HQT

TH-8000
Professional Two-way Radio

User Manual

Hello

We appreciate your purchasing TH-8000 two-way radio! We believe that the quality and function of this radio will bring you stable performance and smooth communication.

TH-8000 is a high-end professional two-way radio launched by HQT, it is the best choice of working in public safety, railway transportation, forestry fire prevention or many other environment.

TH-8000 is waterproof and dustproof and its IP66 certification ensures you smooth communication under any circumstances. TH-8000 also can effectively ensure your communication privacy and personal safety with remote kill/stun/revive, voice encryption, whisper, 4 types of safety protection and other functions.

Please read this manual before use.

Welcome to use **HQT** two-way radio

- Advanced Technology

- IP66

- 6 Types of Signalling

- Battery Lock with National Patent

- 4 Types of Safety Protection

- 2100mAh Li-Poly Battery

- 45mm-Diameter Speaker

- Multi–language Prompts

- PTT ID

- 12.5 kHz

- 3 Programmable Keys

- Voice Prompt in Multi-language

- Wired Clone

- PC Programming

TH-8000

HQT on-line Service Center

HQT service network provides more information about on-line service of HQT two-way radio.

More detailed product information
To deepen your understanding of the functions of this radio.

More plentiful product models
To display more plentiful product models, so that you can understand the details of these products in advance and make decisions correctly according to the requirement of work.

For more details, please visit: www.hqt-tech.com.cn

More detailed product information

More professional technique support
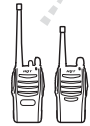
More plentiful product models

More optional accessories

More professional technique support

- **User manual and brochures**
  To provide download or on-line reading of the latest user manuals and brochures in covering detailed information of two-way radios.

- **On-line learning**
  To offer guidelines for detailed setting of the two-way radio.

More optional accessories
To provide various kinds of accessories, which can offer more comfortable operation and more remarkable performance of the radio to you.

Statement

HQT endeavors to achieve the accuracy and completeness of this manual. As for any inaccuracies and omissions that may possibly occur, the right to interpretation is reserved to Shenzhen HQT Science & Technology Co., Ltd.

The design or specification of this product is subject to be modified by Shenzhen HQT Science & Technology Co., Ltd. without prior notice.

It is prohibited to copy, transmit, excerpt and store in any retrieval system, or translated to any languages without written authorization of HQT.

Contents

Safety Matters

Please read these rules below. Nonobservance of the rules may cause danger or violation of law.

- The use of this radio must be in compliance with the regulations of the local government.

- Turn off the radio before you enter places of flammable or explosive environment.

- Do not replace or charge battery pack in places of flammable or explosive environment.

- Turn off the radio before you approach blast area and detonator area.

- Do not use the damaged antenna which may cause slight burn on the skin.

- Only qualified technician are allowed to maintain this two-way radio. Do not disassemble the radio by yourself.

- To avoid problems caused by electromagnetic interference or electromagnetic compatibility, please turn off the radio in places with "Raido Transmiting Equipment Prohibited" mark, such as hospitals or other health care places. When taking a plane, turn off the radio if required.

- In a car with air bag, do not place the radio within possibly involved area when the air bag expands.

- Do not expose the radio to direct sunlight or near heating devices for a long time.

- Keep the radio vertical and speak near the microphone during transmitting.

- Make sure that the antenna is 2.5 cm away from the body during transmitting if you carry the radio on your body.

Product Inspection

Thanks for using TH-8000 two-way radio. Before use, we recommend that:

First check the package for any signs of damage;
Carefully open the package and identify the items listed below;
If any items are missing or damaged during shipment, please contact your dealer.

Items

Radio TH-8000
Qty: 1

Antenna
Qty: 1

Li-poly Battery
Qty: 1

Charger
Qty: 1

Adapter
Qty: 1

Strap
Qty: 1

Belt Clip
Qty: 1

Warranty Card
Qty: 1

User Manual
Qty: 1

Certificate
Qty: 1

Note: Frequency is marked on the color circle at the bottom of the antenna.

Get Acquainted

Battery Information

Applicable battery Model

Please charge with HQT approved battery; using other batteries may burst and cause personal damage.

➥ Note:

1. Do not short-circuit the battery terminals or dispose the battery in fire. Never attempt to disassemble the battery pack.

2. Charge the battery in -0℃ ~45℃ temperature. Otherwise the battery may not be fully charged.

3. Turn off the radio equipped with battery before charge. Using the radio while charging may interfere with charging.

4. Do not pull/plug the adapter and the battery during charging to avoid interfering with the charging procedure.

5. When the battery power consumes quickly even if it is fully and correctly charged, that means the battery life is over and please replace with new battery.

6. Do not charge if the battery or radio is wet. Before charge you should dry it with cloth to avoid danger.

⚠ Warning:

Conductive metals such as jewelry, key or decorating lace may result in short circuit and a large quantity of heat when coming to contact with battery electrodes. Treat any battery carefully especially when placing it into pocket, wallet or other metal container.

Charging Operation

Please charge as follows:
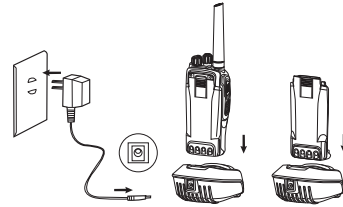
1. Turn off the radio. Plug the DC connector of the adapter into the DC jack on the rear of the charger.

2. Plug the AC connector of the adapter into an AC outlet.

3. After the charger is electrified, the LED glows red for 1 second and goes out, which means the charger is ready for normal battery charging. If the LED flashes red, it means the charger is not ready for battery charging.

4 Insert the battery or radio equipped with battery into the charger. Make sure the battery is in good connection with charger electrode.

5. LED glows red during normal charging and flashes red during trickle charging because of very low battery power. And after the battery power reaches a certain mount during trickle charge, the charger will automatically turn to normal charge mode.

6. The battery is fully charged when LED glows green. The charger will stop charging automatically.

Cautions in Charging

1. The battery is not charged in factory. Please charge the battery before initial use or after long-time storage.

2. Repeat charging 2 or 3 times and the battery will reach its best capacity. Please replace or charge the battery if the battery power is low.

3. When the battery power consumes quickly after normal charge, the battery life is finished. Please contact your dealer and buy new HQT approved battery.

Antenna Information

● The stubby antenna is suitable for short-distance communication; the thin and long antenna will provide the best communication effect. Also it is comfortable to carry on the waist.

● The communication range may be shortened in rainy days or in forest. Please make preparations for that.
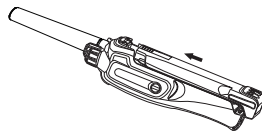
Attaching and Removing
Attaching and Removing the Battery
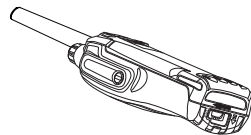Attaching the Battery
Match the two grooves of battery with corresponding guides on the back of the radio. And make sure the full contact and parallel between the battery and aluminum chassis.
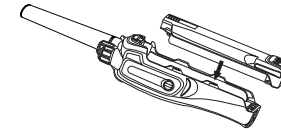
Then push the battery along the guide until the battery latch locks.
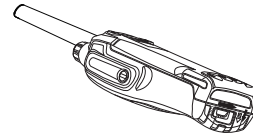
Push the battery latch towards the mark "LOCK" to lock it.

Removing the Battery
To remove the battery, first make sure the radio is turned off, then push the battery latch in the opposite direction of the mark "LOCK" to unlock it, and push the battery latch downwards.

Slide the battery away from the radio.
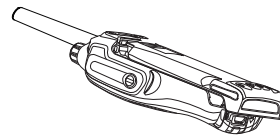
Attaching/Removing the Antenna

Attaching the Antenna: (Figure 1)
1. Insert the antenna into the connector on the top of radio by holding the antenna at its base.
2. Rotate the antenna clockwise to fasten it.

Removing the Antenna: (Figure 2)
Rotate the antenna counter clockwise until you can remove it.
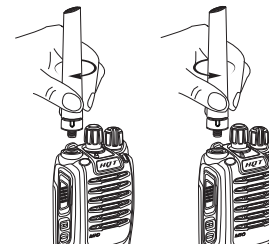
Attaching/Removing the Belt Clip

Attaching the Belt Clip: (Figure 3)

Align the two holes of the belt clip with those of the radio unit, and then fix the belt clip with two M2.5 ×4.5 screws.

Removing the Belt Clip: (Figure 4)

Loose the screws to remove the beltclip.

(Figure 1)   (Figure 2)   (Figure 3)   (Figure 4)

Attaching External Earphone/Microphone

Attaching External Earphone/Microphone

1.Use a coin to screw off the screw on the mic/earphone cover, and then remove the screw and the mic/earphone cover.(Figure 5)

2.Insert external mic/earphone.(Figure 6)

3.Use a coin to fix the external mic/earphone with the screw,and fasten it.(Figure 7)

(Figure 5)　　　　　(Figure 6)　　　　　(Figure 7)

Attaching Hand Strap
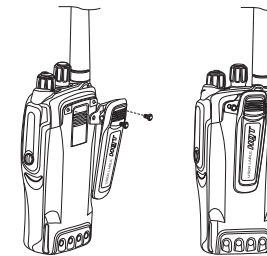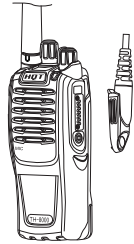
Thread the strap into the hole at the back of the radio and fasten it.
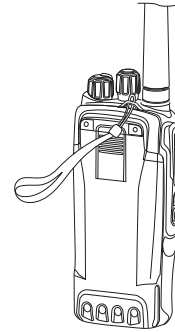
Radio Overview
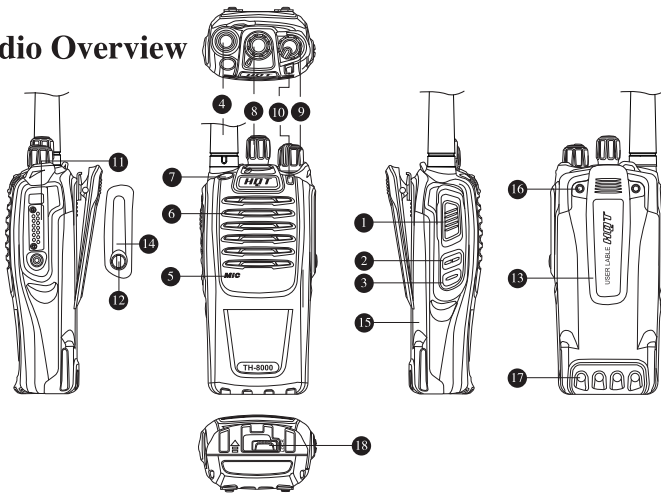
❶ PTT Key
Hold down [PTT] key to transmit and release it to receive.

❷ Programmable Key 1 (SK1 Key)
The press mode and its function can be programmed by PC software.

❸ Programmable Key 2 (SK2 Key)
The press mode and its function can be programmed by PC software.

❹ Attenna

❺ Mic

❻ Speaker

❼ Programmable Key (TK Key)
The press mode and its function can be programmed by PC software.

❽ Channel Selector
Choose the channel from CH01~CH16.

❾ Power Switch/ Volume Control
Rotate it clockwise until a click sounds to turn on the radio; rotate it further to adjust the volume.

Rotate it counter clockwise until a click sounds to turn off the radio.

❿ LED
LED glows red during transmitting, glows green during receiving, flashes red when the battery power is insufficient, flashes green during scanning, glows orange when the signal code is transmitted successfully and flashes orange when the signal is decoded successfully.

⓫ Mic/earphone Port
Used for connecting with earphone and programming cable.

⓬ Screw (for fixing mic/earphone)

⓭ Belt Clip

⓮ Mic/earphone Cover

⓯ Li-poly Battery

⓰ Screws (Belt Clip)

⓱ Charging Pieces

⓲ Battery Latch

Basic Operation

Turning on/off the Radio

Rotate the Power Switch/Volume Control knob clockwise until a "click" sounds to turn on the radio and you will hear channel annunciation.
Rotate the Power Switch/Volume Control knob counter clockwise until a "click" sounds to turn off the radio.
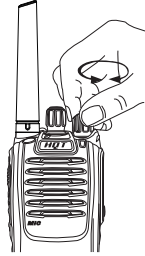
Adjusting Volume

You can adjust volume by rotating it after the radio is turned on.

Tip:You can listen to the background noise by pressing programmed "Squelch Off " key and adjust the volume via rotating Power Switch/Volume Control knob..

Selecting Channel

Rotate the channel seletor to choose channel from CH01~CH16, according to the number mark at the bottom of the channel selector. Also. you can select according to the channel annunciation.

Making Call

To make a call, hold down [PTT] key and speak into the microphone with normal voice. Please keep the microphone 2.5~5 cm away from your mouth.

Tip:

1. Hold down [PTT] key and the radio begin to transmit when LED glows red.
2. When LED flashes red, the battery power is insufficient. If the battery power is lower than normal battery power, the transmission is prohitted.

Receiving Call

Release [PTT] key to receive a call.

Low Battery Alert

When the battery power is insufficient, LED flashes red and the radio will alert user by the soud "Please charge battery" every minutes. The transmission will be prohibitted if the battery power is too low.

Programmable Key

The programmable keys can be programmed as functions below by PC software.

| Function	Deacription
None	No function.
Call 1/Call 2	Send corresponding signal encode (DTMF/2-Tone/5-Tone/QDC1200)
Emergency	Press the programmed Emergency key to activate this function.
Lone Worker	This is to ensure users' safety when they work alone. In Lone worker mode, the radio will send an alert once at the preset time. The user must press a key to reset the timer (the user is safe). Otherwise, the radio will automatically enter emergency mode. Press this key again to exit Lone Worker mode.
Man Down (optional)	When pressing the preprogrammed Man Down key, the radio enters Man Down mode. And the radio will automatically enter emergency mode if it is horizontally or inversely positioned after the preset time elapses. The emergency alert can be disabled only by placing the radio in the vertical position. Press this key again to exit Man Down mode.
Monitor	Press the programmed Monitor key to activate CTCSS/CDCSS, 2-tone, 5-tone or other optional signalling.Press the key again to return to normal operation.
Monitor Momentary	Hold down the programmed Monitor Momentary key to activate CTCSS/CDCSS,2-tone,5-tone,or other optional signalling. Release the key to return to normal operation.
Squelch Off	Press the programmed Squelch Off key to hear background noise.Press the key again to return to normal operation.
Squelch Off Momentary	Hold down the programmed Squelch Off Momentary key to hear background noise.Release the key to return to normal operation.
Adjust Squelch Level	Press the key once and the squelch is set one level higher. (0~9 circle menu)

Scan	Press the preprogrammed Scan key. Scan starting from the current channel and ascends through the channel numbers in scan list. The LED flashes green in scan mode and glows green when a signal is received on a channel and the signaling matches. Press the key again to exit.
Voice Encryption	Press the preprogrammed Encryption key to avoid a third party on the channel listening to your conversation; press this key again to exit.
Whisper	When pressing the preprogrammed Whisper key, the receiver would be clearly heard even if you speak at a very low voice. Press it again to exit.
Talkaround	Turn Talk Around ON and OFF by pressing the programmed key.The radio will transmit on the RX frequency when Talk Around is on, and the CTCSS/CDCSS encode is the same with CTCSS/CDCSS decode. You may occasionally experience an interruption in service (due to power failure, etc.). Talk Around allows you to communicate directly with other transceivers, without the use of a repeater.
VOX	Press the preprogrammed VOX key to activate the VOX function. You can transmit without holding down [PTT]. Press this key again to exit.
Noise Channel Temporary Delete	Press the preprogrammed key to temporarily delete a channel being scanned. To add the deleted channel back to the scan list, you can simply quit scanning to turn off the radio.
Noise Channel Delete	Press the preprogrammed key to permanently delete a channel being scanned from scan list. You can add the deleted channel to the scan list by PC programming.
Adjust Power	Press the key once and the power is set one level higher. (Low and High circle).
Battery Power Indicator	Press the preprogrammed Battery Power Indicator key, and the transceiver will report the battery status by audible indication ("Full Power", "Enough Power", "Low Power" and "Please charge battery").

Advanced Operation

Wired Clone

1. Connect host radio and sub radio with clone cable.

2. Hold down [SK2] key on host radio, then turn on the host radio. The indicator flashes red twice, which means the host radio is ready for cloning. Turn on sub radio as usual.

3. Press [PTT] key on host radio, clone function of sub radio is turned on if LED flashes green twice. Press [PTT] key on host radio again, clone function of sub radio is turned off if LED flashes red twice. Skip Step 3 is to forbid the clone function of sub radio.

4. Press [SK2] key to clone. The LED on the host radio flashes red and the LED on the sub radio flashes green. LED on sub radio goes out when the cloning is finished. If LED on host radio glows green, the clone is failed.

5. Replace with other "sub radio", and repeat step2~6 to continue cloning.

   Tip: PC programming can prohibit the clone function of host radio.

Clone Cable
(optional)

(host radio)　　　　(sub radio)
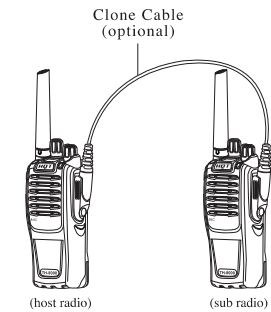
Signaling

The radio supports CTCSS/CDCSS/2-Tone/5-Tone/QDC1200/DTMF. You can set the parameters by PC programming or contact your local delaer.

Optional Accessories

Optional accessories are available according to your requirements. All HQT accessories with good quality will ensure you clear communication and outstanding performance.
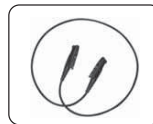
Antenna(400~430MHz)　　Antenna(440~470MHz)　　Earphone: ESN01　　Earset: EHN01

Earphone (Air Tube):EAN01　　Clone Cable: CC02　　Programming Cable: PR03　　Remote Speaker: HN01

Care and Maintenance

Question and Answer

Problem	Solution
No power(unable to turn on)	• The battery power may be insufficient. Please charge or change the battery.
The battery power consumes quickly after charge.	• The battery life is finished. Please change for new battery.
Communication with other members can not be carried out.	• Please check if your frequency and CTCSS/CDCSS are the same with other members in your group. • Maybe you are too far away from other members. Please check if you are within communication range.
Voices of non-group members are heard on the channel.	• Please change CTCSS/CDCSS, and change those of your members, too.
There is no sound during transmiting or quite low sound received by the partner.	• Please check if the volume is turned to its highest level. • Ask your local dealer to check if the MIC is in good condition.
The noise is always heard on the channel.	• You may be too far away from other members and can not receive. Please get close to your members and try again.

Maintenance

Your radio is a product with excellent design and technology, please treat it with care.These recommendations can help you effectively use the radio.

- Keep the radio dry. Rain, moisture or other liquid may cause damage to the radio.
- Do not throw, hit or vibrate the radio. Brutal treatment may damage the inner IC or other elements.
- Do not hold the radio by the antenna or external MIC.
- Please use the original or standard antenna. Unapproved antenna or modifications of accessories may cause damage to the radio.

- Use lint-free cloth to clean the dust or stains on the radio.
- Cover the earphone/microphone pad when not using the radio.
- Use mild detergent (not corrosive chemicals) and cloth to clear the casing, control knob and keyboard after long-time use.

Note:
All recommendations above also refer to your battery, charger and accessories. If any of them works abnormally, please send it to nearest service center.

Service and Support

Shenzhen HQT Science & Technology Co., Ltd. provides long-time support for its products, including repair and supply of the radio and its parts.

Service Commitment

1. HQT two-way radio body has an 18-month guarantee; accessories (battery, charge adapter, charger and antenna) 6 months; earphone 3 months.

2. Replacement is available subject to the presentation of fully-filled warranty card or original purchasing invoice in case that the radio cannot work normally due to non-personal cause within the guarantee.

3. Replacement and repair is available subject to the presentation of fully-filled warranty card or original purchasing invoice in case that the radio or accessories cannot work normally within 30 days from the purchase date.

4. The repaired part has its own guaranty or 90-day guaranty from the repair date. The longer one is valid.

Warranty

1. The guaranty is only valid under normal use. And guaranty is unavailable under such conditions: dissembling or modifications, damages caused by outside force, water let-in, fire burning, and usage of unapproved accessories or antenna, not according to the instruction manual and so on.

2. The guaranty is in effect from the purchase date on the invoice.

3. Free repair is unavailable if the HQT mark or Serial Number mark is torn off.

4. Only the fully-filled warranty card and original purchasing invoice with HQT's seal or dealer's seal affixed is valid for identifying the guarantee.

Cautions

1. Read the user manual before use.

2. Do not use the radio with damaged antenna. Use the radio only with standard antenna.

3. Turn off the radio in potential dangerous environment.

4. Avoid the contact between the battery and the metal, oily or corrosive objects.

5. Do not dip the radio or battery into water or throw them in fire.

6. Use the radio only with standard battery, adapter, charger and earphone.

Terms of Warranty

1. HQT two-way radio body has an 18-month guarantee; accessories (battery, adapter, charger and antenna) 6 months; earphone 3 months.

2. Only the fully-filled warranty card or original purchasing invoice with HQT's seal or dealer's seal affixed is valid for identifying the guarantee. (The invoice should give clear indication of accessories, radio, serial-number, purchasing date, purchasing price and other items.)

3. If the radio body went wrong within the guarantee, it should be ensured to work normally over 30 days after the repair.

4. Replacement and repair is available subject to the presentation of fully-filled warranty card or original purchasing invoice in case that the radio cannot work normally as the instruction says within 30 days from the purchase date. (Note that there must not be visible abrasion on radio body and accessories.)

5. Replacement of the same model is available subject to the presentation of 3-time repair receipt in case that the radio body still work abnormally after three-time-or-above repairs within the guarantee.

6. Repair of accessories (battery, adapter, charger and antenna) is available to the presentation of both fully-filled warranty card and original purchasing invoice.

7. The cost of materials and repair are covered during the time of guarantee.

8. Guarantee is unavailable in case that the HQT mark or the serial-number mark is torn off.
9. Guarantee is unavailable in cases below:
   1) Beyond the warranty period;
   2) Defects or damages under abnormal use;
   3) Defects or damages because of misoperation, accident, water penetration and carelessness;
   4) Defects or damages because of incorrect testing, operation, repair, installation, reconfiguration or adjustment;
   5) Defects or damages to antenna because of non-material or non-processing problems;
   6) Defects or damages because of unauthorized repair and disassembling;
   7) Product that the serial-number mark is torn off or unable to identify;
   8) Product with unclear purchasing date;
   9) Battery under such conditions:
   a. Any damages or unsealing to the battery pack;
   b. Defects or damages to battery because of charging with improper equipment or use beyond regulated maintain condition;
   10) Abrasion under normal use.

Note:The warranty ordinance, which is in accord with Chinese warranty regulations, will be modified properly according to marketing. If modified, the warranty ordinance is subject to our latest updating notice issued by HQT service center.

Appendix
Appendix I: Specification

Item	TH-8000
Frequency Range	400~470MHz
Channel Capacity	16
Channel Spacing	12.5kHz
Frequency Stability	± 2.5ppm
Operating Temperature ℃	−25℃+55℃
Antenna Impedance	50Ω
Operating Voltage	7.4V

Item	TH-8000
RF Output Power	4W/1W
Audio Distortion	≤5%
Sensitivity	0.22uV／0.25uV
Max Audio Output Power	1.5W
Dimension (H×W×D)	120×55×34mm
Weight (with antenna & battery)	300g
Li-poly Battery	2100mAh

Appendix II: Technical Terms

Name	Description
Standby	The radio is in receiving mode when no key is operated.
CTCSS /CDCSS	CTCSS/CDCSS is a kind of signaling attached to audio signal. If CTCSS/CDCSS of the transmitter is the same as that of the receiver, the speaker is unmuted and the sound comes out. Otherwise the sound can not come out.
Battery Save	If there is no signal being received or no operation being conducted for some time, the radio will enter into power saving mode. In this mode, the radio will stop working at regular intervals to save power.
TOT	The time out timer is used to prevent someone from using the same channel for a long time and meanwhile avoid damage to the radio due to long-time transmission.
Squelch	This is to solve the problem of talk quality and noise. Squelch is to suppress the background noise and keep the radio quiet when no signal is received. It can mute the radio when no signal is received. Turn on the Squelch, and you will hear the sound from the speaker.

Squelch On	Under such condition, the radio is receiving all the audio signals (even if the signal is noise signal.)
Monitor	This function enables you to hear all the calls even with unmatched CTCSS/CDCSS.
Scan	A way to hear conversations on all channels.
BCL	When this channel is in use by other users, your radio is prohibited to transmit on the channel to avoid interference.
VOX	VOX enables user to speak into the radio without pressing [PTT] key and the sound is transmitted.
Wired Clone	This is a way to clone parameters from one radio to another one.
Revert Channel	Revert channel refers to the current working channel when pressing [PTT] key during scan.

Safetytraining Information

Your radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "ccupational 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 "eneral Population"in an uncontrolled environment.

This radio has been tested and complies with the FCC RF exposure limits for "ccupational Use Only"In addition, your Shenzhen HQT Science&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:
1. FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to

Radio Frequency Electromagnetic Fields.
2. 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.
3. American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially
Hazardous Electromagnetic Fields– RF and Microwave.
4. The following accessories are authorized for use with this product. Use of accessories other than those (listed in the instruction) specified may result in RFexposure levels exceed the FCC requirements for wireless RF exposure.

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

1. DO NOT operate the radio without a proper antenna attached, as this may damaged the radio and may also cause you to exceed FCC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or antenna specifically authorized by the manufacturer for use with this radio.
2. DO NOT transmits for more than 50% of total radio use time ("50%duty cycle"). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the "TX indicator" lights red. You can cause the radio to transmit by pressing the "PTT" switch.
3. ALWAYS keep the antenna at least 2.5 cm (1 inch) away from the body when transmitting and only use the HYT belt-clip which is listed in instructions when attaching the radio to your belt, etc., to ensure FCC RF exposure compliance requirements are not exceeded. To provide the recipients of your transmission the best sound quality, hold the antenna at least 5 cm (2 inches) from your mouth, and slightly off to one side.

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, your Shenzhen HQT Science&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.