Thanks for buying the series transceiver.

This transceiver offers novel design,enhanced features,solid performances and easy accessibility. We believe you will be pleased with the high quality and reliable features for all your communication needs.

Warning ⚠

» Please do not use the transceiver when you are in the explosing places(such as gas, dust smoke etc.)
» Please turn off the transceiver while your car is being refueled or parked a the gas station.

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

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

Contents

Professional FM Transceiver

Contents

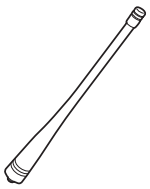
Contents

Unpacking and checking of your equipment

Carefully unpack the transceiver. 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.

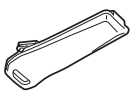
Supplied accessories


Transceiver


High gain antenna


Li-ion batterypack


Intelligent charger


Beltclip


Handstrap


User's manual

Description of functions

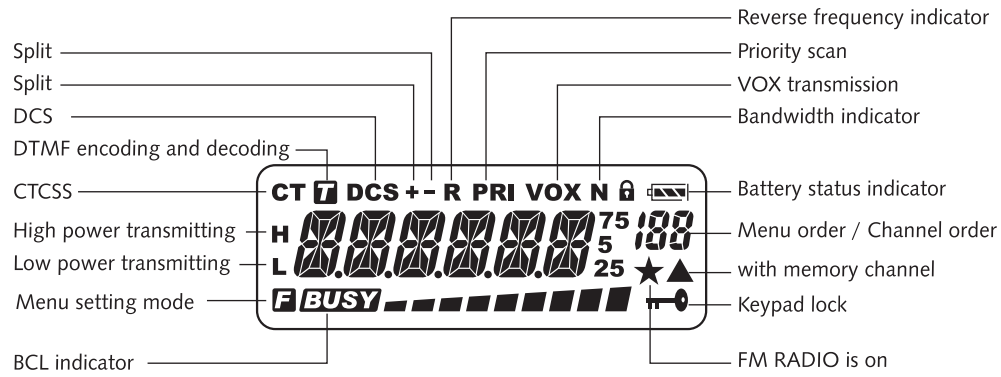
1. VHF: 136-174MHz
   UHF: 350-390MHz UHF: 400-470.9875MHz
2. Output power: VHF: 5W/1W UHF: 4W/1W
3. 128 memory channels
4. DTMF encoding and decoding
5. ANI (caller ID)
6. VOX
7. All calls, group calls and selective calls function
8. Calling ring function
9. Stopwatch timer
10. 105 groups DCS / 50 groups CTCSS
11. Voice guide
12. Wide / Narrow bandwidth selectable (25KHz/12.5KHz)
13. Three color backlight display modes
14. Multi-display modes(channel order number/ channel frequency/channel name)
15. Reverse frequency function
16. Distant urgency alarm function
17. Multi scanning modes

18. Priority scan function
19. FM radio with frequency display
20. Frequency steps selectable (5/6.25/10/12.5/25KHz)
21. High capacity Lithium batterypack
22. Intelligent charger
23. Offset frequency setting (0-69.950MHz)
24. Set frequency shift direction
25. Busy channel lockout
26. Multi display modes when power on (full screen/BATT-V/others)
27. Low voltage prompt
28. Transmitting overtime prompt
29. Keypad lock (auto/manual)
30. Adding scanning channel
31. High/Low power changeable
32. Programmable by computer
33. Wire clone function
34. Menu/Channel reset

Getting started

LCD display

There are various indicators displaying on the screen when powering on. Please refer the below table to learn what the indicators stand for accordingly.



Note:

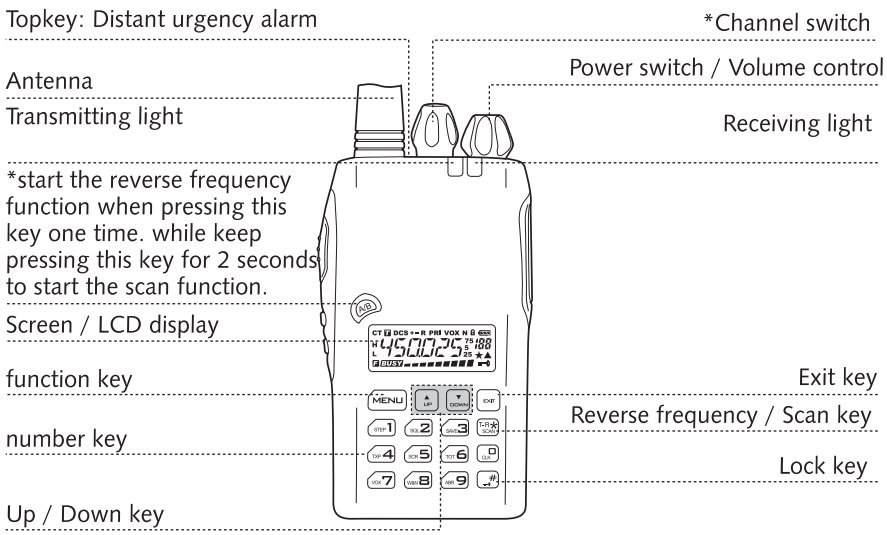
Full indicator for battery capacity

Exhausted indicator for battery capacity

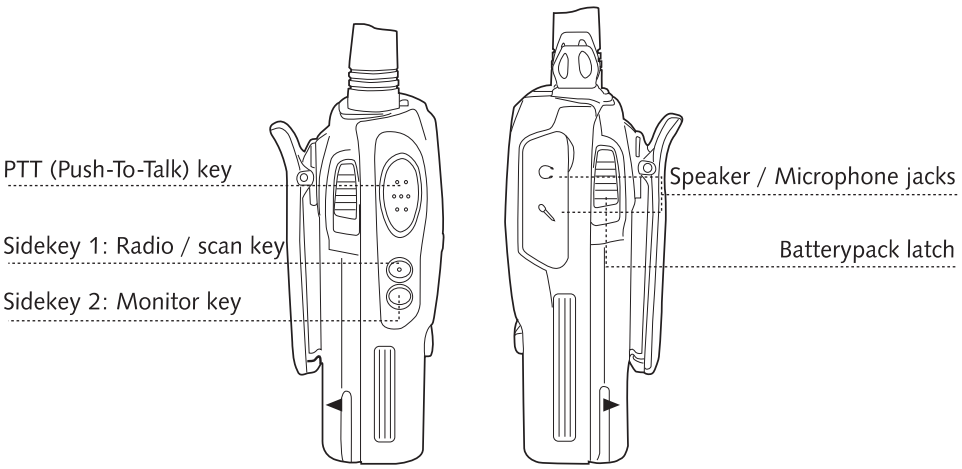
Low indicator for battery capacity

Receiving signal meter

Description of transceiver



Note: * means function instructions with item no. of this key.



Quick search

Press the UP or DOWN key once can activate the quick search for respective settings or parameters of each function.

DTMF encoding

DTMF transmitting time: it means the duration of transmitting DTMF, with the range is from 80 millisecond to 500 millisecond and being editable by the programming software.

Spacing interval of DTMF transmitting: it means intevals for digital when transmitting DTMF, the range is from 50 milisecond to 500 milisecond and can be edited by programming software.

MENU A | UP B | DOWN C | EXIT D

Switch working mode

Channel mode ——— MENU + T-R SCAN ——— Frequency mode

Note: press MENU + A/B to change working mode when the transceiver have A/B button.

1750Hz Burst Tone

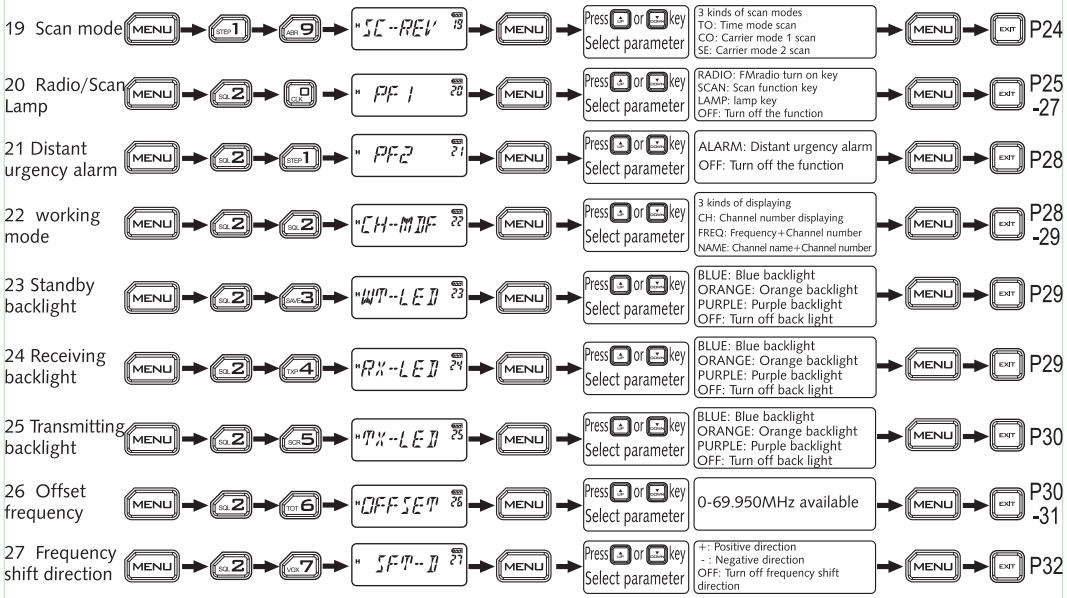
Press side key PTT and PF1 at the same time to transmit 1750Hz burst tone. The range of transmitting time is from 1 second to 10 seconds and can be edited by programming software.

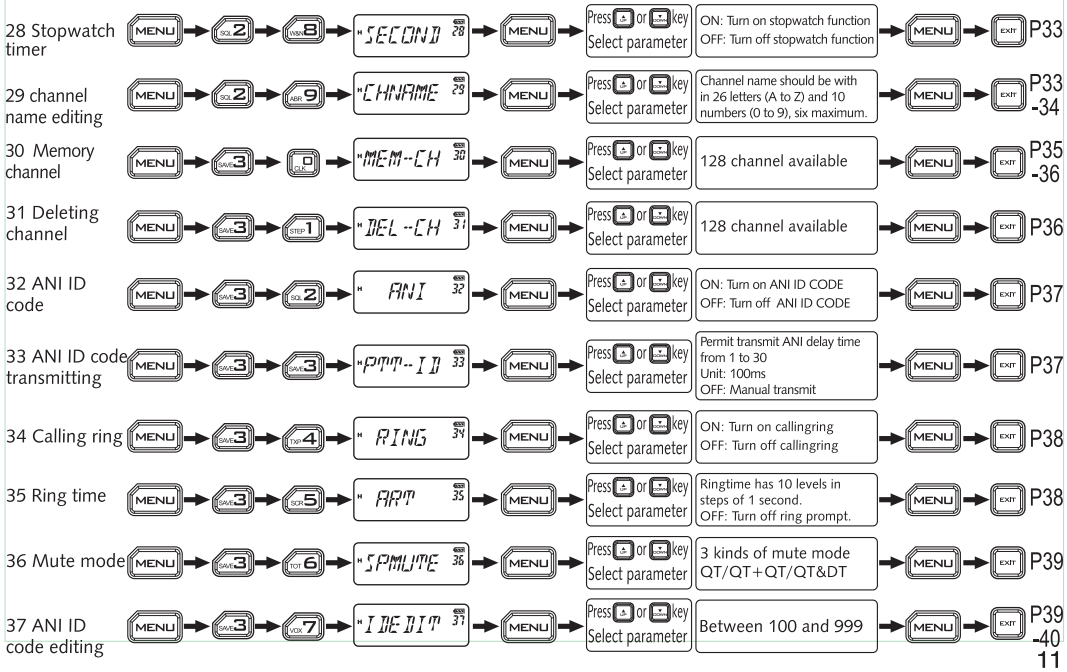
Shortcut operation sheet

Function order	Function name	Enter function set	Screen display	Select parameter	Selectable parameter explanation	Confirm Back	See page
1	Frequency step	MENU → STEP 1	" STEP "	Press ▲ or ▼ key Select parameter	5 kinds of steps: 5K/ 6.25K/10K/12.5K/25K	MENU → EXIT	P13
2	Squelch level	MENU → SQL 2	" SQL-LE "	Press ▲ or ▼ key Select parameter	Squelch level from 0 to 9	MENU → EXIT	P14
3	Power saver mode	MENU → SAVE 3	" SAVE "	Press ▲ or ▼ key Select parameter	ON: Turn on save function OFF: Turn off save function	MENU → EXIT	P15
4	Transmitting power	MENU → TXP 4	" TXP "	Press ▲ or ▼ key Select parameter	H: High power (5W) L: Low power (1W)	MENU → EXIT	P15
5	Transmitting beginning/ending prompt	MENU → SCR 5	" ROGER "	Press ▲ or ▼ key Select parameter	OFF: turn off this function, without any voice prompting. BOT: press PTT, voice prompt when begin transmitting. EOT: release PTT, voice prompt when end transmitting. BOTH: press and release PTT, voice prompt.	MENU → EXIT	P15 -16
6	Time-out timer	MENU → TOT 6	" TOT "	Press ▲ or ▼ key Select parameter	TOT has 40 level in steps of 15 seconds. OFF: Turn off TOT	MENU → EXIT	P16
7	VOX	MENU → VOX 7	" VOX "	Press ▲ or ▼ key Select parameter	VOX has levels from 1 to 10 OFF: Turn off VOX transmission	MENU → EXIT	P17
8	Wide/Narrow bandwidth	MENU → WIN 8	" WIN "	Press ▲ or ▼ key Select parameter	WIDE: 25KHz NARR: 12.5KHz	MENU → EXIT	P17

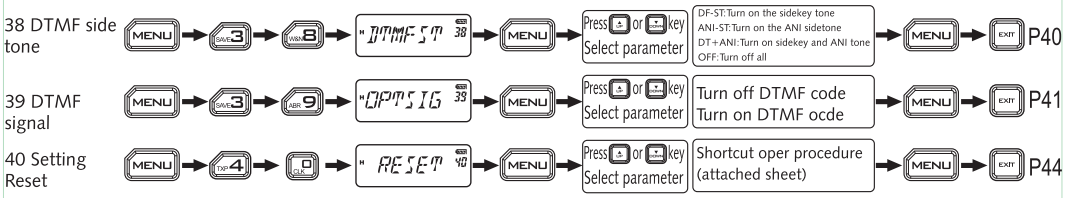
9	Transmitting overtime alarm	MENU → ABR 9	" TOA "	Press ▲ or ▼ key Select parameter	1 to 10 levels with 1 second each. OFF: turn off TOA.	MENU → EXIT	P18
10	Voice guide	MENU → STEP 1 → CLR	" VOICE "	Press ▲ or ▼ key Select parameter	CHINES: Chinese prompt ENGLSH: English prompt OFF: turn off this function	MENU → EXIT	P18
11	Beep prompt	MENU → STEP 1 → STEP 1	" BEEP "	Press ▲ or ▼ key Select parameter	ON: Turn on Beep prompt function OFF: Turn off Beep prompt function	MENU → EXIT	P19
12	Power on message	MENU → STEP 1 → SQL 2	"PONMSG "	Press ▲ or ▼ key Select parameter	OFF: Full screen display BATT: Battery voltage display MSG: WELCOME	MENU → EXIT	P19
13	Busy channel lockout	MENU → STEP 1 → SAVE 3	" BCL "	Press ▲ or ▼ key Select parameter	ON: Turn on BCL OFF: Turn off BCL	MENU → EXIT	P20
14	Keypad lock	MENU → STEP 1 → TXP 4	"AUTOLK "	Press ▲ or ▼ key Select parameter	ON: Turn on Autolock OFF: Turn off Autolock	MENU → EXIT	P20 -21
15	Receiving CTCSS	MENU → STEP 1 → SCR 5	" R-CTCS "	Press ▲ or ▼ key Select parameter	50 groups CTCSS (67.0Hz -254.1Hz) OFF: Turn off CTCSS	MENU → EXIT	P21
16	Transmiting CTCSS	MENU → STEP 1 → TOT 6	" T-CTCS "	Press ▲ or ▼ key Select parameter	50 groups CTCSS (67.0Hz -254.1Hz) OFF: Turn off CTCSS	MENU → EXIT	P22
17	Receiving DCS	MENU → STEP 1 → VOX 7	" R-DCS "	Press ▲ or ▼ key Select parameter	105 groups DCS (D023N-754N) OFF: Turn off DCS	MENU → EXIT	P22
18	Transmiting DCS	MENU → STEP 1 → WIDN 8	" T-DCS "	Press ▲ or ▼ key Select parameter	105 groups DCS (D023N-754N) OFF: Turn off DCS	MENU → EXIT	P23

Shortcut operation sheet





Shortcut operation sheet



- Quick Search / (see page 7)
- All calls, group calls and selective calls (See page 41-43)
- Setting reverse frequency (See page 45)
- Adding scanning channel(See page 45)
- Setting transmitting overtime prompt (See page 46)
- Wire clone function (See page 46)
- working with repeater function (See page 46-48)

How to operate

Menu lock function

If you don't need operate menu functions frequently, you can turn off it by programming software.

The steps are following:

1.Set the password to switch betweeen channel mode and frequency mode.

2.Set the working mode as channel mode.

3.Turn off the operating menu function in the channel mode.

It is programmable to input the password manually and switch to the frequency mode to activate the keypad options if the operating menu is needed.

Setting frequency step (STEP) ---- MENU 1

In standby, press MENU and number STEP 1 key , the screen will display " STEP 1

Press MENU enter, and then press / to select the desired step. Press MENU to confirm, and then press EXIT to return to the standby mode.

This transceiver has the option of 5 KHz, 6.25 KHz, 12.5 KHz, 25.00 KHz steps,with the default value is 12.5KHz.

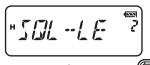
How to operate

Setting squelch level (SQL-LE) ----MENU 2

The level of the squelch means that the intensity of the signal decides when to turn ON/OFF the suqlech.If the level of squelch is set too high,the weak signals may be not received effectively,while the level of squelch is set too low,the transceiver may be disturbed by other noise or other needless singals.

NOTE

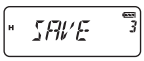
» The squelch level for this transceiver has 0-9 selectable,which 0 means the squelch function is off,and 5 is the default value. The higher level of the squelch is set, the stronger signal is needed.

In standby, press MENU and number 2 key , the screen will display 

Press MENU enter, select your desired level, then press MENU to confirm, and press EXIT to the standby mode.

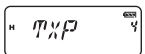
Setting power saver mode (SAVE)----MENU 3

To reduce the battery consumption, the SAVE function can make the transceiver cut off the receiver ciucuit for the moment,then re-activate to detect signals for a while.If there happens to any receiving signals or operations,the transceiver will be activated immediately and exit from the SAVE mode.

In standby, Press MENU and number 3 key , the screen will display 

Press MENU enter, and then press UP / DOWN to select SAVE function ON or OFF, press MENU to confirm, then press EXIT to return to standby mode.

Selecting transmitting power (TXP) ---- MENU 4

In frequency mode, Press MENU and number 4 key , the screen will display 

Press MENU enter, and then press UP / DOWN to select HIGH power or LOW power, press MENU to confirm, then press EXIT to return to the standby mode.

NOTE

» In frequer mode,press PTT+Topkey to quickly switch HIGH and LOW power.

Transmitting beginning/ending Prompt (ROGER)----MENU 5

This function is about the prompt modes when transmitting beginning/ending.

How to operate

OFF: Press and release PTT key , there is no prompt either for the beginning or ending transmitting.
BOT: Press PTT key, there is prompt for the beinning transmitting.
EOT: Release PTT key, there is prompt for the ending transmitting.
BOTH: Press and release PTT key, there is prompt for both beginning /ending transmitting.
In standby mode, press MENU and number 5 key, the screen will display 

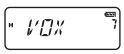
Press MENU enter, and then press UP / DOWN to select OFF/BOT/EOT/BOTH, press MENU to confirm, then press EXIT to return to the standby mode.

Time-out Timer (TOT)----MENU 6

This function is to prevent any transmitter from being busy line or transmitting over time. Meanwhile,it protects the transceiver from being damaged because of the over time transmitting.If the transceiver keeps transmitting over the set time, the transmitting will be interrupted with the warning prompt. This transceiver can be set in 40 levels with 15 seconds each,between 15 and 600 seconds.
In standby mode, Press MENU and number 6 key, the screen will display 

Press MENU enter, and then press UP / DOWN to select your desired transmitting level, press MENU to confirm,then press EXIT to return to the standby mode.

Setting VOX (VOX)----MENU 7

This transceiver will switch to the transmitting mode when detecting the voice signal. The transmittiing operation will somewhat be delayed,and the first beginning of the voice information may be not transmitted successfully,since there needs some time for the VOX ciucuit to detect the voice signal.
In standby mode, press MENU and number 7 key, the screen will display 

Press MENU enter, and then press UP / DOWN to turn OFF or select 1 to 10 VOX levels, press MENU to confirm, then press EXIT to return to the standby mode.

NOTE ⚠

- The higher level of VOX is set, the higher volume is needed.
- In scan mode and radio mode,the VOX function is not available,but just showing VOX signal on the upper right of the display screen.

Setting wide/narrow bandwidth (WN)----MENU8

In standby mode, Press MENU and number 8 key, the screen will display 

Press MENU enter, and then press UP / DOWN to select wide or narrow bandwidth, then press MENU to confirm, then press EXIT to return to the standby mode.

How to operate

Transmitting overtime alarm (TOA)----MENU9

Transmitting overtime alarm is the warning prompt through the transmitting indicator flashing when the transmitting is nearly up to the preset time by the Time-out Timer(TOT)

There are 1-10 levels selectable for TOA,with 1 second each level,level 1 means that the transmitting time is up to 1 seconds before the preset time,at this time,there will be the transmitting overtime alarm.

In standby mode, press MENU and number 9 key, the screen will display "TOA 3"

Press MENU enter, and then press ▲ / ▼ to select OFF or select 1-10 for the overtime alarm, press MENU to confirm, then press EXIT to return to the standby mode.

Setting voice guide (VOICE)----MENU 10

This transceiver has Chinese and English selectable for the voice guide.

In standby mode, press MENU and number 1 key, the screen will display "VOICE 10"

Press MENU enter, and then press ▲ / ▼ to select Chinese or English guide, or select OFF. press MENU to confirm, then press EXIT to return to the standby mode

NOTE

» Please turn off MENU 10 VOICE function and MENU 11 BEEP function together,to turn off all the voice prompt for this transceiver.

Setting beep prompt function (BEEP)----MENU 11

Beep prompt function is for the transceiver operating confirmation,error status prompt or faulty condition reminders.We faithfully advise you to turn on this function,so that you can detect or check the errors and faults.

In standby mode, press MENU and number 1 1 key, the screen will display "BEEP 11"

Press MENU enter, and then press ▲ / ▼ to select BEEP ON or OFF, press MENU to confirm, and press EXIT to standby.

NOTE

» VOICE funciton and BEEP function are on, the VOICE function is prioritized.

Setting power on message (PONMSG) ----MENU 12

This transceiver has 3 display methods available when powering on as below:

①**OFF:** full screen display ②**BATT-V:** Battery voltage display ③**MSG:** displaying "WELCOME"

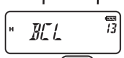
In standby mode, press MENU and number 1 2 key, the screen will display "PONMSG 12"

Press MENU enter, press ▲ / ▼ to select OFF, BATT-V or MSG, press MENU to confirm, then press EXIT to return to the standby mode.

How to operate

Busy channel lockout (BCL)----MENU 13

This function is to prevent the inter ference from the other communicating channels.If the channel is in busy line and pressing PTT,the transceiver will not transmit signal but sound the alarm prompt.

In frequency mode, press MENU and number 1 3 key, the screen will display 

Press MENU enter, press ▲ / ▼ to select ON/OFF, press MENU to confirm, then press EXIT to return to the standby mode.

Setting keypad lock (AUTOLK)----MENU 14

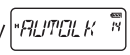
The transceiver has two options, automatical lock(auto lock)and manual lock selectable.

On: When the AUTOLK is on,there are no operations within 15 seconds,the transceiver will be locked automatically. Press # for two seconds to unlock it.

OFF: Turn off the AUTOLK function,but lock the transceiver manually.

NOTE

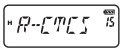
» According to the manual lock, press # for more than two seconds to lock in standby mode, and press # for more than two seconds again to unlock.

In standby mode, press MENU and number 1 4 key, the screen will display 

Press MENU enter, press ▲ / ▼ to select AUTOLOCK ON/OFF, press MENU to confirm, then press EXIT to return to the standby mode.

Setting receiving CTCSS (R-CTCSS)----MENU 15

Using the CTCSS/DCS can be usable for you to receive the specified individual or group calls,and avoid the needless callings from others with the same frequency. Only receiving the same CTCSS/DCS signals, the transceiver can release the squelch.

In frequency mode, press MENU and number 1 5 key, the screen will display 

Press MENU enter, and then press ▲ / ▼ to select OFF to switch CTCSS OFF or use one of the tones between 67.0Hz and 254.1Hz. press MENU to confirm, then press EXIT to return to the standby mode.

NOTE

» This transceiver has 50 groups CTCSS, see appendix (1) CTCSS sheet. You can edit CTCSS tones by using keypad within the range of: 60.0Hz-259.9Hz.

How to operate

Setting transmitting CTCSS (T-CTCSS)----MENU 16

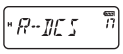
In standby, press MENU and number STEP 1 TOT 6 key, the screen will display 

Press MENU enter,and then press UP / DOWN to select OFF to switch off the CTCSS or use one of the tones between 67.0Hz and 254Hz. press MENU to confirm, then press EXIT to return to the standby mode.

NOTE

» This transcriber has 50 groups CTCSS, see appendix (1) CTCSS sheet. You can edit CTCSS tones by using keypad within the range of: 60.0Hz-259.9Hz.

Setting receiving DCS (R-DCS)----MENU 17

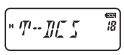
In frequency mode, press MENU and number STEP 1 VOX 7 key, the screen will display 

Press MENU enter, and then press UP / DOWN to select OFF to switch off the DCS or use one of the steps from D023N to D754I. press MENU to confirm, then press EXIT to return to the standby mode.

NOTE

» This transceiver has 105 groups DCS, see appendix (2) DCS frequency sheet. Among them, DXXXN means positive code, while DXXXI means negative code. Positive codes are from D023N-D754N, Negative codes are from D023I to D754I.

Setting transmitting DCS(T-DCS)----MENU 18

In standby mode, press MENU and number STEP 1 VOX 8 key, the screen will display 

Press MENU enter, and then press UP / DOWN to select OFF to switch off the DCS or use one of the steps from D023N to D754I. press MENU to confirm, then press EXIT to the standby mode.

NOTE

» This transceiver has 105 groups DCS, see appendix (2) DCS frequency sheet. Among them, DXXXN means positive code, while DXXXI means negative code. Positive codes are from D023N-D754N, Negative codes are from D023I to D754I.

How to operate

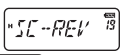
Setting scan mode (SC-REV)----MENU 19

The transceiver will stop scanning when detecting the signals on the frequency/memory channel,in order to answer the calling.The transceiver will continue or stop scanning according to the selected scan modes.There are three scan modes available for this transceiver:

TO: After detecting a signal on a channel, the transceiver will continue scanning if no operation is performed within 5 seconds.

CO: The transceiver stops scanning when there is a signal, three seconds after the signal disappears, it will resume scanning again.

SE: Scanning stops when a signal is received.

In standby, press MENU and number 1 9 key, the screen will display 

Press MENU enter, and then press ▲ / ▼ to select TO,CO or SE, press MENU to confirm, then press EXIT to return to the standby mode.

NOTE

» Press T-n/SCAN for two seconds to start scanning, In scan mode, press any other key to stop scanning.

Setting FM Radio, SCAN, LAMP function on side key (PF1)----MENU20

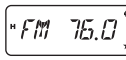
The side key of this transceiver has four functions selectable

①**SCAN:** Scan key ②**RADIO:** Digital radio key ③**LAMP:** Lamp key ④**OFF:** Turn off this function

1. Selecting SCAN funciton:

Press MENU enter,arrowhead aim at"RADIO" position,press ▲ / ▼ and select SCAN fucntion from SCAN fucntion from RADIO/LAMP/SCAN/OFF.

Press MENU and confirm,then press EXIT to return to standby.

In standby, press sidekey 1 to switoh to SCAN mode(Please refer to MENU 26 about the scan mode setting).The transceiver starts scanning,and stops scanning by pressing any keys. 

NOTE

» Hold press the T-n/SCAN key for 2 seconds to quickly switch to the scan mode.

2. Selecting RADIO function:

a. Turning on the FM Radio

Press MENU enter,arrowhead aim at"RADIO" position, press ▲ / ▼ and select RADIO fucntion from RADIO/LAMP/SCAN/OFF.

Press MENU and confirm,then press EXIT to return to standby.

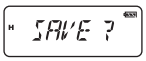
NOTE

» The default of the side key 1 function is RADIO function.

b. Tuning the RM radio station

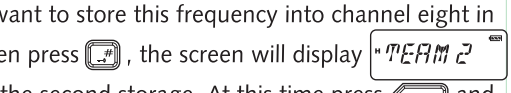
In radio mode, press T-R SCAN key, the transceiver will automatically tune the frequency, and LED light flashes green, until it detects a radio station. Of course, you can also press UP / DOWN to slightly adjust the radio station tuning.

c. Storing radio frequency

After detecting a radio station, press MENU , the screen will display 

, and then press one of the number key from STEP 1 to ABR 9 , the detected radio station frequency will be stored into the chip for future use.

This transceiver has two group radio channels for storing,and the default is in the first storage.

For example, if you want to store frequency 88.1MHz into channel eight in group one, you should only press MENU and number key WX/M 8 . If you want to store this frequency into channel eight in group two, firstly, choose the second storage, then press #→* , the screen will display 

, in this case, the transceiver will be switched into the second storage. At this time,press MENU and

number key WX/M 8 , the frequency will be stored into channel eight, group two.

For the stored radio stations, in radio mode, press any number key from STEP 1 to ABR 9 to invoke them, you can use #→* key to switch the two storage group and invoke one of the stored radio stations.

d. Exiting from the radio mode

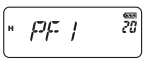
In radio mode,press PF1 again to exit.

NOTE

» When you are listening to the radio, the current frequency or channel is in standby mode, it will automatically switch to the Transmitting/Receiving mode when detecting the aignal. After the signal disappears for 5 seconds, it will resume radio mode automatically. In radio mode, press EXIT to see the standby frequency. Press PTT to transmit, 5 seconds after the operation,the radio will be back to the radio mode.

3. Selecting LAMP function

In standby, press PF1 to turn on lamp, press PF1 again to turn it off after you set the PF1 to LAMP function.

In standby mode, press MENU and number SQ 2 CLR key, the screen will display 

Press MENU enter, and then press UP / DOWN to select LAMP from SCAN,RADIO,LAMP or OFF, press MENU to confirm, then press EXIT to return to the standby mode.

Setting distant urgency alarm function on top key (PF2)----MENU 21

The top key has two functions selectable:

① **ALARM:** Turn on the distant alarm function ②**OFF:** Turn off this function

In standby mode, press MENU and number SQL 2 STEP 1 key, the screen will display " PF2 21

press MENU to confirm, then press EXIT to return to the standby mode.

After selecting ALARM function,in the standby mode,press top key to transmit the alarm code,and the speaker sounds out with the alarm call.Meanwhile, the left-hand LED light flashes RED,and the right-hand LED light flashes GREEN by turns. Please press the top key again to exit.

Setting working mode (CH-MDF)----MENU 22

This transceiver has three displaying modes selectable:

channel, Number(CH),Channel Frequency(FREQ),and Channel Name(NAME).

In standby mode, press MENU and number SQL 2 SQL 2 key, the screen will display "CH-MDF 22

Press MENU enter, and then press UP / DOWN to select CH/FREQ/NAME, then press MENU to confirm, press EXIT to return to the standby mode.

Channel name displaying mode: Only display after successfully editing the channel name,The default displaying mode for this series transceiver is the Channel Order Number(CH).

Channel name editing method: It can be edited via the matching programming software or the MENU 29 manually.

Selecting standby backlight (WT-LED)----MENU 23

This transceiver has three LED backlight colors selectable:

①**BLUE:** blue backlight ②**ORANGE**: orange backlight

③**PURPLE:** purple backlight ④**OFF:** turn off the backlight

In standby mode, press MENU and number SQL 2 SW/B 3 key, the screen will display "WT-LED 23

Press MENU enter, and then press UP / DOWN to select BLUE, ORANGE, PURPLE or OFF, press MENU to confirm, then press EXIT to return to the standby mode.

Selecting receiving backlight (RX-LED)----MENU 24

This transceiver has three LED backlight colors selectable:

①**BLUE:** blue backlight ②**ORANGE**: orange backlight

③**PURPLE:** purple backlight ④**OFF:** turn off the backlight

In standby mode, press MENU and number SQL 2 TXP 4 key, the screen will display "RX-LED 24

Press MENU enter, and then press UP / DOWN to select BLUE, ORANGE, PURPLE or OFF, press MENU to confirm, then press EXIT to return to the standby mode.

How to operate

Selecting transmitting backlight (TX-LED)----MENU 25

This transceiver has four colors selectable:

①**BLUE:** blue backlight ②**ORANGE**: orange backlight

③**PURPLE:** purple backlight ④**OFF:** turn off the backlight

In standby mode, press MENU and number 2 5 key, the screen will display "TX-LED 25"

Press MENU enter, and then press UP / DOWN to select BLUE, ORANGE, PURPLE or OFF, press MENU to confirm, then press EXIT to return to the standby mode.

Setting offset frequency (OFFSET)----MENU 26

Offset frequency is the difference between the transmitting and receiving frequency. The offset range of this transceiver can be from 0 to 69.950MHz.

In standby mode, press MENU and number 2 6 key, the screen will display "OFFSET 26"

Press MENU enter, and then press UP / DOWN to select the offset frequency, press MENU to confirm,then press EXIT to return to the standby mode.

NOTE

» Offset direction and offset frequency are only used when your transceiver is in frequency mode, in order to make the transceiver transmit and receive in different frequencies.

Follow the below steps:

1. Set the frequency mode as the working mode.

2. Set the offset direction and offset frequency

Example: In frequency mode, the transceiver will receive in 450.025MHz,and will transmit in 460.025MHz.Using the OFF-SET function,input the 450.025MHz as the receiving trequency,set the offset direction as"+",then the transmitting transmitting frequency will be in 460.025MHz.

In frequency mode, input the number 4 5 CLR CLR 2 5 key in sequence, press MENU + 2 + VOX 7 + MENU to select positive offset (+), press MENU + EXIT , then press MENU + 2 + 6 + MENU + UP / DOWN to select 10.000+ MENU + EXIT , then the offset direction and frequency are set.

The screen display "450.025"

Press PTT key to transmit, the screen will display "460.025"

Release PTT key, the screen will display "450.025"

Now, the transceiver is working on receiving frequency "450.025" ,

and the transmitting frequency is "460.025"

Setting frequency shift direction (SFT-D)----MENU 27

The trequency shift direction for this transceiver is as following:

1. Transmitting frequency is higher than receiving frequency, this is called positive offset (+)

2. Transmitting frequency is lower than receiving frequency, this is called negative offset (-)

3. Turn off this function (OFF).

In standby mode, press MENU and number 2 7 key, the screen will display "SFT-D 27"

Press MENU enter, and then press UP / DOWN to select +/-/off, press MENU to confirm and then press EXIT to return to the standby mode.

NOTE

» The transceiver cannot transmit if the offset transmitting frequency is beyond the local frequency range.Please adjust the offset value for the receiving frequency,so that the transmitting frequency can work within the available frequency range.

Setting stopwatch timer function (SECOND)----MENU 28

In standby mode, press MENU and number 2 8 key, the screen will display "SECOND 28"

Press MENU enter, and then press UP / DOWN to select ON or OFF, press MENU to confirm, then press EXIT to return to the standby mode.

Usage of stopwatch timer:

When the SECOND function is ON, press # it begins timing, press any key to stop it. Press # to resume.

NOTE

» Press any key (except #) to exit from the SECOND mode.

Channel name editing (CHNAME)----MENU 29

Channel name editing:

1. Channel name can be freely made up of 26 letters (from A to Z) and 10 Arabic numerals (0~9).

2. Channel name can have a maximum length of 6 bits, or you can edit from 1 to 6 bits.

3. When you select the (-) symbol, it means the bit is blank.

How to operate

It is available to edit the desired channel neme:

1. Via the matching programming software.

2. Manually through the transceiver keypad.

When you are editing a channel name,

1. the transceiver has stored at least one channel.

2. the transceiver is working in channel mode.

3. Press [UP] key to select character, and press [DOWN] to select the edit position after entering into the channel name edit function.

Editing steps

1. If the transceiver works in frequency mode, change the working mode to channel mode,set the channeldisplay mode MENU 22 to NAME,then press [MENU] and reesume. If the transceiver works in channel mode,directly set the channel display modeMENU 22 to NAME.

2. Select the desired channel, press [MENU] + [2] + [9] + [MENU], and then the screen will display 6 rails, press [UP] and select character then press [DOWN], press [UP] again to select the second character. After selecting the sixth character press [MENU] to confirm, press [EXIT] to exit. The screen will display the channel name and show the channel number on top right corner.

Setting memory channel(MEM-CH)----MENU 30

In working mode and standby mode,it is available to store the desired frequencies and parameter into this transceiver.

Press [MENU] and number [3] [CLR] key, the screen will display "MEM-CH 30"

Press [MENU] enter, and then press [UP] / [DOWN] to select channel, press [MENU] to store and you will hear an announcement of receiving memory.Press [EXIT] to exit,so this channel is stored as the co-channel.

When you need to store dis-channel, repeat the above procedure, After the memory confirmation,there is voice prompt for the transmitting memory.

For example:

If you want to set 450.025MHz for the receiving frequency, 460.025MHz for the transmitting frequency and store it into CH*20,the steps are as following:

1. When the transceiver works in frequency mode, input [4] [5] [CLR] [CLR] [2] [5], [MENU] + [3] + [CLR] + [MENU], then press [2] [CLR] or [UP] / [DOWN] to select channel 20, press [MENU] to confirm, voice prompt will remind of the receiving memory, press [EXIT] to exit.

2. Then input [4] [6] [CLR] [CLR] [2] [5] + [MENU] + [3] + [CLR] + [MENU] + [MENU] and voice prompt will remind of the transmitting memory press [EXIT] to exit.

3. The dis-channel is stored.

NOTE

- Please set the CTCSS/DCS,DTMF signaling and other functions into the memory frequency before the receiving memory setting, so that they can be stored with the frequency to channel.
- The transmitting memory only store the transmitting point. If you want to store other menu functions into the channel memory,please store them with the receiving memory.
- According to the manual memory,it is necessary to make the channel empty when setting the transmitting and receiving memory in the frequency mode.If not,it is ONLY available for the transmitting memory. Please delete channels before you set the transmitting and receiving memorv if the channel is not empty.
- Besides manual memory,it is also available to program the channel parameter via the matching programming software.

Deleting channel (DEL-CH) ---- MENU31

In standby, press MENU + number 3 1 and the screen will display "DEL -CH 31"
Press MENU enter, and then press ▲ / ▼ to select the channel you want to delete, press MENU to confirm, that the channel and all the according setting parameters are delected,and then press EXIT to return to the standby mode.

Setting ANI ID CODE (ANI)---- MENU32

In frequency, press MENU + number 3 2 and the screen will display "ANI 32"
Press MENU enter, and then press ▲ / ▼ to select ON to turn on ANI ID Code or to turn off ANI ID CODE, press MENU to confirm, press EXIT to return to the standby mode.

Setting ANI ID CODE transmitting (PTT-ID)----MENU 33

Setting ANI ID CODE transmitting means that when you are communicating, every time press the PTT key,the ANI ID CODE will be automatically or manually transmitted.
①**1-30:** Permitted delay time for ANI ID CODE transmitting Unit:100ms ②**OFF**: transmitting ANI ID CODE manually In standby mode, press MENU and number 3 3 key, the screen will display "PTT-ID 33" Press MENU enter, and then press ▲ / ▼ to select 1to 30 for ANI ID CODE transmitting delay time or OFF to transmit ANI ID COE manually, press MENU to confirm, then press EXIT to return to the standby mode.

NOTE

- If this function is off,which manually transmitting ANI ID CODE, you need to input the ANI ID CODE through the keypad manually when pressing PTT to transmit.

How to operate

Setting calling ring (RING)----MENU 34

There will be a caling ring when the transceiver receives the matching DTMF signaling.The ring time is set in MENU 18,and the speaker will be on when the ring time is up to the preset time limit.

In standby mode, press MENU and number 3 4 key, the screen will display " RING 34

Press MENU enter, and then press UP / DOWN to select ON turn on or OFF turn off, press MENU to confirm, then press EXIT to return to the standby mode.

Setting ring time (ART)----MENU 35

The speaker sounds out as a calling ring according to the preset ring time,when the transceiver receives the matching DTMF signaling.

In standby mode, press MENU and number 3 5 key, the screen will display " ART 35

Press MENU enter, and then press UP / DOWN to select one of the ring time from 0 to 10, press MENU to confirm, then press EXIT to return to the standby mode.

NOTE ⚠

» The ring time set for the transceiver has 10 steps selectable, and each step is 1 second, which step 0 means turning off the calling ring function.

Setting mute mode (SPMUTE) ---- MENU 36

The mutemode is to turn on/off the speaker audio according to your optional signal setting.

This transceiver has three kinds of mode which can be selected.

1. **QT:** When the transceiver receives a signal which can open the squelch and the matching CTCSS tone,the loudspeaker will be switched on.When the transceiver does not set a CTCSS tone but still receives a signal, the loudspeaker will be switched on,too.
2. **QT + DT:** When the transceiver receives the desired signal by QT and the matching DTMF signaling, the loudspeaker will be switched on.
3. **QT X DT:** When the transceiver receives one of the desired signals by QT or QT+DT, the loudspeaker will be switched on.

In standby mode, press MENU and number 3 6 key, the screen will display "SPMUTE 36

Press MENU enter, and then press UP / DOWN to select one of QT or QT+DT or QT X DT, press MENU to confirm, then press EXIT to return to the standby mode.

ANI ID CODE editting (IDEDIT)----MENU 37

In frequency mode, press MENU and number 3 7 key, the screen will display "IDEDIT 37 Press MENU enter, input the ID CODE you need directly, press MENU to confirm, then press EXIT to return to the standby mode.

NOTE

» ID CODE is selectable in a range of 100 to 999.

Setting DTMF sidetone (DTMFST) ---- MENU 38

DTME sidetone setting is whether there is key pressing or ANI ID CODE transmitting sidetone when transmitting DTMF signaling.There are 4 modes selectable for this transceiver as followings:

①**DT-ST:** Activate the key pressing sidetone when transmitting.

②**ANI-ST**: Activate the ANI ID CODE transmitting sidetone when transmitting.

③**DT+ANI:** Activate the key pressig and ANI ID DODE transmitting sidetone when transmitting.

④**OFF:** Turn off the DTMF sidetone function.

In standby mode, press MENU and number 3 8 key, the screen will display "DTMF ST 38

Press MENU enter, and then press UP / DOWN to select one function of DT-ST/ANI-ST/DT+ANI/OFF, press MENU to confirm, then press EXIT to return to the standby mode.

Setting DTMF signal (OPTSIG) ---- MENU 39

In standby mode, press MENU and number 3 9 key, the screen will display "OPTSIG 39

Press MENU enter, and then press UP / DOWN to select DTMF to switch on signal function of OFF to avitch off DTMF signal.

press MENU to confirm, then press EXIT to return to the standby mode.

All calls, group calls and selective calls

This transceiver offers ANI ID CODE transmitting,ANI ID CODE edit and DTMF decoding functions.

How to program all calls, group calls and selective calls.

1. ANI ID CODE editing

This transceiver has 3 kinds of method:

①. ANI-XXX ②. ANI-XXXX ③. ANI-XXXXX

XXX: Programmable by 3 bits ANI ID CODE.

XXXX: Programmable by 4 bits ANI ID CODE.

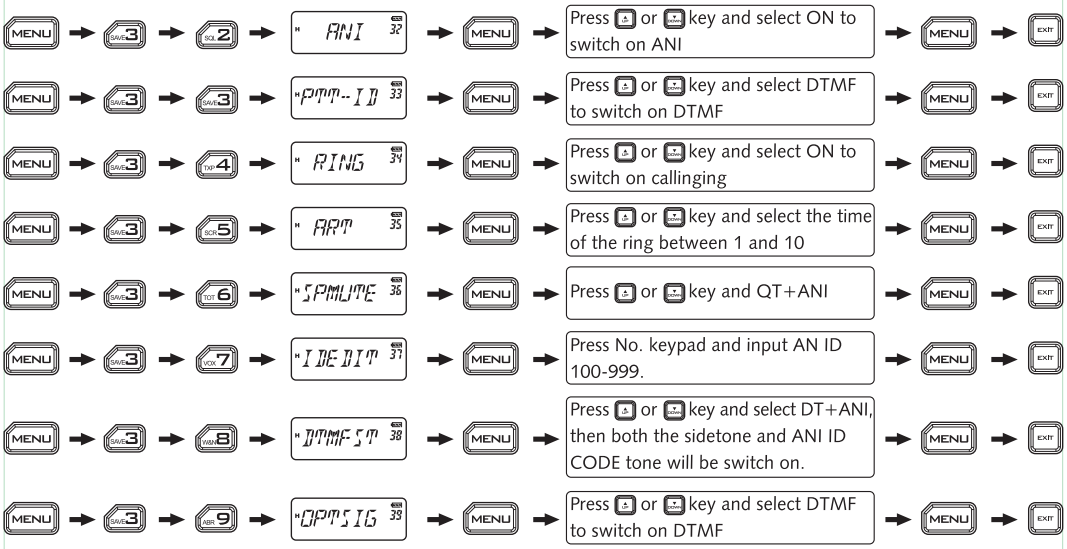
XXXXX: Programmable by 5 bits ANI ID CODE.

X	XXXX
Group number sign	the unique ANI ID CODE
1 to 9 groups	00 to 99
Maximum:9 groups	Maximm unit:100

Above makes up the ANI ID CODE.

How to operate

The steps of setting ANI ID CODE:



NOTE ⚠

» All the frequency points or the channels and the parameters for any the transceivers in the group should be accordant with each other.

a. Using all calls function:

Press PTT input [F/P SCAN] + [#] directly through the keypad.

b. Using group calls function:

Press PTT input group number [F/P SCAN] + [#] directly through the keypad.

c. Using selective calls function:

Press PTT to input the ANI ID CODE you want through the keypad directly.

Setting reset (RESET) ---- MENU 40

The transceiver has two options MENU reset(VFO) and the all model reset(ALL) selectable.

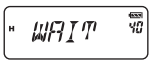
VFO reset means all the settings in frequency mode are returned back to the factory settings.

All reset means all the settings in frequency/channel mode are returned back to the factory settings.

1. **MENU reset (VFO):**

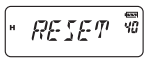
   In standby, press [MENU] + number [4] [C.H] and the screen will display 

   Press [MENU] enter, press [UP] or [DOWN] and select VFO, press [MENU] and the screen will display  .

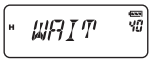
   Press [MENU] again, and the screen will display 

   After the reset operation,the transceiver will be resumed automatically.

2. **All message reset (ALL):**

   In standby, press [MENU] + number [4] [C.H] and the screen will display 

   Press [MENU] enter, press [UP] or [DOWN] and select ALL, press [MENU] and the screen will display 

   Press [MENU] again, and the screen will display 

   After the reset operation,the transceiver will be resumed automatically.

Setting reverse frequency function

When using reverse frequency function, the transmitting and the receiving frequency,together with the CTCSS/DCS encoding and decoding settings,will be interchanged.

■ ***Operating reverse frequency function:***

In standby, press [T-SCAN] to activate the reverse frequency function, press [T-SCAN] again to switch it off.

Low voltage prompt

When the battery pack is on low voltage,there will be prompt to remind of being charged timely.

Adding scanning channel

NOTE ⚠

» Only the added scanning channel can be listed to scan.Editing method: Strictly via programming software.

How to operate

Wire-clone function

Re cloning setting	a. Installing batterypacks on source radio and target radio and connect them via wire-clone cable. b. And then power target radio on. c. Power on the source radio and hold on the MONI key at the same time. d. Red LED on the source radio flashes, while the green LED on the target radio flashes, it shows the wire cloning is completely starts up.	Transmitting red LED flashing means transmitting data when wire cloning. Transmitting red LED distinguishes after completing wire-clone, and the transceiver returns to standby. Transmitting red LED lasting flashing means the wire-clone is failed and the transceiver returns to standby mode.
	Target radio	Receiving green LED flashing means receiving data when wire cloning. Receiving green LED extinguishes after completing wire-clone, and the transceiver returns to standby.

Setting transmitting overtime prompt

When the transmitting time is exceeding the preset time,there will be alarm prompt for "Transmitting overtime", and the transceiver will stop transmitting. If you want to re-start transmitting,please press PTT to transmit. (Please see MENU 6 about the Time-out timer(TOT).

working with repeater function

Most repeaters are working by the pilot frequency methods,so there is a standard and off-standard slip frequency between the transmitting and receiving frequency.Meawhile,the repeater can be forwarded via the matching CTCSS/DCS or DTMF signaling.

It is necessary to set different parameters for the transmitting frequency and receiving frequency. Therefore,you need to set the parameter for this transceiver and store them into the specified channels, which will be used for communication.

E.g.

The transmitting frequency for the repeater station is 450.025MHz with the CTCSS value 67Hz,and the receiving frequency is 460.025MHz.

When the transceiver needs to join this repeater, you need to follow the following steps:

1. Set the receiving freauency, CTCSS value and store this in the specified channel,for example channel 20. In frequency mode, set the receiveing frequency to 460.025MHz,CTCSS value 67.OHZ, and store into channel 20. The operating is as following:
   In frequency mode, input [4] + [6] + [▯] + [▯] + [2] + [5] in order, and select CTCSS value 67Hz (see menu 16)then press [MENU] + [3] + [▯] + [MENU] ; [2] + [▯] key,there is voice prompt for receiving memory,after that press [EXIT] key.
2. Set the transmitting frequency,CTCSS value and store this into CH-20. In frequency mode,set the transmitting frequency to 450.025MHz,CTCSS value 67.OHz, and store into CH-20. The operating is as following:
   In frequency mode, input [4] + [5] + [▯] + [▯] + [2] + [5] , [MENU] + [3] + [▯] + [MENU] ; [2] + [▯] + [MENU] key. There is voice prompt for the transmitting memory,then press [EXIT] key .

How to operate

3. Press MENU , turn on the power at the same time, now the transceiver is working in the channel mode. Please press UP / DOWN to select CH-20,and enter into the repeater station for the communication.

Setting priority scan function

If you want to monitor the other frequency and check the certain preferred frequency at the same time, you can set priority scan functon.

E.G.: Scan six channels: set CH1, CH2, CH3, CH4andCH5 as the common scanned channels, and CH6 as the priority scanned channel. then the scanning order is as followigs:

CH1— CH6— CH2— CH6— CH3— CH6— CH4— CH6— CH5— CH6

When this transceiver detects signal on the priority channel when scanning, it will call on its freouencv.
Please program the priority channel via KG-UVD1P programming software.

How to use the intelligent charger

1. Insert the AC plug into the power grid socket (AC: 90-240V), the indicator on the charger flashes, its then the charger is in the charging standby mode.

2. Insert the battery into the charger, the RED LED is on, which means charging is on the progress. When the RED LED turns to GREEN LED, the charging completes.

NOTE ⚠

» When the exhausted batterypack is inserted into the charger, it will be pre-charged in trickle power with the RED LED flashing until 10-20 minutes later, Then the RED LED in on, the charger enters into the normally charging mode. When the GREEN LED turns on, it is fully charged.

» Charging the exhausted batterypack in trickle power can protect the lithium batterypack better.

Programming guide (via USB programming cable)

a. Download, unzip and install the USB driver according to different operating system.
b. Restart your computer, and it shows the driver is installed successfully.
c. Download and unzip the matching programming software.
d. Connect the transceiver with your computer via the USB programming cable.
e. Power on the transceiver and open the software.
f. Read from the radio to check the connection.
g. Setting on the software accordingly.
h. Write to the radio.

How to operate

NOTE ⚠

» If you get the message "failed connection" when you try to read from the radio, please check the first five steps and the communication ports accordingly.

» Please note that once the first three steps are done well, the com port will be selected automatically when you open the software. However, according to the different computer settings, the com port may be needed to re-set, Please determine the port assignment from the device manager of the computer and select the correct communication port, which is available for the connection.

» If the connection is still not OK, please try another cable or another transceiver on another computer to double check.

Trouble shooting

Before the transceiver is regarded as being faulty,please double check according to the main problems as following chart. If the problems are still happening,please reset it to avoid some misfunctional operation, search assistance from the experienced technician or contact your buyer accordingly.

Problem	Solution
Transceiver will not be switched on, no power.	**1.** The batterypack maybe exhausted, please recharge it. **2.** The batterypack is not installed properly. please re-install it.
The batterypack cannot be used for the regular time.	**1.** The batterypack lifetime is over, please change a new one. **2.** Please double check with the charger or charge the batterypack for enough time.
The receiving light flashes but there is no sound from the speaker.	**1.** The power switch is not adjusted well. **2.** Confirm if the transmitting/receiving CTCSS/DCS is matching. Reset the CTCSS/DCS. **3.** Confirm if you use the right mute mode.

Trouble shooting

Problem	Solution
Keyboard and PTT switch do not work.	1. Confirm if the keyboard is locked. 2. Confirm if other keyboard is jammed.
The transceiver transmits automatically without pressing PTT in standby mode.	Please double check if the VOX function is on, and the VOX level is set too low.
Some functions cannot be stored normally.	Please confirm if the transceiver is working in channel mode,since some functions are ONLY set in channel mode via programming software.
There are other distored signals or noices (from other groups) in the channel.	Please change the CTCSS/DCS frequency.

Technical parameter

Appendix 1

CTCSS

1	67.0	11	94.8	21	131.8	31	171.3	41	203.5
2	69.3	12	97.4	22	136.5	32	173.8	42	206.5
3	71.9	13	100.0	23	141.3	33	177.3	43	210.7
4	74.4	14	103.5	24	146.2	34	179.9	44	218.1
5	77.0	15	107.2	25	151.4	35	183.5	45	225.7
6	79.7	16	110.9	26	156.7	36	186.2	46	229.1
7	82.5	17	114.8	27	159.8	37	189.9	47	233.6
8	85.4	18	118.8	28	162.2	38	192.8	48	241.8
9	88.5	19	123.0	29	165.5	39	196.6	49	250.3
10	91.5	20	127.3	30	167.9	40	199.5	50	254.1

Appendix 2

DCS

1	D023N	16	D074N	31	D165N	46	D261N	61	D356N
2	D025N	17	D114N	32	D172N	47	D263N	62	D364N
3	D026N	18	D115N	33	D174N	48	D265N	63	D365N
4	D031N	19	D116N	34	D205N	49	D266N	64	D371N
5	D032N	20	D122N	35	D212N	50	D271N	65	D411N
6	D036N	21	D125N	36	D223N	51	D274N	66	D412N
7	D043N	22	D131N	37	D225N	52	D306N	67	D413N
8	D047N	23	D132N	38	D226N	53	D311N	68	D423N
9	D051N	24	D134N	39	D243N	54	D315N	69	D431N
10	D053N	25	D143N	40	D244N	55	D325N	70	D432N
11	D054N	26	D145N	41	D245N	56	D331N	71	D445N
12	D065N	27	D152N	42	D246N	57	D332N	72	D446N
13	D071N	28	D155N	43	D251N	58	D343N	73	D452N
14	D072N	29	D156N	44	D252N	59	D346N	74	D454N
15	D073N	30	D162N	45	D255N	60	D351N	75	D455N

DCS

76	D462N	82	D516N	88	D606N	94	D645N	100	D723N
77	D464N	83	D523N	89	D612N	95	D654N	101	D731N
78	D465N	84	D526N	90	D624N	96	D662N	102	D732N
79	D466N	85	D532N	91	D627N	97	D664N	103	D734N
80	D503N	86	D546N	92	D631N	98	D703N	104	D743N
81	D506N	87	D565N	93	D632N	99	D712N	105	D754N

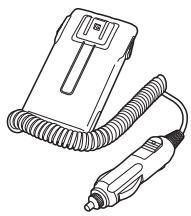
Technical specification

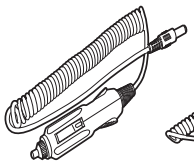
Frequency range	VHF: 136-174MHz
	UHF: 350-390MHz
	UHF: 400-470.9875MHz
Memory channels	128 channels
Voltage	7.4V DC
Working temperature	-30℃(-22F) to + 60℃(140F)
Channels	Co-channel or Dis-channel simplex
Power output	VHF: 5W / UHF:4W
Mode	F3E(FM)
Maximum deviation	⩽ ±5KHz
Adjacent channel power	< -60dB
Stability	±5 ppm
Sensitivity	< 0.2 μV
Audio output power	⩾ 500mW
Weight	250g
Size	62 X 106 X 39 (mm)

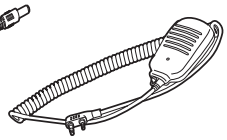
NOTE ⚠

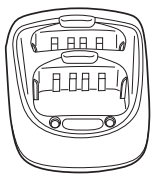
» Specification is subject to be updated without prior notice.

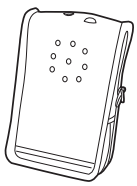
Optional accessories

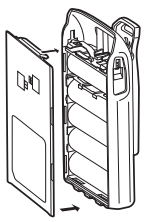

Eliminator


Car charger

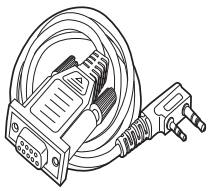

Speaker/MIC


Dual slot charger

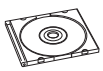

Leather case


"AA" battery case


Wire clone cable


Programming cable


Headset


Programming software

Announce ment

We endeavor to achieve the accuracy and completeness of this manual, but is still not perfect for any possible omission and printing errors. All the above specification is subject to be revised without prior notice.

English Version:69790301-C3-1011-V4