945**  
AM AF AMP

D33  
**MA150**  
VOLTAGE SHIFT

D41  
**MA27A1TA**  
AOC

Q45  
**2SC1684**  
SWITCHING

D35  
**RVDS0113TA**  
BFO PITCH CONTROL

D35  
**RVDR05R1EB3**  
REGULATOR

D41  
**MA150**  
SWITCHING

IC2  
**AN7254**  
D.B.M AGC AMP

Q17  
**2SC1360**  
SW 2nd MIX

METER

Q16  
**2SC1675**  
MW, SW MIX

Q28,24  
**2SC1359**  
SW, MW OSC/VFO BUFFER

Q27  
**2SC2001**  
REGULATOR

Q35,30,37  
**2SC1684**  
SWITCHING

IC3  
**QV1BA524**  
AF POWER AMP

D43,44  
**MA56**  
SWITCHING

Q35,36  
**2SC1359**  
MW OSC/SW VFO

# CIRCUIT BOARD (RADIO/AUT)

Q23

	MW
C	4.5V
B	2.5V
E	1.9V

Q9		Q10		Q18		Q4		Q5		Q20		Q2		Q3		Q30			
	SW		SW		MW		MW		MW		SW		MW		SW		MW		SW
C	3V	C	2.7V	C	6.7V	C	4.88V	C	6.8V	C	6.8V	C	6V	C	6V	C	0.04V	C	2.9V
B	0.8V	B	0.87V	B	0.68V	B	2.7V	B	5.5V	B	5.5V	B	2.5V	B	2.5V	B	0.18V	B	0.64V
E	0.08V	E	0.13V	E	0V	E	2.1V	E	5V	E	5V	S	0.4V	S	0.4V	E	1.8V	E	1.8V

Q13

	SW
D	3.6V
G	1.1V
S	1.3V

Q7

	SW
C	1.1V
B	1V
E	0.3V

IC3

	FM	MW	SW
1	5.3V	5.3V	5.3V
2	0.23V	0.23V	0.23V
3	0V	0V	0V
4	3.5V	3.5V	3.5V
5	3.4V	3.4V	3.4V
6	7.2V	7.2V	7.2V
7	10.65V	10.65V	10.65V
8	9.8V	9.8V	9.8V
9	11.2V	11.2V	11.2V
10	0.34V	0.34V	0.34V

IC2

	FM	MW	SW
1	0.4V	6.5V	6.5V
2	0.2V	3.1V	3.1V
3	0.4V	6.5V	6.5V
4	-	-	-
5	0V	0V	0V
6	0.45V	1.9V	1.9V
7	-	-	-
8	0.35V	5.4V	5.4V
9	-	-	-

Q27

	FM	MW	SW
C	11.25V	11.23V	11.23V
B	0.12V	7.5V	7.5V
E	0.52V	6.8V	6.8V

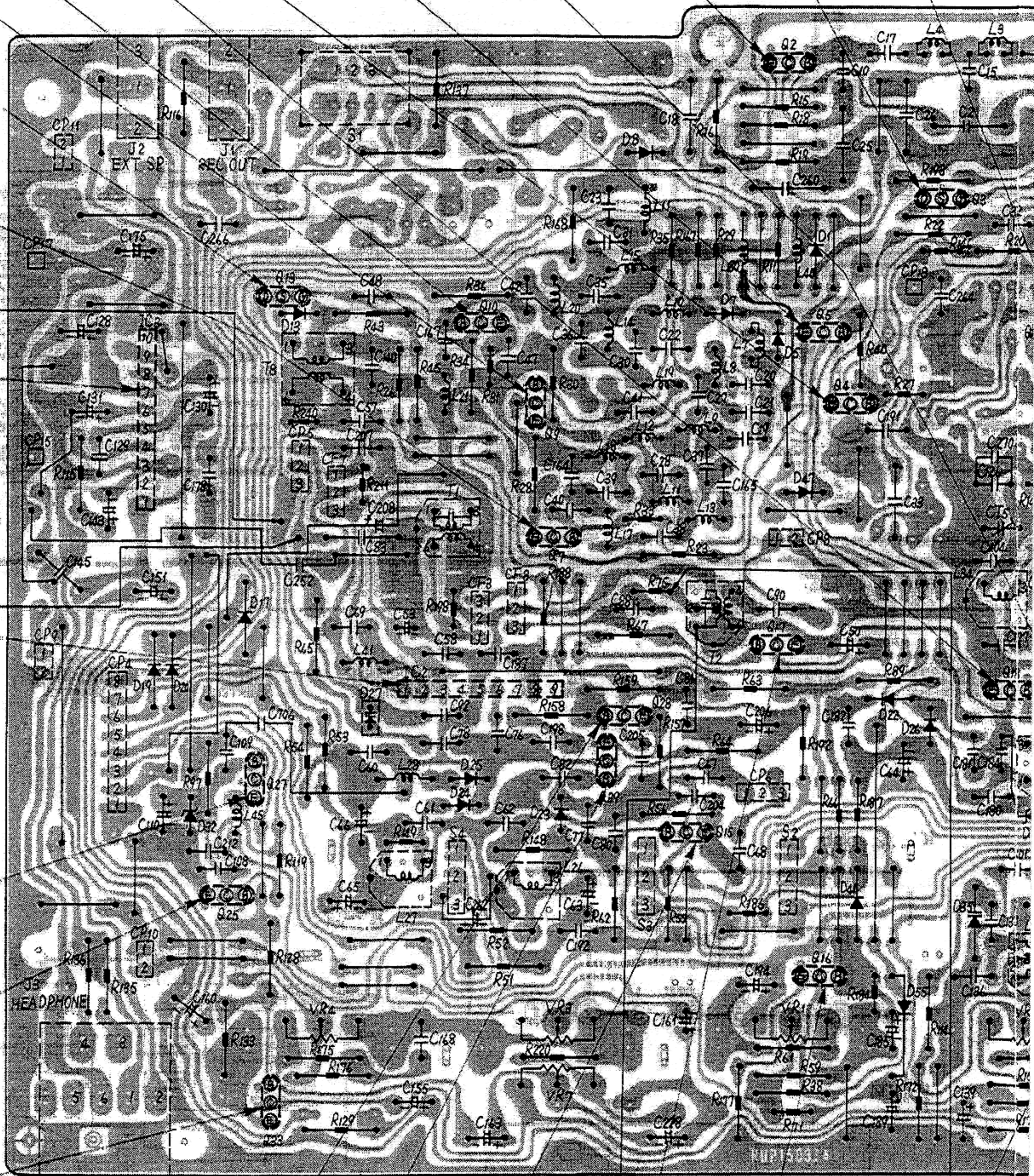
Q25

	FM	MW	SW
C	0.12V	7.5V	7.5V
B	0.7V	0.56V	0.56V
E	0V	0V	0V

Q33

Change the Band Switch

	FM	MW	SW
C	0V	0V	0V
B	0.62V	0.62V	0.62V
E	0V	0V	0V



Q28		Q39		Q15		Q17		Q16		Q26	
	SW		SW		MW		SW		MW		SW
C	3.8V	C	3.7V	C	2.2V	C	5.9V	C	5.5V	C	5.5V
B	2.15V	B	2V	B	1.1V	B	0.74V	B	0.02V	B	0.02V
E	1.5V	E	1.5V	E	0.3V	E	0V	E	0V	E	0V

BFO "ON" Position

	SW
C	0V
B	5.5V
E	6.2V

# DIO) MODEL RF-3100/©

Q35			Q1			Q36		
	MW	SW		MW	SW		MW	SW
C	2.49V	2.55V	D	6.8V	6.8V	C	3.14V	3.19V
B	1.12V	1.18V	G	1.9V	1.9V	B	1.25V	1.36V
E	0.88V	0.76V	S	1.4V	1.4V	E	0.88V	0.76V

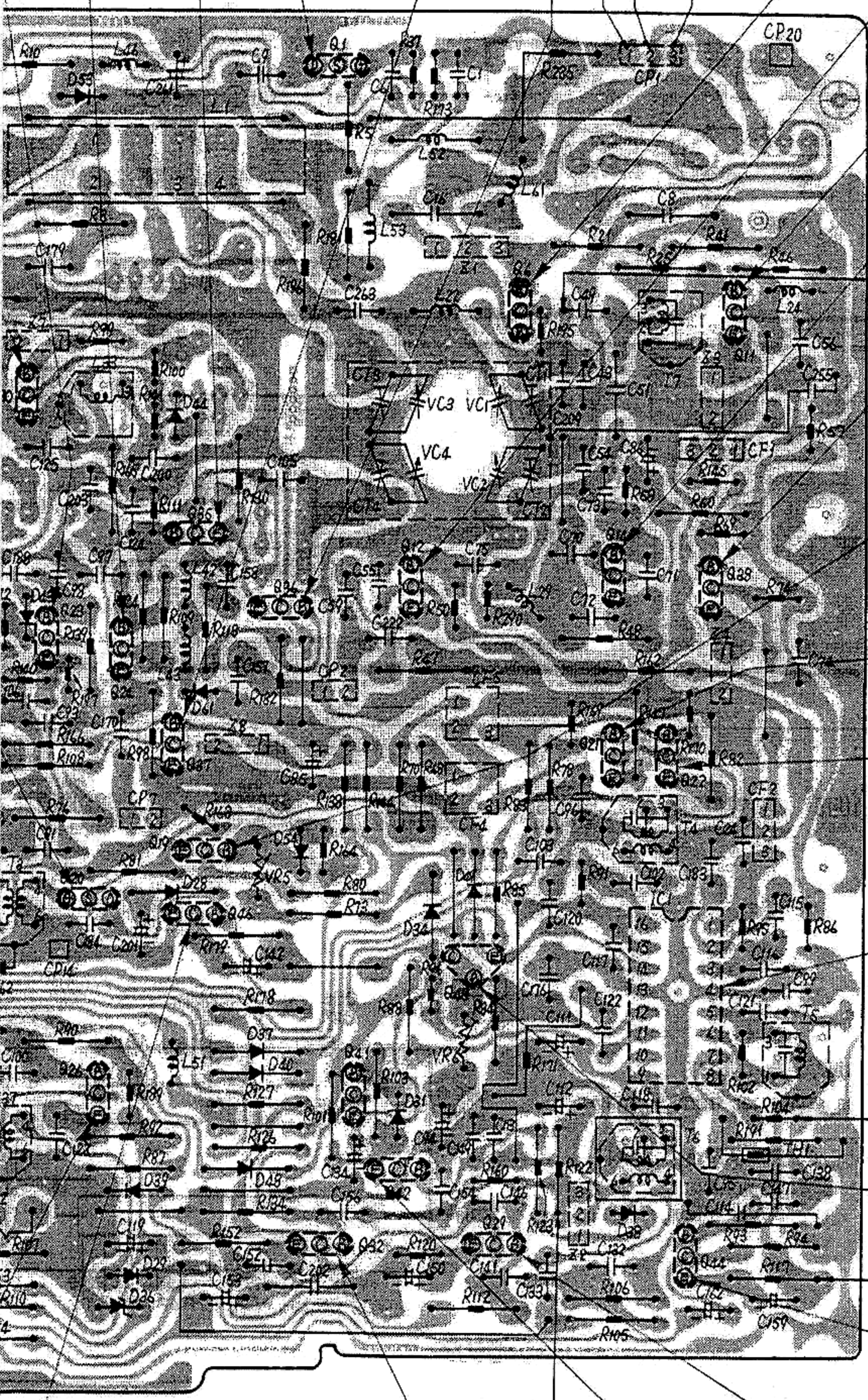
Q24		
	MW	SW
C	3.2V	3.2V
B	1.5V	1.5V
E	0.77V	0.77V

Q37			
	FM	MW	SW
C	0.26V	0.26V	0.05V
B	0.12V	0.12V	0.12V
E	0V	0V	0V

Q6		
	FM	
C	0.14V	
B	0V	
E	0.6V	

Q12		
	FM	
C	1.8V	
B	1.2V	
E	0.53V	

Q11		
	FM	
C	4V	
B	1V	
E	0.34V	



Q14		
	FM	
C	3.16V	
B	2.3V	
E	1.65V	

Q38		
	FM	
C	3V	
B	1.3V	
E	0.6V	

Q19		
	MW	SW
C	0.8V	0.8V
B	0V	0V
E	0V	0V

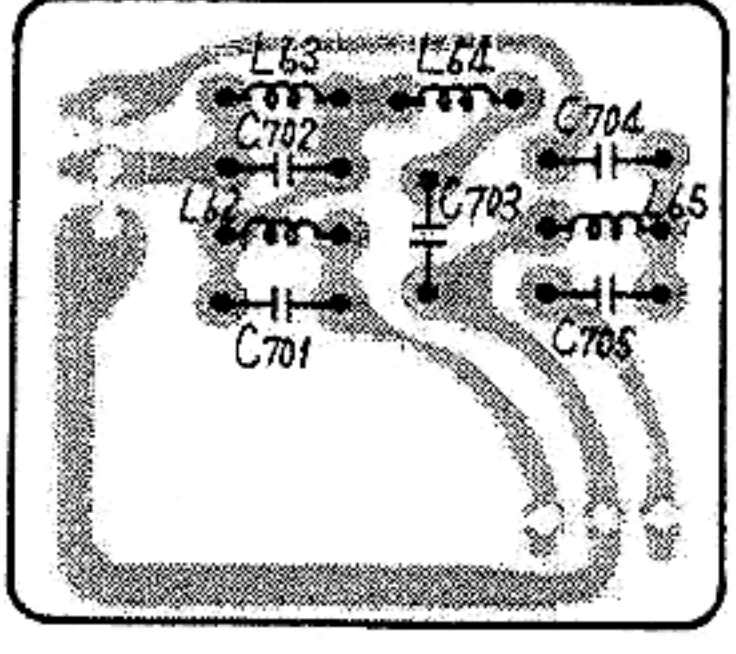
Q21		
"NARROW" Position		
	MW	SW
C	6.7V	6.7V
B	0.9V	0.9V
E	0.23V	0.23V

Q22		
	MW	SW
C	6.7V	6.7V
B	1V	1V
E	0.3V	0.3V

IC1							
	FM	MW	SW		FM	MW	SW
1	1.9V	0V	0V	9	0.4V	6V	6V
2	1.9V	0V	0V	10	0.4V	6V	6V
3	1.9V	0V	0V	11	0V	0.64V	0.64V
4	0V	0V	0V	12	0.4V	0.6V	0.6V
5	2.9V	0V	0V	13	0V	0V	0V
6	2.9V	0V	0V	14	0V	0.03V	0.03V
7	4.4V	0.6V	0.6V	15	0.46V	0.73V	0.73V
8	2.6V	0V	0V	16	0.5V	0.73V	0.73V

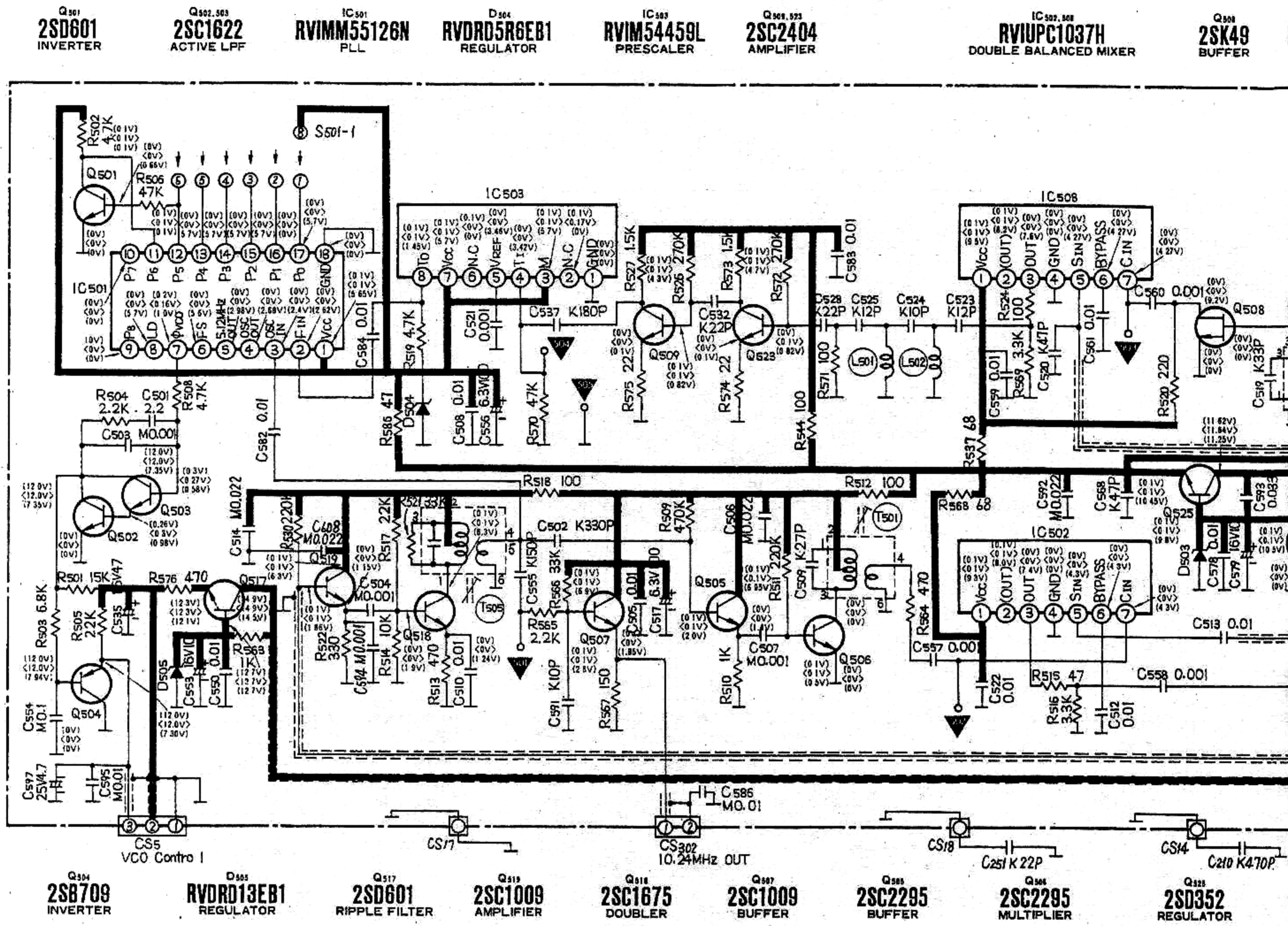
Q43			
	FM	MW	SW
C	0.4V	0.4V	0.4V
B	0.4V	0.4V	0.4V
E	0.53V	0.53V	0.53V

Q44		
	FM	
C	2.5V	
B	1.9V	
E	1.3V	



Q46				Q41				Q32				Q42				Q29		
	SSB				MW	SW	SSB		FM	MW	SW		MW	SW	SSB		SSB	
	0V			C	0.98V	0.98V	6.5V		C	0.52V	4.45V	4.45V	C	0V	0V	0V	C	5.1V
	0.65V			B	1.5V	1.5V	1.75V		B	0.25V	3.2V	3.2V	B	0.91V	0.91V	1.12V	B	1.4V
	0V			E	0.98V	0.98V	1.28V		E	0V	2.6V	2.6V	E	1.52V	1.52V	1.75V	E	0.8V

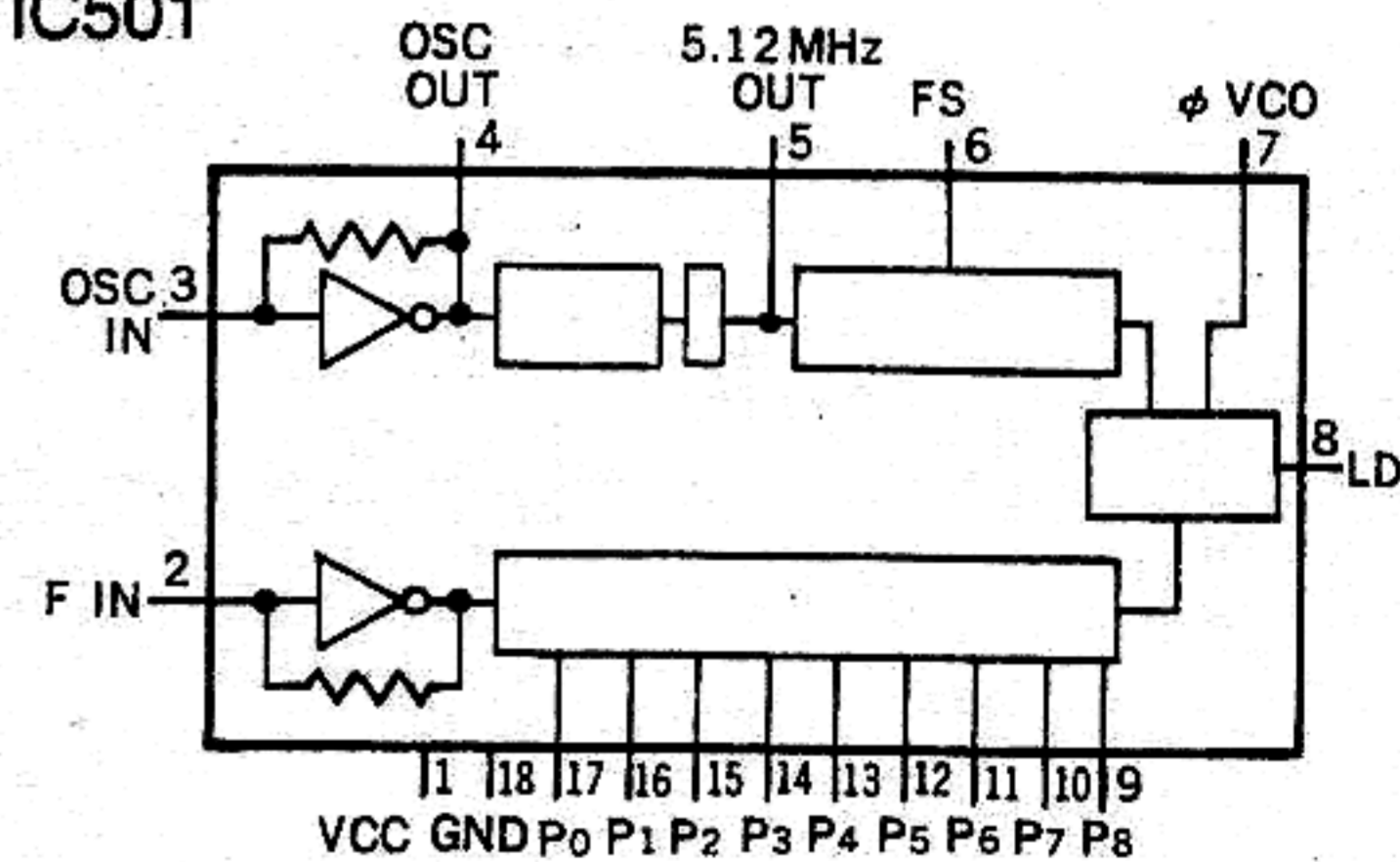
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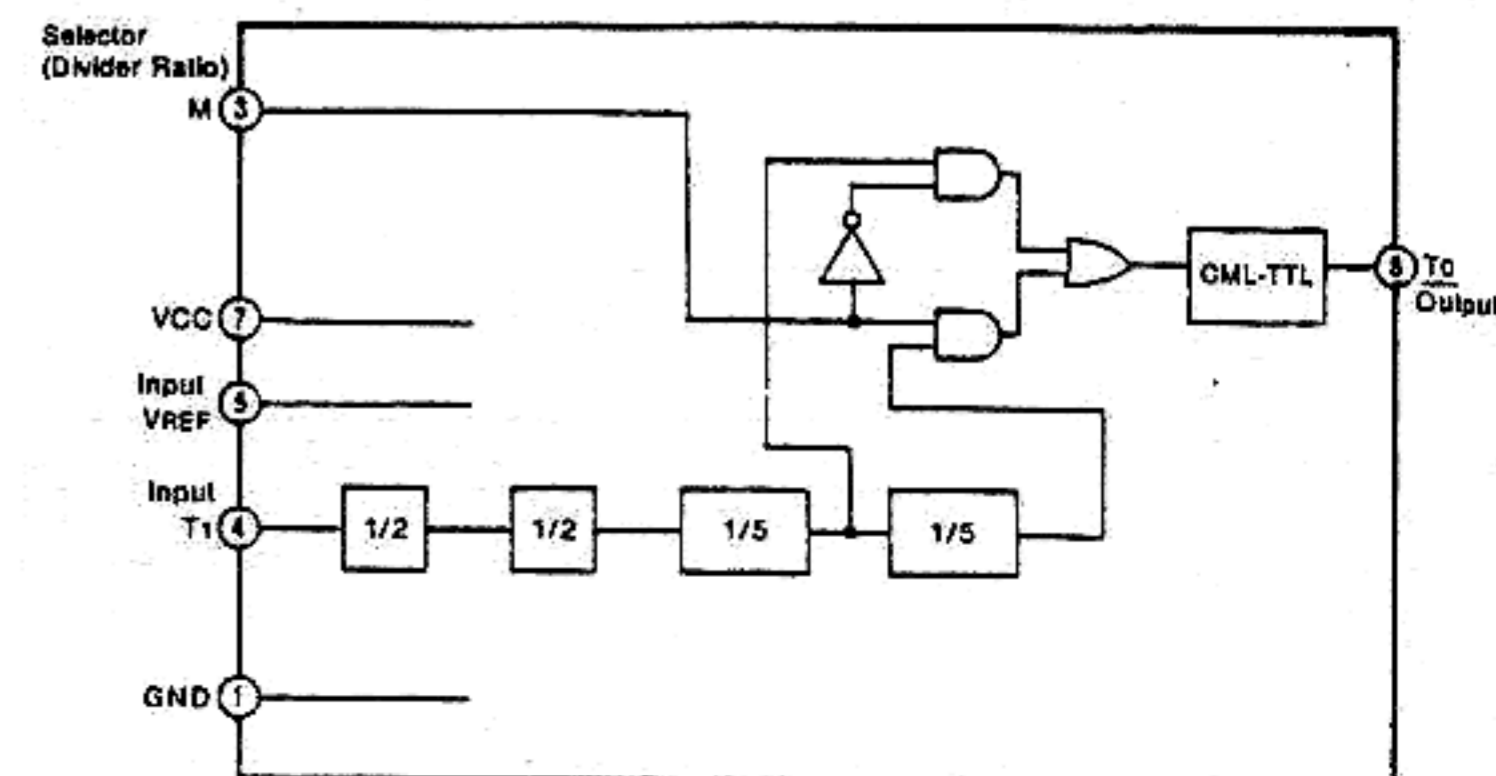
**Notes:**

1. S501-1, S501-2: Band select switch in "FM" position.  
(1... SW16~29, 2... SW8~15, 3... SW1~7, 4... MW, 5, 6... FM)
2. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.  
(Light SW... OFF, Bandwidth SW... WIDE, BFO SW... OFF, Volume... MIN, Bass and Treble... MIN, RF Gain... MIN, BFO Pitch... Center position.  
[ ]... FM position, < >... MW position, ( )... SW position.

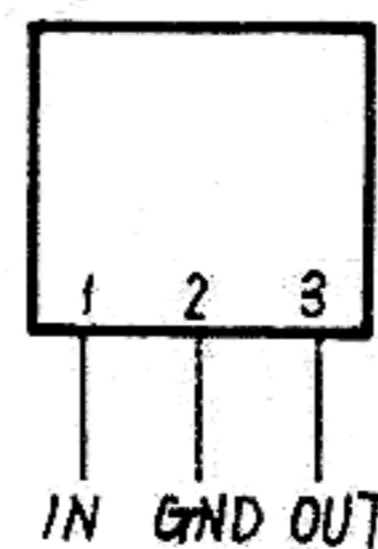
**IC501**



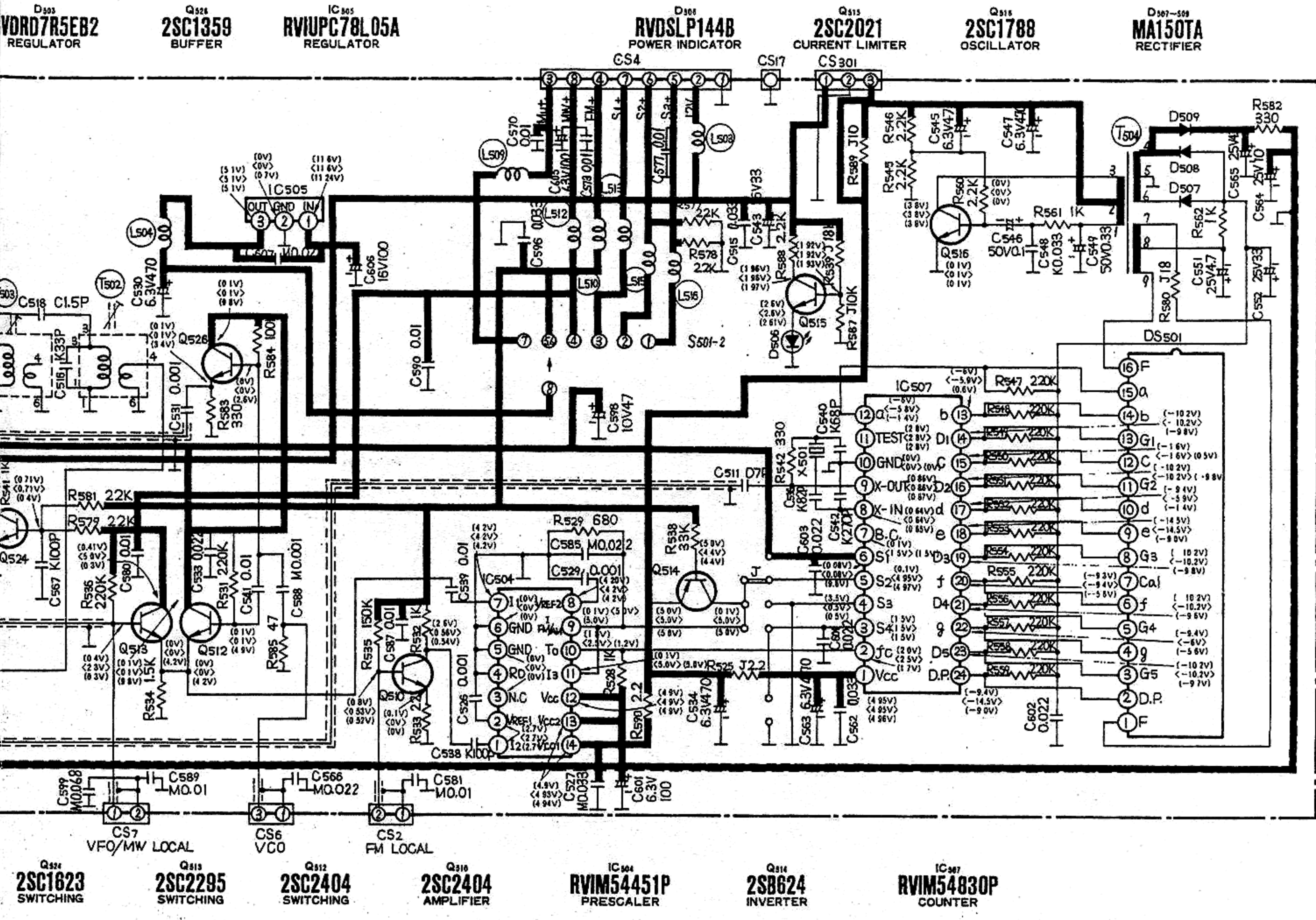
**IC503**



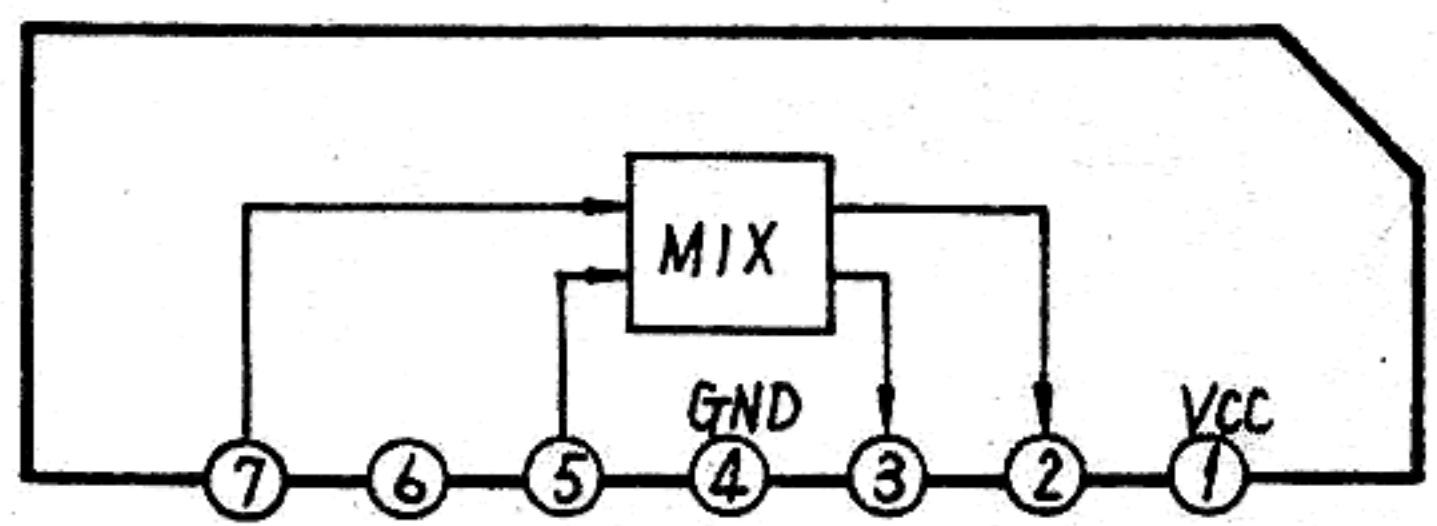
**IC301, 505**



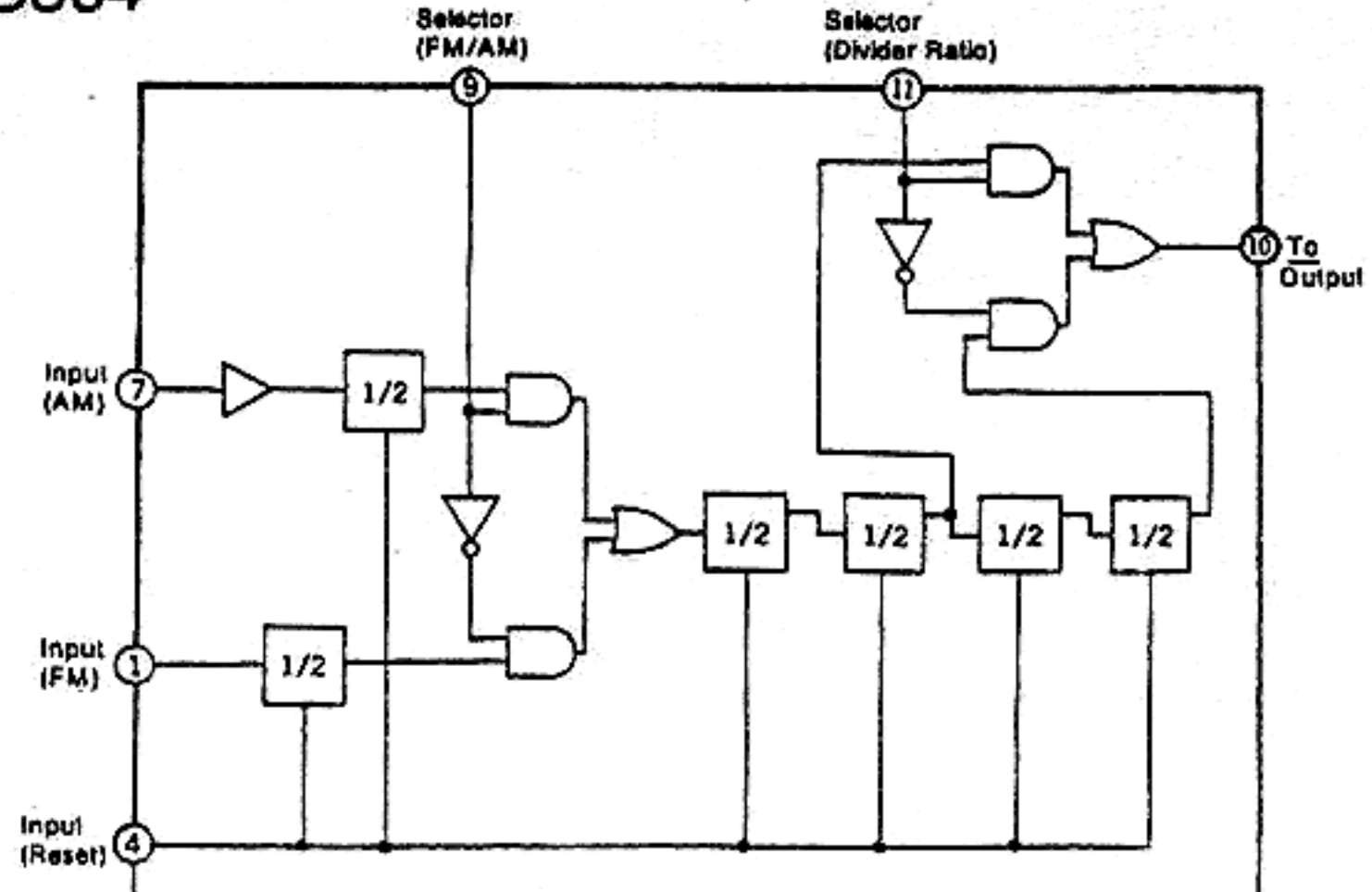
# ER) MODEL RF-3100/©



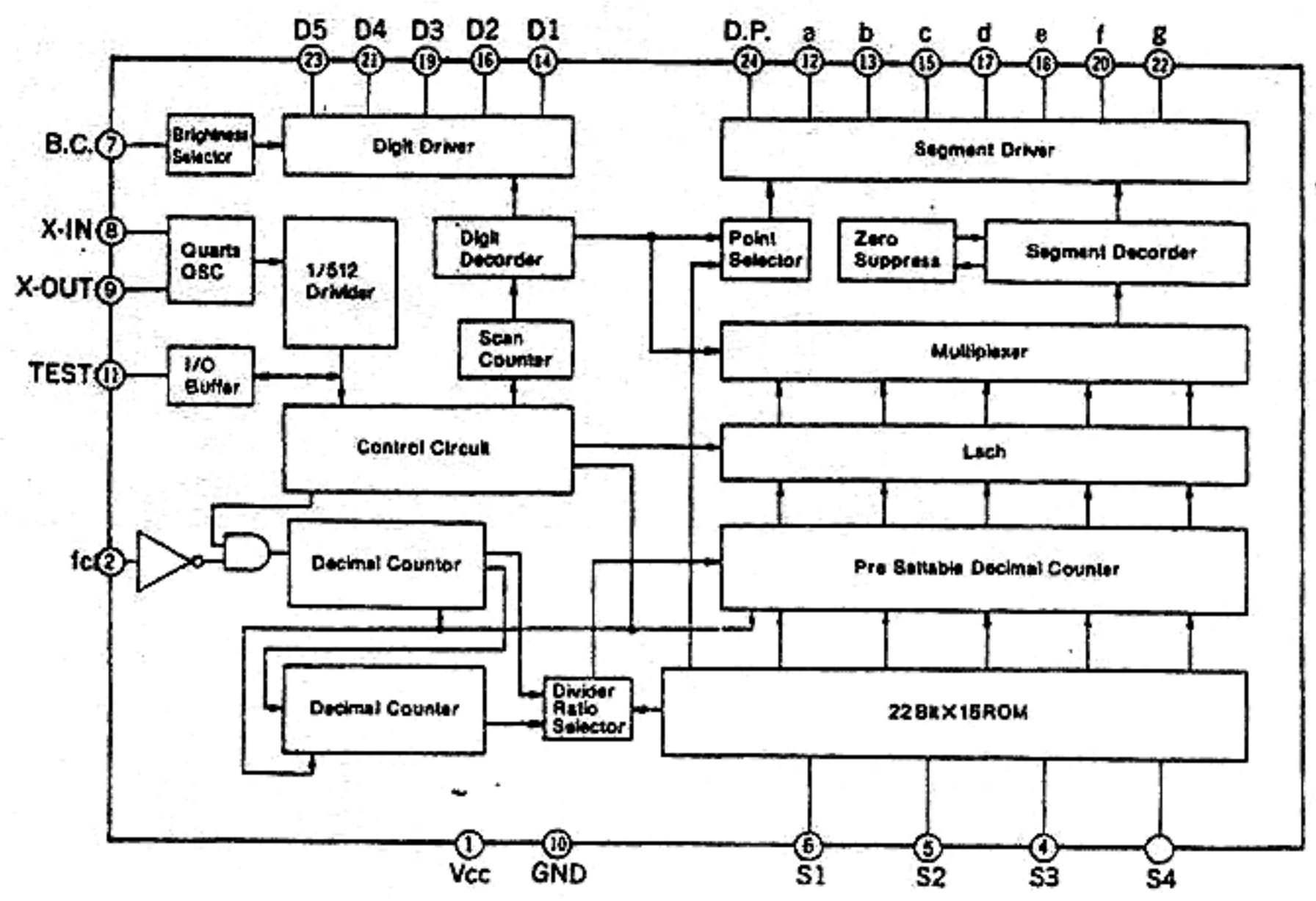
IC502, 508



IC504



IC507





# CIRCUIT BOARD SCHEMATIC DIAGRAM (C

Q514

	FM	MW	SW
C	0.1V	0.0V	5.0V
B	5.0V	4.4V	4.4V
E	5.0V	5.0V	5.0V

Q524

	FM	MW	SW
C	0.1V	0.1V	10.5V
B	0.71V	0.71V	0.4V
E	0V	0V	0V

Q513

	FM	MW	SW
C	0.41V	5.0V	0.3V
B	0.4V	2.3V	0.3V
E	0V	0V	0V

Q526

	FM	MW	SW
C	0.1V	0.1V	9.8V
B	0V	0V	2.6V
E	0.1V	0.1V	3.4V

IC505

	FM	MW	SW
1	11.6V	11.6V	11.24V
2	0V	0V	0V
3	5.1V	5.1V	5.1V

	FM
C	14.9V
B	12.7V
E	12.3V

Q512

	FM	MW	SW
C	0.1V	0.1V	9.8V
B	0.1V	0.1V	4.9V
E	0V	0V	4.2V

Q510

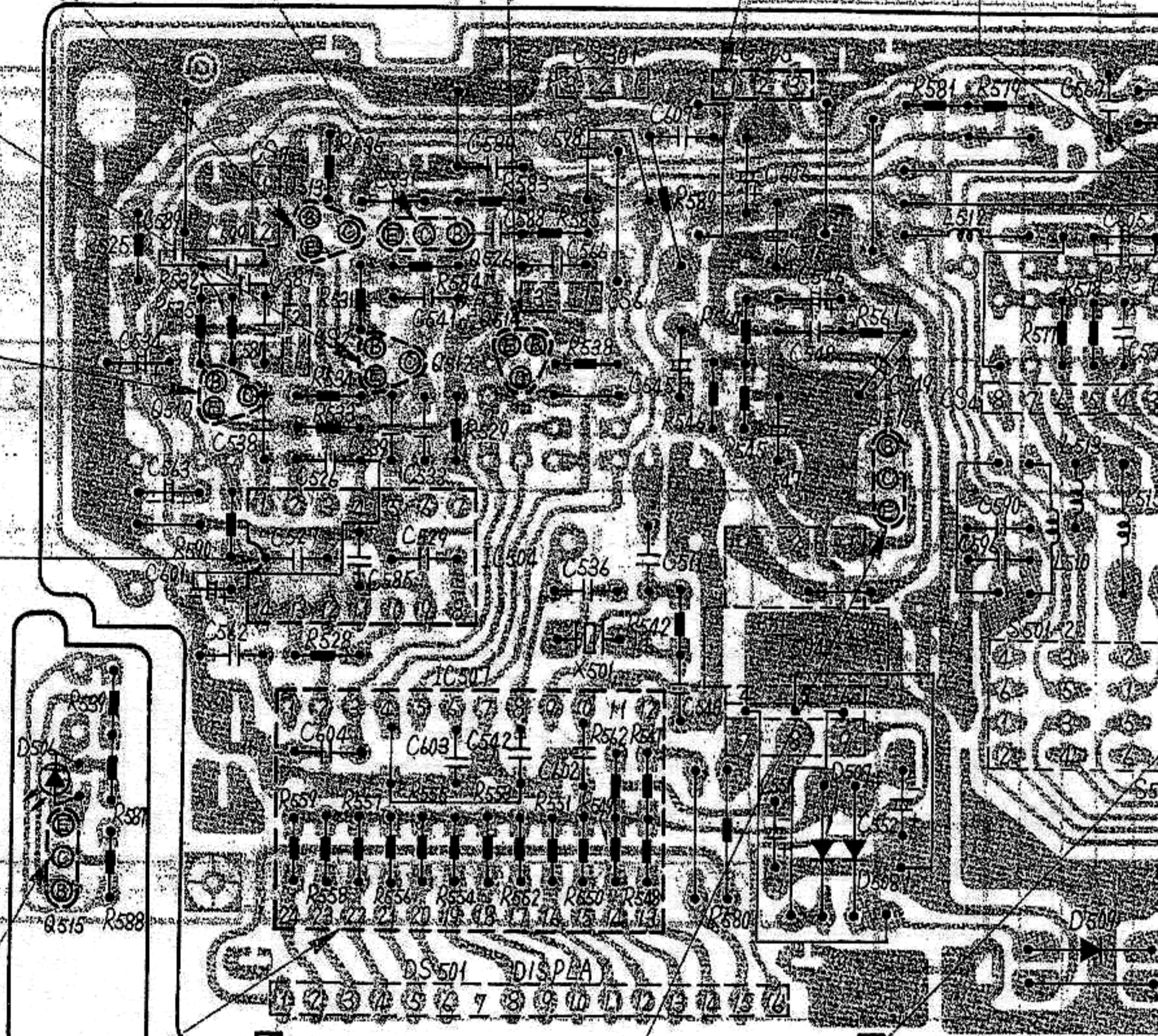
	FM	MW	SW
C	2.6V	0.56V	0.54V
B	0.8V	0.53V	0.52V
E	0.1V	0V	0V

IC504

	FM	MW	SW		FM	MW	SW
1	2.7V	2.7V	2.7V	8	4.2V	4.2V	4.2V
2	2.7V	2.7V	2.7V	9	0.1V	5.0V	5.0V
3	0V	0V	0V	10	1.8V	2.5V	1.2V
4	0V	0V	0V	11	0.1V	5.0V	5.0V
5	0V	0V	0V	12	4.9V	4.9V	4.9V
6	0V	0V	0V	13	4.9V	4.93V	4.94V
7	4.2V	4.2V	4.2V	14	4.9V	4.93V	4.94V

Q515

	FM	MW	SW
C	1.96V	1.96V	1.97V
B	-1.92V	-1.92V	1.93V
E	2.6V	2.6V	2.61V



IC507

	FM	MW	SW		FM	MW	SW
1	4.95V	4.95V	4.96V	13	-6V	-5.9V	0.6V
2	2.0V	2.5V	1.7V	14	-10.2V	-10.2V	-9.8V
3	1.5V	1.5V	1.5V	15	-1.6V	-1.6V	0.5V
4	3.5V	0.5V	0.5V	16	-10.2V	-10.2V	-9.8V
5	0.1V	4.95V	4.97V	17	-9.4V	-5.9V	-1.4V
6	0.08V	0.08V	9.8V	18	-14.5V	-14.5V	-9.0V
7	0.1V	1.5V	1.5V	19	-10.2V	-10.2V	-9.8V
8	0.64V	0.64V	0.65V	20	-9.3V	-9.4V	-5.6V
9	0.86V	0.86V	0.87V	21	-10.2V	-10.2V	-9.6V
10	0V	0V	0V	22	-9.4V	-6V	-5.6V
11	2.8V	2.8V	2.8V	23	-10.2V	-10.2V	-9.7V
12	-6V	-5.8V	-1.4V	24	-9.4V	-14.5V	-9.0V

Q516

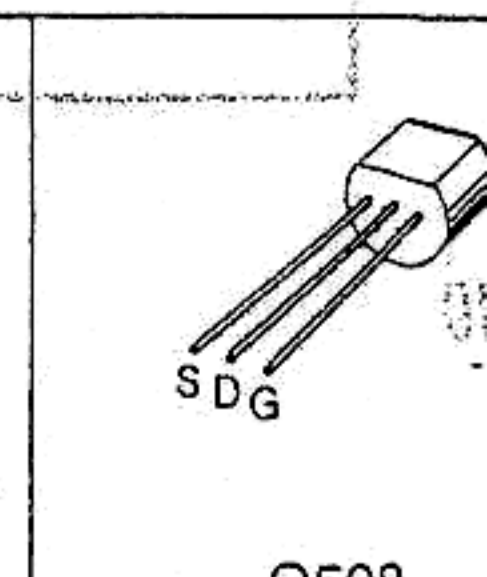
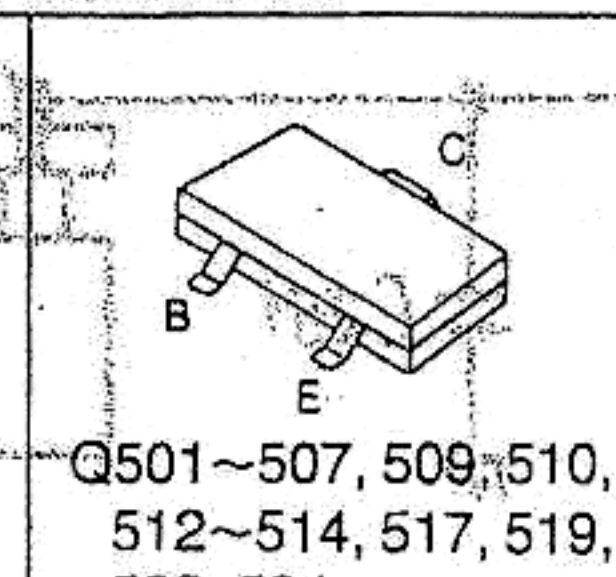
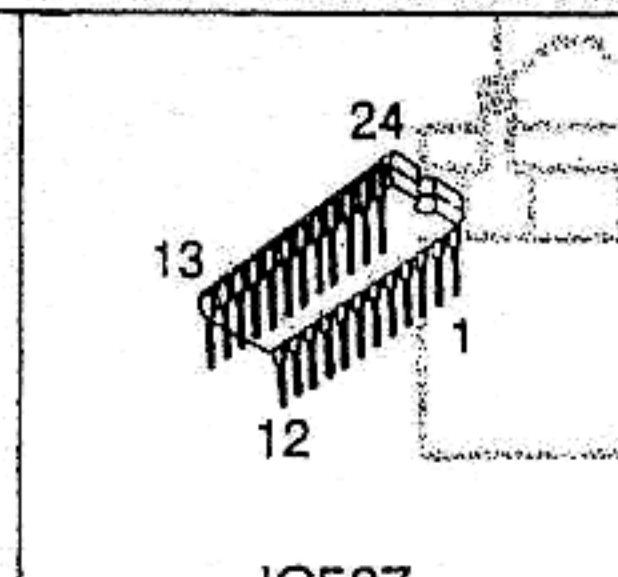
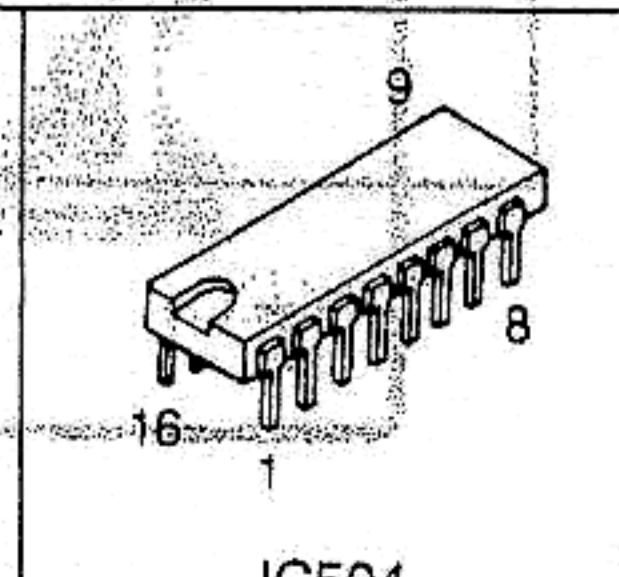
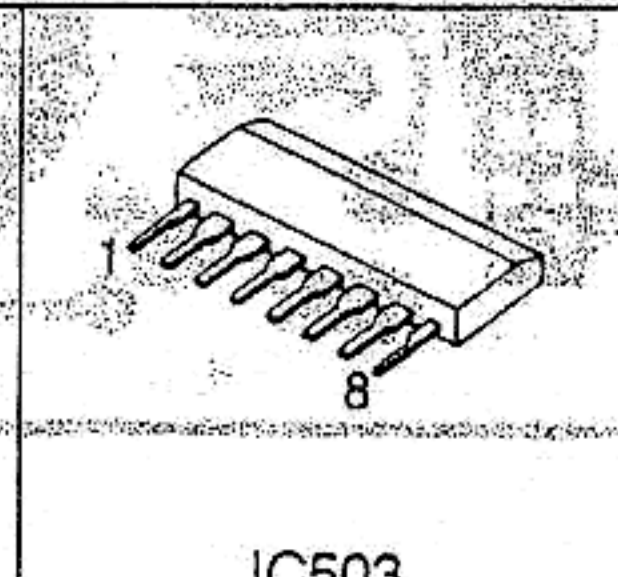
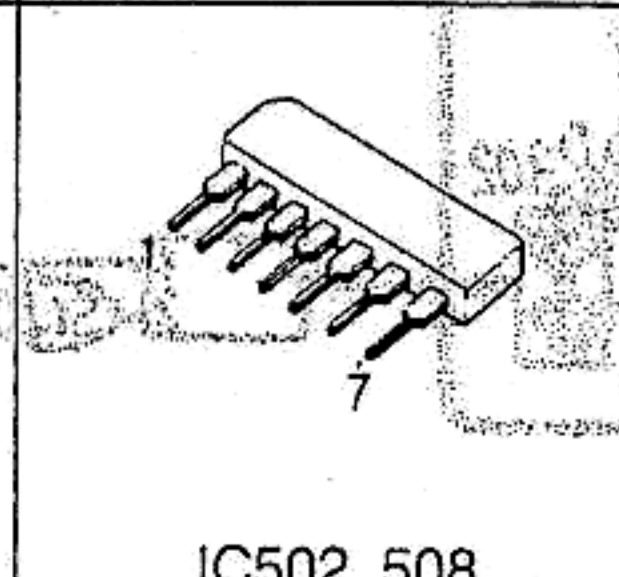
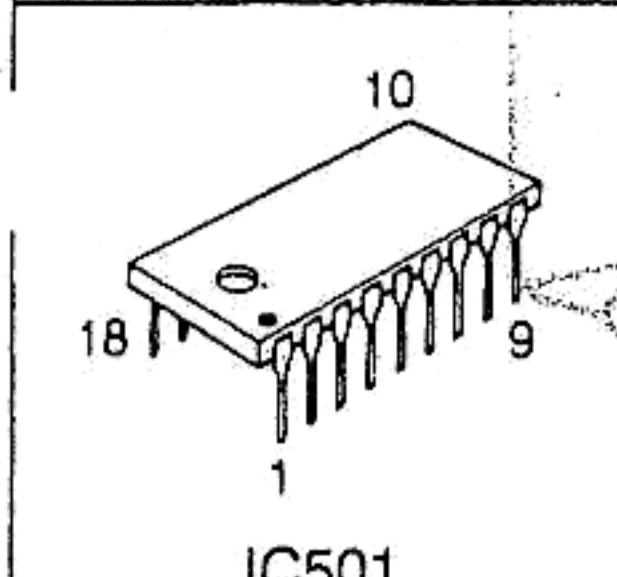
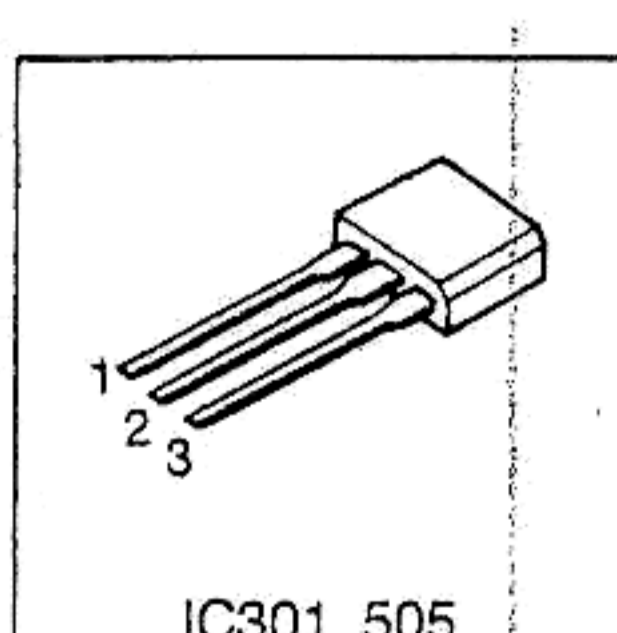
	FM	MW	SW
C	3.8V	3.8V	3.8V
B	0V	0V	0V
E	0.1V	0.1V	0.1V

Q507

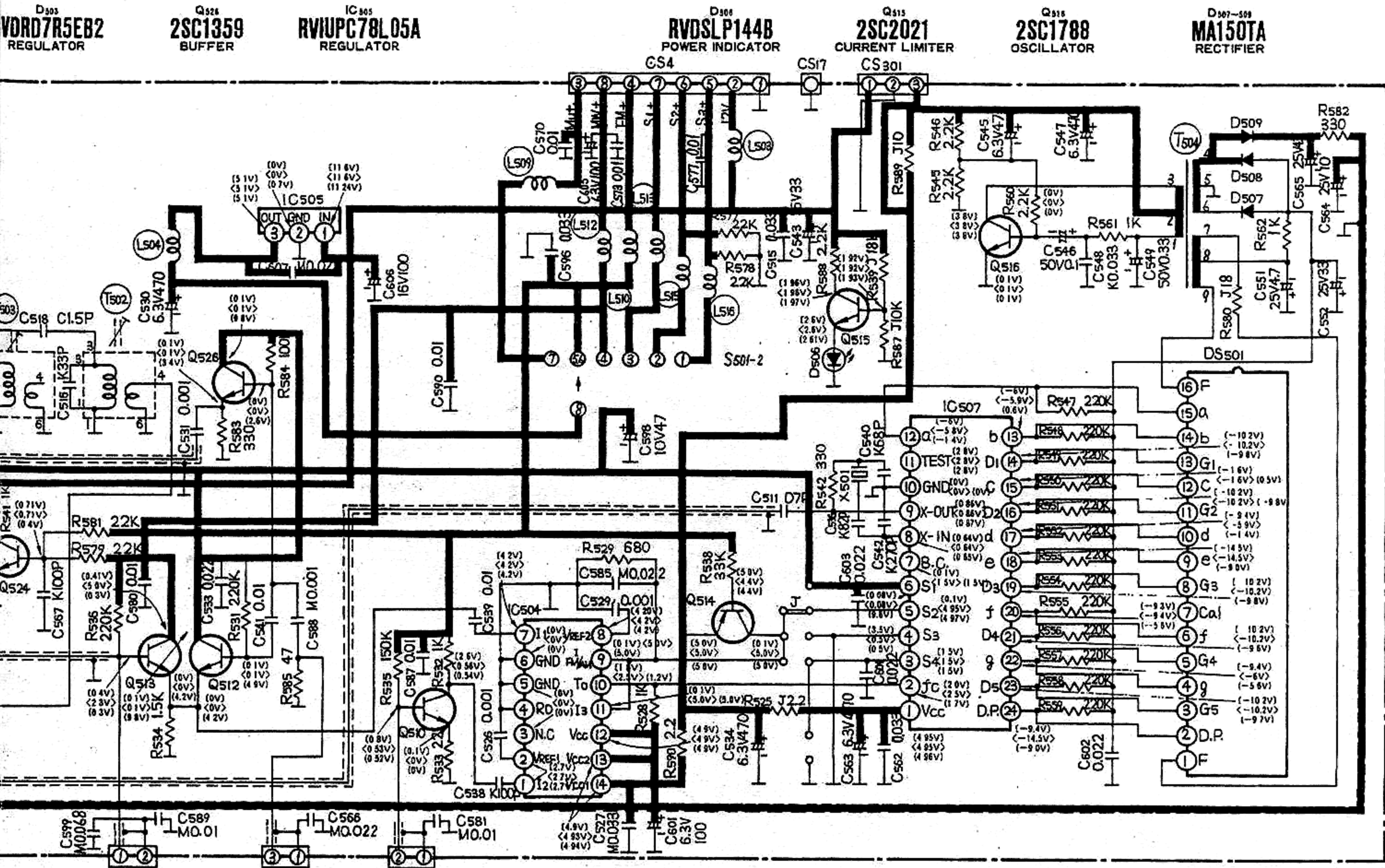
	FM	MW
C	0.1V	0.1V
B	0.1V	0.1V
E	0V	0V

Q525

	FM	MW	SW
C	11.62V	11.64V	11.25V
B	0.1V	0.1V	9.8V
E	0.1V	0.13V	10.45V

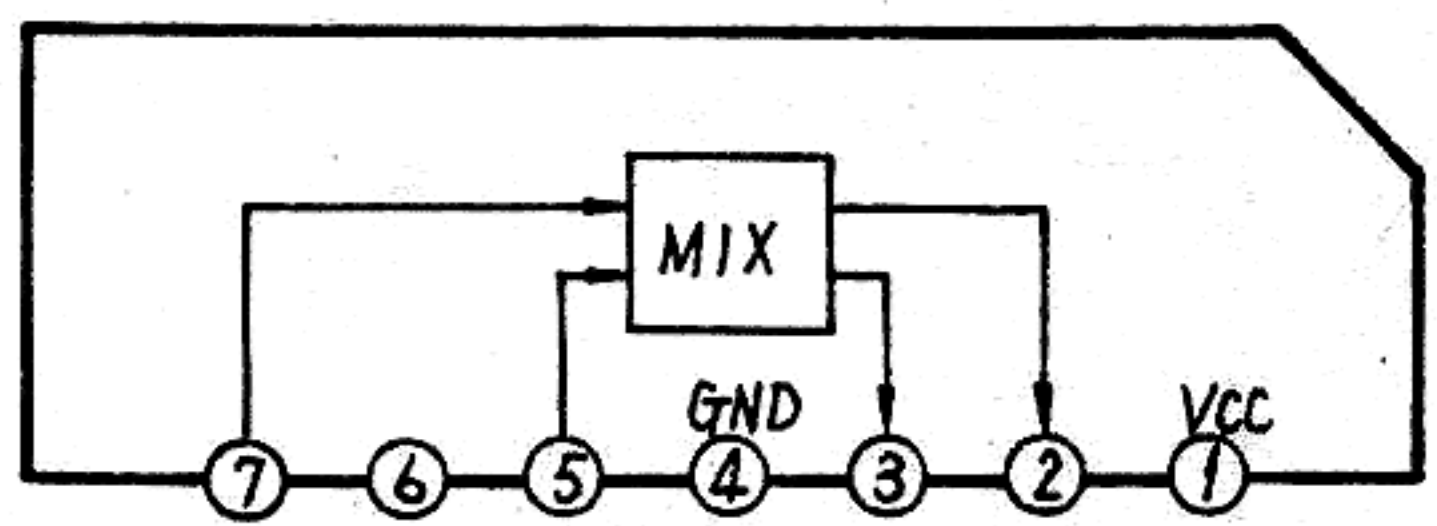


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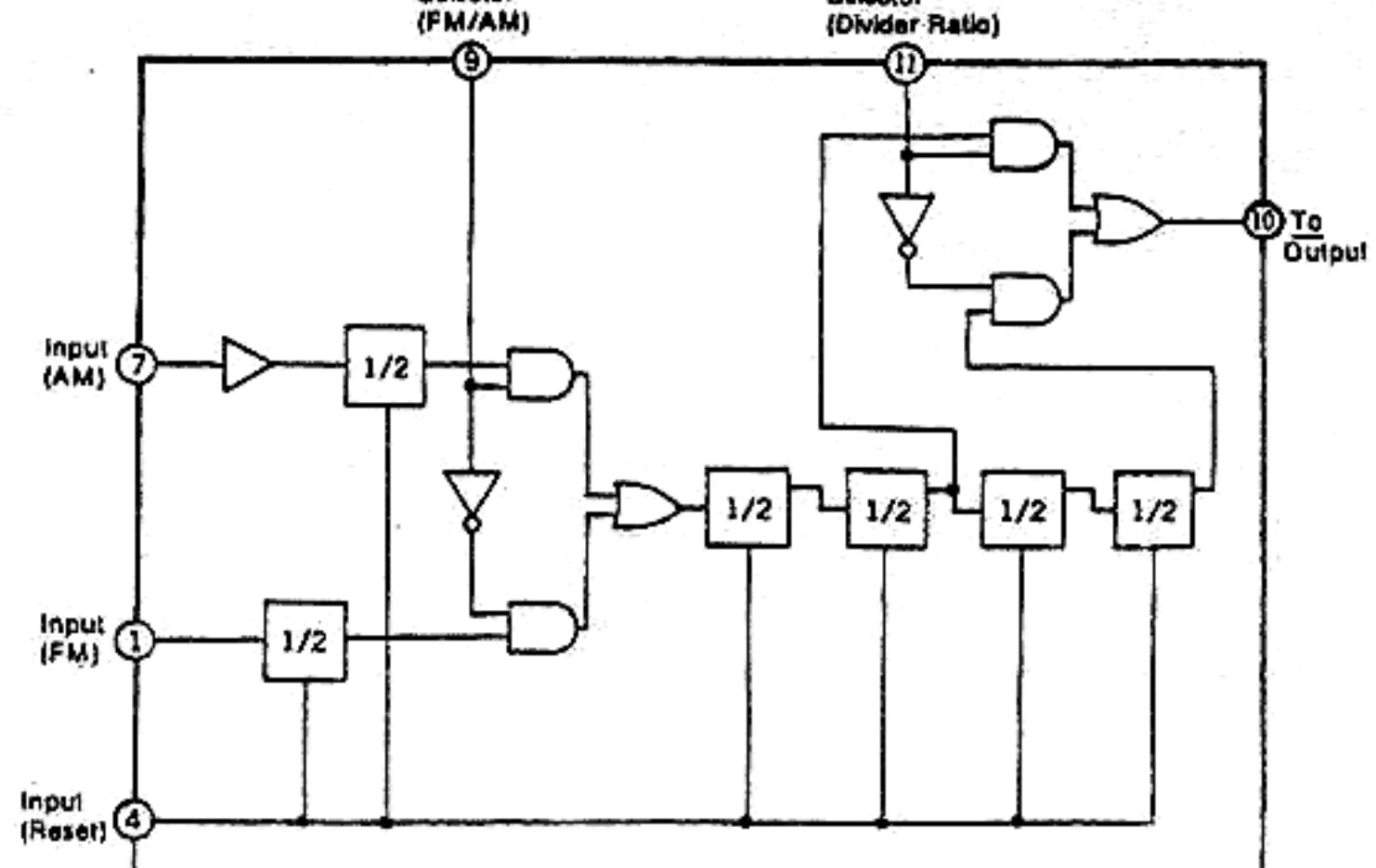


**Q324 2SC1623 SWITCHING**    **Q313 2SC2295 SWITCHING**    **Q312 2SC2404 SWITCHING**    **Q316 2SC2404 AMPLIFIER**    **IC304 RVIM54451P PRESCALER**    **Q314 2SB624 INVERTER**    **IC307 RVIM54830P COUNTER**

IC502, 508



IC504



IC507

