

How to operate

2. In frequency mode, press **MENU** + number key **8** and the screen will display "RX-CTC 8". Press **MENU** enter, and the screen will display "R-CTC 5". Press **▲** or **▼** to select R-CTC function. Press **MENU** enter. Press **▲** or **▼** to select OFF to turn off CTCSS, while select one CTCSS value from 67Hz to 254.1Hz. Press **MENU** to confirm and press **EXIT** return to standby.

NOTE

» This transceiver is with 50 groups CTCSS. Please see appendix(1) CTCSS frequency sheet.

Setting transmitting CTCSS/DCS (TX-CDC)--- MENU 9

There are 2 options:

T-DCS: Setting transmitting DCS

T-CTC: Setting transmitting CTCSS

1. In frequency mode, press **MENU** + number key **9** and the screen will display "TX-CTC 9". Press **MENU** enter, and the screen will display "T-CTC 5". Press **▲** or **▼** to select T-DCS function. Press **MENU** enter and press **▲** or **▼** to select OFF to turn off DCS. While select one DCS value from D023N to D754N. Press **MENU** to confirm and press **EXIT** return to standby.

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NOTE

» This transceiver is with 105 groups DCS. Please see appendix(2) D.C.S code sheet. DXXXN (from D023N to D754N) means positive code while DXXXI (from D023I to D754I) means negative code.

2. In frequency mode, press **MENU** + number key **9** and the screen will display "TX-CTC 9". Press **MENU** enter, and the screen will display "T-CTC 5". Press **▲** or **▼** to select T-CTC function. Press **MENU** enter and press **▲** or **▼** and select OFF to turn off CTCSS, while select one CTCSS value from 67Hz to 254.1Hz. Press **MENU** to confirm and press **EXIT** return to standby.

NOTE

» This transceiver is with 50 groups CTCSS. Please see appendix(1) CTCSS frequency sheet.

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Setting sidekey ---MENU 10

This menu is for the setting of the below two functions:

1. PF1

There are 5 options:

Radio: Radio function

SCAN: Scan function

LAMP: Lamp function

BATT-V: Batterypack voltage prompt

OFF: Turn off the key function

2. PF2

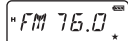




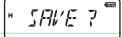
There are 3 options:

ALARM: Start distant urgency alarm function

SOS: SOS function

OFF: Turn off the key function

1.1 Program PF1 as FM radio function:

- **Turn on FM Radio:** In standby mode, press PF1 to turn on. The screen will display . FM radio will search the radio stations automatically while the green light is flashing. It will stop till a radio station is searched. FM radio will stay the searched radio station to receive.
- **Tune radio stations:** In FM radio mode, press . And FM radio will automatically tune while the green light is flashing till a radio station is searched. And press  /  to fine tune the radio stations.
- **Save radio stations:** When a radio station has been searched, please press . And the screen will display .


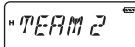


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Then please input a number key between  ~ . The radio station will be stored into the chip. So that you can listen the stored radio station directly.

The transceiver is with two groups of FM radio channels for storing.

For example, if you want to save 88.1 MHz on channel 8 of the 1st group, please press  + .


If you want to save this frequency on channel 8 of the 2nd group, firstly please select the 2nd storage.

Press  and the screen will display . So the transceiver will be switched to the 2nd storage. Then press  +  to save 88.1MHz to channel 8 of 2nd group.

In FM radio mode, press number key  ~  to listen to the saved radio station. You can switch over 1st and 2nd storage to listen to the saved radio station via  key.

- **Exit the Radio:** press PF1 again to exit the radio mode.

NOTE

When FM radio is working, the current frequency or channel is still in standby mode. The transceiver will automatically return to transceiver mode when receiving signals. After the signal disappears for 5 seconds, the transceiver will automatically return to FM radio mode. When FM radio is working, press  to check the current frequency. After pressing PTT to transmit, the transceiver will return to FM radio mode after 5seconds.

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1.2 Program PF1 to scan function:

In standby, press PF1 to enter scan mode. (Scan mode is settled on the scan mode setting via Menu14). Press any key to stop scan.

1.3 Program PF1 to lamp function:

In standby, press PF1 to turn on lamp function. And press PF1 again to turn off lamp.

1.4 Program PF1 to BATT-V function:

In standby press PF1 to start up the battery pack voltage prompt function. The screen will display the current battery pack voltage.

NOTE

» Press **EXIT** key to exit the function.

The above mentioned functions:

In standby, press **MENU** + number keys **1 STEP 0** and the screen will display **"PFKEY"**.

Press **MENU** enter, and the screen will display **"PF1"**. Press **MENU** enter, the screen will display **"RADIO"**. Press **▲** or **▼** select one of SCAN/RADIO/LAMP/BATT-V/OFF functions. Press **MENU** to confirm. Press **EXIT** return to standby.

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2.1 Program PF2 to alarm function:

In standby, hold on PF2 for 2seconds, the speaker will sound alarm and the transceiver will transmit alarm code, and meanwhile the red light flickers. Press PF2 again to exit this function.

2.2 Program PF2 to SOS function:

In standby, hold on PF2 for 2seconds, and the transceiver will transmit alarm tone.

The above mentioned functions:

In standby, press **MENU** + number keys **1 STEP 0** and the screen will display **"PFKEY"**.

Press **MENU** enter, and the screen will display **"PF1"**. Press **▼** and the screen will display **"PF2"**. Press **▲** or **▼** select one of ALARM/SOS/OFF functions. Press **MENU** to confirm, press **EXIT** return to standby.

NOTE

» Each transmitting lasts 10seconds. The interval is 5minutes. Press any key to exit this function.

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Setting keypad autolock (AUTOLK) ---- MENU 11

There are two options: manual lock and auto lock. We can set most of the keys unworkable in order to prevent from pressing a key wrongly.

ON: "ON" means setting keypad autolock function. After setting this function, the keypad will be automatically locked if there is no any operation in 15 seconds. Hold on **#---** for more than 2 seconds to unlock the keypad.

NOTE

» Manual lock: In standby, hold on **#---** for more than 2 seconds to lock keyboard; and press **#---** to unlock the keypad.

OFF: Turn off auto lock.

In frequency mode, press **MENU** + number keys **1 STEP 1 STEP** and the screen will display .

Press **MENU** enter, press **▲** / **▼** to select ON for turning on autolock or OFF for turning off autolock.

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

Setting auto backlight (ABR) ---- MENU 12

This function is for operating the transceiver easily at nights.

NOTE

» When the keypad and the screen are illuminated, the backlight will be automatically extinguished after 5 seconds if without pressing any key. Backlight function is not workable when transmitting or receiving.

In standby, press **MENU** + number keys **1 STEP 2 SAVE** and the screen will display .

Press **MENU** enter, press **▲** / **▼** to select ON for turning on auto backlight or select OFF for turning off backlight.

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

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Setting frequency offset (FRQOFF) ---- MENU 13

There are 2 options:

1. **SFT-D**: Shift frequency direction
2. **OFFSET**: Offset frequency

1. **SFT-D** means as followings:

- a. The transmitting frequency is higher than receiving frequency. The shift frequency direction is positive. (+)
- b. The transmitting frequency is lower than receiving frequency. The shift frequency direction is negative. (-)
- c. Turn off the shift frequency direction function. (OFF)

In standby, press **MENU** + number keys **1 STEP** **3 SOL** and the screen will display **FRQOFF 13**.

Press **MENU** enter, and the screen will display **SFT-D 13**.

Press **MENU** enter, press **▲** / **▼** and select +/- / OFF. Press **MENU** to confirm, then press **EXIT** to return to standby.

NOTE

» The transmitting frequency by the offset frequency should be available within the original frequency range. Please adjust the receiving frequency or the offset frequency accordingly, so that the transceiver can transmit on the available transmitting frequency.

Offset frequency is the difference between the transmitting frequency and the receiving frequency. The offset frequency range for the transceiver is from 0 to 69.950MHz.

In standby, press **MENU** + number keys **1 STEP** **3 SOL** and the screen will display **FRQOFF 13**.

Press **MENU** enter, the screen will display **SFT-D 13**. Press **▼** key, the screen will display **OFFSET 13**.

Press **MENU** enter, press **▲** / **▼** or number keys to select the desired offset frequency.

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

The offset frequency setting and the shift frequency direction are ONLY workable in frequency mode, in order to program the transceiver to work separately on different transmitting and receiving frequencies.

Steps:

1. Setting receiving frequency.
2. Setting shift frequency direction and offset frequency.
3. Setting CTCSS/DCS frequency (if necessary).

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For example, the receiving frequency of a repeater is 460.025MHz. The receiving CTCSS is 69.3Hz. The transmitting frequency is 450.025MHz.

1. Setting receiving frequency in frequency mode, input **4** **FxS** + **5** **CD.S** + **0** + **0** + **2** **SAVE** + **5** **CD.S** in sequence.
2. Setting shift frequency direction: in frequency mode, enter MENU13 "SFT"(Please refer P28) and select "+" direction.
3. Setting transmitting CTCSS/DCS: in frequency mode, enter MENU9 "T-CTC" (Please refer P21 and select "69.3").

NOTE

» In order to use this function easily, you can memorize the above frequency and related data into channels. In this case, you do not need to reset. Please refer MENU19(P41-P42) to learn how to memorize the channels.

Setting scan mode (SC-REV) ---- MENU 14

In order to receive the calling, the transceiver will stop scanning on the frequency(or memory channel) that is detected signals. According to the selected restored method, the transceiver will resume or stop scanning. There are three optional scan modes:

TO: After a signal is detected, the transceiver will resume scanning if there is no operation in 5 seconds.
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CO: After a signal is detected, the transceiver will stop scanning. 3 seconds after a signal disappears, the transceiver will resume scanning.

SE: The transceiver will stop scanning when a signal is detected.

In standby, press **MENU** + number keys **1** **STEP** **4** **FxS** and the screen will display **"SC-REV"** .

Press **MENU** enter, press **▲** / **▼** to select TO, CO or SE.

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

NOTE

» Holding on ***R** for 2 seconds to enter scan mode.

Setting power on message (PONMSG) ---- MENU 15

There are three optional display modes when powering on:

FULL: Full display **BATT-V:** Display the current battery pack voltage **MSG:** WELCOME

In standby, press **MENU** + number keys **1** **STEP** **5** **CD.S** and the screen will display **"PONMSG"** .

Press **MENU** enter, press **▲** / **▼** to select FULL/BATT-V/ MSG.

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

How to operate

Setting stopwatch function (SECOND) ---- MENU 16

In standby mode, press **MENU** and number keys **1 STEP 6 TONE**, the screen will display **SECOND 16**.

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

How to use stopwatch:

When the stopwatch function is turned on, press **#---** once to count time. Press any key to stop counting time. Press **#---** to resume.

NOTE

» When the stopwatch stops counting time, press any key (except **#---**) to exit stopwatch function.

Work mode (CH-MDF) --- MENU 17

There are two work modes for option as followings:

1. Frequency mode (FREQ)

2. Channel mode

① Channel mode (CH) ② Frequency + channel number mode (CH FREQ)

③ Channel name mode (NAME)

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NOTE

» You need to input the password to switch frequency mode to channel mode. While the three work modes in channel mode can be switched over each other without inputting password.

» The switching password is set via programming software.

» The switching password is invalid (switching password function is cancelled) when it is made up of "000000". The switching password is valid when it is not made up of "000000".

Frequency mode (FREQ) and Channel mode changeable

① Invalid password

In standby, press **MENU** + **1 STEP 7 VOX**, the screen will display **CH-MDF 17**.

Press **MENU** enter, then press **▲** / **▼** to select your desired work mode, and then press **MENU** to confirm.

② Valid password

In standby, press **MENU** + **1 STEP 7 VOX**, the screen will displays **CH-MDF 17**.

Press **MENU** enter, then press **▲** / **▼** to select your desired work mode. Press **MENU** to confirm, the screen will display six bars **••••••**. After inputting password, the work mode is changed to the mode you selected.

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NOTE

- » Please make sure you have memorized at least one channel and one channel name before changing channel mode and channel name mode.
- » Shortcut change over frequency mode and channel mode:
In standby press **MENU** + **ALT** . If you never set password, the work mode can be changed over directly. If you have set password, you need to input the password firstly, and then the work mode can be changed.

Channel name edit (CHNAME) --- MENU 18

Channel name edit:

1. Channel name can be made up of 26 characters(A-Z) or 10 Arabic numerals(0-9) freely.
2. The maximum channel name is made up of 6 digits(from 1 digit to 6 digits).
3. Selecting (-) means this digit is blank.

Editing method:




1. Via programming software.
2. Via keypad of the transceiver.

When you edit channel name, please kindly followings:

1. At least one channel has been memorized.

2. The transceiver works in channel mode.
3. After entering the channel name edit function,press  to select the characters, and press  to select the edited position.

Editing steps:

1. If the transceiver works in frequency mode, please set the work mode as CH or CHFREQ mode (See Menu 17).
2. Firstly please select the channel you want to edit, and press **MENU** + **1 STEP** + **8 P.A.C.D** + **MENU** , and then the screen will display 6 bars. Press  to select the desired characters, and then press  , and then press  again to select the 2nd character and so on. After the sixth character is selected, press **MENU** to confirm;and then press **EXIT** to exit the function. And the screen will display this channel name. And the right comer of the screen will display this channel number.
3. If the transceiver works in "CH" mode of channel mode, please change the display mode to "NAME" mode via MENU 17.

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Setting memory channels (MEM-CH) ---- MENU 19

When the transceiver works in frequency mode or in standby mode, you can input the frequency and the parameter that you want to memorize into the channels.

Press **MENU** + number keys **1 STEP** **9 TONE**, and the screen will display **MEM-CH**.

Press **MENU** enter, press **▲** / **▼** to select channel number. And then press **MENU** to memorize. There will be voice prompt when the memorizing is successful.

Press **EXIT** to exit. This channel is co-frequency channel. If you want to memorize the dis-frequency channel, please repeat the above steps. After pressing **MENU** to confirm the memorized channel, the voice will prompt "Transmitting memory".

For example, if you want to memorize the receiving frequency 450.025MHz and the transmitting frequency 460.025MHz into channel 20. The operation procedures are as followings:

1. When the transceiver works in frequency mode, input **4 TXS** **5 C.D.S** **0** **0** **2 SAVE** **5 C.D.S**, **MENU** + **1 STEP** **9 TONE** + **MENU**, then press **2 SAVE** **0** or **▲** / **▼** to select CH-20. Press **MENU** key to confirm. Voice will prompt when the memorizing is successful. Press **EXIT** to exit.
2. Then input **4 TXS** **6 TONE** **0** **0** **2 SAVE** **5 C.D.S**, and then press **MENU** + **1 STEP** + **9 TONE** + **MENU** to memorize this frequency into the channel. The transceiver will voice prompt "Transmitting memory". And press **EXIT** to exit.

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3. The dis-frequency channel is memorized at last.

NOTE

- » If you want to memorize CTCSS/DCS, DTMF functions into the memory channels, please set the functions before memorizing channels. So that the functions can be memorized together with the frequency into the channels.
- » Transmitting memory only can be memorized the transmitting frequencies. If you want to memorize the functions into the memory channels, please memorize the functions together with receiving memory into the channels.
- » In frequency mode, only when the channel is empty, you can do transmitting&receiving memory manually. Otherwise you only can do the transmitting memory. If the channel is not empty, please delete the channel information before doing transmitting&receiving memory.
- » You can also set the parameters via programming software besides manual memorizing.

Delete channel (DEL-CH) ---- MENU 20

In standby, press **MENU** + number keys **2 SAVE** **0**, and the screen will display **DEL-CH**.

Press **MENU** enter, press **▲** / **▼** to select the channel that you want to delete, press **MENU** to confirm.

The selected channel and channel parameters are deleted. Press **EXIT** to return to standby.

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ANI ID code edit (IDEDIT)----MENU 21

In frequency mode, press **MENU** and number keys **2 SAVE** **1 STEP**, the screen will display "IDEDIT 21". Press **MENU** enter, input your desired ANI ID Code directly. And then press **MENU** to confirm, press **EXIT** to return to standby.

NOTE

» ANI ID code can be edited by 3-6 digits freely. ANI ID code is ranged from 000-999999.

Setting DTMF (SETDTF)----MENU 22

There are five options:

PTT-ID: Setting ANI ID CODE transmit delay

OPTSIG: Setting DTMF signaling

SPMUTE: Setting mute mode

ART: Setting ringtime

DTMFST: Setting DTMF sidetone

1. Setting ANI ID code means the ANI ID code transmitting status when pressing PTT key once to communicate.
 - ① **1-30:** Preset ANI transmitting delay time from 1 to 30. Unit:100ms
 - ② **OFF:** Transmitting ANI ID code manuallyIn standby mode, press **MENU** and number keys **2 SAVE** **2 SAVE**, the screen will display "SETDTF 22". Press **MENU** enter, and the screen will display "PTT-ID 11". Press **▲** / **▼** to select PTT-ID function. Press **MENU** enter, and then press **▲** / **▼** to select the allowed delay transmitting time for ANI ID code from 1 to 30. Or select OFF to transmit ANI ID code manually. Press **MENU** to confirm, then press **EXIT** to return to standby.
2. Select if you want to turn on DTMF function. If you select this function, selective calls, group calls and all calls functions are available.

In standby mode, press **MENU** and number keys **2 SAVE** **2 SAVE**, the screen will display "SETDTF 22". Press **MENU** enter, and the screen will display "PTT-ID 11". Press **▲** / **▼** to select OPTSOG function. Press **MENU** enter, and then press **▲** / **▼** to select "ON" to turn on DTMF signaling or "OFF" to turn off DTMF signaling. Then press **MENU** to confirm, press **EXIT** to return to standby.
3. The mute mode means the mode of turning on the speaker. There are three options for turning on the speaker:

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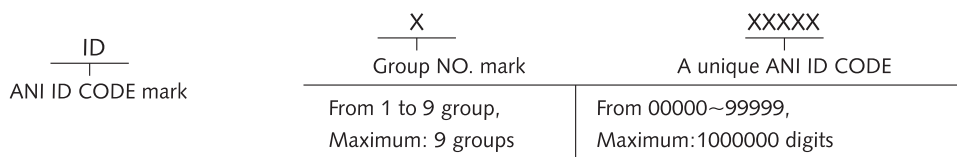
All calls, group calls and selective calls

There are ANI ID code transmission, ANI ID code edit and DTMF decoding functions. Without the assistance of the other communication equipments, the all calls, group calls and selective calls are available between the groups.

Before using all calls, group calls and selective calls function, you need to set as followings:

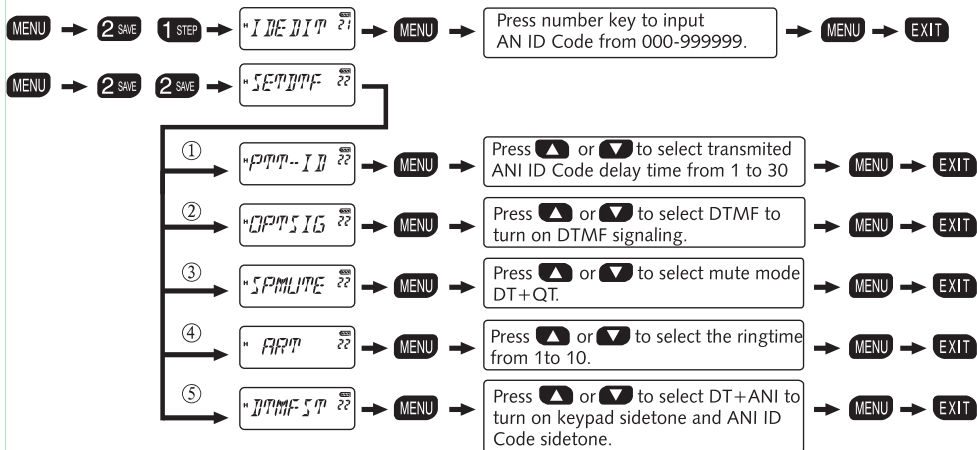
1. ANI ID CODE edit **Note:** Every transceiver in the same group should be edited a unique ANI ID code.

ANI ID CODE: ID--XXX(3 digits) ID--XXXX(4 digits) ID--XXXXX(5 digits) ID--XXXXXX(6 digits)



This is how to set ANI ID CODE.

The steps of setting ANI ID CODE:



NOTE

➤ Any transceiver in the same group should be with the same frequency point and parameter.

How to operate

a. How to use all calls function:

Hold on PTT key to transmit. After transmitting ANI ID Code, input *R + # keys directly.

b. How to use group calls function:

Hold on PTT key to transmit. After transmitting ANI ID Code, input "Group NO." *R + #

c. How to use selective calls function:

Hold on PTT key to transmit. After transmitting ANI ID Code, input the ANI ID Code of the selective transceiver that you want to speak to.

Note: If you press number key to transmit DTMF code while holding on PTT key to transmit, the transmission will be delayed for 2seconds. And then the transmission will stop.

Inspection, stun, kill and monitor function

Inspection: Manager can use this function when he/she wants to know whether his/her staff are on duty. Manager will transmit inspection signals, and the transceiver in the group will reply to the manager automatically(what they reply is their ANI ID CODE).

Stun: Manager can use this function when he/she only wants to let his/her members just receive but can not transmit. Manager only needs to transmit signaling to stun the members' transceiver. So that the stunned transceivers only can receive but can not transmit.

Kill: When the transceiver is lost or some accidents happen, in order to disable the transceiver, manager can use this function to kill the transceiver. So that the transceiver can not transmit or receive.

Monitor: Manager can use this function when he/she wants to know what his/her group members are doing at the moment. When manager transmits the monitor signaling, the members' transceiver in the group will transmit automatically, then manager can hear the member's voice.