

# TWO-WAY RADIO

## User' s Manual



This package is  
100% recyclable

## FCC WARNING

### ■FCC Compliance Statements:

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two 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 the user's authority to operate the equipment.

**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 qualifiedtechnicians.

## CE WARNING:

Use the two way radio in the environment with the temperature between 0-40°C,otherwise,it may damage your two way radio . It can be operating under 2000m.

Hereby, Our declare that the radio equipment type two way radio is compliance with Directive 2014/53/EU. For this device,Head SAR and Body SAR was performed with the device configured in the positions according to EN62209-2:2010,and face-up SAR was performed with the device 25mm from the phantom,and Body SAR was performed with the device 0mm from the phantom. Body SAR was also performed with the headset and belt clip attached and without.

Thank you for purchasing this radio. We believe this easy-to-use radio will provide reliable and dependable communication. We know that you will be pleased with the quality and features of this product.

## PRECAUTIONS BEFORE USING

This radio incorporates excellent design and the latest advanced technology. The following advice will give you important information about how to operate this portable radio safely.

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Please put the radio and accessories where the children cannot reach.

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Maintenance can only be performed by professional technicians.

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Please use the standard battery pack and charger in order not to destroy the radio.

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Please use the standard antenna, in order not to shorten the communication distance.

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Do not expose the radio to sunlight for a long period of time, nor put it near the heat.

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Do not put it in extreme dust or wet environment.

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Do not clean the radio with fierce chemical products, cleaning agents or strong washing agents.

---

Do not transmit when the antenna is not installed.

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If you find bad smell or smog, please turn off the radio immediately. And take the battery off the radio, then contact with the agent.

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## Charging Notes:

- Battery packs are not charged when they are shipped. Charging them before use.
- Initially charging the battery pack after purchase or extended storage (longer than 2 months) will not bring the battery pack to its greatest capacity or its normal charge, which can be done only after repeated charging and discharging two or three times.
- Do not use the radio during charging. This will affect the normal charging of the battery pack, causing damage to the radio and accidents.
- After the battery pack is fully charged, please take it out of the charger-base.
- Although using the right charging ways, but the battery does not gain capacity or using time, it means the battery life is near the end, please change a new battery pack.
- Please adopt original factory battery pack and charger. They are available with your local agent.
- If you have question about non original factory battery pack and accessory, please do not use them. Or it will cause dangerous accidents.

## Charger-Base Instructions:

- Plug the lithium battery or radio equipped with the lithium battery into the charger base, and ensure that the battery is in normal contact with the charging base.
- The green light is steady on when the charging base is empty; When the red light is on, charging begins; When full, the green light is steady on.
- After the lithium battery pack is fully charged, take it out of the charger.

**Note:** 1. When the radio is charging (base-charger /Type-C charging), it is forbidden to transmit so as to avoid damage to the radio and accidental danger.  
2. When the radio is charged (base-charger /Type-C charging), the receiving effect will be affected.  
3. Do not short circuit the battery terminal or discard the battery in the fire.  
4. Do not remove the battery pack cover without permission.

## CONTENTS

|                                                         |    |
|---------------------------------------------------------|----|
| Supplied Accessories .....                              | 01 |
| Radio Diagram .....                                     | 02 |
| Key .....                                               | 03 |
| 1.PTT Key (Transmitting Key) .....                      | 03 |
| 2.Programmable Side Keys and Function Description ..... | 03 |
| 3.Description of Operation Keys .....                   | 04 |
| LCD Display .....                                       | 05 |
| Menu Information (GENERAL) .....                        | 06 |
| Menu Information (CHANNEL) .....                        | 07 |
| Menu Information (WORK) .....                           | 08 |
| Menu Information (VFO SCAN) .....                       | 09 |
| Menu Information (MR SCAN) .....                        | 10 |
| Menu Information (FREQ SCAN)(DTMF) .....                | 11 |
| Menu Information (5TONE) .....                          | 12 |
| Menu Information (NOAA) (HOSTINFO) .....                | 13 |
| Common Operations Introduction (1)~(4) .....            | 14 |
| Common Operations Introduction (5)~(8) .....            | 15 |
| Common Operations Introduction (9)~(11) .....           | 16 |
| Common Operations Introduction (12)~ (13) .....         | 17 |
| Common Operations Introduction (14)~(14.1)(14.2) .....  | 18 |
| Common Operations Introduction (15)~ (16) .....         | 19 |
| Common Operations Introduction (17)~(18) .....          | 20 |
| Common Operations Introduction (19)~(22) .....          | 21 |
| Common Operations Introduction (23) .....               | 22 |
| Specifications (General specification) .....            | 23 |
| Specifications (Transmitting) .....                     | 24 |
| Specifications (Receiving) .....                        | 25 |

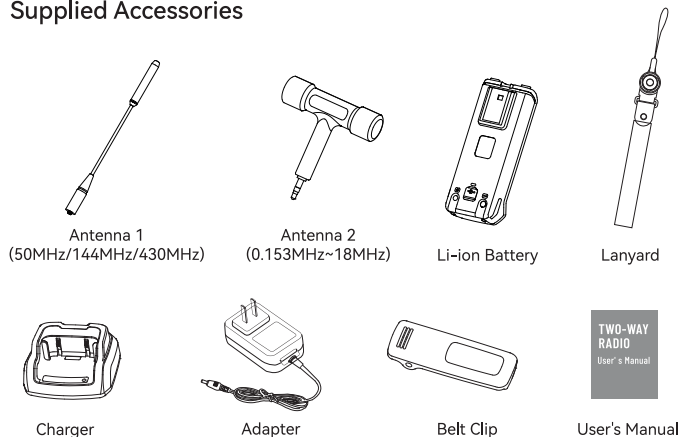
## Complete Radio Accessories

Carefully unpack the portable radio. We suggest that you check the following items before you throw away the packing materials.

### Accessory List

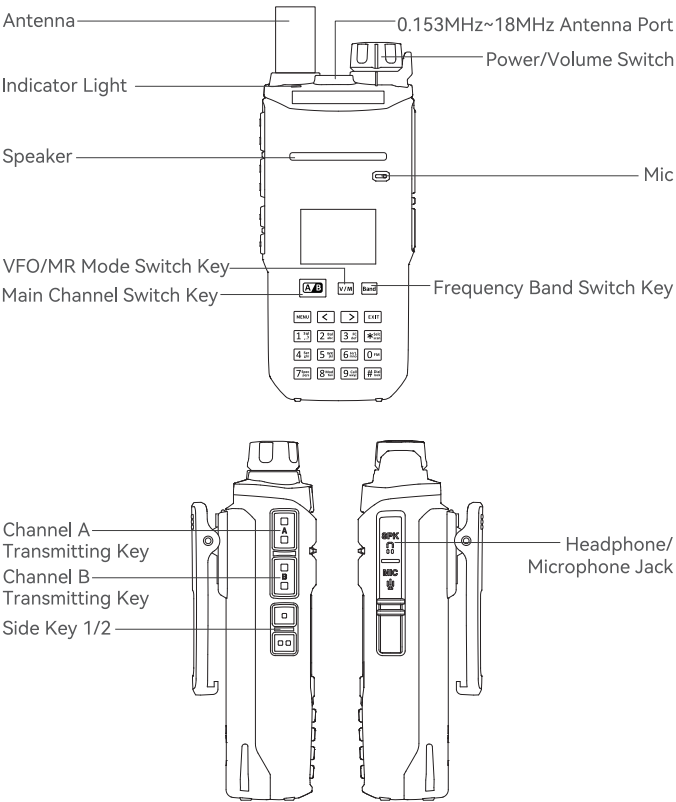
| Item               | Qty |
|--------------------|-----|
| Two Way Radio Body | 1   |
| Antenna            | 2   |
| Li-ion Battery     | 1   |
| Belt Clip          | 1   |
| Charger            | 1   |
| Adapter            | 1   |
| User's Manual      | 1   |
| Lanyard            | 1   |

### Supplied Accessories





## Radio Diagram



## Key Operation Instructions (1)

### PTT Key

- Switch key for transmitting and receiving, press this key when transmitting, and speak into the microphone; Release this key when receiving.  
PTT1: Channel A transmitting key  
PTT2: Channel B transmitting key

### Side Key

- Initial Function:  
Side key 1: Short press: monitor; Long press: 1750Hz.  
Side key 2: Short press: flashlight; Long press: emergency alarm.

The functions that can be set by short/long press of the side keys are listed in the table below:

|                       |                                                                                                                                                                                 |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning               | Press to start the emergency alarm, according to the programming software set the working mode alarm.                                                                           |
| Transmit Output Power | Allows users to switch between high and low power.                                                                                                                              |
| Monitor               | Allows users to turn monitor on or off. Ignore all received signaling and monitor all activities in the channel. You can press this key to monitor noise and adjust the volume. |
| FM Radio              | Turn on/off FM radio mode.                                                                                                                                                      |
| Scan                  | Allows the user to turn on/off scan function.                                                                                                                                   |
| VOX                   | Allows the user to turn on/off the VOX function for the channel.                                                                                                                |
| Transmitting 1750     | Turn on 1750 continuous transmitting.                                                                                                                                           |
| Flashlight            | Turn on/ off flashlight.                                                                                                                                                        |

## Key Operation Instructions (2)

### A/B Key

- In the main interface, switch the main and sub channel, and the channel displayed with ► is the main channel.

### V/M Key

- In the main interface, switch frequency mode and channel mode.

### Band Key

- Switch frequency bands in VFO mode.

## Number Key Instructions:

|   |                                                                                                                                |
|---|--------------------------------------------------------------------------------------------------------------------------------|
| 0 | Listen to FM radio.                                                                                                            |
| 1 | Short press to adjust the squelch SQL level, and long press to adjust the frequency step value.                                |
| 2 | Short press to adjust the volume of channels A and B, and long press to change the channel display mode.                       |
| 3 | Short press to start the one-key frequency matching, and long press to turn on/off the dual receive function.                  |
| 4 | Short press to start the CTCSS/DCS detection, and long press to turn on/off the noise reduction function.                      |
| 5 | Short press to listen to the weather channel (channel A is valid), long press to turn on and off the voice-change function.    |
| 6 | Short press to adjust the transmit power, and long press to turn on/off the VOX function.                                      |
| 7 | Short press to start the spectrum analyzer function, and long press to turn on/off the reverse frequency talk around function. |
| 8 | Short press to select the receiving modulation mode (FM,AM,LSB,USB,CW), and long press to store channel.                       |
| 9 | Short press to jump to the one key call channel, long press to switch to NOAA scanning mode (valid only on NOAA channel).      |
| * | Short press to enter the dialing call interface, long press to turn on the scanning function.                                  |
| # | Short press to enter the frequency or channel number adjustment interface, long press to turn on/off the keypad lock.          |

## LCD Display

You could check the different designated symbols in the LCD. The following chart helps you to understand them.

|           |                                                                                                                                                                                                                                                                                                               |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | Signal Strength. The smaller the number of grids, the weaker the signal.                                                                                                                                                                                                                                      |
| HML       | Transmitting output power indicator. The current transmitting output power is high(H), medium(M) or low(L).                                                                                                                                                                                                   |
| CT DCS    | CT will appear when current code is CTCSS code. DCS will appear when current code is DCS code.                                                                                                                                                                                                                |
|           | Voice prompt is on.                                                                                                                                                                                                                                                                                           |
| N         | The radio work in narrow band mode.                                                                                                                                                                                                                                                                           |
| VOX       | Indicates that the VOX function is enabled, the radio will automatically start transmitting on the main channel when the microphone detects a certain sound level. You can adjust VOX sensitivity in the menu. If you press the PTT key, VOX will turn off, and the radio will switch to manual transmission. |
| + -       | + It means transmitting frequency equals receiving frequency plus a frequency deviation.<br>- It means transmitting frequency equals receiving frequency minus a frequency deviation.                                                                                                                         |
| DTMF TONE | DTMF or 5-tone signal decoding is on.                                                                                                                                                                                                                                                                         |
| DR        | Turn on dual receive.                                                                                                                                                                                                                                                                                         |
|           | Keypad locking.                                                                                                                                                                                                                                                                                               |
|           | Display of the current battery. When the battery is nearly exhausted, it shows . It means the battery needs to charge and the radio will send low power alarm prompt regularly.                                                                                                                               |
| ►         | Main channel indicates. All operations are aimed at main channel.                                                                                                                                                                                                                                             |
| SCR       | The voice encryption of this channel is on.                                                                                                                                                                                                                                                                   |
| R         | Talk around mode. Receive and transmit frequency reverse.                                                                                                                                                                                                                                                     |
| DN        | Noise reduction sign.                                                                                                                                                                                                                                                                                         |
| MV        | Change of voice sign.                                                                                                                                                                                                                                                                                         |
| NS        | NOAA automatic scan.                                                                                                                                                                                                                                                                                          |
| SAME      | Turn on NOAA SAME decoding.                                                                                                                                                                                                                                                                                   |
| S         | Power saving.                                                                                                                                                                                                                                                                                                 |
| SC        | Scan.                                                                                                                                                                                                                                                                                                         |
| RX        | Receiving.                                                                                                                                                                                                                                                                                                    |
| TX        | Transmitting.                                                                                                                                                                                                                                                                                                 |

## Menu Information

Press the MENU key to enter the main menu. Press the Left/Right keys or directly enter a number to select the main MENU item, and press the Menu key to confirm the selection, and press EXIT to return to the Upper Menu.

| Item Name | No.  | Menu Function   | Function Description                                                                         |
|-----------|------|-----------------|----------------------------------------------------------------------------------------------|
| GENERAL   | 1-1  | SAVE            | (Off, 1:1,1:2,1:3,1:4), power saving ratio.                                                  |
|           | 1-2  | ABR             | Automatic Backlight Control (Off, 1-5, 10, 15, 20, 25, 30s to turn off backlight)            |
|           | 1-3  | BEEP            | Key tone switch (off, on)                                                                    |
|           | 1-4  | VOICE           | Voice prompt (off, on)                                                                       |
|           | 1-5  | MDF             | Channel Display Mode (Channel Frequency, Channel No., Channel Name)                          |
|           | 1-6  | AUTOLK          | Automatic Keyboard Lock (Off, On)                                                            |
|           | 1-7  | MIC             | MIC Sensitivity (1-5: Level 1-5)                                                             |
|           | 1-8  | PONMSG          | Power On Display Interface (Full Display, Custom, Voltage, Image, None)                      |
|           | 1-9  | DENOISE         | Voice Noise Reduction (Off, 1-6: Level 1 to 6), reduces background noise                     |
|           | 1-10 | MAGICV          | Magic Voice Selection (Off, 1-5: Level 1 to 5)                                               |
|           | 1-11 | SHOW RESET TIME | 8-200s, no operation timeout and then automatically exit the menu settings                   |
|           | 1-12 | SKEY1_S         | Side key 1 short press function selection.                                                   |
|           | 1-13 | SKEY1_L         | Side key 1 long press function selection.                                                    |
|           | 1-14 | SKEY2_S         | Side key 2 short press function selection.                                                   |
|           | 1-15 | SKEY2_L         | Side key 2 long press function selection.                                                    |
|           | 1-16 | RESET           | Reset (VFO: reset parameters excluding channel parameters; full reset: reset all parameters) |

## Menu Information

| Item Name | No.  | Menu Function | Function Description                                                                                                                                                                                    |
|-----------|------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CHANNEL   | 2-1  | SQL           | Squelch level 0-9.                                                                                                                                                                                      |
|           | 2-2  | STEP          | Step Frequency (100Hz, 500Hz, 1K, 1.5K, 2K, 2.5K, 5K, 6.25K, 8.33K, 9K, 10K, 12.5K, 15K, 20K, 25K)100Hz and 500Hz can only be set in F1, F2 and F3.                                                     |
|           | 2-3  | TXP           | Transmit Power (High, Medium, Low)                                                                                                                                                                      |
|           | 2-4  | TR CTC/DCS    | CTCSS/DCS codec, simultaneously configured to receive and transmit CTCSS/DCS (none, CTCSS,DCSN,DCSI)                                                                                                    |
|           | 2-5  | R CTC/DCS     | CTCSS/DCS decoding, configured to receive CTCSS/DCS (none, CTCSS,DCSN,DCSI)                                                                                                                             |
|           | 2-6  | T CTC/DCS     | CTCSS/DCS coding, configured to send CTCSS/DCS (none, CTCSS,DCSN,DCSI)                                                                                                                                  |
|           | 2-7  | SFT-D         | Offset frequency direction (none: transmit frequency = receive frequency; + : transmit frequency = receive frequency + offset frequency; - : transmit frequency = receive frequency - offset frequency) |
|           | 2-8  | OFFSET        | Offset frequency (0-999.9999M)                                                                                                                                                                          |
|           | 2-9  | W/N           | Bandwidth configuration (wideband: 25 KHz, narrowband: 12.5 KHz)                                                                                                                                        |
|           | 2-10 | MW/SW-BW      | Medium-wave and short-wave channel bandwidth configuration: 2KHz, 2.5KHz, 3KHz, 3.5KHz, 4KHz, 4.5KHz, 5KHz, 5.5KHz                                                                                      |
|           | 2-11 | SCR           | Encrypted calls (off, 1-10)                                                                                                                                                                             |
|           | 2-12 | BCL           | Busy channel lock (off, on)                                                                                                                                                                             |
|           | 2-13 | DEMOMD        | Channel modulation mode: FM, AM, LSB, USB                                                                                                                                                               |
|           | 2-14 | SIGNAL        | Selective call code type (DTMF, 5-tone)                                                                                                                                                                 |
|           | 2-15 | PTT-ID        | DTMF PTT-ID transmit mode (off: no transmit, start transmit: call start transmit up code, end transmit: call end transmit down code, always: both transmit)                                             |
|           | 2-16 | DECODE        | Signaling decoding enable signal (off, on)                                                                                                                                                              |

## Menu Information

| Item Name | No.  | Menu Function | Function Description                                                                                                                                               |
|-----------|------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | 2-17 | SEARCH LIST   | Selecting the scan list for this channel allows all channels in the list to be scanned when scanning is initiated on this channel                                  |
|           | 2-18 | MEM-CH        | Store channel (# key to switch input method, select channel and input channel name through left/right key and number key), click MENU key to complete the storage. |
|           | 2-19 | DEL-CH        | Delete the channel (select the channel by the left/right key or number key), click the MENU key to complete the deletion.                                          |
| WORK      | 3-1  | VOX           | VOX setting (off, 1-10; highest sensitivity at level 1)                                                                                                            |
|           | 3-2  | DUAL RX       | Dual receive switch (off, on)                                                                                                                                      |
|           | 3-3  | TOT           | Maximum time for continuous transmit, (off, 1-10 minutes), timeout to end transmit and alarm prompts.                                                              |
|           | 3-4  | STE           | Tail tone elimination (off,on)                                                                                                                                     |
|           | 3-5  | RP-STE        | Repeater confirmation tone (off, 100-1000ms)                                                                                                                       |
|           | 3-6  | QUICK CALL    | Setting the shortcut channel (select channels by left/right and number keys.)                                                                                      |
|           | 3-7  | ROGER         | Transmit end tone (none: no end tone, beep, frog, or user-defined voice 1-5), and download the customized voice through the programming software.                  |
|           | 3-8  | AL-MOD        | Alarm mode (SITE: local alarm; TONE: transmit alarm signal + local alarm)                                                                                          |
|           | 3-9  | SBAR          | Signal strength bar display switch (off, on), display received signal field strength.                                                                              |
|           | 3-10 | MWSW AGC      | Medium wave, short wave automatic gain control (on, off), improve the reception of strong signals.                                                                 |
|           | 3-11 | CW PITCH FREQ | Under CW mode frequency deviation (400-1500Hz)                                                                                                                     |

## Menu Information

| Item Name | No.  | Menu Function | Function Description                                                                                                                                             |
|-----------|------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VFO SCAN  | 4-1  | SC-REV        | Search recovery mode (TO: continue scanning after 5s; CO: wait for the signal to disappear and continue scanning; SE: stop scanning after receiving the signal.) |
|           | 4-2  | F1 START FREQ | VFO Mode – F1 band scan start frequency: 0.153-1.8MHz                                                                                                            |
|           | 4-3  | F1 END FREQ   | VFO Mode – F1 band scan stop frequency: 0.153-1.8MHz                                                                                                             |
|           | 4-4  | F2 START FREQ | VFO Mode – F2 band scan start frequency: 1.8-18MHz                                                                                                               |
|           | 4-5  | F2 END FREQ   | VFO Mode – F2 band scan stop frequency: 1.8-18MHz                                                                                                                |
|           | 4-6  | F3 START FREQ | VFO Mode – F3 band scan start frequency: 18-32 MHz                                                                                                               |
|           | 4-7  | F3 END FREQ   | VFO Mode – F3 band scan stop frequency: 18-32 MHz                                                                                                                |
|           | 4-8  | F4 START FREQ | VFO Mode – F4 band scan start frequency: 32-76 MHz                                                                                                               |
|           | 4-9  | F4 END FREQ   | VFO Mode – F4 band scan stop frequency: 32-76 MHz                                                                                                                |
|           | 4-10 | F5 START FREQ | VFO Mode – F5 band scan start frequency: 108-136 MHz                                                                                                             |
|           | 4-11 | F5 END FREQ   | VFO Mode – F5 band scan stop frequency: 108-136 MHz                                                                                                              |
|           | 4-12 | F6 START FREQ | VFO Mode – F6 band scan start frequency: 136-174 MHz                                                                                                             |
|           | 4-13 | F6 END FREQ   | VFO Mode – F6 band scan stop frequency: 136-174 MHz                                                                                                              |
|           | 4-14 | F7 START FREQ | VFO Mode – F7 band scan start frequency: 174-350 MHz                                                                                                             |
|           | 4-15 | F7 END FREQ   | VFO Mode – F7 band scan stop frequency: 174-350 MHz                                                                                                              |
|           | 4-16 | F8 START FREQ | VFO Mode – F8 band scan start frequency: 350-400 MHz                                                                                                             |

## Menu Information

| Item Name | No.  | Menu Function     | Function Description                                                                                                                                                                                                                                                                                            |
|-----------|------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | 4-17 | F8 END<br>FREQ    | VFO Mode – F8 band scan stop frequency:<br>350–400 MHz                                                                                                                                                                                                                                                          |
|           | 4-18 | F9 START<br>FREQ  | VFO Mode – F9 band scan start frequency:<br>400–470 MHz                                                                                                                                                                                                                                                         |
|           | 4-19 | F9 END<br>FREQ    | VFO Mode – F9 band scan stop frequency:<br>400–470 MHz                                                                                                                                                                                                                                                          |
|           | 4-20 | F10 START<br>FREQ | VFO Mode – F10 band scan start frequency:<br>470–580 MHz                                                                                                                                                                                                                                                        |
|           | 4-21 | F10 END<br>FREQ   | VFO Mode – F10 band scan stop frequency:<br>470–580MHz                                                                                                                                                                                                                                                          |
|           | 4-22 | F11 START<br>FREQ | VFO Mode – F11 band scan start frequency:<br>580–760 MHz                                                                                                                                                                                                                                                        |
|           | 4-23 | F11 END<br>FREQ   | VFO Mode – F11 band scan stop frequency:<br>580–760 MHz                                                                                                                                                                                                                                                         |
|           | 4-24 | F12 START<br>FREQ | VFO Mode – F12 band scan start frequency:<br>760–1000MHz                                                                                                                                                                                                                                                        |
|           | 4-25 | F12 END<br>FREQ   | VFO Mode – F12 band scan stop frequency:<br>760–1000MHz                                                                                                                                                                                                                                                         |
|           | 4-26 | F13 START<br>FREQ | VFO Mode – F13 band scan start frequency:<br>1000–1160MHz                                                                                                                                                                                                                                                       |
|           | 4-27 | F13 END<br>FREQ   | VFO Mode – F13 band scan stop frequency:<br>1000–1160MHz                                                                                                                                                                                                                                                        |
| MR SCAN   | 5-1  | SEL LIST          | Select Scan List to Edit<br>(1–32, corresponding to 32 scan lists)                                                                                                                                                                                                                                              |
|           | 5-2  | EDIT LIST         | View and Edit Current Scan List<br>Current Channel: The currently displayed<br>MR channel<br>P1 XXXX: Priority Scan Channel 1<br>P2 XXXX: Priority Scan Channel 2<br>Add Channel to Scan List – Channels can be<br>added to the scan list. Any channel can be<br>removed from the scan list using the MENU key. |

## Menu Information

| Item Name    | No. | Menu Function  | Function Description                                                                                                                                                                    |
|--------------|-----|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | 5-3 | PRO 1 CHAN     | Select Priority Scan Channel 1 for Current<br>List – Choose priority scan channel 1 from<br>the scan list.                                                                              |
|              | 5-4 | PRO 2 CHAN     | Select Priority Scan Channel 2 for Current<br>List – Choose priority scan channel 2 from<br>the scan list.                                                                              |
|              | 5-5 | EDIT NAME      | Edit the current scan list name.                                                                                                                                                        |
| FREQ<br>SCAN | 6-1 | TIMEOUT        | Edit Frequency Measurement Maximum<br>Duration (8–32s) – If no valid signal is<br>detected within the timeout period, a<br>failure notification will be displayed.                      |
|              | 6-2 | DECODE<br>MODE | Select the CTCSS,DCS detection mode. Normal<br>mode: detects standard CTCSS/DCS. Expert<br>mode: cracks non-standard CTCSS,DCS.<br>Self-learn mode: crack non-standard<br>inverter DCS. |
|              | 6-3 | DCS MODE       | When the detection mode is Expert Mode,<br>select DCS 23bit or 24bit.                                                                                                                   |
|              | 6-4 | DET THRES      | Set the number of detection times to determine<br>the validity of the CTCSS/DCS.                                                                                                        |
| DTMF         | 7-1 | LOCAL ID       | Identity code, DTMF communication local ID.                                                                                                                                             |
|              | 7-2 | UPCODE         | DTMF up code                                                                                                                                                                            |
|              | 7-3 | DWCODE         | DTMF down code                                                                                                                                                                          |
|              | 7-4 | DELIMITER      | Separation code                                                                                                                                                                         |
|              | 7-5 | GRPCODE        | Group call code                                                                                                                                                                         |
|              | 7-6 | SIDE TONE      | DTMF sidetone switch (Off, On)                                                                                                                                                          |
|              | 7-7 | DECODE RSP     | DTMF decoding response (Off, Ring, Auto<br>response, Ring+Auto reply)                                                                                                                   |
|              | 7-8 | HOLD TIME      | DTMF auto reset time (5s–60s)                                                                                                                                                           |
|              | 7-9 | PRE TIME       | DTMF pre-carrier time before sending<br>code (30–990ms)                                                                                                                                 |

## Menu Information

| Item Name | No.  | Menu Function | Function Description                                                                                                                                                                       |
|-----------|------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5TONE     | 7-10 | 1ST TIME      | Duration of sending DTMF first code (30~990ms)                                                                                                                                             |
|           | 7-11 | *# TIME       | Duration of sending special characters (30~990ms)                                                                                                                                          |
|           | 7-12 | ON TIME       | Duration of sending normal characters (30~990ms)                                                                                                                                           |
|           | 7-13 | OFF TIME      | Time between sending two codes (30~990ms)                                                                                                                                                  |
|           | 7-14 | SEL CONTACT   | Select the contact for DTMF call, (select the contact by left/right key and number key, click MENU key to select it will jump back to the main interface, then you can call it directly)   |
|           | 7-15 | EDIT CONTACT  | Add, edit contact                                                                                                                                                                          |
|           | 7-16 | DEL CONTACT   | Delete contact                                                                                                                                                                             |
|           | 8-1  | LOCAL ID      | Identity code, 5TONE Communication local ID                                                                                                                                                |
|           | 8-2  | UPCODE        | 5TONE Upline code                                                                                                                                                                          |
|           | 8-3  | DWCODE        | 5TONE Downline code                                                                                                                                                                        |
|           | 8-4  | REPEAT TONE   | Repeat tone                                                                                                                                                                                |
|           | 8-5  | GRPCODE       | Group call code                                                                                                                                                                            |
|           | 8-6  | SIDE TONE     | 5TONE Side tone switch (Off, On)                                                                                                                                                           |
|           | 8-7  | DECODE RSP    | 5TONE Decode response (Off, Ring, Auto response, Ring+Auto reply).                                                                                                                         |
|           | 8-8  | HOLD TIME     | 5TONE Auto reset time (0s~60s)                                                                                                                                                             |
| 5TONE     | 8-9  | PRE TIME      | 5TONE Pre-carrier time before sending code (30~990ms)                                                                                                                                      |
|           | 8-10 | 1ST TIME      | Duration of sending 5TONE first code (30~990ms)                                                                                                                                            |
|           | 8-11 | ON TIME       | Length of time to send normal characters (30~990ms)                                                                                                                                        |
|           | 8-12 | OFF TIME      | Time between sending two codes (30~990ms)                                                                                                                                                  |
|           | 8-13 | SEL CONTACT   | Select the contact for 5TONE call, (select the contact by left/right key and number key, click MENU key to select it will jump back to the main interface, then you can call it directly). |
|           | 8-14 | EDIT CONTACT  | Add, edit contact                                                                                                                                                                          |

## Menu Information

| Item Name | No.  | Menu Function | Function Description                                                                                                                                                                                                   |
|-----------|------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | 8-15 | DEL CONTACT   | Delete contact                                                                                                                                                                                                         |
|           | 8-16 | STANDARD      | Standard selection (EIA, EEA, CCIR, ZVEI1, ZVEI2, User-defined)                                                                                                                                                        |
|           | 8-17 | SYM FREQ      | View the frequencies corresponding to all 5TONE codes.                                                                                                                                                                 |
|           |      |               |                                                                                                                                                                                                                        |
| NOAA      | 9-1  | SCAN          | NOAA Channel auto scan switch (Auto scan, Manual scan)                                                                                                                                                                 |
|           | 9-2  | SQL           | NOAA channel squelch level                                                                                                                                                                                             |
|           | 9-3  | DECODE        | Decoding mode (1050Hz, SAME).                                                                                                                                                                                          |
|           | 9-4  | EVENT MODE    | Event mode (default, all on, all off, user-defined).                                                                                                                                                                   |
|           | 9-5  | LOC MODE      | Location mode (Single Address, Multi-Address, Any Address, where Single Address and Multi-Address are user-defined to select the address list)                                                                         |
|           | 9-6  | EVENT SET     | Event setting, use MENU key to enter the next level menu to view and modify the on and off of each event (only menu 9~4 in user-defined mode can modify the on and off of the event).                                  |
|           | 9-7  | LOC SET       | Location setting, use MENU key to enter the next level menu to view and modify the address list of the current monitor (only in single address and multi-address mode can modify and delete the location information). |
|           | 9-8  | EVENT LIST    | Event list, use the MENU key to enter the next level menu to view the list of received alarm events. The MENU key can be used to view the event information in each event menu.                                        |
| HOSTINFO  | 10-1 | HOST NAME     | View the local user name.                                                                                                                                                                                              |
|           | 10-2 | LOGO1         | Edit the power-on interface LOGO1 character.                                                                                                                                                                           |
|           | 10-3 | LOGO2         | Edit the power-on interface LOGO2 character.                                                                                                                                                                           |
|           | 10-4 | VERSION       | View software version                                                                                                                                                                                                  |

## Common Operations Introduction

### (1) Switching Main Channel

Press the A/B key to switch the main channel up or down, ► Indicated main channel.

### (2) Single/Dual Receive Switching

Long press number key 3 to switch, the display shows DR for dual receive, or when menu 3-02 selects on dual receive, short press number key 2 to adjust the volume level of channel A and channel B with the left/right keys.

**Note:** The dual receive function cannot be used when channel A is operating in the F1, F2, and F11 bands.

### (3) Frequency/Channel Mode Switching

In the main interface, press the VFO/MR key to switch between frequency mode and channel mode.

**VFO Mode:** Press the left/right keys to adjust frequency by frequency step, or short press the # key and use the number keys to input the receive frequency.

**Channel Mode:** Press the left/right keys to select the channel by frequency step, or short press the # key and use the number keys to input the channel number.

### (4) Select VFO Frequency

**VFO Mode:** Press the left/right keys to adjust frequency by frequency step, or short press the # key and use the number keys to input the receive frequency.

## Common Operations Introduction

### (5) Select Receive Modulation Mode

Press the 8 key to select the receive demodulation mode: AM, LSB, USB, FM, CW.

### (6) Select Channel

**Channel Mode:** Press the left/right keys to select the channel by frequency step, or short press the # key and use the number keys to input the channel number.

### (7) Select Frequency Band

In VFO mode, use the BAND key to select the desired frequency band.

Channel A: F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11

Channel B: F5, F6, F7, F8, F9, F10, F12, F13.

### (8) Store Channel

In MR mode, you can copy the current channel to new channel.

In VFO mode, set the receive frequency, offset frequency direction, wide/narrow bandwidth, transmit and receive code, transmit power, signaling decoding, voice encryption, and other parameters. Then, long press the 8 key to store the channel, or press MENU to enter menu 2-18, press MENU again to enter, use the left/right keys to select the channel number to store, or use the number keypad to input the channel number. Press MENU, enter the channel name, and press "MENU" again to store the channel. When selecting a stored channel, "CH-XXX" will display, indicating that the channel is already stored. "XXX" indicates that the channel is empty.

## Common Operations Introduction

### (9) Delete Channel

Press MENU to enter menu 2-19, use the left/right keys to select the channel number to delete, or input the channel number using the number keypad. Press MENU, and "SURE?" will display. Press MENU again to delete the channel.

### (10) Set Receive and Transmit CTCSS/DCS

Enter menu 2-04 to set the receive and transmit CTCSS/DCS

Enter menu 2-05 to set the receive CTCSS/DCS

Enter menu 2-06 to set the transmit CTCSS/DCS

Press the # key to select CT, DCSN, or DCSI, and use the left/right keys to choose the required CTCSS/DCS from the list, or directly input using the keypad (CT: 60.0~260.0), (DCS: 000~777).

### (11) Spectrum Analyzer

After setting the center frequency, press the key 7 to enter the spectrum analyzer.

Press key 1 to modify the centre frequency, short press ◀▶ key to change the value, long press ◀▶ key to change the value continuously, or press the numeric key to input the centre frequency, EXIT to exit the editing. Press key 2 to modify the reference field strength value, short press ◀▶ to change the value, long press ◀▶ to change the value continuously, EXIT to exit the editing.

Press key 3 to modify the scan bandwidth, short press ◀▶ to change the value, long press ◀▶ to change the value continuously, 128KHz~6.4MHz, EXIT to exit the editing.

Press key 4 to modify Mark point position, short press ◀▶ to change the value, long press ◀▶ to change the value continuously, or press the numeric key to input Mark frequency, note that the input frequency must be within the Span range, EXIT to exit editing.

Press the side key to monitor the centre frequency signal.

Press key 5 to copy the Mark point frequency to the centre frequency.

## Common Operations Introduction

### (12) Automatic Signal Search

Set the correct receive frequency and press 4 key to start searching for signals. Once a valid signal is received, it will display the detected transmitting signal. Press MENU to store the detected signal to the current channel. SCAN CMP indicates that a valid signal was found and automatic search has stopped. SCAN FAIL indicates that no valid signal was found and automatic search has stopped.

### (13) Frequency Meter or One-Key Frequency Matching

One-key frequency matching requires a strong signal, with both the transmitter and receiver having antennas installed and not too far apart. Press 3 key on the receiver to enter the frequency meter interface. Once a strong signal is received, it will display the signal carrier frequency and transmitting signaling (CTCSS or DCS). Press the \* key to re-measure the frequency. When measuring non-standard CTCSS/DCS, if no valid value can be detected, you can enter menu 6-02 to select either "Expert Mode" or "Self-learn Mode." In self-learn mode, the detected CTCSS/DCS will not be displayed, but you can press MENU to store it for later use.

After detecting a valid frequency, press the MENU key to store the current frequency and transmitting signaling to the designated channel. Press EXIT or PTT to exit the frequency meter during frequency measurement.

Note: Self-learn mode can only store frequency in the first 100 channels.



## Common Operations Introduction

### (14) DTMF and 5-Tone Calling

#### (14.1) DTMF or 5-TONE Calling

Menu 2-14 is used to set DTMF or 5-tone selective calling:

1.Manual Dialing: Long press PTT and press the number keys on the panel to dial. A/B key: A, MR/VFO: B, Left: C, Right: D.

2.Automatic Dialing: Press the \* key and enter a 3-digit number, then short press PTT to initiate the DTMF call. During transmitting, the radio will automatically send its own ID number.

Single Call: Send the target ID number along with its own ID. For example, 123\*100 means the user with ID 100 is calling the user with ID 123.

Group Call: Replace one or more digits of the ID number with a group call code to call a group of users.

The group call code is configured using the programming software.

For example, if the group call code is set to #: sending 12# will call IDs 120-129 (10 units). Sending 1AA will call IDs 100-199 (100 units).

All Call: Sends a 3-digit group call code to call all users.

Receiving: Menu 2-16 must be set to "ON." When the received code is a DTMF or 5-tone personal ID code, successful decoding will display the caller's username. If the call is successful, you can communicate with the caller within the reset time. After the reset time expires, re-decoding is required. The automatic response after receiving a call can be set in Menu 7-07 and 8-07.

#### (14.2) PTT ID

Initiation: You can set the DTMF or 5-tone up and down line codes. Menu 2-15 enables the up and down line codes. Each time the PTT is pressed, the up line code is sent, and when PTT is released, the down line code is sent.

## Common Operations Introduction

### (15) Emergency Alert

Emergency Alerts are used to indicate an emergency situation and you can initiate an emergency call at any time or on any screen, even if there is activity on the current channel.

Press the emergency alarm key to activate local alarm or send alarm signal automatically, alarm type is selectable: local alarm/remote alarm. Press any key to exit alarm mode.

### (16) Scanning

Starting Scan:

Method 1: Long press the \* key to start or exit scanning.

Method 2: Use the side key to turn the scan switch on or off.

Frequency Scanning: During scanning, you can press the left/right keys to change the scanning direction.

Press PTT, EXIT, or long press the \* key to exit scanning.

Menu 4-02 and 4-03 set the frequency scan range.

Channel Scanning: After scanning starts, the radio will sequentially check the channels in the scan list.

During scanning, if a call is received, you can press PTT to reply.

The channel scan options are set in Menu 5.

Priority Scan: You can designate a channel as the priority scan channel.

During scanning, 50% of the radios will scan the priority 1 member.

If there are priority 2 member, the scanning of priority 1 member will be reduced from 50% to 25%. Even if located on a non-priority channel or after priority 2 member, the radio will continue to periodically scan for transmitting activities on the priority 1 member.

If the radio detects activity on priority 1 member, it will stop the current transmitting and switch to the sound of the priority 1 member.

## Common Operations Introduction

### (17) NOAA Receiving

Press the 5 key to enter or exit NOAA weather radio receiving.

This radio has 10 NOAA channels.

The receiving settings can be configured through Menu 9 for NOAA.

If SAME decoding is enabled, received events will automatically be saved in Menu 9-08, with the latest 32 events stored.

### (18) Listen to FM Radio

Press 0 to enter radio mode. Use the left/right keys to change frequency or select a preset radio channel. Press # to manually enter a radio channel frequency or select a preset radio channel using the keypad. Press MR/VFO to switch between VFO and MR modes.

Press 1 to start auto scanning for radio channel. Found radio channels will be automatically saved (up to 20 radio channels).

Press 2 to start manual scanning. When a radio channel is found, the user must manually save it.

Press MENU to save a radio channel.

Press EXIT to exit scanning mode.

Use left/right keys to change the scan direction.

While listening to FM radio, if a valid call is received on the walkie-talkie channel or the PTT button is pressed to make a call, the device will temporarily exit radio mode and switch to communication mode. After the call ends, FM radio will resume.

Press EXIT or 0 to exit radio mode.

## Common Operations Introduction

### (19) Keyboard Lock

Long press the # key to lock or unlock all the keys. When locked, side keys remain functional.

### (20) One Key Call Channel

Press the 9 key to immediately switch to the one key call channel.

Important channels can be set as one key call channels through menu 3-06.

### (21) Aviation Band Receiving

Enter the receiving frequency. If the local aviation frequency is unknown, you can use the scan function to scan the 108-136 MHz full frequency range. Press the 8 key to select the modulation mode as AM.

### (22) Restore Factory Settings

Enter menu 1-16

VFO: Clears all data to the initial state but retains all stored channels.

ALL: Clears all data to the initial state, including stored channels.

The display shows "SURE?" Press the MENU key, and after the radio restarts, all options will return to their factory default values.

## Common Operations Introduction

### (23) Wireless Radio Replication

Long press the PTT + side key 2 to power on and enter the wireless radio replication interface. The display will show AIR COPY (RDY).

Both the transmitter and receiver can use the number keypad to set the frequency for wireless radio replication. The transmitting and receiving frequency must match, with the default transmitting and receiving frequency being 410.0125 MHz.

Receiver Operation – Press EXIT to enter receive mode, display changes to AIR COPY (RCV).

Transmitter Operation – Press MENU to start transmitting frequency programming data, display changes to AIR COPY (PUB).

During the copying process, the copy progress will be displayed as RCV: XX E: XX, where E: XX represents the number of errors in the copied data.

When the copy is complete, the transmitter will display SND: XXX.

## Specifications

### General specification

|                        |                                        |
|------------------------|----------------------------------------|
| Channel Number:        | 999                                    |
| FM Radio Store Number: | 32                                     |
| NOAA Channel Number:   | 10                                     |
| Frequency Stability:   | ±1ppm                                  |
| Modulation Mode:       | FM:11K0F3E(12.5KHz),<br>16K0F3E(25KHz) |
| Size:                  | 126mm*58mm*34.5mm                      |
| Weight:                | 289g                                   |
| Working Temperature:   | -20°C+60°C                             |
| Antenna Impedance:     | 50Ω                                    |

# Specifications

## Transmitting

|                                                                                                               |             |      |
|---------------------------------------------------------------------------------------------------------------|-------------|------|
| <b>Transmitting Power:</b>                                                                                    |             |      |
| Note: This radio have different versions, the real parameter depends on which following version you purchase. |             |      |
| <b>Normal Version:</b>                                                                                        | 25-29.8MHz  | ≤5W  |
|                                                                                                               | 50-54MHz    | ≤5W  |
|                                                                                                               | 136-174MHz  | ≤10W |
|                                                                                                               | 350-490MHz  | ≤10W |
| <b>CE Version:</b>                                                                                            | 28-29.7MHz  | ≤5W  |
|                                                                                                               | 50-52MHz    | ≤5W  |
|                                                                                                               | 144-146 MHz | ≤10W |
|                                                                                                               | 430-440 MHz | ≤10W |
| <b>FCC Version:</b>                                                                                           | 28-29.7MHz  | ≤5W  |
|                                                                                                               | 50-54 MHz   | ≤5W  |
|                                                                                                               | 144-148 MHz | ≤10W |
|                                                                                                               | 420-450 MHz | ≤10W |
| Maximum Frequency Deviation: ≤5KHz(25KHz),≤2.5KHz(12.5KHz)                                                    |             |      |
| Modulation Distortion: ≤5%                                                                                    |             |      |
| Stray Emission: ≤7.5uW                                                                                        |             |      |
| Adjacent Channel Power: 70dB(25KHz),60dB(12.5KHz)                                                             |             |      |
| Residual Modulation: 40dB                                                                                     |             |      |

# Specifications

## Receiving

|                           |                 |                   |         |
|---------------------------|-----------------|-------------------|---------|
| Reference<br>Sensitivity: | FM(12dB SINAD)  | F3(18~32)         | -121dBm |
|                           |                 | F4(32~76)         | -121dBm |
|                           |                 | F5(108~135.9975)  | -121dBm |
|                           |                 | F6(136~173.9975)  | -123dBm |
|                           |                 | F7(174~349.9975)  | -121dBm |
|                           | WFM(20dB SINAD) | F8(350~399.9975)  | -123dBm |
|                           |                 | F9(400~469.9975)  | -123dBm |
|                           |                 | F10(470~579.9975) | -121dBm |
|                           |                 | F11(580~759.9975) | -116dBm |
|                           |                 | F12(580~999.9975) | -116dBm |
| AM(10dB S/N)              | F13(1000~1160)  | -116dBm           |         |
|                           | WFM(76~108)     | -110dBm           |         |
|                           | F1(0.153~1.799) | -100dBm           |         |
|                           | F2(1.8~17.799)  | -110dBm           |         |
|                           | F3(18~32)       | -110dBm           |         |
|                           |                 | F5(108~135.9975)  | -113dBm |
| Audio Power:              |                 | ≥0.5W             |         |
| Audio Distortion:         |                 | ≤10%              |         |

Note: Specifications are subject to change without notice due to technical improvement.