

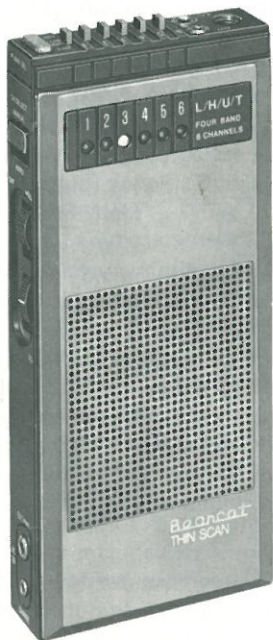
MODEL NO. BC FOUR-SIX TS

# Bearcat<sup>®</sup>

## THIN SCAN<sup>™</sup>

A four-band, six channel  
scanner in an ultra-thin  
"pocket" size.

L/H/U/T



### HAND-HELD/POCKET SCANNER

**Electra**

Electra Company  
Division of Masco Corp. of Indiana  
300 East County Line Road  
Cumberland, Indiana 46229

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## GENERAL DESCRIPTION

The BEARCAT® THIN SCAN™, MODEL BC FOUR-SIX TS, is a hand-held, pocket size model, four-band FM monitor receiver providing automatic scanning of six channels in the most active Low (33-47 MHz), High (152-164 MHz) and U/T (450-470/470-508 MHz) Public Safety/Business Bands.

It features: up to six plug-in crystals in any combination may be used; automatic or manual scanning; each of six channels can be locked out; solid state Light Emitting Diode channel indicators; quieting squelch control; front-mounted 2" speaker; external earphone jack; operation from four AAA penlight batteries or four Nickel Cadmium rechargeable batteries; external power and charger jacks; and operation from a single rubber antenna or a wire antenna (both supplied).

The BEARCAT® THIN SCAN™ is a double conversion superheterodyne circuit — 10.8 MHz and 455 kHz. A monolithic crystal 1st IF filter and a ceramic 2nd IF filter produce exceptional adjacent channel and image rejection.

The circuitry is designed with the most advanced solid state devices to reduce the size and power consumption and provide excellent performance. Scanning-Delay circuit holds any channel locked for two seconds after a signal stops so that the replying station on the same channel can be heard (a simplex system).

For future reference write in the model and serial number here. You will find them on the back of the unit.

MODEL NO. \_\_\_\_\_ SERIAL NO. \_\_\_\_\_

PURCHASED FROM: \_\_\_\_\_

DATE: \_\_\_\_\_

## PREPARATION FOR USE

### CRYSTAL INSTALLATION

#### LEAVE POWER OFF WHILE INSTALLING CRYSTALS

An access door is provided so that crystals can be inserted without removing the case. To remove the Crystal Compartment Cover, press down and outward and slide the cover to the left. Crystal socket location is shown on the inside of the cover.

Up to six crystals may be installed in any combination of Low, High or U/T band. Figure 1 shows the crystal socket layout. For Low band crystals, use the center and the left end crystal socket holes. For High band crystals, use the second from the left end, and the second from the right end. For U/T band crystals, use the center and the right end crystal socket holes. Channel 1 is nearest the top of the radio. Carefully insert the crystals into the sockets.

**NOTE:** Do not install two crystals of the same frequency.

Rigid quality standards are applied to crystals furnished by Electra Company to assure full performance, therefore our warranty does not include correcting poor operation caused by crystals from other sources.

The Low band alignment spread is 33 MHz to 47 MHz, and the High band 152 — 164 MHz. New frequencies may be added within these spreads; if they are outside, performance may be reduced or realignment may be required.

The U/T band alignment spread is 450 MHz to 508 MHz. New frequencies may be added within this spread.

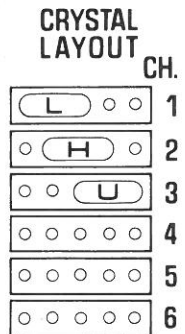


Figure 1

Electra Type A-135 crystals should be used. If your dealer cannot supply the exact frequency you desire, you may order directly from Electra by writing to:

ELECTRA COMPANY  
P.O. Box 29243  
Cumberland, Indiana 46229  
Attention: Sales Department

Specify:

1. Model number of scanner
2. Exact frequency you wish to receive
3. Enclose check or money order of \$5.00 for each crystal.

#### CRYSTAL FORMULAS

Low band:  $\frac{\text{Received frequency} + 10.80\text{MHz}}{3}$   
= crystal frequency

Example:  $\frac{40.00\text{MHz} + 10.80\text{MHz}}{3}$   
= 50.80000MHz

High band:  $\frac{\text{Received frequency} - 10.80\text{MHz}}{3}$   
= crystal frequency

Example:  $\frac{155.01\text{MHz} - 10.80\text{MHz}}{3}$   
= 48.07000MHz

U/T bands:  $\frac{\text{Received frequency} - 10.80\text{ MHz}}{9}$   
= crystal frequency

Example:  $\frac{459.9\text{MHz} - 10.80\text{MHz}}{9}$   
= 49.900000MHz

#### ANTENNA INSTALLATION

The rubber antenna should be screwed into the Antenna jack "ANT." on the top panel. This antenna jack is also designed to accept a standard 5/16-32 stud size metal telescoping antenna as an optional feature.

If more convenient, the wire antenna may be used instead. It should be plugged into the small jack next to the Antenna jack.

#### BATTERY INSTALLATION

Four AAA penlight batteries are required. To remove the Battery Compartment, slightly push the thumb notch beside the Battery Compartment outward. Then, the Battery Compartment pops up. Insert batteries in the Battery Compartment carefully observing the + and - signs indicated. (If batteries are incorrectly inserted, the radio will not operate and rechargeable batteries may be damaged.) Reinstall the Battery Compartment. For installation, see Figure 2.

Regular zinc-carbon flashlight batteries may be used. Alkaline or mercury batteries may give longer life. For greater operating economy, use rechargeable Nickel Cadmium batteries. Remove non-rechargeable batteries when the radio is to be used on AC power or is to be stored, to prevent possible damage from leaking battery fluid.

NOTE: INSERT FOUR "AAA" PENLIGHT BATTERIES CAREFULLY OBSERVING THE POLARITY OF EACH BATTERY.

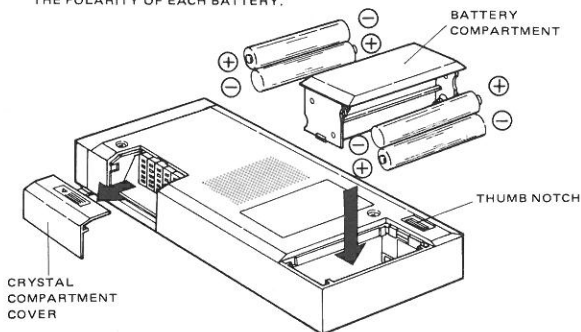


Figure 2



## OPERATION

1. With batteries, crystals and an antenna properly installed, turn the receiver ON by rotating the "VOLUME" control.
2. Place the six channel switches in "ON" position.
3. Set the "AUTO-MANUAL" mode switch to "MANUAL" position.
4. Adjust the "Squelch" control clockwise until the rushing noise is heard. Then adjust the "Squelch" control counterclockwise until the rushing noise disappears.
5. Press the "MANual SElect" switch and continue to step through all channels. If the noise should "break the squelch" on any channel, adjust the squelch control counterclockwise again slightly to quiet the receiver. **THIS MUST BE DONE BETWEEN STATION TRANSMISSIONS.**
6. The Manual select switch may now be used to select and monitor any desired channel.
7. To scan all channels automatically, set the "AUTO-MANUAL" mode switch to "AUTO". Any channel may be omitted as desired by moving the individual channel "LOCK OUT" switch to "OFF" position.

## AC POWER OPERATION

**CAUTION:** To avoid possible damage to the radio, use only the ELECTRA SP-50 AC Adaptor.

Plug the optional adaptor into a convenient 117 volt 60Hz outlet. The small connector on the end of the adaptor wire should be plugged into the external power jack marked "EXT. PWR" on the left side of the radio. If desired, the adaptor may be left plugged into the AC outlet even when the radio has been disconnected for portable use.

If the radio is to be used exclusively on AC, the batteries should be removed from the compartment.

## RECHARGING

**CAUTION:** To avoid possible damage to the radio or batteries, use only the ELECTRA SP-51 Recharger.

4 AAA size Nickel Cadmium batteries may be used in place of dry batteries. These can be recharged hundreds of times and provide long-lasting, economical power.

When the radio fails to scan and the volume becomes low, the batteries should be recharged. (Nickel Cadmium only) Connect the charger plug of the optional charger to the charger jack marked "CHARGE" on the left side of the radio.

**CAUTION:** Regular alkaline, zinc-carbon, mercury, and other single-use batteries may explode if recharging is attempted. **Do not** attempt to recharge any of these batteries.

Completely discharged batteries can be recharged in approximately 14 hours. Moderate over-charging (a few days) will not damage Nickel Cadmium batteries. Since Nickel Cadmium batteries typically lose 1% of their charge per day while not in use, they should receive an overnight charge if they have not been used for several months.

## EXTERNAL SPEAKER JACK (EAR)

A jack is provided on the top for use with an extra speaker (optional) or for an earphone (optional) for private listening.

## SPECIFICATIONS

**Size:** 2-3/4"W x 6-3/16"H x 1"D  
**WEIGHT:** 8 ozs. (including batteries)  
**POWER REQUIREMENTS:** 6Vdc (4 AAA penlight batteries)  
5Vdc (4 AAA Nickel Cadmium batteries)  
6Vdc external power  
**AUDIO OUTPUT:** 100 MW, typical  
**ANTENNA:** Rubber antenna and wire antenna (both supplied)  
Optional metal telescoping antenna can also be used  
**SENSITIVITY:** 0.6 microvolt for 20 dB quieting  
High/Low VHF, typical  
1.0 microvolt for 20 dB quieting  
U/T, typical  
**CHANNELS:** Up to six crystal-controlled channels may be scanned automatically or selected individually or any combination  
**FREQUENCY RANGE:** High band 152-164 MHz; total spread 12 MHz  
Low band 33-47 MHz; total spread 14 MHz  
U/T band 450-470/470-508 MHz; total spread 58 MHz  
**SCAN RATE:** Approximately 8 channels per second  
**CRYSTALS:** Miniature plug-in type A-135 for easy user installation  
**FEATURES:** Squelch control; Volume/On-Off control; Automatic/Manual scan control; individual channel lockout switches; Manual scan mode button; six L.E.D. channel indicators; External antenna jack; Antenna jack; External earphone jack; Ex-

ternal Power and Charger jack;  
Forward facing 2" speaker

**CERTIFIED UNDER FCC REGULATIONS, PART #15.**

## AUTHORIZED BEARCAT SERVICE CENTERS

### ELECTRA COMPANY

DIVISION OF MASCO CORPORATION OF INDIANA  
300 SOUTH ON EAST COUNTY LINE ROAD  
CUMBERLAND, INDIANA 46229  
(317) 894-1440

### CB REPAIR CENTERS, INCORPORATED

4321 NORTH UNITED PARKWAY  
SCHILLER PARK, ILLINOIS 60176  
(312) 671-6100

### TELEDYNE SERVICE COMPANY

6833 EAST ACCO STREET  
LOS ANGELES, CALIFORNIA 90040  
(213) 726-4041

### A.C. SIMMONDS & SONS

975 DILLINGHAM ROAD  
PICKERING, ONTARIO  
CANADA L1W 3B2  
(416) 839-8041

## LIMITED WARRANTY

This Bearcat<sup>®</sup> receiver is warranted to the original consumer purchaser to be free from defects in material and workmanship for a period of one (1) year from the date of purchase as shown on purchaser's receipt.

Electra will repair or replace, AT ITS OPTION AND FREE OF CHARGE, during the warranty period, any part which proves defective in material or workmanship under normal installation, use, and service, provided the receiver is returned to our factory (address below) or to one of our authorized Service Centers (list enclosed), TRANSPORTATION CHARGES PREPAID. Receivers returned to our factory or authorized Service Center must be accompanied by a copy of the purchase receipt. In the absence of such purchase receipt, the warranty period shall be one (1) year from the date of manufacture as indicated by the serial number on your unit.

Any damage to this receiver as a result of misuse, abuse, neglect, accident, improper installation, destruction or alteration of the serial number, repair or alteration outside our factory or Service Center, or any use violative of instructions furnished by us WILL VOID THE WARRANTY. THIS WARRANTY IS LIMITED TO DEFECTIVE PARTS REPAIR AND/OR REPLACEMENT ONLY AND EXCLUDES ANY INCIDENTAL AND CONSEQUENTIAL DAMAGES CONNECTED THEREWITH.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. In the event of a problem with warranty service or performance, you may be able to go to a small claims court, a state court, or a federal district court.

### ELECTRA COMPANY

Division of Masco Corporation of Indiana  
300 South on East County Line Road  
Cumberland, Indiana 46229