

MINI MOBILE RADIO



USER'S MANUAL

Tx:144-148&420-450Mhz

To Customers

Thank you for purchasing this car walkie-talkie. This walkie-talkie is developed with novel design, stable performance, light equipment, easy operation and multiple sophisticated functions.

This walkie-talkie adopts the most advanced technology. We firmly believe that the quality and function of this product will satisfy you!

User Security Information

■ Precautions before use

- Do not use a damaged antenna. A damaged antenna may cause minor burns if it comes into contact with the skin.
- Do not use the radio in explosive environments (such as gas, dust, steam, etc.).
- Turn off the radio when refueling or parking at a gas station.
- Do not modify or adjust the unit for any reason.
- Do not expose the radio to direct sunlight for a long time or place it near heating appliances.
- Do not place the radio in extremely dusty, humid or splashing places, or on unstable surfaces.
- Repairs can only be performed by professional technicians.
- If you find that the radio emits an odor or smoke, turn off the power of the radio immediately and contact the supplier.

■ Safety

It is important for users to understand and recognize the general dangers of using the radio!

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Open box and configuration check

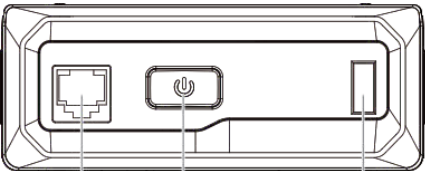
Please be careful to remove the intercom from the packing box. We recommend that you check the following items in the box before discarding the packaging material.

◇ Random accessory list

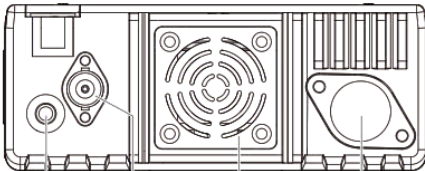
Items	Quantity
Radio Body	1
Microphone	1
Power Cable	1
Bracket	1
Accessories package	1
Voltage Regulator	1

Getting Familiar with the Radio

Radio Overview



MIC Jack Power Switch USB Interface



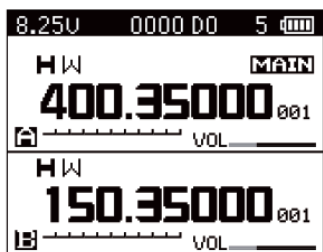
Audio Interface GPS Antenna Socket Cooling Fan RF Antenna Socket

Keyboard



- ◇ Long-press keyboard operation
- Long-press 0 key: start emergency alarm
 - Long-press 1 key: switch tep
 - Long-press 2 key: switch SQL
 - Long-press 3 key: switch Call Tone
 - Long-press 4 key: switch Transmit Power
 - Long-press 5 key: switch Roger
 - Long-press 6 key: switch TOT
 - Long-press 7 key: switch Scan
 - Long-press 8 key: switch Display Type
 - Long-press 9 key: switch Voice Sort
 - Long-press * key: send call tone
 - Long-press # key: keyboard lock/unlock
 - Long-press C/POW: power on/off

■ LCD Display



◇ Channel parameters

- **H/L** : high & low power
- **W/N** : wide&narrow band
- **CT/DT** : analog sub-audio/digital sub-audio
- **V** : VOX
- **S** : scramble
- **C** : Compander
- **+/-** : +/- difference frequency
- **R** : reverse frequency
- **000** : the body code of this radio, the default is 000
- **D0** : the group to which this radio belongs, the default is group 0

◇ System parameters

- **0-5** : Volume level
-  : Battery level indicator

■ Main Functions

- Dual band, dual display, dual standby
- Dual PTT
- Frequency 136-174MHZ & 400-480MHZ (Rx)
- 30W Power output
- Output dual channel
- 108-137MHz Air-band received
- 2*256 channels
- HD color screen display
- Scrambling function
- Emergency alarm
- Chinese/English ANI ID
- 2 Tone, 5 Tone
- DTMF
- Noise cancelling function
- Frequency measurement function
- GPS (optional)

■ Basic modes of the Radio

◇ VFO mode (frequency mode)

Press the **[CLR]** key to switch.

In this mode, you can press the **[UP/DOWN]** key to change the frequency in use.

◇ MR mode (frequency channel mode)

Press the **[CLR]** key to switch.

In this mode, you can press the **[UP/DOWN]** key to change the channel number (stored frequency and related data).

You must program at least one memory channel, otherwise you cannot enter this mode.

◇ CH mode (channel mode)

Press the **[CLR]** key to switch.

In this mode, you can press the **[UP/DOWN]** key to change the channel number (stored frequency and related data).

You must program at least one memory channel, otherwise you cannot enter this mode.

Menu Settings

Menu Usage

The menu contains settings for various software functions of the intercom. You can change the settings in the menu to meet your needs.

- 1. Press the [FUN] key to enter the menu system.
- 2. Press the [UP/DOWN] key to select the menu item to be used.
- 3. Press the [FUN] key to enter the menu setting.
- 4. You can press the [UP/DOWN] key to select the setting content, then press the [FUN] key to complete the setting and return to the menu system.
- 5. Press the [CLR] key to exit the menu system and return to the original working mode.
- 6. If there is no operation for more than 10 seconds, the intercom will automatically return to the original working mode.

Menu List

No.	Display Character	Secondary Menu Display Character	Secondary Menu Setting Instructions
0	Language	English/Chinese	Select the display interface language
1	Step	0.05KHz/..1500K	You can choose from 0.05KHz,...500KHz
2	SQL	0 - 10	Adjust between 0-10 levels, the higher the level, the deeper the squelch
3	Power	Low Power/Middle Power/High Power	Low power transmission/medium power/high power transmission

No.	Display Character	Secondary Menu Display Character	Secondary Menu Setting Instructions
4	Roger	Close/Open	Turn off/on the end tone
5	TOT	Close	No limit on the transmission time
		15s/.../1270s	If the transmission time exceeds, the walkie-talkie will automatically turn off the transmission
6	VOX	Close/Open	Turn off/on voice control
7	VOX Level	Close/1../10	Set the voice control gain threshold
8	Band Set	Narrow/Wide	When selecting narrowband, it will display "N", and when selecting wideband, it will display "W"
9	Voice Sort	Close/English/Chinese	Choose the number tone
10	Beep	Close/Open	Turn off/on the prompt tone
11	Call Tone	Close/1../10	Set the call tone
12	Scan	/	Scan starts, if it is not in frequency mode, at least 2 channels are required to start scanning
13	Backlight	Close	Backlight off (the backlight will light up for a while when there is an operation)
		Open	Backlight always on
		Auto 5s...160s	Backlight goes off after the set time (digits indicate time)

No.	Display Character	Secondary Menu Display Character	Secondary Menu Setting Instructions
14	Scramble	Close/Open	Turn off/on scrambling
15	Compand	Close/Open	Turn off/on compression and expansion
16	Key Lock Mode	Manual	Manually lock the keyboard
		Auto 5s...130s	Lock the keyboard after the set time, do not save the lock state
		Auto 5s 1...130s Save	Lock the keyboard after the set time, save the lock state
17	Des-CTSCS	Close/1../CTC-254.1 DCS-D023N.... DCS-D7541	Press the [V+] key to select: off, CTCSS, DCSN, DCSI; Press [▲]/[▼] key: select the group you need;
18	Ens-CTDCS	Close/1../CTC-254.1 DCS-D023N... DCS-D7541	
19	Sft	None - +	
20	Offset Freq	0.000-450.000MHz	The difference between the transmitting and receiving frequencies

No.	Display Character	Secondary Menu Display Character	Secondary Menu Setting Instructions
21	Rev Frequency	Close/Open	Reverse frequency off/on
22	Power On Tone	Close/Tone 1...Tone 7	Select the power-on prompt tone
23	Scan Add/Del	Delete/Add	Delete/add scanning channels
24	Boot Screen	Picture	Display the power-on image
		Voltage	Display the voltage volts
		Information	Display the set information
25	Double Work	Close/Open	Dual standby off/on
26	Pri Tx Ch	Close	Turn off priority transmission
		Auto	Automatically select the transmission group
		Group A	Transmit in group A
		Group B	Transmit in group B
27	Channel Name	Close/Open	Turn off/on channel name display
28	Channel Save	/	Press [▲]/[▼] key to select the channel number, press the menu key to confirm the storage
29	Channel Del	/	Press [▲]/[▼] key to select the channel number, press the menu key to confirm the deletion
30	Freq Measure	/	Enter the frequency measurement function

No.	Display Character	Secondary Menu Display Character	Secondary Menu Setting Instructions
31	Gen.CH [PTT]	/	Press the PTT key to turn on the machine, and then enter this menu to randomly generate channels 1-32, and then you can Send the channel to the same group members through the fast team function
32	Quick Team T	/	Enter the fast team transmission function
33	Quick Team R	/	Enter the fast team receiving function
34	Signal Type	None / DTMF/ Tone & 5 Tone	Can set signaling type
35	PTT ID Set	Close/BOT/EOT/BOTH	Can set PTT ID
36	Digit Serve	Close/Open	Turn on digital service, can enable individual call, group call, all call functions
37	Call Sort	Single Call/Group Call/All Call	Can select appropriate call mode according to the situation
38	Member Sel	/	Can select members for individual call (user names can be pre-set in the frequency writing software)
39	Group Sel	/	Can select groups for group call (group names can be pre-set in the frequency writing software)
40	Display Type	Night Mode/Day Mode	Can set display type

No.	Display Character	Secondary Menu Display Character	Secondary Menu Setting Instructions
41	Radio	Close/Open	Turn off/on radio
42	Noise Cancel	Close/Open	Turn off/on noise reduction function
43	Reset	Config Reset	Restore the setting mode parameters and full frequency to factory settings
		Clear Channel	Delete all stored channels
		Factory Preset	Restore to the last written frequency parameters
44	Device Info	/	Can display version information and last programming time

CTCSS/DCS

Sometimes you may only want to receive calls from a specific person. CTCSS/DCS allows you to not receive calls from other people using the same frequency. You can choose from 50 commonly used CTCSS and 105 DCS.

■ CTCSS Standard Frequency List

50 Groups CTCSS Freq. (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	189.9	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	

■ DCS Standard Group

105 Groups 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		

Auxiliary functions

■ DTMF signaling

DTMF (Dual Tone Mult Frequency), dual tone multi-frequency, consists of a high frequency group and a low frequency group, each of which contains 4 frequencies. A high frequency signal and a low frequency signal are superimposed to form a combined signal, representing a number. DTMF signaling has 16 codes. DTMF signaling can be used to select the corresponding intercom.

- Select DTMF in the signaling type in the channel information

Signal Type	Signal Decode	Signaling Coding	PTT ID	Speaker not muted
DTMF	16	16	Close	QT/DT

- Set up encoding, decoding and dialing lists in DTMF service to meet customer needs.



■ 2-Tone & 5-Tone Signaling

The 2-tone & 5-tone feature encodes and decodes multiple audio frequencies at different frequencies, allowing users to trigger operations and implement selective calling by sending specific 2-tone & 5-tone codes. This is very useful in situations that require rapid response, coordination, and emergency communications, such as alarms, dispatch, and emergency response.

- Select 2-tone & 5-tone signaling as the signaling type in the channel information

Signal Type	Signal Decode	Signaling Coding	PTT ID	Speaker not muted
2-Tone & 5-Tone	16	16	Close	QT/DT

- Set up encoding, decoding and dialing lists in 2-tone & 5-tone services to meet customer needs.



■ Digital anti-cracking

The digital anti-cracking function can be used to prevent illegal signals from being received.

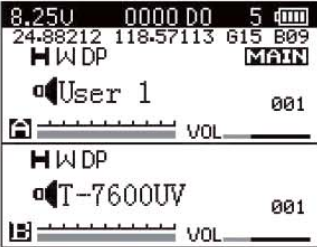
- Enable the digital mode selection in the channel information

VOX	Scramble	Scramble Freq	Comand	Angle Elimination	Jump Freq	Digit Mode
NO	NO	8-3400	NO	None	No	Enable

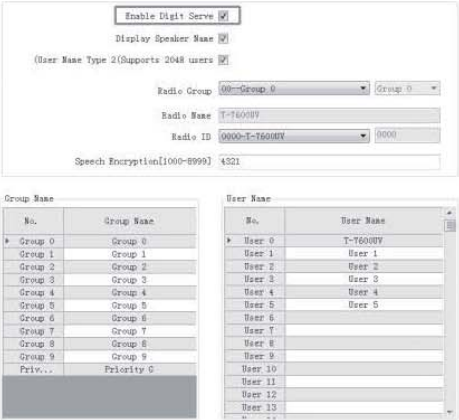
- In Basic Configuration->Configuration, set the digital encoding and enable digital mode.
- Only the same digital code can communicate with each other, the range is 1-- 49999, the default value is 1688

■ Digital Services

By using the digital service function, the intercom alias display function can be realized. The target intercom can display the name of the call initiator. The display effect is as follows:



- The group to which this device belongs: Only those who are set to the same group can talk to each other
- Name of this device: After setting, the receiver can display the name of the caller



- Voice encryption password: You can set it from 0001 to 8999, and only those with the same password can talk to each other.

■ Fast teaming

When a user initiates team transmission on the walkie-talkie and other users enter the fast team receiving side, multiple walkie-talkie devices can be quickly synchronized on one channel, which brings considerable convenience when multiple people travel in a team.

◇ Fast teaming operation method

- Receiver
 1. Enter the menu "Team receiving"
 2. Press the [FUN] key to enter the team receiving, and the interface will display "Fast team receiving side".
- Transmitter
 1. Enter the menu "Team transmitting"
 2. Press the [FUN] key to enter the team transmitting, and the interface will display "Fast team initiator"
 3. At this time, the communication mode of the fast team will be entered. This process takes about 2 minutes. After the communication is completed, the transmitter will exit the transmitting state and the receiver will restart. At this time, members of the same group can talk to each other.

■ **Frequency Measure Function**

This unit has a frequency measurement and decoding function, which can be used to quickly communicate with other walkie-talkies.

◇ **Frequency meter function operation method**

- 1. Enter the menu “Frequency measurement function”
- 2. Press the **[FUN]** key to enter, and the screen will display “Frequency measurement in progress”
- 3. Press and hold the PTT key of the walkie-talkie under test to transmit, and then move closer to this unit
- 4. When the frequency measurement is completed, it will broadcast that the frequency measurement is successful, and the screen will display the frequency and store it in the channel
- 5. You can press the **[UP/DOWN]** key to switch channels and enter the next frequency measurement
- 6. Press the **[CLR]** key to exit the frequency measurement function and return to the original working mode.

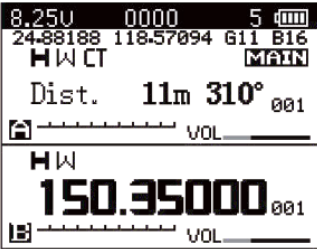
■ **Distance Measurement Function**

This unit has a distance measurement function, which can be used to know the distance and azimuth between this unit and other walkie-talkies.

In the frequency writing software, check the following function to turn on the distance measurement function.

☒ GPS ☒ Distance Measurement

When the ranging function is turned on, when the GPS signal is normal, after the receiving signal disappears, the distance and azimuth from the transmitter will be displayed, as shown in the figure below. The display will show longitude and latitude, number of GPS stars, number of Beidou stars, distance and azimuth.



FCC Regulatory Conformance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Verification of harmful interference by this equipment to radio or television reception can be determined by turning it off and then on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

WARNING ! MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.



ATTENTION! Before using this product, read the RF Energy Exposure and Product Safety Guide that ship with the radio which contains instructions for safe usage and RF energy awareness and control for compliance with applicable standards and regulation.

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