

## Programming

Before the BC780XLT can begin conventional scanning, you must program a frequency into at least one channel. Repeat this procedure for each channel you want to program.

### Storing Frequencies into Channels

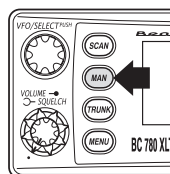
1. Select frequencies from your dealer, from various sources on the internet, or from one of the guides listed on page 5.  
Here is a list of sample frequencies you should try:

156.800 Marine Calling channel  
155.340 Ambulance operations  
155.280 Ambulance operations  
155.160 Ambulance operations  
462.950 Ambulance operations  
462.5625 Family Radio Services (channel one)

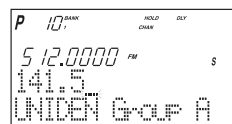
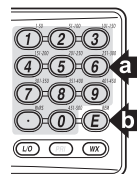
| LOCATION  | BASE    | MOBILE  |
|-----------|---------|---------|
| PAYETTE   | 460.150 | 465.150 |
| PINEHURST | 155.490 | ***.*** |
| POCATELLO | 154.725 | ***.*** |



2. Press **MAN**.
3. Select a channel.
  - a. Enter the channel number.
  - b. Then press **MAN**.

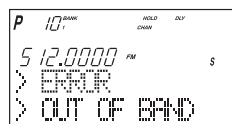
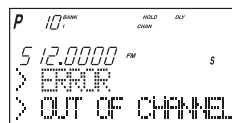


4. Enter the frequency.
  - a. Enter the frequency number.
  - b. Then press **E**.



**Note:** • To clear a mistake while entering the frequency, press  (decimal key) repeatedly until the display is cleared.

- If you enter a channel or frequency which is out of the scanner's range, a distinctive beep will sound and **ERROR** appears in the display.



- You can use  or  when selecting a channel. Press and hold  or  for 1 second to move up/down more quickly.

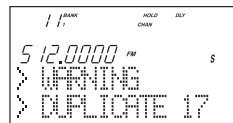
## Duplicate Frequency Alert

If you enter a frequency which has been stored in another channel, you will hear a beep and the other channel displays **WARNING**.

Press  $\odot$  to clear and start again.

— OR —

Press **E** again to store the frequency in both channels.

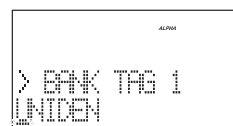
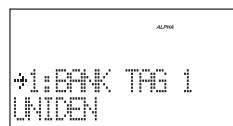


## Storing Text Tags

You can customize your scanner by storing text tags for easy identification of banks, channel transmissions, trunking talkgroup IDs, etc. The text tags can be set at the menu mode. (Refer to Understanding Menu System on page 13.)

### Assigning a Bank Tag to a Bank

1. Press **MENU**.
2. Press **E** to select **SYSTEM DATA**.
3. Press  $\blacktriangle$  or  $\blacktriangledown$  to select **BANK TAG** and then press **E**.
4. Select the bank number to be tagged using  $\blacktriangle$  or  $\blacktriangledown$  and then press **E**.
5. The cursor appears on the display. Rotate **VFO** to change letters, and then press  $\blacktriangle$  or  $\blacktriangledown$  to shift right or left. Both capital and lower case letters are available, as well as numbers and punctuation marks.
6. After entering the desired text, press **E** or **SELECT**.

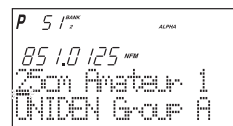


 **Remember!** You can also use the **VFO** control for scrolling. To clear a mistake while entering the frequency, press  $\odot$  (decimal key) repeatedly until the display is cleared.

### Assigning a Text Tag to a Channel

1. Press **MENU**.
2. Press  $\blacktriangle$  or  $\blacktriangledown$  to select **CH DATA** and then press **E**.
3. Select the channel number to be tagged using  $\blacktriangle$  or  $\blacktriangledown$  and pressing **E**. You can also enter the channel number in using the keypad and then press **E**.
4. Press  $\blacktriangle$  or  $\blacktriangledown$  to select **ALPHA TAG** and then pressing **E**.

**Note:** • If you have not stored a frequency in the channel, **UNREGISTERED** will appear in the display.



5. The cursor appears on the display. Rotate **VFO** to change letters, and press  $\blacktriangle$  or  $\blacktriangledown$  to shift right or left. Both capital and lower case letters are available, as well as numbers and punctuation marks.
6. After entering the desired text, press **E**, **SELECT** or **VFO**.

## Beep Alert

The scanner can alert you with three rapid beeps at the beginning of a transmission on an assigned frequency.

### Assigning the beep alert to a channel

This alert can be set on/off to every channel (or to every ID memory for Trunking mode).

1. Press **MENU**.
2. Press **▲** or **▼** to select **CH DATA** and then press **E**.
3. Select the channel number to be tagged using **▲** or **▼** and then press **E**. (You can also enter the channel number in using the keypad or **VFO** control and then press **E**.)
4. Press **▲** or **▼** to select **BEEP ALERT** and then press **E**.
5. Press **▲** or **▼** to select **ON** or **OFF** and then pressing **E**.

**Note:** If **NOT REGISTER** appears, make sure a frequency is stored in the channel.

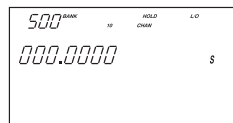
## Programming Tips

- Do not program a weather frequency into one of the channels, since weather channels transmit continuously. Use the Weather Search feature to select the weather information band.
- Group similar services into a bank. For example, program police frequencies in channels 1 through 10 and fire/emergency into channels 51 through 60, and so on.
- Put the frequency that you listen to the most or the most important frequency into a Priority channel.
- To quickly program a series of channels, start with the lowest number channel.  
For example, when you are programming five new frequencies into Channels 4 through 8, start with Channel 4. After you finish programming a channel, press **MAN** or **HOLD/▲** to go to the next higher channel.
- Write down your programmed channels and frequencies and put in a convenient place in case of accidental reprogramming.
- If you want to download frequencies using the SmartScan feature, go to page 59 in this manual.
- Frequencies are rounded off according to the step of each channel.
- When you are overwriting a tagged channel with a new frequency, the previous alpha tag will be deleted. You must re-enter the alpha tag.
- When programming frequencies, a 2 second delay is set automatically but can be changed in the Channel Data menu.

## Deleting a Stored Frequency

To delete a stored frequency:

- a. Select a channel.
- b. Press **0**.
- c. Then press **E**.



**Note:** Channels with no frequencies are automatically locked out.

## Scanning

1. After programming frequencies, simply press **SCAN** to begin scanning.

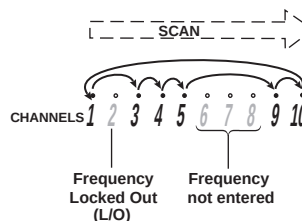


2. The bank indicators selected for scanning appear in the display, and the bank being currently monitored flashes. You can deselect banks from active scanning by pressing their number on your keypad. The indicator for each deselected bank turns off, and the banks channels are not scanned.

**Note:** One Bank must always be active. You cannot deactivate all ten banks at the same time. If you try to turn off all the banks, the first bank is automatically selected.

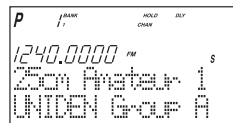
To restore a bank to active scanning, press the banks number on your keypad. The banks indicator will display again.

3. During normal scanning the scanner skips unprogrammed or locked out channels.
4. When a transmission is received, the scanner stops on that channel. When the transmission ends, scanning resumes automatically.



If you want to stop on a channel during scanning, press **MAN**.

If you want to resume scanning, press **SCAN**.



### To directly access a specific channel:

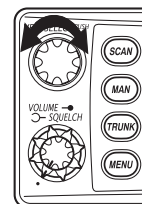
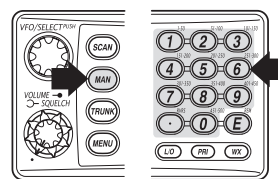
There are several ways to access a specific channel quickly.

1. Press **MAN**.
2. Using the keypad, enter the channel number.
3. Press **MAN** again.

Another method is as follows:

1. Press the **VFO** control until **CHAN** is displayed.
2. Rotate the **VFO** control until the desired channel is displayed. The scanner will automatically go to manual mode.

**Note:** You can accidentally change the frequency if you don't verify that **CHAN** is displayed. If **FREQ** is displayed, you will be changing the frequency when you rotate the **VFO** control. Just don't press **E** or it will be changed!



Still another method of direct access to a specific channel:

1. Press **MAN**.
2. Press **▲** or **▼** to select the channel. (or press and hold **▲** or **▼** to scroll more quickly.)

Lastly to step up through the channels one at a time, repeatedly press **MAN**.

## RF Attenuation Feature

The BC 780XLT comes with an RF Attenuation feature. If you're near an unusually strong signal source, the signal may overload the scanner. The scanner may stop repeatedly on that signal and miss other transmissions.

The RF Attenuation feature works in all modes and attenuates (reduces) the incoming signal strength to prevent stronger signals from overloading the scanner.

The RF attenuation is set at the menu mode.

1. Press **MENU**.
2. For Search mode, press **▲** or **▼** to select **SEARCH EVENT** and then press **E**.

OR

For Scan mode, press **▲** or **▼** to select **CH DATA** and then press **E**. Then you must enter your channel data by pressing **▲**, **▼** or direct keypad entry. Then press **E**.

3. Press **▲** or **▼** to select **ATTENUATOR** and then press **E**.
4. Set to **ON** using **▲** or **▼** and then press **E**.  
ATT appears on the display.



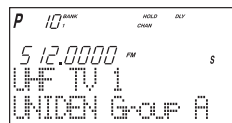
 **Remember!** You can also use the **VFO** control for scrolling. Also instead of pressing **E**, you can press the **VFO/SELECT** control or press the **SELECT/MUTE** key.

Note: Attenuation will only be active for the specified channel. In SEARCH mode, it is applied to the search ranges in all banks.

## Setting the Delay Mode

A default delay of 2 seconds is automatically set for each frequency or talkgroup. A different delay can be set for each programmed channel so that when scan or search stops on a channel there is a brief pause before the scanning cycle resumes. To set the delay feature, enter into the menu mode.

1. Press **MENU**.
2. Press **▲** or **▼** to select **CH DATA** and then press **E**.
3. Select the channel number to be delayed using **▲** or **▼** and then press **E**.
4. Press **▲** or **▼** to select **DELAY** and then press **E**.



5. Press ▲ or ▼ to select one of the delay periods provided and then press **E**. **DLY** appears on the display unless no delay has been set.
6. For Search mode, select **SEARCH EVENT - DELAY**, then set the delay period.

**Note:** The delay periods are as follows:

- None: Delay feature off
- 1 sec.: Delays for 1 sec. before re-scanning
- 2 sec.: Delays for 2 sec. before re-scanning
- 4 sec.: Delays for 4 sec. before re-scanning
- Infinite: Stays on until SCAN is pressed
- -2 sec.: Stays for 2 sec. only before re-scanning \*
- -5 sec.: Stays for 5 sec. only before re-scanning \*
- -10 sec.: Stays for 10 sec. only before re-scanning \*

\*Setting negative delay periods are useful if you are only interested in small segments of conversations. For example: If you set a -5 second delay, you will only hear 5 seconds of the conversation and then the scanner will resume scanning, whether or not the conversation is finished.

## Channel Lockout

You can lockout any channel so it is not checked during normal scanning. You can restore the channel to scanning when you wish.

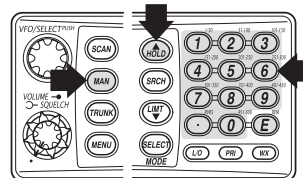
### Lockout in Manual Mode

1. Press **MAN**.
2. Select a channel.  
Enter the channel numbers.  
Press **MAN** again.

— OR —

Press **MAN** or **HOLD/▲** to change higher,  
or **LIMIT/▼** to lower the channel.

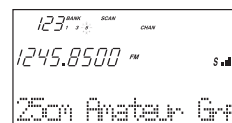
3. Press **L/O** to lockout the channel.  
**L/O** appears in the display.



### Lockout in Scanning Mode

If the scanner keeps stopping on a particular channel due to noise or too frequent transmissions, you may want to keep that channel from scanning.

1. Wait until the scanner stops at the channel.
2. Then press **L/O**.



- The scanner immediately resumes scanning because the locked out channel is no longer in the scanning sequence.



**Lockout Tips** • Write down your locked-out channels and put in a convenient place in case you need to restore them.

## Restoring a Locked-out Channel

- Press **MAN**.
- Select a locked out channel.
  - Enter the channel number.
  - Then press **MAN** again.
- Press **L/O** to unlock the channel. The L/O icon goes out.

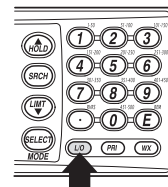
## Restoring All Locked-out Channels

You can restore all locked-out channels in a bank only when a bank is selected for scan. If you have deselected a bank and you want to restore all of its locked-out channels using the steps below, you must press **SCAN** and then press the number of the bank on your keypad.

- Press **MAN**.

**Note:** You must be in Manual mode before restoring all locked-out channels.

- Press and hold **L/O** for about two seconds.  
You will hear two beeps when all the channels have been restored.



## Priority Scan

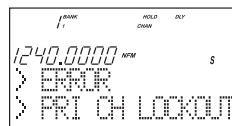
When Priority Scan is turned on, your scanner checks the priority channel every two seconds for activity. If a signal is present on the priority channel, your scanner monitors the channel until the transmission ends, then resumes normal scanning. You can designate one channel in each bank as a Priority Channel. By default, the first channel in each bank is the priority channel, but you can change this.

To activate Priority Scan (in either the Manual or Scan Mode):

- Press **PRI**.

**Note:** If you have locked out the priority channel, **ERROR** message appears when you select Priority mode.

- Press **PRI** again at anytime to deactivate Priority Scan.



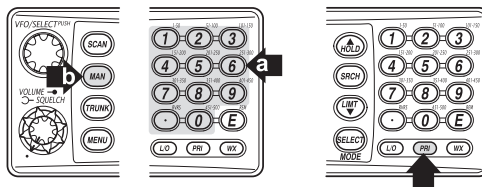
## Changing the Priority Channel

You cannot eliminate the Priority Channel, but you can change it to any one of the 50 available channels in each bank.

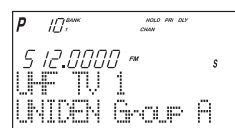
1. Press **MAN**.

2. To select a new Priority Channel:

- a. Enter the channel number.
- b. Then press **MAN** again.



3. Press and hold **PRI** for two seconds to designate this channel as your new Priority Channel. Two beeps indicate that the Priority channel has been changed. The **P** icon appears in the display.



- Note:**
- Priority in Trunking mode works just the same, except instead of setting priorities for channels, you set them for talkgroup IDs. The scanner only checks priority talkgroups between transmission, not in 2 second intervals.
  - Priority scan is disabled while the **TRUNK** icon is lit (an error tone will sound if you try). To make it possible, turn off the **TRUNK** icon then press **PRI**.
  - At Priority scan, it scans the designated Priority Channels in the banks you selected.

## Searching

### Setting a Search Range

**Note:** First you must set the search ranges through the menu screen prior to any searching.

The BC780XLT can search up to 10 separate frequency ranges to help you discover new stations in your area.

To set a search range, enter into the menu mode.

1. Press **MENU**.
2. Press **▲** or **▼** to select **SEARCH EVENT** and then press **E**.
3. Press **▲** or **▼** to select **SEARCH BANK** and then press **E**.
4. Press **▲** or **▼** to select the desired bank number and then press **E**.
5. Press **▲** or **▼** to select **EDIT RANGE** and then press **E**.
6. Enter the lowest frequency using the keypad and then press **E**, then repeat the same for the highest frequency.  
Then press **SRCH**.



- Note:**
- The scanner can search up to 10 ranges by selecting specific banks which you have programmed search ranges. (Chain Search)
  - You can select or deselect the search bank freely by pressing the corresponding number with the keypad.
  - The scanner automatically increases its search speed from 100 to 300 steps per second for the bands having 5 kHz steps. (Turbo Search)
  - Press and hold **▲** or **▼** for more than 2 seconds while searching to switch the search direction.
  - When searching in WFM, it stops before reaching the desired frequency if the step is other than 50 kHz or 100 kHz.
  - After you have set the Search Range through the Menu the first time for a bank, you will be able to set new ranges for the same bank by using the keypad and the standard direct entry method.

**Note:** After you have entered the search range in a selected bank while still in the menu mode, you can set your alpha tag (see page 21), change the step size of the search, or change the mode. Once the lower and upper parameters of your search are edited, the menu screen backs up one level to allow you to modify the step size, receive mode, and alpha tag. Select **2: STEPS** for your step size choices and then press **E**. Select **3: MODE** for the receiver mode choices and then press **E**. Select **4: ALPHA TAG** to enter an alpha tag using the **VFO** control.

## Search Hold Feature

1. Press **HOLD/▲** at anytime to stop the search.
2. Press **HOLD/▲** to move to the next higher frequency.

— OR —

Press **LIMIT/▼** to move down to the previous frequency.

3. Press **SRCH** to resume searching.



## Data Skip

A scanner will normally stop on any transmission it receives. This means the BC780XLT will occasionally stop on data signals and unmodulated transmissions. You can automatically skip many of these types of transmissions during search. To activate the data skip feature, enter into the menu mode.

1. Press **MENU**.
2. Press **▲** or **▼** to select **SYSTEM DATA** and then press **E**.
3. Press **▲** or **▼** to select **DATA SKIP** and then press **E**.
4. Set to **ON** using **▲**, **▼** or **VFO** and then press **E**.  
DATA appears on the display.



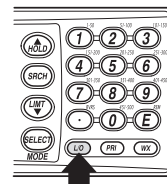
When data skip is active, your scanner may pause momentarily on an unwanted signal but will resume searching in 2 or 3 seconds. Data Skip does not function during AM/WFM band scan, chain search, or WX search, Priority Scan, and Trunking Mode.

## Frequency Skip

If a particular frequency continues to interrupt search scanning, it is possible to set your scanner to skip the frequency.

To skip over a frequency, press **L/O** when stopping at the frequency you want to skip.

- Note:**
- You can program up to 200 skip frequencies. The 201st skip frequency entered causes the first skipped frequency to unlock.
  - If all frequencies in the search range are set to skip, it moves to Search hold mode. To resume searching, do as follows:
    - 1) Cancel the frequency skip set, or
    - 2) Reset the search frequency range.



To cancel all skipped frequencies, press and hold **L/O** for 2 seconds.

## Storing Search Frequencies

You can quickly store any frequency you find during Search.

**Caution:** You must select the channel in which you will store the frequency before entering the search mode. Otherwise, you may erase a stored frequency that you want to keep.

1. During search, press **HOLD/▲** when the scanner stops at the frequency you want to store.
2. Press **E** to store the frequency in the channel you selected.



**Note:** • If the frequency you want to store exists already, **WARNING** appears on the display with a beep. (See Duplicate Frequency Alert on page 21.)

- After storing the frequency, it moves to the manual mode.

3. To store another frequency, select another channel for the new frequency by pressing **MAN** or **HOLD/▲** or **LIMIT/▼**.
4. Repeat steps 1 and 2 after starting search for all the Search frequencies you want to store.

## Auto Storing

The scanner automatically stores searched frequencies if its auto store feature is activated.

To make use of this feature, set a search range first (see page 28), then enter into the menu mode.

1. Press **MENU**.
2. Press **▲** or **▼** to select **SEARCH EVENT** and then press **E**.
3. Press **▲** or **▼** to select **AUTO STORE** and then press **E**.
4. Set to **ON** using **▲**, **▼** or **VFO** and pressing **E**. All bank numbers start flashing and **AUTO** is lit on the display.
5. Select the bank numbers you want to use with the keypad. The selected bank numbers stop flashing.



**Note:** If the selected bank has no free channels to store, **ERROR** will appear on the display with a beep.



6. Press **SRCH** to start auto storing. The **AUTO** icon on the display begins to flash. Audio is muted during the storing process.
7. After the search has gone through the search range, press **MAN** or **MENU** to stop this feature. **STORE END** appears in the display. You may want to let it run through the search range again because during the first pass there may not be any transmissions at that particular time.



 **Remember!** You can also use the **VFO** control for scrolling. Also instead of pressing **E**, you can press the **VFO/SELECT** control or press the **SELECT/MUTE** key.

## Squelch (SQ) Mode

The scanner can be set to the following SQ modes.

- Carrier SQ mode (default setting)

The scanner will stop on any transmission or squelch opening, regardless of whether any sub-audible tone has been programmed for the channel or search range.

- Tone SQ mode

The scanner will stop on any active frequency for which either no sub-audible tone has been programmed or for which the user-programmed sub-audible tone is also active.

- Tone Search mode

During any transmission, the scanner will begin searching all possible sub-audible tones, one of which may also be in use. The scanner counts up through the CTCSS tones and instantly determines any possible DCS tone. See Page 83 for a listing of the tones that the BC780XLT decodes.

**Note:** When Tone Search is active in Scan Mode, once the CTCSS/DCS display flashes a tone repeatedly (meaning that it has found the tone match), you can press **E** to program that frequency with the captured tone. When you change the mode to Tone Squelch from Tone Search, that frequency and tone will be programmed.

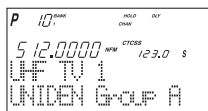
- Tone Lock (out) mode

For either a memory channel or a search range, you can lock a particular sub-audible tone by pressing **L/O** after scrolling to the desired tone. The scanner will stop on any transmission except those which may be using the locked sub-audible.

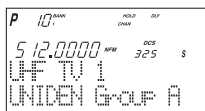
To set your scanner, enter into the menu mode.

1. Press **MENU**.
2. Press **▲** or **▼** to select **SYSTEM DATA** and then press **E**.
3. Press **▲** or **▼** to select **SQ MODE** and then press **E**.
4. Press **▲** or **▼** to select one type (CSQ, Tone SQ, Tone Search) and then press **E**.
5. To set Tone Lock mode, do the following first, then select Tone SQ in step 4.
  - 1) For scan mode, enter **CH DATA - CH No. - TONE DATA**, select CTCSS/DCS with **▲** or **▼**, set Tone Lock ON by pressing **L/O**.
  - 2) For search mode, enter **SEARCH EVENT - TONE DATA**, select CTCSS/DCS with **▲** or **▼**, set Tone Lock ON by pressing **L/O**.

- Note:**
- CTCSS: Continuous Tone Coded Squelch System.
  - DCS: Digital Coded Squelch.
  - For example, the scanner shows the following displays.



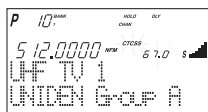
Tone SQ on,  
CTCSS 123.0 Hz set



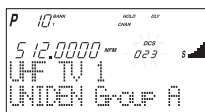
Tone SQ on,  
DCS 325 set



Tone SQ on,  
No CTCSS & DCS set



Tone Search,  
CTCSS 67.0 Hz detected



Tone Search,  
DCS 023 detected



Tone Search,  
no signal present

- If the delay feature (-2 sec/-5 sec/-10 sec) has been set while in Tone search mode, it resumes scanning according to the delay setting.

## Additional Menu Options for Searching

Each of these additional menu options apply to all banks with search ranges entered. If there is a bank that you do not want an option to apply, then simply press the bank number on the numerical keypad. You will see the bank number that you have selected, disappears from the display. (For more information on these options refer to the "Menu Descriptions" section and "Additional Features" section.

Options:

**RECORD** (for more information see page 11)

1. Press **MENU**.
2. Press **▲** or **▼** to select **SEARCH EVENT** and then press **E**.
3. Press **▲** or **▼** to select **RECORD** and then press **E**.
4. Set to **ON** using **▲**, **▼** or **VFO** and pressing **E**.  
**LINE** is lit on the display.

**ATTENUATOR** (for more information see page 24)

1. Press **MENU**.
2. Press **▲** or **▼** to select **SEARCH EVENT** and then press **E**.
3. Press **▲** or **▼** to select **ATTENUATOR** and then press **E**.
4. Set to **ON** using **▲**, **▼** or **VFO** and pressing **E**.  
**ATT** is lit on the display.

**DELAY**

Refer to page 24.