WARRANTY

Tandy/InterTAN offer the following guarantee on this product. Any defect discovered within 1 Year from date of purchase from any Tandy store or dealer will be repaired without charge for parts or labour (or at Tandy's option, replaced or the purchase price refunded).
Simply return the equipment with your sales receipt as proof of purchase to any Tandy store or dealer. This guarantee does not cover any defect caused by misuse or accidental damage, nor does it cover any cost of delivery or collection.
Your sales receipt is all you need to obtain this FREE SERVICE.
This guarantee gives you specific legal rights and is additional to any statutory rights you may have.

WE SERVICE WHAT WE SELL

Important Notice to Users

Use of scanners must conform to the requirements of the law of the country where utilized. Always check that your intended use is legally permitted. InterTAN UK Ltd. cannot be held responsible for illegal use of scanners.

CUSTOM MANUFACTURED FOR TANDY/INTERTAN

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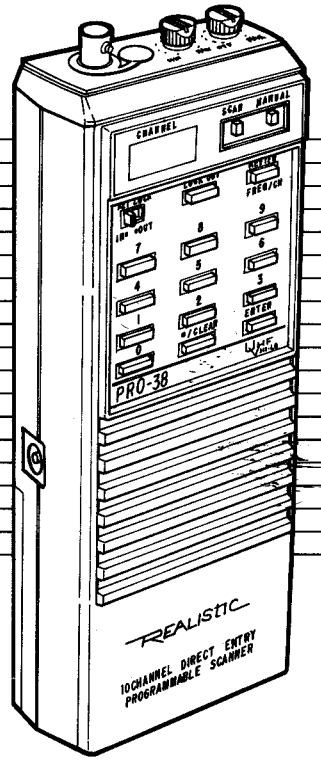
PRO-38

10-CHANNEL DIRECT ENTRY PROGRAMMABLE SCANNER

OWNER'S MANUAL

Please read before using this equipment.



Cat. No. 20-9139

REALISTIC®*

INTRODUCTION

You'll hear plenty of action with your new Realistic® PRO-38 Programmable Scanner. You have direct access to over 20,000 frequencies in seven action radio bands — including 2 m and 70 cm ham, VHF machine and much more. Your PRO-38 scans up to ten channels, so get ready for a lot of excitement.

The secret to the PRO-38 is a custom-designed microprocessor — a computer on a chip. The front panel keyboard lets you easily enter and change frequencies whenever you wish. The microprocessor also gives you special functions, such as these:

- A beep alarm, sounding every 15 — 30 seconds, alerts you when the batteries get low.
- The display shows the channel number, frequency, error indicator, and lockout indicator (when you are using the lock out feature).
- An automatic 3-second scan delay prevents you from losing replies on an individual channel during scanning.
- Memory backup for channel entries lasts up to 30 minutes during battery replacement or power failure when using household current.

The PRO-38 covers all these bands:
66 - 88 MHz (VHF Lo)
136 - 144 MHz (government)
144 - 148 MHz (ham radio 2m)
148 - 174 MHz (VHF Hi)
406 - 450 MHz (ham radio and government)
450 - 470 MHz (UHF Lo)
470 - 512 MHz (UHF Hi)
Over 20,000 frequencies!

MEMO

Note: You must install batteries (or provide another form of power) and store a frequency, before you can hear sound of any kind. **Do not attempt to use SQUELCH or VOLUME until after you enter a frequency.**

Unpack your unit carefully and check the contents for all components — the scanner, the belt clip, the flexible antenna, and the battery holder. Read this manual carefully for complete instructions and fullest enjoyment of your PRO-38.

CONTENTS

WARNING
TO REDUCE THE RISK OF ELECTRICAL SHOCK, FIRE HAZARD, OR DAMAGE TO THE UNIT, DO NOT EXPOSE TO RAIN OR MOISTURE.

For your own protection, please record your scanner's serial number in the box below. You'll find the serial number on the bottom of the unit.

Serial Number

MEMO

MEMO

PREPARATION

BATTERY COMPARTMENT

This compartment houses the battery holder for 5 AA batteries.

BATTERY CHARGER SWITCH (inside the battery compartment) This switch renders a battery recharger inoperable in the REG. ALK. BATT. position. Keep it in this position when using regular or alkaline batteries. In the NI-CAD. BATT. position, it makes possible the recharging of nickel-cadmium batteries.

BATTERY CHARGER

You can recharge nickel-cadmium batteries, provided you use Tandy's Cat. No. 273-7005 (English use) or 273-9665A (Australian use) connected to the EXT PWR jack. You can also attach an adapter here that enables you to use household current (see AC Current).

Caution: Never try to recharge regular or alkaline batteries. Attempting to do so could cause them to explode. Be sure the battery charger switch is in the correct position when using the recharger.

BATTERIES

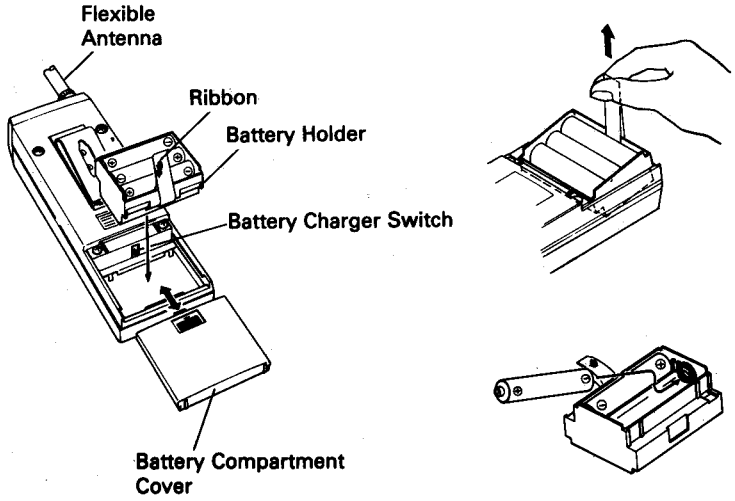
Open the battery compartment by pressing down on the arrow and sliding the cover off in the direction in which the arrow is pointing. Put five AA batteries in the battery holder, observing polarity as marked inside the holder (+ and —). Set the battery charger switch to the appropriate position — NI-CAD.BATT. for nickel cadmium batteries, REG.ALK.BATT for other batteries.

Insert the holder so that the metal contacts on the outside of the holder line up with the metal contacts inside the battery compartment.

The holder fits in only one direction. If the holder doesn't seat properly in the compartment, do not force it.

Be sure a portion of the ribbon inside the compartment remains free. You will use this in the future to lift the battery holder out of the compartment.

Replace the battery compartment cover.



SPECIFICATIONS

FREQUENCY COVERAGE:
VHF-Lo
66 — 88 MHz (in 5 kHz steps)
Government
136 — 144 MHz (in 5 kHz steps)
Ham
144 — 148 MHz (in 5 kHz steps)
VHF-Hi
148 — 174 MHz (in 5 kHz steps)
Ham/Gov't
406 — 450 MHz (in 12.5 kHz steps)
UHF-Lo
450 — 470 MHz (in 12.5 kHz steps)
UHF-Hi ("T")
470 — 512 MHz (in 12.5 kHz steps)

CHANNELS OF OPERATION:
Any 10 channels in any band combinations

SENSITIVITY:
FM: 20 dB Signal-to-Noise ratio at 3 kHz deviation
66 — 88 MHz 0.5μV
136 — 174 MHz 0.7μV
406 — 512 MHz 0.7μV

SELECTIVITY:
±10 kHz, —6 dB
±17 kHz, —50 dB

IF REJECTION:
10.85 MHz 45 dB at 155 MHz

SCANNING RATE:
10 channels sec.

DELAY TIME:
3 seconds

MODULATION ACCEPTANCE:
±12 kHz

IF FREQUENCIES:
10.85 MHz and 450 kHz

FILTERS:
1 crystal filter,
1 ceramic filter

SQUELCH SENSITIVITY:
Threshold: Less than 1.8μV
Tight: (S + N)/N 15 dB

ANTENNA IMPEDANCE:
50 ohms

AUDIO POWER:
260mW nominal

BUILT-IN SPEAKER:
1-2/3" (4.2cm) 7.2 ohm, dynamic type

POWER REQUIREMENTS:
+7.5V DC 5-AA Batteries (not included) or 6.0V DC
5-AA Rechargeable Ni-Cad Batteries (not included)
AC Adapter (Charger); Cat. No. 273-7005 (English use) or 273-9665A (Australian use) (not included).

CURRENT DRAIN:
50mA (Squelched)
110mA (full volume unsquelched)

DIMENSIONS:
7" (178mm) x 2-5/8" (67mm) x 1-3/8" (35mm)mm HWD

WEIGHT:
0.7 lbs (298 g)

BEFORE YOU CALL FOR HELP

The frequencies stored in the PRO-38 memory can be held for approximately 30 minutes without AA batteries or adapter. Check memory contents after replacing batteries.

If you have problems...
We hope you don't — but here are some suggestions.

TROUBLE	CHECK
Unit does not turn on/no power.	1. Batteries are not correctly installed — check to be sure the + and — terminals are properly aligned. 2. Batteries are dead — replace with new ones.
No reception/poor reception.	1. Antenna is not correctly installed — check connector. 2. Environment is not suitable for scanner — relocate unit and try again. 3. Frequencies are not properly programmed — check and re-program. 4. Batteries are weak or dead —replace with new ones.
E appears in display.	1. Programming error — check frequency and try again.
Beep tone sounds every 15 — 30 seconds.	1. Batteries are low in power— replace with new ones.
Keypad does not work/ cannot program.	1. Keypad is locked — check and turn KEYLOCK switch out.

If none of these suggested remedies solves the problem, return your set to your nearby Tandy for assistance.

We recommend that you use our alkaline ENERCELLs, Cat. No. 23-552. Or, with the adapter/charger, use our rechargeable nickel-cadmium batteries, Cat. No. 23-125. You can recharge nickel-cadmium batteries over 500 times.

To recharge nickel-cadmium batteries in the receiver, plug an external adapter/charger into the EXT PWR jack on the side of the unit. Use only Tandy's Cat. No. 273-7005 (English use) or 273-9665A (Australian use) with the barrel-type plug with the green tip center positive. Plug the charger into a standard AC outlet. To fully charge nickel-cadmium batteries, leave the adapter/charger connected for 10 to 18 hours. You can operate the unit while the nickel-cadmium batteries are being recharged.

Disconnect the adapter/charger when recharging is complete. Also disconnect the adapter/charger from the wall outlet during a power failure.

Note: This is the same adapter you use for converting to AC current.

MEMORY BACKUP

The memory storage is preserved by the batteries. The frequencies you store in each channel are retained even when you turn off the power on the PRO-38.

When you replace the batteries, the memory storage still works for approximately 30 minutes.

LOW BATTERY ALARM

A beep alarm, sounding every 15 — 30 seconds, alerts you when the batteries get low. Always replace all batteries at one time.

AC CURRENT

Operating the PRO-38 from household current requires Tandy's adapter, Cat. No. 273-7005 (English use) or 273-9665A (Australian use). Connect the barrel type plug with green tip and center positive to the EXT PWR jack on the PRO-38, and plug the adapter into a standard AC outlet.

Note: The 273-7005 (English use) or 273-9665A (Australian use) is the same adapter used for recharging the batteries.

VEHICLE

Note: Mobile use of scanners might be unlawful or require a permit in some areas. Check with your local authorities.

You can power your PRO-38 from your vehicle's battery, provided it has a 12-volt negative ground electrical system. Use only Tandy's Lighter Cord Set, 270-1533. Connect the plug to the EXT PWR jack on the side of the unit. Then, plug the other end into the cigarette lighter socket.

Caution: Do not let the metal tip of the power cord touch any part of the car while the adapter is plugged into the cigarette lighter socket. Doing so might blow a fuse or damage the adapter.

When you connect the adapter, the internal batteries are automatically disconnected, provided the battery charge switch inside the battery compartment is set to REG.ALK.BATT (non-rechargeable) position.

ANTENNA

Attach the flexible antenna to the BNC connector on the top of your PRO-38. Slip the slot in the antenna's connector over the protrusion on the BNC connector and rotate the antenna's connector until the two connectors lock into place.

The BNC connector on your PRO-38 makes it easy to use a variety of antennas. The supplied antenna can be removed if you wish to try a different one. You can attach an external mobile antenna or outdoor base antenna.

CARE AND MAINTENANCE

Your PRO-38 is an example of superior design and craftsmanship. The following suggestions will help you care for the scanner so that you can enjoy it for years.

Keep the product dry. If it does get wet, wipe it dry immediately. Liquids contain minerals that can corrode the electronic circuits.

Use and store the product only in normal temperature environments. High temperatures can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts.

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

Keep the product away from dust and dirt, which can cause premature wear of parts.

Wipe the product with a dampened cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the product.

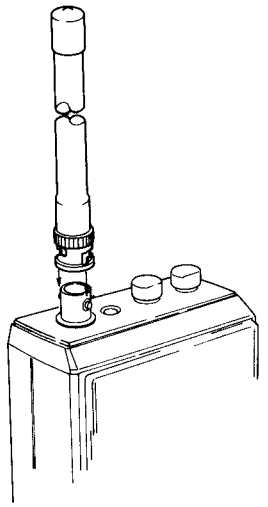
Use only fresh batteries of the recommended size and type. Always remove old or weak batteries. They can leak chemicals that destroy electronic circuits.

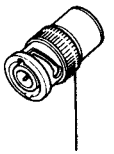
Modifying or tampering with the product's internal components can cause a malfunction and might invalidate the product's warranty. If your product is not performing as it should, take it to your local Tandy store. Our personnel can assist you and arrange for service if needed.

Even with the SQUELCH control set to maximum (fully clockwise), scanning may stop on or around some of these frequencies. If the signal is strong enough (above 10 μV in technical terms) you can listen for transmissions on the channel. But you have to use MANUAL to move away from the troublesome frequency.

Random Notes
Reception on the frequencies covered by your PRO-38 is mainly "line of sight." That means you usually won't be able to hear stations located beyond the horizon at your listening location.

During the summer months, you might be able to hear stations in the 66 - 88 MHz range located several hundred or even thousands of miles away. This is due to summer atmospheric conditions. This type of reception is unpredictable, but often very interesting!





BNC CONNECTOR

Always use 50 ohm coaxial cable. For length over 50 feet, use RG8 low-loss, dielectric coaxial cable.

EARPHONE

For private listening, remove the plastic cap, and plug an earphone into the EAR jack on the top of your PRO-38. This automatically disconnects the speaker. We recommend the Tandy's earphone, Cat. No. 33-175.

EXTERNAL SPEAKER
Sometimes in a noisy area, an extension speaker positioned in the right place can provide more comfortable listening. Plug the cable from the speaker to the EAR jack.

BELT CLIP
The clip holds the PRO-38 to your belt for hands-free movement. Using a Phillips screwdriver, attach the belt clip to the scanner with the screws provided.

OPERATION

The PRO-38 will not work until you store a frequency in one of the channels. But before storing a frequency, get acquainted with some of the controls and features you will use.

DISPLAY
The Liquid Crystal Display shows the channel number, frequency (digit by digit in sequence), LOCK OUT when certain channels are locked out of the scanning process, and E to indicate an erroneous entry.

Error Message (E)
Sometimes when you try to enter a frequency for a channel, an error message "E" appears on the display. This means the frequency is in error and you won't be able to enter it into your PRO-38.
Such frequency errors usually mean you've entered a frequency outside the ranges your PRO-38 operates on (such as 225.00 MHz) or you've put the decimal point in wrong place (14.682 MHz instead of 146.82 MHz). Check carefully to find your mistake and then press ./CLEAR key twice or simply enter the correct number once again.

KEYLOCK
In the OUT position, the KEYLOCK switch makes the keypad operable. In the IN position, keys are locked against accidental operation. (SCAN and MANUAL only remain operable.)

NUMBER KEYS
The number keys make number entries possible for accessing channels and programming frequencies.

Scan Delay
Your PRO-38 stops when it finds a signal. As soon as the signal ends, it begins scanning other channels after about 3 seconds. The 3-second delay gives you a chance to receive a reply to the first signal.

LOCKOUT
If there is a channel you do not wish to scan, such as a weather channel, enter the number of the channel on the keypad, and press [MANUAL]. Then, press [LOCKOUT].

Or, press [MANUAL] repeatedly until the channel you want appears on the display. Press [LOCKOUT]. The PRO-38 now skips this unwanted channel during the scanning process.

However, the lockout feature does not affect manual channel selection. You can still press [MANUAL] repeatedly to select any channel. Or, you can select a specific channel using number buttons.

To disable the lockout feature for a channel, select the locked out channel using either manual method, and press [LOCKOUT] again.

Birdies
"Birdies" are the products of internally generated signals that make some frequencies difficult or impossible to receive. If you program one of these, the scanner locks up and you hear only noise on that frequency.

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

68.715 MHz
68.720 MHz
68.725 MHz
72.800 MHz
73.700 MHz

Tips for Programming
If you make a mistake during number entry, you can clear it by pressing [./CLEAR] twice. Another way to correct a mistake is to first press [ENTER] and then re-enter the entire frequency.

When you enter an invalid frequency, E appears on the display to indicate an error.

Frequencies in the VHF bands are in 5 kHz steps. In the UHF bands, they are in 12.5 kHz steps. The scanner automatically rounds the frequency to the nearest valid number. Example:

If you enter 151.473 MHz, the PRO-38 accepts this entry as 151.475.

472.337 6 MHz becomes 472.337 5 MHz automatically. (The final digit to the right of the decimal does not appear on the display.)

After you program all the desired frequencies, slide the KEYLOCK switch to IN to prevent accidental entries.

VOLUME AND SQUELCH
Rotate the VOLUME control to turn on the PRO-38. Rotate SQUELCH counterclockwise until you hear a rushing sound. If you do not hear this noise, turn the VOLUME control to increase the sound.

Then, slowly rotate SQUELCH clockwise only until the noise stops.

Note:Your PRO-38 will not scan if SQUELCH is set so that you can hear a rushing sound between transmissions.

SCAN
When you press [SCAN], your PRO-38 automatically scans all the programmed channels and stops whenever it finds a signal.

MANUAL
You can manually operate the PRO-38 in one of two ways: advance sequentially through the channels by pressing [MANUAL] repeatedly, or move directly to a channel by entering the channel number on the keypad and pressing [MANUAL]. Channels that might be locked out in the scan mode are accessible in the manual mode.

REVIEW FREQUENCY/CHANNEL KEY
After you have entered a channel number on the keypad, pressing [REVIEW] causes the display to show the frequency (digit by digit in sequence) stored in that channel.

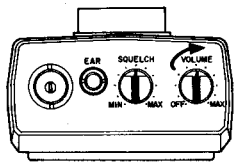
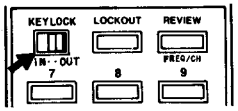
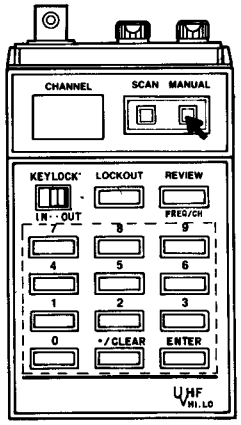
ENTER KEY
Once you finish entering a frequency by pressing number keys on the keypad, pressing [ENTER] stores the frequency in the selected channel.

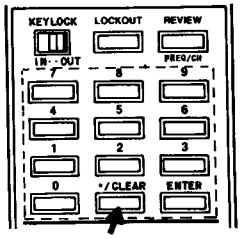
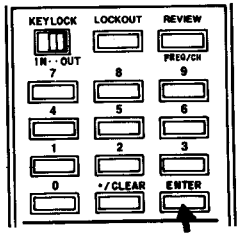
./CLEAR KEY
Pressed once, [./CLEAR] enters the decimal point necessary for programming frequencies. Pressed twice, [./CLEAR] clears an error.

FREQUENCY ENTRIES
You can omit the decimal point when entering frequencies in the VHF high band (136 to 174 MHz) and UHF (406 to 512 MHz) band. In these bands, the PRO-38 automatically enters the decimal point in the correct position. On VHF low band (66 - 88 MHz), you must press the decimal point key at the appropriate position. Otherwise, **E** appears on the display, or the wrong frequency is stored. An example of entering the wrong frequency is, pressing 4 0 1 2 5 for 40.125 MHz. Your entry is interpreted as 401.2500 MHz in the UHF band.

PROGRAMMING

Before attempting operation, enter one of the frequencies most active in your area.

Action	Control
1. Turn VOLUME on.	
2. Slide the KEYLOCK switch to OUT.	
3. Press [MANUAL] to enter the programming mode.	
4. Press the keyboard number(s) for the channel you wish to program and press [MANUAL].	
5. Using the number keys, enter the first several digits of the frequency.	

6. Press [./CLEAR] key to enter the decimal.	
7. Enter the remaining digits of the frequency.	
8. Press [ENTER] to store the frequency in memory for this channel. If you have difficulties, see "Tips for Programming."	

Press [MANUAL] to advance to the next channel, and repeat Steps 5 - 8 to program other channel frequencies.