



S1 Two-way Radio

User Manual

Preface

Welcome to the world of Hytera and thank you for purchasing this product. This manual includes a description of the functions and step-by-step procedures for use.

To avoid bodily injury or property loss caused by incorrect operation, please carefully read the *Safety Information Booklet* before use.

This manual is applicable to the following product:

S1 Two-way Radio

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ISED Compliance Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en

compromettre le fonctionnement.

IC SAR Statement

Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the Push-To-Talk (PTT) key.

To receive calls, release the PTT key. Transmitting 50% of the time or less, is important because the radio generates measurable RF energy only when transmitting (in terms of measuring for standard compliance).

Keep the radio unit at least 2.5 cm away from the face. Keeping the radio at the proper distance is important as RF exposure decreases with distance from the antenna. The antenna should be kept away from the face and eyes.

When worn on the body, always place the radio in a Hytera-approved holder, holster, case, or body harness or by use of the correct clip for this product. Use of non-approved accessories may result in exposure levels which exceed the ISED's occupational/controlled environmental RF exposure limits.

Use of non-approved antennas, batteries, and accessories causes the radio to exceed the ISED RF exposure guidelines.

Contact your local dealer for the optional accessories of the product.

Facteur de cycle nominal ne dépassant pas 50% du temps de transmission. Pour envoyer (appel), appuyez sur la touche Push to talk (PTT).

Pour répondre à un appel, relâchez la touche PTT. Il est important d'émettre 50% ou moins du temps, car la radio ne produit de l'énergie RF mesurable (en termes de mesure de la conformité à la norme) que lorsqu'elle émet.

Maintenez l'appareil radio à une distance minimale de 2.5 cm du visage. Il est important de maintenir la radio à une distance appropriée, car l'exposition aux RF diminue avec la distance de l'antenne. Les antennes doivent être éloignées du visage et des yeux.

Lorsque vous portez la radio sur le corps, placez - la toujours dans un support, un étui, un boîtier ou un harnais de corps approuvé par hytera ou utilisez le clip approprié pour ce produit. L'utilisation d'accessoires non approuvés peut entraîner des niveaux d'exposition dépassant les limites d'exposition aux RF professionnelles / environnementales contrôlées d'ISDE.

L'utilisation d'antennes, de piles et d'accessoires non approuvés peut amener la radio à dépasser les directives d'exposition aux RF d'ISDE.

Veuillez contacter votre distributeur local.



Device must be restricted to occupational use to satisfy ISEDC RF exposure compliance. See User Manual for specific operating requirements.

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Documentation Information

Documentation Conventions

Instruction Conventions

Icon	Description
 TIP	Indicates information that can help you make better use of your product.
 NOTE	Indicates references that can further describe the related topics.
 CAUTION	Indicates situations that could cause data loss or equipment damage.
 WARNING	Indicates situations that could cause minor personal injury.
 DANGER	Indicates situations that could cause major personal injury or even death.

Notation Conventions

Item	Description	Example
Boldface	Denotes menus, tabs, parameter names, window names, dialogue names, and hardware buttons.	To save the configuration, click Apply .
		The Log Level Settings dialogue box appears.
		Press the PTT key.
" "	Denotes messages, directories, file names, folder names, and parameter values.	The screen displays "Invalid Battery!".
		Open "PSS.exe".
		Go to "D:/opt/local".
		In the Port text box, enter "22".
>	Directs you to access a multi-level menu.	Go to File > New .
<i>Italic</i>	Denotes document titles.	For details about using the DWS, refer to <i>Dispatch Workstation User Guide</i> .
Courier New	Denotes commands and their execution results.	To set the IP address, run the following command: vos-cmd - m name IP

Key Operations

Operation	Description
Press	Press and release quickly.
Long press	Press and hold for preset time.
Press and hold	Keep the key pressed.

1. Packing List

Unpack carefully and check that you have received the following items. If any item is missing or damaged, contact your dealer.

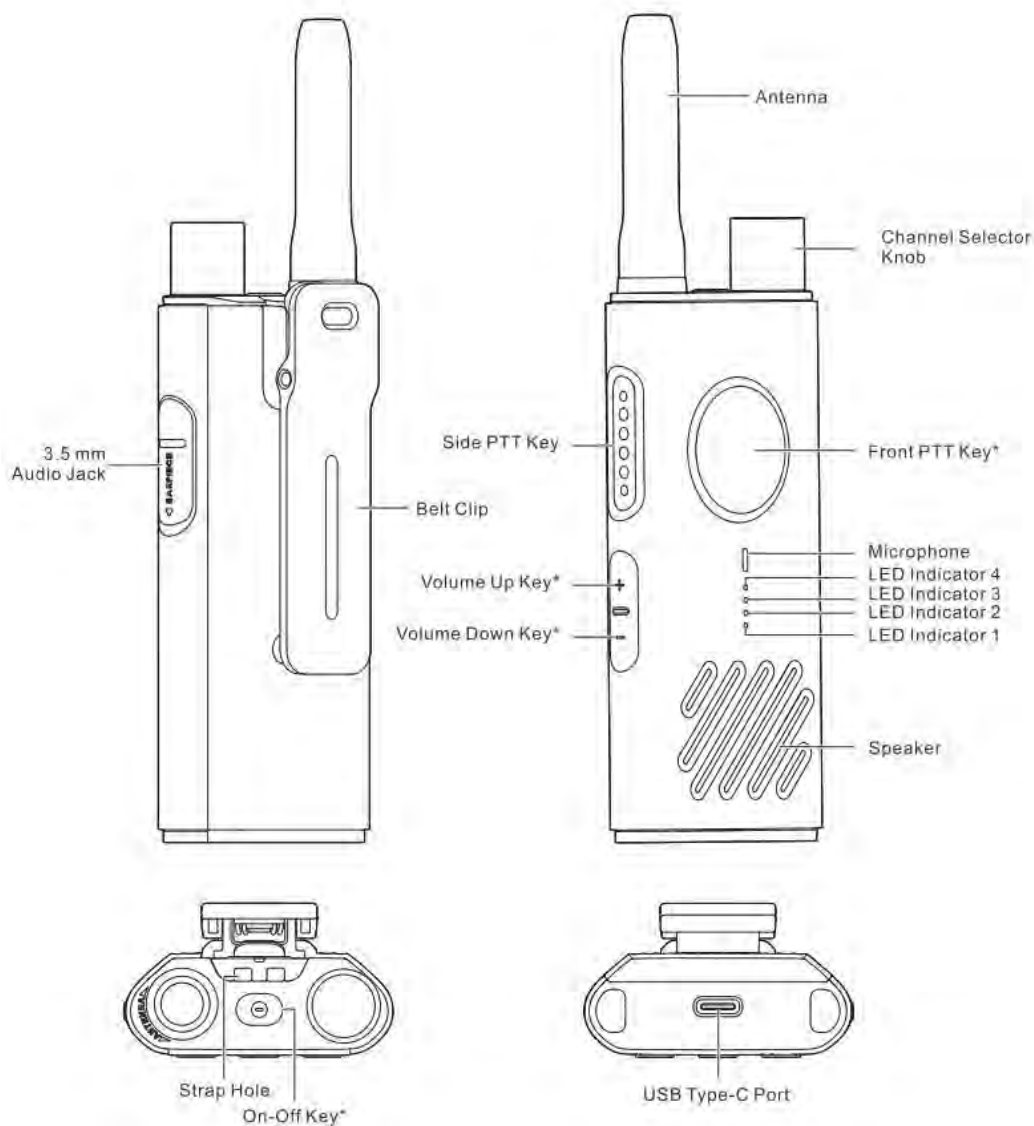
Item	Quantity (PCS)	Item	Quantity (PCS)
Radio	1	Battery	1
Antenna	1	Strap	1
Power Adapter	1	USB Type-C Cable	1
Documentation Kit	1	/	/

NOTE

- Figures in this manual are only for reference.
 - Check that the radio label in the battery slot matches the product you bought. If not, contact your dealer.
-

2. Product Overview

2.1 Product Layout



2.2 Programmable Keys

For convenience, you can assign the **On-Off** key, **Volume Up** key, **Volume Down** key, and **Front PTT** key as shortcuts to radio features through the Hytera Radio app.

Feature	Description
Power Level Adjustment	Allows you to set the TX power level to high or low.
Monitor	Allows you to switch between Monitor Squelch Mode and Receive Squelch Mode.

Feature	Description
Scan	Allows you to enable or disable Scan.
Squelch Off	Allows you to enable or disable Squelch Off.
VOX	Allows you to enable or disable VOX.
Channel List Switch	Allows you to switch the channel list.
Talkaround	Allows you to switch between Direct Mode and Repeater Mode
One-Touch Ultrahigh Power	Allows you to enable or disable Ultrahigh Power.
CH and Battery Voice Notification	Allows the radio to audibly convey channel and battery level.
Mute Mode	Allows you to enable or disable Mute Mode.
Super Power Saver	Allows you to enable or disable Super Battery Saver.
Follow PTT	Allow the Front PTT key to mirror the function of the Side PTT key.
C-N, H-N, L-N, Z1-N, Z2-N, and Z3-N	Allows you to initiate a call to specific channel by pressing the Front PTT key.

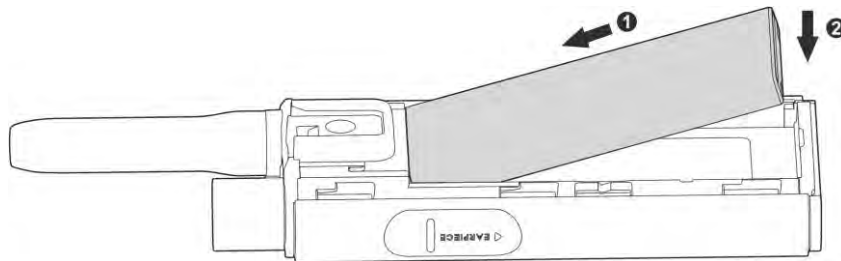
3. Before Use

3.1 Attach the Battery

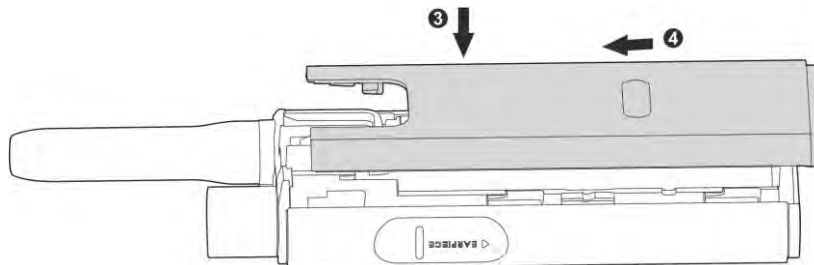
CAUTION

- Use the approved battery to avoid the risk of explosion.
- Dispose of the used battery according to "Precautions for Disposal" in the *Safety Information Booklet*.

1. Press the battery cover backwards to remove the cover.
2. Align the battery contacts with the tabs in the battery compartment, and then press the bottom of the battery downwards.

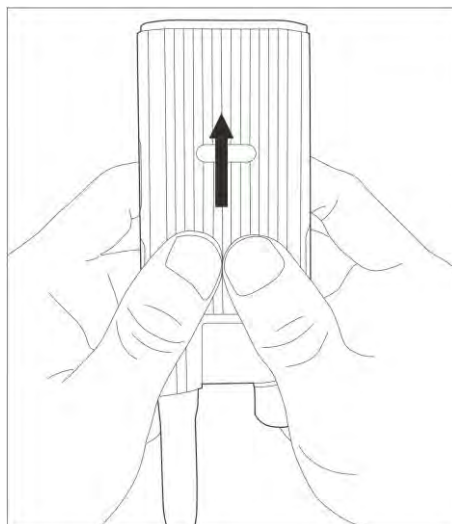


3. Place the hooks of battery cover to the slots, and then push the battery cover upwards until you hear a click.



3.2 Remove the Battery

1. Turn off the radio.
2. Push the battery cover downwards to remove the cover.
3. Remove the battery.



3.3 Charge the Battery

CAUTION

- Use the adapter approved only by the Company.
- Read the *Safety Information Booklet* before charging.
- The remaining lithium-ion battery power is limited to 30% pursuant to the new lithium battery shipment regulation approved by the International Air Transport Association (IATA).

Use the USB Type-C cable to connect the radio with battery attached to the power adapter, power bank, or PC.

You can learn about the charging status through the LED indicators.

LED Indicator	Charging Status
Four LED indicators glow red	The battery is being charged.
Four LED indicators flash red rapidly	The battery fails to be charged.
Four LED indicators glow green	The battery is fully charged.

3.4 Install the Antenna

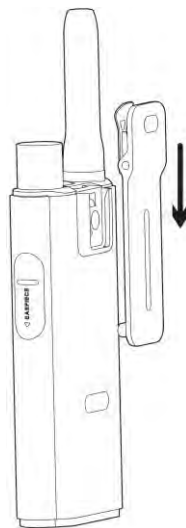
CAUTION

Do not hold the radio by the antenna and swing it; otherwise, the antenna may perform improperly or have a shorter life span.



3.5 Attach the Belt Clip

1. Align the belt clip tab with the groove on the back of the radio.
2. Press the belt clip downwards into place.



NOTE

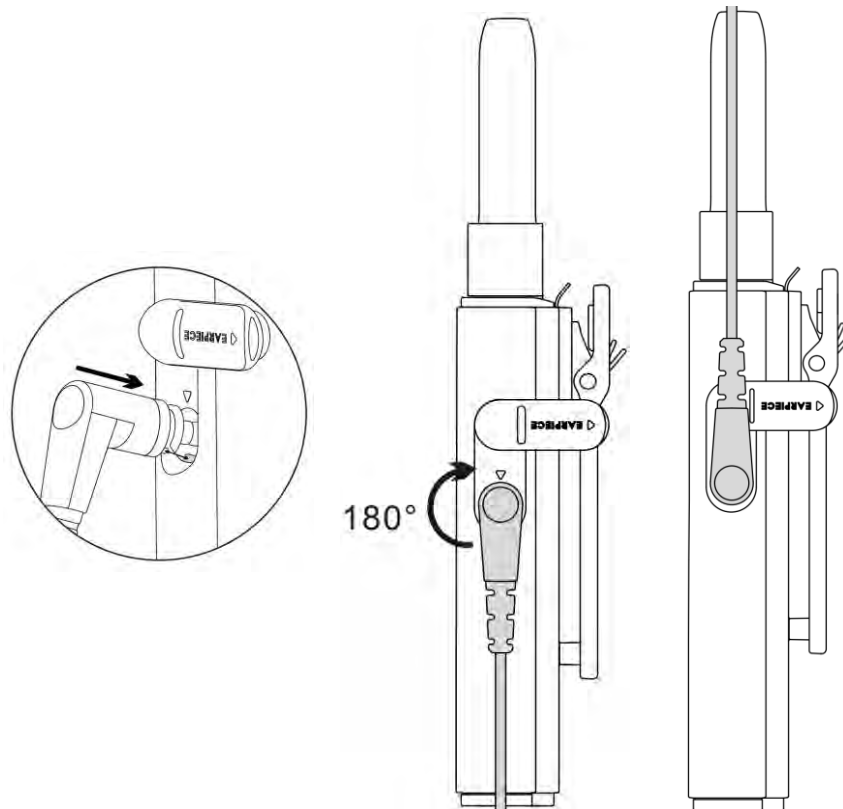
You can press and hold the spring clip of the belt clip and push the belt clip upwards to remove it.

3.6 Wear the Earpiece

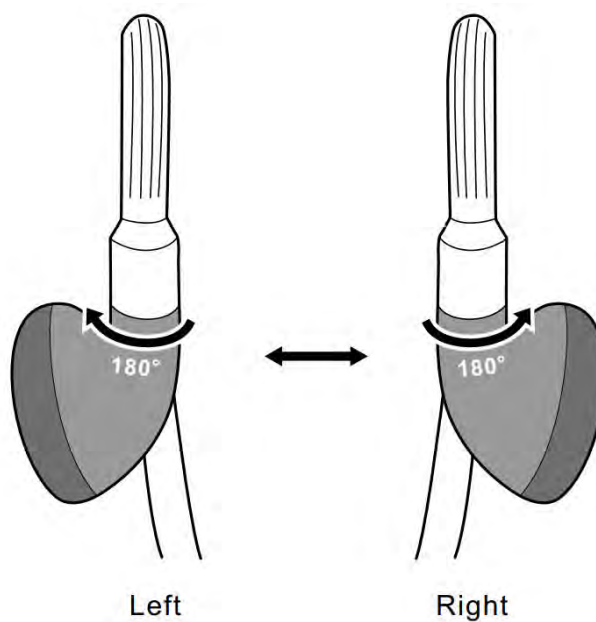
NOTE

The radio is compatible with the EM31 earpiece. For details, consult your dealer.

1. Insert the earpiece plug into the audio jack, and then rotate the plug clockwise by 180°.



2. Rotate the earbud to fit to your left or right ear.



4. Basic Operations

4.1 Turn On or Off the Radio

Long press the **On-Off** key.

4.2 Adjust the Volume

Press the **Volume Up** key to increase the volume, or **Volume Down** key to decrease the volume.

4.3 Switch the Channel List

To switch the channel list, press the preprogrammed **Channel List Switch** key.



NOTE

You can add, modify, or delete channel through the Hytera Radio app.

4.4 Make a Call

To ensure optimal voice quality on the receiving radio, keep the microphone about 2.5 cm to 5 cm away from your mouth during speaking.

- Rotate the **Channel Selector** knob to select a channel, and then press and hold the **Side PTT** key.
- If you assigned a channel to the **Front PTT** key, press and hold the **Front PTT** key to initiate a call on the assigned channel.



NOTE

If no channel is assigned to the **Front PTT** key, the **Front PTT** key works in the same way as the **Side PTT** key.

4.5 Check the Battery Power

Press the preprogrammed **CH and Battery Voice Notification** key.

You can learn about the remaining battery power through the LED indicators and Text To Speech (TTS).

LED Indicator	TTS	Battery Level
Four LED indicators glow green	High battery power	High
<ul style="list-style-type: none">● LED indicators 1, 2, and 3 glow green● LED indicators 1 and 2	Medium battery power	Medium

LED Indicator	TTS	Battery Level
glow green		
LED indicator 1 glows green	Low battery power	Low

5. Operating Status

You can learn about the radio status through the LED indicators.

LED Indicator		Radio Status
Four LED indicators	Flash green once every 0.2s for three times	The radio is being turned on.
	Flash red once every 0.2s	<ul style="list-style-type: none"> ● The radio is being programmed. ● The radio is being written clone data.
LED indicator 1 to indicator 4 in turn	Flashes red	<ul style="list-style-type: none"> ● The radio is transmitting. ● The radio is ready to send clone data.
LED indicator 4 to indicator 1 in turn	Flashes green	<ul style="list-style-type: none"> ● The radio is receiving. ● The radio is ready to receive clone data.
LED indicator 4	Flashes orange once every 3s	<ul style="list-style-type: none"> ● The radio is scanning. ● The radio fails to clone from other radios.
	Flashes orange once every 0.2s for 5s	The radio receives connection request from the Hytera Radio app.
	Flashes red once every 0.2s for 5s	The radio is being searched by the Hytera Radio app.
LED indicator 1	Flashes red once every 0.5s for 1 min	The battery power is low.

6. Supplementary Services

6.1 Mute Mode

Mute Mode allows the radio to remain completely silent, muting all sounds including voice during a call. In this mode, the radio only output sound through the earpiece.

To enable or disable Mute Mode, press the preprogrammed **Mute Mode** key.

6.2 Power Level

Power Level allows you to set the TX power level to high or low. High power enables communication with radios far away from you but consumes more battery power. Low power enables communication with radios close to you and saves battery power.

To adjust the power level, press the preprogrammed **Power Level Adjustment** key.



The TX power of license-free channel is 0.5 W, and cannot be adjusted.

6.3 One-Touch Ultrahigh Power

One-Touch Ultrahigh Power allows you to adjust the TX power of licensed channel to ultra-high (3.5 W), which enhances signal strength and extends communication range.

To adjust the power level to ultra-high, press the preprogrammed **One-Touch Ultrahigh Power** key.

The power level is adjusted to original level in any of the following cases:

- The preprogrammed **One-Touch Ultrahigh Power** key is pressed again.
- The current call ends.
- The radio is restarted.

6.4 VOX

Voice Activated Transmit (VOX) allows the voice to trigger transmission. When the voice detected by the microphone reaches the value to trigger the transmission, the radio automatically transmits the voice without the **Side PTT** key pressed. VOX Gain preprogrammed through the Hytera Radio app is used to control the sensitivity of microphone transmission.

To enable or disable VOX, press the preprogrammed **VOX** key.

6.5 Radio Clone

Radio Clone allows you to copy configuration data of a radio to another radio. The cloning data do not include radio ID, BT alias, and voice notification files.



NOTE

Radios in low battery power cannot enter Radio Clone mode.

Before Clone



NOTE

It is recommended that only one radio is cloned at a time.

- Prepare radio A (to be cloned) and radio B (to receive the cloned data).
- Make sure the two radios have enough battery power.
- Switch the radio A and the radio B to Radio Clone mode.

Radio	Operation
Radio A	<ol style="list-style-type: none"> 1. Turn off the radio. 2. Press the key combination Volume Up and On-Off until the radio turns on and the LED indicators flash red. <p>The radio A enters Radio Clone mode. If no radio clones data from the radio A in five minutes, it automatically exits Radio Clone mode.</p>
Radio B	<ol style="list-style-type: none"> 1. Turn off the radio. 2. Press the key combination Volume Down and On-Off until the radio turns on and the LED indicators flash green. <p>The radio B enters Radio Clone mode.</p>

During Clone

When the radio B receives configurations from the radio A, the radio B audibly notifies "Receiving Data", and the LED indicator flashes red rapidly.

After Clone

- When the radio B successfully clones configuration from the radio A, the radio B audibly notifies "Succeeded". Long press the **On-Off** key to turn off the radio B.
- When the radio B fails to clone configuration from the radio A, the radio B audibly notifies "Failed". Long press the **On-Off** key to turn off the radio B. When the radio B restarts, it recovers to the original configuration.

6.6 Channel Copy

Channel Copy allows you to copy channel information from any radio in the same frequency to the S1 quickly.

NOTE

- Do not copy information of an empty channel.
 - To avoid interference, make sure only one radio can be copied at a time.
 - During channel copy, keep the distance between two radios within one meter.
-

1. Set the S1.
 - a. On the S1, select a channel, and then turn off the S1.
 - b. Press the key combination **Side PTT** and **On-Off** until the S1 turns on and the LED indicators flash green.
The S1 enters Channel Copy mode.
2. Set the other radio.
 - a. Turn on the radio.
 - b. Select a channel, and then press the **PTT** key.
The S1 searches the other radio, and copies channel information from that radio.
When channel copy is complete, the S1 dings.
3. (Optional) To copy other channel information:
 - a. On the S1, select a new channel.
 - b. On the other radio, press the **Side PTT** key.
4. To exit Channel Copy mode, restart the S1.

6.7 Scan

Scan allows you to listen to activities on other channels, keeping track of your team members.

To enable or disable Scan, press the preprogrammed **Scan** key.

With Scan enabled, the radio scans according to the scan list preset for the current channel, during which the LED indicator 4 flashes orange slowly. When detecting activities on a channel, the radio stays on the channel and the LED indicator 4 glows green.

6.8 Monitor

Monitor allows the radio to receive more signals including weak signals, and helps you to recognize weak voices in the speaker.

To switch between Monitor Squelch Mode and Receive Squelch Mode, press the preprogrammed **Monitor** key.

6.9 Squelch Off

Squelch Off keeps the speaker unmuted regardless of whether carrier exists, during which the radio sounds background noise.

To enable or disable Squelch Off, press the preprogrammed **Squelch Off** key.

6.10 Talk Around

Talk Around allows you to continue communication in direct mode when the repeater malfunctions or your radio is out of the coverage of the repeater.

To switch between Direct Mode and Repeater Mode, press the preprogrammed **Talkaround** key.

6.11 Super Power Saver

Super Power Saver allows you to prolong the battery life significantly.

To enable or disable Super Power Saver, press the preprogrammed **Super Power Saver** key.

NOTE

Super Power Saver mode may increase delay for call initiation and establishment.

6.12 Hytera Radio App

You can program the radio through the Hytera Radio app.

To download and install the Hytera Radio app on your Android phone, scan the QR code.

NOTE

It is recommended that you install the Hytera Radio app on the phone running Android 9.0 or later.



7. Troubleshooting

Phenomena	Analysis	Solution
The radio cannot be turned on.	The battery may be installed improperly.	Remove and reattach the battery.
	The battery power may have run out.	Recharge or replace the battery.
	The battery may suffer from poor contact caused by dirtied or damaged battery contacts.	Clean the battery contacts.
The keys do not work.	The keys may fail to function temporarily.	Restart the radio.
	The keys may be damaged.	Contact your dealer or technicians of the Company for maintenance.
The LED indicators are abnormal.	The indication may be abnormal.	Restart the radio.
	The LED indicators may be damaged.	Contact your dealer or technicians of the Company for maintenance.
During receiving, the voice is weak, discontinuous, or totally inactive.	The signal may be weak.	<ul style="list-style-type: none"> ● Make sure that the radio is within the signal coverage. ● Make sure that the antenna is installed.
	The volume may be low.	Increase the volume.
	The speaker may be blocked or damaged.	Clean the surface of the speaker.
The battery fails to be charged.	The power adapter plug may be inserted into the socket improperly.	Reinsert the power adapter to the socket.
	The USB Type-C cable may be poorly connected.	Reconnect the USB Type-C cable.

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

8. Radio Care

To guarantee optimal performance as well as a long service life of the radio, follow the tips below.

8.1 Care Radio

- Do not disassemble the radio.
- Do not throw, crack, or hammer the radio.
- Do not pierce or scrape the radio, especially the interfaces.
- Do not expose the radio to the extreme temperature (lower than -20°C or higher than 55°C).
- Keep the radio away from substances that can corrode it.
- Close the audio jack cover when no accessory is in use.

To avoid liquid penetration into the radio, follow the tips below:

- Do not expose the radio to the environment with high humidity.
- Keep the radio away from salty water, ionized water, alcoholic beverage, lotion, or other impure water.
- Before connecting the accessory or power adapter to the radio, ensure the radio and the interface are dry.

If the radio has been wet, follow the tips below:

- Do not turn on the radio.
- Do not connect the accessory or power adapter to the radio.
- Do not dry the radio by microwave, hair dry, or other external heat sources.
- Do not insert the cotton buds or tissue into the interface.
- Use the clean and soft cloth to dry the water on the radio surface, and then put the radio to the well-ventilated place until it is dry.

Battery

To guarantee optimum performance as well as a long service life of the battery, follow the tips below:

- Use the approved power adapter to charge the battery.
- Keep the radio turned off during charging.
- Do not use the radio during charging.
- Charge the battery under the temperature from 0°C to 45°C .
- When the low battery alert occurs, replace or charge the battery in time.
- When the battery is fully charged, disconnect the power adapter in time.

- Do not drop the battery by force.
- Do not make the battery wet.
- To avoid short circuit, do not use the conductive substance such as iron wire to touch the anode and cathode of the battery.

8.2 Cleaning



CAUTION

- Turn off the radio and remove the battery before cleaning.
 - Ensure no peripheral devices are connected to the radio.
 - Do not use chemical preparations such as stain removers, alcohol, sprays or oil preparations.
 - Do not directly spray the neutral cleanser on the radio.
 - Do not use the radio before it is fully dry.
 - After cleaning the audio jack, put the cover back in place.
-

It is recommended to clean the radio regularly. During cleaning, you can check whether the components are damaged. If damages exist, contact the local dealer or the Company.

1. Use the non-metal brush to clean up the dust or dirt on the radio surface.
2. Use the lint-free cloth with proper neutral cleanser to clean the surface, screen, knob, keys, and interfaces.
3. Use another lint-free cloth with proper pure water to clean up the cleanser or residue.
4. When cleaning the battery slot, use the non-metal brush to clean up the dust and dirt in the slot, and then use the dry and soft lint-free cloth to clean the contacts.

8.3 Sterilizing



CAUTION

- Turn off the radio and remove the battery before sterilizing.
 - Ensure no peripheral devices are connected to the radio.
 - Do not directly spray the alcohol on the radio.
 - Keep the radio away from the power supply and fire.
 - Do not use the radio before it is fully dry.
 - After sterilizing the audio jack, put the cover back in place.
-

It is recommended to sterilize the radio regularly. You can sterilize the radio by the following tips:

Use the lint-free cloth with proper rubbing alcohol (density $\geq 70\%$) to clean the radio surface, keys, knob, and interfaces.

8.4 Storing Radio



CAUTION

- Turn off the radio and remove the battery before storage.
 - Ensure no peripheral devices are connected to the radio.
-

When storing the radio, follow the tips below:

- Keep the radio in the well-ventilated place with the temperature from -30°C to $+80^{\circ}\text{C}$ and the humidity no more than 75%.
- Keep the radio away from the acidic and corrosive substances.
- Keep the radio away from the fire or other heat sources.
- Do not store the radio in direct sunlight.

Battery



CAUTION

The capacity and performance of the battery may degrade if the battery is not used for long time.

When storing the battery, follow the tips below:

- Keep the battery in the well-ventilated place with the temperature from -5°C to $+30^{\circ}\text{C}$ and the humidity no more than 75%.

- Keep the battery away from the acidic and corrosive substances.
- Keep the battery away from the fire or other heat sources.
- Do not store the battery in direct sunlight.
- Store the battery in the package box or bag.
- During storing, charge the battery once every three months, and care the battery once every six months.

9. Optional Accessories

CAUTION

Use the accessories approved by the Company only. Otherwise, we will not be liable for any loss or damage arising out of the use of unauthorized accessories.

Contact your local dealer for the optional accessories used with the product.

10. Specifications

Item	Description
Model	HYT-S31
Dimension (H x W x D) (without antenna and belt clip)	108 mm x 53 mm x 20 mm
Weight (with standard battery, antenna, and belt clip)	145 g
Battery	2,200 mAh
Operating Voltage	3.8 V
Operating Temperature	−20°C to 55°C
Storage Temperature	−30°C to 70°C
Charging Port	USB Type-C
Audio Jack	3.5 mm
BT	<ul style="list-style-type: none">● BLE● LE
Channel	48

11. Abbreviations

Abbreviation	Full Name
IATA	International Air Transport Association
LED	Light-Emitting Diode
PTT	Push-to-Talk
TTS	Text To Speech



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