Preface:

Thank you for purchasing HYT TC-580 Professional Portable Radio. This easy-to-use radio will deliver you secure, instant and reliable communication services at peak efficiency. Please read this manual carefully before use. The information presented herein can help you to derive optimum performance from your radio.

SAFETYTRAINING 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, 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 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 exceeding 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:

- **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 **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 **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.

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.

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver

SAVE THIS INSTRUCTION MANUAL- This instruction manual contains important operating instructions for the Two-Way Radio

EXPLICIT DEFINITIONS

WORD	DEFINITION
WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

OPERATING NOTES

- When transmitting with a portable radio, hold the radio in a vertical position with its microphone 5 to 10 cm (2 to 4 inches) away from your mouth. Keep the antenna at least 2.5 cm (1 inch) from your head and body.
- If you wear a portable two-way radio on your body, ensure that the antenna is at least 2.5 centimeters (1 inch) from your body when transmitting.

PRECAUTIONS

WARNING! 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 5 to 10 cm (2 to 4 inches) away from the lips and the transceiver is vertical.

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

CAUTION! NEVER short the terminals of the battery pack.

NEVER connect the transceiver to a power source other than the Battery listed below Such a connection will ruin the transceiver.

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 –30°C (–22°F) or above +60°C (+140°F).

DO NOT modify the transceiver for any reason.

MAKE SURE the flexible antenna and battery pack are securely attached to the transceiver, and that the antenna and battery pack are dry before attachment. Exposing the inside of the transceiver to water will result in serious damage to the transceiver.

BE CAREFUL! The series transceivers employ waterproof construction, which corresponds to IPX7 of the international standard IEC 60529 (2001), 1 m depth for 30 minutes. However, once the transceiver has been dropped, waterproofing cannot be guaranteed due to the fact that the transceiver may be cracked, or the waterproof seal damaged, etc.

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

> FCC CAUTION:
> Changes or modifications to this device, not expressly approved by **HYT**, could void your authority to operate this transceiver under FCC regulations.

FCC INFORMATION FOR R74TC-580V

This device compliance with Part 90 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.

FCC ID: R74TC-580V

Icon Information

The following icons are available through this manual:

⚠ **Caution:** indicates situations that could cause damage to your radio.

📝 **Note:** indicates tips that help you make better use of your radio.

Copyright Information

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Disclaimer

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 designs are subject to change without notice due to continuous development. No part of this manual may be copied, reproduced, translated, stored in a retrievable system, distributed, or transmitted in any form or by any means, electronic or mechanical, for any purpose without the express written permission of HYT.

Contents

Safety Information

We would like to extend our sincere thanks for your interest in HYT products. To help you ward off bodily injury and property loss resulting from improper operation, please read all safety information in this manual carefully.

Rules on Applicable Environments

1. In a location with fuel, chemicals, explosive atmospheres and other flammable/explosive materials, only approved Ex-protection radios are allowed for use;

2. Turn off your radio before entering a blasting area;

3. Turn off your radio before boarding an aircraft;

4. Do not operate your radio near any medical or electronic device that is vulnerable to RF signals;

5. Do not operate your radio in any area where use of wireless communication equipment is completely prohibited to avoid potential electromagnetic interference and/or compatibility conflicts.

Operating Instructions

1. Please only use accessories approved by HYT. Unauthorized use of other accessories may result in bodily injury and property loss due to compatibility conflict;

2. For your health, make sure the antenna is at least 2.5 cm away from your body;

3. Do not use any portable radio that has a damaged antenna. A minor burn may result if the damaged antenna comes into contact with your skin;

4. Please operate your radio at specified temperature range; otherwise, it may suffer physical damage or performance reduction;

5. Continuous transmission for a long time may lead to heat accumulation within its body. In this case, please keep your radio at a proper location for cooling to avoid potential damage by high temperature;

6. Exposure to high-level volume for a long time may pose hazards to your hearing capability, so be sure to select the right volume level;

7. Do not operate a portable radio while driving to ensure your safety. When such operation is a must, please park your vehicle at a proper place first;

8. For vehicles with an air bag, do not place a radio over an air bag or in the air bag deployment area. Air bags inflate with great force, which may impulse the radio and cause serious injury to occupants of the vehicle;

9. Avoid operating the radio with a wet hand to derive the optimal performance;

10. Operate the radio key and keypad with proper force to prolong their lifespan; clean them with soft brush on a regular basis for the accumulated dust and dirt may disable normal use;

11. Users wearing a pacemaker, a hearing aid or other medical devices shall abide by the following rules:

- Make sure the radio is at least 20 cm away from your medical device during power-on;
- Receive signals at a farther place from your medical device. This can help reduce potential interference;
- When your medical device can not work normally due to radio interference, turn off your radio immediately and consult the manufacturer of medical device for help;

12. Do not expose the radio to direct sunlight for a long time or place it close to other heating sources, which may cause performance reduction;

13. Do not disassemble, modify or repair your radio for any reason, which may result in function failure or even explosion hazards in the blasting area;

14. To avoid any potential hazard, keep your radio and its accessories out of the reach of your children and pets.

Product Inspection

Before using this radio, please unpack the package box carefully and check that all shipped items are received; report any missing or damaged items to your dealer.

Accessories supplied with the radio:

Item	Qty. (PCS)
Li-Ion Battery	1
Rapid-Rate Charger	1
Switching Power	1
Belt Clip	1
Strap	1
Antenna	1
Owner's Manual	1

Note:

1) The pictures are for reference only.
2) The antenna may vary with different frequency bands. And the frequency band is marked on the label of antenna; if not, please refer to the label on the radio unit for frequency band information.
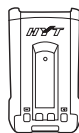
① Li-Ion Battery ② Rapid-Rate Charger ③ Switching Power

④ Belt Clip ⑤ Antenna ⑥ Strap

⑦ Owner's Manual

TC-580
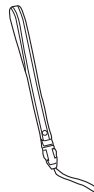
Radio Overview
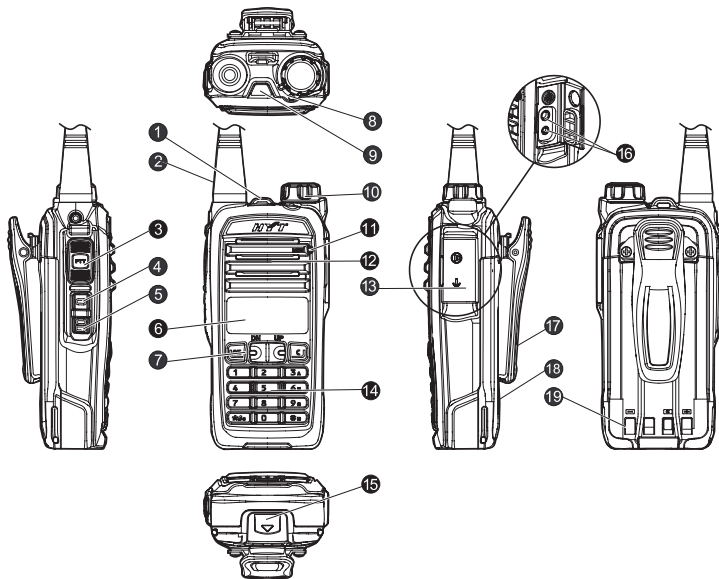
(1)	Strap Hole
(2)	Antenna
(3)	PTT (Push-to-Talk) Key
(4)	SK1 (programmable)
(5)	SK2 (programmable)
(6)	LCD Display
(7)	Function Keypad
(8)	LED Indicator
(9)	TK (programmable)
(10)	Radio On-Off/Volume Control Knob
(11)	Microphone
(12)	Speaker
(13)	Accessory Jack Cover
(14)	Numeric Keypad
(15)	Battery Latch
(16)	Accessory Jack
(17)	Belt Clip
(18)	Battery
(19)	Charging Piece

Radio Overview

■ PTT (Push-to-Talk) Key
Press and hold down the PTT key to transmit, and release it to receive.

■ SK1/ SK2/ TK
Used to be programmed with auxiliary functions (long or short press) by your dealer.

■ LCD Display
Used to display information about radio operation.

■ Function Keypad
- OK key: to access a menu or to select an option.
- DN key: to switch channels downwards during non-menu operation or to scroll options downwards during menu operation.
- UP key: to switch channels upwards during non-menu operation or to scroll options upwards during menu operation.
- C key: to return to the previous menu. Long press this key to return to the main menu.

OK key   DN key   UP key   C key
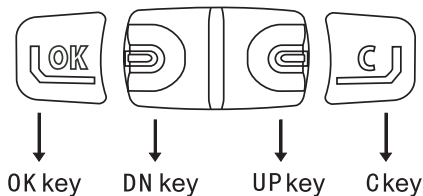
■ Numeric Keypad
Used to enter information for programming the radio.
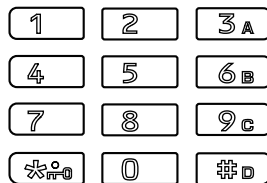
■ Radio On-Off/Volume Control Knob
Used to turn the radio on/off, and to adjust the volume.

Radio Overview

■ LED Indicator

Descriptions of LED indicator are as follows:

Radio Status	LED Indicator
Transmitting	Solidly glows red
Receiving	Solidly glows green
Low battery alert	Flashes red
When a call is transmitted (within the Auto Reset Time)	Solidly glows orange.
When a call is received (within the Auto Reset Time)	Slowly flashes orange
Missed call alert	Rapidly flashes orange
Scanning	Flashes green

■ Accessory Jack

Used to connect accessories such as an earpiece, or a programming cable for radio programming or software upgrade.

Battery Information

Operating Instructions

1. Please only use the battery approved by HYT; unauthorized use of other batteries may result in explosion and fire hazards;

2. Do not remove and replace the battery in explosive areas to avoid explosion, fire and other hazards;

3. Do not discard the battery in fire which may lead to explosion, fire and other hazards;

4. Do not expose the battery to direct sunlight for a long time or place it close to other heating sources, which may cause performance reduction even fire/explosion hazard;

5. Separate the battery from other metal parts to avoid potential hazards resulting from short circuit;

6. Do not squeeze or penetrate the battery to prevent potential battery leakage causing damage to other people or to our living environment;

7. Do not treat the worn battery as household garbage. Recycling of the battery shall comply with your local laws and regulations.

Charging Instructions

1. New batteries shipped from the factory are partially charged. Three complete charge-discharge cycles would optimize the capacity and performance of your battery;

2. Do not charge your battery in an area with explosive hazards. Please only use the charger approved by HYT;

3. Charge the battery at a temperature of 5℃-40℃. Violation of the said limit may result in the battery not being fully charged or even battery damage;

4. To charge the battery attached to a radio, turn off the radio to ensure a full charge;

5. Do not charge a battery that is wet. Please dry it with soft cloth prior to charge to avoid electric shock, short circuit and other hazards;

6. Do not remove the battery or unplug the power cable during charging to ensure a smooth charging process;

7. Overcharge shall always be prohibited for it may shorten the normal life of your battery.

Maintenance Instructions

1. Battery performance will go down when the ambient temperature is below 0°C, so a spare battery is necessary in cold weather;

2. Accumulated dust on charging piece may cause the battery to work or charge abnormally. Please use a clean and dry cloth to wipe it when necessary;

3. Batteries would gradually self-discharge. Therefore, please fully charge the battery to be stored for a long time; then wrap it up with a plastic bag and keep it in a dry and cool place. This can provide defense against moisture intrusion and any damage caused by over self-discharge.

4. To avoid battery capacity reduction due to over self-discharge, recharge the battery fully after storing it for a certain period of time (approximately 3 months for Ni-MH batteries and 6 months for Li-Ion & Li-polymer batteries);

5. Prevent the battery from dropping down to the ground or colliding with other objects; otherwise, the battery performance will degrade significantly;

6. Recharge the battery only when its power is exhausted. This is helpful to prolong its life.

Charging the Battery

Use only the chargers specified by HYT. See figures below for detailed charging methods:

Charging Method I
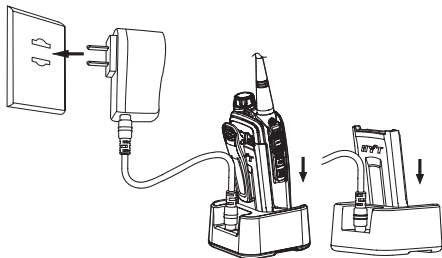
Please follow the steps below to charge your battery:

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

2. Plug the DC connector of the adapter into the DC socket on back of the charger. And the charger LED solidly glows green.

3. Place the radio with the battery attached, or the battery alone, into the charger.

4. Make sure that the battery is in good contact with the charging terminals. The charging process begins when the charger LED solidly glows red.

5. When charging is completed, the charger LED solidly glows green (when charging is about to be completed, the LED glows orange). Then remove the battery or the radio from the charger.

Charging Method II

You may connect multiple desktop charges in parallel to create a multi-unit charger. Assembly Method: Slide the latch of a charger into the slot on the bottom of another charger, as shown in Figure 1.

Latch of Desktop Charger
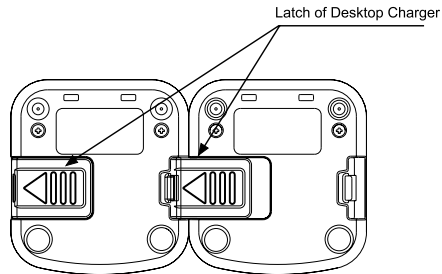
Figure 1 Diagram of Multi-Unit Charger Assembly

Battery Information

You can use HYT Six-Unit Switching Power to charge up to six batteries assembled as above simultaneously, as shown in Figure 2. Please refer to the Owner's Manual for Six-Unit Switching Power for detailed operation instructions.
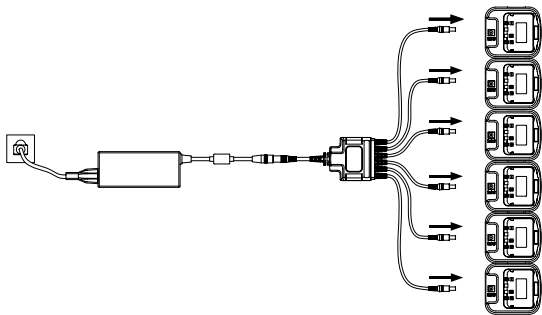
Figure 2 Schematic Diagram of Six-Unit Charger

Assembly and Disassembly

Attaching/Removing the Battery

■ Attaching the Battery

1. Press the belt clip, and push the battery into the radio's slot;

2. Press the battery bottom gently until a click is heard, which indicates that the battery is properly attached to the radio.

> 📝 Note: If the battery is loose or unsecured, please remove and attach it again.
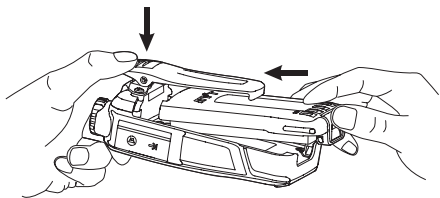
Figure 1
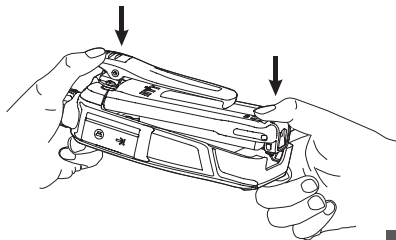
Figure 2

■ Removing the Battery

1. Turn off the radio first.

2. Press the belt clip, and lift the battery latch in the direction as shown below;

3. When the battery bottom gets tilted, release the latch and remove the battery.

> ⚠ Caution: Make sure the battery bottom is slightly tilted to avoid severe abrasions between the battery tab and the slot in the top part of the radio.
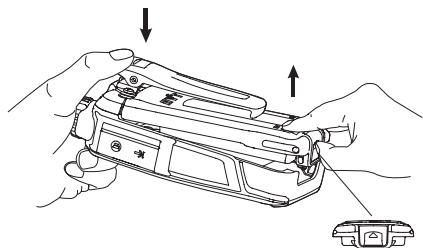
Figure 3
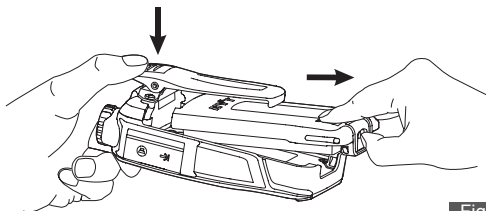
Figure 4

Attaching/Removing the Antenna

■ Attaching the Antenna

Turn the antenna clockwise to fasten it.
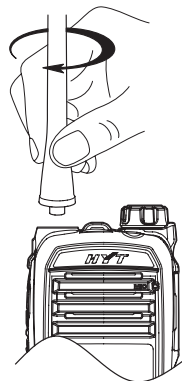
Figure 5

■ Removing the Antenna

Turn the antenna counter-clockwise to remove it.

Attaching/Removing the Belt Clip

■ Attaching the Belt Clip

1. Loosen and remove the screws for belt clip;

2. Align the screw holes in the belt clip with those on the radio body. And then use a screwdriver to secure the screws as shown below.
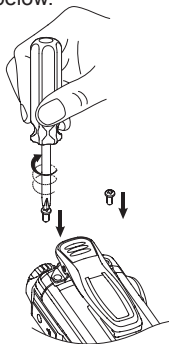
Figure 6

■ Removing the Belt Clip

Unfasten the screws and remove the belt clip.

Attaching/Removing the External Earpiece/ Microphone

■ Attaching the External Earpiece/Microphone

1. Uncover (not remove) the accessory jack cover;

2. Insert the earpiece/microphone plug into the jack, and secure the screw.
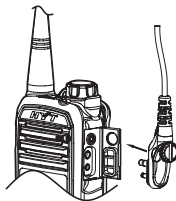
Figure 7

■ Removing the External Earpiece/Microphone

Unfasten the screw and unplug the external earpiece/ microphone.

> ⚠ Caution: When you are using the external earpiece/microphone, waterproof performance of the radio may get affected.

LCD Icons

There are 15 available status icons in all, and no more than 8 icons may display on the LCD simultaneously. As shown in the table below, the display priority decreases from "highest" in the top row to "lowest" in the bottom row. Each icon is displayed at its specific place. When the icon with higher priority tries to access the place which is occupied by an existing icon, the latter has to vacate its place temporarily.

	Leftmost side of LCD ⟶ Rightmost side of LCD							
Highest Priority	📶	🏠	🔈	🔊	Ⓥ	🔒	◈	📢	🔋
	📡	⚠	H	L		🔊			
		🔄							
		🔃							
Lowest Priority		P₁							

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LCD Icons

Description of Icons

Icon	Description	Icon	Description
ᵀᵢₗ	Signal Indicator	◁	Monitor Indicator
⌂	Home Channel Indicator	◁))	Squelch Off Indicator
⚠	Emergency Indicator	Ⓥ	VOX Indicator
⟳	Scan Indicator	🔒	Keypad Lock Indicator
⟳	Scan Stay Indicator	)))	Whisper Indicator
P₁	Priority Scan Indicator	◈	Scrambler Indicator
Ⓗ	High Power Indicator	⊗	Compandor Indicator
Ⓛ	Low Power Indicator	▥	Battery Strength Indicator

Menu Guide

Menu Navigation Chart:
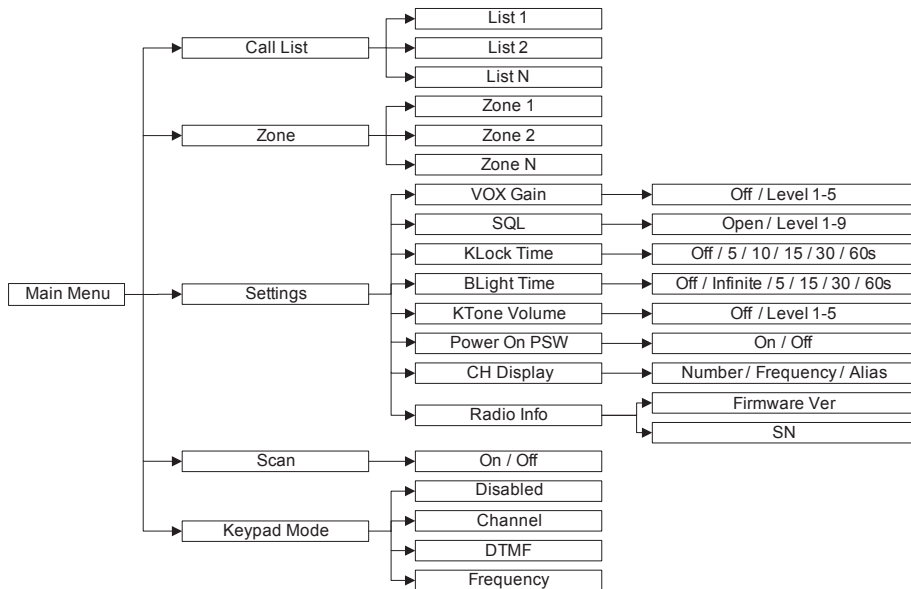
Menu Guide

Front Panel Keys:

Key	Function
⟦ᴏᴋ⟧	OK key: used to select an option or enter a submenu.
⟦ᴄ⟧	C key: used to return to the previous menu or cancel your current operation. Long press this key to return to the main menu.
⟦ᴜᴘ⟧	UP key: used to switch channels upwards during non-menu operation or scroll options upwards during menu operation.
⟦ᴅɴ⟧	DN key: used to switch channels downwards during non-menu operation or scroll options downwards during menu operation
0-9	Used to enter numbers or characters.
⟦＊⟧	Used to enter decimal points or characters. Press ⟦ᴏᴋ⟧ first and then ⟦＊⟧ immediately to lock/unlock the keypad.
⟦#⟧	Used to enter characters.

Menu Description:

Level-1 Menu (Displayed Content)	Level-2 Menu (Displayed Content)	Description for Level-2 Menu
Call List	Call List 1 (Alias)	To select the Call List 1 (Alias)
	Call List 2 (Alias)	To select the Call List 2 (Alias)
	Call List N (Alias)	To select the Call List N (Alias)
Zone	Zone 1 (Alias)	To select the Zone 1 (Alias)
	Zone 2 (Alias)	To select the Zone 2 (Alias)
	Zone N (Alias)	To select the Zone N (Alias)
Settings	VOX Gain	To select the VOX sensitivity level: Off / Level 1-5
	SQL	To select the squelch level: Open / Level 1-9
	KLock Time	To select the keypad lock time: Off / 5s / 10s / 15s / 30s / 60s
	BLight Time	To select the backlight time: Off / Infinite / 5s / 15s / 30s / 60s
	KTone Volume	To select key-press volume: Off / Level 1-5
	Power On PSW	To select the password protection feature: On / Off
	CH Display	To select the channel display method: Channel Number / Channel Frequency / Channel Alias
	Radio Info	To learn the radio information: Firmware Version / Serial Number

Menu Guide

Scan	On / Off	To select the scan feature: On / Off
Keypad Mode	Disabled	To indicate the keypad mode is disabled.
	Channel	To indicate the keypad mode only supports channel number input.
	DTMF	To indicate the keypad mode only supports DTMF input.
	Frequency	To indicate the keypad mode only supports frequency input.

Basic Operations

■ Turning the Radio On/Off

Rotate the Radio On-Off/Volume Control knob clockwise to turn the radio on, and rotate the knob counter-clockwise until a "click" is heard to turn the radio off. During power-on, you will hear an alert tone and see LED indication as well as greetings on the LCD.

■ Adjusting TX Power

Press the programmed Power Adjust key to switch the TX power level between High and Low.

When switching from high power to low power, the radio sounds a low-pitched tone, and the icon $\boxed{L}$ displaces $\boxed{H}$. And when switching from low power to high power, the radio sounds a high-pitched tone, and the icon $\boxed{H}$ displaces $\boxed{L}$.

■ Inputting Password

If the power-on password feature is enabled by your dealer (maximum length: 8 digits), please enter the password by using 0-9, and press $\boxed{\text{OK}}$ to confirm. When the correct password is entered, the radio will access standby mode with a power-on alert tone; otherwise the LCD will display "Error", prompting you to re-try the password.

> Note: During entering the password, please short press $\boxed{\text{C}}$ key to delete a wrong digit or long press it to clear all. In this process, you can move the cursor leftward or rightward through $\boxed{\Rightarrow}$ / $\boxed{\Leftarrow}$ key.

■ Adjusting the Volume

You may control the volume level using the Radio On-Off/Volume Control knob. When the radio is powered on, rotate the knob clockwise to increase the volume, or counter-clockwise to decrease the volume.

Basic Operations

■ Selecting a Zone

The radio supports up to 32 zones. You can switch to your desired zone through the programmable key or the menu as follows:

1. Key Press

Press the programmed Zone Up/ Zone Down key.

2. Menu Operation

   1) Enter the main menu;

   2) Select "Zone" and press $\boxed{\text{OK}}$ to enter;

   3) Select your desired zone and press $\boxed{\text{OK}}$ to confirm.

> Note: The number of channels per zone should be set via programming software by your dealer.

■ Selecting a Channel

The radio supports up to 256 channels. You'd better be sure of the zone where your desired channel locates

before you switch the channel. The ways below are available for channel switch.

1. Press $\boxed{\text{⊡}}$ or $\boxed{\text{⊞}}$.

2. Enter the channel number directly when the keypad mode supports to input channel numbers. (Refer to "Advanced Operations → Keypad Mode" in page 32 for settings of the keypad mode.)

3. Press the programmed Home Channel key to switch to a specific channel. (Refer to "Advanced Operations → Home Channel" in page 31 for settings of the home channel.)

■ Transmitting

To transmit a call, press and hold down the PTT key, and speak into the microphone at your normal voice level. During transmission, the radio displays $\boxed{\text{⧉}}$ with red LED glowing solidly.

> Note: Hold the radio approximately 2.5 to 5 centimeters away from your mouth to reduce the rate of RF energy absorption and ensure an optimal sound volume of the receiving radio.

■ Receiving

Release the PTT key to receive audio signals. If any audio signal is received, the icon ◧▮ will appear with green LED glowing solidly.

TK, SK1 and SK2 are programmable function buttons.

Programmable Auxiliary Functions

Your dealer may assign one of the following auxiliary functions to a short or long, momentary or toggle programmable button-press.

Note: See Advanced Operations for details.

◇ None
◇ Power Adjust
◇ Call 1
◇ Call 2
◇ Call 3
◇ Call 4
◇ Call 5
◇ Compandor
◇ Display Mode Switch
◇ Emergency Off
◇ Emergency On
◇ Home Channel
◇ Keypad Mode
◇ Monitor
◇ Monitor Momentary
◇ Scan
◇ Scrambler
◇ Squelch Off
◇ Squelch Off Momentary
◇ VOX
◇ Whisper
◇ Zone Up
◇ Zone Down
◇ Reverse Display

Advanced Operations

CTCSS/CDCSS

You may set up talkgroups with unique CDCSS/ CTCSS to prevent unwanted conversations at the same frequency. If CTCSS/CDCSS is set on a certain channel, you can only receive voice calls from radios with matching CTCSS/CDCSS. Otherwise you will receive voice calls from all users operating at the same frequency.

> Note: If the following ranges are exceeded, your radio performance will not be guaranteed:
>
> Recommended range for CTCSS: 67Hz~254.1Hz
>
> Recommended range for CDCSS: 023~754

DTMF

■ Methods to transmit DTMF signaling:

During transmission, the LCD displays "Call in PROG" with red LED glowing solidly; after transmission, the LED solidly glows orange. There are three ways available for transmitting:

1. Enter the Call List from the menu, select the desired contact entry, and press PTT to transmit;

2. Use one of the programmed keys Call 1 – Call 5 to transmit;

> Note: To enable this feature, the TX signaling must be set to DTMF on the current channel via programming software by your dealer.

3. Enter the DTMF code by using 0-9 when the radio is in standby mode, and then press PTT to transmit.

> 📝 Note: The numeric keypad must be set to the DTMF keypad. (Refer to "Advanced Operations → Keypad Mode" in page 32 for settings of the keypad mode.)

■ Methods to receive DTMF signaling:

When a channel is programmed to receive DTMF signaling, the preset functions on it will not work unless a matching DTMF signaling is received.

During receiving, the LED solidly glows green; after successful receiving, the LED keeps flashing orange until the pre-defined time expires.

1. Receiving an Emergency Alarm

You may customize the Emergency ID. The radio will sound a fixed Emergency alert when it receives an Emergency Alarm.

2. Receiving an Individual Call

You may customize your Individual Call ID. The radio will sound a special alert when it receives an Individual Call.

3. Receiving a Group Call

You may customize your Group Call ID. The radio will sound a special alert when it receives a Group Call.

4. Receiving Other Types of Codes

If the radio supports ID display, other types of codes received will be displayed on the LCD.

5. Types of Response

Your radio may be set to give any of the following types of response, when it receives an individual call or group call:

1) No Response
2) Silent Alert: The LCD will display "Alert Call Received" but no sound alert will be given.
3) Sound Alert: The LCD will display "Alert Call Received" with sound alert. And only the sound alert will automatically reset.

4) Select Call: The LCD will display "Select Call Received" with sound alert. Both the sound alert and displayed text will automatically reset.

6. ACK (Acknowledge)

When the ACK feature is enabled, the radio will send back a single tone to the calling party, after it receives an individual call or group call.

Channel Scan

The Scan feature enables a two-way radio to continuously scan each channel for activity. It can be programmed by your dealer.

When entering Scan mode, the radio sounds an alert tone (programmable), and then scan starts from the current channel and goes in order of the channel number. During scanning, the LCD displays 🔲 with green LED flashing. If any signal is received on a certain channel with matching signaling, the radio will switch to this channel for the conversation; meanwhile, green

LED solidly glows.

When exiting from Scan mode, the radio also sounds an alert tone (programmable) and 🔲 disappears.

■ No Priority Channel

Suppose there is a scan list of 6 channels and all channels are non-prioritized, the normal scan operation may proceed in the following sequence, as shown in Figure 1.
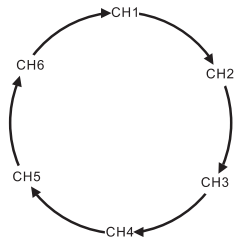

Figure 1 Normal Scan Sequence

■ **Priority Channel Scan**

Suppose there is a scan list of 5 channels and CH2 is prioritized as Priority Channel 1, the scan operation may proceed in the following sequence, as shown in Figure 2.
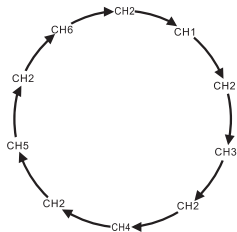
Figure 2 Priority Scan Sequence

■ **Scan On/Off**

There are three ways to access Scan mode:

1. When the radio is in Standby mode, press the programmed Scan key on the channel assigned with a scan list.

2. When Auto Scan is enabled for the channel assigned with a scan list, the radio will start to scan automatically when it switches to the channel.

3. Enter the main menu, select "Scan → On", and press 🔘 to confirm.

There are seven ways to exit from Scan mode:

1. Press the programmed Scan key again during scanning.

2. The radio will automatically exit from Scan mode when switches to a channel with no scan list or with Auto Scan off.

3. Enter the main menu, select "Scan → Off", and press 🔘 to confirm.

4. Press the Call key to transmit.

5. Press the PTT to transmit (except PTT ID).

6. Start the Emergency function.

7. Turn the radio off.

■ Scan Stay

If a matching signal is detected on a Scan List member, or the PTT or Monitor key is pressed, the radio will stay on the channel. At this time, the LCD displays 🔄 and the corresponding channel number. When the scan stays on a priority channel, " 🄿₁ " (Priority Channel 1) will appear on the LCD.

■ Talk Back

With this feature enabled, you can talk back on the channel where scanning pauses.

Enabled: When the radio is staying on a scanned channel, it transmits on the scanned channel;

when the radio is not staying on a scanned channel, it transmits on a preset channel.

Disabled: During scanning, the radio transmits on the preset channel.

■ Priority Scan

With this feature enabled, you can scan the most frequently used channel so that information will not be missed. These priority channels can be programmed by your dealer via programming software. Please contact your dealer for more information.

The radio supports only one priority channel. When scan stays on a non-priority channel, the radio will keep detecting activities on the priority channel. Once any activity is detected, it will jump to the priority channel.

Note:

1. You can create one scan list for each channel and 32 channels at most can be included in the list.

2. During scanning, the radio will not respond to operation of the following functions: Power Adjust, Compandor, Scrambler, Whisper and Keypad Mode.

3. To ensure fast scan speed, the frequency of adjacent channel should not exceed 30MHz.

Emergency

When encountering any emergency or unforeseen situations, you can signal for immediate help by activating this feature. It can be programmed by your dealer.

■ Emergency Start

Press the programmed Emergency On key, and the icon ⚠ appears to indicate the successful entry.

■ Emergency Exit

The radio will return to the previous operating channel after it exits from Emergency mode. And the icon ⚠ disappears accordingly. Ways to exit from Emergency mode include:

1. Press the programmed Emergency Off key.
2. The radio will automatically exit the Emergency mode after the programmed number of Emergency Alarm Cycle is used up.

3. Turn the radio off.

■ Emergency Mode

If the radio enters Emergency mode, it will switch to the preset Emergency Revert Channel. The alarm process includes four stages: Transmit ID, Transmit Alarm, Transmit Background Audio, and Forcibly Receive. Your dealer can program times and duration that the radio cycles during each stage. Please ask your dealer to program one of the following characteristics:

1. No alarm tone available ;
2. Alarm tone audible for the transmitting party only;
3. Alarm tone audible for the receiving party only ;
4. Alarm tone audible for both parties.

Time-out Timer (TOT)

The purpose of TOT is to prevent any single user from using a channel for an extended period, and to protect the radio against damage caused by prolonged

transmission. If the preset time expires, the radio will automatically terminate transmission and keep beeping until the PTT key is released.

Your dealer may program a pre-alert function, so as to alert you to the TOT expiration in advance.

■ Time-out Time

If the programmed time-out time expires, the radio will automatically terminate transmission and keep beeping until the PTT key is released.

■ TOT Pre-Alert Time

The radio will generate pre-alert tone before the programmed TOT pre-alert time expires, to make you aware that transmission will be prohibited soon.

■ TOT Re-Key Time

After the PTT key is released, transmission will remain inhibited until TOT Re-Key Time expires.

■ TOT Reset Time

Two transmissions with time interval shorter than the programmed TOT Reset Time will be deemed as a continuous transmission.

Note: This feature is null in Emergency mode.

Battery Save

With this feature enabled, your radio can conserves battery power to extend its duty time. It can be programmed by your dealer.

In standby mode, if the radio is inactive (no key press/ transmission/reception) for 10 seconds (programmable), it will automatically enter Battery Save mode. And it would exit the Battery Save mode and get activated once any key is pressed or any signal is received.

Compandor

With this feature enabled, you can hear clear and crisp voice even in noisy environment. Press the programmed Compandor key to toggle this function on or off. You can also ask your dealer to assign this feature to a fixed channel. When this feature is enabled, the alert tone sounds once and ▨ appears; when it is disabled, the alert tone sounds twice and the icon disappears.

Display Mode Switch

This feature allows you to change the display mode of channel information: Number, Alias or Frequency. Ways to switch the display mode are shown as below:

- Press the programmed Display Mode Switch key;
- Enter "Settings → CH Display" through the main menu, select your desired display mode, and press 𝗼𝗞 to confirm.

Home Channel

You can ask your dealer to assign the frequently used channel as the Home channel. This feature allows you to fast switch to the Home channel. Ways to switch include:

■ Manual Entry

Press the programmed Home Channel key to switch; and 🏠 appears on the LCD accordingly. Press this key again to return to the previous channel.

■ Auto Entry

You can ask your dealer to assign this feature to a fixed channel. If the non-home channel is inactive, the radio will switch to the Home channel upon expiration of the programmed auto reset time, and 🏠 will appear accordingly.

> 📝 Note: The radio supports only one Home channel.

Advanced Operations

Keypad Mode

This feature enables you to choose one of the keypad input modes: Disabled, Frequency, Channel and DTMF. Ways to switch the modes include:

- Press the programmed Keypad Mode key.
- Enter "Keypad Mode" through the main menu, select your desired keypad mode, and press ⟦ⓄⓀ⟧ to confirm.

According to these four keypad modes, the radio supports the following operations in Standby mode:

Disabled:

The numeric keypad is disabled. You can only press ⟦▣⟧ / ⟦▣⟧ to switch channels.

Channel:

You can input a Channel Number through the numeric keypad, and press ⟦ⓄⓀ⟧ to go on the channel. If the channel does not exist, an Error alert will sound. And you may also press ⟦▣⟧ / ⟦▣⟧ to switch channels.

DTMF:

You can input a DTMF code through the numeric keypad (To create A, B, C and D, respectively double-press 3, 6, 9 and #), and press PTT to transmit. You should set the time and TX signaling (The TX signaling must be set to DTMF) via the programming software at first.

Frequency:

You can input a frequency through the numeric keypad (press ⟦✱⟧ to input a decimal point), and press ⟦ⓄⓀ⟧ to switch to the desired frequency. Simultaneously, LCD displays the frequency compulsively. Press ⟦▣⟧ / ⟦▣⟧ to switch the channel, and the LCD restores the previous display mode. If any illegal frequency is detected, you will be warned of the wrong input by an alert.

Please note that if the radio power is restored, the input frequency remains valid. However, if the channel is switched, this frequency will become invalid.

> Note:You can move the cursor to a wrong character using ⬇ / ⬆ key, and then press ⓒ key to delete it.

Monitor

In this mode, the receiving party can receive incoming calls regardless of CTCSS/CDCSS condition. However, if the frequency consistency between two radios is not satisfied, the receiving party will fail to receive any incoming calls.

In non-auto reset mode, press the programmed Monitor key to enable this feature; the alert tone will sound once and 🔲 will appear accordingly. Press this key again to disable this feature; at this time, the alert tone will sound twice and the icon will disappear.

In auto reset mode, press Monitor to cancel a call.

Monitor Momentary

Refer to Monitor for purpose of Monitor Momentary.

In non-auto reset mode, press and hold down the programmed Monitor Momentary key to enable this feature; the alert tone will sound once and 🔲 will appear accordingly. Release this key to disable this feature; at this time, the alert tone will sound twice and the icon will disappear.

In auto reset mode, press Monitor Momentary to cancel a call.

Scrambler

This technology can encrypt audio signals, and provide sound security for privacy between communication parties.

Press the programmed Scrambler key to toggle this function on or off. You can also ask your dealer to assign this feature to a fixed channel. When this feature is enabled, the alert tone sounds once and ◈ appears; when it is disabled, the alert tone sounds twice and the icon disappears.

Squelch Off

In this mode, the speaker is unmuted in any condition so as to receive any sound on the current channel. When audio signal is received on the channel, audio will be heard. Otherwise, background noise will be heard.

In non-auto reset mode, press the programmed Squelch Off key to enable this feature; the alert tone will sound once and ◘│◘ will appear accordingly. Press this key again to disable this feature; at this time, the alert tone will sound twice and the icon will disappear.

In auto reset mode, press Squelch Off to cancel a call.

Squelch Off Momentary

Refer to Squelch Off for purpose of Squelch Off Momentary. When audio signal is received on the channel, audio will be heard. Otherwise, background noise will be heard.

In non-auto reset mode, press the programmed Squelch Off Momentary key to enable this feature; the alert tone will sound once and ◘│◘ will appear accordingly. Release this key to disable this feature; at this time, the alert tone will sound twice and the icon will disappear.

In auto reset mode, press Squelch Off Momentary to cancel a call.

Voice-operated Transmit (VOX)

With a dedicated earpiece, the radio can automatically begin to transmit when you speak, and terminate transmitting when you stop talking. If VOX is enabled, ⓥ appears on the LCD, and you may follow steps below in Conventional mode:

Advanced Operations

1. Set the PTT/VOX Switch on the earpiece to VOX;
2. Plug the earpiece into the accessory jack;
3. Press the programmed VOX key to activate VOX;
4. Speak into the earpiece microphone and your voice will be transmitted.

Operation Instruction:

1. Press the programmed VOX key to activate or deactivate VOX.
2. The VOX feature may get disabled automatically if the radio is turned off or programmed.
3. You can set the VOX sensitivity through programming software or menu operation to inhibit VOX.

Note:

1. If the PTT/VOX Switch on the earpiece is set to PTT, you can only transmit by pressing the external PTT, no matter whether VOX is activated.

2. When the PTT/VOX Switch is set to PTT, you are not allowed to switch it from PTT to VOX directly; otherwise, continuous transmission may occur. If continuous transmission occurs unexpectedly, you can restore the radio to normal operation by pushing the switch from VOX to PTT, or turning the radio off and back on.

3. You can select an appropriate VOX sensitivity according to the operating environment. If VOX is activated under heavy noise, continuously transmission may occur.

Whisper

With this feature, even if you speak at a low voice, your voice can be heard clearly.

Press the programmed Whisper key to enable this feature; then the alert tone sounds once and 🔊 appears. Press the key again to disable this feature; at this time, the alert tone sounds twice and the icon disappears.

Reverse Display

With this feature, the displayed text can be reversed by 180 degrees.

Press the programmed Reverse Display key to reverse the displayed text; and the alert tone will sound once. Press the key again to restore normal display; and the alert tone will sound twice.

Troubleshooting

Phenomena	Analysis	Solution
The radio can not be powered on.	The battery may have been improperly installed.	Remove the battery and attach it again.
	The battery may have run out.	Recharge or replace the battery.
	The battery contacts may have been damaged (for example, deformed or broken).	Send the battery to your dealer or authorized service center for inspection and repair.
During receiving signals, the voice is weak, discontinuous or totally inactive.	The battery strength may have been too low.	Recharge or replace the battery.
	The volume may have been set to a low level.	Increase the volume.
	The antenna may have got loose or it may have been improperly installed.	Power off the radio, re-install the antenna and power on the radio again.
	The Mic may have been blocked or damaged.	Send the battery to your dealer or authorized service center for inspection and repair.
You can not communicate with other members.	The frequency or CTCSS/CDCSS may have been inconsistent with that of other members.	Set your CTCSS/CDCSS the same as that of other members.

Troubleshooting

Phenomena	Analysis	Solution
You can not communicate with other members.	You may have been too far away from the group members.	Move towards other members. And make sure that you are within the communication range.
Irrelevant communications or noises are heard on the channel.	The radio may have not been set with CTCSS/CDCSS.	Set your CTCSS/CDCSS signaling the same as that of other members. (Go to the dealer for this programming.)
The noise is too loud.	You may have been too far away from other members.	Move towards other members, power off your radio and then restore its power.
	You may have been at an unfavorable position. For example, your communication may have been blocked by high buildings or frustrated in the underground areas.	Move to an open and flat area, and restore the radio power.

If the above solutions can not fix your problems, or you may have some other troubles, please contact us or your local dealer for more technical support.

Care and Cleaning

Please try the following care and cleaning tips to guarantee optimal performance of your radio.

■ Radio Care

- Do not hold the radio by its antenna or earpiece directly.
- Keep the radio far away from substances that can corrode the electronic circuit.
- Attach the accessory jack cover when the radio is not in use.

■ Radio Cleaning

- Clean up the dust and fine particles on the radio surface and charging piece with a clean and dry lint-free cloth or a brush regularly.
- Use neutral cleanser and a non-woven cloth to clean the keys, control knobs and front case after long-time use. Do not use chemical preparations such as stain removers, alcohol, sprays or oil preparations, so as to avoid surface case damage. Make sure the radio is completely dry before use.

Optional Accessories

Li-Ion Battery (2000mAh)
BL2003

Vehicle Desktop Adapter
CHV09

Six-unit Switching Power
PS7002 (The power cable
may vary in different coun-
tries and areas)

Earbud with in-Line PTT &
VOX ESM11

Earbud with on-MIC PTT
& VOX ESM12

D-earset with Boom MIC &
VOX EHM16

D-earset with in-Line
MIC & VOX EHM15

Earpiece with on-MIC
PTT & VOX& Transpar-
ent Acoustic Tube EAM12

Optional Accessories

Remote Speaker Microphone SM08M3

Receive-Only Earpiece with Transparent Acoustic Tube (for use with remote speaker microphone) ESS08

Receive-Only Earbud (for use with remote speaker microphone) ESS07

Note:Pictures above are for reference only and may vary from actual product. However, featuring functions shall be held.