

Dual-band

**TWO-WAY
RADIO**

USER'S MANUAL



THANK YOU!

Welcome to choose us for your handheld wireless Two-way radio. This two way radio is fashion design, high quality , multi-function and easy-to-use. It will be very helpful in your communication needs.

Multifunctional Dual-band Two Way Radio operation instructions

I. Product Function Introduction

1. Working Frequency Band

FM: 65-134MHz(Receiving)

VHF:108-134MHz(Receiving/Transmitting) 136-174MHz(Receiving/Transmitting)

UHF:220-260MHz(Receiving/Transmitting) 400-470MHz(Receiving/Transmitting)

Working modes: frequency mode, channel mode

3. A maximum of 512 channels can be stored (8 regions * 64 channels per region)

4. High, medium, and low-power transmission, wide-band and narrowband channels

5.Three channel display modes: channel name, channel frequency, channel number

6.Channel parameters can be stored and edited in frequency mode

7.Step frequency, frequency offset direction, and frequency offset frequency are optional in frequency mode

8.Voice activated voice controlled(VOX) emission function, VOX level 9 optional

9.Dual frequency standby

10.Channel busy transmission(BCL)

11.Low battery warning, battery voltage display, high and low battery prohibited

12.The transmission and reception of sub tones are set separately, supporting 50 CTC (supporting non-standard sub tone points) and 210 DCS

13.Voice encryption (frequency hopping function)

14.Relay function: frequency difference, direction, reverse frequency, disconnection, relay pilot

15.Simulated call confidentiality function: frequency scrambling, frequency hopping

16.Channel scanning mode: TO time, CO carrier, SE search

17.VFO sweep mode: frequency range scanning, real-time frequency and sub tone scanning

18.FM radio: Supports frequency mode and storage mode for reception

19.SOS emergency alarm

20.Manual/Automatic Keyboard Lock

21.Side key customization function

22.Built in input method

23.Support custom startup display preset icons

24.Multi language options: English, Chinese

25.Computer programming to write frequency software

26. Positioning and other functions

II . Key Function Description

1. MENU key

Short press: When on the main interface, enter the menu, and when on the Non-main interface, confirm options.

Long press: When on the main interface,switch channel or frequency mode.

2. EXIT key

Short press: When on the main interface, switch between primary A or secondary B frequency bands .

Long press: When on the Non-main interface, used to exit options or return to the previous menu , and used to clear entered information in input mode.

3. ^ UP key

Short press: When on the main interface, increase the frequency or select the next channel on the main interface, and when on the Non-main interface, select up .

Long press: No

4. v DOWN key

Short press: When on the main interface, decrease the frequency or select the previous channel. When on the Non-main interface, select downwards.

Long press: No

5. KEYBOARD numeric keypad

Short press: Input mode is used to input text content

Long press: No

6. * key

Short press: Switch to reverse frequency, disconnection, and normal mode on the main interface.

Long press: Lock or unlock the keyboard on the main interface.

7. Key

Short press: No

Long press: Open weather forecast on the main interface

8. # Key

Short press: Open the DTMF code sending interface on the main interface.

Long press: When scanning the frequency or channel on the main interface, short press again to stop scanning.

9. PTT key

Short press: Used for A-segment DTMF code transmission on the DTMF code transmission interface.

Long press: A-band frequency transmission

10. SK1 key

Short press: Used for B-segment DTMF code transmission on the DTMF code transmission interface

Long press: No

11. SK2 key

Short press: supports customization (FM radio/monitoring/scanning/frequency scanning/alarm/weather forecast), DTMF code sending interface is used for deletion.

Long press: supports customization (FM radio/monitoring/scanning/frequency scanning/alarm/weather forecast)

12.TK key

Short press: supports customization (FM radio/monitoring/scanning/frequency scanning/alarm/weather forecast).

Long press: supports customization (FM radio/monitoring/scanning/frequency scanning/alarm/weather forecast).

13. Channel selection/quick selection knob

Clockwise rotation: Increase the frequency or select the next channel on the main interface, and select upwards on the non-main interface.

Counter clockwise rotation: Increase the frequency or select the previous channel on the main interface, and decrease it on the non-main interface.

14. Power switch/volume adjustment knob

Clockwise rotation: Turn on the power when turned off, and increase the volume when turned on.

Rotate counterclockwise: Rotate to the bottom when turned on to turn off the power, and decrease the volume when turned on.

15. External earphone jack

External headphones: Use earphones to receive and transmit frequencies.

External write frequency cable: software version program upgrade, or use computer write frequency software for reading and writing frequency data operations.

III . Icon Function List

Icon number	Icon type	Icon Style	Icon Name
1.1	Key icon	MENU	Menu/Confirm
1.2	Key icon	EXIT	Exit/Return/Switch Frequency Mode
1.3	Key icon	⤴UP	Upwards choose
1.4	Key icon	V DOWN	Downwards choose
1.5	Key icon	*LOCK	Keyboard lock
1.6	Key icon	☁	Weather forecast
1.7	Key icon	#DTMF	DTMF code transmission
1.8	Key icon	#SCAN	DTMF code transmission
1.9	Key icon	KEYBOAR D	Numbers 0-9
1.10	Key icon	PTT	A-band frequency transmission
1.11	Key icon	SK1	B-band frequency transmission
1.12	Key icon	SK2	Side key 2 customization (FM radio/monitor/scan/sweep/alarm/weather forecast)
1.13	Key icon	TK	Top key customization (FM radio/monitor/scan/sweep/alarm/weather forecast)
2.1	Interface icon		Remaining battery capacity
2.2	Interface icon	Zone-x	Current Region
2.3	Interface icon	CH-xxx	Current channel
2.4	Interface icon	MAIN	Current mode
2.5	Interface icon	VFO	Frequency mode A/B
2.6	Interface icon	TX/RX	Transmission/reception
2.7	Interface icon	HI/MI/LO	Transmission power: high/medium/low
2.8	Interface icon	W/N	Channel broadband: broadband/narrowband
2.9	Interface icon	SCR	Interference function
2.10	Interface icon	Q	Dual frequency standby
2.11	Interface icon	D	Sub audio: Analog Sub audio/Digital Sub audio
2.12	Interface icon	CTC/DCS	Frequency difference direction: forward/reverse
2.13	Interface icon	+/-	Sound switch
2.14	Interface icon		Inverted frequency
2.15	Interface icon	R	Off-line
2.16	Interface icon	T	AM modulation and demodulation mode

2.17	Interface icon	AM	AM modulation and demodulation mode
2.18	Interface icon	FM	FM radio
2.19	Interface icon	SEEK	Sweep frequency
2.20	Interface icon	SOS	Alarm
2.21	Interface icon	WX-xx	weather forecast

Explanation:

- 1. PTT/SK1 key:** When making a main call, after selecting the frequency or channel, long press the PTT or SK1 key to initiate the call, the red indicator light will remain on, and the terminal will be in the transmitting state to speak normally; After the main call ends, releasing the PTT or SK1 button will be accompanied by a transmission end prompt sound, and the terminal will be in an idle state at this time; When called, the green indicator light stays on, and the terminal is in the receiving state to hear the speak. To ensure optimal reception volume, please maintain a distance of 2-5 centimeters between the microphone and the mouth during transmission.
- 2. HI/MI/LO transmission power:** HI-high power, MI-medium power, LO-low power.
- 3. W/N channel broadband:** W-broadband, with a channel spacing of 25KHz; N-narrowband, with a channel spacing of 12.5KHz
- 4. Q -voice control function:** Launch when the sound pressure level of the microphone reaches the set value.
- 5. D-Dual band standby:** indicates that the dual band standby function has been set and activated simultaneously. When in the dual standby state, it can simultaneously standby on the frequency points of the two frequency bands displayed on the screen.
- 6. CTCSS/DCS:** The current sub tone is CTCSS/DCS, and when it appears during transmission, it indicates that analog CTCSS/DCS signaling is being transmitted.
- 7.+/- Frequency difference direction:** The relay channel has a positive/negative frequency difference between the receiving frequency and the transmitting frequency, indicating that the transmitting frequency is the receiving frequency plus/minus one frequency difference.
- 8. Tone switch:** When the side tone is turned on, it indicates that the device emits a Tone tone when transmitting DTMF.
- 9. R-Inverted Frequency:** Inverted receiving and transmitting frequencies in frequency/channel mode, including sub audio configurations.
- 10. T-offline:** The relay channel, it will adjust the transmission frequency to the reception frequency.
- 11. Remaining battery level:** Display the current remaining battery level. When the battery is about to run out, the icon frame flashes and the terminal prohibits transmission.
- 12. ☒ Weather forecast:** Long press the weather forecast
- 13. * R/T/No:** Short press to switch between frequency reversal/offline/normal mode.
- 14. * LOCK** keyboard lock: Long press to lock or unlock the keyboard
- 15. #DTMF:** Short press to enter the DTMF code sending interface. Enter the DTMF code to be sent through the keyboard. When it is less than 6 digits, press the # key

to end. If the input is incorrect, short press the SK2 key to delete the code. After entering, press the PTT key or SK1 key to send the code. Press and hold the button to continue sending codes, release to end sending codes. When input on the keyboard, codes 0-9/MENU/UP/DOWN/EXIT/*/# correspond to codes 0-9/A/B/C/D/*/#

16. # SCAN: Long press frequency or channel scan. When staying on an active channel, holding down the PTT or SK1 key can initiate a callback. Frequency scanning: In VFO frequency mode, enter the frequency through the keyboard, long press the # key to enter the frequency scanning state, and the terminal will scan according to the preset step frequency. When an active frequency point is scanned, it will automatically stay at this active frequency point until it is idle. After idle for 5 seconds, the scanning will resume.

Channel scanning: In CH xxx channel mode, long press the # key to enter channel scanning mode, and then scan between the added channels. When an active channel is scanned, it will automatically stay on this active channel until it is idle. After idle for 5 seconds, scanning will resume.

Note: Before using the scanning function, please clearly set the conditions for the terminal to continue scanning after detecting a signal. You can choose one of the following modes.

To time scan: When the terminal detects a signal, it stops scanning and remains in a stopped state for 5 seconds. Even if the signal is still present, the terminal will continue scanning.

Co carrier scanning: The terminal stops scanning when a signal is detected and maintains the same frequency until the signal disappears. There is a 2-second delay between signal disappearance and scanning recovery to allow time for the response to start transmitting.

SE search scan: The terminal exits the scan upon detecting a signal and remains at this frequency.

17. FM radio: Press the FM function key to activate the radio function, and the screen will display the current frequency of the radio. You can adjust the frequency of the radio by pressing the up and down keys on the keyboard or manually inputting on the keyboard. If you want to turn off the radio function, press the FM function key again.

18. SEEK frequency scanning: The terminal acts as a receiver, allowing it to scan radio frequencies from the air and store the scanned received frequencies and sub tones in the channel. During the frequency scanning process, the distance between the transmitter and receiver should be maintained between 0.5-1 meter.

19. SOS alarm: Press the SOS button to turn on the alarm function, and the terminal will sound an alarm according to the preset alarm mode. If you want to exit the alarm function, press the alarm button again.

20. Relay pilot frequency: Relay activation audio. In relay mode, even if the terminal is in channel lock state, it can still transmit relay activation audio to activate the dormant relay station through the following operations. By holding down the PTT key and then pressing the SK1 key, the terminal will transmit the corresponding audio at the preset frequency.

21. Monitoring function: After selecting the frequency or channel on the main

interface, press the monitoring button to turn on the monitoring function and keep the terminal in a long-term intercom monitoring state. If you want to exit the monitoring function, press the monitoring button again.

IV.Menu Function List

Menu Number	Menu Level 1	Menu Level 2	Menu Description
1.1	Regional selection	Regional selection	
2.1	Intercom settings	Squelch level	
2.2	Intercom settings	Transmission power	
2.3	Intercom settings	Channel broadband	
2.4	Intercom settings	Interference function	
2.5	Intercom settings	VOX	
2.6	Intercom settings	VOX delay	
2.7	Intercom settings	Dual frequency standby	
2.8	Intercom settings	Power saving mode	
2.9	Intercom settings	BCLO	
2.10	Intercom settings	Launch time limit	
2.11	Intercom settings	Tail sound elimination	
2.12	Intercom settings	Relay pilot frequency	
2.13	Intercom settings	Scanning mode	
2.14	Intercom settings	End of call prompt sound	
2.15	Intercom settings	Eliminating the tail sound through relay	
2.16	Intercom settings	Relay tail sound detection	
2.17	Intercom settings	SOS mode	
3.1	Advanced setting	Prompt sound switch	
3.2	Advanced setting	Voice switch	
3.3	Advanced setting	Automatic keyboard lock	
3.4	Advanced setting	Automatic backlight	
3.5	Advanced setting	Menu exit time	
3.6	Advanced setting	GPS positioning	
3.7	Advanced setting	Time zone	
3.8	Advanced setting	Language selection	
4.1	Frequency mode	Step frequency	
4.2	Frequency mode	Frequency difference direction	
4.3	Frequency mode	Frequency difference frequency	
5.1	Channel settings	Channel storage	
5.2	Channel settings	Channel deletion	
5.3	Channel settings	Display mode of segment A	
5.4	Channel settings	Display mode of segment B	

6.1	Sub-audio settings	Receive CTCSS	
6.2	Sub-audio settings	Receive DCS	
6.3	Sub-audio settings	Launch CTCSS	
6.4	Sub-audio settings	Launch DCS	
6.5	Sub-audio settings	Learn frequency hopping	
6.6	Sub-audio settings	Encryption	
7.1	Signaling settings	PTT-ID code sending	
7.2	Signaling settings	Y signaling switch	
7.3	Signaling settings	Y signaling code	
7.4	Signaling settings	Identity code	
7.5	Signaling settings	Sound switch	
8.1	Side key customization	Short press the side key 2	
8.2	Side key customization	Long press the side key 2	
8.3	Side key customization	Short press the top button	
8.4	Side key customization	Long press the top button	
9.1	Radio information	Radio information	
10.1	Factory restoration	Radio information	

Description:

- 1. The menu adopts a first level mode, when entering the menu, it is necessary to pay attention to whether the currently selected frequency mode is in segment A or segment B. When saving, it will be set to the corresponding specific configuration.**
- 2. Transmission power, channel bandwidth, sub tone transmission and reception, step frequency, frequency offset direction, frequency offset frequency, only valid when set in frequency mode.**

Note:

If there are any changes due to technological improvements, no further notice will be given, and this machine will be the main manufacturer.

GPS function

The GPS location sharing function, is uses FSK to transmit data for location sharing.

It must be ensured that the walkie talkie that receives and sends GPS location information operates on the same frequency or channel and is set to the main frequency band.

In GPS mode, you can only view location information and cannot make normal calls. Voice intercom must exit GPS mode to proceed.

GPS positioning system switch setting

- 1. Use the menu Advanced Settings GPS Positioning PS Switch Select Enable**
The use of GPS

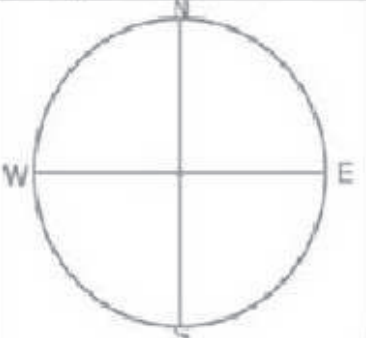
In standby mode, long press the [EXIT] key to enter the GPS location information interface and GPS distance direction interface. In the GPS location information interface, press the [MENU] key to switch between the GPS location information

interface and the GPS distance direction interface. Press the [up↑] or [down↓] keys to switch the information of the selected group members. The group number of the current member will be displayed at the top of the interface. In GPS mode, press the [EXIT] key to return to standby mode.

Figure 3.8.1 GPS Location Information Interface Diagram

My Position	
Pos Success	
10:08:20	
N:24°56'52.5"	
E:118°27'72.8"	
H:74.0M	GPS

3.8.2 GPS Distance and Direction Interface

My Position	
	GPS

- Find local location**
1. Long press the [EXIT] key to enter GPS mode
 2. Use the [up↑] or [down↓] keys to switch to "My Position"
 3. At this time, the GPS is in receiving mode and displays "Searching", indicating that the positioning has not been successfully executed.
 4. Display "Pos Success", indicating that the machine's position has been successfully obtained, and display the current position, longitude, latitude, and altitude, where N is north latitude and H is altitude

Figure 3.8.3 Search

My Position	
Searching	
08:00:29	
N:00°00'00.0"	
E:000°00'00.0"	
H:0.0M	GPS



Figure 3.8.3 Successful Pos

My Position	
Pos Success	
10:08:20	
N:24°56'52.5"	
E:118°27'72.8"	
H:74.0M	GPS

If the message 'Positioning...' is displayed for a long time, it is recommended that you search for satellites in open locations.

Send local location information

1. After the machine's GPS positioning is successful, press the [left←] or [right→] button to switch to the location information interface.

2. Press the [up↑] or [down↓] key to select the local contact (GPS call contact).

3. Press [PTT] to send the current location information of the device to the target selective call group (GPS call contact).

-In the transmission of positioning information, prompt "NEVER Get Pos"

-Location information sent successfully, prompt 'Get location'

After the target intercom successfully receives your location information, the screen will display your location information.

3.8.4 Select Call Group Diagram

01. SC001	
Pos Success	
10:08:20	
N:24°56'52.5"	
E:118°27'72.8"	
H:74.0M	GPS

3.8.5 Displaying location information

01. SC001	
Never Get Pos	
N:24°56'52.5"	
E:118°27'72.8"	
H:74.0M	GPS

3.8.6 Sending location successfully sent

01. SC001	
Get Position	
N:24°56'52.5"	
E:118°27'72.8"	
H:74.0M	GPS

Request someone else's location

1. After the GPS positioning of the machine is successful, press the [EXIT] key to enter the GPS interface.

2. Press [up↑] or [down↓] key to select the pre-programmed call group.

3. After confirming the selection of the call group, press [PTT] to initiate a location request command to the target selected call group.

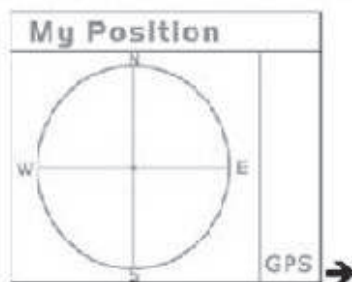
-Disable transmission during waiting for reception

-If the other party receives your request, it will reply with your location information.

-The red center point is your position, the flashing red dot inside the circle is the position of the other party, and the lower left corner is the reference distance between the two computers.

-Press the [MENU] key to switch to the location information screen to display the other party's longitude, latitude, and altitude.

Figure 3.8.6 Distance Orientation Interface Diagram



3.8.7 Select Call Group

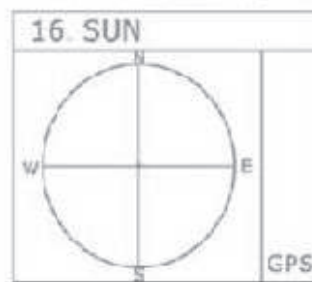
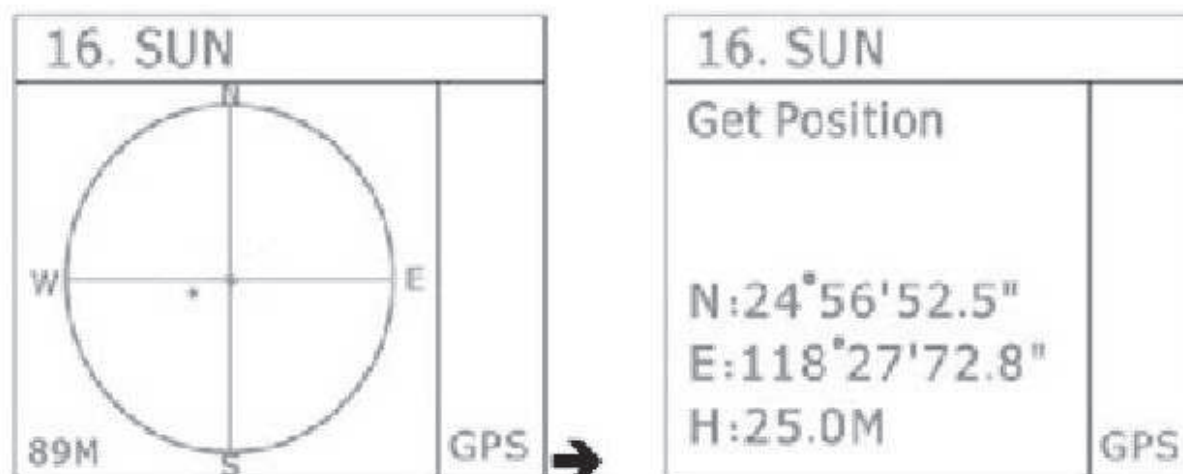


Figure 3.8.9 Successfully Received Location Information



Dual Stage Technical Specifications

Frequency range: 64-108MHz (FM radio frequency band) 136-174MHz

220-260MHz/400-520MHz

Frequency stability: $\pm 2.5\text{ppm}$

Rated voltage: DC7.4V

Memory channel: 64 channels * 8 areas **Antenna configuration:** Inductive antenna

Antenna impedance: 50 Ω

Working mode: Same frequency simplex or different frequency simplex

Volume: 120 * 57 * 39mm

Modulation method: FM (F3E)

Maximum frequency deviation: $\leq \pm 5\text{KHz}$

Residual wave radiation: $< -60\text{dB}$

Emission current: $\leq 1.5\text{A}$

Frequency stability: $\pm 2.5\text{ppm}$

Reception sensitivity: $< 0.18\mu\text{V}$

Audio power: $\geq 400\text{mW}$

Standby current: 72mA (36mA in power-saving mode) **Transmitting part**

Output power: High $\geq 10\text{W}$, Low $\geq 5\text{W}$

Modulation method (broadband, narrowband): 16KF $\angle$ 3E/11KF $\angle$ 3E

Maximum frequency offset (broadband, narrowband): $\leq 5\text{KHz}/\leq 2.5\text{KHz}$

Adjacent channel power (broadband, narrowband): $\leq -65\text{dB}/\leq 62\text{dB}$

Stray power: $\leq 7\mu\text{W}$

Pre-emphasis characteristic: 6dB/increasing per octave

Emission current: $\leq 2.5\text{A}$ (10W) $\leq 1.6\text{A}$ (5W)

CTCSS/DCS: 0.55KHz $\pm$ 0.15KHz,

(Broadband, Narrowband): 0.4KHz $\pm$ 0.1KHz

Modulation sensitivity: 8-12mV

Modulation distortion: $< 5\%$ **Receiving part**

Reference sensitivity: -122dBm (12dB SINAD) **Audio power:** 1W

Audio distortion: $< 5\%$

Blocking: ≥ 85 intermodulation (broadband, narrowband) $\geq 60\text{dB} \geq 55\text{dB}$

Attention: Specifications may change without prior notice due to technical improvements.

GUARANTEE CARD

Model Number _____

Serial Number _____

Purchasing Date _____

Dealer

Telephone

User's Name

Telephone

Address

Post Code

REMARKS

1.This guarantee card to be kept by the user, no replenishment if lost.

2.This Guarantee card to be filled & chopped by the dealer, or it is invalid.

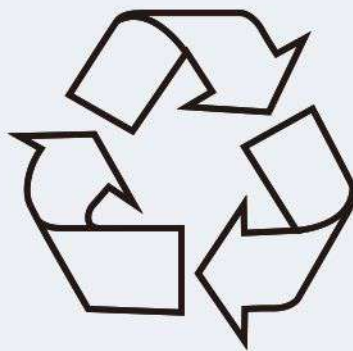
3.Don't alter the guarantee card, please confirm the serial number on the guarantee card correspond the radio.

4.One-year guarantee, charger, earphone, antenna and feeder line are not under guarantee.

5.The user can get repairing sewing from the follow ways:

a: go to the shop when you buy the radio.

b: our local repairing agent



RECYCLABLE PACKAGING