

User Manual
Two way radio
Brand name:TGKK
Model name: TGK-590
FCC ID:2ACNNTGK-590

To Users:

Thank you for purchasing our TGKK two way radio, we believe that this easy to use radio will bring you trusted communication.

This operating instruction suit to:
UHF FM Radio: TGK-590 450-520MHz

Safety: It is very important for a user to use the walkie-talkie general risk awareness.

Warning:

Explosive environments (gas, dust and smoke so on)
When near to gas station, please turn off the radio.

Notice to users

Before using the radio, please read this manual carefully.

Do not flammable, explosive, and prohibit the use of walkie-talkie in a bad environment (such as: gas stations, gas stations, hospitals, airports, etc.), or to use the walkie-talkie radios charge.

Do not within the scope of jurisdiction of the government government decree prohibited without the walkie-talkie can transmit operations.

Do not let the intercom by the prolonged direct sunlight, and do not place intercom placed near a heating device.

Do not place the walkie-talkie in a dusty, humid and splash land, do not place it on an unstable surface.

If you find any unusual smells or smoke from a walkie-talkie, you should immediately remove the battery pack from the transceiver. Please contact us or your local dealer.

Walkie-talkie service, can only be done by a professional technician, do not disassemble.



TGKK®
JUST DO EXQUISITEQUALITY

TGK-590

Full-band multifunction wireless fm two way radio

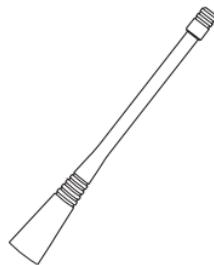
Features:

- Frequency Mode + channel mode + Professional intercom mode
- Power-on password function
- High sensitivity Radio
- Flash light function
- 128 memory channels
- LCD screen
- Chinese and English voice prompt function
- Wire cloning function
- Manual / Computer frequency modulation
- VOX function
- Alarm function
- Group Function
- 50CTCSS & 104*2 DCS
- CTCSS/DCS Emission offset power transfer function

Unpack and check device

Please carefully open the color box and check the accessories in below list.

Accessory	Item	Item No.	Quantity
	Antenna		1
	Hand tape		1
	Belt clip		1
	Bolt		1
	User manual		1



Antenna



Belt clip



Bolt



Hand tape

Preparation before use

Warning ▲

*Please do not charge the battery pack long time.

If you charge the battery pack has not been completed within the specified time, stop charging. The battery pack may overheat or burst suddenly caught fire and smoke.

*Please do not put the battery pack into a microwave oven and a high pressure vessel.

The battery pack may overheat or burst suddenly caught fire and smoke.

*Please do not let the battery pack to rupture and leak near the fire.

If the battery pack leaks (or issue pungent odor), immediately place it away from flammable areas. Battery electrolyte leakage easily fire, smoke may cause the battery pack or a sudden fire.

*Please do not use any unauthorized, non TGKK brand battery pack.

If the battery pack emit a pungent odor, color looks different, deformed or shaped performance for any reason, and please do not use the battery pack is removed from the charger or operating equipment.

*Please use the designated TGKK brand charger.

Charger is specifically designed for this type walkie-talkie, walkie-talkie battery charge of the model is more scientific and reasonable, safe and reliable.

Preparation before use

When using lithium batteries:

- Charge the battery before using
- To minimize battery discharge, please do not use the battery pack when the battery pack is removed from the device, remove the battery pack stored in a cool dry place.
- Please store the battery pack in a long time:
 - 1, remove the battery pack from the device. 2, if possible, the battery will be discharged.
 - 3, the battery pack is stored in a cool (temperatures below 25 degrees Celsius) and dry place

Li-ion Battery features:

- The battery pack after repeated charging and discharging, and gradually reduce its capacity.
- Even if the battery pack is never used will be aging.
- In the more shade on the lithium pack, the longer the time required.
- In the more heat the battery pack will shorten its life. Heat stored in the battery pack, the battery pack aging faster. Please do not leave the battery pack in the car and placed near heating appliances.
- If the battery pack using a shorter time, even though they have full power, please replace the battery pack. Continues to charge and discharge the battery pack will cause electrolyte leakage.

Charge the Lithium battery :

The charger is plugged in, the charger green indicator light, into the battery and the red indicator light after a good contact to start charging the battery. After the battery is fully charged the charger green light.

Preparation before use

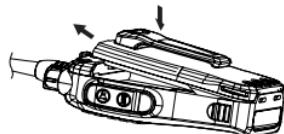
Install / remove the battery pack:

*Do not short circuit the battery terminals, or the battery will spark

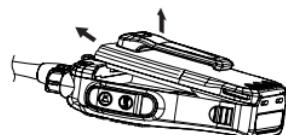
*Do not attempt to remove the casing of the battery pack

*The battery pack can not installed in hazardous environments, sparks will cause an explosion.

1, Insert the battery pack into the battery compartment on the back of the radio, press Battery Pack inward until the Battery Pack Latch locks it place with a 'Click'.



2, To remove the battery pack, turn off the radio then close the battey pack latch, battery pack will Prolapse from radio, then take off the battery pack.



Preparation before use

Install Antenna:

Hold the antenna base, antenna clockwise screwed on top of the interface walkie-talkie until tighten up.



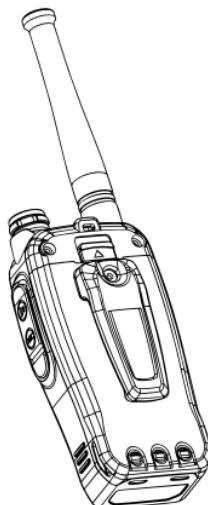
Install hand tape:

Strung the Hand Tape to the ring on the top of the radio back.

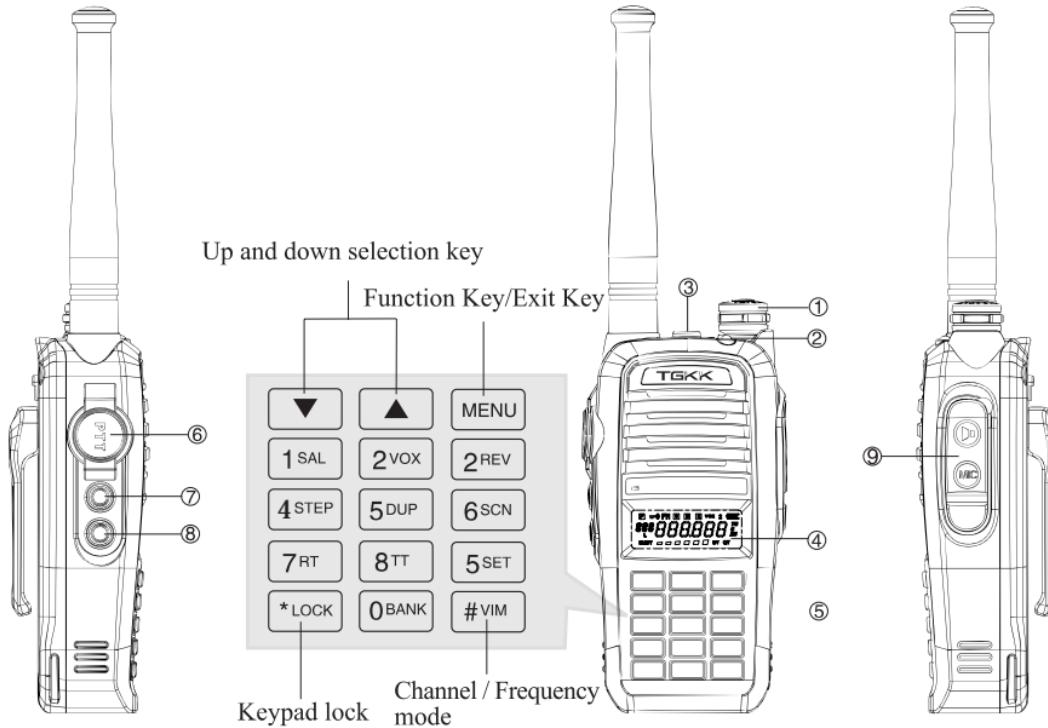


Install belt clip:

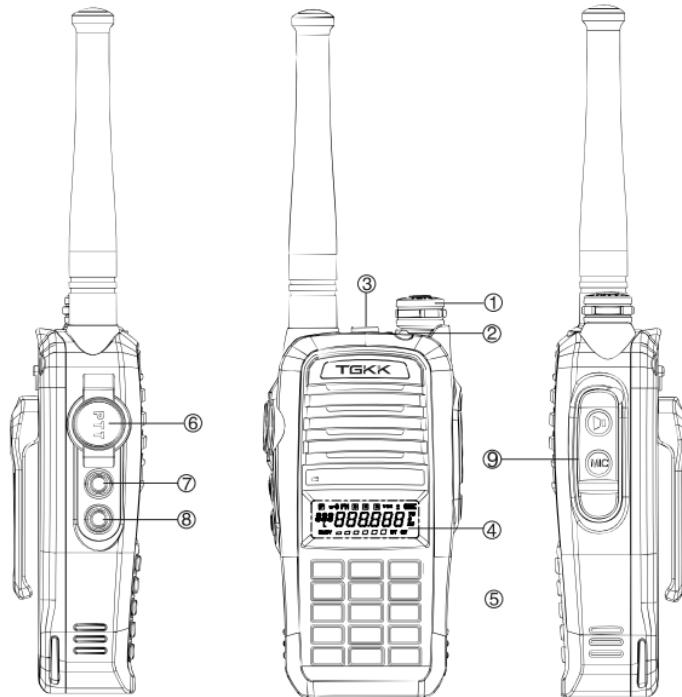
If necessary, use a random Annex 3 * 4 screws fix belt clip.



Familiar with the machine



Familiar with the machine

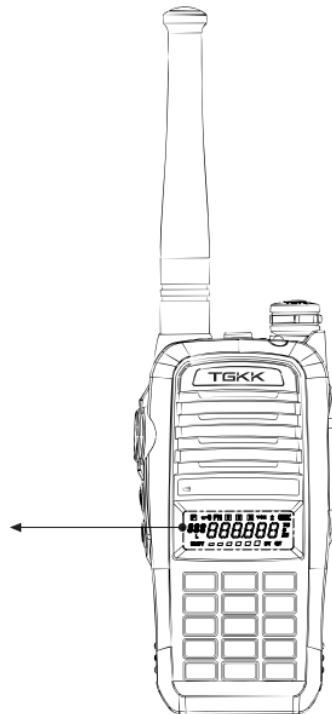
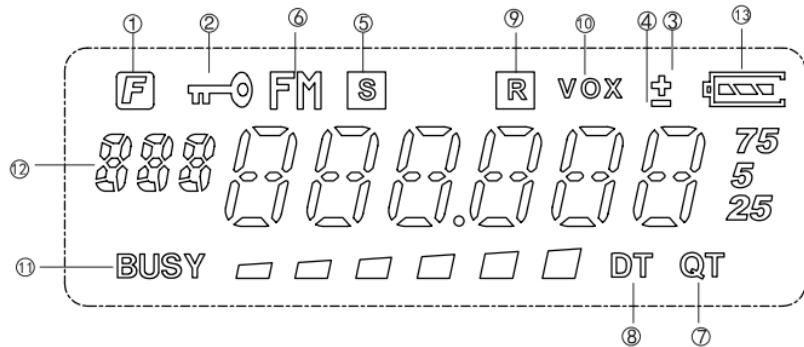


- ①Power switch / volume controller
- ②Working indicator light,red light when transmit, green light when receive.
- ③Click the alarm key to turn on the light
- ④LCD screen to show radio working condition.
- ⑤Digit keyboard
- ⑥PTT push to talk
- ⑦Monitor key
- ⑧Alarm Key keep press the key will
- ⑨External microphone and earphone jack

Instruction of LCD Chart

1, F: The status to select function
2, Keyboard has locked
3, +: Add frequency
4, -: Reduce frequency
5, S: Power saving mode
6, FM: FM radio mode
7, QT: Mark of CTCSS

8, DT: Mark of DCS
9, R: Reverse frequency mode
10, VOX: VOX function is launch
11, Receiving or transmitting
12, Channel No.
13, The battery power status.



Operating mode



FR mode



CH mode (Channel+ frequency)



Channel mode

■ FR mode (Frequency mode)

Hold the **[#]** key on, switch to FR mode. In this mode can be switched by the **[#]** key to choose all frequencies or channel + frequency. Press **[▲]**、**[▼]** key to change the whole frequency or channel number ; Or press the number keys to enter the desired frequencies or full channel number (001-128 channels)

■ CH mode (Channel+ frequency)

Hold the **[#]** key to turn on, you can switch to CH mode. In this mode, you can use the **[▼]**、**[▲]** to change the channel number, Or press the number keys to enter the desired channel (001-128 channels). You at least want to program a memory channel, otherwise unable to enter this mode.

■ Professional intercom mode (Channel mode)

By programming software 'Professional intercom mode' setting. You can use the walkie-talkie set to professional intercom mode. In this mode, only to change the current channel by **[▲]**、**[▼]** keys, other keys invalid. Nor is converted to FR mode and CH mode.

Basic operation

■ Switching Power Supply

Screw clockwise the power/volume knob to turn on the power, screw anticlockwise to turn off .

■ Adjust the volume

Press the volume control knob clockwise to increase the volume, counterclockwise rotation will decrease the volume.

■ Select the frequency

Press  to increase the frequency, press the  key to decrease the frequency. If you have not chosen a specific frequency, you need to change the frequency interval. See 'Set step frequency' (Page12), you can also use the number keys to enter the desired frequency directly see 'numeric keys to enter' (Page15)

■ PTT key launch

Press and hold the PTT button and speak in a normal tone of voice. (When transmitting red) at the end of speaking, release the PTT button, wait for the reception.

■ VOX Transmitting

1, Can set the vox gain level and the delay time length of VOX stop launch in Menu Setting. (VOX gain level: Grade one is the highest, need the maximum volume power to start transmitting. Grade nine is minimum.

2 Press  +2, open the VOX function.

3, insert the headset to the radio.

4, Talk to the microphone, if the sound intensity is enough can launch.

Basic operation

■ Monitor

Press the MONI key into Monitor mode (squelch will close at the same time), loosen the key to exit Monitor state.

■ Alarm function

- 1, Keep the press the **Alarm** key for 2 seconds, radio will enter alarm state.
- 2, In alarm state, if the current channel have set a transmitting frequency, radio will automatically to transmit.
- 3, In alarm state, radio sound alarm and transmit for 20 seconds, then stop for 10 seconds, continue in 20 seconds, so cycle three times and exit alarm state.
- 4, In alarm state, if radio receive any signal during the 10 second pause will exit alarm state.
- 5, Press PTT key also will exit alarm state.

■ Call function

Click the **MENU** Key then Click **▲** key, radio will enter call state, keep transmit call signal for 4 Seconds. When receive call, radio will sound a special ring to prompt.

■ Flashlight function

Click the **Alarm** key to open the LED light, click again to close.

■ Key lock switch

Standby state, press the ***** key for a second to lock the keyboard, press one second again to unlock.

Function operation

The machine through the **MENU** key, 0-9, ***** **#** key to achieve quick operation, allowing users to use the walkie-talkie simple and convenient.

■ Squelch level setting (MENU +1)

- 1, Press the **MENU** key, then press the number keys 1, enter the squelch level setting. There are 0-9 levels.
- 2, According **▲** **▼** up or down to select the squelch level, press any key to exit.

■ On Off voice function (MENU +2)

- 1, Press the **MENU** button, then press the number 2 key, switch voice features. When the voice function is on, the LCD will display the icon.

■ On Off scrambling function (MENU +3)

- 1, Press the **MENU** key, then press the number key 3 switch scrambling function. When scrambling function is turned on, the LCD will display the icon. When the channel is no transmission frequency, you can not enter scrambling.

■ Set step frequency (MENU +4)

- 1, Press the **MENU** key, then press the number keys 4, enter the setup step frequency.
- 2, According **▲** **▼** stepping up or down to select the frequency, to confirm and store. Press any other key to exit.

■ Set-frequency (MENU +5)

- Press the **MENU** key, then press the numeric key 5 to enter the switching-frequency direction. When adding frequency LCD +, when less frequency LCD—.

Function operation

■ Enter the scan (MENU +6)

- 1,Press the **MENU** key, then press the number keys 6, the transceiver will enter the scan.
- 2, scanning, press the **MENU** key, the transceiver will save the current channel or frequency is swept, and then exit the scan. Press any other key, will not save the channels direct exit scan.
- 3, During scanning, press **▲** **▼** keys to change the scanning direction.
- 4, VFO mode: radio will scan whole frequency band.
- 5, Channel mode: non-group mode will scan all 128 channels with a data channel scan added; the group mode, the scanning of the group (each group up to 16 channels) scans with data adding channels.
- 6, If there are currently less than two channels have not been set frequency information to add, you can not

■ Set receive and transmit signaling (MENU +7)

- 1, Press the **MENU** key, then press the numeric key 7 to enter the setting to receive and transmit signaling.
- 2, press the ***** key to switch the signaling type, as follows:

OFF → CTCSS → DCS N
- 3, press the **#** key to switch to the digital sub-audio pros and cons, as follows:

DCS N → DCS I
- 4, using the **▲** **▼** keys to select your desired category, the choice of OFF, turn off CTCSS.

Function operation

5, Press **[MENU]** to save and leave. Other key is invalid exit.

(NOTE: When the display mode is CHXXX, it can not set receive and transmit signaling)

■ Set transmit signaling (MENU +8)

1 Press the **[MENU]** key, then press the number keys 8, enter the setting emission signaling.

2, press the ***** key to switch the signaling type, as follows:

OFF → CTCSS → DCS N → OFF

3, press the **#** key to switch digital CTCSS positive direction, as follows:

DCS N → DCS I

4, using the **▲** **▼** keys to select the group you want, when you select OFF, close the sub-audio.

5 Press **[MENU]** to save and leave. Other key is invalid exit.

(NOTE: When the screen display CHXXX, it can not set the transmitter signaling)

■ Enter menu option (MENU +9)

Press **[MENU]** key, then press the number keys 9, enter **[MENU]** option. Specific operations can refer to the following < **[MENU]** operation>.

■ Select Workgroup operation (MENU +0)

- 1, Press **MENU** key, then press the number keys 0, enter the selected working groups operate.
- 2, Using the **▲** **▼** keys to select the group you want. A-H total 8 groups available. Only the group which store channel can be selected. Or can not be selected.
- 3, Press other key to leave this operation, return to standby. (NOTE: This operation only can be carried out in Channel mode and open the group function.)

■ Store new channel (MENU + *)

- 1, Intercom must be in full frequency mode to store channel operation.
- 2, Press the **MENU** key, then press the ***** key to enter the storage channel operation, a small channel number and F symbol flashes.
- 3, By pressing the **▲** **▼** keys to select a channel to be stored, or choose to enter a number directly into the channel.
- 4 Press **MENU** to exit the store to confirm. Other key is invalid exit.

■ Enter Numeric keys

- 1, In channel mode, inputs (001-128) to switch the current channel. If the input channel exist frequency,

Function operation

then switch to your input channel. If not then return to the original channel.

For example: CH 1: (input 001) CH 98:(input 098 or 98) CH 123:(input 123)

2, In FR mode, when Standby, Input 6 digits to change the current frequency. If the digit out of range, radio will return to the original operating frequency.

■ Wire cloning

Press **[MONI]** key and **[▼]** key and turn on the radio to enter cloning mode, LCD "CLonE" prompt, press the side buttons **[MONI]** key to start clone. At hte point, the host shows "CLOU", vice radio shows "CLIN". When finish clone, if success, host radio will show "End" then return to the initial state; If that fails, host radio will show "Err" and then return to original state. A successful clone needs about 8 seconds.

■ Delete channel

1, Radio is in Channel mode.

2, Press **[*]** key to turn on the radio to enter channels delete mode, in this point "DEL" indication show in the screen, while a small channel number flashes.

3, You can press **[▲]** **[▼]** keys to select the channel you want to delete, or select a channel by entering the corresponding number channel, press the **[MENU]** key to enter. Screen will show "YES".

4, Finally, press the **[MENU]** button to confirm. The radio will cut back to the next channel to delete a channel frequency, ready to be deleted. When all the channels are not frequency, the radio will exit the delete channel state cuts to full-range state.

FM Radio Function

The function of radio must be written "Radio" is set to "open" when connect to pc programming.

1, Open/Close FM radio function

The transceiver is in standby mode, press **[MENU]** enter options, press the MONI key to toggle on or off the FM radio.

When the FM is on, the LCD shows "FM". In the radio full frequency mode, you can enter the frequency directly listen to the radio.

Or by pressing the  &  keys to change the radio frequency in steps of 100K; in the radio channel mode, you can press  &  keys or enter the two-digit channel number (01-25) to change the current radio channel.

2, Switch FR Mode/ Channel mode for FM Radio

In FM radio mode, press the **[#]** key to switch the radio FR Mode or Channel mod.

(When walkie-talkie FM radio channel is not stored , you can not switch.)

3, Search Radio station

In the radio state, if you want to quickly find the desired station, use station search operation.

In FR mode, press **[MENU]** key to enter the options, then click the 6 key to enter the radio station search.

LCD sets the current progress of the search. By pressing the  &  keys to change the direction of the radio station search.

When the search has sets, radio frequency automatic stay on that point.

When want to continue to station search, then you can press  &  to determine the direction of the search platform to continue the search units.

In the radio station search, press other than  &  keys, or transmit by PTT, the radio will exit the search condition.

FM Radio Function

4, Monitor function in FM Radio mode

Click **MENU** Key, then click 9 key to enter the setting, select the 16 th item DW, use **▲** & **▼** key to select, click **MENU** to save.

ON: in FM radio mode, can monitor the intercom signal, when radio receive any signal will exit the FM mode into intercom state, after the communication finished return to FM radio mode.

OFF: just keep in FM radio mode.

5, Set Radio SQ rating

In FM radio mode, click **MENU** key, then click 1 key to enter squelch setting, use **▲** & **▼** select ON or OFF mode, other key to save and leave.

6, Store radio station channel

In FM radio mode, press **MENU** key, then press ***** key to enter radio station store operation, use **▲** & **▼** key to select the channel you want, press the **MENU** key to save.

7, Delete radio station channel

First, turn radio to FM radio channel mode, and close the radio, then keep pressing the ***** key and open the radio, in this point, screen show “xxDEL”, use **▲** & **▼** key to select the channel you want to delete, then press **MENU** key to confirm to delete.

Menu operation

Click **[MENU]** key, LCD function key symbol **[F]**, Press the number keys 9, walkie - talkie enter to menu mode. Press **[▲]** & **[▼]** to select a menu item, pre **[MENU]** button to enter the item. Then Press **[▲]** & **[▼]** In operation, press the **[*]** key to exit and return to standby.

■ Specific each menu item as follows:

1, Ring settings

Off: Ringer off. On: Ringtones open.

2, Backlight setting

On: backlight lit. Off: backlight is off.

Aut: button is pressed, the backlight is lit, when the backlight is turned on for 10 seconds, if there is no operation, the backlight will turn itself off.

3, Set Emission limit

Limited time there: OFF (no limit), 30S, 60, 90, 120, 150, 180, 210, 240, 270.

4, Set frequency offset

FR mode can be set. You can enter 5 digits through the key frequency offset in the range of (00.000M ~ 99.995M)

5, Open the closed group

On: group open. Off: group off. Group only valid in channel mode.

The Machine has 128 channels, divided into eight groups. Each group has 16 channels.

Wherein the channel 1 to channel 16 is group A; Channel 17 to channel 32 is a group B; so, the last set of channels 113 to the channel 128, the group H.

Menu operation

6, Display current battery voltage

After entering the walkie - talkie, displays the current battery voltage, automatically return to standby mode after 10 seconds.

7, VOX grade setting

Can be set to: 1 ~ 9 Level.

8, VOX delay time set

Delay time there: 0.3S, 0.5S, 1.0S, 1.5S, 2.0S, 3.0S.

9, Set receiver power-saving

On: power-saving features turned on. Off: power-saving features turned off.

10, Set the scan mode

CO: Carrier scan. TO: Time scan. SE: single scan. Scan to a signal, immediately stop scanning.

11, Scan the Add / Remove settings

ADD: Add DEL: Delete

12, Key lock settings

Manu: manually set the key lock AUTO: automatic lock button locks. 30 seconds no keys, key lock is automatically locked.

13, Set the boot display

OFF: Boot does not show DC: display the current power voltage MSG: Boot Display Greeting

Menu operation

14, Set the boot display information

You can set 6 characters in boot information. Press  &  to select a character, press the  key to cut to the next character, press the  key before deleting a character, press the  button to confirm exit.

15, Set the channel display name

On: Channel mode displays the channel name. Off: Channel mode does not display the channel name.

16, Set FM Radio listening mode

When DW is ON, In FM radio mode, you can monitor walkie - talkie signals. When the walkie - talkie signal is received, it will temporarily exit FM radio state, enter to intercom state. When Intercom state ends, it will automatically enter the FM Radio state.

17, English voice reporting function

CHI: Chinese voice reporting open. ENG: English voice reporting open. OFF: voice reporting off.

Menu operation

19, Set the Power-on Password

The walkie - talkie with a Power On Password function, Open radio power required to enter five passwords, walkie - talkie function is activated; If the password is wrong, prohibit the use of walkie - talkie function.

■ Set Password

Entering 19 item displays “*_____”*Enter 5 digit password, press **MENU** button to confirm exit.

■ Change password

Entering 19 item displays “_____”*put power-on password, LCD display “*_____”* Enter 5 digits new password, press the **MENU** button to confirm exit.

■ Cancel password

Entering 19 item displays “_____”*put power-on password, LCD display.“*_____”* Press **MENU** to exit, Power On Password canceled.

20, The transmitter end sound settings (with optional)

Launch party at the end tone is emitted after the launch end, intercom will emit a tone prompts the recipient, then the transmitting side has finished, the receiver can Intercom. This calls for a continuous function have a good effect.

On: turn on the transmitter end tone.

Off: Turn off the transmitter end tone.

Technical Specifications (Schedule I)

General	
Frequency Range	450-520MHz
Memory channel	128
Channel spacing	12.5KHz
Antenna Impedance	50
Working Voltage	7.4V DC
Frequency Stability	$\pm 2.5 \times 10^{-6}$
Dimension	56mm×105mm×34mm (including battery)
Weight	177(including battery and antenna)

Technical Specifications (Schedule II)

Transmitter	
Carrier Frequency Tolerance	$\pm 2 \times 10^{-6}$
Output Power	4.5W
Modulation Sensitivity	<20mV
Modulation Distortion	$\leq 5\%$
Maximum Frequency Deviation	$\leq 5\text{kHz}$
Occupied bandwidth	$\leq 16\text{Khz}$
Spurious radiation	≤ 7.5
Adjacent Channel Power	-60dB
Transmitting Current	$\leq 1.5\text{A}$

Technical Specifications (Schedule III)

Receiver	
Sensitivity	≥0.18
Squelch Sensitivity	≤0.4V
Audio Output Power	500mW
Audio Distortion	≤7%
Modulation receive broadband	≥ ± 7.5kHz
Total Channel Inhibition	≥-8dB
Obstruction	≥85dB
Spurious Response Rejection	≥60dB
Spurious Response	≥60dB
Inter-modulation Rejection	≥60dB
Receive Current	≤200mA
Squelch System standby Current	20mA

Care and Maintenance

Common fault and Troubleshooting

Common fault	Troubleshooting
No sound comes from the speaker	1, Volume is too low 2, The squelch level is set too tight 3, Different tone is selected with tone squelch
the battery cannot be used long time after charged	1, The batteries are exhausted. 2, The battery polarity is reversed
Can not have dialogues with other members	1, Out of talkie range 2, Frequency of CTCSS/DCS is different
Others's sound in the channel	The CTCSS/DCS is changed, please reset the channels.

SAFETY TRAINING INFORMATION



Your Xiamen Teruite Electronic Technology co., Ltd. radio generators RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways To Minimize Such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment. This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only". In addition, your Xiamen Teruite Electronic Technology co., Ltd. radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- ◆ FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- ◆ American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- ◆ American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields—RF and Microwave.
- ◆ The following accessories are authorized for use with this product. Use of accessories other than those (listed in the instruction) specified may result in RF exposure levels exceed the FCC requirements for wireless RF exposure.



To ensure you're your expose to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines

The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to as-sure that this radio operates with the FCC RF exposure limits of this radio.

Electromagnetic Interference/Compatibility

During transmissions, Xiamen Teruite Electronic Technology co., Ltd. radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. **DO NOT** operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

Occupational/Controlled Use

The radio transmitter is used in situations in which persons are exposed as consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Attention:

This radio complies with IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50% and is authorized by the FCC for occupational use only. An appropriate warning label is affixed to all units.

In order to comply with RF exposure requirements, a minimum distance of 2.5cm must be maintained when held-to-face, and body-worn operations are restricted to the approved original accessories (belt clip).

Do not use this device when antenna shows obvious damages