Service
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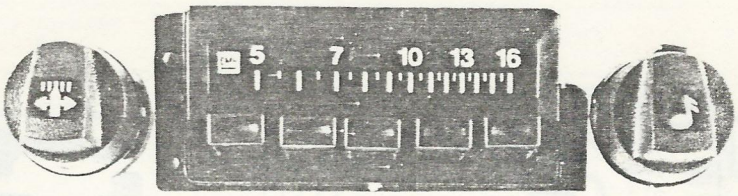

Service Manual

12 V

SPECIFICATIONS

Tuning Range	525 to 1605 kHz
Intermediate Frequency	455 kHz
Power Output	3.5 Watts RMS
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 17021
Printed in Australia

PHILIPS

WIRING ON PC BOARD

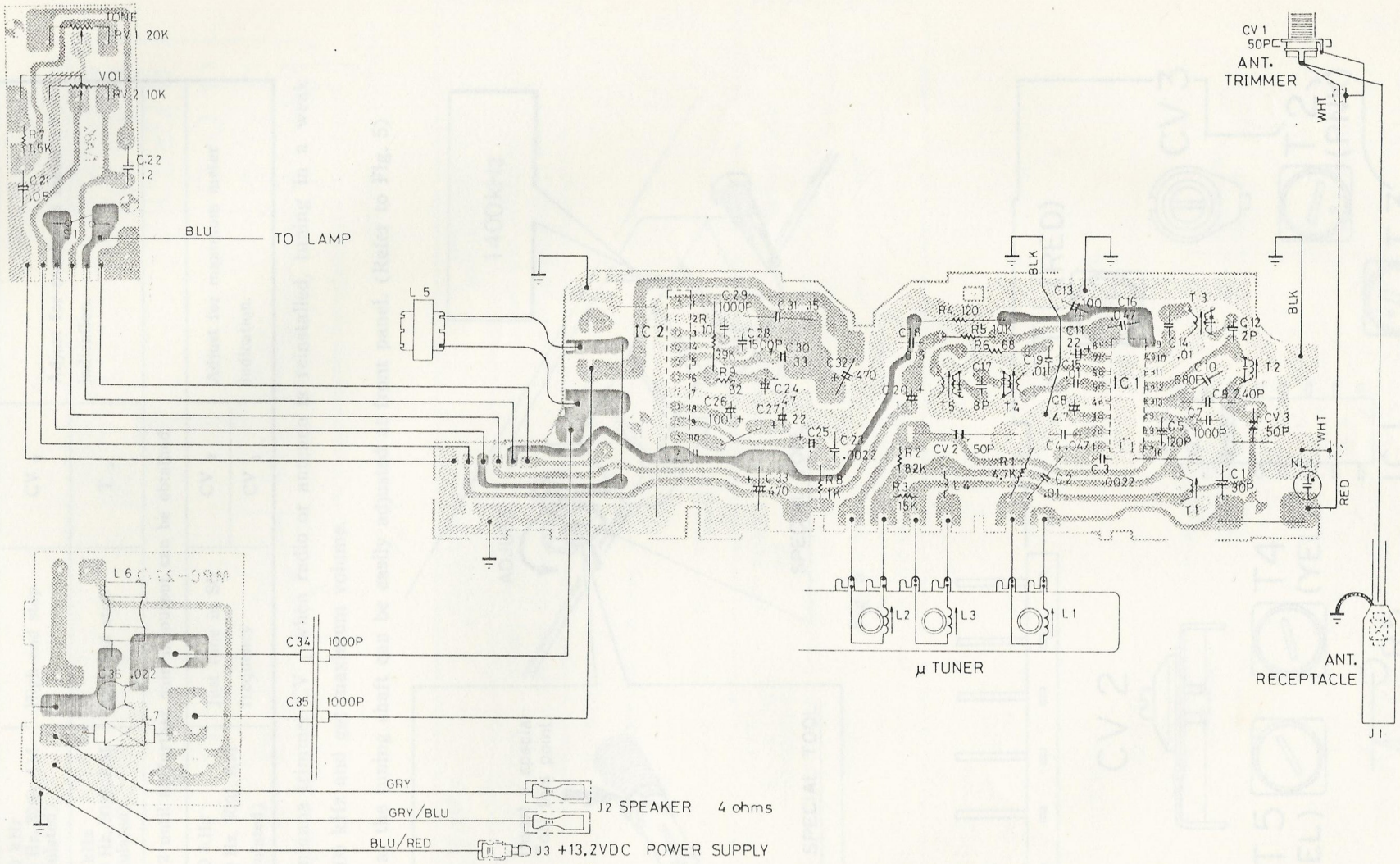

Fig. 2

IC \ Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC 1	*1.9V	.8V	.3V	0V	5.8V	.7V	1.6V	1.7V	11.4V	2.1V	0V	10.0V	3.4V	1.3V	10.0V	10.5V
IC 2	5.6V	0V	1.3V	6.5V	10.0V	5.1V	0V	5.2V	4.9V	12.7V	13.1V	/	/	/	/	/

NOTES: 1. PC board (RN-MPC-27A/1) shows parts-side view.

2. *: Measured with at 3-volts scale range of 100,000 ohm per volt, in case of 12-volts scale range, it will be shown 2.2 volts.

b. Power supply : 13.2 VDC

c. Controls : Volume for maximum

Tone for high

(2) Alignment (Refer to Fig. 6 for ADJUST POINTS.)

STEP	PURPOSE	GENERATOR FREQUENCY	SET TUNER TO	ADJUST POINTS	PROCEDURE
1	Tuning range	1,630 kHz (400 Hz, 30%, AM modulated)	High-end stop	CV_3	Adjust for maximum meter indication.
2		515 kHz (400 Hz, 30%, AM modulated)	Low-end stop	T_1	
3	Repeat STEP 1 and 2 until no further gain in output can be obtained.				
4	Tracking	1,400 kHz (400 Hz, 30%, AM modulated)	Just tune in SG frequency	CV_2	Adjust for maximum meter indication.
5				CV_1	

NOTE: Always readjust antenna trimmer CV_1 when radio or antenna is reinstalled, tuning in a weak station around 1,400 kHz and get maximum volume.

Antenna trimmer at the tuning shaft can be easily adjusted at front panel. (Refer to Fig. 5)

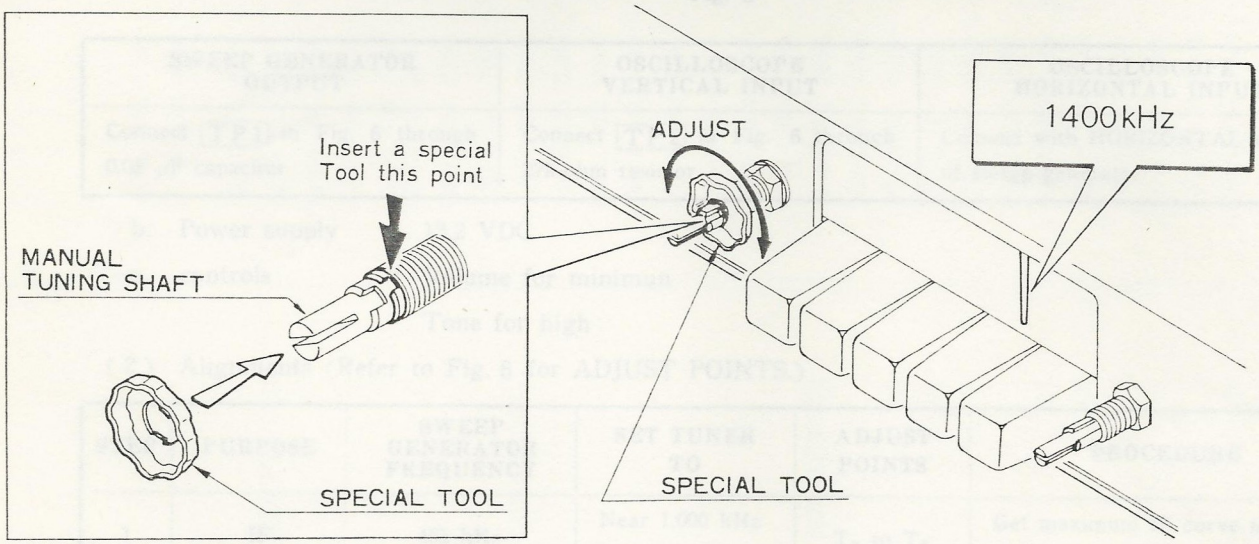

Fig. 5

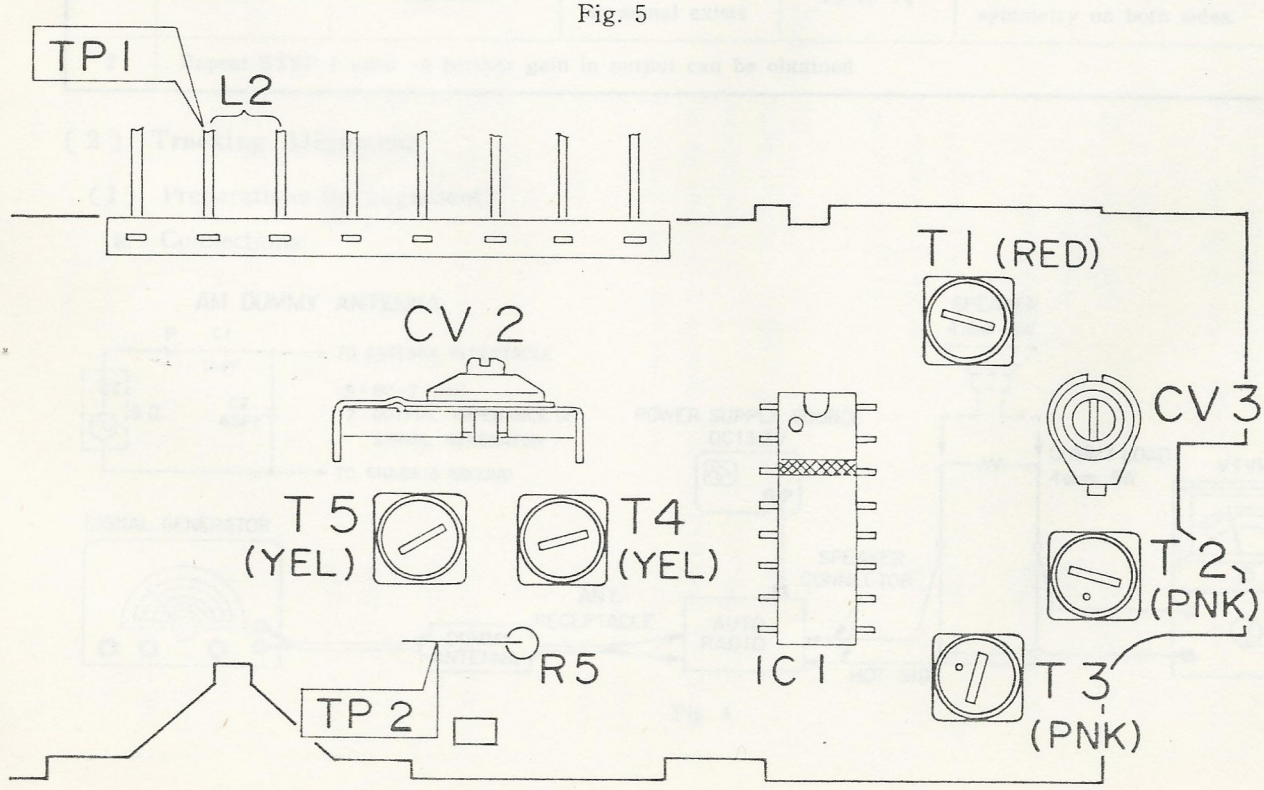

Fig. 6 ADJUST POINTS

ALIGNMENT

[1] IF Alignment

(1) Preparations for alignment

a. Connections

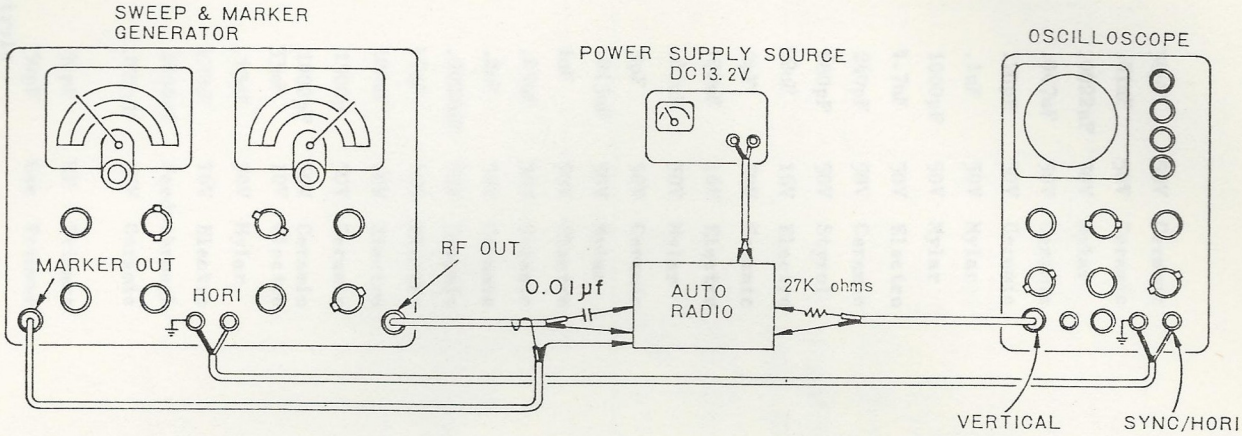

Fig. 3

SWEEP GENERATOR OUTPUT	OSCILLOSCOPE VERTICAL INPUT	OSCILLOSCOPE HORIZONTAL INPUT
Connect TP1 in Fig. 6 through 0.01 μF capacitor	Connect TP2 in Fig. 6 through 27k-ohm resistor	Connect with HORIZONTAL terminal of sweep generator

b. Power supply : 13.2 VDC

c. controls : Volume for minimun

Tone for high

(2) Alignments (Refer to Fig. 6 for ADJUST POINTS.)

STEP	PURPOSE	SWEEP GENERATOR FREQUENCY	SET TUNER TO	ADJUST POINTS	PROCEDURE
1	IF	455 kHz	Near 1,000 kHz no signal exists	T_2 to T_5	Get maximum IF curve and best symmetry on both sides.
2	Repeat STEP 1 until no further gain in output can be obtained.				

[2] Tracking Alignment

(1) Preparations for alignment

a. Connections

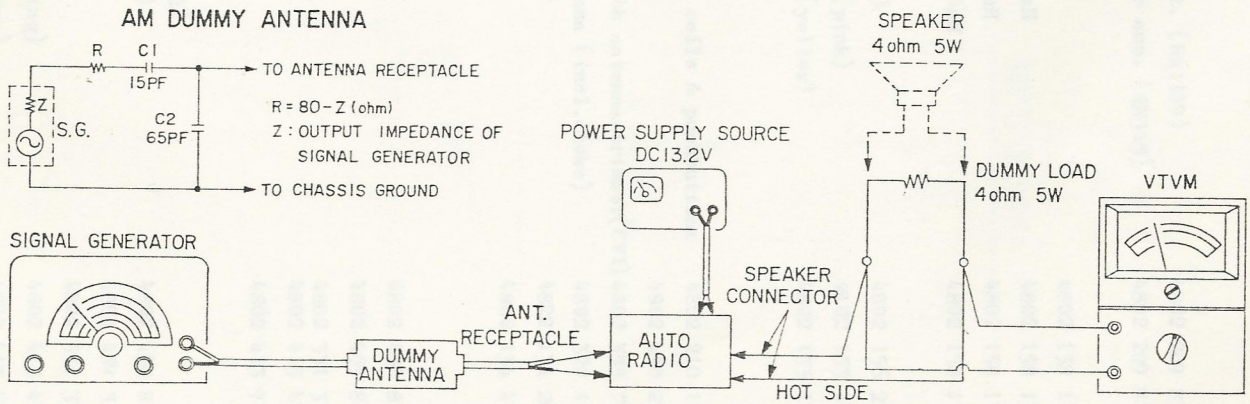

Fig. 4

REPLACEMENT PARTS LIST

Ref. No.	Description			Service Code
CAPACITORS				
C1	30pF	50V	Ceramic	4802 122 47048
C2	.01uF	50V	Ceramic	4822 122 30043
C3	.0022uF	50V	Mylar	4802 121 47151
C4, 16	.047uF	50V	Ceramic	4802 121 47167
C5	120pF	50V	Ceramic	4822 122 30093
C6	.1uF	50V	Mylar	4802 121 47134
C7	1000pF	50V	Mylar	4802 121 47146
C8	4.7uF	50V	Electro	4802 124 47034
C9	240pF	50V	Ceramic	4802 122 47123
C10	680pF	50V	Styrol	4822 122 30053
C11, 27	22uF	16V	Electro	4802 124 47021
C12	2pF	50V	Ceramic	4822 122 31036
C13	100uF	16V	Electro	4802 124 47051
C14, 15, 19	.01uF	50V	Mylar	4802 121 47158
C17	8pF	50V	Ceramic	4822 120 21052
C18	.015uF	50V	Mylar	4802 121 47161
C20, 25	1uF	50V	Electro	4802 124 47037
C21	.05uF	50V	Ceramic	4802 122 47002
C22	.2uF	50V	Ceramic	4802 122 47109
C23	.0022uF	50V	Ceramic	4822 122 30114
C24	47uF	10V	Electro	4802 124 47016
C26	100uF	10V	Electro	4802 124 47002
C28	1500p	50V	Ceramic	4822 122 31221
C29	1000pF	50V	Ceramic	4802 122 47022
C30	33mF	10V	Electro	4802 124 47013
C31	.15uF	50V	Mylar	4802 121 47173
C32, 33	470uF	16V	Electro	4802 124 47024
C34, 35	1000pF	Feed-through		4822 122 70022
C36	.022uF	50V	Ceramic	4802 122 47108
CV2	50pF	RF	Trimmer	4802 125 57043
CV3	50pF	Osc	Trimmer	4802 125 57038
Resistors and Controls				
Note:	All resistors are standard values and tolerances unless specified otherwise.			
RV1, 2, S1	10K + 20K + switch			4802 102 27068

Ref. No.	Description	Service Code
IC's, Coils and Transformers		
IC1	RF conv. and det. (HA1199)	4802 209 87122
IC2	Driver and power amp. (AN315)	4802 209 87124
L4	Choke 4.7uH	4802 158 17104
L5	Choke filter .3mH	4802 158 17076
L6	Choke filter 50uH	4802 158 17042
L7	Choke filter .74uH	4802 158 17077
T1	Oscillator (red)	4802 156 27097
T2, 3	Transformer IF (pink)	4802 153 17165
T4, 5	Transformer IF (yellow)	4802 153 17166
Miscellaneous Electrical		
	Tuner assy.inc. coils & pushbuttons	4802 210 17079
	Pushbuttons	4802 410 27034
	Tuning shaft with antenna trimmer(CV1)	4802 535 77061
	Receptable antenna (incl.choke)	4802 320 17027
	Neon lamp	4822 134 20016
	Dial lamp	4802 134 47049
Miscellaneous Mechanical (Gemini)		
	Pointer	4802 450 87052
	Nose piece	4802 459 87009
	Dial (printed)	4802 331 37029
	Knob (front)	4802 413 47137
	Knob (rear)	4802 413 97107
Miscellaneous Mechanical (U.C. Torana)		
	Pointer (yellow)	4802 450 87052
	Nose piece	4802 459 57009
	Dial (printed)	4802 331 37029
	Knob front (tuning)	4802 413 47135
	Knob front (volume)	4802 413 47136
	Knob rear	4802 413 57004
	Knob rear (wing)	4802 413 57005

SCHEMATIC

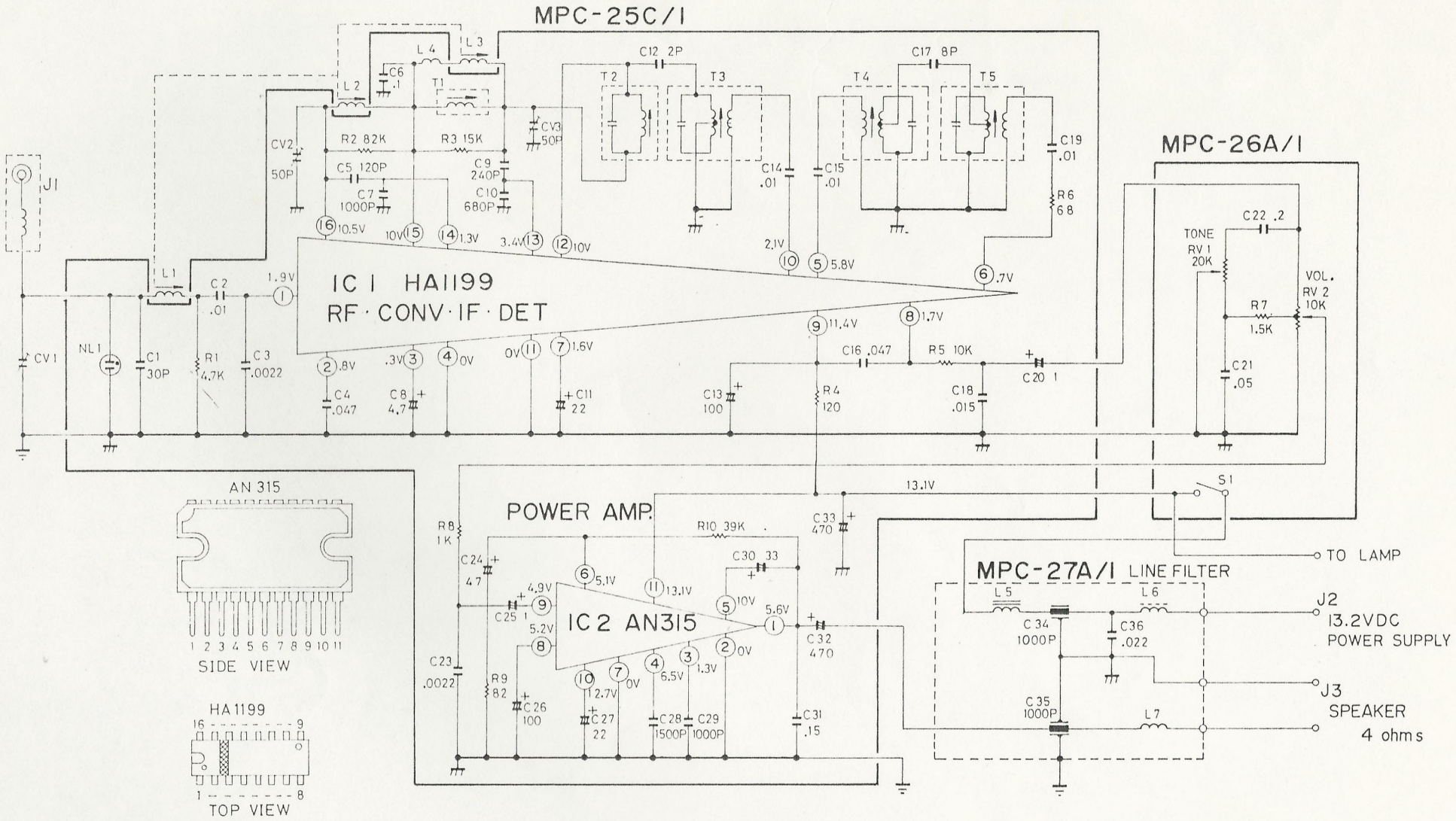

Fig. 1

NOTES: 1. All resistance in ohms, K=1000
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.