

*The SainSonic RST599 is a unique FM transceiver with many groundbreaking features. It adopts graphic dot matrix LCD screen, which allows users to change the LCD display icons and language whenever needed, and therefore be able to make LCD display more vivid and personalized. Moreover, the menu items are divided into first-layer menu and second-layer menu, which allows users to find out the desired menu item more easily.*

*We appreciate your purchase of this transceiver, and encourage you to read this manual thoroughly, so as to learn about the many exciting features of your exciting new handheld transceiver!*

*This transceiver is innovative in design, powerful and stable in performance. We are confident that the excellent quality and characteristic functions of this transceiver will satisfy you and meet all your communication needs.*

### **Notices to User**

- ※ Government law prohibits the operation of unlicensed radio transmitters within the territories under government control.
- ※ Illegal operation is punishable by fine or imprisonment or both
- ※ Refer service to qualified technicians only.

## **WARNING**

It is important that the operator is aware of and understand hazards common to the operation of any transceiver.

Explosive environment (such as gases, dust, fumes, etc. )

Turn off your transceiver while taking on fuel, or while parked in gasoline service stations.

## **FCC Warning:**

### **RF Exposure Compliance and Control Guidelines and Operating Instructions**

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits always adhere to the following procedures.

#### **Guidelines:**

Do not remove the RF Exposure Label from the device.

User awareness instructions should accompany device when transferred to other users.

Do not use this device if the operational requirements described herein are not met.

#### **Attention:**

This radio complies with IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50 percent and is authorized by the FCC for occupational use only.

An appropriate warning label is affixed to all units. In order to comply with RF exposure requirements, a minimum distance of 2.5cm must be maintained when held-to-face, and body-worn operations are restricted to the approved original accessories (belt clip).

Do not use this device when antenna shows obvious damages

## **USING TIPS**

Please read the following brief instructions, non-compliance with these rules may cause danger or violate the law.

- ※ Obey the local government regulation before using this radio, improper use may violate the law and be punished.
- ※ Turn off the radio before entering flammable or explosive areas.
- ※ Do not charge or change the battery in flammable or explosive areas.
- ※ Turn off the radio before getting close to the blasting zone or detonator areas.
- ※ Do not use radio whose antenna is damaged ,touching of damaged antenna will cause heat injury.
- ※ Do not attempt to disassemble the radio; maintenance work should be done by technical expert only .
- ※ To avoid troubles caused by electromagnetic interference or electromagnetic compatibility ,please turn off the radio in places where have the banner of “Do not use wireless equipment”, such as hospital and other healthcare areas.
- ※ In the car with an airbag, do not put the radio within the scope of the airbag deployment.
- ※ Do not store the radio under direct sunshine or in hot areas.
- ※ When you transmit with the radio ,do keep away from its antenna for 5cm at least .
- ※ If the radio appears smelly or smoke ,please shut off its power immediately and contact with your local dealer .
- ※ Do not transmit too long ,for the radio may heat and hurt the user .

## Welcome to use our characteristic FM transceiver



### Main Functions:

Dual band, dual frequency, dual display, dual standby  
A/B frequency independent operation  
240 memory channels

Automatic repeater offset (ARS)  
Manual repeater shift  
CTCSS/DCS setting  
CTCSS/DCS code display when TX  
CTCSS/DCS scanning  
Priority channel scanning  
Power-on password setting  
7 backlight colors selective  
Time & Date setting & displaying  
Alarm clock setting  
Automatic Power-Off (APO)  
FM radio  
Scrambler  
2 tone & 5 tone  
DTMF function  
DTMF address book  
DTMF stun & kill  
Emergency alarm call  
Automatic contact & call  
Flashlight illumination  
IP67 Waterproof

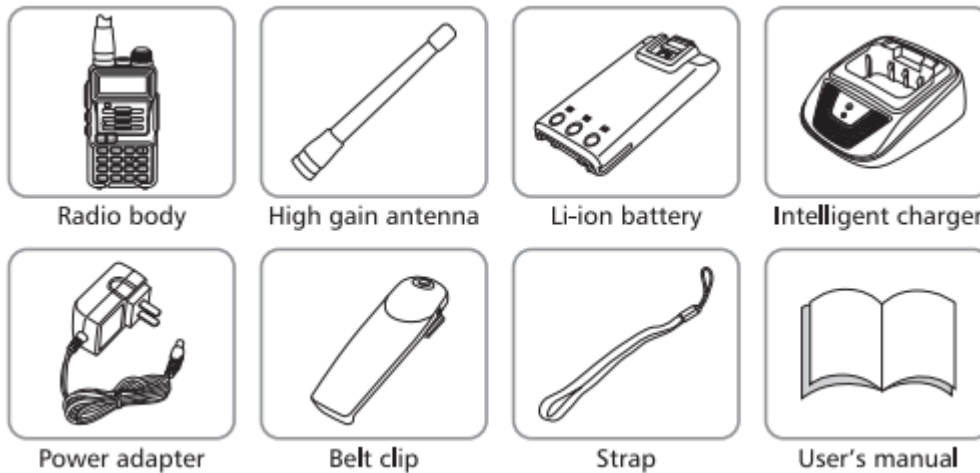
## **Contents**

|                                                  |    |
|--------------------------------------------------|----|
| ACCESSORIES SUPPLIED WITH SainSonic RST599 ..... | 1  |
| Standard accessories:.....                       | 1  |
| INSTALLATION OF ACCESSORIES.....                 | 2  |
| Installing/Removing Battery .....                | 2  |
| Installing/Removing Antenna .....                | 3  |
| Installing/Removing Belt Clip .....              | 4  |
| Connecting to Optional Earphones .....           | 5  |
| CHARGING BATTERY .....                           | 6  |
| Charger .....                                    | 7  |
| Optional charging way: .....                     | 7  |
| FUNCTIONS AND OPERATION .....                    | 8  |
| GETTING FAMILIAR.....                            | 9  |
| LCD display .....                                | 9  |
| Radio illustration .....                         | 11 |
| KEYPAD FUNCTIONS .....                           | 12 |
| SHORTCUT MENU .....                              | 13 |
| FULL MENU ITEMS .....                            | 14 |
| DETAILED MENU ITEMS DESCRIPTION .....            | 16 |
| TX/RX GROUP .....                                | 16 |
| CTC/DCS GROUP .....                              | 17 |
| SIGNALING GROUP .....                            | 18 |
| CHANNEL GROUP .....                              | 20 |
| REPEATER GROUP .....                             | 21 |
| SCAN GROUP .....                                 | 22 |
| SET GROUP .....                                  | 23 |
| ADDITION GROUP .....                             | 28 |
| FM RADIO FUNCTION.....                           | 32 |
| COMPLEMENTARY FUNCTIONS.....                     | 33 |
| SET MODE ITEMS .....                             | 34 |
| QT/DQT sheet.....                                | 36 |
| Warranty Terms.....                              | 37 |

## **ACCESSORIES SUPPLIED WITH SainSonic RST599**

Pls check if any damage happens to the package when you receive it. Carefully unpack the transceiver. We recommend you check the items listed in the following table. If any item is missing or damaged during shipment, pls contact your local dealer immediately.

### **Standard accessories:**

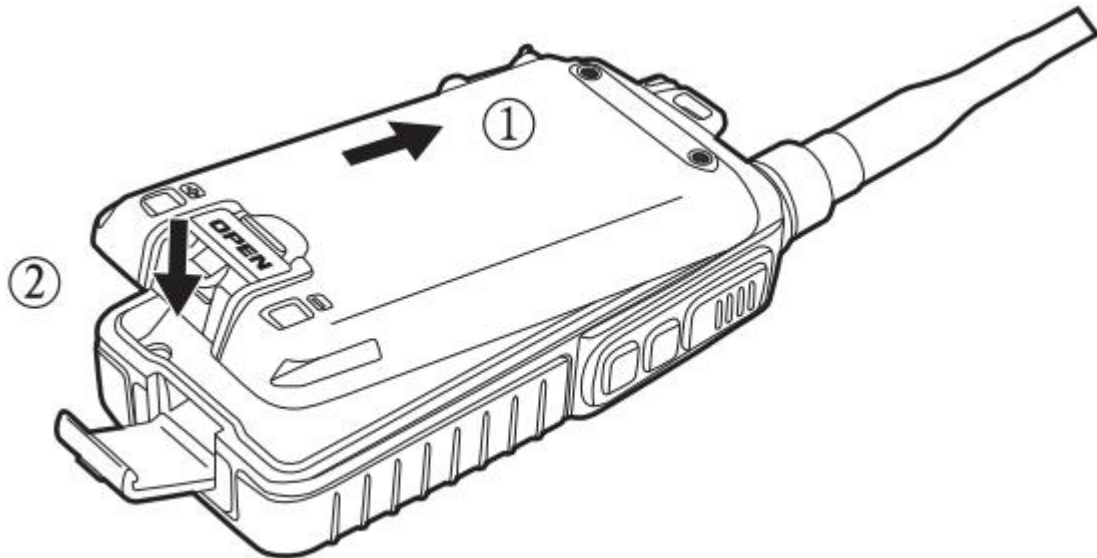


Optional accessories are available upon need. Consult your local dealer for details and any newly-available options. Connection of any unauthorized accessories may cause damage and void the limited warranty on this apparatus.

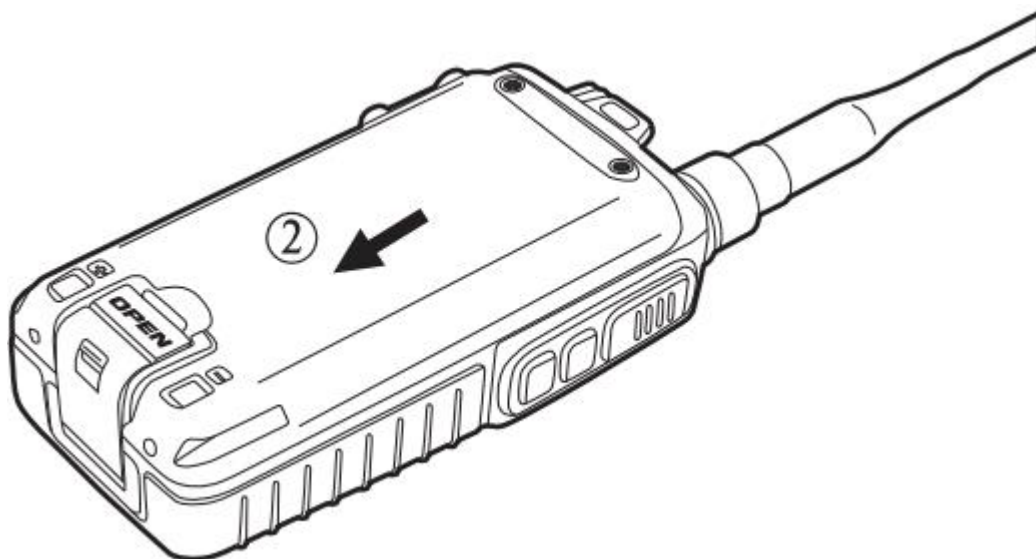
## **INSTALLATION OF ACCESSORIES**

### **Installing/Removing Battery**

Position the location pin top of the battery ① at holes at the top of the aluminum plate, then press down the battery ② to the radio until it is well connected, then push up the battery buckle ③ and a click tone is heard, the battery is installed.

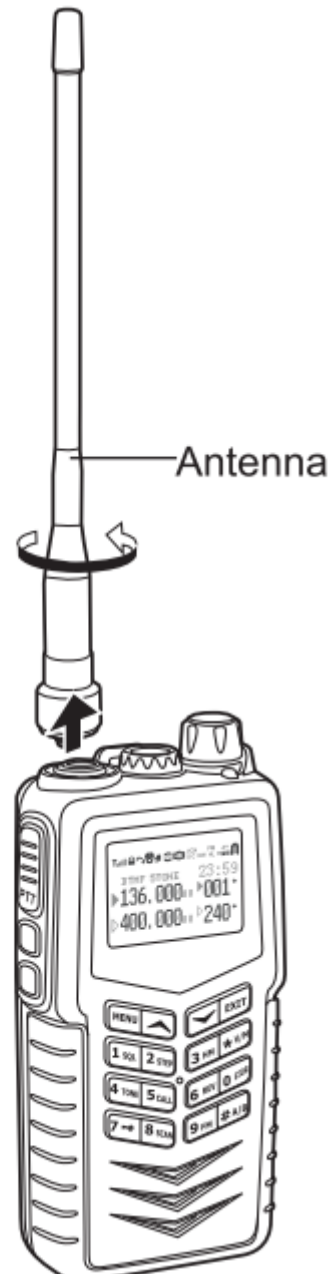
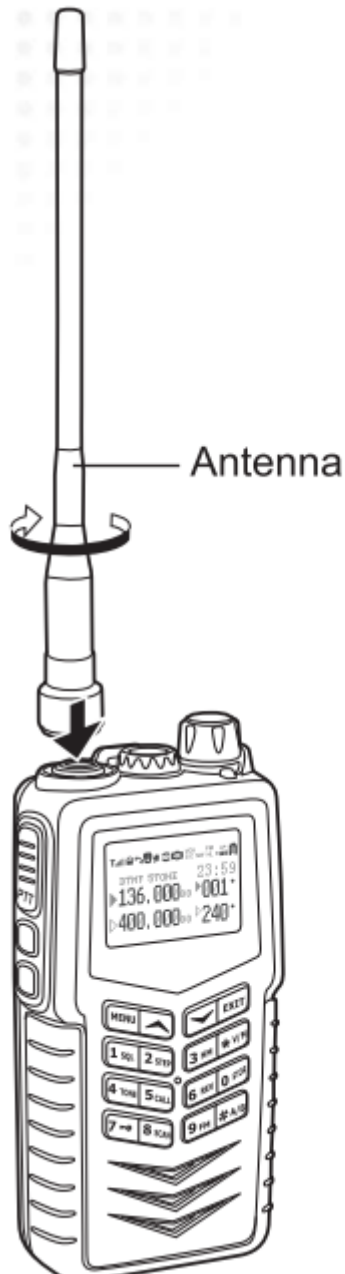


To remove battery, first make sure the radio is shut off. Pull up the battery snap ① marking "OPEN", the battery buckle ② can be easily opened, then the battery is automatically separated from the radio's aluminum plate, the battery is removed.



## Installing/Removing Antenna

Insert the threaded end of the antenna into the large threaded hole reserved in the top of your walkie-talkie, and turn the antenna clockwise until it is fully tightened. Turn the antenna counterclockwise to remove it from the walkie-talkie.



## Installing/Removing Belt Clip

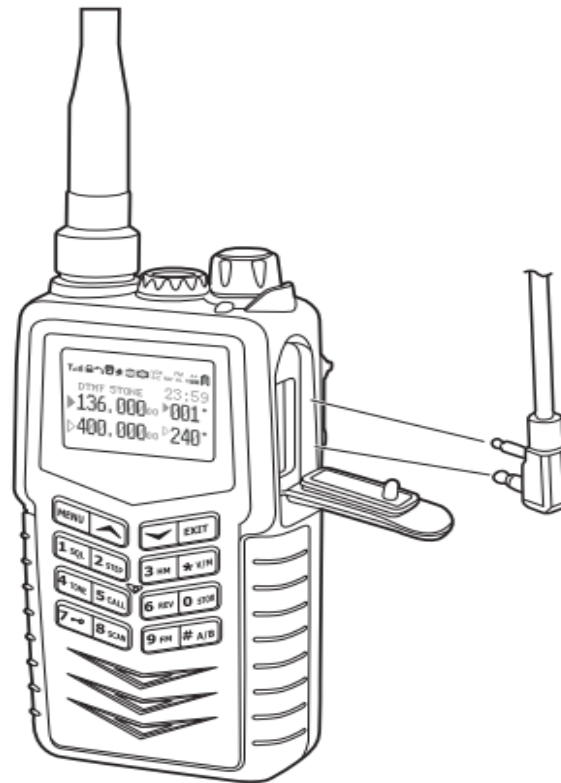
Hold the activate snap of belt clip, align the belt clip with the battery slot, parallelly pushing into it, until a click sound is heard, the belt clip is installed.

To remover belt clip, hold down the activate snap of it with one hand, and lift up the beleaguer clip at the lower end, and force the belt clip pushed up until it is removed.



## Connecting to Optional Earphones

Open the earphone cap from the top right Corner to expose earphone jack, and insert the earphone plug into the jacket for normal use.



## **CHARGING BATTERY**

Supplied battery is provided uncharged, therefore new battery or battery not used for a long period of time must be charged before use.

The battery capacity will reach the optimum level after two to three cycles of charge/discharge.

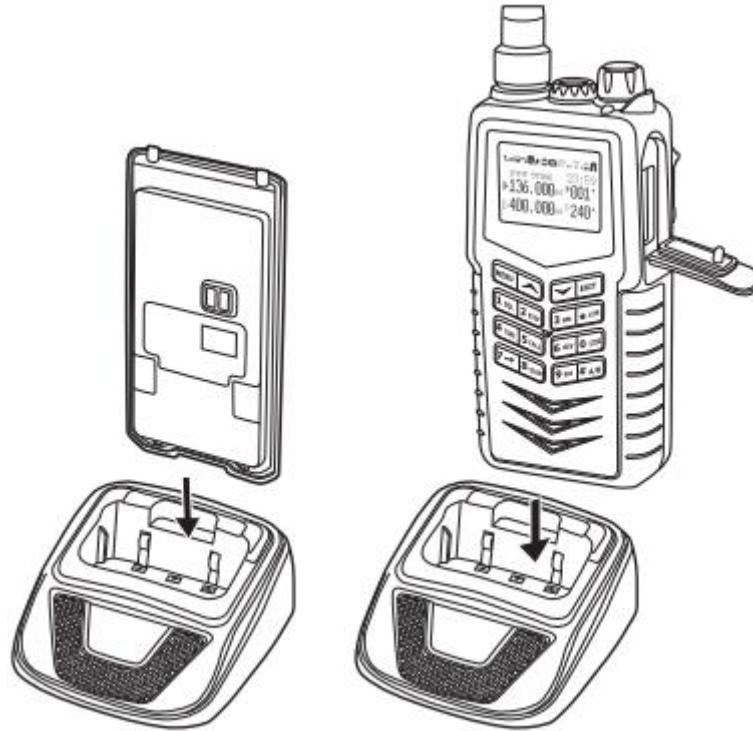
In case the battery capacity is found low, charge or replace the battery.

### ***Note:***

- >>Do not short-circuit battery terminals or put the battery into fire.
- >>Charging battery loaded in a walkie-talkie is allowed, but in this case the walkie-talkie must be shut off to ensure efficient charging.
- >>Do not leave your walkie-talkie and battery on the charger when not charging the battery. Continuous charging will damage the battery.
- >>Do not place fully charged battery on the charger for "recharging", this may significantly reduce battery life. Always charge the battery in ambient temperature of about 25°C (indoor) if possible. Charging the battery in a temperature lower than 10°C may cause electrolyte leakage and eventually damage the battery.
- >>Charging the battery in a temperature higher than 35°C will reduce battery capacity and affect use of the walkie-talkie.

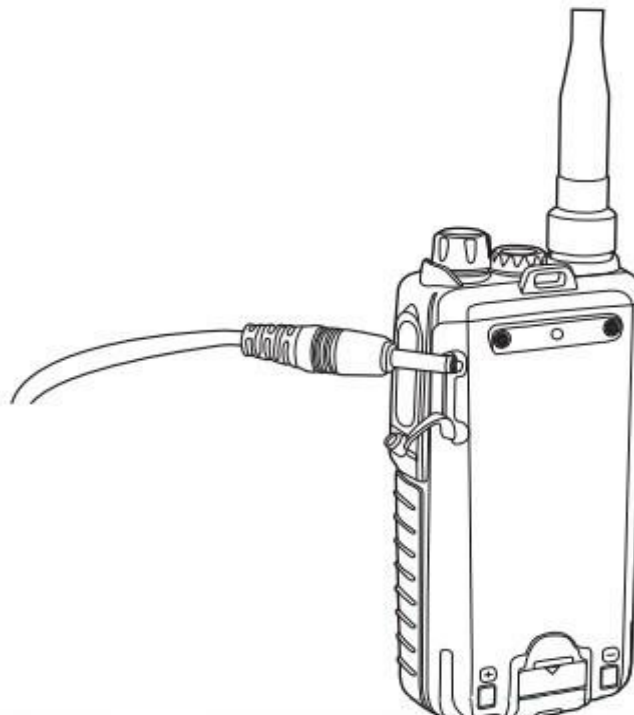
## Charger

Insert battery or walkie-talkie loaded with battery into the charger. Make sure that the battery/walkie-talkie is in good contact with the charger. The indicator light turns red when the charger starts charging, and turns green when the battery is full.



## Optional charging way:

Remove the wall charger. On the side top of battery there is a charging jack, insert the adaptor into the charging jack to charge the battery directly.



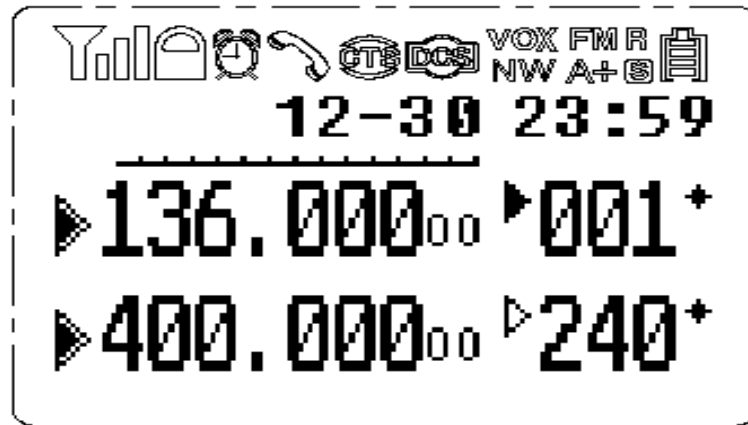
## **FUNCTIONS AND OPERATION**

We encourage you to read this section as thoroughly as possible, so you'll get the most out of this fantastic new transceiver. Now... let's get operating!

## GETTING FAMILIAR

### LCD display

You will see various icons shown on the screen. The following table can help you identify icons' meanings which display on LCD.



Rx signal strength&power meter



Keypad lock



Alarm clock



Signaling



CTCSS activated



DCS activated

**VOX**

VOX function activated

**FM**

FM radio activated

**R**

Reverse frequency activated

**A+**

Automatic repeater offset (plus shift) activated



Manual repeat shift (plus shift) activated



Battery voltage indicator

**12-30**

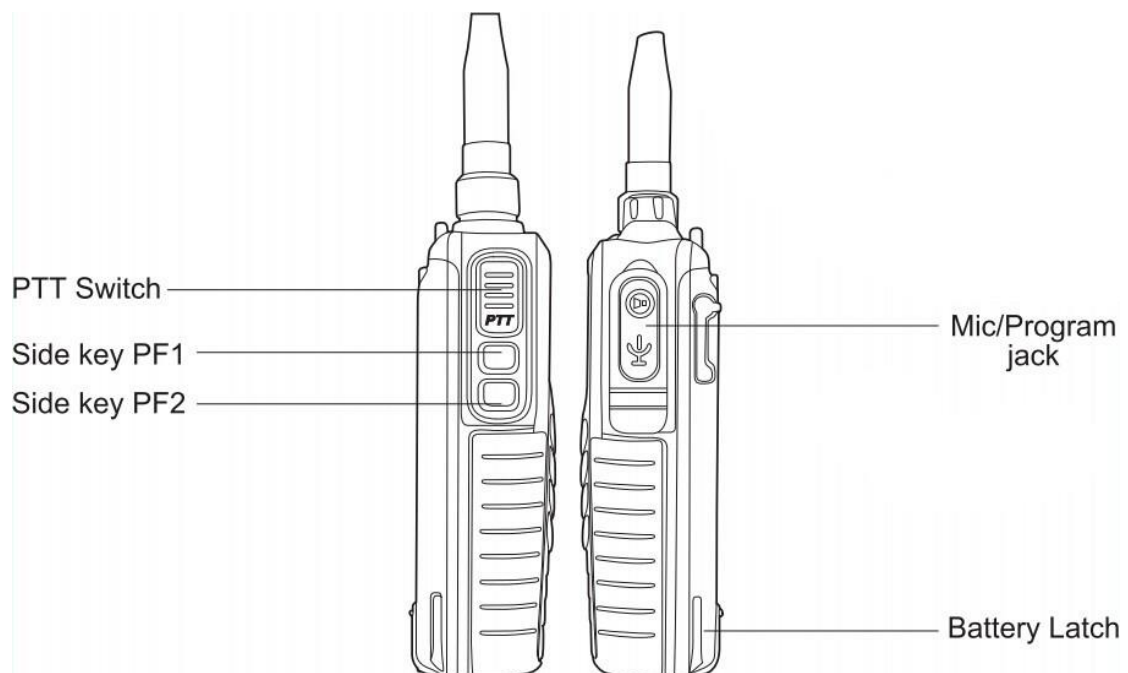
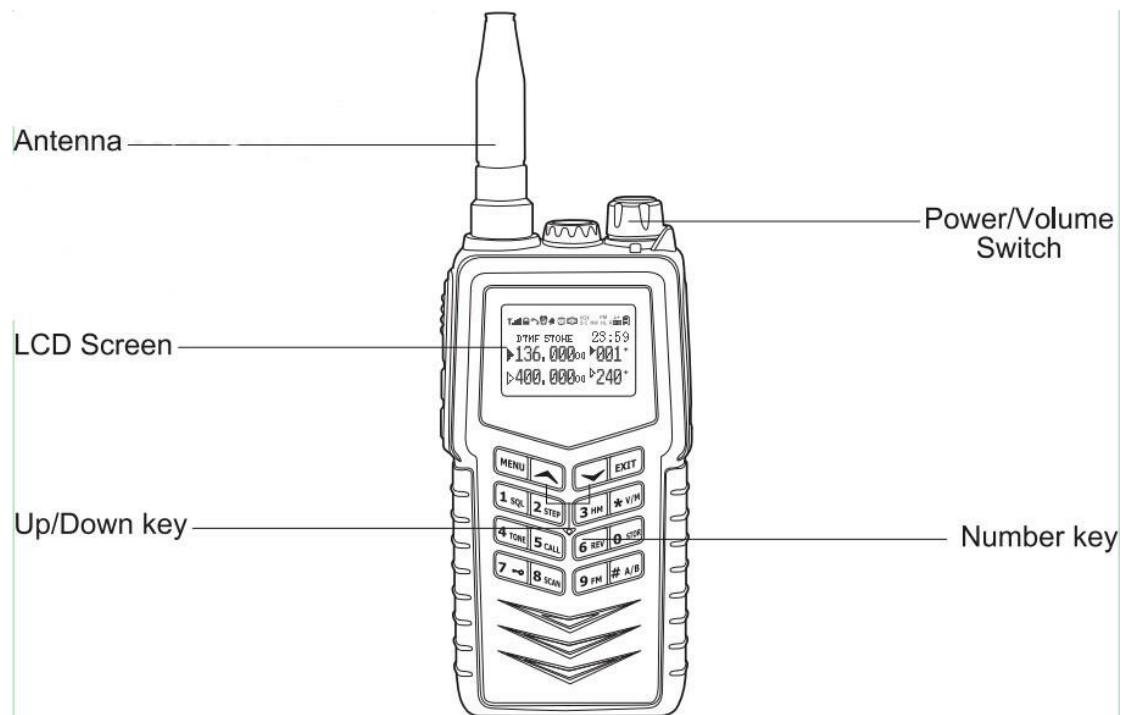
Date display

**23:59**                      Time display

**136.000<sup>00</sup>**                      Current frequency display

**240**                      Channel number

## **Radio illustration**



## **KEYPAD FUNCTIONS**

| Keypad                                                                                                                                                                  | Press Key                                                                                     | Press and Hold Key                                     | Press [MENU] +                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------|
|                                                                                        | Enters into shortcut menu                                                                     | No action                                              | Enters into menu lists                                                     |
|                                                                                        | Exits or returns to last_layer menu;<br>Deletes number when selecting<br>frequency or channel | No action                                              | Returns to standby                                                         |
| Side key1                                                                                                                                                               | Monitor                                                                                       | Monitor                                                | No action                                                                  |
| Side key2                                                                                                                                                               | Flashlight switch                                                                             | Emergency alarm call                                   | No action                                                                  |
|                                                                                        | Inputs desired<br>frequency or<br>channel number                                              | No action                                              | stores memory channel                                                      |
|                                                                                        |                                                                                               | No action                                              | Squelch setting                                                            |
|                                                                                        |                                                                                               | No action                                              | Frequency step setting                                                     |
|                                                                                        |                                                                                               | No action                                              | Switches to the "Home"<br>channel (favorite frequency)                     |
|                                                                                       |                                                                                               | No action                                              | Select signaling type                                                      |
|                                                                                      |                                                                                               | No action                                              | Transmits signaling call                                                   |
|                                                                                      |                                                                                               | No action                                              | Reverses the txt and rx<br>frequencies while working<br>through a repeater |
|                                                                                      |                                                                                               | No action                                              | Activates the key lock<br>function                                         |
|                                                                                      |                                                                                               | No action                                              | Activates the scanning<br>function                                         |
|                                                                                      |                                                                                               | No action                                              | Activates the FM radio                                                     |
|                                                                                      | Switches work mode                                                                            | No action                                              | No action                                                                  |
|                                                                                      | Switches main channel between A<br>and B                                                      | No action                                              | Switches between VHF and<br>UHF mode (available under<br>VFO mode only)    |
|   | Increases/decreases frequency or<br>channel                                                   | Rapidly<br>increases/decreases<br>frequency or channel | No action                                                                  |

## SHORTCUT MENU

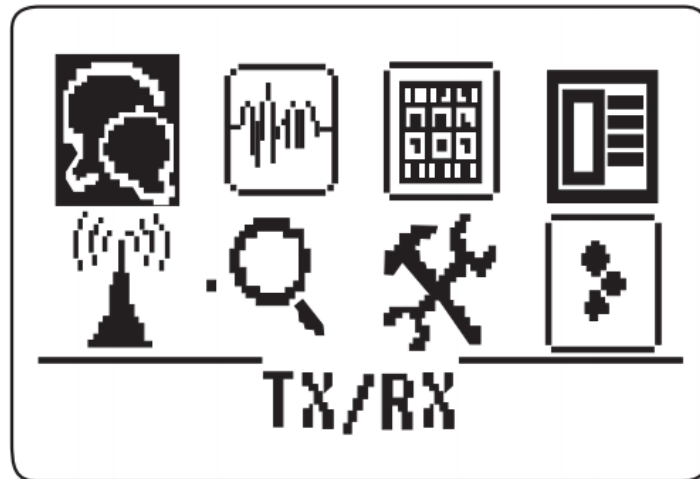
Press **[MENU]** key, it provides a “Shortcut” menu item setup. You can input the numeric keys 0-9 to get the corresponding shortcut menu items as shown in the above table.

## **FULL MENU ITEMS**

More than 50 menu items are available for SainSonic RST599. And the more than 50 menu items are divided into 8 groups. Therefore, you will see a “First-layer” menu and a “Second-layer” menu.

When you need any specific menu item, you can go to the corresponding first-layer and second-layer menu, and find it easily.

Press **[MENU]** to enter menu mode, then further press **[MENU]** for [MORE] detailed menu items. The radio enters into first-layer menu as shown below:



Press   key to select your desired first-layer menu, then press **[MENU]** to enter, the second-layer menu are listed for you.

| Group      | Sub-menus    |
|------------|--------------|
| TX/RX      | SQL          |
|            | Power        |
|            | BCLO         |
|            | TOT          |
|            | TOA          |
|            | Talk around  |
|            | Whisper      |
| CTC/DCS    | C-CTC/DCS    |
|            | R-CTC/DCS    |
|            | T-CTC/DCS    |
|            | CTC/DCS Scan |
| SIGNALLING | Signal Type  |
|            | Side Tone    |
|            | Encode mode  |
| CHANNEL    | Home Channel |
|            | Delete       |
|            | Name Edit    |
|            | Name Disp    |
| REPEATER   | 1750Hz Tone  |
|            | ARS          |
|            | SFT-D        |
|            | SFT Freq     |

| Group | Sub-menus    |
|-------|--------------|
| Scan  | Scan         |
|       | Resume       |
|       | PriScan      |
| SET   | Work Mode    |
|       | Batt. Saver  |
|       | A/B Watch    |
|       | VOX Delay    |
|       | Clock        |
|       | Date         |
|       | Time         |
|       | Key beep     |
|       | Begin Beep   |
|       | ROG Beep     |
|       | FM-R Watch   |
|       | Key Lock     |
|       | Lamp Control |
|       | Idle Color   |
|       | Tx Color     |
|       | Rx Color     |
|       | Language     |
|       | Step         |

| Group    | Sub-menus     |
|----------|---------------|
| Scan     | Scan          |
|          | Resume        |
|          | PriScan       |
| ADDITION | Alarm Clock   |
|          | Alarm Ring    |
|          | Password      |
|          | Password Edit |
|          | AUC           |
|          | AUC POS       |
|          | AUC TxPer     |
|          | AUC TOT       |
|          | AUC Alarm     |
|          | APO           |
|          | Reset         |

## **DETAILED MENU ITEMS DESCRIPTION**

### **TX/RX GROUP**

#### **Squelch adjustment (SQL)**

The squelch system allows you to mute the background noise when no signal is being received, which makes “standby” operation more pleasant. It also significantly reduces battery current consumption.

The squelch level can be adjusted from level 0 to 9. Level 0 is the lowest with squelch always opened, level 9 is the highest.

When the squelch level is too high, if signal is too weak, it may not be received efficiently. When the squelch level is too low, you may suffer from noise interference.

The default setting is level 5.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “TX/RX”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “SQL”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to adjust the squelch setting. Press **[MENU]** to confirm and exit.

#### **Power setting**

You can select between a total of three transmitter power levels on this transceiver. They are: High/Mid/Low. The exact power output may vary somewhat, depending on the voltage supplied to the transceiver.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “TX/RX”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Power”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to adjust the power level. Press **[MENU]** to confirm and exit.

#### **Busy channel lockout (BCLO)**

This function is to prevent interfering other radio which is on communicating. If the channel you selected is using by other radio, transmission is prohibited. At this time press PTT key, an alarm prompt will sound until PTT key is released.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “TX/RX”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “BCLO”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select ON/OFF. Press **[MENU]** to confirm and exit.

#### **Time out timer (TOT)**

The TOT is designed to prevent your transceiver from being transmitted too long. When the transmission exceeds the preset time limit, the transceiver will stop

transmitting and an alarm tone will sound until PTT key is released.

This transceiver can be set in 20 steps of 30 seconds, from 30s to 600s.

As configured at the factory the TOT feature is set to “90s”, and here is the procedure for activating it:

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “TX/RX”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “TOT”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to set the TOT time. Press **[MENU]** to confirm and exit.

### **Transmit overtime alert (TOA)**

Transmit overtime alert is to alarm the user that transmission time is going to reach the preset transmission time limit, a beep tone will sound to alert you during transmission.

The transceiver’s TOA can be set as OFF, 1s, 2s, 3s.....9s, 10s. The default setting is 5s.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “TX/RX”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “TOA”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to set the TOA time. Press **[MENU]** to confirm and exit.

### **Talk Around**

When talk around function is activated, the TX frequency gets to be same as RX frequency; the TX signaling also gets to be same as RX signaling.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “TX/RX”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Talk Around”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select ON/OFF. Press **[MENU]** to confirm and exit.

### **Whisper function**

With whisper function turned on, the user can speak in a very low volume (or whisper) to transmit, yet the voice can still be received clearly.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “TX/RX”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Whisper”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select ON/OFF. Press **[MENU]** to confirm and exit.

## **CTC/DCS GROUP**

### **Common CTCSS/DCS setting (C-CTC/DCS)**

The TX and RX CTCSS/DCS can be set to be the same simultaneously.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “CTC/DCS”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “C-CTC/DCS”, press **[MENU]** to enter into parameter setting.

Press **[# A/B]** key to switch between OFF---CTCSS---DCS(+)--DCS(-). Further press **[F1]/[F2]** key to select the desired CTCSS/DCS code. CTCSS/DCS code can also be input by keypad directly.

#### **RX CTCSS/DCS setting (R-CTC-DCS)**

The split RX CTCSS/DCS can be set separately.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “CTC/DCS”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “R-CTC/DCS”, press **[MENU]** to enter into parameter setting.

Press **[# A/B]** key to switch between OFF---CTCSS---DCS(+)--DCS(-). Further press **[F1]/[F2]** key to select the desired CTCSS/DCS code. CTCSS/DCS code can also be input by keypad directly.

#### **TX CTCSS/DCS setting (T-CTC-DCS)**

The split TX CTCSS/DCS can be set separately.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “CTC/DCS”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “T-CTC/DCS”, press **[MENU]** to enter into parameter setting.

Press **[# A/B]** key to switch between OFF---CTCSS---DCS(+)--DCS(-). Further press **[F1]/[F2]** key to select the desired CTCSS/DCS code. CTCSS/DCS code can also be input by keypad directly.

NOTE: Except from the common standard CTCSS/DCS code, the non-standard CTCSS/DCS code can also be inputted in this transceiver.

#### **CTCSS/DCS scanning (CTC/DCS Scan)**

This transceiver will scan any CTCSS/DCS code which may be used in the current frequency. When a CTCSS/DCS code is scanned, the CTCSS/DCS scanning will stop.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “CTC/DCS”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “CTC/DCS Scan”, press **[MENU]** to activate CTCSS/DCS scanning function. Press **[EXIT]** to exit.

During CTCSS/DCS scanning, press **[F1]/[F2]** key to change the CTCSS/DCS scanning direction of forward or backward.

## **SIGNALING GROUP**

### **Signaling type setting**

Four options for signaling type are available: OFF---2 Tone--- 5 Tone---DTMF

**2 Tone:** 16 groups of 2 Tone signaling can be set via software. Press **[MENU] + [5]** to make signaling transmission, then press **[]/[]** key to select the desired 2 Tone code, and press PTT key to transmit the 2 Tone signaling.

**2 Tone decode:** If the signaling for the RX frequency or channel is set as 2 Tone, when a signal is received, the 2 Tone code will be decoded, and the LCD screen shows “2TONE” icon. When the received 2 Tone code is decoded successfully, the LCD screen shows “2TONE OK”.

**5 Tone:** 16 groups of 5 Tone signaling can be set via software. Press **[MENU] + [5]** to make signaling transmission, then press **[]/[]** key to select the desired 5 Tone code, and press PTT key to transmit the 2 Tone signaling.

**5 Tone decode:** If the signaling for the RX frequency or channel is set as 5 Tone, when a signal is received, the 5 Tone code will be decoded, and the LCD screen shows “5TONE” icon. When the received 5 Tone code is decoded successfully, the LCD screen shows “5TONE OK”.

**DTMF:** The DTMF signaling can be set via software. DTMF transmission can be made manually or through DTMF address book. Press **[MENU] + [5]** to make DTMF signaling transmission, you can input the desired DTMF code via keypad or select one of the DTMF codes from address book, then press PTT key to transmit.

**DTMF decode:** If the signaling for the RX frequency or channel is set as DTMF, and the transceiver’s self ID has also been set via software, when a signal is received, the DTMF code will be decoded, and the LCD screen shows “DTMF” icon. When the received DTMF code is decoded successfully, the LCD screen shows “DTMF OK”.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[]/[]** key to select group “SIGNALING”, press **[MENU]** to confirm and enter into second-layer menu. Press **[]/[]** key to select item “Signal Type”, press **[MENU]** to enter into parameter setting. Use **[]/[]** key to select the desired signaling type. Press **[MENU]** to confirm and exit.

### Side tone setting

This function is to turn on or turn off the prompt tone when sending out the signaling codes. If side tone is turned on, the radio will sound a string of noise when the signaling codes are sent out.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[]/[]** key to select group “SIGNALING”, press **[MENU]** to confirm and enter into second-layer menu. Press **[]/[]** key to select item “Side Tone”, press **[MENU]** to enter into parameter setting. Use **[]/[]** key to select ON/OFF. Press **[MENU]** to confirm and exit.

### Encode mode setting

This function is to select the desired DTMF signaling transmit mode. Two options are available: Manu and Address Book.

**Manu:** Input the desired DTMF codes in sequence via keypad, and then press PTT key to send out the DTMF code manually.

Address Book: 30 groups of DTMF codes can be stored or preset in the address book via software. When Address Book mode is selected, Press **[MENU]+ [5]** to transmit DTMF code, you can press **[F1]/[F2]** key to select the desired DTMF code among the address book to send out.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SIGNALING", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Encode Mode", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select the desired encode mode. Press **[MENU]** to confirm and exit.

## CHANNEL GROUP

### Home channel setting

A special "HOME" channel is available for this transceiver, to allow quick recall of a favorite operating frequency. All the memory channels in the transceiver can be set as "HOME" channel. If there is no memory channel in this transceiver, when you set or recall the "HOME" channel, the screen will show: "No channel".

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "CHNNEL", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Home Channel", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select the desired channel, then press **[MENU]** to fix it as Home channel and exit.

To activate the Home channel, press shortcut **[MENU] + [3HM]** keys.

### Channel deleting setting (DELETE)

This function works only under Channel or Memory mode.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "CHNNEL", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "DELETE", press **[MENU]** to enter into channel deleting setting. Use **[F1]/[F2]** key to select the unwanted channel, then press **[MENU]** to delete it and exit.

### Channel name editing

This function only works under Channel (CH) mode.

Under channel (CH) mode, press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "CHNNEL", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Name Edit", press **[MENU]** to enter into channel name editing.

6 characters can be set for the channel name, including 26 letters (a to z), 10 number (0-9) and (+), (-), (.), (,), (/).

Press keypads to get the corresponding number 0-9 directly, and press **[F1]/[F2]** key to select desired 26 letters and other characters.

Press **[\*V/M]** to enter into next character; press **[#A/B]** key to delete current character and return to last character.

### Channel name display

This function only works under Channel (CH) mode.

Under channel(CH) mode, press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “CHNNEL”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Name Disp”, press **[MENU]** to enter into parameter setting. Press **[F1]/[F2]** key to select ON/OFF. Press **[MENU]** to confirm and exit.

If the channel name is preset, and channel display is turned on, the transceiver will display channel name on the screen under CH mode.

## REPEATER GROUP

### 1750Hz burst tone setting

A 1750Hz burst tone may be required for connecting with your local repeater.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “REPEATER”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “1750Hz Tone”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select OFF/1s/2s/3s/4s/5s. Press **[MENU]** to confirm and exit.

### Automatic repeater shift (ARS) function

This function only works under Frequency (VFO) mode.

This transceiver provides a convenient Automatic Repeater Shift function, which causes the appropriate repeater shift to be automatically applied whenever you tune into the designated repeater sub-bands in your country/region.

If the ARS function does not appear to be working, you may have accidentally disabled it.

Under frequency (VFO) mode, press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “REPEATER”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “ARS”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select ON/OFF. Press **[MENU]** to confirm and exit.

### **Manual repeater shift direction setting (SFT-D)**

It works only under frequency (VFO) mode.

If the ARS function has been disabled, or if you need to set a repeater shift direction different from that established by the ARS, you may set the direction of the repeater shift manually.

Under frequency (VFO) mode, press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "REPEATER", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "SFT-D", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select one of "OFF/+/-". Press **[MENU]** to confirm and exit.

NOTE: TX frequency higher than RX frequency, this called positive direction (+)

TX frequency lower than RX frequency, this called negative direction (-)

### **Manual repeater shift frequency setting (SFT Freq)**

It works only under frequency (VFO) mode.

Similar to the shift direction, the repeater shift frequency can also be manually set according to your special needs.

Under frequency (VFO) mode, press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "REPEATER", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "SFT Freq", press **[MENU]** to enter into parameter setting. Press **[F1]/[F2]** key to select the desired shift frequency, or input by keypad directly.

## **SCAN GROUP**

### **Scan resume mode setting**

Three options for scan resume mode are available:

Carrier: The transceiver will stop on a signal that is scanned, 3 seconds after the signal disappears, it will resume scanning.

Time: When a signal is received, if there is no operation for 5 seconds, the

transceiver re-starts scanning.

Seek: Scanning will stop when receives a signal.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SCAN", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Scan Resume", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select the desired scan resume mode. Press **[MENU]** to confirm and exit.

### **Priority scan channel setting (PriScan)**

The user is allowed to define one of the channels in this transceiver as the "Priority" scan channel. When scanning is activated, the transceiver will scan the "Priority" channel every time it scans one channel. If a signal is received, the scanner will pause on that channel in accordance with the Scan Resume mode described in 6.1.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SCAN", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "PriScan", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select the desired priority channel. Press **[MENU]** to confirm and exit.

### **Scan channel adding & deleting (Scan Add)**

This function only works in Channel (VFO) mode or Memory mode.

You can add or delete any channel from the scan list. If a channel is deleted from scan list, it will be omitted during scanning. To re-scan it again, you need to add it to scan list.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SCAN", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Scan Add", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select Add/Del. Press **[MENU]** to confirm and exit.

## **SET GROUP**

### **Work mode setting**

Three work modes are selective: Channel/Memory/Frequency mode.

#### **(1) Channel mode**

Only channel number will be shown in the screen when selected Channel mode. And if the channel name is turned on (see item 4.4), the LCD screen will display channel name instead of channel number.

#### **(2) Memory mode**

When you have stored at least one memory channel, when the work mode is set as Memory, the frequency will be displayed in screen and channel number will be indicated at the right side.

#### **(3) Frequency mode**

Only frequency will be displayed in screen. Under this mode, you can use

[]/[] key to change frequency or input your desired frequency directly by keypad and store memories.

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press []/[] key to select group "SET", press [MENU] to confirm and enter into second-layer menu. Press []/[] key to select item "Work Mode", press [MENU] to enter into parameter setting. Use []/[] key to select the desired work mode. Press [MENU] to confirm and exit.

### **Battery save function (Batt. Saver)**

Battery saver is to "put the radio to sleep" for a time interval, periodically "waking it up" to check for activity. This feature significantly reduces quiescent battery drain, and you may change the amount of "sleep" time between activity checks.

There are five options for this: OFF/1:2/1:2/1:3/1:4. The default setting is: 1:2

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press []/[] key to select group "SCAN", press [MENU] to confirm and enter into second-layer menu. Press []/[] key to select item "Batt Saver", press [MENU] to enter into parameter setting. Use []/[] key to select the desired battery saving time. Press [MENU] to confirm and exit.

### **A/B watch**

This function mainly refers to the auto switch of the TX arrow upon receipt of signal. It works like this:

ON: The TX arrow will automatically switch to the A or B frequency which has a coming-in signal, and will stay on that. You can just press PTT key to transmit.

AUTO: The TX arrow will automatically switch to the A or B frequency which has a coming-in signal, and if there is no operation for 5 seconds, the arrow will return back to the original frequency.

OFF: The TX arrow will always stay in the current frequency, and will not switch to the other A/B frequency even if there is signal there. You have to press A/B key to switch the TX arrow for transmit manually.

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press []/[] key to select group "SET", press [MENU] to confirm and enter into second-layer menu. Press []/[] key to select item "A/B watch", press [MENU] to enter into parameter setting. Use []/[] key to select ON/Auto/OFF. Press [MENU] to confirm and exit.

### **VOX level setting (VOX Gain)**

The VOX function provides automatic transmit/receive switching based on voice input to the microphone. With the VOX function enabled, you do not need to press the PTT key to transmit.

The VOX gain can be set as OFF/0-9 levels

OFF: VOX function is turned off, not activated.

Levels 0-9: The higher the level is, the larger volume it needs to start vox

transmission. VOX is prohibited when the transceiver is in scanning mode or FM radio mode.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SET", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "VOX Gain", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select the desired level. Press **[MENU]** to confirm and exit.

### **VOX delay time setting (VOX Delay)**

The transceiver provides for adjustment of the "Hang-time" of the VOX system (the transmit-receive delay after the cessation of speech). Available delay time are: 0.3s/0.5s/1.0s/2.0s/3.0s/4.0s/5.0s

The default setting is: 1.0s

To set a different delay time:

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SET", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "VOX Delay", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select the desired VOX delay time. Press **[MENU]** to confirm and exit.

### **Clock (Time & Date) displaying & standby**

When the transceiver is in standby mode, it also provides the Clock displaying when the "Clock" function is turned on. If there is no operation for more than 20 seconds, the transceiver will go to Clock standby mode, the exact time & date, and which day of the week will be shown for standby mode.

If the "Clock" function is turned off, the transceiver will not go to Clock standby mode.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SET", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Clock", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key to select ON/OFF. Press **[MENU]** to confirm and exit.

### **Date setting**

The exact date can be set and displayed in the LCD screen. Set it by following steps:

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SET", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Date", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key or numeric keys to select the desired values. Press **[# A/B]** key to enter into next value setting. After the new date is set, press **[MENU]** to confirm and exit.

### Time setting

The exact time can be set and displayed in the LCD screen. Set it by following steps:

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “SET”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Time”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key or numeric keys to select the desired values. Press **[# A/B]** key to enter into next value setting. After the new time is set, press **[MENU]** to confirm and exit.

### Key Beep tone setting

Beep tone is to indicate the radio operation, and operation error status or fault conditions, etc.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “SET”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Key Beep”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select ON/OFF. Press **[MENU]** to confirm and exit.

### Transmit begin beep prompt (Begin Beep)

If Transmit Begin Beep prompt (Begin Beep) is turned on with one of the three beep tones, when you press PTT key to transmit, the transceiver will sound the beep tone to prompt transmission starting. You can talk to transmit after the Begin Beep tone is over. If this feature is turned OFF, it will not sound beep tone to indicate transmission starting.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “SET”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Begin Beep”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select OFF/1/2/3”. Press **[MENU]** to confirm and exit.

### Transmit over beep prompt (ROG Beep)

If Transmit Over Beep prompt (Begin Beep) is turned on with one of the three beep tones, when you release PTT key to stop transmission, the transceiver will sound the beep tone to prompt transmission over. If this feature is turned OFF, it will not sound beep tone to indicate transmission over.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “SET”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “ROG Beep”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select OFF/1/2/3”. Press **[MENU]** to confirm and exit.

### FM-R watch

This function is to set whether to monitor the two-way radio signal under FM

radio mode.

ON: Under FM radio, the transceiver will automatically switch to two-way radio mode for communication when receiving signal. 5 seconds after there is no signal or no operation is made, it returns to FM radio mode. And, transmission can be made under FM radio mode

OFF: Under FM radio mode, the transceiver does not transmit or receive.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SET", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "FM-R watch", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select ON/OFF. Press **[MENU]** to confirm and exit.

### **Key lock**

To prevent any accidentally misuse of the keypad, the keypad can be locked.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SET", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Key Lock", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select "Manu/Auto". Press **[MENU]** to confirm and exit.

Auto: Auto lock is turned on. After 30 seconds without any operation, the keypad will automatically be locked. Press **[7]** key to unlock keypad.

Manu: Keypad can only be locked manually by hand. Press **[7]** key to lock, and press **[7]** key for 2 seconds to unlock.

### **LCD lamp setting (LAMP control)**

Three options are available for the LCD lamp control:

Auto: 5 seconds without any operation, the LCD lamp will get off

ON: The LCD lamp will keep on lighting.

OFF: The LCD lamp does not light.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SET", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Lamp control", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select "Auto/On/Off". Press **[MENU]** to confirm and exit.

### **Lamp standby color setting (Idle Color)**

There are seven backlight colors available for this transceiver:

Red/Green/Blue/Yellow/Purple/Cyan/White.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group "SET", press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item "Idle Color", press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select the desired color. Press **[MENU]** to confirm and exit.

### **Transmit backlight color (Tx Color)**

There are seven backlight colors available for this transceiver:

Red/Green/Blue/Yellow/Purple/Cyan/White.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “SET”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Tx Color”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select the desired color. Press **[MENU]** to confirm and exit.

### **Receive backlight color (Rx Color)**

There are seven backlight colors available for this transceiver:

Red/Green/Blue/Yellow/Purple/Cyan/White.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “SET”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Rx Color”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select the desired color. Press **[MENU]** to confirm and exit.

### **Displaying language switching**

The default options for the displaying language are: Chinese/English

We can also change the displaying language to other different languages as per the dealers’ needs. For more details, pls contact with us.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “SET”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Language”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select the desired language Press **[MENU]** to confirm and exit.

### **Frequency step setting (Step)**

The transceiver has options of: 2.5K/5K/6.25K/10K/12.5K/25K/50K/100K steps

The steps can be set only under frequency (VFO) mode.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “SET”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “Step”, press **[MENU]** to enter into parameter setting. Use **[F1]/[F2]** key select the desired step. Press **[MENU]** to confirm and exit.

## **ADDITION GROUP**

### **Alarm Clock**

Three alarm clock can be set and activated for this transceiver.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “ADDITION”, press **[MENU]** to confirm and enter

into second-layer menu. Press [F1]/[F2] key to select item “Alarm Clock”, press [MENU] to enter. Use [F1]/[F2] key select the one of the three alarm clock. Press [MENU] to enter into alarm clock setting. Press [# A/B] key to go to different setting items After all the settings are completed, press [MENU] key to confirm and exit.

### **Alarm ring selecting**

The alarm ring can be set as OFF/1/2/3.

OFF: No alarm ring will sound to indicate the alarm clock.

1/2/3: Different rings are selective, and will sound the ring to indicate the alarm clock.

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press [F1]/[F2] key to select group “ADDITION”, press [MENU] to confirm and enter into second-layer menu. Press [F1]/[F2] key to select item “Alarm Ring”, press [MENU] to enter into parameter setting. Use [F1]/[F2] key select the desired alarm ring. Press [MENU] to confirm and exit.

### **Power-on password setting (Password)**

Power-on password can be set for this transceiver. If it is turned on, when you power on the transceiver, a password of 6 digits is required before you get into the transceiver. Enter the 6-digit password and press [MENU] to confirm and get into the transceiver.

To disable the password, turn this function off.

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press [F1]/[F2] key to select group “ADDITION”, press [MENU] to confirm and enter into second-layer menu. Press [F1]/[F2] key to select item “Password”, press [MENU] to enter into parameter setting. Use [F1]/[F2] key select ON/OFF. Press [MENU] to confirm and exit.

### **Power-on password editing**

There are 6 digits for the power-on password, which can be set by the numeric keys.

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press [F1]/[F2] key to select group “ADDITION”, press [MENU] to confirm and enter into second-layer menu. Press [F1]/[F2] key to select item “Password Edit”, press [MENU] to enter. Use numeric keys to select the desired numbers to compose the password. Press [# A/B] key to delete current digit and go to last digit. After the password editing is completed, press [MENU] to confirm and exit.

### **Automatic contact feature (AUC)**

This transceiver provides a characteristic Automatic Contact feature which will help you identify whether you are out of the communication range or not, and alert you to return to areas within the communication range.

Set a transceiver as “Master”, the other transceivers as “Slave”. The “Master”

transceiver will automatically contact the “Slave” transceivers by transmitting in a preset regular time interval (set via software). If the “Slave” transceivers receive the signal, they are still within the communication range. If the “Slave” transceivers do not receive the signal within the preset time limit (“AUC TOT”), they are out of the communication range, and the beep alarm tone (“AUC Alarm”) will sound to indicate this. In this case, “Slave” users are advised to return back to the effective communication range.

To activate the AUC feature, do the following step:

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “ADDITION”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “AUC”, press **[MENU]** to enter. Press **[F1]/[F2]** key to select ON/OFF. Press **[MENU]** to confirm and exit.

#### **Automatic contact position setting (AUC POS)**

One of the transceivers can be set as “Master”, and the other transceivers be set as “Slave”

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “ADDITION”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “AUC POS”, press **[MENU]** to enter. Press **[F1]/[F2]** key to select “MASTER/SLAVE”. Press **[MENU]** to confirm and exit.

#### **Automatic contact transmitting time interval (AUC TxPer)**

This feature is only for the “MASTER” transceiver. It is to set the time interval for the Master transceiver to transmit and to contact with “Slave” transceivers.

The available time intervals are: 5-250 seconds.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “ADDITION”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “AUC TxPer”, press **[MENU]** to enter. Press **[F1]/[F2]** key to select the desired time interval. Press **[MENU]** to confirm and exit.

#### **Automatic contact time limit (AUC TOT)**

This feature is used for “Slave” transceivers. A time limit can be set for AUC feature. If the “Slave” transceivers do not receive the signal within the preset time limit (“AUC TOT”), they are out of the communication range. A continuous beep alarm tone (“AUC Alarm”) will sound to indicate this. In this case, “Slave” users are advised to return back to the effective communication range.

The available AUC TOT values are: 5-250 seconds.

Press **[MENU]** key, then press **[MENU]** again to enter into first-layer menu. Press **[F1]/[F2]** key to select group “ADDITION”, press **[MENU]** to confirm and enter into second-layer menu. Press **[F1]/[F2]** key to select item “AUC TOT”, press **[MENU]** to enter. Press **[F1]/[F2]** key to select the desired time limit. Press

[MENU] to confirm and exit.

### **AUC Alarm time interval (AUC Alarm)**

This feature is used for “Slave” transceivers. If the “Slave” transceivers do not receive the signal coming from “Master” transceiver, a continuous beep alarm tone (“AUC Alarm”) will sound based on the time interval to indicate this. In this case, “Slave” users are advised to return back to the effective communication range.

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press [F1]/[F2] key to select group “ADDITION”, press [MENU] to confirm and enter into second-layer menu. Press [F1]/[F2] key to select item “AUC Alarm”, press [MENU] to enter. Press [F1]/[F2] key to select the desired alarm time interval. Press [MENU] to confirm and exit.

### **Automatic power off (APO)**

The APO feature helps conserve battery life by automatically turning the transceiver off after a preset period of time within which there has been no operation to the transceiver.

The available selections for the time before power-off are: 10m/20m/30m/1h/2h.....12h, as well as APO OFF.

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press [F1]/[F2] key to select group “ADDITION”, press [MENU] to confirm and enter into second-layer menu. Press [F1]/[F2] key to select item “APO”, press [MENU] to enter. Press [F1]/[F2] key to select the desired APO time period. Press [MENU] to confirm and exit.

### **Reset**

There are two ways of reset: VFO and ALL.

VFO: All the menu functions setting will be resumed to factory default setting.

ALL: All transceiver’s setting will be resumed to factory default setting.

Press [MENU] key, then press [MENU] again to enter into first-layer menu. Press [F1]/[F2] key to select group “ADDITION”, press [MENU] to confirm and enter into second-layer menu. Press [F1]/[F2] key to select item “Reset”, press [MENU] to enter. Press [F1]/[F2] key to select the VFO/ALL reset. Press [MENU] to confirm. The transceiver will go back to standby mode after reset.

## FM RADIO FUNCTION

### FM radio mode

Press **[MENU]+[9]** to activate the FM radio mode. Press / key or numeric keys to select or input your desired FM radio frequency. Press **[MENU]+[9]** to exit FM radio mode.

### FM radio scanning:

Under FM radio mode, press **[\*V/M]** to start scanning, press / key to change the scanning direction, when a FM radio signal is searched, it will stop on that FM radio channel. Press **[EXIT]** key to exit scanning.

### FM radio channel storage

20 FM radio channels are available.

Under FM radio mode, press **[MENU]** key to enter setting mode, press / key to select item "SAVE", press **[MENU]** to enter setting, then press / key to select the desired channel among 1-20 for storing the FM radio station.

### FM radio channel loading

Under FM radio mode, press **[MENU]** key to enter setting mode, press / key to select item "LOAD", press **[MENU]** to enter setting, then press / key to select the desired channel. Press **[MENU]** to load it.

### FM radio step

The available FM radio steps are: 0.05MHz/0.1MHz/0.5MHz/1MHz

Under FM radio mode, press **[MENU]** key to enter setting mode, press / key to select item "STEP", press **[MENU]** to enter setting, then press / key to select the desired FM radio step. Press **[MENU]** to confirm.

## **COMPLEMENTARY FUNCTIONS**

### **Flashlight illumination**

Press side key PF2 to turn on/off the flashlight, and also switch between ON---Slow flash---Quick flash---OFF.

### **Emergency alarm call**

Press and hold side key PF2 to activate emergency alarm call. Press PTT key or side key PF2 to stop it.

### **IP 67 waterproof**

Adopting the waterproof gasket and waterproof structure, the transceiver can reach IP67 waterproof standard. It is submersible in one-deep water for 30 minutes. Therefore, it can be perfectly used in the harsh environment such as rain, snow, or any other sudden change in temperature.

## **SET MODE ITEMS**

| First layer | second layer | function                                                                   | available values         |
|-------------|--------------|----------------------------------------------------------------------------|--------------------------|
| TX/RX       | SQL          | Sets the squelch threshold                                                 | 0-9                      |
|             | Power        | Sets the TX power output                                                   | High/Low                 |
|             | BCLO         | Enable/disable the busy channel lockout function                           | Off/QDT/CAT              |
|             | TOT          | Sets the TOT time                                                          | Off/30s/60s~570s/600s    |
|             | TOA          | Sets the TOA time                                                          | Off/1s/2s~9s/10s         |
|             | Talk Around  | Enable/disable the talk around function                                    | On/Off                   |
|             | Whisper      | Enable/disable the whisper function                                        | On/Off                   |
| CTC/DCS     | C-CTC/DCS    | Common CTCSS/DCS setting for TX&RX                                         | Off/CTC/DCS/IDCS         |
|             | R-CTC/DCS    | Split RX CTCSS/DCS setting                                                 | Off/CTC/DCS/IDCS         |
|             | T-CTC/DCS    | Split TX CTCSS/DCS setting                                                 | Off/CTC/DCS/IDCS         |
|             | CTC/DCS Scan | Activates CTCSS/DCS scanning                                               |                          |
| SIGNALLING  | Signal Type  | Selects the signaling type for transmission                                | Off/DTMF/2TONE/5TONE     |
|             | Side Tone    | Enable/disable the side tone for signaling transmission                    | On/Off                   |
|             | Encode Mode  | Selects whether to send DTMF by manually dial or through DTMF address book | Manu/Address Book        |
| CHANNEL     | Home Channel | Sets a favorite channel                                                    | 1~240                    |
|             | Delete       | Deletes channels(under MR/CH mode)                                         |                          |
|             | Name Edit    | Edit channel name (under CH mode)                                          |                          |
|             | Name Disp    | Enable/disable channel name display(under CH mode)                         | On/Off                   |
| REPEATER    | 1750Hz Tone  | Sets the length for 1750Hz tone                                            | Off/1s/2s/3s/4s/5s       |
|             | ARS          | Enable/disable the automatic repeat shift                                  | On/Off                   |
|             | SFT-D        | Manually set the shift direction(under VFO mode)                           | Off                      |
|             | SFT Freq     | Manually set the shift frequency (under VFO mode)                          |                          |
| SCAN        | Scan Resume  | Sets the scan resume mode                                                  | Carrier/Time/Seek        |
|             | PriScan      | Sets a priority channel                                                    | Off/1~240                |
|             | Scan Add     | Add/delete channels from scanning list(under MR/CH mode)                   | Add/Del                  |
| SET         | Work Mode    | Selects the work mode                                                      | Channel/Memory/Frequency |
|             | Batt.Saver   | Selects the battery saver interval("sleep" ratio)                          | Off/1:1/1:2/1:3/1:4      |
|             | A/B Watch    | Enable/disable the A/B watch feature                                       | Auto/On/Off              |
| First layer | second layer | function                                                                   | available values         |

|          |               |                                                                    |                                         |
|----------|---------------|--------------------------------------------------------------------|-----------------------------------------|
| SET      | VOX Gain      | Selects the VOX level                                              | Off/1~9                                 |
|          | VOX Delay     | Selects the VOX delay time                                         | 0.3s/0.5s/1.0s/2.0s/3.0s/4.0s/5.0s      |
|          | Clock         | Enable/disable the clock standby mode                              |                                         |
|          | Date          | Sets the actual date                                               |                                         |
|          | Time          | Sets the actual time                                               | On/Off                                  |
|          | Key beep      | Enable/disable the keypad beep tone                                | On/Off                                  |
|          | Begin Beep    | Enable/disable the TX starting beep tone                           | Off/1/2/3                               |
|          | ROG Beep      | Enable/disable the TX over beep tone                               | Off/1/2/3                               |
|          | FM-R Watch    | Enable/disable two-way radio signal monitoring under FM radio mode | On/Off                                  |
|          | Key lock      | Selects key lock mode                                              | Manu/Auto                               |
|          | Lamp Control  | Enable/disable LCD lamp                                            | Auto/On/Off                             |
|          | Idle Color    | Selects standby lamp color                                         | Red/Green/Blue/Yellow/Purple/Cyan/White |
|          | Tx Color      | Selects TX lamp color                                              | Red/Green/Blue/Yellow/Purple/Cyan/White |
|          | Rx Color      | Selects RX lamp color                                              | Red/Green/Blue/Yellow/Purple/Cyan/White |
|          | Language      | Selects displaying language                                        | Chinese/English                         |
| ADDITION | Step          | Selects frequency step                                             | 2.5K/5K/6.25K/10K/12.5K/25K/50K/100K    |
|          | Alarm clock   | Sets the alarm clock                                               |                                         |
|          | Alarm Ring    | Selects the alarm ring                                             | Off/1/2/3                               |
|          | Password      | Enable/disable the power-on password                               | On/Off                                  |
|          | Password Edit | Edits the power-on password                                        |                                         |
|          | AUC.          | Enable/disable the automatic contact feature                       | On/Off                                  |
|          | AUC.POS       | Sets the automatic contact position                                | Master/Slave                            |
|          | AUC.TxPer     | Selects the automatic contact TX time interval                     | 5~250                                   |
|          | AUC.TOT       | Selects the automatic contact time limit                           | 5~250                                   |
|          | AUC.Alarm     | Selects the automatic contact alarm time interval                  | 2~60                                    |
|          | APO           | Selects the automatic power off time period                        | Off/10m/30m/1h/2h~11h/12h               |
|          | Reset         | Selects the reset mode                                             | VFO/ALL                                 |

## QT/DQT sheet

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 67.0  | 69.3  | 71.9  | 74.4  | 77.0  | 79.7  | 82.5  | 85.4  | 88.5  | 91.5  |
| 94.8  | 97.4  | 100.0 | 103.5 | 107.2 | 110.9 | 114.8 | 118.8 | 123.0 | 127.3 |
| 131.8 | 136.5 | 141.3 | 146.2 | 151.4 | 156.7 | 162.2 | 167.9 | 173.8 | 179.9 |
| 186.2 | 192.8 | 203.5 | 210.7 | 218.1 | 225.7 | 233.6 | 241.8 | 250.3 |       |
|       |       |       |       |       |       |       |       |       |       |
| D023N | D025N | D026N | D031N | D032N | D043N | D047N | D051N | D054N | D065N |
| D071N | D072N | D073N | D074N | D114N | D115N | D116N | D125N | D131N | D132N |
| D134N | D143N | D152N | D155N | D156N | D162N | D165N | D172N | D174N | D205N |
| D223N | D226N | D243N | D244N | D245N | D251N | D261N | D263N | D265N | D271N |
| D306N | D311N | D315N | D331N | D343N | D346N | D351N | D364N | D365N | D371N |
| D411N | D412N | D413N | D423N | D431N | D432N | D445N | D464N | D465N | D466N |
| D503N | D506N | D516N | D532N | D546N | D565N | D606N | D612N | D624N | D627N |
| D631N | D632N | D654N | D662N | D664N | D703N | D712N | D723N | D731N | D732N |
| D734N | D743N | D754N |       |       |       |       |       |       |       |

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D023I | D025I | D026I | D031I | D032I | D043I | D047I | D051I | D054I | D065I |
| D071I | D072I | D073I | D074I | D114I | D115I | D116I | D125I | D131I | D132I |
| D134I | D143I | D152I | D155I | D156I | D162I | D165I | D172I | D174I | D205I |
| D223I | D226I | D243I | D244I | D245I | D251I | D261I | D263I | D265I | D271I |
| D306I | D311I | D315I | D331I | D343I | D346I | D351I | D364I | D365I | D371I |
| D411I | D412I | D413I | D423I | D431I | D432I | D445I | D464I | D465I | D466I |
| D503I | D506I | D516I | D532I | D546I | D565I | D606I | D612I | D624I | D627I |
| D631I | D632I | D654I | D662I | D664I | D703I | D712I | D723I | D731I | D732I |
| D734I | D743I | D754I |       |       |       |       |       |       |       |

## **Warranty Terms**

### **>>Scope and Period of Warranty**

Guarantees that any walkie-talkie manufactured by us found with material other manufacturing defects will be entitled to free maintenance within the period specified below from the date of purchase, provided Theta the with is used and maintained under normal conditions.

|                                                   |                  |
|---------------------------------------------------|------------------|
| <b>Main unit</b>                                  | <b>12 months</b> |
| <b>Accessories (antenna, batteries, charger )</b> | <b>6 months</b>  |

### **>>The following cases are not covered by warranty:**

1. Any defect or damage caused by improper or unintended use of the product.
2. Any defect or damaged caused but incorrect use, accidents, water spillage or negligence of the user.
3. Ant defect or damaged caused incorrect test, operation, maintenance, assembly, refitting or adjustment.
4. Antenna defect or damage caused by reasons other than material or manufacturing defects.
5. Any defect other damaged caused by unauthorized maintenance and disassembly
6. Product with erased or illegible serial number.
7. Product with unidentifiable date of purchase.
8. Chargeable batteries with:
  - a. Damaged or unsealed battery case;
  - b. Anus defect or damage caused by charge or use under equipment or maintenance conditions other than those specified.
9. Normal wear and tear.