

Contents

Safety and General Information	3
Product Inspection	4
Getting Started	5
Battery Information	8
Antenna Information	11
Assembly and Disassembly	11
General Radio Operations	17
Programmable Auxiliary Functions	19
Functions and Settings	19
CTCSS/CDCSS.....	19
Battery Save.....	20
Power Adjust.....	20
Time-out Timer (TOT).....	20
Battery Strength Indicator.....	20
Monitor / Squelch Off.....	21
Busy Channel Lockout (BCL).....	24
Low Battery Alert.....	24
Voice Operated Transmit (VOX).....	24
Companor.....	25
Scrambler.....	25
Troubleshooting	26
Care and Cleaning	27
Optional Accessory	27
Channel Frequency Table	27
CTCSS Table 38	28
CDCSS Table (83)	29
Glossary	30

Preface

Thank you for your purchase of the HYT TC-518 radio. TC-518 is a business radio that with exquisite and ergonomic design, which bring user a fine operation feel. Passing IP54 waterproof and dustproof certification and utilizing HYT™ audio compandor technology, TC-518 will definitely assure your every fine communication as you wish.

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-518 VHF Two-way Radio

TC-518 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 is at least 2.5cm away from your body.

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, 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 exceed the FCC requirements for wireless RF exposure.



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

- **DO NOT** operate the radio without a proper antenna attached, as this may damaged the radio and may also cause you to exceed FCC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or antenna specifically authorized by the manufacturer for use with this radio.
- **DO NOT** transmits for more than 50% of total radio use time (“50% duty cycle”). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the “TX indicator” lights red. You can cause the radio to transmit by pressing the “PTT” switch.
- **ALWAYS** keep the antenna at least 2.5 cm (1 inch) away from the body when transmitting and only use the **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 $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$).
- **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.

Product Inspection

Before unpacking the TC-518 portable radio, please inspect the packaging for signs of damage and report any damage to your dealer.

Upon unpacking of the TC-518 portable radio, please ensure that all items shipped were received, report any missing or damaged items to your dealer.

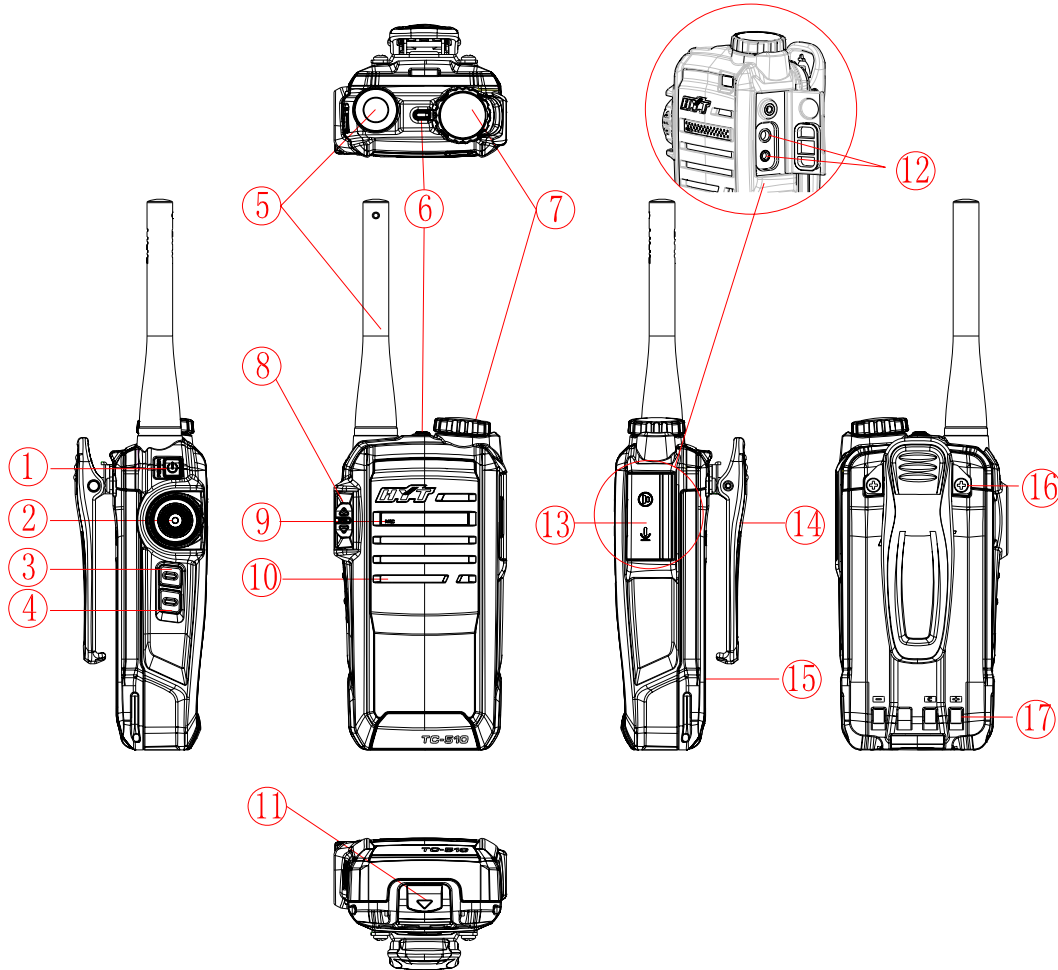
Item	Qty. (PCS)
Antenna	1
Belt Clip	1
Strap	1
Battery	1
Charger	1
Switching Power	1
Owner's Manual	1

Note: 1. Frequency band is marked on the label of antenna. 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.

Getting Started

TC-518



① Power Key	② PTT (Push-to-Talk) Key	③ SK1 (programmable key)	④ SK2 (programmable key)
⑤ Antenna	⑥ LED Indicator	⑦ Channel Selector Knob	⑧ Volume control knob
⑨ Microphone	⑩ Speaker	⑪ Battery Latch	⑫ Earpiece Jack and Programming Port

⑬ Earpiece Cover	⑭ Belt Clip	⑮ Battery	⑯ Belt Clip Screw
⑰ Charging Piece			

(1) Power Key

(2) PTT (Push-to-Talk) Key

Used to switch between transmit and receive modes. Hold down the PTT key and speak into the microphone to transmit, and release it to receive.

(3) SK1 Key

Side key 1, programmable. Your dealer can assign one function to the key via the programming software.

(4) SK2 Key

Side key 2, programmable. Your dealer can assign one function to the key via the programming software.

(5) Antenna

(6) LED Indicator

(7) Channel Selector Knob

Rotate the knob to select a desired channel among channels 1 to 16.

(8) Volume Control Knob

Turn the knob up (+) to increase the volume, or down (-) to decrease the volume.

LED Indicator Statuses refer to followings:

	Status	LED Indication and Alert Tone
User Wired Clone	Source Radio: Power on the radio while holding down the SK2 key. Target Radio: press the power key to turn the radio on.	The LED flashes orange once.
	Source Radio: Power on the target radio and connect the cloning cable. Then press the SK2 key on the source radio to initiate cloning.	1. The LED flashes red when cloning is in progress. 2. The red LED goes out when cloning is completed. 3. The red LED goes out when cloning fails.

	Target Radio	<ol style="list-style-type: none"> 1. The LED flashes green when cloning is in progress. 2. The green LED goes out when cloning is completed.
Power On		<ol style="list-style-type: none"> 1. The power-on alert tone is heard when the radio is powered on. 2. When the current channel is idle, beeps are heard.
Low Battery Alert		The LED flashes red and the low pitched tone is heard every ten seconds.
Transmitting		<ol style="list-style-type: none"> 1. Red LED. 2. When transmission times out, beeps are heard. 3. TOT Pre-alert: One beep is heard.
Receiving		The LED glows green when carrier presents.
Scanning		<ol style="list-style-type: none"> 1. The LED flashes green every 1 second when detecting. 2. Scan Start Tone (programmable by your dealer): One beep is heard. 3. Scan Stop Tone (programmable by your dealer): One beep is heard.
Programming		Reading: The LED flashes red. Writing: The LED flashes green.
Power Adjust		From High to Low Power: The low pitched tone is heard. From Low to High Power: The high pitched tone is heard
VOX/Compandor/Scrambler/Channel Lock		Enable VOX: A high pitched tone is heard. Disable VOX: Two continuous pitched tones are heard.

- (9) Microphone**
- (10) Speaker**
- (11) Battery Latch**
- (12) Earpiece Jack & Programming Port**
- (13) Accessory Cover**
- (14) Belt Clip**
- (15) Battery**
- (16) Screw, Belt Clip**
- (17) Charging Piece**

Battery Information

Initial Use

New batteries are shipped uncharged from the factory. Charge a new battery for 5 hours before initial use. The maximum battery capacity and performance is achieved after three full charge/discharge cycles. If you notice the battery power runs low, please recharge the battery.

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. To avoid risk of personal injury, do not dispose of batteries in a fire!
2. Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household waste.
3. Never attempt to disassemble the battery.

Battery Tips

1. When charging your battery, keep it at a temperature among 5°C - 40°C. Temperature out of the limit may cause battery leakage or damage.
2. When charging a battery attached to a radio, turn the radio off to ensure a full charge.
3. Do not cut off the power supply or remove the battery when charging a battery.
4. Never charge a battery that is wet. Please dry it with soft cloth prior to charge.
5. The battery will eventually wear out. When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new battery.

To Prolong Battery Life

1. Battery performance will be greatly decreased at a temperature below 0°C. A spare battery is necessary in cold weather. The cold battery unable to work in this situation may work under room temperature, so keep it for later use.
2. The dust on the battery contact may cause the battery cannot work or charge. Please use clean dry cloth to wipe it before attaching the battery to the radio.

Battery Storage

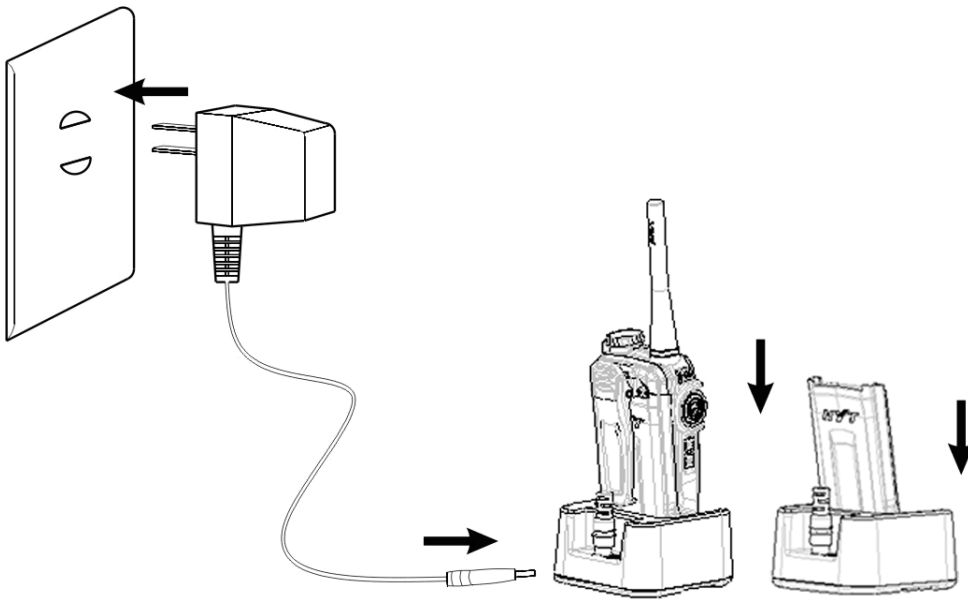
1. Fully charge a battery before you store it for a long time, to avoid battery damage due to over-discharge.
2. Recharge a battery after several months' storage (Ni-MH & Ni-Cd batteries: 3 months; Li-Ion & Li-polymer batteries: 6 months), to avoid reducing battery capacity due to over-discharge.
3. Store your battery in a cool, dry place under room temperature, to reduce self-discharge.

Charging Operation

When the radio flashes red LED and sounds low-pitched tone at intervals of ten seconds, indicating the battery power is low, 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

Refer to the following procedures:



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 green 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.

Troubleshooting:

When troubleshooting, always observe the color of the LED.

No LED Indication?

1. Make sure that the power cord is plugged into an appropriate AC outlet.

Red LED flashes rapidly (0.2s on/0.2s off)?

1. Remove the battery from the charger, and:
 - a) Make sure that it is a HYT authorized battery. Other batteries may not charge.
 - b) Remove power from the battery charger, and clean the gold metal, charging contacts of the battery and charger, using a clean dry cloth.
2. The battery temperature may be above 45°C.
3. Defective battery. Please replace it with a new one.

4. Power up the charger and place the battery back into the charger pocket. If the LED indicator continues to flash red, replace the battery.

Note:

- ✚ When the battery charger detects the proper battery conditions, rapid charging begins automatically (steady red LED).
 - If the battery temperature is above 45°C, the charger will report the fault by flashing red LED rapidly (0.2s on/0.2s off), and will not charge until the battery temperature is below 45°C, with red LED solidly glows (Ni-MH battery only).

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

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.)

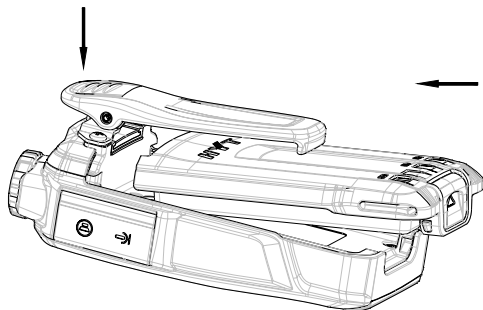


Figure 1

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.

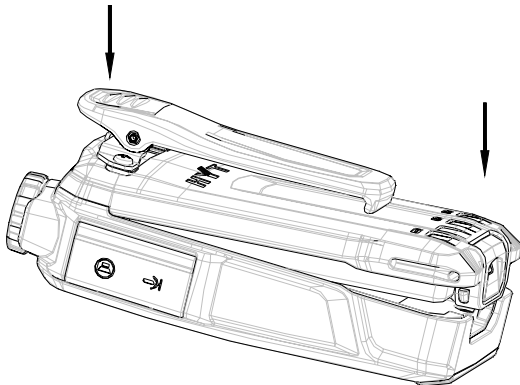


Figure 2

Removing the Battery

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.

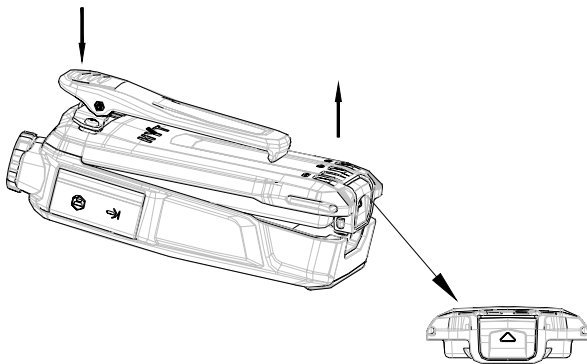


Figure 3

When the bottom of battery is lifted, release the battery latch and take out from the battery slot, see figure 4 below. (Note: when battery is tilted, the angle between battery and main unit can not be too large so that serious abrasion of the tab in the top of battery is caused.)

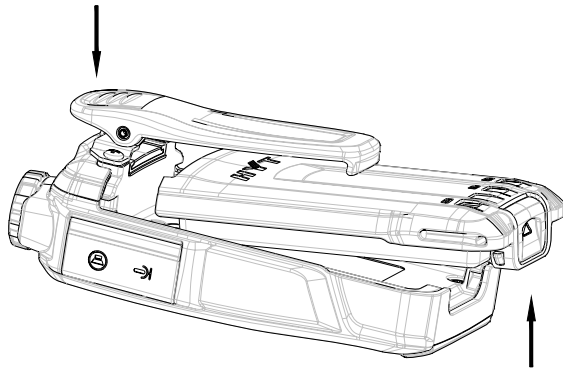


Figure 4

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.

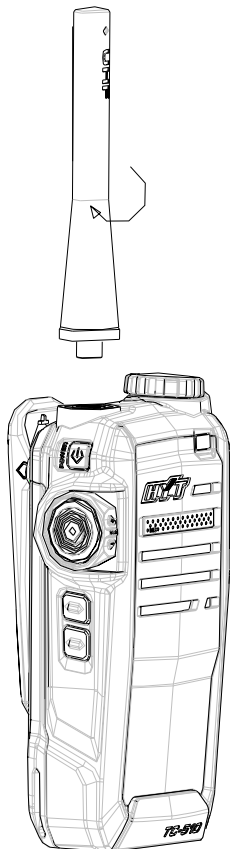


Figure 5

Removing the Antenna

When disassembling antenna, turn the antenna counter-clockwise until it is loosen and screwed out, shown as figure 6.

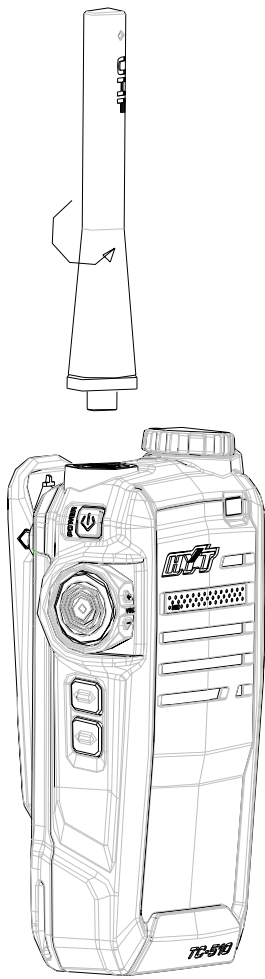
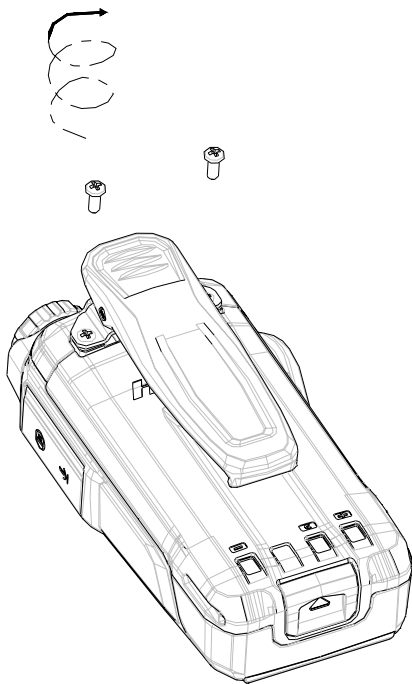


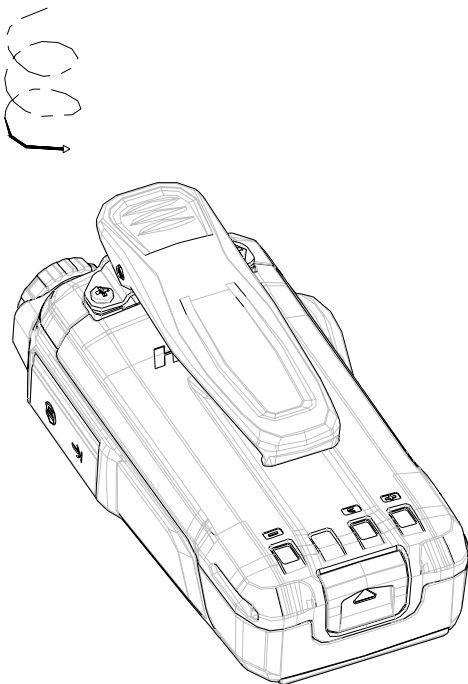
Figure 6

Attaching the Belt Clip

- ① Loosen the screw of the belt clip from the main unit, fasten the belt clip to the main unit (make sure the screw holes of the belt clip and of the aluminum chassis are aligned), then clockwise screw down the belt clip. (See figure 7 below).

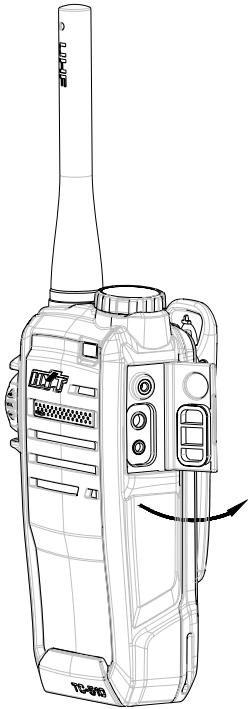
**Figure 7****Removing the Belt Clip**

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

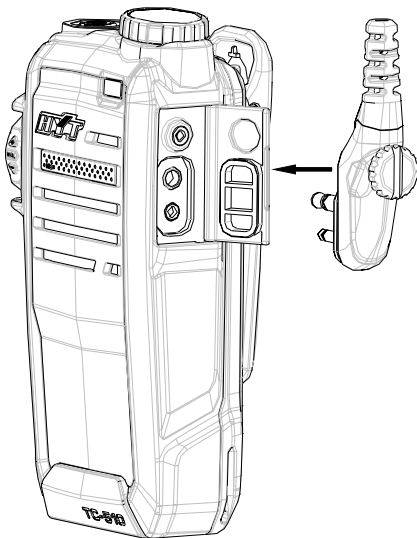
**Figure 8**

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

Hold down [Power] key for about 2s to turn the radio on/off, and then radio sounds an alert tone.

(See figure 1)

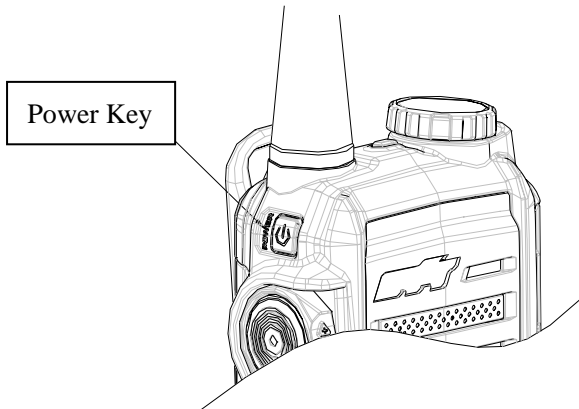


Figure 1

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. As shown in figure 2.

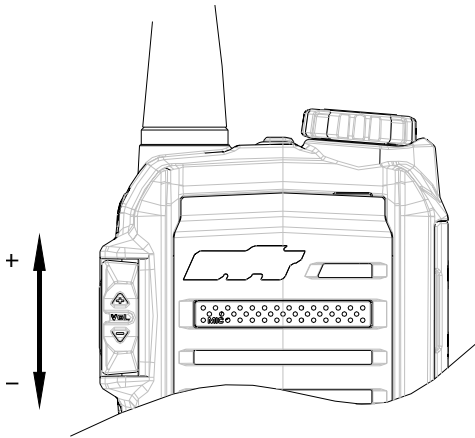


Figure 2

Select a Channel

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

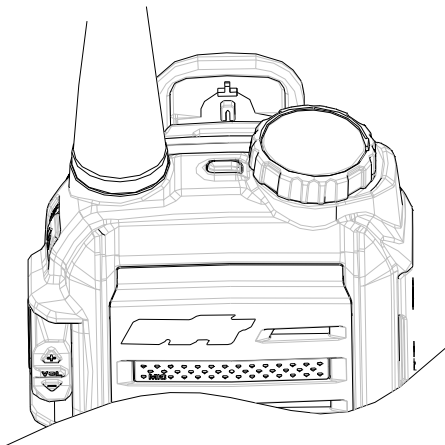


Figure 3

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 **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
- Compandor
- Monitor
- Monitor Momentary (See glossary for definitions of Momentary and Monitor)
- Scan
- Scrambler
- Squelch Off
- Squelch Off Momentary
- VOX
- Illumination
- Battery Strength Indicator
- Channel Lock

Functions and Settings

The following functions are programmable by your dealer.

CTCSS/CDCSS

(See glossary for definitions of 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, when no signal is received or no operation is done, can lower battery consumption (which 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-518 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%	No indication is shown when programmable key is pressed; LED flashes red while radio is operating. While the radio standby, LED flashes red and a low-pitched tone sounds at intervals of a preset time. The interval can be set by programming software.
Less than 10%	No indication is shown when programmable key is pressed; at the time, radio can only receive or standby (Tx is disabled). While the radio standby, LED flashes red and a low-pitched tone sounds at intervals of a preset time. The interval can be set by programming software. If [PTT] key is held down, an alert tone indicating low-voltage Tx inhibit would sound.

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 Momentary 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.

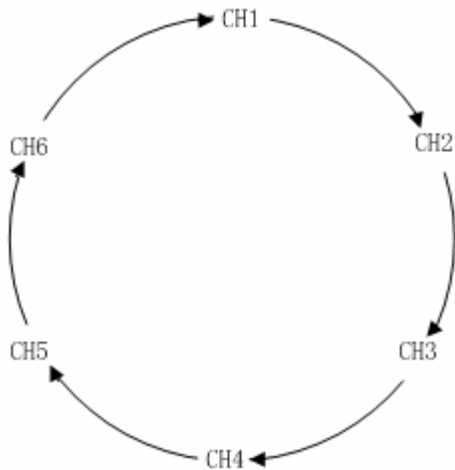


Figure 1

Priority Channel Scan

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

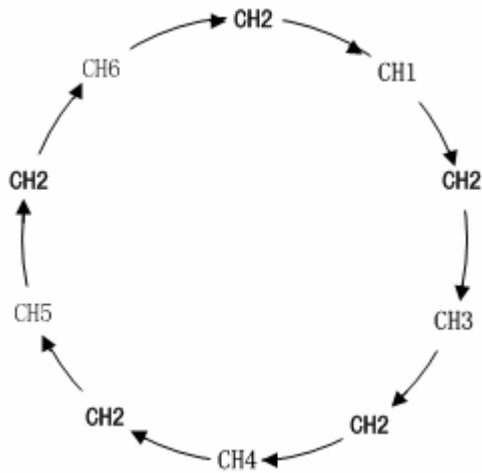


Figure 2

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.

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.

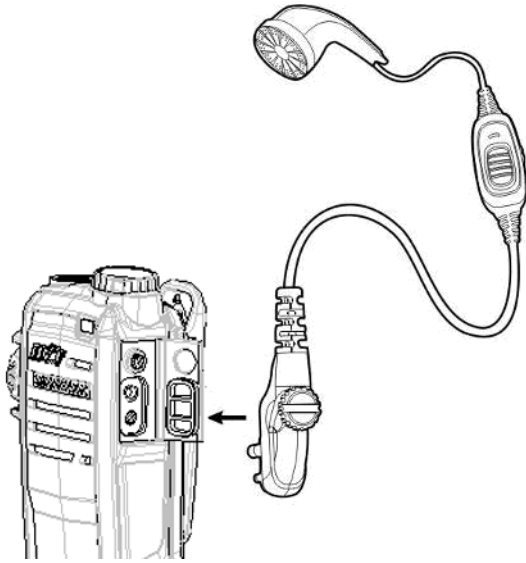
Your dealer can enable/disable the [VOX] feature, and set the [VOX] sensitivity. When [VOX] feature is enabled, the user can transmit hands free with [VOX] accessories:

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.

Comandor

This feature secures any clear talk of user in the noisy environment. The feature, programmed by your dealer, can be enabled or disabled through operation of the programmable key.

Scrambler

Realizing audio encryption, this feature can make any radio without the function receive no real audio so that any private communication of user can highly be protected. The feature, programmed by your dealer, can be enabled or disabled through operation of the programmable key.

Troubleshooting

Symptom	Solution
Cannot power on the radio.	<ul style="list-style-type: none"> a. The battery is run out. Please recharge the battery or replace it with a fresh one. 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.	<ul style="list-style-type: none"> a. The battery life cycle is over, please replace with a new one. 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.	<ul style="list-style-type: none"> a. Confirm radios have the same channel, and CTCSS/CDCSS settings. b. Make sure you are within their communication range.
Hear non-group members	<ul style="list-style-type: none"> a. Please change your CTCSS/CDCSS settings, and so as your group members.
No voice or low voice while transmitting	<ul style="list-style-type: none"> a. Whether the volume switch knob is switched to a proper position. b. Send the radio to your dealer for microphone detection.
Noise always on	<ul style="list-style-type: none"> 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 radio 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

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.

No part of this manual may be copied, reproduced, translated, stored in a retrieval system, distributed, or transmitted in any form or by any means, electronic or mechanical, for any purpose without the express written permission of HYT.