

©  
BENISON

JB-4

*VHF FM TRANSCEIVERS*

# Instruction Manual

**To Customers:**

Thank you for your using our FM VHF 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:JB-4

**FEATURE**

- 1、 Output power: VHF5W/UHF4W
- 2、 199groups for memory channels
- 3、 Channel step (5/6.25/10/12.5/25KHZ)
- 4、 VOX function
- 5、 CTCSS/DCS
- 6、 Multifunction scan
- 7、 Three color for LCD to adjust
- 8、 Program software suitable by KENWOOD

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**Unpack and check equipment:**

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

**Supplied Accessories:**

ITEMS	Quantity
Rubber antenna	1pc
Battery pack	1pc
Charger	1 pc
Belt Clip	1 pc
User's manual	1pc

**Choose Accessories:**

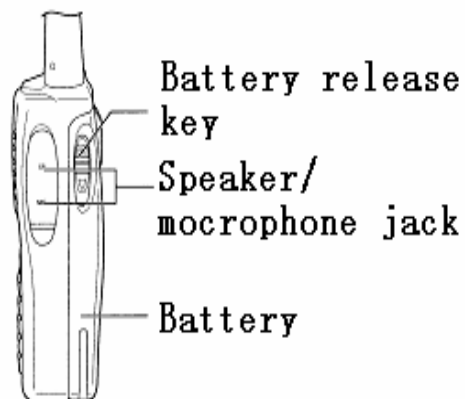
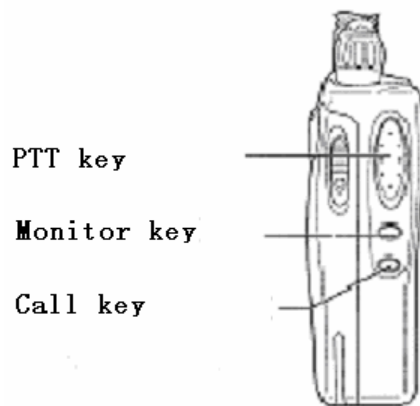
ITEMS
Small speaker
Connecting cable
Programmable software

**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 affect 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

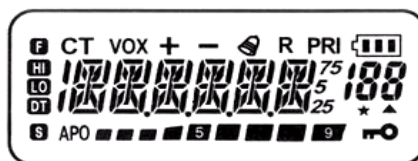


Instruction Manual

一、 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 lights.
- 3、 Busyng Indicator: When Moni key and squelch operating, Appears “■■■■■■■■” when moni key and squelch operating which mean busyng indicator.
- 4、 PTT key: Switch for Transmit and Receive
- 5、 MONI key: Press this key can monitor the working channel ,when receiving.
- 6、 LAMP key: switch for black light.
- 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.

二、 LCD



ICON	EXPLANATION
	Appears channel, frequency and second function.
<b>F</b>	It wink after press “F/”
<b>CT</b>	CTCSS
<b>DT</b>	DOTCD
<b>VOX</b>	Vox turned on
<b>+</b>	Dispersion to hyper-recvie frequency
<b>-</b>	Dispersion to under-recvie frequency
	Warning tone
<b>R</b>	Scrambler
	Appears battery
<b>HI</b>	High power
<b>LO</b>	Low power
<b>S</b>	Save battery
<b>APO</b>	Set auto shut down
<b>188</b>	Manu coder and memory channel
	Received signal and power display
<b>★</b>	Content in channel
	Keypad locked

**三、 Second function by keypad :**

VFO/MR	Frequency, memory change, cancel ,memory ,exit
M/SEL	Manu/affirm key
F/☐	Second function and keypad locked,(press 2 seconds)
IPOW	High/Low power: Press “F/☐” with this key to set the H/L power.
2VOX	Vox and Sensitivity set: press “F/☐” with this key to choose VOX OFF/1~9 and sensitivity
3SQL	Squelch Sensitivity Threshold: press “F/☐” with this key to set squelch sensitivity threshold(0~9)
4APO	Auto shut down set: press “F/☐” and this key to shut down(OFF30~240)
5BEEP	Warning tone set: Press F/☐” and this key to turn on/off warning tone.
6LED	Black lights: press “F/☐” and this key to choose black lights (OFF/ON/AUT)
7CTDCS	CTDCS: Press “F/☐” and this key to choose (OFF/CTCSS/DCS)
8CT	CTCSS: press “F/☐” and this key to choose CTCSS (OFF67~254.1)
9DC	DTS: Press “F/☐” and this key to choose (OFF23~754)
0SCAN	Channel scan: Press “F/☐” and this key to scan the frequency and channel
*STEP	Step choose: Press “F/☐” and this key to choose the spacing frequency (5/10/6.25/12.5/25)
#REV	Scrambler: Under different frequency, press “F/☐” and this key to change receive and transmit frequency

**Method of application :**

- 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 clockwise rotation until pull it out from SMA connector.
- 2、 Power switch:** Rotate **PWR/VOL** by clockwise, you will heard “kade” 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 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 model, press[F/☐] two seconds, to lock or unlock ,it appears “☐” when locked.
- 7 Scrambler:** Under any model, press[F/☐] and “#REV” ,it appears “R” means turn on the Scrambler, do it again to turn off the scrambler function.
- 8、 Mode choose:** frequency model, channel model, memory frequency model
  - ① Press “M/SEL” and turn on to change the channel and frequency.
  - ② Under frequency model. press “VFO/MR” to change frequency and memory frequency model.
- 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.

LAMP: Black lights key, press it light, again it extinguish.

## Function operating

### 1、H/L power set

Under any model, press [M/SEL] LCD Appears “**POW. H 1**” And press [M/SEL] it appears “**POW. H 1**” turning knob, choose “**H/L**” (H is high power, L is high power) press [M/SEL]

To back the manual, press [VFO/MR] for exit.

Shortcut: press [F/ ] and [1POW] LCD appears “**POW. H 1**” turning to choose “**H/L**” press [M/SEL] to confirm, press [VFO/MR] for exit.

### 2、VOX and sensitivity set:

Under any model, press [M/SEL] key turning knob to choose manual 2, it appears “**VOX. OFF 2**” and then press [M/SEL]. it appears “**VOX. OFF 2**”, running knob to choose “**OFF/1~9**” (OFF is close, the high the sensitive), press [M/SEL] again to back the manual, press [VFO/MR] for exit. LCD appears “**VOX**” after choose vox.

Shortcut: Press [VFO/MR] and [2VOX] then LCD appears “**VOX. OFF 2**”, turning knob choose “**OFF/0~9**” press [M/SEL] to confirm and press [VFO/MR] for exit.

### 3、Squelch Sensitivity Threshold:

Under any model, press [M/SEL] turning knob, choose manual 3, it appears “**SQL. 00 3**” press [M/SEL] it appears “**SQL. 00 3**” turning knob to choose “**00~09**” (the high the sensitivity) press [M/SEL] to confirm, press [VFO/MR] for exit.

Shortcut: press [F/ ] and [3SQL] it appears “**SQL. 00 3**” turning knob choose “**00~09**” press [M/SEL] to confirm, press [VFO/MR] for exit.

### 4、Auto shut down set

Under any model press [M/SEL] to turning knob to choose manual 4, “**APO. OFF 4**” then press [M/SEL] it appears: “**APO. OFF 4**” turning knob to choose “**OFF/30/60/120/240**” (close or choose time, the unit is minute) press [M/SEL] it again to back the manual, press [VFO/MR] for exit. LCD appears “**APO**” when choose time.

Shortcut: press [F/ ] and [4APO] it appears “**APO. OFF 4**” turning knob and choose “**OFF/30/60/120/240**” press [M/SEL] to confirm, press [VFO/MR] for exit.

### 5、Warning tone set

Under any model, press [M/SEL] turning knob to choose manual 5, appears “**BP. ON 5**” press [M/SEL] appears “**BP. ON 5**” turning knob to choose “**ON/OFF**” (ON is open, OFF is close) press [M/SEL] again to back the manual, Press [VFO/MR] for exit.

Shortcut: press [F/ ] and [5BEEP] appears “**BP. ON 5**” turning knob to choose “**ON/OFF**” press [M/SEL] to confirm, and [VFO/MR] for exit.

### 6、Black lights

Under any model, press [M/SEL] turning knob to choose menu 6 it appears “**LED. OFF 6**” and then press [M/SEL] it appears “**LED. OFF 6**” turning knob to choose “**OFF/ON/AUT**” (OFF is close, ON is open, AUT is auto) press [M/SEL] again to back the manual, and [VFO/MR] for exit.

Shortcut: press [F/ ] and [6LED] appears “**LED. OFF 6**” turning knob to choose “**OFF/ON/AUT**” press [M/SEL] to confirm, and [VFO/MR] for exit.

### 7、CTDCD

Under frequency model, press [M/SEL] turning knob to choose manual 7, it appears “**CT. DCS 7**” and then press it appears “**CT. CSS 7**” turning knob to choose “**OFF/CTCSS/DCS**”. Press [M/SEL] to back the manual, and [VFO/MR] for exit. Choose “**CTCSS**” LCD will appears “**CT**” and choose “**DCS**” LCD will appears “**DT**”.

Shortcut: press [F/ ] and [7CTDCS] appears “**CT. CSS 7**” turning knob to choose “**OFF/CTCSS/DCT**” press [M/SEL] to confirm, and [VFO/MR] for exit.

## 8、CTCSS

Under frequency model, press [M/SEL] turning knob to choose manual 8, it appears “**CT. OFF 8**” and then press [M/SEL] “**CT. OFF 8**” turning knob to choose “**OFF/67~254. 1HZ**” press [M/SEL] to back the manual, and press [VFO/MR] for exit.

Shortcut: Press [F/ ] and [8CT] it appears “**CT. OFF 8**” turning knob to choose “**OFF/67~254. 1**” press [M/SEL] to confirm, and [VFO/MR] for exit.

## 9、DCS

Under frequency mode, press [M/SEL] turning knob to choose manual 9, it will appear “**DC. OFF 9**” and press [M/SEL] it appears “**DC. OFF 9**” turning knob to choose “**OFF/023N~754I**” and press [F/ ] choose “**N**” / “**I**” (N is obverse I is reverse) press [M/SEL] again, to confirm and back manual, press [VFO/MR] for exit.

Shortcut: press [F/ ] and [9DC] appears “**DC. OFF 9**” turning knob to choose “**OFF/023N~754I**” press [F/ ] to confirm, and [VFO/MR] for exit.

## 10、Choose backlight color

Under any model, press [M/SEL] turning knob to choose manual 10, it appears “**LIGH. P 10**” and press [M/SEL] again, it appears “**LIGH. P 10**” turning knob to choose “**P/B/G**” (P is purple, B is orange, G is Blue) Press [M/SEL] to confirm, and [VFO/MR] for exit.

## 11、Save battery

Under any model, press [M/SEL] turning knob to choose menu 11, it will appear “**SAV. OFF 11**” and press [M/SEL] it appears “**SAV. OFF 11**” turning knob to choose “**OFF/ON**” press [M/SEL] to confirm and back the manual, [VFO/MR] for exit. LCD appears “**S**” when choose “**ON**” .

## 12、Scan model and set.

Under any model, press [M/SEL] turning knob to choose manual 12, it will appear “**SCAN. CO 12**”, press [M/SEL] it will appear “**SCAN. CO 12**” turning knob to choose “**CO/TO/SE**” (Co is carrier wave scan, TO is time scan, SE is search scan) press [M/SEL] to back the manual, and [VFO/MR] for exit.

## 13、Time for transmit

Under any model, press [M/SEL] turning knob to choose manual 13 it will appear “**TOT. OFF 13**” and press [M/SEL] it appears “**TOT. OFF 13**” turning knob to choose “**OFF/60/120/180**” (unit: second) press [M/SEL] to back the manual, and [VFO/MR] for exit.

## 14、Keypad locked

Under any model, press [M/SEL] turning knob to choose menu 14, it will appear “**KY. MANU 14**” and then press [M/SEL], turning the knob to choose “**MANU/AUTO**” (MANU is HM, AUTO is automatism) press [M/SEL] to back manual, and [VFO/MR] for exit.

Shortcut: press [F/ ] 2 seconds, locked or unlock the keypad.

## 15、STSCAN (CTCSS scan)

Under any model, press [M/SEL] turning knob to choose menu 15, it appears “**CTSCAN 15**” and press [M/SEL] begin to scan, it stop to wink, when find CTCSS, and press [VFO/MR] for exit.

## 16、DCSAN (DCS scan)

Under any model, press [M/SEL] turning knob to choose menu 16, it appears “**DCSCAN 16**” and press [M/SEL] begin to scan, it stop to wink, when find DTC, and press [VFO/MR] to exit.

## 17、Frequency step

Under frequency model, press [M/SEL] turning knob to choose menu 17, it appears “**STP. 25 17**” press [M/SEL] it appears “**STP. 25 17**” turning knob to choose “**5/6. 25/10/12. 5/25KHZ**” spacing frequency, and press [M/SEL] To back the menu, and [VFO/MR] for exit.

Shortcut: press [F/ ] and [\*STEP] it appears “**STP. 25 17**” turning knob to choose “**5/6. 25/10/12. 5/25**” press [M/SEL] to confirm, and [VFO/MR] for exit.

## 18、Beat frequency set

Under frequency model, press [M/SEL] turning knob to choose menu 18, it will appears **"OFFSET 18"** and press [M/SEL] it will appears **"OFFSET 18"** press digital to set :for example: beat frequency is 10Mhz,input **"1/0/0/0/0/"** and press [M/SEL] to confirm and back menu, press [VFO/MR] for exit.

## 19、Beat frequency choose

Under frequency mode., press [M/SEL] turning knob to choose menu 19, it will appears **"SFT. OFF 19"** and press [M/SEL] it will appears **"SFT OFF 19"** turning knob to choose **"OFF/+/-"** (+ when transmit hyper-receive , -when transmit under-receiver) Press [M/SEL] again to confirm and back the menu, press [VFO/MR] for exit. LCD will appears **"+"** or **"-"** what you choose.

20、RCT receive CTCSS choose and check<sup>15</sup>

Under frequency model, press [M/SEL] turning knob to choose menu 20,it will appears **"RC. OFF 20"** and then press [M/SEL] it will appears **"RC. OFF 20"** turning knob to choose menu **"OFF/67~254. 1"** (receive CTCSS ) ,press [M/SEL] to confirm and back menu, press [VFO/MR] for exit.

## 21、TCT transmit CTCSS choose and check

Under frequency model, press [M/SEL] and turning knob to choose menu 21,it will appears **" TC. OFF 21"** then press [M/SEL] it will appears **"TC. OFF 21"** turning knob to choose **"OFF/67~254. 1"** (transmit CTCSS ) ,press [M/SEL] again to confirm and back menu, press [VFO/MR] for exit.


## 22、RDQT receive DCS choose and check

Under frequency model, press [M/SEL] turning knob to choose menu 22 ,it will appears **"RD. OFF 22"** press [M/SEL] again, it will appears **"RD. OFF 22"** turning knob to choose **"OFF/023N~7541"** , (receive CTCSS ) press [M/SEL] again to confirm and back menu, press [VFO/MR] for exit.


## 23、TDQT transmit DCS choose and check

Under frequency model, press [M/SEL] turning knob to choose menu 23,it will appears **"TD. OFF 23"** and then press [M/SEL] it will appears **"TD. OFF 23"** turning knob to choose **"OFF/023N~7541"** , (transmit CTCSS) and then press [M/SEL] to confirm and back menu, press [VFO/MR] for exit.

## 24、Channel or operating frequency scan.

Under channel or memory calling frequency, press [F/ ] and [0SCAN] to scan the channel. It will stop to scan and locked until it found the sign, press any key to exit.

## 25、Saving channel

Under frequency model, choose frequency and other parameter (CTCSS, DCS, beat frequency, orientation and power)press [F/ ] and [0SCAN] it will appears **"FUNC 25"** turning knob to choose the saving channel (01~199) and press [VFO/MR] to save the frequency and back the frequency estate.

NOTE: If have sign in the channel, **"★"** it appears.

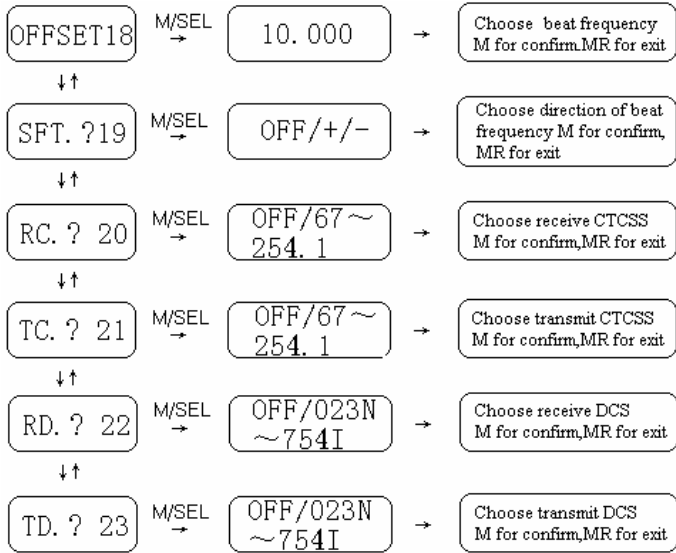
## 26、Cancel memory channel

Under memory frequency calling, choose cancel memory ,turn off the radio, press [VFO/MR] and then turn on the radio, it appears **"DEL? ~~188~~"** unlash [VFO/MR] and then press [M/SEL] to choose the cancel memory channel.

**Manu function**

- ① press[M/SEL]enter into menu model.
- ② Turning knob to choose the menu.
- ③ Press [M/SEL]to enter into the menu to set.
- ④ After finish set, press [M/SEL] to confirm and press [VFO/MR] to exit the menu.

MENU	Selection	Operation
↓ M/SEL POW. ? 1	M/SEL → L/H	→ Choose H/L power, M for confirm, MR for exit.
↓↑ VOX. ? 2	M/SEL → OFF/1~9	→ Choose VOX, M for confirm, MR for exit.
↓↑ SQL. ? 3	M/SEL → 00~09	→ Choose squelch sensitivity threshold M for confirm, MR for exit.
↓↑ APO. ? 4	M/SEL → OFF/30~240	→ Choose autoshut down, M for confirm, MR for exit.
↓↑ BP. ? 5	M/SEL → OFF/ON	→ Choose warning tone, M for confirm, MR for exit.
↓↑ LED. ? 6	M/SEL → OFF/ON/AUT	→ Choose backlight, M for confirm, MR for exit.
↓↑ CT. ? 7	M/SEL → OFF/CTCSS/DCS	→ Choose receive/transmit, M for confirm, MR for exit.
↓↑ CT. ? 8	M/SEL → OFF/67~254.1	→ Choose receive/transmit CTCSS, M for confirm, MR for exit.
↓↑ DC. ? 9	M/SEL → OFF/023~754I	→ Choose receive/transmit DCS, M for confirm, MR for exit.
↓↑ LIGH. ?10	M/SEL → B/G/P	→ choose backlight color, M for confirm, MR for exit.
↓↑ SAV. ? 11	M/SEL → ON/OFF	→ choose save battery, M for confirm, MR for exit.
↓↑ SCAN. ?12	M/SEL → CO/TO/SE	→ choose scan, M for confirm, MR for exit.
↓↑ TOT. ?13	M/SEL → OFF/60~180	→ Choose time for transmit, M for confirm, MR for exit.
↓↑ KY. ?14	M/SEL → MAN/AUTO	→ Choose keypad lock, M for confirm, MR for exit.
↓↑ CTSCAN15	M/SEL → 67~254.1	→ Choose CTCSS scan, M for confirm, MR for exit.
↓↑ DCSCAN16	M/SEL → 023N~754I	→ Choose DCS scan, M for confirm, MR for exit.
↓↑ STP. ?17	M/SEL → 5~25	→ Choose step frequency, M for confirm, MR for exit.



**Notice: Items 7,8,9,18~23 is available only in Frequency mode**

## Specifications

Frequency Range (V)	245.0000 MHz
Number of Channel	80
CTCSS	50 CTCSS 105 DCS
Channel Specking	5.6.25.10.12.5.25KHz
Modulation	FM
Antenna Impedance	50 $\Omega$
Operating Voltage	DC7.2V
Current Consumption	Cathode dearth-plate
Operating Temperature	-10°C ~ +55°C
Output power	5W(High) 1W(Low)
Spurious emissions	$\leq -65$ dB
Intermodulation Response Rejection	70 dB
Current Consumption	$\leq 1.6$ A(transmit 5W)
Maximum Deviation	$\leq \pm 2.5$ kHz
Sensitivity Adjust	2~20mV
Frequency Stability	$\pm 5$ ppm
Usable Sensitivity	0.2 $\mu$ v
Audio Output	$\geq 0.5$ w
Audio Distortion	$\leq 10\%$
Audio Frequency Response	300~3000Hz
Occupied Bandwidth	$\leq 16$ KHz

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	