Legal Information

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aution

Output power listed is rated conducted. This device must be restricted to work-related operations only in an Occupational/Controlled RF exposure environment and must operate with a duty factor not exceeding 50%. This transmitter may operate with the antenna(s) documented in this filing in Push-to-Talk and body-worn configurations. RF exposure compliance is limited to the specific beltclip and accessory configurations as documented in this filing and the separation distance between user and the device or its antenna shall be at least 2.5 cm. All qualified end-users of this device must have the knowledge to control their exposure conditions and/or duration to comply with occupational/controlled Exposure limit and requirements. The highest reported SAR values for Face-held, body-worr simultaneous transmission conditions are 1.18 W/Kg, 2.18 W/Kg

- 1. Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- 2. Adapter shall be installed near the equipment and shall be easily accessible
- 3. The device operating temperature range is -20~40°.
- 4. The plug considered as disconnect device of adapter.
- 5. The device complies with RF specifications when the device used at 25mm form your front face and 0mm form your body to antenna.
- 6. Declaration of Conformity Hereby,ZTE TRUNKING TECHNOLOGY CORPORATION declares that

this UHF Digital Portable Radio product is in compliance with essential requirements and other relevant provisions of Directive 2014/53/EU.

CE

Get Started

Please read the following information before your operation:

How to use this manual? What will your agent/system administrator tell you?

How to use this manual?

For details, refer to the descriptions provided in the following sections.

What will your agent/system administrator tell you?

You can consult your agent or system administrator about the following: • Is your PH400 configured with a preset channel?

- Which buttons can access other functions?
- Which optional accessories are applicable to your demand?

This manual describes the basic operations of the PH400. However, your agent or system administrator may customize your PH400 based on your application. For details, contact your agent or system

Ready to Use the HT

Perform the following steps to assemble your HT: Charge the battery. Install the battery. Install the antenna. Install the belt clip. Power on Adjust the volume

Charge the Battery

The PH400 is powered by a Li-ion battery. To avoid damage and comply with the warranty terms, you can charge the battery only with the charger included with the PH400.

Install the Battery

Align the battery with the battery seat on the back of the PH400 and forcibly press the battery into the PH400 until the locker properly locks. To remove the battery, power off the PH400 and press the locker of the battery until the battery separates from the battery seat.

Programmable key 1

DMO dual-timeslot

Hybrid channe

Scanning list

Scanning

Talkaround

Hybrid Channe

Scanning List

signals.

Scanning

SMS

VOX

HT Control

HT control options

HT Control Options

• PTT button

Receiving and Answering Calls

Receive or answer calls after the PH400 channel ID and user ID or call group ID are selected.

QUICK START GUIDE DIGITAL HAND-HELD TERMINAL

PH400 U(1)

When the PH400 transmits a call, the LED indicator is red on. When the PH400 receives a call, the LED indicator is green on.

Receiving and Answering a Group Call

To receive a call from a user group, the PH400 must be configured to be a member of the group.

- 1. When the PH400 receives a group call, the LED indicator flashes
- 2. Hold the PH400 vertically and one to two inches (2.5 cm to 5.0 cm) away from your mouth. Press and hold the PTT key and talk to the microphone after the LED indicator is red on.
- 3. Release the **PTT** key to receive the call.
- 4. If no voice is transmitted and received in a specified time, the call is

Receiving and Answering a Private Call

A private call is the call from an individual portable radio to another portable radio.

When you receive a private call:

1. he LED indicator flashes green

- 2. Hold the PH400 vertically and one to two inches (2.5 cm to 5.0 cm) away from your mouth. Press and hold the PTT key and talk to the microphone after the LED indicator is red or
- 3. Release the PTT key to receive the call
- 4. If no voice is transmitted and received in a specified time, the call is

Receiving a General Call

An all-call is the call from an individual portable radio to all portable radios on the channel. It is used to release the important notices that need users' special concern

When you receive an all-call:

- 1. The PH400 beeps (if the prompt tone is turned on) and the LED indicator flashes green.
- 2. If no voice is transmitted and received in a specified time, the call is erminated

Notes:

- You cannot answer an all-call.
- If you are handed over to another channel when you are receiving an all-call, the PH400 stops receiving this all-call. During an allcall, you cannot use any pre-programmed key until the call is terminated

Initiating a HT Call

- You can select a channel, user ID, or call group ID in either of the following ways:
- Channel selection knob
- Pre-programmed shortcut key

Note:

Your PH400 must enable channel encryption before sending encrypted information. The transmitted encrypted information can be decrypted only when the target portable radio has the same encryption key as vour PH400

Initiating a Call with the Channel Selection Knob

Initiating a Group Call

To initiate a call to a user group, the PH400 must be configured to be a member of the group.

Procedure:

- 1. Turn the channel selection knob and select the channel with the active call group ID.
- 2. Hold the PH400 vertically and one to two inches (2.5 cm to 5.0 cm) away from your mouth
- 3. Press and hold the **PTT** key and talk to the microphone after the LED indicator is red on.
- Release the PTT key to receive the call. When the PH400 receives an answer, the LED indicator flashes green
- 5. If no voice is transmitted and received in a specified time, the call is

Initiating a Private Call

Procedure:

- 1. Turn the channel selection knob and select the channel with the active user ID.
- 2. Hold the PH400 vertically and one to two inches (2.5 cm to 5.0 cm) away from your mouth
- 3. Press and hold the $\ensuremath{\textbf{PTT}}$ key and talk to the microphone after the ED indicator is red on.
- 4. Release the **PTT** key to receive the call. When the PH400 receives an answer, the LED indicator flashes green
- 5. If no voice is transmitted and received in a specified time, the call is

Initiating an All Call

This function allows you to transmit signals to all the users on the channel. The PH400 must be programmed to allow you to use this function

Procedure:

- 1. Turn the channel selection knob and select the channel with the active all-call group alias or ID. Hold the PH400 vertically and one to two inches (2.5 cm to 5.0 cm)
- away from your mouth 3. Press and hold the **PTT** key and talk to the microphone after the
- LED indicator is red on.

Note:

The users on the channel cannot answer an all-call.

Initiating a Group/Private Call with the Shortcut Key

With the shortcut-key call function, you can make a group call or a private call with a pre-defined alias or ID. To use this function, you can pre-define a shortcut key. You can allocate only an alias or an ID to a shortcut key. You can pre-define several shortcut keys. Procedure:

- 1. Press the pre-programmed shortcut key to initiate a group call or a private call to the pre-defined alias or ID.
- 2. Hold the PH400 vertically and one to two inches (2.5 cm to 5.0 cm) away from your mouth
- Press and hold the PTT key and talk to the microphone after the LED indicator is red on.
- 4. Release the **PTT** key to receive the call. When the PH400 receives an answer, the LED indicator flashes green
- 5. If no voice is transmitted and received in a specified time, the call is terminated

For a private call, you hear a short prompt tone when you terminate the

Install the Antenna

removing its antenna.

Install the Belt Clip

Alian the screw hole in the belt clip with that on the back of the PH400 and tighten the belt clip with the screw.

Power on

installed

Turn the **On/Off/Vol** knob clockwise until a click and then a prompt tone are heard, indicating that the power-on test is successful Note:

Power off the PH400, insert the antenna into the mounting hole, and turn it clockwise. To remove the antenna, turn the antenna counterclockwise. Make sure that the PH400 is powered off before

If the tone/prompt function of the PH400 is disabled, no power-on prompt tone can be heard. You can enable/disable the prompt tone on the programming software. If the PH400 fails to be powered on, check the battery. Make sure that the battery is properly charged and correctly

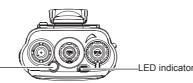
If the problem persists, contact your agent. To power off your PH400, turn the knob counterclockwise until a click is heard.

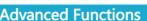
Adjust the Volume

To turn up the volume, turn the **On/Off/Vol** knob clockwise. To turn down the volume, turn the On/Off/Vol knob counterclockwise.

Please read the following carefully:

Programmable buttons





The PH400 provides the following advanced functions:

Remotely listening allowed Remotely alarm-reporting allowed

DMO Dual-Timeslot

In a DMO dual-timeslot communication, two calls can be made on the same frequency, making the communication efficiency double and saving the cost for users for frequency request and use. In addition, dual-timeslot communication can ensure smooth and realtime communication even in peak time.

You can set a hybrid channel for your PH400 to receive digital or analog

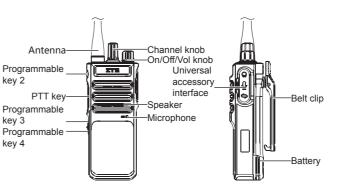
You can create a scanning list and allocate it to a single channel or a call group. Your PH400 can check whether there are voice activities on the current channel or in the current call group by cyclically scanning the channels and call groups in the list. Your PH400 can support up to 10 scanning list and each list consists of up to 16 members.

When you enable scanning, your PH400 check whether there are voice activities on the current channel by cyclically scanning the preprogrammed scanning list.

The LED indicator flashes orange

Automatic scanning: The PH400 starts to scan automatically after you select an active channel or call group with automatic-scanning enabled.

Front and Side Views of the HT



Programmable Keys

Your agent can set the programmable keys as the shortcut keys or preset channel or call groups

Functions That Can Be Allocated

- Emergency call: initiates an emergency alarm or call in accordance with programming
- PTT call: initiates a portable radio call. Voice control: enables or disables the VOX function.
- Power switchover: switches over the transmit power level between
- the high and low power. Squelch: enables or disables the squelch function
- Remote kill: remotely powers off the PH400.
- Remote activation: remotely powers on the PH400.
- Area switchover: changes the current area of the PH400. There are
- two areas available for the PH400
- Remote listening: remotely listens to the activities of the PH400.
- Talkaround switch: enables or disables the Talkaround mode.
- Remote detection: checks whether the peer device is operating.
- Scanning on/off: enables or disables scanning.

Starting and Stopping Scanning

with the channel selection knob.

after the LED indicator is red on

channels or call groups.

can be set on the PH400.

2. The LED indicator red on.

message fails to be sent.

Setting a Power Level

2. Release the **PTT** key to receive the call.

Sending a Pre-edited Short Message

scanning is stopped, the LED indicator is off.

Transmitting a Response During Scanning

Procedure

Procedure

Procedure

Procedure:

• Shortcut call key 1~5: initiates a group call or a private call and sends preset short messages with a shortcut key.

1. Start or stop scanning by pressing the pre-programmed scanning

2. When scanning is started, the LED indicator flashes orange. When

During scanning, your PH400 stays on the active channel or in the

active call group detected. The duration when the PH400 stays on the

1. During the idle time, press the PTT key and talk to the microphone

You can send a pre-edited short message with a pre-programmed key.

1. Press the pre-programmed shortcut key to send a pre-edited short message to a pre-defined ID. Up to 10 pre-edited short messages

3. If two prompt tones are heard, it indicates that the short message is

You can set the power level of each channel to low or high.

1. Press the pre-programmed power level key.

A high power level is used for the communication between the

PH400 and a remote portable radio. A low power level is used for the communication between the PH400 and a near portable radio.

2. If the PH400 beeps once, it indicates that high power is transmitted.

If the PH400 beeps twice, it indicates that low power is transmitted.

successfully sent. If one low tone is heard, it indicates that the short

channel is called the pre-programmed time limit of the "idle time"

3. If you do not send a response, the PH400 starts to scan other

key or selecting a channel with a pre-programmed scanning list

PTT Key

Each channel in the PH400 can be individually configured as a digital/ analog channel.

- During a call, the PTT key can allow the PH400 to transmit signals to other portable radios in the call. You can press and hold the PTT key to transmit a call and release the PTT key to receive a call. When the PTT key is pressed, the microphone is activated.
- When a call is terminated, the PTT key can initiate a new call. For details, refer to the "Initiating a Portable Radio Call" section on Page 7.
- When you release the PTT key to terminate a call, you can hear a beep. You can switch off the channel idle prompt by disabling all PH400 tones and prompts. You can enable/disable the prompt tone on the programming software.
- Channels can be switched over by the channel selection knob.

Status Indicators

The PH400 indicates its operational status in the following ways: LED indicators Prompt tones

LED Indicators

The LED indicators show the operational status of the PH400

- Red on: The PH400 is transmitting signals, sending short messages, and encrypting calls or data.
- Green on: The PH400 is powering on, receiving signals or short messages, and encrypting calls or data.
- Flashing orange: The PH400 is scanning.

Note:

You can enable or disable the following indicators on the programming software: transmission indicator, receiving indicator, scanning indicator, channel switchover indicator, power-on indicator, and carrier indicator.

Accessories

Prompt Tones

Your PH400 is compatible with the accessories liste table. For details, contact your agent.

'talkaround"

Remotely Listening Allowed

Remote Kill Allowed

This function enables remote kill of the PH400

Power adapter		
Belt clip		
Earphone (optional)		
	ZTE Parking List	
Name	Model/Specification	Quantity
Portable radio	PH400 U(1)	1
Antenna	AF512	1
Li-ion battery	AB400	1
Smart charger		1
Power adapter		1
Belt clip		1
Quick start guide		1

Enabling or Disabling the VOX Voice Control Function

VOX allows you to initiate a hand-free voice call on a programmed channel. Once the microphone on the VOX accessory detects a voice signal, the PH400 automatically transmits signals in a programmed time period

Note:

details, contact your agent or system administrat

- Procedure: 1. Press the programmed VOX key to enable or disable the VOX function
- 2. Talk to the microphone clearly.

Talkaround

If the forwarder does not work or if your PH400 is beyond the operating scope of the forwarder but within the coverage of other portable radios, you can still use your PH400 for communication. This is called

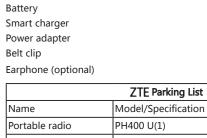
Procedure:

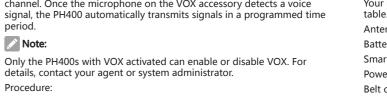
Press the programmed Repeater/Talkaround key to switch over between the Talkaround and Repeater mode

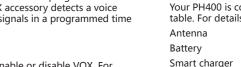
This function enables remote listening of the PH400.

Remotely Alarm-Reporting Allowed

This function enables remote alarm reporting of the PH400.









Tompetiones
The prompt tones provide voice prompts of the device status or data reception responses. You can enable or disable the related prompt tones on the programming software.
 Digital single-call tone: A beep can be heard when the PTT key is pressed.
 Digital group-call tone: A beep can be heard when the PTT key is pressed.
 Analog call tone: No beep can be heard when the PTT key is pressed.
Call end tone: A toot can be heard.
• Key pressing tone: A beep can be heard.
• Power-on tone: A continuous tone can be heard.
 Transmission termination tone: Repeated thuds can be heard until you release the PTT key.
 Low-battery alarm tone: Repeated tones can be heard when the battery voltage is low. You can set the duration on the programming software.
Receiving and Initiating a Call
After configuring the following function, you can use your PH400.
Selecting a Zone
A zone is a channel group. The PH400 supports up to two zones. One zone supports up to 16 channels. (The PH400 supports up to 32 channels.) Procedure:
1. Press the pre-programmed zone conversion key.
 The LED indicator flashes green once, indicating that the current zone is zone 1. If the LED indicator flashes red once, it indicates that the current zone is zone 2. The PH400 reports the current channel ID.
Selecting the PH400 Channel, User ID, or Call Group ID Procedure:
Turn the channel selection knob to select the PH400 channel ID and user ID or call group ID.
6
Accessories
Your PH400 is compatible with the accessories listed in the following

Restrictions are valid for the European country

Restrictions are valid for the following countries: France (FR) , United Kingdom (UK) , Italy(IT) , Ireland (IE) , Portugal (PT) , Luxembourg (LU) ,Bulgaria(BG) ,Latvia (LV),Czech Republic (CZ) , Denmark(DK), Estonia(EE), Lithuania(LT), Hungary(HU), Netherlands(NL), Austria(AT), Poland(PL), Romania (RO), Slovakia(SK), Finland(FI), Sweden(SE).

Technical Specification

Digital protocol: ETSI TS 102 361-1, -2, -3 Frequency Range: UHF:400-470MHz Channel capacity: 32 Channel spacing: 12.5kHz/25KHz Channel spacing: 12.5KH2/25KH2 Frequency stability: ±1.0pm Operating Voltage: 7.4V Sensitivity (Analog): 0.22uV (12dB SINAD) Sensitivity (Digital): 0.22uV (5% BER) FM modulation: 12.5KHz (11K0F3E)/25KHz (16K0F3E) 4FSK digital modulation: 12.5KHz for Data (7K60F1D&7K60FXD) 12.5KHz for Voice (7K60F1E&7K60FXE) 12.5KHz Voice and Data (7K60FXW)

Engineering personnel setting up those frequency ranges whit Customer Programming Software(CSP), the mechanism implemented in the product to avoid the end user to managing changes in the definition of operating frequency ranges in order to avoid usage of un-allowed frequency ranges.

Country	Frequency Range(MHz)	Max. Transmi power (W)
Germany(DE)	hany(DE) 406.1-430 ,440-470	
France (FR)	406.1-430,444.5-447, 451.5-460, 461.5-470	4
United Kingdom (UK)	410-430 ,440-470	4
Italy(IT)	440-443,445-470	4
Greece(EL)	406.1-430 ,440-470	4
Spain(ES)	406.1-430 ,440-470	4
Ireland (IE)	410 - 430,440 - 455, 456 - 459,460 - 470	4
Belgium(BE) 406.1-430 ,440-470		4
Croatia (HR) 406.1-430 ,440-470		4
Cyprus (CY) 406.1-430 ,440-470		4
Portugal (PT) 440-470		4
Malta(MT) 406.1-430,440-470		4
Luxembourg (LU)	410-430,440- 470	4
Bulgaria(BG)	410 -430,440-470	4

Latvia (LV) 406.1-430,440-450,456 -470 Slovenia(SI) 406.1-430,440-470 4 Czech Republic (CZ) 448 - 451.3 ,457.38 - 461.3 ,467.38 - 470 Denmark(DK) 406.1-430, 450 - 470 406.1 - 410,412.5 - 420 , 422.5-430 ,440 - 442.5, Estonia(EE) 443 - 450,446 -446.2,450 -453 ,457.575 - 463,467.575 -470 406.1 - 410 , 413 - 418.6 ,423 - 428.6 ,440 - 450 , Lithuania(LT) 450 - 452.9875 ,458.1125 - 462.9875 ,467.4875 - 467.5875 Hungary(HU) 417 - 420,442 - 445,456 - 460, 461.3 - 470 Netherlands(NL) 410 -430,440-470 444.9 - 444.900001, 450 - 456, 457.33 - 457.330001, Austria(AT) 457.45 - 458.3,460 -470 448 - 449.5,457 - 460,467 - 470 Poland(PL) 408 - 410.8,415 - 420.8,425 - 429.8, 440 - 450.55, Romania (RO) 457.5 - 458.2, 460 - 460.55,467.5 - 468.2 Slovakia(SK) 441.025 - 451.31,455.73 - 461.31,465.73- 470 407.525 - 408.55,410.0125 - 410.8875,417.525 - 417.9, 420.8875,426.35 - 427.5,427.525 - 427.9, 429.15 -419.15 - 419.525,419.55625 - 419.71875,420.0125 -9.525,429.55625- 429.71875,440.0125 - 440.5875, 440.60625 - 440.89375,442.775 - 443, 443.025 - 444, Finland(FI) 444.025 - 444.525,444.55 - 444.975,445 - 446, 447.00625 - 447.29375,447.30625 - 447.70625, 449 025 - 449 525 449 55 - 449 975 450 325 - 452 475 452.525 - 452.975,453.0125 - 453.6625,469.725 - 469.975 406.1 -430, 442 - 444,444.5875 - 452.5, Sweden(SE) 457.5 - 462.5,467.5 - 470

echnical Specification

CC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject (1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including

interference that may cause undesired operation. NOTE 1:

This equipment has been tested and found to comply with the limits for a Class B digital device , pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be

determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: - Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver. -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help. NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible

for compliance could void the user's authority to operate the equipment.