

OPERATING MANUAL

FRS-14ND

**14 CHANNEL 2 WAY RADIO
WITH CTCSS SECURITY**

Family Radio Service
Frequencies
Voice-Activated
Stopwatch function
Earpiece Included



Victory Concept Ind. Ltd.
FCC ID: OJ7968FRS0401
Job #: 435AH1
Exhibit #: 6A

FCC WARNING

ADJUSTMENT: REPLACEMENT or substitution of transistors, regular diodes or other parts of a unique nature, with parts other than those recommended by Columbia, may cause a violation of the technical regulations of part 95 of the FCC Rules, or violation of Type Acceptance requirements of Part 2 of the Rules.

NOTES: 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.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following condition: this device must accept any interference received, including interference that may cause undesired operation.

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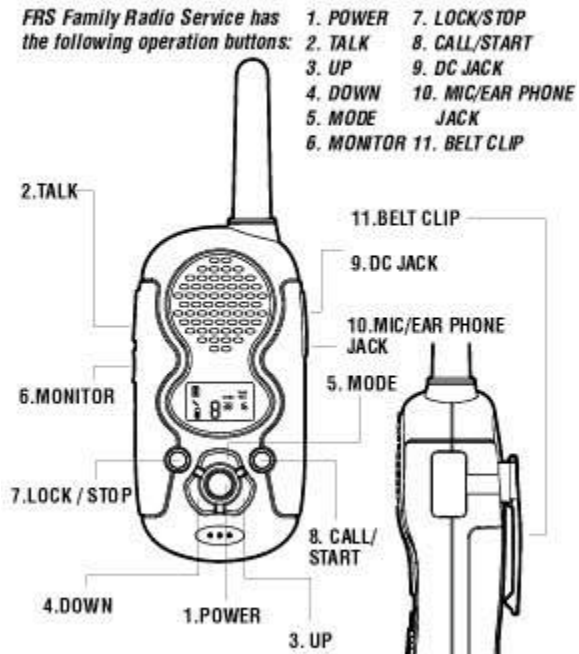
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LOCATION OF THE CONTROLS

FRS Family Radio Service has the following operation buttons:



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SETTING UP YOUR FRS RADIO

Battery Installation

Batteries are not included with your FRS 2-way radio. To use the radio, you must install 4 AAA size alkaline batteries.

Caution: incorrect positioning of the batteries can damage both the batteries and the unit.

To install the batteries:

- Remove the belt clip by pulling the tab on the top of the belt clip, and sliding it up and off the unit.
- Pull the battery door lock tab down to release the battery cover.
- Insert four AAA batteries. Position the batteries according to the polarity markings on the plastic.
- Replace the battery cover. Snap the lock tab and belt clip back into place.



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SETTING UP YOUR FRS RADIO

Battery Meter

The battery meter is located in the top left corner of the LCD display panel on the unit. It looks like a battery with 3 vertical bars inside. These bars indicate the amount of power available. As the power is used, the bars will disappear.



Low Battery Indicator

When the batteries need to be changed, the battery meter icon will flash. To ensure uninterrupted communication, replace the batteries as soon as possible.



Note:

Always use alkaline batteries for replacements. If you will store your radio for long periods of time, always remove the batteries. Batteries may corrode and leak when left unused over long periods of time, and permanently damage your radio.



**DO NOT PUT BATTERIES INTO A FIRE OR
EXPOSE TO HIGH HEAT. THEY MAY
EXPLODE.**

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SELECTABLE FEATURES AND OPERATING METHODS

1 Turn the FRS On

- To turn on the unit, press and hold the [POWER] button until the LCD display shows as in fig 1 and a beep sounds.
- After 0.5 second, the LCD display will change to figure 2 the LED will flash every 2 seconds to indicate the FRS is on and is in the NORMAL operating mode.
- In the NORMAL operating mode, the LCD display will show the current channel number, current CTCSS code, current volume level, and other icons depending on the status stored.



Fig 1

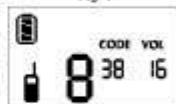


Fig 2

2 To Turn the FRS Off

- To turn the FRS off, press and hold the [POWER] button for 1 second until the display clears.

3 To Adjust the Volume

- In the NORMAL operating mode, press the [UP] or [DOWN] buttons to adjust the radio's volume level from 1 to 16. A key tone beep will indicate the volume changes if the speaker is not on.
- When holding the [UP] or [DOWN] button, the volume level will be automatically continuously increased or decreased. The key tone beep will not be heard when volume level is continuously changed.
- The key tone beep is also disabled when changing the volume during the receiving status.

4 Key Tones

- Key tones can be disabled by holding down the [MONITOR] button while turning the power on. A key tone disabled icon will be displayed on the LCD screen to indicate the key tone feature has been disabled. (Fig. 3)
- Turn off the radio, to restore the key tone, turn the FRS off, then holding the [MONITOR] button, turn the power back on, the key tone will return.
- The [PTT] button does not have a key tone even when the key tone feature is enabled.



Fig 3

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5 Set The Channel Number

- From the NORMAL operating mode, press the [MODE] button once, the CHAN icon will begin to flash indicating the radio is in the CHANNEL SETTING mode instead of the NORMAL mode (Fig 4)
- Press the [UP] or [DOWN] button to select a new channel. Holding the [UP] or [DOWN] button will continuously increase or decrease the channel number.
- The radio will return to the NORMAL mode after 5 seconds if no button is pressed or when the [PTT] button is pressed, the unit will enter the CTCSS CODE SELECTION menu mode if you press the [MODE] button once more.



Fig 4

Remark:

- At Anytime in the menu-setting mode, the FRS will return to the NORMAL mode after 5 seconds if no button is pressed.
- At Anytime in the menu-setting mode, the FRS will return back to the NORMAL mode immediately if the [PTT] button is pressed. No transmission is activated at this time.

6 To Set The CTCSS Code

- From the NORMAL operating mode, press the [MODE] button 2 times, the CODE begins to flash indicating entering the CTCSS CODE setting mode. (Fig 5)
- Press the [UP] or [DOWN] button to select a new code while the CODE icon is flashing. Select Codes 1 to 38



Fig 5

7 Setting The Scanning Feature

- From the NORMAL operating mode, press the [MODE] button 3 times, the LCD display changes to indicate entering the SCAN SETTING mode. (Fig 6)
- Anytime when entering this mode, the scanning feature is disabled in default. Press the [UP] button to use the scanning feature and [DOWN] button to disable it. (Fig 7)



Fig 6

- The FRS will start scanning when it returns to the NORMAL operating mode and the scanning feature is enabled. The channel number is scrolled during scanning.
- VOX feature will be temporarily disabled during scanning (Ref. Page 9).
- [MONITOR] button will be temporarily disabled during scanning (Ref. Page 11)



Fig 7



Fig 8

The Scan feature allows users to monitor channels of other transmitting radios. When the FRS detects channel activity, it stops scanning and stays at the active channel for 2 seconds. If the CTCSS code is matched at this time, the user can listen to the transmission of other FRS, otherwise, only the BUSY icon is turned on to indicate the channel is used by others. If the user wants to use this channel, just press and release the [PTT] button to stop scanning and the newest scanned channel on the LCD display will replace the previously selected channel.

The radio will continuously scan up to the next active channel after 2 seconds if nothing is pressed.

The radio will exit scanning and resume the previously selected channel if the [MODE] button is pressed at any time during scanning.

8 Setting The Call-Ring Tone Feature

- From the NORMAL operating mode, press the [MODE] button 4 times, the FRS will enter the CALL-RING SETTING mode. The LCD display changes as in fig 9, the large numeric display shows the current call-ring number, and the 'CA tone' is flashing.
- Press the [UP] or [DOWN] button to change the call-ring number (there are 10 different types) see page 13, the different call-ring tone can be heard during changing.



Fig 9

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While the [UP] button is pressed during transmitting status, or the [CALL] button is pressed in the NORMAL operating mode, the FRS will transmit the selected call-ring tone. While holding the button as described above, the FRS will keep transmitting a call-ring tone for a maximum of 10 seconds.

9 Setting Vox Sensitivity

- From the NORMAL operating mode, press the [MODE] button 5 times, the FRS now enters the VOX SETTING mode. The current sensitivity level will be shown as a large numeric display and the VOX icon begins to flash. (Fig 10)
- The [UP] or [DOWN] button can change the sensitivity level. The most sensitive level is level 1 and 0 means to disable the VOX function.
- The VOX feature will be temporarily disabled during setting, receiving, transmitting, scanning and monitoring.



Fig 10

When the VOX feature is in use, the FRS will transmit at least 2 seconds while it detects that the voice level is higher than the selected sensitive level. That means even if the voice level is not detected, the UNIT will still transmit for 2 more seconds.(Fig 11)



Fig 11

10 Setting the Stop-Watch Feature

- From the NORMAL operating mode, press the [MODE] button 6 times. The TIMER icon begins to flash to indicate you are entering the STOP-WATCH SETTING mode. (Fig 12)
- Press the [UP] button to enable the stopwatch timer feature and the [DOWN] button to disable it.

Pressing the [START] button once in the NORMAL operating mode will make the stopwatch run. Pressing the [START] button again will stop the display of the stopwatch, it will run in the background and the TIMER icon is flashing. Pressing the [START] button again will make the stopwatch run continuously... Pressing the [STOP] button will stop the running of the stopwatch, either in the foreground or background, it will display the total elapsed time. Press the [STOP] button again and it will clear the stopwatch to zero. (Fig 14)



Fig 12

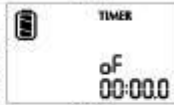


Fig 13



Fig 14

11 Set the Auto-Power-Off Feature (APO)

- From the NORMAL operating mode, press the [MODE] button 7 times, the FRS enters the APO SETTING mode, the APO icon is flashing and the large numeric display shows the current period of APO time. (Fig 15)
- Pressing the [UP] or [DOWN] button can change the APO time (from 1 to 3 hours, 0 will disable the APO)



Fig 15

The Auto-Power-Off feature can make the FRS turn itself off after a certain period of inactivity. This feature is used to prevent unexpected battery consumption.

During the APO period, pressing any button will reset the APO timer. If no button is pressed during the selected period, the FRS will sound a warning tone every 5 seconds and the APO icon will flash during the last minute before Automatic Power off occurs. If no button is pressed, the FRS will turn itself off after one minute.

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OTHER FEATURES AND OPERATING METHOD

1 Receive Monitor

In the NORMAL operating mode, press the [MONITOR] button and hold for 1 second to turn off the auto-squelch. The signals on the current channel can be heard. Release [MONITOR] to turn the auto-squelch function back on.

During scanning, the Receive Monitor feature can not be activated (Ref. Page 8). During the Receive Monitor mode, the VOX feature will be temporarily disabled even it is activated (Ref. Page 8).

2 Sending messages (TALK)

- Press and hold the [PTT] talk button, speak into the FRS microphone. The LED indicator and the TRANSMIT indicator glow continuously when transmitting.
- To receive messages, release the [PTT] button.
- If the [UP] button is pressed while transmitting, the FRS will send out the selected Call-Ring tone with the microphone muted. The Call-Ring tone can also be heard on your speaker. (Fig 16)
- During transmitting, the Timeout Timer feature can prevent accidental continuous transmission. It emits a warning tone and stops transmission if the [PTT] button is pressed over 60 continuous seconds.



Fig 16

3 Key Lock Feature

- Press and hold the [LOCK/STOP] button for 1 second, the LOCK feature is on and its icon also appears. (Fig 17)
- Press and hold the [LOCK/STOP] button again for 1 second, the LOCK feature is disabled and its icon will disappear.



Fig 17

The Key-Lock feature allows the user to disable the [UP], [DOWN], [CALL/START] and [MODE] buttons so that the radio settings cannot be changed accidentally. The [PTT], [MONITOR] and [POWER] remain functional. (Fig 17)

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When pressing [PTT] to transmit, the [UP] button will be temporarily enabled to activate the Call-Ring feature

4 BUSY indicator (RSSI indicator)

Anytime when the FRS detects a valid signal on the selected channel, the BUSY indicator will appear, but the speaker only will work when matching CTCSS code (Fig 18)

During receiving, the VOX feature will be temporarily disabled even if it is activated (Ref. Page 9)



Fig 18

5 Use of Auxiliary Microphone Jack and Earphone Jack

The FRS has an Auxiliary Microphone and Earphone jack. If an ear phone is pushed in the jack on the top of radio, the speaker of radio will be disabled and replaced by the earphone; the combination of an auxiliary microphone and auxiliary [PTT] button is the same as the one of microphone and [PTT] button.

You can use the auxiliary mic with PTT switch or you can use auxiliary mic without the switch together with the VOX function to activate transmission.

6 LCD Back Light

Whenever a button (except [PTT]) is pressed, the LCD back light will illuminate for 5 seconds.

7 Power Saving Feature

In the NORMAL operating mode (standby to receive), the Power Saving feature will put the FRS's RF section in an ON/OFF duty cycle to save battery power. The ON/OFF duration is about 120ms ON and 480ms OFF.

If the SCAN function is activated, the RF receive section will not have a power saving cycle and will continue to scan for channel activity.

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LIST OF CALL RING TONE TYPES

Tone No	Tone Name	Usage
1	Ring_1	Call-Ring tone type 1
2	Ring_2	Call-Ring tone type 2
3	Ring_3	Call-Ring tone type 3
4	Ring_4	Call-Ring tone type 4
5	Ring_5	Call-Ring tone type 5 (Music)
6	Ring_6	Call-Ring tone type 6 (Music)
7	Ring_7	Call-Ring tone type 7 (Music)
8	Ring_8	Call-Ring tone type 8 (Music)
9	Ring_9	Call-Ring tone type 9 (Music)
10	Ring_10	Call-Ring tone type 10 (Music)
11	Alert	Normal key tone for button pressed
12	Alarm	Low battery alarm tone
13	Warning	Pressing [PTT] button over 60 seconds
14	Power-On	Signal tone when radio's power turned on.
15	Power-Off	Signal tone when radio's power turned off.

LIST OF CHANNEL FREQUENCIES

Channel Frequency Chart			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	462.5625	8	467.5625
2	462.5875	9	467.5875
3	462.6125	10	467.6125
4	462.6375	11	467.6375
5	462.6625	12	467.6625
6	462.6875	13	467.6875
7	462.7125	14	467.7125

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**LIST OF 38 CTCSS
CODE FREAUENCIES**

NO.	FREQUENCY (Hz)	NO.	FREQUENCY (Hz)	NO.	FREQUENCY (Hz)
1	67.0	14	107.2	27	167.9
2	71.9	15	110.9	28	173.8
3	74.4	16	114.8	29	179.9
4	77.0	17	118.8	30	186.2
5	79.7	18	123.0	31	192.8
6	82.5	19	127.3	32	203.5
7	85.4	20	131.8	33	210.7
8	88.5	21	136.5	34	218.1
9	91.5	22	141.3	35	225.7
10	94.8	23	146.2	36	233.6
11	97.4	24	151.4	37	241.8
12	100.0	25	156.7	38	250.3
13	103.5	26	162.2		

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**COLUMBIA TELECOMMUNICATIONS
LIMITED WARRANTY**

COLUMBIA TELECOMMUNICATIONS warrants this unit to be free from defects in material and/or workmanship for a 1-year period beginning with the date of purchase. This warranty does not cover second-hand ownership or products that are purchased for sale or lease to another. This warranty does not cover damage resulting from acts of God, lightning accident, misuse, improper installation or operation, or unauthorized repair or alteration.

If this unit should become defective within the first 30 days from purchase, return it to the retailer where it was obtained (with all of the original packing materials and parts) for an over-the-counter exchange. If this unit becomes defective after the first 30 days but within one year of purchase, we will replace it with a new or reconditioned one of the same or similar style. The replacement unit will be warranted for a period of 90 days or the remainder of the original one year period, whichever is longer.

To obtain warranty service on your COLUMBIA TELECOMMUNICATIONS equipment, you must provide proof of the date of purchase. We strongly recommend that you keep your sales receipt and all of the packing materials in order to take advantage of your products limited warranty. Include all accessories and owners manual when returning product to an authorized service center (listed below.) Do not forget to include your name and return address (print please), a brief description of the defect, a \$10.00 check (for shipping and handling) and a copy of your sales receipt.

Customer service may be contacted at 1-800-889-7434 between 9 am and 5 pm est.

There are no expressed warranties except as listed above. COLUMBIA TELECOMMUNICATIONS will not be liable for incidental or consequential damages resulting from the use of this product, or resulting from misuse contrary to this warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and/or limitations may not apply to you. This warranty gives you specific and legal rights and you may also have other rights which vary from state to state.

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