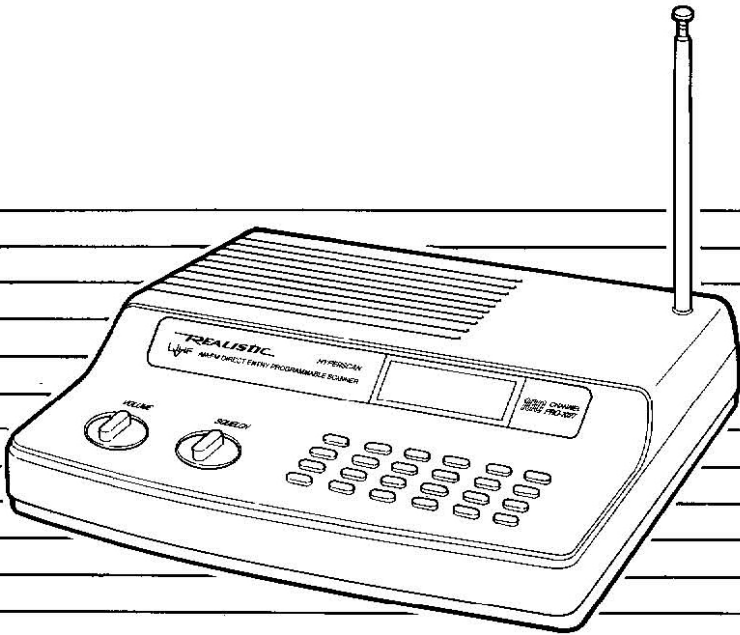


OWNER'S MANUAL

PRO-2027
Programmable Scanner

Please read before using this equipment.



Cat. No. 20-402

REALISTIC®

INTRODUCTION

Your Realistic PRO-2027 Programmable Scanner lets you in on all the action! This scanner gives you direct access to over 31,000 frequencies, including those used by the police department, fire department, ambulance services, amateur radio operators, and transportation services. You can store frequencies in your scanner's 100 channels and 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 special features:

Hyperscan — to search through frequencies at up to 50 steps per second or scan stored channels at 25 channels per second.

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

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

Memory Backup for Channel Entries — keeps the channel frequencies stored in your scanner's memory for up to 1 hour if the scanner is unplugged or if a power failure occurs.

Lockout Function — keeps channels you select from being scanned.

Priority Channel — helps keep you from missing important calls on a channel you specify.

Monitor Memories — temporarily save up to ten channels you locate during a search.

Liquid-Crystal Display — shows the selected channel, frequency, and other information.

Your PRO-2027 covers all of these bands:

30–50 MHz (VHF Lo)

50–54 MHz (6-Meter Ham Band)

108–136.975 MHz (Aircraft) (AM)

137–144 MHz (Government)

144–148 MHz (2-Meter Ham Band)

148–174 MHz (VHF Hi)

380–450 MHz (Ham Radio and Government)

450–470 MHz (UHF Lo)

470–512 MHz (UHF TV)

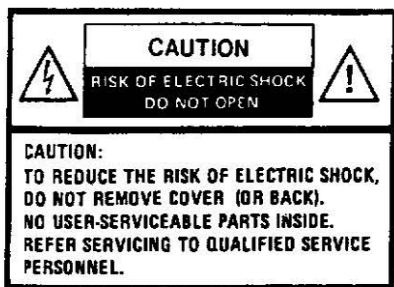
806–823.9375 MHz (UHF Hi)

851–868.9375 MHz (UHF Hi)

896–960 MHz (UHF Hi)

© 1992 Tandy Corporation
All Rights Reserved.

Radio Shack and Realistic are registered trademarks used by Tandy Corporation.



This symbol is intended to alert you to dangerous voltage inside this unit that can cause shock. Do not open enclosure.



This symbol is intended to alert you to important operating and maintenance instructions in this owner's manual.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS RECEIVER TO RAIN OR MOISTURE.

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.

FCC NOTICE:

Your scanner might cause radio or TV interference, even when it is operating properly. To determine whether your scanner is causing the interference, turn off your scanner. If the interference goes away, your scanner is causing the interference. 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 Radio Shack store for help.

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

For your records, please record your scanner's serial number in the space provided. The serial number is located on the back of the scanner.

Serial Number: _____

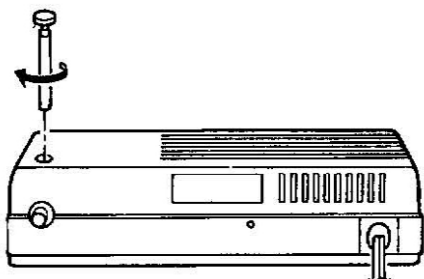
CONTENTS

PREPARATION.....	5
Connecting the Antenna	5
Connecting Power	5
Connecting Headphones	6
Listening Safely	6
Resetting and Initializing the Scanner	6
UNDERSTANDING YOUR SCANNER.....	7
A Look at the Display	7
A Look at the Keyboard	8
UNDERSTANDING CHANNEL-STORAGE BANKS	9
Channel-Storage Banks	9
Monitor Memories	9
OPERATION	10
Setting the Volume and Squelch	10
Storing Frequencies	10
Searching For and Temporarily Storing Active Frequencies.....	11
Limit Search	11
Direct Search.....	12
Listening to Monitor Memories	13
Moving a Frequency from a Monitor Memory to a Channel	13
Scanning the Channels	13
SPECIAL FEATURES	14
Delay	14
Scanning and Search Speeds	14
Locking Out Channels	14
Turning Channel-Storage Banks On and Off.....	14
Priority	15
Manually Selecting a Channel	15
A GENERAL GUIDE TO SCANNING	16
Birdies.....	16
Reception Notes	16
A Guide to the Action Bands.....	16
Typical Band Usage.....	18
TROUBLESHOOTING.....	20
CARE AND MAINTENANCE	21
SPECIFICATIONS	22

PREPARATION

CONNECTING THE ANTENNA

To attach the supplied telescoping antenna, screw it into the hole on the top of the scanner.



The antenna's length controls its sensitivity. Adjust the length of the telescoping antenna as follows for best reception.

30 MHz – 512 MHz	extend fully
806 MHz – 960 MHz	extend 2 segments

The telescoping antenna is adequate for strong local signals. For best results, attach a multi-band outdoor antenna (not supplied) to the scanner. Your local Radio Shack store sells a complete line of outdoor antennas.

Follow these steps to install an outdoor antenna.

1. Select a location as high as possible.
2. Mount the antenna following the instructions that came with the antenna and its mounting hardware.

3. Plug the antenna into the scanner's **ANT** (antenna) jack on the rear of the scanner using a 52-ohm coaxial cable (not supplied). For lengths over 50 feet, use RG8 low-loss, coaxial cable.

Note: This scanner requires a BNC antenna connector, such as Cat. No. 278-117.

Warning: When installing or removing an outdoor antenna, use extreme caution. If the antenna starts to fall, let it go! It could contact overhead power lines. **IF THE ANTENNA TOUCHES THE POWER LINE, CONTACT WITH THE ANTENNA, CABLE, OR GUY WIRES CAN CAUSE ELECTROCUTION AND DEATH!** Call the power company to remove the antenna. Do not attempt to do so yourself.

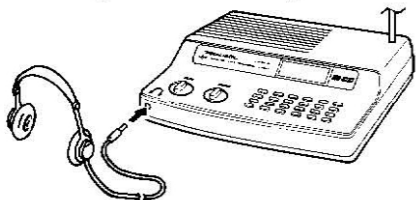
CONNECTING POWER

You power your scanner from standard AC power. Connect the scanner's AC power cord to a standard AC outlet.

The memory backup circuit begins to function a few minutes after you plug in the scanner. If a power failure occurs or if the power cord is disconnected, this circuit holds information in the scanner's memory for about 1 hour.

CONNECTING HEADPHONES

For private listening or in a noisy environment, you can plug headphones with a 1/8-inch plug (not supplied) into the jack on the front of your scanner. We recommend Radio Shack's mono headset (Cat. No. 20-210).



Note: Plugging in headphones automatically disconnects the internal speaker.

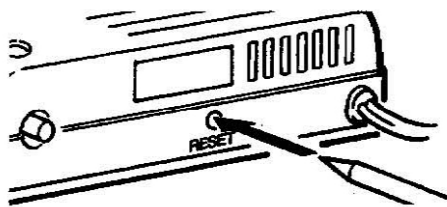
Listening Safely

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

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

RESETTING AND INITIALIZING THE SCANNER

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



Follow these steps to reset the scanner:

1. Turn on the scanner.
2. Press **RESET** at the rear of the scanner using a pointed object, such as a ball-point pen. If this is not effective, initialize the scanner as directed below.

Follow these steps to initialize the scanner.

Caution: Initialize the scanner only when you are sure the scanner is not working properly. This procedure clears all information in the scanner's memory.

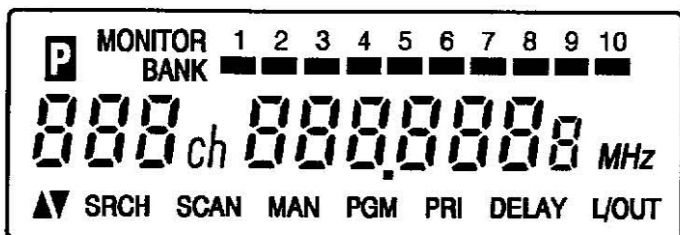
1. Turn on the scanner.
2. Press and hold **CLEAR** and then press **RESET** at the rear of the scanner using a pointed object, such as a ball-point pen. Release **CLEAR** after the display reappears.

UNDERSTANDING YOUR SCANNER

A LOOK AT THE DISPLAY

The display has several indicators that show the scanner's current operating mode. A quick look at the dis-

play will help you understand how to operate your scanner.



P — appears when you listen to the priority channel.

MONITOR — appears when you listen to a monitor memory.

BANK — appears with bars to the right to show which channel-storage banks are turned on for the scan mode. See "Understanding Channel-Storage Banks."

ch — digits that precede this indicator show which of the 100 channels the scanner is tuned to.

MHz — digits that precede this indicator show which of the 31,000 possible frequencies the scanner is tuned to.

▲ and **▼** — indicate the search direction.

SRCH — appears during a limit search (when **-L-** also appears) or a direct frequency search (when **-d-** also appears).

SCAN — appears when you scan channels.

MAN — appears when you manually select a channel.

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

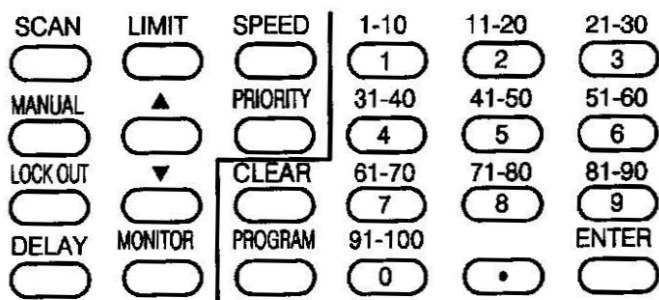
PRI — appears when you turn on the priority channel feature.

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.

L/OUT — appears when you manually select a locked-out channel.

A LOOK AT THE KEYBOARD

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



SCAN — scans through the programmed channels.

MANUAL — stops scanning and lets you directly enter a channel number.

LOCK OUT — lets you lock out a selected channel.

DELAY — programs a two second delay for the selected channel.

LIMIT — used during frequency searches. See "Searching For and Temporarily Storing Active Frequencies."

▲ — searches frequencies up from the currently displayed frequency.

▼ — searches frequencies down from the currently displayed frequency.

MONITOR — accesses the 10 monitor memories. See "Moving a Frequency from a Monitor Memory to a Channel."

SPEED — changes the scanning or search speed from low to high or high to low.

PRIORITY — sets and turns on and off priority for a particular channel.

CLEAR — clears an incorrect entry.

PROGRAM — programs frequencies into channels.

Number Keys — each has a single digit followed by a range of numbers. The single digit is the number entered when you enter a channel number or a frequency. The range of numbers (21-30, for example) indicates the channels that make up a channel storage bank. See "Understanding Channel Storage Banks."

ENTER — enters program frequencies into channels.

UNDERSTANDING CHANNEL-STORAGE BANKS

You can store up to 110 frequencies into your scanner's memory. You store each frequency into either a permanent memory, called a channel, or a temporary memory, called a monitor. There are 100 available channel memories and 10 available 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 10 channels each. Use each channel-storage bank to group frequencies, such as the police department, fire department, ambulance services, or aircraft (see "A Guide to the Action Bands").

For example, the police might use four frequencies, one for each side of town. You could program the police frequencies starting with Channel 1 (Bank 1) and program the fire department on Channel 11 (Bank 2). When you want to listen to only police calls, you can turn off the other banks.

MONITOR MEMORIES

The scanner also has 10 monitor memories. You can use these memories to temporarily store frequencies while you decide whether to save them in 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."

When you are in the monitor mode, the 10 numbers at the top of the display indicate the 10 monitor memories. **MONITOR** appears and the bar indicates the currently active monitor memory.

OPERATION

SETTING THE VOLUME AND SQUELCH

Follow these steps to set the volume and squelch.

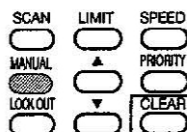
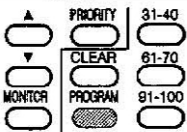
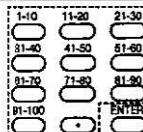
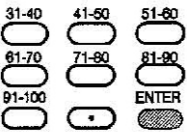
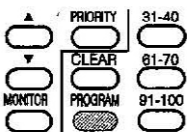
1. Set **VOLUME** to about 2 and **SQUELCH** to 10.
2. Slowly turn **SQUELCH** counter-clockwise until you hear a hissing sound.
3. Adjust **VOLUME** to a comfortable sound level.

4. Slowly rotate **SQUELCH** clockwise until the hissing stops.

Note: If the scanner picks up unwanted, partial, or very weak transmissions, rotate **SQUELCH** clockwise to decrease the scanner's sensitivity to these signals.

STORING FREQUENCIES

Follow these steps to store frequencies in channels:

<p>1. Press MANUAL. Enter the channel number you want to program.</p>	
<p>2. Press PROGRAM. PGM appears on the display.</p>	
<p>3. Enter a frequency.</p>	
<p>4. Press ENTER to store the frequency.</p> <p>Note: If you made a mistake in Step 3, Error appears on the display. Press CLEAR and repeat Step 3.</p>	
<p>5. Repeat Steps 1-4 to program more channels. If you want to program the next channel in sequence, repeat Steps 2-4.</p>	

SEARCHING FOR AND TEMPORARILY STORING ACTIVE FREQUENCIES

Good references for active frequencies are Radio Shack's "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, use these procedures to search for a transmission. See also "A Guide to the Action Bands" in this manual.

Note: Press **DELAY** to make the scanner pause 2 seconds after a transmission ends before proceeding to the next frequency.

Limit Search

Limit search lets you search within a range of frequencies you select. **-L-** appears on the display during a limit search.

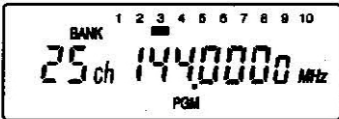
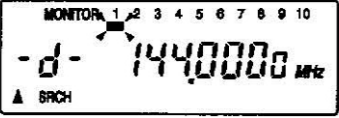
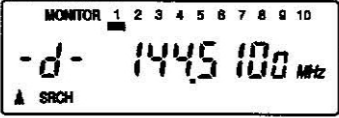
1. Press PROGRAM , then LIMIT .	
2. Enter the lower limit of the frequency range.	
3. Press ENTER , then LIMIT .	
4. Enter the upper limit of the frequency range.	
5. Press ENTER .	

<p>6. Press ▲ to search up from the lower limit. Or, press ▼ to search down from the upper limit.</p>	 <p>MONITOR 1 2 3 4 5 6 7 8 9 10</p> <p>-L- 3800000 MHz</p> <p>▲ SRCH</p> <p>SCAN LIMIT MANUAL ▲ LOCKOUT ▼</p>
<p>7. When the scanner stops on a transmission, press MONITOR to store the frequency in the current monitor memory, or press ▼ or ▲ to continue the search.</p>	 <p>MONITOR 1 2 3 4 5 6 7 8 9 10</p> <p>-L- 3801500 MHz</p> <p>▲ SRCH</p> <p>MANUAL ▲ LOCKOUT ▼ DELAY MONITOR</p>

Note: As you store frequencies in monitor memories, the bar under the memory number indicates the current monitor memory.

Direct Search

When you are listening to a channel, you can search up or down from the current displayed frequency. -d- appears on the display during a direct search.


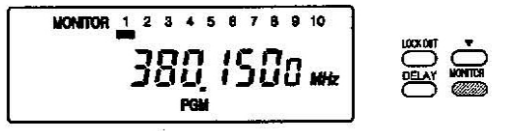
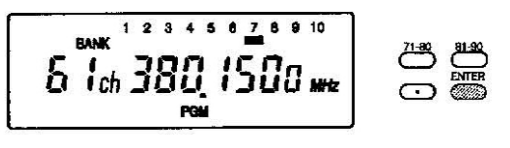
<p>1. Press MANUAL and the channel number to select a channel in which you have programmed a frequency. Then press MANUAL or PROGRAM to enter the channel number.</p>	 <p>BANK 1 2 3 4 5 6 7 8 9 10</p> <p>25 ch 1440000 MHz</p> <p>PGM</p> <p>SCAN LIMIT SPEED MANUAL ▲ PRIORITY LOCKOUT ▼ CLEAR DELAY MONITOR PROGRAM</p>
<p>2. Press ▲ to search up from the channel's frequency or press ▼ to search down.</p>	 <p>MONITOR 1 2 3 4 5 6 7 8 9 10</p> <p>-d- 1440000 MHz</p> <p>▲ SRCH</p> <p>SCAN LIMIT MANUAL ▲ LOCKOUT ▼</p>
<p>3. When the scanner stops on a transmission, press MONITOR to store that frequency in the current monitor memory.</p>	 <p>MONITOR 1 2 3 4 5 6 7 8 9 10</p> <p>-d- 1445100 MHz</p> <p>▲ SRCH</p> <p>LOCKOUT ▼ DELAY MONITOR</p>

LISTENING TO MONITOR MEMORIES

You can listen to monitor memories by pressing **MANUAL**, **MONITOR**, and then the number for the monitor memory you want to listen to.

MOVING A FREQUENCY FROM A MONITOR MEMORY TO A CHANNEL

Follow these steps to move a frequency from a monitor memory to a channel.

1. Press MANUAL . Enter the channel number you want to store the monitor frequency in; then press PROGRAM .	 <p>The display shows 'BANK' with a cursor over '6', '1ch', and '0000000 MHz'. Below the display are buttons: MANUAL, LOCKOUT, DELAY, MONITOR, PRIORITY, CLEAR, and PROGRAM.</p>
2. Press MONITOR and enter the monitor memory number that has the frequency you want to store.	 <p>The display shows 'MONITOR' with a cursor over '3', '380.1500 MHz', and 'PGM'. Below the display are buttons: LOCKOUT, DELAY, and MONITOR.</p>
3. Press ENTER . The scanner stores the monitor frequency in the channel.	 <p>The display shows 'BANK' with a cursor over '6', '1ch', '380.1500 MHz', and 'PGM'. Below the display are buttons: 71-90, 81-90, and ENTER.</p>

If you want to return to a limit search after this procedure, press **LIMIT** and either ▼ or ▲ to continue.

SCANNING THE CHANNELS

To begin scanning, press **SCAN**. The scanner scans through all non-locked channels in the activated banks. Set **SQUELCH** so you do not hear the hissing sound between transmissions.

Be sure to read the following sections to get the full benefits from all of your scanner's special features.

SPECIAL FEATURES

DELAY

Many agencies use a two-way radio system that might have a pause of several seconds between a query and a reply. To program a delay into that channel to keep from missing a reply, select the channel and press **DELAY** so **DELAY** appears on the display.

When your scanner pauses at an active channel which has been programmed with a delay, while scanning, it waits for two seconds after the completion of each transmission on that channel before it resumes scanning.

SCANNING AND SEARCH SPEEDS

While you are in scan or search mode, you can press **SPEED** to select the scanning/search speed.

The scanner has 2 different scanning speeds:

- 8 channels per second
- 25 channels per second

It also has 2 different search speeds:

- 8 steps per second
- 50 steps per second

LOCKING OUT CHANNELS

You can increase the effective scanning speed by locking out specific channels that you have not yet programmed. Manually select the empty channel and press **LOCK OUT** so **L/OUT** appears on the display. This is also handy for locking out channels you have programmed that have a continuous transmission. You can still manually select locked-out channels.

To unlock a channel, manually select the channel and press **LOCK OUT** so **L/OUT** disappears from the display.

Note: There must be at least one active channel in each bank. You cannot lock out all channels.

TURNING CHANNEL-STORAGE BANKS ON AND OFF

You can turn each channel-storage bank on and off. When you turn off a bank, the scanner does not scan any of the 10 channels in the bank.

While scanning, press the number key corresponding to 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.

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

PRIORITY

You can scan through the programmed channels, and still not miss an important or interesting call on a specific channel. To program a stored channel as the priority channel, press **PROGRAM**, the desired channel number and then **PRIORITY**. You can only select one channel as the priority channel.

To turn on the priority feature, press **PRIORITY** during scanning. **PRI** appears on the display. The scanner now checks the priority channel every two seconds, and stays on the channel if there is activity. **P** appears in the upper left corner of the display whenever the scanner is set to the priority channel.

To turn off the priority feature, press **PRIORITY** until **PRI** disappears from the display.

MANUALLY SELECTING A CHANNEL

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

To select a channel, just press **MANUAL**. Enter the channel number, and press **MANUAL** again. Or, if the scanner is scanning and stops at the desired channel, just press **MANUAL** one time. Pressing **MANUAL** additional times makes the scanner step through the channels.

A GENERAL GUIDE TO SCANNING

BIRDIES

Birdies are the products of internally generated signals that make some frequencies difficult to receive. If you program one of these frequencies, you hear only noise on the channel.

If the interference is not severe, you might be able to turn **SQUELCH** clockwise to cut out the interference. The most common birdies to watch for are listed below.

Birdie Frequencies:

31.545 MHz	164.835 MHz
38.400	165.040
51.200	167.855
120.600	168.855
122.700	171.855
135.200	383.475
140.890	399.250
143.910	418.125
144.910	419.100
147.660	420.650
through	431.9875
147.700	435.775
152.880	439.800
160.815	440.525
163.830	444.550

RECEPTION NOTES

Reception on the frequencies covered on your scanner is mainly line-of-sight. That means you usually won't be able to hear stations at your listening location that are located beyond the horizon.

During summer months, you might be able to hear stations in the 30-50 MHz range located several hundreds or even thousands of miles away. This type of reception is unpredictable, but often very interesting.

One very useful service is the National Oceanic Atmospheric Administration (NOAA) Weather Radio's continuous weather broadcasts. These broadcasts contain weather forecasts and data for the area around the station, plus bulletins on any threatening weather conditions. These stations use seven frequencies (between 162.40 and 162.55 MHz). In most areas of the country, you can receive one or more of these frequencies.

A GUIDE TO THE ACTION BANDS

With a little investigation, you can find active frequencies in your community to monitor exciting events. We can give you some general pointers on finding these frequencies, and you can take it from there. Please use caution and common sense when you hear an emergency call. Never go to the scene of an emergency. It could be very dangerous.

Find out if there is a local club that monitors your community's frequencies. Perhaps a local electronics repair shop that works on equipment similar to your scanner can give you channel frequencies used by local radio services. A volunteer police or fire employee can also be a good source for this information.

As a general rule on VHF, most activity concentrates between 153.785 and 155.98 MHz and then again from 158.73 to 159.46 MHz. Here you find local government, police, fire, and most emergency services. If you are near a railroad or major railroad tracks, look around 160.0 to 161.9 for signals.

You can hear commercial aircraft transmissions between 118 and 136.975 MHz. Military aircraft operate between 225 and 400 MHz.

In some large cities, the UHF bands are used for emergency services. Here, most of the activity is between 453.025 and 453.95 MHz and between 456.025 and 467.925 MHz.

In the UHF band, frequencies between 456.025 and 459.95 MHz and between 465.025 and 469.975 MHz are used for mobile units and control stations associated with base and repeater units that operate 5 MHz lower (that is, between 451.025 and 454.95 MHz and between 460.025 and 464.975 MHz). This means if you find an active frequency inside one of these spreads, you can look 5 MHz

lower (or higher) to find the base station/repeater for that service.

A newer technology is now available that uses the 800 MHz band for many services. Trunked radio, introduced to business systems in 1975, is now used by public safety agencies. With up to twenty channels available, the transmitter automatically selects an unused frequency each time it is activated. Several agencies can share such a system without interfering with each other. This system can provide secure communications for selected units, with unselected units unable to hear the message.

Frequencies in different bands are accessible only at specific intervals. In the VHF-Lo, HAM, Government, and VHF-Hi bands, frequencies are available in 5 kHz steps. In the aircraft band, frequencies are available in 25 kHz steps. In all other bands, frequencies are available in 12.5 kHz steps. Your scanner rounds the entered frequency down to the nearest valid frequency. For example, if you try to enter 151.473, the scanner accepts this as 151.470 MHz.

TYPICAL BAND USAGE

The following is a brief listing of the typical services that use the bands your scanner receives. This listing helps you decide which ranges you would like to scan.

These frequencies are subject to change, and might vary from area to area. For a more complete listing,

Abbreviations:

BA.....Remote Broadcast (Radio & TV)
CA.....General Mobile (Radio)
CAP.....Civil Air Patrol
IB.....Business
IF.....Forest Products
IM.....Motion Picture Industry
IP.....Petroleum Industry
IS.....Special Industrial (Construction, farming, etc.)
IT.....Telephone Maintenance
IW.....Power and Water Utilities
IX.....Manufacturers
IY.....Relay Press (newspaper reporters)
LA.....Automotive Emergency (tow trucks)
LJ.....Motor Carrier, Trucks
LR.....Railroad
LU.....Motor Carrier, Buses
LX.....Taxi
MC.....Maritime Limited Coast (private stations)
MG.....Maritime Government (Coast Guard)
MP.....Maritime Public Coast (marine telephone)
MS.....Maritime Shipboard
PF.....Fire
PH.....Highway Maintenance
PL.....Local Government
PM.....Medical Services
PO.....Forestry Conservation
PP.....Police
PS.....Special Emergency
RA.....Mobile Telephone (aircraft)
RC.....Mobile Telephone (radio common carrier)
RT.....Mobile Telephone (landline companies)
BIFC.....Boise Interagency Fire Cache

Government Agencies:

UAF.....Air Force
UAR.....Army
UBW.....International Boundary &
Water Laboratories
UCE.....Environmental Research Laboratories
UCF.....Maritime Fisheries Service
UCG.....Coast Guard

refer to the "Police Call Radio Guide including Fire and Emergency Services," "Official Aeronautical Frequency Directory," and "Official Marine Frequency Directory" available at your local Radio Shack store.

Abbreviations used by permission of the publishers of "Police Call Radio Guide," Copyright Hollins Radio Data.

UCM.....Maritime Administration
UCO.....Ocean Survey
UCP.....National Capitol Police
UCW.....National Weather Service
UCX.....Department of Commerce
UEP.....Environmental Protection Agency
UER.....Department of Energy
UFA.....Federal Aviation Administration
UFC.....Federal Communications Commission
UGC.....Soil Conservation Service
UGF.....Forest Service
UGS.....General Services Administration
UGX.....Department of Agriculture
UHW.....Dept. of Health and Human Services
UIB.....Bonneville Power Administration
UIF.....Bureau of Sport Fisheries and Wildlife
UIG.....Geological Survey
UII.....Bureau of Indian Affairs
UIL.....Bureau of Land Management
UIM.....Bureau of Mines
UIP.....National Park Service
UIR.....Bureau of Reclamation
UIS.....Southwestern Power Administration
UIX.....Department of the Interior
UNO.....United Nations
UNS.....NASA
UPO.....Postal Service
USA.....Federal Govt. Misc.
USD.....State Department
USN.....Navy
UTC.....Bureau of Customs
UTM.....Bureau of the Mint
UTR.....Department of Transportation
UTV.....Tennessee Valley Authority
UTX.....Treasury Department
UVA.....Veterans Administration
UXX.....Classified

Band Usage:

30-50 MHz:

30.00-30.55	.....	USA,UAR,USN,UCG,UAF
30.58-31.98	.....	IS,IP,IB,LU,PO
32.00-32.99	.....	USA,UAR,USN,UCG,UGX,UAF,UIR
33.02-33.98	.....	PS,PH,IS,IB,IP,PF
34.01-34.99	.....	UCG,UER,USA,UAR,UAF USN,UGX,UIP,UIF
35.02-35.98	.....	IB,IT,RC,RT,IS,PS
36.01-36.99	.....	UIX,UER,USA,UAR,USN,UTR, UCO,IP,UHW,UGF,UGX,UAF
37.02-37.98	.....	PP,PL,IW,PH,PS
38.27-38.99	.....	USA,USN,UGX,UGF,UAR, UAF,UIX,UTV,UVA
39.02-39.98	.....	PP,PL
40.01-41.99	.....	UIA,UAR,UIP,UAF,USA,UVA,UER, USN,UIF,UIR,UTV,UIM,IP,UIX,UEP, UCG,UIL,BIFC,UHW,UTX
42.02-42.94	.....	PP
42.96-43.68	.....	IB,IS,IT,RC,RT,PS
43.70-44.60	.....	LU,LJ
44.62-46.58	.....	PP,PO,PL,PH,PF,PS
46.61-46.99	.....	USA,UIL,BIFC,UAF,UAR,UGX,UGF
47.02-49.58	.....	PH,PS,IS,IW,IF,IP
49.61-49.99	.....	UIL,UAR,UGC,UAF,UAR, UGX,UGF,USA

150-173 MHz

150.775-151.985	.....	PM,LA,IF,PH,PO,IS,IB
150.0075-152.84	.....	PM,RC,LX,IF,IB,RT
152.87-153.725	.....	IM,IS,IP,IX,IF,IW
153.74-156.24	.....	PL,PF,IS,IB,PP,PM,PH
156.255-157.45	.....	IP,MC,MS,MG,MP,PM
157.47-158.70	.....	LA,LX,IF,IS,IB,RT,IW,IP,IX,IT,RC
158.73-159.48	.....	PP,PL,PH,PO,IP
159.495-161.565	.....	LR,LJ
161.58-162.00	.....	IP,MC,BA,MP
162.025-173.9875	.....	Misc. Govt. Agencies

406-512 MHz

406.125-419.975	.....	Misc. Govt. Agencies
450.05-450.925	.....	BA
451.00-451.70	.....	IW,IF,IP,IT,IX
451.725-452.175	.....	IS,IF,IP,LX
452.20-452.95	.....	LX,LJ,LR,LA
452.975-453.975	.....	IY,PL,PH,PF,PO,PP
454.00-457.60	.....	IP,RC,RT,RA,BA,IB
458.025-467.925	.....	PM,PP,IB,IX,IF,IP,IT,IW,GM
482.00-508.9875	.....	Mixed Public Safety

Unlike the lower bands, frequencies in the 800 MHz band are not allocated by the FCC to specific services. In each area, the channels are licensed on a first come, first served basis. There are two categories for licensing: Public Safety and Industrial. Systems using one to five channels are conventional. Five channel systems might use trunked service, but all systems with more than five channels must use a trunked system.

851.0125-855.9875	.....	Conventional Systems
856.0125-860.9875	.....	Conventional or Trunked
861.0000-865.9875	.....	Trunked Systems
866.0000-869.9999	.....	Reserved-Satellite

You might discover one of your regular stations on another frequency that is not listed. It might be what is known as an image. For example, you suddenly find 453.275 also on 474.675. To see if it is an image, do a little math. Double the intermediate frequency of 10.7 MHz and subtract that number (21.4) from the new frequency. If the answer is the regular frequency, then you have tuned to an image. Occasionally, you might get interference on a weak or distant channel from a strong broadcast 21.4 MHz below the tuned frequency. This is rare, and the image signal is usually cleared whenever there is a broadcast on the actual frequency.

TROUBLESHOOTING

We hope you don't have any problems with your scanner, but if you do, the following suggestions might help.

Problem	Cause and Solution
The scanner does not function.	Check to see that the scanner is plugged into a working AC outlet.
No reception or poor reception.	<ul style="list-style-type: none">● Antenna is not correctly installed. Check the connector.● The area is not suitable for the scanner – relocate the scanner and try again.● Frequencies are not properly programmed – check and reprogram.
Error appears on the display.	Programming error – check the frequency and reprogram, if necessary.
Keys do not work and display is random.	Reset the scanner. See “Resetting and Initializing the Scanner.”
Frequency is not accepted.	If no error is displayed, you entered a frequency between the steps. Your scanner rounds invalid frequencies down to the nearest valid frequency. Enter the correct frequency.

If none of the above suggestions help, take your scanner to your local Radio Shack store for assistance.

CARE AND MAINTENANCE

Your PRO-2027 Programmable 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 can 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 your scanner's internal components can invalidate the scanner's warranty and might void your FCC authorization to operate it. If your scanner is not operating as it should, take it to your local Radio Shack store for assistance.

SPECIFICATIONS

Frequency Coverage:

VHF-Lo	30-50 MHz (in 5 kHz steps)
Ham	50-54 MHz (in 5 kHz steps)
Aircraft	108-136.975 MHz (in 25 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	380-450 MHz (in 12.5 kHz steps)
UHF-Lo	450-470 MHz (in 12.5 kHz steps)
UHF-TV	470-512 MHz (in 12.5 kHz steps)
UHF-Hi	806-823.9375 MHz (in 12.5 kHz steps)
	851-868.9375 MHz (in 12.5 kHz steps)
	896-960 MHz (in 12.5 kHz steps)

Channels of Operation..... Any 100 channels in any band combinations
(10 channels x 10 banks) and 10 monitor channels.

Sensitivity (20 dB Signal-to-Noise Ratio):

30-54 MHz	0.5 μ V
108-136.975 MHz	2.0 μ V
137-174 MHz	1.0 μ V
380-512 MHz	1.0 μ V
806-960 MHz	2.0 μ V

Spurious Rejection:

30-54 MHz	50 dB at 40 MHz
108-136.975 MHz	50 dB at 124 MHz
137-174 MHz	50 dB at 154 MHz
380-512 MHz	Not specified
806-960 MHz	Not specified

Selectivity:

\pm 10 kHz	-6 dB
\pm 20 kHz	-50 dB

Scanning Rate

Fast speed:.....	25 channels/sec.
Slow speed:.....	8 channels/sec.

Search Rate

Fast speed:.....	50 steps/sec.
Slow speed:.....	8 steps/sec.

Priority Sampling.....2 seconds

Delay Time.....2 seconds

Modulation Acceptance..... \pm 8 kHz

IF Frequency.....10.7 MHz and 455 kHz

Squelch Sensitivity:	
Threshold	1.0 μ V
Tight (VHF Lo, Hi, UHF)	(S+N)/N 25 dB
(Aircraft).....	(S+N)/N 20 dB
Antenna Impedance.....	50 ohms
Audio Power	1.2 watt nominal
Built-in Speaker (3").....	8 ohm, dynamic type
Power Requirement	AC 120 volts, 60 Hz, 13 watts
Dimensions	7 $\frac{1}{16}$ \times 9 $\frac{7}{8}$ \times 2 $\frac{3}{8}$ inches (DWH)
	(180 \times 250 \times 60 mm)
Weight.....	Approx. 53 oz. (1.5 kg) without antenna

Features and specifications are of typical units and subject to change for improvement without notice.

US PATENT NUMBERS:

3,794,925
 3,801,914
 3,961,261
 3,962,644
 4,027,251
 4,092,594
 4,123,715
 4,245,348

RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for 1 year from date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your Radio Shack sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

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

We Service What We Sell

RADIO SHACK
A Division of Tandy Corporation
Fort Worth, Texas 76102