

A86 Model Professional FM Handheld Transceiver

(VHF: 245-245.9875MHZ)

USER'S MANUAL



Please read carefully before using

Thank You!

We are grateful you have chosen A86 model FM VHF 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:

A86 MODEL VHF: 245-245.9875MHZ FM TRANSCEIVER

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 FB-136 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
A86 Transceiver	1
Rubber Antenna	1
7.4V Li-ion Battery	1
String	1
Desk Charger	1
Belt Clip	1
User's Manual	1

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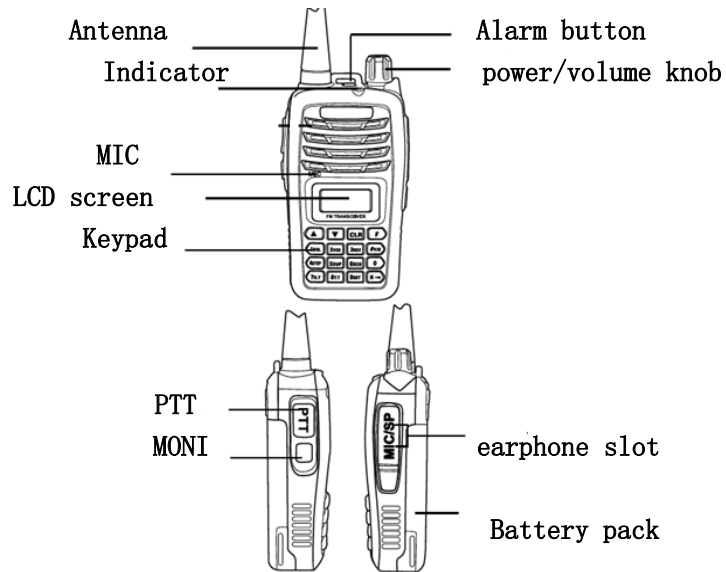
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Main Function

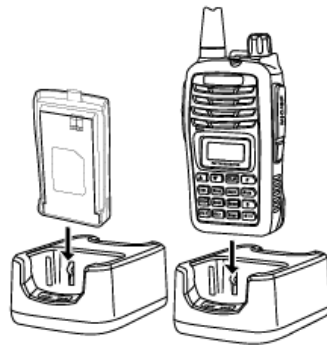
- ◇ VHF Frequency Range: (245-245.9875MHZ)
- ◇ 199 Stored Channels
- ◇ CTCSS / DCS
- ◇ VOX Function
- ◇ Multiple Scan Function
- ◇ Calling Function
- ◇ PC Programmable
- ◇ Wired Copy Function
- ◇ Alarm Function
- ◇ Group Programmable
- ◇ High/Low Power Selection
- ◇ FM Radio Function

一、Get Acquainted



Charge Battery Pack

The battery is not charged in the factory, and please charge 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.

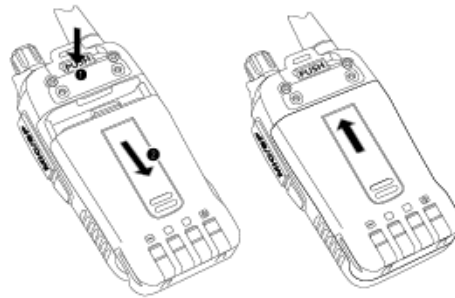


Plug the uncharged battery or transceiver with battery into charger, and make sure the battery contact with charging terminal. Red light means charging on, while green light means off.

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

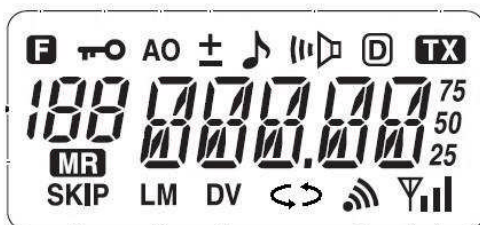
Used for earphone and wired copy between two radios, and also operate with PC software. (Please contact the dealer about data wire and PC software.)

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
	Appear when pressing 【F】 and enter function operation.
	Appear when transmitting
	Appear when receiving
	SQL on
	Key-press tone on
	Appear when calling
	Display frequency in use or menu function
	Memory channel
	Display stored channel
	Appear when reverse frequency is on
	Appear when CTCSS is on
	Appear when DCS is on
	Appear when VOX is on
	Add scanned channel
	Increase frequency
	Decrease frequency
	Appear when keypad is locked
	Appear when group is on
	Appear when FM radio is on
	Low power transmitting

三、Working Mode

■FR Mode (Frequency mode)

Press to turn on, can select to FR mode. Under this model press show "Full C... frequency" or "CH+FR Model". You can select to select full frequency or channel number, or can direct use keypad to input the full frequency or channel number you need.

■CH Mode (Channel Mode)

Under CH mode, You can press to change channel number, or directly input your needed number.

■Menu Mode

Press then press to enter menu. Then press to select. You can enter menu to operate, and operation details please refer to "Menu Operation."

四、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

Pre increase frequency; to decrease frequency.

If you can not select specific multiple, you will change the frequency spacing. detail information see "select step frequency".

You can use keypad to direct input the frequency you need, Please see the "Keypad input".

■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 , then press 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. Hold "MONI" for 4 seconds to enter another Moni mode(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.

■Key lock On/Off

Under standby mode hold **,*** for one second to switch key lock on/off.

五、FM Radio Function

1、 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.

2、 Select Frequency/CH Mode

Under FM Radio mode, press **#** to switch FM radio's Frequency/CH mode. (You can't switch when FM Radio is off.)

3、 Search Broadcast Channel

Under FM Radio mode, you can use this function to quickly get your needed channel.

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

LCD displays "RS UP/d N". 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.

4、 Set MONI Mode

Setting Way: Under FM Radio mode, press **F** to enter function option, then press **9** 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 D Wis OFF, it will stay in FM radio mode.

5、 Set SQL Level

Under FM Radio mode, press **F** to function option, then press **1** to set SQL level. You can press **▲**、**▼** to select level 0~9. Then

press any key to exit.

6、 Store Channel Data

Under FM Radio mode, input radio frequency, press **F**, then press ***** to store channel data; press **▲**、**▼** to select the channel you want to store, then press **F** to store data.

7、 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. Turn off the power and turn on again .

六: Shortcut Operation

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

■Set SQL Level

1. Press **F** , hen press **1** 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.

■ON/OFF VOX Function

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

■ON/OFF Reverse Frequency Function

. Press **F** , then press **3** 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 Frequency function.

■Select step frequency

1. Press **F** , Then press **4** , to select step frequency . It is totally :12.5K、25K.

Note:: This function just use in FR Model .

■Select different frequency

. Press **F** ,Then press number 5, to select different frequency . When increase frequency ,the LCD show “+” , decrease frequency ,The LCD show “—” .

■Scan

1. Press **F** , then press **6** to begin scanning.
1. 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.
1. 2.While scanning, press **▲** **▼** to change scanning direction.
2. VFO Mode: radio will scan all frequency ranges.
3. 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).

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

■Set Transmit/Receive Signal

- Press **F** , then press **7** , to set Transmit/Receive sign.
- Press ***** to switch signal type, see as below::

OFF → CTCSS → DCS N

- Press **#** to adjust DCS, see as below::

DCS N → DCS I

- Press **▲** **▼** to select your needed group.
- Press **F** to store and exit. Other keys are no use to exit.

■Set Transmit Signal

- Press **F** , then press **8** to set transmit signal.
- Press ***** to switch the signal type, see as below:

OFF → CTCSS → DCS N → OFF

- Press **#** to adjust DCS, see as below:

DCS N → DCS I

- Press **▲** **▼** to select your needed group.
- Press **F** to store and exit. Other keys are no use to exit.

■Menu Option

Press **F** , then press **9** to enter menu option. Details please refer to below operations.

■Select Working Group

- Press **F** , then press **0** to select working group.
- Press **▲** **▼** to select your needed group. There are 10 groups A~J to select. Only the group with stored channel(s) can be selected.
- 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

- The radio must in the full frequency model can store channel .
- Press **F** .then press ***** , to store channel operation ,small channel number and F sign flicker.

3. press or to select store channel number; or direct input the number to store channel
 4. press to store and confirm to exit .the other operation can not to exit .

Note: when you use keypad to Channel programming setting,from 1 channel to 80 channel are not revised or cannel .store channel can select programming from 81 channel to 199 channels.

■Set High/Low Power

- Under standby mode, press to enter function option, then to switch high/low power.
- When it's low power, LCD screen show "L".

七、Menu Operation

Press then press radio enter menu function. Press
 or to select menu options;

Press to enter, then press to adjust, finally press to confirm and back to last option.
 press to exit, back to last option.

Menu Details As Below:

1、

1、Set Ringing

Off: turn off ringing

On: turn on ringing

2、Set Background Light

On: background light keep on

Off: background light keep off

Auto: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 last 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 standby mode after 10 seconds.

7、Set VOX Level

Set VOX from level 1~9

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 Key lock Mode

Menu: 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, press to cancel front letter, press 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.

■ Keypad Input

Under CH mode, input 1-3 digital numbers to switch current frequency. After inputting, 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. In FR model (full frequency), standby, put the number to change the frequency as present. After input 6 digits, if the input frequency can be used, the radio can switch to the frequency you input. If out of range, it will come back to frequency of working.

八、Delete Channel

1. Your radio must be under "Channel + Frequency" mode.
2. Press to switch power on. Now LCD screen shows "DEL ", and channel number flickers.
3. You can press to select your needed channel, or directly input your needed channel number then now LCD screen shows "YES".
4. Finally to confirm. After deleting first channel, radio switches to next channel stored with frequency, ready for next deleting.

Note : only cancel the new added channel ,1-80 channel can not canceled.

九、set self channel programming

■set memory channel

Press and and turn on to enter self programming model . The LCD show "SELF". And press The LCD show "CH-1".

1. Select channel number

You can or to select the channel number ,the range from 81-199 channel .

2. Set RX frequency

Press to set RX frequency . You can press to select whether set self channel'RX frequency .If you want to cancel self channel .

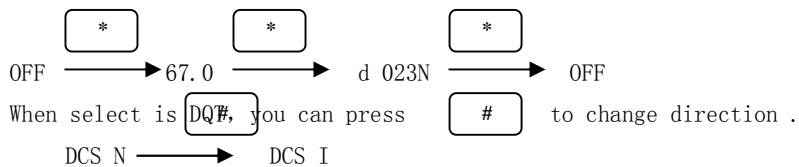
You can press then the LCD show "-----", then to confirm , then this channel information can be canceled . The radio can enter the operation next channel .

You can select keypad ,input 6 digits to input the frequency you need , then to confirm and enter RX programming operation .

You can press to increase or decrease step to select frequency at present , . To select the step (12.5K、25K、) . press to confirm and enter RX programming operation .

3. Set RX signaling

When you enter this model ,the LCD show(3 OFF) . press to select kind of the signaling . Then press or To select group of what to want to RX, then to confirmed



4. Set TX frequency

The set method of setting is the same to " Set RX frequency"

5. SET TX SIGNALING

The set method of setting is the same to " Set RX Signaling "

6. Set busy lock

Press or to select OFF or (WAVE) or (CALL) , after selecting to press

- To confirm .
7. Set add scan /cancel scan function.
 Press or to select Add) or (Del), after selecting press to confirm.
 8. Set low/high power
 Press or select High or Low function , after selecting press to confirm.
 9. Set channel name
 You can set 5 character name of channel. p to select character press * to swith next character ,press 按
 Cancel front character ,press
 To confirm. This self programming is finis h , the radio operation enter next programming next channel .

十、Special Function

Clear All Channels Away

press and to switch power on, LCD screen shows "CLEAR F", then press , and it shows "VFO",

press to set "VFO" or "FULL". Finally press to cancel letter .

After clearing away, radio is back to standby mode

When set "VFO", clear full frequency information ,and all the information will save.

When set "FULL", clear full frequency information and added information (1-80 channels can not canceled)

After clearing function ,the radio machine setting and full frequency is enclosed :

Frequency deviation: 10.000M different frequency: OFF step : 5KHz
 signaling: no Operation mode : VFO frequency power save: on
 tone : on scan model : time scan Time timer : 180second
 VOX: off SQL level : 3 backlight : auto Reverse frequency : off
 key lock : manual group operation: off VOX gain : 4 level VOX delay time : 0.3second

■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 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.

十一、Specification

General Part	
Frequency Range	VHF: 245-245.9875MHz
Operating Temperature	-10℃to +60℃
Frequency Combination	Phase lock frequency synthesizer
Frequency Stability	±2.5ppm
Memory Channel	199 channels
Rated Voltage	DC7.4V Li-ion battery
Antenna	Rubber antenna
Antenna Impedance	50 Ω
Operation Mode	Simplex of co-frequency or alien frequency
Dimension	102mm × 62mm × 35mm (without antenna)
Weight	About 220g(including battery pack)

Transmitter	
Output Power	High Power: 5W Low Power: 1W
Modulate Mode	Frequency Modulate
Maximum Frequency Deviation	≤2.5KHz
Spurious Radiation	<-60dB
Transmit Current	High Power≤1600mA Low Power≤800mA

Receiver	
Sensitivity	<0.20uV(12dB SINAD)
Squelch Sensitivity	<0.20uV
Intermodulation Antijamming	50dB
Audio Power	≥400mW
Receive Current	≤120mA
Squelch System Standby Current	15mA

FM Radio	
Frequency Range	FM: 76 MHz ~107.95MHz

Common Error and Solution

Error	Solution
Could not turn on the power	<ul style="list-style-type: none"> ● Battery power is too low, please recharge the battery. ● Bad connect of battery, remove the battery and installing it one time.

The power of battery easily get lost.	<ul style="list-style-type: none"> ● The battery life is ended, please use new battery.
Could not talk with other member in the same team	<ul style="list-style-type: none"> ● Distant is out of the effect communicate range. ● Apply with different frequency/ DCS/ CTCSS, please reset these parameter.
Appears voices from other non-member	<ul style="list-style-type: none"> ● Please change your CTCSS signal, or change all the transceivers signal in your team.
No FM Radio Function	<ul style="list-style-type: none"> ● Check whether in the Radio Mode, if not please shift setting in the Radio Mode. ● Check your local Radio station signal, or signal problem.

We endeavor to achieve the manual's accuracy and completeness, but sorry that not liable for any possible emission and printing errors.

Specifications are subject to change without notice.