NOTICE

Thank You!

We are grateful you have chosen ___ FM VHF/UHF portable transceiver. This 2-way radio represents novel design and stable performance. It is developed to meet the demands of portability, easy-operating and multifunction. The small size and reasonable price will satisfy you.

MODELS COVERED BY THIS MANUAL:

___ VHF/UHF FM TRANSCEIVER

Rubber Antenna		
7.4V Li-ion Battery		
Slang		1
Desk Charger		1
Belt Clip		1
User's Manual		1

Safety Information

1. Please DO NOT try to open the transceiver, as it may do damage to the transceiver.

2. Please use the matched antenna in case it shortens communication distance. Please DO NOT transmit before antenna is installed. Please also use battery pack and charger we've offered in case of any damage.

3. Please DO NOT expose the transceiver to direct sunlight for a long time; DO NOT place the transceiver near any heating, damp and dusty environments; DO NOT wash the transceiver with detergent with harsh chemicals.

4. Please turn off the power immediately and remove the rechargeable battery pack from the transceiver if any abnormal odor or smoke is detected, and then contact the dealer.

Checking Equipment

Thank you for using   FM transceiver. Before using, we recommend you:

- Please check whether the package is broken.
- Unpack the transceiver carefully: Identify the items listed in the following table.
- If any damage or miss has occurred during shipment, contact with dealer immediately.

SUPPLIED ACCESSORIES

Item	Quantity
Transceiver	1
Rubber Antenna	1
7.4V Li-ion Battery	1
String	1
Desk Charger	1
Belt Clip	1
User's Manual	1

Content

Main Function

- VHF Frequency Range/136-173.995MHz
- UHF Frequency Range/400-469.995MHz
- 199 Stored Channels
- CTCSS/DCS
- VOX Function
- Calling Function
- PC Programmable
- Wired Copy Function
- Alarm Function
- Group Programmable
- FM Radio Function
- High/Low Power Selection
- Narrow/Wide Bandwidth Selection
- Chinese/English Voice Annunciation(Optional)

Get Acquainted

Antenna
Indicator
Speaker
MIC
LCD Screen
Keypad

Alarm Button
Power/
Volume Knob

PTT
MONI

Earphone Slot
Battery Pack
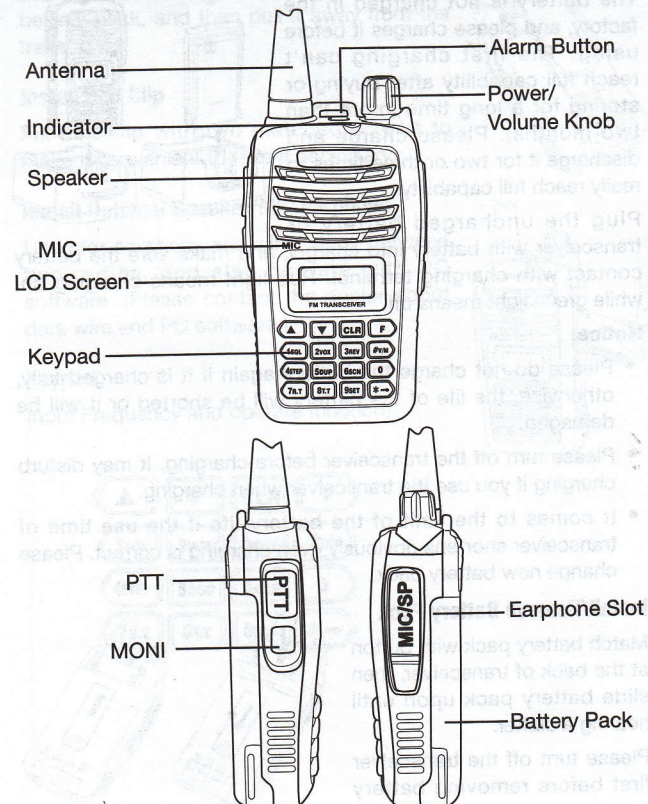
Charge Battery Pack

The battery is not charged in the factory, and please charges it before using. The first charging can't reach full capability after buying or storing for a long time (more than two months). Please charge and discharge it for two or three times to really reach full capability.

Plug the uncharged battery or transceiver with battery into charger, and make sure the battery contact with charging terminal. Red light means charging on, while green light means off.

Notice:

- Please do not charge the battery again if it is charged fully, otherwise, the life of the battery will be shorted or it will be damaged.
- Please turn off the transceiver before charging. It may disturb charging if you use the transceiver when charging.
- It comes to the limit of the battery life if the use time of transceiver shortens obviously even charging is correct. Please change new battery pack.

Install/Remove Battery Pack

Match battery pack with button at the back of transceiver, then slide battery pack upon until hearing a clatter.

Please turn off the transceiver first before removing battery
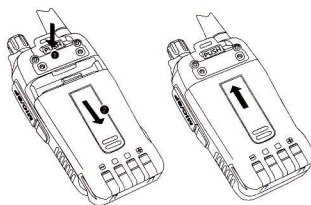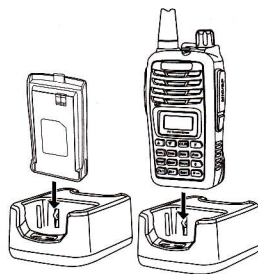
pack. Push battery latch on the top of the transceiver to release the upside of battery pack, and then pull it away from the transceiver.

Install Belt Clip

Fix belt clip with two matched screws to make it convenient to take if necessary.
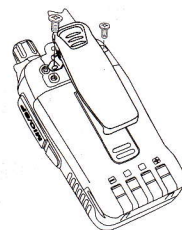
Install Optional Speaker/MIC Earphone

Used for earphone and wired copy between two radios, and also operate with PC software. (Please contact the dealer about data wire and PC software.)

Keypad

Input Frequency and operate function.

LCD Screen
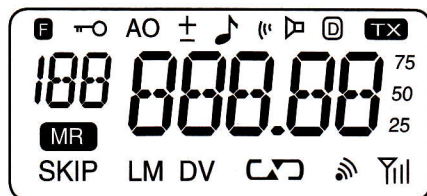
You can find kinds of indicators on the screen showing selected content. Sometimes you may forget what these indicators represent or how to set them. And then the following table can be useful.

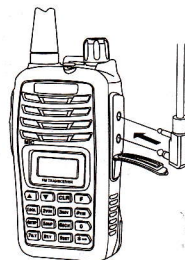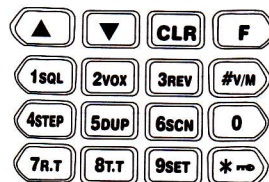| Signal	Function Description
F	Appear when pressing F and enter function operation
TX	Appear when transmitting
Y.ıl	Appear when receiving
Y	SQL on
♪	Key-press tone on
(ıı	Appear when calling
888.88	Display frequency in use or menu function
188	Memory channel
MR	Display stored channel
DV	Appear when reverse frequency is on

▷	Appear when CTCSS is on
Ⓓ	Appear when DCS is on
﹅	Appear when VOX is on
SKIP	Add scanned channel
+	Increase frequency
—	Decrease frequency
☞O	Appear when keypad is locked
<>	Appear when group is on
AO	Appear when FM radio is on
L	Low power transmitting

Working Mode

■ FR Mode(Frequency Mode)

Under FR mode, you can re-press [#V/M] to select full frequency or channel number.

You can press [▲] [▼] to change, or directly input your needed full frequency or channel number.

■ CH Mode(Channel Mode)

Press [#V/M] to swift the power on,then switch to CH mode. Under CH mode,You can press [▲] [▼] to change channel number, or directly input your needed number. You have to store at least one channel, or you can not enter this mode.

NOTE: Press [#V/M] and switch the power on,and you can change between FR and CH mode.

■ Menu Mode

Press [F] then press [9SET] to enter menu. Then press [▲] [▼] to select. You can enter menu to operate, and operation details please refer to "Menu Operation."

Basic Operation

■ Switch Power On/Off

Turn the Power/Volume knob clockwise to switch on the transceiver; turn the Power/Volume knob counterclockwise to switch the transceiver off.

■ Adjust Volume

Turn the Power/Volume knob clockwise to increase volume; turn it counterclockwise to decrease volume.

■ Select Frequency

Press [▲] to increase frequency; press [▼] to decrease frequency.
If you can't get your needed frequency, please change frequency step, details refer to "Set Frequency Step."
Or you can input your needed frequency via keypad, details refer to "Keypad"

■ PTT Transmit

1. Press and hold "PTT" and speak normally. (Red light flashes while transmitting.)
2. Release "PTT" to turn to receiving state.

■ VOX Transmit

1. You can set VOX plus and VOX stop to delay transmit time in menu function.(VOX plus:1 is the highest level,you need to speak loud to powerfully transmit; 9 is the lowest level.)
2. Press [F], then press [2VOX] to turn VOX function on.
3. Insert the MIC earphone.
4. Speak to MIC, and it can transmit when you speak loud

enough.

■ MONI

1. Press MONI to enter Moni mode. (SQL on)
2. ode(SQL on), then release "MONI", the transceiver is still in MONI mode; then press "MONI" to exit Moni mode.

■ Alarm Function

1. Hold [ALM] for 10 seconds to enter Alarm function.
2. Turn the Volume knob to change alarming volume.
3. If there is frequency in stored channel, the transceiver will auto transmit.
4. Under Alarm function, the transceiver rings and transmits for 20 seconds, and there are 10 seconds between the first and second ringing. After recycling for 3 times, it exits, then back to normal state.
5. While alarming during 10 seconds, the transceiver exits when receiving signal, then back to normal state.
6. While alarming, you can also press "PTT" to exit.

■ Calling Function

1. Press [ALM] then release it shortly,transceiver enters calling state; A calling signal is transmitted, and it lasts for 4 seconds.
2. Under calling state, you can press PTT to stop calling, back to standby state.
3. When calling is received, the transceiver rings, and matched icon flickers in the screen.

■ Keylock On/Off

1. Under standby mode,hold [*-•] for one second to switch keylock on/off.

FM Radio Function

■ Turn On/Off FM Radio

Under standby mode,press [F] to enter FM Radio function,then press "MONI" to switch FM Radio on/off. When radio is on, LCD screen displays"AO".Under Full Frequency mode,you can input 4-5 digital numbers, or you can press [▲][▼] to change the radio frequency; frequency step is 50K;Under CH mode,you can press[▲][▼] or input 2 digital numbers(01~25)to change current channel.

■ Select FR/CH Mode

Under FM Radio mode, press [#V/M] to switch FM radio's FR/CH mode(You can't switch when FM Radio is off.)

■ Search Broadcast Channel

Under FM Radio mode, you can use this functon to quicky get your needed channel.

Under FM radio frequency mode,press [F] to enter this function,then press [6SCN] to search broadcast channel.

LCD displays"RS UP/dN". You can press [▲][▼] to change searching direction. Press any other key to exit searching.

When certain channel is searched, FM radio stops at the searched frequency and then exits.

While searching, press PTT, and it will auto exit.

■ Set MONI Mode

Setting Way:Under FM Radio mode,press [F] to enter function

option,then press [9SET] to enter this function;Select DW,then press F to enter; press [▲] [▼] to select,finally press F to confirm.

NOTE: When DW is ON,you can MONI signal under FM radio mode; while receiving signal, it will exit FM radio mode to enter receiving mode. After speaking, it will auto return to FM radio mode.

When DWis OFF, it will stay in FM radio mode.

■ Set SQL Level

Under FM Radio mode,press [F] to function option,then press [1SQL] to set SQL level. Youc an press [▲] [▼] to select level 0~9. Then press any key to exit.

■ Store Channel Data

Under FM Radio mode,input radio frequcny, press [F],then press [*→] to store channel data; press [▲] [▼] to select the channel you want to store,then press [F] to store data.

■ Delete Channel Data

Set FM Radio mode and CH mode,then switch the power off. Hold [*→] and switch the power on to delete FM radio channel data. Now LCD displays"xx DEL". Press [▲] [▼] to select channel,then press [F],LCD displays"xx YES". Finally press [F] to delete. After deleting, LCD displays"xx DEL". You can go to delete next channel.

Shortcut Operation

For A86, press [F], then pess 0~9,#/* to operate, and you can edit the function easier.

■ Set SQL Level

1. Press[F],then press[1SQL]to set SQL level. There are levels 0-9.

2. Press [▲] [▼] to select SQL level,confirm and store, then press any other key to exit.

■ VOX Function On/Off

Press [F] then press [2VOX] to switch VOX function on/off. While VOX Function is on, the icon will show on the screen.

■ Reverse Frequency Function On/Off

Press [F] then press [3REV] to switch Reverse Frequency function on/off. While this function is on, the icon will show on the screen.

When this channel is without transmit frequency, you can't enter Reverse Frequcny function.

■ Set Frequency Step

1. Press[F]then press [4STEP] to set frequency step. There are 5K/10K/12.5K/20K/25K/30K/50K.

2. Press [▲] [▼] to select frequency step,confirm and store, then press any other key to exit.

■ Set Different Frequency

Press [F] then press [5DUP] to switch different frequency. With plus frequency, LCD screen shows +; with reduce frequency, LCD

screen shows —.

■ Scan

1. Press (F) then press (6SCN) to begin scanning.

2. Press (F) while scanning, the radio will save currently scanned frequency/channel, then exit scanning. If you press any other key, the radio won't save any frequency/channel and directly exit.

3. While scanning,,press (▲) (▼) to change scanning direction.

4. VFO Mode:radio will scan all frequency ranges.

5. CH Mode:while out of group mode, radio will scan the stored channel(you can store 199 channels in total);under group mode, radio will scan the stored channel in the group(you can store no more than 20 channel each group).

6. If there are less than 2 stored channels, and they aren't added, radio can't scan.

■ Set Transmit/Receive Signal

1. Press (F) then press (7R.T),to set Transmit/Receive signa.

2. Press (*⊷) to switch signal type,see as below:

    OFF——►CTCSS——►DCS N

3. Press (#V/M) to adjust DCS,see as below:

    DCS N——►DCS I

4. Press (▲) (▼) to select your needed group.

5. Press (F) to store and exit. Other keys are no use to exit.
NOTE: When under CH XXX Mode, you can't set Transmit/

Reveive signa.

■ Set Transmit Signal

1. Press (F) then press (8T.T) to set transmit signal.

2. Press (*⊷) to switch the signal type,see as below:

    OFF ——► CTCSS ——► DCS N ——►OFF

3. Press (#V/M) to adjust DCS,see as below:

    DCS N ——►DCS I

4. Press (▲) (▼) to select your needed group.

5. Press (F) to store and exit. Other keys are no use to exit.
NOTE: When under CH XXX mode, you can't set transmit signal.

■ Menu Option

Press (F) then press (9SET) to enter menu option. Details please refer to below operations.

■ Select Working Group

1. Press (F) then press (0) to select working group.

2. Press (▲) (▼) to select your needed group. There are 10 groups A~J to select. Only the group with stored channel(s) can be selected.

3. Press any other key to exit, back to standby mode.

NOTE: With the radio under CH mode,and Group Function is on,your operation is available.

■ Store New Channel

1. Under full frequency mode,you can store new channel.

2. Prses (F) then press (*←) to store new channel; the channel number and F will flicker on the screen.

3. Press (▲)(▼) to select the channel you want to channel, or directly input number to select the channels to store.

4. Press (F) to confirm and exit.

■ **Set High/Low Power**

1. Under standby mode,press (F) to enter function option,then press (#V/M) to switch high/low power.

2. When it's low power, LCD screen show"L".

Menu Operation

Press (F) then press (9SET) radio enter menu function. Press (▲)(▼) to select menu options;

Press (F) to enter, then press (▲)(▼) to adjust,finally press (F) to confirm and back to last option.

You can also press (CLR) to exit,back to last option.

Menu Details As Below:

1. Set Ringing

Off:turn off ringing

On:turn on ringing

NOTE: When radio is without"Voice Annunciation Function",you have to close "Voice Numbering Function" in No.17 to allow ringing and beeping.

2. Set Background Light

On:background light keep on

Off:background light keep off

Auot:background light on when you press any key; it's off without any operation within 10 seconds.

3. Set Timeout

You can select:OFF/30/60/90/120/150/180/210/240/270(s)

4. Set Different Frequency

You can directly input 5 digital numbers of different frequency:(00.000M~99.995M)(It can only be set under full frequency mode).

5. Turn On/Off Group

On:turn on group

Off:turn off group

There are total 199 channel in this radio, divided in 10 groups. There are respectively 20 channels in first 9 groups, while 19 channels for lsat group.

The channels 1-20 are in group A, channels 21-40 are in group B, followings are according, and channels 181-199 are in group J.(It is available only under CH mode.)

6. Show Current Battery Voltage

Show current battery voltage when switching the power on, back to standy mode after 10 seconds.

7. Set VOX Level

Set VOX from leves1~9

8. Set VOX Timeout

You can select:0.3S/0.5S/1.0S/1.5S/2.0S/3.0S

9. Save Time

On:turn on save power function

Off:turn off save power function

10. Set Scan Mode

CO:carrier wave scan

TO:time scan

SE:single time scan; it stops when any signal is scanned

11. Set Scan Add/Delete

ADD:add

DEL:delete

12. Set Keylock Mode

Manu:lock keypad by hand

AUTo:auto lock keypad

13. Set Boot-strap Display

OFF:not show any content

DC:show current voltage

MSG:show greeting words

14. Set Boot-strap Information

You can set information with 5 letters. Press ▲ ▼ to select letters; press (*⟶) to switch to next letter; pres (#V/M) to cancel front letter, press (F) to confirm and exit.

15. Set Channel Name

On:show channel name under CH mode

Off:no show channel name under CH mode

16. Set MONI Mode under CH mode

When DW is ON,you can MONI signal under FM radio mode; while receiving signal, it will exit FM radio mode to enter receiving mode. After speaking, it will auto return to FM radio mode.

When DW is OFF, it will stay in FM radio mode.

17. Voice Annunciation Function

When VOIC is ON, turn on voice annunciation function

When VOIC is OFF, turn off voice annunciation function

NOTE: voice annunciation function must be turned off if radio is without this function, to allow beep and ringing work.

18. Wide/Narrow Bandwidth Selection

W: select wide band

N:select narrow band

Note:When you select wide band, please set same for radios in same group, to guarantee voice quality.

■ Keypad Input

1. Under CH mode,input 1-3 digital numbers to switch current frequency. After inputing, radio will switch to your input channel if it has stored frequency, unless it returns to original channel.

eg:CH 1:(input 001)   CH 98:(input 098 or 98)

CH 123:(input 123)

2. Under FR(full frequency) mode,input 6 digital numbers to switch current frequency. After inputing, radio will switch to your input frequency if it's available, unless it returns to original frequency.

Delete Channel

1. Your radio must be under "Channel + Frequency" mode.

2. Hold [✳⤶] to switch power on. Now LCD screen shows"DEL",and channel number flickers.

3. Press [▲][▼] to select your needed channel,or directly input your needed channel number,then press [F], now LCD screen shows"YES".

4. Finally press [F] to confirm. After deleting first channel, radio switches to next channel stored with frequency. If all channels are without frequency, radio will exit, back to full frequency mode.

Set Stored Channel

■ Set Stored Channel

Hold [MONI] and [▲] to switch power on. LCD screen shows"SELF", then press [F], LCD screen shows"CH-1".

1. Select Channel Number

Prsess [▲] [▼] to select your needed channel, you can select ranges from 1~199.

2. Set Receive Frequency

Press [F] to set receive frequency. Press [*-] to select whether setting receive frequency of current channel. If you want to delete curret channel, you can press [*-], LCD screen shows"------",then press [F] to confirm,now this channel is deleted. Radio go to delete next channel.

You can also input 6 digital numbers,then press [F] to confirm, then radio enters to receive signa programming.

You calso can press [▲] [▼] to change frequency step to change current frequency. Press [#V/M] to switch current frequency step(5K/10K/12.5K/20K/25K/30K/50K). Press [F] to confirm and tner to receive signal programming.

3. Set Receive Signal

When you enter this option,LCD screen shows(3 OFF), press [*-] to select your needed signal type, then press [▲] [▼] to select your needed group of receive signal, press [F] to confirm.

OFF ⟶ 67.0 ⟶ d 023N ⟶ OFF

When you select DQT signal, you can press [#V/M] to adjust.

DCS N ⟶ DCS I

4. Set Transmit Frequency

Please refer to "Set Receive Frequency".

5. Set Transmit Signal

Please refer to "Set Receive Signal".

6. Set Busy Channel Lock

Press [▲] [▼] to select OFF,WAVE Lock or CALL lock, then press [F] To confirm.

7. Set Add/Delete Scan Function

Press [▲] [▼] to select Add or Delete scan function,then press [F] to confirm

8. Set High/Low Power

Press [▲] [▼] to select High or Low power function,then press [F] to confirm.

9. Set Channel Name

You can set channel name with five digital names, press [▲] [▼] to select letter, then press [*-] to next letter,press [#V/M] To delete front letter,then press [F] to confirm. Now current channel is programmed, and radio enters to next programming channel.

Special Function

■ Delete All Channels/Frequencies

Press [MONI] and (F) to switch power on,LCD screen shows"CLEAR",then press (F), now LCD screen shows"VFO".

Press (▲)(▼) to select"VFO"or"FULL", finally press (F) to delete, now radio auto returns to standby mode.

When select"VFO",radio deletes all frequency information, and save all channel information.

When select"FULL",radio deletes all frequency and channel *information*.

■ PC Program Function:

1. Connect the radio's SP/MIC jack and computer COM(communication port) with the program cable,then switch power on.

2. Turn on the computer,and launch the program software. Read the parameters of the radio, then select your needed frequency and other function parameters. Afterwards, click related button to write to radio, or directly press the relative signal on the toolbar to start writing. After the progress is finished, LCD screen displays "Succeed". Now all parameters are written in the radio.

■ Wired Copy Function

Press [MONI] and (▼) to switch power on to enter wired copy state, LCD screen displays"CLonE",then press MONI to begin copying. While copying,the copied radio will show"CL OU",copying radio show"CL IN". When successfully copied, the copied radio shows"End", then auto back to the original state of wired copy state;when copy failed, the copied radio shows"Err", then auto back to the original state of wired copy. It takes about 15 seconds to finish copying.

Specification

General Part

Frequency Range	VHF:136–173.995MHz UHF:400–469.995MHz
Operating Temperature	–10℃+60℃
Frequency Combination	Plase lock frequency synthesize
Frequency Stability	± 2.5ppm
Memory Channel	199 channels
Rated Voltage	DC7.4V Li–ion battery
Antenna	Rubber antenna
Antenna Impedance	50Ω
Operation Mode	Simplex of co–frequency or alien frequency
Dimension	102mm × 62mm × 35mm
Weight	About 220g(including battery pack)

Transmitter		
Output Power	High Power:5W	Low Power:1W
Modulate Mode	Frequency Modulate	
Maximum Frequency Deviation	W:≤5KHz N:≤2.5KHz	
Spurious Radiation	<-60dB	
Transmit Current	High Power≤1300mA Low Power≤800mA	
Receiver		
Sensitivity	<0.20uV(12dB SINAD)	
Squelch Sensitivity	<0.15uV	
Intermodulation Antijamming	50dB	
Audio Power	≥500mW	
Receive Current	≤120mA	
Squelch System Standby Current	25mA	
FM Radio		
Frequency Range	FM:76 MHz ~107.95MHz	