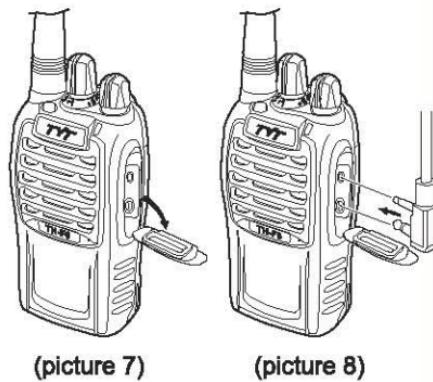


Installing external headset

Reveal (do not remove) the mic/speaker jack cover (picture 7), insert the headset into the mic/speaker jack (picture 8).

Note: Using the external headset will affect the water-tightness performance of radio.



Installing the strap

Wear the strap through the hole on the top right of the radio (picture 9).



User's Manual

Getting familiar
Basic operations
Advanced operations

Getting familiar

Channel-selecting knob

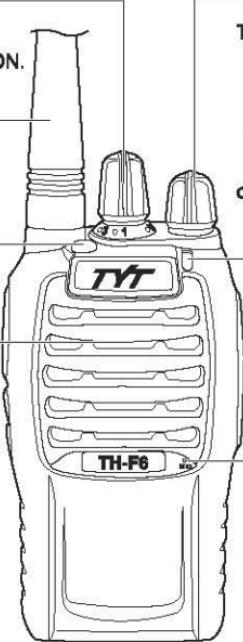
Select the working channel, channel annunciation when voice prompt is ON.

Antenna

with threaded head, for transmitting and receiving

Top key
programmable key

Speaker
sound output



Power/volume knob

To power on/off and adjust the volume. Rotate it clockwise, a "click" sound is heard and a "Du" tone prompts the radio power on, continue to rotate it to adjust the volume. Rotate it counter-clockwise until a "click" sound is heard, it powers off.

LED indicator light

The indicator light turns red when transmit, turns green when receive. It blinks red when the battery capacity is low, and blinks green when scanning.

Microphone
sound input

Strap hole

For wearing the strap

PTT switch

Press it to transmit, release it to receive

Middle key:

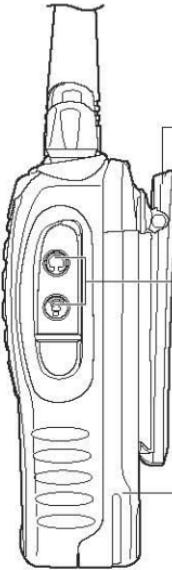
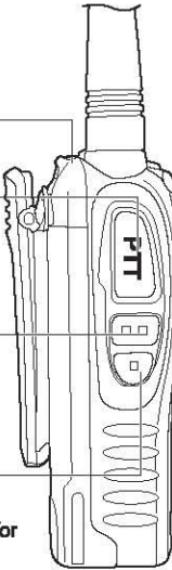
programmable key

The factory default setting for it is battery capacity management key

Bottom key:

programmable key

The factory default setting for it is call management key.



Belt clip

You can clip the radio in the belt and is easy to take.

Mic/speaker jack/
programming port

Used to connect headset or external programming cable.

Programmable via PC
programming software.

Li-ion battery
For charging the radio.

Basic operations

Power on/off

Rotate the power/volume knob clockwise, a "click" sound is heard and a "Du" tone sounds, it powers on.

Rotate the power/volume knob counter-clockwise, a "click" tone sounds and it powers off.



Adjusting the volume

Rotate the power/volume knob clockwise, when it powers on, continue to rotate the knob to adjust the volume.

Note: You can monitor the background sound and adjust the volume.



Selecting channels

Rotate the channel-selecting knob directly to select your desired channel from 1 to 16.

Please refer to the channel numbers or symbols at the bottom of the knob to select the channel, or operate based on the voice annunciation.



Transmitting

To transmit, please press the [PTT] switch and speak to the microphone in a normal voice.

Keep the mouth about 5cm away from microphone

Notice: 1. Press [PTT] switch, the indicator lights red, it transmits.

2. If the red indicator blinks, it indicates low power, and the radio may not be able to transmit.

Receiving

Release the [PTT] switch to receive.

You can hear the voice when there is a signal in the current channel. If the signal is weak, and the squelch level of your radio is high, you may not be able to receive the signal.

Advanced operations

Advance operations should be done via the PC programming software, or by your local dealer.

PC programming

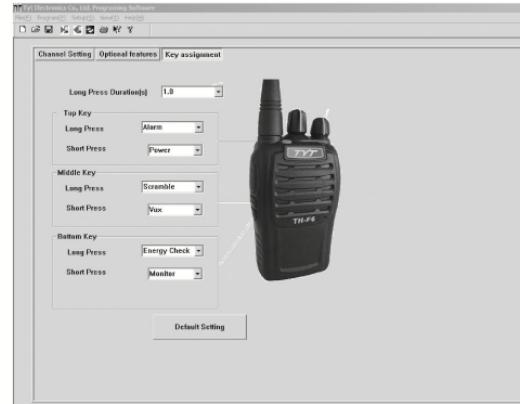
- 1) Get access to TYT Electronics Co. website: www.tyt888.com, and download the dedicated software for LS-450 (You can also contact local dealer for programming)
- 2) Keep the radio power off, connect the radio with computer via programming cable.
- 3) Open the software and edit in it, then turn on the radio, click "  " to write the data into the radio.
- 4) You can set all the parameters by the instruction of the "HELP" at the top of software.



Setting functions of the programmable keys

Users can define the functions of the programmable keys via LS-450 software

The factory default setting as follows:



As shown in the above chart, the long press defaults as 2 seconds, long press the [top key] for emergency alert, short press the [top key] for whisper function; long press the [middle key] for high/low power adjusting, short press the [middle key] for battery capacity prompt function; long press the [bottom key] for voice scrambler, short press the [bottom key] for continuous monitoring. You can program the functions of [top key], [middle key] and [bottom key] via programming software.

Definable functions of the keys include: OFF/Continuous monitor/Temporary monitor/Voice scrambler/Emergency alert/Energy check /Whisper function/

Energy check

Our user can select this function through the menu "Key assignment" in the software for LS-450

The factory default setting as below:

Short press [middle key] to realize the function. Press [middle key], the radio will announce the current battery capacity: High power, mid power, and low power, please charge it.

The corresponding key for this function can be changed through the menu "Key assignment" in the software according to your different needs.

High/low power adjustable

Our user can select power for different channels respectively according to the working environment of the radio, to get the best battery saving condition. When it works in low power, the transmit current becomes low, and will prolong the working time of battery. High power is 5W, and low power is 1W.

1) You can select the desired high/low power of each channel through the menu "Power" in the software of LS-450

2) The factory default setting of this function is long pressing the [mid key] to adjust high/low power of the channel. Long press this key when the radio in standby, the voice prompt high power*/low power* will be heard, which means high/low power is adjusted.

Monitor

The factory default setting of this operation is short pressing the [bottom key]. The corresponding function key can be changed among [top key], [middle key] and [bottom key] through the menu "Key assignment" in LS-450 software. Short press the [bottom key], you can monitor the weak signal, and when there is no signal, you can adjust the volume by rotating the power/volume knob. Press [bottom key] again to stop monitoring.

Voice scrambler

The factory default setting of this function is long pressing the [bottom key]. When this function turns on, the TX voice will be sent out with scrambler, other radio can only receive the signal when its scrambler matches. If the scrambler doesn't match, the voice will be distorted, and can not be heard clearly.

- 1) Long press the [bottom key], the radio will announce "scrambler on", long press [bottom key] again, it will announce "scrambler off".
- 2) The corresponding function key can be changed through the menu "Key assignment" of the software for LS-450
- 3) You can turn scrambler on/off through the menu "Scramble" of the "Optional features" in the software for LS-450, tick it to turn it on, contrariwise, turn it off.

Whisper function

The factory default setting of this function is short pressing the [top key]. With whisper function turning on, you can speak in a low voice, other radios can still hear you clearly.

- 1) Short press the [top key], the radio will announce "Whisper on", short press [top key] again, the radio will announce "whisper off".
- 2) The corresponding function key can be changed through the menu "Key assignment" of the software for LS-450
- 3) You can turn Whisper on/off through the menu "Whisper function" of the "Optional features" in the software for LS-450

Whisper level is selective from 1 to 3. Whisper level will affect receiving volume based on the same transmitting volume. Eg: with the same transmitting volume, whisper level 1 will get the lowest receiving volume, level 3 will get the highest receiving volume. (The default setting is level 2). Tick "Whisper function enable" to turn it on, contrariwise, turns it off.

(The default setting is OFF)

Note: When whisper function turns on, much background noise will also be received, we suggest you turn off whisper function in normal use.

Emergency alert function

The factory default setting of this function is long pressing the [top key]. When emergency alert turns on, press [top key], the radio rings and the indicator turns red, emergency alarm signal will be sent out to other radios in the same channel, they will emit emergency alarm call when receiving the signal. After the radio sends out the alert, it will emit the alarm call.

- 1) Press [PTT] switch, the radio stop sending out the emergency alert and the radio backs to normal working mode. Other radios will stop receiving the emergency alert, and back to transmitting mode when press [PTT] switch.
- 2) When the radio receives response signals from other radios, press [PTT] switch to transmit, and the emergency alert will be stopped automatically. The other radios can only stop emergency alert and receive signals after pressing [PTT] switch.
- 3) The radio sending out emergency alert can only receive other radios' response signal after pressing [PTT] switch, otherwise, the radio can not talk with other radios, and the emergency alert will be sent out every five seconds automatically.
- 4) The factory default setting of emergency alert is ON, and can be turned ON/OFF through the menu "Alarm Function Enable" of the "Optional features" in the software for LS-450. Tick it to turn it ON, contrariwise, turn it off.

Other programmable functions operation

Voice prompt

The default setting is Chinese voice prompt, and you will know the working condition of the radio with voice prompt.

- 1) The voice prompt can be selected "Chinese/English/Tone/OFF" through the menu "Voice/Beep Tone" of the "Optional Features" in the software for TH-F6. When choosing "OFF", voice prompt turns off.
- 2) **Channel annunciation:** You will get to know the working conditions of current channel which is being operated.
- 3) **Low battery alert:** The radio will alert you when the battery capacity reaches the minimum operating voltage.
- 4) **Scanning prompt:** when the current channel is set as the scan channel, it will indicate you by voice prompt.

Low battery prompt

The default setting is Chinese voice prompt. When transmitting or standby, if the battery capacity reaches the pre-determined low level, the indicator light blinks red, and a low battery alert tone will be heard.

The indicating tone can be "Please change the battery/Du/Please charge the battery". When the low battery alert occurs, it can not transmit, please change or charge the battery. You can select the desired language through the menu "Voice/Beep Tone" of the "Optional Features" in the software for LS-450

Battery save function

The radio will save battery when there is not any operation or signal. Battery save function will automatically turn on when the current channel has no signal or operation for 5 seconds. And it will turn off when there is signal or operation.

You can turn on/off the battery save function through the menu "Save energy" of the "Optional Features" in the software.

DTMF signaling setting (PTT ID/ANI)

As per the transmitting and receiving request, you can pre-input the DTMF code in the menu "PTT ID" of the "Optional Features" in the software (8 digits in maximum, they are: 1234567890ABCD*#). DTMF code can be sent out in the pre-set state, either when the transmit starts or ends. The menu "Start Enable" and "End Enable" do not tick in the default setting.

You can edit the DTMF signaling through the menu "DTMF" of the "Optional Features" in the software.

1) **DTMF speed (digit/sec):** can be set from 4 to 15, the default setting is: 6

2) **First digit time (ms):** can be set from 0 to 1000ms, the default setting is 0ms.

3) **First digit delay time (ms):** can be set from 100 to 1000ms, the default setting is: 100ms.

Lock detect

The default setting is ON. You can turn it on/off through the menu "Lock Detect" of the "Optional Features" in the software for LS-450

If it turns on, when the PLL frequency goes beyond the range, or can not work normally, a "Du" tone will be heard continually. If it turns off, the radio can not detect the PLL loss lock.

Busy channel lock

When this function turns on, it can prevent interfering other radios that are working in the same channel.

The default setting is OFF. If the BCL function of the selected channel turns on by the software or by the local dealer, when the current channel is being used by other radios, it will not transmit when you press the PTT switch, and a "Du" tone will sound. Release PTT switch to stop the "Du" tone. When the channel is not used, press PTT switch to transmit.