

## Intertek Testing Services

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Radio Shack, A Division of Tandy Corporation, Scanning Receiver  
FCC ID: AAO2000421

Date of Test: August 7, 1998

### 9.0 **Instruction Manual**

Attached is a preliminary copy of the Instruction Manual.

This manual will be provided to the end-user with each unit sold/leased in the United States.

**Cat. No. 20-421**  
**OWNER'S MANUAL**

## **PRO-2015**

**200-Channel Home Scanner**

**Please read before using this equipment.**

Illustration will add

RadioShack LOGO

## FEATURES

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Your RadioShack PRO-2015 200-Channel Home Scanner gives you direct access to over 25,000 exciting frequencies, including police and fire departments, ambulance service, and amateur radio services. You can select up to 200 channels to scan, and you can change your selection at any time.

The secret to your scanner's ability to scan so many frequencies is its custom-designed microprocessor – a tiny, built-in computer.

Your scanner has these special features:

**Hyperscan™** – lets you scan up to 25 channels per second and search up to 50 steps per second.

**Band Search** – let you search for transmissions within preset frequency ranges, so you can find interesting frequencies more quickly.

**20 Monitor Memories** – let you temporarily save up to 20 frequencies located during a frequency search, so you can move selected frequencies to channel storage later.

**Direct Search** – lets you search for new and unlisted frequencies starting from a specified frequency.

**Ten Channel-Storage Banks** – let you store 20 channels in each bank to group channels so calls are easier to identify.

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

**Two-Second Scan Delay** – delays scanning for about 2 seconds before moving to another channel or frequency, so you can hear more replies.

**Lock-Out Function** – lets you set your scanner to skip over specified channels or frequencies when scanning or searching.

**Display Backlight** – makes the scanner easy to read in low light conditions.

**External Antenna Terminal** – lets you connect an external antenna (not supplied) to the scanner.

**Memory Backup** – keeps the frequencies stored in memory for about 1 hour during a power loss.

We recommend you record your scanner's serial number here. This number is on the scanner's back panel.

Serial Number: \_\_\_\_\_

Your PRO-2015 scanner can receive all of these frequencies:

- 29-54 MHz
- 108-136.9875 MHz
- 137-174 MHz
- 380-512 MHz

## **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 TV or radio.
- Connecting your scanner to an outlet that is on a different electrical circuit from the TV or radio.
- Contacting your local RadioShack store for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) This device may 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) 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 (either 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). RadioShack encourages responsible, legal scanner use.

## CONTENTS

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## PREPARATION

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This scanner is primarily designed for use in the home as a base station. You can place it on a desk.

### CONNECTING THE SUPPLIED ANTENNA

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

The supplied telescoping antenna helps your scanner receive strong local signals. To install the antenna, screw it clockwise into the hole on the scanner's top.

add illustration

The scanner's sensitivity depends on the antenna's length and various environmental conditions. For the best reception of the transmissions you want to hear, adjust the antenna's length.

Frequency	Antenna Length
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29-174 MHz	Extend fully
380-512 MHz	Extend 2 segments

### Connecting an Outdoor Antenna

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

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

- The location of the antenna should be as high as possible.
- The antenna and antenna cable should be as far as possible from sources of electrical noise (appliances, other radios, and so on).
- The antenna should be vertical for the best performance.

To connect an optional base-station or mobile antenna, first remove the supplied antenna from the scanner. 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 ANT jack on the back of the scanner, you might also need a PL-259-to-Motorola antenna plug adapter, such as RadioShack Cat. No. 278-208. 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. Then route the antenna's cable to the scanner and connect the cable to the ANT jack.

**Caution:** Do not run the cable over sharp edges or moving parts that might damage it.

add illustration

**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 POWER

### Using AC Power

The scanner's supplied AC adapter lets you power the scanner from a standard AC outlet. To connect power to the scanner, insert the AC adapter's barrel plug into the DC12V jack on the back of the scanner, then plug the AC adapter into a standard AC outlet.

add illustration

**Warning:** Do not use the AC adapter's polarized plug with an extension cord receptacle unless the blades can be fully inserted to prevent blade exposure.

#### **Cautions:**

- Be sure to connect the AC adapter to the scanner before you connect it to an AC outlet, and disconnect the AC adapter from the AC outlet before you disconnect it from the scanner.
- The supplied AC adapter supplies 12 volts DC power and delivers 300 milliamps. Its center tip is set to positive, and its plug properly fits the scanner's DC12V jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.

## Using Your Vehicle's battery

If your AC power does not work in an emergency, you can power your scanner from your vehicle's cigarette lighter socket with an optional DC cigarette lighter power cable, such as Cat. No. 270-1533 (not supplied).

To connect an optional DC cigarette lighter power cable, insert its barrel plug into the DC12V jack on the back of the scanner, then plug the power cable into your vehicle's cigarette lighter socket.

add illustration

**Caution:** If you use a DC cigarette lighter power cable with the scanner, it must supply 12 volts and deliver at least 300 milliamps. Its center tip must be set to positive, and its plug must properly fit the DC12V jack on the back of the scanner. The recommended power cable meets these specifications. Using a power cable that does not meet these specifications could seriously damage the scanner or the power cable.

### Notes:

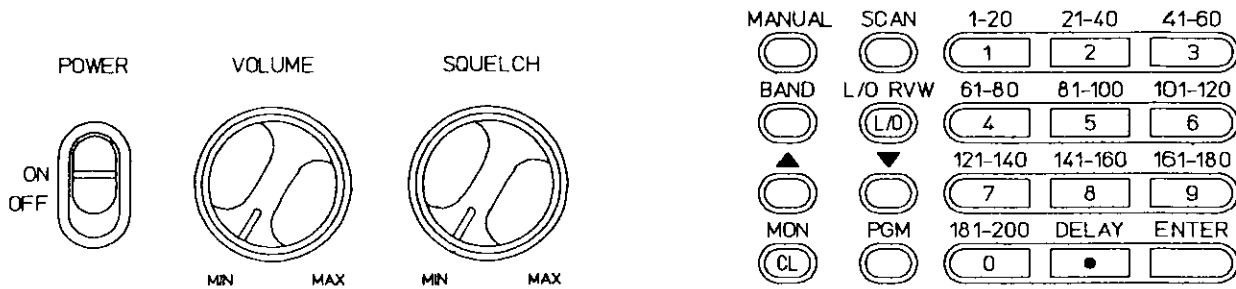
- If you use a DC cigarette lighter power cable and your vehicle's engine is running, you might hear electrical noise from the engine. This is normal.
- Mobile use of this scanner is unlawful or requires a permit in some areas. Check the laws in your area.

## YOUR SCANNER

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### A LOOK AT THE FRONT PANEL CONTROLS

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



**POWER**—Turns the scanner on and off.

**VOLUME**—Adjusts the volume.

**SQUELCH**—Adjusts the scanner's squelch.

**MANUAL**—stops scanning to let you directly enter a channel number.

**BAND**—selects a preprogrammed search band.

**▲ and ▼**—searches up or down from the currently displayed frequency, or changes scanning direction.

**MON/CL**—accesses the 20 monitor memories or clears an incorrect entry.

**SCAN**—scans through the programmed channels.

**L/O RVW/L/O**—lets you review locked-out frequencies, or lets you lock out selected channels/frequencies so they will not be scanned or searched.

**PGM**—lets you program frequencies into channels.

**Number Keys**—each key has a single-digit label and a range of numbers. Use the digits on the keys to enter the numbers for a channel or a frequency. Use the range of numbers above the key (21-40, for example) to select the channel in a channel-storage bank. See "Understanding Bands/Banks/Memories."

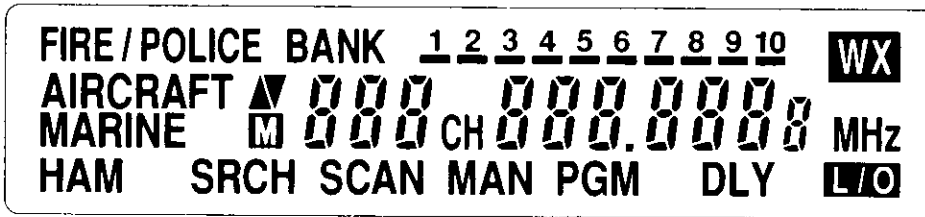
**DELAY/●**—programs a 2-second delay for the selected channel, or enters a decimal point (necessary when programming frequencies).

**ENTER**—enters frequencies into channels.



## A LOOK AT THE DISPLAY

The display has indications that show the scanner's current operation. A quick look at the display will help you understand how to operate your scanner.



**FIRE/POLICE** – appears when you searches for fire/police band.

**AIRCRAFT** – appears when you searches for air band.

**MARINE** – appears when you searches for marine band.

**HAM** – appears when you searches for amateur radio band.

**BANK** – appears with numbers (1—10). Bank numbers with a bar under them show which ones are turned on for scanning. See “Understanding Bands/Banks/Memories.”

**WX** – appears when you scan weather channels.

**▲ or ▼** -- indicates the search or scan direction.

**M** – flashes with a number (1-20) to show which monitor memory you are listening to.

**CH** – appears with digits (1-200) to show which channel the scanner is turned to.

**MHz** – appears with digits to show which of the 25,000 possible frequencies the scanner is tuned to.

**SRCH** – appears during a band, or direct frequency search.

**SCAN** – appears when you scan channels.

**MAN** – appears when you manually select a channel.

**PGM** – appears while you program frequencies into the scanner's channels.

**DLY** – appears when you program a 2-second delay.

**L/O** – appears when you manually select a channel you locked out while scanning or you review the locked out frequency.

**Error** – appears when you make an entry error.

**-dUPL-** – appears when you try to store a frequency that is already stored in another channel.

**-d-** -- appears during a direct search.

**-b-** -- appears during a band search.

**CH-FULL** – appear when you try to enter a frequency during a search when all channels are full.

**F L-out** – appears when you start direct search for the locked out frequency.

**FLo -FULL** – appears when you try to lockout a frequency during a search when 50 frequencies are already locked out.

**L-r** – appears when you review the lockout frequencies.

**dFAULT** – appears when you remove the locked out frequencies through the band search frequencies.

**FLo ALL-CL** – appears when you remove all the locked out frequencies during a band/direct search.

**UNDERSTANDING BANDS/BANKS/MEMORIES****Search bands**

Many of these frequencies are grouped within permanent memory locations called search bands.

**Fire/Police**

Group	Frequency range (MHz)	Step (kHz)
1	33.420-33.980	20
	37.020-37.420	20
	39.020-39.980	20
	42.020-42.940	20
	44.620-45.860	40
	45.880	
	45.900	
	45.940-46.060	40
	46.080-46.500	20
	2	153.770-154.130
154.145-154.445		15
154.650-154.950		15
155.010-155.370		60
155.415-155.700		15
155.730-156.210		60
158.730-159.210		60
166.250		
170.150		
3	453.0375-453.9625	12.5
	458.0375-458.9625	12.5
	460.0125-460.6375	12.5
	465.0125-465.6375	12.5

**Aircraft**

Frequency range (MHz)	Step (kHz)
108.000-136.9875	12.5

**HAM (Amateur Radio)**

Group	Frequency range (MHz)	Step (kHz)
1	29.000-29.700	5
2	50.000-54.000	5
3	144.000-148.000	5
4	420.000-450.000	12.5

**Marine**

Frequency range (MHz)	Step (kHz)
156.025-156.750	25
156.800	
156.850	
156.875-156.975	25
157.025	
157.050	
157.100	
157.150	
157.175	
157.425	
160.625	
160.650-160.875	25
161.600	
161.800	
161.825-162.000	25

You can search these bands to quickly find active frequencies.

**Note:** The frequencies in the scanner's search bands are preset. You cannot change them.

**Channel-Storage Banks**

To make it easier to identify and select the channels you want to listen to, channels are divided into 10 channel-storage banks (1-10) of 20 channels each. You can use each channel-storage bank to group frequencies, such as those used by the police department, fire department, ambulance services, and aircraft.

For example, there might be three or four police departments in your area, each using several different frequencies. Additionally, there might be other law enforcement agencies such as state police, county sheriffs, or SWAT teams that use their own frequencies. You could program all law enforcement frequencies starting with Channel 1 (the first channel in Bank 1), then program the fire department, paramedic, and other public safety frequencies starting with Channel 21 (the first channel in Bank 2).

## **Monitor Memories**

The scanner also has 20 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 band, or direct search. See "Storing Active Frequencies."

You can select monitor memories manually, but you cannot scan them. See "Listening to Monitor Memories."

## OPERATION

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### TURNING ON THE SCANNER/SETTING VOLUME AND SQUELCH

**Note:** Make sure the scanner's antenna is connected before you turn it on.

1. Turn VOLUME MIN/MAX and SQUELCH MIN/MAX fully counterclockwise.

add illustration

2. Slide POWER to ON to turn on the scanner.

add illustration

3. Turn VOLUME MIN/MAX clockwise until you hear a hissing sound.
4. Turn SQUELCH MIN/MAX clockwise, then leave it set to a point just after the hissing sound stops.

#### Notes:

- If the scanner picks up unwanted, partial, or very weak transmissions, turn SQUELCH MIN/MAX clockwise to decrease the scanner's sensitivity to these signals.
- If you want to listen to a weak or distant station, turn SQUELCH MIN/MAX counterclockwise.
- If the scanner will not scan, turn SQUELCH MIN/MAX further clockwise.

### STORING ACTIVE FREQUENCIES

You can store frequencies into channels using any of these methods:

- Manual storage
- Band, or direct search

Good references for active frequencies are RadioShack's "Police Call Radio Guide Including Fire and Emergency Services," "Aeronautical Frequency Directory," and "Maritime Frequency Directory." We update these directories every year, so be sure to get a current copy. See also "Guide to the Action Bands."

#### Manually Storing Frequencies

If you know a frequency you want to store, you can store it manually

1. Press PGM. PGM appears.

(Add illustration/PGM key)

2. Use the number keys to enter the channel number where you want to store the frequency, then press PGM again.
3. Use the number keys to enter the frequency you want to store into that channel (including the decimal point).
4. Press ENTER to store the frequency.

(Add illustration/ENTER key)

**Notes:**

- If you entered an invalid frequency in Step 3, the scanner beeps and displays the channel number and Error. Simply repeat Steps 3 and 4.
- Your scanner automatically rounds the entered frequency down to the closest valid frequency. For example, if you try to enter a frequency of 151.4730, your scanner accepts it as 151.470.
- If you entered a frequency that is already stored in another channel, the scanner beeps three times and flushes the lowest channel number where the frequency is already stored and -dUPL- about 5 seconds, then the frequency flashes in place of -dUPL-. If you want to store the frequency anyway, press ENTER again. If you press MON/CL key, the scanner clears frequency (000.0000 appear).

5. Repeat Steps 2—4 to store more frequencies into channels.

**BAND SEARCH**

If you do not know of a frequency to store, you can search your scanner's preprogrammed band search for active frequencies, then store any that you find into your channels or monitor memories.

**Note:** You can use the scanner's delay feature while using band search.

Follow these steps to search for and store active frequencies using band search.

1. Press BAND. The last selected band name (such as HAM), SRCH, -b-, ▲, frequency and the frequency search group number (if search band have group) appear on the display.

(Add illustration/BAND key)

2. To select a different band within 2 seconds, repeatedly press BAND until the desired band name appears on the display (see "Search Bands"). After about 2 seconds, the scanner begins searching rapidly upward in that band for an active frequency.

**Notes:**

- To reverse the search direction at any time, hold down ▲ or ▼ for about 1 second.
- To search the band upward or downward in small increments, repeatedly press and release ▲ or ▼.
- To press and release ▲ and ▼ while receiving signal, the scanner pauses the search. To start search, hold down ▲ or ▼.

- To quickly move upward or downward through the frequencies, press and hold down ▲ or ▼. The scanner tunes through the frequencies until you release ▲ or ▼.
3. If needed, select search group with numeral key (see "Search Bands").
  4. When the scanner finds an active frequency, it stops searching and displays the frequency's number. To store the displayed frequency in the lowest available channel, press ENTER. The channel and frequency flash twice, and the scanner stores the displayed frequency. The scanner continues to search for frequencies.

**Notes:**

- If there is no empty channel, CH-FULL appears. To store more frequencies, you must clear some channels. See "Deleting Frequency from a Channel." To continue searching after CH-FULL appears, press MON/CL.
  - If you entered a frequency that is already stored in another channel, the scanner beeps three times and flushes the lowest channel number where the frequency is already stored and -dUPL- about 5 seconds then the frequency flashes in place of -dUPL-. If you want to store the frequency anyway, press ENTER again.
  - To store the displayed frequency in the monitor memory, press MON/CL. The frequency flashes twice, and M and the monitor memory number flash. To search for another active frequency in the selected band, press and hold ▲ or ▼ for about 1 second. If you try to store a frequency in a monitor memory that is already stored in a channel, -dUPL- flashes then M, the channel number, CH, and the frequency flash. If you press MON/CL key while -dUPL- flashing, the scanner do not store the frequency in the monitor memory. If you press MON/CL while frequency appears on the display in place or -dUPL-, to store monitor memory.
5. To select a different band and search for another active frequency, repeat Steps 2-3.

**DIRECT SEARCH**

You can search up or down from the currently displayed frequency.

**Note:** You can use the scanner's delay feature while using band search.

1. Press MANUAL or PGM, then enter the frequency you want to use as a starting point for the search.

**Note:** To start from a frequency already stored in one of your scanner's channels, press MANUAL or PGM, enter the desired channel number, then press MANUAL or PGM again.

2. Hold down ▲ or ▼ for about 1 second to search up or down from the selected frequency.

**Notes:**

- To reverse the rapid search direction at any time, hold down ▲ or ▼ for about 1 second.
- To search the selected band upward or downward in small increments (in steps 5, 12.5, or 25 kHz), press and release ▲ or ▼.

- To press and release ▲ and ▼ while receiving signal, the scanner pauses the search. To start search, hold down ▲ or ▼.
  - To quickly move upward or downward through the frequencies, press and hold down ▲ or ▼. The scanner tunes through the frequencies until you release ▲ or ▼.
- When the scanner finds an active frequency, it stops searching and displays the frequency's number.

To store the displayed frequency in the lowest available channel, press ENTER. ▲ or ▼ and the channel and frequency flash twice, and the scanner stores the displayed frequency. The scanner continues to search for frequencies.

**Notes:**

- If there is no empty channel, CH-FULL appears. To store more frequencies, you must clear some channels. See "Deleting Frequency from a Channel." To continue searching after CH-FULL appears, press MON/CL.
- If you entered a frequency that is already stored in another channel, the scanner beeps three times and displays the lowest channel number where the frequency is already stored, and -dUPL- then the frequency flashes. If you want to store the frequency anyway, press ENTER again.
- To store the displayed frequency in the monitor memory, press MON/CL. The frequency flashes twice, and M and the monitor memory number flash. To search for another active frequency, press and hold ▲ or ▼ for about 1 second. If you try to store a frequency in a monitor memory that is already stored in a channel, -dUPL- flashes then M, the channel number, CH about 5 seconds, then the frequency flash. If you press MON/CL key while -dUPL- flashing, the scanner do not store the frequency in the monitor memory and return to the search. If you press MON/CL while frequency appears on the display, to store monitor memory.

## SCANNING THE CHANNELS

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

The scanner scans through all channels (except those you have locked out) in the active banks.

**Notes:**

- You must store frequencies into channels before the scanner can scan them.
- The scanner does not scan empty channels.
- To change the scanning direction, press ▲ or ▼.

## TURNING CHANNEL-STORAGE BANKS OFF AND ON

To turn off banks while scanning, press the bank's number key until the bar under the bank's number disappears. The scanner does not scan any of the channels within the banks you have turned off.



**Notes:**

- You cannot turn off all banks. There must be at least one active bank.
- You can manually select any channel in a bank, even if the bank is turned off.
- When you turn on the bank while scanning, the scanner moves to the selected bank's channel and continues scanning.

To turn on banks while scanning, press the bank's number key until a bar appears under the bank's number.

**MOVING A FREQUENCY FROM A MONITOR MEMORY TO A CHANNEL**

1. Press PGM.
2. Use the number keys to enter the channel number where you want to store the monitor frequency, then press PGM again.
3. Press MON/CL. M, the channel number, and CH flash.
4. Enter the desired monitor memory's number (1-20), then press MON/CL again. The selected monitor memory's frequency appears.
5. Press ENTER. The scanner stores the frequency in the selected channel.
6. To move another monitor memory frequency to the next channel, press PGM and repeat Steps 3-5.

**DELETING FREQUENCY FROM A CHANNEL**

1. Press PGM.
2. Use the number keys to enter the channel number containing the frequency you want to delete.
3. Press PGM again.
4. Press 0, then press ENTER. The frequency is deleted.
5. To delete more frequencies, repeat Steps 2-4.

**LISTENING TO MONITOR MEMORIES**

To listen to a monitor memory, press MAN, then press MON/CL. M, the monitor memory number, and CH flash, and the current monitor memory frequency appears. To select other monitor memories, use the number keys to enter the monitor memory's number (1-20), then press MON/CL. M and the monitor memory number where the frequency is stored and CH flash.

## MONITORING A STORED 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.

(Add illustration/MANUAL key)

2. Enter the channel number.
3. Press MANUAL again.

## LISTENING TO A WEATHER BAND

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.

Weather Channel	Frequency range (MHz)
1	162.400
2	162.425
3	162.450
4	162.475
5	162.500
6	162.525
7	162.550

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

To hear your local forecast and regional weather information, pressing BAND until WX appears. Your scanner scans through the weather band. Your scanner should stop within a few seconds on your local weather broadcast.

To reverse the scanning direction, press and release ▲ or ▼ key.

To manually select a preprogrammed weather channel, hold down ▲ or ▼ key for about 1 second. MAN appears on the display. In this mode, you can select weather channel directly by pressing channel number (1-7). To move upward (or downward) to the next channel, press and release ▲ or ▼ key.

**Note:** To scan the weather channel again, hold down ▲ or ▼ key for about 1 second.

## SPECIAL FEATURES

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### DELAY

Many agencies use a two-way radio system that might have a pause of several seconds between a query and a reply. To avoid missing a reply, you can program a 2-second delay into any of your scanner's channels or frequencies. Then, when the scanner stops on the channel or frequency, DLY appears on the display and the scanner continues to monitor the channel/frequency for 2 seconds after the transmission stops before it 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 starts to scan again.
- If the desired channel is not selected, manually select the channel then press DELAY/●.
- If the scanner is searching, press DELAY/● during the search. DLY appears on the display and the scanner automatically adds a 2-second delay to every transmission it stops on.

To turn off delay, press DELAY/● when DLY is displayed.

### LOCKING OUT CHANNELS AND FREQUENCIES

You can scan existing channels or search frequencies faster by locking out channels or frequencies that have a continuous transmission, such as a weather channel.

#### Locking Out Channels

To lock out a channel while scanning, press and release L/O/L/O RVW when the scanner stops on the channel.

To lock out a channel manually, select the channel then press and release L/O/L/O RVW until L/O appears on the display.

**Note:** You can still manually select locked-out channels.

To remove the lockout from a channel, manually select the channel and press L/O/L/O RVW then L/O disappears from the display.

#### Locking Out Frequencies

To lock out a frequency during a band, or direct search, press L/O/L/O RVW when the scanner stops on the frequency. The scanner locks out the frequency, then continues searching. This frequency lockout functions in both search modes (direct and band search).

**Notes:**

- The scanner does not store locked-out frequencies during a search.
- You can lock out as many as 50 frequencies during a search. If you try to lock out more, FLo FULL appears on the display (see "Reviewing Locked-Out Frequencies" and "Remove All Locked Out Frequencies" below).

**Reviewing Locked-Out Frequencies**

To review the frequencies you locked out, hold down L/O/L/O RVW more than 2 seconds during a search. L-r appears on the display and calls the lowest locked-out frequency. As you press ▲ or ▼, the scanner displays all locked out frequencies. The scanner beeps two times, scanner displays all locked-out frequencies and return the lowest locked-out frequency.

**Remove All Lockout From Frequencies**

To remove all lockout from frequencies as follows:

1. To start band or direct search.
2. To review the frequencies you locked out, hold down L/O/L/O RVW for about 2 seconds, while search. L-r appears on the display.
3. Hold down MON/CL then L/O/L/O RVW. FLo ALL-CL appears on the display.
4. Press ENTER to clear all lockout. If you do not wish to clear lockout, press MON/CL.

**Remove Lockout From Frequencies Through The Band Search Frequencies**

To remove lockout from frequencies through the band search range as follows:

1. To start band or direct search.
2. To review the frequencies you locked out, hold down L/O/L/O RVW for about 2 seconds, while search. L-r appears on the display.
3. Hold down MON/CL then press BAND. dFAULT appears on the display.
4. Press ENTER to clear all lockout that the scanner is able to access frequencies during band search. If you do not wish to clear lockout, press MON/CL.

## **TURNING THE KEY TONE ON AND OFF**

Each time you press any of the scanner's keys, the scanner sounds a tone.

Follow these steps to turn the scanner's key tone off or back on.

1. If the scanner is on, slide POWER switch to OFF to turn it off.
2. While you hold down the 2 and ENTER keys, turn on the scanner.
3. After 1 second, release 2 and ENTER.

**A GENERAL GUIDE TO SCANNING**

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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**

**US Weather Frequencies**

162.400	162.425	162.450	162.475
162.500	162.525	162.550	

**Ham Radio Frequencies**

Ham radio operators often transmit emergency information when other means of communication break down. The following chart shows the frequencies the scanner receives that Ham radio operators normally use:

Wavelength (meters)	Frequencies (MHz)
10-Meter	29.000-29.700
6-Meter	50.000-54.000
2-Meter	144.000-148.000
70-cm	420.000-450.000

**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.

The birdie frequencies on this unit to watch for are:

Birdie Frequencies will add

To find the birdies in your 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 scan 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

### United State Broadcast Bands

In the United State, there are several broadcast bands. The standard AM and FM bands are probably the most well known. There are also four television audio broadcast bands – the lower three transmit on the VHF band and the fourth transmits on the UHF band.

#### Typical Band Usage

##### VHF Band

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

##### UHF Band

Military Aircraft	380.00-384.00 MHz
U.S. Government	406.00-420.00 MHz
70-cm Amateur	420.00-450.00 MHz
Low Range	450.00-470.00 MHz
FM-TV Audio Broadcast, Wide Band	470.00-512.00 MHz

#### Primary Usage

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

##### VHF Band

Activities	Frequencies
Government, Police, and Fire	153.785-155.980 MHz
Emergency Services	158.730-159.460 MHz
Railroad	160.000-161.900 MHz

##### UHF Band

Activities	Frequencies
Land-Mobile "Paired" Frequencies	450.000-470.000 MHz
Base stations	451.025-454.950 MHz
Mobile units	456.025-459.950 MHz
Repeater Units	460.025-464.975 MHz
Control Stations	465.025-469.975 MHz

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

## SPECIFIED INTERVALS

Frequencies in different bands are accessible only at specific intervals. For example:

Frequency Range(s)	Specified Interval
29-54 and 137-174 MHz	5.0 kHz steps
108-136.9875, 380-512 MHz	12.5 kHz steps

**Note:** In band search, frequency interval is not same as above. See "Search bands."

## 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.

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)
MAR	Military Amateur Radio
MARI	Maritime Limited Coast (Coast Guard, Marine Telephone, Shipboard Radio, Private Stations)
MARS	Military Affiliate Radio System
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
TELB	Mobile Telephone (Aircraft, Radio Common Carrier, Landline Companies)
TELC	Cordless Phones
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

**VERY HIGH FREQUENCY (VHF)**

## VHF Low Band

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
36.250	Oil Spill Cleanup
36.270-36.990	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,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	
50.00-54.00	HAM
U.S. Government Band	
137.000-144.000	GOVT,MIL
2-Meter Amateur Band	
144.000-148.000	HAM
VHF High Band	
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
162.0125-162.350	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
169.550-169.9875	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
173.600-173.9875	GOVT

### ULTRA HIGH FREQUENCY (UHF)

#### U.S. Government Band

406.125-419.975	GOVT,USXX
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#### 70-cm Amateur Band

420.000-450.000	HAM
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#### Low Band

450.050-450.925	RTV
451.025-452.025	IND,OIL,TELM,UTIL
452.0375-453.000	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  
(Channels 14 through 69 in 6 MHz steps)

475.750	Channel 14
481.750	Channel 15
487.750	Channel 16
:	:
511.750	Channel 20

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

## FREQUENCY COVERSION

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:

$32.62 \text{ (MHz)} \times 1000 = 32,620 \text{ kHz}$

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

$127,800 \text{ (kHz)} / 1000 = 127.8 \text{ MHz}$

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

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

## 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 453.275 also on 474.675.

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

Note the new frequency.	44.675
Double the intermediate frequency of 10.7 MHz (21.400) and subtract it from the new frequency.	-21.400
	-----
If the answer is the regular frequency, then you have tuned to an image.	453.275

Occasionally, you might get interference on a weak or distant channel from a strong broadcast 21.4 MHz below the tuned frequency. This is rare, and the image signal is usually cleared whenever there is a broadcast on the actual frequency.

## TROUBLESHOOTING

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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.

<b>Problem</b>	<b>Possible Causes</b>	<b>Remedies</b>
The scanner does not work at all.	The AC adapter and/or optional DC adapter is not connected.	Be sure the adapter is fully inserted into the DC12V jack.
Poor or no reception.	<ul style="list-style-type: none"> <li>. Improperly connected antenna.</li> <li>. Programmed frequencies are the same as birdie frequencies.</li> </ul>	<ul style="list-style-type: none"> <li>. Be sure the antenna is properly connected.</li> <li>. Avoid programming frequencies listed under "Birdie Frequencies" or only select them manually.</li> </ul>
Error appears on the display.	Programming error.	Enter the frequency correctly, including the decimal point.
Keys do not work or display changes.	Undetermined error.	Turn the scanner off then on again, or reset the scanner (see "Resetting/Initializing the Scanner").
Scanner is on but will not scan.	SQUELCH is not correctly adjusted.	Adjust SQUELCH clockwise (see "Turning On the Scanner/Setting Volume and SQUELCH").
In the scan mode, the scanner locks on frequencies that have an unclear transmission.	Birdies.	Avoid programming frequencies listed under "Birdie Frequencies" or only listen to them manually.

**CARE AND MAINTENANCE**

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Your RadioShack PRO-2015 200-Channel Portable 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.

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

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

(add illustration) Use and store the scanner only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts.

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

(add illustration) 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 operating as it should, take it to your local RadioShack store for assistance.

**SPECIFICATIONS**

## Frequency Coverage

- 29-54 MHz (in 5 kHz steps) (FM)
- 108-136.9875 MHz (in 12.5 kHz steps) (AM)
- 137-174 MHz (in 5 kHz steps) (FM)
- 380-512 MHz (in 12,5 kHz steps) (FM)

Operational Channels 200 channels plus 20 monitor memories

Sensitivity FM: (S+N)/N 20 dB, Dev.: 3kHz at 1kHz  
AM: (S+N)/N 20 dB, Mod.: 60% at 1 kHz29-54 MHz 0.5  $\mu$ V108-136.9875 MHz 1  $\mu$ V137-174 MHz 0.5  $\mu$ V380-512 MHz 0.7  $\mu$ V

## Spurious Rejection

(FM at 154 MHz) 50 dB

## Selectivity

+/-10 kHz -6 dB

+/-18 kHz -50 dB

## IF Interference Ration

10.7 MHz at 154 MHz 70 dB

Scanning Rate 25 channels/sec

Search Rate 50 steps/sec

Delay Time 2 sec

IF Frequencies 10.7 MHz, and 455 kHz

## Squelch Sensitivity

Threshold less than 1.0  $\mu$ V

Tight (FM) (S+N)/N 25 dB

Tight (AM) (S+N)/N 20 dB

Antenna Impedance 50 ohms

Audio Power 800 mWatts nominal (10%THD)

Built-in Speaker 3" (77 mm), 8-ohm, dynamic type

Power Req. 120 VAC, 60 Hz, 8 W

OP Temp. +14° F to +140° F (-10° C to +60° C)

Dimensions 2 1/16 x 8 1/4 x 6 7/8 inches (HWD) (52 x 210 x 175 mm)

Weight approx. 24 oz (680 g) without antenna

Supplied Accessories Telescoping Antenna, AC Adapter

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



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Address & Warranty