USER MANUAL

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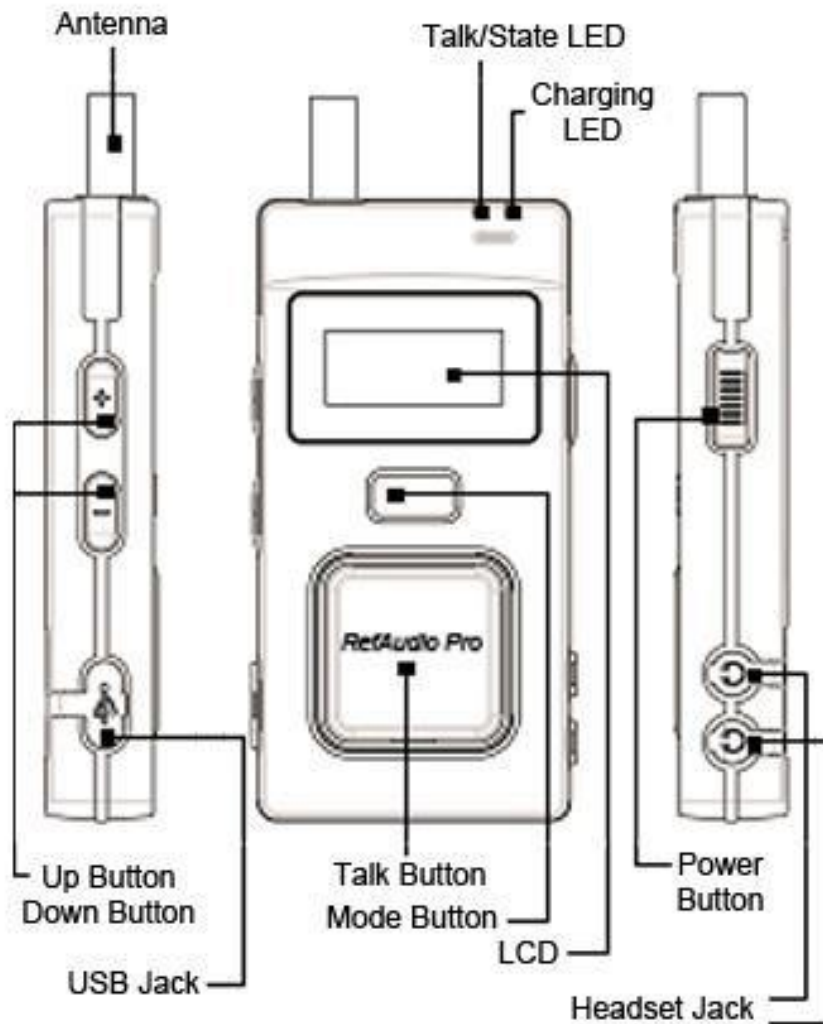
1. General Information

1.1 Introduction

RefAudio Pro is a full duplex (hands free radio) develop by L&W Sports Communications. It is a high-quality compact radio for use in sports environments and has multiple applications across a wide range of industrial and commercial areas.

1.2 Main Features

* Full duplex open communication between 5 users

* Unlimited number of listeners

* 24 separate channels and Software upgradable

* Secure transmissions on 900Mhz frequency

* Transmissions range up to 900m line of sight

* Clear sound quality and noise cancelling

* Up to 10 hours function battery life

* Water resistant for outdoor use

2. Controls and Indicators

3. How To Use

3.1 Power ON/Off

Press and hold the power button for 3 seconds to turn the unit on. The LCD display lights up and shows the selected volume and basic radio status levels. This is known as the HOME screen. To turn off, press the power button until the letters "OF" appear then release. The radio will shut down.

3.2 Group Selection

Press and hold the MODE button until the "GRP" indicator flashes in the LCD screen. Select the Group number 0-24 by pressing the ▲ and ▼ on the left-hand side of the radio (volume buttons).

Release all the buttons and the screen will revert to the HOME screen.

All radios need to have the same group number to be able to communicate within the group.

3.3 ID Selection

In a group, each radio must have a different ID starting at "00" to "99". The "00" radio becomes the "MASTER" radio. Every group MUST have a master radio. The words Master and Talk will appear in the LCD screen next to the volume number on the home screen.

To set each radio in the group, press and hold the MODE button until the "GRP" flashes. Press the mode button again and the "ID" symbol will flash. Use the ▲ and ▼ buttons on the side of the radio to give each radio an ID between "01" and "04". Release all the buttons and the radio will be set on that selected "ID". Any radio with an ID "05" to "99" will be receive only radios. Note that in the RefAudio Pro 10 model, user ID "00 to "09" will be talk radios as up to 10 users are allocated in this model. User ID "10 to "99" will be listener radios.

3.4 Volume Adjustment

Press the ▲ button to increase the volume and the ▼ button to reduce the volume. There are 6 volume levels, and the volume may be adjusted at any time during use.

3.5 Side Tone Selection

The RefAudio Pro radio has a side tone function that allows the user to hear what is being transmitted.

To activate side tone, press and hold the MODE button until the "GRP" symbol on the LCD screen is blinking. Press the mode button twice until the "SO" symbol appears in the LCD screen. "SO" indicates that the side tone function is on. To turn off side tone when the "SO" symbol is flashing, use the ▲ or ▼

buttons and the "SF" symbol will appear. Release all buttons and the radio will reset to the home screen.

The speaker off symbol 🔇 will be shown on the home screen. To turn on side tone repeat the process.

3.6 Microphone off - Receive only setting

The radio can be used in receive only mode. When this is required press and hold the MODE button until the "GRP" symbol on the LCD screen is blinking. Press the mode button 3 times until the "PO" symbol appears in the LCD screen. To use receive only mode, use the ▲ and ▼ buttons until the "PF" symbol appears on the screen. Release all buttons and the radio will reset to the HOME screen. To return the radio to full function, repeat the steps until the symbol "PO" is on the display.

3.7 Microphone Sensitivity Level Control

In situations where loud external noise exists, you can reduce the sensitivity level of the microphone. Press and hold the MODE button until the "GRP" symbol on the LCD screen is blinking. Then press the MODE button 4 times until the symbol C4 appears in the LCD Display. Use the ▲ and ▼ buttons to adjust the level. C1 is the lowest microphone level and C5 is at the highest level.

3.8 Audio Output High/Low

If a higher output is required, for example in very noisy environments, the RefAudio Pro radio has an increased output setting.

Press and hold the MODE button until the "GRP" symbol on the LCD screen is blinking. Then press the MODE button 5 times until the symbol "UL" appears in the LCD Display. Use the ▲ and ▼ buttons to adjust the level to "UH" for increased output.

Note: when used in the UH mode the user may experience sound distortion or hearing damage. Ensure correct volume levels are used.

3.9 Lock Mode

The radio can be placed into lock mode if required to prevent any unwanted changes to the radio. This can be achieved by simultaneously pressing the Mode button and the RefAudio Pro button on the front of the radio until the letters "LC" appear on the screen. In the lock mode function only the volume of the radio can be adjusted. If the radio is turned off the lock mode will remain until the unlock sequence takes place. To unlock the radio, repeat the locking process.

4. Battery

The rechargeable Li-ion battery 3.7V, 1100mAh is installed in the device. To charge the device, plug the USB charging cable into the USB port and connect to the A/C adapter or any USB charging device. The charging LED on the right-hand side top corner of the radio will blink during charging and will turn off when the battery is fully charged.

5. Specifications

ITEM	SPECIFICATION
Radio Frequency Type	ISM 915MHz ~ 928MHz
Type	Wireless Microphone/Receiver Unit
Radio Interface	ISM 900MHz: FSK Modulation with Frequency Hopping -- Output Power: Class 1(100mW)
Voice Codec	16bit/16KHz
Tx Max Output Power	100mW
Rx Sensitivity	-95dBm
Voice Latency	< 35ms
Num. of Frequency Channel	24 Groups
Channel Spacing	500Khz
Battery	Li-ion Battery @3.7V/ TBD 1100mA
Antenna	Internal Helical Antenna
Talk Time	10hr Typ.
Power Consumption	Avg. 100mA at Class 1(100mW)
Distance Range(LOS)	1000M @ Class 1
Frequency response	50 Hz ~ 7 kHz
Maximum operation users	5person (include Master device)
Dimension / Weight	98mm(H) x 49mm(W) x 17mm(D) / 88g
LED Display	Status LED, Talk LED, Charging LED
Low Battery Alert	Audible signal (Beep)