BTECH

FRS-A1

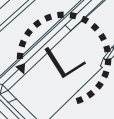## Operating Manual

ATTENTION

BTECH FRS-A1 is a multi-tasking FRS transceiver that combines the latest technology in radio communication along with a sturdy mechanical frame.

The FRS-A1 is designed in simplicity for all users. It works on all FRS channels with all bandwidths and privacy tones supported. The FRS-A1 allows you to simultaneously monitor two different FRS channels at once. The FRS-A1 also includes a flashlight, NOAA weather radio receiver, and an FM radio receiver. The FRS-A1 supports both computer and manual programming. The FRS-A1 is compatible with Kenwood K1 2 Pin accessories and supports USB Type-C charging.

Please read all information carefully before using our products.

FCC RF EXPOSURE

WARNING! It is up to the user to properly operate this radio transmitter to insure safe operation. Do not use the radio with a damaged antenna. If a damaged antenna comes into contact with the skin, a minor burn may occur.
Please contact your local dealer for a replacement antenna, if needed.

■ Hand-Held Operation (Held-to-Face)

This device was evaluated for typical hand-held (held-to-face) operations with a 1 inch spacing from the front of the radio. For hand-held operation, the radio should be held 1 inch from the user's face to comply with FCC RF exposure requirements.

■ Body-Worn Operation

This device was evaluated for body-worn operations with the supplied belt-clip accessory. (All necessary accessories are included in the package; any additional or optional accessories are not required for compliance with the guidelines.) Third party accessories (unless approved by the manufacturer) should be avoided as these may not comply with FCC RF exposure guidelines.

For body-worn operation, this device has been tested and meets the Industry Canada RF exposure guidelines when used with BTECH accessories supplied or designated for this product. Use of other accessories may not ensure compliance with Industry Canada RF exposure guidelines.

FCC PART15

■ FCC PART 15 COMPLIANCE

This device complies with Part 15 of the FCC rules. Operation is subjected to the two following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

PRECAUTIONS FOR BATTERIES

■ Charging Prohibitions

To protect you against any property loss, bodily injury or even death, be sure to observe the following safety instructions:

1. Do not charge or replace your battery in a location where fuels, chemicals, explosive atmospheres and other flammable or explosive materials are present.
2. Do not charge your battery if it is wet. Dry it with a soft and clean cloth prior to charging it.
3. Do not charge your battery if it is suffering deformation, leakage and overheat.
4. Do not charge your battery with an unauthorized charger.
5. Do not charge your battery in a location where strong radiation is present.
6. Do not overcharge your battery as it may shorten the life of your battery.

■ Maintenance Instructions

To help your battery work normally or prolong its life, be sure to observe the following instructions:

1. Accumulated dust on charging connector may affect normal charging. Please use a clean and dry cloth to wipe it on a regular basis.
2. It is recommended to charge the battery between 5°C ~ 40°C. Violation of the said limit may cause battery life reduction or even battery leakage.
3. To charge a battery attached to the product, turn it off to ensure a full charge.
4. Do not remove the battery or unplug the power cord during charging.
5. Do not dispose of the battery in a fire.
6. Do not expose the battery to direct sunlight for a long time or place it close to other heating sources.
7. Do not squeeze, penetrate the battery, or remove its case.

■ Transportation Instructions

1. Damaged batteries must not be transported.
2. To avoid short circuiting, separate the battery from the metal bars or from each other, if two or more batteries are transported in one packaging.
3. If the battery is not attached, the radio should be powered off

The content of the shipment must be declared in the shipping documents and by a battery shipping label on the packaging. Contact your delivery service for the local regulations and further information.

■ Precautions for Disposal

Once the service life of our products (including but not limited to radios and batteries) has ended, they shall not be disposed as household garbage. Dispose of and recycle our products in accordance with your local regulations.

MAINTENANCE

To be safe and sure:
- Never open your radio's case.
- Never change or replace anything in your radio except the batteries.

■ Care and Safety

Your FRS-A1 was designed to fulfill any warranty obligations and to enjoy for many years.

As for the device, we recommend you follow these suggestions:

• Do not attempt to open the unit. Non-expert handling of the unit may damage it and/or annul the warranty.

• When using regulated power supply, the power voltage must be 5V to avoid damages.

• High temperatures can shorten the life of electronic devices, and warp or melt certain plastics. Do not store the radio in dusty or dirty areas.

• Keep the radio dry. Rainwater or dampness will corrode electronic circuits.

• If it appears that the radio has a peculiar smell or emits smoke, please shut off its power immediately and remove the charger or battery from the radio.

• Do not transmit without an antenna attached.

• To clean the radio, use a soft, damp cloth. Do not use cleaners or solvents because they can harm the body of the unit and leak inside, causing permanent damage.

• Use a dry, lint-free cloth to clean the battery contacts.

■ Hazardous Environments

Do not operate the radio in hazardous environments as explosion or fire may occur. Do not operate the radio near unshielded electrical blasting caps.

Under certain conditions, radios can interfere with blasting operations and may cause an explosion. Turn your radio OFF to prevent accidental transmission when in a blasting area or in areas posted: "Turn off two-way radio." Construction crews often use remote control RF devices to set off explosives.

Read this information before using the radio. In August 1996, the Federal Communications Commission (FCC) of the United States with its action in Report and Order FCC 96-326 adopted an updated safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated transmitters.

Those guidelines are consistent with the safety standard previously set by both U.S. and international standards bodies. The design of the radio complies with the FCC guidelines and these international standards. Never allow children to operate the radio without adult supervision and the knowledge of the following guidelines.

PACKAGE CONTENTS

- 2 FRS-A1 transceivers

- 1 USB to AC Adaptor

- 1 USB to Dual USB-C Cable

- 1 User manual

- 2 Li-Ion battery packs (1500mAh 3.7V)

- 2 Belt clips

- 2 Wrist straps

- 2 Earpieces

MAIN FEATURES

- 22 FRS Channel transceiver (No license required)
- 10 Selectable call/call alerts
- 260 Privacy codes (50 CTCSS Tones and 210 DCS Codes)
- FM radio receiver (88-108MHz)
- Channel monitor, channel scan, dual watch functions

- CTCSS and DCS codes research
- Voice Operated Switch/Voice Operated Exchange (VOX)
- Frequency step: 2.5/5/6.25/10/12.5/25KHz
- VOICE: Vocal indication of the function selected
- Low battery voice indicator
- LED Flashlight
- Li-Ion 1500mAh battery pack
- Up to 8-mile range*

- Output power: 2W
- 7 Channel NOAA Weather Radio
- 1750Hz tone

- TOT (Time out timer)
   OFF/30/60/90/120/150/180s
- Busy channel lockout function (BCL)
- High/low power selection
- Squelch adjustable in 9 levels
- Keypad lock
- Battery Saver
- Supports USB (Type-C) charging
- 2 Pin Kenwood accessory jack

*Range may vary depending on environmental and/or topographical conditions.
*NOAA and FM radio receiver(88-108MHz) with FCC sDOC.

About the Range

Your FRS-A1 Series radio is designed to give you maximum range under optimum conditions.

• Maximum Range: Little to no sight obstruction.

• Medium Range: Partial obstruction to the line of sight.

• Short Range: Major obstruction to line of sight.
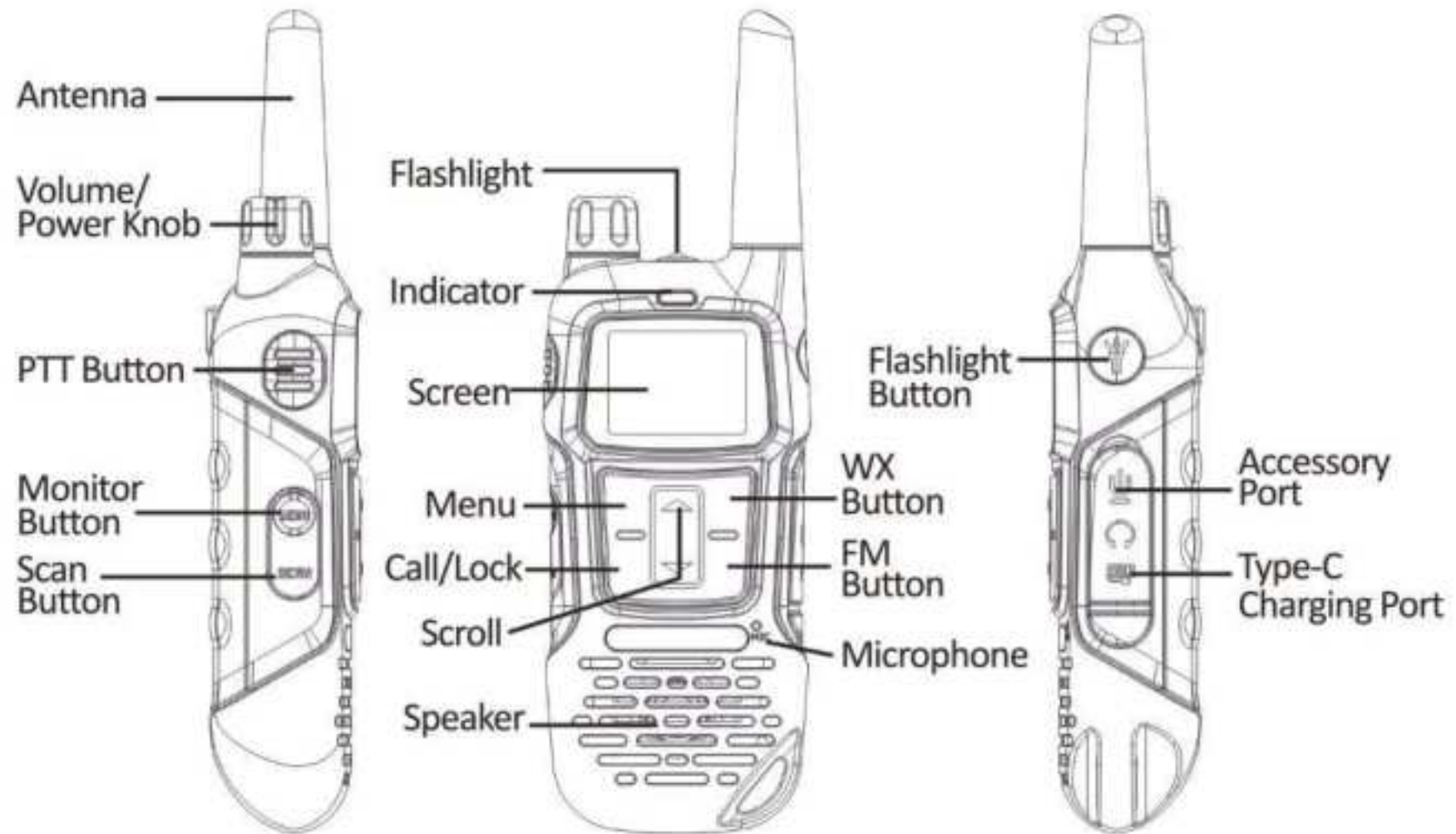
Optimum Conditions are:

• Over water

• Open, rural areas without obstructions

• Flat areas where you can see the other person

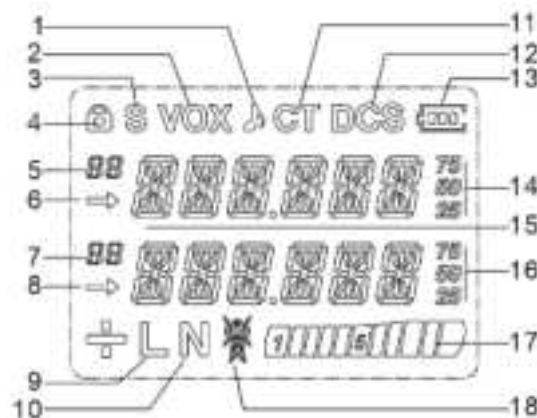**To ensure you get maximum range:**

• Be sure to use fresh or fully charged batteries - low batteries will cause low power conditions.

• Be sure to set your radio to use high power.

Note: Channels 8 through 14 are only permitted to be used using the low power setting, in accordance with the FCC.

MAIN CONTROLS AND PARTS OF THE RADIO

Antenna

Volume/
Power Knob

PTT Button

Monitor
Button

Scan
Button

Flashlight

Indicator

Screen

Menu

Call/Lock

Scroll

Speaker

WX
Button

FM
Button

Microphone

Flashlight
Button

Accessory
Port

Type-C
Charging Port

8

LCD DISPLAY

1. Call Tone (Off, 1–20)	10. Narrowband Indicator (working at 12.5KHz)
2. VOX（OFF,1-5）	11.CTC Indicator（67.0-254.1）
3. Dual Channel Monitor（ON/OFF）	12.DCS Indicator（D023I/N-D754I/N）
4. Keypad Lock	13. Battery Indicator (3 Battery Levels)
5. A Channel Number (1-22) or menu number (1-17)	14. The last two digits of RX/TX frequency (4-5 digits after the decimal point)
6. A Channel Arrow Pointer	15. Frequency/Channel Alias Display Area
7. B Channel Number (1-22)	16. The last two digits of RX/TX frequency (4-5 digits after the decimal point)
8. B Channel Arrow Pointer	17. Transmit Power Indicator (half grid for low power, full grid for high power)
9. Low Power Indication	18. Status (Transmit/ Receive)

CHARGING THE RADIO

Your radio includes USB charging cables (with AC adaptor) and battery packs. Follow these instructions to recharge your radio.

Make sure to turn the radio OFF before placing the radio in the charging cradle.

1) Plug the Type-C USB cable into the Type-C USB charging port on your radio. Connect the other end of the Type-C USB cable into a USB plug or use the AC/USB transformer to connect it to an AC outlet.

2) The LED will illuminate red while charging, and will illuminate green when fully charged

Note:

• *Use only the supplied battery and AC adapter or approved accessories from BTECH.*

• *Charge time may vary depending on the remaining battery life at the start of charge.*

• *The battery must be installed for the unit to operate, even if the unit is also connected to external power.*

• *If battery power is low, you cannot operate the radio even using external power. Allow the battery to charge before using. If you try to transmit while power is low, the radio will automatically turn off.*

• *For fastest charging, turn off the radio before charging.*

BASIC OPERATIONS

Turning Your Radio On and Off

To turn your radio **ON**, turn the rotary knob clockwise until you feel the knob click.

To turn your radio **OFF**, turn the rotary knob counterclockwise until you feel the knob click.

Setting the Volume

Increase volume by turning the rotary knob clockwise.

To decrease volume, turn the rotary knob counterclockwise.

Do not hold the radio close to your ear. If the volume is set to an uncomfortable level, it could hurt your ear.

Choosing a Channel

Your radio has 22 FRS channels and 260 privacy codes you can use to talk to others. In order to speak to someone, both your radios must be set to the same channel and privacy code.

Press **[▲]** to move up one channel at a time.

Press **[▼]** to move down one channel at a time.

When choosing a privacy code, if you press and hold down the **[▲] or [▼]** key, it will allow you to scroll more quickly through them.

Note: privacy codes do not keep conversations private; a better term may be 'filter'. Adding privacy codes will filter out calls to only hear calls with the matching 'privacy code'. Privacy codes enable multiple groups to share the same channel, by using a privacy code to only hear their own group's conversations. The FRS-A1 will indicate if the channel is in use, even if you do not hear the traffic - the LED will illuminate green on the FRS-A1 to indicate that there is activity on the channel. You can hear all channel activity by holding the [MONI] button to open the squelch and hear all traffic.

Talking and Listening

All radios in your group must be set to the same channel and Privacy Code in order to communicate.

1. Hold your radio 2–3 cm from your mouth.

2. Press and hold the [**PTT**] key while speaking. The Transmit **TX- - -** icon appears on the display.

3. Release the [**PTT**] key. You can now receive incoming calls. When you do, the Receive **RX- - -** icon appears on the display.

For maximum clarity, hold the radio 2 to 3 cm away and avoid covering the microphone while talking.

A/B channel selection

In standby mode, press and hold ▲/▼ key to switch A/B channel. Arrows point to transmit channel.

SCAN

Your FRS-A1 can scan all 22 channels for activity. Press and hold the **[SCAN]** key to begin scanning. Repeat the same procedure to stop scanning.

Your radio will rapidly scan each of the 22 channels and stop on any active channel. Your radio will resume scanning after 4 seconds when the channel is no longer active.

When you press the **[PTT]** key to transmit on an active channel, the scanning function will stop, and you will remain on that channel. To initiate scanning again, press the **[SCAN]** key again.

NOTE: You can change the direction of scanning (increase channel numbers or decreasing channel numbers) by tapping corresponding ▲/▼ key.

Scanning for Privacy Codes

Your FRS-A1 can scan to find the matching tone from another radio if you do not know the tone being used.   First select the same FRS channel from the other radio to match the FRS-A1. The green light will illuminate on the FRS-A1 if the channel is active and correct. To find the matching tone, go to Menu 01, (RXCODE) and enter the submenu by pressing the **[MENU]** key. Transmit on the other radio with the unknown tone. Your FRS-A1 LED will illuminate green to confirm an active channel is being received. Press the **[SCAN]** key while the FRS-A1 is actively receiving from the other radio. The FRS-A1 will begin scanning through the active tones and will stop on the matching tone once found.

NOTE: The radio will only scan for tones while there is activity on the channel. You must ensure that you are on the active channel and the channel is actively receiving to begin scanning for the matching

tone.

Monitor

Pressing and holding the **[MONI]** key will let you hear noise so you can adjust the volume level of the radio when not receiving a signal. This should be used to check activity on your current channel before transmitting.
This will hear all traffic on the channel regardless of the privacy tone used.

Using the Monitor button will hear all traffic on the channel. Holding the **[MONI]** key will open the squelch and will hear all traffic no matter what privacy tones you have enabled.

Keypad lock

This function locks the keypad to prevent accidental pressing of the controls.
To avoid accidentally changing the radio setting, press the 🔒 key for 2 seconds. The 🔒 icon will appear on the display. **PTT**, **LAMP**, **MONITOR**, and **FM Radio** keys will still be active. Repeat the same procedure to unlock the keypad.

Flashlight

This function is very useful for night illumination.
To turn it on press **[LAMP]**; push it two times to change the flashlight to a strobe light; push it a third time to turn it off.

FM Radio (FM)

The frequency range to listen to the radio is 87-108MHz.

With FRS-A1 turned on, Press **[FM]** to turn on the radio. Select the desired radio frequency with the **[▲]/[▼]** keys. Press the [SCAN] key or hold the ▲/▼ keys to automatically search for radio channels. Press **[FM]** to exit FM radio.

NOAA Weather Radio

Your radio can receive weather broadcasts from the NOAA National Weather Service.

While using the Weather Radio, you are not able to receive FRS communications.

1. To turn on the Weather Radio Broadcast mode, the **[WX]** key. WEATHE appears.

2. Press **[▲]/[▼]** to select the desired weather channel.

3. To exit the Weather Radio Broadcast mode, press **[WX]**. WEATHE disappears.

NOTE: There are 7 NOAA channel frequencies available, and these frequencies are the 7 NOAA nationwide broadcasts. You will need to pick the channel with the strongest reception in your area. You can press the [SCAN} key to scan for an active channel; this, however, will make the /, keys inactive. Once you have connected to an active channel or you wish to stop scanning just press the

[SCAN] key again, and that will exit the scanning function.

NOAA Weather Radio Frequency List:

Chan.	Freq. (MHz)	Chan.	Freq. (MHz)
WEATHER CH01	162.550	WEATHER CH05	162.450
WEATHER CH02	162.400	WEATHER CH06	162.500
WEATHER CH03	162.475	WEATHER CH07	162.525
WEATHER CH04	162.425	---	---

1000Hz, 1450Hz, 1750Hz Tone Burst

To send out a tone burst; you simultaneously press the designated key while holding down the PTT key.

No further configuration is required to use this feature.

The following configurations will transmit accordingly:

- **[PTT] + [FM]** = **Transmits 1450Hz Tone Burst**
- **[PTT] + [MONI]** = **Transmits 1750Hz Tone Burst**
- **[PTT] + [♫ 🔊]** = **Transmits 2100Hz Tone Burst**

If you have the keypad lock enabled on your radio, you can still send a 1750Hz tone burst the regular way without having to unlock your radio.

WORKING THE MENU SYSTEM

Basic Use
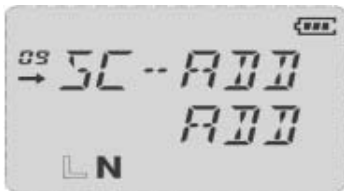
Using the menu with arrow keys

1. Press the **[MENU]** key to enter the menu.

2. Use the **[▲]** and **[▼]** keys to navigate between menu items.

3. Once you find the desired menu item, press **[MENU]** again to select that menu item.

4. Use the **[▲]** and **[▼]** keys to select the desired parameter.

5. When you've selected the parameter you want to set for a given menu item:

   a). Press **[MENU]** to confirm your selection, and it will save your setting and bring you back to the main menu.

   b). Press **[WX]** to cancel your changes, and it will reset that menu item and bring you out of the menu entirely.

6. To exit the menu at any time, press the **[PTT]** key.

Shortcut Menu operations

MENU No.	Name (Full Name)	LCD display	Selectable
1	RXCODE - Receiver Privacy Codes	⁰¹→RXCODE OFF	OFF;67.0…D754N The Privacy Codes is OFF, and the display is OFF. When the display is OFF, press ▲ key to select CTCSS with priority; When the display is OFF, press ▼ key to select DCS with priority.
2	TXCODE -Transmitter Privacy Codes	⁰²→TXCODE OFF	OFF;67.0…D754N The Privacy Codes is off, and the display is OFF. When the display is OFF, press ▲ key to select CTCSS with priority; When the display is OFF, press ▼ key to select DCS with priority.
3	SQL - Squelch Level	⁰³→SQL 3	0-9 Levels 0: Lowest 9: Highest

4	LIGHT - Back Light	ON →LIGHT ON	OFF ON KEY
5	BEEP - Keypad Beep	05 →BEEP ON	OFF ON *Allows audible confirmation of a key press.
6	VOX - VOX	06 →VOX OFF	OFF will turn off VOX function. 1: Lowest Sensitivity 5: Highest Sensitivity
7	TXP -Transmit Power	07 →PWR HIGH	HIGH - high power transmission; LOW - low power transmission. *When set to low power, the screen will display the 'L' icon.
8	TDR – Dual Watch Operation	08 →TDR OFF	OFF ON *Monitor [A] and [B] at the same time. Activate the dual watch, and the screen will display the 'S' icon.

9	SC – ADD - Channel Scan add/delete	 ᴼ⁹ 5C -- ᴀ ᴅ ᴅ ᴀ ᴅ ᴅ └ N	ADD-Add the current channel to the scan list DELETE-delete the current channel from the scan list
10	SAVE - Battery Saving	¹⁰ 5ᴀ⁄E ON	OFF: ON:
11	TOT - Time-Out-Timer	¹¹ TOT 120	OFF,30,60···180S *This feature provides a safety switch that limits transmission time to a programmed value. This will promote battery conservation by not allowing you to make excessively long transmissions and, in the event of a stuck PTT switch, it can prevent interference to other users as well as battery depletion.
12	BCLO - Busy Channel Lock-out	¹² ᴮCLO OFF	OFF ON *Disables the [PTT] key on a channel that is already in use. The transceiver will make a beep tone and will not transmit if the [PTT] key is pressed when a channel is already in use.

13	RING - Call Tone Select	¹³RING OFF	OFF - close call tone; Select 1-10 process, you can listen to the call tone.
14	VOICE - Voice Reminding	¹⁴VOICE ENG	OFF - turn off voice prompts; ON- turn on voice prompts.
15	CH DIS- Channel Display Mode	¹⁵CH DIS FREQ LN	CH NUM: Displays the channel number NAME: Displays the channel name FREQ: Displays programmed frequency
16	CHNAME – Channel Name	¹⁶CHNAME CH--001 LN	Choose A/B/C—X/Y/Z letters and 0-9 numbers, a total of 6 digits
17	RESET -Restore defaults	¹⁷RESET OK LN	*Resets the radio to factory defaults.

Menu settings

Receiving with Privacy Codes (RXCODE) - MENU 01

You can configure different receiving privacy codes for each channel. The selected privacy code may be different for each channel.

Note: Selecting a privacy code of "OFF" will disable the privacy feature. To communicate between two FRS-A1 radios, all radios in your group must be set to the same channel and privacy code selections.

The receiving privacy codes setting steps are as follows:

1. Press the **[MENU]** key to enter the main menu, and press ▲/▼ key to enter the MENU 01.

2. Press the **[MENU]** key again to enter the **RXCODE** menu.

3. Press the ▲/▼ key to select the privacy code; and the selection range is OFF / 67.0~754N.

Note: The default state of the privacy code is off, and the display is OFF. When the display is OFF, press the ▲ key to select CTCSS with priority, range 67~254.1Hz (50 groups in total); when the display is OFF, press the ▼ key to select DCS with priority, range D023N-D754I (104 groups in total).

During the selection process, press and hold the ▲/▼ key to quickly search for the sub-tone code.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

Transmitting with Privacy Codes (TXCODE) - MENU 02

You can configure different transmission privacy codes for each channel. The selected privacy code may be different for each channel.

Note: Selecting a privacy code of "OFF" will disable the privacy feature. To communicate between two FRS-A1 radios, all radios in your group must be set to the same channel and privacy code selections.

The steps for creating your transmission privacy code settings are as follows:

1. Press the **[MENU]** key to enter the main menu and press the ▲/▼ key to enter the MENU 02.

2. Press the **[MENU]** key again to enter the **TXCODE** menu.

3. Press the ▲/▼ key to select the privacy code, and choose a selection range of OFF or 67.0~754N.

Note: The default state of the privacy code is off, and the display is OFF. When the display is OFF, press the ▲ key to select CTCSS with priority, range 67~254.1Hz (50 groups in total); when the display is OFF, press the ▼ key to select DCS with priority, range D023N-D754I (104 groups in total).

During the selection process, press and hold the ▲/▼ key quickly to search for the sub-tone code.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

Squelch level (SQL) - MENU 03

You can adjust the base level of your squelch threshold using this menu. Squelch is used to eliminate unnecessary noise when the radio is receiving interference. Squelch can be used in combination with your selected privacy codes to filter out unwanted interference. Ensure your paired radios have the same matching privacy codes, before adjusting your squelch level.

A higher squelch threshold will require a stronger received signal to open the squelch on your radio. A higher squelch can also filter out weaker signals. By lowering your squelch threshold, your radio range may increase by hearing weaker signals, but you may also be subject to hearing more interference.

In general, you set your squelch to the lowest number possible that prevents hearing outside interference. You increase your squelch to a higher number if you begin hearing too much interference.

NOTE: This transceiver has 10 (0-9) available levels: 0 means that the squelch is turned off. From level 1 to level 9 you will have different levels of noise reduction. The higher the number, the higher the squelch threshold is set.

The steps for setting the squelch level are as follows:

1. Press the **[MENU]** key to enter the main menu and press the ▲/▼ key to enter the MENU 03.

2. Press the **[MENU]** key again to enter the **SQL** menu.

3. Press the ▲/▼ key to select the squelch level, and set the selection range to either 0 or 1-9

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

Backlight Intensity (DISPLAY LIGHT) - MENU 04

The LCD backlight is convenient for you to use at night or in a dark environment. The LCD backlight setting steps are as follows:

1. Press the **[MENU]** key to enter the main menu, and press the ▲/▼ key to enter the MENU 04.

2. Press the **[MENU]** key again to enter the **LIGHT** menu.

3. Press the ▲/▼ key to select the LCD backlight switch, and the selection range to ON/OFF/KEY

Note: ON-backlight will be always on; OFF-backlight will be always off; KEY-touch key will automatically activate the backlight. Without any key operation, the backlight will be automatically turned off after a delay of 5 seconds.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

Beep Tone (BEEP) - MENU 05

If you enable this function, every time a key is pressed, you will hear a beep tone. You can set it as follows:

1. Press the **[MENU]** key to enter the main menu and press the ▲/▼ key to enter the MENU 05.

2. Press the **[MENU]** key again to enter the **BEEP** menu.

3. Press the ▲/▼ key to select the BEEP switch, and set the selection range to either ON/OFF.

Note: ON - turn on the key prompt sound; OFF - turn off the key prompt sound.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

VOX (VOX) - MENU 06

Your radio has 5 VOX level settings: (OFF/1~5).

This function allows for hands-free conversations: just speak in the direction of the microphone and the communication will be automatically activated.

Note: That while the VOX setting is turned ON you cannot use the TDR setting. If you attempt to use the TDR setting, while the VOX is currently on, it will turn the VOX back to 0.

The steps for setting up VOX voice control transmission are as follows:

1. Press the **[MENU]** key to enter the main menu and press the ▲/▼ key to enter the MENU 06.

2. Press the **[MENU]** key again to enter the **VOX** menu.

3. Press the ▲/▼ key to select the VOX switch and sensitivity; and set the selection range to OFF/1~5.

Note: Level 5 has low sensitivity and should be used when there is high background noise; Level 1 has high sensitivity and should be used when there is low background noise. Selecting 'OFF' will turn off the VOX function. After the VOX function is turned on, the screen will display the 'VOX' icon.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

High/Low Power Selection (PWR) - MENU 07

High power is used for transmission in a long distance or complex environment, and low power is used for transmission in close range or open terrain. If you need to change the transmit power, follow these steps:

1. Press the **[MENU]** key to enter the main menu and press the ▲/▼ key to enter the MENU 07.

2. Press the **[MENU]** key again to enter the **PWR** menu.

3. Press the ▲/▼key to select the transmit power and select the desired range, HIGH/LOW.

NOTE: When set to low power transmission, the screen will display the 'L' icon.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

NOTE: In accordance with FCC Rules channels 8 through 14 are set and locked in the Low Power setting; and cannot be changed. However, channels 1 through 7 and 15 through 22 still have the capability to switch between the High/Low Power setting.

Dual Watch function (TDR) - MENU 08

This function is a dual-channel monitor scan, which can monitor the A and B segments in the normal mode. If a signal is received on the monitoring channel, the scan stays on this channel.

Note: While the TDR setting is ON, the VOX cannot be turned on as well. If you attempt to set the VOX, while the TDR setting is ON, it will automatically override the VOX back to 0.

The steps for setting the dual-frequency waiting function are as follows:

1. Press the **[MENU]** key to enter the main menu, press the ▲/▼ key to enter the MENU 08.

2. Press the **[MENU]** key again to enter the **TDR** menu.

3. Press the ▲/▼ key to select the dual watch function and set the selection range to ON/OFF.

Note: OFF - turns off the dual watch function; ON - turns on the dual watch function.

Turn on the dual watch function; the screen will display the 'S' icon.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

SC-ADD Scan channel add and delete - MENU 09

Add or delete a channel from the scanning list. The radio will scan the channels only assigned to the scanning list. The steps for setting this up are as follows:

1. Press the **[MENU]** key to enter the main menu and press the ▲/▼ key to enter the MENU 09, LCD should display as:

2. Press the **[MENU]** key again to enter the **SC-ADD** menu.

3. Press the ▲/▼ key to select the ADD/DELETE.

Note: ADD - adds the current channel to the scan list to turn on the current channel scan function; DELETE - deletes the current channel from the scan list to turn off the scan function of the current channel.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

Power Save (SAVE) - MENU 10

To save battery power, this function can turn off the transceiver when no signal is received.

To set the Power Save mode:

1. Press the **[MENU]** key to enter the main menu and press the ▲/▼ key to enter the MENU 10.

2. Press the **[MENU]** key again to enter the **SAVE** menu.

3. Press the ▲/▼ key to select the power saving mode and set the selection range to ON/OFF.

Note: ON-turns on the power saving mode; OFF-turns off the power saving mode.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

Time Out Timer (TOT) - MENU 11

The TOT function is used to prevent too long of a transmission. This function temporarily blocks transmissions if the radio has been used beyond the maximum time permitted. Once maximum time is reached, the radio will be forced in reception mode. The transmission time can be set in 6 levels with 30 seconds each (between 30 and 180 seconds).

To set a TOT level:

1. Press the **[MENU]** key to enter the main menu, press the ▲/▼ key to enter the MENU 11.

2. Press the **[MENU]** key again to enter the **TOT** menu.

3. Press the ▲/▼ key to select the transmission time limit, the selection range is
   OFF/30S/60S/90S/120S/150S/180S.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

Busy Channel Lockout (BCL) - MENU 12

When this function is active, if you select a busy channel and press the PTT, the transceiver will not transmit.

To set the BCL:

1. Press the **[MENU]** key to enter the main menu, press the ▲/▼ key to enter the MENU 12.

2. Press the **[MENU]** key again to enter the **BCLO** menu.

3. Press the ▲/▼ key to select the switch and select the range ON/OFF.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

Call Tone Select (RING)- MENU 13

This setting will allow you to transmit a unique call tone alert to identify your radio when you transmit messages. You can select from one of ten different call tone signals. To set a call tone:

1. Press the **[MENU]** key to enter the main menu, press the ▲/▼ key to enter the MENU 13.

2. Press the **[MENU]** key again to enter the **RING** menu.

3. Press the ▲/▼ key to select a different call tone. An example of each call tone will sound for 1.5 seconds.

Note: OFF - turns off the call reminder tone; during the selection of 1-10, you can listen to the call tone.

Before you initiate a voice intercom, you can press the [🎵📱] key to alert the listener.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

VOICE Selection (VOICE) - MENU 14

Your FRS-A1 radio has voice prompt function for channel and function operation, you can choose to switch voice function.

The setting steps are as follows:

1. Press the **[MENU]** key to enter the main menu, press the ▲/▼ key to enter the MENU 14.

2. Press the **[MENU]** key again to enter the **VOICE** menu.

3. Press the ▲/▼ to select the switch, and the selection range to either ON/OFF.

Note: OFF - turns off the voice prompt function; ON - turns on the voice prompt function.

After turning off the voice prompt function, there will be a beep prompt when you select a channel or menu setting.

4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

2.2CH DIS Channel display mode setting- MENU 15

The channel display mode of the walkie-talkie has a display mode of channel name, working frequency, and channel number, the set-up steps are as follows:

1. Press the **[MENU]** key to enter the main menu, press the ▲/▼ key to enter the MENU 15, LCD should display as:

2. Press the **[MENU]** key again to enter the **CH DIS** menu.

3. Press the ▲/▼ key to select FREQ/CH NUM/NAME.

Note: Note: FREQ - displays channel working frequency; CH NUM - displays channel number; NAME - displays channel alias.

After turning off the voice prompt function, there will be a beep prompt when you select a channel or menu setting.

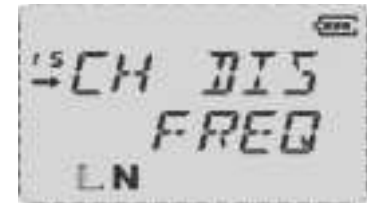4. Press the **[MENU]** key to confirm your selections.

5. Press the **[WX]** key to cancel your selections.

6. Press the **[PTT]** key to exit the menu mode.

2.3CH NAME Channel alias setting- MENU 16

The walkie talkie is allowed to set and display the channel alias, up to 6 digits, which can be letters or numbers. The set-up steps are as follows:

1. Press the **[MENU]** key to enter the main menu, press the ▲/▼ key to enter the MENU 16,
  LCD should display as:

2. Press the **[MENU]** key again to enter the **CHNAME** menu,
the first digit of the current alias flashes to remind you to edit it.

3. Press the ▲/▼ key to select A/B/C...X/Y/Z letters and 0-9 numbers. Press the **[MENU]** key to confirm.

4. The second digit flashes to indicate that editing is allowed. Press the / key to select A/B/C...X/Y/Z letters and 0-9 numbers.

Note: Press UP key to jump forward in sequence. Press the DOWN key to jump in reverse order.

5. Press the **[MENU]** key to confirm your selections.

6. Press the **[WX]** key to go back through each selection.

7. Press the **[PTT]** key to exit the menu mode.

Restore Factory Settings (RESET) - MENU 17

Your FRS-A1 radio has a reset function. To reset the radio, proceed as follows:

1. Press the **[MENU]** key to enter the main menu, press the ▲/▼ key to enter the **MENU 17**. The screen should show **RESET**.

2. Press the **[MENU]** key to confirm, and the radio will reset the parameters.

Appendix A. – Trouble shooting guide

Phenomena	Analysis	Solution
You cannot turn on the radio.	The battery may be installed improperly.	Remove and reattach the battery.
	The battery power may have run out.	Recharge or replace the battery.
	The battery may suffer from poor contact caused by dirty or damaged battery contacts.	Clean the battery contacts or replace the battery.
During receiving, the voice is weak or intermittent.	The battery voltage maybe low.	Recharge or replace the battery.
	The volume level may be low.	Increase the volume.
	The speaker may be blocked.	Clean the surface of the speaker.
You cannot communicate with other group members.	The frequency or signaling type maybe inconsistent with that of other members.	Verify that your TX/RX frequency and signaling type are correct.
	You may be too far away from other members.	Move towards other members.
You hear unknown voices or noise.	You may be interrupted by radios using the same frequency.	Change the frequency or adjust the squelch level.
	The radio in analog mode maybe set with no signaling.	Request your dealer to set signaling for the current channel to avoid interference
You are unable to hear anyone because of too much noise and hiss.	You may be too far away from other members.	Move towards other members.
	You may be in an unfavorable position. For example, your communication may be blocked by high buildings or blocked in an underground area.	Move to an open and flat area, restart the radio, and try again.
	It may be the result of external disturbance (such as electromagnetic interference).	Stay away from equipment that may cause interference.
The radio keeps transmitting.	VOX may be turned on or the headset is not installed in place.	Turn off the VOX function. Check that the headphones are in place.
You cannot use the keys.	The keypad may not work temporarily.	Restart the radio.
	The keypad may be locked. Look for the 🔒 symbol at the top of the screen.	Press and hold the 🔒 key to unlock.

Appendix B. - Technical Specifications

General

Frequency Range	FRS 462.5500 ~ 467.7250 MHz
Memory Channel	22 FRS Channels + 7 NOAA Weather
Operation Voltage	DC3.7V ±10%
Battery Capacity	900mAH (Li-Ion)
Frequency Stability	±2.5ppm
Operating Temperature	-20℃ to +60℃
Mode of Operation	Simplex
Antenna Impedance	50ohm

Transmitter Part

RF Output Power	FRS 2W/0.5W
FM Modulation	11K0F3E@12.5KHz
Adjacent Channel Power	60dB @ 12.5 KHz
Transmission current	≤1200mA

Receiver Part

Receive Sensitivity	0.25μV (12dB SINAD)
Adjacent Channel Selectivity	≥55dB@12.5KHz
Inter Modulation and Rejection	≥55dB@12.5KHz
Conducted Spurious Emission	≤-57dB@12.5KHz
Rated Audio Power Output	0.5W @8ohms
Receive current	≤350mA
Rated Audio Distortion	≤5%

NOTE: All specifications may be modified without prior notice or liability. Thank you.

Appendix C. – FRS Frequency Chart(MHz)

CH.No	CH.Freq.	CH.No	CH.Freq.
1	462.5625	12	467.6625
2	462.5875	13	467.6875
3	462.6125	14	467.7125
4	462.6375	15	462.5500
5	462.6625	16	462.5750
6	462.6875	17	462.6000
7	462.7125	18	462.6250
8	467.5625	19	462.6500
9	467.5875	20	462.6750
10	467.6125	21	462.7000
11	467.6375	22	462.7250

Appendix D. – CTCSS Table

CTCSS CHART (Hz)

Number	Frequency	Number	Frequency	Number	Frequency	Number	Frequency	Number	Frequency
1	67.0	2	69.3	3	71.9	4	74.4	5	77.0
6	79.7	7	82.5	8	85.4	9	88.5	10	91.5
11	94.8	12	97.4	13	100	14	103.5	15	107.2
16	110.9	17	114.8	18	118.8	19	123.0	20	127.3
21	131.8	22	136.5	23	141.3	24	146.2	25	151.4
26	156.7	27	159.8	28	162.2	29	165.5	30	167.9
31	171.3	32	173.8	33	177.3	34	179.9	35	183.5
36	186.2	37	189.9	38	192.8	39	196.6	40	199.5
41	203.5	42	206.5	43	210.7	44	218.1	45	225.7
46	229.1	47	233.6	48	241.8	49	250.3	50	254.1

Appendix E. – DCS Table

DCS CODE LIST

Number	Code	Number	Code	Number	Code	Number	Code	Number	Code
1	D023N	2	D025N	3	D026N	4	D031N	5	D032N
6	D036N	7	D043N	8	D047N	9	D051N	10	D053N
11	D054N	12	D065N	13	D071N	14	D072N	15	D073N
16	D074N	17	D114N	18	D115N	19	D116N	20	D122N
21	D125N	22	D131N	23	D132N	24	D134N	25	D143N
26	D145N	27	D152N	28	D155N	29	D156N	30	D162N
31	D165N	32	D172N	33	D174N	34	D205N	35	D212N
36	D223N	37	D225N	38	D226N	39	D243N	40	D244N
41	D245N	42	D246N	43	D251N	44	D252N	45	D255N
46	D261N	47	D263N	48	D265N	49	D266N	50	D271N
51	D274N	52	D306N	53	D311N	54	D315N	55	D325N
56	D331N	57	D332N	58	D343N	59	D346N	60	D351N
61	D356N	62	D364N	63	D365N	64	D371N	65	D411N
66	D412N	67	D413N	68	D423N	69	D431N	70	D432N
71	D445N	72	D446N	73	D452N	74	D454N	75	D455N
76	D462N	77	D464N	78	D465N	79	D466N	80	D503N
81	D506N	82	D516N	83	D523N	84	D526N	85	D532N
86	D546N	87	D565N	88	D606N	89	D612N	90	D624N
91	D627N	92	D631N	93	D632N	94	D645N	95	D654N

96	D662N	97	D664N	98	D703N	99	D712N	100	D723N
101	D731N	102	D732N	103	D734N	104	D743N	105	D754N
106	D023I	107	D025I	108	D026I	109	D031I	110	D032I
111	D036I	112	D043I	113	D047I	114	D051I	115	D053I
116	D054I	117	D065I	118	D071I	119	D072I	120	D073I
121	D074I	122	D114I	123	D115I	124	D116I	125	D122I
126	D125I	127	D131I	128	D132I	129	D134I	130	D143I
131	D145I	132	D152I	133	D155I	134	D156I	135	D162I
136	D165I	137	D172I	138	D174I	139	D205I	140	D212I
141	D223I	142	D225I	143	D226I	144	D243I	145	D244I
146	D245I	147	D246I	148	D251I	149	D252I	150	D255I
151	D261I	152	D263I	153	D265I	154	D266I	155	D271I
156	D274I	157	D306I	158	D311I	159	D315I	160	D325I
161	D331I	162	D332I	163	D343I	164	D346I	165	D351I
166	D356I	167	D364I	168	D365I	169	D371I	170	D411I
171	D412I	172	D413I	173	D423I	174	D431I	175	D432I
176	D445I	177	D446I	178	D452I	179	D454I	180	D455I
181	D462I	182	D464I	183	D465I	184	D466I	185	D503I
186	D506I	187	D516I	188	D523I	189	D526I	190	D532I
191	D546I	192	D565I	193	D606I	194	D612I	195	D624I
196	D627I	197	D631I	198	D632I	199	D645I	200	D654I
201	D662I	202	D664I	203	D703I	204	D712I	205	D723I
206	D731I	207	D732I	208	D734I	209	D743I	210	D754I

■ FCC Compliance Statements

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.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. Do not use this device when the antenna shows obvious damages.
Hold this transmitter approximately 25 mm away from your face and speak normal with the antenna pointed up and away. Use the supplied belt clip for body-worn configuration as other accessories may not comply to the limits.

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

■ Licensing Information

Use our radio in USA is subject to the rules & regulations of FCC. Changes or modifications not expressly approved by our may void the user authority granted by the FCC to operate this radio and should not be made. To comply with FCC requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services. Replacement of any transmitter component (crystal, semiconductor, etc) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

Note: Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

Important: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device. Your radio is set up to transmit a regulated signal on an assigned frequency. It is against the law to alter or adjust the settings inside the radio to exceed those limitations. Any adjustments to your radio must be made by qualified technicians.

Disclaimer

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