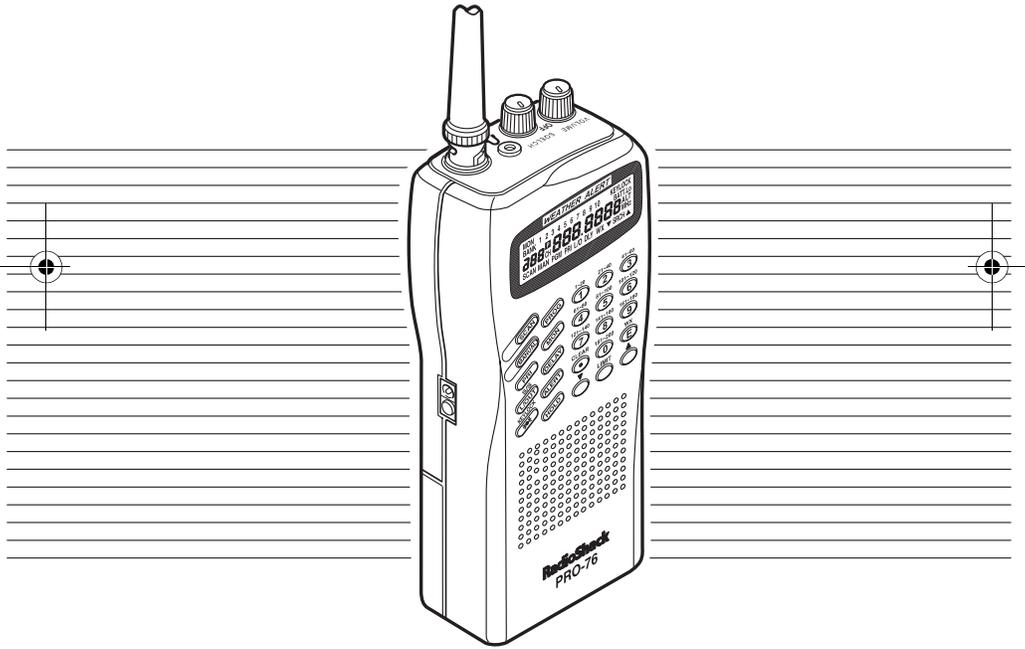


Owner's Manual

Cat. No. 20-313

PRO-76 200-Channel VHF/UHF/Air Handheld Scanner

Please read before using this equipment.



RadioShack®

FEATURES

Your new RadioShack VHF/UHF/Air Handheld Scanner lets you in on all the action! This scanner gives you direct access to over 23,000 exciting frequencies, including those used by police and fire departments, ambulance services, aircraft, transportation services, and amateur radio. You can select up to 200 channels for your scanner to scan and you can change your selection at any time.

Your scanner also has these special features:

Weather Alert — the scanner automatically sounds an alert when it receives a weather emergency signal.

Weather Band Key — scans seven preprogrammed weather frequencies to keep you informed about current weather conditions.

Wired Programming — you can connect your scanner to a personal computer and program frequencies into the

scanner from the computer using an optional cable and software.

Note: The necessary cable and software, and additional information about using your personal computer to program your scanner, are available at your local RadioShack store.

Liquid Crystal Display — makes it easy to view and change programming information.

Search Skip — lets you select up to 20 frequencies for the scanner to skip during a limit or direct search to avoid unwanted frequencies.

Direct Search — lets you search for a transmission starting from a specified frequency.

Ten Channel-Storage Banks — you can store 20 channels in each bank (200 total channels), letting you group channels so you can more easily identify calls.

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used by Tandy Corporation.

Ten Monitor Memories — let you temporarily save up to ten frequencies you locate during a search, so you can move selected frequencies to channel storage later.

Scan Delay — delays scanning for about 2 seconds before moving to another channel, so you can hear more replies that are transmitted on the same channel. You can also set the scanner to delay on all active frequencies during a search.

Memory Backup — keeps the channel frequencies stored in memory for an extended time even if the scanner loses power.

Three Power Options — you can power the scanner from internal (rechargeable or non-rechargeable) batteries or external AC or DC power (using an optional AC or DC adapter).

Low Battery Alert — warns you when the battery power gets low.

Key Lock — lets you lock the scanner's keys to help prevent accidentally chang-

ing the scanner's programming.

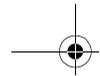
Key Confirmation Tones — the scanner sounds a confirmation tone when you perform an operation correctly and an error tone if you make an error.

Lockout Function — lets you set the scanner to ignore specified channels when scanning.

Ten Priority Channels — let you set the scanner to check up to ten channels every 2 seconds so you do not miss important calls.

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

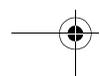
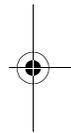
Supplied Flexible Antenna with BNC Connector — provides good reception of strong local signals. You can connect an external antenna with a BNC connector to the scanner for improved reception of distant/weaker signals.



Your scanner can receive these bands:

Frequency Range (MHz)	Types of Transmissions
29–54	10-Meter Ham Band, VHF Lo, 6-Meter Ham Band
108–136.975	Aircraft
137–174	Military Land Mobile, 2-Meter Ham Band, VHF Hi
406–512	Federal Government, 70-cm Ham Band, UHF Standard Band, UHF “T” Band

Note: See “Specifications” on Page 44 for more information about the scanner’s frequency steps.



FCC NOTICE

Your scanner might cause radio or TV 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 the following methods to eliminate the interference:

- Move your scanner away from the receiver.
- Connect your scanner to an outlet that is on a different electrical circuit from the receiver.
- Contact your local RadioShack store for help.

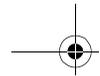
Note: Mobile use of this scanner is unlawful or requires a permit in some areas. Check the laws in your area.

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) service providers. 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:

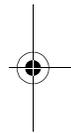
- telephone conversations (cellular, cordless, or other private means of telephone signal transmission)
- pager transmissions
- any scrambled or encrypted transmissions

According to the *Electronic Communications Privacy Act* (ECPA), you are subject to fines and possible imprisonment for intentionally listening to, using, or divulging the

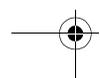


contents of such a transmission unless you have the consent of a party to the communication (unless such activity is otherwise illegal).

This scanner is designed to prevent reception of illegal transmissions, in compliance with the law which requires that scanners be manufactured in such a way 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.

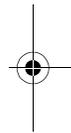


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PREPARATION

INSTALLING BATTERIES

You can power your scanner with four AA batteries (not supplied). For the best performance and longest life, we recommend RadioShack alkaline batteries. Or, you can use rechargeable nickel-cadmium or nickel-metal hydride batteries. Both types of batteries are available at your local RadioShack store.

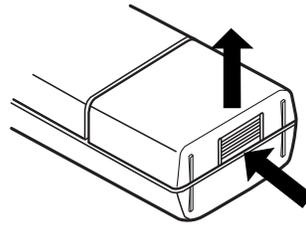
Cautions:

- The scanner has a built-in circuit that lets you recharge nickel-cadmium batteries inside the battery compartment. However, you must never use this circuit when you have installed non-rechargeable batteries in the scanner. Be sure to read "Important Information About the External Power Jacks" on Page 10 and "Charging Rechargeable Batteries" on Page 12.
- 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.

Follow these steps to install batteries.

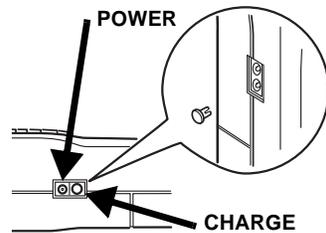
1. While pressing down on the tab on the bottom of the battery compartment cover, pull it away from the scanner to remove it.



2. Install two batteries in the battery compartment and two in the cover as indicated by the polarity symbols (+ and -) marked on the inside of the battery compartment and inside the cover.

Warning: Never use the **CHARGE** jack when you have installed non-rechargeable batteries. If you try to recharge non-rechargeable batteries, they become very hot and could explode.

Remove the plastic plug from the **CHARGE** jack before you use it, then replace the plug when you finish.



USING AC POWER

You can power the scanner using a 9V, 300-mA AC adapter and a size H Adaptaplug® adapter (neither supplied). Both are available at your local RadioShack store.

Cautions:



You must use a Class 2 power source that supplies 9V DC and delivers at least 300 mA. Its center tip must be set to positive and its plug must fit the scanner's **POWER** jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.

- Always connect the AC adapter to the scanner before you connect it to AC power. When you finish, disconnect the adapter from AC power before you disconnect it from the scanner.

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

USING VEHICLE BATTERY POWER

You can power the scanner from a vehicle's 12V power source (such as cigarette-lighter socket) using a 9V, 300-mA DC adapter and a size H Adaptaplug adapter (neither supplied). Both are available at your local RadioShack store.

Cautions:



You must use a power source that supplies regulated 9V DC and delivers at least 300 mA. Its center tip must be set to positive and its plug must fit the scanner's **POWER** jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.

- Always connect the DC adapter to the scanner before you connect it to the power source. When you finish, disconnect the adapter from the power source before you disconnect it from the scanner.

To power the scanner using a DC adapter, attach the Adaptaplug adapter to the DC adapter so the tip reads positive (+). Set the adapter's voltage switch to 9V and insert the Adaptaplug adapter into the scanner's **POWER** jack, then plug the DC adapter into your vehicle's cigarette lighter socket.

Note: 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.

CHARGING RECHARGEABLE BATTERIES

Your scanner has a built-in charging circuit that lets you charge Ni-Cd rechargeable batteries while they are in the scanner.

Important: The scanner's built-in charging circuit takes a long time to recharge nickel-metal hydride batteries while they are installed in the scanner. You must use an external battery charger to charge them.

To charge Ni-Cd batteries, remove the plug from the scanner's **CHARGE** jack and connect an AC adapter to the jack.

Warning: Do not connect an adapter to the scanner's **CHARGE** jack if you installed non-rechargeable batteries (standard, extra-life, or alkaline). Non-rechargeable batteries become hot and could explode if you try to recharge them.

It takes between 14 and 16 hours to recharge Ni-Cd rechargeable batteries that are fully discharged. You can operate the scanner while recharging the batteries, but charging takes longer.

Note: Ni-Cd batteries last longer and deliver more power if you occasionally let them fully discharge. To do this, simply use the scanner until **BATT. Lo** flashes and the scanner beeps every 15 seconds. Then fully charge the batteries.



Important:

This scanner can use Ni-Cd rechargeable batteries. At the

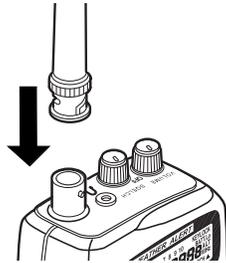
end of a Ni-Cd battery's useful life, it must be recycled or disposed of properly. Contact your local, county, or state hazardous waste management authorities for information on recycling or disposal programs in your area or call 1-800-843-7422. Some options that might be available are: municipal curbside collection, drop-off boxes at retailers such as your local RadioShack store, recycling collection centers, and mail-back programs.

CONNECTING AN ANTENNA

Connecting the Supplied Antenna

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

The supplied flexible antenna helps your scanner receive strong local signals. Follow these steps to install the antenna.



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.

The scanner's sensitivity depends on the antenna's length and various environmental conditions.

Connecting an Outdoor Antenna

Instead of the 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.
- 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 an 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 the

supplied antenna. Then route the antenna's cable to the scanner and connect the cable to the scanner's antenna jack.

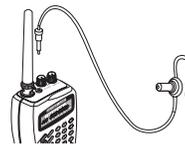
Cautions:

- 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.

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.

CONNECTING AN EARPONE/ HEADPHONES

For private listening, you can connect an earphone or headphones with a 1/8-inch (3.5-mm) plug to the  jack on 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/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/headphones with your scanner while riding a bicycle, be very careful. Do not listen to a continuous broadcast. Even though some earphones/headphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.

CONNECTING AN EXTENSION SPEAKER

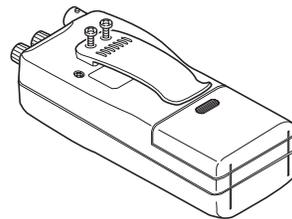
In a noisy area, an amplified extension speaker (available at your local RadioShack store) positioned in the right place might provide more comfortable listening.

Plug the speaker cable's $\frac{1}{8}$ -inch (3.5-mm) plug into your scanner's Δ jack.

Note: Connecting an external speaker disconnects the scanner's internal speaker.

USING THE BELT CLIP

You can attach the supplied belt clip to make the scanner easier to use when you are on the go. Use a Phillips screwdriver and the two supplied screws to attach the belt clip to the scanner.



UNDERSTANDING YOUR SCANNER

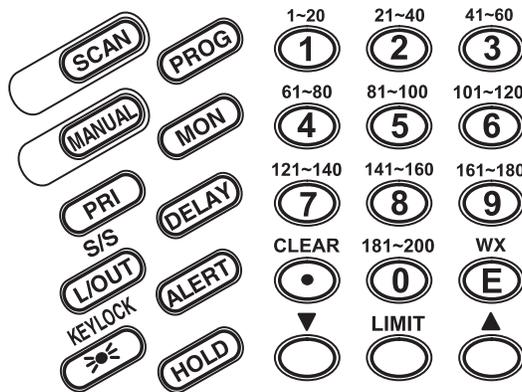
Once you understand a few simple terms we use in this manual and familiarize yourself with your scanner's features, you can put the scanner to work for you. You simply determine the type of communications you want to receive, then set the scanner to scan them.

A **frequency** is the tuning location of a station (expressed in kHz or MHz). To find active frequencies, you can use the **search** function.

When you find a frequency, you can store it into a programmable memory location called a **channel**, which is grouped with your other channels in a **channel-storage bank**. You can then **scan** the channel-storage banks to see if there is activity on the frequencies stored there. Each time the scanner finds an active frequency, it stays on that channel until the transmission ends.

A LOOK AT THE KEYPAD

Your scanner's keys might seem confusing at first, but this information should help you understand each key's function.



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 appropriate to the action being performed.

- SCAN** Scans programmed channels.
- MANUAL** Stops scanning and lets you directly enter a channel number.
- S/S-L/OUT** Skips a specified frequency during limit or direct search; lets you lock out selected channels.
- PRI** Turns the priority feature on and off.
- MON** Accesses one of the ten monitor memories.
- DELAY** Programs a 2-second delay for the selected channel; sets a delay for all active frequencies during a search.
- ALERT** Turns the weather alert feature on or off.
- HOLD** Holds the frequency search.
- CLEAR/.** Clears an incorrect entry; enters a decimal point.
- WX/E (Enter)** Scans the seven preprogrammed weather channels; enters frequencies into channels.
- KEYLOCK/☞☛** Locks/unlocks the keypad to prevent accidental entries; turns on the display light for about 15 seconds.
- PROG** Programs frequencies into channels.
- ▼/LIMIT/▲** Searches up or down for active frequencies; programs the limit search frequency range.

Number Keys Enters a single-digit (0 to 9) or a range of numbers. Use the range of numbers above the key (21–40 for example) when selecting the number for a desired channel-storage bank. See “Understanding Banks” on Page 21. Use the single digits to enter a channel or frequency.

A LOOK AT THE DISPLAY

The display has indicators that show the scanner’s current operating status. This quick look at the display will help you understand how your scanner operates.



- P** Appears when you listen to the priority channel.
- ▼/▲** Indicates the search direction.
- ALT** Appears when weather alert mode is active. **ALT** flashes when the scanner detects the weather alert signal.
- BANK** Shows which banks are turned on for scanning (see “Understanding Banks” on Page 21).
- BATT.Lo** Appears when the batteries are low.
- CH** Appears with digits (1–200) to show which channel the scanner is tuned to.

-
- d** Appears instead of the channel number during a direct search.

 - DLY** Appears when you program a delay.

 - Error** Appears when you make an entry error.

 - H** Appears during a limit search hold.

 - h** Appears during a direct search hold.

 - Hi** Appears with a selected frequency to show the search range's upper limit.

 - KEYLOCK** Appears when you lock the keypad.

 - L** Appears instead of the channel number during a limit search.

 - Lo** Appears with a selected frequency to show the search range's lower limit.

 - L/O (lockout)** Appears when you manually select a channel that was previously locked out or when you manually select a frequency that was previously stored in search skip memory.

 - MON** Appears when you listen to a monitor memory. A number (1–10) appears to the right of **MON** indicating which monitor memory you are listening to.

 - MHz** Digits that precede this indicator show which frequency the scanner is tuned to.

 - MAN** Appears when you manually select a channel.

 - PGM** Appears when you program frequencies into the scanner's channels.



PRI	Appears when the priority feature is turned on.
SCAN	Appears when the scanner scans channels.
SRCH	Appears during limit, direct, and weather band searches.
WX	Indicates that the scanner is searching the weather channels.

UNDERSTANDING BANKS

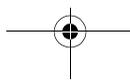
Channel Storage Banks

To make it easier to identify and select the channels you want to listen to, channels are divided into 10 banks of 20 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 35).

For example, the police department might use four frequencies, one for each side of town. You could program the police frequencies starting with Channel 1 (the first channel in bank 1) and program the fire department frequencies starting with Channel 21 (the first channel in bank 2).

MONITOR MEMORIES

The scanner has 10 monitor memories that you can use to temporarily store frequencies while you decide whether to save them into channels. This is handy for quickly storing an active frequency when you are searching through an entire band. You can store a frequency into a monitor memory during a limit or direct search. See "Finding and Storing Active Frequencies" on Page 23.



OPERATION

TURNING ON THE SCANNER/ SETTING VOLUME AND SQUELCH

1. Turn **SQUELCH** fully counterclockwise.
2. To turn on the scanner, turn **VOLUME** clockwise until you hear a hissing sound.
3. Turn **SQUELCH** clockwise, just until the hissing sound stops.

Notes:

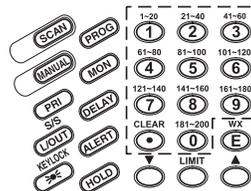
- To listen to a weak or distant station, turn **SQUELCH** counterclockwise. If reception is poor, turn **SQUELCH** clockwise to cut out weak transmissions.
 - If **SQUELCH** is adjusted so you always hear a hissing sound, the scanner will not scan or search properly.
4. To turn off the scanner when you finish, turn **VOLUME** counterclockwise to **OFF**.

STORING KNOWN FREQUENCIES INTO CHANNELS

Good references for active frequencies are the RadioShack *Police Call Guide including Fire and Emergency Services*, *Official Aeronautical Frequency Directory*, and *Maritime Frequency Directory*. We update these directories every year, so be sure to get a current copy.

Follow these steps to store frequencies into channels.

1. Press **MANUAL** then enter the channel number (1–200) where you want to store a frequency.
2. Press **PROG.** **PGM** appears.
3. Use the number keys and **.** to enter the frequency (including the decimal point) you want to store.



4. Press **E** to store the frequency into the channel.

Notes:

- If you made a mistake in Step 3, **Error** appears and the scanner beeps three times when you press **E**. Simply start again from Step 3.
 - Your scanner automatically rounds the entered frequency down to the closest valid frequency. For example, if you enter a frequency of 151.473, your scanner accepts it as 151.475.
5. Repeat Steps 1–4 to program more channels. Or to program the next channel in sequence, repeat Steps 2–4.

To listen to a stored frequency, press **MANUAL**, enter the channel number, then press **MANUAL** again.

FINDING AND STORING ACTIVE FREQUENCIES

Using Limit Search

A limit search lets you search for active frequencies between upper and lower limits that you set. **L** appears during a limit search.

Follow these steps to enter the search frequency range.

1. Press **PROG** then **LIMIT**. **Lo** appears.
2. Use the number keys and **•** to enter the lower limit frequency of the range you want to search.
3. Press **E** then **LIMIT**. **Hi** appears.
Note: If the frequency you entered is not valid, **Error** appears. Enter a different frequency then repeat Step 3.
4. Use the number keys and **•** to enter the upper limit frequency of the range you want to search.
5. Press **E**.

6. Press ▼ to search from the upper to the lower limit or ▲ to search from the lower to the upper limit. The current monitor memory number flashes.
7. When the scanner stops on a transmission you want to save, press **MON** to store the frequency in the current monitor memory. The monitor memory number stops flashing.
8. Press either ▼ or ▲ to continue the search. If you saved a frequency in a monitor memory, the monitor memory number advances by one and starts flashing again. (If the last monitor memory was 10, the scanner returns to monitor memory 1.)

Note: To replace a frequency in a monitor memory, store a new frequency in that monitor memory.

9. To hold the frequency, press **HOLD**. **H** appears.

To resume the limit search, press **HOLD** again.

Notes:

- You can press ▼ or ▲ while **H** appears to step through the frequencies toward the upper or lower limit.
- If you tune to a search skip frequency, **L/O** appears (see “Using Search Skip Memory” on Page 30).

Using Direct Search

During a direct search, the scanner searches up or down starting from the displayed frequency. **d** appears during a direct search.

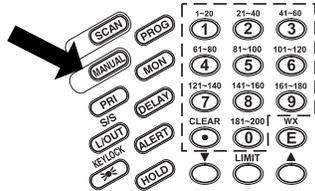
Follow these steps to use direct search.

Note: You can use the scanner’s delay feature while using direct search.

1. Press **MANUAL** then use the number keys and • to enter the starting frequency of the range you want to search.

Or, to select a frequency stored in a channel, press **MANUAL**, use the number keys to enter the channel number,

then press **MANUAL** again.



2. Press ▼ or ▲ to search up or down from the selected frequency.
3. When the scanner stops on a transmission you want to save, press **MON** to store the frequency in the current monitor memory. The monitor memory number stops flashing.
4. Press either ▼ or ▲ to continue the search. If you saved a frequency in a monitor memory, the monitor memory number advances by one and starts flashing again. (If the last monitor memory was 10, the scanner returns to monitor memory 1.)

Notes:

- You can press ▼ or ▲ while **h** appears to step through the frequencies upward or downward.
- If you tune to a search skip frequency, **L/O** appears (see “Using Search Skip Memory” on Page 30).

USING MONITOR MEMORY

Listening to a Monitor Memory

To listen to the monitor memories you stored during a search, press **MANUAL**, **MON**, then the number of the memory you want to listen to. Use the **1–9** number keys for memories 1–9, and **0** for memory 10. Or repeatedly press **MON** to cycle through the stored monitor memories.



Moving a Frequency from a Monitor Memory to a Channel

Follow these steps to move a frequency stored in a monitor memory to a permanent channel.

1. Press **MANUAL**. **MAN** appears.
2. Enter the number (1–200) for the channel where you want to store the monitor frequency. The channel number appears.
3. Press **PROG**. The currently stored frequency appears.
4. Press **MON** then the number of the monitor memory number that has the frequency you want to store. The channel number flashes.
5. Press **E**. The scanner stores the frequency in the selected channel, and the channel number stops flashing.

SCANNING CHANNELS

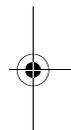
Note: You cannot scan channels until you have stored frequencies in them.

To scan channels stored in the channel-storage banks, press **SCAN**. The scanner scans through all channels in the active banks.

To select one or more channel-storage banks while scanning, select each bank you want to scan by pressing its number key so the bank's number appears on the display.

To turn off channel-storage banks, press the number key for each of the bank(s) so the bank's number disappears. The scanner does not scan any of the stored channels within banks you have turned off.

To set the scanner to remain on the current channel even after the transmission stops, press **MANUAL** at any time during the transmission.





To lock out channels so the scanner does not stop for a transmission on those channels, see “Locking Out Channels” on Page 28.

Notes:

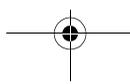
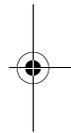
- You can manually select any channel in a bank, even if the bank is turned off.
- You cannot turn off all ten banks.

MANUALLY SELECTING A CHANNEL

You can continuously monitor a specific channel without scanning. This is useful if you hear an emergency broadcast on a channel and do not want to miss any details (even though there might be periods of silence) or if you simply want to monitor that channel.

Follow these steps to manually select a channel.

1. Press **MANUAL**.
2. Enter the channel number (1–200).
3. Press **MANUAL** again.



SPECIAL FEATURES

USING THE KEYLOCK

Once you program your scanner, you can protect it from accidental program changes by turning on the keylock feature. When the keypad is locked, the only controls that operate are **SCAN**, **MANUAL**, **KEYLOCK**, **VOLUME**, and **SQUELCH**.

Note: The keylock does not prevent the scanner from scanning channels.

To turn the keylock on or off, turn on the scanner then hold down **KEYLOCK** for about 3 seconds. The scanner beeps and **KEYLOCK** appears or disappears.

LOCKING OUT CHANNELS

You can increase the effective scanning speed by locking out individual channels that have a continuous transmission, such as a weather channel (see “National Weather Frequencies” on Page 34) or a birdie

frequency (see “Birdie Frequencies” on Page 34).

To lock out a channel, manually select the channel then press **L/OUT**. **L/O** appears.

To remove the lockout from a channel, manually select the channel then press **L/OUT**. **L/O** disappears.

To unlock all memory channels, follow these steps.

1. While scanning, turn on the memory banks you want to unlock.
2. Press **MANUAL**.
3. Hold down **L/OUT** for at least 3 seconds. The scanner beeps twice and unlocks all memory channels you previously locked out (in the selected banks).

Notes:

- Your scanner automatically locks out empty channels.
- You can still manually select locked-out channels.

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 program a 2-second delay into any channel or frequency. When your scanner stops on a channel or frequency with a programmed delay, **DLY** appears. The scanner continues to monitor that frequency for 2 seconds after the transmission stops. Then the scanner resumes scanning or searching.

You can program a 2-second delay in any of these ways:

- If the scanner is scanning and stops on an active channel, quickly press **DELAY** before it resumes scanning.
- If the desired channel is not selected, manually select the channel, then press **DELAY**.
- If the scanner is searching, press **DELAY**. **DLY** appears and the scanner automatically adds a 2-second delay to every transmission it stops on

during a limit or direct search.

To turn off the 2-second delay on a channel or frequency, press **DELAY** while the scanner is monitoring that channel or frequency. **DLY** disappears.

TURNING CHANNEL-STORAGE BANKS ON AND OFF

You can turn each channel-storage bank on and off. When you turn off a bank, the scanner does not scan any of the 20 channels in that bank.

While scanning, press the number key corresponding to the bank you want to turn on or off. (Press **0** to select bank 10). If the memory bank indicator is on, the bank is turned on and the scanner scans all channels within that bank that are not locked out. If the indicator is off, the scanner does not scan any of the channels within that bank.

Notes:

- You can manually select any channel in a bank, even if the bank is turned off.
- You cannot turn off all banks. One bank is always active.

(where **L/O** appears). Then hold down **S/S** until **L/O** disappears.

To clear all the skip frequencies from search skip memory at once, during a search, hold down **S/S** until the scanner beeps twice.

USING SEARCH SKIP MEMORY

You can skip specified frequencies during a limit or direct search. This lets you avoid unwanted frequencies or ones you have already stored in a channel. You can program up to 20 frequencies to be skipped into the scanner's memory.

To skip a frequency, press **S/S** when the scanner stops on the frequency during a limit or direct search. **L/O** (lockout) appears the next time you display that frequency.

To clear a single frequency from search skip memory so the scanner can stop on it during a limit or direct search, press **HOLD** to hold the search. Then press **▼** or **▲** to select the frequency

Notes:

- If you program more than 20 skip frequencies, each new frequency replaces one you stored earlier, starting from the first stored frequency.
- You can select a skipped frequency by using **▼** or **▲** when the scanner is holding. **L/O** appears when you select a skipped frequency.

USING PRIORITY

You can scan through channels and still not miss important calls on specific channels. You can program one stored channel in each bank as a priority channel (for up to a total of 10 stored channels). As the scanner scans the bank, if the priority feature is turned on, the scanner checks the priority

channel for activity every 2 seconds. **PRI** appears whenever the scanner is set to use priority.

The scanner automatically designates each bank's first channel as its priority channel. Follow these steps to select a different channel as the priority channel for a bank.

1. Press **PROG**.
2. Enter the channel number you want to select as the priority channel, then press **PRI**. **P** appears to the right of the channel number.
3. Repeat Step 2 for the channel in each bank you want to program as a priority channel.

To turn on the priority feature, press **PRI** while **MAN** or **SCAN** appear. **PRI** appears. As you scan the bank, the scanner checks the bank's priority channel every 2 seconds in each bank that is turned on, starting from the lowest to the highest-numbered priority channel.

To turn off the priority feature, press **PRI**. **PRI** disappears.

Notes:

- You cannot select a monitor memory when priority is turned on.
- You can lock out priority channels. If you lock out all priority channels, **PCH LOC Out** appears when you turn on the priority feature.

USING THE DISPLAY BACKLIGHT

You can turn on the display's backlight for easy viewing in the dark. Press $\Rightarrow \Leftarrow$ to turn on the display light for 15 seconds. To turn off the light sooner, press $\Rightarrow \Leftarrow$ again.

Note: The scanner locks the keypad (see "Using the Key-Lock" on Page 28) if you hold down $\Rightarrow \Leftarrow$. If this happens, hold down $\Rightarrow \Leftarrow$ until the scanner beeps (if the key tone is turned on) and **KEY-LOCK** disappears.

TURNING THE KEY TONE ON OR OFF

The scanner is preset to sound a tone each time you press any of its keys. Follow these steps to turn the scanner's key tone on or off.

1. If the scanner is turned on, turn **VOLUME** counterclockwise until it clicks to turn it off.
2. Hold down **S/S** while you turn on the scanner. **no bEEP** (if the key tone is off) or **On bEEP** (if the key tone is on) appears for about 3 seconds.

LISTENING TO THE WEATHER BAND

To hear your local forecast and regional weather information, press **WX**. Your scanner begins to scan through the weather band.

Your scanner should stop within a few seconds on your local weather broadcast. If the broadcast is weak, you can press **WX** again or **▼** or **▲** to resume scanning.

WX Alert

Your scanner warns you of serious weather conditions by sounding an alarm if a National Weather Service broadcaster in your area broadcasts an alert tone. Follow these steps to set the scanner so it sounds an alarm when a weather alert tone is broadcast.

1. Press **WX** to scan the weather channels.
2. Press **ALERT**. **ALT** appears.

If the scanner detects the weather alert, it sounds an alarm and **ALT** flashes. Press any key to turn off the alarm. To cancel all weather alert checking, press **ALERT**.

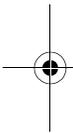


AVOIDING IMAGE FREQUENCIES

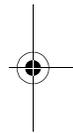
You might discover one of your regular stations on another frequency that is not listed. It might be what is known as an image frequency. For example, you might find a service that regularly uses a frequency of 431.875 also on 474.675.

To see if it is an image, do a little math.

Note the new frequency	474.675
Double the intermediate frequency of 21.4 MHz	(42.800)
and subtract it from the new frequency	-42.800
If the answer is the regular frequency	431.875
then you have tuned to an image.	



Occasionally, you might get interference on a weak or distant channel from a strong broadcast 42.8 MHz above or below the tuned frequency. This is rare, and the image signal is usually cleared whenever there is a broadcast on the actual frequency.



RESETTING THE SCANNER

If the scanner's display locks up or does not work properly after you connect a power source, you might need to reset the scanner.

Caution: This procedure clears all the information you have stored into the scanner. Before you reset the scanner, try turning it off and on to see if it begins working properly. Reset the scanner only when you are sure it is not working properly.

To reset the scanner, turn it off then turn it back on while holding the **2** and **9** keys. **CLear** appears.





A GENERAL GUIDE TO SCANNING

Reception of the frequencies covered by your scanner is mainly "line-of-sight." That means you usually cannot hear stations that are beyond the horizon.

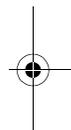
GUIDE TO FREQUENCIES

Ham Radio Frequencies

Ham radio operators often broadcast emergency information when other means of communication break down.

The following chart shows the voice frequencies that you can monitor:

Wavelength (Meters)	Voice (MHz)
10-Meter	29.000–29.700 MHz
6-Meter	50.100–54.000 MHz
2-Meter	144.100–148.000 MHz
70-Centimeter	420.000–450.000 MHz



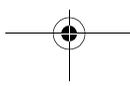
National Weather Frequencies

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 broadcasts 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 **SQUELCH** clockwise to cut out the birdie. This scanner's birdie frequency (in MHz) is 146.65 MHz.

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
34





the scanner. Use the search function and search every frequency range from its lowest frequency to the highest. Occasionally, the scanner will stop searching as if it had found a signal. However, the signal often is silent. 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 (MHz)

VHF Band

Low Range	29.00–50.00
6-Meter Amateur	50.00–54.00
U.S. Government	137.00–144.00
2-Meter Amateur	144.00–148.00
High Range	148.00–174.00

UHF Band

U.S. Government	406.00–420.00
70-Centimeter Amateur	420.00–450.00
Low Range	450.00–470.00
FM-TV Audio Broadcast, Wide Band	470.00–512.00

Primary Usage

As a general rule, most of the 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-Centimeter Amateur Band	440.000–450.000
FM Repeaters	
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

Note: Remote control stations and mobile units operate at 5 MHz higher than their associated base stations and relay repeater units.

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 the *Police Call Radio Guide including Fire and Emergency Services*, available at your local RadioShack store.

Abbreviations	Services
AIR	Aircraft
BIFC	Boise (ID) Interagency Fire Cache
BUS	Business
CAP	Civil Air Patrol
CB	Citizens Band
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)

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, TELC
47.020–47.400	PUB
47.420	American Red Cross
47.440–49.580	IND, PUB
49.610–49.990	MIL, TELC

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
121.510–136.000	AIR

U.S. Government Band (137–144 MHz)

137.000–144.000	GOVT, MIL
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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
152.030–152.240	TELB
152.270–152.480	IND, TAXI, BUS
152.510–152.840	TELB
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
157.770–158.100	TELB
158.130–158.460	BUS, IND, OIL, TELM, UTIL
158.490–158.700	TELB
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
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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
454.025–454.975	TELB
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

Note: Some cities use the 470–512 MHz band for land/mobile service.

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:

$$9.62 \text{ (MHz)} \times 1000 = 9620 \text{ kHz}$$

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

$$2780 \text{ (kHz)} \div 1000 = 2.780 \text{ MHz}$$

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

$$300 \div 7.1 \text{ MHz} = 42.25 \text{ meters}$$



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	SOLUTION
Scanner is totally inoperative.	The AC or DC adapter is not connected.	Be sure the adapter's barrel plug is fully inserted into the POWER jack.
	The batteries are dead.	Replace the batteries with fresh ones, or recharge the rechargeable batteries.
	The scanner might be locked.	Reset the scanner. See "Resetting the Scanner" on Page 33.
Poor or no reception	An antenna is not connected or is connected incorrectly.	Make sure an antenna is properly connected to the scanner.
	SQUELCH might not be set properly.	Be sure SQUELCH is adjusted properly. See "Turning On the Scanner/Setting Volume and Squelch" on Page 22.
	Programmed frequencies are the same as "birdie" frequencies.	Avoid programming frequencies listed under "Birdie Frequencies" on Page 34 or only listen to them manually.
Keypad does not work.	Keylock is turned on.	Turn off the keylock.
	The scanner might need to be reset.	Reset the scanner (see "Resetting the Scanner" on Page 33)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Scanner is on but will not scan <i>(continued)</i>	Only one channel is (or no channels are) stored.	Store frequencies into more than one channel.
	The scanner is not set to scan.	Press SCAN .
	All channels are locked out.	Make sure at least two channels are not locked out.
During scanning, the scanner locks on frequencies that have an unclear transmission.	Programmed frequencies are the same as "birdie" frequencies.	Avoid programming frequencies listed under "Birdie Frequencies" on Page 34, or only listen to them manually.
	SQUELCH might not be set properly.	Be sure SQUELCH is adjusted properly. See "Turning On the Scanner/Setting Volume and Squelch" on Page 22.

CARE AND MAINTENANCE

Your RadioShack 200-Channel VHF/UHF/Air Handheld Scanner is an example of superior design and craftsmanship. The following suggestions will help you care for your scanner so you can enjoy it for years.



Keep the scanner dry. If it gets wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.



Use and store the scanner only in normal temperature environments. Temperature extremes can shorten the life of electronic devices and distort or melt plastic parts.



Keep the scanner away from dust and dirt, which can cause premature wear of parts.



Handle the scanner gently and carefully. Dropping it can damage circuit boards and cases and can cause the scanner to work improperly.



Wipe the scanner with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the scanner.

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. If your scanner is not performing as it should, take it to your local RadioShack store for assistance.

SPECIFICATIONS

Frequency Coverage (MHz):

10 Meter Amateur Radio	29–29.7 (in 5 kHz steps)
VHF Lo	29.7–50 (in 5 kHz steps)
6 Meter Amateur Radio	50–54 (in 5 kHz steps)
Aircraft	108–136.975 (in 12.5 kHz steps)
Government	137–144 (in 5 kHz steps)
2 Meter Amateur Radio	144–148 (in 5 kHz steps)
VHF Hi	148–174 (in 5 kHz steps)
UHF/70-cm Amateur Radio	406–512 (in 12.5 kHz steps)

Channels of Operation 200 channels/10 monitor memories

Sensitivity (20 dB S/N with 60% modulation for AM; 3 kHz deviation for FM):

29–54 MHz	0.4 μ V
108–136.975 MHz	2.0 μ V
137–174 MHz	0.6 μ V
406–512 MHz	0.5 μ V

Spurious Rejection:

40.84 MHz	37 dB
162.4 MHz	20 dB

Selectivity:

–6 dB	\pm 10 kHz
–50 dB	\pm 17 kHz

Search Speed 20 Steps/Sec

Scan Speed 17 Channels/Sec

Delay Time 2 Seconds

IF Frequencies:

1st IF	21.4 MHz
2nd IF	450 kHz

Squelch Sensitivity:

Threshold 0.3 μ V for VHF Lo, 0.4 μ V for all others
Tight (FM) (S + N)/N 25 dB
Tight (AM) (S + N)/N 17 dB

IF Rejection (at 162.4 MHz) 75 dB

Priority Sampling 2 Seconds

Antenna Impedance 50 Ohms

Audio Power (Maximum):

FM 230 mW
AM 250 mW

Built-In Speaker 1³/₈ Inches (36 mm), 8 Ohms

Operating Temperature -4° to 140° F
(-20° to 60° C)

Power Requirements +6 Volts DC, 4 AA Batteries

Optional AC and DC Adapter 9 Volts DC, 300 mA

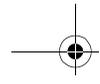
Current Drain 300 mA

Dimensions (HWD) (without antenna) 5³/₄ × 2⁹/₁₆ × 1¹¹/₁₆ Inches
(147 × 64.5 × 42.5 mm)

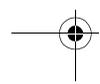
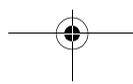
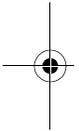
Weight (without antenna) 7.76 oz
(220 g)

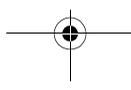
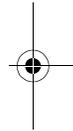
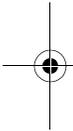
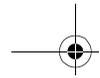
Supplied Accessories Antenna
Belt Clip

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



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.

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