

# Admiral

# Radio

## 5B5X CHASSIS

**Note:** Refer to Admiral Service Manual No. S559 for service information on etched circuit wiring.

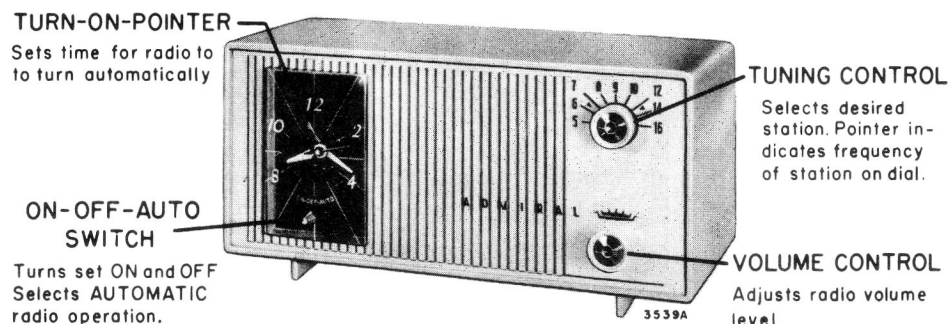


Figure 1. Front View of 853X and 858X Models, Showing Controls.

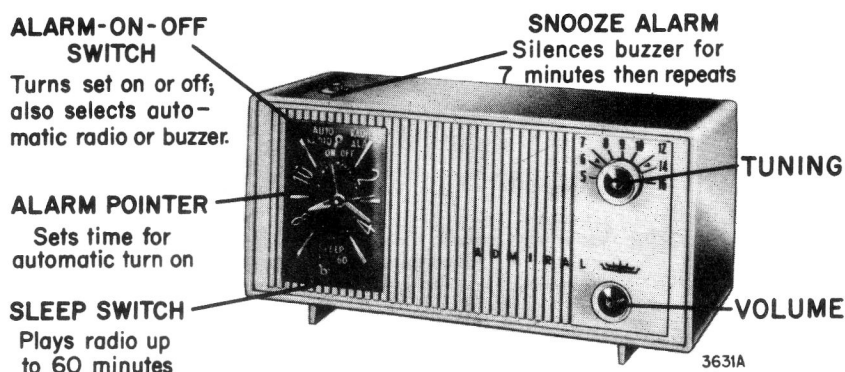


Figure 2. Front View of 865X and 866X Models, Showing Controls and Snooze Alarm Button.

### SPECIFICATIONS

**ANTENNA:** Ferrite rod.

**CIRCUIT:** Superheterodyne using 5 miniature tubes.

**CLOCK:** Telechron Timer.

**FREQUENCY RANGE:** Standard broadcast band: 535 to 1620 KC.

**INTERMEDIATE FREQUENCY:** 455 KC.

**POWER CONSUMPTION:** 30 watts.

**POWER SUPPLY:** 117 volts, 60 cycles, AC only.

**SPEAKER:** 4" PM with Alnico V magnet. Voice coil impedance, 3.2 ohms.

### GENERAL

All components, except the speaker (with output transformer) and the antenna rod, are mounted on an etched circuit board. The use of etched circuitry

### CLOCK RADIO

MODEL	COLOR	CHASSIS
853X	White	5B5X
858X	Turquoise	
865X	Melon and White	
866X	Yellow and White	

provides an efficient, compact and practically trouble free receiver.

The two groups of models listed in the chart, differ only in the type clock used and the cabinet color.

The cabinets of the 853X and 858X models are a single color.

The 865X and 866X models have two-tone cabinets and the clock is provided with an entirely new feature called "The Snooze Alarm." The Snooze Alarm button, when pressed, will silence the buzzer. See figure 2. The buzzer will start again after approximately seven minutes. The snooze alarm may be repeated up to 5 times.



## SERVICE MANUAL T1077

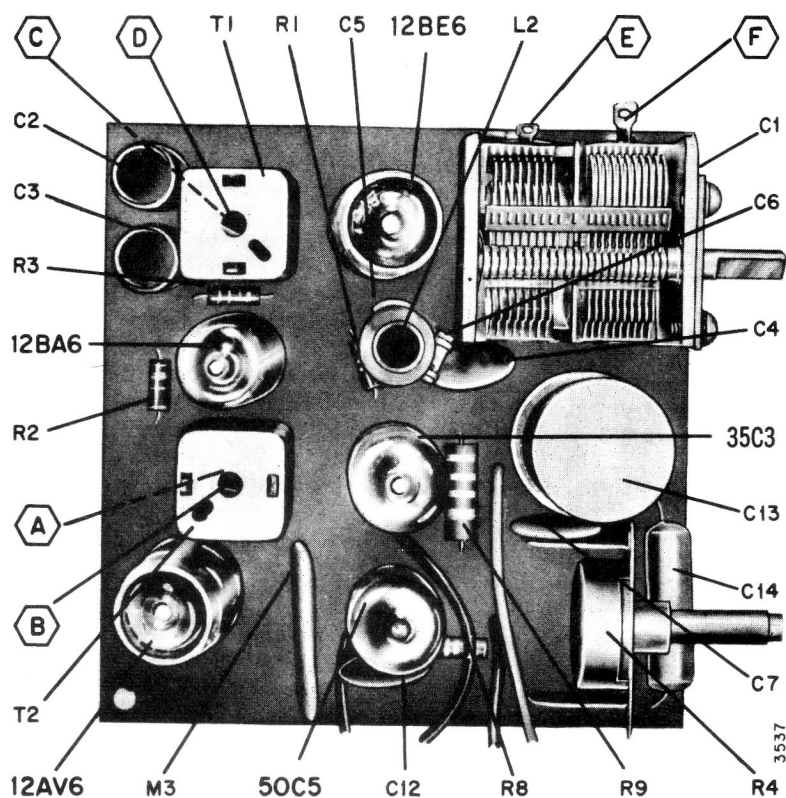


Figure 4. Top View of Chassis Showing Location of Components and Alignment Points.

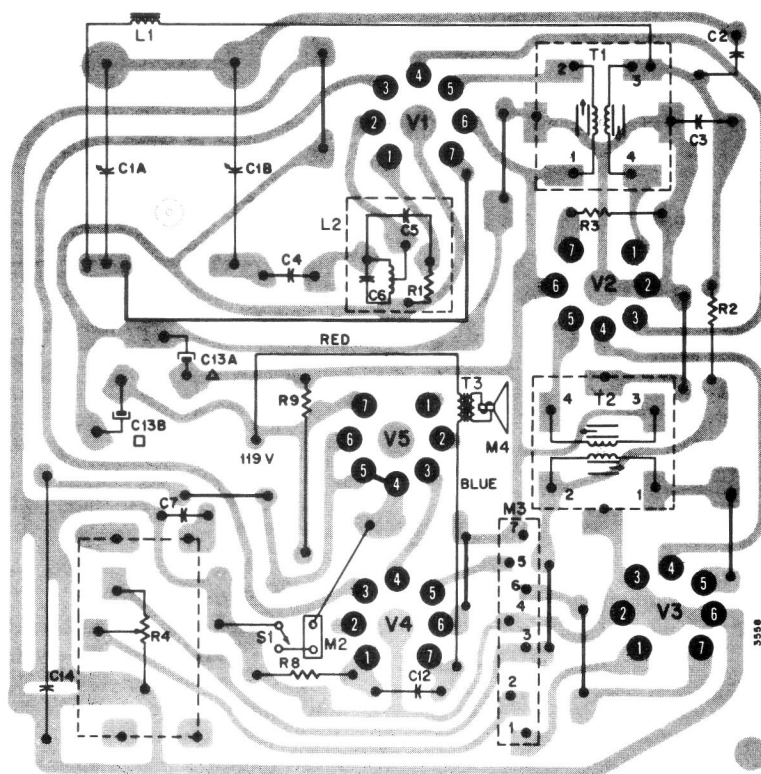
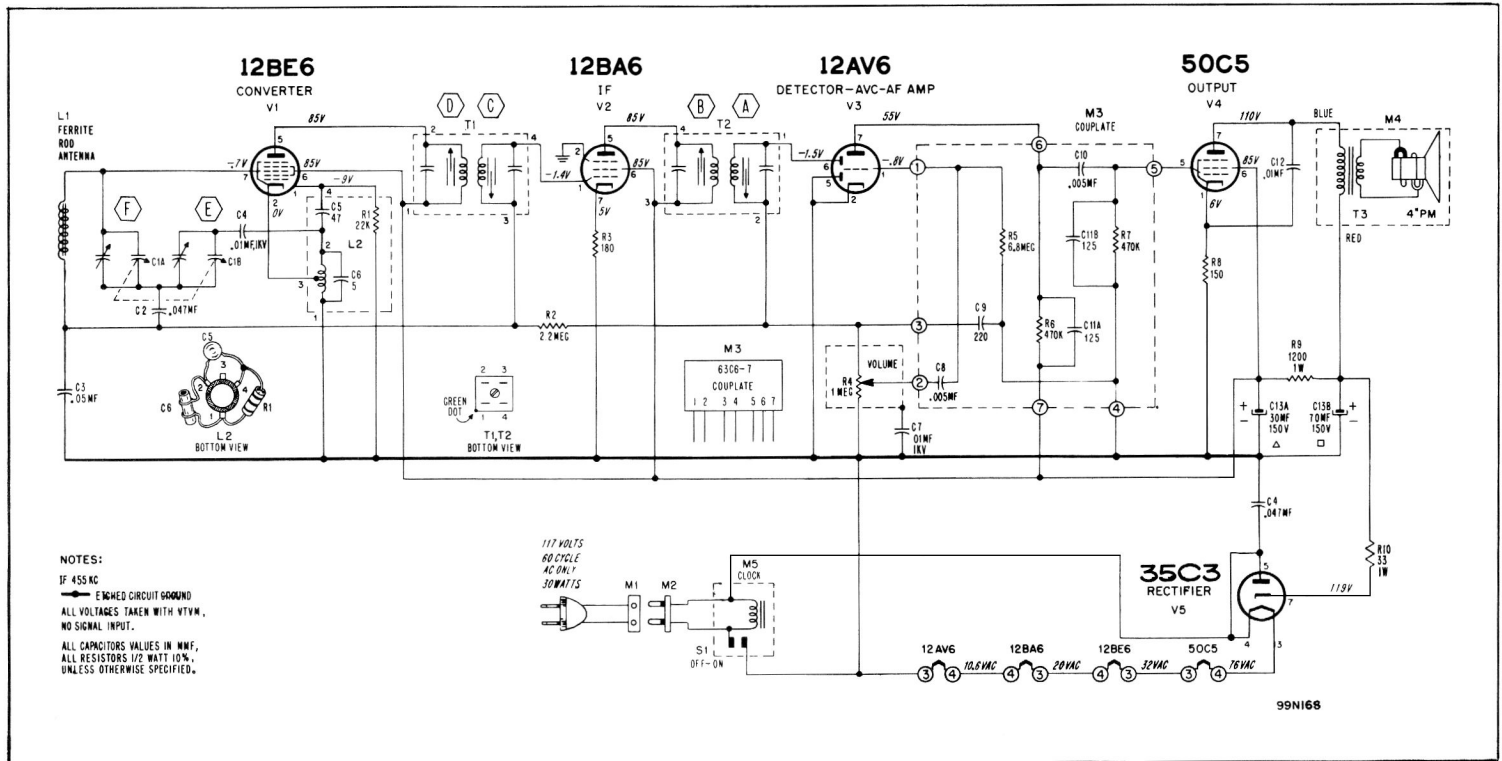


Figure 5. Rear View of Etched Circuit Board. Gray area represents etched wiring; black symbols and lines represent components and connections on opposite side.



### VOLTAGE PRECAUTION

Do not connect an earth ground to this set.

The chassis of this receiver is connected directly to one side of the power line. To avoid possibility of damage to test equipment or to etched circuit wiring, do not place the chassis directly on a metal service bench, tools or other metal objects.

### VOLTAGE DATA

- All readings made between tube socket terminals and etched circuit ground.
- Dial turned to low frequency end; volume control at minimum.
- All voltages measured with vacuum-tube voltmeter, on 117 Volts AC line.

### ALIGNMENT PROCEDURE

- Use an isolation transformer if available; otherwise, connect a .1 mfd. capacitor in series with low side of signal generator and connect to etched circuit ground.  
 Caution: Do not connect to control shafts.
- Set volume control full on.
- Connect output meter across output secondary.  
 For best results, disconnect voice coil and use a 3.2 ohm load.
- Use lowest setting of signal generator capable of producing adequate indication on lowest scale of output meter.
- Use a non-metallic alignment tool with a blade 3/32" wide for aligning IF transformers.
- Repeat adjustments to insure good results.

STEP	CONNECTION OF SIGNAL GENERATOR	SIGNAL GENERATOR FREQUENCY	RECEIVER GANG SETTING	ADJUSTMENT
1	Through a .1 mf capacitor to stator, Antenna section of gang tuning capacitor	455 KC	Gang fully open	"A", "B", "C" and "D" for maximum output
2	Same as "STEP 1"	1620 KC	Gang fully open	"E" for maximum output
3	Radiated Signal. Loop of several turns of wire, or generator lead placed close to antenna ferrite rod for adequate signal pickup.	1400 KC	Tune in on generator signal	"F" for maximum output

\*Adjustments "A" and "C" made from underside of chassis.

## TO REMOVE CHASSIS FOR SERVICING

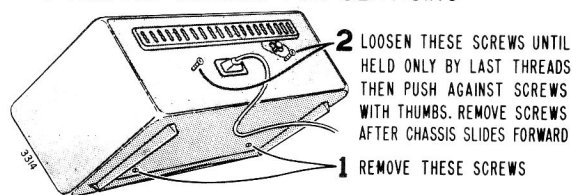


Figure 3. Rear View of Cabinet Showing Chassis Mounting Screws.

## CLOCK REMOVAL

To remove clock, first remove cabinet rear from chassis and front panel as shown in figure 3.

Remove clock knobs. If knobs are snug, they may be more easily removed after clock has been loosened. The clock is held in position by four Phillips head, self tapping screws made especially for plastic. A small spacer washer is used under each screw. The clock face and trim plate are held in position only by the clock.

## 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 board, it is permissible to solder component on the rear of the board.

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 type brush. Before inserting new unit make certain all

lug holes are free of solder, to prevent damage to wiring or component or both.

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.

## SERVICE HINTS

Except at the terminal points where components are soldered to the foil, the etched circuit board is coated with a lacquer to prevent dust and humidity from creating leakage paths between adjacent wiring. Therefore, when making voltage, or resistance checks, connect the meter probe only at the soldered points of the foil to assure continuity between the wiring and the probe. It is not recommended that the lacquer coating be broken along other portions of the foil when making these measurements.

The etched circuit wiring is permanently bonded to the chassis board, but can be destroyed by excessive heat from soldering. Soldering irons with low (35 watts or less) ratings are well suited for etched circuit servicing.

When taking voltage readings or making resistance measurements, use test leads with needle point prods to avoid possibility of a short circuit between sections of the wiring.

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

## PARTS LIST

### RESISTORS

Sym.	Description	Part No.
R1	22K ohm, $\frac{1}{2}$ W, 10%.....	60B8-223
R2	2.2 meg, $\frac{1}{2}$ W, 10%.....	60B8-225
R3	180 ohm, $\frac{1}{2}$ W, 10%.....	60B8-181
R4	Control, 1 meg ohm, 30%.....	75C25-15
R5	6.8 meg, $\frac{1}{2}$ W, 20%.....	Part of M3
R6	470K ohm, $\frac{1}{2}$ W, 20%.....	Part of M3
R7	470K ohm, $\frac{1}{2}$ W, 20%.....	Part of M3
R8	150 ohm, $\frac{1}{2}$ W, 10%.....	60B8-151
R9	1.2K ohm, 1W, 10%.....	60B14-122
R10	33 ohm, 1W, 10%.....	60B14-330

### CAPACITORS

C1A	272 mmfd, max. ant. gang.....	68C78-1
C1B	102 mmfd, max. ocs.....	
C2	.047 mfd, 20%, 400V.....	64B16-32
C3	.05 mfd, 20%, 200V.....	64A12-1
C4	.01 mfd, GMV, 1000V.....	65M1-3
C5	47 mmfd, $\pm$ 5%, 500V.....	65D10-73
C6	5 mmfd.....	65D10-146
C7	.01 mfd, GMV, 1000V.....	65M1-3
C8	.005 mfd, +50% -30%, 500V.....	Part of M3
C9	220 mfd, +50% -30%, 500V.....	Part of M3
C10	.005 mfd, GMV, 500V.....	Part of M3
C11A	250 mmfd. (total) $\pm$ 30%.....	Part of M3
C11B		
C12	.01 mfd, GMV, 500V.....	65D10-3
C13A	30 mfd, 150V electrolytic.....	67C30-2
C13B	70 mfd, 150V	
C14	.047 mfd, 20%, 400V.....	64L6-28

### COILS AND TRANSFORMERS

Sym.	Description	Part No.
L1	Rod Antenna.....	69B228-4
L2	Oscillator Coil.....	69A190-7
T1	1st I. F. Transformer.....	72C28-65
T2	2nd I. F. Transformer.....	72C28-65
T3	Output Transformer.....	Part of M4
<b>MISCELLANEOUS PARTS</b>		
M1	Line Cord and Plug.....	89B62-4
M2	Plug Interlock.....	88W36
M3	Couplate (includes R5, R6, R7, C8, C9, C10 and C11).....	63C6-7
M4	Speaker 4" P. M.....	78B94-2
	Terminal.....	9A8-3
	Bracket (Antenna mtg.).....	15B1665
	Bracket (Extrusion Support).....	15B1764-2
	Bracket (Gang Mtg.).....	15B2041
	Gang Spacer P. C. Board.....	32A250-2
	Plastic Extrusion.....	33C233-4
	Tube Socket, 7 Pin.....	87D35-13
	Tube Socket, 7 Pin.....	87D35-14
	Tube Shield, 7 Pin.....	87B52-2

### CLOCK PARTS

Insert (Clock) 853X, 858X.....	23C373-1
Insert (Clock) 865X, 866X.....	23C373-2
Clock Crystal 853X, 858X.....	24C32-1
Clock Crystal 865X, 866X.....	24C32-2
Clock (Telechron) 853X, 858X.....	91C38-1
Clock Knob 853X, 858X.....	91C38-10

Sym.	Description	Part No.
	Clock (Doze Alarm) (Telechron) (865X, 866X).....	91C39-1
	Clock Knob (865X, 866X).....	91C39-10

### CABINET PARTS

Cabinet Model 853X (White).....	34D129-29
Cabinet Model 858X (Turquoise).....	34D129-27
Cabinet Model 865X (Melon).....	34D129-31
Cabinet Model 866X (Yellow).....	34D129-32
Cabinet Front (White) 853X, 865X, 866X.....	34D151-1
Cabinet Front (Turquoise) 858X.....	34D151-2
Knob (Tuning).....	33C353-4
Knob (Volume Control).....	33C353-5
Spring.....	19D1-60
Push Button (865X, 866X).....	33B361-1
Cup (Plastic) (865X, 866X).....	33C362-1

### PARTS AND SERVICE FOR CLOCK

Consult your Admiral distributor for the address of the nearest parts and service station for clocks used in Admiral radios.

Form No. T1077