HYT-P50 PoC Radio

Product Description

Hytera Communications Corporation Limited

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Documentation Information

This section describes the audience, conventions, and revision history of this document.

Audience

This document is intended primarily for the following audiences:

- Sales and marketing engineers
- Business customer
- System maintenance engineers

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, dialog names, and hardware buttons.	To save the configuration, click **Apply**.
		The **Log Level Settings** dialog 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**.

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Item	Description	Example
Italic	Denotes document titles.	For details about using the UNM5800, refer to *UNM5800 Operation Guide*.
`Courier New`	Denotes commands and their execution results.	To set the IP address, run the following command: `vos-cmd - m name IP`

Revision History

Document Version	Application Version	Release Date	Description
00	V1.0	January 2025	Initial release.

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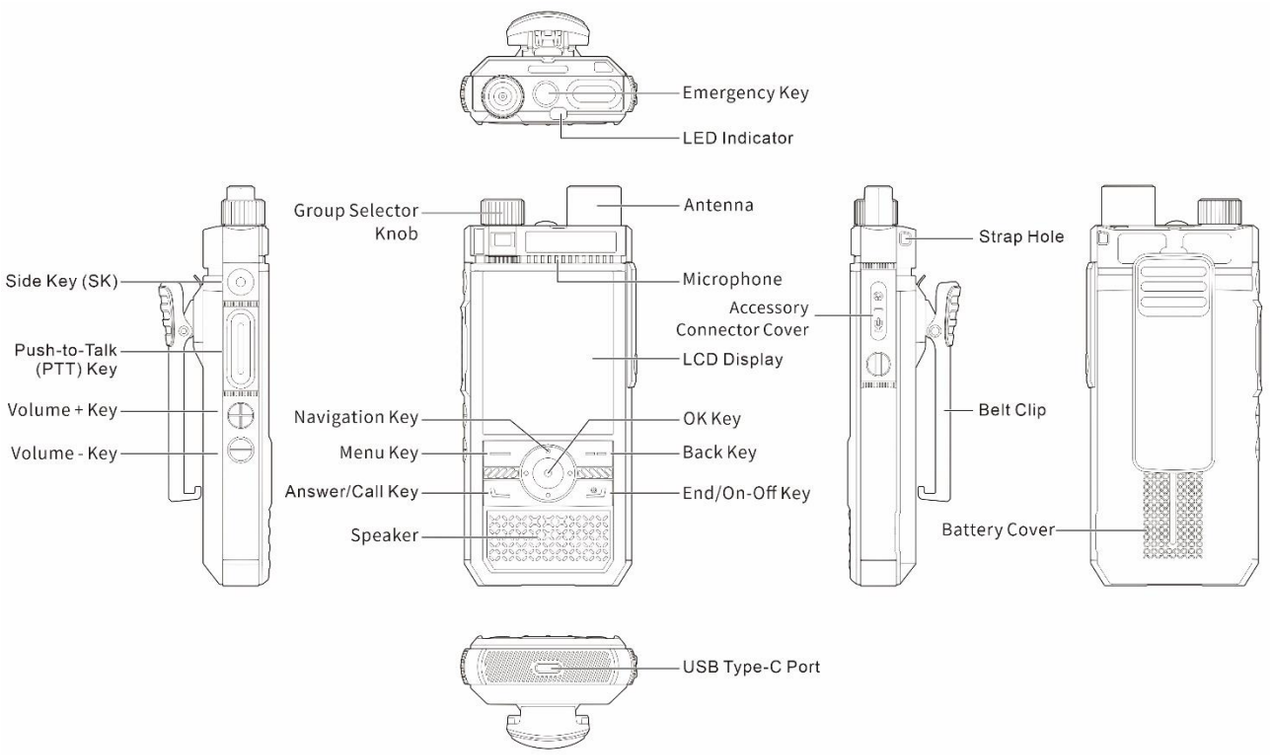
1. Overview

Hytera HYT-P50 is a full-featured push-to-talk over cellular (PoC) radio designed to provide instant communication services over the LTE networks. With superior audio quality and the Hytera PoC solution adopted, the HYT-P50 ensures reliable information transmission, empowering users of various industries to work effectively and collaborate seamlessly.

With the Android 12 Go operating system and user-friendly interfaces, the HYT-P50 allows easy and smooth operation. With high-quality manufacturing techniques and multiple functionalities, the HYT-P50 is built to perform excellently in various scenarios and environments.

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2. Product Layout



NOTE

Key functions are subject to product upgrades.

3. Highlights

3.1 Reliability

3.1.1 Unrivaled Durability

Benefits

The HYT-P50 is durable to be used and perform excellently even in harsh environments.

Key Features

- With high-quality PC materials, the HYT-P50 boasts high mechanical strength and robust resistance to shock, heat, and corrosion.
- With highly accurate mold, precisely assembled components, and evenly injected materials, the HYT-P50 is manufactured to guarantee great durability and shock resistance performance.
- IP68 rated, the HYT-P50 is waterproof, greatly prolonging radio life span.
- With high-strength alloy and waterproof design, the USB Type-C port still performs perfectly after plug and unplug tests, so the radio can withstand complex environments.
- With a professional 9-pin accessory connector of screw-in design, the HYT-P50 can firmly connect to various accessories.

3.1.2 Stable Communications

Benefits

With the Hytera PoC solution, the HYT-P50 allows the user to initiate a private or a group call nationwide over the public network.

Key Features

- Professional Dual Antenna Design

  The professional dual-antenna design ensures instant, stable, and clear voice services even in areas with weak signals. At B5 frequency band, the transmit receive power (TRP) can reach 18.5 dBm and the total isotropic sensitivity (TIS) can reach –93.5 dBm.

- Instant PoC Calls
  - The HYT-P50 allows the user to initiate private and group calls.
  - The HYT-P50 allows the user to initiate a call to the preset standby group simply by pressing the **PTT** key.
- Mobile Network Services

  After the Nano SIM card is installed, the HYT-P50 can access mobile network services.

3.1.3 Superior Audio Quality

Benefits

The HYT-P50 delivers loud and clear audios, ensuring the user to hear and be heard all the time even in noisy environment.

Key Features

- High Power Speaker

  With the 3-watt speaker with a diameter of 36 mm, the HYT-P50 delivers up to 112 dB audio at 10 cm away.

- Professional Acoustic Cavity

  With professional acoustic cavity design, the audio is loud and clear.

- Noise Cancellation

  The advanced noise cancellation technology filters out surrounding sounds for clear communication.

- Howling suppression

  The efficient howling suppression technology ensures that information is transmitted without interruption.

- Wideband Audio Processing

  The wideband audio processing technology reproduces sound naturally for enhanced clarity and understanding.

3.1.4 Long Battery Life

Benefits

Powered by a large-capacity battery, the HYT-P50 offers round-the-clock services.

Key Features

- With 12 nm high-precision process, the HYT-P50 is equipped with a low-power, high-performance chip and a 4,000 mAh Li-ion battery.
- With low-power design of both software and hardware, the HYT-P50 operates on a 10-10-80 duty cycle (10% transmitting time, 10% receiving time, and 80% standby time).

3.1.5 Positioning

Benefits

The HYT-P50 provides precise and fast positioning, helping the dispatcher to make quick and right decisions, and the user to get accurate positions even in complicated environments such as tunnel.

Key Features

- The HYT-P50 supports multiple positioning modes, including GPS, GLONASS, and BDS.

- With the Hytera PoC solution, the HYT-P50 can periodically report its location data to the command center, allowing the dispatcher to know the real-time location and replay the tracks of the radio.

3.1.6 Safety Alarms

Benefits

With the safety functionalities, the HYT-P50 protects the user effectively.

Key Features

In the Lone Worker mode, if the user does not press the key to confirm their safety within a preset time, the HYT-P50 will automatically trigger an emergency alarm.

3.2 Simplicity

3.2.1 Screen Style

Benefits

The HYT-P50 is designed for easy and user-friendly operation. The user can customize the style of the home screen according to their needs.

Key Features

- Screen Style
  - Mixed (PoC+app): With this style, the user can view PoC information at a glance, or add their favorite apps to home screen.
  - App library: With this style, the user can view all apps on home screen and open any apps in seconds.
- Intuitive Screen

  With the 2.4-inch LCD color display, the HYT-P50 provides clear and user-friendly interfaces, which allows quick access to information.

3.2.2 Group Selector Knob

Benefits

With the Group Selector knob, the user can switch the group simply by rotating the knob, which helps them focus on work.

Key Features

- The Group Selector knob can be rotated without any glance.

  For example, when the user wears the HYT-P50 at their waist, the user can switch the group easily without lowering their head to operate on the screen.

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- The stepless Group Selector knob provides damping feedbacks, which ensures the precision of group switching.

3.2.3 Efficient Management

Benefits

The user can effectively manage the HYT-P50 with tools.

Key Features

- When the HYT-P50 is connected to PoC Manager through a data cable, the user can manage the application and programming of the radio.
- When the HYT-P50 is connected to WLAN, the user can clone the radio information to another radio.

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4. Specifications

Parameter	Description
Frequency range	Africa, Asia, and Europe: ● GSM: 850MHz/900MHz/1800MHz/1900MHz ● WCDMA: B1/B3/B5/B8 ● LTE TDD: B34/B38/B39/B40/B41 ● LTE-FDD: B1/B3/B5/B7/B8/B18/B19/B20/B26/B28 America: ● GSM: 850MHz/900MHz/1800MHz/1900MHz ● WCDMA: B2/B4/B5 ● LTE TDD: B38/B41 ● LTE-FDD: B2/B3/B4/B5/B7/B12/B13/B17/B26/B28
Operating system	Android 12 Go
Processor	4 cores, 2.0 GHz
Memory	1GB LPDDR4X + 8GB EMMC
Dimensions (H x W x D)	129.5 mm × 61 mm × 23.5 mm
Weight	190 g (does not include the belt clip)
Screen size	2.4 inches
SIM card slot	Nano x 1
Positioning systems	GPS+BDS/GPS+GLONASS/BDS
Network type	2G/3G/4G
BT	BT 5.0
Interfaces	USB Type-C port 9-pin accessory connector Belt clip connector (easy to be attached and removed)
Battery	4,000 mAh

Parameter	Description
Charging mode	USB Type-C
Speaker power	3 W (max.)
Operating temperature	–20°C to +60°C
Storage temperature	–30°C to +70°C
ESD	±12 kV (air), ±8 kV (contact)
IP rating	IP68
Drop resistance	1.5 m
Certification	CE

5. Abbreviations

Abbreviation	Full Name
BDS	Beidou Navigation Satellite System
CE	Certificate CE
ESD	Electro-Static Discharge
GLONASS	Global Navigation Satellite System
GPS	Global Positioning System
PoC	Push-to-Talk over Cellular
SIM	Subscriber Identity Module

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