



**BENISON**  
**JB7**

**VHF FM TRANSCEIVERS**

**User's Manual**

To customer :

Thank you for your using our FM VHF/UHF radio. The design is reasonable structure with stable functions. And high quality with easy operation and perfect capability.

Before operate this transceiver, please reading the instruction manual.

Suitable for : JB7

## FEATURE

- 2、80 groups for memory channels
- 3、Channel step (5/6.25/10/12.5/25KHZ)
- 4、VOX function
- 5、CTCSS/DCS

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### Unpack and check equipment:

Take out the radio carefully, check the packing before discarding. If any items losing or broken, please contact with local agents.

### Supplied Accessories:

ITEMS	Quantity
Rubber antenna	1pc
Battery pack	1pc
Charger	1pc
Belt Clip	1pc
User;s Menu	1pc

### Choose Accessories:

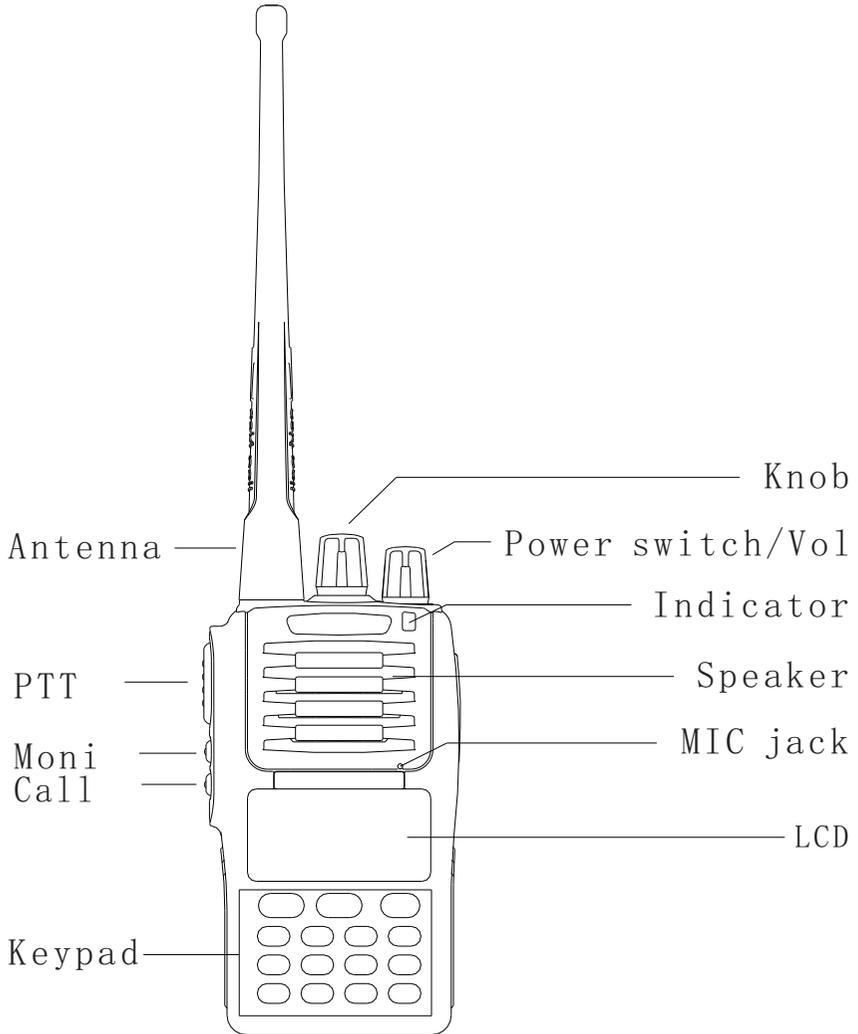
ITEMS
Small speaker
Connecting cable
Programmable software

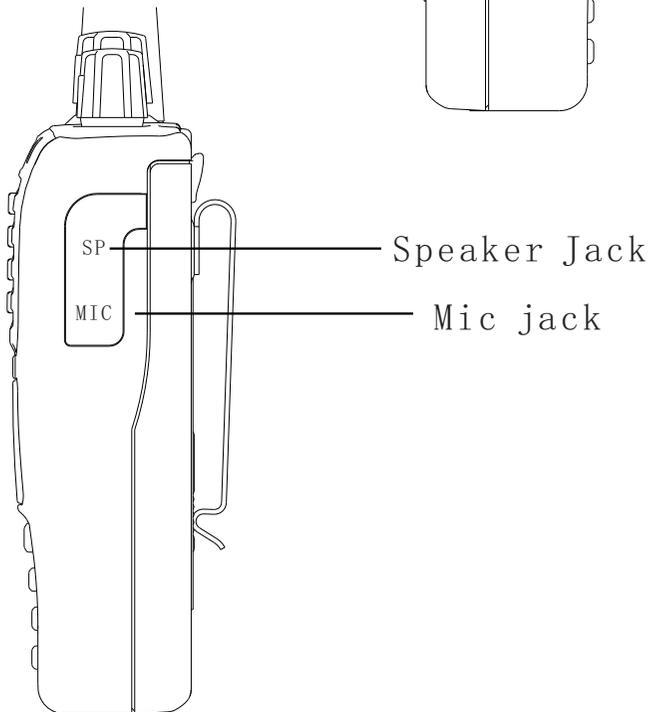
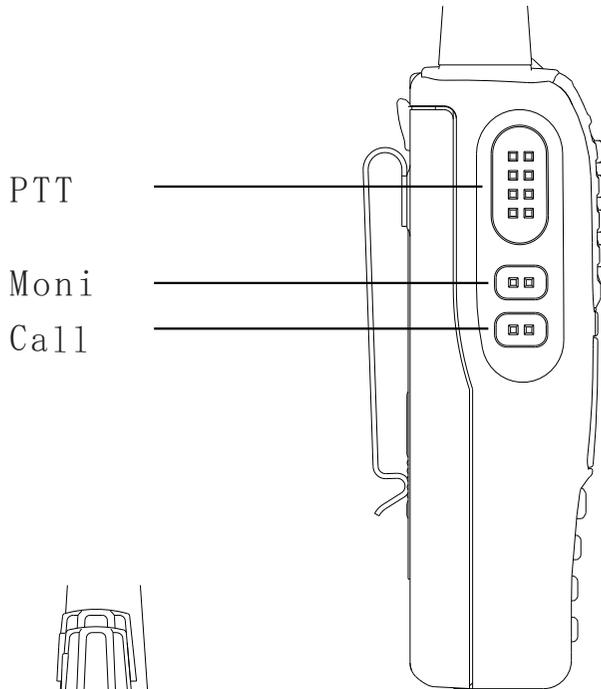
## **Maintain**

This Radio is an electronic product for exact design. The suggestions below will help you to use many years.

- 1、 Do not open the transceiver by yourself ,it will attaint the radio.
- 2、 Be note that the power voltage should between 6V and 8V when using regulated power supply.
- 3、 Do not put the radio under sunshine, hot place and high temperatures will shorten the electronic life or let the plastics warp.
- 4、 Do not put the radio in the dusty or dirty place.
- 5、 Keep the radio dry, because rainwater or damp will corrode electronic circuits.
- 6、 If the transceiver has peculiar smell or smoke, please turn off and take out the battery, and then contact with local agents.
- 7、 Do not transmit without antenna.

# Getting Acquainted





# Instruction Manual

## 1 Key,Knob,Switch,Indicator

- 1、 Power/Volume Knob:To turn on/off the radio and control volume.
- 2、 Transmit Indicator: Press PTT, when it transmit, the light ligths.
- 3、 Busying Indicator:When Moni key and squelch operating, Appears “” when moni key and squelch operating which mean busying indicator.
- 4、 PTT key:Switch for Transmit and Receive
- 5、 MONI key:Press this key can monitor the workingchannel, when receiving.
- 6、 Call key:Press this key can call the working channel, when receiving.
- 7、 Speaker/Mic jack: Use the Speaker or Microphone or together, contact this jack. Be note that do not let the water dropping into it, when it not use.
- 8、 SMA Connector : For connecting attached antenna.

## II LCD

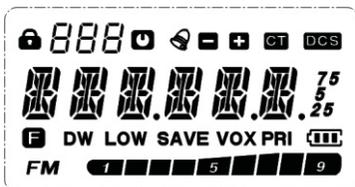


图 标	说 明
	Appears channle, frequency and second fuction.
	It wink after press
	CTCSS
	DCTCSS
	Vox turned on
	Dispersion to hyper-recvie frequency
	Dispersion to under-recvie frequency
	Warning tone
	Scrambler
	Appears battery
	Low power
	Save battery
	Menu coder and memory channel
	Received signal and power display
	Keypad locked

### III Second function by keypad

VFO/MR	Frequency,memory change, cancel,memory,exit
M/SEL	Menu/affirm key
<b>F/mO</b>	Second function and keypad locked,(press 2 seconds)
1POW	High/Low power: press <b>(F/mO)</b> with this key to set the H/L power.
2VOX	Vox and Sensitivity set: press <b>(F/mO)</b> with this key to choose VOX OFF/1~9 and sensitivity
3SQL	quelch Sensitivity Threshold: press <b>(F/mO)</b> with this key to set squelch sensitivity threshold(0~9)
4APO	Auto shut down set: press <b>(F/mO)</b> and this key to shut down(OFF30~240)
5BEEP	Warning tone set: Press <b>(F/mO)</b> and this key to turn on/off warning tone.
6LED	<b>Black lights: press <b>(F/mO)</b> and this key to choose blacklights(OFF/ON/AUT).</b>
7CTDCS	CTDCS: Press <b>(F/mO)</b> and this key to choose(OFF/CTCSS/DCS).
8CT	CT receive / transmit CTCSS: under frequency mode, press <b>(F/mO)</b> and this key to choose
9DC	DC receive / transmit DTS : under frequency mode, press <b>(F/mO)</b> and this key to choose (OFF23~754)
0SCAN	Channel scan :Press <b>(F/mO)</b> and this key to scan the frequency and channel
*STEP	Step choose: Press <b>(F/mO)</b> and this key to choose the spacing frequency (5/10/6.25/12.5/25)
#REV	Scrambler: Under different frequency, press <b>(F/mO)</b> and this key to change receive and transmit frequency

## **Basic operation**

- 1、Connected antenna: Insert the base of the attached antenna into SMA, rotate the antenna by clockwise until set down. Take out the antenna from the base by anticlockwise rotation until pull it out from SMA connector.
- 2、Power switch: Rotate PWR/VOL by clockwise, you will heard “kada” it turn on the radio. All the sign and frequency will appears on the LCD. (Due to this radio have automatic squelch function, the speaker did not have any noise before have calling) Use PWR/VOL to set the volume when have call. Anticlockwise this key until heard “kade”, all the sign and frequency will not appears, it means turn off the radio.
- 3、Set volume: Turn on the radio (this radio have automatic squelch function, the speaker did not have any noise before have calling) press [MONI] key, and then rotate PWR/VOL key, clockwise the VOL key to increase the volume, anticlockwise to decrease the volume.
- 4、Moni function: Press Moni key and adjust your desired volume by PWR/VOL, you can directly hear sound without waiting for receiving any signal.

5、Transmit : Press[MONI]seconds to check the channel what you want if it is free, press[PTT], and speak to the radio in general tone.

The red light lights when press [PTT]

It will not clear if near the speaker or loud speaker.

Unlash [PTT] to heard from your partner.

6、Keypad locked: Under any mode, press **F/MO** two seconds, to lock or unlock ,it appears  when locked.

7、Scrambler: Under any mode,press **F/MO** and **#REV** it appears “” means turn on the Scrambler, do it again to turn off the scrambler function.

8、Frequency mode,channel mode,memory frequency mode

①Press **M/SEL** and turn on to change the channel and frequency.

②Under frequency mode. press **VFO/MR** to change frequency and memory frequency mode.

9、**Side key operate:**

PTT : Transmit key, press to transmit,and unlash to stop transmit.

MONI : Moni key, Press this key to moni the operating frequency.

CALL : Call key, press this key to call the channel working.

## Function operating

### 1、H/L power set

Under any mode, press **(M/SEL)** LCD appears P01-1,  shining; then press **(M/SEL)** it press P01-2,  shining; turning knob, choose “H/L”(H is high power, L is lower power),press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.

- ◆Short cut: press **(F/MO)** and press **(1POW)** LCD appears P01-2,  shining; turning knob to choose “H/L”,press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P01-1



P01-2

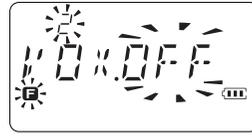
### 2、VOX control transmit

Under any mode, press **(M/SEL)** turning knob to choose menu 2, it appears P02-1,  shining; then press **(M/SEL)** it appears P02-2,  shining; turning knob to choose “OFF/1~9”(OFF for close,the high the sensitive),press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.LCD appears “VOX”after choose vox.

- ◆Short cut: press **(F/MO)** and press **(2VOX)** LCD appears P02-2,  shining, turning knob to choose “OFF/1~9”; press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P02-1



P02-2

### 3、 Squelch Sensitivity Threshold

Under any mode, press **(M/SEL)** turning knob to choose menu 3, it appears P03-1,  shining; then press **(M/SEL)** it appears P03-2,  shining; turning knob to choose "00~09" (the high the sensitivity), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.

◆Shortcut: press **(F/MO)** and **(3SQL)** it appears P03-2,  shining; turning knob to choose "00~09" (the high the sensitivity), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P03-1



P03-2

### 4、 Auto shut down set

Under any mode, press **(M/SEL)** turning knob to choose menu 4, it appears P04-1,  shining; then press **(M/SEL)** it appears P04-2,  shining; turning knob to choose "OFF/30/60/120/240" (close or choose time, the unit is minute), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.

- ◆Shortcut: press **(F/NO)** and **(4APO)** it appears P04-2,  shining; turning knob to choose "OFF/30/60/120/240" (close or choose time, the unit is minute), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P04-1



P04-2

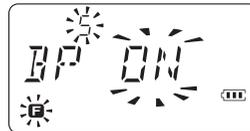
### 5、Warning tone set

Under any mode, press **(M/SEL)** turning knob to choose menu 5, it appears P05-1,  shining; then press **(M/SEL)** it appears P05-2,  shining; turning knob to choose "ON/OFF" (ON is open, OFF is close), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.

- ◆Shortcut: press **(F/NO)** and **(5BP)** it appears P05-2,  shining; turning knob to choose "ON/OFF" (ON is open, OFF is close), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P05-1



P05-2

## 6、Black lights

Under any mode, press **(M/SEL)** turning knob to choose menu 6, it appears P06-1,  shining; then press **(M/SEL)** it appears P06-2,  shining; turning knob to choose "OFF/ON/AUT" (OFF is close、ON is open、AUT is auto), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.

◆Shortcut: press **(F/☉)** and **(5BP)** it appears P06-2,  shining; turning knob to choose "OFF/ON/AUT" (OFF is close、ON is open、AUT is auto), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P06-1



P06-2

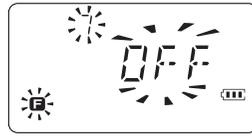
## 7、CTDCS

Under any mode, press **(M/SEL)** turning knob to choose menu 7, it appears P07-1,  shining; then press **(M/SEL)** it appears P07-2,  shining; turning knob to choose "OFF/CTCSS/DCS", press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit. Chosse "CTCSS" LCD will appears **CT** and choose "DCS" LCD will appears **DCS**.

◆Shortcut: press **(F/☉)** and **(7CTDT)** it appears P07-2,  shining; turning knob to choose "OFF/CTCSS/DCS", press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P07-1



P07-2

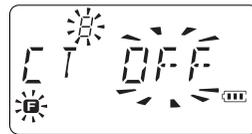
## 8、CTDCS

Under any mode, press **(M/SEL)** turning knob to choose menu 8, it appears P08-1, ☀️ shining; then press **(M/SEL)** it appears P08-2, ☀️ shining; turning knob to choose "OFF/67~254.1", press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.

- ◆ Shortcut: press **(F/↻)** and **(8GT)** it appears P08-2, ☀️ shining; turning knob to choose "OFF/67~254.1", press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P08-1



P08-2

## 9、DCS

Under any mode, press **(M/SEL)** turning knob to choose menu 9, it appears P09-1, ☀️ shining; then press **(M/SEL)** it appears P09-2, ☀️ shining; turning knob to choose "OFF/023N~754I", press **(F/↻)** to choose N"/"I" (N is obverse I is reverse), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.

- ◆ Shortcut: press **(F/MO)** and **(9DC)** it appears P09-2,  shining; turning knob to choose "OFF/67~254.1", press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



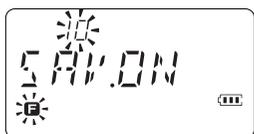
P09-1



P09-2

### 10、 Save battery

- Under any mode, press **(M/SEL)** turning knob to choose menu 10, it appears P10-1,  shining; then press **(M/SEL)** it appears P10-2,  shining; turning knob to choose "OFF/ON", press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit . LCD appears **SAVE** when choose ON.



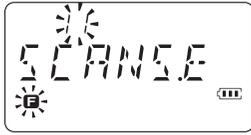
P10-1



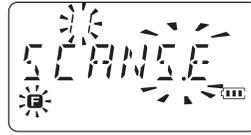
P10-2

### 11、 Scan mode and set

- Under any mode, press **(M/SEL)** turning knob to choose menu 11, it appears P11-1,  shining; then press **(M/SEL)** it appears P11-2,  shining; turning knob to choose "CO/TO/SE" (Co is carrier wave scan, TO is time scan, SE is search scan), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit .



P11-1



P11-2

## 12、Time for transmit

Under any mode, press **(M/SEL)** turning knob to choose menu 12, it appears P12-1, ☀ shining; then press **(M/SEL)** it appears P12-2, ☀ shining; turning knob to choose "OFF/60/120/180" (unit : second), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit .



P12-1

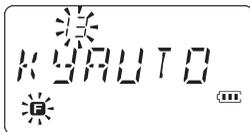


P12-2

## 13、Keypad locked

Under any mode, press **(M/SEL)** turning knob to choose menu 13, it appears P13-1, ☀ shining; then press **(M/SEL)** it appears P13-2, ☀ shining; turning knob to choose "MANU/AUTO" (MENU is HM、AUTO is automatism), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit .

◆Shortcut: press **(F/wo)** two seconds , lock and unlocked the keypad.



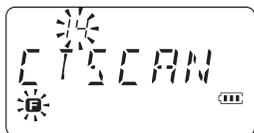
P13-1



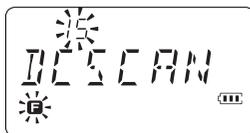
P13-2

#### 14、STSCAN (CTCSS scan)

Under any mode, press (M/SEL) turning knob to choose menu 14, it appears P14-1, ☀️ shining; press (M/SEL) begin to scan, it stop to wink, when find CTCSS, and press (VFO/MR) for exit.



P14-1



P15-1

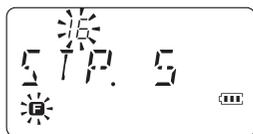
#### 15、DCSAN (DCS scan)

Under any mode, press (M/SEL) turning knob to choose menu 15, it appears P15-1, ☀️ shining; press (M/SEL) begin to scan, it stop to wink, when find DCS, and press (VFO/MR) for exit.

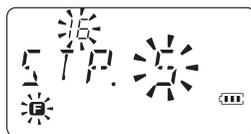
#### 16、Frequency step

Under any mode, press (M/SEL) turning knob to choose menu 16, it appears P16-1, ☀️ shining; then press (M/SEL) it appears P16-2, ☀️ shining; turning knob to choose "5/6.25/10/12.5/25", press (M/SEL) to confirm and back to menu, press (VFO/MR) for exit.

- ◆ Shortcut: press (F/MO) and (\*SETP) it appears P16-2, ☀️ shining; turning knob to choose "5/6.25/10/12.5/25", press (M/SEL) to confirm and back to menu, press (VFO/MR) for exit.



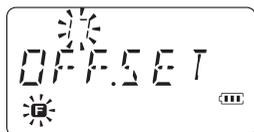
P16-1



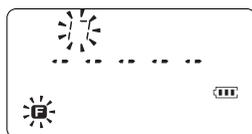
P16-2

## 17、 Alien and beat frequency set

Under any mode, press **(M/SEL)** turning knob to choose menu 17, it appears P17-1,  shining; , press digital to set :for example : beat frequency is 10Mhz, put press " 1/0/0/0/0/" ; press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P17-1

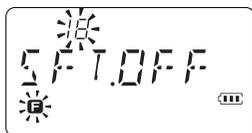


P17-2

## 18、 Beat frequency choose

Under any mode, press **(M/SEL)** turning knob to choose menu 18, it appears P18-1,  shining; then press **(M/SEL)** it appears P18-2,  shining; turning knob to choose " OFF/+/- " (+ when transmit hyper-receive , - when transmit under-receive), press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit. LCD appears  or .

◆ Shortcut: press **(F/MO)** and press **(#REV)** LCD appears   
 eceive/transmit. frequency exchanged.



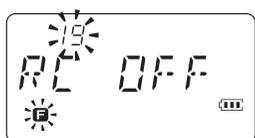
P18-1



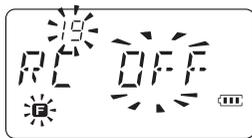
P18-2

### 19、RCT receive CTCSS choose and check

Under any mode, press (M/SEL) turning knob to choose menu 19, it appears P19-1, ☀shining; then press (M/SEL) it appears P19-2, ☀shining; turning knob to choose "OFF/67~254.1", press (M/SEL) to confirm and back to menu, press (VFO/MR) for exit.



P19-1



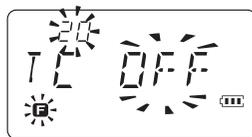
P19-2

### 20、TCT transmit CTCSS choose and check

Under any mode, press (M/SEL) turning knob to choose menu 20 it appears P20-1, ☀shining; then press (M/SEL) it appears P20-2, ☀shining; turning knob to choose "OFF/67~254.1", press (M/SEL) to confirm and back to menu, press (VFO/MR) for exit.



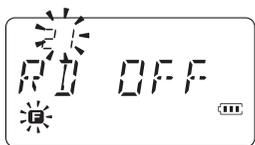
P20-1



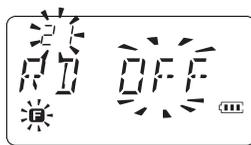
P20-2

### 21、RDQT receive DCS choose and check

Under any mode, press (M/SEL) turning knob to choose menu 21, it appears P21-1, ☀shining; then press (M/SEL) it appears P21-2, ☀shining; turning knob to choose "OFF/023N~754I", press (M/SEL) to confirm and back to menu, press (VFO/MR) for exit.



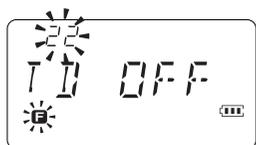
P21-1



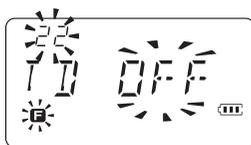
P21-2

## 22、TDQT transmit DCS choose and check

Under any mode, press **(M/SEL)** turning knob to choose menu 22, it appears P22-1, shining; then press **(M/SEL)** it appears P22-2, shining; turning knob to choose "OFF/023N~754I", press **(M/SEL)** to confirm and back to menu, press **(VFO/MR)** for exit.



P22-1



P22-2

## 23、Channel or operating frequency scan.

Under channel or memory calling frequency, press **(F/MO)** and **(OSCAN)** to scan the channel. It will stop to scan and locked until it found the sign, press any key to exit.

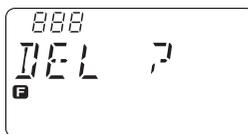
Under frequency mode, press **(F/MO)** and **(OSCAN)** to scan ,it will stop to scan and locked until found the sign.,press any key to exit.

## 24、Saving channel

Under frequency mode, choose frequency and other parameter (CTCSS, DCS, beat frequency, orientation and power), press **(F/MO)** and **(VFO/MR)** it will appears P24-1, shining; turning knob to choose the saving channel (01~80) and press **(VFO/MR)** to save the frequency and back the frequency estae.



P24-1



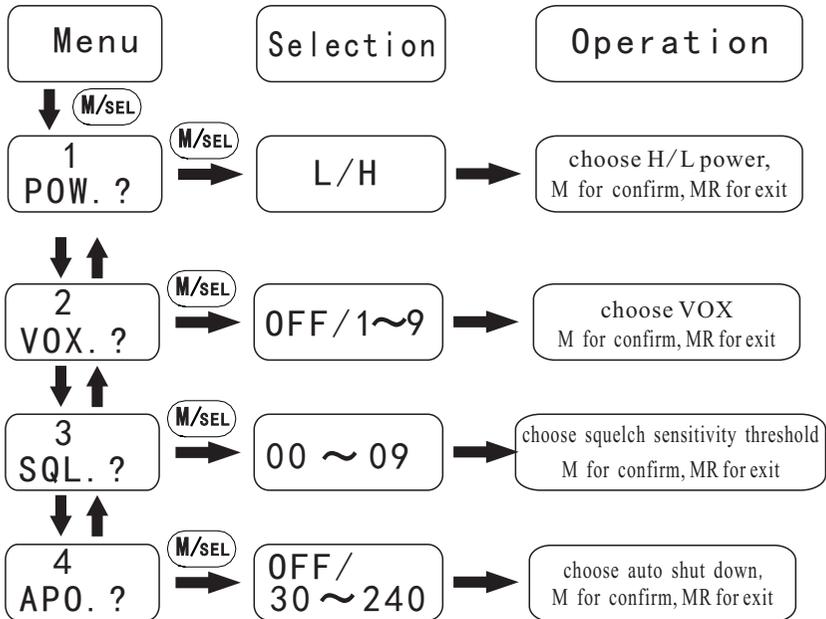
P25-1

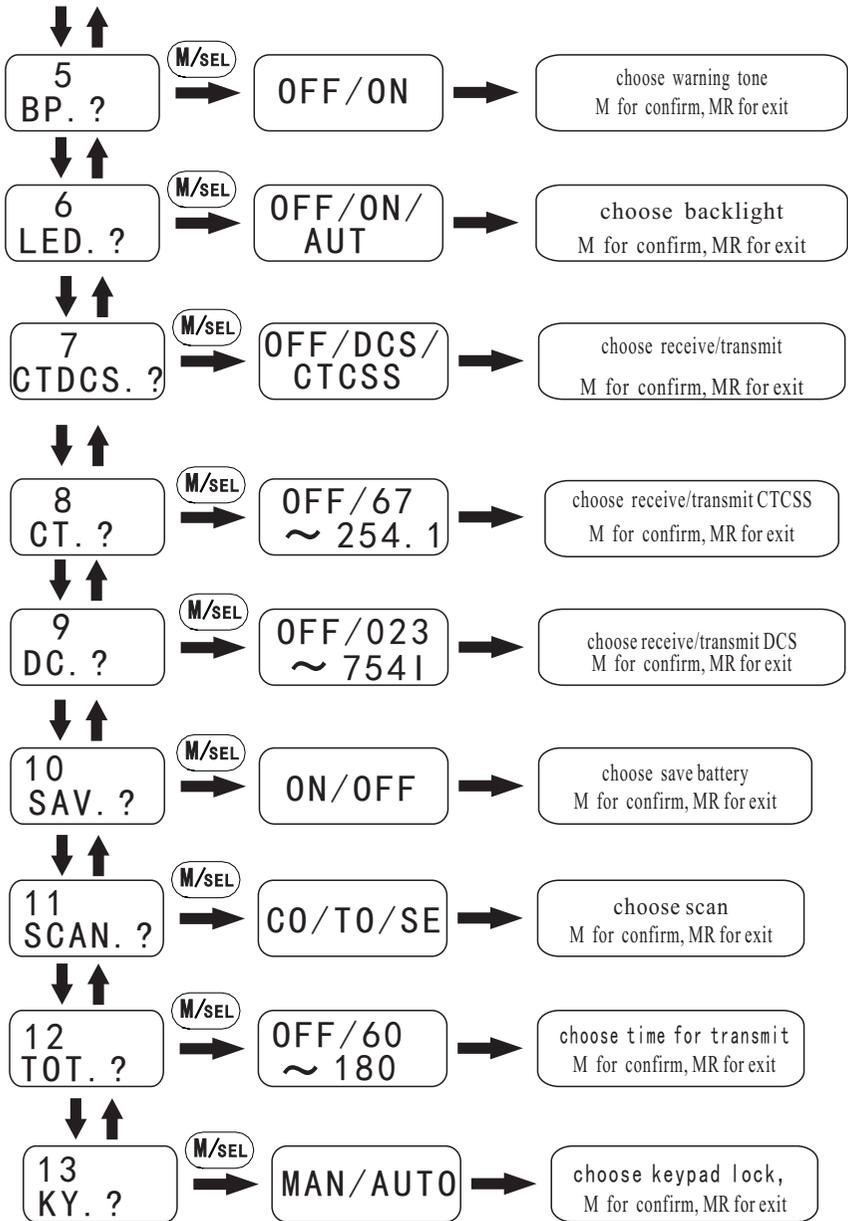
## 25、Delete memory channel

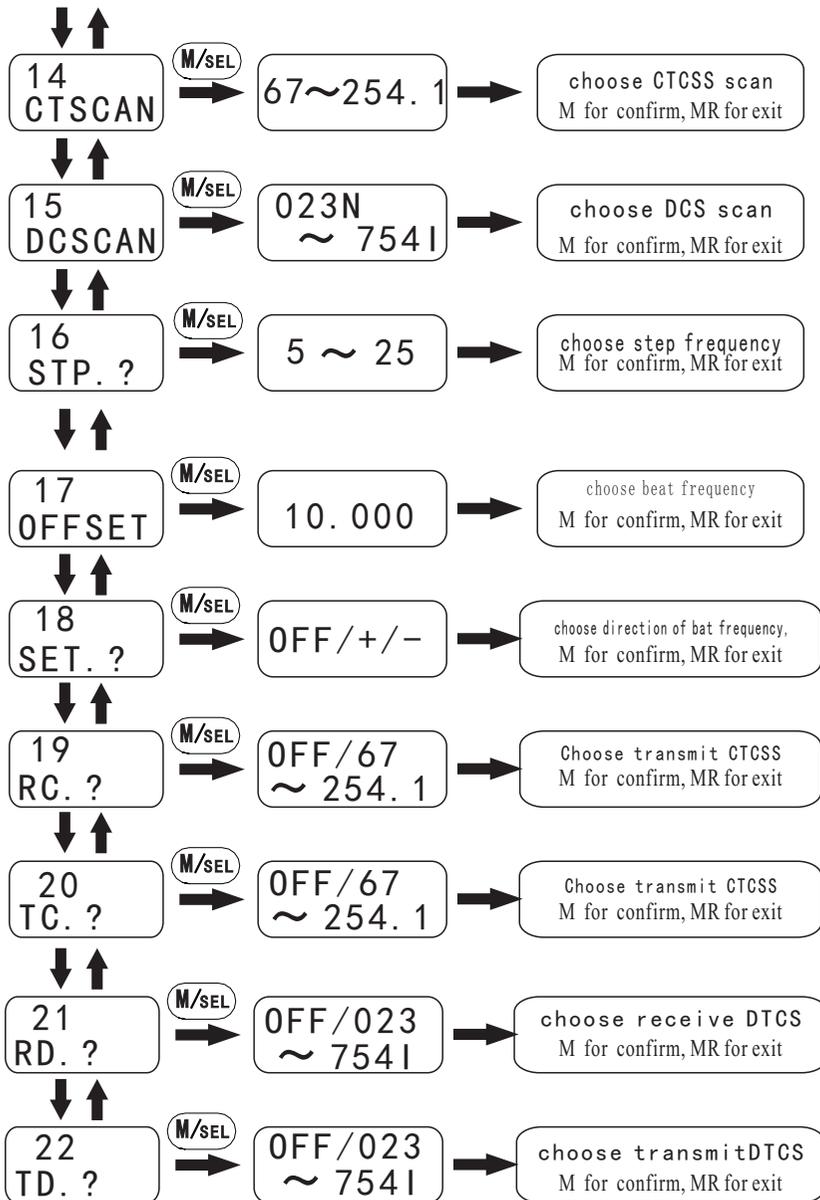
Under memory frequency calling, choose delete memory ,turn off the radio,press **VFO/MR** and then turn on the rado, it appears P25-1; unlash **VFO/MR** and then press **M/SEL** to choose the cancel memory channel.

Menu function:

- ① Press **M/SEL** enter into menu mode
- ② Turning knob to choose the menu.
- ③ Press **M/SEL** to enter into the menu to set.
- ④ After finishing set, press **M/SEL** to confirm and press **VFO/MR** to exit the menu.







**Notice:Items 7,8,9,17~22 is available only in Frequency mode.**

## Specification

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Frequency Range	245~245.9575MHz
Number of Channel	80
CTCSS	50 CTCSS 105 DCS
Frequency Spacing	5,6.25,10,12.5,25KHz
Modulation	FM
Mode of Operation	Simplex or Semi-duplex
Input Impedance	50 $\Omega$
Operating Voltage	DC7.2V
Current Consumption	Cathode darth-plate
Operating Temperature	-10°C ~ +55°C
Output power	$\leq 3W$
Spurious emissions	$\leq -65dB$
Current Consumption	$\leq 1.6A$ (transmit4W)
Maximum Deviation	$\leq \pm 5KHz$
Sensitivity Adjust	2-20mV
Frequency Stability	$\pm 5ppm$
Usable Sensitivity	0.2uV
Audio Output	$\geq 0.5W$
Audio Distortion	$\leq 10\%$
Audio Frequency Response	300~3000Hz
Occupied Bandwidth	$\leq 16KHz$

**Note: We will not advance,if changing the technique specification.**

## Annexed Table:

50 CTCSS frequency code (HZ)							
67.0	85.4	107.2	136.5	165.5	186.2	210.7	254.1
69.3	88.5	110.9	141.3	167.9	198.9	218.1	
71.9	91.5	114.8	146.2	171.3	192.8	225.7	
74.4	94.8	118.8	151.4	173.8	196.6	229.1	
77.0	97.4	123.0	156.7	177.3	199.5	233.6	
79.7	100.0	127.3	159.8	179.9	203.5	241.8	
82.5	103.5	131.8	162.2	183.5	206.5	250.3	

105 DCS code									
023	065	132	205	255	331	413	465	612	723
025	071	134	212	261	332	423	466	624	731
026	072	143	223	263	343	431	503	627	732
031	073	145	225	265	346	432	506	631	734
032	074	152	226	266	351	445	516	632	743
036	114	155	243	271	356	446	523	645	754
043	115	156	244	274	364	452	526	654	
047	116	162	245	306	365	454	532	662	
051	122	165	246	311	371	455	546	664	
053	125	172	251	315	411	462	565	703	
054	131	174	252	325	412	464	606	712	