

Triple-Trunking Desktop/Mobile Radio Scanner

Thank you for purchasing your RadioShack Triple-Trunking Desktop/Mobile Radio Scanner from RadioShack.

Your 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

AC adapter

DC cable with fuse

Antenna

DIN sleeve

Removal keys (2)

Mounting bracket

Knobs (2)

Lock washers (2)

Screws (2)

Rubber feet (4)

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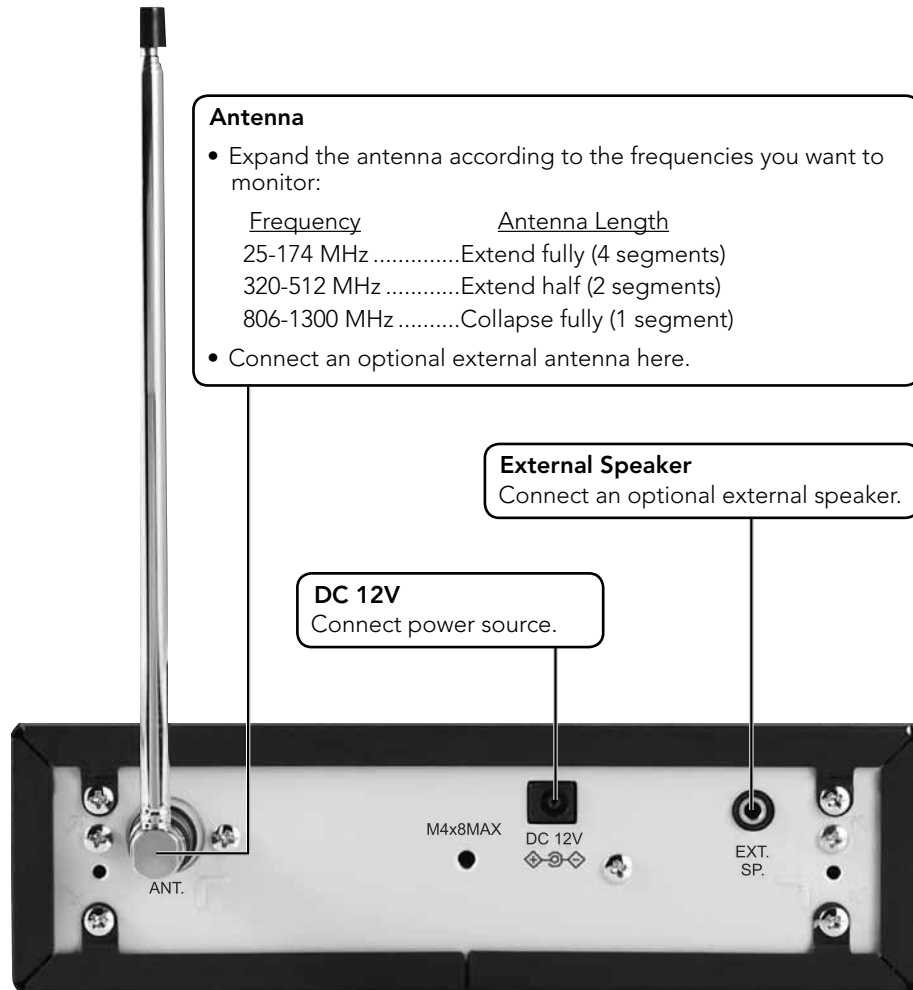
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Scanner Setup

Scanner Features



Antenna

- Expand the antenna according to the frequencies you want to monitor:

Frequency	Antenna Length
25-174 MHz	Extend fully (4 segments)
320-512 MHz	Extend half (2 segments)
806-1300 MHz	Collapse fully (1 segment)

- Connect an optional external antenna here.

External Speaker
Connect an optional external speaker.

DC 12V
Connect power source.

FUNC / A/a

- Press in combination with other keys to access various functions.
- Change the text input mode: lower case letters, upper case letters, or numbers.

PRI / ALERT

- Turn priority function on and off.
- Turn weather alert on and off.

SQUELCH
Adjust the squelch.

PC/IF
Connect an optional PC interface cable.



VOLUME/OFF
Turn the scanner on or off; adjust the volume.

Headphones
Connect an earphone or headphone.

L/O

- Lock out selected channels
- Skip specified frequencies during a search
- Lock out a selected ID while trunking.

CL / CTCSS/DCS

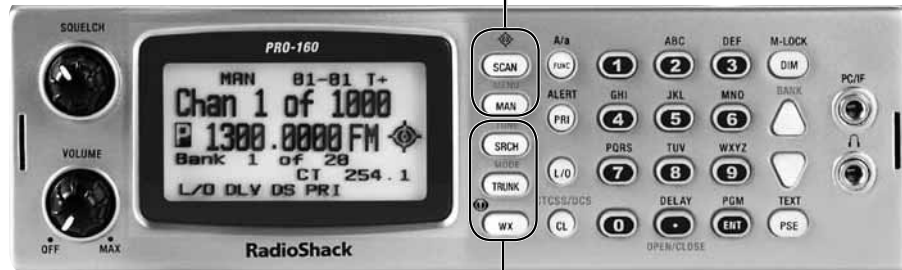
- Clear an entry.
- Press after **FUNC** to turn CTCSS/DCS on and off.

SCAN / 

- Scan the stored channels; scan an active ID while trunking.
- Press and hold to turn Signal Stalker on and off.

MAN / MENU


- Manually enter a channel.
- Press after **FUNC** to enter menu mode.

**SRCH / TUNE**

- Start a chain search; start and select a service search.
- Press after **FUNC** to enter the fine tune mode and search a specified frequency range.

TRUNK / MODE

- Enter the Talk Group ID program mode.
- Press after **FUNC** to select the modulation for trunking system.

WX / 

- Start weather search.
- Press and hold to activate Skywarn.

1-0 / A-Z

Input a number or character

**/ DELAY / OPEN/CLOSE**

- Enter a decimal point, space, or hyphen.
- Turn delay on or off.
- Press after **FUNC** to change trunk open/close mode.

ENT / PGM

- Complete the entry of frequencies and text.
- Put the scanner in programming mode.

DIM / M-LOCK

- Set the display brightness.
- Press and hold to lock the memory.

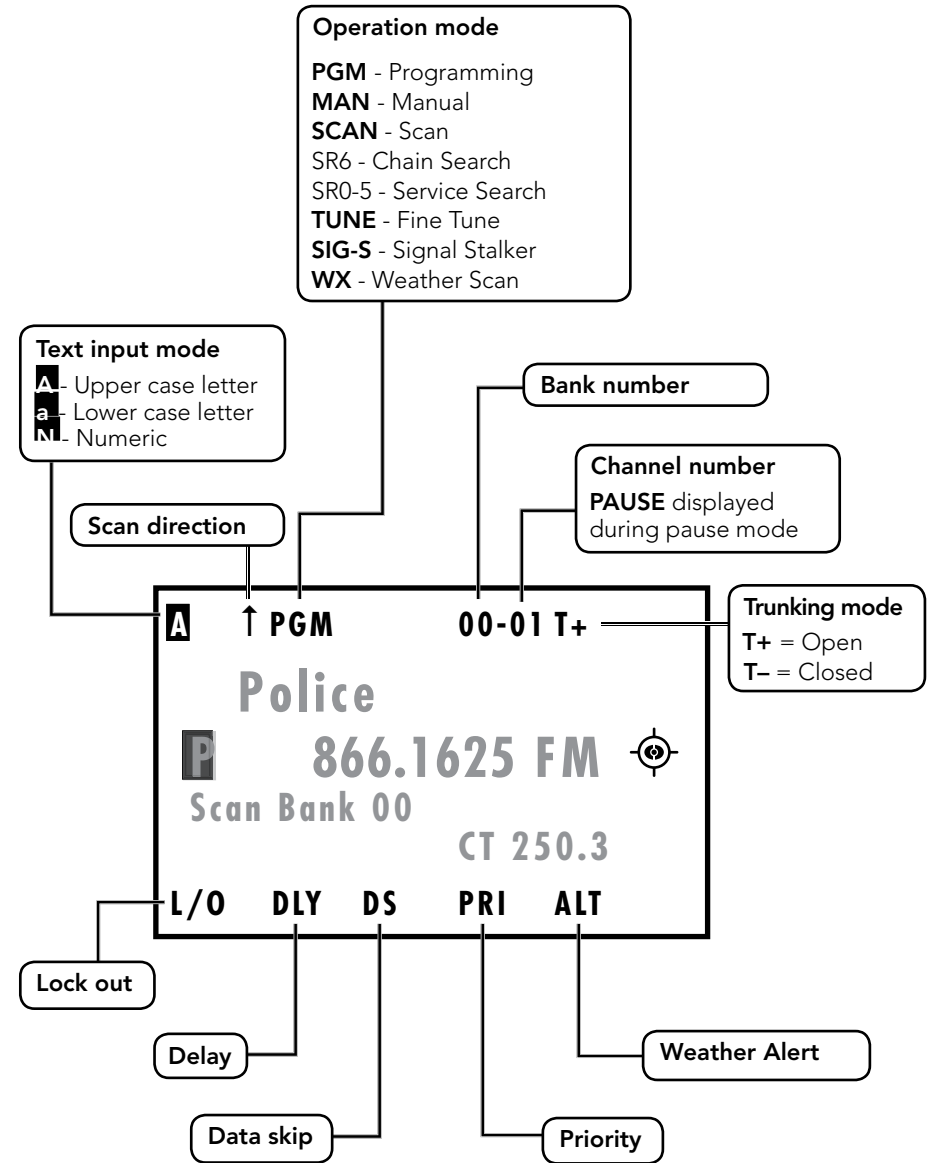
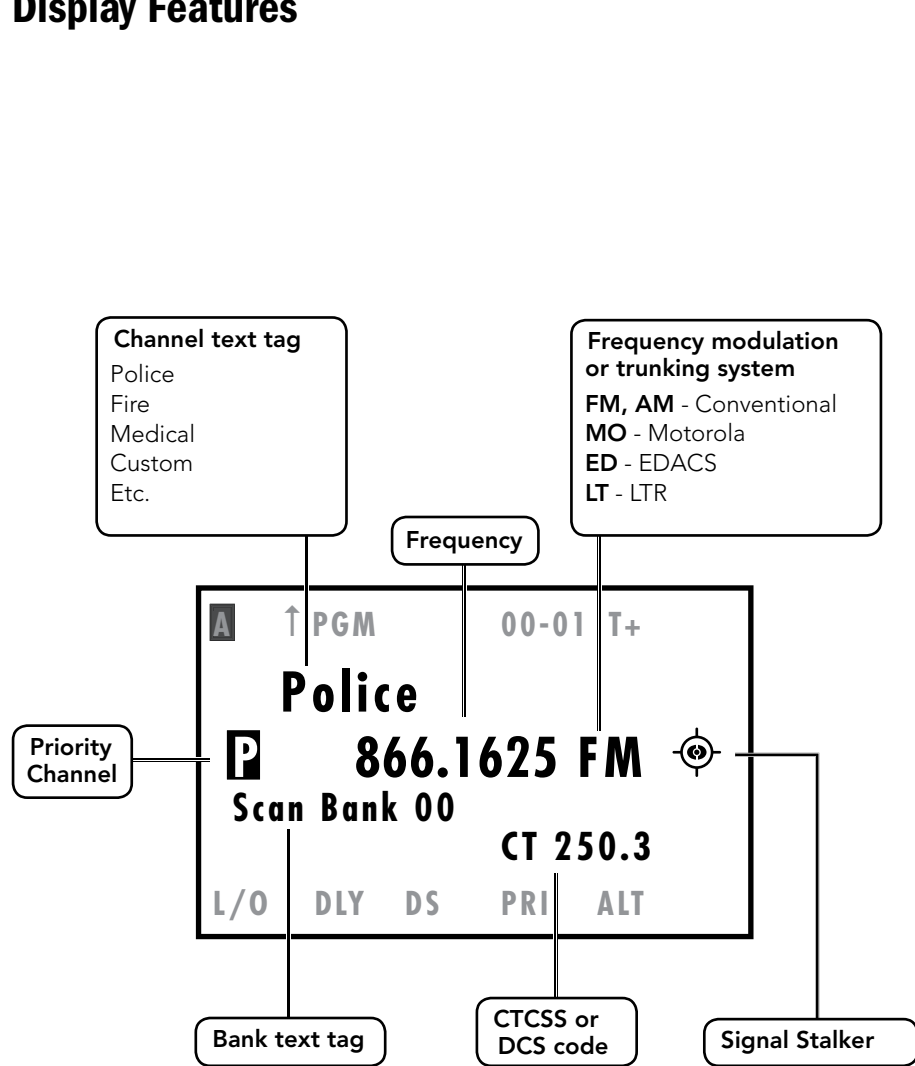
▲ ▼ / BANK

- Select options during programming; change scan or search direction; change the ID location number while trunking.
- In Scan mode, press after **FUNC** to go to select bank menu.
- In Manual or Program mode, press after **FUNC** to change bank.

PSE / TEXT

- Stop and resume search or scan.
- Change from program mode to enter text tag mode.

Display Features



Powering Your Scanner

You can power your scanner from a wall outlet, from your vehicle's cigarette lighter or power port, or through your vehicle's ignition.

Use a Class 2 power source that supplies 12V DC and delivers at least 500mA. Its center tip must be set to positive and its plug must fit the scanner's DC 12V jack. Using an adapter that does not meet these specifications could damage the scanner or the adapter.

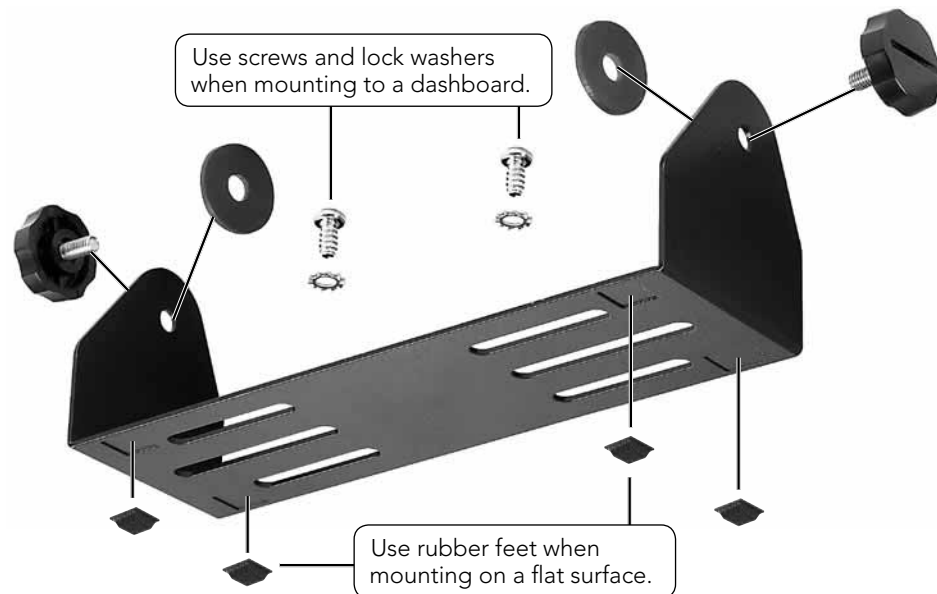
Using Your Scanner as a Base Station

Attach the Mounting Bracket

Attach the scanner to the mounting bracket when you use the scanner as a base station on a flat surface such as a desk, shelf, or table. Because the speaker is on the bottom of the scanner, you can use the mounting bracket to elevate your scanner off the surface for better sound. Attach the four protective rubber feet to the mounting bracket.

Connect to a Wall Outlet

1. Connect the supplied AC adapter to the **DC 12V** jack.
2. Plug the adapter into the power source.



Using Your Scanner as a Mobile Unit

Mounting Over or Under Your Vehicle Dashboard

Use the mounting bracket to mount your scanner over or under the dashboard (see diagram on previous page). Before installing, confirm that your scanner fits in the desired mounting area, will not interfere with airbag deployment zones, and you have all the necessary materials to complete the task.

1. Use the supplied mounting bracket as a template to mark positions for the two mounting screws.
2. At the marked positions, drill holes slightly smaller than the screws. When drilling holes, be sure to avoid obstructions and wires behind the mounting surface.
3. Attach the mounting bracket to the surface using the supplied screws and lock washers.
4. Slide the scanner into the bracket, aligning the scanner's holes with the holes in the bracket, and then screw the mounting knobs into the scanner.

CAUTION: AVOID AIRBAG DEPLOYMENT ZONES if you mount your scanner over or under a vehicle dashboard. Mounting in deployment zones can prevent the airbag from performing properly and may result in injury.

Connect to Your Vehicle Cigarette Lighter or Power Port

Plug a 12V DC cigarette-lighter adapter (not supplied, available at your local RadioShack or RadioShack.com) into your vehicle's 12V power source.

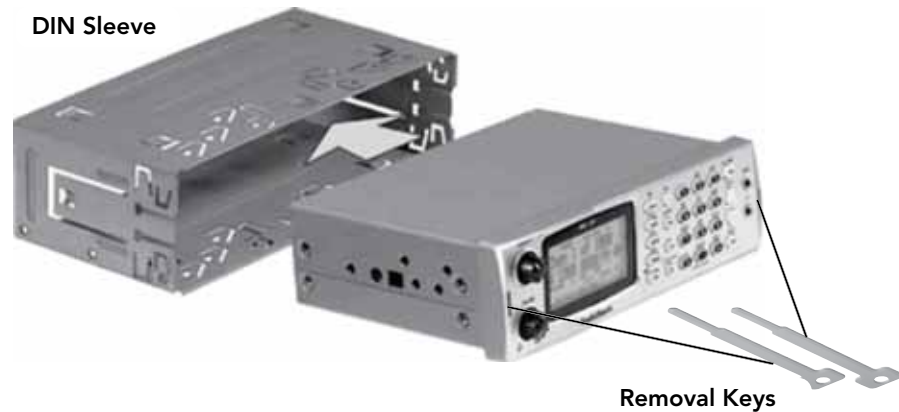
Note: If you use a cigarette-lighter adapter, you might hear some electrical interference from your engine while scanning. This is less of a problem if you connect to the vehicle fuse box (see next page).

Mounting Inside Your Vehicle Dashboard

Your scanner requires a 2 x 7-1/8 x 5-5/16 inch (50 x 180 x 135 mm) mounting area. Allow an additional 2-3/8 inch (60 mm) space behind the scanner for connectors and wires.

1. Remove the four rear screws that secure the outer metal case and carefully pull off the case.
2. Insert the DIN sleeve into the opening in your dashboard, lip facing out.

- Push out the top and bottom tabs to hold the sleeve firmly in place.
- Connect the DC cable (included), antenna wire, and remote speaker wire (neither included) to the back of the scanner, then feed the wires through the back of the DIN sleeve.
- Slowly slide the scanner into the sleeve until it locks in place.

**Notes:**

- When mounting in your dashboard, you will need to connect an external antenna and an external speaker.
- To remove your scanner from the DIN sleeve, insert the two removal keys straight into the scanner's front panel and pull the scanner out.

Connect to Your Vehicle Fuse Box (Negative Ground Only)

Note: If you are not experienced in connecting accessories to the vehicle fuse box, use a certified installer.

- Disconnect the cable from the negative (-) terminal of your vehicle's battery.
- Ground the black wire of the supplied DC power cord to your vehicle's chassis. The grounding screw must make complete contact with the metal frame of your vehicle.
- Connect the red wire of the supplied DC power cord to a voltage source that turns on and off with the ignition switch, such as a spare accessory terminal in your vehicle's fuse box.
- Insert the adapter's barrel plug into the scanner's DC 12V jack.
- Reconnect the cable to the negative (-) terminal of your vehicle's battery.

Using the Antenna

Install the antenna by aligning the connector arrow to the ANT jack's upper tab, and press into place.

Expand the antenna according to the frequencies you want to monitor:

Frequency	Antenna Length
25-174 MHz	Extend fully (4 segments)
320-512 MHz	Extend half (2 segments)
806-1300 MHz	Collapse fully (1 segment)

The scanner's ANT jack supports a variety of antennae (available at RadioShack).

Notes:

- An external antenna is optional if you use your scanner as a base station. Connect an external antenna if you mount your scanner in your vehicle.
- The antenna should be vertical for best performance.
- Keep the antenna and cable as far as possible from sources of electrical noise, such as appliances or other radios.


Always use 50-ohm coaxial cable, such as RG-58 or RG-8X, to connect an outdoor antenna. For lengths between 50 and 100 feet, use RG-8X low-loss dielectric coaxial cable. For lengths over 100 feet, use RG8. You also may need a BNC adapter (not supplied).

CAUTION: Use extreme caution when installing or removing an outdoor antenna. If the antenna starts to fall, let it go! If the antenna touches a power line, touching the antenna, mast, cable, or guy wires can cause electrocution and death. Call the power company to remove the antenna. Do not attempt to do so yourself.

Turning on the Scanner

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

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

To perform a quick check of scanner operation, press the **WX /**  key. If you are near a NOAA weather station, you should hear weather information.

Connecting an External Speaker

To use an external speaker (available at your local RadioShack store), plug the speaker's 1/8 inch (3.5 mm) plug into the scanner's EXT SP jack.

Note: *Connecting an external speaker mutes the scanner's internal speaker.*

Connecting Headphones

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

Listening Safely

To protect your hearing, follow these earphone or headphones guidelines:

- 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 listening. Turn on the scanner, and adjust the volume to a comfortable level.
- After 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.
- Even though some earphones/headphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.

Understanding 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.

The scanner scans conventional frequencies and trunked systems. A **frequency**, expressed in kHz or MHz, is the tuning location of a station. To find active frequencies, use the **search** function. For more information about trunked transmissions see "**Trunk Operation**" on p. 41.

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 type of service. 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. Your scanner has 20 channel-storage banks. Each bank contains 50-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: *Search for frequencies to find your local frequencies, after you have programmed these frequencies into channels, you can scan the channels.*

Service Banks

The scanner is preprogrammed with all the frequencies allocated to the Marine, CB band, FRS/GMRS/MURS, Police (Fire/Emergency, non-trunked UHF and VHF), Aircraft and Ham band services. This helps you quickly find active frequencies instead of doing a chain 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 20 banks of 50 channels. Use each channel-storage bank to group frequencies.

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 0 (the first channel in Bank 0), and program the fire department frequencies starting with Channel 50 (the first channel in Bank 1).

Manual Mode

To enter Manual Mode from any other mode, press **MAN/MENU**.

Programming Frequencies into Channels

Before the scanner can begin to scan, you must program a frequency into at least one channel.

To locate and store specific frequencies into channels for later use:

1. From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Press **FUNC + ▲** or **▼** to select a bank.

3. Press ▲ or ▼ to select a channel
4. Use the number keys to enter the frequency, using • for the decimal point.
5. Press **ENT/PGM** to store the frequency into the channel.
6. To program the next channel in sequence, press ▲ or **ENT/PGM** and repeat Steps 4 and 5.

Programming Notes:

- If you entered an invalid frequency in Step 5, "Invalid Freq." appears and the scanner beeps error tones. Enter a valid frequency.
- If you entered a frequency in Step 5, which already exists on another channel, the scanner beeps an error tone and displays that channel. Press **CL** to clear the display, or press **ENT/PGM** to store the frequency in both channels.
- To erase a frequency from a channel, from Manual Mode press **ENT/PGM** to enter Programming Mode and then press **CL**. "Erase Frequency" will appear; press **ENT/PGM** to erase.
- 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 •/DELAY to turn the delay function on or off. The scanner stores this setting in the channel.
- To store trunked system frequencies, see "Programming Trunked Frequencies" on p. 41.

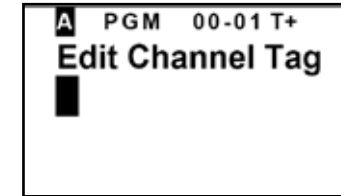
If you do not have a list of frequencies in your area, refer to www.radioreference.com or use a chain, fine tune, or service search to find transmissions (see "Searching" on p. 22).

Entering Channel Text Tags

To store text tags for easy identification of channels:

1. From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Enter the channel number where you want to store a text tag. If you make a mistake, press **CL** repeatedly until the display is cleared.

3. Press **MAN/MENU**.
4. Press **PSE/TEXT** to put the scanner into channel Text Tag Mode. The cursor appears.



5. Enter up to 16 letters by repeatedly pressing the number keys. Press ▲ or ▼ to move the cursor to the right or the left. Press **FUNC/A/a** to choose the input mode: upper case letters, lower case letters, or numbers. (See "Appendix A: Inputting Text" on p. 68.)
6. Press **ENT/PGM** to store.

Entering Bank Text Tags

To store text tags for easy identification of banks:

1. From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Press **FUNC + ▲** or **▼** to select the bank where you want to store a text tag.
3. Press **FUNC + ENT/PGM**. "Edit Bank Tag or Erase All Freq." appears.
4. Press **PSE/TEXT** to put the scanner into Bank Text Tag Mode. The cursor appears.



5. Press the number keys to enter up to 16 letters. Press ▲ or ▼ to move the cursor to the right or the left. Press **FUNC/A/a** to choose the input mode: upper case letters, lower case letters, or numbers. (See "Appendix A: Inputting Text" on p. 68.)
6. Press **ENT/PGM** to store.

Erasing All Frequencies in a Bank

To erase all frequencies in a bank:

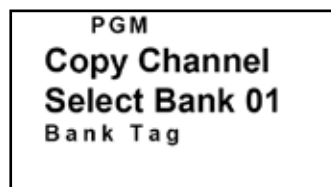
1. From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Press **FUNC + ▲** or **▼** to select the bank where you want to erase all the frequencies.
3. Press **FUNC + ENT/PGM**. "Edit Bank Tag or Erase All Freq." appears.
4. Press **FUNC + CL**.
5. Press **1** to erase all frequencies in the selected bank. Press **CL** to cancel.
Or
1. From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Enter the number of the bank where you want to erase all the frequencies.
3. Press **FUNC + ENT/PGM**. "Edit Bank Tag or Erase All Freq." appears.
4. Press **FUNC + CL**.
5. Press **1** to erase all frequencies in the selected bank. Press **CL** to cancel.

Note: If you entered an invalid bank number in step 2, the scanner displays "Invalid Bank No." Press **CL**.

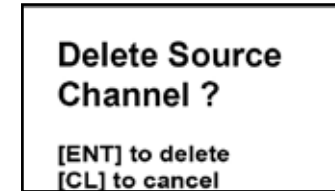
Copying or Moving a Frequency

To copy or move a frequency to a channel:

1. From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Select the frequency you want to copy or move. Or, directly enter the bank and channel number and press **MAN**.
3. Press and hold **ENT/PGM** to put the scanner in Program Copy Mode.



4. Press **▲** or **▼** to select the bank where you want to copy or move the frequency.
5. Press **ENT/PGM**. The smallest empty channel number and **0.0000** appears. If there is no empty channel, the scanner automatically selects the first channel of the bank.
6. Press **▲** or **▼** if you want to select another channel, then press **ENT/PGM**, "Delete Source Channel?" appears.



7. If moving a frequency, press **ENT/PGM** to delete the source. If copying a frequency, press **CL** to keep both locations.

Searching

Use the search function to find active frequencies.

While doing a chain, fine tune, or service bank search, press **•/DELAY** to turn the delay on or off.

While doing a chain, fine tune, or service bank search, set the scanner to skip data signals (such as fax or modem signals) if you want to search only for audio (voice) signals (see **“Skipping Data Signals”** on p. 35).

Chain Search

This feature lets you search through preset frequency ranges. You can also program a range. There are three modes within this feature: Chain Search Mode, Chain Search Pause Mode, and Program Band Select Mode.

The preset frequency ranges are:

Bank	Frequency (MHz)	Step (kHz)
0	25.0000-54.0000	5
1	137.0000-174.0000	5
2	179.750-215.750	6000
3	216.0000-224.9950	5
4	225.0000-399.9875	12.5
5	400.0000-512.0000	6.25
6	764.0000-775.9875	12.5
7	794.0000-805.9875	12.5
8	806.0000-956.0000	12.5
9	1240.0000-1300.0000	12.5

Starting Chain Search

1. Press **SRCH**, and then repeatedly press **SRCH** until **SR6** appears at the top of the display.
2. Press **0 – 9** to enable or disable the search bank being searched.

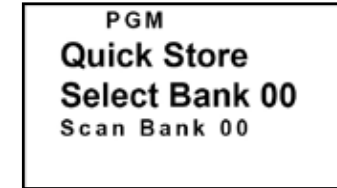
Note: At least one bank needs to be entered.

3. Press **▼** to search down or **▲** to search up.
4. When the scanner stops on a transmission, quickly press **PSE** to stop searching and listen to the transmission. **SR6 PAUSE** appears. To step through the frequencies during search Pause Mode, press **▼** or **▲**.
5. To release the hold and continue searching, press **PSE**.

Storing Frequencies Found During a Search

To store frequencies you find in a search.

1. Press **FUNC + ENT/PGM** when you find a frequency.

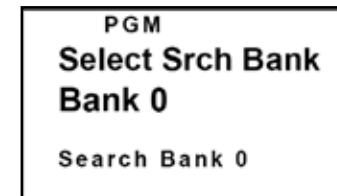


2. Press **▼** or **▲** to select a bank.
3. Press **ENT/PGM**. The frequency you want to store, the smallest empty channel number, and **“0.0000”** are displayed.
4. Press **ENT/PGM** to enter the frequency. After programming, **“Edit Ch Memory?”** appears. Press **ENT/PGM** to go to Programming Mode, or press **CL** to go back to a previous mode.

Programming Search Ranges

To define the search range for each search bank during a chain search:

1. From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Press **SRCH** to go to Programming Search Bank Mode.



3. Press **▼** or **▲** to select the bank number. Press **ENT/PGM**.
4. Using the number keys and **•**, enter the lower limit frequency, and then press **ENT/PGM**.
5. Using the number keys and **•**, enter the upper limit frequency, and then press **ENT/PGM**.
6. Press **MAN/MENU** to exit Programming Mode, or press **CL** to go back to a previous menu.

Programming Search Bank Text Tags

To store text tags for easy identification of search banks:

1. From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Press **SRCH** to go to Programming Search Bank Mode.
3. Press **▼** or **▲** to select the desired bank number.
4. Press **PSE/TEXT** to go to Programming Search Bank Text Tag Mode.



5. Enter up to 16 letters by repeatedly pressing the number keys. Press **▲** or **▼** to move the cursor to the right or the left. Press **FUNC/A/a** to choose the input mode: upper case letters, lower case letters, or numbers. (See **"Appendix A: Inputting Text"** on p. 68.)
6. Press **ENT/PGM** to store the text tag.
7. Press **MAN/MENU** to exit Programming Mode, or press **CL** to go back to a previous menu.

Fine Tune

To search up or down from the currently displayed frequency using fine tune:

1. From Manual Mode, Press **FUNC + SRCH/TUNE** to go to Fine Tune Pause Mode.
2. Press **PSE** to begin searching in Fine Tune Mode.
3. Press **▼** or **▲** to change search direction.



To start a fine tune search from a specific frequency:

1. From Manual Mode, Press **FUNC + SRCH/TUNE** to go to Fine Tune Pause Mode.
2. Enter a frequency using the number keys, and then press **ENT/PGM**.
3. Press **PSE** to begin searching in Fine Tune Mode.
4. Press **▼** or **▲** to change search direction.

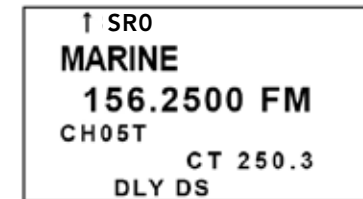
Note: *If you enter an invalid frequency, the scanner displays "Invalid Freq."*

Service Bank Search

The scanner is preprogrammed with all the frequencies allocated to Marine, CB band, FRS/GMRS/MURS, Police (Fire/Emergency, non-trunked UHF and VHF), Aircraft and Ham band transmissions.

To search the service banks:

1. Press **SRCH**. The current service bank appears and the scanner starts searching. To select a different service bank, press **SRCH** again.
2. Press **▼** or **▲** to begin searching the newly selected service. Or, the scanner will start searching automatically after two seconds.



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

To directly access a channel (only for Marine, CB band, and FRS/GMRS/MURS):

1. From Service Search Mode, press **PSE** to go to Service Search Pause Mode.
2. Press the number key that corresponds to the desired channel. Press **PSE** to select the channel.

Search Skip Memory

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

Note: You cannot skip frequencies during weather scan.

To skip a frequency, press **L/O** when the scanner stops on the frequency during a search. The scanner stores the skipped frequency in memory and automatically resumes the search.

To clear a single frequency from skip memory:

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

Or

1. In Search or Search Pause Mode, Press **FUNC + L/O** to open the Frequency Lockout menu.
2. Select **Review Lockouts** and press **ENT/PGM**.
3. Select the desired frequency and press **ENT/PGM**. "Unlock?" appears.
4. Select **Yes** and press **ENT/PGM** to clear the frequency from skip memory.

To clear all the skipped frequencies at once:

1. Press **PSE** to stop the search.
2. Hold down **L/O** until the scanner beeps twice.

Or

1. In Search or Search Pause Mode, Press **FUNC + L/O** to open the Frequency Lockout menu.
2. Select **Unlock All** and press **ENT/PGM**.
3. Select **Yes** and press **ENT/PGM** to clear all frequencies from skip memory.

Notes:

- If you selected all frequencies to be skipped within the search range, the scanner beeps 3 times and does not search. "All ranges Locked out!" appears.
- If you select more than 200 frequencies to skip, "L/O List Full!" appears.

Search Speeds

The scanner has two search speeds: Normal search at 90 steps/second and Hypersearch at 270 steps/second.

Hypersearch applies only to the 5 kHz step bands (25–54 MHz, 137–174 MHz, and 216–224.9950 MHz).

Signal Stalker I

Signal Stalker I detects and displays the frequency of nearby strong radio transmissions. Signal Stalker I works well for locating mobile and handheld two way radios in areas with no other strong transmission sources.

Signal Stalker I 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.

Using Signal Stalker I

Note: Turn off the data skip feature for Signal Stalker I if it is on. (See "Skipping Data Signals" on p. 35.)

To turn on Signal Stalker I, turn **SQUELCH** fully clockwise, and then press and hold **SCAN/📶**. The 📶 icon appears. Every 2 seconds, the scanner searches for frequencies in the range you specify in "Setting the Signal Stalker I Options" below.

When the scanner finds a frequency, it alerts you according to its settings and "Signal found!" appears. Press any key to confirm the displayed frequency. Press **▼** or **▲** to resume scanning.



To turn off Signal Stalker I and turn on normal scanning, press and hold **SCAN/📶**. The 📶 icon disappears.

Note: Signal Stalker I doesn't run in weather search, program search range, or Programming Mode.

Setting the Signal Stalker I Options

1. Press **FUNC + MAN/MENU**.
2. Select **Signal Stalker** and press **ENT/PGM**. The Signal Stalker I options appear. (See the following section for a description of the options.)
3. Select the option you want to set and press **ENT/PGM**.
4. Select **0n** or **Off** and press **ENT/PGM**.
If you selected Band Switch, press **▼** or **▲** to select the band you want to set. Press **ENT/PGM**. Then select **0n** or **Off** and press **ENT/PGM**.
5. Press **MAN/MENU** to exit the Menu Mode, or press **CL** to go back to a previous menu.

Signal Stalker I Options

- **Alert Beep:** Set to **0n** if you want to hear an alert when Signal Stalker I finds a frequency.
- **Alert Light:** Set to **0n** if you want the backlight to flash when Signal Stalker I finds a frequency.
- **Pager Screen:** Set to **0n** if you want to ignore common pager frequencies.
- **Only Mode:** Set to **0n** to turn off normal scanning while Signal Stalker I runs. Set to **Off** to continue normal scanning while Signal Stalker I runs in the background.
- **Band Switch:** Set the frequency band where you want the scanner to look for transmissions.

0	25-54 :	VHF Low Band
1	108-137:	AIR Band
2	137-225:	VHF High Band 1
3	225-320:	VHF High Band 2
4	320-512:	UHF Band
5	764-956:	800MHz Band

- **Voice Interrupt:** 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 causing the audio signal to break at that moment.

Set Voice Interrupt to **0n** if you want to keep the Signal Stalker I active despite interruptions while the scanner is receiving an audio signal. Set to **Off** if you do not want to hear interruptions. The scanner resumes checking signals when the audio signal ends.

- **Logging:** Set this function to **0n** to scan log channels along with normal channels. Set this function to **Off** if you do not want to scan log channels.

Log Channels

- 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 Bank 19 Channel 49 and you can manually access them by selecting channels as Bank 20 Channel 00, Bank 20 Channel 01, ... Bank 20 Channel 09. The channel numbers appear as SS-0, SS-1, ... SS-9.
- You cannot program frequencies in the log channels.
- You can lock out the log channels like normal channels.
- The scanner stores signals found by the Signal Stalker I even if the logging option is set to off.
- The frequencies in the log channels are deleted when the scanner is turned off.

Signal Stalker I Band Meter

The band meter allows you to see which band Signal Stalker I is searching for. When a strong and consistent signal is detected, this meter will rise up to Max. The scanner tunes to the signal and shows the band where the signal is detected.

However, even if this meter rises to Max, the scanner might not be able to catch the signal if it is out of range, locked-out, or screened as a common pager frequency.

To improve performance, disable the band by pressing the band number on the keypad. Alternatively, disable the band within the Band Switch in the Signal Stalker I options menu.

Note: *This feature is different from SIGNAL STRENGTH METER using RSSI.*

Scanning

Scanning Stored Channels

To begin scanning channels, press **SCAN**. The scanner scans through all non-locked channels in the activated banks (see “**Locking Out Channels**” on p. 35 and “**Turning Banks On and Off**” on p. 33). When the scanner finds a transmission, it stops on it. When the transmission ends, the scanner resumes scanning.



Scanning Notes:

- If you have not stored any frequencies into channels, the scanner does not scan.
- If the scanner picks up unwanted partial, or 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 “**Trunk Operation**” on p. 41.

Manually Selecting a Channel

You can continuously monitor a single channel without scanning. This is useful if you want to monitor a specific channel or 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.

To directly access a channel:

1. Press **MAN** to stop scanning.
2. Enter the bank and channel number and press **MAN**. The selected channel appears.

To stop at a channel while scanning:

1. Press **MAN** to stop scanning.
 2. Press ▼ or ▲ to select the next or previous channel.
 3. Press **SCAN** to resume scanning.
- Or
1. Press **PSE** when the scanner stops on a transmission.
 2. During Pause Mode, you cannot select another channel by pressing ▼ or ▲.
 3. Press **PSE** or **SCAN** to resume automatic scanning.

Weather Scan

To scan for weather transmissions:

1. Press **WX/📶**. **WX** appears. Change the scan direction by pressing ▼ or ▲.
2. To stop the scan, press **PSE**. **PAUSE** appears.

To set a weather alert, see “**Receiving NWR-SAME and Weather Alert Signals**” on p. 38.

Skywarn

The Skywarn function lets you jump directly to the last channel in memory (Bank 19 #49) from any mode. The scanner goes into Skywarn Mode and starts receiving transmissions in the last channel.

Note: Before using this feature, program the local Skywarn frequency for your area into Bank 19, Channel 49.

Activate Skywarn by pressing and holding **WX/📶**.



If no frequency is programmed in the last channel, “**Skywarn Freq. is not stored.**” appears and the scanner sounds an error tone.

The scanner has 10 channels for Skywarn (Bank 19 channels 40-49). Press ▼ or ▲ to select other Skywarn channels. Press **MAN/MENU** to exit Skywarn.

About Skywarn

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. 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

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.*

To listen to NOAA for weather alerts, warnings, watch box notices, and weather-forecasts see **“Receiving NWR-SAME and Weather Alert Signals”** on p. 38.

Settings

Setting 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.

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

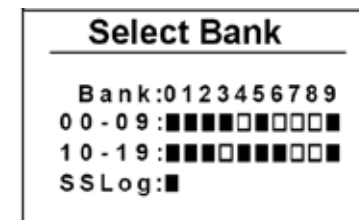
- To turn off the 2-second delay, press **•/DELAY** while the scanner is monitoring a channel, scanning, or searching. **DLY** disappears.
- To turn on the 2-second delay for a single channel, manually select the channel and press **•/DELAY**. **DLY** appears.
- To turn on the 2-second delay for the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

The Signal Stalker I delay time is 10 seconds.

Turning Banks On or 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 50 channels in that bank.

1. In Scan Mode, Press **FUNC + ▲/BANK**.
2. Press **▼** or **▲** to select a set of banks (00-09, 10-19, or SS Log).
3. Press the number key (**0 - 9**) that corresponds to the bank you want to turn on or off. A black box indicates the bank is turned on. An empty box indicates the bank is turned off.
4. Press **MAN/MENU** or **CL** to exit from Menu Mode.



Notes:

- The scanner scans all the channels within the displayed banks that are not locked out.
- 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, the last bank remains.

Programming Scan Bank Lists

Scan bank lists save the configuration status (on or off) of the scanner's 20 banks. You can program up to 20 scan lists, assign text names, and load the configuration you want to use. For example, you might create a scan list named "Home" which scans banks 0-8, and a list named "Work" which scans banks 9-12.

To program and name a scan bank list:

1. Turn banks on or off in the configuration that you want to save.
2. Press **FUNC + MAN/MENU**.
3. Select **Scan List** and press **ENT/PGM**.
4. Select **Save Scan List** and press **ENT/PGM**.
5. Select the number you want and press **ENT/PGM**. Select **Yes** and press **ENT/PGM**.
6. Press **CL** to go to the previous menu.
7. Select **Edit Text** and press **ENT/PGM**.
8. Select the number you want and press **ENT/PGM**.
9. Input text and press **ENT/PGM**.
10. Press **MAN/MENU** to exit from the menu.

To load a scan bank list:

1. Press **FUNC + MAN/MENU**.
2. Select **Scan List** and press **ENT/PGM**.
3. Select **Load Scan List** and press **ENT/PGM**.
4. Select the list you want to load and press **ENT/PGM**. Select **Yes** and press **ENT/PGM**.
5. Press **MAN/MENU** to exit from the menu.

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, and 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 selected banks and all Signal Stalker I log channels, press **MAN** to stop scanning, then hold down **L/O** until the scanner beeps twice.

Skipping Data Signals

The data skip feature prevents the scanner from stopping on channels that consist of non-modulated or data signals (such as fax or modem transmissions) during a search or scan. When the radio receives a data signal and data skip is selected, the signal is ignored.

To turn on the data skip feature:

1. If the priority feature is on, turn it off by pressing **PRI** during scanning.
2. Press **FUNC + MAN/MENU**.
3. Select **Data Skip** and press **ENT/PGM**.
4. Select **Search, Scan, or Signal Stalker** then press **ENT/PGM**.
5. Select **On** or **Off** and press **ENT/PGM**.
6. Press **MAN/MENU** to exit the Menu Mode, or press **CL** to go back to a previous menu.
7. **DS** appears when the data skip feature is on.

Note: This feature does not apply to the AM band or Weather Search Mode as data signals are not generally found in these services.

Memory Lock

The memory lock feature protects the scanner from accidental program changes.

To turn on the memory lock, press and hold **DIM/M-LOCK** until **Memory Locked** appears. To turn it off, press and hold **DIM/M-LOCK** until **Memory Unlocked** appears. When the scanner is locked, it beeps an error tone if you try to program a frequency or talk group ID.

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

Setting Display Brightness

Press **DIM/M-LOCK** to toggle the brightness of the display backlight between **bright**, **dim** or **off**.

Setting the LCD Contrast

To change LCD contrast:

1. Press **FUNC + MAN/MENU**.
2. Select **LCD Contrast** and press **ENT/PGM**.
3. Select contrast level 1-8 and press **ENT/PGM**
4. Press **MAN/MENU** to exit the Menu Mode, or press **CL** to go back to a previous menu.

Setting the Keytone

Each time you press any of the scanner's keys, the scanner sounds a tone.

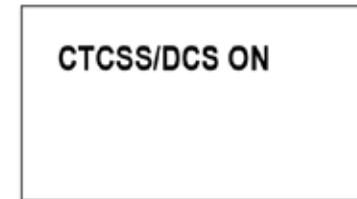
To turn the scanner's key tone on or off:

1. Press **FUNC + MAN/MENU**.
2. Select **Key Tone** and press **ENT/PGM**.
3. Select **On** or **Off** and press **ENT/PGM**.
4. Press **MAN/MENU** to exit the Menu Mode, or press **CL** to go back to a previous menu.

Setting CTCSS/DCS

The CTCSS/DCS feature allows squelch to open only when the tone you have programmed with a specific frequency is received along with a transmission. If the scanner detects the tone, it displays the tone's frequency and DCS code.

To turn the CTCSS/DCS feature on or off, Press **FUNC + CL/CTCSS/DCS**. The scanner displays, "CTCSS/DCS ON" or "CTCSS/DCS OFF" for one second.



Notes:

- When CTCSS/DCS is on in Scan Mode or Manual Mode, the scanner works according to the channel settings.
- When CTCSS/DCS is on in Chain Search, Fine Tune, or Signal Stalker I, the scanner searches for CTCSS/DCS codes.
- The CTCSS/DCS feature does not apply to the AIR band or Weather Scan.

For more information, see "**Programming CTCSS/DCS Codes**" on p. 60.

Setting 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. From Manual Mode, press **ENT/PGM**.
2. Enter the channel number you want to select as the priority channel, and then press **PRI**. "P" appears to the left of the selected channel frequency.

- Repeat Steps 1 and 2 for the channel in each bank that 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. 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.

Note: If you have locked out all priority channels, "Priority Scan No Channel." appears when you activate the priority feature.

Weather Priority

When the weather priority feature is on and the scanner detects a 1050Hz alert tone, priority WX activates and you receive a weather alert.

To set weather priority channel:

- Press **WX/** and then press **PSE**.
- Press **▼** or **▲** to select the priority WX channel you want.
- Press **FUNC + PRI** to set the WX priority channel.

To turn this function on and off:

From Scan Mode or Search Mode, Press **FUNC + PRI**. "WX Priority Scan Turn On" or "WX Priority Scan Turn Off" appears.

Receiving NWR-SAME and Weather Alert Signals

The National Oceanic and Aerospace Administration (NOAA) broadcasts alerts that include digitally encoded data. The severity of the alert is identified using Specific Area Message Encding (SAME). The scanner displays the SAME event code name and sounds an alert for each level: Warning level, Watch level, or Advisory level.

To program your scanner to alert you when the weather service issues a SAME event code, turn on the alert feature and then leave the scanner monitoring the weather service.

Note: You cannot scan channels and monitor for SAME event codes at the same time.

Turning On the Digital Weather Alert Feature

- Press **WX/** to start the weather search.
- Press **PRI/ALERT**. "SAME Standby" and "ALT" appear. This mutes the audio until the scanner receives a SAME-coded signal.

When the scanner receives a SAME-coded signal, the alert sounds, **ALT** flashes, and the SAME event code name (which indicates the severity of the alert) appears. Press any key to turn off the alert sound and listen to the weather broadcast.

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 **PRI/ALERT** for about 1 second. The tones sound in the order Advisory level, Watch level, then Warning level, and "WX ALERT TEST" flashes. Each alert code appears as its tone sounds. Press any key to end the test sequence.

Programming Alerts for a Specific County

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 (0=entire area; 48=Texas; 439=Tarrant County).

To limit weather alerts to a specific area, you must program in the FIPS codes for the areas you want to receive alerts.

Programming FIPS

1. From Scan or Manual Mode, press **WX/**.
2. Press **FUNC + ENT/PGM** to go to the Programming FIPS Code menu.
3. Press **▼** or **▲** to select **Custom**. Press **ENT/PGM**. If a FIPS code is not programmed, "-----" appears.
4. Use the keypad to enter the FIPS code. Press **CL** to cancel an inputted FIPS code. Press **ENT/PGM** to store.
5. Press **▼** or **▲** to enter up to 14 additional FIPS codes.
6. Press **ENT/PGM** to exit FIPS programming.

To delete a FIPS code:

1. From Scan or Manual Mode, press **WX/**.
2. Press **FUNC + ENT/PGM** to go to the Programming FIPS Code menu.
3. Press **▼** or **▲** to select **Custom**. Press **ENT/PGM**.
4. Press **▼** or **▲** to select the desired FIPS code.
5. Press **CL**. "Erase FIPS Code?" appear.
6. Press **CL** to cancel or **ENT/PGM** to delete. "_____" appears.

To reset the scanner to sound an alert for all areas:

1. From Scan or Manual Mode, press **WX/**.
2. Press **FUNC + ENT/PGM** to go to the Programming FIPS Code menu.
3. Press **▼** or **▲** to select **All FIPS**. Press **ENT/PGM**.

Trunk Scanning

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

Simultaneous Trunking

The scanner allows you to track up to 20 systems at a time. You can trunk scan or search and scan conventional frequencies at the same time. You can program conventional frequencies in the same bank as trunking systems, but only one trunking system per bank.

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.

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.

Trunk Operation

Programming Trunked Frequencies

Programming trunking frequencies is the same as non-trunked frequencies, except that you must store the appropriate mode (MO, ED, or LT) with each frequency.

Notes:

- You can scan only one type of trunked frequency, either EDACS (GE/Ericsson), Motorola, LTR (EF Johnson), or EDCAS SCAT in a bank at one time. You can, however, mix conventional channels and frequencies in a bank.
- If you are programming trunked frequencies for Motorola Type I and

hybrid systems, you must first program the fleet map (see “**Type I and Hybrid Trunked Systems**” on p. 54).

- If you are programming frequencies for an EDACS system you must store them in the Logical Channel Number order (usually listed as LCN#). For example, LCN1 would go into channel 01 for the current bank, and LCN2 would go into channel 02.
- If you are programming frequencies for an LTR system you must store them in the home repeater order. For example, home repeater order 1 would go into channel 01 for the current bank, and home repeater order 2 would go into channel 02

Follow these steps to program trunked frequencies:

1. From Scan or Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
2. Press **FUNC + ▼** or **▲** to select a bank. Hold down **▼** or **▲** to move through the bank selection faster.
3. Press **▼** or **▲** to select a channel. Hold down **▼** or **▲** to move through the channel selection faster.
4. Press **TRUNK/MODE** to enter the Trunk ID Programming Mode.
5. Repeatedly press **FUNC + TRUNK/MODE** to select MOT (Motorola), EDACS, LT, or EDACS SCAT. This sets the talk group ID decoding method to be used for the bank.

```
PGM  BNK09  T+
MOT mode
PMT ID-0:  ----
ID List: 0  ON
DLY
```

5. Press **ENT/PGM** to enter Programming Mode.
6. Enter the desired trunking frequency then press **ENT/PGM** to store.
7. Press **FUNC + TRUNK/MODE** to select the appropriate mode (MO, ED, or LT).

```
PGM  09-00  T+
P866.3875 MO
Scan Bank 09
DLY
```

8. To enter additional trunking frequencies as subsequent channels in the same bank, press **ENT/PGM** or **▲** to access the next open channel. Repeat steps 6 and 7 to enter the frequencies. (See “**Programming Frequencies into Channels**” on p. 17).
9. Press **SCAN** to start scanning.

Notes:

- If you enter a frequency that has already been entered, the scanner sounds an error tone and displays “**Duplicate Freq.**” and the channel number. If the dual entry is an error press **CL** and enter the correct frequency. If the dual entry is intentional press **ENT/PGM** to accept.
- You may replace any frequency by selecting the bank and channel, pressing **ENT/PGM** and entering the new frequency.
- If you make an error in the entry process, repeatedly press **CL** to erase the incorrect data.

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. The scanner continues to monitor the ID for 2 seconds after the transmission stops before resuming scanning.

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

Skipping a Trunked Bank

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

Talk Group IDs

Finding Talk Group IDs

Set the scanner to Open Mode to find all the active talk group IDs within the trunked system. Once you've stored the IDs, set the scanner to Close Mode so you only hear the IDs you want.

To toggle a bank between Open Mode and Close Mode, press **FUNC +** **•/DELAY/OPEN/CLOSE**. T+ appears for Open Mode; T- appears for Close Mode.

You can also change the a bank's mode from the Set Open/Close menu.

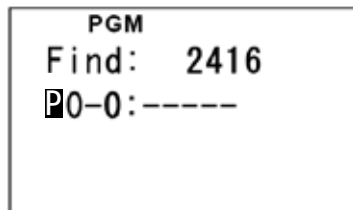
1. In Scan Mode, press **FUNC + ▲/BANK** to go to the Select Bank menu.
2. Press **TRUNK** to go to the Set Open/Close menu.
3. Press **▼** or **▲** to move the cursor up or down. Press the number key that corresponds to the desired bank, choosing **+** for Open Mode or **-** for Close Mode.
4. Press **TRUNK** while in the Set Open/Close menu to return to the Select Bank Menu.
5. To exit from Menu Mode, press **MAN/MENU**.

Storing Talk Group IDs

1. Press **FUNC + ENT/PGM** when the scanner stops on a voice channel transmission or when a talk group ID is indicated in the Manual Mode.
2. Press **▼** or **▲** to select the list where you want to store the ID and press **ENT/PGM**.

Note: If the ID has already been stored, "ID was saved" appears.

3. The smallest empty ID memory number and "-----" appears. Press **▼** or **▲** to choose the memory location where you want to store the ID, then press **ENT/PGM**.



4. "Edit ID Memory?" appears. Press **ENT/PGM** to edit; press **CL** to cancel.

Talk Group ID Text Tags

When the scanner stops on a transmission, it displays the ID's text tag if you have stored the ID. You can confirm the ID code while the scanner shows the text when the received signal is a voice channel.

1. Press **FUNC + PSE/TEXT** while the scanner is receiving the voice channel and indicating the text name. The ID code appears as MT ID: XXXXXX, etc.
2. Press **FUNC + PSE/TEXT** again to cancel.

Pausing on an Active Talk Group ID

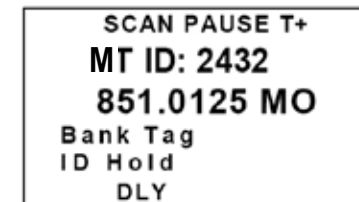
To stop scanning and keep the scanner tuned to a desired ID:

1. Press **PSE**. PAUSE appears and the scanner stays on the current ID.
2. Press **PSE** to resume scanning or searching.

Manually Entering a Talk Group ID

You can listen to a specific talk group ID (even if it's not stored in memory by manually entering the ID.

1. Press **PSE** to enter Pause Mode.
2. Enter the ID number and press **PSE**.
3. "ID Hold" appears.



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 and most are not voice signals. Since these are assigned Talk Group IDs just like other users, you may want to lock out reception of these signals. The scanner allows that you lock out up to 50 Talk Group IDs for each trunk scanning bank. If you use all the banks as trunking banks, you can lock out up to 1000 IDs at one time.

Note: If you lock out an ID, it is also locked out of the scan lists. See “Using Talk Group ID Lists” on p. 49

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

When you try to lock out more than 50 Talk Group IDs in a bank, “ID L/O Full!” appears.

You can also lock out talk group IDs from the ID Programming Mode.

1. Press **ENT/PGM** then **TRUNK/MODE** to enter the ID Programming Mode.
2. Press **FUNC + ▼** or **▲** to select the desired bank.
3. Press **▼** or **▲** to select the ID memory.
4. Press **L/O** to lock out the ID. **L/O** appears.

Unlocking Locked-Out Talk Group IDs

To remove the lockout from a talk group ID, manually select the ID memory, and press **L/O**. **L/O** disappears.

To review and unlock lockouts in a bank:

1. Press **ENT/PGM** then **TRUNK/MODE** to enter the ID Programming Mode.
2. Press **FUNC**, and then press **L/O**.
3. Select **Review ID L/O** and press **ENT/PGM**.
4. If you want to unlock a locked-out ID, select it and press **ENT/PGM**. Select **Yes** and press **ENT/PGM**.
5. If you want to unlock all lockouts at the same time, select **Unlock All** after Step 2.

Manually Programming Talk Group IDs

1. Press **ENT/PGM** then **TRUNK/MODE** to enter the ID Programming Mode.
2. Press **FUNC + ▼** or **▲** to select the desired bank.
3. Repeatedly press **FUNC + TRUNK/MODE** to select MOT Mode, EDACS Mode, or LT Mode.
4. Repeatedly press **TRUNK** to select the ID List.

5. Press **▼** or **▲** to select the ID location within the list.
6. Enter the talk group ID and press **ENT/PGM**. Use the decimal point for a hyphen if needed.
7. To create an optional ID tag, press **PSE/TEXT**, enter the desired text for the ID, and press **ENT/PGM** (see “Appendix A: Inputting Text” on p. 68).
8. To store and program the next ID memory in sequence, press **▼** or **▲** and repeat from Step 6.

Notes:

- If you made a mistake in Step 6, “Invalid ID” appears and the scanner beeps.
- You can enter either AFS or a decimal code for ED (EDACS) IDs. When you press **FUNC** then **2** at Step 6, the decimal format appears for about 2 seconds. Now you can enter the ID code with a decimal format.
- If you entered an ID code that is already stored in another ID channel, “Duplicate ID, ID Memory: X-X” appears. Press **ENT/PGM** to store the ID code, press **CL** to cancel.

See the following subsections for specific requirements for entering Motorola, EDACS and LTR talk group IDs.

Motorola

To enter a Motorola Type II Talk Group ID:

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

To enter a Motorola Type I Talk Group ID:

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

EDACS

AFS (‘Agency-Fleet-Sub fleet’) is the numbering format used in the scanner to display and enter EDACS talk groups. The scanner shows EDACS talk groups in AFS format and can also work in decimal format. (See “Selecting The EDACS Talk Group ID Format” on p. 57). AFS allows you to enter full or partial

EDACS Talk Group IDs.

To enter a full EDACS ID:

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

EDACS Partial Group Numbers

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” on p. 57.)*

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:

Press	To Scan
0 1 . ENT/PGM	all 01 groups
0 1 . 0 1 ENT/PGM	all 01 talk groups within the 01 agency

To enter a Partial EDACS ID:

1. Enter the agency number you want to store. Press **•/DELAY** to enter the dash.
2. Press **ENT/PGM**.

Or you can program all the talk group numbers for one fleet of an agency.

1. Enter the agency number.
2. Press **•/DELAY** to enter the dash.
3. Enter the fleet number.
4. Press **ENT/PGM**.

LTR

Users on an LTR system are assigned to specific talk groups, which are identified by the scanner 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 Use ID you want to store.
4. Press **ENT/PGM**.

Clearing Talk Group IDs

1. Press **ENT/PGM** then **TRUNK/MODE** to enter the ID Programming Mode.
2. Press **▼** or **▲** to select the ID you want to clear.
3. Press **CL**. “Erase a Talk Group ID?” appears.
4. Press **ENT/PGM** to clear the ID. Press **CL** to cancel.

Clearing All Talk Group IDs in a Bank

You can quickly delete all talk group IDs from a bank if you want to use the bank to store different data (such as a new set of talk group IDs).

1. Press **ENT/PGM** then **TRUNK/MODE** to enter the ID Programming Mode.
3. Press **FUNC + ▼** or **▲** to select a talk group ID bank.
4. Press **FUNC** then **6**. “Erase entire List?” appears.
5. Press **ENT/PGM** to clear the list. Press **CL** to cancel.

Using Talk Group ID Lists

When you designate a bank as a trunking bank, your scanner sets up 10 sub banks, which are simply lists used to store your favorite talk group IDs. Each list can contain up to 10 talk group IDs, so you can store a total of 100 talk

group IDs for each trunking bank. If you use all the banks as trunking banks, 2000 talk group IDs will be available.

Once talk group IDs are stored in list, you can scan them like you scan conventional frequencies.

Turning a Talk Group ID List On or Off

1. Press **ENT/PGM** then **TRUNK/MODE** to enter the ID Programming Mode.
2. Repeatedly press **TRUNK** to select the desired ID List.
3. Press **FUNC** then **1** to turn the ID List on or off.

Scanning the Talk Group ID Lists

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

In Close Mode, you can remove or restore a talk group ID list from active scanning. While the scanner is stopped on a voice channel transmission, press the number (0-9) of the list you desire to turn on or off.



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

Priority Scanning Talk Group IDs

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 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** for 2 seconds in ID Programming Mode. "P" appears.

To turn priority ID scanning on or off, press **PRI** during ID while scanning in Close Mode. "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" on p. 45.

Motorola Trunking Systems

Motorola Type II 800 MHz

On the 800 MHz trunking band, you can select the channel plan (Normal, Splinter, or Custom). On the 900 MHz trunking band, you do not need to set any other settings.

Follow these steps to program 800 MHz band Motorola trunking.

1. Press **ENT/PGM** then **TRUNK/MODE** to enter the ID Programming Mode.
2. Press **FUNC + ▼** or **▲** to select the desired bank.
3. Repeatedly press **FUNC + TRUNK/MODE** and select MOT Mode.
4. Press **FUNC + 3**.
5. Select NORMAL, SPLINTER or CUSTOM and press **ENT/PGM**.
 - If you are uncertain about the channel plan, use the default setting of Normal. The base frequency in Normal is 851.0125 MHz.
 - If you cannot receive with the normal setting, change to SPLINTER. The base frequency in Splinter is 851.0000 MHz.
 - If you cannot receive in either the Normal or Splinter channel plans, try Custom. In the Custom channel plan, you can set the base frequency, offset channel and spacing for 800MHz Trunking System.

Setting the Base Frequency, Offset Channel, and Spacing for 800 MHz Custom

To properly track Motorola 800 MHz Custom trunked systems, you must enter the base frequency, offset channel and spacing for each system.

1. Press **FUNC + MAN/MENU** to enter the Menu Mode.
2. Select **Trunk Option** press **ENT/PGM**.
3. Select the desired bank and press **ENT/PGM**.
4. Select **MOT**, and press **ENT/PGM**.
5. Select **800MHz CH Plan**, and press **ENT/PGM**.
6. Select **Custom**, and press **ENT/PGM**.
7. Select **Custom Range**, and press **ENT/PGM**.
8. Select **Base Freq**, and press **ENT/PGM**.
9. Use the number keys and **•** to enter a Lower Frequency, then press **ENT/PGM**.

10. Use the number keys and **•** to enter an Upper Frequency, then press **ENT/PGM**.
 11. Select **Offset**, and press **ENT/PGM**.
 12. Use the number keys and **•** to enter an Offset Channel, then press **ENT/PGM**.
- Note:** You can input within a range of 0 - 1023 for 800 MHz Custom trunked system.
13. Select **Spacing**, and press **ENT/PGM**.
 14. Select a Spacing Frequency, then press **ENT/PGM**.
- Note:** You can only select within a range of 12.5 – 100 kHz, and 12.5 kHz multiples.
15. Press **CL**. The scanner returns to the previous screen.
 16. If you want to program another Custom Range, repeat steps 7 through 15.

Note: Usually, the settings for base frequency, offset channel, and spacing are common between systems, therefore these settings are applied to all Motorola 800MHz custom banks.

Motorola UHF / VHF

You can program the scanner to receive transmissions in the UHF band (406-512 MHz) / VHF band (136-174MHz) of the Motorola trunking system. You must program the system's base frequency, offset channel, and spacing frequency.

Notes:

- Base frequencies, offset channel, and spacing vary for each type of trunking system. You can get information about these frequencies for the trunking system you want to scan using www.radioreference.com, other Internet sources, or locally published guidebooks.
- If you try to program a base frequency in the 800MHz bands (806-960 MHz), the scanner ignores the entry.

1. Press **ENT/PGM** then **TRUNK/MODE** to enter the ID Programming Mode.
2. Press **FUNC** + **▼** or **▲** to select a bank.
3. Repeatedly press **FUNC** + **TRUNK/MODE** and select MOT Mode.

4. Press **FUNC** + **2**. The Custom Range menu appears.
5. Select **Base Freq 1/3**, and press **ENT/PGM**. Use the number keys to input the lower base frequency and press **ENT/PGM**. Input the upper base frequency and press **ENT/PGM**.

Base Freq Notes:

- Base frequency consists of Lower frequency and Upper frequency. Upper frequency should input the value subtracted from the next lower frequency by 1 step.

For example, if you get the following information from radioreference.com, you can input the Lower and Upper Frequency into the Base Frequency.

	1	2
Base	451.0000	461.5000
Offset	560	380
Spacing	12.5	12.5

- a. Input the Lower Frequency as 451.000MHz.
- b. Input the Upper Frequency as 461.4875MHz (461.5MHz-12.5kHz).
- c. Input the next Lower Frequency as 461.500MHz.
- d. If the next Lower frequency isn't defined, input 512.000MHz to enter the UHF upper limit frequency.

Or you can input only Lower Frequency into the Base Frequency. If you have inputted the Upper Frequency, enter 0 then press **ENT/PGM** to clear it. Then input lower frequencies in ascending sequence.

6. Press **CL** to return to the Custom Range menu.
7. Select **Offset 1/3** and press **ENT/PGM**. Use the number keys to input the offset and press **ENT/PGM**.
8. Press **CL** to return to the Custom Range menu.
9. Select **Spacing 1/3** and press **ENT/PGM**. Press **▼** or **▲** to select the spacing and press **ENT/PGM**.
 - For Motorola UHF system use 12.5kHz spacing between 12.5kHz – 100kHz.
 - For Motorola VHF system use 5kHz spacing between 5kHz – 100kHz.
10. Press **CL** to return to the Custom Range menu and repeat steps 5-9 for the other ranges.

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 “**Setting the Status Bit Feature (S-Bit)**” on p. 56).

Subfleet information is included with the frequency list for a Type I system. To enter a provided map, see “**Selecting a Preset Fleet Map**” below. To locate fleet map information, refer to www.radioreference.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 **SCAN** 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 Custom Fleet Map**” on p. 55).

Selecting a Preset Fleet Map

1. Press **FUNC + MAN/MENU** to open Menu Mode.
2. Select **Trunk Option**, then press **ENT/PGM**. Select a bank, then press **ENT/PGM**.
3. Select **MOT**, and press **ENT/PGM**.
4. Select **Edit Fleet Map**, and press **ENT/PGM**.
5. Select **Preset**, and press **ENT/PGM**.
6. Select the preset map you want to use and press **ENT/PGM**. (See “**Appendix B: Fleet Maps**” on p. 69 for a description of the preset fleet maps).

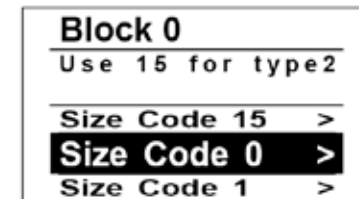
Note: When the scanner searches for transmissions, Type I fleet and subfleet IDs such as 100-12, 100-9, 000-12, or 400-8 display.

Programming a Custom Fleet Map

You must set the fleet map if you want to receive a Motorola Type I system. Fleet maps are included along with other information about Motorola Type I systems at www.radioreference.com.

Follow these steps to program a custom fleet map.

1. Press **ENT/PGM** then **TRUNK/MODE**.
2. Press **FUNC + ▼** or **▲** to select the desired bank.
3. Press **FUNC + 8**, then select **Custom** and press **ENT/PGM**.
4. Select the block and press **ENT/PGM**.



5. Select the size code supplied with the Type I system information and press **ENT/PGM**.
6. Repeat steps 4 and 5 for each block.
7. Make sure each entry is correct.

Notes:

- The default setting of the bank is Motorola Type II.
- However, if you set Type I and you want to return to Type II, enter 15 at Step 5.
- If you cannot find your fleet map information, see “**Appendix B: Fleet Maps**” on p. 69 for a description of the preset fleet maps.

Setting Control Channel Only Mode

When this function is activated, trunking is performed using Control Channel data only. Voice channel frequencies do not have to be programmed into memory. This feature only applies to Motorola 800 MHz, 800 MHz Custom, 900 MHz, VHF, UHF systems.

To turn this function on or off:

1. Press **FUNC + MAN/MENU** to open Menu Mode.
2. Select **Trunk Option**, then press **ENT/PGM**. Press ▼ or ▲ to select a bank, then press **ENT/PGM**.
3. Select **MOT**, then press **ENT/PGM**.
4. Select **Set C-Ch Only**, and press **ENT/PGM**.
5. Select **On** or **Off** and press **ENT/PGM**.

Setting the Status Bit Feature (S-Bit)

To control how the scanner interprets and displays talk group IDs, set status bits (also called S-Bits), to **Yes** or **Ignore**. 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 (S-bit feature = Ignore). 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.

Note: *If you are scanning a Motorola Type I system and do not have a fleet map for that system, you might have to set the status bit feature to 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 the status bit feature is set to Yes or you will miss some transmissions.*

To set the status bit feature to yes or ignore.

1. Press **FUNC + MAN/MENU** to open Menu Mode.
2. Select **Trunk Option**, then press **ENT/PGM**. Press ▼ or ▲ to select a bank, then press **ENT/PGM**.
3. Select **MOT**, and press **ENT/PGM**.
4. Select **Set Status Bit**, and press **ENT/PGM**.
5. Select **Yes** or **Ignore**, and press **ENT/PGM**.

Setting the Disconnect Tone Detect Function

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. Press **FUNC + MAN/MENU** to open Menu Mode.
2. Select **Trunk Option**, then press **ENT/PGM**. Press ▼ or ▲ to select select a bank, then press **ENT/PGM**.
3. Select **MOT**, and press **ENT/PGM**.
4. Select **Set End Code**, and press **ENT/PGM**.
5. Select **Yes** or **Ignore**, and press **ENT/PGM**.

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

EDACS Talk Groups

Selecting the EDACS Talk Group ID Format

Your scanner can enter or display EDACS talk groups in decimal format (1-2047).

1. Press **FUNC + MAN/MENU** to open Menu Mode.
2. Select **Trunk Option**, then press **ENT/PGM**. Press ▼ or ▲ to select a bank, then press **ENT/PGM**.
3. Select **EDCS**, and press **ENT/PGM**.
4. Select **EDCS ID Format**, and press **ENT/PGM**.
3. Select **AFS Format** or **Decimal Format**, and press **ENT/PGM**.

You can use this feature to translate decimal talk group lists to the much more powerful AFS format. Become familiar with AFS partial entry, and your scanning will become far more flexible and efficient.

EDACS Talk Group ID Range Search

When your scanner searches EDACS 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 Trunking Pause Mode press **0, 1, •/DELAY** then **SCAN**. "01----" appears during scan. Or if you want to search within the 01 agency and 01 fleet, while in trunking Pause Mode press **0, 1, •/DELAY, 0, 1**, then **SCAN**.

To stop the ID range search, press **SCAN** while talk group ID is not active.

Advanced Programming

Transferring Data To or From another Scanner or PC

You can clone your scanner by transferring the programmed data to or from another PRO-160 scanner using a connecting cable. You can also upload or download programmed data from a PC through wired programming.

Cloning Your Scanner

You can clone all the frequencies, trunking talk groups, and fleet maps programmed in your PRO-160 to another PRO-160 or PRO-162 using an interface cable with 1/8-inch phone plugs on both ends.

1. Make sure the scanners are turned off and then plug the cable into each scanner's **PC/IF** jack.
2. Turn on both scanners. "Clone Mode [UP] to send" appears.
3. Press **▲**. "Confirm Send Data? [1] to Yes [CL] to No" appears.
4. Press **1** to send the data to the other unit or press **CL** key to cancel the operation.
5. When the data transfer is completed, "Clone Mode Finished" appears. If the data transfer is not successful, "Clone Mode Error" appears.
6. After the clone operation is complete, remove the cable, turn both units off and then on again.

Wired Programming

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

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 the **PC/IF** jack on the front 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-160** (if necessary).
5. Turn the scanner on. The scanner automatically goes into the wired Programming Mode and receives the data from the PC. "Wired Programming" appears.

- When the scanner has successfully received all data, turn the scanner off and remove the cable.
- Turn the scanner on again.

CTCSS/DCS

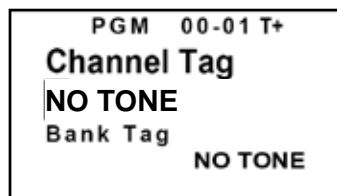
Continuous Tone Coded Squelch System (CTCSS) and Digital Coded Squelch (DCS) are subaudible tone signaling systems sometimes referred to as PL or DPL (Motorola's trademarked terms for Private Line and Digital Private Line, respectively). CTCSS and DCS are used only for FM signals and are usually associated with both amateur and commercial two-way frequencies. These systems make use of a special subaudible tone that accompanies a transmitted signal.

CTCSS and DCS are used for many purposes. In many cases, CTCSS and DCS are used to restrict access to a commercial repeater, so that only those units which transmit the correct tone along with their signal can "talk" to the repeater. CTCSS and DCS are also used in areas that receive interference where there are several stations with output frequencies that interfere with each other.

A scanner equipped with CTCSS and DCS allows squelch to open only when the tone you have programmed with a specific frequency is received along with a transmission.

Programming CTCSS/DCS Codes

- From Manual Mode, press **ENT/PGM** to put the scanner in Programming Mode.
- Press **FUNC + CL/CTCSS/DCS** to put the scanner in Program CTCSS/DCS Mode. "NO TONE" flashes on the bottom-right corner.



- Repeatedly press **FUNC + CL/CTCSS/DCS** to put the scanner in program CTCSS Mode when you want to program a CTCSS frequency.

Note: To program a DCS code, repeatedly press **FUNC**, and then press **CTCSS/DCS** until DCS code appears on the display.

- Press **▼** or **▲** to select a CTCSS frequency or use the number keys to enter a valid frequency.
- Press **ENT/PGM** to store the CTCSS frequency.
- Repeat steps 2 – 5 until you enter all the desired frequencies.

You can search for the following CTCSS frequencies and DCS codes.

CTCSS Frequencies (Hz)

67.0	69.3	71.9	74.4	77.0	79.7
82.5	85.4	88.5	91.5	94.8	97.4
100.0	103.5	107.2	110.9	114.8	118.8
123.0	127.3	131.8	136.5	141.3	146.2
151.4	156.7	159.8	162.2	165.5	167.9
171.3	173.8	177.3	179.9	183.5	186.2
189.9	192.8	196.6	199.5	203.5	206.5
210.7	218.1	225.7	229.1	233.6	241.8
250.3	254.1				

DCS Codes (Octal)

023	025	026	031	032	036	043	047
051	053	054	065	071	072	073	074
114	115	116	122	125	131	132	134
143	145	152	155	156	162	165	172
174	205	212	223	225	226	243	244
245	246	251	252	255	261	263	265
266	271	274	306	311	315	325	331
332	343	346	351	356	364	365	371
411	412	413	423	431	432	445	446
452	454	455	462	464	465	466	503
506	516	523	526	532	546	565	606
612	624	627	631	632	654	662	664
703	712	723	731	732	734	743	754

Additional Information

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.

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) This device must accept any interference received, including interference that may cause undesired operation.

Scanning Legally

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

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

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

This scanner is designed to prevent reception of illegal transmissions, in compliance with the law which requires that scanners be manufactured in

such a way as to not be easily modifiable to pick up those transmissions. Do not open your scanner's case to make any modifications that could allow it to pick up transmissions that are not legal to listen to. Doing so could subject you to legal penalties.

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

- 25.0000-54.0000 (in 5 kHz steps)
- 108.0000-136.9875 (in 12.5 kHz steps)
- 137.0000-174.0000 (in 5 kHz steps)
- 179.7500 - 215.7500 (in 6 MHz steps)
- 216.0000-224.9950 (in 5 kHz steps)
- 225.0000-399.9875 (in 12.5 kHz steps)
- 400.0000-512.0000 (in 6.25 kHz steps)
- 764.0000-775.9875 (in 12.5 kHz steps)
- 794.0000-823.9875 (in 12.5 kHz steps)
- 849.0125-868.9875 (in 12.5 kHz steps)
- 894.0125-956.0000 (in 12.5 kHz steps)
- 1240.0000-1300.0000 (in 12.5 kHz steps)

Number of Channels	1000
Number of Banks	20
Sensitivity (AM/FM/WFM)	
FM	20 dB S/N at 3 kHz deviation
28.0000-54.0000	0.4µV
137.0000-174.0000	0.4µV
216.0000-224.9950	0.4µV
400.0000-512.0000	0.4µV
764.0000-775.9875	0.5µV
794.0000-823.9875	0.5µV
849.0125-868.9875	0.5µV
894.0125-956.0000	0.5µV
1240.0000-1300.0000	0.9µV
AM	20 dB S/N at 60% modulation
25.0000-27.9950	1.0µV
108.0000-136.9875	1.0µV
225.0000-319.9875	1.0µV
320.0000-399.9875	1.0µV
WFM	20 dB S/N at 22.5 kHz deviation
179.750–215.750 MHz	0.6 µV
IF Frequencies	265.55/380.75 MHz, 10.80 MHz, 450 kHz
IF Rejection at 162.40 MHz	85 dB
IF Rejection at 453.25 MHz	40 dB
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 (5 kHz step bands only)

Priority Sampling	2 Seconds
Delay Time	2 Seconds
Antenna Impedance	50Ω
Speaker	
Built-in Speaker	3 inches (77 mm) 8Ω 5W Dynamic Type
Audio Output	2 W maximum
Power	
Supplied AC Adapter (12V DC; 500mA; center tip set to positive) or	
Optional 12V DC cigarette-lighter adapter (not supplied)	
Current Drain	
Squelched	125 mA
Full Output	470 mA
Dimensions (HxWxD)	2.25 x 7.46 x 6 inches (56 x 186.6 x 152 mm)
Weight	38 oz (1.08 kg) (without case)
Specifications are typical; individual units might vary. Specifications and depictions are subject to change and improvement without notice.	

Troubleshooting

Problem	Cause	Solution
Scanner is on but will not scan.	SQUELCH is not adjusted correctly.	Adjust SQUELCH.
	Only one channel or no channels are stored.	Store frequencies into more than one channel.
Scanner won't work at all.	Scanner is not receiving power.	Be sure the adapter's barrel plug is fully plugged into the DC 12V 500 mA jack and the AC or DC adapter is plugged in.
Display is dark.	The dimmer setting is set to dim or off.	Press DIM/M-LOCK to toggle between bright, dim, or off.
Poor or no reception.	Antenna loose.	Make sure an antenna is connected to the scanner.
	Interference.	Move the scanner or antenna to a better location.

Problem	Cause	Solution
Invalid Freq or Invalid Channel appears.	Programming error.	Re-enter the frequency correctly, including the decimal point.
Scanner is not acquiring a data channel.	SQUELCH is not correctly adjusted for trunk scanning.	Adjust squelch for trunk scanning. See "Setting Squelch for the Trunking Mode" on p. 41
	Frequency used for the data channel is missing	Press SCAN to search for the data channel. See "Programming Trunked Frequencies" on p. 41.
Scanner won't 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" on p. 41 and "Scanner is not acquiring a data channel" problem above.
	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 "Type I and Hybrid Trunked Systems" on p. 54.
Scanner won't scan a Type II system.	The fleet map you have selected or entered might be incorrect.	Program a fleet map and set all blocks to size code 0. See "Programming a Custom Fleet Map" on p. 55 and "Type I and Hybrid Trunked Systems" on p. 55.
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 "Type I and Hybrid Trunked Systems" on p. 54. and "Programming a Custom Fleet Map" on p. 55.
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 "Type I and Hybrid Trunked Systems" on p. 54.
	The selected fleet map is incorrect.	Try another preset fleet map or program a fleet map See "Type I and Hybrid Trunked Systems" on p. 54.
	Frequencies are not programmed.	Enter all of the trunk's frequencies. See "Programming Trunked Frequencies" on p. 41.

Resetting your 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 again 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 **PSE**, turn on the scanner. "Initializing... Please wait" appears for about 5 seconds as the scanner clears its memory.

Note: *Do not turn off the scanner again until "Initializing... Please wait" disappears. Otherwise, the scanner might not clear its memory properly.*

Follow these steps to restore the 278 preprogrammed frequencies stored in the private bank.

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

Appendix A: Inputting Text

Use the number keypad on the scanner to enter text according to the alphabet printed at each number key. Press a number key until the scanner displays the correct letter. Press ▲ or ▼ to move the cursor to the right or the left. Press **FUNC/A/a** to choose the input mode: Upper case letters, lower case letters, or numbers.

For example, to enter the word "Scanner."

1. Press **7/PQRS** 4 times to enter "S."
2. Press **FUNC/A/a** to switch to lower case letters.
3. Then press **2/ABC** 3 times to enter "c."
4. Press ▲ to move cursor.
5. Press **2/ABC** 1 times to enter "a."
6. Press **6/MNO** 2 times to enter "n."
7. Press ▲ to move cursor.
8. Press **6/MNO** 2 times to enter "n."
9. Press **3/DEF** 2 times to enter "e."
10. Press **7/PQRS** 3 times to enter "r."
11. Press **ENT/PGM** to end your text entry.

Text Input Chart

Keys	Number of times key is pressed										
	1	2	3	4	5	6	7	8	9	10	11
1	.	()	-	+	*	/	@	^	&	1	
2/ABC	A	B	C	2							
3/DEF	D	E	F	3							
4/GHI	G	H	I	4							
5/JKL	J	K	L	5							
6/MNO	M	N	O	6							
7/PQRS	P	Q	R	S	7						
8/TUV	T	U	V	8							
9/WXYZ	W	X	Y	Z	9						
0	Sp	#	?	_	,	\$	%	!	~	'	0

Appendix B: Fleet Maps

Preset Fleet Maps

Block	Size Code							
	1	2	3	4	5	6	7	8
0	S11	S4	S4	S12	S4	S3	S10	S1
1	S11	S4	S4	(S12)	S4	S10	S10	S1
2	S11	S4	S4	S4	S12	S4	S11	S2
3	S11	S4	S4	S4	(S12)	S4	S4	S2
4	S11	S4	S4	S4	S4	S12	S4	S3
5	S11	S4	S4	S4	S4	(S12)	S4	S3
6	S11	S4	S12	S4	S4	S12	S4	S4
7	S11	S4	(S12)	S4	S4	(S12)	S4	S4

Block	Size Code							
	9	10	11	12	13	14	15	16
0	S4	S0	S4	S0	S3	S4	S4	S3
1	S4	S0	S0	S0	S3	S3	S4	S10
2	S0	S0	S0	S0	S11	S10	S4	S10
3	S0	S0	S0	S0	S4	S4	S11	S11
4	S0	S0	S0	S0	S4	S4	S11	S0
5	S0	S0	S0	S0	S0	S4	S0	S0
6	S0	S4	S0	S0	S0	S12	S12	S12
7	S0	S4	S0	S4	S0	(S12)	(S12)	(S12)

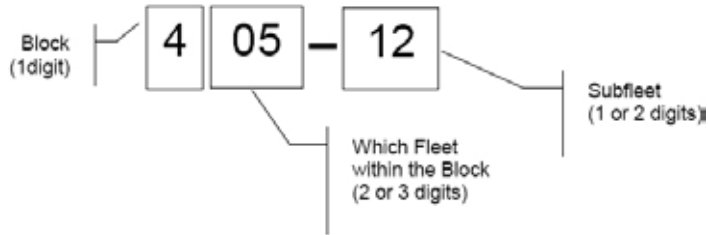
User Defined Fleet Maps

When a Type I system is designed, the address information for all the IDs are divided into 8 equal sized blocks. When you program your scanner to track a Type I system, you must select a size code for each of these blocks. When you have assigned a size code to all 8 blocks, you have defined the Fleet Map for the system you're tracking. Each size code determines the number of Fleets, Subfleets, and IDs each block will have.

For example, a size code of "4" has one Fleet, which is divided into 16 separate Subfleets, and it has a total of 512 individual IDs.

When a block is assigned a size code, the Fleet or Fleets created within the

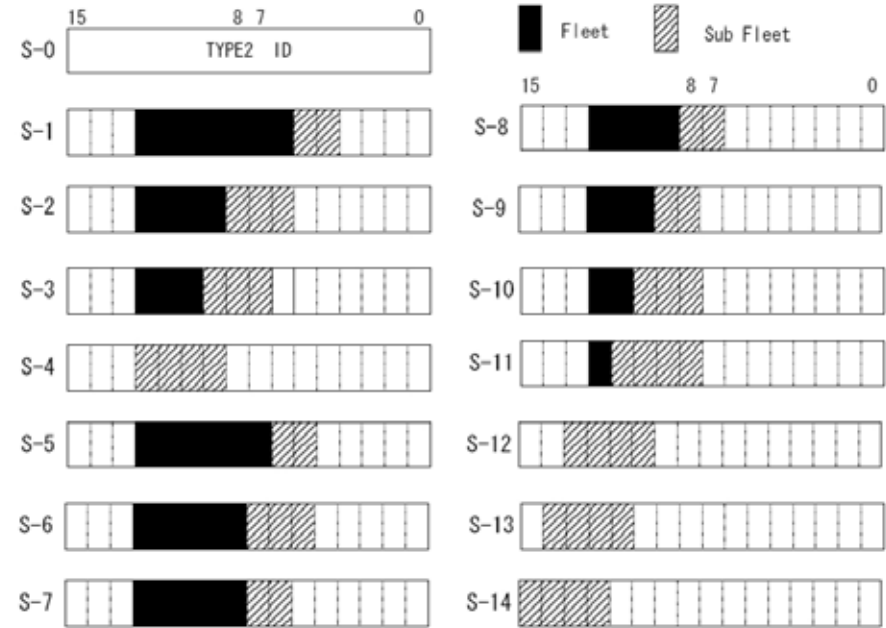
block are assigned a Type I ID. The way these IDs display on your scanner depends on the block number and the block size code. When a Type I ID displays, the left most digit represents the block where contains the ID. The next two or three digits identify which Fleet is active, and the last digit(s) identifies the Subfleet.



Your task is to program your fleet map with the same size code assignments as the trunked system. If you do this accurately, you'll track all the Fleet-Subfleet combinations used by the system. In other words, you'll hear complete communications while monitoring a trunked system.

Fleet Map Size Codes

Size	Fleets	Subfleets	Ids	Blocks Used
0	Reserve block for Type 2 Ids			
1	128	4	16	1
2	16	8	64	1
3	8	8	128	1
4	1	16	512	1
5	64	4	32	1
6	32	8	32	1
7	32	4	64	1
8	16	4	128	1
9	8	4	256	1
10	4	8	256	1
11	2	16	256	1
12	1	16	1024	2
13	1	16	2048	4
14	1	16	4096	8



Size Code Restrictions

If you select size code 12, 13, or 14, these restrictions apply:

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

Since these size codes require multiple blocks, the next available block(s) will automatically be assigned when you program a fleet map. For example, if you assign Block 0 as size code 12, the scanner also assigns Block 1 as size code 12. If you assign Block 0 as size code 14, all the other blocks will be assigned size code 14 because it uses all available blocks.

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Notes:

Notes:

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