This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must except any interference received,  including interference that may cause undesired operation.

# SAFETY TRAINING INFORMATION

**Your HYT 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, Warning     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 HYT 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 Potential y Hazardous Electromagnetic Fields— RF and Microwave.

**To ensure that your exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following
CAUTION guidelines:**
**• DO NOT** operate the radio without a proper antenna attached, as this may damage 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 an antenna specifically authorized by the manufacturer for use with this radio.

• **DO NOT** transmit 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** use HYT authorized accessories (antennas, batteries, belt clips, speaker/mics, etc). Use of unauthorized accessories can cause the FCC RF exposure compliance requirements to be exceeded. Body-worn operations are restricted to belt-clips, holsters or similar accessories that have no metallic component in the assembly and that provide at least 1.5 cm separation between the device, including its antenna, and the user's body. To provide the recipients of your transmission the best sound quality, hold the antenna at least 5 cm (2 inches) from 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 assure that this radio operates within the FCC RF exposure limits of this radio.

### Electromagnetic Interference/Compatibility

During transmissions, your HYT 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.

# FOREWORD

Thank you for purchasing the HYT transceiver.

**READ ALL INSTRUCTIONS** carefully and completely before using the transceiver.

**SAVE THIS INSTRUCTION MANUAL–**This instruction manual contains important operating instructions for the transceiver.

# INSTALLATION NOTES

• Body-worn operations are restricted to belt-clips, holsters or similar accessories that have no metallic component in the assembly and that provide at least 1.5 cm separation between the device, including its antenna, and the user's body

• If you wear a portable two-way radio on your body, ensure that the antenna is at least 2.5 centimeters (1 in.) from your body when transmitting.

# IMPORTANT

RF CAUTION! NEVER hold the transceiver so that the antenna is very close to, or touching exposed parts of the body, especially the face or eyes, while transmitting. The transceiver will perform best if the microphone is 2 to 4 in. (5 to 10 cm) away from the lips and the transceiver is vertical.

RF **CAUTION! NEVER** operate the transceiver with a headset or other audio accessories at high volume levels.

RF **CAUTION! NEVER** short the terminals of the battery pack.

**DO NOT** push the PTT when not actually desiring to transmit.

**AVOID** using or placing the transceiver in direct sunlight or in areas with temperatures below +14°F (–10°C) or above +122°F (+50°C). The basic operations, transmission and reception of the transceiver, are guaranteed within the specified operating temperature range (depending on version). However, the LCD display may not be operate correctly, or show an indication in the case of long hours of operation, or after being placed in extremely cold areas.

**DO NOT** modify the transceiver for any reason.

KEEP the transceiver from the heavy rain, and **never** immerse it in the water. The transceiver construction is **water resistant**, not waterproof.

The use of non HYT battery packs/chargers may impair transceiver performance and invalidate the warranty.

# Contents

# Thank You !

Thank you for your purchase of the HYT TC-980 radio - the choice for professionals. TC-980 is

a professional radio that with exquisite and ergonomic design, which bring user a fine operation

feel. The TC-980 is customized for noisy environments such as construction sites because all

TC-980 radios are approved to dust & water protection Class IP66 and endowed with large

speaker.

This easy-to-use radio will deliver you secure, instant and reliable communications at peak

efficiency. Please read this manual carefully before use. The information presented herein will

help you to derive maximum performance from your radio.

MODELS COVERED IN THIS MANUAL

TC-980 VHF Two-way Radio

TC-980 UHF Two-way Radio

# Safety and General Information

The following general safety precautions as would normally apply, which should be observed during all phases of operation, service and repair of this equipment.

◇ Turn off your radio prior to entering any area with a potentially explosive atmosphere.

◇ Do not charge your battery in a potentially explosive atmosphere.

◇ Do not use any portable radio that has a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn can result.

◇ This equipment should be serviced by qualified technicians only.

◇ To avoid possible interference with blasting operations, turn off your radio when you are near electrical blasting caps. In a blasting area or in areas such as hospital site posted "Turn off two-way radio"; when taking an airplane, please obey the "turn off two-way radio" instruction of aircrew staff as well.

◇ For vehicles with an air bag, do not place a radio in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a radio is placed in the air bag deployment area and the air bag inflates, the radio may be propelled with great force and cause serious injury to occupants of the vehicle.

◇ Do not expose the radio to direct sunlight over a long time, nor place it close to heating source.

◇ When using your radio, hold the radio in a vertical position with the microphone 3 to 4 centimeters away from your lips.

◇ If you wear a radio on your body when transmitting, ensure the radio and its antenna are at least 2.5cm away from your body.

# Specifications

| General | |
|---|---|
| Frequency Range（MHz） | VHF band 1: 136-150MHz<br><br>UHF band 1: 400-470MHz<br>UHF band 2: 450-520MHz |
| Channel Spacing （KHz） | Wide: 25 KHz / Narrow: 12.5KHz |
| Operating Voltage（V） | 7.5V   DC |
| Antenna Impedance (Ω) | 50Ω |
| VOX Level | Adjustable 5 levels |
| Operating Temperature | -20℃- +50℃ |
| Reliability | Meets   GB/T15844-1995    Standard |
| RF Power Output（W） | Hi: 4.5-5W / Lo: 2.0±0.3W |
| Reference Sensitivity (dBm) | Wide: -119dBm /Narrow: -118dBm |
| Maximum Audio Power Output (W) | More than 1.2W |
| | |

# Product Inspection

Before unpacking the TC-980 portable radio, please inspect the packaging for signs of damage and report any damage to your dealer.

Upon unpacking of the TC-980 portable radio, please ensure that all items shipped were received, report any missing or damaged items to your dealer.

| Item | Qty. (PCS) |
|------|------------|
| Antenna | 1 |
| Belt Clip | 1 |
| Strap | 1 |
| Battery | 1 |
| Charger | 1 |
| Adapter | 1 |
| Owner's Manual | 1 |

Note: 1. Frequency band is marked on the label of antenna, if not, identify the frequency band according to the color circle, red indicates UHF, green indicates VHF. Please refer to the label on the radio unit for detailed frequency band information.

2. The radio unit is shipped with screws mounted from the factory.

| | | |
|---|---|---|
| Li-ion Battery (1200mAh) | MCU Charger | Switching Power (different P/N for different countries and areas) |
| Belt clip | Strap | Antenna |

# Getting Started
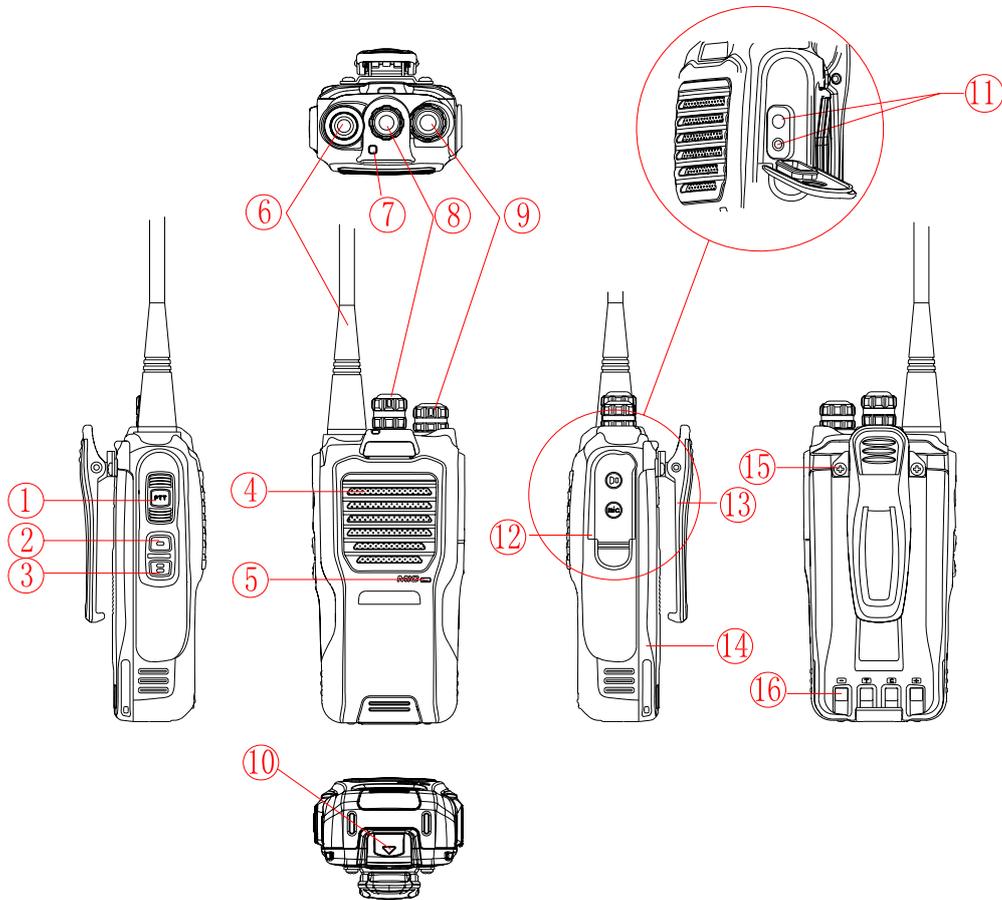
| (1) PTT (Push-to-Talk) key | (2) SK1 key (Side Key 1) (programmable) | (3) SK2 (Side Key 2) (programmable) | (4) Speaker |
|---|---|---|---|
| (5) Microphone | (6) Antenna | (7) LED Indicator | (8) Channel Selector Knob |
| (9) Radio On-Off /Volume Control Knob | (10) Battery Latch | (11) Accessory Jack | (12) Accessory cover |
| (13) Belt Clip | (14) Battery | (15) Screw | (16) Electrode Piece |

\* **PTT** (Push-to-Talk) Key

Press and hold down the **PTT** key to transmit, release it to receive.

\***SK1** (Side Key 1)

Side Key 1 is the programmable key that can be assigned with long press function and short press function by your dealer. (See Glossary for definitions of short press and long press.)

\***SK2** (Side Key 2)

Side Key 2 is the programmable key that can be assigned with long press function and short press function by your dealer. (See Glossary for definitions of short press and long press.)

\*LED indicator

Status of LED indicator and alert tone see table below (See Functions and Settings for the detailed operations):

| | |
|---|---|
| Power up in user mode | When the radio is turned on, the power up alert tone is heard.<br>When the current channel is a blank channel, the radio sounds Beep tone continuously. |
| Low battery alert | LED flashes red, and a low-pitched tone sounds at intervals of 10 seconds. |
| Transmitting | LED glows red when transmitting<br>When TOT timer expires, the radio sounds Beep tone continuously.<br>TOT pre-alert: a Beep is heard. |
| Receiving | LED glows green when carrier is present. |
| Scanning | Green LED flashes at every 1 second, while scanning is in process.<br>Scan Start Alert Tone (programmable by your dealer): a Beep is heard.<br>Scan Exit Alert Tone (programmable by your dealer): a Beep is heard.<br>Priority Channel Scan Alert Tone (programmable by your dealer): when scanning, if the current channel is the priority channel, the radio sounds a Beep. |

| Power adjust | A low-pitched tone is heard when transmit power is adjusted from high power to low power. A high-pitched tone is heard when transmit power is adjusted from low power to high power. |
|---|---|
| VOX | A high-pitched tone is heard when the VOX feature is activated. A low-pitched tone is heard when the VOX feature is disabled. |

*Channel Selector Knob

   Rotate the knob to select from channel 1 to 16.

* Radio On-Off/Volume Control Knob

   Rotate the knob clockwise to turn the radio on, rotate the knob fully counter-clockwise until a click is heard to turn the radio off.

   Turn the knob clockwise to increase the volume, or counter-clockwise to decrease the volume.

*Battery latch, used to remove the battery.

* Accessory Jack

   The jack is used to connect speaker, microphone, external PTT, earpiece, programming cable and cloning cable.


# Battery Information

## Safety Precautions

The optional battery is shipped uncharged from the factory. Please charge a new battery or battery that has not been used for a long time prior to use. The maximum capacity of the battery is achieved only after 2 or 3 charging and discharging cycles. When the battery power runs low, please recharge the battery or replace with a refresh one.

## Applicable Battery Packs

To reduce the risk of injury, charge only the battery specified by the manufacturer. Other batteries may burst, causing bodily injury and damage.

**Caution:**

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

2. The battery should be charged at 5℃ ~ 40℃, temperature out of this range could result the battery not fully charged.

3. When charging a battery attached to a radio, turn the radio off to ensure a full charge.

4. Do not cut off the power supply or remove the battery when charging a battery.

5. If the operation time will not increase even though the battery is properly charged, this means the battery life cycle is over, please replace with a new one.

6. Do not return fully charged batteries to the charger for an "extra boost". This action will significantly reduce battery life.

7. Never charge a battery that is wet. Please dry it with soft cloth prior to charge.

All batteries can cause property damage and/or bodily injury such as burns if conductive materials such as jewelry, keys, or beaded chains touch exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

**Charging Operation**

If the battery is assembled to the radio, its LED indicator flashes red and sounds falling tone 10 seconds per time, which indicates that the battery power is low and please charge the battery by the HYT approved charger. The charger's LED indicates the charging progress.

| Status | Charger LED | Remarks |
|---|---|---|
| Standby (no-load) | Red LED flashes slowly (0.2s on/3s off ) | Intelligent rapid-rate charger only |
| Battery is charging | Red LED solidly glows | |
| Battery is fully charged | Green LED solidly glows | |
| Error | Red LED flashes rapidly (0.2s on/0.2s off) | Intelligent rapid-rate charger only |

Charging please refer to the following procedure:
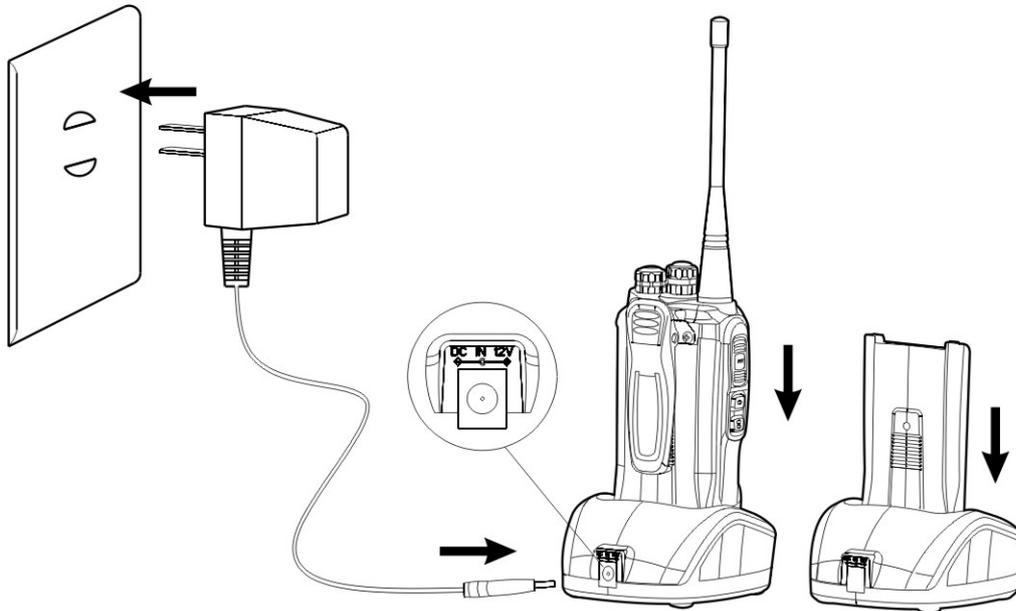


1.  Plug the DC connector of the adapter into the DC socket on the back of the charger.

2.  Place the radio with the battery attached, or the battery alone, in the charger.

3.  Plug the AC connector of the adapter into the AC outlet socket.

4. Make sure the battery is in well contact with the charging terminals, the charging process initiates when the red LED lights.

5. The greed LED lights about 3 hours later indicating the battery is fully charged. Then remove the radio with the battery attached or the battery alone from the charger.

Note:

   a)   It is normal that the LED flashes before placing the battery into the charger.

   b)   Do not place another battery into the charger until the charger LED is stabilized.

   c)   After the battery is placed properly, the LED solidly glows red indicating the battery is charging, or flashes indicating the battery is damaged or the ambient temperature is over high/low.

# Antenna Information

 ✧  Stubby antennas are ideal for communication within limited range. Fine and long antennas optimizes communication coverage, ideal when the radio is worn on the belt because they are flexible and soft.

 ✧  Rainy days or forest locations may narrow your communication range, please prepare in advance to avoid potential inconvenience.

# Assembly and Disassembly

**Attaching the Battery**

1. Hold the battery and make it close to the top of aluminum chassis, see figure 1. (Note: insert the tab on the top of battery into the top of battery slot).
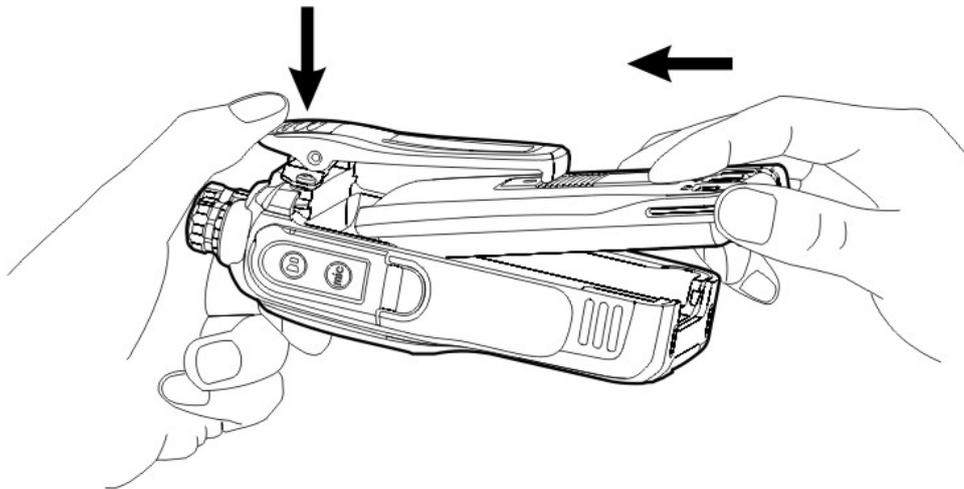


**Figure 1**

2. Lightly press the bottom of the battery until a click is heard. By then, the battery latch locks with the main unit and assembly is finished. See figure 2 below.

Note: if the battery is not well locked, please remove the battery and attach it again.
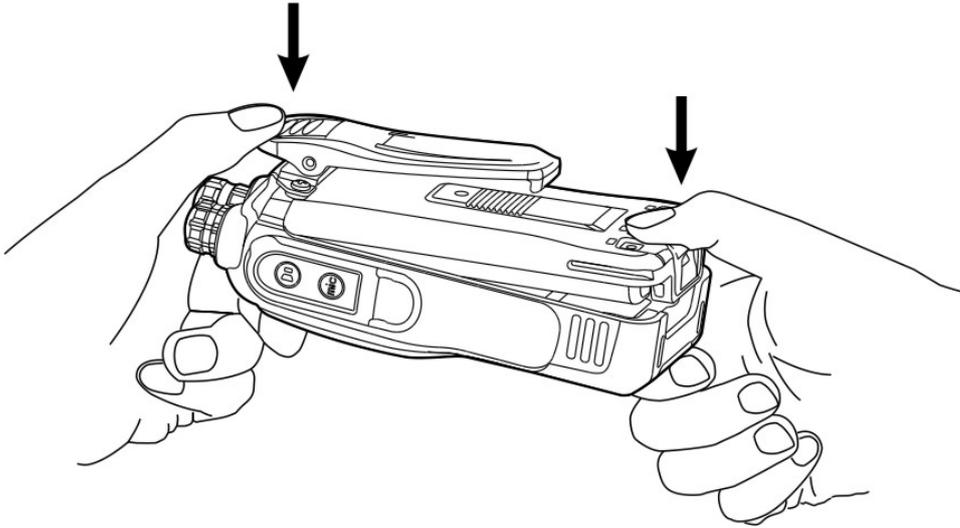
**Figure 2**

**Removing the Battery**

1.  Please turn off the radio first. Then hold the top of radio main unit and press belt clip to make its tail turn up. Lift the battery latch in the direction of the arrow. See figure 3.
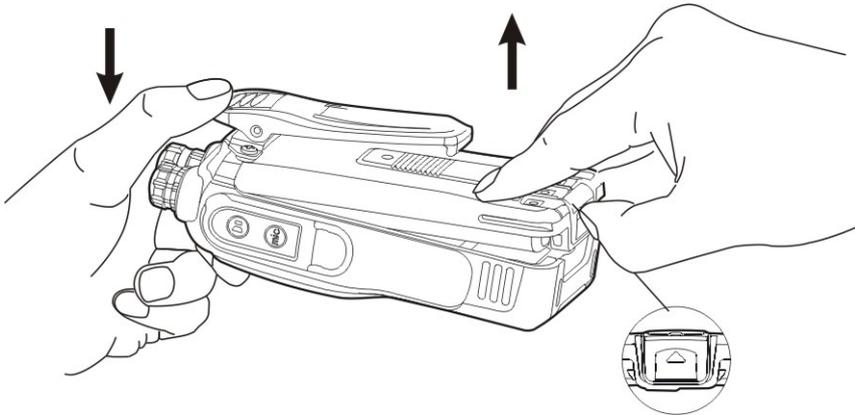


**Figure 3**

2.  When the bottom of battery is turned up, release the battery latch and take out from the battery slot, see figure 4 below. (Note: when battery is turned up, the angle between battery and main unit can not be too large to cause serious abrasion of the tab in the top of battery.)
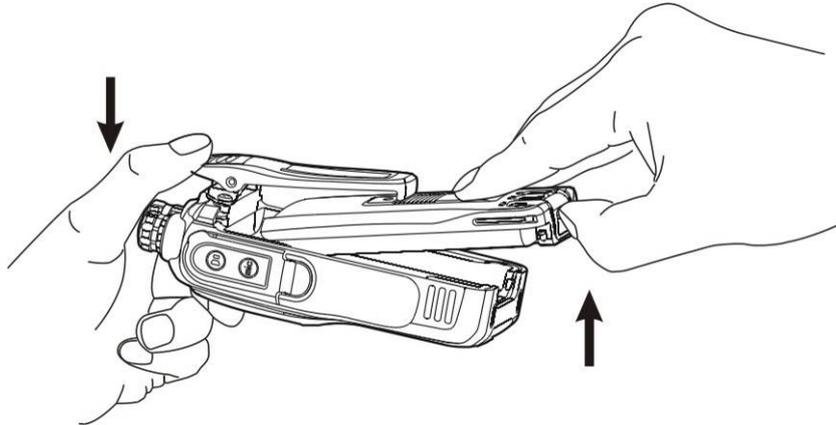
**Figure 4**

**Attaching the Antenna**

1.  Insert the antenna to the big screw thread hole on the top of main unit.

2.  Turn the antenna clockwise until it is screwed down, shown as figure 5.



**Figure 5**

**Removing the Antenna**

When disassembling antenna, turn the antenna counter-clockwise until it is loosen and screwed

out, shown as figure 6.
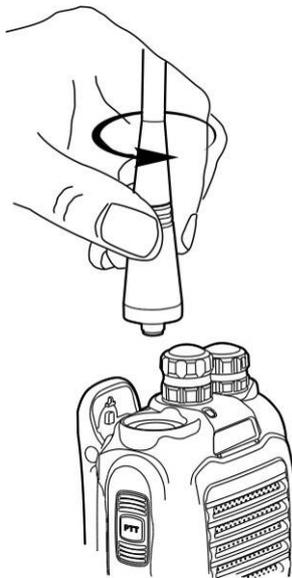
**Figure 6**

**Attaching the Belt Clip**

Loose the screw of belt clip from the main unit, fasten the belt clip to the main unit (make sure the screw holes of belt clip and of aluminum chassis is aligned), clockwise screw down the belt clip. (See figure 7 below).
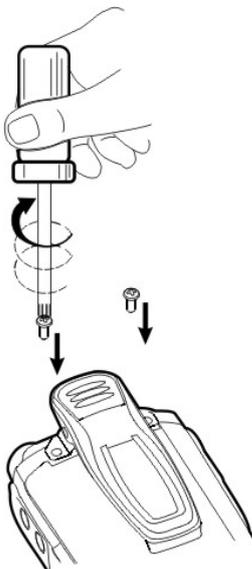


**Figure 7**

**Removing the Belt Clip**

Turn the screwdriver counter-clockwise to loosen the screw. Please refer to the operations for attaching the belt clip. See figure 8 below.
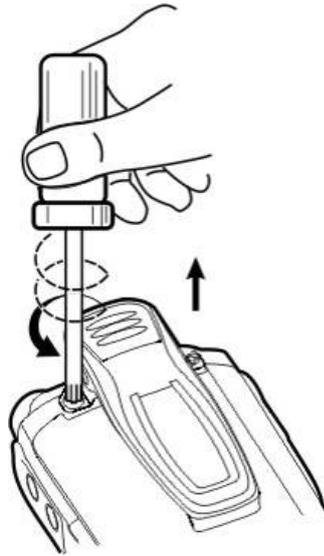
**Figure 8**

**Attaching the Earpiece/Microphone**

1. Open (not remove) the accessory cover, shown as figure 9.
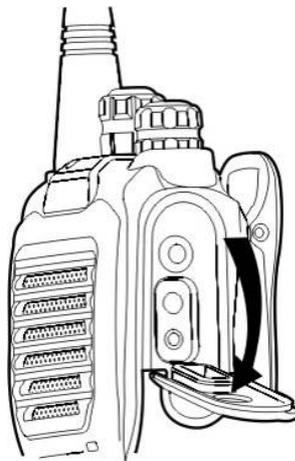


**Figure 9**

2. Plug the audio accessory firmly into the accessory jack, then secure the screw, shown as figure 10.
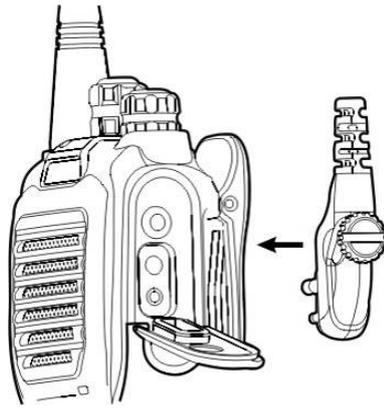
**Figure 10**

### Removing the Earpiece/Microphone

Loosen the screw and then remove the audio accessories.

Note: Using the radio with audio accessory may affect the waterproof performance of the radio.

# General Radio Operations

**Note:** See Glossary for definitions of relevant words.

## Turn the Radio On/Off

Turn the radio on-off /volume control knob clockwise to turn on the radio, then radio sounds an alert tone. Turn the radio on-off /volume control knob counter-clockwise to turn off the radio. (See figure 1 below)
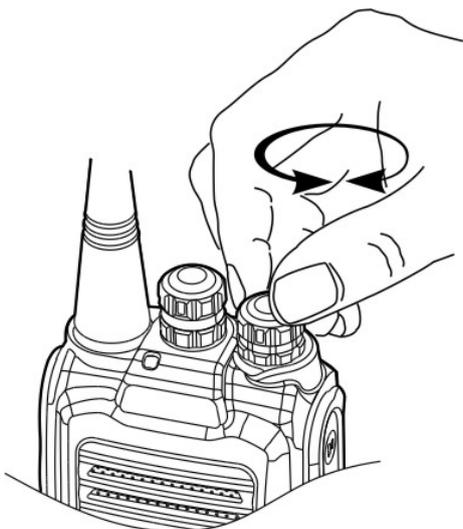


**Figure 1**

## Adjust the Volume

Press the programmable key set as Squelch Off / Squelch Off Momentary to listen the background noise, then turn the volume control knob clockwise/counter-clockwise to increase/decrease the volume. See Glossary for definition of Squelch.



**Figure 2**

## Select a Channel

Turn the channel selector knob to select a channel. (See figure 3 below)
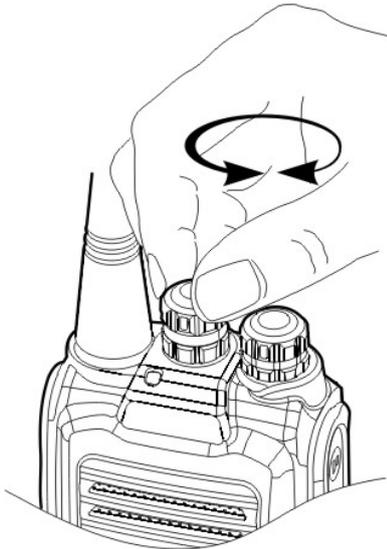


**Figure 3**

## Transmitting

To transmit, press and hold down **PTT** key and talk to microphone to speak. ensure the radio is 2.5 to 5 centimeters away from your lips.

**Receiving**

To receive signal, release the **PTT** key.

**Talk Range**

| Flat ground with no obstructions | Up to 10 kilometers |
|---|---|
| Residential area (close to buildings） | Up to 5 kilometers |
| Inside multi-level buildings | Up to 20 floors |

# Programmable Auxiliary Functions

Your dealer may program the **TK, SK1, SK2** (long or short press) keys with one of the following auxiliary functions respectively. See Functions and Settings for the detailed description.

- None

- Power Adjust

- Battery Power Indicator

- Squelch Off (See Glossary for definitioins of Steady and Squelch Off.）

- Squelch Off Momentary

- Monitor

- Monitor Momentary（See Glossary for definitioins of Momentary and Monitor）

- Scan（See Glossary for definitioin of Scan.）

- VOX

# Functions and Settings

The following functions are programmable by your dealer.

## CTCSS/CDCSS

Set up talkgroups with unique CDCSS/CTCSS to prevent unwanted conversations on the same frequency. See Glossary for definitions of CTCSS and CDCSS.

If CTCSS/CDCSS is set on the current channel, CTCSS/CDCSS match is required for the radio to unmute to an incoming signal. If CTCSS/CCSS is not set, the radio can receive calls from all users operating on the same frequency. Your dealer may set CTCSS/CDCSS for some channels.

This feature does not mean that your conversation will not be heard by others. Radios that set with the same CTCSS/CDCSS, or no CTCSS/CDCSS, can receive from you.

## Battery Save

This feature can be enabled by your dealer. The Battery Save feature is automatically activated once no activity on the channel and no operation performed (no key press and no knob selection), for extended operation time.

Pressing any key or receiving a signal will restore the radio to normal operation and exit from Battery Save.

See Glossary for the definition of Battery Save.

## Power Adjust

A press of the programmed Power Adjust key switches the transmit power level between high and low power.

# Time-out Timer (TOT)

Limits the amount of time the radio user can continuously transmit on a channel. If the user holds down the PTT longer than the preprogrammed limit, the radio automatically stops transmitting, and generates a warning tone until the PTT is released.

Your dealer may program the alert tone that sounds before the TOT timer nearly expires.

See Glossary for the definition of Time-out Timer.

# Battery Strength Indicator

The TC-980 allows you to simply press one button to illuminate the LED batter gauge, which emits different indications representing battery strength levels until the key is released.

| Battery Strength | LED Indication |
|---|---|
| 70% - 100% | Green |
| 50% - 70% | Orange |
| 30% - 50% | Red |
| 10% - 30% | LED is unlit when the programmed key is pressed, while flashes red while the radio is operating. |
| Less than 10% | LED is unlit when the programmed key is pressed. While the radio standby, LED flashes red and a low-pitched tone sounds at intervals of ten seconds, a press of the PTT then shall activate the talk prohibit tone. |

# Monitor / Squelch Off

● **Squelch Off**

Causes the radio to forcibly unmute speaker to here activities on the current channel, whatever the receive condition is. The radio speaker outputs audio when audio signal is present, or

background noise will be heard if no audio signal is detected.

Press the function key to enter the Squelch Off mode, and press it again to exit.

● **Squelch Off Momentary**

Causes the radio to forcibly unmute speaker to here activities on the current channel, whatever the receive condition is. The radio speaker outputs audio when audio signal is present, or background noise will be heard if no audio signal is detected.

Holds down the function key to enter the Squelch Off mode, and release it to exit.

● **Monitor**

Carrier condition must be satisfied for the radio to unmute to an incoming call, regardless of CTCSS/CDCSS condition.

Press the function key to enter Monitor mode, and press it again to exit.

● **Monitor Momentary**

Carrier condition must be satisfied for the radio to unmute to an incoming call, regardless of CTCSS/CDCSS condition.

Holds down the function key to enter Monitor Momentary mode, and release it to exit.

# Scan

Press the programmed **Scan** key to initiate scanning ascending through the channel numbers in scan list. Green LED flashes during the scan process, and solidly glows when activity is detected on a channel and signalling condition is satisfied. Press the key again to exit scanning. When scanning is active, the radio continuously scans for activity on scan list members. Once activity is detected on a channel, scanning pauses on the active channel for you to receive activity. Your dealer can choose channels that you wish to scan and list them in a scan list.

**No Priority Channel**

Assuming a scan list with 6 channels, if all the channels are non-prioritized, the normal scan operation would check for activity in the following sequence, as figure 1 has shown.
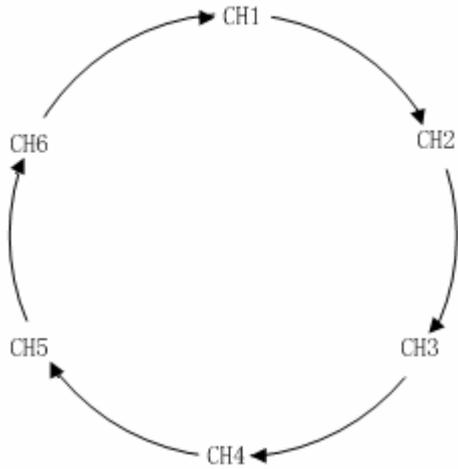
Figure 1

**Priority Channel Scan**

If you prioritize Channel 2 as Priority 1, the scan operation would change as figure 2 shown below.
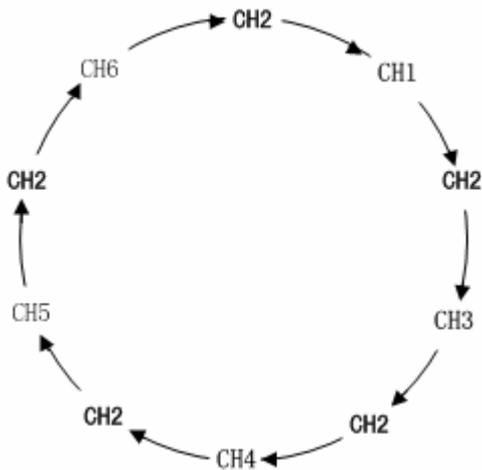


Figure 2

**Scan On/Off**

You can enter scan mode through the following two methods:

1. Key operation

Press the programmed **Scan** key to enter scan mode, provided that there're no less than 2 members in the scan list.

2. Auto

When Auto Scan is enabled for a channel, the radio shall automatically enter scan mode when it is switched to the channel.

You can exit scan mode through the following three methods:

1. Key operation

Press the programmed **Scan** key to exit scan mode.

2. Auto

The radio automatically exits from scan mode when it is switched to another channel.

1. Key operation

Press the programmed **Scan** key to exit from scan mode.

2. Auto

The radio automatically exits from scan mode when it is switched to another channel.

3. Turn the radio off.

- **Talk Back**

You can respond to any calls received during the scan process by pressing the PTT.

- **Priority Channel Scan**

Enable you to constantly monitor & keep an update on the activities on the most commonly used channel so that messages will not be missed. Check with your dealer for details.

When scanning remains on a non-priority channel, the radio continues to monitor activities on the priority channel, and jumps to the priority channel if activity is detected.


## Busy Channel Lockout (BCL)

Avoid interference with the users using the same channel by preventing transmission if another talk group is already on the air. The radio will generate a continuous tone upon PTT press if a transmission is not allowed. Release the PTT to cancel the tone.

See Glossary for definition of BCL.


## Low Battery Alert

For extra convenience, LED flashes red and a low-pitched tone sounds at every ten seconds to alert users to recharge the battery should the battery level run low.


## Voice Operated Transmit (VOX)

You can transmit hands free with the use of optional accessories. The radio will automatically

begin transmitting when you speak, and terminate transmitting when you stop talking. See Glossary for definition of VOX.

Press the programmed **VOX** key to activate or exit the **VOX** feature, with alert tone sounds accordingly.

Your dealer can enable/disable the VOX feature, and set the VOX sensitivity. When VOX feature is enabled, the user can transmit hands free with VOX accessories:

1. Press the programmed **VOX** key to activate the VOX feature.

2. Select the PTT/VOX switch on the earpiece to VOX.

3. Plug the earpiece into the accessory jack.

4. Speaker into the earpiece microphone and your voice will be transmitted.

When transmitting with VOX accessories, you may here your own voice from the VOX earpiece slightly. Press the PTT of your radio to disable the VOX feature. Turn the radio off on again, or plug the earpiece into the accessory jack again to restore the VOX feature.

Note: No matter whether the VOX feature is enabled, if you select the PTT/VOX switch on the earpiece to PTT, you are able to transmit by press of the external PTT, and you are not allowed to push the switch from PTT to VOX, this action shall cause the radio to continuously transmit. When continuous transmission occurs, push the PTT/VOX switch from VOX to PTT, or turn on the radio again to restore the radio to operation use.
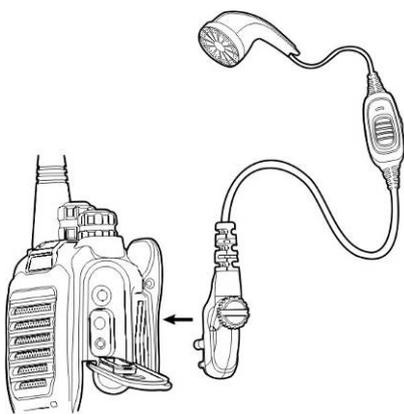


Note: to order accessories, please contact your dealer.

# Troubleshooting

| Symptom | Solution |
|---|---|
| Cannot power on the radio. | a. The battery is run out. Please recharge the battery or replace it with a fresh one.<br>b. The battery is not properly installed. Please remove and reinstall the battery. |
| The operation time will not increase even though the battery is properly charged. | a. The battery life cycle is over, please replace with a new one.<br>b. The battery is not fully charged. Make sure that the battery is removed after LED indicator has indicated green. |
| Cannot talk to or hear group members. | a. Confirm radios have the same channel, and CTCSS/CDCSS settings.<br>b. Make sure you are within their communication range. |
| Hear non-group members | a. Please change your CTCSS/CDCSS settings, and so as your group members. |
| No voice or low voice while transmitting | a. Whether the volume switch knob is switched to a proper position.<br>b. Send the radio to your dealer for microphone detection. |
| Noise always on | a. Group members are too far away to receive their call. Please go within the communication range and re-power on the radio to try. |

# Care and Cleaning

- Do not handle the radio by its antenna or external microphone directly.

- Do not place the repeater in a dusty or dirty environment.

- Clean the radio with a lint-free cloth to remove dirt or grease, to avoid poor contact due to excessive dust.

- Clean the radio using a lint-free cloth moistened with clean water and a mild dishwashing liquid.

- Avoid subjecting the radio to corrosives, solvents or spirits.

# Optional Accessory

| | | | |
|---|---|---|---|
|  |  |  |  |
| Antenna | Ni-MH Battery (1300mAh) BH1303 | Multi-unit Rapid-rate Charger MCA02 | Switch Power PS7501 (for use with different power cords for different countries and areas) |
|  |  |  |  |
| Remote Speaker Microphone SM08M3 | Receive-only Earpiece (for use with remote speaker microphone) ESS07 | Receive-only Earpiece with Transparent Acoustic Tube (for use with remote speaker microphone) ESS08 | Earbud with in-Line PTT & VOX ESM11 |
|  |  |  |  |
| Earpiece with on-MIC PTT & VOX & Transparent Acoustic Tube EAM12 | D-earset with in-Line Microphone & PTT & VOX EHM15 | D-earset with Boom Microphone & in-Line PTT & VOX EHM16 | Light-weight, Single-Muff Headset with in-Line PTT & VOX ECM12 |

| | | | |
|---|---|---|---|
|  |  |  |  |
| Light-weight, Behind-the-Head Earpiece with in-Line PTT & VOX ECM11 | Heavy Duty Noise-cancelling & VOX Headset ECM13 | Behind-the-head heavy weight high-quality noise-cancelling & VOX headset (with screw) ECM14 | Leather Carrying Case LCBN56 |
|  |  |  |  |
| Transparent Waterproof Bag LCBY03 | Chest Pack LCBN13 | Programming Cable (COM port) PC19 | Programming Cable (USB port) PC26 |
|  |  | | |
| Universal Programming kit PC08 | Cloning Cable CP05 | | |
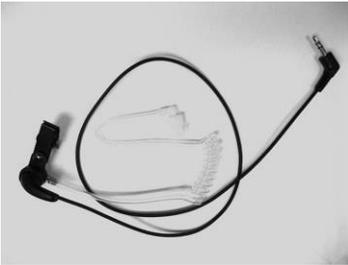
# Channel Frequency Table

**Model:** _____

**Serial No.:** _____

| Channel | Tx Frequency (MHz) | Tx CTCSS /CDCSS | Rx Frequency (MHz) | Rx CTCSS/CDCSS |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |

# CTCSS Table 38

| No. | Frequency (Hz) | No. | Frequency (Hz) |
|---|---|---|---|
| 1 | 67.0 | 20 | 131.8 |
| 2 | 71.9 | 21 | 136.5 |
| 3 | 74.4 | 22 | 141.3 |
| 4 | 77.0 | 23 | 146.2 |
| 5 | 79.7 | 24 | 151.4 |
| 6 | 82.5 | 25 | 156.7 |
| 7 | 85.4 | 26 | 162.2 |

| | | | |
|---|---|---|---|
| 8 | 88.5 | 27 | 167.9 |
| 9 | 91.5 | 28 | 173.8 |
| 10 | 94.8 | 29 | 179.9 |
| 11 | 97.4 | 30 | 186.2 |
| 12 | 100.0 | 31 | 192.8 |
| 13 | 103.5 | 32 | 203.5 |
| 14 | 107.2 | 33 | 210.7 |
| 15 | 110.9 | 34 | 218.1 |
| 16 | 114.8 | 35 | 225.7 |
| 17 | 118.8 | 36 | 233.6 |
| 18 | 123.0 | 37 | 241.8 |
| 19 | 127.3 | 38 | 250.3 |

# CDCSS Table (83)

| No. | CDCSS | No. | CDCSS |
|---|---|---|---|
| 39 | 023 | 82 | 331 |
| 40 | 025 | 83 | 343 |
| 41 | 026 | 84 | 346 |
| 42 | 031 | 85 | 351 |
| 43 | 032 | 86 | 364 |
| 44 | 043 | 87 | 365 |
| 45 | 047 | 88 | 371 |
| 46 | 051 | 89 | 411 |
| 47 | 054 | 90 | 412 |
| 48 | 065 | 91 | 413 |
| 49 | 071 | 92 | 423 |
| 50 | 072 | 93 | 431 |
| 51 | 073 | 94 | 432 |
| 52 | 074 | 95 | 445 |
| 53 | 114 | 96 | 464 |
| 54 | 115 | 97 | 465 |
| 55 | 116 | 98 | 466 |

| | | | |
|---|---|---|---|
| 56 | 125 | 99 | 503 |
| 57 | 131 | 100 | 506 |
| 58 | 132 | 101 | 516 |
| 59 | 134 | 102 | 532 |
| 60 | 143 | 103 | 546 |
| 61 | 152 | 104 | 565 |
| 62 | 155 | 105 | 606 |
| 63 | 156 | 106 | 612 |
| 64 | 162 | 107 | 624 |
| 65 | 165 | 108 | 627 |
| 66 | 172 | 109 | 631 |
| 67 | 174 | 110 | 632 |
| 68 | 205 | 111 | 654 |
| 69 | 223 | 112 | 662 |
| 70 | 226 | 113 | 664 |
| 71 | 243 | 114 | 703 |
| 72 | 244 | 115 | 712 |
| 73 | 245 | 116 | 723 |
| 74 | 251 | 117 | 731 |
| 75 | 261 | 118 | 732 |
| 76 | 263 | 119 | 734 |
| 77 | 265 | 120 | 743 |
| 78 | 271 | 121 | 754 |
| 79 | 306 | | |
| 80 | 311 | | |
| 81 | 315 | | |

# Glossary

| Name | Description |
|------|-------------|
| Short Press | Key press shorter than 1.5 seconds. |
| Long Press | Key press longer than 1.5 seconds. |
| Standby Status | In normal mode, no key operation is made on the radio and the radio is in receiving status. |
| CTCSS/CDCSS | The setting of CTCSS/CDCSS code in transmitting party must match that in the receiving party, for the receiver to unmute its speaker to output audio. |
| Battery Save | The function is to save the battery power and prolong the operation time. Once no activity on the channel and no operation performed, the radio shall be on and off alternately. |
| Time-out Timer (TOT) | The time-out timer feature stops someone from talking too long and tying up the channel. |
| Squelch | The purpose of squelch is to mute audio output from the speaker when no signals are present. Open the squelch to unmute radio speaker. |
| Squelch Off | Always unmute speaker to receive audio as well as background noise. |
| Monitor | Carrier condition must be satisfied for the radio to unmute to an incoming call, regardless of CTCSS/CDCSS condition. |
| Momentary | Holds down the function key to activate the status, and release it to exit. |
| Scan | The scan feature enables the radio to continuously scan each channel for activity. |
| Busy Channel Lockout | Avoid interference with the users using the same |

| | channel by preventing transmission if another talk group is already on the air. |
|---|---|
| VOX | The radio will automatically begin transmitting when you speak. |

HYT endeavors to achieve the accuracy and completeness of this manual, but no warranty of accuracy or reliability is given. All the above specifications and design are subject to change without notice due to continuous development.

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