

OWNERS MANUAL



Bearcat[®] 250

FIVE BAND SCANNING RECEIVER

Low Band	32-50 MHz	UHF Band	450-470 MHz
Ham	146-148 MHz	UHF (T) Band	470-512 MHz
High Band	148-174 MHz	Plus: UHF Gov't	420-450 MHz

MONITORS VHF and UHF FM RADIO SERVICES

Hams	Utility services	Special Emergency
Police	Industry	Disaster Relief
Government	Business	School Buses
Forestry	Hospitals	Transportation
Conservation	Ambulances	Taxicabs
Mobile telephones	Automobile Emergency	Railroads
Press	Marine	Paging
Fire	Manufacturers	Trucks

MADE IN CUMBERLAND, IND. U.S.A. UNDER ONE OR MORE OF THE FOLLOWING PATENTS:

3,961,261 3,962,644 4,027,251 4,092,594 4,100,497 4,123,715 AND PATENTS PENDING

Electra **ELECTRA**
COMPANY

DIVISION OF MASCO CORPORATION OF INDIANA
CUMBERLAND, INDIANA 46229

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TABLE OF CONTENTS

Radio Services	Front Cover	Time	13
Table of Contents	1	Priority	14
Technical Specifications	2	Delay	14
General Description	3	Count	14
Safety Precautions	3	Auxiliary	15
Operating Instructions	4	Erase Store	15
Front Panel Controls	5	Search Lockout	15
Display Features	7	Birdies	15
What Does It All Mean?	7	Mobile Installation	16
Programming Frequencies	8	External Antenna	17
Direct Channel Access	9	External Speaker	17
Channel Banks	9	Auxiliary Function	17
Scanning	9	Useful Hints	19
Speed	10	Service	20
Lockout	10	Frequency Allocations	21
Automatic Search	11		
Search/Store	12	Warranty	Back Cover
Recall	12		
Transfer and Erase	12		
Transfer (No Erase)	13		



**UNDERWRITERS
LABORATORIES
LISTED**

**Certified in accordance with FCC
Rules and Regulations Part 15.63
as of date of manufacture.**

CAUTION

TO PREVENT FIRE OR SHOCK
HAZARD, DO NOT EXPOSE THIS
APPLIANCE TO RAIN
OR MOISTURE.

For future reference, write the model number and serial number below. You will find them printed on the back of your radio.

Model No. _____ Serial No. _____

Purchased from _____ Date _____

TECHNICAL SPECIFICATIONS*

Size:	10 5/8" W x 3 1/2" H x 8" D
Weight:	5 lbs.
Cabinet:	Vinyl-clad steel or painted textured steel
Power requirements:	117Vac, 20W 13.8Vdc, 9W
Antenna:	Telescoping whip (supplied) Connector provided for external antenna (50-70 ohms)
Clock:	Crystal-controlled; LED display of hours, minutes, seconds. Keyboard-resetable
Frequency Coverage:	Low Band 32 – 50MHz Amateur 146 – 148MHz High Band 148 – 174MHz UHF Band 420 – 470MHz UHF-T Band 470.0125-512.0125MHz
RF Sensitivity: ($\pm$ 5KHz deviation, 12db SINAD)	.4 microvolts 30-174MHz .8 microvolts 420-512MHz
Squelch Sensitivity:	.3 microvolts 30-174MHz .6 microvolts 420-512MHz
IF selectivity:	–60db @ $\pm$ 25KHz
Scan/Search Speed:	Selectable 5 or 15 channels per second
Scan/Search delay:	Selectable 0 or 2 seconds
Audio output:	2 Watts RMS, 8 ohms. 10% THD (max.)
Auxiliary output:	Will switch 500 ma. d. c. (max. sink) external load
Front Panel Controls:	Volume (on/off) Squelch (Auto Squelch) Display Keyboard Speaker
Rear Apron Connectors:	12Vdc 117 Vac External Antenna External Speaker (2 jacks) Auxiliary Control Terminal Ground Terminal

*Specifications are typical and subject to change without notice

GENERAL DESCRIPTION

Your Bearcat 250 is a 50-channel, automatic VHF/UHF FM scanning radio receiver. Its micro-processor control makes scanning easy. The advanced search feature allows unknown signals to be captured and monitored, and their frequencies to be automatically stored in memory for later recall. The versatile keyboard will allow you to command a variety of convenient functions: digital display of frequencies and channel numbers, direct channel access, scan or manual control, lockout of unwanted channels, priority for important transmissions, automatic search with search/store storage and recall, selectable speed control for both scan and search, lockout of "birdies" or other unwanted search frequencies and even local time. . . . to the second!

An internal dual power supply allows 117 Vac or 12 Vdc operation. 100% solid-state circuitry includes seven custom-designed integrated circuits made especially for your Bearcat 250. Additional features include external antenna jack, external speaker jacks, auxiliary connector, volume and squelch controls, a large, bright display panel, frequency synthesis requiring no channel crystals, and track-tuning.

SAFETY PRECAUTIONS

Although your Bearcat 250 is listed with Underwriters Laboratories for complying with standards of safety, a review of common precautions is recommended:

- Do not operate this unit if it is wet
- Never touch an electrical appliance while standing in water or on wet ground
- Do not tamper with the internal circuitry
- Do not connect or disconnect the rear-apron power connector when the line cord is plugged into an ac receptacle

If you suspect an electrical problem exists, refer to the warranty instructions and return your receiver immediately to Electra for inspection. Use the original packing carton for secure shipment.

OPERATING INSTRUCTIONS

By reading this section carefully, you can be using your new scanner within minutes. Follow the sequence of directions to avoid confusion.

1. After unpacking the unit from the carton (save the carton for possible future use), check your Bearcat 250 for shipping damage; if damage has occurred, contact your dealer immediately per the warranty instructions.
2. First insert the ac power cord into the connector provided on the rear apron of your scanner. Plug the cord into a 117Vac outlet (mobile installation will be discussed later).
3. Insert the threaded end of the telescoping whip antenna (provided) into the hole on the top of the scanner. Screw it in clockwise finger-tight, and extend it fully.
4. Turn the scanner ON by turning the VOLUME control clockwise approximately 1/3 of its rotation. The volume control is used in the conventional manner to adjust the sound to a comfortable listening level.
5. Rotate the squelch control fully counter-clockwise until it switches into AUTOMATIC. This factory-set circuit permits the receiver to automatically turn off, or mute, irritating background noise while instantly responding to desired signals.

(For very precise manual squelch adjustment, rotate the control clockwise until you hear the background "hiss"; then turn the control back until the noise just disappears again. This is the most sensitive setting for the squelch control.)

Your radio is now in the "first power-on" condition. The status of various features is as follows:

- A. It is scanning at fast speed as indicated by the rolling display.
- B. The first bank (channels 1 thru 10) is selected and a small red dot at upper left is on.
- C. Priority is inactive; Search Limits are cleared.
- D. The clock started at 0:00:00 and is not set accurately. An "E" will show in the 6th position when "TIME" is selected.

NOTE: The above condition will exist any time the radio is unplugged or power is interrupted. Lockout, Delay, Aux., and Count are retained in a non-volatile memory.

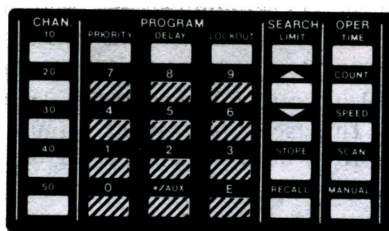
You may hear local signals at this time only if the factory test frequencies are active in your area.

"For proper scan operation all channels being scanned should be programmed with 'valid' frequencies."

You will learn how to program your Bearcat 250 with local frequencies shortly.

FRONT PANEL CONTROLS

1. **ON/OFF-VOLUME:** Turns the receiver ON and OFF and adjusts the sound level.
2. **SQUELCH:** Keeps the radio quiet unless a signal is being received and allows the radio to scan or search for a signal.
3. **AUTO SQUELCH:** A convenient, fixed squelch setting.
4. **DISPLAY PANEL:** Indicates Channel Number, Frequency, Delay (d), Lockout (L), Scanning action (rolling zeros or L in locked out channels), Programming Error (Error), Time, Time Error (E), Priority (P), Channel Banks (·) Aux. (·).
5. **KEYBOARD:** Transfers fingertip commands to the Bearcat 250 Micro-Processor.



NUMERIC KEYS

[0] thru **[9]** and **[./Aux.]** used to program frequencies into the scanner and program AUX. function.

[E] enters frequencies into scan channels from keyboard or from search display.

SCANNING CONTROLS

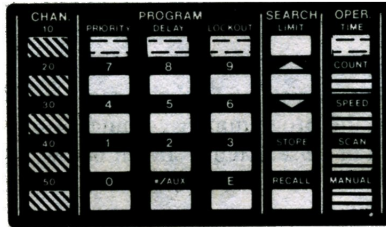
[10 - 50] five banks (10 channel each) are each included or excluded for a maximum of 50 channels.

[Scan] starts SCAN of all programmed channels.

[Manual] Single-steps receiver through all 50 channels; stops search or scan; prepares the radio for any mode of operation.

[Speed] selects SCAN, SEARCH or STORE-SEARCH rates of 5 or 15 channels per second.

[Count] indicates the number of times the displayed channel has received a signal.



FEATURE CONTROLS

Lockout

locks out displayed channel during SCAN only.

Delay

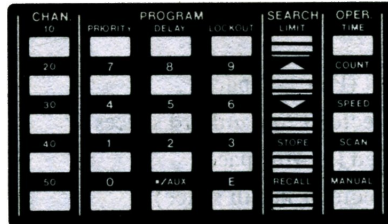
Selectively activates a 2-second delay to receive a reply transmission

Priority

Samples channel 1 every two seconds and automatically switches to any signal on channel 1 regardless of any other signals.

Time

displays TIME when radio is ON or OFF.



SEARCH CONTROLS

Limit

enters two selected frequencies as upper and lower limits



starts searching upwards



starts searching downwards

Store

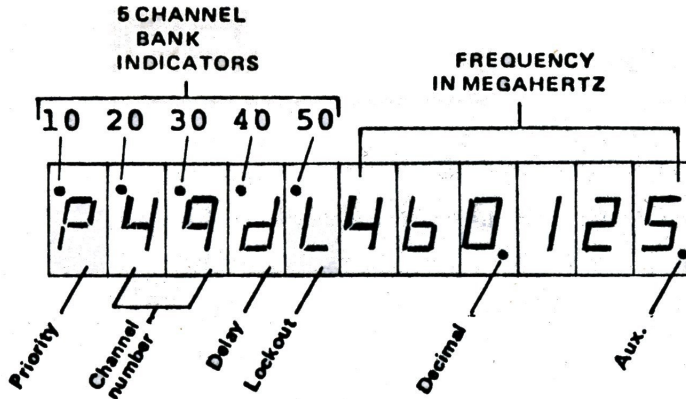
automatically samples all active signals between SEARCH limits and silently STORES up to 64 frequencies.

Recall

recalls and displays each frequency stored in memory during SEARCH/STORE.

DISPLAY FEATURES

The BC-250 display consists of 11 digit spaces or “windows” in which lighted characters indicate the programming commands of the keyboard. The display of features selected or de-selected is shown below:



In this example, from left to right, the following information is shown:

All 5 CHANNEL BANKS are selected as indicated by dots at upper left of spaces 1-5

PRIORITY is ON (P in 1st space)

Channel 49 is selected (2nd and 3rd spaces)

DELAY is selected (in 4th space)

LOCKOUT is selected (in 5th space)

The FREQUENCY 460.125MHz (6th thru 11th spaces) is programmed into channel 49.

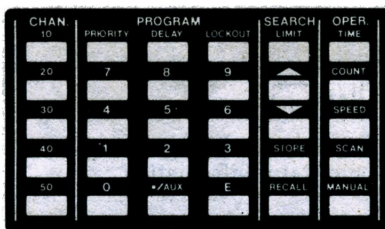
AUX. is selected as indicated by the dot in lower-right of 11th space.

WHAT DOES IT ALL MEAN?

Scanners electronically sample through your choice of frequencies looking for a signal. When a signal is detected, the scanning function stops and the squelch is activated allowing the listener to hear the transmissions. When the signal goes off the air, the squelch turns off the audio (so we don't hear annoying background noise) and the circuitry resumes its scanning of the channels looking for another signal.

It all sounds very simple. In fact, a good scanner like the Bearcat 250 is very sophisticated, using the latest microprocessor techniques from the computer industry. These integrated circuits, or IC “chips” allow this very complex radio to be simple and easy to use.

PROGRAMMING YOUR RECEIVER



PROGRAMMING FREQUENCIES

Read this section thoroughly before attempting frequency programming.

Now that you are aware of some of the flexibility of your Bearcat 250, you are ready to enter local frequencies.

You can program your receiver to scan 50 different frequencies, one for each of the 50 channels, arranged in 5 groups of 10 channels each.

EXAMPLES

To program 162.550MHz in desired channel

PRESS: **Manual** step to that channel

PRESS: **1 6 2 . 5 5 E**

READ: (channel #) 162.550

PRESS: **Manual** (step to next channel)

To program 471.1375MHz in next channel (Example: 10)

PRESS: **4 7 1 . 1 3 7 5 E**

READ: 10 471.137 (Rounded off to 6 places)

This manual selection of channels may continue through all fifty channels, even without all channel banks having been pressed.

If you attempt to program a frequency that is outside the tuning range of the receiver, "Error" appears on the display, and you simply enter a new frequency.

If you make a mistake on one channel

PRESS: **E** then program correct number.

DIRECT (MANUAL) CHANNEL ACCESS

To display any channel (Example: 37) manually when: Scanning is stopped; in manual mode; in time; in count

PRESS: **3** **7** **Manual**

READ: 37 in 2nd and 3rd spaces along with frequency and status information.

The "Manual Mode" may be selected at any time by pressing **Manual**. All of the 50 channels may be displayed in sequence by repeated pressing of the **Manual** key.

BANKS OF CHANNELS

The first bank of channels was automatically selected upon "First Power-on" and was indicated by the dot in upper-left of 1st space. After programming the first 10 channels, continue programming by:

PRESS: **20** Bank Key. A dot appears in the 2nd space.

PRESS: **Manual** 11 appears as the channel No.
Continue programming channels 11 thru 20.
Repeat above procedure for banks 30, 40 and 50.

Any bank may be de-selected, or omitted from scanning, by pressing the corresponding key. For example to de-select the bank containing channels 41 thru 50:

PRESS: **50** Bank Key. The dot in space 5 will disappear.

If all banks are de-selected, Bank 10 is automatically re-selected.

SCANNING

To put your receiver in the "Scanning Mode", adjust the squelch properly (see Page 4). Then:

PRESS: **Scan**

READ: Rolling Zeros in the 10 right-most spaces of the display.

The Bank Indicator Dot for the bank being scanned at that instant.

Lockout Symbols (L) (instead of zeros) representing the channels being skipped.

When a signal is received on a channel (not locked out) the scanning will stop and the display will show:

- the selected banks
- the channel number being received
- the frequency being received

To stop scanning

PRESS: **Manual**

LOCKOUT

You may wish to lock out certain frequencies in any bank and skip over them when scanning. To **program Lockout** on a channel (Example: 37) first select that channel manually.

PRESS: **3** **7** **Manual**

PRESS: **Lockout**

READ: 37 (L) (lockout symbol appears on this channel)

To remove Lockout

PRESS: **Lockout** The symbol (L) will disappear from this channel.

SPEED

To scan slowly (5 channels per second)

PRESS: **Speed**

To resume fast scan (15 channels per second)

PRESS: **Speed**

PROGRAMMING SPECIAL FEATURES

Your BC-250 offers many special features which, when properly understood and used, will increase its usefulness greatly.

AUTOMATIC SEARCH

To search for signals continuously between two frequencies in the same band (example: 160.000MHz to 161.000MHz), go to any desired channel manually (example 37). Then:

PRESS: **1** **6** **0** **.** **Limit**

READ: 37 160.000 (one limit is entered)

PRESS: **1** **6** **1** **.** **Limit**

READ: 37 161.000 (other limit is entered)

PRESS:  (search starts up and repeats) OR

PRESS:  (search starts down and repeats)

To reverse direction of search at anytime

PRESS:



or



To stop search

PRESS:

Manual

The "Scan" frequency in that channel will be displayed.

To resume search on this, or any channel, without changing search limits:

PRESS:



or



Searching on a channel will not erase that channel.

To enter a frequency, found while searching, into the channel on which you are searching:

PRESS:

E

Then manually go to the next channel you want to use and resume searching.

SEARCH/STORE

To get a stored "List" of up to 64 frequencies in a separate memory, found while searching between two limit frequencies, select a channel and enter both limits as in Automatic Search.

Then:

PRESS: **Store** Search starts going up. As each signal is found, the frequency is stored once in a special memory and search resumes quickly.

To reverse the direction of search

PRESS:



RECALL

To see the stored frequencies on the display

PRESS: **Manual** **Recall** Read the first stored frequency in the special memory. You may wish to copy it on paper.

To see the next and other stored frequencies in sequence

PRESS: **Recall** for each one. The end of the stored list is indicated by a blank screen. The next press of **Recall** starts at the first frequency again.

TRANSFER AND ERASE

To transfer frequencies from the store memory to regular channels for scanning, erasing as you go, first select a channel manually.

Then:

PRESS: **Recall** First stored frequency is displayed.

PRESS: **E** The displayed frequency is now entered in that channel.

1. PRESS: **Manual** Steps to next channel (display shows frequency already in that channel).

2. PRESS: **Recall** First stored frequency is displayed.

3. PRESS: **./Aux** **Recall** First stored frequency is erased and 2nd stored frequency displayed.

4. PRESS: **E** 2nd stored frequency is stored in 2nd selected channel.

The pattern of 1 thru 4 above can be repeated until all stored frequencies are transferred and erased. (**Manual** **Recall** **./Aux** **Recall** **E**)

TRANSFER AND NOT ERASE (a slow operation)

To transfer frequencies from store and **not** erase store memory, select desired channel manually. Then:

PRESS: **Recall** Display first stored frequency.
PRESS: **E** Enter first stored frequency.
PRESS: **Manual** Step to next channel.
PRESS: **Recall Recall** Display second stored frequency.
PRESS: **E** Enter second stored frequency.
PRESS: **Manual** Step to next channel.
PRESS: **Recall Recall Recall** Display third stored frequency.
PRESS: **E** Enter third stored frequency.
PRESS: **Manual** Step to next channel.
PRESS: **Recall Recall Recall Recall E Manual**

Continue this pattern for all desired frequencies.

Loss of power will erase store memory.

TIME

To display time from the 12-hour clock, go to the Manual Mode first. Then:

PRESS: **Time** The display shows hours, minutes and seconds. If an "E" appears, power has been interrupted and the clock should be reset.

To set the clock to 9:02:03 when in the TIME mode

PRESS: **9 0 2 0 3 E** and Read: 9.02.03 or
PRESS: **9 0 2 E** and Read: 9.02.00 or
PRESS: **9 E** and Read: 9.00.00

(The last two are convenient when setting the clock on time signals).

Time WILL be displayed when the switch is turned "OFF".

You may also scan or search with the time and channel number being displayed.

To remove time from the display: PRESS: **Time**

PRIORITY

This selectable feature will permit you to hear channel 1 any time it is active, regardless of any other signals being received at that time. Put your favorite frequency in channel 1. Then:

PRESS: **Priority** "P" is displayed

To de-select Priority

PRESS: **Priority** again. "P" disappears

DELAY

To selectively delay restart of scanning on a "Simplex" signal long enough to receive a reply on the same channel, manually go to the channel to be delayed. Then:

PRESS: **Delay** The "d" will be displayed. The channel will hold for 2 seconds after the signal ends.

To de-select delay

PRESS: **Delay** The "d" disappears. Scanning will begin immediately at the end of the signal.

Delay will also hold for 2 seconds in Search or Store if such a delay is desired.

COUNT

To count the number of times a channel has received a signal (up to 99) go to that channel manually, for example, 34:

PRESS: **Manual** **3** **4** **Manual** Channel 34 is displayed

PRESS: **Count** The count number will show at the right end of the display.

To erase count from memory while it is displayed:

PRESS: **./Aux** 00 will be displayed.

To return to manual without erasing count

PRESS: **Count**

AUXILIARY

To selectively control accessories attached to the Auxiliary terminal on the rear apron, go to the desired channel manually. Then:

PRESS: **./Aux** **E** Dot appears at lower-right of display.

To de-select Auxiliary

PRESS: **./Aux** **E** Dot disappears.

ERASING STORE MEMORY

To remove a specific frequency from the store memory

PRESS: **Recall** Repeat until that frequency is in display.

PRESS: **./Aux** **Recall** That frequency remains in display but is erased from memory.

To bulk-erase the store memory

PRESS: **./Aux** **Store** One frequency will remain in display but all are erased from memory.

SEARCH LOCKOUT

To lock out frequencies found by searching during further search, or to store a frequency found by search, search until that frequency is in display. Then:

PRESS: **Lockout** The frequency enters Store memory. Search resumes.

Frequencies retained or locked out by this means may be erased in the manner previously covered, i.e:

PRESS: **Recall** **./Aux** **Recall** To erase one frequency.

PRESS: **./Aux** **Store** To bulk-erase.

BIRDIES

All frequency-synthesized circuits generate internal signals, some of which may be detected by your Bearcat 250. Many of these can be verified by disconnecting the antenna; if the signal still persists, it is probably a "birdie".

BIRDIE LOCKOUT

To avoid false signals from birdies interrupting a search function, program Search in the regular manner. Then:

1. Disconnect antenna
2. Press **Store** Allow at least one search through the range
3. Press **Manual**
4. Reconnect antenna.
5. Resume normal SEARCH operation. Birdies will be skipped automatically.

MOBILE INSTALLATION

In some areas, unauthorized mobile police receivers are unlawful; be sure to check with local authorities before installing your unit.

Your Bearcat 250 may be installed in any vehicle or boat which has a 12-volt, negative-ground electrical system.

A mounting bracket has been provided for your convenience.

1. Using the mobile mounting bracket, select a location under the dash to hold the scanner in the desired position.
2. Mark and drill two mounting holes using a 7/64 drill bit; secure the bracket with two #6 self-tapping screws (provided).
3. Insert the two plastic T-washers (provided) into the bracket holes, flanges inward, and secure the scanner in place with the two mounting bolts and washers (provided).
4. Connect the dc power cable to the insulated terminal on the rear apron of the receiver; attach the other end of the cable to the "accessory" or "radio" terminal on the vehicle fuse block.

Because the scanner continues to drain battery current (about ¼ amp) even after being turned off, the power lead should be attached to one of the fuse circuits which is disconnected by the vehicle ignition switch.

Be sure the radio cabinet is well-grounded to the car metal through the mounting frame; otherwise, connect a piece of wire from the ground screw on the rear apron of the radio to the metal body of the vehicle.

Because power to the scanner is interrupted by turning off the vehicle ignition switch, your clock will have to be re-set each time you restore power. It will "power up" scanning, fast, no priority and bank 10 selected.

5. Connect an appropriate mobile monitor antenna designed for multi-band coverage to the scanner. If necessary, the automotive antenna, extended about 18 inches, can be used with fair results.

EXTERNAL ANTENNA

The telescoping antenna provided with your Bearcat 250 is recommended for most monitoring. For weak-signal reception, or for electrically-noisy locations, an appropriate external antenna designed for multi-band coverage should be connected to the unit via coaxial cable. RG-58U is recommended for lengths of up to 100 feet.

Your Bearcat 250 is equipped with an automotive type of external antenna jack, and a mating plug (supplied) must be used.

An outside antenna need only be high enough to clear surrounding obstructions. Above all, **STAY AWAY FROM POWER LINES!** You may be killed upon contact of the antenna with a power line.

EXTERNAL SPEAKER

Although the internal speaker of the scanner will provide ample room volume, in some applications an external speaker such as the Bearcat B-45 may be desired. The external speaker should be plugged into the rear-apron jack which will cut off the internal scanner speaker.

AUXILIARY FUNCTION

When the auxiliary function is activated selectively on a channel, (PRESS: **[Aux.] [E]**) a red dot will appear at the lower-right corner. Each time the scanner detects a signal on this channel, the AUX. terminal on the rear apron of your Bearcat 250 will provide a closed circuit of up to 500 milliamperes of current. This will turn on many remote controlled battery-operated cassette recorders without additional accessories. NOTE: Some recorders may require additional interface equipment for control or audio. This should be installed by a qualified technician.

Audio for the recorder input is provided by: The External Speaker jack which will disconnect the internal speaker for silent recording; or the Tape jack which allows the speaker to remain on for audible monitoring while recording.

One connection of the tape recorder is made in the following manner:

1. Turn the radio off and unplug it from the wall receptacle.
2. Connect the control wires from the cassette recorder "Remote" jack to the AUX. and GND. terminals as shown in Fig. 1. If the recorder, set to "play", starts with the receiver OFF, the wires should be reversed. NOTE: Recorder should not be grounded to radio or other device in any manner.
3. Plug in radio, turn it ON. With the recorder set to operate, step the BC-250 to a channel programmed for aux. control (PRESS: **[Aux.] [E]**). Receive a signal (or open the squelch) and the recorder should be activated.

4. Connect the Tape output of the BC-250 to the "mic" input of the recorder as shown in Fig. 1. To isolate the recorder ground from the scanner, coupling capacitors should be used in the ground and center conductors as shown. **Alternate:** Sound may be recorded by placing the microphone near the receiver speaker if preferred.
5. Adjust the BC-250 volume control to proper recording level.

To de-activate the Aux. function

PRESS: **./Aux.** **E** again.

The aux. control terminal will source 9 ma. and sink 500 ma. It is protected against reverse voltages. The internal circuitry is shown in Fig. 2.

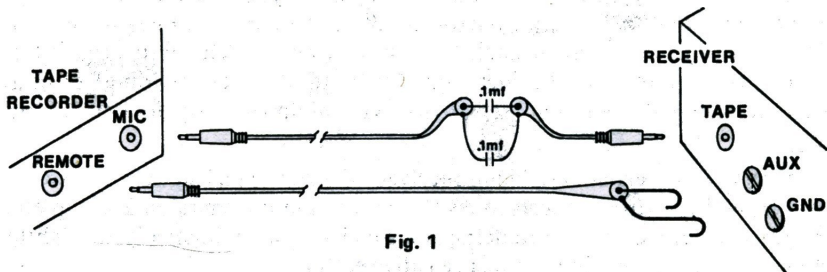


Fig. 1

RECORDER HOOK-UP

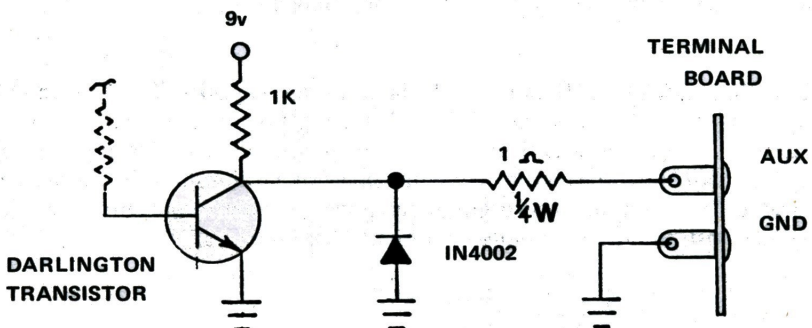


Fig. 2

INTERNAL AUX. CONTROL CIRCUITRY

USEFUL HINTS

When frequency-programming VHF high band and UHF, you may ignore **decimals and final zeros**; they will be entered automatically. Thus, program 162.550 as 16255. Decimals must be used, however, in low band.

If you get lost during any programming steps, simply press **[Manual]** and start again.

Write your programmed channels and matching frequencies on a sheet of paper to avoid the frustration of trying to remember what was programmed on a particular channel if it is accidentally erased.

If priority is already in use, or if you don't wish to use that function, you may still provide preferred scanning to certain highly-desireable channels by inserting the **same frequency into several channels**, so that it is scanned more often.

During search, it is likely that some strong signals will lock in before they are on center-frequency; this is often detectable by a raspy, distorted voice quality. Simply press the  or  button to allow it to step another increment, and note an improvement in quality or signal strength. The actual signal frequency may be read at the higher-quality (and stronger-sounding) setting. Often, reducing the squelch sensitivity will minimize early lock-in during search.

When very weak signals are being received, their marginal nature will sometimes allow the search or scan to resume before the transmission is complete. This may be remedied by advancing the squelch control manually to slightly below the noise threshold (its most sensitive setting).

In strong-signal regions such as metropolitan areas, a short antenna is preferred to reduce signal interference, commonly called "intermod". Other interference signals are known as "images"; these weaker secondary signals are found about 21MHz above their actual transmitting frequencies.

CHANNEL BANKS: Because of the large storage capacity (50 channels) of your Bearcat 250, a system of filing has been provided so that you may selectively activate or de-activate sets of programmed frequencies in groups of ten. This not only speeds up scanning time (when unwanted banks are de-activated), but permits you to group categories of monitoring. For example, you may wish to program your scanner with these services:

10	1-10	Police
20	11-20	Fire
30	21-30	Press
40	31-40	Mobile Telephone
50	41-50	Marine

Each bank of channels may be randomly inserted or removed from the scanning sequence at any time merely by pressing the appropriate channel number. It is not possible to remove all five banks, as the first bank will resume automatically.

A dot will appear in each of the first five display spaces indicating which bank is being scanned.

DELAY

When the receiver is scanning or searching, it will remain on one particular frequency or channel as long as a signal is being received. As soon as the signal goes off the air, the scan or search resumes. Also, if it is a "Duplex" channel you will want to scan quickly to the next channel which you may have programmed to receive the reply. If a repeater is being monitored, the signal usually stays on the air long enough for both sides of the conversation to be heard. However many transmissions are "simplex": Both transmitters are on the same channel. By pressing **DELAY** while the frequency or channel is displayed, a two-second pause will occur after the signal goes off the air before the receiver resumes its scan or search function. This is usually long enough for a replying communication to be heard.

To de-activate the delay command on that channel, press **DELAY** a second time while the scan or search has stopped on that channel.

SERVICE

Your Bearcat 250 has been designed for years of dependable, trouble-free service. In case of difficulty:

1. Refer to Operating Instructions on page 4 to confirm that the proper procedure for operation has been followed.
2. Recheck the power outlet, power cord, control settings, display and sound.
3. If it is then determined that the receiver requires servicing, refer to the warranty instructions enclosed with your unit for the nearest repair facility.
4. When preparing the receiver for shipment remove the telescoping antenna to avoid damage to it or the internal circuit assemblies.
5. Pack the unit in its original packing and carton or other sufficient packing material. Please include a brief, concise description of the difficulty you are having, along with your name, address, and phone number, along with a copy of your purchase receipt.

FREQUENCY ALLOCATIONS

Because of the short-range nature of VHF and UHF FM communications, frequencies allocated to services in one geographical location will not be heard more than 25-50 miles distance (an exception is "skip", when signals bounce back to earth from the ionosphere). For this reason, a separate frequency directory must be compiled for each monitoring area.

Most standard frequency separations and classifications are regulated in the United States by the FCC.

Block allocations. . . and even some discrete frequencies. . . covered by the Bearcat 250 are shown below.

ABBREVIATIONS

Police	P.D.
State Police	St. P.D.
Fire Department	F.D.
Special Emergency	Sp. Emer.
Highway Maintenance	Hwy.
Forestry-Conservation	Fors. Cons.
Government	Govt.
Local Government	L. Govt.
Business Radio	Bus.
Manufacturers	Mfg.
Broadcast Remote	BC R.
Mobile Telephone	Mob. Tel.
Radio Paging	Page.
Special Industrial	Sp. Ind.
Motion Picture	Mot. P.
Power Utilities	Power
Petroleum.	Pet.
Forest Products	For. Prod.
Railroad	R.R.
Automobile Emergency	Auto Emer.
Red Cross.	
U.S. Weather Bureau	U.S.W.B.
U.S. Coastal & Geodetic Survey	U.S.C.G.S.
National Parks	Nat. Pk.
Indian Affairs	
Bureau of Reclamation	Bur. Recl.
Department of Agriculture & Forestry	Agr. & For.
Land Transportation	Land Tr.

30-50MHz Band

30.01 - 30.56.	Govt.
30.56 - 30.62.	Sp. Ind.
30.66 - 31.24.	Ind. (Pet. For. Cons. Bus., For. Prod.)
31.26 - 31.98.	Sp. Ind., For. Cons.
32.00 - 33.00.	Govt.
33.02 - 33.16.	Hwy., Sp. Emer., Bus.
33.18 - 33.38.	Pet.

33.42 - 33.98.	F.D.
34.00 - 35.00.	Govt.
35.02 - 35.18.	Bus.
35.22 - 35.66.	Mob. Tel. & Page
35.70 - 35.73.	Bus.
35.74 - 35.98.	Sp. Ind. & Bus.
36.00 - 37.00.	Govt.
37.02 - 37.44.	P.D. & L. Govt
37.45 - 37.86.	Power
37.90 - 37.98.	Hwy. & Sp. Emer
38.00 - 39.00.	Govt.
39.02 - 39.98.	P.D., L. Govt.
40.00 - 42.00.	Govt.
42.02 - 42.94.	St. P.D.
42.96 - 43.18.	Sp. Ind. & Bus.
43.22 - 43.68.	Mob. Tel. Page
43.70 - 44.60.	Trucks, Bus.
44.62 - 45.06.	St. P.D., For. Cons.
45.08 - 45.66.	P.D.
45.68 - 46.04.	P.D. Hwy., Sp. Emer.
46.06 - 46.50.	F.D.
46.52 - 46.58.	L. Govt.
46.60 - 47.00.	Govt.
47.02 - 47.40.	St. Hwy.
47.42 -	Red Cross
47.44 - 47.68.	Sp. Ind., Sp. Emer.
47.70 - 48.54.	Power
48.56 - 49.58.	For. Prod., Pet.
49.60 - 50.00.	Govt.

146 - 174MHz Band

146.000 - 148.000	HAM
148.010 -	MARS
148.15 -	CAP
148.155 - 148.250	MIL
148.290 - 150.750	USN
150.815 - 150.995	Bus.
151.010 - 151.130	Hwy.
151.145 - 151.475	For. Cons.
151.505 - 151.595	Sp. Ind.
151.625 - 151.955	Bus.
151.985 - 152.240	Mob. Tel. (RCC)
152.270 - 152.450	Taxi
152.480 - 152.840	Mob. Tel. Page
152.870 - 153.020	Sp. Ind. Mot. P

153.050 - 153.440	Pet., For. Prod.
153.470 - 153.710	Power
153.740 - 154.115	L. Govt.
154.130 - 154.445	F.D.
154.450 - 154.600	Sp. Ind., Pet., Bus.
154.655 - 155.145	P.D., L. Govt., St. P.D.
155.160 - 155.400	Sp. Emer., P.D.
156.045 - 156.240	Hwy., P.D.
156.275 - 157.425	Marine
157.456 - 157.500	Auto Emer.
157.530 - 157.710	Taxi
157.740 - 158.100	Mob. Tel., Page
158.130 - 158.460	Power, For. Prod. Pet.
158.490 - 158.700	Mob. Tel. (RCC)
158.730 - 158.970	P.D., L. Govt.
158.985 - 159.210	P.D., Hwy
159.225 - 159.465	For. Cons.
159.510 - 160.200	Trucks
160.215 - 161.565	R.R.
161.600 - 162.000	Marine
162.026 - 162.175	Bur. Recl.
162.400	U.S.W.B.
162.475	U.S.W.B.
162.550	U.S.W.B.
163.125	Indian Affairs
163.175	Bur. Recl.
163.275	U.S.W.B.
163.388 - 163.538	MIL
163.825 - 163.975	Govt.
164.025 - 164.075	U.S.C.G.S.
164.175 - 165.188	Bur. Recl., Nat. Pk., Govt., Agr. & For.
169.300	F.A.A.
169.450 - 169.725	Ind., Data
170.150	F.D., BC. R.
170.200 - 170.220	U.S.C.G.S.
170.225 - 170.325	Ind., Land Tr.
170.425 - 170.575	For. Cons.
170.975 - 171.250	Govt. Ind., Land Tr.
171.388 - 172.725	Bur. Recl., For. Cons., Ind., Dept. Ag. & For., Govt.
172.775	Nat. Pk.
173.025	U.S.W.B.
173.075	U.S.C.G.S.
173.204	Press Relay, Mot. P., Pet., Bur. Recl.

420-512MHz Band

420.000 - 450.000	HAM
451.050 - 450.950	Remote Br.
451.000 - 451.150	Util.
451.175 - 451.750	For. Prod., Pet., Pwr., Tel. Maint.
451.775 - 451.975	Spec. Ind.
452.000 - 452.500	Taxi, Mot. Carrier, R.R.
452.525 - 452.600	Auto Club
452.625 - 452.975	Motor Carr., R.R.
453.000 - 453.975	L. Govt., P.D., F.D.
454.000 - 454.975	Mob. Tel.
455.000 - 455.975	Remote Br.
456.000 - 458.975	P.D., F.D., Ind., Land Tr.
459.000 - 459.975	Domestic Public
460.000 - 460.625	P.D., F.D.
460.650 - 462.175	Bus.
462.000 - 462.450	Taxi

462.550 - 462.725	C.B.
462.750 - 462.975	Bus.
463.000 - 463.175	Med.
463.200 - 464.975	Bus.
465.000 - 467.500	P.D., F.D., Ind., Lan. Tr.
467.750 - 467.925	Bus.
467.5375 - 467.7375	C.B.
467.7375 - 469.975	Pub. Safety, Ind., Land. Tr.

In some large metropolitan areas, 1 or 2 channels of the "TV Band" (470MHz to 512MHz) are used for communication purposes. Each T.V. station (channels 14 through 20) utilizes 6MHz:

470-476 T.V.	Channel 14
476-482 T.V.	Channel 15
482-488 T.V.	Channel 16
488-494 T.V.	Channel 17
494-500 T.V.	Channel 18
500-506 T.V.	Channel 19
506-512 T.V.	Channel 20

Where these frequencies are assigned for communication purposes, in lieu of a T.V. station, the 6MHz segment is allocated as shown here for channel 14 (470 - 476MHz0).

470.0125 - 470.2875	Domestic Public (Base, Mob.)
470.3125 - 471.1375	Public Safety
471.1625 - 471.2875	Reserve Pool A
471.3125 - 471.4125	Pwr., Tel. Maint.
471.4375 - 471.6375	Spec. Ind.
471.6625 - 471.7875	Reserve Pool B
471.8125 - 472.3375	Bus.
472.3625 - 472.4375	Taxi
472.4675 - 472.7875	R.R., Motor Carrier, Auto Emer.
472.8125 - 472.987	Pet., For. Prod., Mfg
473.0125 - 473.2875	Domestic Public
473.3125 - 474.1375	Public Safety
474.1625 - 474.2875	Reserve Pool A
474.3125 - 474.4125	Pwr., Tel. Maint.
474.4375 - 474.6375	Spec. Ind. (Mobile)
474.6625 - 474.7875	Reserve Pool B
474.8125 - 475.3375	Bus.
475.3625 - 475.4375	Taxi
475.4625 - 475.7875	R.R., Motor Carrier, Auto Emer.
475.8125 - 475.9875	Pet., For. Prod., Mfg.

The same allocation pattern is repeated for each of the TV channels 14 thru 20. For example, if channel 17 is assigned for communications in your area, "Taxi" would be 490.3625 to 490.4375 and 493.4375 (corresponding to 472.3625 to 472.4375 and 475.3625 to 475.4375 above). Note that in the example, we added three TV channels (18MHz to the channel 14 frequencies.

LIMITED WARRANTY

This Bearcat® 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 of 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 or a federal district court.

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