Clarion

SERVICE MANUAL

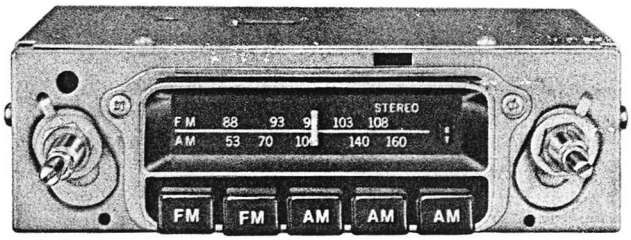
Closer Relations through "CLARION SERVICE MANUAL"

1978

MODEL RU-348A.B

Fabricant: CLARION CO., LTD./Exportations: CLARION SHOJI CO., LTD.
3, Kojimachi 5-chome, Chiyoda-ku, Tokyo, 102 Japan Tel.: (265) 2931 Telex: J22908, J22152 CLARISHO
Succursales outre-mer:
CLARION SHOJI (EUROPA) G.M.B.H. 2000 Hamburg 76, Schöne Aussicht 35, West Germany. Tel.: 220-7667 Telex: 41214969
CLARION SHOJI CO., LTD. (U.S.A.) 5500 Rosecrans Ave., Lawndale, Calif., 90260 U.S.A. Tel.: 213-973-1100 Telex: 66-4447
CLARION CORPORATION OF AMERICA 5500 Rosecrans Ave., Lawndale, Calif., 90260 U.S.A. Tel.: 213-973-1100 Telex: 66-4447
CLARION CORPORATION OF AMERICA, EASTERN DIVISION 421 North Midland Ave., Saddle Brook, N.J. 07662 U.S.A. Tel.: 201-791-1200 Telex: 13805
CLARION (MALAYSIA) SDN. BHD. 9 1/2 m.s. Bayan Lepas, Penang, Malaysia Tel.: 897-206, 897-334 Telex: PG 255 (Penang)
CLARION DO BRASIL INDUSTRIA E COMERCIO LTDA. Caixa Postal 5033, Sao Paulo, Brasil Tel.: 32-5161 Telex: 3821123
CLARION (HONG KONG) CO., LTD. 225 Ping Chau Gallery, Ocean Terminal, Kowloon, H.K. Tel.: 3-675785 Telex: HK4922

MODEL RU-348A



MODEL RU-348B

* SPECIFICATIONS

Circuit System:	Superheterodyne
Tuning System:	Manual μ-tuning 5-push button system.
Receive range:	AM 530KHz ~ 1605KHz FM 88MHz ~ 108MHz
Intermediate frequency:	AM 452.5KHz FM 10.7MHz
Maximum sensitivity:	AM Less than 22dB FM Less than 18dB
Practical sensitivity:	AM Less than 24dB (at S/N 20dB) FM Less than 18dB (at S/N 30dB)
Image rejection ratio:	AM More than 60dB FM More than 35dB
IF rejection ratio:	AM More than 40dB FM More than 70dB
½ IF rejection ratio:	FM More than 60dB
AFC:	FM 400KHz ~ 700KHz
AGC FOM:	AM Less than 26dB
Selectivity:	AM More than 20dB (at ±10KHz detune)
Limiter sensitivity:	FM Less than 30dB
ST Indicator sensitivity:	FM Less than 30dB
ST Separation:	FM More than 20dB (400Hz)
Electrical fidelity:	AM 100Hz H +4±3bB L +7±3dB 4000Hz H −15±5dB L −26±5dB FM 100Hz H +2±3dB L +3±3dB 7000Hz H −15±5dB L −28±5dB

Load impedance:	4Ω	
Power output:	4W x 2 (for 10% distortion) More than 6W x 2 (for max. volume)	
Power supply voltage:	DC.14.4V (11V ~ 16V) Nagative ground	
Dimensions:	Width	160m/m
	Height	50m/m
	Depth	120m/m
Weight:	1.2kg	

Semiconductors:

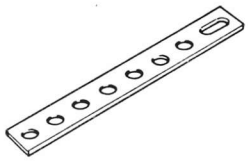
FM	RF amplifier	2SC1342 x 1
	Frequency mixer	2SC535B x 1
	Local oscillator	2SC461B x 1
	AFC	001-0130-00x 1 (1S2790WT)
	IF amplifier	2SC460B x 4
	Detector	001-0020-00 x 2 (1N60P)
	Pre amplifier	2SC460B x 1
	MPX	051-0056-00, 01x 2
AM	RF amplifier	2SC460B x 1 001-0095-00 x 1 (1S2076)
	Frequency converter	2SC454B x 1
	IF amplifier	2SC454B x 1
	AGC	001-0010-00 x 1 (1N34A)
	Detector	001-0010-00 x 1 (1N34A)
	Audio output amplifier	051-0036-02, 03 x 2 (HA-1322)
	Voltage regulator	001-0099-01 x 1 (HZ7B)

Printed in Japan 298-1785-000

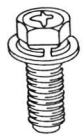
* COMPONENT VIEW:

RU-348A-01

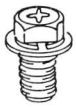
	Main unit	1
280-3344-00	Owners guide	1
300-4976-00	Mounting bracket	1



921-6232-00	Parts bag	1



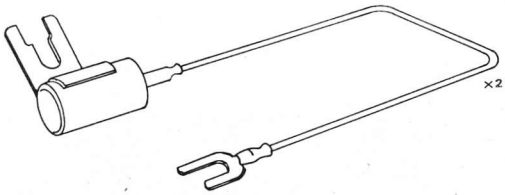
734-5016-31
D-SEMS-HEX-BOLT



734-5010-31
D-SEMS-HEX-BOLT

723-5000-11
HEX-NUT

740-5000-10
FLAT WASHER



085-0010-31
NOISE-SUPPRESSOR

922-0778-00	Parts bag	1

380-3335-00
KNOB

380-3336-01
KNOB

745-0524-00
SPECIAL WASHER

722-0231-00
SPECIAL NUT

RU-348B-01

	Main unit	1
280-3326-00	Owners guide	1
921-6194-00	Parts bag	1

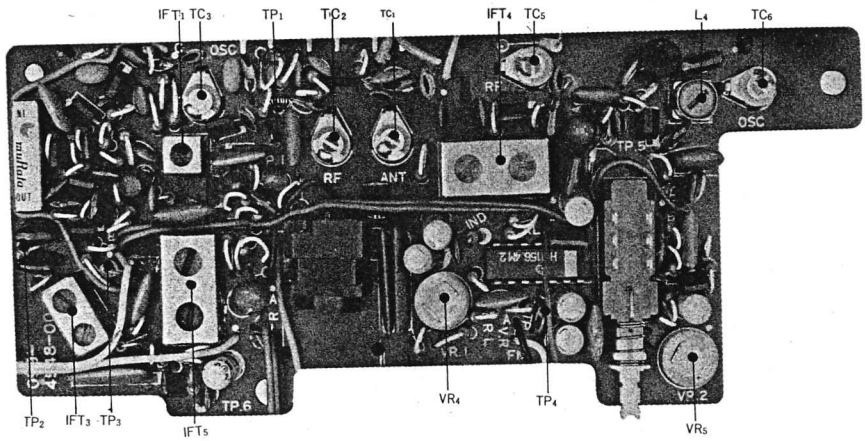
722-0231-00
SPECIAL NUT

745-0430-01
SPECIAL WASHER

* FEATURES:

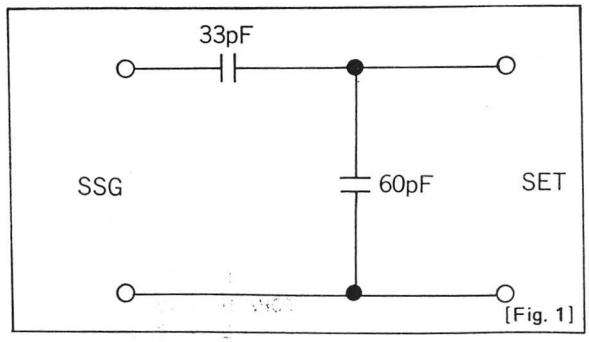
- Use of monolithic power IC in the audio section assures high-quality reproduction and high reliability.
- Considering variations in climatic conditions, superb silicone transistors capable of operating both at high as well as low temperature are used.
- Stable operation is assured against power supply voltage fluctuation by using a constant-voltage diode.

* ADJUSTMENT METHODS:



1. Adjustment of AM tuner

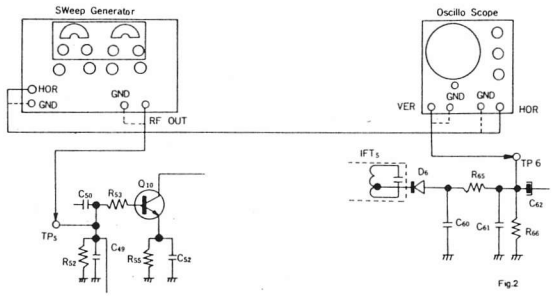
1-1 Instruments required
- AM standard signal generator (SSG)
- AM IF sweep generator (452.5KHz)
- Oscilloscope
- Dummy load (4Ω)
- VTVM
- Dummy antenna (see below Fig. 1.)



[Fig. 1]

1-2 Adjustment of IF Section

1. Connect the sweep generator output to TP5 and oscilloscope's vertical terminal to TP6. Turn the tuning knob of the set fully clockwise.
2. When the sweep generator frequency is set to 452.5KHz and its output level is increased, a waveform as shown in Fig. 2 is obtained.
   Keep the output of SSG as small as possible and the vertical gain of oscilloscope as large as possible.
3. Adjust the cores of IFT4 and IFT5 of obtain maximum height of the waveform with good symmetry.



[Fig. 2]

1-3 Tracking adjustment

Apply the output of SSG to the set through dummy load.

Bring the set's dial pointer to the maximum frequency point on the dial and set the AM SG to 1620KHz.

Adjust the OSC trimmer (TC6) to receive 1620KHz.

Next set the dial pointer to the left end (minimum receiving frequency), set the SSG signal to 520KHz, and adjust L4 to receive this signal. Repeat these adjustments 2 ~ 3 times so that the receiving band width becomes 520KHz ~ 1620KHz.

Now adjust the ANT trimmer (TC4) and RF trimmer (TC5) on the same frequency so that the Audio output becomes maximum.

15 ~ 20dB output of SSG is suitable for the adjustment. The volume and tone controls must be at maximum position.

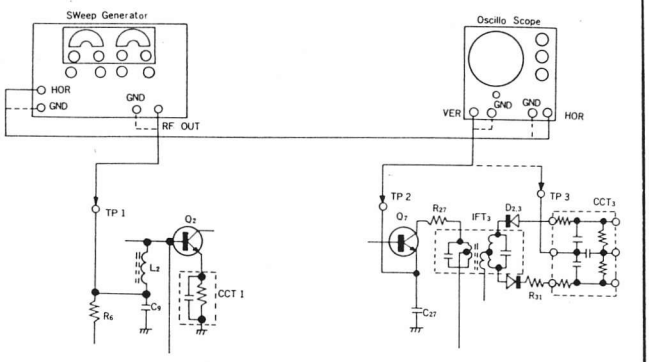
2. Adjustment of FM tuner

2-1 Instruments required

FM standard signal generator (SSG)
FM IF sweep generator (10.7MHz)
Oscilloscope
Dummy load (4Ω)
VTVM

2-2 Adjustment of IF section

1. Connect the sweep generator output to TP1 and oscilloscope's vertical terminal to TP2.
   Turn the tuning knob of the set fully clockwise.
2. With the sweep generator frequency set of 10.7MHz when the output level of the sweep generator is gradually increased, waveform shown in Fig. 3 appears on the CRT screen.
   Now perform the following adjustment.
   Keep the FM SSG output as small as possible and the vertical gain of oscilloscope as large as possible.
3. Adjust the core (green) of IFT1 for maximum height of the waveform with good symmetry.
   Adjust the core (blue) of IFT3 for maximum height of the waveform.
4. Connect the vertical terminal of oscilloscope to TP3. Adjust the core (black) of IFT3 for good linearity and good symmetry of the S-curve.



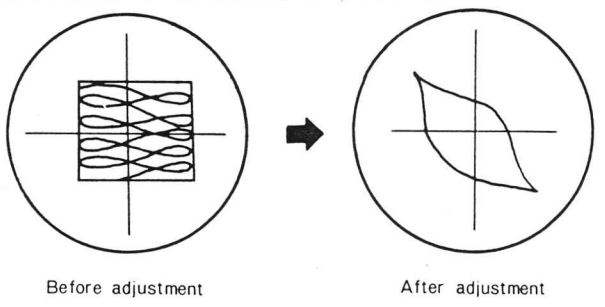
[Fig. 3]

2-3 Tracking adjustment

1. Turn the tuning knob fully counterclockwise (lowest receiving frequency position).
   Adjust the OSC trimmer (TC3) to receive 87.5MHz from the FM SSG.
2. Turn the tuning knob to receive 98MHz. Set the output of FM SSG to approximately 10dB and adjust the ANT trimmer (TC1) and RF trimmer (TC2) to obtain maximum audio output.
   At this time, the volume control and tone control knobs must be at maximum position.

2-4 MPX section adjustment

1. Turn the ST-MO switch OFF. (Monoral reception).
   Connect the oscilloscope vertical input to TP.4 and apply a precalibrated 19KHz signal (stereo modulator calibration use signal) to the horizontal input.
   Adjust the semi-fixed control VR5 so that the Lissajuous waveform becomes almost stationery.
   (If a frequency counter is available, connect it to TP.4 and adjust VR5 so that the frequency becomes exactly 19.0KHz).
   -Adjustment of the frequency of voltage controlled oscillator (VCO)-
2. Connect the stereo modulator to FM SSG and set to the specified modulation depth (pilot signal 7.5KHz). Turn the ST-MO switch ON. (Stereo reception).
   Set the SSG output to about 25dB.
   Adjust the semi-fixed control VR4 by turning it in the counterclockwise direction to a position where the ST indicator lights.
   -Adjustment of Indicator lamp sensitivity-
3. This adjustment of lamp (lighting) sensitivity must be performed after the adjustment of VCO frequency. The sensitivity increases when VR4 is turned counter-clockwise and increases when VR4 is turned to clock-wise direction.



[Fig. 4]

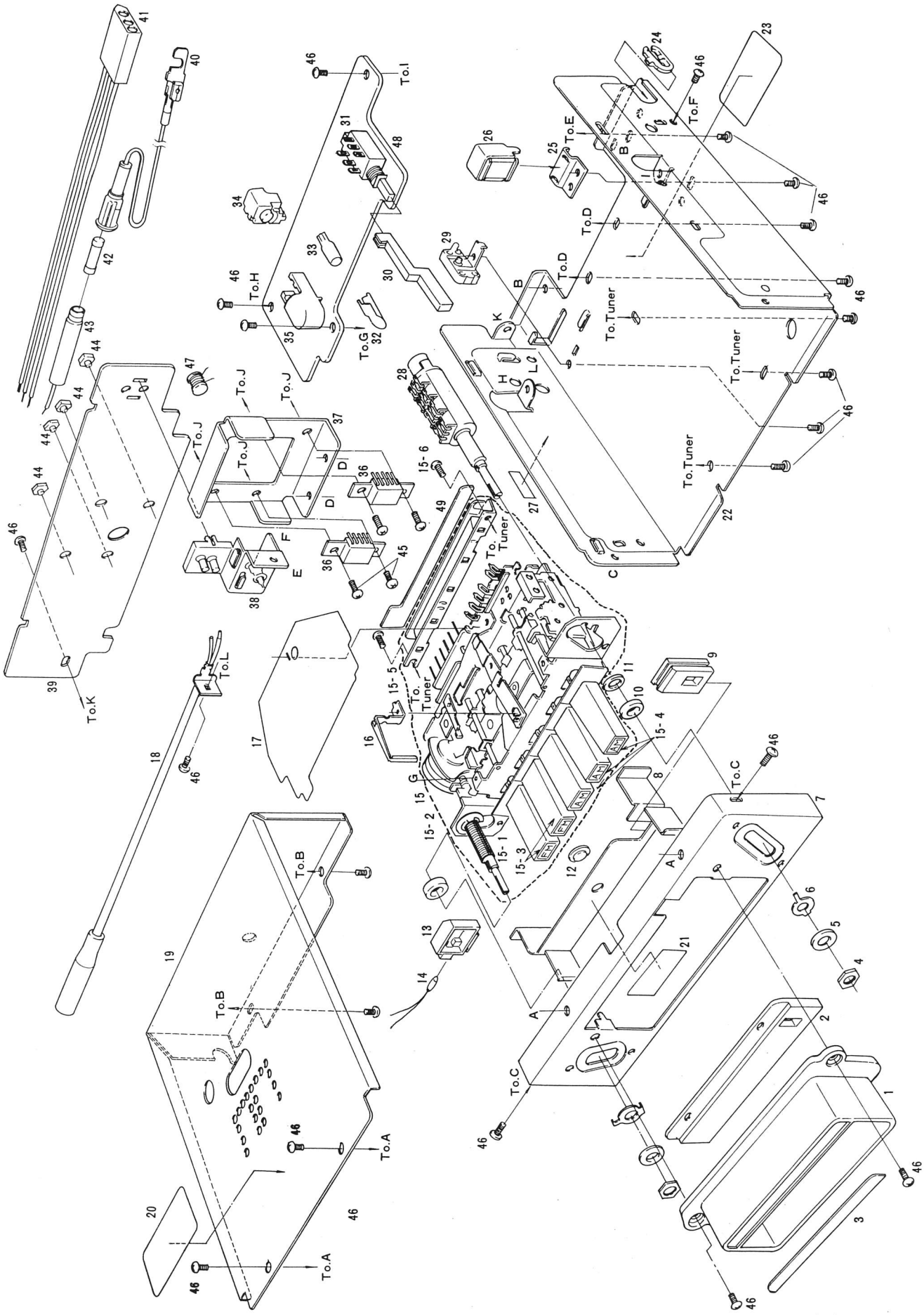
Does not become perfectly round because the Lissajuous figure is formed by the rectangular waveform (TP.4 output) and sinusoidal waveform (calibration use 19KHz signal).

* TROUBLESHOOTING: (Refer to the circuit diagram and printed board.)

Symptom	Faulty circuit	Place, cause of fault	Action
No sound at all	Power supply circuit	● Fuse open ● Bypass capacitor short ● T_1 (choke) open ● L_7 (coil) open ● $C_{96,97}$ (16-470), C_{93} (10-330) faulty ● R_{73}, R_{75} open ● Zeener diode (D7) short	Replace Replace Replace Replace Replace Replace Replace
	AF circuit	● Speaker faulty ● Speaker lead open ● Bypass capacitor short ● $C_{76,91}$ (10-1000) faulty ● $IC_{2,3}$ (051-0036-02, 03) faulty	Replace Replace Replace Replace Replace
	AM section	● $IFT_{4,5}$ open ● $Q_{9,10,11}$ faulty ● $TC_{4,5,6}$ short ● Tuner coil (L_1) open ● C_{43}, C_{44}, C_{45}, C_{50} faulty	Replace Replace Replace Replace Replace
	FM section	● $IFT_{1,2,3}$ open ● $Q_1 \sim_8$ faulty ● Tuner coil open ● IC_1 (051-0056-00) faulty ● $CCT_{4,5}$ faulty	Replace Replace Replace Replace Replace
Sound is low or sensitivity is poor	AF circuit	● $IC_{2,3}$ (051-0036-02, 03) short or faulty ● $C_{76,91}$ (10-1000) capacity down ● $C_{77,92}$ (50-1) leaking	Replace Replace Replace
	AM section	● $TC_{4,5,6}$ misadjusted ● L_1 coil open ● $Q_{9,10,11}$ deteriorated ● $IFT_{4,5}$ misadjusted ● D_4 (IS2076) deteriorated ● Tuner coil open, etc.	Readjust Replace Replace Readjust Replace Replace
	FM section	● $TC_{1,2,3}$ misadjusted ● $Q_1 \sim_8$deteriorated ● $IFT_{1,3}$ misadjusted ● Tuner coil open, etc. ● $D_{2,3}$ deteriorated ● ANT shield wire open or short	Readjust Replace Readjust Replace Replace Replace
		● AM, FM switch faulty ● ANT receptacle contact faulty	Replace Replace
Sound is distorted	AF circuit	● $IC_{2,3}$ (051-0036-02, 03) short or faulty ● Speaker faulty	Replace Replace
	AM section	● R_{49}, R_{63}, D_5, D_{58} faulty	Replace
	FM section	● Q_8, IC_1 (051-0056-00) faulty ● $D_{2,3}$ faulty ● CCT_3 faulty or short	Replace Replace Replace
Abnormal sounds (motorboating, osillation)	AF circuit	● C_{93}, C_{96}, C_{97} capacity down ● $IC_{2,3}$ (051-0036-02, 03) faulty	Replace Replace
	AM section	● C_{44}, C_{49}, C_{55}, C_{56}, C_{59}, C_{51} faulty	Replace
	FM section	● $C_{32,33,94}$ capacity down ● Each bypass capacity faulty ● Each decoupling capacitor faulty	Replace Replace Replace
		● C_{95} capacity down	Replace
Indicator does not light	MPX section	● $VR_{4,5}$ misadjusted ● SW_1 faulty ● C_{34}, C_{37} capacity down or faulty ● PL_2, R_{46} open or faulty	Readjust Replace Replace Replace
Stereo offect is absent	MPX section	● C_{30}, C_{32}, C_{35}, C_{36} faulty ● R_{38}, R_{37} open	Replace Replace

* EXPLODED VIEW:

⊙Main section



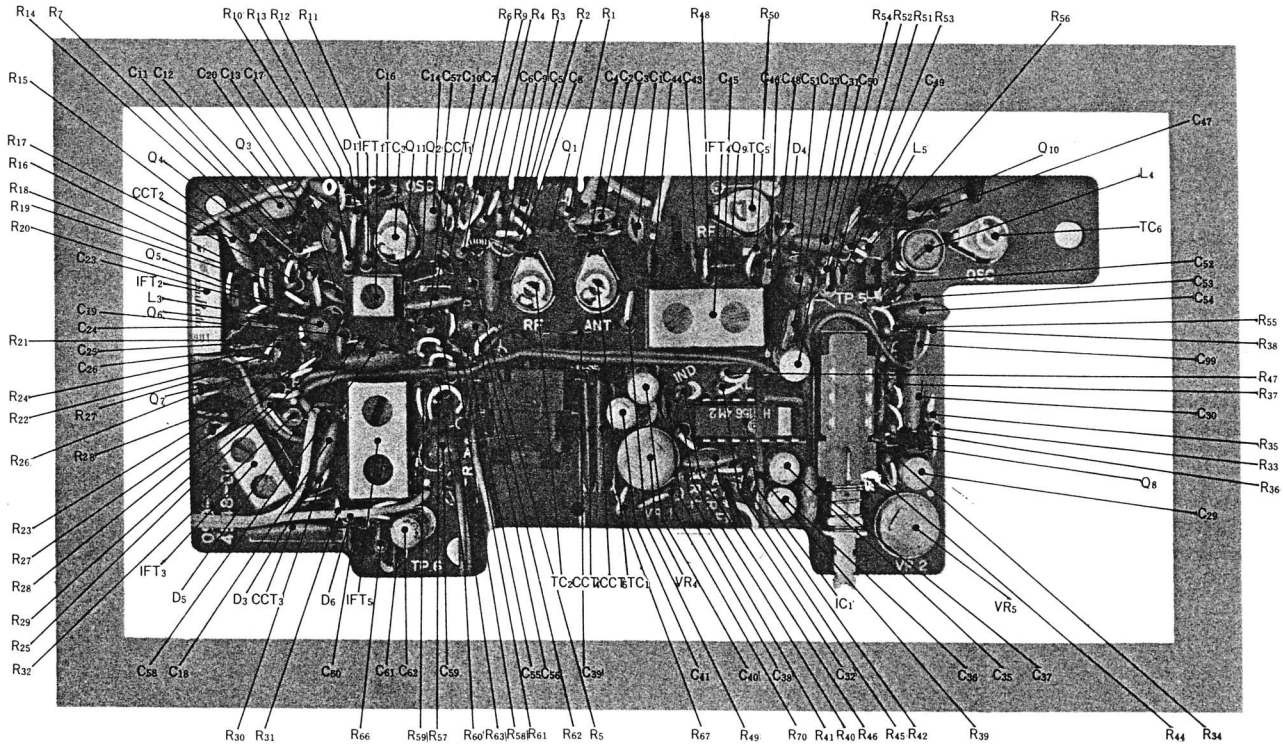
* PARTS LIST:

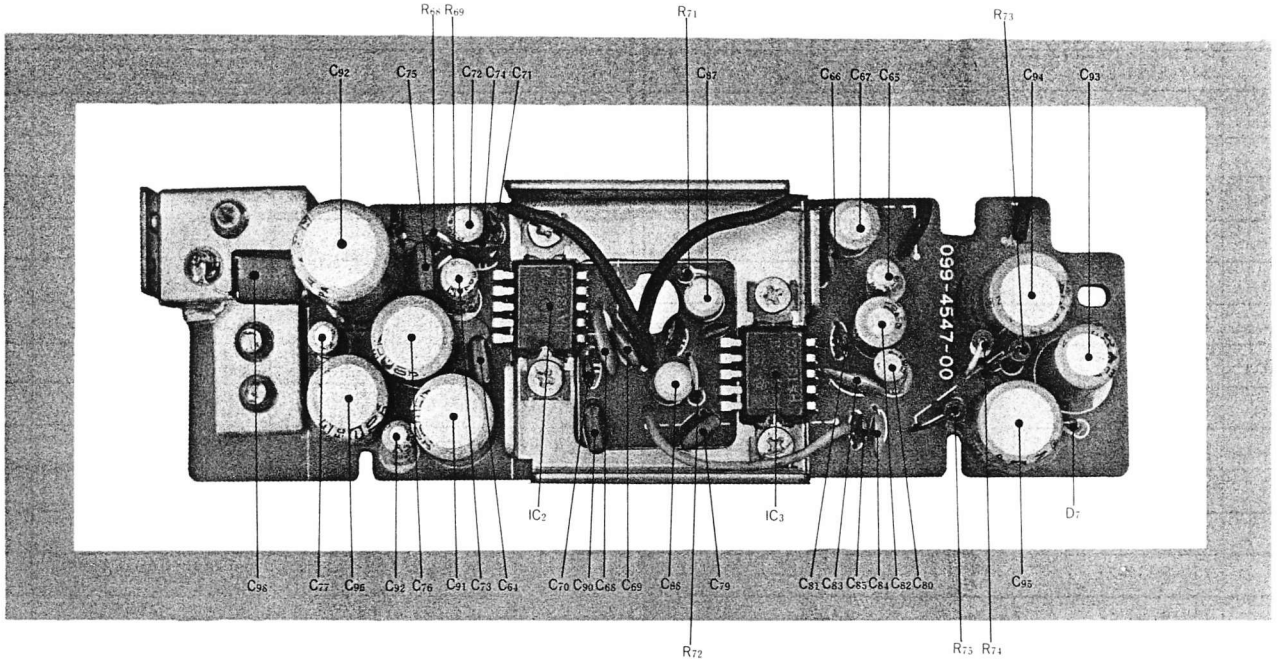
⊙Main section

REF.NO.	PART NO	DESCRIPTION	P.C.S
1	370-2994-01 370-2803-01	Escutcheon RU-348A RU-348B	1
2	372-2751-00 372-2743-00	Dial plate RU-348A RU-348B	1
3	371-2590-01 377-0153-00	Trim plate RU-348A Dial support RU-348B	1
4	722-0231-00	Special nut	2
5	745-0250-00	Special washer	2
6	330-5341-00	Pressed part	2
7	308-0865-00	Front cover	1
8	374-0693-00 374-0691-00	Back plate RU-348A RU-348B	1
9	345-2644-00	Rubber part	1
10	745-0220-00	Special washer	2
11	745-0430-00	Special washer	1
12	375-0530-02	Pilotlamp accessory	1
13	345-2497-00	Rubber part	1
14	017-0308-00	Pilotlamp	1
15	937-0144-39	6 coil push button tuner	1
15-1	965-2477-00	Tuning shaft assembly	1
15-2	744-0005-00	Special E-ring	1
15-3	965-2246-00	Button assembly (FM)	2
15-4	965-2245-00	Button assembly (AM)	3
15-5	013-3102-00	Switch	1
15-6	731-3006-80	Taptight (M3×6)	2
16	376-0799-00 376-0796-00	Dial pointor RU-348A RU-348B	1
17	347-0523-01	Paper part	1
18	092-0515-00	Antenna receptacle	1
19	310-0860-00	Upper case	1
20	286-3905-00 286-3897-00	Setplate RU-348A RU-348B	1
21	286-3906-00 286-3901-00	Setplate RU-348A RU-348B	1
22	311-0893-00	Lower case	1

REF.NO.	PART NO	DESCRIPTION	P.C.S
23	285-0656-00 285-0583-00	Guide label	1
24	335-0580-00	Molded part	1
25	330-5248-00	Presseb part	1
26	009-0617-00	Choke	1
27	285-0645-00	Guide label	1
28	012-3484-00	Variable resistor	1
29	004-1504-01	Trimmer	1
30	382-0107-00 382-0106-00	Button RU-348A RU-348B	1
31	013-3149-00	Switch	1
32	330-5002-00	Pressed part	1
33	017-0306-01	Pilotlamp	1
34	070-0927-01	Pilotlamp socket	1
35	335-0635-06	Molded part	1
36	051-0036-02	IC	2
37	313-0936-00	Heat sink	1
38	944-0459-00	Filter assembly	1
39	099-4547-00	PWB	1
40	850-1924-00 850-1926-00	A-lead RU-348A RU-348B	1
41	851-2171-00	SP-lead	1
42	120-0020-00	Fuse (2A)	1
43	850-1895-00 850-1925-00	A-lead RU-348A RU-348B	1
44	725-0182-00	Plate nut	4
45	714-3006-81	Machine screw(M3×6)	4
46	731-3006-80	Tap tight (M3×6)	22
47	010-1686-00	Coil	1
48	099-4548-00	PWB	1
49	099 4549-00	PWB	1

⊙Electrical section





* PARTS LIST:

⊙Electrical section

REF. NO.	PART NO	DESCRIPTION	P.C.S
Q_1	102-1342-00	Transistor (2SC1342)	1
Q_2	102-0535-02	Transistor (2SC535B)	1
Q_3	102-0461-02	Transistor (2SC461B)	1
$Q_{4,5,6,7,8,9}$	102-0460-02	Transistor (2SC460B)	6
$Q_{10,11}$	102-0454-02	Transistor (2SC454B)	2
IC_1	051-0056-00 01	IC (HA1156)	1
$IC_{2,3}$	051-0036-02 03	IC (HA1322)	2
D_1	001-0130-00	Diode (1S2790WT)	1
$D_{2,3}$	001-0020-00	Diode (1N60)	2
D_4	001-0095-00	Diode (1S2076)	1
$D_{5,6}$	001-0010-00	Diode (1N34A)	2
D_7	001-0099-01	Diode (HZ7B)	1
$TC_{1,2}$	004-1496-00	Trimmer	2
TC_3	004-1502-01	Trimmer	1
TC_4	004-1504-00	Trimmer	1
$TC_{5,6}$	004-1498-00	Trimmer	2
$CCT_{1,2}$	050-0030-00	Component circuit	2
CCT_3	050-0010-00	Component circuit	1
$CCT_{4,5}$	050-0051-00	Component circuit	2
$VR_{4,5}$	012-3394-00	Variable resistor	2
T_1	009-0617-00	Choke	1
L_1	010-0930-00	Coil	1

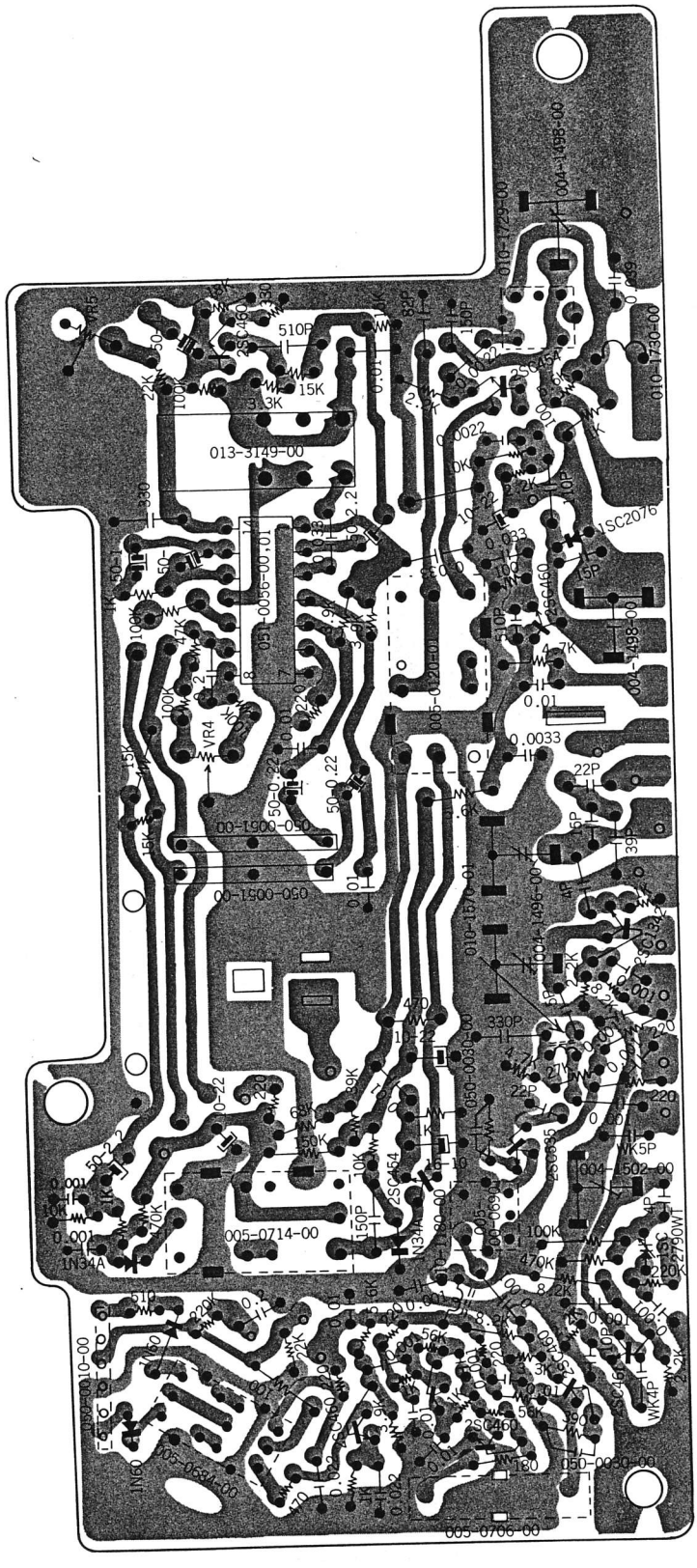
REF. NO.	PART NO	DESCRIPTION	P.C.S
L_2	010-1570-01	Coil	1
L_3	010-1180-00	Coil	1
L_4	010-1729-00	Coil	1
L_5	010-1730-00	Coil	1
L_7	010-1686-00	Coil	1
IFT_1	005-0698-00	IF trans	1
IFT_2	005-0706-00	IF trans	1
IFT_3	005-0684-00	IF trans	1
IFT_4	005-0120-01	IF trans	1
IFT_5	005-0714-00	IF trans	1
R_{75}	110-3301-42	Solid resistor (½W 33Ω±5%)	1
R_{74}	110-4701-42	Solid resistor (½W 47Ω±5%)	1
R_{73}	110-1511-42	Solid resistor (½W 150Ω±5%)	1
R_{57}	110-2211-32	Solid resistor (¼W 220Ω±5%)	1
R_{65}	110-1021-32	Solid resistor (¼W 1KΩ±5%)	1
R_{55}	110-2221-32	Solid resistor (¼W2.2KΩ±5%)	1
R_{48}	110-4721-32	Solid resistor (¼W4.7KΩ±5%)	1
R_{66}	110-1031-32	Solid resistor (¼W 10KΩ±5%)	1
R_{44}	110-2231-32	Solid resistor (¼W 22KΩ±5%)	1
$R_{68,71}$	111-4701-22	Film resistor (⅛W 47Ω±5%)	1
$R_{29,50}$	111-1011-22	Film resistor (⅛W 100Ω±5%)	3
R_{18}	111-1811-22	Film resistor (⅛W 180Ω±5%)	1

REF.NO.	PART NO	DESCRIPTION	P.C.S
$R^{4,9,16}_{23,28,46}$	111-2211-22	Film resistor (1/8W 220Ω±5%)	6
R_{35}	111-3311-22	Film resistor (1/8W 330Ω±5%)	1
R_{17}	111-3911-22	Film resistor (1/8W 390Ω±5%)	1
R_{27}	111-4711-22	Film resistor (1/8W 470Ω±5%)	1
$R_{31,61}$	111-5111-22	Film resistor (1/8W 510Ω±5%)	2
$R^{1,20,22}_{26,43,51}$	111-1021-22	Film resistor (1/8W 1KΩ±5%)	6
$R^{2,7}_{8,52}$	111-2221-22	Film resistor (1/8W2.2KΩ±5%)	4
$R_{15,36}$	111-3321-22	Film resistor (1/8W3.3KΩ±5%)	2
$R_{24,45,47}$	111-3921-22	Film resistor (1/8W3.9KΩ±5%)	3
$R_{5,42}$	111-4721-22	Film resistor (1/8W4.7KΩ±5%)	2
$R_{25,49,56}$	111-5621-22	Film resistor (1/8W5.6KΩ±5%)	3
$R_{3,10,14}$	111-8221-22	Film resistor (1/8W8.2KΩ±5%)	3
$R_{54,63}$	111-1031-22	Film resistor (1/8W 10KΩ±5%)	2
$R_{37,38,67}$	111-1531-22	Film resistor (1/8W 15KΩ±5%)	3
R_{33}	111-1831-22	Film resistor (1/8W 18KΩ±5%)	1
R_{32}	111-2231-22	Film resistor (1/8W 22KΩ±5%)	1
R_{58}	111-3931-22	Film resistor (1/8W 39KΩ±5%)	1
$R_{69,72}$	111-4731-22	Film resistor (1/8W 47KΩ±5%)	1
$R_{19,21}$	111-5631-22	Film resistor (1/8W 56KΩ±5%)	2
R_{60}	111-6831-22	Film resistor (1/8W 68KΩ±5%)	1
$R^{12,34,39}_{40,41}$	111-1041-22	Film resistor (1/8W100KΩ±5%)	5
R_{59}	111-1541-22	Film resistor (1/8W150KΩ±5%)	1
$R_{13,30}$	111-2241-22	Film resistor (1/8W220KΩ±5%)	2
$R_{11,64}$	111-4741-22	Film resistor (1/8W470KΩ±5%)	2
$C_{70,85}$	141-4723-11	Polyester capacitor (50V0.0047μF)	2
C_{44}	141-3323-11	Polyester capacitor (50V0.0033μF)	1
$C_{49,52}$	141-2223-11	Polyester capacitor (50V0.0022μF)	2
$C^{66,71}_{81,86}$	141-1523-11	Polyester capacitor (50V0.0015μF)	4
$C^{23,26}_{60,61}$	141-1023-11	Polyester capacitor (50V0.001μF)	4
$C^{47,64,}_{79}$	141-3933-14	Polyester capacitor (50V0.039μF)	5
$C_{33,34,46}$	141-3333-14	Polyester capacitor (50V0.033μF)	3
$C_{27,28}$	141-2233-13	Polyester capacitor (50V0.022μF)	2
$C^{21,22,24}_{25,38,39}$ 43,55	141-1033-12	Polyester capacitor (50V0.01μF)	8

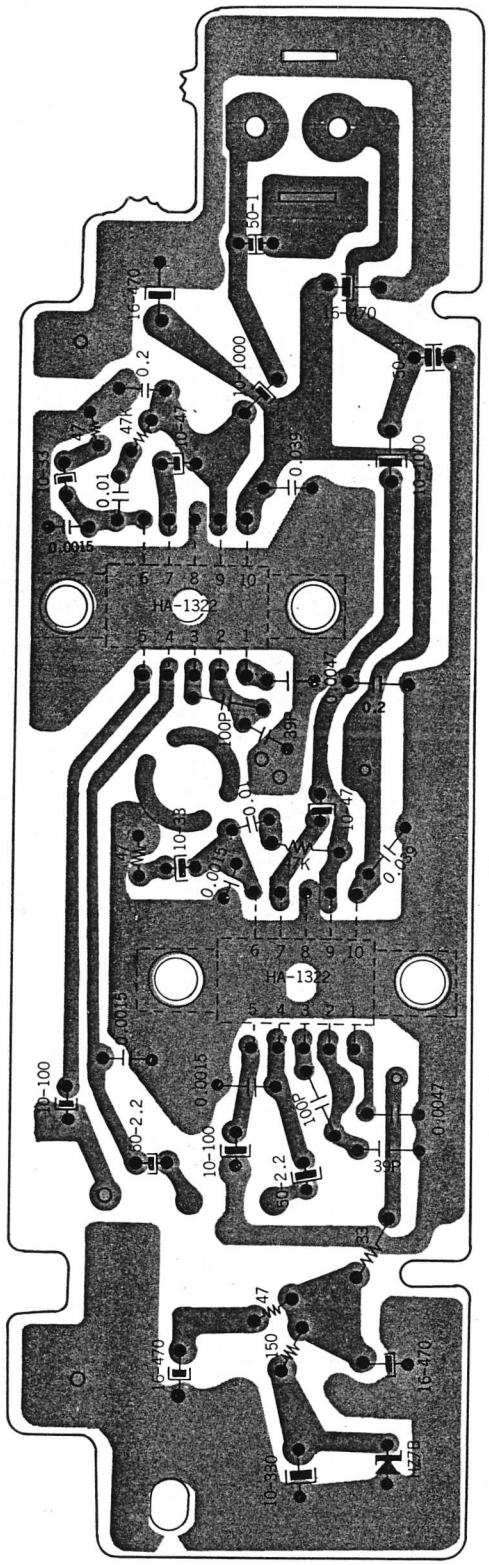
REF.NO.	PART NO	DESCRIPTION	P.C.S
C_{98}	141-8233-15	Polyester capacitor (50V0.082μF)	1
$C_{63,78}$	141-4733-13	Polyester capacitor (50V0 047μF)	2
C_{45}	141-5113-11	Polyester capacitor (50V510pF)	1
C_{42}	144-5612-10	Mica capacitor (50V560pF)	1
C_{30}	144-5112-10	Mica capacitor (50V510pF)	1
$C_{9,37}$	144-3312-10	Mica capacitor (50V330pF)	2
C_{58}	144-1512-10	Mica capacitor (50V150pF)	1
C_{50}	144-1112-10	Mica capacitor (50V110pF)	1
C_{53}	144-8202-10	Mica capacitor (50V 82pF)	1
C_{10}	153-1096-13	Ceramic capacitor (1pFCH)	1
$C_{4,16}$	151-4096-13	Ceramic capacitor (4pFCH)	2
C_{8}	151-5096-13	Ceramic capacitor (5pFCH)	1
C_{11}	151-1006-13	Ceramic capacitor (10pFCH)	1
$C_{3,48}$	152-1502-13	Ceramic capacitor (15pFCH)	2
$C_{1,7}$	152-2202-13	Ceramic capacitor (22pFCH)	2
$C_{2,69,84}$	153-3902-13	Ceramic capacitor (39pFCH)	3
$C_{68,83}$	155-1002-13	Ceramic capacitor (100pFCH)	2
C_{54}	153-1512-56	Ceramic capacitor (150pFUH)	1
$C_{12,14}$	153-4097-70	Ceramic capacitor (4pFWK)	2
$C^{29,36}_{77,92}$	180-1054-62	Electrolytic capacitor (50V1μF)	4
$C^{31,62}_{65,80}$	180-2254-62	Electrolytic capacitor (50V2.2μF)	4
$C_{72,87}$	180-3364-22	Electrolytic capacitor (10V33μF)	2
$C_{73,88}$	180-4764-22	Electrolytic capacitor (10V47μF)	2
$C_{67,82}$	180-1074-22	Electrolytic capacitor (10V100μF)	2
$C_{35,40,41}$	042-0140-00	Special capacitor (50V0.22μF)	3
C_{57}	042-0176-00	Special capacitor (16V10μF)	1
$C_{51,56,59}$	042-0199-00	Special capacitor (10V22μF)	3
C_{93}	042-0150-00	Special capacitor (10V330μF)	1
$C^{94,95}_{96,97}$	042-0173-00	Special capacitor (16V470μF)	4
$C_{76,91}$	042-0153-00	Special capacitor (10V1000μF)	2
$C^{5,6,13}_{15,17,19}$ 20	042-0053-00	Special capacitor (50V0.001μFB)	7
$C^{18,32}_{75,90}$	043-0020-00	Special capacitor (12V0.2μF)	4

＊PRINTED WIRING BOARD:

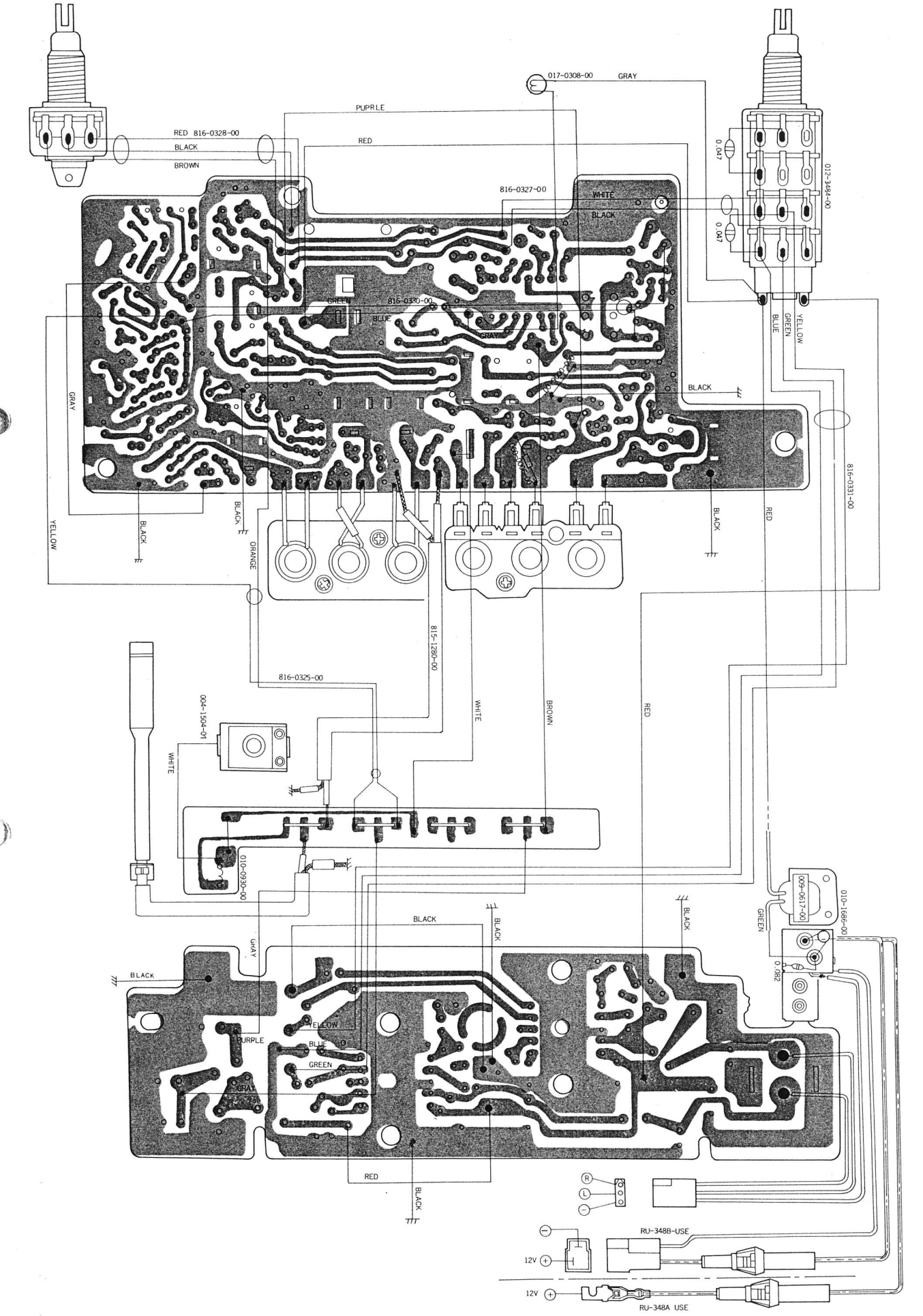
⊙RF section



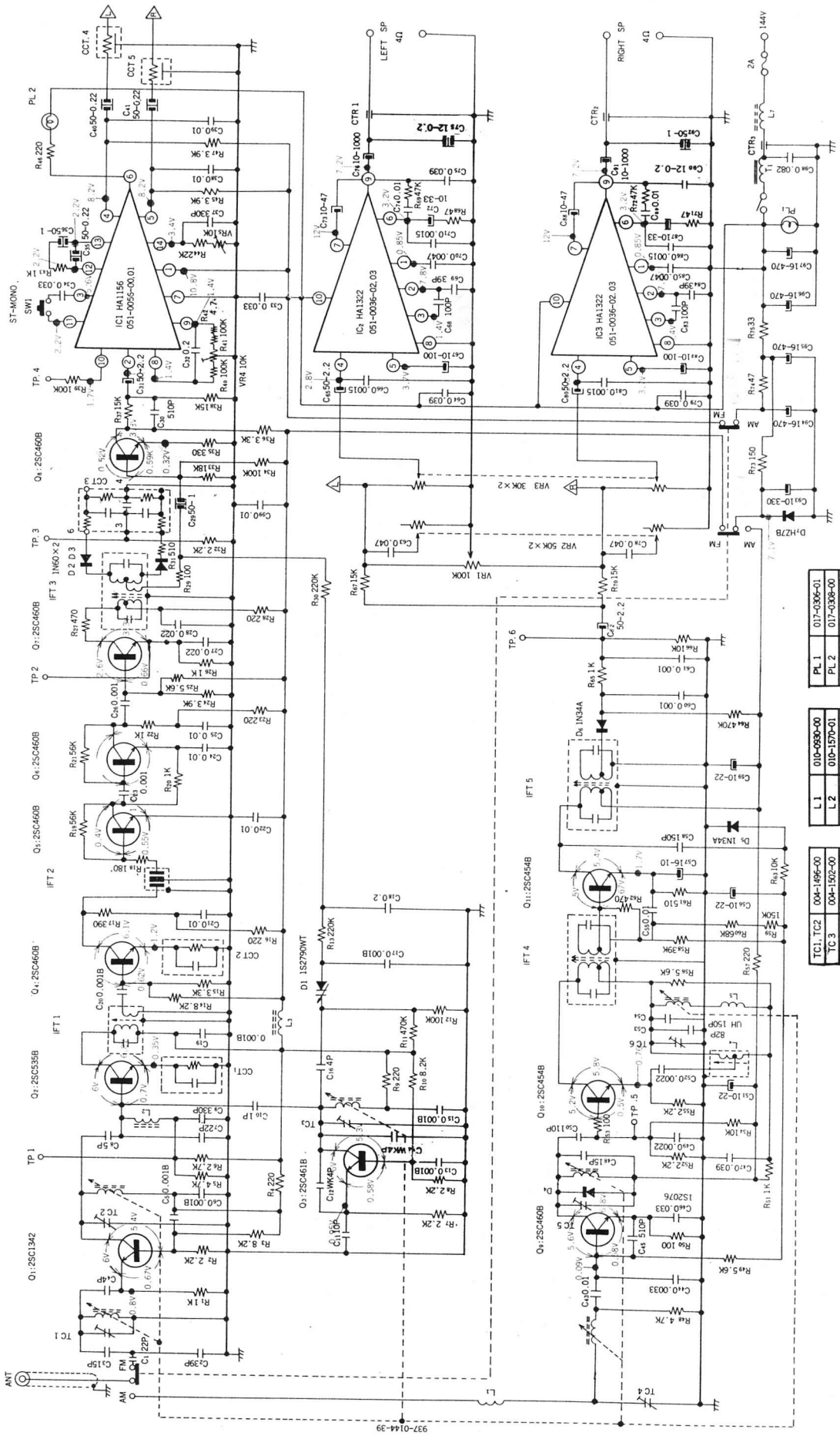
⊙AF section


HA-1322
HA-1322
10-100
60-2.2
10-100
60-2.2
0.0015
0.0015
0.0015
10-470
10-330
47
150
16-470
16-470
1SS78
R1
0.0047
39P
100P
0.0047
0.2
10-47
10-1000
0.039
0.01
0.2
10-1000
0.0015
10-33
10-47
16-470
50-1

* PRINTED WIRING BOARD:



* CIRCUIT DIAGRAM:



PL 1	017-0306-01	
PL 2	017-0308-00	
D 1	001-0130-00	
D2, D3	001-0020-00	
D 4	001-0095-00	
D5, D6	001-0010-00	
D 7	001-0099-01	
SW 1	013-3149-00	
CTR1, 2	040-0080-01	
CTR 3	040-0080-04	

L 1	010-0930-00	
L 2	010-1570-01	
L 3	010-1180-00	
L 4	010-1729-00	
L 5	010-1730-00	
L 7	010-1686-00	
IFT 1	005-0698-00	
IFT 2	005-0706-00	
IFT 3	005-0694-00	
IFT 4	005-0120-01	
IFT 5	005-0714-00	

TC1, TC2	004-1496-00	
TC 3	004-1502-00	
TC 4	004-1504-01	
TC5, TC6	004-1498-00	
CCT1, 2	050-0030-00	
CCT 3	050-0010-00	
CCT4, 5	050-0061-00	
VR2, 3	012-3484-00	
VR4, 5	012-3394-00	
T 1	009-0617-00	