

PRO-99 Deluxe Compact Race Scanner

OWNER'S MANUAL —
Please read before using this equipment.

20-515



! IMPORTANT !

If an icon appears at the end of a paragraph, go to the box on that page with the corresponding icon for pertinent information.



— Warning



— Important



— Caution



— Hint



— Note

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Thank you for purchasing the RadioShack 500-Channel VHF/Air/UHF/800 MHz Handheld Race Scanner. It lets you in on all the action in the pits or on the track at the big race. This scanner gives you direct access to over 47,000 frequencies, including those used by participants and staff at auto races, police and fire departments, ambulance services, and amateur radio services. You can select up to 500 channels to scan, and you can change your selection at any time.

Some of the exciting features of this scanner include:

Car Number Operation — store frequencies by car number and store multiple frequencies under the same car number.

Two-Second Scan/Search Delay — Delays scanning or searching for 2 seconds before moving to another channel, so you can hear more replies.

Ten Channel-Storage Banks — Store up to 50 channels in each of 10 different banks, to group channels so you can more easily identify calls.

Preprogrammed Frequency Bands — Lets you search for transmissions within preset frequency ranges or within ranges you set, to reduce search time and select interesting frequencies.

Memory Backup — Keeps the channel frequencies stored in memory for an extended time even without internal batteries.

Triple Conversion**Superheterodyne Receiver** —

Eliminates interference from intermediate frequency (IF) images, so you hear only the frequency you select.

HyperSearch™ and**HyperScan™** — Set the scanner

to search at up to 62 steps per second and scan at up to 50 channels per second, to quickly find interesting transmissions.

CTCSS Continuous Tone Code Squelch Service — Restricts

channel reception to transmissions using specified subaudible CTCSS tone when scanning or parked on a single channel.

Duplicate Frequency Check —

Automatically notifies you if you are about to store a frequency you have already stored in the same bank, to help avoid wasting storage space.

Priority Channel — Designate a

frequency to scan every two seconds so you do not miss important calls.

Weather Band — Scans seven

preprogrammed weather frequencies to keep you informed about current weather conditions.

Weather Alert — Automatically

sounds the alarm tone to advise of hazardous weather conditions when it detects the alert signal on the local NOAA weather channel.

Text Input — Lets you input a text label for each channel, priority channel and limit search bank.

Lock-Out Function — Set the scanner to skip over specified channels or frequencies when scanning, searching or moving through frequencies in the car number operation.

Key Lock — Lock the scanner's keys to prevent accidentally changing the scanner's programming.

Two Supplied Antennas with BNC Connector — Select the antenna that best meets your needs. The supplied stub antenna helps your scanner receive strong local signals and makes the scanner easy to carry and use at events. The supplied flexible antenna provides excellent reception of weaker signals and is designed to help prevent antenna breakage.

16-Character, 4-Line Alphanumeric Display — Shows you detailed operating information clearly.

Display Backlight — Makes the scanner easy to read in low light situations.

Three Power Options — Power the scanner from internal batteries (non-rechargeable batteries, rechargeable Ni-MH (nickel-metal hydride) or regular or high capacity Ni-Cd (nickel-cadmium) batteries), external AC power (using optional adapters), or

vehicle battery power (using optional adapters).

Your scanner can receive all of these frequencies:

28-54 MHz

108-136.9875 MHz

137-174 MHz

406-512 MHz

806-823.9875 MHz

849-868.9875 MHz

894-960 MHz

This Owner's Manual also includes the section "A General Guide To Scanning" on Page 60 to help you target frequency ranges in your service area so you can search for a wide variety of transmissions.

FCC NOTICE

Your scanner might cause TV or radio interference even when it is operating properly. To determine whether your scanner is causing the interference, turn off your scanner. If the interference goes away, your scanner is causing it. Try to eliminate the interference by:

- moving your scanner away from the receiver
- connecting your scanner to an outlet that is on a different electrical circuit from the receiver

- contacting your local RadioShack store for help

If you cannot eliminate the interference, the FCC requires that you stop using your scanner.

This device complies with Part 15 of the *FCC Rules*. Operation is subject to the following conditions:

(1) This device must not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

SCANNING LEGALLY

Your scanner covers frequencies used by many different groups including police and fire departments, ambulance services, government agencies, private companies, amateur radio services, military operations, pager services, and wireline (telephone and telegraph) services. It is legal to listen to almost every transmission your scanner can receive. However, there are some transmissions you should never intentionally listen to. These include:

- telephone conversations (cellular, cordless, or other private means of telephone signal transmission)
- pager transmissions
- any scrambled or encrypted transmissions

According to the Electronic Communications Privacy Act (ECPA), you are subject to fines and possible imprisonment for



NOTE

Mobile use of this scanner is unlawful or requires a permit in some areas. Check the laws in your area.

! IMPORTANT !



The EPA certified RBRC® Battery Recycling

Seal on the rechargeable (Ni-Cd) battery indicates RadioShack is voluntarily participating in an industry program to collect and recycle these batteries at the end of their useful life, when taken out of service in the United States or Canada. The RBRC program provides a convenient alternative to placing used rechargeable batteries into the trash or the municipal waste stream, which may be illegal in your area. Please call 1-800-THE-SHACK (1-800-843-7422) for information on rechargeable battery recycling and disposal bans/restrictions in your area. RadioShack's involvement in this program is part of the company's commitment to preserving our environment and conserving our natural resources.

BATTERY NOTES

- Dispose of old batteries promptly and properly.
- Do not burn or bury batteries.
- Use only fresh batteries of the required size and recommended type.
- Do not mix old and new batteries, different types of batteries (standard, alkaline, or rechargeable), or rechargeable batteries of different capacities.
- If you do not plan to use the scanner for a month or more, remove the batteries. Batteries can leak chemicals that can damage electronic parts.

⚠ WARNING ⚠

Never install non-rechargeable batteries in the yellow rechargeable battery holder. Non-rechargeable batteries can get hot or explode if you try to recharge them.

intentionally listening to, using, or divulging the contents of such a transmission unless you have the consent of a party to the communication (unless such activity is otherwise illegal).

This scanner has been designed to prevent reception of illegal transmissions. This is done to comply with the legal requirement that scanners be manufactured so as to not be easily modifiable to pick up those transmissions. Do not open your scanner's case to make any modifications that could allow it to pick up transmissions that it is not legal to listen to. Doing so could subject you to legal penalties.

We encourage responsible, legal scanner use.

PREPARATION

INSTALLING BATTERIES

You can power your scanner with three AA batteries (not supplied). 

You can use either the black non-rechargeable battery holder or the yellow rechargeable battery holder (both supplied) to hold the batteries. If you use the yellow battery holder, we recommend nickel-cadmium or nickel-metal hydride batteries (not supplied). 

1. Press down on the battery compartment cover then slide the cover in the direction of the arrow to remove it.

2. If you are using non-rechargeable batteries, place them into the black holder, as indicated by the polarity symbols (+ and -) marked on the holder. Or, if you are using rechargeable batteries, place them into the yellow holder as indicated by the polarity symbols (+ and -) marked on the holder.
3. Place the battery holder into the battery compartment. 
4. Replace the cover.

When **Low Battery!** appears on the display and the scanner beeps, or if the scanner stops operating properly, replace the batteries.

Charging Rechargeable Batteries

Your scanner has a built-in charging circuit that lets you charge rechargeable batteries while they are in the scanner. To charge rechargeable batteries, you need to use an AC adapter which supplies 6V (RadioShack Cat. No. 273-1758) or a DC adapter which supplies 6V (RadioShack Cat. No. 273-1859). Connect a size B Adaptaplug to the adapter's cable with the tip set to positive then insert the Adaptaplug into the scanner's PWR DC 6V jack. 

It takes between 14 and 16 hours to recharge Ni-MH or 7 and 8 hours to recharge Ni-Cd batteries that are fully discharged. You can operate the scanner while

CAUTIONS

- The battery holder fits only one way inside the battery compartment. Do not force it.

NOTES

- Do not overcharge Ni-Cd batteries. Overcharging causes them to get hot and shortens their life.
- Ni-Cd batteries last longer and deliver more power if you occasionally let them fully discharge. To do this, simply use the scanner until Low Battery! flashes on the display and the scanner beeps. Then fully charge the batteries.

recharging the batteries, but charging takes longer.

USING AC POWER

You can power the scanner using a 6V, 300-mA AC adapter and a size B Adaptaplug™ adapter (neither supplied). Both are available at your local RadioShack store. ⚡

To power the scanner using an AC adapter, attach the Adaptaplug to the AC adapter so the tip reads positive (+), then insert the Adaptaplug into the scanner's **PWR DC 6V** jack. Connect the other end of the adapter to a standard AC outlet.

USING A 12V POWER SOURCE

You can power the scanner from a vehicle's 12V power source (such as a cigarette-lighter socket) using a 6V, 300-mA DC adapter and a size B Adaptaplug (neither supplied.) Both are available at your local RadioShack store. ⚡

To power the scanner using a DC adapter, attach the Adaptaplug to the DC adapter so the tip reads positive (+), set the adapter's voltage switch to 6V, then insert the Adaptaplug into the scanner's **PWR DC 6V** jack. Plug the other end of the DC adapter into your vehicle's cigarette-lighter socket. ⚡

⚡ CAUTION ⚡

You must use a power source that supplies 6V DC and delivers at least 300 mA. Its center tip must be set to positive and its plug must fit the scanner's **PWR DC 6V** jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.



📄 NOTES 📄

If you use a cigarette-lighter power cable and your vehicle's engine is running, you might hear electrical noise from the engine while scanning. This is normal.

CONNECTING AN ANTENNA

Connecting a Supplied Antenna

You must install an antenna before you can operate the scanner.

The supplied stub antenna helps your scanner receive most strong transmissions at events and makes the scanner easier to carry and use. The supplied flexible antenna provides slightly better reception and helps your scanner receive strong local signals.

1. Align the slots around the antenna's connector with the tabs on the antenna jack.
2. Press the antenna down over the jack and turn the antenna's base clockwise until it locks into place.

Connecting an Outdoor Antenna

Instead of a supplied antenna, you can connect an outdoor base-station or mobile antenna (not supplied) to your scanner using a BNC connector. Your local RadioShack store sells a variety of antennas. Choose the one that best meets your needs. ⚠

When deciding on a mobile or base-station antenna and its location, consider these points.

- The antenna should be as high as possible on the vehicle or building.

WARNING

Use extreme caution when you install or remove an outdoor antenna. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna touches a power line, contact with the antenna, mast, cable, or guy wires can cause electrocution and death. Call the power company to remove the antenna. **DO NOT** attempt to do so yourself.

CAUTION

- Do not run the cable over sharp edges or moving parts that might damage it.
- Do not run the cable next to power cables or other antenna cables.

- The antenna and its cable should be as far as possible from sources of electrical noise, such as appliances or other radios.
- The antenna should be vertical for the best performance.

Always use 50 Ohm coaxial cable, such as RG-58 or RG-8, to connect the base-station or mobile antenna. For lengths over 50 feet, use RG-8 low-loss dielectric coaxial cable. If the antenna cable's connector does not fit in the scanner's antenna jack, you might also need a PL-259-to-BNC antenna plug adapter. Your local RadioShack store carries a wide variety of coaxial antenna cable and connectors. 

Once you choose an antenna, follow the mounting instructions supplied with the antenna, after removing a supplied antenna. Then route the antenna's cable to the scanner and connect the cable to the scanner's antenna jack.

CONNECTING AN EARPHONE/HEADPHONES

For private listening, you can connect an earphone or headphones with a 1/8-inch (3.5 mm) plug to the  jack on the top of the scanner. (Your local RadioShack store carries a wide selection of earphones and headphones). Connecting an earphone or headphones automatically disconnects the internal speaker.

Listening Safely

To protect your hearing, follow these guidelines when you use an earphone or headphones.

- Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.
- Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Once you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

Traffic Safety

- Do not use an earphone or headphones with your scanner when operating a motor vehicle or riding a bicycle in or near traffic. Doing so can create a traffic hazard and could be illegal in some areas.
- If you use an earphone or headphones with your scanner while riding a bicycle, be very careful. Do not listen to a continuous transmission. Even though some earphones or headphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.

⚠ WARNING ⚠

Never connect the audio output line of the headphone jack and a power supply (and GND) line when you use the headphone jack to connect an external speaker. If connected, over current flows to the audio IC of the scanner which causes abnormal high temperature and the scanner might break down.

CONNECTING AN EXTENSION SPEAKER

In a noisy area, an amplified extension speaker (available at your local RadioShack store) might provide more comfortable listening. Plug the speaker cable's 1/8-inch (3.5 mm) plug into your scanner's  jack. Connecting an external speaker disconnects the scanner's internal speaker. ⚠

ATTACHING THE BELT CLIP

You can attach the supplied belt clip to make your scanner easier to carry when you are on the go. Attach the belt clip to the back of the scanner, then slide it downward until it clicks.

To remove the belt clip, pull up the hook then slide the belt clip.

UNDERSTANDING THE SCANNER

Once you understand a few simple terms used in this manual and familiarize yourself with your scanner's features, you can put the scanner to work for you. You simply determine the type of communications you want to receive, then set the scanner to scan them.

Your scanner comes pre-loaded with recent frequencies for race drivers.

A LOOK AT THE KEYPAD

If your scanner's keys seem confusing at first, the following information should help you understand each key's function. ↙ ↘

FUNC — Lets you use various functions by pressing this key in combination with other keys. When using the FUNC key, press FUNC first, then release it, then quickly press the next key in the function key sequence.

Hold down for about 2 seconds, the scanner enters function menu mode.

☞/☼ — Locks and unlocks the keypad to prevent accidental entries; turns the backlight on and off.

^ — Moves through car numbers or channels. Or, enters the tune mode (from channel display mode).

v — Moves through car numbers or channels. Or, enters the tune mode (from channel display mode).

> — Moves through frequencies in the same car number. Or, you can change the car number.

< — Enters the text input mode or CTCSS setting mode.

CAR/CAR/CH — Enter the car number you want to listen. Or, changes between car number display mode and channel number display mode.

NOTE ↙ ↘

Some of the scanner's keys perform more than one function and are marked with more than one label. The steps in this Owner's Manual show only the label on the key appropriate to the action being performed.

SCAN — Scans any programmed channels (channel display mode only), or lets you directly enter a channel number.

SRCH/PAUSE — Lets you search the seven search banks, or pauses search or tune operation.

WX/ALERT — Scans the scanner's preprogrammed weather channels, or turns the WX alert mode on and off.

1/PRI — Enters a 1, or inputs characters 0 through 9 in text mode. Or, sets and turns the priority function on or off.

2/DLY — Enters a 2, inputs characters A through C in text mode, or programs a 2-second delay for the selected channel.

3/L/OUT — Enters a 3, inputs characters D through F in text mode, or lets you lock out selected channels or frequencies.

4/CTCSS — Enters a 4, inputs characters G through I in text mode, or turns the CTCSS operation on/off.

5 — Enters a 5, or inputs characters J through L in text mode.

6 — Enters a 6, or inputs characters M through O in text mode.

7 — Enters a 7, or inputs characters P through S in text mode.

8 — Enters a 8, or inputs characters T through V in text mode.

9 — Enters a 9, or inputs characters W through Z in text mode.

./CLEAR — Enters a decimal point (necessary when programming frequencies), spaces in text mode, clears an incorrect entry, or returns to the previous menu.

0 — Enters a 0, or inputs characters . - # _ @ + * & / , \$ % ! ^ () ? ~ ' Δ.

ENT (enter) — Completes the entry of frequencies and text.

UNDERSTANDING BANKS

Channel Storage Banks

To make it easier to identify and select the channels you want to listen to, channels are divided into 10 banks of 50 channels each.

Use each channel-storage bank to group frequencies, such as those used by the police department, fire department, ambulance services, or aircraft (see “Guide To The Action Bands” on Page 61).

For example, the police department might use four frequencies, one for each side of town. You could program the police frequencies starting with Channel 00 (the first channel) in Bank 1 and program the fire department frequencies starting with Channel 00 (the first channel) in Bank 2.

☑ **NOTE** ☑

The frequencies in the scanner's service banks are preset. You cannot change them. See "Search Band Charts" on Page 42.

Service Banks

The scanner is preprogrammed with the frequencies allocated by car, marine, FRS/GMRS/MURS, police/fire, aircraft, and ham radio bands. This is handy for quickly finding active frequencies instead of searching through an entire band (see "Searching a Preprogrammed Frequency Range" on Page 40).☑

OPERATING YOUR SCANNER

TURNING ON THE SCANNER

1. To turn on the scanner, turn **VOL** clockwise.
RadioShack Race Track PRO appears. After 3 seconds, **Input Car#** appears.
2. To turn off the scanner, turn **VOL** counterclockwise to **OFF**.☑

FUNCTION MENU

When you press **FUNC** for about 2 seconds, the menu screen appears. Various operations can be done from this menu. The structure of the menu is as shown below:

1:Pre-Load CAR

(Pre-load car number frequency)

1:NASCAR Nextel

2:Busch Series

3:Craftman Truck

4:INDY

5:ARCA

2:Display

1:Car# Display (Car number mode)

2:Channel Disp. (Channel number mode)

3:PGM Car# (Program car number)

The following sub menu appears after you input the car number and frequency (or press ENT).

1:Program Freq.

2:Program Text

3:Set Tone Code

4:Tone SQ

1. On

2. Off

5:Delay

1. On

2. Off

6:Lockout

1. On

2. Off

7:Continuous Car

(To add a frequency to the selected car number)

8:new Car#

(Program a new car number and frequency)

4:PGM CH (Program channel)
The following sub menu appears
after you input the channel
number).

1:Program Freq.

2:Program Text

3:Program Car#

4:Set Tone Code

5:Tone SQ

1. On

2. Off

6:Delay

1. On

2. Off

7:Lockout

1. On

2. Off

8:Next Channel

5:PGM PRI CH (Program priority
channel)

1:Program Freq.

2:Program Text

3:Set Tone Code

4:Tone SQ

1. On

2. Off

5:Delay

1. On

2. OFF

6:PGM Limit SRCH

(Program limit search)

1:Change Freq.

2:Program Text

3:Tone SQ

1: On

2: OFF

4:Delay

1: On

2: OFF

7:Recall Lockout

1:Conventional CH

2:SR0 Car Band

3:SR1 Marine

4:SR2 FRS/GMS/MU

5:SR3Police/Fire

6:SR4 Aircraft

7:SR5 Ham

8:SR6 Limit SRCH

8:System Data

1:Back Light

(Set backlight timer setting)

1. 3 Seconds

2. 5 Seconds

3. 10 Seconds

4. 20 Seconds

2:Key Tone

(Select key tone on or off)

1:Key Tone On

2:Key Tone Off

3:LCD Contrast

4:On Air Program

1:Start On Air

2:Change Freq.

5:Initialization

CAR NUMBER OPERATION

Your scanner is specially designed to help you listen to communications at auto races.

Drivers, their pit crews and spotters, pace car drivers, security officers, emergency personnel, track officials, and representatives of governing organizations such as NASCAR, SCCA, and NHRA all use radios to communicate with each other during a race. You might also hear transmissions from the news media and reporters, local police departments, and paramedics and doctors at the local hospital.

You can store a car number and frequency in each of the scanner's channels, associate one or more frequencies stored in channels with a car number, and recall any frequencies associated with that car number by simply entering the number. You can store one car number and frequency, or one frequency by itself, in each

channel (for up to 500 car numbers and frequencies).

For example, if you want to listen to communications between the driver of car number 24 and that driver's pit crew, you find all the frequencies used by the driver's team by using any of the following options:

- the steps in “Searching a Preprogrammed Frequency Range” on Page 40
- “Manually Tuning a Frequency” on Page 46
- frequencies you already know

Then, you store a car number and the frequencies associated with that car number in the scanner's channels and display the car number as you listen to those frequencies by using the information in “Viewing Frequencies Associated With a Car Number” on Page 26.

ABOUT THE PRELOADED CAR NUMBERS AND FREQUENCIES

For your convenience, the five exciting car race frequencies are preloaded in your scanner. You can use one of the race frequencies by moving to Banks 8 and 9. 

1. Press and hold **FUNC** for about 2 seconds.
2. Press **1** to select **Pre-Load CAR**.
3. Select the category and press the corresponding number.

NOTES

Preloads are subject to change. Check with your local RadioShack store for the most current download instructions.

NOTES

- After you store a car number and a frequency, you can store additional frequencies then associate those frequencies with the same car number. See "Adding Frequencies To a Car Number" on Page 25"
- If you add one or more leading zeros to a single digit car number, your scanner recognizes them as different car numbers. For example, you can enter 5 for one car number, 05 for another car number, and 005 for another car number.

Load From Pre-Program CAR
Press 1 key ->YES. Other key->
NO appears.

4. Press 1 to program the race frequency or other than 1 to cancel the programming.

STORING A CAR NUMBER AND FREQUENCY

You can store a car number and frequency in each of the scanner's channels, and you can recall any frequencies associated with the car number by entering the number. You can store one car number in each channel (for up to 500 car numbers).

1. Repeatedly press **CAR** until **Input Car#?** appears.
2. Enter the car number. If the number is one or two digits, enter the number then press **CAR**. If the number is three digits, enter the number only. **P.Fr** (Program Frequency), the car number, and frequency (or **0.00000 MHz**) appears.
3. Enter the frequency (including the decimal point) you want to associate with the car number by using the number keys and **./CLEAR**.

To clear the display (if you make a mistake), press and hold **./CLEAR** before you press **ENT**.

4. Press **ENT** to store the frequency. The car number

and frequency are stored in an available channel.

To program another frequency in the same car number, press **^** or **v** to recall 0.00000 MHz then repeat Step 3.

When you finish programming, press **CAR** twice.

Adding Frequencies To a Car Number

1. Select the car number that you want to add the frequency by using **CAR** and the number keys.
2. Press **FUNC** then **v**. **P.Fr** and **0.00000 MHz** appears.
3. Enter the frequency (including the decimal point) you want to associate with the displayed car number by using the number keys and **./CLEAR**.
4. Press **ENT** to store the frequency. The frequency is associated with the car number entered.

Adding a Car Number to the Channel

You can assign the car number after you program the frequency into the channel. ↙

1. Enter the normal car number operation mode.
2. Press **FUNC**, and then **^** to recall the frequency without car number. The scanner shows **C.Fr** (Call Frequency)

NOTES ↙ ↘

When the scanner is not programmed with frequencies without the car number, the scanner sound an error tone.

Car# - - - at the top line. Then press **^** or **v** to select the frequency that you want to add a car number. ↙

3. Press **FUNC** the press **>**.
4. Enter the car number by using the number keys. If you enter 1 or 2 digit, press **ENT**.

Viewing Frequencies Associated With a Car Number

1. Repeatedly press **CAR** until **Input Car#?** appears.
2. Enter the car number. Then press **CAR**. One of the car number's frequencies appears. ↙
3. Repeatedly press **>**. This operation skips locked out frequencies.

If you want to move to another car number frequency, press **^** or **v**.

Removing a Frequency From a Car Number

1. Recall a car number frequency using **CAR**, the number key and **>**.
2. Press **SCAN**. **R.Fr** appears.
3. Press **0**.
4. Press **ENT**.

A.Fr (All Frequency) Mode (In Car Number Operation)

You can recall all conventional channel frequencies in this mode

NOTES ↙ ↘

- If the car number is three digits, you must not press **CAR**.
- When the specified car number is not programmed, the scanner shows **0.00000 MHz**.
- When the specified car number was set to lockout, **Locked out** appears, the scanner shows **R.Fr** (All Frequency mode), the car number and the frequency.

though the channel number does not appear.

Press **SCAN** during car number operation. The scanner shows **R.Fr.** Press **SCAN** to advance to the next channel. To move to a channel (ex. 110), press 110 then **SCAN**. The scanner displays the contents of channel 110.

To recall an empty channel, press **FUNC** then 0.

4-Way Rocker Key Operation

Normal Car Number Operation mode — Press **CAR**. (no display at the upper left corner):

^ or v — Moves through car numbers. If a car number is locked out, the scanner does not recall the locked out car number.

< — Enters the text input mode.

> — Moves through frequencies in the selected car number. If there is only one frequency associated with the car number an error tone will sound.

Call Frequency mode — From normal car number operation mode, press **FUNC**, and then press **^**. **C.Fr Car# _ _ _** appears at the upper left corner. In this mode, the scanner moves to a frequency that is not programmed with a car number. To change the displayed frequency while in this mode, use the keypad to enter the new frequency, and then press **ENT** to save.

^ and **v** — Moves through frequencies without the car number. If a car number is locked out, the scanner does not recall the locked out car number.

< — Enters the text input mode.

> — Moves the cursor to the next right character when you are in text mode. Otherwise this results in an error tone.

All Frequency mode — From normal car number operation mode, press **FUNC**, and then press **>**. **R.Fr Car# XX** appears at the upper left corner. In this mode the car number can be changed if needed. To save the new number, press **ENT**. To cancel, press **CAR**.

^ and **v** — Returns the scanner to normal car operation mode if a new number has been saved. Otherwise this results in an error tone.

< — Enters the text input mode if a new number has been saved. Otherwise this results in an error tone.

> — Moves the cursor to the next right character when you are in text mode. Otherwise this results in an error tone.

If you enter the all frequency mode by pressing **SCAN** in the normal car number mode, you will not be able to change the car number.

Program Frequency mode — From normal car number operation mode, press **FUNC**, and then press **v**. **P.Fr Car# XX** appears at the upper left corner.

0.00000 MHz appears if the car number has only one frequency. If the car number has more than one frequency, one of the frequencies appears.

^ and **v** — Moves through selected car number frequencies. You can program a frequency when **0.00000 MHz** is displayed. If the car number frequency is locked out, the scanner will still recall the locked out frequency and **L** will be displayed at the upper right corner.

< — Enters the text input mode when a frequency is displayed, or after a new frequency has been saved.

> — Moves the cursor to the next right character when you are in text mode. Otherwise this results in an error tone.

Programming a Quiet Code —

From normal car number operation mode, press **FUNC**, and then press **<**. **Qcode XX CT XXX.X** appears at the bottom of the screen.

^ and **v** — Moves through Quiet codes and CTCSS frequencies in the selected car number. Press **ENT** to save the code selection.

STORING FREQUENCIES INTO CHANNELS

1. To begin programming your scanner, press **FUNC**, and then **CAR** to change the channel display mode. **MAN**, a bank and channel number appears on the display. You can select the desired channel storage bank and channel using the number keys and **SCAN**. For example, Bank 3, Channel 23 is entered as "323" and **SCAN**.
2. Use the number keys and **./CLEAR** to enter the frequency (including the decimal point) you want to store.
3. If you make a mistake, press and hold **./CLEAR** for about 2 seconds to clear the entire field and start over.
4. Press **ENT** to store the frequency into the channel.

*If you made a mistake in entering the frequency, **Invalid Freq.** briefly appears and the scanner beeps when you press **ENT**. Enter the frequency again.*

*If you enter a frequency that has already been entered elsewhere in the same bank, the scanner sounds an error tone. **Dupl.Freq.** and the channel number that has been duplicated displays. If the dual entry is an error,*

NOTES

- Your scanner automatically rounds the entered frequency to the nearest valid frequency. For example, if you enter a frequency of 151.53, your scanner accepts it as 151.5275. Reception of the frequency will not be adversely affected.
- You may replace any frequency by selecting the bank and channel, pressing **▲** or **▼** and entering the new frequency.
- You can clear programmed frequency data. Press **0** then **ENT**.

press **./CLEAR** and enter the correct frequency. If the dual entry is intentional, press **ENT** to accept.

5. By default, the scanner will configure the channels you enter for a two second delay after a transmission is received. This is indicated by **D** appearing in the top row of the display. If you do not want the scanner to pause for reply traffic before resuming scanning operation, press **FUNC** then **2/DLY** until **D** is not visible in the top line of the display.

STORING TEXT TAGS

You can customize your scanner by storing text tags (up to 16 characters) for easy identification of channel transmissions.

1. Select channel using **SCAN**, **^**, and **v**.
2. Press **<**. The scanner enters the text input mode. If you want to cancel the operation, press **FUNC**.
3. Enter the text using the number keys. (see "Text Input Chart" on Page 32).

If you make a mistake, press **<** or **>** to move to the character you want to change.

For example, to identify amateur (ham) radio transmissions in the 6 meter range, input "**HAM 6m**" as follows:

"H" is the second letter associated with 4 on the keypad. Press 4, and then 2.

"A" is the first letter associated with 2 on the keypad. Press 2, and then 1.

"M" is the first letter associated with 6 on the keypad. Press 6, and then 1.

A space is entered by pressing **./CLEAR**.

"6" is the sixth number associated with 1 on the keypad. Press 1, and then 6.

"m" is the first letter associated with 6 on the keypad. Press 6 and **^** or **v** (for the lower case set), and then press 1.

4. Press **ENT** to input the text.

Text Input Chart

Press	Character	Press	Character
./CLEAR	Space	1	1234567890
2	A B C	2 ^ or v	a b c
3	D E F	3 ^ or v	d e f
4	G H I	4 ^ or v	g h i
5	J K L	5 ^ or v	j k l
6	M N O	6 ^ or v	m n o
7	P Q R S	7 ^ or v	p q r s
8	T U V	8 ^ or v	t u v
9	W X Y Z	9 ^ or v	w x y z
0	. - # _ @ + * & / ,	0 ^ or v	\$ % ! ^ () ? ~ ' Δ

DELETING FREQUENCIES FROM CHANNELS

In certain circumstances you may wish to completely clear the contents of a channel. One example would be to create empty channels in a selected channel storage bank so the frequency copy function has empty channels available for copied frequencies.

1. Repeatedly press **FUNC**, and then **CAR** until **MAN**, **Bank** and the channel number appears.
2. Use the number keys and press **SCAN** to select the channel with the frequency you want to delete, or use **^** or **v** to navigate to the desired channel.
3. Press **0** and then **ENT**. The frequency is cleared, **0.00000** appears in the display.

Clearing All Channels

1. Set the scanner to the conventional channel mode so **MAN**, **Bank**, and a channel number appear.
2. Press and hold **/CLEAR**. Then press **0**. **All 500 Channels Clear?**
Press 1 key ->YES Other key -> NO appears.
3. Press **1** to clear the all channels, or press any key other than **1** to cancel the clear.

! IMPORTANT !

Initializing the scanner clears all information you stored in the scanner's memory. Initialize the scanner only when you are sure.

NOTES

- The scanner will not enter scan mode if there are no frequencies stored in channels, or if all channels are locked out in the channel storage bank(s) that you are attempting to scan. In either of these cases, the scanner will display **All channels Locked out!**. See "Storing Frequencies Into Channels" on Page 30
- If SQ is adjusted so you always hear a rushing sound, the scanner will not scan properly. Rotate the SQ control until the rushing sound stops.
- If SQ is adjusted precisely at the threshold where the rushing sound stops, the radio will be most sensitive to very weak signals. The radio may also receive unwanted noise or signals that are too weak to understand. Most users prefer to position the SQ control a little bit past the point of threshold to avoid receiving noise or signals that are too weak to understand.

INITIALIZING THE SCANNER

If you want to clear all the scanner's memory, initialize the scanner.!

1. Press and hold **FUNC** for about 2 seconds.
2. Press **8, 5**, and then **ENT**.

Do not turn off the scanner until the initialization is complete.

SCANNING CHANNELS

1. Set the scanner to the conventional channel mode so **MARI, Bank**, and a frequency appear by pressing **FUNC** then **CAR**.
2. Turn **SQ** fully counterclockwise and adjust **VOL** to a comfortable level.
3. Turn **SQ** clockwise until the rushing sound stops.

To begin scanning channels or to start scanning again after monitoring a specific channel, press **SCAN**.

To change the scanning direction, press **^** or **v** while scanning.

To restart scanning while the scanner is in stop mode, press **^** or **v**.

The scanner scans through all channels (except those you have locked out) in the active channel storage banks (see "Turning

Channel Storage Banks Off and On” on Page 35 and “Locking Out Channels or Frequencies” on Page 51).

Turning Channel Storage Banks Off and On

To turn off channel storage banks while scanning, press the bank's number key so the bank's number disappears. For example, to turn off bank 1, press 1. The scanner does not scan any of the channels within the banks you turned off.

To turn on channel storage banks while scanning, press the number key until the bank's number appears. For example to turn bank 1 on again, press 1.

You cannot turn off all channel storage banks. There must be at least one active channel storage bank.

You can manually select any channel in a channel storage bank, even if the bank is turned off.

Monitoring a Single Channel

You can monitor a single channel with your scanner by navigating to that channel while in manual mode. The scanner will receive traffic on the selected frequency.

To monitor a single channel, repeatedly press **SCAN** during conventional channel operation. **MAN** appears.

Power Save Circuit

Your scanner features a power save circuit that is automatically activated any time you manually select a channel or car number frequency. The power save mode works by allowing the receiver to "sleep" briefly while waiting for a call on the selected channel.

USING CTCSS

When your scanner stops on a frequency that is configured for CTCSS, it checks for a match between the transmitted CTCSS (quiet) code and the code that is stored with the channel memory. If the transmitted and stored codes match, the scanner stops on the transmission and allows the audio to pass to the speaker. If the codes do not match, the scanner resumes scan operation. If the special "search" code is in use, the scanner will instantly display any detected CTCSS mode. You can store the detected code into the channel memory by pressing **ENT** while the code is displayed.

PROGRAMMING CHANNELS FOR CTCSS

CTCSS allows you to program frequencies into your scanner that are used by more than one group in your area and listen only to the group that is of interest to you by specifying the group's specific CTCSS code. CTCSS can also help reduce instances where interfering signals cause your scanner to stop on one channel.

There are two ways you can program your scanner to operate with CTCSS. If you know the CTCSS code that is used on a particular frequency, you can manually enter the code when you are programming the scanner, or any time afterwards.

You can also set a special search code up that will instantly decode the CTCSS code on a received transmission. Channels programmed with the search code will receive all traffic on the channel, and will instantly decode and display any CTCSS code that is found with the transmission. You can then store the found code in the channel memory with one keystroke.

Programming a Quiet Code into a Channel

1. Select the channel you want to program the quiet code. 
2. Press **FUNC**, and then press **<**. **Set Tone Code** appears.
3. Press **^** or **v** to select quiet code (frequency). See the "Quiet Code Chart" on Page 37.
4. Press **ENT** to set the quiet code.

NOTES

- If you want to program a quiet code into a car number frequency, you can select the car number frequency.
- The scanner might detect an adjoining quiet code and sometimes receive the frequency.

Quiet Code Chart

Code	Frequency (Hz)	Code	Frequency (Hz)
00	SRCH	20	131.8
01	67.0	21	136.5
02	71.9	22	141.3
03	74.4	23	146.2

Code	Frequency (Hz)	Code	Frequency (Hz)
04	77.0	24	151.4
05	79.7	25	156.7
06	82.5	26	162.2
07	85.4	27	167.9
08	88.5	28	173.8
09	91.5	29	179.9
10	94.8	30	186.2
11	97.4	31	192.8
12	100.0	32	203.5
13	103.5	33	210.7
14	107.2	34	218.1
15	110.9	35	225.7
16	114.8	36	233.6
17	118.8	37	241.8
18	123.0	38	250.3
19	127.3		

TURNING ON OR OFF THE CTCSS

1. Select the channel or the car number frequency.
2. Press **FUNC** then **4/CTCSS**.
The scanner turns on or off the CTCSS in the selected channel (or the car number frequency).

Finding the Quiet Code on a Frequency

1. First, select the frequency of the car number or enter the frequency on which the quiet code is used into a channel. See "Storing Frequencies Into Channels" on Page 30.
2. Once you have selected the frequency of the car number or entered the frequency on a

channel, press **FUNC** and then **4/CTCSS**. **CT00:SRCH** appears. When the scanner detects the quiet code while receiving a transmission, the detected code flashes on the bottom line.

If you want to enter the detected code into the car number or the channel, press **ENT** while the code flashes.

Using CTCSS During a Search

You can find the quiet code on frequencies during a search (except SR1 and SR4). While searching through a band, press **FUNC** then **4/CTCSS**. **CT00:SRCH** appears. When the scanner finds a frequency with a quiet code, the quiet code frequency flashes.

To turn off the CTCSS feature, press **FUNC** then **4/CTCSS** again.

SEARCHING AND TUNING

FINDING AND STORING ACTIVE FREQUENCIES

You can search for transmissions using the scanner's preprogrammed search banks. The search banks include six preprogrammed search ranges, SR0 to SR5. You can change the search range of Bank SR6 manually by setting the lower and higher ends of the search range. 

NOTES

- You can use the scanner's delay feature while searching the search bank. See "Delay" on Page 50.
- You can set CTCSS when searching any search range, except for SR1 and SR4. The scanner will display detected CTCSS codes depending on the CTCSS setting. See "USING CTCSS" on Page 36.
- The scanner does not search locked-out frequencies while searching ranges. See "Locking Out Channels or Frequencies" on Page 51.

SEARCHING A PREPROGRAMMED FREQUENCY RANGE

The scanner contains these preprogrammed search ranges, stored in the search banks (SR0-SR6).

Bank	Band
SR0	Car Band
SR1	Marine
SR2	FRS/GMRS/MURS
SR3	Police/Fire
SR4	Aircraft
SR5	Ham
SR6	Limit Search (User configured)

1. Repeatedly press **SRCH/PAUSE** to select the desired search bank.
2. In the marine and FRS/GMRS/MURS bands, you can directly select a channel or search through the band. When **m** appears at the left most position of the second line or the scanner stops on a frequency, you can directly select a channel (refer to "Search Band Charts" on Page 42). Use the numeric keypad to select a specific two digit channel number (for example, press **16** to select Channel 16, or **05** to select channel 5). You can also change the channels by pressing **▲** or **▼**.

There are several group banks in SR0 Car Band, SR3

Police/Fire and SR5 ham bands. You can turn on or off the sub-groups by pressing the group numbers. For example, to turn off sub-group 2, press 2.

3. In all search bands except marine and FRS/GMRS/MURS bands, press **FUNC** and then **SRCH/PAUSE** to pause the search. To continue search, press **FUNC**, and then press **SRCH/PAUSE** again.

In marine and FRS/GMRS/MURS bands, press **FUNC**, and then **SRCH/PAUSE** while **m** is displayed. **m** changes to **S** and now you can search through the band.

Press **FUNC**, and then **SRCH/PAUSE** again to return to the previous mode.

4. Rotate **SQ** clockwise and leave it set to a point just after the rushing sound stops. After 2 seconds (if the delay feature is on), the scanner starts searching.
5. When the scanner finds an active frequency, it stops searching, and resumes when the transmission ends. If delay is programmed with the search range the scanner will pause for a reply before search resumes. ↙

↙ **NOTES** ↘

- In the aircraft and limit search bands, press **FUNC** then press **^** to start searching up from the lowest frequency or press **v** to start searching down from the highest frequency.
- You can press **^** or **v** at any time to change the search direction.
- Use **^** or **v** while paused to increment the frequency one step at a time.

Search Band Charts

Search bank: SR0

Car number band

Sub-Group	Frequency (MHz)	Step (kHz)
1	150.9875 – 152.0000	7.5
1	152.8700 – 153.7250	7.5
1	154.4825 – 154.5050	7.5
1	154.5100 – 154.525	5
1	154.5275 – 154.54625	6.25
1	154.5475 – 154.6075	7.5
1	154.6100 – 154.6250	5
2	460.0000 – 470.0000	12.5
3	851.0000 – 868.9875	12.5
3	936.2125	
3	937.1500	
3	937.2000	
3	937.2875	
4	450.0000 – 459.9875	12.5

Search bank: SR1

Marine band

Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	156.0500	63	156.1750
05	156.2500	64	156.2550 160.8250
06	156.3000	65	156.2750
07	156.3500	66	156.3250
08	156.4000	67	156.3750
09	156.4500	68	156.4250
10	156.5000	69	156.4750
11	156.5500	70	156.5250
12	156.6000	71	156.5750
13	156.6500	72	156.6250
14	156.7000	73	156.6750
15	156.7500	74	156.7250
16	156.8000	77	156.8750

Channel	Frequency (MHz)	Channel	Frequency (MHz)
17	156.8500	78	156.9250
18	156.9000	79	156.9750
19	156.9500	80	157.0250
20	157.0000 161.6000	81	157.0750
21	157.0500	82	157.1250
22	157.1000	83	157.1750
23	157.1500	84	157.2250 161.8250
24	157.2000 161.8000	85	157.2750 161.8750
25	157.2500 161.8500	86	157.3250 161.9250
26	157.3000 161.9000	87	157.3750 161.9750
27	157.3500 161.9500	88	157.4250
28	157.4000 162.0000		

Search bank: SR2
FRS/GMRS/MURS band

Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	462.5625	15	462.5500
02	462.5875	16	462.5750
03	462.6125	17	462.6000
04	462.6375	18	462.6250
05	462.6625	19	462.6500
06	462.6875	20	462.6750
07	462.7125	21	462.7000
08	467.5625	22	462.7250
09	467.5875	23	151.8200
10	467.6125	24	151.8800
11	467.6375	25	151.9400
12	467.6625	26	154.5700

Channel	Frequency (MHz)	Channel	Frequency (MHz)
13	467.6875	27	154.6000
14	467.7125		

Search bank: SR3

Police/Fire department band

Sub-Group	Frequency (MHz)	Step (kHz)
1	33.4200 – 33.9800	20
1	37.0200 – 37.4200	20
1	39.0200 – 39.9800	20
1	42.0200 – 42.9400	20
1	44.6200 – 45.8600	40
1	45.8800	
1	45.9000	
1	45.9400 – 46.0600	40
1	46.0800 – 46.5000	20
2	153.7700 – 154.1300	60
2	154.1450 – 154.4450	15
2	154.6500 – 154.9500	15
2	155.0100 – 155.3700	60
2	155.4150 – 155.7000	15
2	155.7300 – 156.210	60
2	158.7300 – 159.2100	60
2	166.2500	
2	170.1500	
3	453.0375 – 453.9625	12.5
3	458.0375 – 458.9625	12.5
3	460.0125 – 460.6375	12.5
3	465.0125 – 465.6375	12.5
4	856.2125 – 860.9875	25
4	866.0125 – 868.9875	12.5

Search bank: SR4

Aircraft band

Frequency (MHz)	Step (kHz)
108.0000 – 136.9875	12.5

Search bank: SR5

Ham band

Group	Frequency (MHz)	Step (kHz)
1	29.0000 – 29.7000	5
2	50.0000 – 54.0000	5
3	144.0000 – 148.0000	5
4	420.0000 – 450.000	12.5

Search bank: SR6

Programmable limit search band

Searching Active Frequencies in Your Desired Frequency Range

You can search a specific range of frequencies by programming SR6 with lower and upper frequency limits.

1. Press and hold **FUNC** for about 2 seconds. The menu screen appears on the display.
2. Press **6** to select **PGM Limit SRCH**, and then press **1** to select **Change Freq.** The cursor blinks **L** on the top line for the lower limit frequency.
3. Use the number keys and **./CLEAR** to enter the desired lower limit frequency (including the decimal point).
4. Press **ENT** to set the lower limit frequency. The cursor moves to upper frequency field. If the entered frequency is incorrect, **Invalid Freq.** briefly appears in the scanner's display.

5. Enter your desired upper frequency and press **ENT**.
6. Repeatedly press **SRCH/PAUSE** to select **SR6 Limit SRCH**. When the scanner finds an active frequency, it stops searching.

USING ZEROMATIC

You can set Zeromatic on or off by pressing **FUNC** and then **9 (Z)**. Press **FUNC**, and then **9** again to toggle the Zeromatic setting. In tune mode, when this feature is turned on, **Zeromatic On** briefly appears in the display, then **z** appears at the first digit of the second line. When searching with Zeromatic on, the scanner will automatically tune to the correct center frequency (or the step increment closest to the correct center frequency). When searching or tuning with Zeromatic off, the scanner will unmute faster on a detected signal but the frequency may not be exact. If the scanner stops on a signal before it reaches the correct center frequency, you can step up or down to the correct frequency using the **^** or **v** key. Zeromatic functions only in search banks 0, 3, 4, 5, 6, and manual tuning.

MANUALLY TUNING A FREQUENCY

You can manually set the scanner to move through all receivable frequencies, or select a specific frequency as a starting point.

1. Set the scanner to the conventional channel mode

so **MAR**, **Bank**, and a channel appears.

2. Press **FUNC** then press **▲** or **▼**. **Tune** and the current frequency appear in the display.
3. Use the number keys to enter the frequency where you want the scanner to start.
4. Press **ENT** to store the frequency and start tuning.
5. While automatic tuning, press **▲** or **▼** to change the direction of the tune. When the scanner finds an active frequency, it stops on the frequency. 

USING FREQUENCY COPY

You can easily copy a frequency into a vacant channel in a specified bank. This feature provides an easy method of storing frequencies of interest you encounter while searching or tuning. You **cannot** copy a frequency from the Marine and FRS/GMRS/MURS search bands.

Copying a Frequency Into a Vacant Channel In a Specified Bank

You can copy a frequency into a vacant channel in a specified bank when the scanner stops on the frequency during search or tune mode. 

1. Press **FUNC**, and then **ENT** when you find a frequency you want to copy. **Bank 0** (default setting) **Store?**

NOTES

To pause the tune, press **FUNC** then **SRCH/PAUSE**. Use **▲** or **▼** while paused to increment the frequency one step at a time. To resume the tune, press **FUNC** then **SRCH/PAUSE** again.

NOTES

- If you try to copy a frequency that is already stored in the same bank, the scanner sounds a notice tone three times after you press **ENT**. **Dupl.Freq.Chxxx** appears at the third line. If you want to copy the duplicate frequency anyway, press **ENT**, or if not, press **. /CLEAR** to cancel.
- If the scanner displays **Bank X Full !**, the bank has no vacant channel.

appears in the scanner's display.

2. If you want to copy the frequency into bank 0, press **ENT**. It is stored in the first available vacant channel in the bank. Or press your desired bank number to store, then press **ENT** to store the frequency in the selected bank. **Channel Stored!** appears for two seconds. All the conditions such as CTCSS code and delay condition are copied on the channel. After about two seconds, the scanner automatically returns to search mode.

LISTENING TO WX CHANNEL

The FCC (Federal Communications Commission) has allocated channels for use by the National Oceanic and Atmospheric Administration (NOAA). Regulatory agencies in other countries have also allocated channels for use by their weather reporting authorities.

NOAA and your local weather reporting authority broadcast your local forecast and regional weather information on one or more of these channels.

Listening To a Weather Channel

To hear your local forecast and regional weather information, press **WX/ALERT**. Your scanner scans through the weather band then stops on the first active

weather frequency. Press **WX/ALERT** repeatedly to find the strongest weather frequency for your location.

WX Alert

Your scanner's WX alert warns you of serious weather conditions by sounding an alarm if a National Weather Service broadcaster in your area broadcasts a weather alert tone.

To set the scanner so it sounds an alarm when a weather alert tone is broadcast, press **FUNC** then **WX/ALERT** while you are listening to the WX channel.

WX Alert Standby appears.

If the scanner detects the weather alert, it sounds an alarm. The scanner sounds the alert for five minutes when it receives the weather alert signal. After five minutes, the alert stops and the scanner beeps every ten seconds. Press any key except  to turn off the alarm.

To cancel the weather alert operation, press **FUNC** then press **WX/ALERT** again.

SPECIAL FEATURES

USING PRIORITY

The priority feature lets you scan through channels and still not miss important or interesting calls on a frequency you select. You can program one frequency into the priority channel. As the scanner scans, if the priority feature is turned on, the scanner checks the

priority channel for activity every 2 seconds.

1. Press and hold **FUNC** about 2 seconds. The menu screen appears on the display.
2. Press **5** to select **PGM PRI CH** and then press **1** to select **Program Freq.** The cursor blinks at the second line.
3. Use the number keys and **./CLEAR** to enter the priority frequency (including the decimal point).
4. Press **ENT** to set the priority channel. If the entered frequency is incorrect, **Invalid Freq.** briefly appears in the scanner's display.

To turn on the priority feature, press **FUNC** then **1/PRI** while scanning. **P:OFF (Pri: Off)** changes to **P:On (Pri: On)**. The scanner checks the priority channel every 2 seconds and stays on the channel if there is activity. **Pri. Channel** and the frequency appear whenever the scanner is set to the priority channel.

To turn off the priority feature, press **FUNC** then **1/PRI**. **P:On** changes to **P:OFF**.

DELAY

Many agencies use a two-way radio system that has a period of several seconds between a query and a reply. To avoid missing a reply, you can use a 2-second delay during scanning, tuning, or

NOTES

- If you program a weather frequency into the priority channel and the scanner detects a WX alert tone on that frequency, the scanner sounds the alert tone and **Weather Alert!** appears. Press any key except **↔/☀** to turn off the alarm.
- If you program a weather frequency into the priority channel, **P:WX** appears instead of **P:On**.
- If you set on the tone squelch, **P:CT** appears instead of **P:On**.

searching. When your scanner stops on a channel or frequency with a programmed delay, the scanner continues to monitor that frequency for 2 seconds after the transmission stops before resuming scanning, tuning, or searching. Delay is automatically set as the default for each channel or when you tune or search. **D** appears at the rightmost position on the first line when delay is set.

To turn off or on the 2-second delay in a channel or frequency, press **FUNC** then press **2/DLY** while the scanner is monitoring that channel or frequency.

LOCKING OUT CHANNELS OR FREQUENCIES

You can lock out channels to force the scanner to skip and ignore any traffic while scanning. You can also lock out up to 50 frequencies while searching to skip undesired transmissions. ↙

Locking Out Car Number Frequencies

To lock out a car number frequency, press **FUNC** and then **3/L/OUT**. If the scanner is in the car number All Frequency mode, **L** appears on the top line. If the scanner has other frequencies in the same car number, the next frequency appears. If the scanner has not other frequencies in the same car number, **Locked out!** appears about two seconds.

NOTES

This scanner uses the same memory between conventional channel mode and car number operation. If you remove the conventional channel's lockout which also locks the channel of a programmed car number, the scanner removes the lockout from the car number operation.

You can still manually select and monitor a locked-out car number frequency.

To remove the lockout from a car number frequency:

1. Enter the car number All Frequency mode.
2. Repeatedly press **FUNC** then **SCAN** to select locked-out car number frequency.
3. Press **FUNC** then **3/L/OUT**.

Locking Out Channels

To lock out a channel while scanning, press **FUNC** and then **3/L/OUT** when the scanner stops on the channel.

To lock out a channel manually, select the channel and then press **FUNC**, **3/L/OUT** so **L** appears in the display.

You can still manually select and monitor locked-out channels.

To remove the lockout from a channel, manually select the channel and press **FUNC** and then **3/L/OUT** so **L** disappears.

Reviewing the Lock-Out Channels

To review all locked out channels, press and hold **FUNC** for about 2 seconds and then press **7** and **1**. Repeatedly press **^** or **v** to advance to the next locked out channel. 

NOTES

If you want to remove the lockout from a channel, simply press **3/L/OUT** to remove the lockout.

Clearing All Lockout Channels

1. Set the scanner to the conventional channel manual mode.
2. Press and hold **/CLEAR**, and then press **3/L/OUT**. **All Locked out Channels Clear? Press 1 key ->YES Other key ->NO** appears.
3. Press **1** to clear the all lockout channels, or press any key other than **1** to cancel clear.

Locking Out Search Frequencies

To lock out a frequency during a search, press **FUNC** and then press **3/L/OUT** when the scanner stops on that frequency. The scanner locks out the frequency and continues searching. ↙

Reviewing Locked-Out Search Frequencies

You can review the frequencies within a search bank that you locked out:

1. Press and hold **FUNC** for about 2 seconds.
2. Press **7** to select **Recall Lockout**.
3. Select the search bank and press the number key which you want to review all lockout frequencies. The search bank number, the search bank name, the first lockout frequency, and **L/Olist 01 of XX** or **L/O List ChXX** appear on the display.

NOTES

- You can lock out as many as 50 frequencies in each search bank. If you try to lock out more, **Memory full !** will appear in the display, and you will be unable to lock out any more frequencies until some have been cleared. See "Clearing a Locked-Out Search Frequency" on Page 54.
- If you lock out all frequencies in one search bank and only this search bank is activated, **All ranges Locked out!** appears in the display and the scanner will not search.

4. Press **^** or **v** to scroll through the list.

The locked-out number and the total locked-out number also appear as **L/Olist XX of YY**. (The tenth of twenty five locked out frequencies would appear as **L/Olist 10 of 25**). If the search bank has no locked-out frequencies, **L/O List Empty** appears in the scanner's display. Press **SRCH/PAUSE** to cancel reviewing locked-out frequencies.

Clearing a Locked-Out Search Frequency

To clear a locked-out frequency, select that frequency (see "Reviewing Locked-Out Search Frequencies" on Page 53), and then press **3/L/OUT**.

If all locked-out frequencies are cleared within a search bank, **L/O List Empty** appears in the scanner's display.

Clearing All Locked-Out Frequencies in a Search Bank

1. Press and hold **FUNC** for about 2 seconds.
2. Press **7** to select **Recall Lockout**.
3. Select the search bank and press the number key which you want to delete all lockout frequencies. The search bank number, the search bank name, the first lockout frequency, and **L/Olist 01 of XX**

or **L/O List ChXX** appear on the display.

4. Press and hold **/CLEAR** for about 2 seconds. The scanner will display **Confirm list clear? 1 -> YES.**
Other key -> NO.
5. Press **1** to clear all locked-out frequencies. **L/O List Empty** appears.

Press any key other than **1** to cancel clear.

USING BACKLIGHT

You can turn on the display's backlight for easy viewing in the dark. Press **☞/☀** to turn on the light for 5 seconds (default). If necessary, you can change the lighting time. See "Changing the Backlight Duration". To turn off the light sooner, press **☞/☀** again. 

Press and hold **☞/☀** for about 2 seconds to turn on the display's backlight for an extended period of time. To turn it off, press **☞/☀**.

Changing the Backlight Duration

1. Press and hold **FUNC** for about 2 seconds. The menu screen appears.
2. Press **8** and then **1** to select **1:Back Light**.
3. Press **^** or **v** to select the desired backlight duration. Selecting **3**, **5**, **10** or **20** sets the backlight duration.
4. Press **ENT**.

NOTES

The scanner automatically turns off the backlight when the scanner enters the power save mode.

KEY LOCK

Once you program your scanner, you can protect it from accidental program changes by turning on the key lock feature. When the keypad is locked, the only controls that operate are **FUNC**, **⏏/☀**, **SQ**, and **VOL**.

You cannot activate the key lock while you are entering a frequency into a channel.

1. To turn on the key lock, press **FUNC** and then **⏏/☀**.

Key locked. appears for about 1 second. **Key locked.** appears when you press any key after locking the keypad, and the scanner sounds the low pitched Invalid tone.

2. To turn off the key lock, press **FUNC** and then **⏏/☀**. The scanner beeps three times and **Key unlocked.** appears in the scanner's display.

TURNING THE KEY TONE ON AND OFF

The scanner is preset to sound a tone each time you press one of its keys (except **⏏/☀**). You can turn the key tone off or back on.

1. Press and hold **FUNC** for about 2 seconds. The menu screen appears.
2. Press **8** and then **2** to select **2:Key Tone**.
3. Press **1** to select **1:Key Tone On**, or press **2** to select **2:Key Tone Off**.

CHANGING THE DISPLAY CONTRAST

1. Press and hold **FUNC** for about 2 seconds. The menu screen appears.
2. Press **8** and then **3** to select **3:LCD Contrast**.
3. Press **<** or **>** to select **LCD contrast**. Then press **ENT** to set the display contrast.

USING CLONE MODE

You can transfer the contents of the scanner's memory to and from another PRO-99 scanner using an optional connecting cable with 1/8-inch (3.5 mm) phone plugs on both ends (use RadioShack part number 42-2420 available at your local RadioShack store).

Or, you can program your scanner using data you transfer from your personal computer to the scanner using an optional PC application software.

Cloning Data from Another PRO-99

1. Turn on both scanners.
2. Connect the connecting cable to each scanner's **PC/IF** jack.
**** CLONE MODE ****
Press UP to send
Remove cable to exit. appears in the scanner's display.
3. Press **^**. **Confirm send data?**
1 -> YES
Press other key for NO. appears in the scanner's display.

NOTES

Incorrect Model! appears if the scanner receives data from another scanner other than a PRO-99.

4. Press 1 to send the data to the other unit, or press any other key to cancel the operation.
5. The scanner sends the data. Do not disconnect the PC/IF cable or interrupt power to either scanner while the transfer is taking place.
6. To exit the clone mode, remove the cable.

ON-AIR PROGRAMMING

You can also program your scanner by receiving data transmitted on a frequency your scanner can receive (called on-air programming).

You can use on-air programming to store the following data into the scanner:

-  **NOTES** 
- The scanner receives only the data shown above during on-air programming.
 - On air programming data is normally transmitted at the race track during races.
 - **Invalid Freq.** or **Invalid Ch** appears if the scanner receives a channel number equal to 0 or frequency data which is out of the range of frequencies the scanner can receive.
 - **Checksum Error** appears if the scanner receives a checksum error.

- Channel number (from 000 to 949)
- Frequency (any frequency the scanner can receive)
- Car number (from 0 to 999, including 00, 000, 01, and 001)
- Channel text tag
- Channel lockout setting (ON or OFF)
- Channel delay setting (ON or OFF)
- CTCSS code (67 Hz – 250.3 Hz)
- CTCSS setting (ON or OFF)

USING ON-AIR PROGRAMMING

1. Press and hold **FUNC** for about 2 seconds. Then press **8** and **4**. **On Air Program** appears on the display.
2. Default receiving frequency is 154.6 MHz. If you want to change the receive frequency, press **2** and enter the frequency, then press **ENT**.
3. To start on air programming, press **1**. **Ready to Receive** appears on the display.
4. Send the data from the PC. **Start Program** and the data being received by the scanner appear in the order they are received.
5. When the scanner successfully receives all data, **All Data Correct XX finished** (XX: received correct channel number) appears. If the scanner received an error, the scanner displays **Success = XX Data Error = YY** (XX: received correct channel number, YY: received error channel number).

On-Air Programming Specifications

Interface — AFSK (Audio Frequency Shift Keying)

Modulation — MSK (Minimum Shift Keying)

Mark Frequency — 1200 Hz

Space Frequency — 1800 MHz

NOTES

- You cannot use an AM frequency during on-air programming. Do not enter a frequency between 108.000 and 136.9875 MHz in Step 2.
- If the scanner did not receive an end bit from the PC, received data status does not appear.

Data Format — Asynchronous

Data Length — 8-bit

Parity — None

Stop Bit — 2-bit

Baud Rate — 1200 bps

Data Transmission Direction —
One Way (Receive Only)

A GENERAL GUIDE TO SCANNING

GUIDE TO FREQUENCIES

National Weather Frequencies

162.400	162.425	162.450
162.475	162.500	162.525
162.550		

Birdie Frequencies

Every scanner has birdie frequencies. Birdies are signals created inside the scanner's receiver. These operating frequencies might interfere with transmission on the same frequencies. If you program one of these frequencies, you hear only noise on that frequency. If the interference is not severe, you might be able to turn **SQ** clockwise to cut out the birdie. This scanner's birdie frequencies (in MHz) are:

29.700	44.550	118.800
133.650	141.310	144.380
145.375	147.450	148.500

150.525	153.5975	163.350
408.56875	411.6375	414.7125
417.78125	420.85625	423.925
427.000	430.06875	431.550
433.14375	436.2125	439.2875
442.35625	445.43125	448.500
451.575	454.64375	460.7875
466.93125	473.075	479.21875
485.3625	491.50625	497.650
503.79375	806.250	807.91875
814.0625	862.000	907.000

To find the birdies in your individual scanner, begin by disconnecting the antenna and moving it away from the scanner. Make sure that no other nearby radio or TV sets are turned on near the scanner. Use the search function and search every frequency range from its lowest frequency to the highest. Occasionally, the searching will stop as if it had found a signal, often without any sound. That is a birdie. Make a list of all the birdies in your scanner for future reference.

GUIDE TO THE ACTION BANDS

TYPICAL BAND USAGE (IN MHz)

HF Band

10-Meter Amateur	28.000–29.700
------------------	---------------

VHF Band

Low Range	29.700–50.000
6-Meter Amateur	50.000–54.000

Aircraft	108.00–136.00
U.S. Government	137.00–144.00
2-Meter Amateur	144.000–148.000
High Range	148.000–174.000

UHF Band

U.S. Government	406.000–420.000
70-cm Amateur	420.000–450.000
UHF-Low Band	450.000–470.000
UHF-T Band	470.000–512.000

800MHz Band

System Inputs	806.000–824.000
System Outputs	851.000–869.000
Trunked Private / General	894.000–960.000

PRIMARY USAGE

As a general rule, most radio activity is concentrated on the following frequencies:

VHF Band

Activities	Frequencies (MHz)
2-Meter Amateur Band	144.000–148.000
Government, Police and Fire	153.785–155.980
Emergency Services	158.730–159.460
Railroad	160.000–161.900

UHF Band

Activities	Frequencies (MHz)
70-cm Amateur Band FM Repeaters	420.000–450.000
Land-Mobile "Paired" Frequencies	450.000–470.000
Base Stations	451.025–454.950
Mobile Units	456.025–459.950
Repeater Units	460.025–464.975
Control Stations	465.025–469.975

Remote control stations and mobile/portable units operate at 5 MHz higher than their associated base stations and relay repeater units in the UHF band.

BAND ALLOCATION

To help decide which frequency ranges to scan, use the following listing of the typical services that use the frequencies your scanner receives. These frequencies are subject to change, and might vary from area to area. For a more complete listing, refer to Police Call Radio Guide including Fire and Emergency Services, available at your local RadioShack store.

Abbreviation	Service
AIR	Aircraft
BIFC	Boise (ID) Interagency Fire Cache
BUS	Business
CAP	Civil Air Patrol
CCA	Common Carrier
CSB	Conventional Systems
CTSB	Conventional/ Trunked Systems
FIRE	Fire Department
HAM	Amateur (Ham) Radio
GOVT	Federal Government
GMR	General Mobile Radio
GTR	General Trunked
IND	Industrial Services (Manufacturing, Construction, Farming, Forest Products)
MAR	Military Amateur Radio
MARI	Maritime Limited Coast (Coast Guard, Marine Telephone, Shipboard Radio, Private Stations)
MARS	Military Affiliate Radio System

Abbreviation	Service
MED	Emergency/Medical Services
MIL	U.S. Military
MOV	Motion Picture/Video Industry
NEW	New Mobile Narrow
NEWS	Relay Press (Newspaper Reporters)
OIL	Oil/Petroleum Industry
POL	Police Department
PUB	Public Services (Public Safety, Local Government, Forestry Conservation)
PSB	Public Safety
PTR	Private Trunked
ROAD	Road & Highway Maintenance
RTV	Radio/TV Remote Broadcast Pickup
TAXI	Taxi Services
TELM	Telephone Maintenance
TOW	Tow Trucks
TRAN	Transportation Services (Trucks, Tow Trucks, Buses, Railroad, Other)
TSB	Trunked Systems
TVN	FM-TV Audio Broadcast
USXX	Government Classified
UTIL	Power & Water Utilities
WTHR	Weather

**HIGH FREQUENCY (HF) —
(3 MHz-30 MHz)**

10-Meter Amateur Band
(28.0-29.7 MHz)

28.000-29.700 HAM

**VERY HIGH FREQUENCY (VHF)
— (30 MHz-300 MHz)**

VHF Low Band
(29.7-50 MHz-in 5 kHz steps)

29.700-29.790.....IND

29.900-30.550..... GOVT, MIL
 30.580-31.980..... IND, PUB
 32.000-32.990..... GOVT, MIL
 33.020-33.980..... BUS, IND, PUB
 34.010-34.990..... GOVT, MIL
 35.020-35.980..... BUS, PUB, IND,
 TELM
 36.000-36.230..... GOVT, MIL
 36.230-36.990..... Oil Spill Cleanup,
 GOVT, MIL
 37.020-37.980..... PUB, IND
 38.000-39.000..... GOVT, MIL
 39.020-39.980..... PUB
 40.000-42.000..... GOVT, MIL, MARI
 42.020-42.940..... POL
 42.960-43.180..... IND
 43.220-43.680..... TELM, IND, PUB
 43.700-44.600..... TRAN
 44.620-46.580..... POL, PUB
 46.600-46.990..... GOVT
 47.020-47.400..... PUB
 47.420..... American Red Cross
 47.440-49.580..... IND, PUB
 49.610-49.990..... MIL

6-Meter Amateur Band (50-54 MHz)

50.00-54.00..... HAM

Aircraft Band (108-136 MHz)

108.000-121.490..... AIR
 121.500..... AIR Emergency
 121.510-136.975..... AIR

U.S. Government Band (137-144 MHz)

137.000-144.000..... GOVT, MIL

2-Meter Amateur Band (144-148 MHz)

144.000-148.000..... HAM

VHF High Band (148-174 MHz)

148.050-150.345..... CAP, MAR, MIL
 150.775-150.790..... MED

150.815-150.980..... TOW,
Oil Spill Cleanup
 150.995-151.475..... ROAD, POL
 151.490-151.955..... IND, BUS
 151.985..... TELM
 152.0075..... MED
 152.270-152.480.....IND, TAXI, BUS
 152.870-153.020.....IND, MOV
 153.035-153.725..... IND, OIL, UTIL
 153.740-154.445..... PUB, FIRE
 154.490-154.570..... IND, BUS
 154.585.....Oil Spill Cleanup
 154.600-154.625.....BUS
 154.655-156.240.....MED, ROAD,
 POL, PUB
 156.255-157.425..... OIL, MARI
 157.450..... MED
 157.470-157.515..... TOW
 157.530-157.725..... IND, TAXI
 157.740.....BUS
 158.130-158.460.....BUS, IND, OIL,
TELM, UTIL
 158.730-159.465.... POL, PUB, ROAD
 159.480..... OIL
 159.495-161.565..... TRAN
 161.580-162.000..... OIL, MARI, RTV
 162.0125-162.35.... GOVT, MIL, USXX
 162.400-162.550..... WTHR
 162.5625-162.6375..... GOVT, MIL,
 USXX
 162.6625..... MED
 162.6875-163.225..... GOVT, MIL,
 USXX
 163.250..... MED
 163.275-166.225..... GOVT, MIL,
 USXX
 166.250..... GOVT, RTV, FIRE
 166.275-169.400..... GOVT, BIFC
 169.445-169.505..... Wireless Mikes,
GOVT
 169.55-169.9875... GOVT, MIL, USXX
 170.000-170.150... BIFC, GOVT, RTV,
FIRE
 170.175-170.225..... GOVT
 170.245-170.305..... Wireless Mikes
 170.350-170.400..... GOVT, MIL
 170.425-170.450..... BIFC
 170.475..... PUB
 170.4875-173.175..... GOVT, PUB,
Wireless Mikes

173.225-173.5375..... MOV, NEWS,
 UTIL, MIL
 173.5625-173.5875..... MIL
 Medical/Crash Crews
 173.60-173.9875..... GOVT

**ULTRA HIGH FREQUENCY
 (UHF) — (300 MHz-3 GHz)**

U. S. Government Band (406-420
 MHz)

406.125-419.975..... GOVT, USXX
 70-Centimeter Amateur Band
 (420-450 MHz)

420.000-450.000..... HAM
 Low Band (450-470 MHz)

450.050-450.925..... RTV
 451.025-452.025..... IND, OIL, TELM,
 UTIL
 452.0375-453.00..... IND, TAXI,
 TRAN TOW, NEWS
 453.0125-454.000..... PUB, OIL
 455.050-455.925..... RTV
 457.525-457.600..... BUS
 458.025-458.175..... MED
 460.0125-460.6375.. FIRE, POL, PUB
 460.650-462.175..... BUS
 462.1875-462.450..... BUS, IND
 462.4625-462.525.... IND, OIL, TELM,
 UTIL
 462.550-462.925..... GMR, BUS
 462.9375-463.1875..... MED
 463.200-467.925..... BUS

FM-TV Audio Broadcast, UHF
 Wide Band (470-512 MHz)

(Channels 14 through 20 in 6 MHz
 steps) ↙

475.750 Channel 14
 481.750 Channel 15
 487.750 Channel 16
 493.750 Channel 17
 499.750 Channel 18
 505.750 Channel 19
 511.750 Channel 20

↙ **NOTES** ↘
 Some cities use the 470-
 512 MHz band for land/
 mobile service.

Conventional Systems Band —
Locally Assigned (in 6.25 kHz
steps)

Frequency Range	Service
851.0125–855.9875 MHz	CSB

Conventional/Trunked Systems
Band —
Locally Assigned
(in 6.25 kHz steps)

Frequency Range	Service
856.0125–860.9875 MHz	CTSB

Trunked Systems Band —
Locally Assigned
(in 6.25 kHz steps)

Frequency Range	Service
861.0125–865.9875 MHz	TSB

Public Safety Band —
Locally Assigned
(in 6.25 kHz steps)

Frequency Range	Service
866.0125–868.9875 MHz	PSB

33-Centimeter Amateur Band
(902-928 MHz in 6.25 kHz steps)

Frequency Range	Service
902.000–928.000 MHz	HAM

Private Trunked Band (in 6.25 kHz
steps)

Frequency Range	Service
935.0125–939.9875 MHz	PTR

General Trunked Band (in 6.25 kHz steps)

Frequency Range	Service
940.0125–940.9875 MHz	GTR

FREQUENCY CONVERSION

The tuning location of a station can be expressed in frequency (kHz or MHz) or in wavelength (meters). The following information can help you make the necessary conversions.

1 MHz (million) =
1,000 kHz (thousand)

To convert MHz to kHz, multiply the number of megahertz by 1,000:

$$30.62 \text{ (MHz)} \times 1,000 = 30,620 \text{ kHz}$$

To convert from kHz to MHz, divide the number of kilohertz by 1,000:

$$127.800 \text{ (kHz)} / 1,000 = 127.8 \text{ MHz}$$

To convert MHz to meters, divide 300 by the number of megahertz:

$$300/50 \text{ MHz} = 6 \text{ meters}$$

CARE

Keep the scanner dry; if it gets wet, wipe it dry immediately. Use and store the scanner only in room temperature environments.

Handle the scanner carefully; do not drop it. Keep the scanner away from dust and dirt, and wipe it with

a damp cloth occasionally to keep it looking new.

SERVICE AND REPAIR

If your scanner is not performing as it should, take it to your local RadioShack store for assistance. To locate your nearest RadioShack, use the store locator feature on RadioShack's website (www.radioshack.com), or call 1-800-The Shack (843-7422) and follow the menu options. Modifying or tampering with the scanner's internal components can cause a malfunction and might invalidate its warranty and void your FCC authorization to operate it.

TROUBLESHOOTING

If your scanner is not working as it should, these suggestions might help you eliminate the problem. If the scanner still does not operate properly, take it to your local RadioShack store for assistance.

Problem	Possible Cause	Remedy
The scanner is totally inoperative	The AC or DC adapter is not connected	Be sure the adapter's barrel plug is fully inserted into the jack.
	Dead Batteries	Replace or recharge the batteries.
Poor or no reception	An antenna is not connected or is connected incorrectly	Make sure an antenna is properly connected to the scanner.
	Programmed frequencies are the same as "birdie frequencies."	Avoid programming frequencies listed under "Birdie Frequencies" on Page 60, or listen to them manually
The keypad does not work	Key lock is activated.	Turn off the key lock.
	The scanner may be locked up.	Turn the scanner off and then on again.
The scanner is on but will not scan.	SQ is not correctly adjusted	Adjust SQ by turning it clockwise.
	Only one channel is (or no channels are) stored.	Store frequencies into more than one channel

SPECIFICATIONS

Frequency Coverage (MHz):

Frequency Range (MHz) Programming/Search Step Value

28-54 5 kHz

108-136.9875 12.5 kHz

137-174 5, 6.25 or 7.5 kHz

406-512 6.25 kHz

806-823.9875 6.25 kHz

849-868.9875 6.25 kHz

894-960 6.25 kHz

Channels of Operation 500 channels

Sensitivity (20 dB S/N):

28-54 MHz 0.3 μ V

108-136.9875 MHz 1.0 μ V

137-174 MHz 0.5 μ V

406-512 MHz 0.5 μ V

806-960 MHz 0.5 μ V

Spurious Rejection (FM @ 154.6 MHz) 40 dB

Selectivity:

-6 dB +/- 10 kHz

-50 dB +/- 18 kHz

Data Decode Sensitivity:

WX alert 1050 Hz tone 0.45 μ V

Search Speed Up to 62 Steps/Sec.

Scan Speed Up to 50 Channels/Sec.

Delay Time 2 Seconds

IF Frequencies:

1st IF 380.8 MHz (380.680 – 380.86875)

2nd IF 45 MHz

3rd IF 450 kHz

IF Rejection (380.75 MHz) 75 dB at 154.6 MHz

Priority Sampling 2 Seconds

Squelch Sensitivity:

Threshold 0.3 μ V

Tight (FM) (S+N)/N=30 dB

Tight (AM)	(S+N)/N=20 dB
Antenna Impedance.....	50 Ohms
Audio Output Power (10% THD).....	150 mW nominal (Using Batteries), BLT
Built-In Speaker	1 1/8 Inches (28 mm), 8 Ohms
Operating Temperature	14 to 140 °F
.....	(-10 to 60 °C)
Power Requirements	4.5 Volts DC, 3 AA Batteries
External Power	6 Volts, 300 mA/Size B Adaptaplug adapter
Current Drain (Squelched).....	75 mA
Battery Charge Current.....	150 mA
Dimensions (HWD)	4 13/16 x 2 5/8 x 1 1/4 inches
.....	(122 x 67 x 31 mm)
Weight (without antenna and batteries)	5.8 oz. (165 g)

Specifications are typical: individual units might vary.
Specifications are subject to change and improvement without notice.

NOTES

NOTES

Limited One-Year Warranty

This product is warranted by RadioShack against manufacturing defects in material and workmanship under normal use for one (1) year from the date of purchase from RadioShack company-owned stores and authorized RadioShack franchisees and dealers. EXCEPT AS PROVIDED HEREIN, RadioShack MAKES NO EXPRESS WARRANTIES AND ANY IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. EXCEPT AS PROVIDED HEREIN, RadioShack SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO CUSTOMER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS OR DAMAGE CAUSED DIRECTLY OR INDIRECTLY BY USE OR PERFORMANCE OF THE PRODUCT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY, INCLUDING, BUT NOT LIMITED TO, ANY DAMAGES RESULTING FROM INCONVENIENCE, LOSS OF TIME, DATA, PROPERTY, REVENUE, OR PROFIT OR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF RadioShack HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

In the event of a product defect during the warranty period, take the product and the RadioShack sales receipt as proof of purchase date to any RadioShack store. RadioShack will, at its option, unless otherwise provided by law: (a) correct the defect by product repair without charge for parts and labor; (b) replace the product with one of the same or similar design; or (c) refund the purchase price. All replaced parts and products, and products on which a refund is made, become the property of RadioShack. New or reconditioned parts and products may be used in the performance of warranty service. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period.

This warranty does not cover: (a) damage or failure caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, lightning or other incidence of excess voltage or current; (b) any repairs other than those provided by a RadioShack Authorized Service Facility; (c) consumables such as fuses or batteries; (d) cosmetic damage; (e) transportation, shipping or insurance costs; or (f) costs of product removal, installation, set-up service adjustment or reinstallation.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

RadioShack Customer Relations, 200 Taylor Street, 6th Floor, Fort Worth, TX 76102

12/99