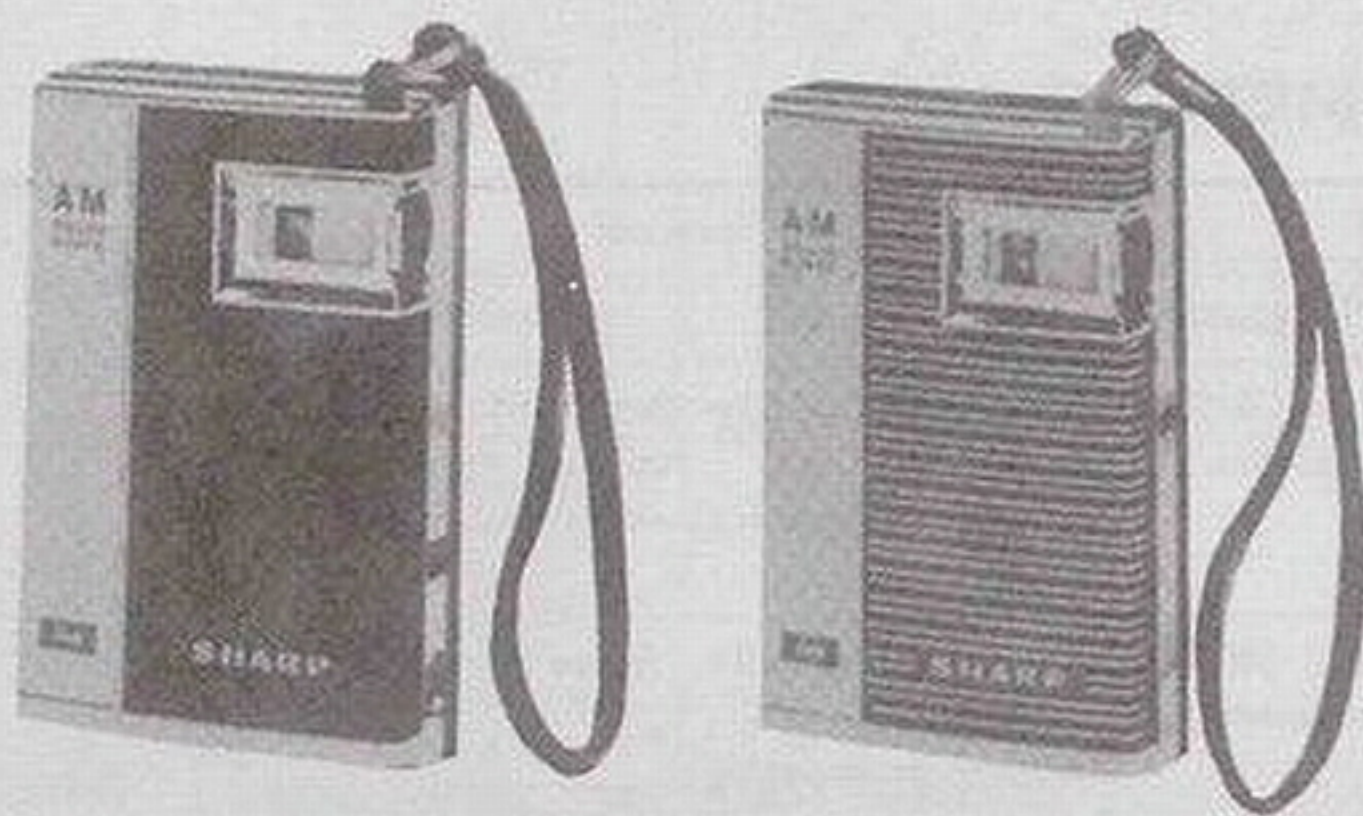




# Service Manual

BP-102A



MODEL

BP-102A, B

## SPECIFICATIONS

Tuning Range ..... AM 530~1650KC  
 Intermediate Frequency ... 455KC  
 Power Supply ..... DC 3V (2 UM-3 batteries)  
 Audio Output ..... 160mW maximum  
 Speaker ..... 2 3/8" (6cm), 4 ohms

### Transistor Complement

Q1 2SA354B ..... Converter  
 Q2 2SA12C ..... 1st IF Amplifier  
 Q3 2SA12C ..... 2nd IF Amplifier  
 Q4 2SB77C ..... Audio Amplifier  
 Q5, 6 2SB77B ..... Output (Matched Pair)

## GENERAL DESCRIPTION

The circuit used in these pocket-portable radios incorporates 6 transistors, 1 diode and 1 thermistor located on a printed circuit board with newly developed printed resistors.

Signal picked up by a ferrite bar antenna is fed to converter and then is amplified through 2 IF stages and is detected.

The signal then passes through the 3 transistor audio amplifier circuit

An AGC voltage is fed back to 1st IF amplifier.

## CHASSIS REMOVAL

1. Remove the battery cover and batteries.
2. Push up the bottom of the back cover and separate it from the cabinet.
3. Remove the 3 screws located on the printed circuit board.
4. Carefully pull the chassis from the cabinet.

WPPC

# SHARP ELECTRONICS (U.K.) LTD

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# ALIGNMENT INSTRUCTIONS

Should it become necessary at any time to check the alignment of this receiver, proceed as follows;

- 1) Connect an output meter across the speaker voice coil lugs.
- 2) Set volume control for maximum.
- 3) Attenuate the signals from generator enough to swing—the most sensitive range of output meter.
- 4) Use a non-metallic alignment tool.
- 5) Repeat adjustment to insure good results.

## AM ALIGNMENT CHART

Step	Signal generator Connection to receiver	Input signal frequency	Receiver		Adjust
			Dial setting	Remarks	
1	Connect signal generator through a 10KΩ dummy to the antenna tuning condenser. Ground lead to the receiver chassis.	Exactly 455KC. (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Adjust for maximum output on speaker voice coil lugs.	T3 T2 T1
2	Use radiating loop, loop of several turns of wire, or place generator lead close to receiver for adequate signal pickup. Connect generator output to one end of this wire.	Exactly 520KC. (400%, 30%, AM modulated.)	Tuning gang fully closed. (maximum capacity)	Same as step 1.	L2
3	Same as step 2.	Exactly 1680KC. (400%, 30%, AM modulated.)	Tuning gang fully open. (minimum capacity)	Same as step 1.	C4
4	Same as step 2.	Exactly 600KC. (400%, 30%, AM modulated.)	600 KC	See note.	L1
5	Same as step 2.	Exactly 1400KC. (400%, 30%, AM modulated.)	1400 KC	Same as step 4.	C3
6	Repeat steps 2, 3, 4 and 5 until no further improvement is obtained.				

**NOTE:** Check alignment of receiver antenna coil by bringing a piece of powdered iron (such as a coil slug) near the antenna loop stick, then a piece of brass. If powdered iron increases output, loop requires more inductance. If brass increases output, loop requires less inductance. Change loop inductance by sliding the bobbin toward the center of ferrite core to increase inductance, or away to decrease inductance. This adjustment will not be required unless L1 has been replaced.

## PRINTED RESISTOR REPLACEMENT

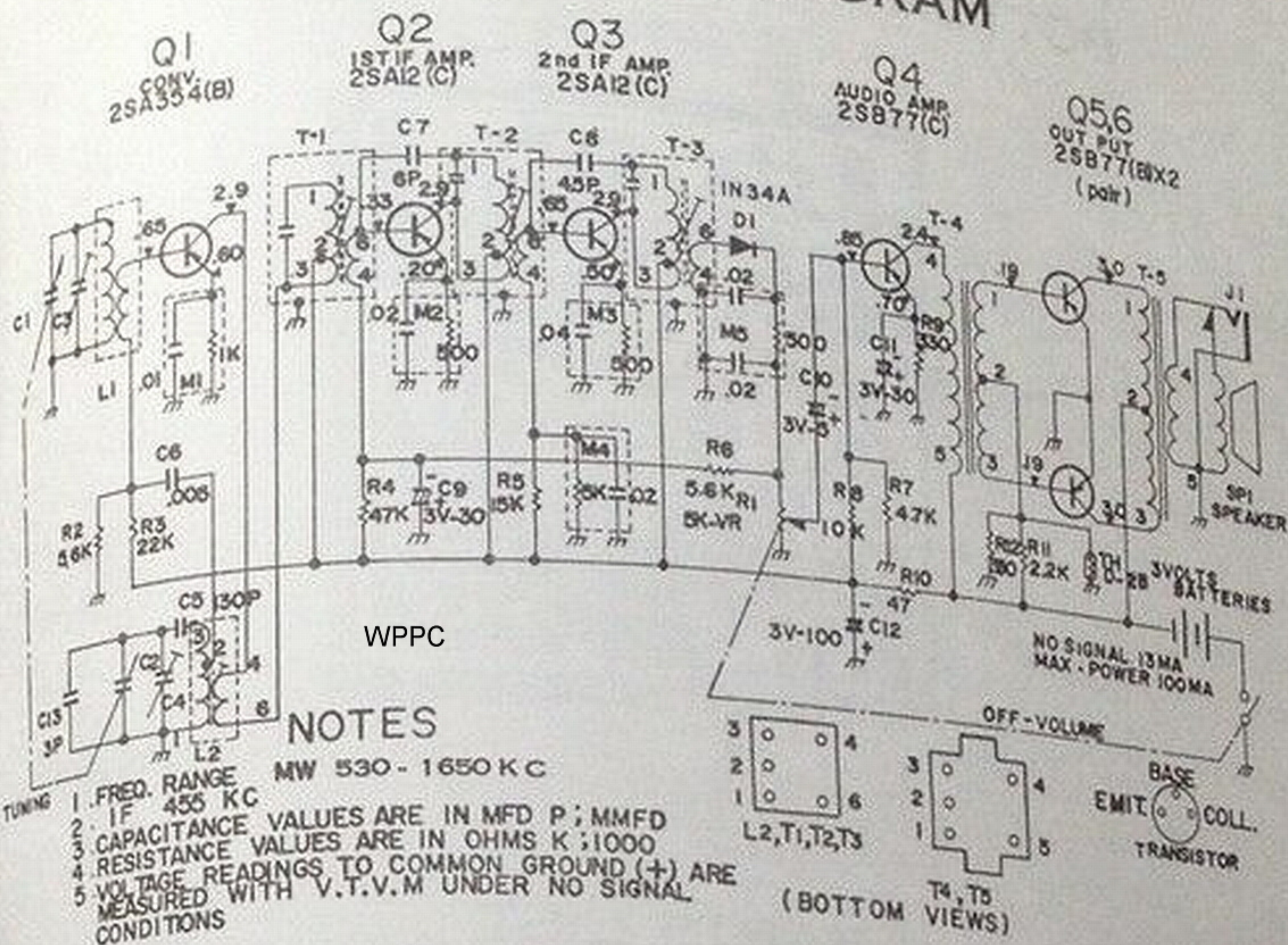
Unlike conventional carbon film or solid resistors the printed resistors adopted in this radio consist of plastic resin and carbon powder printed directly on the printed circuit board. Silver powder is also printed on the circuit at connecting points (both ends) to facilitate wiring. Advantages of printed resistor are: 1) easy wiring, 2) increased durability against shock, 3) less space required and 4) more uniform characteristics, truly ideal for solid state pocket radio circuits.

When repairing or replacing the printed resistor circuit, be sure to observe the following:

1. When replacing parts be careful not to crack or scratch the surface of the printed resistors.
2. When a printed resistor is defective, scratch the carbon in front of printed circuit board and scratch solder resist paint in back of printed circuit board with a knife and install an ordinary resistor of equivalent value. (Replacement of entire printed circuit board is not necessary.)
3. When soldering a new resistor or other parts, use a small soldering iron (20~30 watts). Soldering should be done rapidly.



# SCHEMATIC DIAGRAM



## TOP VIEW OF CHASSIS

