



User Manual

T60 Portable PoC Two-way Radio



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Notice

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Safety Precaution

- ◆ The two-way radio can be repaired only by professional technicians. Users should not disassemble it by themselves.
- ◆ To avoid problems caused by electromagnetic interference or electromagnetic incompatibility, please turn off the radio in a place where you are instructed to do so, for example, a hospital, a health care center and an aircraft.
- ◆ In a vehicle with an air bag, please keep the radio out of the expansion area of the air bag.
- ◆ Do not replace or charge the battery in flammable or explosive environment.
- ◆ Please turn off the radio near a blast zone or thunder zone.
- ◆ Do not use the radio if the antenna is damaged, otherwise slight burning might occur when the antenna contacts the skin.
- ◆ Make sure the antenna is installed properly before using the radio. A radio not installed with an antenna is liable to damage while transmitting signals.
- ◆ When the radio is transmitting, keep it vertical and keep the microphone 5 cm away from your mouth.
- ◆ Keep the radio at least 2.5 cm away from your body when the radio is transmitting.

Battery

- ◆ Contact of conductive substance on human body, for example, jewelry, a key and a bead necklace, with an exposed battery terminal may result in damage to personal belongings and injury like burn caused by a high temperature after the battery is short circuited with such substance. Please handle a charged battery carefully, especially when you put it in a pocket, wallet or metallic container. To reduce risk of injury, avoid exposure to fire, disassembly or pressing.
- ◆ The ambient temperature of a power supply unit or a voltage transformer to the charger should not be higher than 40°C (104°F).
- ◆ Turn off the radio before charging it. The battery cannot be charged properly if you use the radio while charging it.
- ◆ Connect the radio to the charger only when the battery needs to be charged. Continuous charging will shorten battery life. Do not use the charger as a holder.
- ◆ For the best battery performance, you are suggested to replace the battery after using it for one year.

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1. Using the Battery

1.1 Notice for Charging

The radio is delivered uncharged. Before using the radio for the first time, please charge the battery. If the battery is not used for a long time or run out, please charge it before using it again. It is necessary to charge and discharge the battery for two or three times to attain the best performance of it. When you see a warning of low voltage on the radio, please charge or replace the battery.

Notes:

- ◆ Do not short out battery terminals or discard the battery in fire.
- ◆ When charging the battery installed on the radio, please power off the radio so that the battery can be charged fully.
- ◆ Please take the radio and battery out of the charger when not charging the battery. Continuous charging will shorten battery life.

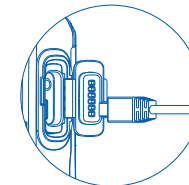
- ◆ Stop charging the battery if it is fully charged, otherwise its cycles of charging and discharging will be reduced.
- ◆ Try to keep the battery indoors under a temperature of about 25°C. The battery is liable to fail after being kept in a low temperature of below -10°C for a long time.
- ◆ Under a temperature above 35°C or below -10°C, the discharge capacity of the battery might reduce. This is decided by the physical characteristics of lithium battery.

1.2 Charging

You can charge the battery using one of the following methods.

(1) Charging via Micro USB Port on Right Side

- Open the cover of external interfaces on the right side of the radio to find the Micro USB port.
- Connect the port using the programming/charging cable to charge the



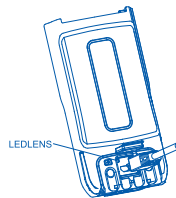
radio.

(2) Charging via Micro USB port on Bottom Side

- a. Uninstall the battery.
- b. Connect the radio to the Micro USB port at the bottom of the radio using the data/charging cable to charge the radio. Green LED indicator light will be on beside the port.

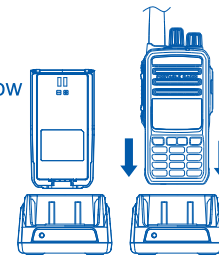
(3) Charging via Desktop Charger (Optional)

- a. Place the desktop charger on a horizontal surface, and keep off flammables.
- b. Plug the power adapter of the charger into an AC power socket, and connect the power adapter cable to the jack at the back of the charger. Green LED indicator light will be on.
- c. Put the radio (with the battery installed) into the charger to start charging. Red LED indicator light



will be on. Ensure good contact between the battery and the charging terminals.

- d. After charging for about 6 hours, red light will be off and green light on. Now the battery is fully charged. For optimized battery performance, continue charging for 1 to 2 hours, and then take out the radio.
- e. Unplug the power adapter.



Note:

- ◆ The radio is delivered uncharged. Before using the radio for the first time, please charge the battery.
- ◆ For a new battery or a battery that has been stored for more than 2 months, it is necessary to charge it for several times to achieve normal battery capacity. Please charge the battery every three months at least.

- ◆ To maintain service life and performance of the battery, do not charge a battery that has been fully charged or before a warning of low voltage is shown on the radio. After charging, take the battery out of the charger.
- ◆ When you see a warning of low voltage, please charge the battery before using it again. To maintain the service life and performance of the battery, do not power on the radio intentionally.

2. Using the Accessories

2.1 Installing/Uninstalling the Battery

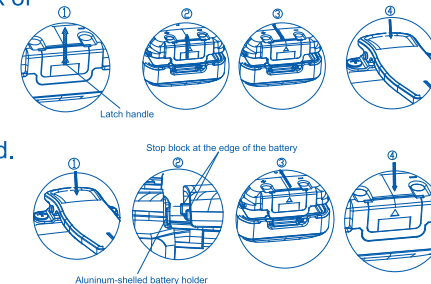
◆ Installing the Battery

- (1) Press the upper part of the belt clip gently so that it goes up. (Figure ①)

- (2) Align the battery with the battery holder at the back of the radio, and then insert the battery. (Figure ②)

- (3) Push the battery in the direction indicated until the latch is in position. (Figure ③)

- (4) Press the upper part of the battery until it is latched. (Figure ④)



◆ Uninstalling the Battery

- (1) Power off the radio.
- (2) Slide the latch in the indicated direction, and the battery will go up. (Figures ① and ②)

(3) Slice the battery in the indicated direction to take it down. (Figure ③) If the belt clip is installed, please first press the upper part of it so that it goes up.

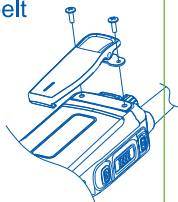
Note:

- ◆ Do not short out battery terminals or discard the battery in fire.
- ◆ Do not disassemble the battery casing.

2.2 Installing/Uninstalling the Antenna

To install the antenna, plug the threaded end into the antenna interface, and rotate the antenna clockwise until it is tight.

To uninstall the antenna, rotate it counterclockwise.

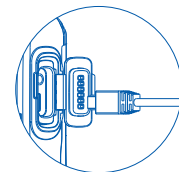


2.3 Installing/Uninstalling Belt Clip

To install the belt clip, align the two screw holes on the belt clip with the two at the back of the radio, and fasten the clip using screws. To uninstall the belt clip, loosen the screws, and then take off the belt clip.

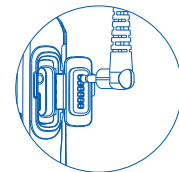
2.4 Connecting Programming/Charging Cable

Open the cover of external interfaces on the right side of the radio, find the Micro USB port, connect the port to a PC using the programming/charging cable, and write/read parameters using the attached programming software.

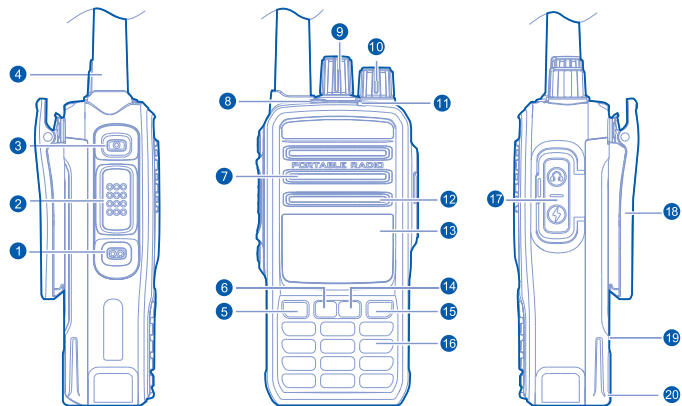


2.5 Connecting an Earphone (Optional)

To use an earphone, open the earphone cover at the upper part of the right side of the radio, and then plug the earphone connector into the jack.



3. Appearance



SN	Item	SN	Item
1	Side Key 1	11	LED Indicator
2	PTT Key	12	Microphone
3	Side Key 2	13	Screen
4	Antenna	14	Right Navigation Key
5	Left Menu Key	15	Right Menu Key
6	Left Navigation Key	16	Keypad
7	Speaker	17	External Interfaces Open the cover to find the earphone interface and Micro USB port.
8	Emergency Alarm Key	18	Belt Clip
9	Channel Knob	19	Battery
10	Power/Volume Knob When the radio is off, rotate it clockwise to power on the radio; when the radio is on, rotate it to adjust the volume, or rotate it counterclockwise until a "Ka da" sound is heard to power off.	20	Battery Latch

4. Programming Keys

4.1 Programming Keys

To cater to users' habits, programmable keys (i.e. two side keys and one top key) are provided, which can be set as shortcut keys through programming by your dealer.

To program a key, connect the programming/charging cable to the Micro USB port of the radio, and then program using the attached programming software.

The following functions can be achieved through programming keys.

SN	Function	Usage
1	Invalid	No response for key pressing
2	Broadcast remaining battery	Voice broadcast of remaining battery capacity

SN	Function	Usage
	capacity	
3	Broadcast user name	Voice broadcast of the user name of the radio
4	Broadcast group name	Voice broadcast of the name of the group the radio is in
5	Download and play back voice record	Play 5 previous voice records (with voice recording enabled)
6	Contact list	Display/broadcast contact information
7	Emergency Alarm	Send an emergency alarm

5. LED Indicator





The states of the LED indicator are described in the following table.








LED Indicator State	Device State
Red light on	<ul style="list-style-type: none"> - No SIM card is installed, or it is installed improperly (with voice prompt "No SIM card is installed"). - Fail to unlock the PIN code of the SIM card.
Green light on	<ul style="list-style-type: none"> - During a call (i.e. individual/group/all call).
Yellow light on	<ul style="list-style-type: none"> - The device is in individual-call standby state. - The device is not configured on the server (with voice prompt "Not configured"). - The device is expired. - The device is in standby state or call setup state under duplex talk.

LED Indicator State	Device State
Red light flashes fast	<ul style="list-style-type: none"> - Network registration fails because of an inactivated SIM card or overdue charge. - Device registration fails because of poor wireless network connection.
Green light flashes slow	<ul style="list-style-type: none"> - Network registration is successful, and the device enters standby state.
Yellow light flashes fast	<ul style="list-style-type: none"> - The device is powered on.
No indication	<ul style="list-style-type: none"> - The device is powered off.

6. Icons

The following screen icons are used to indicate the state of the radio.

Icon	Description
	2G/3G/4G received signal strength
2G/3G/4G	E: 2G GPRS transmission; 3G: 3G WCDMA transmission 4G: 4G LTE transmission
	Wi-Fi signal strength
	Searching GPS satellite signals
	GPS signals acquired

Icon	Description
	In group call
	In individual call
	Unread emergency alarm message
	Bluetooth enabled, searching for Bluetooth device
	Connected to Bluetooth device
	Remaining battery capacity
	Unread short message

7. Basic Operation

7.1 Powering On/Off

When the radio is off, rotate the Power/Volume knob clockwise until a click is heard to power on the radio.

When the radio is on, rotate the Power/Volume knob counterclockwise until a click is heard to turn off the radio.

7.2 Standby State

After the radio registers successfully, it enters standby state so as to save battery consumption to the greatest extent.

7.3 Adjusting the Volume

When the radio is on, rotate the Power/Volume knob clockwise to increase the volume or counterclockwise to decrease it.

7.4 Selecting a Group

You can select a group using one of the following methods.

Method 1: After the radio registers successfully and enters standby state, rotate the Group knob to select a group.

Method 2: In the standby interface, press the Menu key to enter the Menu interface, press navigation keys to select Group List and then a group, and then press the OK key.

7.5 Initiating a Call

After switching to a group successfully (note: groups are set under the management platform), press the PTT key to call the default contacts of the current group. If no contact is online, you will hear a voice prompt “No online group member”, and then transmission request will be interrupted.

7.6 Receiving a Call

After switching to a group successfully (note: groups are set under the management platform), if a group member initiates a call, the radio will have green LED indicator light on, and receive traffic from the group.

7.7 Delayed Callback Admission

Use this function to delay admitting the radio to a group call for a period of time.

7.8 Priority Call

You may set different priorities for different radios, so that a radio with a higher priority can initiate a call before a radio with a lower priority does and interrupt an ongoing call.

7.9 Call Types

◆ Individual Call

To make an individual call, take the following steps.

1) Entering Individual-Call Mode

Press the programmed Individual Call key (a side key or the top key; for details, see 2. Programming Keys) to enter individual-call mode.

2) Selecting a Callee Radio

Select a radio, and it will be broadcast.

Note: You may select a callee radio from the Contact List.

3) Initiating an Individual Call

Make sure the radio is normal state (i.e. green light flashes slow). Press the PTT key.

After the call is set up successfully, yellow light will be on, and the callee's name and call type will be displayed on the LCD screen. When the callee receives the call, yellow light will be on, and the caller's name will be displayed on the LCD screen.

After the call ends, the caller and the callee will have yellow light on.

◆ Individual-Call TOT for Voice

After an individual call is set up, if no voice data is exchanged during 30 seconds, the call will end and there is voice prompt "Voice timeout". Then, the caller and callee return respectively to the group they belong to.

7.10 All Call

An all call is of the highest priority. When an all call is initiated, other calls (including group calls and individual calls) will be released so as to insert the all call.

Only a special user is privileged to initiate an all call, and such a user is configured via the network management platform.

Note:

The default call duration for all types of calls is 60 seconds, which can be modified through the network management platform. If call duration exceeds this value, the call will end automatically.

7.11 Downloading and Playing Back Video Records

● Downloading and Playing Back Video Records

You can download and play back the latest 5 voice records. To achieve this, enable voice recording and playback under the management platform, and then press the key programmed for downloading and playing back voice record (for details, see 2. Programmable Keys).

● Viewing and Playing Back Video Records

In the standby interface, press the Menu key to enter the Menu interface, press navigation keys to select Call Records, and then view or play back the latest 30 voice records.

7.12 Submitting Position Information

The radio is positioned through a built-in GPS module, and positioning information is submitted to the management platform. Real-time position and track of the radio can be displayed on a GIS map under the platform or via dispatcher software.

7.13 Low-Battery Reminder

When remaining battery capacity is below 10%, there is voice prompt “Low battery, please charge”. When remaining battery capacity is below 5%, there will be voice prompt “Low battery, please charge” at an interval. Please replace the battery, or power off the radio and charge the battery.

7.14 Remote Programming

Partial parameters of the radio can be set via the management platform, distributed to the radio via a 2G (GPRS), 3G (WCDMA) or 4G (LTE) network and activated, for example, group settings, terminal names, functions and permissions.

7.15 Wi-Fi

In the standby interface, press the Menu key to enter the Menu interface, select Settings and then Wi-Fi, and then enable or disable Wi-Fi function.

After Wi-Fi is enabled, the radio can scan Wi-Fi nearby networks in real time, and a password can be set.

7.16 Emergency Alarm

To send/exit an emergency alarm, hold down the top key. (Please have the key programmed beforehand using the attached PC tool.)

There are two alarm modes as below, which can be set by going to “Menu” → “Settings” → “Alarm Modes”.

- a. Silent Alarm: Under this mode, the radio sends an emergency alarm silently, and receive an alarm with voice prompt “SOS alarm from ***”.
- b. Alarm and call: If silent alarm is disabled, the radio sends an emergency alarm and rings a siren,

and receive an alarm and rings a siren with voice prompt "SOS alarm from ***".

To view sent alarms and received alarms, go to "Menu" → "Message Records" → "SOS Messages".

7.17 Advanced Functions

Activation, stunning, killing and monitoring of the radio and voice playback can be achieved via dispatcher software.

8. Technical Specifications

General

Communication Systems & Frequency Bands (Optional) (Subject to those on the radio paster.)	Version 1 (EMEA & Asia): FDD-LTE: Band 1,3,5,7,8,20; TDD-LTE: Band 38,40,41; WCDMA: Band 1,2,5,8; GSM/GPRS: Band 2,3,5,8 Wi-Fi: 2.4/5GHz Version 2 (America): FDD-LTE: Band 1,2,4,5,7,12,13,17,28A,28B; WCDMA: Band 1,2,4,5; GSM/GPRS: Band 2,5; Wi-Fi: 2.4/5GHz
Storage Temperature	-40°C ~ + 80°C
Operating Temperature	-20°C ~ + 50°C
Water and Dust	IP 54

Resistance	
Dimension (H*W*D)	115mm*54mm*30mm (battery included, antenna excluded)
Weight	330g (battery and antenna ncluded)
Screen	128*64 pixels, monochrome screen
Keypad	Qwerty
Battery	3600mAh Li-ion(standard), 5200mAh Li-ion (optional)
Operating Voltage	3.7V DC
Standby Duration (3600mAH battery)	2G: 22 hrs (GPS on), 25 hrs (GPS off) 3G: 15 hrs (GPS on), 16 hrs (GPS off) 4G: 13 hrs (GPS on), 15 hrs (GPS off)
Transmitter	
Transmitting Power	2G: DCS:30dBm±2dBm (1800/1900MHz)

	GSM: 33dBm±2dB (800/900MHz) 3G: 24dBm+1/-3dB 4G: 23dBm±2dB
Audio Distortion	5% (typical)
Receiver	
Receiving Sensitivity	2G:BER < 0.001 when $\hat{I}_{or} = -106.7$ (-108) dBm 3G: BER < 0.001 when $\hat{I}_{or} = -106.7$ (-108) dBm 4G:BER < 0.001 when $\hat{I}_{or} = -98$ (-100) dBm
Audio Power	1W
Audio Distortion	5% (typical)

NOTE:

NOTE:
