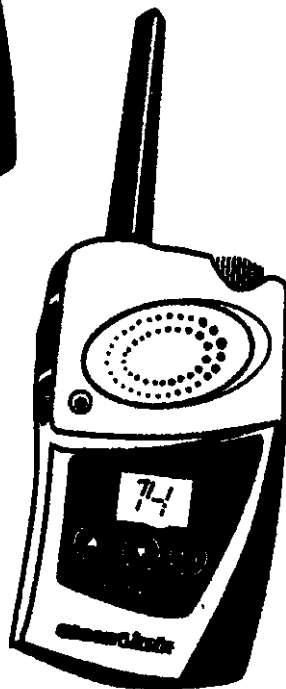


**ClearLink**

CONNECT 3  
CONNECT 14



**User's  
Guide**

Connect-3/Connect-14 Family Service Radios

## Introduction

The reason you are purchasing ClearLink Communications Family Service Radios, ClearLink Communications is dedicated to innovation and excellence in wireless communications, especially in the emerging area of "Family Radios" and related products.

### "Family Radio Service."

The Federal Communications Commission (FCC) introduced "Family Radio Service" in 1997 to provide the general public with broader access to short range, two way voice communication.

To prevent interference with military and commercial radio systems, Family Radio Service is limited to a maximum of 14 channels which operate on specific FCC assigned frequencies. In addition, output power is limited to 500 mW. While the normal operating range is approximately one mile, under ideal conditions, Family Radios will operate within a range of up to two miles.

All Family Radios, including the ClearLink Connect 3 and the ClearLink Connect 14, are programmed to transmit and receive regulated signals only on FCC assigned frequencies. Any attempt to modify either these signals or frequencies is in violation of FCC regulations and may cause permanent damage to the radio.

Operation is further subject to the following conditions as established by the FCC:

1. Family Service Radios may not be used to cause harmful interference with other radios;
2. Individuals operating Family Service Radios must acknowledge that these radios may be subject to occasional interference from military and commercial systems.

### ClearLink Connect 3 & ClearLink Connect 14.

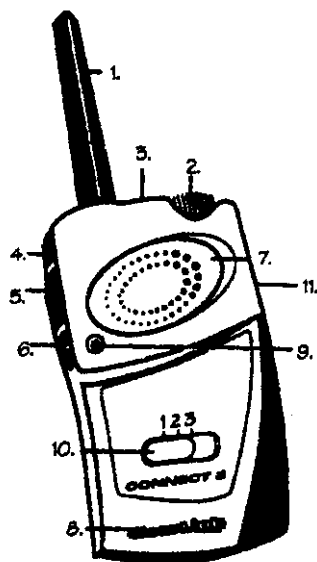
We offer several models of Family Service Radios, including the ClearLink Connect 3 and the ClearLink Connect 14.

The Connect 3 operates on three factory programmed, FCC assigned channels; the Connect 14 operates on all fourteen FCC assigned channels. The Connect 14 also includes several features not incorporated in the Connect 3 model.

This manual provides operating instructions, specifications and other important information pertaining to both the ClearLink Connect 3 and the ClearLink Connect 14.

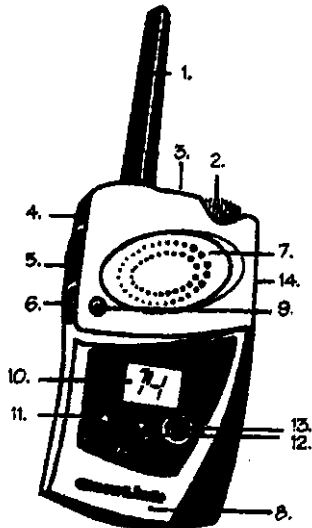
**ClearLink Connect 3.**

1. Antenna
2. Power ON/OFF & Volume Control
3. Microphone & Speaker Jack\*
4. Call Button (CALL)
5. "Push To Talk" Transmission Button (PTT)
6. Monitor Button (MON)
7. Speaker
8. Microphone
9. Transmitting & Low Battery Indicator Light (TX/BATT)
10. Channel Selector Switch
11. Battery Recharging Jack\*  
- Battery Compartment (back)  
- Removable Belt Clip (back)  
- Adjustable Wrist Strap (not shown)



**ClearLink Connect 14.**

1. Antenna
2. Power ON/OFF & Volume Control
3. Microphone & Speaker Jack\*
4. Call Button (CALL)
5. "Push To Talk" Transmission Button (PTT)
6. Monitor Button (MON)
7. Speaker
8. Microphone
9. Transmitting & Low Battery Indicator Light (TX/BATT)
10. LED Display
11. Channel Up Button (▲)
12. Channel Down Button (▼)
13. Channel Scanning Button (S)
14. Battery Recharging Jack\*  
- Battery Compartment (back)  
- Removable Belt Clip (back)  
- Adjustable Wrist Strap (not shown)



\*For use with Optional Accessories



**Optional Accessories.**

1. Single Ear Piece "Push To Talk" Microphone
2. Headset "Push To Talk" Microphone
3. Rechargeable NiCad Battery Pack
4. A/C Battery Pack Charging Adapter
5. 12 Volt "Cigarette Lighter" Battery Pack Charging Adapter
6. Carrying Case With Arm Band Strap
7. Speaker Microphone

**Installing The Batteries.**

Both the Connect 3 and Connect 14 are powered by three AA alkaline batteries. Both models can also be powered by an optional, rechargeable battery pack or by optional, rechargeable AA Nickel Cadmium (NiCad) batteries. See "Optional Accessories" at the end of this manual for further information.

To access the battery compartment on the back of the radio, open the locking clip and slide the compartment cover downward and remove it. Insert three AA batteries (not supplied) in accordance with the polarity symbols (+ / -) embossed on the bottom of the compartment, and replace the compartment cover.

**Worth Noting:**

- If the red Low Battery warning indicator light (#9) illuminates when the radio is turned on, it is time to replace the batteries.
- When replacing the batteries, always replace all three.

**"Turning It On."**

To turn the radio on, turn the Power ON/OFF button (# 2) in a clockwise direction. The radio will emit a series of short "startup" tones indicating that it is ready to transmit and receive.

If you wish to temporarily disable the start up tones, turn the radio off and depress and hold the "PTT" (Push To Talk) Button (# 5). While holding the PTT Button down, turn the radio on and release the PTT Button.

This process must be repeated each time you use the radio if you wish to disable the tones.

### **"Tuning It In."**

#### **ClearLink Connect 3.**

The ClearLink Connect 3 operates on three factory programmed FRS channels: Position Number "1" on the Channel Selector (#10) corresponds to FRS Channel 8; Position Number "2" corresponds to FRS Channel 10; Position Number "3" corresponds to FRS Channel 14.

To tune the radio to the desired FRS channel, simply slide the Channel Selector Switch left or right until the vertical bar on the Switch is aligned with the appropriate Position Number.

#### **ClearLink Connect 14.**

The ClearLink Connect 14 operates on all 14 FRS Channels. To select a channel, push the Channel UP (#11) or Channel DOWN (#12) Buttons until the desired channel number appears in the LED screen (#10). Depressing and holding either the Channel UP or DOWN Buttons will result in a rapid change of channels.

### **"Avoiding The Competition."**

The ClearLink Connect 14 has a scanning feature which enables you to determine which of the 14 FCC assigned channels, if any, are in current use by other FRS radio operators in your area. To activate this feature, press and release the Scan Button (#13).

The Connect 14 will automatically scan to and pause for approximately five seconds on each channel in current use by other operators. To stop the scanning process, press the Scan Button, the Channel UP or Channel DOWN Button, or the PTT Button.

Once each of the radios with which you are operating are turned on and tuned to the same clear channel, you are ready to begin transmitting and receiving.

### **Transmitting & Receiving.**

To send a voice transmission, depress and hold the PTT Button down. The red TX/BATT Indicator light will illuminate confirming that the radio is in the transmission mode. Hold the Microphone (#8) approximately two inches from your mouth, and speak in a normal voice. When you are finished transmitting, release the PTT button; the radio will automatically revert to the receive mode.

### **"Call" Button.**

To alert the operator of another radio that you are about to send a transmission, press and release the Call Button (#4). The "call signal" will sound in both the transmitting and receiving units for approximately two seconds.

This "call signal" will be heard in other ClearLink radios when they are turned on and tuned to the same channel.

#### **"Roger" Signal.**

The radio can be programmed to transmit a brief signal to the other radios with which you are operating when you end your transmission. To activate this feature, depress and hold the Call Button while turning the radio on.

This feature must be activated each time you use the radio.

#### **Adjusting The Volume.**

To adjust the volume, turn the Volume Control Button (#2) clockwise (volume up) or counter clockwise (volume down). To determine the current volume level prior to turning the radio on, depress and hold the Monitor Button (#6). The Speaker will emit static approximating the current volume.

#### **Battery "Reserve" Feature.**

In order to reserve battery power, the radio is programmed to cycle from a fully operational mode to a standby mode if no transmissions are sent or received within a period of approximately six seconds. The cycle is continuous, and is interrupted whenever a transmission is sent or received.

This feature increases the useful battery life by approximately 50%.

#### **Belt Clip & Adjustable Wrist Strap.**

To install the Wrist Strap, thread the thin end of the Strap through the hole at the top of the Belt Clip creating a small loop. Thread the other, thicker end of the Strap through the small loop and pull the Strap tight.

To remove the Belt Clip from the back of the radio, pull it gently out and down.

#### **Worth Noting.**

- Do not attempt to remove or otherwise adjust the radio antenna.
- The LED display on the ClearLink Connect 14 is sensitive to extreme temperatures and humidity. Exposing the radio to temperatures below -50°F (-20°C) or above 140°F (60°C) may cause permanent damage.
- The ClearLink Connect 3 and 14 are moisture resistant; they are not waterproof. Avoid immersing in water or other liquids.
- Keep the ClearLink Connect 3 and 14 out of direct sunlight.

#### Optional Accessories

The following accessories generally are available through your local retailer. If your retailer does not stock the accessory you wish to purchase, please call us at 603-595-3348 for pricing and ordering information.

- Single Ear Piece "Push To Talk" Microphone
- Headset "Push To Talk" Microphone
- Rechargeable NiCad Battery Pack
- A/C Battery Charging Adapter\*
- 12 Volt "Cigarette Lighter" Battery Charging Adapter\*
- Carrying Case/Arm Band Strap
- Speaker Microphone

\*For use with NiCad Battery Pack Only

#### ClearLink Connect 3 & Connect 14 Specifications

Connect 3 Channels.....	3
Connect 14 Channels.....	14
Frequency.....	462/467 MHz
Audio Frequency.....	1 KHz
Reference Deviation.....	1.5 KHz DEV. (FM)
Audio Output.....	500mV
Maximum Deviation.....	2.5 KHz
Operating Temperature.....	- 50°F (- 20°C ~ 140°F(60°C)
Power Source.....	4.5 Volt DC
Dimensions.....	2.1" (W) x 3.9" (H) x 1.2" (D)
Weight.....	3.5 ounces

#### Questions & Service.

Questions regarding the ClearLink Connect 3 and ClearLink Connect 14 may be directed to our Customer Service Department at 603-595-3348.

When returning the radio or accessories to ClearLink for service, please enclose a detailed, typed or clearly printed explanation of the problem(s) you are experiencing. Please also enclose your name, return shipping address (No P.O. Box) and daytime phone number. Pack the item or items carefully to prevent damage in transit. If possible, use the original packing material.

Insure and ship the package prepaid via a carrier through which the shipment can be traced to ClearLink Communications, 34 Franklin Street, Suite 5-703, Nashua, NH 03060.

In the event the radio or accessories are returned to us for service or replacement within one year of the date of original consumer purchase, our Limited One Year Warranty may apply. Please read the terms and conditions of this warranty carefully.

Family Service Radios □ 7

**Limited One Year Warranty.**

ClearLink Communications warrants that the ClearLink Connect 3 Family Radio Service Radio ("the Radio") and the ClearLink Connect 14 Family Service Radio ("the Radio"), its component parts and accessories will be free from defects in workmanship and materials for a period of one (1) year from the date of original consumer purchase.

This limited warranty may be enforced by the original consumer purchaser only and provided that the Radio has been operated exclusively within the United States of America. At its sole discretion, ClearLink Communications will repair or replace defective Radios or component parts or accessories without charge upon delivery to the ClearLink Service Department.

Items being returned must be accompanied by the sales receipt or copy of the sales receipt or other valid proof of the date of purchase by the original consumer. The original consumer must pay all charges associated with the return of the Radio or component parts or accessories. ClearLink Communications will pay the associated charges to return Radios or component parts or accessories when repaired or replaced under warranty.

This limited warranty does not apply to 1.) damage resulting from an accident; 2.) damage resulting from misuse or abuse of the product or from unauthorized alterations or repairs; 3.) in the event the serial number has been altered, defaced or removed; or 4.) in the event the owner of the Radio resides outside of the United States of America.

All implied warranties, including warranties of merchantability and suitability for a particular use are limited in duration to the length of this warranty. ClearLink Communications shall not be liable for any incidental, consequential or other damages including, without limitation, damages resulting from loss of use or cost of installation.

Note: Some states do not permit limitations on the length of an implied warranty and/or do not permit exclusion or limitation of incidental or consequential damages. Consequently, the limits stated in this warranty may not be applicable to the original consumer.



## 7. Alignment instructions

### WARNING

Any repairs or adjustments should be made under the supervision of a qualified radio-telephone technician.

### TRANSMITTER

#### 1. Power Supply Voltage

The Power supply voltage should be set for 4.5 VDC measured at the radio during transmit. Periodically check the power supply voltage during the alignment procedure.

#### 2. Frequency Setting

- A. Connect a frequency counter or Communications Service Monitor to the antenna connector through an RF power attenuator (5 watt minimum rating, 20 dB minimum attenuation).
- B. Depress the PTT switch.
- C. Adjust the CT-1 trimmer capacitor such that the output frequency is equal to the channel frequency with a maximum error of  $\pm 200$  Hz.
- D. Release the PTT switch.

#### 3. Output Power Alignment.

- A. Set the power supply voltage for 4.5 VDC.
- B. Connect a Communications Service Monitor or a watt meter and dummy load to the antenna connector.
- C. Depress the PTT switch.
- D. To be convinced for 0.5 Watt(50 ohm load) output power with a maximum error of  $\pm 0.15$  Watts.
- E. Release the PTT switch.

#### 4. Deviation Adjustment.

- A. Connect an audio generator .  
The audio frequency should be set at 1 KHz.
- B. Connect an FM deviation meter or Communications Service Monitor to the antenna connector through an RF power attenuator (5 watt minimum rating, 20 dB minimum attenuation). Set the monitor to read peak deviation.
- C. Depress the PTT switch.
- D. Adjust RV3 for  $\pm 2.5$ KHz maximum deviation.
- E. Release the PTT switch.

APPENDIX 7

CIRCUITS AND DEVICES TO STABILIZE FREQUENCY

SYNTHESIZER

A phase locked loop (PLL) circuit establishes and stabilizes operating frequency.

The data for producing necessary frequencies is established by the CPU on the digital board.

The frequency stability of the Tx/Rx is maintained by the TCXO, which generates a stable frequency of 12.8 MHz.