RadioShack

20-528

PRO-528 1,000-Channel Handheld Trunking Scanner

Please read this user's guide before installing, setting up and using your new product

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Contents

Thank you for purchasing your RadioShack 1000-Channel Handheld Trunking Scanner from ***RadioShack***. Your handheld scanner is one of a new generation of scanners designed to track Motorola® Type I, Type II, hybrid analog systems, (such as Smartnet® and Privacy Plus®) plus M/A-COM EDACS® and EF Johnson LTR. Those systems are extensively used in many 800 MHz, 900 MHz, and UHF communication systems.

what's included

- **scanner**

- **antenna**

- **belt clip (2) screws**

- **user's guide**
- **quick start guide**
- **preprogrammed frequency guide**

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your scanner's features

SCAN/MANUAL — scans the stored channels and scan lists, or manually enter a channel or frequency. Manually stores talk group IDs in scan lists

SRCH (search) — start a chain search, search a specified frequency range , or search another active ID while trunking.

SVC — starts a service.

TRUNK — stores the trunking ID code or holds the trunking ID while scanning.

WX/ — starts weather search; activates Skywarn function.

HOLD/RESUME — Stops and resumes searching.

▲▼—Search and scan up and down a selected frequency range; selects options during programming; changes the ID location number while trunking.

MENU — enter the menu mode.

PRI (Priority) — sets and turns the priority function on or off.

L/O — lockout selected channels or skip specified frequencies during a search; lock out a selected ID while trunking.

— turn Signal Stalker I on and off.

E/PGM (Program) — programs frequencies into channels.

1/HAM — select the HAM band in service mode.

2/MRN (Marine) — select the marine band in service mode.

3/AIR — select the air band in service mode.

4/POL — select the police band in service mode.

6/ALERT — turns NWR - SAME weather alert on and off.

0-9 — input a number or characters.

•/CLR/DELAY — enter a decimal point, space, or programs delay time for the selected channel/ search bank, or enters a hyphen (in trunking ID setting). Press **CLR** to clear an entry. Programs a 2-second delay for a selected channel or service; programs a 2-second delay while trunking.

/KEYLOCK — locks the keypad to prevent changes; turns the display and key backlight on and off.

POWER DC 9V — connect an external power source here (not included).

PC/IF — connect an optional PC interface cable here to use the scanner with your computer.

VOLUME — turn the scanner on or off and adjust the volume.

SQUELCH — adjust the squelch.

— connect an earphone or headphone here.

supplying power to your scanner

You can power your scanner with batteries, DC adapter, or an AC adapter.

Warning: Only set the **ALKALINE ◄ JACK ► NiMH** switch to **NiMH** for use with nickel metal hydride (NiMH) rechargeable batteries. Never use non-rechargeable batteries when the switch is set to **NiMH**.

1. Set the **ALKALINE ◄ JACK ► NiMH** switch inside the battery compartment to the appropriate setting.

- **ALKALINE** when using alkaline batteries (not included).

Caution: You must use a Class 2 power source that supplies 9V DC and delivers at least 300mA. Its center tip must be set to positive and its plug must fit the scanner's DC 9V 300mA jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.

- **NiMH** when using rechargeable (NiMH) AA batteries (not included). The

scanner stops charging automatically after 14 hours when the DC jack is connected to power.

battery cautions

- Use only fresh batteries of the required size and recommended type.
- Always remove old or weak batteries. Batteries can leak chemicals that damage electronic circuits.
- Do not mix old and new batteries, different types of batteries (standard, alkaline, or rechargeable), or rechargeable batteries of different capacities.
- When the battery icon BATT flashes and the scanner beeps every 15 seconds, replace all four batteries.
- Always dispose of old batteries promptly and properly. Do not bury or burn them.

Warning: Do not connect a charging adapter to the scanner if non-rechargeable batteries (such as alkaline batteries) are installed in the scanner and **ALKALINE ◄ JACK ► NiMH** is set to NiMH, or if you are unsure of the switch's position. Non-rechargeable batteries will get hot and can even explode if you try to recharge them.

- Always connect the AC adapter to the scanner before you connect it to AC power. When you finish, disconnect the adapter from AC power before you disconnect it from the scanner.

connecting the antenna

Attach the supplied antenna to the scanner by align the slots around its base with the tabs on the scanner, then slide into place.

When using an external antenna, always use 50-ohm, RG-58, or RG-8, coaxial cable to connect to it. If the antenna is over 50 feet from the scanner, use RG-8 low-loss dielectric coaxial cable. If your antenna's cable does not have a BNC connector, your local RadioShack store carries a variety of BNC adapters.

connecting an earphone/ headphone

For private listening, you can plug headphones (not included) into the headphone jack on top of your scanner. This automatically disconnects the internal speaker. Note that the sound is "mono" and not stereo.

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.

If you use an earphone or headphones with your scanner, be very careful. Do not listen to a continuous broadcast. Even though some earphones/headphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.

attaching the belt clip

Use a Phillips-head screwdriver and the supplied screws to attach the clip to the scanner.

transferring data to or from another scanner or pc

You can transfer the programmed data to and from another PRO-528 scanner using a connecting cable which has 1/8-inch phone plugs on both ends (not supplied). Connect the cable between each scanner's PC/IF jacks. See "cloning your scanner". You can also upload or download the programmed data to or from a PC using an optional PC interface cable and software available through your local RadioShack store. See "wired programming."

about your scanner

We use a few simple terms in this manual to explain the features of the scanner. Familiarize yourself with these terms and the scanner's features, and you can put the scanner to work for you right away. Simply determine the type of communications you want to receive, then set the scanner to scan those communications.

The scanner scans conventional frequencies and trunked systems. For more information about trunked transmissions (see "trunking operation").

A frequency, expressed in kHz or MHz, is the tuning location of a station. To find active frequencies, you use the search function.

Besides searching within a selected frequency range, you can also search your scanner's service banks. Service banks are preset groups of frequencies categorized by the type of services that use those frequencies. For example, many amateur radio frequencies are located in the HAM service bank.

When you search and find a desired frequency, you can store it into a programmable memory location called a channel. Channels are grouped into channel-storage banks. The scanner has 10 channel-storage banks. Each bank contains 100-channel sets. So the scanner has 1,000 channels. You can scan the channel-storage banks to see if there is activity on the frequencies stored there.

Note: *You search frequencies when you want to find your local frequencies and scan channels after you programmed your found frequencies.*

understanding banks

service banks

The scanner is preprogrammed with all the frequencies allocated to the ham, marine, aircraft, and police (fire/emergency) services. This helps you quickly find active frequencies instead of doing a chain search (see "service bank search").

channel storage banks

To make it easier to identify and select the channels you want to listen to, all the channels are divided into 10 banks of 100 channels. Use each channel-storage bank to group frequencies, such as those for the police department, fire department, ambulance services, or aircraft.

For example, the police department might use four frequencies in your town while the fire department uses an additional four. You could program the four police frequencies starting with Channel 1 (the first channel in bank 1), and program the fire department frequencies starting with Channel 101 (the first channel in bank 2).

turning on the scanner and setting squelch

Note: *Make sure the scanner's antenna is connected before you turn it on.*

1. Turn **SQUELCH** fully counterclockwise.
2. Turn **VOLUME**/**OFF** clockwise until it clicks and you hear a hissing sound.
3. Turn **SQUELCH** clockwise until the hissing stops.

storing known frequencies into channels

You can locate and store specific frequencies into channels for later use.

Note: *To store trunked system frequencies, see "programming trunked frequencies."*

Follow these steps to store frequencies into channels.

1. Press **E/PGM** to put the scanner in programming mode. PGM appears.
2. Use the number keys to enter the channel number you want to assign to a frequency.
3. Press **SCAN/MANUAL**.
4. Use the number keys and **•/CLR / DELAY** to enter the frequency, including the decimal point you want to store.
5. Press **E/PGM** to store the frequency into the channel.

Notes:

- *If you entered an invalid frequency in Step 4,* **Error** *appears and the scanner beeps error tones.*

  Enter a valid frequency.

- If you entered a frequency in Step 4, which already exists on another channel, the scanner beeps an error tone and displays that channel. Press **•/CLR /DELAY** to clear the display, or press **E/PGM** to store the frequency in both channels.

- The scanner automatically rounds the entered number to the nearest valid frequency. For example, if you enter 151.473 (MHz), your scanner accepts it as 151.475.

- After a transmission, the scanner automatically pauses for 2 seconds on this channel before proceeding to the next active transmission. Press **•/CLR /DELAY** to turn the delay function off or on. See "delay"). The scanner stores this setting in the channel.

6. To program the next channel in sequence, press ▲ or ▼ and repeat Steps 4 and 5.

copying/moving a frequency

If you want to copy/move a frequency to a channel, follow the steps below:

1. Manually select the channel which contains the frequency you want to copy or move.

2. Press **E/PGM**.
3. Press and hold **E/PGM** during program mode. Scanner displays the copy/move menu.
4. Press ▲ or ▼ to select the copy/move function, then press **E/PGM** to decide on copy or move.
5. Select the bank where you want to copy or move the frequency. The smallest empty channel number and "000.0000" flashes on and off over the frequency you want to store.
6. Press ▲ or ▼ to move to the channel where you wish to store the frequency.
7. Press **E/PGM** to enter the frequency, and return to the program mode. To cancel the copy or move, press **•/CLR /DELAY**. If there is no empty channel, the scanner automatically selects the first channel of the bank.

searching for and temporarily storing active frequencies

If you do not have a reference to frequencies in your area, use a chain, direct, or service search (except weather search) to find a transmission.

Notes:

- *While doing a chain, direct, or service bank search, press* • **/CLR / DELAY** *if you want to turn the delay on or off (see "delay").*

- *While doing a chain, direct, or service bank search, press* **MENU** *if you want the scanner to skip data signals (such as fax or modem signals) and search only for audio (voice) signals to enter the menu mode and turn Data Skip Option to off (see "skipping data signals").*

chain search

This feature lets you search through preset frequency ranges. You can also preset a range. There are three modes within this feature: chain search mode, chain search hold mode, and program band select mode.

The preset frequency ranges are:

Bank No.	Frequency (MHz)	Step (kHz)
1	29.0000 – 49.9950	5
2	50.0000 – 54.0000	5
3	137.0000 – 147.9950	5

4	216.0000 – 224.9950	5
5	400.0000 – 419.99375	6.25
6	420.0000 – 449.99375	6.25
7	450.0000 – 469.99375	6.25
8	470.0000 – 512.0000	6.25
9	806.0000 – 956.0000	12.5
10	1240.0000 – 1300.0000	12.5

starting chain search

1. Press **SRCH**. **SRCH** appears.
2. Press **0 – 9** to enable or disable the search bank number being searched.

Notes

Note: At least one bank needs to be entered. If you disable all the banks, the error tone beeps.

3. Press ▼ to search down or ▲ to search up.
4. When the scanner stops on a transmission, quickly press **HOLD/ RESUME** to stop searching to listen to the transmission. **HOLD** appears.

5. To release the hold and continue searching, press **HOLD/RESUME**.

Note: *To step through the frequencies while HOLD appears, press ▼ or ▲.*

storing found frequencies during chain search

You can store frequencies you find in chain search mode or chain search hold mode.

1. Press **E/PGM** when you find a frequency. The bank numbers flash.
2. Press the bank number you want to store the frequency. The smallest empty channel number and "000.0000" flashes on and off over the frequency you want to store.
3. Press ▲ or ▼ to move to the channel where you wish to store the frequency.
4. Press **E/PGM** to enter the frequency.

programming search ranges

You can define the search range during a chain search in each search bank.

1. Press and hold **E/PGM** in chain search or chain search hold mode. The lowest and the highest frequencies of Bank 1 appear alternately.

2. Press the bank number you want to change the range. The lower frequency range appears.
3. Using the number keys, enter the lower limit frequency, and then press **E/PGM**.
4. Press ▲ or ▼ to change the frequency to an upper limit frequency.
5. Using the number keys, enter the upper limit frequency, and then press **E/PGM**.
6. When you finish programming frequency ranges, press **SRCH**.

direct search

You can search up or down from the currently displayed frequency using direct search. SRCH appears during searching.

Press and hold SRCH when the frequency you want to start from appears. Or, enter the frequency you want to start from using the number keys in search hold mode, then press ▲ or ▼.

Note: *If you enter an invalid frequency, the scanner displays Error. Press* **•/CLR /DELAY**.

service bank search

You can search for ham, marine, aircraft, or police (fire/emergency) transmissions without knowing the specific frequencies used in your area. The scanner is

preprogrammed with all the frequencies allocated to these services. To use this feature, press **SVC**. The current service symbol appears and the scanner starts searching. To select a different service bank, press **1/HAM**, **2/MRN**, **3/AIR** or **4/POL**.

The newly selected service symbol appears. Press ▲ or ▼ to search.

Notes

Note: *Because there are many different frequencies allocated to fire and police departments, it can take several minutes to search all the service frequencies.*

weather search

You can also search for weather transmissions. To start weather search:

1. Press **WX**/. **WX** appears. You can change the search direction by using ▲ or ▼.
2. If you want to stop the search, press **HOLD/RESUME**. **HOLD** appears.

search skip memory

You can skip up to 200 specified frequencies during a chain, direct and service search and Signal Stalker I. This lets you avoid unwanted frequencies or those already stored in a channel.

Note: *You cannot skip frequencies during WX service search.*

To skip a frequency, press **L/O** when the scanner stops on the frequency during a chain, direct and service search and Signal Stalker I. The scanner stores the frequency in memory and automatically resumes the search.

To clear a single frequency from skip memory so the scanner stops on it during a chain, direct and service search and Signal Stalker I:

1. Press **HOLD/RESUME** to stop the search.
2. Press ▲ or ▼ to select the frequency. **L/O** appears.
3. Press **L/O**. **L/O** disappears.

To clear all the skip frequencies at once while searching, press **HOLD/RESUME**, then hold down **L/O** until the scanner beeps twice.

Notes:

- *If you selected all frequencies to be skipped within the search range, the scanner beeps 3 times and does not search.*
- *If you select more than 200 frequencies to skip, each new frequency replaces a frequency*

previously stored, beginning with the first stored frequency.

- *Press ▲ or ▼ to select a skipped frequency while* **HOLD** *appears.* **L/O** *appears when you select a skipped frequency.*

scanning the stored channels

To begin scanning channels, press **SCAN/MANUAL**. The scanner scans through all non-locked channels in the activated banks. (See "locking out channels" and "turning channel-storage banks on and off"). When the scanner finds a transmission, it stops on it. When the transmission ends, the scanner resumes scanning.

Notes:

- *If you have not stored frequencies into any channels, the scanner does not scan.*

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

- *To listen to a weak or distant station, turn* **SQUELCH** *counterclockwise.*
- *To ensure proper scanning, adjust* **SQUELCH** *until the audio mutes*
- *To scan in the trunk scanning mode, see "trunking operation."*

manually selecting a channel

You can continuously monitor a single 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 a specific channel.

Press **SCAN/MANUAL** to stop scanning, enter the channel number, and then press **SCAN/MANUAL**. The selected channel appears.

Or, during scanning, if the radio stops at a channel you want to listen to, press **HOLD/RESUME**. Press **HOLD/RESUME** to resume automatic scanning.

special features

delay

Sometimes a user might pause before replying to a transmission. To avoid missing a reply on a specific channel, the scanner automatically programs a 2-second delay into any channel or frequency. You can monitor the channel frequency for an additional 2 seconds after the transmission stops before resuming scanning or searching.

Depending on the scanner operation, follow one of these steps to turn off or on a delay.

- To turn off the 2-second delay, press **•/CLR /DELAY** while the scanner is monitoring a channel, scanning, or searching. **DLY** disappears.
- To turn on the 2-second delay to a channel again, select the channel and press **•/CLR /DELAY**. **DLY**appears.
- To turn on the 2-second delay to search again, press **•/CLR /DELAY** while the scanner is searching.

DLY appears and the scanner automatically adds a 2-second delay to every frequency it stops on in that band.

Signal Stalker I also has a delay feature. It's delay time is 10 seconds.

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 100 channels in that bank.

While scanning, press the number key that corresponds to the bank you want to turn on or off. Numbers appear at the top of the display, showing the currently selected banks. The scanner scans all the channels within the displayed banks that are not locked out (see "locking out channels"). The bank number flashes when the scanner scans a channel that belongs to the bank.

Notes:

- *You can manually select any channel within a bank, even if that bank is turned off.*
- *One bank must always be active. If you try to turn off all banks, bank 1 remains.*

locking out channels

You can increase the scanning speed by locking out channels that have a continuous transmission, such as a weather channel. To lock out a channel,

manually select the channel, then press **L/O**. **L/O** appears.

Note: *You can still manually select locked-out channels.*

To remove the lockout from a channel, manually select the channel, then press **L/O**. **L/O** disappears.

To unlock all channels in the banks that are turned on, press **HOLD/RESUME** to stop scanning, then hold down **L/O** until the scanner beeps twice.

priority

The priority feature lets you scan through the channels and still not miss important or interesting calls on specific channels. You can program one stored channel in each bank as a priority channel. If the priority feature is turned on, as the scanner scans the bank, it checks that bank's priority channel for activity every 2 seconds.

The scanner automatically designates each bank's first channel as its priority channel. Follow these steps to select a different channel in a bank as the priority channel.

1. Press **E/PGM**.
2. Enter the channel number you want to select as the priority channel, then press **PRI**. **P** appears to the right of the selected channel number.

3. Repeat Steps 1 and 2 for the channel in each bank you want to program as a priority channel.

   To review all priority channels (in ascending order only), repeatedly press **PRI** to see the numbers of the priority channels.

To turn on the priority feature, press **PRI** during scanning. **PRI** appears.

Then the scanner checks the designated priority channel every 2 seconds in each bank. The bank number appears at the top of the display.

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

Notes

Note: *If you have locked out all priority channels, "CH Loc Out" appears when you activate the priority feature. To unlock any desired priority channels, see "locking out channels."*

using the keylock

To protect the scanner from accidental program changes, turn on the keylock feature. When the scanner is locked, the only controls that operate are **SCAN/ MANUAL**, **HOLD/RESUME** and / **KEYLOCK**.

To turn on the keylock, hold down **/KEYLOCK** until appears.

To turn it off, hold down **/KEYLOCK** until disappears.

Notes

Note: *Using keylock does not prevent the scanner from scanning channels.*

wired programming

You can transfer programming data to your scanner using your PC and an optional interface cable (available at your local RadioShack store) and software (available at your local RadioShack or www.radioshack.com).

Notes

Note: *If the scanner receives no data from the PC for more than 20 seconds,* **T-Err** *appears and wired programming stops.*

1. Make sure your scanner is turned off.
2. Connect the interface cable to your computer and then connect the other end of the cable to **PC/IF** on the side of the scanner.
3. Install the software to your computer and run the program.
4. To set up the program, click on Tools, select Configuration, and select PRO-528 (if necessary).
5. Turn the scanner on. The scanner automatically goes into the wired programming mode. **PGM** and **WirEd**

appear. Then send the data from the PC. Data frame numbers being received appear.

6. When the scanner has successfully received all data, **End** appears. If the scanner received an error while receiving data, **End**, **d-Err**, and its frame number appear. If the scanner received a communication error while receiving data, **C-Err** indicates the packet number where the error occurred. If the scanner received a checksum error while receiving data, **S-Err** indicates the packet number where the error occurred. If the scanner received a length field error while receiving data, **L-Err** indicates the packet number where the error occurred.

cloning your scanner

You can clone all the frequencies, trunking talk groups, and fleet maps programmed in your PRO-528 to another PRO-528 or PRO-433 using an optional interface cable and software.

1. Make sure the scanners are turned off and then plug the cable into each scanner's **PC/IF** jack.

2. While you press and hold **E/PGM** on both scanners, turn on both scanners.

3. Determine the scanner which has the frequency data that you want to transfer and set it to be the **FirSt** unit.

4. Set the other unit to be the **CLONE** unit.

5. Press **E/PGM** on the First Unit and then **CLONE** unit. The First Unit checks whether the **CLONE** unit is connected correctly. When a First Unit receives the response from the **CLONE** unit, the data transfer starts. During data transfer, **SND** and **REC** flash.

6. When the data transfer is completed, **done** appears. If the data transfer is not successful, **Error** appears.

7. After the clone operation is complete, remove the cable, turn both unit off and then on again.

using the display backlight

To turn on the display light for easy viewing at night, press ☼ .The display lights for 15 seconds. To turn off the light sooner, press ☼ again.

using the auto backlight display

You can set the scanner so the auto backlight turns on for about 5 seconds when the scanner receives signals.

If you press a key (except ☼) within 5 seconds, the display remains lighted for more than 15 seconds.

To turn auto backlight display on or off:

1. Press **MENU**.
2. Repeatedly press ▲ or ▼ to select **AutoLit**, then press **E/PGM**.
3. Repeatedly press ▲ or ▼ to select **ON** or **OFF**, then press **E/PGM**.
4. Press **MENU** to exit the menu mode.

search speeds

Notes

Note: *Hypersearch applies only to the 5 kHz step bands (29–54 MHz, 137–174 MHz, and 216–224.9950 MHz).*

The scanner has two search speeds.
Normal Search (90 steps/second)
Hypersearch (270 steps/second)

turning the keytone off/on

Each time you press any of the scanner's keys, the scanner sounds a tone. To turn the scanner's key tone off or on:

1. Press **MENU**.
2. Repeatedly press ▲ or ▼ to display **bEEP**, then press **E/PGM**.
3. Repeatedly press ▲ or ▼ to select **OFF** or **ON**, then press **E/PGM**.

4. Press **MENU** to exit the menu mode.

turning the battery save function off/on

When the scanner is set to receive (monitor) a manually selected channel, and it is not actively scanning, using the battery save feature conserves energy.

To turn the battery save function off or back on:

1. Press **MENU**.
2. Repeatedly press ▲ or ▼ to display **b-SAVE**, then press **E/PGM**.
3. Repeatedly press ▲ or ▼ to select **OFF** or **ON**, then press **E/PGM**.
4. Press **MENU** to exit the menu mode. When the battery save feature is active, the scanner repeatedly turns off the internal power for 1 second, then turns it back on for about 1/2 second to check for a transmission.

skipping data signals

To prevent the scanner from stopping on channels that consist of nonmodulated or data signals (such as fax or modem transmissions) during a search or scan, turn on the data skip feature. When the radio receives a data signal and data skip is selected, the signal is ignored.

To turn on the data skip feature;

1. Turn off the priority feature if it is on (see "priority").
2. Press **MENU**.
3. Repeatedly press ▲ or ▼ to display **dAtA-S**, then press **E/PGM**.
4. Repeatedly press ▲ or ▼ to select **OFF** or **ON**, then press **E/PGM**.
5. Press **MENU** to exit the menu mode.

Notes

Note: *This feature does not apply to the air band and weather search mode as data signals are not generally found in these services.*

receiving nwr-same and weather alert signals

In 1994, the National Oceanic and Aerospace Administration (NOAA) began broadcasting alerts that include digitally encoded data. Specific Area Message Encoding (SAME) includes information which identifies the severity of the alert. While this scanner does not encode specific geographical data, it does detect SAME signals and decode the alert level. The scanner displays this data as codes corresponding to the levels of severity (L1, L2, and L3).

turning on the digital weather alert feature

1. Press **WX/** and start weather search. See “weather search.”
2. Press **6/ALERT**. **ALERT** appears. This mutes the audio until the scanner receives a SAME-coded signal. When the scanner receives a SAME-coded signal, **ALERT** flashes and an associated “L” code (which indicates the severity of the alert) and SAME-coded signal appears alternately. The scanner remains on the weather channel and the audio turns on so you can hear the weather broadcast.

The scanner displays one of the following codes to indicate the alert level .

L1: Warning

L2: Watch

L3: Advisory

WXA: Weather Alert (1050 Hz)

testing digital weather alert tone

To hear and test the tones for the three alert levels, press **WX/** to select the weather service, then hold down **ALERT** for about 1 second. The tones sound in the order **L3**,

L2, then **L1**, and **TEST** flashes. Each alert code appears as its tone sounds. Press any key to end the test sequence.

programming a FIPS code

To specify a county, SAME uses a standard established by the US Census bureau, called FIPS.

The format of a FIPS code is:

PSSCCC, where...

P = area subdivision (0=entire area)

SS = State code (00=all states)

CCC = County code (000=all counties)

For example, the FIPS code for Tarrant County, Texas is:

048439 (48=Texas; 439=Tarrant County).

Some counties are further subdivided, in which cases, the first digit will be 0 for all subdivisions in the county and each subdivision will be labeled 1-9.

To program your scanner to alert you when the weather service issues an alert, you must set the scanner to the alert mode, and then leave the scanner monitoring the weather service. You cannot scan weahter channels and monitor for weather alerts at the same time.

To limit weather alerts to a specific area, you must also program in the FIPS code(s) for the area(s) you want to receive alerts. The scanner can be set to either alert for all areas, or only the areas you have programmed.

programming FIPS

1. During weather scan hold mode, press **E/PGM**. The scanner sends itself into FIPS programming mode. If the scanner is set to alert for all FIPS, **ALLFIPS** appears on the display. If the scanner is set to alert only the area you have programmed, **F1** appears.
2. Press ▲ or ▼ to change the displayed FIPS code from **F1** to **F15**. If a FIPS code is not programmed, ------- appears.
3. Use the keypad to enter the FIPS code. Press **•/CLR /DELAY** to cancel an inputted FIPS code.
4. Press **E/PGM** to store the FIPS code. Press **0** then **E/PGM** to clear a FIPS code. ------ appears. If an invalid value has been inputted, the FIPS code is cleared.
5. To set the scanner so it alerts you when you receive any FIPS code, press ▲ or ▼ to move **ALLFIPS**. Then press **E/PGM**. Then go to WX hold mode.

6. To set to alert only for the area you have programmed, press ▲ or ▼ to move **F1** to **F15**, then press **E/PGM**. Then go to **WX** hold.

Skywarn

The Skywarn function lets you jump directly to the last channel in memory (Channel 1000) from any mode by press and holding **WX/**. The scanner goes into scan hold mode and starts receiving transmissions in the last channel. Before using this feature, enter the local Skywarn frequency for your area into Channel 1000. If no frequency is programmed in the last channel, **No Prog** appears and the scanner sounds an error tone.

about Skywarn

Skywarn is an organized group of trained weather observers. A Skywarn group exists in virtually every US county with a significant population. During inclement weather, reports made by Skywarn observers include information about:

- Pea-sized and larger hail
- Wind and wind gusts of 40 MPH and greater
- Heavy rainfall

- Lightning (cloud-to-cloud and especially cloud-to-ground)
- Wall clouds seen in severe thunderstorms (which spawn tornadoes)
- Severe lowering of a wall cloud
- Turbulence in a wall cloud
- Funnel clouds
- Tornadoes
- High water areas
- Downed power lines
- Other emergency conditions that affect life or property

Listen to NOAA for weather alerts and warnings, watch box notices, and weather-forecasts. Listen to Skywarn to hear trained observers in your vicinity call in official reports to a net control station which relays those reports to NOAA and other emergency agencies.

Note: *If you tune to a Skywarn frequency when the Skywarn net is not active, you may hear nothing, or you may hear amateur radio operators talking on a local repeater system.*

Signal Stalker I

Your scanner' s Signal Stalker I feature lets you set the scanner so it detects and then displays the frequency of a nearby strong radio transmission. You can set the scanner so Signal Stalker I works "in the background" while you are scanning other frequencies; turn off normal scanning while Signal Stalker I works; or turn off Signal Stalker I and use the scanner normally. You can set the scanner so it alerts you when Signal Stalker I finds a frequency. You can also set the frequency band where you want the scanner to look for transmissions. You can also turn on the pager screening feature so the scanner ignores common pager frequencies.

Notes

Note: *Signal Stalker I works well for locating the source of strong local transmissions, such as mobile and handheld two way radios in areas with no other strong transmission sources. You can screen unwanted transmissions by pressing* **L/O** *to lock them out. See "search skip memory" for more information. It might not correctly display frequency information for transmitters using a highly directive antenna (such as an amateur radio beam antenna), if there are many transmitters operating at the same time in the same area,*

or if the transmitter is a broadcast television station.

setting the Signal Stalker I options

1. Press **MENU**.
2. Repeatedly press ▲ or ▼ to select **SIG-St.**, then press **E/PGM**. One of the following Signal Stalker I options appears:

- **S-S.bnd**: Lets you select the Signal Stalker I band.
- **S-S.ALt**: Lets you select the Signal Stalker I alert settings.
- **S-S.Lit**: Lets you select the Signal Stalker I back light settings.
- **S-S.PS**: Lets you select the pager screen settings.
- **S-S.OnlY**: Lets you select the Signal Stalker I mode settings.
- **S-S.Int**: Lets you select the Signal Stalker I voice interrupt settings.

While the Signal Stalker I is on and the scanner is receiving an audio signal (voice) in normal scanning, the scanner checks the Signal Stalker I every 2 seconds and the audio signal breaks at that moment. If you do not want the

break, set this function to **OFF**. The scanner does not check signals while receiving an audio signal. The scanner resumes checking signals when the audio signal ends. If you want to keep the Signal Stalker I active despite the interruption, set this function to **ON**.

- **S-S.LOG**: Lets you select the Signal Stalker I logging setting.

  When the scanner finds a strong signal, it automatically saves the signal to one of 10 log channels. If the scanner finds a new frequency after the 10 log channels are fully stored with frequencies, the oldest memory is deleted and the new frequency is stored in that channel. You can scan the log channels along with the normal 1000 channels.

- The 10 log channels are located after Channel 1000 and you can manually access them by selecting channnals as Channel 1001, Channel 1002, ... Channel 1010. "**-1-**", "**-2-**", ... "**-10-**" appear as channel numbers.

  You cannot program frequencies in the log channels.

  You can lock out the log channels like normal channels.

Set **S-S.LOG** to **ON** to scan the log channels along with the normal channels. If you do not want to scan the channels, set it to **OFF**.

The scanner stores signals found by the Signal Stalker I even the **S-S.LOG** function is **OFF**.

The frequencies in the log channels are deleted when the scanner is turned off.

3. Repeatedly press ▲ or ▼ to select the option you want, then press **E/PGM**.

- **S-S.bnd:** If you selected S-S.bnd, one of the following band names appears:

29-54 : VHF Low Band

108-137: AIR Band

137-225: VHF High Band

400-512: UHF Band

806-956: 800MHz Band

Repeatedly press ▲ or ▼ to select the band you want to set, then press **E/PGM**.

4. Repeatedly press ▲ or ▼ to select **ON** or **OFF**, then press **E/PGM**.

5. When you select the option, press **•/ CLR /DELAY** to exit the option mode.

6. Press **MENU** to exit the menu mode.

using Signal Stalker I

Note: *Turn off the data skip feature if it is on.*

To turn on Signal Stalker I, turn **SQUELCH** fully clockwise, then press ⊕ except in WX search, program search range, or program mode. ⊕ appears. Every 2 seconds, the scanner searches for frequencies in the range you specified in "Setting the Signal Stalker I Options."

When the scanner finds a frequency, it sounds the alert you specified in "Setting the Signal Stalker I Options", and **Found** flashes. Press any key to confirm the displayed frequency. Press **HOLD/RESUME** to resume scanning.

To turn on Signal Stalker I and turn off normal scanning, turn S-S.OnlY of Signal Stalker I options to on. ⊕ flashes. See "setting the Signal Stalker I options."

To turn off Signal Stalker I and turn on normal scanning, press ⊕ and ⊕ disappears.

trunking operation

The scanner tracks transmissions that use the Motorola Type I, Type II, hybrid, and EDACS and LTR analog trunking systems.

setting the scanner to the trunking mode

simultaneous trunking

The scanner allows you to track up to 10 systems at a time. You can trunk scan or search and scan conventional frequencies at the same time. You can also program conventional frequencies in the same bank as trunking systems.

After the scanner is finished checking activity in the trunked system, it scans other conventional frequencies in the bank. (Only trunking frequencies are programmed in trunk mode.)

If a system is inactive for 1 second and there are no conventional channels in the bank, the scanner starts scanning the next selected trunk bank. If you turned DELAY on, the scanner starts scanning the next trunk bank after about 2 seconds.

To scan both trunking and conventional banks, select the banks you wish to be active with trunking off, then press **TRUNK**. The scanner begins scanning. To return to conventional scanning, press **TRUNK** again.

setting squelch for the trunking mode

For trunked reception, a good squelch setting is in the center of the range with the white marker pointing to the rear of

the scanner. If it is set too high, it could prevent your scanner from locking on the control channel reliably. If it is set too low, it will slightly delay finding the control channel. The best setting is the same as for conventional reception and is critical for monitoring trunked systems.

programming trunked frequencies

Follow these steps to select, program, and store trunked frequencies.

1. Press **E/PGM** in conventional mode to set the scanner in programming mode. Then, press **TRUNK**. Your scanner beeps a tone. Then **TRUNK** and all of the bank numbers flash.

2. Press the number key (1-9 and 0) of the desired target storage bank. Select one of the trunk systems by repeatedly pressing ▲ or ▼ to select a trunking system type, then press **E/PGM**.

   Note: *You can select from the following six systems:*

Notes

You See	Trunk System
E2 – 800	Motorola Type II, 800 MHz frequencies

E2 – 900	Motorola Type II, 900 MHz frequencies
E2 – Hi	Motorola Type II, VHF(136-174 MHz) frequencies
E2 – UHF	Motorola Type II, UHF (400-512 MHz) frequencies
E1	Motorola Type I, and Hybrid
Ed	EDACS Wide Band: 9600 baund
Ed – SCt	EDACS Scat
Lt	LTR

3. **Prog F** appears, then press **E/PGM**. The scanner automatically selects the first channel in the selected bank.

4. Use the number keys to enter a valid frequency within the trunk system, then press **E/PGM**. The bank number, the channel number, and **E** (EDACS), **M** (Motorola), or **L** (LTR) appears

depending upon the trunk system selected.

Notes:

- *If you enter an invalid frequency (outside the selected range), the scanner beeps, the channel number flashes and* **Error** *appears. If this happens, press* **•/CLR / DELAY** *to clear the frequency, then repeat the entry.*

- *For* **EDACS (Ed)** *and* **LTR** *systems, you must enter the frequencies in logical channel number (LCN) order.*

- *If you try to enter a duplicate frequency in a bank, the scanner beeps and the channel which was previously stored appears*

5. Press ▲ or ▼ to select the next channel in the bank and repeat Step 4 to enter frequencies in that bank.

6. Repeatedly press **•/CLR /DELAY** to return back to Step 2. Repeat Steps 2 and 5 until all frequencies have been entered.

7. Press **SRCH** to begin searching for the trunk's data channel and scan conventional frequencies at the same

time. As the scanner looks through the frequencies, you see them on the display. When the scanner finds the controlling data channel, the scanner begins trunking.

searching a trunked bank

Once the data channel is acquired, the scanner begins a trunk search.

With the search function, you will be able to find all the active talk groups within the trunked system.

Press **SCAN/MANUAL**. You can switch to the trunk scan mode from the trunk search mode. See “scanning the talk group ID lists”.

While scanning conventional frequencies, follow the steps below to switch to the trunk mode after the scanner finds the data channel.

1. Press **TRUNK**. The scanner begins scanning both trunking and conventional banks.
2. Hold down **TRUNK** for about 1 second. The scanner switches to the trunk scan mode.
3. Hold down **TRUNK** for about 1 second again. The scanner switches to the trunk search mode.

Hint*: While searching, you may not know exactly to whom the talk group IDs are assigned until you listen awhile. To locate talk group ID lists for your local police, fire, and other agencies, refer to frequency guides available at your local RadioShack store or on internet sites such as www.trunkscanner.com. You can also determine the type of agency you are listening to after a short while, be it a police, fire, or emergency medical 2-way radio user. Once you have identified the type of service, note the associated talk group ID of that unit for future programming. See "identifying a trunked frequency". Determining the service associated with a talk group ID might take awhile, but discovering the ID owner of each signal is half the fun of trunk scanning!*

turning a trunked bank on or off

1. Press and hold **SCAN/MANUAL** during trunk scanning. The selected trunked banks appear.
2. Press the bank number (0–9), to turn the desired bank on or off.

skipping a trunked bank

You can scan conventional frequencies programmed in the same bank by holding down ▲ for about 1 second. If there is no conventional frequency, the scanner scans the next bank.

turning the status bit ignore (s-bit) on or off

You can set how your scanner works with status bits (also called S-Bits), letting you control how the scanner interprets and displays talk group IDs. The last four bits of a Motorola Type II talk group ID (a binary 16-bit code) are the status bits. In some systems, status bits identify special situations (such as an emergency status).

Your scanner is preset to assume that the status bits in a talk group ID are set to 0 and ignores them. For example, when the scanner receives the talk group ID 010111001110 0011, it reads the ID as 010111001110 0000 and converts the first 12 bits of the ID to 23776 (the talk group ID). However, since the status bit value is 3 (0011 converted to decimal equals 3), the ID is actually 23779.

If you are scanning a Motorola Type I system and do not have a fleet map for that system, you might have to turn off status bit ignore in order to determine the proper fleet map.

Important: *If you are scanning any system other than a Motorola Type I system, be sure status bit ignore is set to* **ON** *or you will miss some transmissions.*

Follow these steps to turn status bit ignore on or off.

1. Set the scanner to conventional programming mode and then press **TRUNK**.
2. Select the bank.
3. Repeatedly press ▲ or ▼ to select **Motorola Type**, then press **E/PGM**.
4. Repeatedly press ▲ or ▼ to select **S-bit**, then press **E/PGM**.
5. Repeatedly press ▲ or ▼ to select **ON** or **OFF**, then press **E/PGM**.

identifying a trunked frequency

While ID scanning (looking for IDs within a trunked system) or performing an ID search, press ▼ to see the current trunked frequency. (The frequency flashes twice.) Then hold down ▼ until a confirmation tone sounds and the ID and the frequency alternately appear.

To return to normal operation, press ▼.

selecting the EDACS (Ed) talk group ID format

Your scanner can also enter or display EDACS (Ed) talk groups in decimal format (0-2047).

1. Select the trunking programming mode and the bank you want to change.
2. Press ▲ or ▼ to select **EDACS (Ed)**, then press **E/PGM**.
3. Press ▲ or ▼ to select **AFS**, then press **E/PGM**.
4. Press ▲ or ▼ to select **AFS ON** or **AFS OFF**, then press **E/PGM**. You can use this feature to translate decimal talk group lists to the much more powerful AFS format. It is very easy to use. Be sure to become familiar with AFS partial entry, and your scanning will become far more flexible and efficient.

EDACS (Ed) talk group ID range search

When your scanner searches EDACS (Ed) talk group IDs, the scanner can search within a range you set for agency or fleet listings. For example, if you want to search within the 01 agency, while in hold mode press **0**, **1**, **•/CLR /DELAY** then **SRCH**. Or if you want to search within the 01 agency and 01 fleet, while trunking press **0**, **1**, **•/**

CLR /DELAY, **0**, **1**, then **SRCH**.

To stop the ID range search, press ▲ while the talk group is deactivated.

using HOLD to monitor an active talk group ID

Follow these steps to stop scanning and searching and keep the scanner tuned to a desired ID.

1. Press **HOLD/RESUME**. **HOLD** appears and the scanner stays on the current ID.
2. If you want to listen to (and hold) a different ID, use the number keys to enter that ID.
3. Press ▼. **HOLD** flashes, then the scanner monitors the ID.
4. Press **HOLD/RESUME** to resume scanning or searching for a data channel.

locking out talk group IDs

Many municipal and commercial services use trunk systems to transmit signals from such devices as water meter transmitters, door alarms, and traffic signals. Some signals are encrypted, as well, and most are not voice signals. Since all these are assigned IDs just like other users, you may want to lock out reception of these ID

signals. You can lock out up to 100 IDs at one time.

Note: *If you lock out an ID while searching, it is also locked out of the scan list(s). See "using talk group ID lists."*

To lock out an ID, press **L/O** when the ID appears. The ID is locked out, and the next active ID appears.

unlocking a single talk group ID

You can check all IDs already locked out.

1. Select the trunking programming mode and the bank you want to review.
2. When the selected trunked system is displayed, press **E/PGM**.
3. Use ▲ or ▼ to choose **Id Lout**, and press **E/PGM**.
4. Press **L/O**, the ID is unlocked and the next locked ID displays.
5. If you unlocked all locked IDs, the scanner displays **Non**.

unlocking all talk group IDs

Hold down **L/O** while searching until you hear two short beeps. You can check all locked out IDs. Hold down **L/O** while you are reviewing all locked out IDs. The scanner beeps twice. All locked out IDs in a

bank are unlocked. Press **SRCH** to resume the search.

using trunk scanning Scan Delay

Sometimes a user might pause before replying to a transmission. You can set the scanner to hold on an ID for 2 seconds to wait for a reply. That way, the scanner continues to monitor the ID for 2 seconds after the transmission stops before resuming scanning.

Press **•/CLR /DELAY** to turn trunk scanning scan delay on or off. **DLY** appears when the scan delay is set to on.

Note: *If you consistently miss responses even with scan delay turned on, change the default system type or the fleet map being used. See "scanning type I and hybrid trunked systems".*

monitoring talk group IDs

You can use your scanner's display to monitor the frequencies/talk group IDs of a trunked system for activity, to determine which talk group IDs are the most active. To set the scanner to monitor IDs, hold down **SRCH** until you hear two short beeps, and **SRCH** flashes. All active group

IDs appear in quick succession. To stop monitoring IDs, press ▲.

Note: *When you monitor IDs, any IDs you have locked out also appear.*

using talk group ID lists

When you program trunked frequencies into a bank (see "programming trunked frequencies"), your scanner sets up ten scan lists for that one bank in which you can store your favorite IDs. Each list can contain up to 10 IDs, for a total of 100 IDs for each trunk scanning bank. If you use all the banks as trunking banks, you can store 1000 IDs.

Talk group ID lists help you organize trunking system users into categories. For example, you might use List 1 for police IDs, List 2 for fire department IDs, List 3 for emergency medical service IDs, and so on. Once you store all the IDs in a list, you can scan them just as you scan conventional channels. You can program IDs into talk group ID lists manually, during a search, or automatically.

manually storing talk group IDs in talk group ID lists

1. Select the trunking programming mode and the bank you want to change.

2. Use ▲ or ▼ to choose trunk system, then press **E/PGM**.
3. Use ▲ or ▼ and choose **Prog id**, then press **E/PGM**.
4. Press ▲ or ▼ to select the scan list location.
5. Enter the talk group IDs for each trunk system.

Motorola talk groups

To enter a Type 2 Talk Group ID:

1. Enter the ID you want to store by using the keypad.
2. Press **E/PGM**.

To enter a Type 1 ID:

For a Type I ID, enter the block number, fleet number and subfleet number to form the talk group ID number.

1. Enter the ID you want to store by using the keypad (ID = Block number + Fleet number + **•/CLR/DELAY** + Subfleet number).
2. Press **E/PGM**.

EDACS (Ed) talk groups

To enter a full EDACS ID:

1. Enter the Agency number.
2. Press **•/CLR/DELAY** to enter the dash.
3. Enter the fleet number and subfleet number.
4. Press **E/PGM**.

entering EDACS partial talk groups

You can enter partial group numbers in an EDACS talk group. By entering only the desired portion of a group, you can select either 128, 8, or 1 talk group. For example, you might program every talk group in a police department by pressing just four keys.

Note: *You cannot use partial talk groups in decimal mode. (See "selecting the EDACS talk group ID format").*

You can program a specific talk group such as 01-011 into the scan list memory. In AFS mode, you can program the talk groups for an entire agency by pressing corresponding keys.

For example:

You Press	To Scan
01 . E	all 01 groups
01 . 01 E	all 01 talk groups within the 01 agency

To enter a Partial EDACS ID:

1. Enter the agency number you want to store. Press **•/CLR /DELAY** to enter the dash.
2. Press **E/PGM**. Or you can program all the talk group numbers for one fleet of an agency.
3. Enter the agency number.
4. Press **•/CLR /DELAY** to enter the dash.
5. Enter the fleet number.
6. Press **E/PGM**. Remember the AFS format allows you to enter full or partial EDACS IDs for powerful flexibility in all modes. The scanner defaults to AFS talk group displays for EDACS only.

LTR talk groups

Users on an LTR system are assigned to specific talk groups, which are identified

by the radio as a six-digit number. The number is in the form AHHUUU, where:

A = Area code (0 to 1)

H = Home repeater (01 through 20)

U = User ID (000 through 254)

To enter an LTR ID:

1. Enter the area code.
2. Enter the home repeater number.
3. Enter the ID you want to store.
4. Press **E/PGM**.

Note: *To clear a stored ID while entering an ID, press* **0** *and* **E/PGM** *successively, then start over.*

scanning the talk group ID lists

Press **SCAN/MANUAL** to begin scanning the lists you have stored.

Note: *If one or more of the IDs you stored are incorrect,* **Error** *flashes twice and the scanner beeps several times, then the scan list numbers appear at the top of the display. To correct the entry, delete at least one of the incorrect IDs.*

To remove a scan list from active scanning, use the number keys to enter the scan list's

number. The scan list number turns off, and the IDs in that list are not scanned.

Note: *One of the ten scan lists must always be active. You cannot remove all of them.*

To restore a scan list to active scanning, use the number keys to enter the number of the list again.

priority talk group ID scanning

You can assign a priority to a favorite ID so during scanning the scanner checks that ID more frequently than the others in the list. Each of the ten memory locations reserved for storing lists (see "using talk group ID lists") can have only one priority ID, and the ID assigned that priority in List 1 has the highest priority of all.

To assign a priority to an ID, press and hold **PRI**. **P** appears.

To turn priority ID scanning on or off, repeatedly press **PRI** during ID scanning or manual operation.

PRI appears when priority scanning is turned on.

Note: *Priority ID scanning does not operate when priority IDs are locked out. See "locking out talk group IDs".*

scanning type I and hybrid trunked systems

Your scanner is preset to scan Type II system IDs. When you scan trunked frequencies, each Type II user ID you see appears as an even number without a dash (example 2160). Your scanner can also scan Type I trunked systems. Each Type I ID appears as a three- or four-digit number, followed by a hyphen, followed by a one- or two-digit number (example 200-14).

If you notice a mix of odd- and even-user IDs (examples 6477, 2160, 6481, 6144, and 1167), then you are probably monitoring either a Type I or hybrid (a combination of Type I and Type II user IDs) system with the S-Bit function turned off (see "turning the status bit ignore (S-Bit) on or off").

Subfleet information is included with the frequency list for a Type I system. To enter the provided map, see "programming a fleet map".

Note: *To locate suitable fleet map information, review the contents of website www.trunkscanner.com.*

If you do not already know the size codes used, you will have to guess. Since you do not have to figure out all the blocks at one time, this is not as hard as it might seem.

Select a size code for a block, then press **SRCH** and listen to the conversations. If you are receiving most of the replies, then you have probably selected the right size code and can program the next block of the map. There are 16 preset fleet maps to choose from, and it is best to start with these when setting up a Type I or hybrid trunk scanning bank.

If none of the following preset fleet maps allow you to follow complete conversations, then you probably need to program your own fleet map (see "Programming a Fleet Map").

preset fleet maps table

E1P1		E1P2		E1P3	
Block	Size Code	Block	Size Code	Bock	Size Code
0	S11	0	S4	0	S4
1	S11	1	S4	1	S4
2	S11	2	S4	2	S4
3	S11	3	S4	3	S4
4	S11	4	S4	4	S4
5	S11	5	S4	5	S4
6	S11	6	S4	6	(S12)
7	S11	7	S4	7	(S12)

E1P4

Block	Size Code
0	S12
1	(S12)
2	S4
3	S4
4	S4
5	S4
6	S4
7	S4

E1P5

Block	Size Code
0	S4
1	S4
2	S12
3	(S12)
4	S4
5	S4
6	S4
7	S4

E1P6

Block	Size Code
0	S3
1	S10
2	S4
3	S4
4	S12
5	(S12)
6	S12
7	(S12)

E1P7

Block	Size Code
0	S10
1	S10
2	S11
3	S4
4	S4
5	S4
6	S4
7	S4

E1P8

Block	Size Code
0	S1
1	S1
2	S2
3	S2
4	S3
5	S3
6	S4
7	S4

E1P9

Block	Size Code
0	S4
1	S4
2	SO
3	SO
4	SO
5	SO
6	SO
7	SO

E1P10

Block	Size Code
0	S0
1	S0
2	S0
3	S0
4	S0
5	S0
6	S4
7	S4

E1P11

Block	Size Code
0	S4
1	S0
2	S0
3	S0
4	S0
5	S0
6	S0
7	S0

E1P12

Block	Size Code
0	S0
1	S0
2	S0
3	S0
4	S0
5	S0
6	S0
7	S4

E1P13

Block	Size Code
0	S3
1	S3
2	S11
3	S4
4	S4
5	S0
6	S0
7	S0

E1P14

Block	Size Code
0	S4
1	S3
2	S10
3	S4
4	S4
5	S4
6	S12
7	(S12)

E1P15

Block	Size Code
0	S4
1	S4
2	S4
3	S11
4	S11
5	S0
6	S12
7	(S12

E1P16

Block	Size Code
0	S3
1	S10
2	S10
3	S11
4	S0
5	S0
6	S12
7	(S12)

selecting a preset fleet map

1. Set the scanner for conventional scanning and press **E/PGM**, then press **TRUNK** to select the trunking programming mode and the bank you want to change.
2. Repeatedly press ▲ or ▼ to select **TYPE 1 SYSTEM (E1)**, then press **E/PGM**.
3. Repeatedly press ▲ or ▼ to select **FLEEt**, then press **E/PGM**.
4. Repeatedly press ▲ or ▼ to select the name of the desired map (example E1P7). The preprogrammed fleet map appears.
5. Press **E/PGM**. **FLEEt** displays.

Notes

Note: *When the scanner searches for transmissions, Type I fleet and subfleet IDs such as 100-12, 100-9, 000-12, or 400-8 display.*

If you are still unable to listen to a complete conversation, then try another preset map.

programming a fleet map

1. Select the trunking programming mode and the bank you want to change.
2. Repeatedly press ▲ or ▼ to select Type 1 System (**E1**), then press **E/PGM**.

3. Repeatedly press ▲ or ▼ to select **FLEEt**, then press **E/PGM**. A preprogrammed fleet map appears.

4. Repeatedly press ▲ or ▼ until **USr** appears. Then press **E/PGM**.

5. Repeatedly press ▲ or ▼ to select the size code for the first block, then press **E/PGM**. The next available block appears.

6. Repeat Step 5 until you have selected a size code for each desired block.

7. Press **SRCH**. The scanner exits the trunking programming mode, tunes the data channel, then searches using the map you programmed.

Note: *If you select size code S-12, S-13, or S-14, these restrictions apply:*

Notes

- S-12 can only be assigned to Blocks 0, 2, 4, or 6
- S-13 can only be assigned to Blocks 0 and 4
- S-14 can only be assigned to Block 0

Since these size codes require multiple blocks, you will be prompted for the next available block when you program a fleet map. For example, if you assign Block 0 as S-12, the scanner prompts you for b2, the next block available, instead of b1. If

you assign Block 0 as S-14, you would not see another prompt because S-14 uses all available blocks.

programming a hybrid system

A hybrid system is simply a Type I system with some of its blocks designated as Type II blocks.

To program a hybrid system, follow the steps listed in "Programming a Fleet Map." However, if you want a block to be Type II, instead of pressing ▲ or ▼ to select the size block (Step 5), enter size code S-0 instead.

programming the Base and Offset frequencies

To properly track Motorola VHF and UHF trunked systems, you must program the applicable base and offset frequencies for each system. For a list of these frequencies and other scanner information, go to www.trunkscanner.com and other similar frequency resources.

1. Select the trunking programming mode.
2. Press the number key of the bank where you want to store the base frequency.

3. Repeatedly press ▲ or ▼ to select Motorola Type UHF, or VHF system, then press **E/PGM**.

4. Repeatedly press ▲ or ▼ to select **bASE**, then press **E/PGM**.

5. Press the configuration Block Number (1-3) .

6. Press the number keys to enter a new base frequency, then press **E/PGM**.

7. Press ▲. The display changes to the spacing frequency entering mode.

8. Enter the frequency using the number keys according to the following guide, then press **E/PGM**.

   - For Motorola Type II VHF (E2-VHF Hi band), use 5kHz steps between 5 kHz – 100 kHz.

   - For Motorola Type II UHF (E2-UHF band), use 12.5kHz steps between 12.5 kHz – 100 kHz.

9. Press ▲. The display changes to the offset channel entering mode.

10. Enter an offset channel using the number keys, then press **E/PGM**.

Notes

Note: *You can only input a frequency between 380 – 759.*

11. Press **•/CLR /DELAY**. The scanner returns to the previous screen. Repeat steps 5 through 10 to program additional configurations.

turning the Motorola disconnect tone detect function On/Off

When the Motorola disconnect tone detect function is disabled, the scanner looks for squelch before returning to the control channel instead of waiting for the disconnect tone. Only in rare instances will you need to adjust the default settings. The condition to return to control channels depends on whether the signal is present or not.

1. Select the trunking programming mode and the bank you want to change.
2. Press ▲ or ▼ to select **Motorola Type 2** or **Motorola Type 1**, then press **E/PGM**.
3. Press ▲ or ▼ to select **Eot**, then press **E/PGM**.
4. Press ▲ or ▼ to select **Eot ON** or **Eot OFF**, then press **E/PGM**.

Notes

Note: *If you set the squelch so you hear a hissing sound, the scanner will remain on the voice channel, even when a disconnect tone is transmitted or there is no signal at all.*

frequently asked questions

These suggestions might help you locate the problem.

My scanner is on but will not scan, why?

- **SQUELCH** is not adjusted correctly; adjust **SQUELCH**.
- Only one channel or no channels are stored.
- Store frequencies into more than one channel.

Why won't my scanner work at all?

- Check the batteries or make sure the AC adapter or DC adapter is connected properly.
- Recharge the rechargeable batteries or replace the non-rechargeable batteries.
- The AC adapter or DC adapter is not connected.
- Be sure the adapter's barrel plug is fully plugged into the **9V 300 mA jack**.

Why doesn't my keypad work?

The keylock function is activated. To turn off the keylock, press ☼ / **KEYLOCK** until 🔑 disappears.

Why is BATT flashing?

Recharge the rechargeable batteries or replace the alkaline batteries.

Why am I getting poor or no reception?

Batteries are weak or completely discharged.

Check the batteries or make sure the AC adapter or DC adapter is connected properly.

Make sure an antenna is connected to the scanner.

Why does Error appear?

Programming error: re-enter the frequency correctly, including the decimal point.

Why won't my scanner track a trunked system?

The transmission might not use a system that can be tracked by your scanner.

Scan another transmission.

The data frequency is missing: see

"programming trunked frequencies."

The system you are trying to track is a Type I system, and the scanner is set to scan Type II systems. Set the scanner to receive Type I trunked frequencies. See "scanning type I and hybrid trunked systems".

Scanner is set to receive Type I trunked frequencies, but does not scan them. The fleet map you have selected or entered might be incorrect.

Check the fleet map and correct it if necessary (see "scanning type I and hybrid trunked systems" and "programming a fleet map").

Why isn't my scanner acquiring a data channel?

SQUELCH is not correctly adjusted for trunk scanning. Adjust squelch for trunk scanning. See "setting squelch for the trunking mode".

Why is the frequency used for the data channel missing?

Press **SRCH** to search for the data channel (see "programming trunked frequencies").

Why am I missing replies to conversations?

The system you are trying to track is a Type I system, and the scanner is set to scan

Type II systems. Set the scanner to receive Type I trunked frequencies. See “scanning type I and hybrid trunked systems”.

The selected fleet map is incorrect. Try another preset fleet map or program your own fleet map (see “scanning type I and hybrid trunked systems”).

Enter all of the trunk’s frequencies: see “programming trunked frequencies”.

How do I reset my scanner?

If the scanner’s display locks up or stops operating properly, you might need to reset the scanner.

Caution: This procedure clears all the information you have stored in the scanner. Before you reset the scanner, try turning it off and on to see if it begins working properly. Reset the scanner only when you are sure it is not working properly.

1. Turn off the scanner.
2. While holding down **2**, **9** and **HOLD/ RESUME**, turn on the scanner. **CLEAr** flashes for about 5 seconds as the scanner clears its memory.

Notes

Note: *Do not turn off the scanner again until* **CLEAr** *stops flashing. Otherwise, the scanner might not clear its memory properly.*

Follow these steps to restore the 150 preprogrammed frequencies stored in the private bank.

1. Make sure your scanner is turned off.
2. Press **3** and **E/PGM** simultaneously while turning on the scanner. After several seconds, the scanner restores the frequencies.

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 it. Try the following methods to eliminate the interference:

• move your scanner away from the receiver

• connect your scanner to an outlet that is on a different electrical circuit from the receiver

• contact your local RadioShack store for help

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

scanning legally

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

- telephone conversations (cellular, cordless, or other private means of telephone signal transmission)
- pager transmissions
- any scrambled or encrypted transmissions

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

This scanner is designed to prevent reception of illegal transmissions, in compliance with the law which requires that scanners be manufactured in such a way as to not be easily modifiable to pick

up those transmissions. Do not open your scanner's case to make any modifications that could allow it to pick up transmissions that it is not legal to listen to. Doing so could subject you to legal penalties.

We encourage responsible, legal scanner use.

care

Keep the scanner dry; if it gets wet, wipe it dry immediately. Use and store the scanner only in normal temperature environments. Handle the scanner carefully; do not drop it. Keep the scanner away from dust and dirt, and wipe it with a damp cloth occasionally to keep it looking new.

service and repair

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

specifications

Frequency Coverage:

29–54 MHz (in 5 kHz steps)

108–136.9875 MHz (in 12.5 kHz steps)

137–174 MHz (in 5 kHz steps)

216–224.995 MHz (in 5 kHz steps)

400–512 MHz (in 6.25 kHz steps)

806.0000–823.9875 MHz (in 12.5 kHz steps)

849.0125–868.9875 MHz (in 12.5 kHz steps)

894.0125–956.0000 MHz (in 12.5 kHz steps)

1240.0000–1300.0000 MHz (in 12.5 kHz steps)

Number of Banks 10

Sensitivity (AM/FM):

FM ..... 20 dB S/N at 3 kHz deviation

29–54 MHz..... 0.4 μV

137–174 MHz .....0.5 μV

216–225 MHz .....0.5 μV

400–512 MHz .....0.6 μV

806–956 MHz .....0.7 μV

1240–1300 MHz .....1.0 μV

AM .....20 dB S/N at 60% modulation

108–136.9875 MHz .....1.5 μV

IF Rejection (at 162.4 MHz) .....100 dB

Channels 1000

Operating Temperature:

Normal .....–4° to 140°F (–20° to 60°C)

Signal Stalker I ...14° to 140°F (–10° to 60°C)

Scan Speed ..... 90 Channels/Second

Search Speed:

Normal ..... 90 Steps/Second

Hypersearch .....270 Steps/Second

Priority Sampling ..... 2 Seconds

Delay Time ..... 2 Seconds

IF Frequencies 380.7 MHz, 10.85 MHz, 450 kHz

Antenna Impedance 50Ω

Audio Output .....270 mW maximum

Built-in Speaker .....1&7/16 Inches (36 mm)

8Ω Dynamic Type

Power:

4 AA Alkaline Batteries (6.0 VDC),

or 4 AA Rechargeable Ni-MH Batteries (4.8 VDC) or Optional AC Adapter

Current Drain:

Squelched .....80 mA

Full Output .....160 mA

Dimensions (HWD) ..... 6 x 2.6 x 1.75 inches (153 x 66 x 44 mm)

Weight (without antenna, batteries, belt clip) 8.4 oz (238 g)

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

RadioShack.

limited one-year warranty

This product is warranted by ***RadioShack*** against manufacturing defects in material and workmanship under normal use for one (1) year from the date of purchase from ***RadioShack*** company-owned stores and authorized ***RadioShack*** franchisees and dealers. For complete warranty details and exclusions, check with your local ***RadioShack*** store.

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