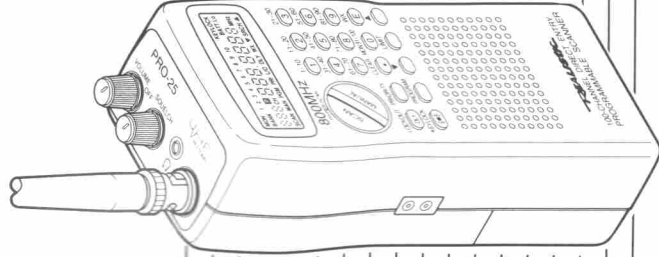


PRO-25 100-Channel OWNER'S MANUAL Portable Scanner

Please read before using this equipment.



20-505 (available in Canada only)
20-9505 (available in Europe/Australia only)

REALISTIC® *

INTRODUCTION

Your new REALISTIC PRO-25 100-Channel Portable Scanner lets you in on all the action! This scanner gives you direct access to multiple exciting frequencies. You can select up to 100 channels to scan and you can change your selection at any time.

The secret to your scanner's ability to scan so many frequencies is its custom-designed microprocessor—a tiny, built-in computer. Your scanner also has these special features:

HyperScan—scans up to 50 channels per second and searches up to 100 frequencies per second.

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

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

Priority Channel—checks a channel you select every 2 seconds so you don't miss important calls.

Weather Band Key—scans seven preprogrammed weather frequencies so you can hear about current weather conditions. (The weather band is only available in Canada.)

Frequency Search—lets you find every available frequency.

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

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*Registered Trademark of Tandy Corporation.

Monitor Memories—let you temporarily save up to 10 channels you locate during a frequency search.

Display Backlight—makes the scanner easy to read in dimly-lit areas.

Flexible Antenna with BNC Connector—provides excellent reception and is designed to help prevent antenna breakage.

Memory Backup—keeps the channel frequencies stored in memory for up to 1 hour during a power loss.

The Pro-25 (20-505 available in Canada only) receives these bands:

- 29-29.7 MHz (10-Meter Amateur Radio)
- 29.7-30 MHz (HF Hi)
- 30-50 MHz (VHF Lo)
- 50-54 MHz (6-Meter Amateur Radio)
- 108-136.975 MHz (Aircraft)
- 137-144 MHz (Government)
- 144-148 MHz (2-Meter Amateur Radio)
- 148-174 MHz (VHF Hi)
- 406-450 MHz (70-Centimeter Amateur Radio and Government)
- 450-470 MHz (UHF Lo)
- 470-512 MHz (UHF "T" Band)
- 806-823.9375 MHz (Public Service)
- 851-868.9375 MHz (UHF Hi)
- 896.1125-956 MHz (UHF Hi, 33-Centimeter Amateur Radio)

CONTENTS

The Pro-25 (20-9505 available in Europe and Australia only) receives these bands:

- 66-88 MHz (VHF Lo)
- 108-136.975 MHz (Aircraft)
- 137-144 MHz (VHF Hi)
- 144-148 MHz (2-Meter Amateur Radio)
- 148-174 MHz (VHF Hi)
- 406-450 MHz (70-Centimeter Amateur Radio and UHF Lo)
- 450-470 MHz (UHF Lo)
- 470-512 MHz (UHF Hi)

Europe:

- 806.000-956.000 MHz (UHF Hi)

Australia:

- 806.000-823.9375 MHz (UHF Hi)
- 823.9500-850.9800 MHz (UHF Hi)
- 851.0000-868.9375 MHz (UHF Hi)
- 868.9500-896.1000 MHz (UHF Hi)
- 896.1125-956.0000 MHz (UHF Hi)

In addition, your scanner is preprogrammed with these weather service channels (can be received in Canada only):

- 162.400 MHz
- 162.425 MHz
- 162.450 MHz
- 162.475 MHz

For your permanent records, we urge you to record your scanner's serial number in the space below. The serial number is located on the scanner's back panel.

Serial Number: _____

Use of scanners must conform to the requirements of the law of the country where they are utilized. Always check that your intended use is legally permitted. InterTAN Inc. and its subsidiaries cannot be held responsible for the illegal use of scanners.

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POWER SOURCES

You can power your scanner from any of these power sources:

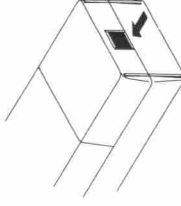
- Internal batteries (not included)
- Standard AC power (using an optional AC adapter)
- Vehicle battery power (using an optional DC adapter)

Using Internal Batteries

You can power your scanner with four AA batteries. For the longest operation and best performance, we recommend alkaline batteries. Or, you can use rechargeable nickel-cadmium batteries.

Follow these steps to install or replace batteries.

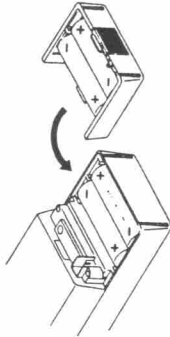
1. If the scanner is on, turn **VOLUME/OFF** fully counterclockwise until it clicks to turn it off.
2. Press down the tab on the battery compartment cover, and lift open the compartment.



3. Remove any old batteries from the compartment and cover.

Caution: Always dispose of old non-rechargeable batteries promptly and properly. Do not bury or burn them.

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

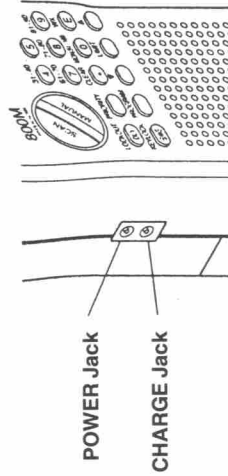


5. Replace the cover.

If BATT.Lo flashes on the display, immediately replace or recharge all four batteries. See "Important Information About the External Power Jacks" and "Charging Nickel-Cadmium Batteries."

IMPORTANT INFORMATION ABOUT THE EXTERNAL POWER JACKS

The scanner has two external power jacks—POWER and CHARGE. It is important that you understand the purpose of each jack before you connect any adapter to the scanner.



The POWER jack powers the scanner and disconnects the internal batteries. You can use this jack with either an AC or DC adapter, regardless of the type of batteries you installed.

The CHARGE jack powers the scanner and also charges the internal batteries. Use the CHARGE jack only when rechargeable nickel-cadmium batteries are installed.

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

USING AC POWER

To operate the scanner from AC power, you need an AC adapter.

Cautions:

- You must use an AC adapter that supplies 9 volts and delivers at least 300 milliamps. Its center tip must be set to negative, and its plug must correctly fit the scanner's POWER jack. Using an adapter that does not meet these specifications could seriously damage the scanner or the adapter.
- Always plug the adapter's barrel plug into the scanner before you plug the adapter's power module into the AC outlet. Always unplug the adapter's power module from the AC outlet before you unplug the adapter's barrel plug from the scanner.



Plug the adapter's barrel plug into the scanner's POWER jack. Then plug the adapter's power module into a standard AC outlet.

Note: If you installed rechargeable nickel-cadmium batteries in the scanner, you can connect the AC adapter to the CHARGE jack. This powers the scanner and recharges the batteries at the same time. See "Charging Nickel-Cadmium Batteries."

USING VEHICLE BATTERY POWER

You can power the scanner from your vehicle's battery power, using a DC adapter.

Cautions:

- You must use a DC adapter that supplies (regulated) 9-volt power and delivers at least 300 milliamps. Its center tip must be set to negative, and its plug must correctly fit the scanner's POWER jack. Using an adapter that does not meet these specifications could seriously damage your scanner or the adapter.
 - Your vehicle must have a 12-volt, negative-ground electrical system.
 - To protect your vehicle's electrical system, always plug the adapter into the scanner before you plug it into your vehicle's cigarette-lighter socket. Always unplug the adapter from the vehicle's cigarette-lighter socket before you unplug it from the scanner.
- Follow these steps to connect the DC adapter.



1. Connect the DC adapter's barrel plug to the adapter's cable, with the tip set to - (negative).

2. Set the adapter's voltage switch to 9V.

3. Insert the barrel plug into the scanner's POWER jack.

4. Plug the other end of the adapter into your vehicle's cigarette lighter socket.

Note: If the scanner does not operate properly when you use a DC adapter, unplug the adapter from the lighter socket and clean the socket to remove ash and other debris.

CHARGING NICKEL-CADMIUM BATTERIES

The scanner has a built-in charging circuit that lets you recharge nickel-cadmium batteries while they are in the scanner. To charge the batteries, simply connect an AC or DC adapter to the scanner's CHARGE jack.

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

It takes about 10 to 18 hours to recharge batteries that are fully discharged. You can operate the scanner while recharging nickel-cadmium batteries, but the charging time is lengthened.

Cautions:

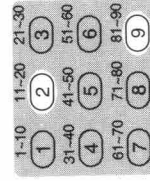
- Do not overcharge nickel-cadmium batteries.
- To prevent damaging nickel-cadmium batteries, never charge them in an area where the temperature is above 32°C (90°F) or below 4°C (40°F).

RESETTING 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.

Caution: This procedure clears all the information you programmed into the scanner. Use this procedure only when you are sure your scanner is not working properly.

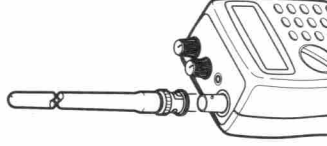
1. If the scanner is on, turn VOLUME/OFF fully counterclockwise until it clicks to turn it off. Then wait a few seconds.
2. While you press and hold down the 2 and 9 keys, turn on the scanner.



CONNECTING THE ANTENNA

Follow these steps to attach the supplied flexible antenna to the antenna jack on the top of your scanner.

1. Align the slots around the antenna's connector with the tabs on the antenna jack.



2. Press the antenna down over the antenna jack and rotate the antenna's base clockwise until it locks into place.

Connecting an Optional Antenna

The scanner's antenna jack lets you use your scanner with a variety of antennas. The supplied antenna provides adequate reception in most areas, but you can connect an optional antenna such as an external mobile antenna or outdoor base antenna. Your local Radio Shack/Tandy store sells a variety of antennas.

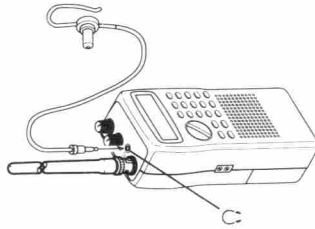
To connect an outdoor antenna, use 50-ohm coaxial cable. For lengths over 15 meters (50 feet), use low-loss dielectric coaxial cable. If your antenna's cable does not have a BNC connector, you will also need a BNC adapter (available at your local Radio Shack/Tandy store).

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

Warning: Use extreme caution when you install or remove an outdoor antenna. If the antenna starts to fall, let it go! It could contact overhead power lines. If the antenna touches a power line, contact with the antenna, mast, cable, or guy wires can cause electrocution and death. Call the power company to remove the antenna. Do not attempt to do so yourself.

CONNECTING AN EARPHONE/HEADPHONES

For private listening, plug an earphone or headphones into the jack on top of your scanner. This automatically disconnects the internal speaker. Your local Radio Shack/Tandy store has a wide selection of earphones and headphones.



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.

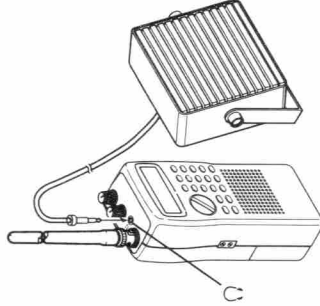
Traffic Safety

Do not wear headphones or an earphone while you drive a vehicle or ride a bicycle. This can create a traffic hazard and is illegal in some areas.

Even though some headphones and earphones are designed to let you hear some outside sounds when you listen at normal levels, they still present a traffic hazard.

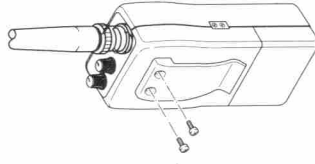
CONNECTING AN EXTENSION SPEAKER

In a noisy area, an extension speaker or an amplified speaker, positioned in the right place, might provide more comfortable listening. Plug the speaker cable's 3.5 mm (1/8-inch) mini-plug into your scanner's jack.



ATTACHING THE BELT CLIP

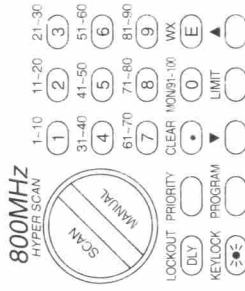
You can attach the supplied belt clip so you can easily use the scanner when you are on the go. Use the two supplied screws to attach the belt clip to the scanner. Then slide the belt clip over your belt or waistband.



UNDERSTANDING YOUR SCANNER

A LOOK AT THE KEYPAD

A quick look at the keys should help you understand the scanner's functions.



SCAN—scans through the programmed channels.

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

LOCKOUT/DLY—locks out a selected channel or programs a two-second delay for the selected channel.

PRIORITY—sets the priority channel and turns it on and off.

CLEAR/—clears an incorrect entry or enters the decimal point when programming frequencies.

MON/91-100/0—accesses the 10 monitor memories.

WX/E (enter)—scans through the preprogrammed weather channels or enters frequencies into channels. The weather channels are received in Canada only.

KEYLOCK/—a quick press turns on the display's backlight for 15 seconds, and when held down, it locks/unlocks the keypad to prevent accidental entries.

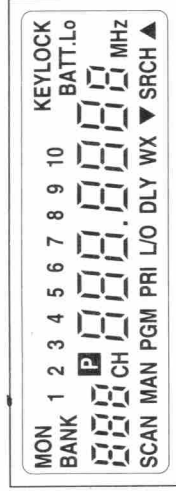
PROGRAM—programs frequencies into channels.

LIMIT, ▼, and ▲—searches for active frequencies so you can find ones you want to store.

Number Keys—each key has a single digit on it and a range of numbers printed above it. The single digits refer to the number of a channel or frequency. The range of numbers (21-30, for example) shows the channels that make up a memory bank. In addition, the keypad has different functions in the manual, scan, and program modes.

A LOOK AT THE DISPLAY

A quick look at the display should help you understand what the scanner can do.



MON—appears with a number (1-10) to show which monitor memory you are listening to.

BANK—shows which channel-storage banks are turned on.

KEYLOCK—appears when you lock the keypad.

BATT.Lo—appears when the battery is low.

CH—appears with a digit that shows which of the 100 channels the scanner is tuned to.

P—appears when you listen to the priority channel.

MHz—appears with digits that show which frequency the scanner is tuned to.

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 the priority feature is selected.

L/O—appears when you manually select a locked channel.

DLY—appears when you program a 2-second delay for a channel.

WX—appears when you scan the preprogrammed weather channels. (The weather band is received in Canada only.)

▼ and ▲—indicate the search direction.

SRCH—appears during a limit search and a direct search.

L—appears instead of the channel number during a limit search.

d—appears instead of the channel number during a direct search.

Hi—appears with a frequency to show the upper limit of the frequency range to search.

Lo—appears with a frequency to show the lower limit of the frequency range to search.

UNDERSTANDING CHANNEL-STORAGE BANKS AND MONITOR MEMORIES

Your scanner can store up to 110 frequencies. You store each frequency in either a permanent memory location, called a channel, or a temporary memory location, called a monitor memory. This scanner has 100 channels and 10 monitor memories.

Channel-Storage Banks

To make it easier to identify and select the channels you listen to most often, channels are divided into 10 channel-storage banks of 10 channels each. Use each channel-storage bank to group frequencies.

Monitor Memories

The scanner also has 10 temporary memories called monitor memories. Use these memories to temporarily store frequencies while you decide whether or not to save them into channels. This is handy for quickly storing an active frequency when you are searching through an entire band.

Note: To store frequencies into a monitor memory, you must first perform a limit search or direct search. See "Searching For and Temporarily Storing Active Frequencies."

OPERATION

TURNING ON THE SCANNER AND SETTING SQUELCH

1. Turn SQUELCH fully counterclockwise.



2. Turn VOLUME clockwise until you hear a hissing sound.



3. Turn SQUELCH clockwise, then leave it set to a point just after the hissing sound stops.

The scanner automatically starts scanning channels. Press MANUAL to stop scanning.

Notes:

- If the scanner picks up unwanted, partial, or very weak transmissions, turn SQUELCH clockwise to decrease the scanner's sensitivity to these signals. If you want to listen to a weak or distant station, turn SQUELCH counterclockwise.
- If SQUELCH is adjusted so you always hear a hissing sound, the scanner will not scan properly.

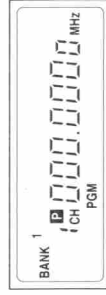
STORING FREQUENCIES

Follow these steps to store frequencies into channels.

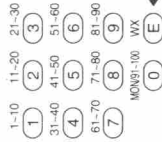
1. Press **MANUAL**. Enter the channel number where you want to store a frequency.



2. Press **PROGRAM**. PGM appears on the display.



3. Use the number keys and **CLEAR/** to enter the frequency (including the decimal point) you want to store.
4. Press **WX/E** to store the frequency.



Notes:

- If you made a mistake in Step 3, Error appears on the display and the scanner sounds three beeps. To enter a different frequency, start again from Step 3.
- Your scanner automatically rounds the entered frequency up to the nearest valid frequency. For example, if you try to enter 151.473, your scanner accepts it as 151.475.

5. Repeat Steps 1-4 to program more channels. Or, to program the next channel in sequence, repeat Steps 2-4.

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

SEARCHING FOR AND TEMPORARILY STORING ACTIVE FREQUENCIES

Note: Press **LOCKOUT/DLY** if you want to make the scanner pause 2 seconds after a transmission ends before it proceeds to the next frequency.

Limit Search

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

1. Press **PROGRAM**, then **LIMIT**. **Lo** appears on the display.



2. Enter the lower limit of the frequency range you want to search.
3. Press WX/E, then LIMIT. Hi appears on the display.



Note: If the frequency you entered is not valid, Error appears. To enter a different frequency, start again from Step 2.

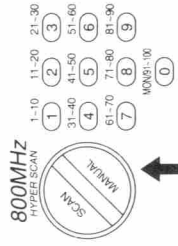
4. Enter the upper limit of the frequency range.
5. Press WX/E.
6. Press ▼ to search from the upper to the lower limit or press ▲ to search from the lower to the upper limit. The scanner starts searching, and the number of the next monitor memory flashes at the top of the display.
7. When the scanner stops on a transmission you want to save, press MON/91-100/0 to store the frequency in the flashing monitor memory. The monitor memory number stops flashing.
8. Press either ▼ or ▲ to continue the search.

Note: After you store a frequency in the displayed monitor memory, the scanner's display automatically shifts to the next monitor memory. For example, after you store a frequency in monitor memory 1, monitor memory 2 flashes at the top of the display after you resume searching.

Direct Search

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

1. Press MANUAL, the channel number, then MANUAL to select a frequency stored in a channel.



2. Press ▼ or ▲ to search down or up from the selected frequency.
3. When the scanner stops on a transmission, press MON/91-100/0 to store that frequency in the flashing monitor memory. Or, press ▼ or ▲ to continue the search.

LISTENING TO MONITOR MEMORIES

After you store a frequency into a monitor memory using a direct or limit search, you can listen to the monitor memory by pressing MANUAL, MON/91-100/0, and then the number of the monitor memory.

MOVING A FREQUENCY FROM A MONITOR MEMORY TO A CHANNEL

A monitor memory is a temporary storage area. Follow these steps to move a frequency stored in a monitor memory to a permanent channel.

1. Press MANUAL.

2. Enter the channel number where you want to store the monitor frequency.

3. Press PROGRAM.

4. Press MON/91-100/0 then the monitor memory number that has the frequency you want to store. The channel number flashes.



5. Press WX/E. The scanner stores the frequency in the selected channel, and the channel number stops flashing.

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 just want to monitor a specific channel.

Follow these steps to manually select a channel.

1. Press MANUAL.
 2. Enter the channel number.
 3. Press MANUAL again.
- Or, if your scanner is scanning and stops at the desired channel, press MANUAL once.

Note: Pressing MANUAL additional times causes your scanner to step through the channels.

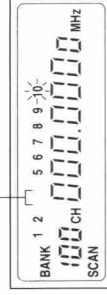
To start automatic scanning after monitoring a specific channel, press SCAN.

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 that bank.

While scanning, press the number key of 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.

Banks 3 and 4 are off



Notes:

- When scanning, the channel-storage banks may not necessarily show up in order. This is normal with the PRO-25 and does not mean that the scanner is faulty.
- 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.

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. Your scanner's delay feature lets it wait for 2 seconds after each transmission on a channel or frequency while scanning or searching.

To program a 2-second delay for a channel, press LOCKOUT/DLY. DLY appears. When your scanner stops on the channel or frequency while scanning or searching, it waits for 2 seconds after each transmission on that channel or frequency before it resumes scanning or searching.

LOCKING OUT CHANNELS

You can increase the scanner's effective scanning speed by locking out channels that you have not yet programmed or that have a continuous transmission, such as a weather channel.

To lock out a channel, manually select the channel and press LOCKOUT/DLY until L/O appears on the display.



Notes:

- You cannot lock out all channels. There must be at least one active channel in each bank.
- You can manually select locked-out channels.

To remove the lock-out from a channel, manually select the channel and press LOCKOUT/DLY until L/O disappears from the display.

PRIORITY

You can scan through channels and still not miss an important or interesting call on a specific channel. When a channel is selected as the priority channel and the priority feature is turned on, the scanner checks that channel every 2 seconds, and stays on the channel if there is activity.

To program a channel as the priority channel, press PROGRAM, the desired channel number, then PRIORITY. P appears beside the channel number.



Notes:

- You can only select one channel as the priority channel.
- Channel 1 is initially set as the priority channel.

To turn on the priority feature, press PRIORITY while the scanner is either scanning or in the manual mode. To turn off the priority feature, press PRIORITY until PRI disappears from the display.

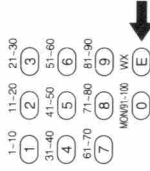
LISTENING TO THE WEATHER BAND

(The weather band is received in Canada only.)

The scanner is preprogrammed with seven weather channels. You can hear your local forecast and regional weather information on one or more of these channels.

A GENERAL GUIDE TO SCANNING

To scan the preprogrammed weather channels, simply press WX/E. The scanner stops on the local weather broadcast.



Note: For a list of all 11 national weather frequencies, see "National Weather Frequencies."

USING THE KEYLOCK

After you program your scanner, you can protect it from accidental program changes by turning on the keylock feature. When the keypad is locked, the only controls that operate are SCAN, MANUAL, KEY-LOCK/(()), VOLUME/OFF, and SQUELCH. (However, the scanner continues to scan channels.)

To turn on the keylock, press and hold KEYLOCK/(()) until the scanner beeps and KEYLOCK appears on the display. To turn it off, press and hold KEYLOCK/(()) until the scanner beeps and KEYLOCK disappears from the display.

KEYLOCK



USING THE DISPLAY BACKLIGHT

You can turn on the display's backlight for easy viewing in dimly-lit areas. Press KEYLOCK/(()) to turn on the display light for 15 seconds. To turn off the light, press KEYLOCK/(()) again.

Note: Do not hold KEYLOCK/(()) down or it will lock up the keypad.

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.

During the summer months, you might be able to hear stations in the 30-50 MHz range located several hundred or even thousands of miles away. This is because of summer atmospheric conditions commonly known as skip. This type of reception is unpredictable but often very interesting!

GUIDE TO FREQUENCIES

National Weather Frequencies (Canada only)

161.650	162.425	162.475	162.550
161.775	162.440	162.500	163.275
162.400	162.450	162.525	

Ham Radio Frequencies

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

Wavelength Meters	Voice (MHz)
10-meter	28.300-29.700 (20-505 only)
6-meter	50.100-54.000 (20-505 only)
2-meter	144.100-148.000
70-cm	420.000-450.000
33-cm	902.000-928.000

Note: Your scanner cannot receive some types of transmissions on these bands.

Birdie Frequencies

Birdies are frequencies your scanner uses when it operates. 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 most common birdies to watch for are:

31.05 MHz (20-505 only)	113.85 MHz
41.40 MHz (20-505 only)	124.20 MHz
51.75 MHz (20-505 only)	134.55 MHz
72.45 MHz (20-9505 only)	144.90 MHz
82.8 MHz (20-9505 only)	155.25 MHz

A GUIDE TO CANADIAN ACTION BANDS

With a little investigation, you can find the active frequencies in your community. 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 local radio services.

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 major railroad tracks, listen between 160.0 to 161.9 for signals.

In some larger cities, there has been a move to the UHF bands 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, mobile units operate between 456.025 and 459.95 MHz and between 465.025 and 469.975 MHz. A repeater picks up the mobile units transmissions on one frequency, then rebroadcasts (or repeats) the transmission 5 MHz lower, but at a higher power level, than the mobile units (that is, 451.025-454.95 MHz and 460.025-464.975 MHz). This means that if you find an active frequency inside one of the mobile units frequency spreads, you can look 5 MHz lower to find the repeater frequency.

A system called trunked radio lets several services use the same set of frequencies in the 800 MHz band without interference.

Several frequencies are allocated to two or more services (like fire, police, and water departments). As each service transmits, a separate control signal activates other radios in the same service, so only that service hears the transmission. The frequency is selected as soon as the unit begins to transmit, and could be any one of the allocated frequencies.

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, and 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 to the nearest valid frequency. For example, if you try to enter 151.473, the scanner accepts this as 151.475 MHz.

Note: Available frequencies and their usage can vary from one country to another and the above information should be treated as a general guide.

AVOIDING IMAGE FREQUENCIES

You might discover one of your regular stations on another frequency that is not listed. It might be what is known as an image frequency. For example, you might find a service that regularly uses a frequency of 432.585 also on 454.185 or 433.485.

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

The scanner's intermediate frequencies (IF) are:

10.80 MHz .450 MHz

Note the new frequency where you find the service:

454.185 MHz 433.485 MHz

Double the IF of this unit and subtract it from the new frequency

-21.60 MHz -.900 MHz

If the answer is the regular frequency, then the new frequency is an image frequency.

432.585 MHz 432.585 MHz

Occasionally you might get interference on a weak or distant channel from a strong broadcast 21.60 MHz below the tuned frequency. This is rare, and the image signal is usually cleared whenever there is a broadcast on the actual frequency.

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 by 1,000:

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

To convert from kHz to MHz, divide by 1,000.

$$\frac{2780 \text{ kHz}}{1000} = 2.780 \text{ MHz}$$

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

$$\frac{300}{300} = 42.25 \text{ meters}$$

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

TROUBLESHOOTING

If you have problems operating your scanner, here are some suggestions that might help. If the scanner still does not operate properly, contact your local Radio Shack/Tandy store for assistance.

Symptom	Suggestion
• Scanner is On but will not scan. • Scanner scans continuously and never stops on a transmission. • Scanner produces a constant hissing sound.	• If SQUELCH is adjusted so you always hear a hissing sound, the scanner will not scan properly. Be sure SQUELCH is adjusted properly (See "Tuning ON the Scanner and Setting Squelch"). • Check the antenna (indoor or outdoor). • Signals might be blocked from being received by the scanner due to metal frames or material in the building. Change the scanner's location and try again.
• Scanner receives stations poorly or not at all.	• Make sure the scanner is connected to a working power source.
• Scanner does not work at all.	• The scanner is tuned to a "Birdie" frequency. Avoid programming frequencies listed on page 32, or only listen to them manually.
• Scanner locks on frequencies that have an unclear transmission.	• Broadcaster is transmitting a signal type that the scanner cannot receive. Choose another frequency.

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/Tandy store for assistance.

If you cannot eliminate the interference, local laws may require you to stop using your scanner.

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

CARE AND MAINTENANCE

Your REALISTIC PRO-25 100-Channel Portable Scanner is an example of superior design and craftsmanship. The following suggestions will help you care for your PRO-25 so you can enjoy it for years.



Keep the scanner dry. If it gets wet, wipe it dry immediately. Liquids can contain minerals that 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, damage batteries, 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.



Use only fresh batteries of the required size and type. Always remove old or weak batteries. They can leak chemicals that can destroy electronic circuits.

Modifying or tampering with the scanner's internal components can cause a malfunction and might invalidate the scanner's warranty and void the unit's legal certification to operate it. If your scanner is not operating as it should, take it to your local Radio Shack/Tandy store for assistance.

SPECIFICATIONS

Frequency Coverage:

The Pro-25 (20-505 available in Canada only) receives these bands:

VHF Lo.	29-50 MHz (in 5 kHz steps)
Amateur Radio.	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)
Amateur Radio.	144-148 MHz (in 5 kHz steps)
VHF-Hi.	148-174 MHz (in 5 kHz steps)
Amateur Radio/Government.	406-450 MHz (in 12.5 kHz steps)
UHF Standard.	450-470 MHz (in 12.5 kHz steps)
UHF "T".	470-512 MHz (in 12.5 kHz steps)
UHF Public Service.	806.0000-823.9375 MHz (in 12.5 kHz steps)
	851.0000-868.9375 MHz (in 12.5 kHz steps)
	896.1125-956 MHz (in 12.5 kHz steps)

The Pro-25 (20-9505 available in Europe/Australia) receives these bands:

VHF Lo.	66-88 MHz (in 5 kHz steps)
Aircraft.	108-136.975 MHz (in 12.5 kHz steps)
VHF.	137-144 MHz (in 5 kHz steps)
Amateur Radio.	144-148 MHz (in 5 kHz steps)
VHF-Hi.	148-174 MHz (in 5 kHz steps)
Amateur Radio/UHF-Lo.	406-450 MHz (in 12.5 kHz steps)
UHF (Europe).	450-470 MHz (in 12.5 kHz steps)
	470-512 MHz (in 12.5 kHz steps)
UHF (Australia).	806.0000-956.0000 MHz (in 12.5 kHz steps)
	450-470 MHz (in 12.5 kHz steps)
	470-512 MHz (in 12.5 kHz steps)
	806.0000-823.9375 MHz (in 12.5 kHz steps)
	823.9500-850.9800 MHz (in 30.0 kHz steps)
	851.0000-868.9375 MHz (in 12.5 kHz steps)
	868.9500-896.1000 MHz (in 30.0 kHz steps)
	896.1125-956.0000 MHz (in 12.5 kHz steps)

General:

Channels of Operation. . . 100 Channels in Any Band Combinations
(10 channels per bank, 10 banks)
and 10 monitor memories

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

29-54 MHz	0.5 μ V (20-505 Canada only)
66-88 MHz	0.5 μ V (20-9505 Europe/Australia only)
108-136.975 MHz	1.3 μ V
137-174 MHz	0.6 μ V
406-512 MHz	0.5 μ V
806-956 MHz	0.7 μ V

Limit/Band Search Speed	100 steps/second
Scan Speed	50 channels/second
Priority Sampling	2 seconds
Delay Time	2 seconds

Intermediate Frequencies (IF):

1st	10.8 MHz
2nd	450 kHz

Audio Power:

FM	230 mW Maximum
AM	250 mW Maximum

Built-in Speaker: 36 mm (1⁷/₁₆ Inches) 8 Ohms, dynamic

Power Requirements: +6 VDC (4 AA alkaline batteries,
4 AA rechargeable nickel-cadmium batteries,
AC adapter, or DC universal adapter)

Dimensions: 155.6 x 61.9 x 42.9 mm
(6¹/₈ x 2⁷/₁₆ x 1¹¹/₁₆ Inches) HWD

Weight: 230 g (8.11 Ounces)

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

InterTAN WARRANTY

InterTAN warrants that this product will be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. Within this period, simply take the product and your proof of purchase to any InterTAN store or dealer and the product will be repaired without charge for parts and labour. InterTAN reserves the right to charge for transportation. Any product which has been subject to misuse or accidental damage is excluded from this warranty.

This warranty is only applicable to a product purchased through InterTAN's company owned stores and dealers and to a product that is presented for repair in a country where InterTAN offers the product for sale. While this warranty does not confer any legal rights other than those set out above, you may have additional statutory rights which will vary under the laws of the various countries, states, provinces and other governmental entities in which InterTAN operates. This warranty is subject to all statutory rights you may have in the country of purchase.

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MANUFACTURED IN THE PHILIPPINES. IMPORTED FOR/IMPORTE POUR

InterTAN CANADA LTD., BARRIE, CANADA, L4M 4W5

InterTAN AUSTRALIA LTD., A.C.N. 002 511 944

InterTAN U.K. LTD., WEST MIDLANDS, WS2 7PS

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