

SAFETY TRAINING INFORMATION



Your radio generates 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 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 that your exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines:

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.

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.

ALWAYS keep the antenna at least 2.5 cm (1 inch) away from the body when transmitting and only use the TYT 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 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.

The Measured Head SAR (2.5 cm)= **2.676 W/Kg**; Body SAR= **3.028 W/ Kg**

Handheld two way radio

Model:LS-450

FCC ID:ZT8LS-450

To Customers

Thank you very much for using **TYT** two way radios. The function and quality of this easy-to-use radio will be satisfactory, and bring you a stable, reliable, clear and efficient communications service. It will meet your requirement by the compact size and reasonable price.

LS-450, a full-frequency-range professional two way radio, adopts the new humanism design principle, making it smart in shape, advanced in function and flexible in operation. By using the programming keys together with Chinese/English voice prompt function, you will be able to know and switch the radio working condition; this is its outstanding flexibility.

Whisper function, with this function you don't need to speak loudly to the speaker, your partner can still hear you clearly, you can also set voice scrambler according to your specific need.

More fantastic functions, LS-450 will take you to enjoy them.

Main Functions

Compact and easy to operate

Chinese/English voice prompt

Voice scrambler

Emergency alert

Whisper function

CTCSS/DCS

Wide/narrow bandwidth selectable
(25KHz / 12.5KHz)

Full frequency range design,
wide frequency coverage

DTMF setting (PTT ID/ ANI)

Battery capacity management

Power protection function

Setting functions of programmable keys

TOT

Wire clone function

PC programmable

<http://www.tyt888.com>



CONTENTS

- 02 Using tips
- 03 Unpacking and checking equipments
- 05 Battery
- 08 Antenna
- 09 Installing and uninstalling of supplied accessories
- 14 Getting familiar
- 16 Basic operations
- 18 Advanced operations
- 33 Optional accessories
- 34 Trouble shooting guide
- 35 Maintaining
- 36 Specification
- 38 Frequency list
- 39 Glossary list
- 41 Service and support
- 43 Guarantees

User's Manual

Using tips Unpacking and checking equipments

<http://www.tyt888.com>

Battery Antenna

Installing and Uninstalling of supplied accessories

<http://www.tyt888.com>

Battery

Please use **TYT** designated battery; other batteries can cause explosion and hurt people.

Notice: 1. Please do not short-circuit the battery terminals or expose of in fire. Do not dissemble the battery by yourself.

2. Charge the battery between temperature 0℃ and 45℃. The battery can not be fully charged beyond this temperature range.

3. Please turn off the power when you charge the radio with battery. Transmit with the radio in charge will affect its correct charge.

4. Do not unplug the power or battery when it is charged.

5. The operating time becomes short even the battery is fully charged, the battery is exhausted, please replace battery.

6. Please do not charge when the battery or the radio is wet. Please dry it with a cloth before charging to avoid any danger.

Warning: When the conductive metals such as jewelry, key or decorative chains touch the battery terminals, all the batteries are likely to cause damage to the items or personal injury. These conductive metals may form a short circuit and generates much heat. Do deal with any battery carefully, especially when put it into pocket, wallet or other metallic containers.

Charging operations:

Charge the battery as follows:

- 1) Power off
- 2) Insert the DC adaptor plug in the DC jack on the back of charger
- 3) Insert the AC adaptor plug in the AC power output socket
- 4) Insert the battery or radio with battery vertically in a charger, to check whether the battery and charger terminal is in normal contact.
- 5) Make sure the battery and charger terminal is in good contact, when the charging indicator light turns red, it starts charging.

Note: 1. Before inserting the battery, it is abnormal if the charging indicator blinks
2. To change the battery for charging, please wait until the indicator is stable.
3. When the battery is well inserted, the indicator turns red and the charging is on the process, if the indicator blinks, then the battery is damaged or the temperature is too high or too low.

Self-testing

When the charger powers up, if the orange indicator lights for one second and then goes out, entering the standby mode, the charger passes the self-testing and can charge the battery. If the orange indicator blinks constantly, the charger fails to pass the self-testing, and can not charge the battery.

Normal charging indicator

When charging the battery, if the indicator light turns red, the battery is on the normal charge; if the red indicator light blinks constantly, the battery capacity is too low, and is on the trickling charge, and after the battery capacity reaches a certain level, it will switch to the normal charge.

Note: Trickle charge does not exceed 30 minutes, if the red indicator light blinks after 30 minutes, it means the charger can not charge battery, please check whether the battery or the charger has been damaged.

Charging precautions:

- 1) The battery is not fully charged in factory, please charge before using it.
- 2) Charge and discharge the battery for two or three times, the battery capacity will reach the best condition. When the battery capacity is low, please charge or change the battery.
- 3) The battery lasts shortly even if it is fully charged, the battery is exhausted, please contact your local dealer to buy a new authentic TYT battery.

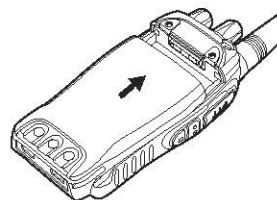
Antenna

- Short thick antenna is suitable for short-distance communication, while long thin antenna will offer you a better communication effect. Wearing the radio in your waist will not make you feel uncomfortable.
- The communication range will be shortened in bad weather or among the trees, please prepare in advance to avoid any inconvenience of your communication and security.

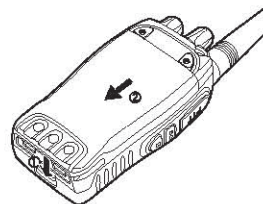
Installing and uninstalling of the accessories

Installing/Removing the battery

- 1) Align the two grooves of battery and the guide rail on the back of aluminum shell, ensuring full contact and in parallel, then push the battery up to the radio base along the rail on the back of aluminum shell, until the battery latch locks up. (picture 1)
- 2) To remove the battery, please make sure the radio is closed, push the battery latch down, and make sure the radio and battery is on the releasing state, and then push the battery out from the radio. (picture 2)



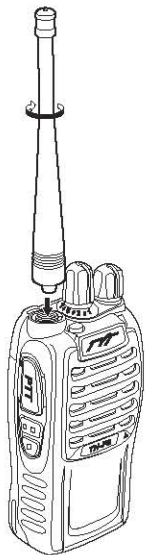
(picture 1)



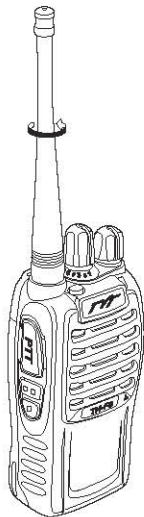
(picture 2)

Installing and removing the antenna

- 1) Align the threaded end of antenna and the threaded hole at the top of radio, rotate the antenna clockwise until it is tight. (picture 3)
- 2) To remove the antenna, rotate it counter-clockwise until the antenna spirals out. (picture 4)



(picture 3)



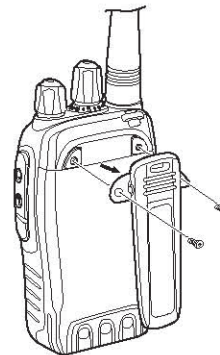
(picture 4)

Installing/removing the belt clip

- 1) Align the two holes of belt clip and the two holes of the radio, fix them with the supplied M2.5x5 screw. (picture 5)
- 2) Loosen the screw set to remove the belt clip (picture 6)



(picture 5)



(picture 6)