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DESKTOP RADIO SCANNER

Thank you for purchasing your Desktop Radio Scanner from RadioShack. Please read this user's guide before setting up and using your new scanner

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This user's guide is available in Spanish at www.radioshack.com.

Esta guía del usuario está disponible en español en www.radioshack.com.

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Scanning Legally

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

- Telephone conversations (cellular, cordless, or other private means of telephone signal transmission)
- Pager transmissions
- Any scrambled or encrypted transmissions

According to the Electronic Communications Privacy Act (ECPA), as amended, you are subject to fines and possible imprisonment for intentionally listening to, using, or divulging the contents of such a transmission unless you have the consent of a party to the communication (unless such activity is otherwise illegal).

This scanner is designed to prevent reception of illegal transmissions, in compliance with the law which requires that scanners be manufactured in such a way as to not be easily modifiable to pick up those transmissions. Do not open your scanner's case to make any modifications that could allow it to pick up transmissions that are not legal to listen to. Doing so could subject you to legal penalties.

In some areas, mobile use of this scanner is unlawful or requires a permit. Check the laws in your area. We encourage responsible, legal scanner use.

Features

Your new PRO-650 Desktop Scanner lets you scan conventional transmissions, and is preprogrammed with search banks for convenience. By pressing a one touch search key, you can quickly search those frequencies most commonly used by public service and other agencies without tedious and complicated programming.

This scanner gives you direct access to over 26,000 exciting frequencies, including those used by ambulance services, aircraft, and amateur radio services, marine, civil air patrol, VHF and UHF business bands, government frequencies and some police and fire departments.

Your scanner also has these special features:

One-Touch Service Search Banks – Lets you search preset frequencies in separate marine, fire/police, aircraft, ham, FM Radio and weather bands.

Display Backlight – Easy to read in low-light situations.

Lockout Function – Lets you skip specified channels or frequencies when scanning or searching.

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

SAME/FIPS Weather Alert – Displays weather events for the county or counties that you choose.

Memory Backup – Keeps the frequencies stored in memory for an extended time.

Scan Delay – Delays scanning for about 2 seconds, so that you can hear replies on the same channel.

Priority Channel – Lets you set the scanner to check one channel every 2 seconds so that you do not miss transmissions on that channel.

Data Cloning – Lets you transfer the programmed data to another PRO-650 scanner.

External Antenna Connector – Lets you connect an external antenna (not supplied) with a BNC connector for improved reception of distant/weaker signals.

Scanner Basics

After you familiarize yourself with your scanner's features you can then set up your scanner.

Frequencies

A frequency is the waveband of the transmitting signal (expressed in kHz or MHz). Your Pro-650 receives a range of analog frequencies; the best resource for your local frequencies is www.radioreference.com.

Also, you can use your scanner's search functions to find active frequencies in your area.

Your PRO-650 scanner can receive these bands:

Frequency Range	Types of Transmissions
29–54 MHz	10-Meter Ham, VHF Lo, 6-Meter Ham
87.3–107.9 MHz	FM Broadcast
108–136.99166 MHz	Aircraft
137–174 MHz	Military Land Mobile, 2-Meter Ham, VHF Hi
380–512 MHz	UHF Aircraft, Federal Government, 70-cm Ham, UHF Standard, UHF "T"

 Note: See "Specifications" on page 29 for more information about frequency steps.

Channels

Channels are storage areas for frequencies saved in your scanner's memory. Each saved frequency is assigned a channel.

Banks

A bank is a storage area for a group of channels. Your scanner provides 10 banks (1 to 10) that can each store up to 20 channels, for a total of 200 channels. You can use the banks to group and organize frequencies.

For example, you could program the frequencies used by your local police department starting with Channel 1 (the first channel in bank 1) and program the fire department frequencies starting with Channel 21 (the first channel in bank 2).

Setup

Connecting the Antenna

To attach the supplied telescopic antenna, insert the antenna in the hole on the top of the scanner and turn the antenna clockwise to tighten.

Connecting an Outdoor Antenna

To connect an external antenna, follow the installation instructions supplied with the antenna. Use 50 Ohm coaxial cable, such as RG-58 or RG-8. For lengths over 50 feet, use RG-8 low-loss dielectric coaxial cable. If the antenna cable's connector does not have a BNC connector, you will also need a BNC adapter (available at your local **RadioShack** store).

⚠️ **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, touching 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 a Speaker or Headphones

You can plug an amplified speaker or headphones (not supplied) with ⅛ inch (3.5 mm) mini-plug into the **HEADPHONE** jack on the back of the scanner. This automatically disconnects the internal speaker.

Note: Use an amplified speaker with this scanner. Non-amplified speakers do not provide sufficient volume for comfortable listening.

Listening Safely

To protect your hearing, follow these guidelines:

- Do not listen at high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Set the volume to the lowest setting. Then turn on your audio device and adjust the volume to a comfortable level.
- Avoid increasing the volume. Your ears will adapt to the volume level, so a level that does not cause discomfort could still damage your hearing.

Powering Your Scanner

1. Connect the supplied adapter to the scanner's **DC 9V** jack and a standard power outlet.
2. To disconnect, unplug the adapter from the power source first.

Caution: You must use a Class 2 power source that supplies 9V DC and delivers at least 400mA. Its center tip must be set to positive and its plug must fit the scanner's **DC 9V** jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.

Turning on the Scanner

1. Turn the **SQUELCH** all the way down before you turn on the scanner.
2. Slide **POWER** to **ON**. A welcome message appears. After about 3 seconds, adjust **VOLUME** to a comfortable level.
3. Turn **SQUELCH** clockwise, just until the hissing sound stops. If you always hear a hissing sound, the scanner will not scan or search properly.
- To listen to a weak or distant station, turn **SQUELCH** counterclockwise.
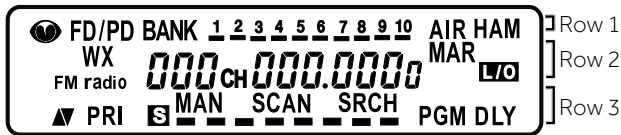- If reception is poor, turn **SQUELCH** clockwise to cut out weak transmissions.

Turning Off the Key Tone

The scanner is preset to sound a tone each time you press one of its keys.

To turn the key tone on and off:

1. Turn on the scanner. `WELCOME SCAnnInG rECEIVEr` appears.
2. While the welcome message is on the screen, press **1** to turn on the key tone or press **2** to turn it off.

Understanding the Display

	Row 1
⬤ FD/PD BANK **1 2 3 4 5 6 7 8 9 10** AIR HAM	Row 1
WX 000ᴄʜ000.000ₒ MAR L/O	Row 2
▲▼ PRI ⬛MAN _ SCAN _ SRCH PGM DLY	Row 3

Row 1

⬤ – Skywarn channel active.

FD/PD – Searching the fire/police bank.

BANK – Indicates the scan bank(s). A bar appears under the numbers for banks that are turned on.

AIR – Searching the aircraft bank.

HAM – Searching the amateur radio bank.

Row 2

WX – Searching weather channels.

FM radio – Searching for FM radio stations.

000 **–** Channel number the scanner is tuned to.

CH – Appears with channel number (*1–200*) or *P* (priority channel).

000.000ₒ **–** Frequency the scanner is tuned to.

MAR – Searching the marine bank.

L/O – A locked out channel/frequency is manually selected or reviewed.

Row 3

▲▼ (Up/Down) – Search or scan direction.

PRI – Priority feature is active.

⬛ – Signal meter; bars indicate strength of signal.

MAN – Manual mode.

SCAN – Scan mode.

SRCH – Searching a service bank.

PGM – Program mode.

DLY – Two-second delay is active.

Display Messages

ALL CH L-out **–** All channels locked out during scan or marine band search.

b X Ch-FULL **–** All displayed bank channels are full.

b X StorE **–** Frequency programmed into displayed bank's channel.

CLOnE **–** Clone mode.

-dUPL- **–** Frequency is already stored in another channel.

Error **–** Entry error.

FLo ALL-CL **–** All the locked-out frequencies removed during a FD/PD, AIRCRAFT, or HAM bank search.

L-r **–** Review the locked-out frequencies.

L-O Fr-FULL **–** Maximum of 50 frequencies already locked out.

oFF tonE **–** Key tone deactivated.

On tonE **–** Key tone activated.

P **–** Scanner is tuned to the priority channel.

-t- **–** Tune mode.

Sub Bank Messages

Lo VHF **–** Sub-bank 1 of the fire/police bank.

Hi VHF **–** Sub-bank 2 of the fire/police bank.

UHF **–** Sub-bank 3 of the fire/police bank.

10 M **–** Sub-bank 1 of the HAM bank.

6 M **–** Sub-bank 2 of the HAM bank.

2 M **–** Sub-bank 3 of the HAM bank.

70CM **–** Sub-bank 4 of the HAM bank.

Understanding the Keypad

MAR – Search the preprogrammed marine bank.

FD/PD – Search the preprogrammed fire/police bank.

⊕ – Search the preprogrammed weather bank, or press and hold to jump to the Skywarn channel. You must first program your local Skywarn frequency into channel 200 (see page 22).

HAM – Search the preprogrammed amateur radio bank.

AIR – Search the preprogrammed aircraft bank.

FM – Search FM radio stations.

SCAN / MAN (Manual) – Enter Scan mode to scan programmed channels. Enter Manual mode to stop scanning, directly enter a channel number, or monitor a single channel.

▲ ▼ – Select the direction for searching and scanning.

PRI / ALERT – Enable and disable the priority feature. Enable and disable SAME standby mode when monitoring a weather channel.

PSE (Pause) – Stop and restart a search or tune.

0–9 – Input numbers when entering frequencies and selecting banks (0 selects bank 10). The number range above the keys (1–20, 21–40, 41-60, etc.) indicates the channels stored in that bank.

• / DELAY – Input a decimal point when entering frequencies. Set a two-second delay for a selected channel.

ENT (Enter) – Complete the entry of a frequency.

L/O / L/O RVW – Lock-out selected channels or frequencies. Review locked-out frequencies.

TUNE / CLEAR – Enter Tune search. Clear an incorrect entry.

PGM – Program frequencies into channels.

Configuring Your Scanner

Preprogrammed Frequencies

Your scanner includes 153 preprogrammed frequencies, which you can load into Channels 1 to 153. For a list of these frequencies, see "Preprogrammed Frequency List" on page 24.

To load the pregprogrammed frequencies:

1. Turn off the scanner and then turn it on again.
2. While *WELCOME* message appears, press **PGM.**
3. *Load –Fr–* appears, then *YES––Ent* and *No––CLEAr* appear alternately.
4. Press **ENT** to load frequencies or **CLEAR** to cancel.

Programming Channels

If you do not have a list of frequencies in your area, refer to www.radioreference.com.

1. Press **PGM**. *PGM* appears.
2. Enter the channel number (1–200) where you want to store a frequency, then press **PGM** again.
3. Use the number keys and • to enter the frequency (including the decimal point), then press **ENT**.
4. To program the next channel in sequence, press **PGM** and repeat Step 3. To program a specific channel repeat Steps 2 and 3..

   - *Your scanner automatically rounds down to the closest valid frequency. For example, if you enter 151.473, your scanner rounds it to 151.470.*
   - *If* *Error* *appears and the scanner beeps three times when you press* **ENT***, start again from Step 2.*
   - *If the frequency is already stored in another channel, the scanner beeps three times and displays* *-dUPL-* *(duplicate) and the lowest channel number where the frequency is already stored. Press* **TUNE/CLEAR** *to cancel. Press* **ENT** *if you still want to store the frequency.*

Programming with a Computer

You can upload or download programmed data to or from a PC using a USB cable available from your local RadioShack store or www.RadioShack.com.

The application software is available online. Use a search engine to find "scanner programming software." Follow instructions in the software package to upload and download data.

Cloning Programmed Data

You can transfer the programmed data to and from a PRO-650 scanner using an optional connecting cable with ⅛-inch (3.5mm) stereo phone plugs on both ends (available from your local *RadioShack* store or www.RadioShack.com).

1. Turn on both scanners.
2. Connect the connecting cable to each scanner's **PC/IF** jack. *CLOnE* and *UP to SEnd* appears.
3. Press ▲ on the host scanner.
4. *SEndInG* appears at the host scanner.

To exit clone mode after the data transfer is complete, remove the cable.

No ConnEct appears if you try to connect to another model scanner. The PRO-650 does not clone with other scanner models.

Searching for Frequencies

During a tune search, the scanner tunes up or down starting from a frequency you specify.

1. Press **TUNE**. The display alternates between *PSE* and *–t–*.

2. If you want to change the starting frequency, enter a new frequency and press **ENT**.

3. Press **PSE** to start tune search. *–t–* appears on the display.

Service Bank Search

Your scanner contains groups of preset frequencies called Service Banks. You can search for marine, fire/police, aircraft, ham, FM, and weather transmissions even if you do not know the specific frequencies that are used in your area.

Then you can store the frequencies you find into the scanner's channels (except for weather and marine banks, which are already stored as channels). To start a search, press the button of the Service Bank you would like to search (Marine, Fire/Police, Aircraft, Ham, FM, or Weather).

Search Commands

- Press **PSE** to pause searching. Press **PSE** again to resume.
- Press **•/Delay** to turn the two-second delay feature on and off.
- Press **L/O** to lock-out a frequency (except Weather band).
- To reverse the search direction at any time, press ▲ or ▼.
- If necessary, you can select search groups using the number keys.

Storing Found Frequencies

Once you find interesting frequencies during a Tune or Service Bank search, you can store them in the scanner's channel-storage banks.

1. Press **ENT** when you find a frequency. The bank number and *StorE* appear.

2. To change banks, enter the new bank number.

3. Press **ENT** to store the frequency. The channel and frequency flash twice. To cancel the operation, press **TUNE/CLEAR**.

- *The frequency is automatically stored in the first empty channel of the selected bank.*
- *If the scanner displays* -dUPL-, *the frequency is already stored in another channel. Press* **ENT** *if you want to continue storing the frequency. Press* **TUNE/CLEAR** *to cancel.*
- *If there are no empty channels in the bank,* Ch-FULL *appears. You can select another bank or clear some channels in the current bank (see* **"Clearing a Stored Channel"** *on page 19).*
- *If the scanner displays* -dUPL- *or* CH-FULL*, you can store another channel location by pressing* **PGM**. *The channel number flashes and* 000.0000 *(or previous frequency) appears. Press the desired channel number then press* **ENT**. *Repeat if needed. Press* **ENT** *again when an empty channel is found.*

Birdie Frequencies

All scanners have birdie frequencies, which are signals created inside a scanner that can cause interference.

To find the birdies in your scanner:

1. Disconnect the antenna, and make sure that no other nearby radio or TV sets are turned on near the scanner.

2. Search every frequency range from its lowest frequency to the highest. Occasionally, the searching will stop as if it has found a signal, often without any sound. This is a birdie.

3. Make a list of all the birdies in your scanner for future reference.

Scanning Stored Channels

Press **SCAN/MAN** until $SCAN$ appears to continuously scan through all channels with stored frequencies.

If the scanner finds an active frequency, it stops and displays that channel and frequency number, then it automatically begins scanning again when the transmission on that frequency ends.

- *Press ▲ or ▼ to reverse the scanning direction.*
- *To monitor a channel, press* **SCAN/MAN** *at any time during the transmission so* MAN *appears.*

The scanner does not scan channels in banks that are turned off.

To turn a channel-storage bank on or off, press the bank's number key (**1–0,** using **0** for bank 10) during scanning. The channel-storage banks are on when they have a bar underneath them and off when no bar appears underneath them.

- *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.*

Setting Delay

To avoid missing a reply in conversations, a two-second delay is automatically set for each channel. The scanner stops for two seconds after a transmission ends before it resumes scanning or searching. DLY appears on the display when the delay function is active.

To turn delay on:

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

To turn delay off:

Press **•/DELAY** while the scanner is monitoring a channel or frequency. DLY disappears.

Using the Priority Channel

The priority feature sets the scanner to check one specific channel every two seconds while scanning. You can only program one frequency into the priority channel.

1. Press **PGM,** then press **PRI/ALERT.** PCH and 000.000_0 (or the previously stored frequency) appear.
2. Enter the frequency you want stored in the priority channel, then press **ENT**.
3. To turn on the priority feature, press **PRI/ALERT** during scanning or searching. PRI appears. The scanner checks the priority channel every two seconds and stays on the channel if there is activity.

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

Monitoring a Channel

You can continuously monitor a specific channel without scanning.

1. Press **SCAN/MAN** until MAN appears.
2. Enter the channel number (1–200).
3. Press **SCAN/MAN** again.

Locking Out Channels

You can increase the scanning or search speed by locking out channels or frequencies that have a continuous transmission, such as control channels, weather channels, or birdie frequencies.

Press **L/O** when the scanner stops on a channel or frequency while scanning or searching. The scanner locks out the channel/frequency then continues scanning/searching.

To manually lock-out a channel, select the channel then press **L/O**. *L/0* appears in the display.

- *Your scanner automatically locks out empty channels.*
- *You can still manually select locked-out channels.*
- *You can lock-out a maximum of 50 frequencies during a search. If you try to lock-out more,* L-0 Fr-FULL *appears.*

Managing Lock-outs

1. Set the scanner to Manual by pressing the **SCAN/MAN** button until MAN appears.
2. Hold down **L/O/L/O RV W** for about two seconds. The scanner pulls up a locked out channel.
3. Press and hold **L/O/L/O RV W** to show the next locked out channel. If an error beep sounds, there are no locked out channels.
4. To remove the lock-out, press **L/O/L/O RV W** until *L/0* disappears.

Managing Service Bank Lock-outs

1. Hold down **L/O/L/O RV W** for about two seconds during a Service Bank search.
2. Press ▲ or ▼ repeatedly to scroll through the list of locked-out frequencies. *L-r* and *L/0* appear in the display.
3. Press **L/O/L/O RV W** to remove the lock-out. The list scrolls to the next locked-out frequency.
- *When you reach the highest locked-out frequency, the scanner beeps twice and rolls to the lowest locked-out frequency.*

- *If the Service Bank has no locked-out frequencies,* EMPty *appears.*

Unlocking All Service Bank Frequencies

1. Hold down **L/O/L/O RV W** for about two seconds during a Service Bank search. *L-r* appears.
2. While holding down **TUNE/CLEAR,** press **L/O/L/O RV W**. FLo ALL—CL appears for about two seconds. Then the display alternates with YES --- Ent and No --CLEAr.
3. Press **ENT**. *L-r* EMPty appears. The scanner clears lock-outs from all frequencies in the Service Bank.

Clearing a Stored Channel

To remove a frequency stored in a channel.

1. Press **SCAN/MAN** to stop scanning.
2. Press the number keys to enter the channel number (1–200).
3. Press **PGM.** PGM appears.
4. Press **0** then **ENT**. The frequency number changes to 000.000o to indicate the channel is cleared.
5. To clear another channel, use the number keys to enter that channel number then press **PGM** again. Or, repeatedly press **PGM** until the desired channel number appears. Repeat Step 4.

Weather Features

The NOAA and your local weather reporting agency broadcast local forecast and regional weather information on one or more channels allocated for use by weather reporting agencies.

Your scanner is an extremely sensitive high-quality receiver on the weather frequencies. However, the included antenna is optimized for general purpose scanning. To receive weather alerts, please make sure you are receiving a clear signal or switch to an external antenna.

Press 🔘 to hear your local forecast and regional weather information. *WEAthEr* appears for about two seconds, then the scanner starts searching the weather bank.

Press **PSE** to stop searching the channels. *SRCH* disappears and *MAN* appears. To change the channel manually, press ▲ or ▼.

Receiving All Weather Alerts

To program the scanner to search for weather alerts every two seconds, set a weather channel as the priority channel. See **"Using the Priority Channel"** on page 17.

If the scanner detects a 1050 Hz weather alert tone on the programmed channel, the scanner sounds the alert tone and *ALErt* flashes. Press any key to turn off the alarm.

Receiving Alerts for Specific Areas

The National Weather Service precedes each weather alert with a digitally encoded SAME (Specific Area Message Encoding) signal, then a 1050 Hz tone. The SAME signal includes a FIPS (Federal Information Processing Standard) code and an event code.

A current list of FIPS codes is located at www.NWS.NOAA.gov/NWR.

SAME Standby Mode

In SAME Standby mode, your scanner monitors weather channels for SAME alerts for up to seven areas you specify by entering the FIPS codes.

To program your scanner for SAME Standby mode:

1. Press 🔘.
2. Press **PGM** to access the FIPS code entry mode.
3. Use ▲ or ▼ to select the desired FIPS code storage location.
4. Use the number keys to enter the FIPS code, then press **ENT** to store the code.
5. Repeat steps 3-4 for all the FIPS codes that you wish to store.
6. Press 🔘 to exit FIPS code entry mode. The scanner displays *F* showing that FIPS codes are enabled.
7. Press **PRI/ALERT** to initiate SAME Standby mode. The scanner displays *F [1-7]CH StAndby*.

The scanner will monitor weather channels for alerts with matching FIPS codes. To exit SAME Standby mode, press **PRI/ALERT** again.

- *Press L/O during step 4 to lock-out FIPS entries; L/O appears in the display. Press L/O again to enable FIPS entries; L/O disappears.*
- *If you do not enter any FIPS codes, or if your FIPS codes are locked out, when you enter SAME Standby mode the scanner receives alerts and warning messages for all receivable areas.*
- *The scanner sounds an alert when it receives the SAME code. To stop the alert and ready the scanner to receive a new alert signal, press any key.*
- *If you do not stop the alert within five minutes, the alert stops and the scanner beeps every ten seconds. If the scanner receives a new weather alert after five minutes, it sounds the new alert.*

Testing the Weather Alert and Beep Tone

1. To test the weather alert, press and hold **ENT** for more than 2 seconds while *F [1-7]CH StAndby* appears on the display.

   The display indicates the type of message, and the scanner sounds an alert or series of beeps. The beeps automatically change every 3 seconds.
2. Press any key to stop testing.

Skywarn™

Many areas of the country have amateur radio repeaters that have been designated as "Skywarn" repeaters. During times of severe weather, these repeaters relay reports of severe weather directly to the local National Weather Service forecast office. Your scanner can easily jump to your local Skywarn frequency and monitor these reports.

Before using this feature, you must program the Skywarn frequency into channel 200. Refer to www.radioreference.com to find Skywarn frequencies in your area.

To activate Skywarn, press and hold 🔘 for about two seconds. The scanner jumps to channel 200 to monitor the Skywarn frequency. If no frequency is programmed in the Skywarn channel, *No ProG* appears.

Additional Information

Care

Your scanner is not waterproof. Do not expose it to rain, moisture, or extremely high humidity. If the scanner gets wet, wipe it dry immediately. Use and store the scanner only in normal temperature environments. Handle the scanner carefully; do not drop it. Keep the scanner away from dust and dirt, and wipe it with a damp cloth occasionally to keep it looking new.

Initializing the Scanner

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

Important: This procedure clears all information you stored in the scanner's memory. Only initialize the scanner when you are sure the scanner is not working properly.

Important: Do not turn off the scanner until the initialization is complete. When the initialization is complete, *1CH 000.000₀* appears on the display.

1. Turn off the scanner, then turn it on again. *WELCOME SCAnnInG rECEIVEr* appears.

2. Press **0,** then press **1** while the welcome message is on the screen. *InItIAL* appears for about two seconds, then *YES —Ent* and *No —CLEAr* appear alternately.

3. Press **ENT**. *WAIt* appears for about two seconds.

Service and Repair

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

Preprogrammed Frequency List

Ch.	BANK 1 Freq. (MHz)	Ch.	BANK 2 Freq. (MHz)	Ch.	BANK 3 Freq. (MHz)
1	40.5000	21	151.6250	41	154.3250
2	52.5250	22	151.8200	42	154.3400
3	121.5000	23	151.8800	43	154.3550
4	122.0000	24	151.9400	44	154.3700
5	122.2000	25	151.9550	45	154.3850
6	122.7000	26	154.0100	46	154.4000
7	122.7500	27	154.0700	47	154.4150
8	122.8000	28	154.1300	48	154.4300
9	122.9000	29	154.1450	49	154.4450
10	122.9500	30	154.1600	50	154.5700
11	123.0000	31	154.1750	51	154.6000
12	123.1000	32	154.1900	52	155.1600
13	123.4500	33	154.2050	53	155.1750
14	131.4500	34	154.2200	54	155.2050
15	131.6750	35	154.2350	55	155.2200
16	146.5200	36	154.2500	56	155.2350
17	146.7600	37	154.2650	57	155.2650
18	146.8800	38	154.2800	58	155.2800
19	146.9400	39	154.2950	59	155.2950
20	148.1500	40	154.3100	60	155.3250

Ch.	BANK 4 Freq. (MHz)	Ch.	BANK 5 Freq. (MHz)	Ch.	BANK 6 Freq. (MHz)
61	155.3400	81	415.7000	101	460.4250
62	155.3550	82	446.0000	102	460.4500
63	155.3700	83	450.8000	103	460.4750
64	155.3850	84	454.0000	104	460.5000
65	155.4000	85	460.0250	105	460.5250
66	155.4750	86	460.0500	106	460.5500
67	156.4250	87	460.0750	107	460.5750
68	156.4500	88	460.1000	108	460.6000
69	156.4750	89	460.1250	109	460.6250
70	156.5750	90	460.1500	110	460.6500
71	156.6250	91	460.1750	111	460.7000
72	156.8000	92	460.2000	112	460.7500
73	156.9250	93	460.2250	113	460.8000
74	157.0500	94	460.2500	114	460.8500
75	157.1000	95	460.2750	115	460.9000
76	157.1250	96	460.3000	116	460.9250
77	157.4250	97	460.3250	117	460.9500
78	162.3000	98	460.3500	118	460.9750
79	163.2000	99	460.3750	119	462.5500
80	415.2000	100	460.4000	120	462.5625

Ch.	BANK 7 Freq. (MHz)	Ch.	Freq. (MHz)	Ch.	BANK 8 Freq. (MHz)
121	462.5750	134	462.9500	141	467.5875
122	462.5875	135	462.9750	142	467.6125
123	462.6000	136	464.5000	143	467.6375
124	462.6125	137	464.5500	144	467.6625
125	462.6250	138	464.8750	145	467.6875
126	462.6375	139	467.0625	146	467.7125
127	462.6500	140	467.5625	147	467.7625
128	462.6625			148	467.8125
129	462.6750			149	467.8500
130	462.6875			150	467.8750
131	462.7000			151	467.9000
132	462.7125			152	469.5000
133	462.7250			153	469.5500

Service Banks

The scanner is preprogrammed with the frequencies allocated to marine, fire/police, aircraft, ham radio, FM broadcast and weather services. This is handy for quickly finding active frequencies instead of searching through an entire bank (see **"Service Bank Search"** on page 14).

NOTE: The frequencies in the scanner's one-touch service bands are preset. You cannot change them.

Fire/Police

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

Aircraft

GROUP 1		GROUP 2	
Frequency Range (MHz).	Step (kHz)	Frequency Range (MHz).	Step (kHz)
108.000-118.000	8.33	118.00833-136.99166	8.33

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

FM Broadcast

Frequency Range (MHz)	Step (kHz)
87.3–107.9	100

Weather Channels

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

Marine

Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
01	156.0500	63	156.1750
05	156.2500	64	156.2250 / 160.8250
06	156.3000	65	156.2750
07	156.3500	66	156.3250
08	156.4000	67	156.3750
09	156.4500	68	156.4250
10	156.5000	69	156.4750
11	156.5500	70	156.5250
12	156.6000	71	156.5750
13	156.6500	72	156.6250
14	156.7000	73	156.6750
15	156.7500	74	156.7250
16	156.8000	77	156.8750
17	156.8500	78	156.9250
18	156.9000	79	156.9750
19	156.9500	80	157.0250
20	157.0000 / 161.6000	81	157.0750
21	157.0500	82	157.1250
22	157.1000	83	157.1750
23	157.1500	84	157.2250 / 161.8250
24	157.2000 / 161.8000	85	157.2750 / 161.8750
25	157.2500 / 161.8500	86	157.3250 / 161.9250
26	157.3000 / 161.9000	87	157.3750 / 161.9750
27	157.3500 / 161.9500	88	157.4250
28	157.4000 / 162.0000		

Note: Both frequencies (transmission and reception) are shown for marine channels used for duplex transmission.

Specifications

Frequency Coverage
29-54 MHz ....(5 kHz steps)/FM
87.3-107.9 MHz ....(100 kHz steps)/WFM
108-136.99166 MHz ....(8.33 kHz steps)/AM
137-143.9875 MHz ....(12.5 kHz steps)/FM
144-148 MHz..(5 kHz steps)/FM
148.0125-150.7875 MHz ....(12.5 kHz steps)/FM
150.8-161.995 MHz...(5 kHz steps)/FM
162-174 MHz ....(12.5 kHz steps)/FM
380-512 MHz ....(12.5 kHz steps)/FM

Sensitivity (S+N)/N 20 dB
29-54 MHz .... 0.5 uV
87.3-107.9 MHz ((S+N)/N 30 dB) ....1.0 uV
108-136.99166 MHz ....1.0 uV
137-174 MHz .... 0.5 uV
380-512 MHz ....0.7 uV
Spurious Rejection (FM @154 MHz) ....50 dB

Selectivity
±8 kHz/±17kHz (FM/AM)..-6dB/-50dB
±80kHz/±180kHz (WFM)..-6dB/-50dB
Search Speed ....Up to 80 Steps/Sec
Scan Speed ....Up to 40 Channels/Sec
Delay Time.. 2 Seconds

IF Frequencies
1st IF .... 10.7 MHz
2nd IF ....455 kHz
IF Interference Ratio (10.7 MHz).........................70 dB at 154 MHz

Squelch Sensitivity
Threshold (FM/AM) ....Less than 0.5 uV
Threshold (WFM) ....Less than 1.0 uV
Tight (FM).. (S + N)/N 25 dB
Tight (WFM)...(S+N)/N 60 dB
Tight (AM) .... (S+N)/N 20 dB
Antenna Impedance..50 Ohms
Audio Output Power (10% THD).............................0.7 W Nominal
Built-In Speaker....................................... 3 Inches (77 mm), 8 Ohms
Operating Temperature..........................32° to 110°F (0° to 43°C)
Power Requirements.............................9V AC Adapter (supplied)
.... 9V DC Adapter (not supplied)
Dimensions (HWD) ....8.25 x 6.87 x 2.37 In
....(210 x 175 x 60 mm)
Weight (without antenna) ....24.7 oz (700 g)

Specifications and depictions are subject to change and improvement without notice. Actual product may vary from the images found in this document.

FCC Notice

This equipment has been tested and found to comply with the limits for a scanning receiver, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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.

Limited Warranty

RadioShack warrants this product against defects in materials and workmanship under normal use by the original purchaser for **one (1) year** after the date of purchase from a RadioShack-owned store or an authorized RadioShack franchisee or dealer. RADIOSHACK MAKES NO OTHER EXPRESS WARRANTIES.

This warranty does not cover: (a) damage or failure caused by or attributable to abuse, misuse, failure to follow instructions, improper installation or maintenance, alteration, accident, Acts of God (such as floods or lightning), or excess voltage or current; (b) improper or incorrectly performed repairs by persons who are not a RadioShack Authorized Service Facility; (c) consumables such as fuses or batteries; (d) ordinary wear and tear or cosmetic damage; (e) transportation, shipping or insurance costs;

(f) costs of product removal, installation, set-up service, adjustment or reinstallation; and (g) claims by persons other than the original purchaser.

Should a problem occur that is covered by this warranty, take the product and the RadioShack sales receipt as proof of purchase date to any RadioShack store in the U.S. RadioShack will, at its option, unless otherwise provided by law: (a) replace the product with the same or a comparable product; or (b) refund the purchase price. All replaced products become the property of RadioShack. Replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for replacement of the product made after the expiration of the warranty period.

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