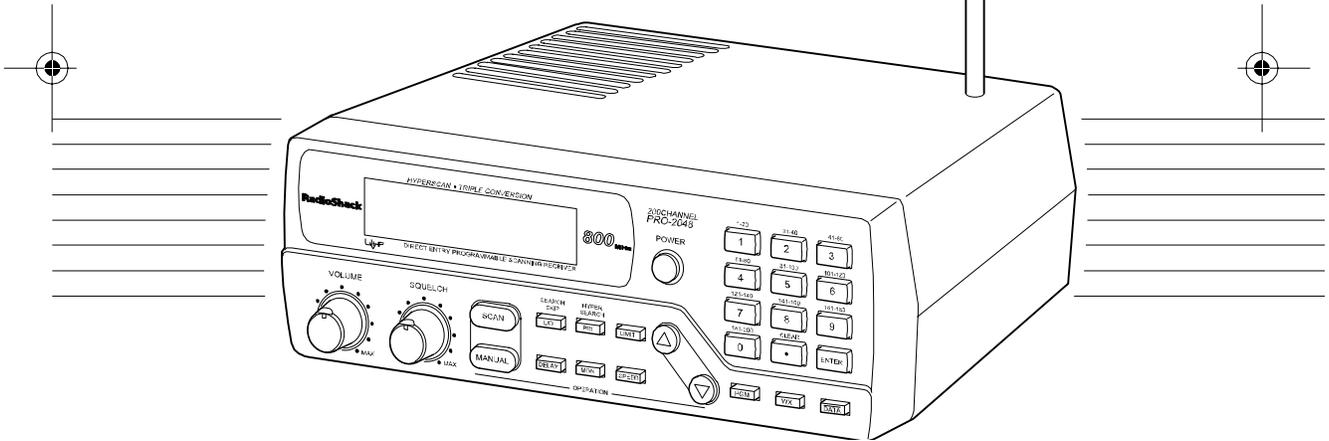# Owner's Manual

Cat. No. 20-417
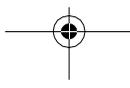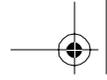
PRO-2048 200-Channel
Programmable Home Scanner

Please read before using this equipment.

RadioShack®

FEATURES

Your RadioShack PRO-2048 200-Channel Programmable Home Scanner lets you in on all the action! This scanner gives you direct access to over 30,000 exciting frequencies that include police and fire departments, ambulance and transportation services, and amateur radio. You can select up to 200 channels to scan, and you can change your selections 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 also has these features:

Manual or Scan Channel Select — lets you manually specify a single channel or set the scanner to automatically scan all the stored channels.

Triple Conversion Superheterodyne Receiver — virtually eliminates any interference from intermediate frequency (IF) images, so you hear only the frequency you select.

Search Function — searches for new and unlisted frequencies using a designated frequency range (limit search) or starting from a specified frequency (direct search).

Selectable Scan/Search Speeds — let you select normal or Hyper Scan speeds, and normal, high, or HyperSearch speeds.

HyperScan™ — scans 50 channels per second.

HyperSearch™ — searches through frequencies at 300 steps per second in bands that have 5 kHz steps to help you find interesting broadcasts.

Ten 20-Channel Storage Banks — let you store 20 channels in each of 10 banks to group frequencies so you can easily identify calls.

Ten Priority Channels — let you set the scanner to check up to 10 channels every 2 seconds so you do not miss important calls.

Data Signal Skip — lets you set the scanner to skip non-modulated signals or data signals during a limit or direct search so it can automatically continue searching.

Monitor Memories — let you store up to 10 frequencies you locate during a frequency search which you can then transfer into channels.

Search Skip — lets you select up to 20 frequencies for the scanner to skip during a limit or direct search, so you can avoid unwanted frequencies such as those with a continuous transmission.

Adjustable Tone — lets you turn on or off the beep you hear when you press a key.

Two-Second Scan Delay — delays scanning for 2 seconds before moving to another channel, so you can hear more replies.

Weather Band Key — scans the preprogrammed weather frequencies so you can stay informed about current weather conditions.

Memory Backup — keeps the channel frequencies stored in your scanner's memory for up to 3 days during a power loss.

Squelch Control — lets you adjust the receiver's sensitivity low enough to receive weak signals or high enough to eliminate receiver noise when not receiving a signal.

Lock-Out Function — prevents channels you select from being scanned.

Backlit Liquid Crystal Display — lets you easily see the indicators on the scanner's display, even at night.

Audio Output Jack — lets you connect an earphone or headphones for private listening, or an external speaker for listening in a remote or noisy area.

Optional Antenna Terminals — let you connect the supplied telescoping antenna to the screw-in terminal, or an external antenna to the BNC connector.

Optional Power Sources — you can power your scanner using the supplied AC adapter or an optional DC cigarette-lighter power cable.

Warning: To prevent fire or shock hazard, do not expose this system to rain or moisture.

CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER OR BACK. NO USER-SERVICE-ABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the scanner's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the scanner's case.

This symbol is intended to inform you that important operating and maintenance instructions are included in the literature accompanying this scanner.

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

Serial Number: _____

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Your PRO-2048 can receive these bands:

Band	Frequency Range (MHz)
10-Meter Ham Band	29.00–29.7
VHF-Lo	29.7–50.00
6-Meter Ham Band	50.00–54.00
Aircraft	108–136.975
Government/Ham	137–148
VHF-Hi	148–174
Ham/Government	406–450
UHF-Lo	450–470
UHF-T (TV)	470–512
UHF-Hi	806–823.9375
	851–868.9375
	896.1125–956

FCC NOTICE

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

- Moving your scanner away from the receiver

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

- Contacting your local RadioShack store for help

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

This device complies with Part 15 of *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 conversation (unless such activity is otherwise illegal). We encourage responsible, legal scanner use.

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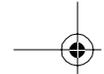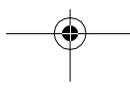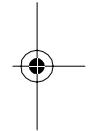
CONTENTS

PREPARATION

Your scanner's display is protected during shipment by a piece of blue film. Peel off this film before you use the scanner.

CONNECTING POWER

Note: If a power failure occurs or if the DC cigarette-lighter power cable or AC adapter is disconnected, the scanner's memory backup circuit keeps information in memory for up to 3 days.

Using Standard AC Power

You can power your scanner from a standard AC outlet using the supplied AC adapter.

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:

- The supplied AC adapter supplies 12 volts and delivers 500 milliamps. Its center tip is set to positive, and its plug properly fits the scanner's **DC 12V** jack. Using an AC adapter that does not meet these specifications could damage the scanner or the adapter.

- Be sure you connect the AC adapter to the scanner before you connect it to a standard AC outlet. Then disconnect the adapter from the AC outlet before you disconnect it from the scanner.

- If you have difficulty inserting the AC adapter's polarized plug, do not force it. Turn it over and reinsert it.

1. Insert the supplied AC adapter's barrel plug into the scanner's **DC 12V** jack.
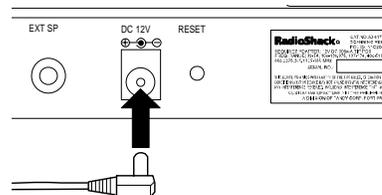
2. Plug the adapter's power module into a standard AC outlet.
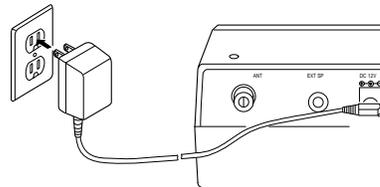
Using Vehicle Battery Power

To power your scanner from your vehicle's cigarette-lighter socket, you need a DC cigarette-lighter power cable such as Cat. No. 270-1533).

Cautions:

- The DC cigarette-lighter power cable must be capable of delivering 12 volts and 500 milliamps, its center tip must be set to positive, and its barrel plug must correctly fit the scanner's **DC 12V** jack. The recommended power cable meets these specifications. Using a power cable that does not meet these specifications could damage the scanner or the power cable.

- Always plug the power cable into the scanner before you plug it into your vehicle's cigarette-lighter socket. Always unplug the power cable from the vehicle's cigarette-lighter socket before you unplug it from the scanner.

Follow these steps to use vehicle battery power.
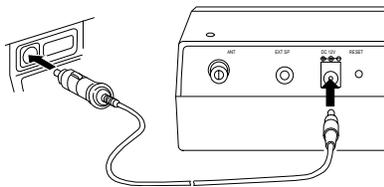
1. Insert the power cable's barrel plug into the scanner's **DC 12V** jack.

2. Plug the other end of the power cable into the vehicle's cigarette-lighter socket.

Note: If the scanner does not operate properly when you use a cigarette-lighter power cable, unplug the power cable from the cigarette-lighter socket and clean the socket to remove ashes and other debris.

CONNECTING THE ANTENNA

To attach the supplied telescoping antenna to your scanner, simply screw it into the hole on top of your scanner.
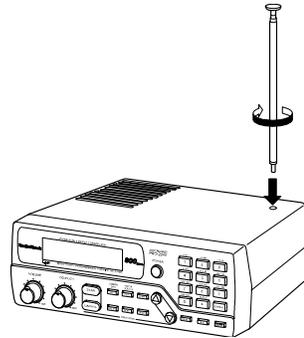
The antenna's length controls its sensitivity. Adjust the length of the telescoping antenna as follows for the best reception.

29–54 MHz	Extend all 3 segments
108–174 MHz	Extend only 2 segments
406–956 MHz	Collapse fully (only 1 segment extended)

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Connecting an Optional Antenna

The supplied telescoping antenna receives strong, local signals. However, to receive weaker, more distant signals in all bands, you can attach an optional antenna, such as an external mobile antenna or outdoor base station antenna. Your local RadioShack store sells a variety of antennas.

Note: If you connect an external antenna, remove the telescoping antenna from the top of the scanner.

Always use 50-ohm coaxial cable, such as RG-58 or RG-8, to connect an outdoor antenna. For lengths over 50 feet, use RG-8 low-loss dielectric coaxial cable. If your antenna's cable does not have a BNC connector, use a BNC adapter available at your local RadioShack store.

Follow the installation instructions supplied with the antenna, route the antenna cable to the scanner, then connect it to the **ANT** jack on the back of the scanner.
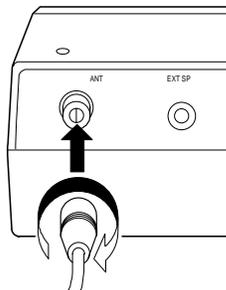
Warning: Use extreme caution when installing or removing an outdoor antenna. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna touches a power line, contact with the antenna, mast, cable or guy wires can cause electrocution and death! Call the power company to remove the antenna. Do not attempt to do so yourself.

Cautions:

- Do not run the cable over sharp edges or moving parts.

- Do not run the cable next to power cables or other antenna cables.

- Do not run the cable through areas that produce extreme heat.

- Follow all cautions and warnings included with the antenna.

RESETTING THE SCANNER'S DISPLAY

If the scanner's display stops working after you connect a power source, follow these steps to reset it.

1. If the scanner is off, press **POWER** to turn it on.

2. Using a pointed object, such as a straightened paper clip, press **RESET** on the back of the scanner. The display resets, and the scanner turns off.

3. Press **POWER** to turn on the scanner again.
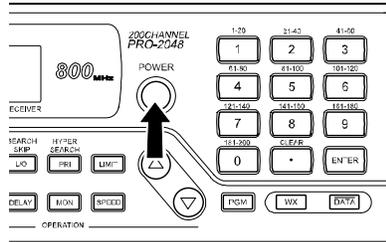
INITIALIZING THE SCANNER

If the scanner or its display does not work properly even after resetting it, follow these steps to initialize the scanner.
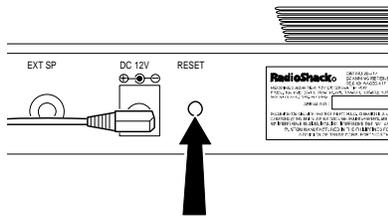
Caution: Initializing the scanner clears all the channels you stored in memory. Initialize the scanner only when you are sure it is not working properly.

1. If the scanner is off, press **POWER** to turn it on.

2. Hold down ●**/CLEAR**, then press **RESET** on the back of the scanner using a pointed object, such as a straightened paper clip. The display resets, and the scanner turns off.

3. Press **POWER** to turn on the scanner.

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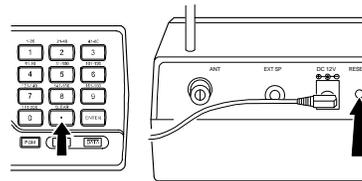
CONNECTING AN EARPHONE/ HEADPHONES/ EXTERNAL SPEAKER

The $1/8$-inch **EXT SP** jack on the back of the scanner lets you connect an optional earphone (such as Cat. No. 33-175), headphones (such as Cat. No. 20-210), or an external speaker (such as Cat. No. 21-549).
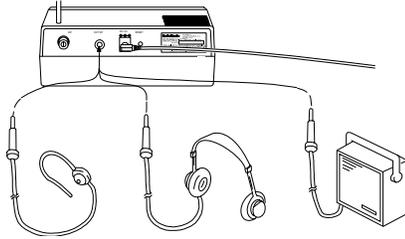
Note: Connecting any external device to the **EXT SP** jack automatically disconnects the internal speaker.

Listening Safely

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

• Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.

• Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.

• 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 wear an earphone or headphones while operating a motor vehicle or riding a bicycle. This can create a traffic hazard and could be illegal in some areas.

Even though some earphones and headphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.

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 find the communications you want to receive, then set the scanner to scan those frequencies.

A **frequency** is the tuning location of a station (expressed in kHz or MHz). To find active frequencies, you can use the **limit search** function which lets you search within a specific range of frequencies or the **direct search** function which lets you search up or down from the currently displayed frequency.

When you find a frequency, you can store it into a permanent 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.

Another option is to store the frequency into a temporary memory location called a **monitor memory** until you decide to move it to a channel.

Just keep in mind — you search frequencies and scan channels.

A LOOK AT THE FRONT PANEL

This look at the scanner's front panel will help you understand each control's function.
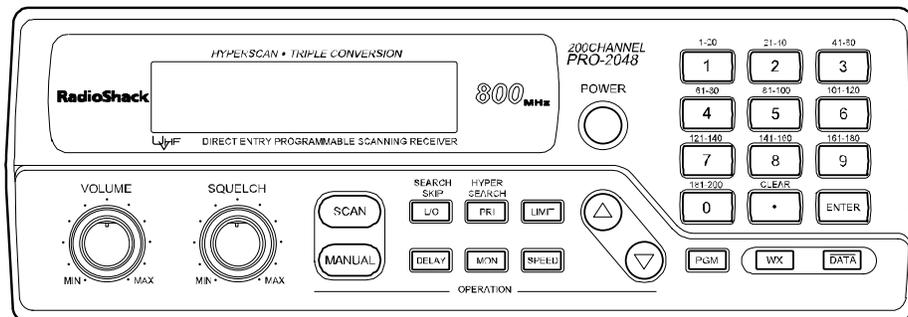
VOLUME	Sets the scanner's volume.
SQUELCH	Adjusts the scanner's receiver sensitivity to help you eliminate background noise.

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SCAN	Starts scanning through the stored channels.
MANUAL	Stops scanning and lets you manually enter a channel number.
L/O/SEARCH SKIP	Turns the selected channel's lockout function on and off, or skips a specified frequency during a limit or direct search.
DELAY	Programs a 2-second delay for the selected channel.
PRI/HYPER SEARCH	Sets and turns on and off the priority function for a particular channel, or selects the HyperSearch speed.
MON	Stores frequencies into and accesses the 10 monitor memories.
LIMIT	Used to set the lower or upper limit during frequency searches.
SPEED	Changes the scanning or search speed.
POWER	Turns the scanner on and off.
D —	Enters the up or down direction in the search mode.
Number Keys	Each key has a single-digit label and a range of numbers. The single digits are used to enter a channel or a frequency. The range of numbers (21–40, for example) above the key indicates the channels that make up a channel-storage bank.
●/CLEAR	Enters the decimal point in a frequency, or clears an incorrect entry. Also used when you initialize the scanner.
ENTER	Enters programmed frequencies into channels.
PGM	Programs frequencies into channels.
WX	Searches through the seven preprogrammed weather channels.
DATA	Turns the data skip feature on and off.

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A LOOK AT THE DISPLAY

The display's indicators show the scanner's current operating mode.

```
MON   1 2 3 4 5 6 7 8 9 10  SCAN  MANUAL  PROGRAM
BANK
 P      8 8 8 CH  8 8 8 . 8 8 8 8 MHz
PRIORITY  LOCKOUT  DATA  DELAY  WX ▼SEARCH▲
```

MON	Appears when you listen to a monitor memory.
BANK	Appears with numbers (1–10) next to it to show which channel-storage banks are turned on for scanning.
SCAN	Appears when you scan channels. Blinks when the scanner is in the HyperScan mode.
MANUAL	Appears when you manually select a channel.
PROGRAM	Appears while you program frequencies into the scanner's channels.
P	Appears when you are hearing a priority channel.
CH	Digits to the left of this indicator show which channel the scanner is tuned to.
MHz	Digits to the left of this indicator show which frequency the scanner is tuned to.
PRIORITY	Appears when you turn on the priority channel feature.
LOCKOUT	Appears when you manually select a locked channel, or during a search hold when the frequency is stored in search skip memory.

$\overline{\text{DATA}}$ Appears while the data skip function is turned on.

DELAY   Appears when you program a channel for a two-second delay before scanning or when you listen to a channel programmed with the delay feature.

WX   Appears when the scanner is in the weather band mode.

s **and** t   Indicates the search direction. Blinks in the high speed search mode.

SEARCH   Appears during a limit (**-L-**) or direct (**-d-**) search or weather scan. Blinks in the HyperSearch mode.

Error   Appears when you make an incorrect entry.

Lo   Appears when you program the lower limit for a frequency search.

Hi   Appears when you program the upper limit for a frequency search.

-h-   Appears during a direct search hold.

-H-   Appears during a limit or weather search hold.

UNDERSTANDING THE SCANNER'S MEMORY

You can store up to 210 frequencies into your scanner's memory. This scanner has 200 channel memories and 10 monitor memories.

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 of 20 channels each. Use each storage bank to group frequencies, such as the police department, fire department, ambulance services, or aircraft (see "Guide to the Action Bands" on Page 31).

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 starting with Channel 21 (the first channel in Bank 2).

Monitor Memories

The scanner has 10 monitor memories. You can use these memories to temporarily store frequencies while you decide whether or not to store them into channels. This is handy for quickly storing an active frequency when you search through an entire band. You can manually select these memories, but you cannot scan them. See "Searching For and Temporarily Storing Active Frequencies" on Page 20.

OPERATION

TURNING ON THE SCANNER/SETTING THE VOLUME AND SQUELCH

1. Turn **SQUELCH** fully clockwise.
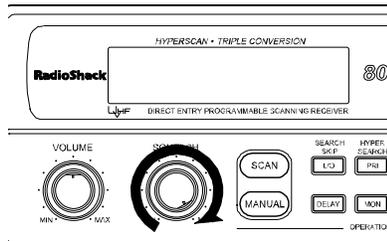
2. Press **POWER** to turn on your scanner. The scanner continuously scans the unlocked channels.
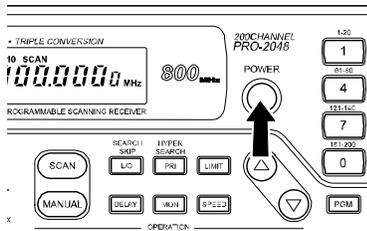
Note: If you have not stored any frequencies into channels, the scanner does not scan.

3. Press **MANUAL** to stop the scanning. The display shows the current channel.
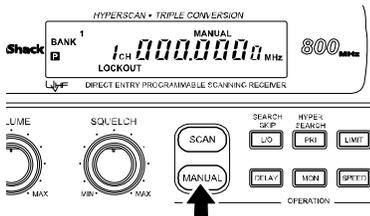
4. Turn **VOLUME** clockwise to set the scanner's volume about $1/4$ of the way between **MIN** and **MAX**.
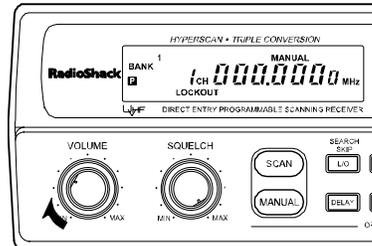
5. Turn **SQUELCH** counterclockwise until you hear a hissing noise.

6. Adjust **VOLUME** to a comfortable level.

7. Slowly turn **SQUELCH** clockwise until the hissing noise stops.

   Squelch Tips:

   • If the scanner picks up unwanted or weak transmissions, slightly turn **SQUELCH** clockwise to decrease receiver sensitivity.

   • If the scanner does not pick up any transmissions, slightly turn **SQUELCH** counterclockwise to increase receiver sensitivity.

8. To turn off the scanner, press **POWER**.

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MANUALLY STORING FREQUENCIES IN CHANNELS

You can manually store up to 200 frequencies into your scanner's channels.

Great 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.

If you do not have a reference to frequencies in your area, you can use a limit or direct search to find a transmission (see "Searching For and Temporarily Storing Active Frequencies" on Page 20).

Follow these steps to manually store frequencies.

1. Press **MANUAL** to stop the scanning.
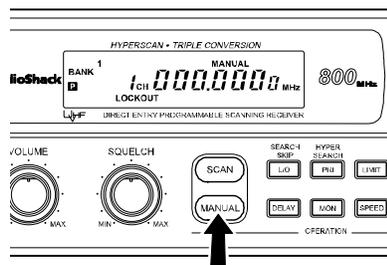
2. Enter the channel number where you want to store a frequency.

3. Press **PGM**. **BANK** and the bank number, the selected channel number and **CH**, **000.0000 MHz**, and **PROGRAM** appear.
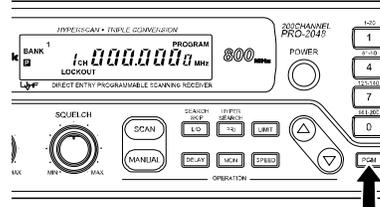
4. Enter the frequency you want to store, including the decimal point.

   Note: When you enter a frequency, the scanner automatically rounds it to the nearest valid number. For example, if you enter **151.473**, your scanner rounds it up to 151.475.

5. Press **ENTER** to store the frequency into the selected channel.
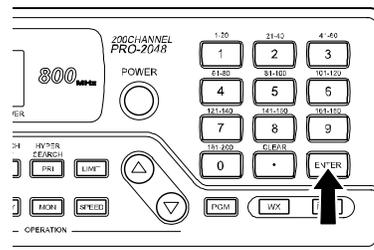
   Note: If you made a mistake in Step 4, **Error** appears. Repeat Steps 4 and 5.

6. To program the next channel in sequence, repeat Steps 3–5. To program other channels not in sequence, repeat Steps 2–5.

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SEARCHING FOR AND TEMPORARILY STORING ACTIVE FREQUENCIES

You can search for frequencies using a limit or direct search, then temporarily store frequencies into monitor memories.

Limit Search

A limit search lets you search for active transmissions within a specified range of frequencies.

Note: You can also use the scanner's delay feature while using a limit search (see "Using the 2-Second Delay" on Page 27).

Follow these steps to search for active frequencies using a limit search.

1. Press **PGM**, then **LIMIT**. **Lo** and a frequency appear.
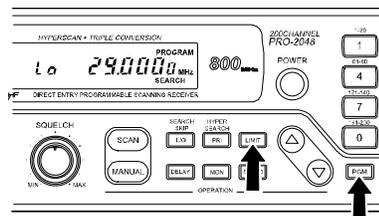
2. Using the number keys, enter the lowest frequency (including the decimal point) you want to search within the desired frequency range, then press **ENTER**.
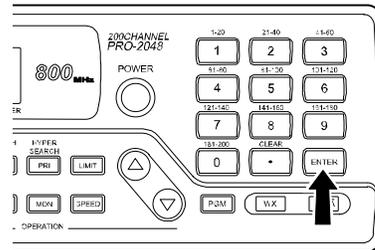
Note: If you enter an invalid frequency, **Error** appears. To correct this, simply repeat the step.

3. Press **LIMIT**. **Hi** and a frequency appear.
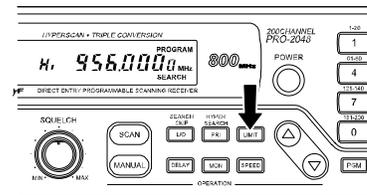
4. Using the number keys, enter the highest frequency you want to search within the desired frequency range, then press **ENTER**.

5. Press D to search upward from the lower to the upper limit, or press — to search downward from the upper to the lower limit. **-L-**, **SEARCH**, and s or t appear, and the next available monitor memory flashes.

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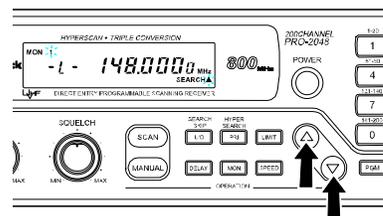
6. When the scanner finds an active frequency, you can do one of the following:

- To store the displayed frequency into the current monitor memory, quickly press **MON**.

- To continue the search, press D or —.

- To hold the frequency, press **LIMIT**. **-H-** appears.

Press **LIMIT** again to cancel the hold and resume the limit search.

Notes:

- If you press D or — during the hold mode, the frequency changes in the current step increment toward the upper or lower limit (see "Specifications" on Page 42).

- If you tune to a search skip frequency, the display shows **LOCKOUT** (see "Search Skip Memory" on Page 22).

Direct Search

A direct search lets you specify a starting frequency, then search for active transmissions above or below the specified frequency.

Note: You can also use the scanner's delay feature while using direct search (see "Using the 2-Second Delay" on Page 27).

Follow these steps to search for active frequencies using a direct search.

1. Press **MANUAL**.
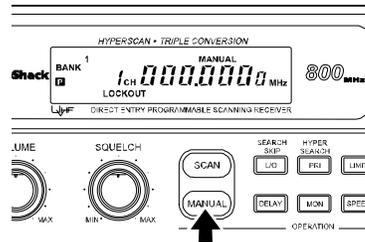
2. Using the number keys, enter the frequency (including the decimal point) you want to start the search from, or the channel number containing the starting frequency.

3. Press D to search up or — to search down starting from the specified frequency or channel. **-d-**, **SEARCH**, and s or t appear, and the next available monitor memory flashes.
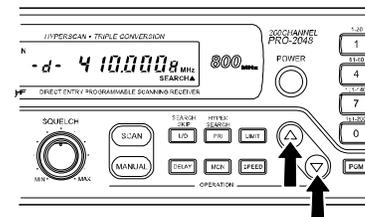
Note: If you enter an invalid frequency, **Error** appears. Repeat Steps 2 and 3.

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4. When the scanner finds an active frequency, you can do one of the following:

- To store the frequency into the current monitor memory, press **MON**.

- To continue the search, press D or —.

- To hold the frequency, press **LIMIT**. **-h-** appears.

Press **LIMIT** again to cancel the hold and resume the direct search.

Notes:

- If you press D or — while a frequency is held, the frequency changes in the current step increment.

- If you tune to a search skip frequency, the display shows **LOCKOUT** (see "Search Skip Memory").

Search Skip Memory

You can skip specified frequencies during a limit, direct, or weather search (see "Listening to the Weather Band" on Page 25). This lets you avoid unwanted frequencies or ones you have already stored in a channel. You can program up to 20 frequencies to skip into the scanner's memory.

To skip a frequency, press **L/O/SEARCH SKIP** when the scanner stops on the frequency during a limit, direct, or weather search.
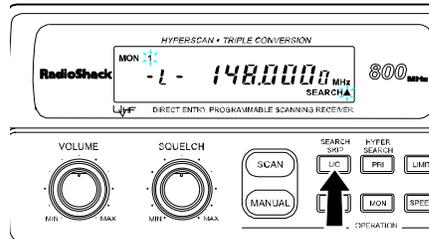
To clear a single frequency from skip memory so the scanner can stop on it during a limit, direct, or weather search, press **LIMIT** to hold the search, press D or — to select the skipped frequency, then press **L/O/SEARCH SKIP** until **LOCKOUT** disappears.
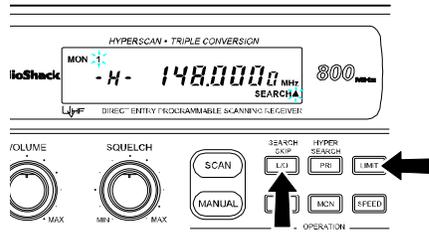
To clear all the skip frequencies at once, while in the search mode, hold down **L/O/SEARCH SKIP** until the scanner beeps 2 times.

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Notes:

- If you program more than 20 skip frequencies, each new frequency replaces old ones, starting from the first stored frequency.

- You can select the skipped frequency when the scanner is in the hold mode. The scanner displays **LOCKOUT** when you select a skipped frequency.

- If you skip all frequencies in the weather band or within a search range, the scanner sounds three beeps and will not start searching.

LISTENING TO MONITOR MEMORIES

After you temporarily store frequencies into the scanner's monitor memories, you can listen to them by pressing **MANUAL**, **MON**, then the number for the monitor memory you want to listen to.

Note: To listen to the monitor memories, the priority channel feature must be turned off (see "Using Priority Channels" on Page 26).

MOVING A FREQUENCY FROM A MONITOR MEMORY TO A CHANNEL

1. Press **MANUAL** to stop the scanning.

2. Enter the channel number where you want to store the monitor frequency, then press **PGM**. **PROGRAM** appears.
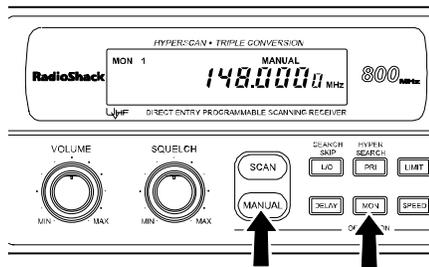
3. Press **MON**, then enter the monitor memory number that has the frequency you want to store. **MON** and the entered frequency appear, and the channel number blinks.
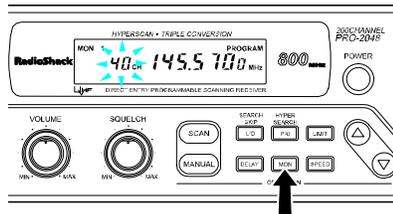
4. Press **ENTER**. The scanner stores the frequency into the selected channel.

SCANNING THE STORED CHANNELS

To scan the stored channels, press **SCAN**. Your scanner scans through all the stored channels except the ones you lock out (see "Locking Out Channels" on Page 27).

If necessary, readjust **SQUELCH** so you do not hear the hissing sound between transmissions.

TURNING CHANNEL-STORAGE BANKS ON AND OFF

You can set your scanner to scan more efficiently by turning selected channel storage banks on or off.

When you turn off a bank, the scanner does not scan any of the 20 channels in the bank.

While scanning, press the number key for the bank you want to turn on or off. 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. There must be at least one active bank.

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 want to hear all the details (even though there might be periods of silence) or if you want to monitor only a specific channel or a locked-out channel.

To manually select a channel, press **MANUAL**, enter the channel number, then press **MANUAL** again.

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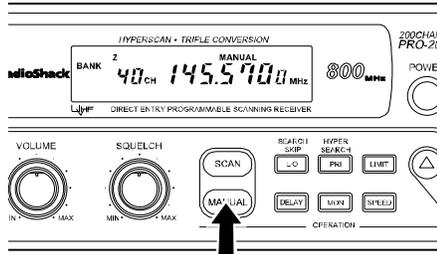
If the scanner is scanning and stops at the desired channel, press **MANU-AL** once. Repeatedly press **MANUAL** to step through the channels one at a time.

LISTENING TO THE WEATHER BAND

Your scanner is preprogrammed with the following weather frequencies.

162.400 MHz	162.500 MHz
162.425 MHz	162.525 MHz
162.450 MHz	162.550 MHz
162.475 MHz	

To hear your local forecast and re-gional weather information, simply press **WX**. **WX** appears.
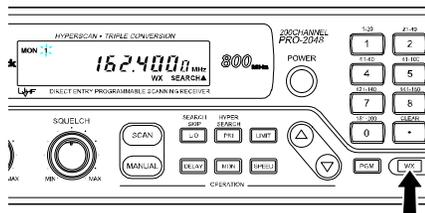
Your scanner searches through the weather band and stops on an active broadcast. If a broadcast is weak, press **WX** again to continue to search through the weather band.

You can press **LIMIT** to pause the weather search, then press D or — repeatedly to move forward or back-ward through the channels. To con-tinue the search, hold down **LIMIT**, D, or — for more than 1 second.

Note: If you tune to a search skip fre-quency, the display shows **LOCK-OUT** (see "Search Skip Memory" on Page 22).

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SPECIAL FEATURES

USING PRIORITY CHANNELS

The priority feature lets you scan through channels and still not miss important or interesting calls on specific channels. You can program one stored channel in each bank as a priority channel (up to 10 stored channels in total). As the scanner scans the bank, if the priority feature is turned on, the scanner checks the priority channels every 2 seconds for activity.

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 **PGM**.

2. Enter the channel number you want to select as the priority channel, then press **PRI/HYPER SEARCH**. **P** appears to the left of the channel number.
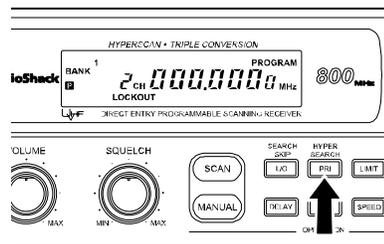
3. Repeat Steps 1–2 for the channel in each bank you want to program as a priority channel.

Note: If the scanner cannot find a priority channel, **P CH LOCOUt** appears when you turn on the priority feature.

To confirm all priority channel numbers, press **PGM**, then repeatedly press **PRI/HYPER SEARCH** to see the priority channels.

To turn on the priority feature, press **PRI/HYPER SEARCH** during scanning. **PRIORITY** appears and every 2 seconds the scanner checks the priority channel in each bank that is turned on, starting from the lowest-numbered to the highest-numbered priority channel. If there is a transmission on the priority channel, the scanner tunes the transmission until it stops.

The scanner does not check the channel if it is in a bank which is turned off or if the priority channel is locked out.

To turn off the priority feature, press **PRI/HYPER SEARCH. PRIORITY** disappears.

USING THE 2-SECOND 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, **DELAY** appears 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:
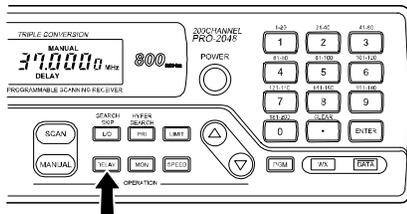
- If the scanner is scanning and stops on an active channel, quickly press **DELAY** before it starts to scan again. **DELAY** appears.

- If the desired channel is not selected, manually select the channel then press **DELAY**. **DELAY** appears

- If the scanner is searching, press **DELAY** during the search. **DELAY** appears and the scanner automatically adds a 2-second delay to every transmission it stops on.

To turn off delay, press **DELAY** when **DELAY** is displayed.

LOCKING OUT CHANNELS

You can set your scanner to scan more efficiently by locking out channels you do not want to monitor. This is handy for locking out channels where you stored a frequency with a continuous transmission, such as a weather channel.

To lock out a channel, press **MANUAL**, enter the desired channel number, press **MANUAL** or **PGM** to select the channel, then press **L/O/SEARCH SKIP** so **LOCKOUT** appears.
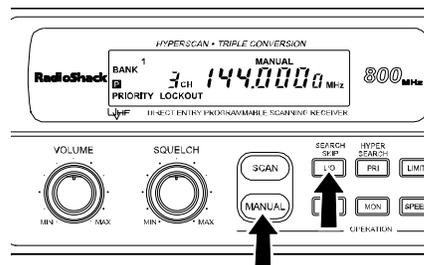
Note: You can still manually select locked out channels.

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To unlock a channel, manually select the channel, then press **L/O/SEARCH SKIP** so `LOCKOUT` disappears.

To unlock all channels, while the scanner is scanning, select the banks containing the locked channels you want to unlock, press **MANUAL**, then hold down **L/O/SEARCH SKIP** until the scanner beeps twice.

CHANGING SCANNING AND SEARCH SPEEDS

The PRO-2048 has two scan and three search speeds.

Type	Speed
Normal Scan	12 channels/ second
HyperScan	50 channels/ second
Normal Search	50 steps/second
High Speed Search	100 steps/ second
HyperSearch	300 steps/ second (5 kHz steps only)

To change the *scanning* speed, during scanning, press **SPEED** to switch between normal and HyperScan speeds. `SCAN` flashes during Hyper-Scan speed.

To change the *search* speed, during a limit, direct, or weather search, press **SPEED** to switch between the normal and high speed search speeds. s or t flashes during high speed search.

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To select the HyperSearch speed, during a limit or direct search, press **PRI/HYPER SEARCH.** `SEARCH` flashes during HyperSearch speed.

Note: You can use HyperSearch speed only in 5 kHz-step bands.

SKIPPING DATA SIGNALS

You can set the scanner to skip non-modulated or data signals (such as control signals for pagers or trunked systems) when searching or scanning.

Note: This feature does not work and $\overline{\text{DATA}}$ does not appear in the AM mode. Also, the scanner might not skip data signals that have varied patterns of pauses and frequencies.

To skip data signals, press $\overline{\text{DATA}}$. $\overline{\text{DATA}}$ appears.
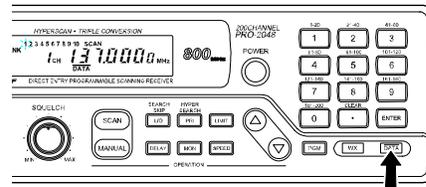
To turn off data skip, press $\overline{\text{DATA}}$ so $\overline{\text{DATA}}$ disappears.
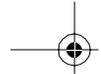
TURNING THE KEY TONE ON OR OFF

Your scanner beeps each time you press a key. Follow these steps to turn off the key tone beep.

1. Turn off the scanner.

2. Hold down **L/O/SEARCH SKIP**, then turn on the scanner. **OFF bEEP** appears.

To turn on the beep, repeat these steps. **on bEEP** appears.
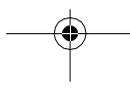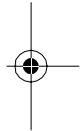
A GENERAL GUIDE TO SCANNING

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

US Weather Frequencies

162.400   162.425   162.450   162.475   162.500   162.525   162.550

Canadian Weather Frequencies

161.650   161.775   163.275

Note: These frequencies are not pre-programmed in the weather service bank but can be manually programmed into a channel.

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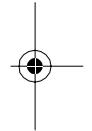
Ham radio operators often transmit emergency information when other means of communication break down. The following chart shows the frequencies the scanner receives that Ham radio operators normally use:

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
33–cm	902.000–928.000

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.
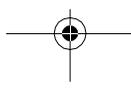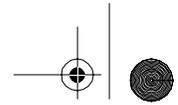
The birdie frequencies on this unit to watch for are:

31.200 MHz	36.0500 MHz	114.400 MHz
116.0375 MHz	120.1625 MHz	128.1750 MHz
132.1755 MHz	140.1900 MHz	145.195 MHz
145.600 MHz	163.2200 MHz	813.400 MHz
823.800 MHz	940.900 MHz	

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 States Broadcast Bands

In the United States, 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

HF Band

10-Meter Amateur Band	29.00–29.70 MHz
High Range	29.70–29.90 MHz

VHF Band

Low Range	30.00–50.00 MHz
6-Meter Amateur	50.00–54.00 MHz
Aircraft	108.00–136.00 MHz
U.S. Government	138.00–144.00 MHz
2-Meter Amateur	144.00–148.00 MHz
High Range	148.00–174.00 MHz
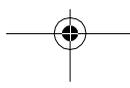
UHF Band

U.S. Government	406.00–420.00 MHz
0.6-Meter Amateur	420.00–450.00 MHz
Low Range	450.00–470.00 MHz
FM-TV Audio Broadcast, Wide Band	470.00–806.00 MHz
Conventional Systems	851.00–856.00 MHz
Conventional/Trunked Systems	856.00–861.00 MHz
Trunked Systems	861.00–866.00 MHz
Public Safety	866.00–869.00 MHz
Private Trunked	896.00–940.00 MHz
General Trunked	940.00–950.00 MHz

UHF Band

10-Meter Amateur Band	29.00–29.70 MHz
High Range	29.70–29.90 MHz

VHF Band

Low Range	30.00–50.00 MHz
6-Meter Amateur	50.00–54.00 MHz
Aircraft	108.00–136.00 MHz
U.S. Government	138.00–144.00 MHz
2-Meter Amateur	144.00–148.00 MHz
2-Meter Amateur	144.00–148.00 MHz

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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:

Band Type	Specified Interval
VHF, HAM, and Government	5.0 kHz steps
All Others	12.5 kHz steps
Aircraft	25.0 kHz steps

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)
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

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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
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HIGH FREQUENCY (HF)

10-Meter Amateur Band (28.0-29.7 MHz)

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29.000–29.700 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .HAM
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VERY HIGH FREQUENCY (VHF)

VHF Low Band (in 5 kHz steps)

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29.700–29.790 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .IND
29.900–30.550 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . GOVT, MIL
30.580–31.980 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . IND, PUB
32.000–32.990 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .GOVT, MIL
33.020–33.980 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . BUS, IND, PUB
34.010–34.990 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .GOVT, MIL
35.020–35.980 . . . . . . . . . . . . . . . . . . . . . . . . . BUS, PUB, IND, TELM
36.000–36.230 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .GOVT, MIL
36.250 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Oil Spill Clean up
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
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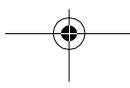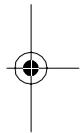
47.440–49.580 . . . . .IND, PUB
49.610–49.990 . . . . .MIL, TELC

6-Meter Amateur Band

50.00–54.00 . . . . HAM

Land Mobile Service Band

72.00–76.00 . . . . .LMS

FM Radio Broadcast, Wide Band

88.00–108.00 . . . . .FM

Aircraft Band

108.000–121.490 . . . . AIR
121.500 . . . . .AIR Emergency
121.510–136.000 . . . . AIR

U.S. Government Band

138.000–144.000 . . . . 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
150.815–150.965 . . . . TOW
150.980 . . . . .Oil Spill Clean up
150.995–151.130 . . . . ROAD
151.145–151.475 . . . . .POL
151.490–151.955 . . . . .IND, BUS
151.985 . . . . .TELM
152.0075 . . . . MED
152.030–152.240 . . . . .TELB
152.270–152.465 . . . . IND, TAXI
152.480 . . . . .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 Clean-Up
154.600–154.625 . . . . .BUS
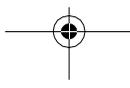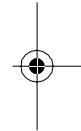
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154.655–156.240 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . MED, ROAD, POL, PUB
156.255 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .OIL
156.275–157.425 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 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 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .OIL
161.600–162.000 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .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 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Wireless Mikes
169.500 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .GOVT
169.505 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Wireless Mikes
169.55–169.9875 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . GOVT, MIL, USXX
170.000 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .BIFC
170.025–170.150 . . . . . . . . . . . . . . . . . . . . . . . . . . . . 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
173.225–173.375 . . . . . . . . . . . . . . . . . . . . . . . . . . . . MOV, NEWS, UTIL
173.3875–173.5375 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .MIL
173.5625–173.5875 . . . . . . . . . . . . . . . . . . . . . . MIL Medical/Crash Crews
173.60–173.9875 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .GOVT
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Ultra High Frequency (UHF) (300 MHz–3 GHz)

U. S. Government Band

406.125–419.975 . . . . .GOVT, USXX

70-cm Amateur Band

420.000–450.000 . . . . HAM

Low Band

450.050–450.925 . . . . .RTV
451.025–452.025 . . . . .IND, OIL, TELM, UTIL
452.0375–453.00 . . . . .IND, TAXI, TRAN TOW, NEWS
453.0125–453.9875 . . . . .PUB
454.000 . . . . 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
462.550–462.725 . . . . GMR
462.750–462.925 . . . . .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
.   .
.   .
.   .
805.750 . . . . Channel 69

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

Conventional Systems Band—Locally Assigned

851.0125–855.9875 . . . . .CSB

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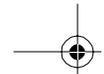
Conventional/Trunked Systems Band—Locally Assigned

856.0125–860.9875 . . . . CTSB

Trunked Systems Band—Locally Assigned

861.0125–865.9875 . . . . TSB

Public Safety Band—Locally Assigned

866.0125–868.9875 . . . . PSB

Common Carrier

869.010–894.000 . . . . CCA

Private Trunked

935.0125–939.9875 . . . . PTR

General Trunked

940.0125–940.9875 . . . . GTR

FREQUENCY CONVERSION

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

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

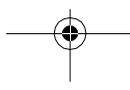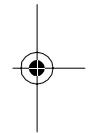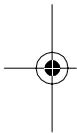To convert MHz to kHz, multiply the number of megahertz by 1,000:

9.62 (MHz) x 1000 = 9620 kHz

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

2780 (kHz) ÷ 1000 = 2.780 MHz

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

300 ÷ 7.1 MHz = 42.25 meters

TROUBLESHOOTING

If you have problems, here are some suggestions that might help. If they do not, take your scanner to your local RadioShack store for assistance.

PROBLEM	POSSIBLE CAUSE	REMEDY
Scanner is on but will not scan.	**SQUELCH** is not correctly adjusted.	Adjust **SQUELCH** clockwise.
	Only one channel or no channels are stored.	Store frequencies into more than one channel.
	The scanner's display must be reset.	Reset the scanner's display (see "Resetting the Scanner's Display" on Page 10).
Scanner is totally inoperative.	No power.	Make sure the scanner is plugged into a working AC or DC outlet.
	The AC or DC adapter is not connected.	Be sure the adapter's barrel plug is fully plugged into the **DC 12V** jack.
The scanner's display dims.	The AC or DC adapter is not providing the required voltage.	Make sure the AC or DC adapter is set to provide the required voltage.
Keypad does not work or display randomly changes.	The scanner's display must be reset.	Reset the scanner's display (see "Resetting the Scanner's Display" on Page 10).
Poor or no reception.	An antenna is not connected or connected incorrectly.	Make sure an antenna is correctly connected to the scanner.
	Programmed frequencies are the same as "birdie" frequencies.	Avoid programming frequencies listed under "Birdie Frequencies" on Page 30, or only listen to them manually.
Error appears.	Programming error.	Reprogram the frequency correctly, including the decimal point.
While scanning In the scan mode, 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 30, or only listen to them manually.

CARE AND MAINTENANCE

Your RadioShack PRO-2048 200-Channel Programmable Home 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.

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

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.

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.
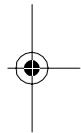
Modifying or tampering with the scanner's internal components can cause a malfunction and might invalidate your scanner's warranty and void your FCC authorization to operate it. If your scanner is not performing as it should, take it to your local RadioShack store for assistance.
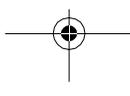
SPECIFICATIONS

Frequency Coverage:

VHF-Lo	29-50 MHz (in 5 kHz steps)
Ham	50-54 MHz (in 5 kHz steps)
Aircraft	108-136.975 MHz (in 12.5 kHz steps)
Government	137-144 MHz (in 5 kHz steps)
Ham	144-148 MHz (in 5 kHz steps)
VHF-Hi	148-174 MHz (in 5 kHz steps)
Ham/Government	406-450 MHz (in 12.5 kHz steps)
UHF-Standard	450-470 MHz (in 12.5 kHz steps)
UHF-T (Television)	470-512 MHz (in 12.5 kHz steps)
UHF-Hi	806.0000 - 823.9375 MHz (in 12.5 kHz steps)
UHF-Hi	851.0000 - 868.9375 MHz (in 12.5 kHz steps)
UHF-Hi	896.1125 - 956 MHz (in 12.5 kHz steps)

Channels of Operation .... 200 channels in any combination of bands

Sensitivity:

AM: 20 dB Signal-to-Noise Ratio at 60% modulation
108–136.975 MHz .... 1.5 μV

FM: 20 dB Signal-to-Noise Ratio at 3 kHz deviation
29–54 MHz .... 0.5 μV
137–174 MHz .... 0.6 μV
406–512 MHz .... 0.6 μV
806–956 MHz .... 0.8 μV

Scanning Rate:

Normal	12 channels/sec
Hyper	50 channels/sec

Search Speed:

Normal	50 steps/sec
High	100 steps/sec
Hyper	300 steps/sec (only 5 kHz step band)

Delay Time .... 2 Seconds

IF Frequencies .... 380.7 MHz, 10.85 MHz, and 450 kHz

Antenna Impedance .... 50 Ohms

Audio Power .... 1.3 Watts maximum

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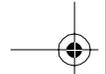
Built-In Speaker .... $2^1/_4$-Inch (57 mm), 8-ohm, dynamic type

Power Requirements .... AC 120 Volts, 60 Hz

Current Drain .... DC 230 mA (squelched)

DC 400 mA (full volume unsquelched)

Dimensions (HWD) .... $2^3/_4 \times 8^1/_{16} \times 7^{11}/_{16}$ Inches

$(70 \times 205 \times 195$ mm)

Weight .... 1.5 lbs

(680 g)

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

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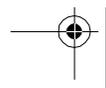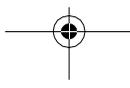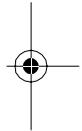
Limited One-Year Warranty

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

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

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

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

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

RadioShack Customer Relations, Dept. W, 100 Throckmorton St., Suite 600, Fort Worth, TX 76102

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A Division of Tandy Corporation
Fort Worth, Texas 76102

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