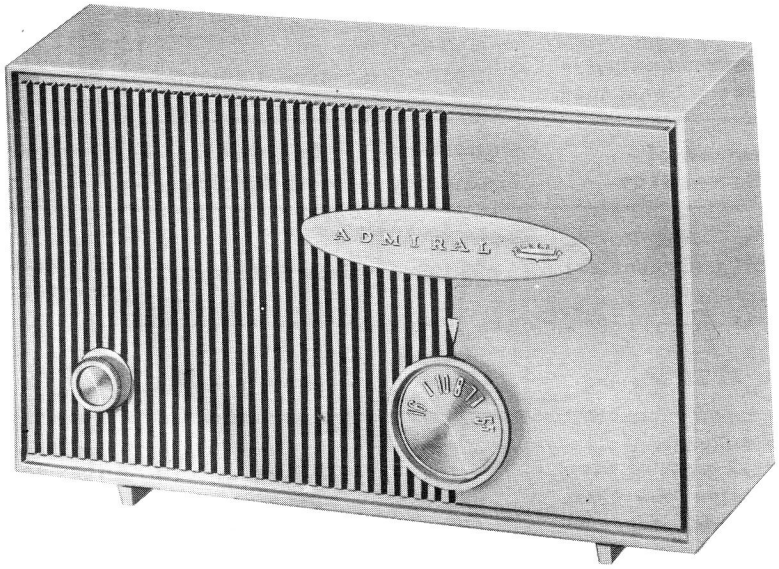
# ADMIRAL

# 4X3X RADIO




ANTENNA: Aeroscope. Built-in loop type.

CIRCUIT: Superheterodyne using four miniature type tubes. One 12AU6 (converter), one 12AV6 (detector), one 50C5 (output) and one 35C3 (rectifier).

FREQUENCY RANGE; Standard broadcast band; 535 KC to 1620 KC.

INTERMEDIATE FREQUENCY: 455 KC.

POWER SUPPLY: 105-120 volts 60 cycle AC only.

POWER CONSUMPTION: 30 watts.

SPEAKER: 4 inch PM with Alnico V magnet. Voice coil impedance 3.2 ohms.

| *MODEL* | *COLOUR* | *CHASSIS* |
|---|---|---|
| *Y3303X* | *WHITE* | *4X3X* |
| *Y3308X* | *TURQUOISE* | |
| *Y3309X* | *GRAY* | |

## REMOVING CHASSIS FROM CABINET

Unplug and remove back. Remove the knobs from the front of the cabinet. Remove the screw outside from under the Tuning knob and the screws inside that hold the Volume control bracket to the cabinet, Remove etched circuit board support at rear of chassis. Chassis will now slide out.

## GENERAL

The 4X3X chassis is a completely new design in the small, compact, but very efficient AM radio line. The size and relative sensitivity is made possible only by the use of an etched Satellite type circuit board.

## COMPONENT REPLACEMENT

Defective resistors and capacitors should be removed by clipping leads as close to the unit as possible then the new part neatly soldered to the old leads. If any resistor or capacitor is found inconvenient to replace on the top side of the board, it is permissible to solder component on the bottom of the board.

# Service Manual T1142

## ALIGNMENT PROCEDURE

a. Use an isolation transformer or connect a .1 mf. capacitor in series with low side of signal generator.
CAUTION: DO NOT CONNECT AN EARTH GROUND WIRE DIRECTLY TO CHASSIS.

b. Set Volume control full on.

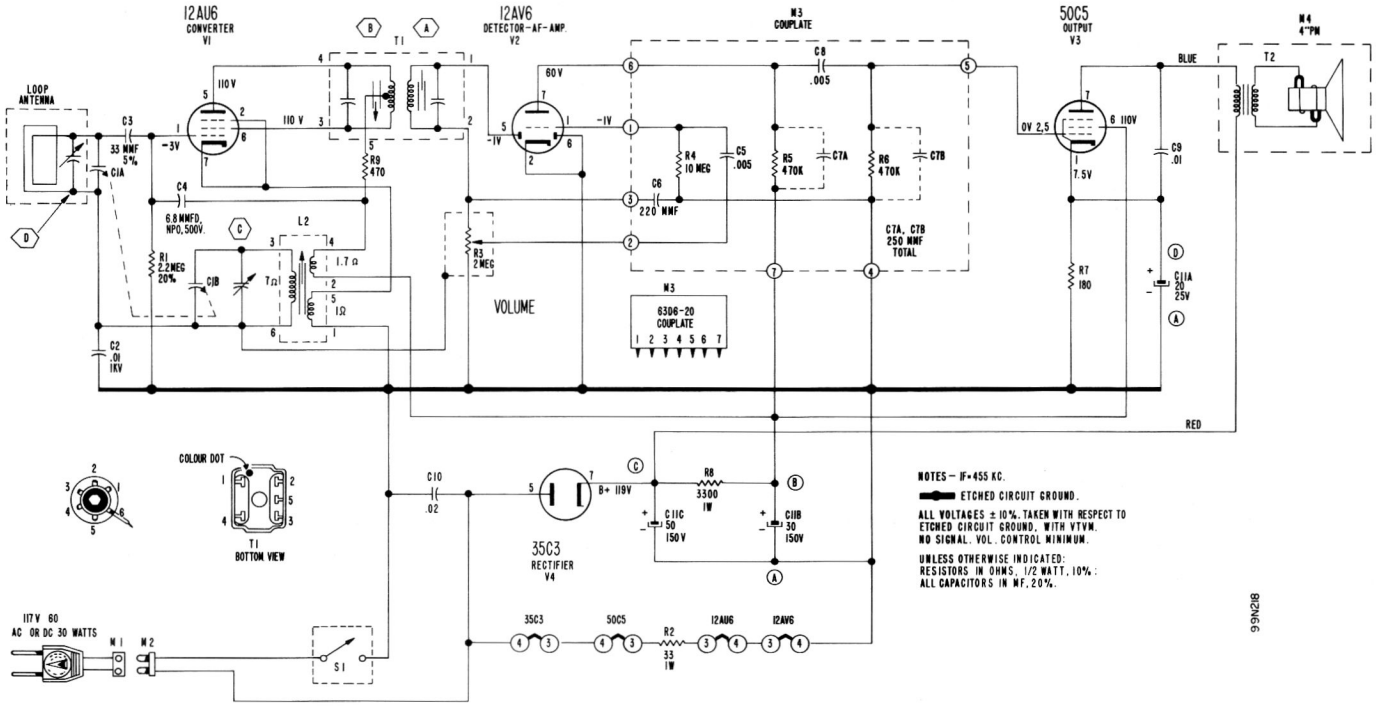
c. Connect output meter across output secondary. Disconnect speaker, use 3.2 ohm load.

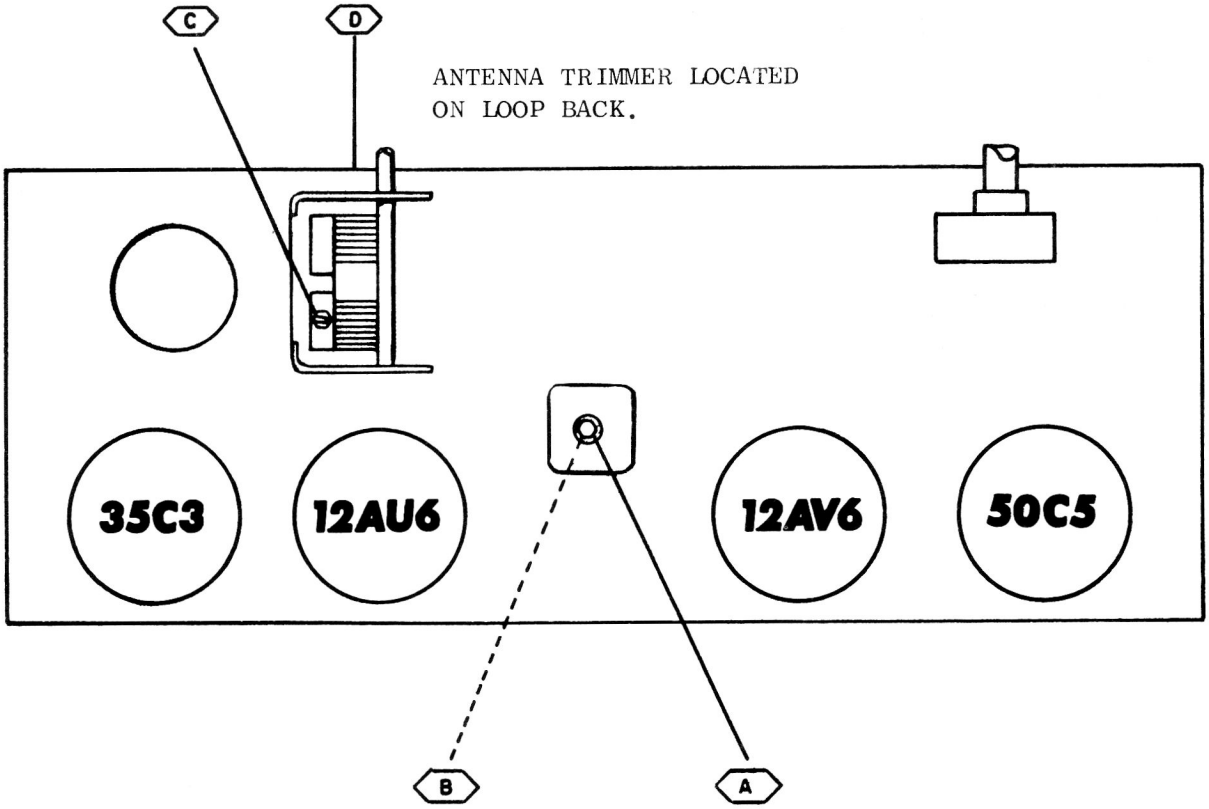
d. Use lowest setting of signal generator capable of producing adequate indication on lowest scale of output meter.

e. By using alignment tool (Part No. 98A30-7) both IF transformer slugs can be aligned

f. Repeat adjustments to insure good results.

| Step | Connection of Signal Generator | Signal Gen. Frequency | Receiver Gang Setting | Adjustment Description | Adjustment |
|---|---|---|---|---|---|
| 1. | Through a .1 mf capacitor to pin 1 of the 12AU6 (Converter) tube. | 455 KC | Gang fully open | IF Primary IF Secondary | (A) and (B) for maximum output |
| 2 | Same as "STEP 1". | 1620 KC | Gang fully open | Oscillator Trimmer | (C) for maximum output |
| 3 | Radiated Signal. Loop of several turns of wire, or place generator lead close to receiver loop for adequate signal pickup. | 1400 KC | Tune in generator signal | Antenna Trimmer | (D) for maximum output (Rock gang for optimum results) |






**ADJUSTMENT "A" ACCESSIBLE FROM BOTTOM OF BOARD**

**Top View of Chassis Showing Tube and Alignment Point Locations.**

## VOLTAGE PRECAUTION

The etched circuit common ground of this receiver is connected directly to one side of the power line. To prevent damage to etched wiring, do not place chassis directly on a metal bench, or other metal objects.

When taking voltage or resistance measurements, use test prods with needle points to avoid short circuits between sections of the circuit wiring.

## VOLTAGE DATA

- All voltage readings made between tube socket terminals and etched circuit common ground.
- Dial set to low frequency end; volume control at minimum.
- Line voltage at 117 volts AC.
- All voltages measured with vacuum-tube-voltmeter.

If a unit such as the oscillator coil or IF transformer is to be replaced, first remove old part by heating the mounting lugs with a pencil type soldering tool (35 watts or less) and straighten with pick and long nose pliers. Brush away any loose solder with a stiff glue brush. Before inserting new unit, make certain all lug holes are free of solder, to prevent damage to wiring or component or both.

An open or damaged section of the etched wiring may be repaired by soldering a short jumper wire across the break.

It is seldom necessary to replace complete tube sockets. Tube socket lugs may be replaced individually. Tube socket lugs may be ordered under part number 87D35-2. NOTE: If a complete socket is replaced, make certain that the center "shield" connection is securely soldered to the etched board, to prevent possibility of hum or oscillation developing.

## PARTS LIST

### RESISTORS

| SYM. | DESCRIPTION | PART NO. |
|---|---|---|
| R1 | 2.2 megobms, ½ watt | 60B8-225 |
| R2 | 33 obms, 1 watt | 60B14-330 |
| R3 | 2 megobms volume control & switch | 75B77-6 |
| R4 | 10 megobms | Part of M3 |
| R5 | 479,000 obms | Part of M3 |
| R6 | 470,000 obms | Part of M3 |
| R7 | 180 obms, ½ watt | 60B8-181 |
| R8 | 3,300 obms, 1 watt | 60B14-332 |
| R9 | 470 obms, ½ watt | 60B8-471 |

### CAPACITORS

| | | |
|---|---|---|
| C1A<br>C1B | gang condenser | 68C89-2 |
| C2 | .01 mf, 1kv GMV ceramic disc | 65M1-3 |
| C3 | 33 mmf, 5%, 500 volts, ceramic disc | 65D10-119 |
| C4 | 6.8 mmfd, NPO, 500 volts | 65D10-26 |
| C5 | .005 mf | Part of M3 |
| C6 | 220 mmf | Part of M3 |
| C7A | | Part of M3 |
| C7B | | Part of M3 |
| C8 | .005 mf | Part of M3 |
| C9 | .01 mf, 500 volts, ceramic disc | 65D10-41 |
| C10 | .02 mf, 500 volts, ceramic disc | 65D10-34 |
| C11A<br>C11B<br>C11C | 20 mf, 25 volts<br>30 mf, 150 volts Electrolytic<br>50 mf, 150 volts | 67C39-5 |

### COILS, TRANSFORMERS AND MISCELLANEOUS CHASSIS PARTS

| SYM. | DESCRIPTION | PART NO. |
|---|---|---|
| L1 | Antenna, Loop, Part of Cabt. Back | 69N13-4 |
| L2 | Coil, Oscillator | 69C215-6 |
| T1 | Trasformer, IF | 72C175-1 |
| M1 | A.C. Line Cord and Plug | 89C62-4 |
| M2 | Connector, Interlock | 9B42-2 |
| M3 | Couplate, Audio | 63D6-20 |
| M4 | Speaker, 4 incb PM | 78B142-8 |
| | Socket, Tube | 87D35-47 |

### CABINET PARTS LIST

| | |
|---|---|
| Knob, Tuning, Wbite | 33C465-13 |
| Knob, Volume, White | 33C519-1 |
| Cabinet, White, Y3303X | 34E201-1 |
| Cabinet, Turquoise, Y3308X | 34E201-2 |
| Cabinet, Gray, Y3309X | 34E201-3 |
| Trimmer | 66A33-1 |

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