Car radio 02AN479A

Service
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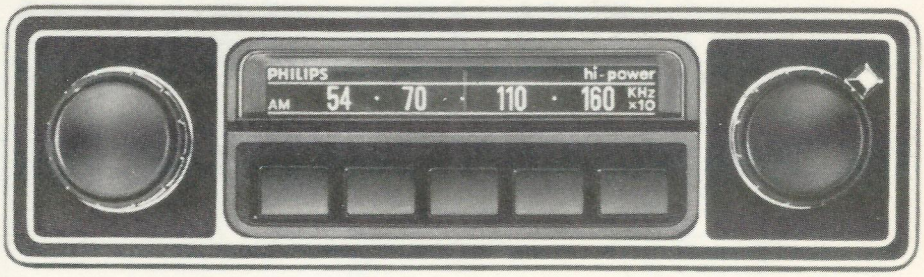

Service Manual

12 V

SPECIFICATIONS

Tuning Range	525 to 1605 kHz
Intermediate Frequency	455 kHz
Power Output	3.5 Watts. Min. RMS (at T.H.D. = 10%)
Speaker Impedance	4 ohms
I.C.'s	2 I.C.S.
Power Input	12V Negative to earth
Current	Approx. 0.2 amp. (at 0.5W output)

WARNING:

Connect power lead of receiver to positive battery terminal only. Receiver will be damaged if connected to incorrect polarity.

Subject to modification

4802 725 17012

PHILIPS

REPLACEMENT PARTS LIST

Ref. No.	Description	Part No.
C1	30 pF 50V Ceramic	4802 122 47048
C2	.01 μF 50V Ceramic	4822 122 30043
C3	.0022 μF 50V Mylar	4802 121 47151
C4	4.7 μF 25V Electrolytic	4802 124 47034
C5	120 pF 50V Ceramic	4822 122 30093
C6	.1 μF 50V Mylar	4802 121 47134
C7, 14	.047 μF 25V Ceramic	4802 121 47167
C8	.001 μF 50V Mylar	4802 121 47146
C9	240 pF 50V Ceramic	4802 122 47123
C10	680 pF 50V Ceramic	4822 122 30053
C11, 23	1 μF 50V Electrolytic	4802 124 47037
C12	.015 μF 50V Mylar	4802 121 47161
C13	2 pF 50V Ceramic	4822 122 31036
C15, 16, 19	.01 μF 50V Mylar	4802 121 47158
C17	100 μF 16V Electrolytic	4802 124 47051
C18	8 pF 50V Ceramic	4822 120 21052
C20, 28	22 μF 16V Electrolytic	4802 124 47021
C21	.05 μF 12V Ceramic	4802 122 47002
C22	.2 μF 12V Ceramic	4802 122 47109
C24	.0022 μF 50V Ceramic	4822 122 30114
C25	47 μF 10V Electrolytic	4802 124 47016
C26	100 μF 10V Electrolytic	4802 124 47002
C27	1500 pF 50V Ceramic	4822 122 31221
C29	.001 μF 50V Ceramic	4802 122 47022
C30	33 μF 10V Electrolytic	4802 124 47013
C31	.15 μF 100V Mylar	4802 121 47173
C32, 33	470 μF 16V Electrolytic	4802 124 47024
C34, 35	1000 pF Feed-thru	4822 122 70022
C36	.022 μF 50V Ceramic	4802 122 47108
CV2	50 pF RF Trimmer	4802 125 57043
CV3	50 pF Osc. Trimmer	4802 125 57038

Resistors and Controls

Note: All resistors are standard values and tolerance unless specified otherwise.

RV1, 2 S1	10K + 20K + Switch	4802 102 27067

Ref. No.	Description	Part No.
IC's, Coils and Transformers		
IC1	RF Conv. IF and DET(HA1199)	4802 209 87122
IC2	Driver and Power Amp.(AN315)	4802 209 87124
L4	Osc. Coil 4.7 μH	4802 158 17104
L5	Choke (Filter) 2.7 mH	4802 158 17076
L6	Choke (Filter) 50 μH	4802 158 17042
L7	Choke (Noise Suppression) .74 μH	4802 158 17077
T1	Transformer (Oscillator)	4802 156 27097
T2, 3	Transformer IF	4802 153 17165
T4, 5	Transformer IF	4802 153 17166
Miscellaneous Electrical		
	Tuner Assembly, incl Coils and Pushbuttons	4802 210 17076
	Pushbuttons	4802 410 27035
CV1	Tuning Shaft with Antenna Trimmer	4802 535 77062
F1	Fuse, 3A	4802 253 47006
NL1	Lamp, Neon	4822 134 20016
PL1, 2	Lamp (Dial Light)	4822 134 40301
	Socket (Dial Lamp)	4802 255 27008
	Filter (PL1 and PL2)	4802 480 37017
J1	Socket (Antenna)	4802 320 17027
Miscellaneous		
	Backplate (Dial)	4802 421 27001
	Pointer	4802 450 87086
	Dial and Escutcheon	4802 459 57006
	Nut 9 mm (Control Shafts)	4802 505 17016
	Knob Front	4802 413 47098
	Knob Rear	4802 413 97111
	Knob Rear Wing	4802 411 57013
	Escutcheon	4802 459 47053

SCHEMATIC

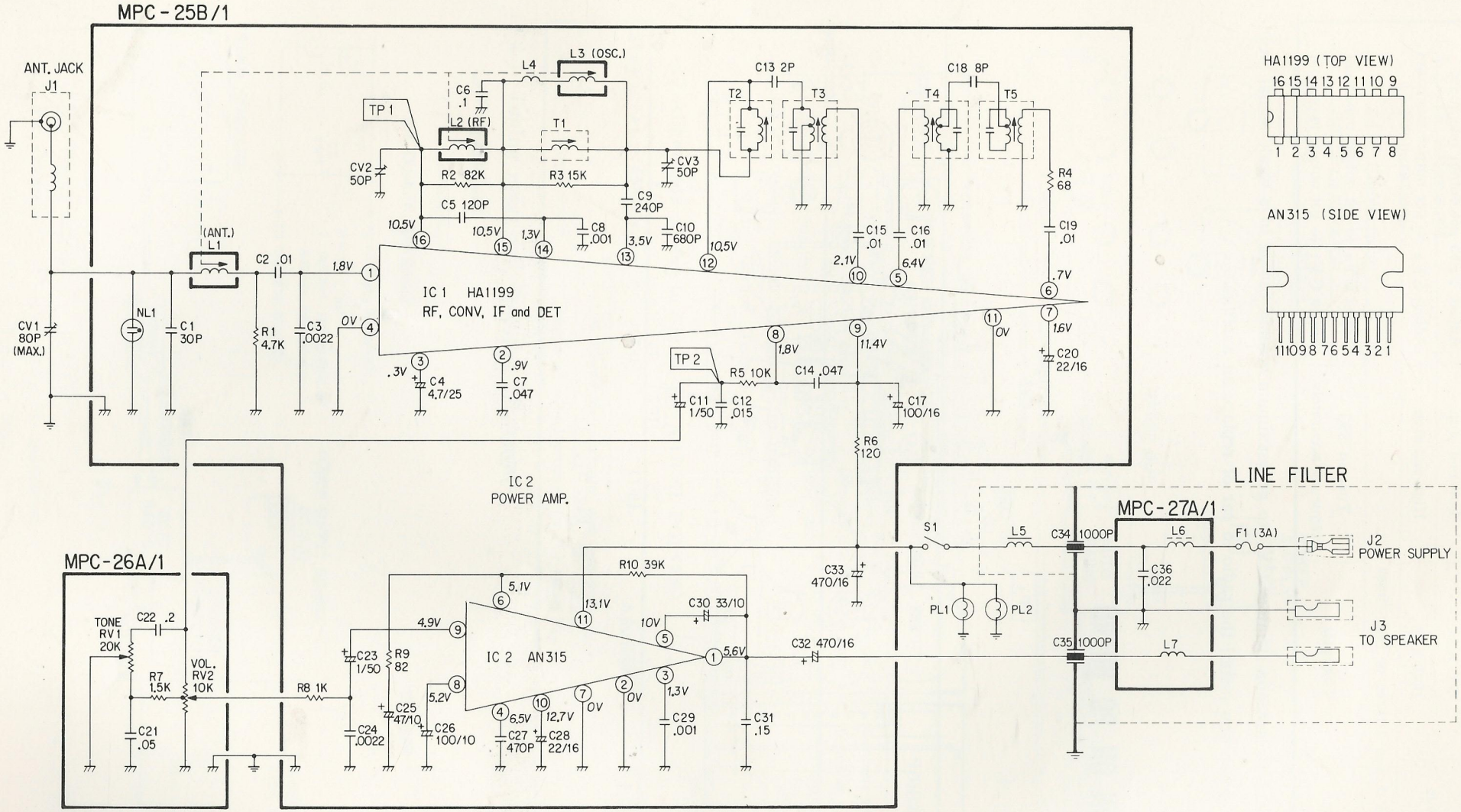

Fig. 1

NOTES:

1. All resistance in ohms, K=1,000
2. All capacitance in μF, P=$\mu\mu$F
3. DC voltages against the chassis measured with 100,000 ohm per volt meter, power supply set at +13.2 VDC, no signal input

WIRING ON PC BOARD

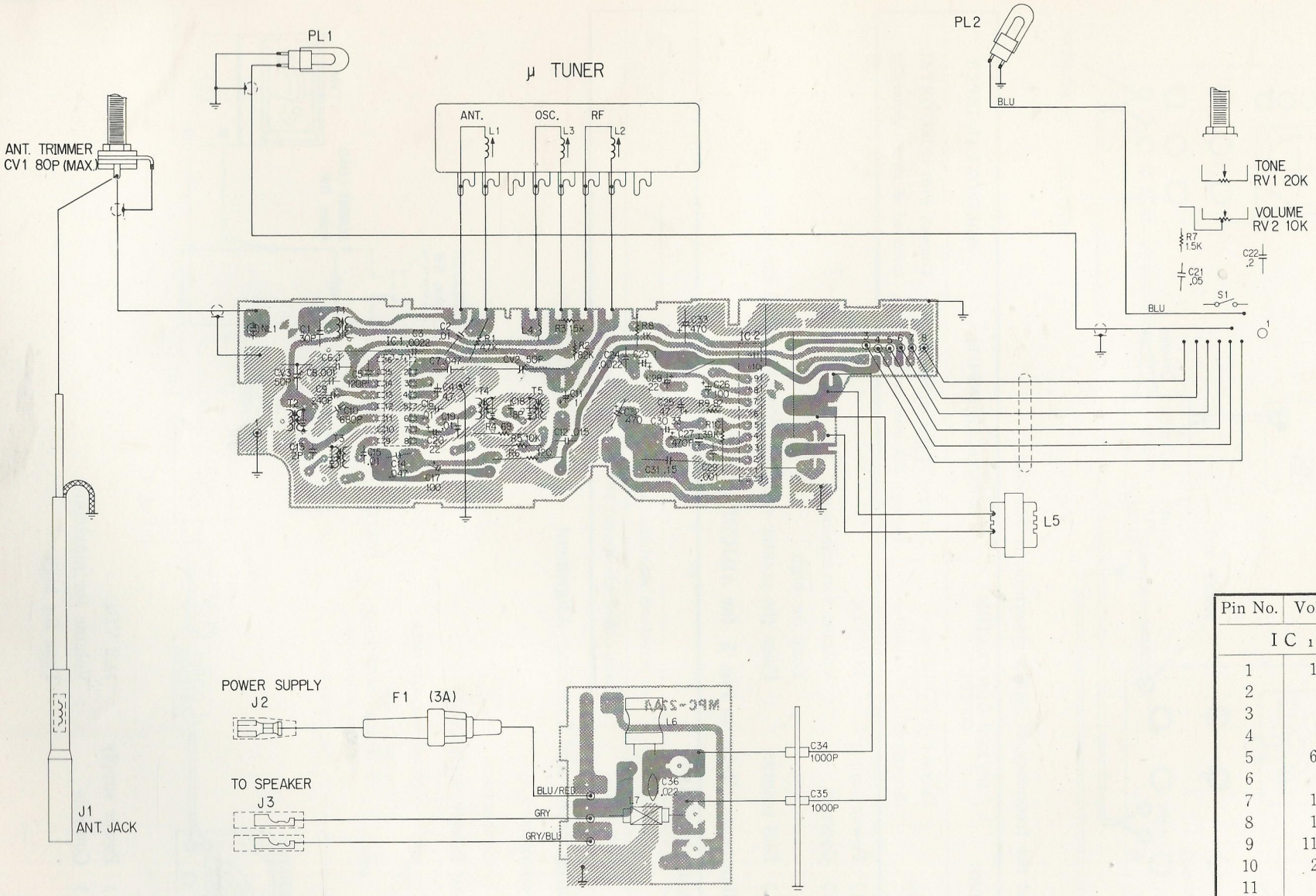

Fig. 2

Pin No.	Voltage
IC 1	
1	1.8V
2	.9V
3	.3V
4	0V
5	6.4V
6	.7V
7	1.6V
8	1.8V
9	11.4V
10	2.1V
11	0V
12	10.5V
13	3.5V
14	1.3V
15	10.5V
16	10.5V

IC 2	
1	5.6V
2	0V
3	1.3V
4	6.5V
5	10.0V
6	5.1V
7	0V
8	5.2V
9	4.9V
10	12.7V

NOTES:
1. All resistance in ohms, K=1,000
2. All capacitance in μF, P=μμF
3. DC voltages against the chassis measured with 100,000 ohm per volt meter, power supply set at +13.2 VDC, no signal input
4. PC board (MPC-27A/1) of line filter is shown components side view.

ALIGNMENT

〔1〕 IF Alignment

◎ Preparations

(1) Connections

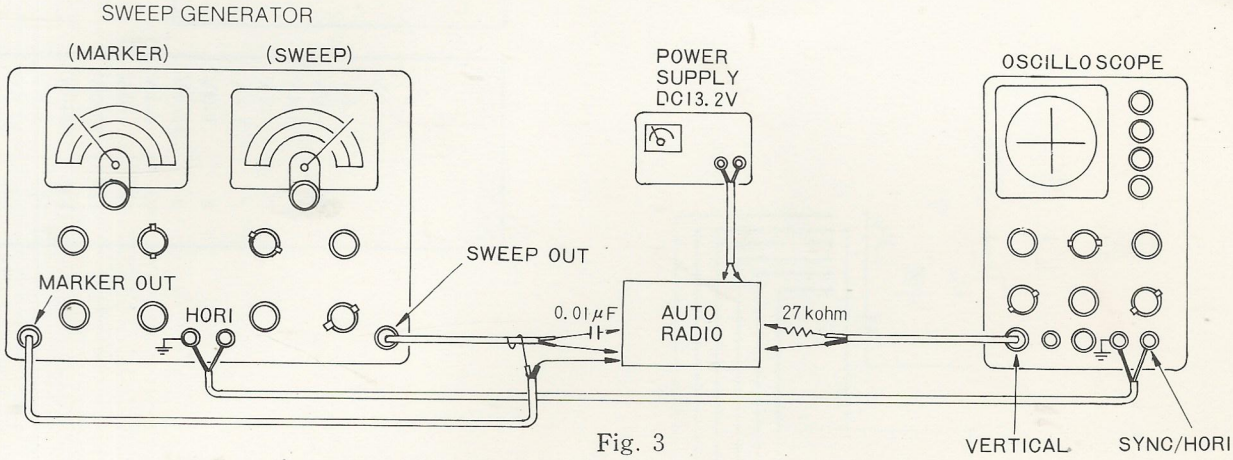

Fig. 3

Set the frequency of sweep generator at 455 kHz.

PURPOSE	SWEEP GENERATOR OUTPUT	VERTICAL INPUT	HORIZONTAL INPUT
IF curve	Connect TP1 in Fig. 5 through 0.01 μF capacitor	Connect TP2 in Fig. 5 through 27k-ohm resistor	Connect with HORIZONTAL terminal of sweep generator

(2) Power supply : 13.2 VDC

(3) Controls : Volume for minimum
Tone for high

(4) Dial pointer : Place the pointer near to 1,000 kHz where no signal exists.

◎ Alignments (Refer to Fig. 5 for ADJUST POINTS)

STEP	ADJUST POINTS	ADJUST
1	T 2, 3, 4, 5	Get waveform maximum and best symmetry
2	Same above	Repeat above adjustment two or three times

〔2〕 Tuning range and Tracking Alignment

◎ Preparations

(1) Connections

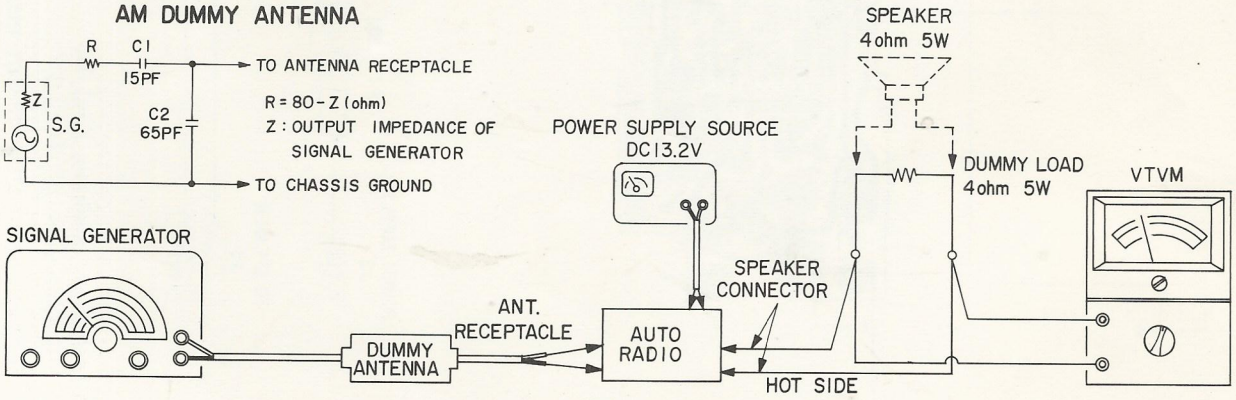

Fig. 4

(2) Power supply : 13.2 VDC

(3) Controls : Volume for maximum
Tone for high

◎ **Alignments (Refer to Fig. 5 for ADJUST POINTS)**

STEP	PURPOSE	SSG FREQUENCY	DIAL POINTER	ADJUST
1	Tuning range	505 kHz	Low-end stop	Adjust T_1 to get output maximum
2		1640 kHz	High-end stop	Adjust CV_3 to get output maximum
3	Repeat STEP 1 and 2 three or four times			
4	Tracking	1400 kHz	Tune in SSG frequency accurately	Adjust CV_2 to get output maximum
5				Adjust CV_1 to get output maximum

NOTE : Always readjust antenna trimmer CV_1 to get maximum volume tuning in a weak signal near 1400 kHz, when you install the radio in car or replace an antenna.

PARTS LOCATION ON PC BOARD

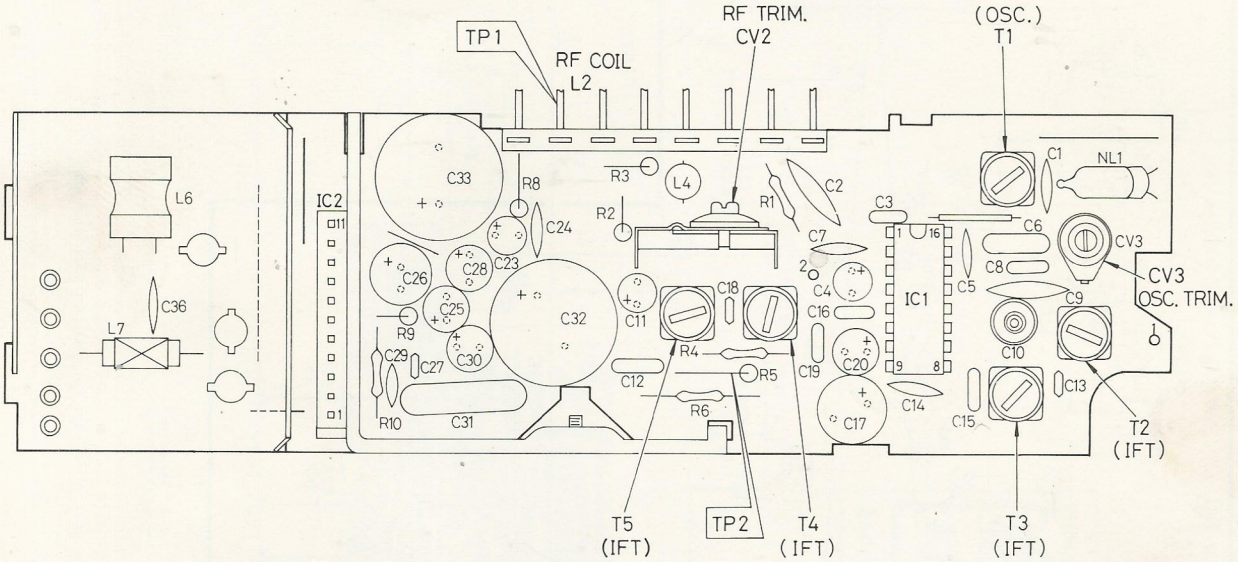

Fig. 5