CONTENTS

PREPARATION

INSTALLING THE LI-ION BATTERY PACK

Note: Because the battery pack is provided uncharged, you must charge the battery pack before using it with the transceiver. To charge the battery pack, refer to "CHARGING THE LI-ION BATTERY PACK".


1 Position the two grooves on the edge and two hooks at the bottom of the battery over the corresponding guides on the back of the transceiver.

2 Slide the battery pack along the back of the transceiver until the release latch on the top of the transceiver locks the battery pack in place.

3 To remove the batttery pack, push the release latch on top, then slide the battery pack down.
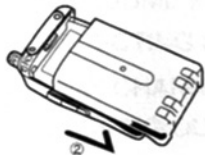
INSTALLING THE ANTENNA

Hold the base of the supplied antenna, then screw the antenna into the connector on the top panel of the transceiver until secure.

INSTALLING THE BELT CLIP

You can install the supplied belt clip to the transceiver tightening the 2 supplied screws.

CHARGING THE LI-ION BATTERY PACK

Slide the battery pack or transceiver with a battery pack into the desktop charger.

- The charging LED lights red and charging begins; when the light turns to green, it means the battery pack is fully charged.
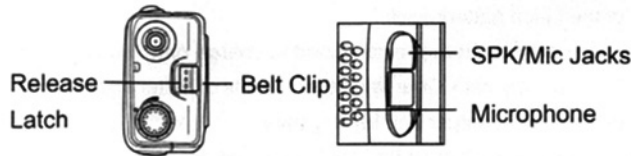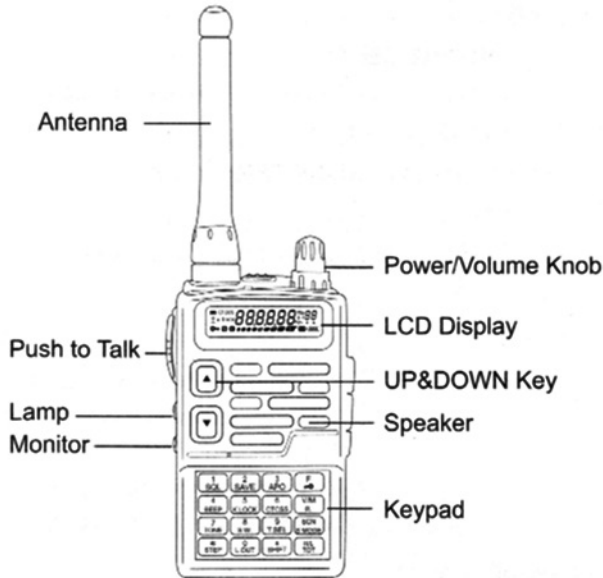- It takes approximately 3 hours to charge an empty Li-ion battery pack.

CAUTION

- Exceeding the specified charge period shortens the useful life of the Li-ion battery pack.
- The provided charger is designed to charge only the provided Li-ion battery pack.Charging other models of battery packs may damage the charger and battery pack.
- The battery pack must be kept in cool and dry place.

GETTING ACQUAINTED

KEYS AND CONTROLS

Antenna

Power/Volume Knob

LCD Display

Push to Talk

UP&DOWN Key

Lamp

Speaker

Monitor

Keypad

Release Latch

Belt Clip

SPK/Mic Jacks

Microphone

LCD DISPLAY
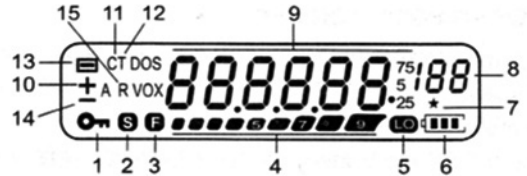
1. Appears when the Lock function is ON.
2. Appears when the Power Saver function is activated.
3. Appears when the Function key is pressed.
4. S-meter (RX) and relative RF power meter (TX).
5. Appears when the transmit output power is set to Low.
6. Shows the battery life.
7. Appears when the displayed memory channel has been locked out.
8. Display the current memory channel when in Memory Recall mode.
9. Display various alphanumeric information such as an operating channel or menu selection.
10. Appears when the Auto Power Off function is activated.
11. "CT" appears when the CTCSS function is activated.
12. Appears when the Tone function is activated.
13. Appears when the Frequency Shift function is activated.
14. Appears when the [UP], [DOWN] key unlock function is activated.
15. Appears when the Repeater function is activated.

BASIC OPERATION

SWITCHING POWER ON/OFF

1 Turn the **[POWER]** switch clockwise to turn ON the transceiver.
  ◆ A music tone sounds.
2 To turn OFF the transceiver, turn the **[POWER]** switch counterclockwise again.
  ◆ The transceiver stores the parameters when it is turned OFF. It recalls these parameters next time you turn the transceiver ON again.

ADJUSTING VOLUME

Turn the **[VOLUME]** control clockwise to increase the audio output level and counterclockwise to decrease the output level. If you are not receiving a signal, press and hold **[MONI]** to unmute the speaker, then adjust the **[VOLUME]** control to a comfortable audio output level.

ADJUSTING SQUELCH

The purpose of the S quelch is to mute the speaker when no signals are present. With the squelch level correctly ste, you will hear sound only while actually receiving signals. The higher the selected squelch level, the stronger the signals must be ,to receive. The appropriate squelch level depends on the ambient RF noise conditions.

1 Press **[F]**, **[1]**.
  ◆ The current squelch level appears.

2 Use the **[UP]**, **[DOWN]** key to select the squelch level from 0 to 9.
  ◆ Select just the level at which the background noise is eliminated when no signal is present.
  ◆ The larger the level number you select, the stronger the signals you need to receive to hear.
3 Press any key other than **[LAMP]** and **[MONI]** to complete the setting.

TRANSMITTING

1 To transmit, hold the transceiver approximately 5 cm (2 inches) from your mouth, then press and hold the **[PTT]** switch and speak into the microphone in your normal tone of voice.
  ◆ The status LED on the top panel lights red and bargraph meter appears.
2 When you finish speaking, release the **[PTT]** switch.
Note: If you transmit continuously for more than 1 minute (default), the internal time-out timer generates a warning beep and the transceiver stops transmitting. In this case, release the **[PTT]** switch and let the transceiver cool down for a while, then press the **[PTT]** switch again to resume transmitting.

■ SELECTING OUTPUT POWER

Selecting lower transmission power is the best way to reduce the battery consumption, if communication is still reliable. You can configure different power levels for transmission. Press **[H/L]** key to switch between high and low output power.

SCAN

Scan is an useful function for hands-off monitoring of your favorite channels. By becoming comfortable with all types of Scan, you will increase your opearing efficiency.

SCAN RESUME METHOD

Before using Scan, it's necessary to decide under what condition you want your transceiver to continue scanning after detectiong and stopping for a signal. You can choose one of the following modes. Then default is Time-Operated mode.

1 Time-Operated Mode (Default)
Your transceiver stops scanning when detecting a signal, remains there for approximately 5 seconds, and then continues to scan even if the signal is still present.
2 Carrier-Operated Mode
Your transceiver stops scanning when detecting a signal and remains on the same channel until the signal drops out. There is a 2 seconds delay between signal drop-out and scan resumption to allow time for any responding stations to begin transmitting.
Note: Pressing and holding **[MONI]** causes the transceiver to stop scanning; releasing **[MONI]** causes it to resume scaaning.

■ SELECTING SCAN RESUME METHOD

1 Press **[F]**,**[S]** to enter Scan Menu mode.
2 Press **[UP]** or **[DOWN]** key to select Time-Operated (TO), or Carrier-Operated (CO) mode.
3 Press any key other than **[LAMP]**, **[MONI]** to exit Menu mode.

MEMORY CHANNEL SCAN

Memory Scan allows all memory channels containing data to be scanned.

1 Press **[S]**.
   ◆ Scan starts with the channel last recalled.
   ◆ To reverse the scan direction, use **[UP]** (upward scan) or **[DOWN]** (downward scan).
2 To quit Memory Scan, press any key other than **[LAMP]**, **[MONI]**.
   Note: The squelch must be closed for Scan to function.

■ LOCKING OUT MEMORY CHANNELS

You can lock out memory channels that you prefer not to monitor during Memory Channel Scan.

1 Press **[UP]**, **[DOWN]** key to select the memory channel to be lock out.
2 Press **[F]**, **[0]** to switch Lockout ON (or OFF).
   ◆ A star appears at the right side of the LCD to indicate that the channel has been locked out.

CTCSS

You may sometimes want to hear calls from only specific persons or groups. The Continuous Tone Coded Squelch System (CTCSS) allows you to ignore (not hear) unwanted calls from other persons who are using the same frepuency. Simply select the same CTCSS tone as selected by the other persons in your group.A CTCSS tone is sub-audible tone and is selectable from among the 50 tone frepuencies listed in the table on the following page.

Note: CTCSS does not cause your conversation to be private. It only relieves you of listening to unwanted conversations.

USING CTCSS

1 Select the desired channel number.

2 Press **[F]**, **[6]** to switch the CTCSS function ON (or OFF).
 ♦ "CT" appears on left top of the LCD when CTCSS is ON.

3 Press **[F]**, **[9]**.
 ♦ The current CTCSS frequency appears.

4 Use **[UP]**, **[DOWN]** to select a tone frequency.

5 P ress any key other than **[LAMP]** and **[MONI]** to complete the setting.

Freq. (Hz)	Freq. (Hz)	Freq. (Hz)	Freq. (Hz)
67.0	103.5	159.8	199.6
69.3	107.2	162.2	203.5
71.9	110.9	165.5	206.5
74.4	114.8	167.9	210.7
77.0	118.8	171.3	218.1
79.7	123.0	173.8	225.7
82.5	127.3	177.3	229.1
85.4	131.8	179.9	233.6
88.5	136.5	183.5	241.8
91.5	141.3	186.2	250.3
94.8	146.2	189.9	254.1
97.4	151.4	192.8	
100.0	156.7	196.6	

■ SELECTING A TONE FREQUENCY

1 Press **[F]**, **[7]** to activate the Tone function.

2 Press **[F]**, **[9]**.
 ♦ The current tone frequency appears and blinks.

3 Use the **[UP]**, **[DOWN]** to select a tone frequency.

4 Press any key other than **[LAMP]** and **[MONI]** to complete the setting.

OPERATOR CONVENIENCES

KEYPAD LOCK FUNCTION

The Lock function disables most of the keys to prevent you from accidentally activating a functionl.

1 Press **[F]** (1 second).
  - ◆ " **Oⁿ** " appears when this function is ON.
  - ◆ The following keys cannot be locked:
    [PTT], **[LAMP]**, **[MONI]**, **[F]** (1 second), **[POWER]** and **[F]** then **[LAMP]**.
2 Press **[F]** (1 second) to unlock the keys.

LAMP FUNCTION

You can illuminate the transceiver display by pressing **[LAMP]**. Approximately 5 seconds after releasing **[LAMP]**, the light goes OFF if no other key is pressed. Pressing any key other than **[LAMP]** while the display is lit restarts the 5 second timer; pressing **[LAMP]** turns OFF the light immediately.

1 To latch the light ON press **[F]**, **[LAMP]**. The light remains ON until you press **[F]**, **[LAMP]** again.

BATTERY SAVER

Battery Saver extends the operating time of the transceiver. It automatically activates when the squelch is closed and no key is pressed for more than 5 seconds. To reduce the battery consumption, it shuts the receiver circuit OFF for the

programmed time then momentarily turn it back ON to detect a signal. To program the receiver shut-off period for battery saver.

1 Press **[F]**, **[2]** to switch the Battery Saver ON/OFF.
  - ◆ When the Battery Saver ON, " **S** " appears.

APO (Auto Power OFF)

The transceiver switches OFF automatically if no keys and controls are pressed or adjusted, and no signal is received for 2 hours. 1 minute before the transceiver switch OFF, warning beeps sound for few seconds and "A" blinds. Then, the transceiver turns OFF automatically.

1 Press **[F]**, **[3]** to switch ON the APO.
  - ◆ "A" appears.
2 To OFF the APO, press [F], [3] again.

BEEP FUNCTION

The Beep function provides you confirmation of entry, error status, and maifunctions of the transceiver. We recommend you leave it ON in order to detect erroneous operations and malfunctions.

However, to turn the Beep function OFF:

1 Press **[F]**, **[4]** to enter the Beep menu mode.
2 Press **[UP]**or **[DOWN]** key to switch between ON/OFF.
3 Press any key other than **[LAMP]** and **[MONI]** to complete the setting.

[UP]/[DOWN] KEYS ENABLE

Sometimes you wodld like to use **[UP]**, **[DOWN]** key to change the memory channel when the keypad Lock function is ON, you can unlock the **[UP]**, **[DOWN]** key to function even the keypad lock function is ON.

1 Press **[F]**, **[5]** to actviate.

" — " appears.

STOP WATCH

This is an additional function for your convenience.

1 Press **[F]**, **[8]** to starts the counting.

2 To stop, press any key other than **[LAMP]** and **[MONI]**.

BEAT SHIFT

Since the transceiver uses a microprocessor to control various functions of the transceiver, the CPU clock oscillators harmonics or image may appear on some spots of the receiving frepuencies. In this case, turn the Beat Shift function ON.

1 Press **[F]**, **[#]** to switch between ON/OFF.

" — " appears when ON.

MEMORY CHANNEL / VFO DISPLAY

You can switch the display between memory channel only or memory channel with frequency dosplay.

1 Press **[V/M]** key to switch.

TIME-OUT TIMER

The Time-Out Timer (TOT) limits the time of each transmission. The built-in time-out timer limits each transmission time to a maximum of 7 minutes. Just before the transceiver stops the transmission, a warning beeps sounds. It is necesary to protect the transceiver from thermal damage. You can turn this function OFF.

1 Press **[F]**, **[H/L]** to enter the TOT menu mode.

◆ Press **[UP]**, **[DOWN]** key to select your desired time (from 1~7 minutes) or switch it OFF.

ADJUSTING H/L POWER OUTPUT

You can adjust the H/L power output by the transceiver.

1 Press and hold **[1]** & **[3]**, then switch ON the transceiver, a message will display "TEST".

2 Connect the transceiver to the test set instrument to check the power output. Press and hold **[1]** to enter to the HI power output, adjust the value as you prefer, press and hold **[1]** again to save.

3 For the LO power output, press and hold **[2]** to enter the mode.

4 Turn off the tansceiver and ON agagin to activate the new setting.

FREE CHANNEL SETTING

Press **[MONI]** and **[▲]** key, then power ON, enter to self programming mode. LCD display (SELF).

```
   ___      ___
  | O |    | ▼ |        _____
  |___|    | ▲ |       | SELF |
  | O |    | ▼ |       |_____|
  |___|    | ▲ |
```

Press **[▣]** key, LCD display to (CH-081 1).

```
  _____
 |........| ......     _____
 |........| ......    | CH-001  1|
 |........| ......    |_____|
```

You can also program by your dealer through PC software.

1. Selecting Channel
   Use **[▲]** or **[▼]** key to select your desired channel, range from 81-199,

2. RX Frequency
   Press **[PTT]**, then **[▣]** key to enter RX frequency setup. You can select your RX frequency through **[▲]** or **[▼]** key, after press [PTT] to complete the setting.
   - To change the channel spacing, press **[⬚]** key to switch between (6.25kHz/12.5kHz), default setting is 12.5kHz.

3. TX Frequency
   Same with RX Frequency setup.

4. CTCSS
   When you enter this mode, LCD display (oFF 3). Press **[▣]** key to enter, use **[▲]** or **[▼]** key to select your desired CTCSS frequency (50 groups of CTCSS available), press **[PTC]** to complete the setting.

5. Beat Shift
   Use **[▲]** or **[▼]** to switch between ON and OFF (Default setting OFF).

6. Scan Del/Add
   Use **[▲]** or **[▼]** to switch between Add (Add Scan, Default setting) and dEL (Scan Delete).

7. Complete self programming mode, LCD display (End 9). Press **[PTT]** to enter to next channel setting.