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## USING NOTE ITEMS

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This is an excellent design and advanced technology radio. Below advises will better help you to following the duties of in terms of repair, will better know the safety of using radio;

- Please keep the radio and accessories in where is the children can not touch them;
- Please do not disassembly radio, it will cause radio broken when non professional staff handle it;
- Please use the standard battery and charger, avoid to damage the radio;
- Please use the match antenna, avoid to shorten the communication distance;
- Do not keeping the radio under the sunshine with long time, or keeping it into the superheat place;
- Do not keep the radio into where is full with the dust and damp;
- Do not use strong chemical products, cleaning agents or strong Lotion to cleaning the radio;
- Can not transmitting when without installing it's antenna;
- If it find that radio have the peculiar smell or smoke, please turn off the supply power of radio promptly, and contact with supplier about this case;
- Do not short battery terminal connection or put battery pack into fire.

### NOTE

- *If you following all above mention advise to using the radio and it's accessories ,they still can not working normally, please promptly contact with supplier about this case;*
- *If using those parts and accessories those are not producing and not selling by our company, we can not promise that the safety and operation of radio;*

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## OUT OF THE BOX AND RADIO INSPECTION

Carefully take out the radio. We recommend that you identify the items in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, please notify your dealer.

### ※ Supplied accessories table

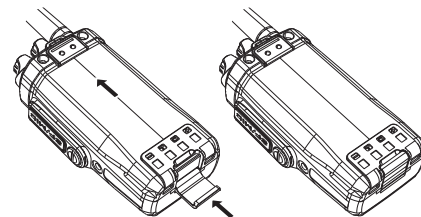
Item	Quantity
Transceiver	1
High-gain antenna	1
Lithium battery pack	1
Intelligent charger	1
Belt clip	1
Handstrap	1
User's Manual	1
Warranty Card	1

## INSTRUCTIONS BEFORE USE

### ※ Install/Remove battery pack

The battery pack was not charging before leaving factory, please charging before use the radio;

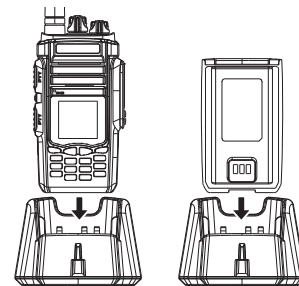
- Please put the battery pack align with radio back-side, then push it with up towards direction, until release plus of radio base is locked;
- Removing the battery pack, push it with down towards direction, until release plus of radio base unlocked;



### ※ Charge steps

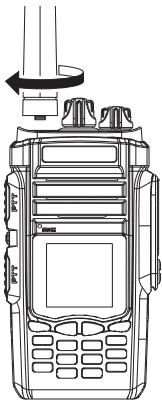
The charger plug into the mains of 220V or 110V power outlet, the charger indicator green light flashing, the battery pack or the radio with battery pack insert into the charger card slot.

The charger red light flashing to start charging. Charging then the charger green light flashing, charging end.



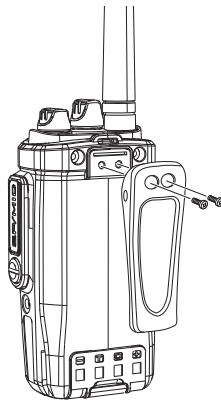
### ※ Install antenna

Install the antenna into the radio connector, holding the antenna base and turning it clockwise until secure.



### ※ Install/Remove belt clip

If necessary install the belt clip at the rear of the battery compartment cover.



## BE FAMILIAR WITH RADIO

### ※ Description of functions

- Duplex different/same band transfer function
- Duplex working mode
- AB Zone duplex working (A zone transmit, B zone receive)
- Dual receive
- In same or different frequency, AB zone all can receive contemporary;
- Super colorful LCD display;
- Adapted to the various countries and regions of the working frequency:
  - 136-174 & 400-470MHz (RX/TX)
  - 136-174 & 400-480MHz (RX/TX)
  - 136-174 & 450-520MHz (RX/TX)
  - 144-146 & 430-440MHz (RX/TX)
- (RX) FM: 76MHz-108MHz (Frequency step 100K)
- Dual display
- Large screen dual band display, two completely independent operation system;
- Offset frequency setting and frequency direction setting
- Duplex repeater UHF to VHF or VHF to UHF
- 999 channels
- Output power 10W
- CTCSS/DCS, CTCSS/DCS scan function
- VOX function

- Definition function of Multi-side key
- Caller ID display
- Main caller ID display
- DTMF
- All Calls, Group Calls and Selective Calls
- SOS function
- Priority Scan Function
- Remote emergency alarm
- Wide/Narrow bandwidth Selection (12.5KHz/ 25KHz)
- Operating voice prompts in English and Chinese
- Display in English and Chinese
- SingleTone Pulse Frequency: 2100Hz/1750Hz/1000Hz/1450Hz (sinalling for activating repeater)
- Reverse Frequency
- Stopwatch function
- Scrambler function

## ※ Technical specification

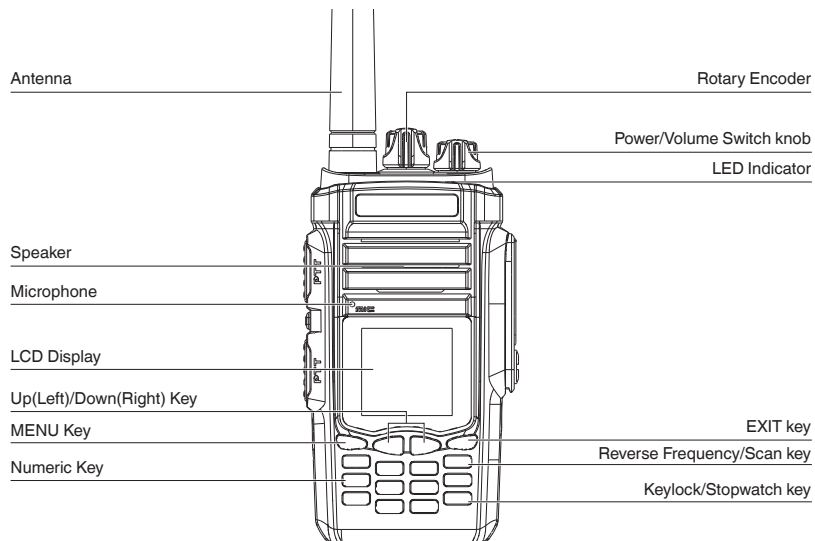
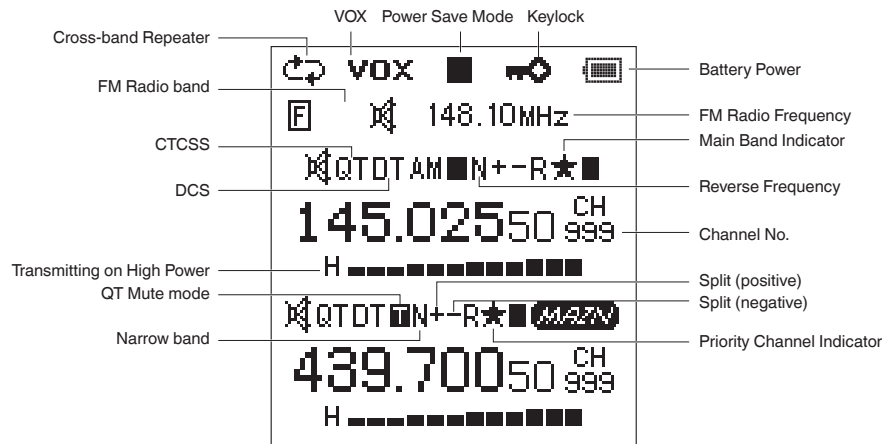
General	
Frequency range match	To adapt to the working frequency of various countries and regions: (TX/RX) 136-174MHz & 400-470MHz; 136-174MHz & 400-480MHz 136-174MHz & 450-520MHz; 144-146MHz & 430-440MHz
step frequency	5KHz / 6.25KHz / 10KHz / 12.5KHz / 25KHz / 50KHz / 100KHz
Channel Capacity	999
Working mode	F2D / F3E
Operating Temperature	-20°C to +40°C
Antenna Impedance	50Ω
Working voltage	7.4V DC
Weight	280g (with battery and antenna)
Dimension	124.5 × 64 × 37mm (without antenna)

Receiver	Wide band	Narrow band	Transmitter	Wide band	Narrow band
Adjacent channel selectivity	≤70dB	≤60dB	Modulation mode	16K F3E	11K F3E
Intermodulation	≤65dB	≤60dB	Adjacent channel power	≥70dB	≥60dB
Spurious response	≤70dB	≤70dB	spurious	≥60dB	≥60dB
Acoustic frequency response	+1~3dB (0.3~3KHz)	+1~3dB (0.3~2.55KHz)	Acoustic frequency response	+1~3dB (0.3~3KHz)	+1~3dB (0.3~2.55KHz)
SNR	≥45dB	≥40dB	Max Freq.Deviation	± 5KHz	12.5KHz
Audio distortion	≤5%		Frequency stability	± 2.5ppm	
Audio Output Power	≤500mW		Audio distortion	≤5%	
Sensitivity	UHF/VHF: 0.25μV (12dB SINAD)		Output power	10W/1W (VHF) 10W/1W (UHF)	

## ※ Structure Specification

### ※ Screen Display

On the display, you can see a variety of indicators to choose content.



## FUNCTIONAL INSTRUCTION

### ※ Variety working modes of the radio

#### ◇ Working models

### ※ Basic operation

#### ◇ Quick search function

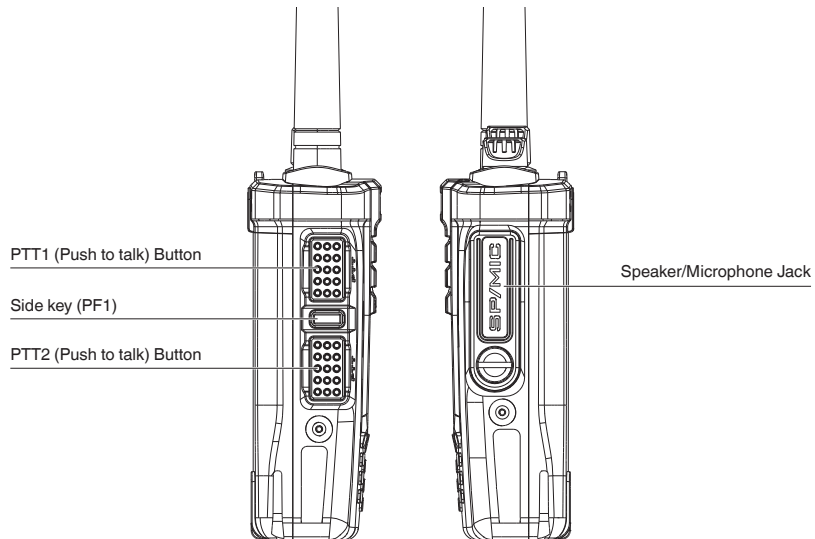
Press [UP] or [DOWN] to set function or parameter, Long press [UP] or [DOWN] to quick search function.

#### ◇ DTMF

#### ◇ Reverse frequency function

When using this function, TX and RX frequency will be exchanged, with CTCSS /DCS will be exchanged; the operating: Under of standby states, press [\*SCAN] to open this function, then press [\*SCAN] again to turn off;

#### ◇ Scramble function





## FUNCTION MENU

### ※ Frequency step (STEP) – Menu1

In the standby, Press [MENU] + [1 STEP], LCD display;  
Press [MENU], then Press [UP]/[DOWN] to select the freq step, and press [MENU] to confirm, final press [EXIT] back to standby.

**Tips:** The radio have 7 type Freq step, including 5K, 6.25K, 10K, 12.5K, 25K, 50K, 100K;

### ※ SQL level (SQL-LE) – Menu2

The SQL level selection is actual that Open this function or close this function when signal up to what is level; When open this function and set up in the same signaling, The speaker will issue the voice; if select higher level of this function will cause the weak signal so as to not receive very well; if select lower level of this function, will cause the disturb of noise and other signal;

In the standby, press [MENU]+[2 SQL], LCD Display;  
Press [MENU], then Press [UP]/[DOWN] to select the SQL level, and press [MENU] to confirm, final press [EXIT] back to standby.

**Tips:** The radio have level “0~9” to select, selecting “0” will keep this function closing, the level “1~9”, the level higher and the function higher;

### ※ Power save mode (SAVE) – Menu 3

In order to reduce battery consume, This function will be shut down the receiver circuit of radio for

some time, then open for a moment to checking the received signal;  
In the standby, press [MENU]+[3 SAVE], LCD Display;  
Press [MENU], then Press [UP]/[DOWN] to select ON(open function)/OFF(close function), and press [MENU] to confirm, final press [EXIT] back to standby states.

### ※ Power Level (TXP) – Menu4

Under the standby states, press [MENU]+[4 TXP], LCD Display;  
Press [MENU], then Press [UP]/[DOWN] to select level, and press [MENU] to confirm, final press [EXIT] back to standby states;  
■ The radio have 2 type power level: HIGH/LOW

### ※ Transmitting prompt voice (Roger) – Menu5

In the standby, press [MENU]+[5 ROGER], LCD Display;  
Press [MENU], then Press [UP]/[DOWN] to select the prompt mode, and press [MENU] to confirm, final press [EXIT] back to standby states.  
■ The radio have 4 type prompt mode of Transmitting prompt voice: BOT, EOT, BOTH, OFF

### ※ Transmitter time-out timer (TOT) – Menu 6

In the standby ,press [MENU]+[6 TOT], LCD Display;  
Press [MENU], then Press [UP]/[DOWN] to select the times, and press [MENU] to confirm, final press [EXIT] back to standby;  
■ The radio have total 60 grade of times, From 15s to 900s, 15s increment per level.

### ※ VOX function (VOX) – Menu 7

In the standby, press [MENU]+[7 VOX], LCD Display;

Press [MENU], then Press [UP]/[DOWN] to select the VOX grade, and press [MENU] to confirm, final press [EXIT] back to standby states;

- The radio have the grades “1~9” of VOX function. OFF: turn off function;

#### Tips:

- VOX Function open higher level grade ,the used sound will be higher;
- It can not open this function under the scanning states or FM states.

### ※ Wide/Narrow Band setting (W/N) – Menu 8

In the standby, press [MENU]+[8 W/N], LCD Display;

Press [MENU], then Press [UP]/[DOWN] to select the bandwidth, and press [MENU] to confirm, final press [EXIT] back to standby;

- The radio have 2 type of bandwidth:  
WIDE: Wide bandwidth (25K) and NARR: narrow bandwidth (12.5K)

### ※ Operation prompt voice(VOICE) – Menu 9

In standby states, press [MENU]+[9 VOICE], LCD Display;

Press [MENU], then Press [UP]/[DOWN] to select the prompt mode, and press [MENU] to confirm, final press [EXIT] back to standby;

- The radio have 2 type prompt mode:

ON (open function) / OFF (close function)

**Tips:** If want to turn off all operation prompt voice, it must be turn of Menu 9 operation prompt voice setting (VOICE) and Menu 11 beep prompt setting (BEEP).

### ※ Transmit overtime alarm (TOA) – MENU 10

In standby, press [MENU]+[1 STEP]+[0DW], screen display;

In standby, press [UP]/[DOWN] choose time, then press [MENU], final press [EXIT] back to standby.

- Transmit overtime alarm have 10 seconds, total is 10 level, each level 1 second. OFF: close the over time alarm.

**Tips:** If transmit time continuous exceed “overtime alarm”, erro voice then stop transmit.

### ※ Beep (BEEP) – Menu 11

In the standby states, press [MENU]+[1 STEP]+[1 STEP], LCD Display;

Press [MENU], then Press [UP]/[DOWN] to select ON/OFF, and press [MENU] to confirm, final press [EXIT] back to standby;

### ※ Screen Chinese/English (language) – Menu 12

In the standby, press [MENU]+[1 STEP]+[2 SQL], LCD Display;

Press [MENU], then Press [UP]/[DOWN] to select language, and press [MENU] to confirm, final press [EXIT] back to standby;

- The radio have 2 language dispalry: CHINESE/ENGLISH, voice prompt also change.

### ※ **Busy channel lock-out (BCL) – Menu 13**

In the standby, press **[MENU]+[1 STEP]+[ 3 SAVE]**, LCD Display;  
Press **[MENU]**, then Press **[UP]/[DOWN]** to select ON/OFF, and press **[MENU]** to confirm, final press **[EXIT]** back to standby;

*Tips: When radio working under the mode of cross band repeater and transmit, this is function is prohibited;*

### ※ **Scan mode (SC-REV) – Menu 14**

In the standby, press **[MENU]+[1 STEP]+[4 TXP]**, LCD Display;  
Press **[MENU]**, then Press **[UP]/[DOWN]** to select scan mode, and press **[MENU]** to confirm, final press **[EXIT]** back to standby;

- **TO** : Scanning the carrier signal, and not any operation within 5 seconds will continue to scan
- **CO** : Scanning the carrier signal will stop scanning ,carrier signal will disappear after 3 seconds then continue to scan;
- **SE** : Scanning the carrier signal will stop scanning;

*Tips: Press [\*SCAN] with 2 second, then can enter into scanning states;*

### ※ **Receiving CTCSS (R-CTC) – Menu15**

In the standby, press **[MENU]+[1 STEP]+[5 ROGER]**, LCD Display;  
Press **[MENU]**, then Press **[UP]/[DOWN]** to select CTCSS, and press **[MENU]** to confirm, final press **[EXIT]** back to standby;

- The standard CTCSS total 50 group, the range of CTCSS: 67.0~254.1Hz; OFF: turn off function;

### ※ **Transmit CTCSS (T-CTC)---Menu 16**

Under the standby states, press **[MENU]+[1 STEP]+[6 TOT]**, LCD Display;  
Press **[MENU]**, then Press **[UP]/[DOWN]** to select CTCSS, and press **[MENU]** to confirm, final press **[EXIT]** back to standby;

- The standard CTCSS total 50 group, the range of CTCSS: 67.0~254.1Hz; OFF: turn off function;

### ※ **Receive DCS (R-DCS) – Menu 17**

Under the standby states, press **[MENU]+[1 STEP]+[7 VOX]**, LCD Display;  
Press **[MENU]**, then Press **[UP]/[DOWN]** to select DSC, and press **[MENU]** to confirm, final press **[EXIT]** back to standby states;

- The standard DCS total 105 group ortho code, 105 group reverse code, the range: D023N~D754I; OFF: turn off function;

### ※ **Transmit DCS(T-DCS) – Menu 18**

In the standby, press **[MENU]+[1 STEP]+[8 W/N]**, LCD Display;  
Press **[MENU]**, then Press **[UP]/[DOWN]** to select DSC, and press **[MENU]** to confirm, final press **[EXIT]** back to standby;

- The standard DCS total 105 group ortho code, 105 group reverse code, the range: D023N~D754I; OFF: turn off function;

CTCSS													
1	67	9	88.5	17	114.8	25	151.4	33	177.3	41	203.5	49	250.3
2	69.3	10	91.5	18	118.8	26	156.7	34	179.9	42	206.5	50	254.1
3	71.5	11	94.8	19	123	27	159.8	35	183.5	43	210.7		
4	74.4	12	97.4	20	127.3	28	162.2	36	186.2	44	218.1		
5	77	13	100	21	131.8	29	165.5	37	189.9	45	225.7		
6	79.7	14	103.5	22	136.5	30	167.9	38	192.8	46	229.1		
7	82.5	15	107.2	23	141.3	31	171.3	39	196.6	47	233.6		
8	85.4	16	110.9	24	146.2	32	173.8	40	199.5	46	241.8		

DCS													
1	D023N	16	D074N	31	D166N	46	D261N	61	D356N	76	D462N	91	D627N
2	D025N	17	D114N	32	D172N	47	D263N	62	D364N	77	D464N	92	D631N
3	D026N	18	D115N	33	D174N	48	D265N	63	D365N	78	D465N	93	D632N
4	D031N	19	D116N	34	D205N	49	D266N	64	D371N	79	D466N	94	D645N
5	D032N	20	D122N	35	D212N	50	D271N	65	D411N	80	D503N	95	D654N
6	D036N	21	D125N	36	D223N	51	D274N	66	D412N	81	D506N	96	D662N
7	D043N	22	D131N	37	D225N	52	D306N	67	D413N	82	D516N	97	D664N
8	D047N	23	D132N	36	D226N	53	D311N	68	D423N	83	D523N	98	D703N
9	D051N	24	D134N	39	D243N	54	D315N	69	D431N	84	D526N	99	D712N
10	D053N	25	D143N	40	D244N	55	D325N	70	D432N	85	D532N	100	D723N
11	D054N	26	D145N	41	D245N	56	D331N	71	D445N	86	D546N	101	D731N
12	D066N	27	D152N	42	D246N	57	D332N	72	D446N	87	D565N	102	D732N
13	D071N	28	D155N	43	D251N	58	D343N	73	D452N	88	D606N	103	D734N
14	D072N	29	D156N	44	D252N	59	D344N	74	D454N	89	D612N	104	D743N
15	D073N	30	D162N	45	D256N	60	D361N	75	D455N	90	D624N	105	D754N

### ※ Side key 2 definitions (PF2-KEY) – Menu 19

In the Standby, press [MENU]+[1 STEP]+[9 VOICE], LCD Display;  
Press the [MENU], press the [UP]/[DOWN] to select the desired parameter type, Press [MENU] button to confirm, press [EXIT] back to standby.

- The radio side keys 2 parameters: CALL (call option), VFTX (amplitude-frequency emission).
- Selective call code by our supporting software for editing.

### ※ Define the side key 1 (PF1-KEY) – Menu 20

In the Standby, press [MENU]+[2 SQL]+[0 DW] key, LCD display;  
Press the [MENU], press the [UP]/[DOWN] keys to select the desired parameter type, then Press [MENU] button to confirm, press [EXIT] go back to standby.

- The radio side key 1 parameter: SCAN, LAMP, SOS, TELEALARM, RADIO, DISABLE. Default set is FM radio.

The above parameters are selected to achieve their each functions:

#### ◇ PF1 select SCAN scan function

In the standby, press PF1 key to enter Scan state (scan mode base on the menu functions (14), the scanning process, press any key to stop scanning.

#### ◇ PF1 select LAMP long light

In the standby, press PF1 key to start the lamp, press the PF1 key to close the long light.

#### ◇ PF1 select SOS

In the standby, press PF1 key, the speaker alarm in 2 seconds, and pronounce alarm tone.

**Tips:** *Transmission time is 10 seconds, 5 minutes in the next time. Press any key to exit.*

#### ◇ PF1 Select TELEALARM

In the standby, press PF1, speaker alarm sound and alarm code, press the PTT key to exit.

#### ◇ PF1 Select RADIO

1. In the standby, press PF1 key to open the radio, screen display;  
Press [**\* SCAN**] key to enter the radio to automatically search for radio stations, receipt the signal of radio stop automatically.
2. Set radio frequency:  
Activate the radio, press the [**RPT**] for 2 seconds, the screen displays:  
Press 0-9 key number to set radio channels. Exit radio, press the PF1 key.

**Tips:** *FM radio working, the current frequency or channel still in standby, will automatically return to radio status when receiving a signal. Automatically return to FM radio in 5 seconds after Signal disappear. Press the PTT key, will automatically return to radio in 5 seconds.*

#### ※ Working mode (CH-MDF) – Menu 21

In the Standby, press [**MENU**]+[**2 SQL**]+[**1 STEP**], screen displays;  
Press the [**MENU**], press the [**UP**]/[**DOWN**] keys to select the desired working mode, press the [**MENU**]

to confirm, press [**EXIT**] back to standby.

The radio of working mode VFO mode or MR mode, VFO+MR mode including three different display mode;

- MR Display mode;
- VFO+MR display mode;
- VFO display mode;

**Tips:** *But VFO model and MR model sometimes set up the password limit; The exchanged of them need to input correct password then can go ahead exchanged;*

If setting the exchanged password, press [**VFO/MR**], LCD display like below picture, input the password then press Menu to confirm. When inputting 6 password, if inputting is correct, the switchable mode is success, if inputting is incorrect, the switchable mode is unsuccessful; The setting of exchanged password only through by the software of our company, and 6 number of password all is “0”, will cancel the exchanged password setting;

#### ※ Backlight (ABR) – Menu 22

In the standby, press [**MENU**]+[**2 SQL**]+[**2 SQL**], screen display:  
Press [**MENU**] to enter, press the [**UP**]/[**DOWN**] to select the desired setting, press the [**MENU**] button to confirm, press [**EXIT**] key to return to standby.

- Always ON: Backlight always on
- 1S-20S: backlight light setting time
- Always OFF: Backlight always off (**TIPS:** This function is invalid, because display is colorful)

### ※ Offset frequency (OFFSET) – Menu 23

In the Standby, press [MENU]+[2 SQL]+[3 SAVE], the screen displays:

Press the [MENU] to enter, press [UP]/[DOWN] keys to select the desired offset frequency, then press [MENU] to confirm, press [EXIT] back to standby.

- The radio is the offset frequency between 0~599.995MHz, the frequency of the input frequency difference of 7, 8-bit stepping frequency automatic judgment.

### ※ Offset frequency direction setting (SFT-D) – Menu 24

In the standby, press [MENU]+[2 SQL]+[4 TXP], the screen displays:

Press [MENU] to enter, press [UP]/[DOWN] keys to select the desired offset frequency direction, then press [MENU] to confirm, press [EXIT] back to standby.

#### The radio offset frequency direction:

- Transmit frequency is higher than the receiver offset frequency is positive (+);
- Transmit frequency is lower than the receiver offset frequency is negative (-);
- Turn off offset frequency direction(off).

### ※ Stopwatch (SECOND) – Menu 25

In the Standby, press [MENU]+[2 SQL]+[5 ROGER], the screen displays:

Press the [MENU] to enter, press [UP]/[DOWN] key to select ON and press [MENU] to confirm, press [EXIT] to back standby.

**Tips : (Second instruction)** when the second is on, press the [UP] key to start the counting, press any key except [UP] to stop the counting; press [DOWN] the second restart.

### ※ Channel Name setting (CHNAME) – Menu 26

Edit channel name only in channel mode to edit the current channel, frequency mode operation is invalid.

In the standby, press [MENU]+[2 SQL]+[6 TOT], the screen displays:

Press the [MENU] to enter, then the first character flashing (this character instructions being edited), press [UP] keys to select the desired character, press the [DOWN] key to edit the next one, press the [#AB] to confirm, press [EXIT] to exit.

**TIPS:** The channel name can edit up to eight characters. When the edited eight characters are all empty, the default channel name is blank, channel name displayed as NO-NAME!, The channel name can edit four Chinese characters through the programming software.

### ※ Channel memory setting (MEM-CH) – Menu 27

In channel mode or frequency mode, press [MENU]+[2 SQL]+[7 VOX], the screen displays:

Press [MENU] to enter, press [UP]/[DOWN] keys to select the desired channel number storage, press the [MENU] to confirm, press the [EXIT] key to exit.

**Example:** RX frequency 450.025MHz, CTCSS 67.0Hz, TX frequency 460.025MHz, stored in the first 10 channels.

- 1) In the frequency mode, frequency 450.025, press [MENU]+[1 STEP]+[5 ROGER] setting RX CTCSS function, Press [MENU], then press [UP]/[DOWN] keys to select 67.0Hz, press [MENU] to confirm.
- 2) Press the [MENU]+[2 SQL]+[3 SAVE] to set the offset frequency 10.000MHz, Choose offset frequency direction is positive +.

3) Press the **[MENU]+[2 SQL]+[7 VOX]** into the storage channel, select the channel no.10, Press **[MENU]** to confirm and back to standby.

**TIPS:** In the standby, press **[MENU]+[2 SQL]+[7 VOX]** to enter the channel stored, To input channel number of hundred's digit, ten's digit and unit's digit, press **[MENU]** to confirm. When the selected channel is a blank channel, the channel number font is displayed in blue; if the selected channel is originally had set the parameters of the channel, the channel number is displayed font is dark red.

### ※ Channel Delete setting (DEL-CH) — Menu 28

In the Standby, press **[MENU]+[2 SQL]+[8 W/N]**, the screen displays:  
Press the **[MENU]** to enter, press the **[UP]/[DOWN]** keys to select the channel number to be deleted,  
Press the **[MENU]** to confirm, press **[EXIT]** back to standby.

**TIPS:**

- The first channel can not be deleted.
- When the selected channel is a blank channel, the channel number font is displayed in blue; if the selected channel is originally had set the parameters of the channel, the channel number is displayed font is dark red.

### ※ SCNCD scan setting — Menu 29

In the standby, press **[MENU]+[2 SQL]+[9 VOICE]** key, the screen displays:

Press the **[MENU]** to enter the CTCSS scan.  
Scanning the CTCSS tone, will stay on the screen when reach the CTCSS tone, then press **[MENU]** to save.

If scanned tone undesired use, you can press **[\*SCAN]** to continue.

**TIPS:**

- Current working channel or frequency corresponding to the carrier signal is not received, the function is not working.
- Reverse the scan direction, press **[UP]/[DOWN]** keys or rotate the channel knob.

### ※ Power message setting (PONMSG) — Menu 30

In the Standby, press **[MENU]+[3 SAVE]+[0 DW]**, the screen displays:  
Press **[MENU]** to enter, press **[UP]/[DOWN]** keys to select the desired parameter press **[MENU]** to confirm, press **[EXIT]** back to standby.  
■ BITMAP and BATT-V

### ※ Mute mode (SP-MUTE) — Menu 31

In the Standby, press **[MENU]+[3 SAVE]+[1 STEP]**, the screen displays:  
Press the **[MENU]** to enter, press **[UP]/[DOWN]** keys to select the desired quiet mode and press the **[MENU]** to confirm, press **[EXIT]** back to standby.  
Mute mode: when the speaker is open condition, this setting is particularly suitable for selective calling, group calling, all call.

#### **Mute mode:**

- QT: matching QT audio sub-carrier signal, the speaker will turn on.
- QT+DTMF: matching QT and other tone signaling carrier signal, the speaker will turn on.
- QT\*DTMF: matching QT or other tone signaling carrier signal, the speaker will turn on.

#### ※ **ANI code setting (ANI-SW) — Menu 32**

In the Standby, Press [MENU]+[3 SAVE]+[2 SQL], the screen displays:

Press the [MENU] enter, press [UP]/[DOWN] key to select ON/OFF, and press the [MENU] button to confirm, press [EXIT] back to standby.

#### ※ **ANI code edit (ANI-EDIT) — Menu 33**

In the standby, press [MENU]+[3 SAVE]+[3 SAVE], the screen displays:

Press the [MENU] to enter, put into the desired number and press the [MENU] button to confirm, press [EXIT] back to standby.

**TIPS:** The radio ANI code by the Arabic numerals 0-9, first bit non-zero, minimum three bits, maximum six bits.

**Example:** Edit 6 bits of ANI code(123456)

In the Standby, press [MENU]+[3 SAVE]+[3 SAVE], the screen displays:

Press [MENU], First bit flicker, put into [1 STEP], [2 SQL], [3 SAVE], [4 TXP], [5 ROGER], [6 TOT] then press [MENU] to confirm, And press [EXIT] back to standby.

**TIPS:** Every radio only have one unique ANI code, A area /B area editing are the same ANI code;

#### ※ **ANI code side tone (DTMF-ST) — Menu 34**

In the Standby , press [MENU]+[3 SAVE]+[4 TXP], the screen displays:

Press [MENU] to Enter, Press [UP]/[DOWN] to select the ID Side Tone you need, then press [MENU] to confirm, and press [EXIT] back to standby;

**The radio have ANI code Side Tone like below:**

- DT-ST: Opening Keyboard Side Tone when transmitting;
- ANI-ST: Opening ANI code side tone when transmitting;
- DT+ANI: Opening the side tone of keyboard and ID code when transmitting OFF

#### ※ **Automatic keyboard lock setting (AUTOLOCK) — Menu 35**

In the Standby, press [MENU]+[3 SAVE]+[5 ROGER], the screen displays:

Press [MENU] to Enter, Press [UP]/[DOWN] to select ON/OFF, then press [MENU] to confirm, and press [EXIT] back to standby ;

After the automatic lock is ON, The keyboard will automatic lock Within 15 seconds when radio have not any operation, please hold [#LOCK] for 2 seconds or more and will be unlocked;

- Manual Lock  
In the standby, Press hold [#LOCK] for 2 seconds or more and will be locked, then hold [#LOCK] for 2 seconds or more and will be unlocked;

#### ※ **Priority channel switch setting (PRICH-SW) — Menu 36;**

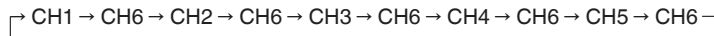
In the Standby, press [MENU]+[3 SAVE]+[6 TOT], the screen displays:

Press [MENU] to Enter, Press [UP]/[DOWN] to select ON/OFF, then press [MENU] to confirm, and press [EXIT] back to standby;



**Example:** Scanning 6 common channel CH1, CH2, CH3, CH4, CH5, CH6, and CH6 will be set to priority channel.

The scanning process:



If the radio detects a signal on the “priority channel”, it will call-up this frequency; it can go ahead select the priority channel through our software;

### ※ Repeater ON-OFF setting (RPT) — Menu 37

When turn on the function, Other repeater settings can working;

In the Standby, press **[MENU]+[3 SAVE]+[7 VOX]**, the screen displays:

Press **[MENU]** to Enter, Press **[UP]/[DOWN]** to select ON/OFF, then press **[MENU]** to confirm, and press **[EXIT]** back to standby;

### ※ Repeater setting (RPT-SET) — Menu 38

The Menu of repeater setting have 2 mode of X-DIRPT directional cross band repeater, X-TWRPT dual direction cross band repeater;

Under the standby states, Press **[MENU]+[3 SAVE]+[8 W/N]**, the screen display;

Press **[MENU]** to enter, Press **[UP]/[DOWN]** to select the type your need then press **[MENU]** to confirm.

**TIPS:** *Switchover the communication and repeater model through RPT, Under the standby states, long press [RPT] with 2 seconds can realize the switchover of communication and repeater*

*mode;*

In order to use the repeater best, repeater receive voice can reflect the working states of repeater on time and efficiently;

Under the mode of X-DIRPT directional cross band repeater, or X-TWRPT dual direction corss band repeater, Setting reverse frequency of working channel or frequency, Frequency difference direction or frequency difference frequency, the frequency of the corresponding frequency is beyond the range of the frequency of transmission, then the area can not be transmitted.

Two working channel must be two cross band frequency and channel (Radio receive frequency in UHF band on the A area, and transmit frequency in VHF band on the B area). of course, can setting of Radio transmitting frequency in VHF band on the A area, and receive frequency in UHF band on the B area.

### ※ Repeater speaker setting (RPT-SPK) — Menu 39

In the standby, Press **[MENU]+[3 SAVE]+[9 VOICE]**, the screen display:

Press **[MENU]** to enter, Press **[UP]/[DOWN]** to select ON/OFF, then Press **[MENU]** to confirm, and Press **[EXIT]** back to standby;

### ※ Repeater PTT setting (RPT-PTT) — Menu 40

In the standby, Press **[MENU]+[4 TXP]+[0 DW]**, the screen display:

Press **[MENU]** to enter, Press **[UP]/[DOWN]** to select ON/OFF, then Press **[MENU]** to confirm, and Press **[EXIT]** back to standby ;

### ※ Scan Add setting (SCAN-ADD) — Menu 41

In the standby, Press [MENU]+[4 TXP]+[1 STEP], the screen display:

Press [MENU] to enter, Press [UP]/[DOWN] to select ON/OFF, then Press [MENU] to confirm, and Press [EXIT] back to standby;

#### TIPS:

- The radio working under the cross band repeater or repeater/Transmitting mode, this function is prohibited;
- Scan add function can only be set in the channel mode, the current channel can be set, the frequency mode settings are invalid.

### ※ Single tone pulse frequency (ALERT) — Menu42

In the standby, Press [MENU]+[4 TXP]+[2 SQL], the screen display:

Press [MENU] to enter, Press [UP]/[DOWN] to select the need parameter then Press [MENU] to confirm, and Press [EXIT] back to standby ;

**TIPS:** The repeater system for starting the Single tone pulse frequency, some repeater need one to activate, if the repeater starting, not need it to activate, Optional pulse signal including 1750Hz, 2100Hz, 1000Hz, 1450Hz;

### ※ ANI code transmission delay setting (PTT-DLY) — Menu 43

In the standby, Press [MENU]+[4 TXP]+[3 SAVE], the screen display:

Press [MENU] to enter, Press [UP]/[DOWN] to select the need times then Press [MENU] to confirm, and Press [EXIT] back to standby;

- The radio have ANI code transmission delay time is 100~300 milliseconds, divide into 30levels, each level is 100 milliseconds;

### ※ ANI code transmission mode (PTT-ID) — Menu44

In the standby, Press [MENU]+[4 TXP]+[4 TXP], the screen display:

Press [MENU] to enter, Press [UP]/[DOWN] to select the need mode then Press [MENU] to confirm, and Press [EXIT] back to standby states;

- The radio have 3 ID code transmission mode: BOT(Beginning), EOT(Ending), BOTH

### ※ Ringing Time setting (RING) — Menu 45

In the standby, Press [MENU]+[4 TXP]+[5 ROGER], the screen display:

Press [MENU] to enter, Press [UP]/[DOWN] to select the need time then Press [MENU] to confirm, and Press [EXIT] back to standby;

- The radio have 10 seconds of ringing time, divide 10 levels, each level 1 seconds, OFF

### ※ Scanning channel group A (SCG-A) — Menu 46

Scanning group is a set of radio which can be grouped by writing data channels, and specify the group of channel scanning, scanning the channel only for this group of channels.

- **Scanning group:** All full channels, and 1-10 scanning group;

In the standby, Press [MENU]+[4 TXP]+[6 TOT], the screen display:

Press [UP]/[DOWN] to select then Press [MENU] to confirm, and Press [EXIT] back to standby;

**NOTICA:** Channel scanning group A only can working in area A;

### ※ Scanning channel group B (SCG-B) – Menu 47

Scanning group is a set of radio which can be grouped by writing data channels, and specify the group of channel scanning, scanning the channel only for this group of channels.

- **Scanning group:** All full channels, and 1-10 scanning group;

Under the standby states, Press **[MENU]+[4 TXP]+[7 VOX]**, the screen display:

Press **[UP]/[DOWN]** to select, then Press **[MENU]** to confirm, and Press **[EXIT]** back to standby;

**NOTICA:** Scanning channels group B only can working in area B;

### ※ Repeater Prompt Tone switch setting (RPT--TONE) – Menu 48

In the standby, Press **[MENU]+[4 TXP]+[8 W/N]**, the screen display:

Press **[MENU]** to enter, Press **[UP]/[DOWN]** to select the desired parameter then Press **[MENU]** to confirm, and Press **[EXIT]** back to standby states;

- ON: Turn on the function
- OFF: Turn off the function

### ※ CDCSS/DCS scanning save type setting (SC-QT) – Menu 49

The radio is scanning QT, When scanning to the other side for them, Have 3 optional type to saving:

- 1) Saving as current encoder and decoder of the radio (ALL)
- 2) Saving as current encoder of the radio;
- 3) Saving as current decoder of the radio;

In the standby ,Press **[MENU]+[4 TXP]+[9 VOICE]**, the screen display:

Press **[UP]/[DOWN]** to select then Press **[MENU]** to confirm, and Press **[EXIT]** back to standby;

### ※ Sub-Frequency Mute setting – Menu 50

In the standby, Press **[MENU]+[5 ROGER]+[0 DW]**, the screen display:

Press **[MENU]** to enter, Press **[UP]/[DOWN]** to select the desired parameter then Press **[MENU]** to confirm, and Press **[EXIT]** back to standby ;

#### TIPS:

- TX: Main frequency transmitting, turn off sub - frequency when receiving
- RX: Mian frequency receiving , turn off sub-frequency when receiving
- TX/RX: Main frequency transmitting/receiving , turn off sub-frequency when receiving

### ※ Call code setting (CALLCODE) – Menu51

In the standby, Press **[MENU]+[5 ROGER]+[1 STEP]**, the screen display:

Press **[MENU]** to enter, Press **[UP]/[DOWN]** to select the desired call code then Press **[MENU]** to confirm, and Press **[EXIT]** back to standby;

- The radio have 1-20 group call code available to select, this can program by software;

### ※ Scramble switch setting – Menu 52

In the standby, Press **[MENU]+[5 ROGER]+[2 SQL]**, the screen display:

Press **[MENU]** to enter, Press **[UP]/[DOWN]** to select the desired scramble code then Press **[MENU]**

to confirm, and Press **[EXIT]** back to standby states;

**Tips:**

- Avoid be hearing in the same frequency, total have 8 group scramble code available to select;
- Scrambler is optional function.

※ **Reset setting (RESET) – Menu 53**

The parameter of reset (VFO): Will reset all functional setting and renew factory default parameter of function setting, but not resetting the parameter of channels;

The parameter of reset (ALL): Will reset all functional setting and the parameter of all channels, and renew factory default of function.

In the standby, Press **[MENU]+[5 ROGER]+[3 SAVE]**, the screen display:

Press **[MENU]** to enter, Press **[UP]/[DOWN]** to select the desired the parameter then Press **[MENU]** to confirm, the screen display;

The radio will go through the resetting the functional parameter (VFO)/resetting all parameter (ALL), finishing reset, the radio will restart automatic, and back to standby states;

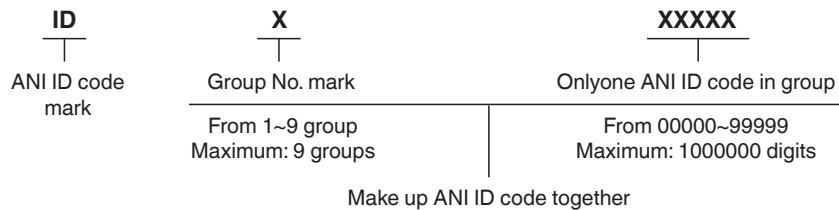
## PARTIAL FUNCTION EXPLAINING IN DETAIL

※ **All call, select call, group call**

The radio have the functions including ANI ID, Edit personal ID code, and DTMF decode, Without the aid of other communication equipment, it can achieve the Communication operation including all call, group call and select call;

**The ready work for communication of using All call, group call and select call: Editing ID**

ANI ID code: ID--XXX (3 bits) ID--XXXX (4 bits) ID--XXXXX (5bits) ID--XXXXXX (6bits)



**Notice:**

- It must edit the different ANI ID code for each radio when they are use in group;
- Each radio have the same frequency or channel and their parameter when using on one group;

◇ **ALL call using**

Pressing **[PTT]** to transmitting, when sending out the radio ID code, Input **[\*SCAN]+[# AB]** in key-

board.

#### ◇ Group call using

Pressing [PTT] to transmitting, when sending out the radio ID code, Input [Group number] (ID code of other party+[\*SCAN]+[#LOCK] in keyboard.

#### ◇ Select call using

Pressing [PTT] to transmitting, when sending out the radio ID code, Input personal ID code in keyboard;

Select call key can achieve the select call directly, can set up select call code by our software, select call code setting and being selected call code are the same. The radio will send out the ID code automatic when press the select call key+the ID code of selective radio, achieving the function of select call quickly.

**Ex:** being selecting ID code is 123456, the select code of the radio also can set as 123456.

### ※ The using of radio repeater function

#### ◇ The selective of “RPT-PTT” repeater PTT

Under the standby states, press [MENU]+[4 TXP]+[0 DW];

Press [MENU] to enter, Press [UP]/[DOWN] to select ON(open) then Press[MENU] to confirm, and Press [EXIT] back to standby;

#### ◇ The selective of “RPT-SPK” repeater SPK

Under the standby states, press [MENU]+[3 SAVE]+[9 VOICE];

Press [MENU] to enter, Press [UP]/[DOWN] to select ON (open) then Press [MENU] to confirm, and Press [EXIT] back to standby;

#### ◇ The repeater type selective of “RPT-SET”

Entering into cross band repeater: under the standby states,press[MENU]+[3 SAVE]+[8 W/N], the scree display;

Press [MENU] to enter, Press [UP]/[DOWN] to select dual direct cross band repeater (X-TWRPT), or select the directional cross band repeater (X-DIRPT) then Press [MENU] to confirm, exiting to menu and back to standby states, long press [RPT] with 2 seconds, now the radio enter into cross band repeater states;

Exiting to cross band repeater “under the standby states, long press [RPT] with 2 seconds, now the radio exit to cross band repeater and enter to radio communication mode;

## TROUBLE SHOOTING

Fault phenomena	Solutions
Receiving indicator light being keeping, but speaker without any voice	<ul style="list-style-type: none"><li>• Confirming that volume switch if adjust the biggest;</li><li>• If setting the different QT with other group, please re-checking then reset the QT;</li><li>• Mute mode if setting with correct;</li></ul>
Keyboard without reaction	<ul style="list-style-type: none"><li>• The keyboard if being locked;</li><li>• If having any key is seizing;</li></ul>
Can not scanning	<ul style="list-style-type: none"><li>• Please checking the channels in scanning group if add the scan function;</li></ul>
Cross band repeater setting is unsuccessful	<ul style="list-style-type: none"><li>• Please confirm A/B area working channel if it is cross band frequency;</li></ul>
Repeater states can not retransmission	<ul style="list-style-type: none"><li>• Please checking the mute mode of receiver and QT if all correct;</li></ul>
When standbys states ,the radio transmitting automatic without pressing <b>[PTT]</b>	<ul style="list-style-type: none"><li>• VOX function if turn on , and it's level if too lower</li></ul>
the channels appearing others voice (non-group member)	<ul style="list-style-type: none"><li>• Please change QT</li></ul>