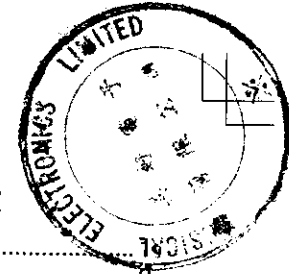




*AFTER MODIFICATION!
ON PAGE 1, 2 AND 10.*

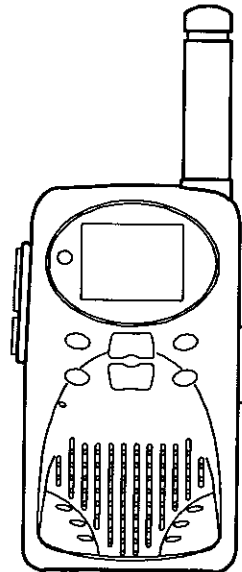
Call



09 JAN 2002

14 CHANNEL FAMILY RADIO SYSTEM

FRS-89A



CONTENTS

Safety Information 2
 FCC Warnings 2
 Precaution 2
 Features 2
 Unpacking 2
 Controls and Indicators 3
 LCD Display 3
 To Install Batteries 4
 To Recharge Batteries 5
 To Turn On or Turn Off The Unit 5
 Auto Battery Power Saver 5
 To Transmit 5
 To Adjust Volume Control 5
 To Select Channel 6
 Automatic Channel Scan 6
 Monitor button 6
 To Set Dual Watch Function 7
 To Lock Control Keys 7
 To Select Call Tones 8
 To Turn ON or OFF Beep 8
 To Turn ON or OFF Roger Tone 9
 General Specifications 10

**BEFORE OPERATING THIS PRODUCT PLEASE
READ THESE INSTRUCTIONS COMPLETELY**



Safety Information

Your wireless hand-held portable transceiver contains a low power transmitter. When the Push-to-Talk (PTT) button is pushed it sends out radio frequency (RF) signals. The device is authorized to operate at a duty factor not to exceed 50%. In August 1996, the Federal Communications Commissions (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless devices.

IMPORTANT : To maintain compliance with the FCC's RF exposure guidelines hold the transmitter and antenna at least 1 inch (2.5 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away from the face. If you wear the headset on your body while using the headset accessory, use only the supplied belt clip for this product and when transmitting, take it out of the belt to ensure that the antenna is at least 1 inch (2.5 centimeters) from your body.

Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

WARNING : Adjustment to this unit or replacement of any transmitter component (crystal, semiconductor, etc.) to this unit could result in a violation of the rules.

NOTE : This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

PRECAUTIONS

- Do not modify or attempt to adjust the transceiver for any reason.
- Avoid extremes in exposure to water, heat, and cold. This transceiver is weather resistant but not waterproof.
- Do not expose the transceiver to long period of direct sunlight, nor place the transceiver close to heating appliances.
- Do not place the transceiver in excessively dusty areas, humid areas, wet areas, nor on unstable surfaces.
- If an abnormal or smoke is detected coming from the transceiver, immediately switch OFF the power and remove the batteries from the transceiver. Contact your dealer.

Features

- Up to 2 mile range
- 14 Channels
- 5 Selectable Call Tones
- Auto Channel Scan
- Multi-function Back-lit LCD Display
- Roger Tone and Call / Ringer
- Detachable Belt Clip
- Auto Battery Saver

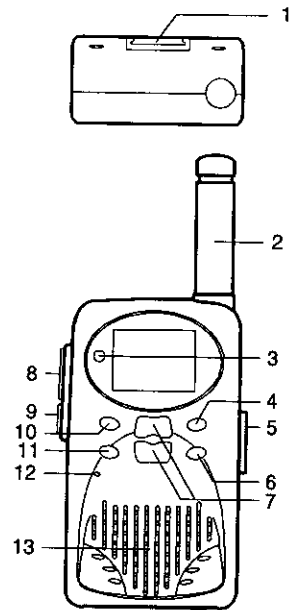
UNPACKING

Carefully unpack the transceiver. We recommend that you identify the items listed below before discarding the packing material.

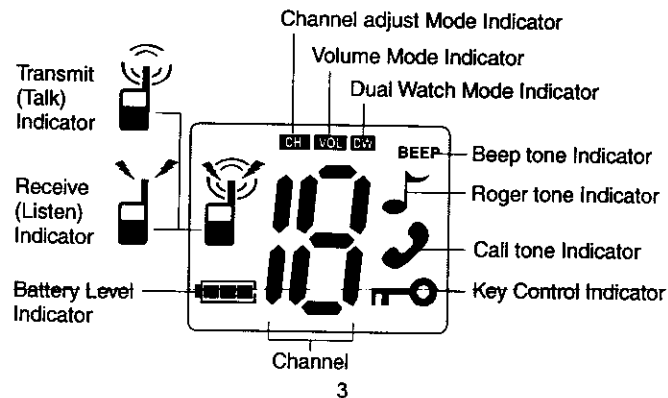
- Transceiver1
- Belt Clip1
- Instruction Manual1

Controls and Indicators

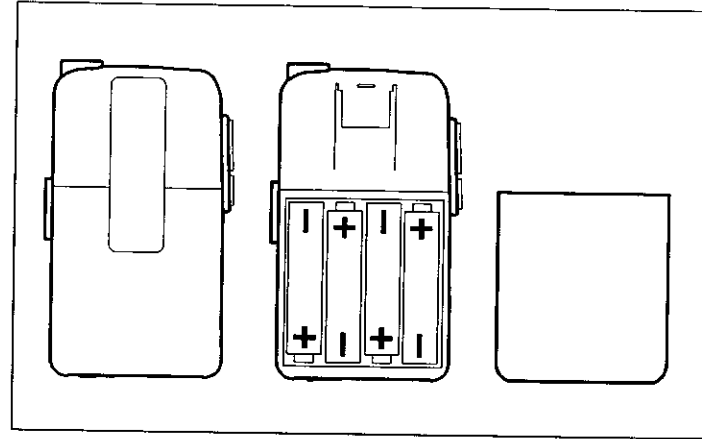
1. Belt Clip
2. Antenna
3. Battery Saver & PTT indicator
4. Enter/Lock key
5. Earphone / Microphone Jack
6. Power switch
7. Up/Down key
8. PTT (Push To Talk) Switch
9. Monitor /Lamp Switch
10. Menu key
11. Call key
12. Microphone
13. Speaker




LCD Display



To Install Batteries



1. Pull lock tab down and lift door up (towards you) to remove battery cover.
2. Insert four "AAA" batteries. Position batteries according to polarity markings.

Note : When batteries are low or need charging the  BATT LOW indicator will blink. Replace alkaline batteries. This unit operates best on alkaline batteries.

Do not leave batteries installed over a long period of time as leakage may occur that can destroy the radio.

To Turn On The Unit or To Turn Off The Unit

Press the POWER switch for more than 1 second.

Auto Battery Power Saver

The unit has a special circuit designed to extend battery life. If there are no transmissions within 5 seconds, the unit will automatically switch to battery save mode.

To Transmit

Press the PTT (Push-To-Talk) button and simply talk to the built-in microphone.

Many times the limits to maximum possible range are environmental factors such as blockage caused by trees, buildings, hills, or other obstructions. If you find communication is not possible, many times this can be overcome by moving only a few feet to a new location. Range may be reduced while operating in a vehicle or from inside to outside a metal building. Battery condition also affects range.

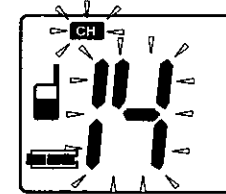
To Adjust VOLUME control

Press momentarily UP button to increase or DOWN button to decrease volume.

The higher number, the higher volume level.

To Select Channel

1. Press the MENU button. The LCD display indicates as shown at right.
2. Press the UP or DOWN button to set a desired channel.
3. Press the MENU button to continue other settings.



To complete setting, press the ENTER button.

Automatic Channel Scan

This feature allows scanning for an active main channel.

To access the Automatic Channel Scan, press and hold the UP or DOWN button to search signals.

When the unit catches a strong signal, scan will stop for 5 seconds.

If you want to stop at that channel, press the PTT or ENTER button.

To turn off the Automatic Channel Scan, press the MENU button once. The main channel will return to the original preset channel.

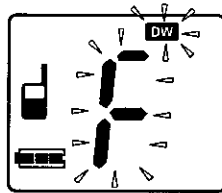
MONITOR button

The MONITOR button is used to check the activity on a channel before transmitting.

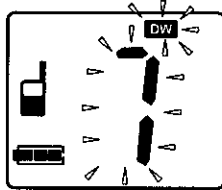
To Set Dual Watch Function

This feature enables you to monitor 2 channels simultaneously. Set Main and Sub channels you want to monitor prior to set Dual Watch Function.

1. Press the MENU button repeatedly until the LCD display indicates as shown at right. "F" indicates Dual Watch set off.




2. Press the UP or DOWN button to set a desired channel to monitor. Example: Ch 7



3. Press the MENU button to continue other settings.
To complete setting, press the ENTER button.

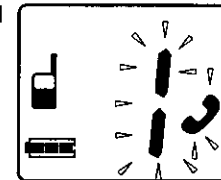
To Lock Control Keys (UP/DOWN, MENU keys)

Press and hold the ENTER button for 2 seconds. Key icon  will appear on the display.

To Select Call Tones

Call tones sound like a telephone ring, and are convenient for quickly identify yourself to another party. Persons whom you call will instantly recognize you because of your call tone. As the unit features 5 different tones, you can select and set your favorable tone.

1. Press the MENU button repeatedly until the LCD display indicates as shown at right.



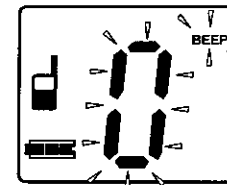
2. Press the UP or DOWN button to set a desired tone from 1 to 5.

3. Press the MENU button to continue other settings.
To complete setting, press the ENTER button.

To Turn On or Off BEEP

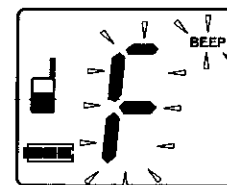
The beep feature allows you to control whether the unit beeps every time you press a button. Turn it off if you want quiet radio operation.

1. To turn BEEP off, press the MENU button repeatedly until the LCD display indicates as shown at right. "0" indicates BEEP set On.



2. Press the UP or DOWN button to turn off the beep. "F" indicates BEEP set Off.

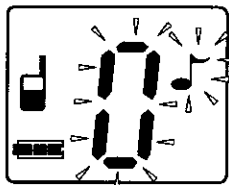
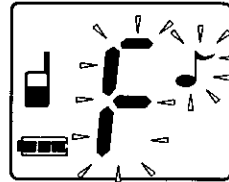
3. Press the MENU button to continue other settings.
To complete setting, press the ENTER button.



To Turn On or Off Roger Tone (Talk Confirmation Tone)

This alerts the other party that you are finished talking and it's OK for them to begin talking.

1. Press the MENU button repeatedly until the LCD display indicates as shown at right. "F" indicates Roger Tone set Off.
2. Press the UP or DOWN button to turn on the beep. "0" indicates Roger Tone set On.
3. Press the MENU button to continue other settings.
To complete setting, press the ENTER button.



General Specifications

A. Frequency

CH = 14 Channels within 462.5625 MHz -467.7125 MHz.

B. Receiver

- | | |
|----------------------------------|--------------|
| 1. Sensitivity | 0.25 μ V |
| For 12 dB signal | |
| 2. Max. audio output @ 10% THD | 300 mW |
| 3. Max. S/N ratio @ 1mV RF input | 40 dB |
| 4. Squelch Sens | 0.2 μ V |
| 5. Audio frequency resp. | |
| @ 300 Hz | \pm 10 dB |
| @ 3000 Hz | \pm 10 dB |
| 6. Signal displacement BW | \pm 5 kHz |
| 7. Adjacent CH. rejection | 55 dB |
| 8. Intermodulation rejection | 55 dB |
| 9. Spurious response rejection | 55 dB |

C. Transmitter

- | | |
|-----------------------------|---------------|
| 1. Effective radiated power | 360 mW (MAX). |
| 2. Carrier freq. stability | 500 Hz |
| 3. Modulation limiting | 2.5 kHz |
| 4. Carrier attack time | 80 mS |
| 5. Audio frequency response | |
| @ 300 Hz | \pm 10 dB |
| @ 3000 Hz | \pm 10 dB |
| 6. Audio distortion | 3 % |
| 7. Hum and Noise | 40 dB |

D. Power Supply

- | | |
|---|-------------|
| 1. Battery life (1-Tx : 1-Rx : 8-Standby) | 30 Hours |
| 2. Battery, AAA x 4 | 4.8 - 6.0 V |