Preface

Thanks for your favor in our product. This manual is helpful for you to quickly know how to use the product. For detailed features and operations, please refer to the *TETRA Terminal Series Feature Book* and the *Safety Information Booklet* along with the product.

This manual is applicable to the following product:

PT790Ex F5 TETRA Intrinsically Safe Portable Terminal

Disclaimer

Hytera Communications Corporation Limited (the Company) endeavors to achieve the accuracy and completeness of this manual, but no warranty of accuracy or reliability is given. All the specifications and designs are subject to change without notice due to continuous technology development. No part of this manual may be copied, modified, translated, or distributed in any manner without the express written permission of us.

We do not guarantee, for any particular purpose, the accuracy, validity, timeliness, legitimacy or completeness of the Third Party products and contents involved in this manual.

If you have any suggestion or would like to learn more details, please visit our website at:http://www.hytera.com.

RF Radiation Information

This product must be restricted to operations in an occupational/controlled RF exposure environments. Users must be fully aware of the hazards of the exposure and able to exercise control over their RF exposure to qualify for the higher exposure limits.

RF Radiation Profile

Radio Frequency (RF) is a frequency of electromagnetic radiation in the range at which radio signals are transmitted. RF technology is widely used in communication, medicine, food processing and other fields. It may generate radiation during use.

RF Radiation Safety

In order to ensure user health, experts from relevant industries including science, engineering, medicine and health work with international organizations to develop standards for safe exposure to RF radiation. These standards consist of:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR part 2 sub-part J;
- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992;
- Institute of Electrical and Electronic Engineers (IEEE) C95. 1 – 1999;
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998;

FCC Regulations

Federal Communication Commission (FCC) requires that all radio communication products should meet

the requirements set forth in the above standards before they can be marketed in the U.S, and the manufacturer shall post a RF label on the product to inform users of operational instructions, so as to enhance their occupational health against exposure to RF energy.

EU Regulatory Conformance

As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of the Directive 1999/5/EC. Please note that the above information is applicable to EU countries only.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not 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

Operation is subject to the following two conditions: 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:" 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."

RF Exposure Compliance and Control Guidelines and Operating Instructions

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits always adhere to the following procedures.
Guidelines:
• Do not remove the RF Exposure Label from the device.
• User awareness instructions should accompany device when transferred to other users.
• Do not use this device if the operational requirements described herein are not met.
Operating Instructions:
• Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the Push-To-Talk (PTT) button. To receive calls, release the PTT button. Transmitting 50 % of the time, or less, is important because this radio generates measurable RF energy exposure only when transmitting (in terms of measuring for standards compliance).

• Hold the radio in a vertical position in front of face with the microphone (and the other parts of the radio, including the antenna) at least one inch (2.5 cm) away from the nose. Keeping the radio at the proper distance is important because RF exposures decrease with distance from the antenna. Antenna should be kept away from eyes.
• When worn on the body, always place the radio in a Hytera's approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of Hytera's or other manufacturer's non-approved accessories may result in exposure levels, which exceed the FCC's occupational/controlled environment RF exposure limits.

• If you are not using a body-worn accessory and are not using the radio in the intended use position in front of the face, then ensure the antenna and the radio are kept at least 2.5 cm (one inch) from the body when transmitting. Keeping the radio at the proper distance is important because RF exposures decrease with increasing distance from the antenna.

• Use only manufacturer's name approved supplied or replacement antennas, batteries, and accessories. Use of non-manufacturer-name approved antennas, batteries, and accessories may exceed the FCC RF exposure guidelines.

•For a list of Hytera's approved accessories (see the user manual), or (visit the following website which lists approved accessories: http: add website address), or(The manufacturer should include the appropriate bracketed item{s} in the manual.)
• For a list of Hytera's approved accessories (see the user manual), or (visit the following website which lists approved accessories: www.hytera.cn

IC statement

The device has been tested and compliance with SAR limits, users can obtain Canadian information on RF exposure and compliance

Après examen de ce matériel aux conformité aux limites DAS et/ou aux limites d'intensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité and compliance d'acquérir les informations correspondantes

This device complies with Industry Canada licence-exempt RSS standard (s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie 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, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that, the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

IC RSS warning

The term "IC:" before the certification/registration number only signifies that the Industry Canada technical specifications were met.

Le terme "IC:" devant le numéro de certification / enregistrement signifie seulement que les spécifications techniques d'Industrie Canada ont été respectées.

Nominal antenna port impedance / Impédance nominale antenne Port 50 Ω IC radiation exposure statement

This radio is intended for use in occupational/controlled applications where users have been made aware of the potential risks for exposure and can exercise control over their exposure. This product is not authorised for general population, consumer or similar use. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cette radio a été con?ue pour un usage professionnel dans un environnement contr?lé, où les utilisateurs sont pleinement conscients du danger potentiel de l'exposition à laquelle ils sont oumis et peuvent exercer un contr?le sur cette exposition. Ce dispositif radio N'EST PAS autorisé pour l'ensemble de la population, les consommateurs en général, ni pour une utilisation similaire. Cet émetteur ne doit pas être co-localisés ou fonctionner en conjonction avec une autre antenne ou émetteur. Caring for your product Your radio does not require regular servicing. Caring for your radio as described in this guide will help maintain the product in good operational condition.

Contents

1. Intrinsically Safe Terminal Information

Equipment marking

FM/CAN

- Class I, Zone 0 AEx/Ex ia IIC T4 Ga
- Class I,II, III Div 1, Group A,B,C,D,E, F, G T120°C
- -30℃≤Ta≤60℃

ATEX

- II 1G Ex ia IIC T4
- II 1D Ex ia IIIC T120°C IP6X
- I M1 Ex ia

IECEx

- Ex ia IIC T4 Ga
- Ex ia IIIC T120°C Da IP6X
- Ex ia I Ma

Certificate Number

-
-

No Misoperations

Stop operating this product and leave the explosive atmosphere immediately when the safety or integrity of the product is endangered, and deliver it to your local dealer for examination.

These items may endanger the product's safety or integrity:

- The radio is stored improperly;
- The radio is faulty;
- The radio works with overload;
- The radio's operational error or threshold value is out of allowed range.
- The radio is damaged during transportation;
- The radio's housing is obviously damaged or cracked;
- The radio logo or model is hard to be recognized;

Safety Instructions

⚠️Caution

   To protect you against any property loss, bodily injury or even death, be sure to observe the following safety instructions:

- Use only the Ex-battery BL1813-Ex or BL2413-Ex specified by the Company. The use of other batteries may result in Ex-protection (intrinsic safety) failure.

- Charge the battery in a non-hazardous area only with the designated charger.

- Do not remove the battery from the radio in a hazardous area.

- Do not carry any standby battery into a hazardous area.

- Use the accessories specified by the Company only. Do not replace the accessories in a hazardous area.

- Do not use a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn may result.

- Do not expose the radio to direct sunlight for a long time, nor place it close to a heating source.

- Hold the radio upright and keep its microphone 2.5 to 5 centimeters away from your mouth during use.

- If you wear a radio on your body, ensure its antenna is at least 2.5 centimeters away from your body during transmission.

- Please do not use the radio out of the operating temperature range specification of this product.

- Do not attempt to repair and service the radio, batteries and its accessories. Please contact your dealer for repair and servicing.

- Do not dissemble or redo the radio. Unauthorized modification of the radio may result in termination of Ex-protection (intrinsic safety) of the radio.

- Improper usage of the product other than it is intended to be used for will impair safety of the product, yourself and surrounding environment.

Compliance Standards
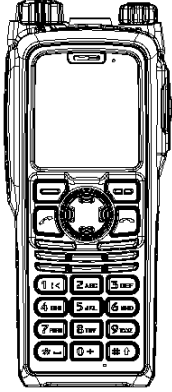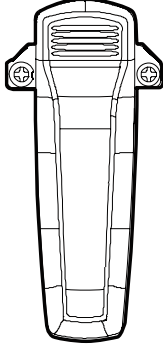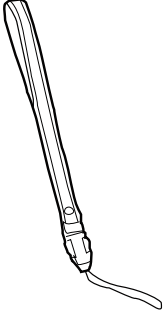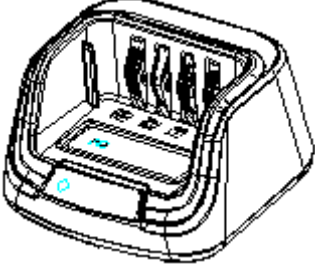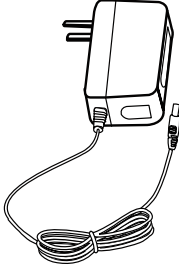
Standard	Issue Date
FM	
FM Class 3600	2011

Standard	Issue Date
FM Class 3611	2004
FM Class 3810	2005
ANSI/IEC-60529(Ed. 4.0)	2004
ANSI/ISA-60079-0(12.00.01)	2009
ANSI/ISA-60079-11(12.02.01)	2012
ANSI/ISA-60079-31(12.10.03)	2009
ANSI/ISA-61010-1(82.02.01)	2004
CAN	
CAN/CSA-C22.2 No.0-M91	2006
CAN/CSA-C22.2 No.142-M1987	2009
CAN/CSA-C22.2 No.213-M1987	2008
CAN/CSA-C22.2 No.60079-0 (Ed. 5.0)	2011
CAN/CSA-C22.2 No.60079-11 (Ed. 5.0)	2011
CAN/CSA-C22.2 No.60079-31 (Ed.1.0)	2012
CAN/CSA-C22.2 No.60529 (Ed. 5.0)	2005
CAN/CSA-C22.2 No.61010-1 (Ed. 2.0)	2009
ATEX	
EN 60079-0 (Ed. 5.0)	2009
EN 60079-11 (Ed. 6.0)	2012
EN 60079-31 (Ed. 1.0)	2009
EN 60529+A1 (Ed. 2.0)	1992
IECEx	
IEC-60079-0 (Ed. 6.0)	2011

Standard	Issue Date
IEC-60079-11 (Ed. 6.0)	2011
IEC-60079-31 (Ed. 1.0)	2008

2. Items in the Package

Please unpack carefully and check if all items listed below are received. If any item is missing or damaged, please contact your dealer.

Portable Terminal	Antenna	Belt Clip
Strap	Charger	Battery
Power Adapter	Documentation Kit	

📝Note

The frequency band is marked on the label of the antenna; if not, refer to the band on the terminal for frequency band information.

3. Product Overview

3.1 Product Controls
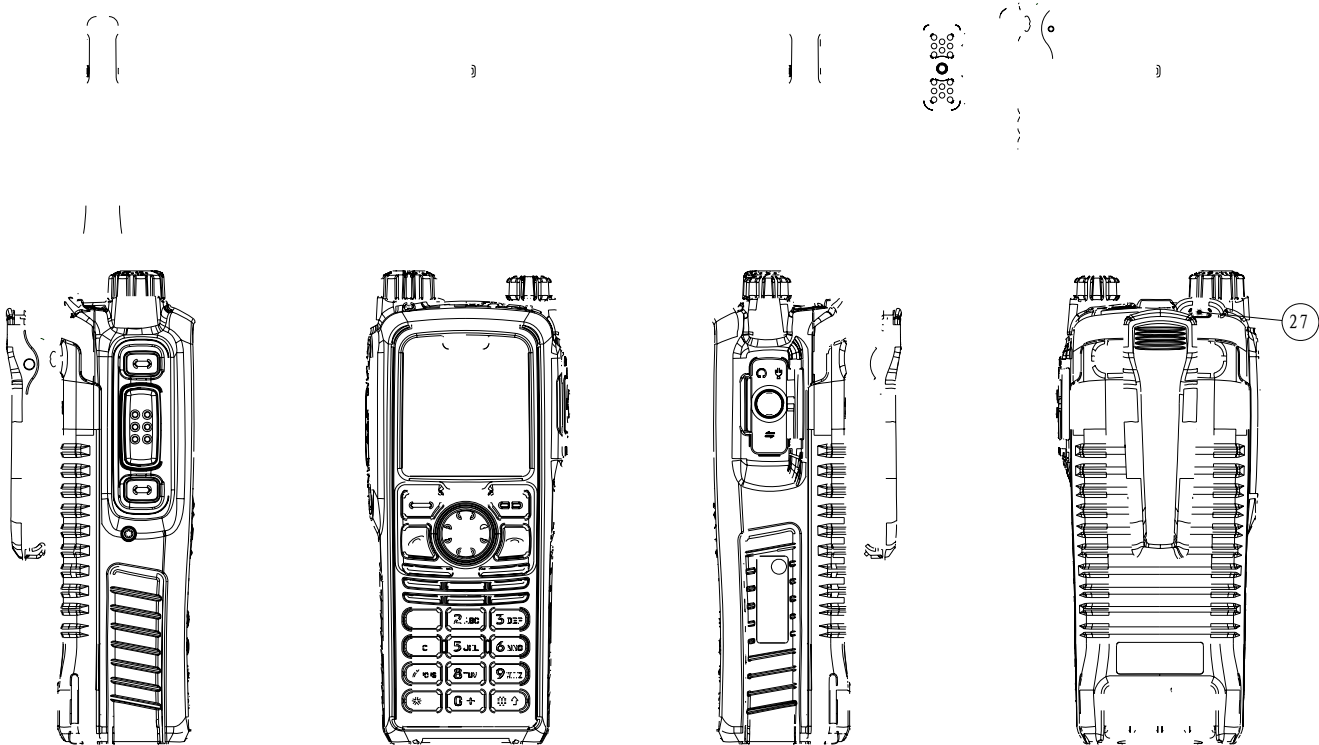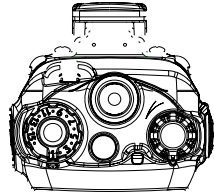
No.	Part Name	No.	Part Name
①	SK1 (Side Key 1)	⑮	Power On-Off/Volume Control Knob
②	PTT (Push-to-Talk) Key	⑯	Half-duplex Microphone
③	SK2 (Side Key 2)	⑰	Accessory Connector Cover
④	Emergency Key	⑱	Options/Back Key

No.	Part Name	No.	Part Name
⑤	Group Selector Knob	⑲	End Key
⑥	Full-duplex Receiver	⑳	Navigation Key
⑦	LCD Display	㉑	Full-duplex Microphone
⑧	Func/OK Key	㉒	Battery Latch
⑨	Answer/Call Key	㉓	Accessory Connector
⑩	Half-duplex Speaker	㉔	Belt Clip
⑪	Numeric Keypad	㉕	Battery
⑫	Antenna Connector	㉖	Charging Piece
⑬	LED Indicator	㉗	Strap Hole
⑭	Antenna	/	/

3.2 Programmable Keys

For enhanced convenience, you may request your dealer to program the **SK1**, **SK2**, **Navigation** key, **Answer/Call** key, numeric keys 1–9, ⟨ ＊ ␣ ⟩ and ⟨ ＃ ↑ ⟩ as shortcuts to needed menus and functions. Please refer to the corresponding *TETRA Terminal Series Feature Book* for more details.

4. Before Use

4.1 Attaching the Antenna

Rotate the antenna clockwise to fasten it.
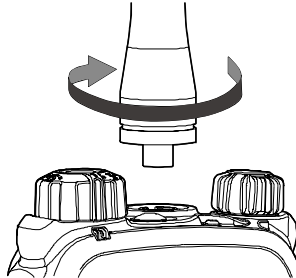
To remove the antenna, rotate it counter-clockwise.

4.2 Installing the SIM Card

If a SIM card is required to realize the End-to-End Encryption (E2EE) feature which should be purchased separately, please install the SIM card first.

1. Turn off the terminal, and then slide the battery latch upwards to unlock the battery.

2. Loosen the screws fixing the SIM card cover, open the cover, and then place the card into the slot properly, as shown in the figure below.
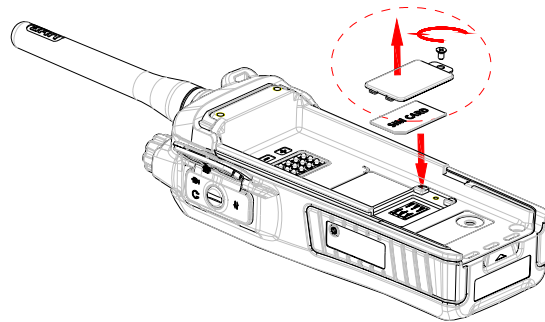
3. Replace the cover and tighten the screw as shown in the figure below.
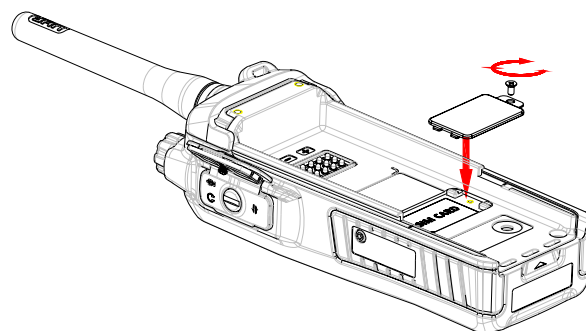
4.3 Attaching the Battery

1. Align the battery slots with the guide rails on the terminal, and push the battery as ② shows.
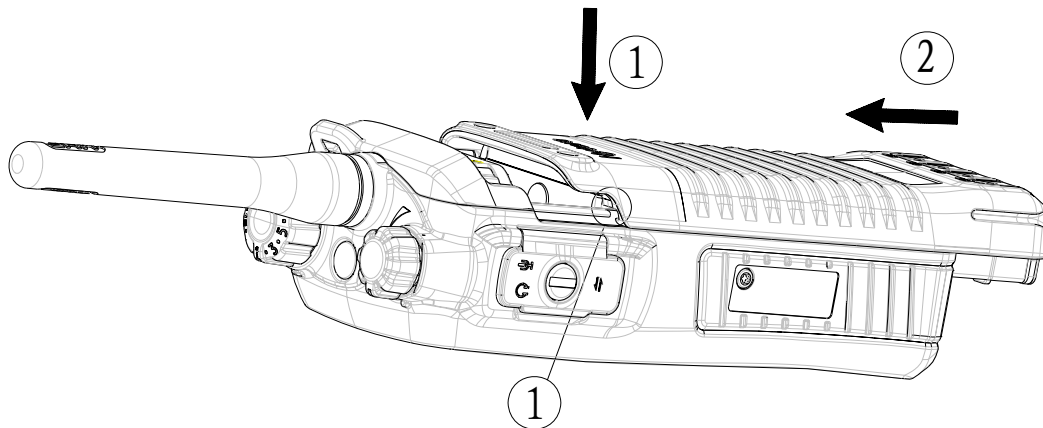
2. Open the battery latch and hold it down until the metal lock goes into the battery housing completely.
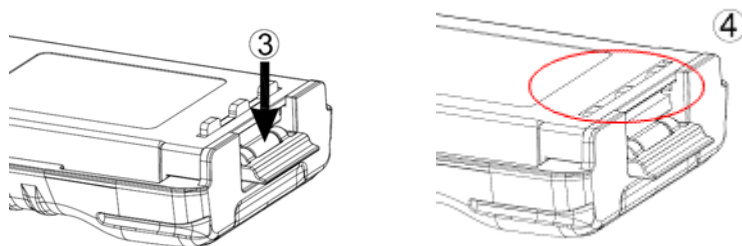
3. Push the battery until it is fully fitted into the slot, and then release the battery latch.

📝Note:

To remove the battery, please power off the terminal first. Then open the battery latch, and slide the battery out while holding down the battery latch.
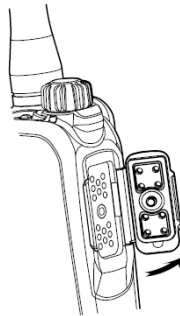
4.3.2 Attaching the Belt Clip

1. Loosen the screws on the back of the terminal.

2. Align the screw holes on the belt clip with those on the terminal's body, and then tighten the screws as shown below.
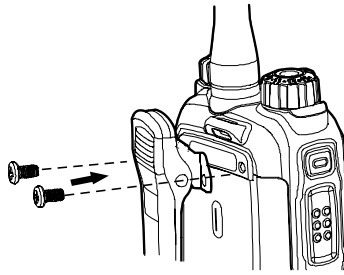
4.3.3 Attaching the Accessories

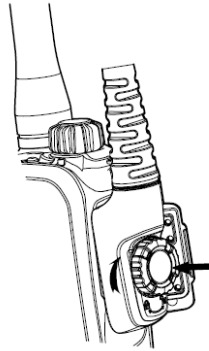1. Open the accessory connector cover as shown below.

2. Align the accessory (such as an audio accessory, or a programming cable) plug with the accessory connector.

    ⚠️**Caution:**

    Do not scrape the silicone rubber surrounding the accessory connector screw hole.

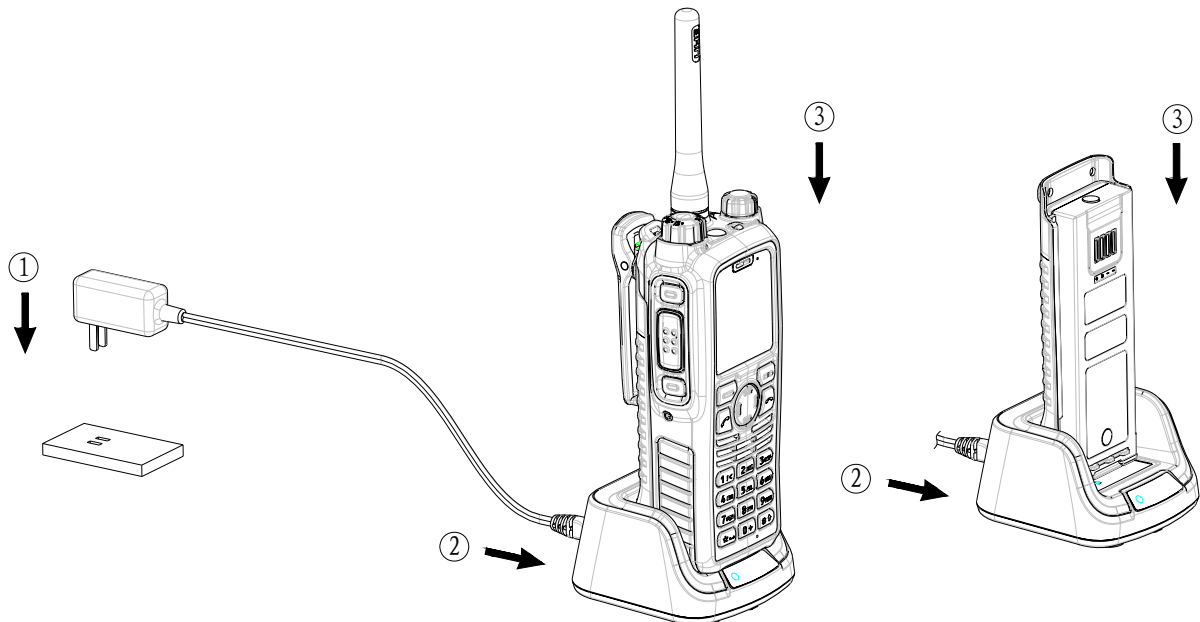   Otherwise, the waterproof performance of the terminal will be affected.
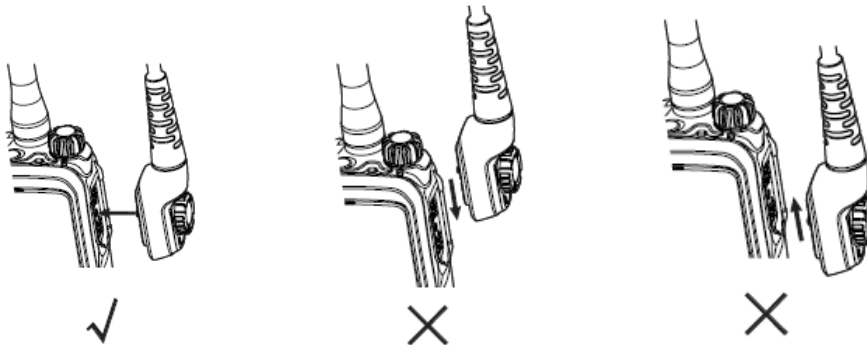
3. Secure the accessory plug with screw.

4.4 Charging the Battery

Only use the charger and battery specified by the Company. The charger LED indicator will indicate the charging process.(See the table below).   The figure below shows you how to charge the battery.

1. Connect the power adapter to AC socket. See arrow ①.

2. Plug the power adapter into the rear jack of charger. See arrow ②.

3. Place the terminal with the battery attached, or the battery alone, into the charger. See arrow ③.

The charger LED indicates you the charging process. When the charger LED glows red, the charging begins. When charging is complete, the charger LED glows green.

The table below shows you the details.

📝Note

> ➢ To achieve optimal battery performance, please charge the battery for 5 hours before initial use.
> ➢ Please refer to the *Safety Information Booklet* for the detailed information on battery use.

LED Indication	Charging Status
The LED indicator flashes red slowly.	Standby(no load)
The LED indicator glows red.	Charging
The LED indicator glows orange.	90% charged
The LED indicator glows green.	Fully charged
The LED indicator flashes red rapidly.	Charging failed

5. Status Indication

5.1 Status Icon

Name	Icon	Terminal Status
Battery Strength Icon		The battery strength is low.
		More bars indicate more battery strength.
RSSI Icon (For TMO only)		No signal indicates that the terminal is unregistered.
		More bars indicate stronger signal.
Message Icon		There is(are) unread message(s).
		The Inbox is full.
Operation Mode Icon	T	The terminal is operating in TMO.
	D	The terminal is operating in DMO.
		The terminal is operating in fallback mode.
Profile Icon		Silent
		Normal
Audio Accessory Icon		The audio accessory is connected.
GPS Icon		A GPS module is connected and the valid GPS data is received.
		Valid GPS data can be received, and the audio accessory has been connected.
		A GPS module is connected and no valid GPS data is received.
		No valid GPS data can be received and the audio accessory has been connected.
Call Icon		A call is in progress.
Group Selection Icon		The terminal is ready for switching the talkgroup.

5.2 LED Indicator

LED Indication	Terminal Status
The LED indicator glows red.	Transmitting
The LED indicator glows green.	Receiving
The LED indicator flashes green slowly.	Channel free in DMO
The LED indicator glows orange.	Channel busy in DMO

6. Basic Operations

6.1 Turning On/Off

- To turn on the terminal, rotate the **Power On-Off/Volume Control** knob clockwise. Then the LED indicator flashes green, and the terminal shows the power-up screen and sounds power-up alert. Upon successful powering on, the terminal enters the home screen. In TMO, after being turned on, the terminal will register with the network. In DMO, the terminal will be ready for use after being turned on.

- To turn off the terminal, rotate the **Power On-Off/Volume Control** knob counter-clockwise until a click is heard.

6.2 Switching Operation Mode

This terminal can operate in either TMO or DMO. To switch the operation mode, press the **Func/OK** key in the home screen to enter the "Mode" menu, and then select "TMO" or "DMO".

6.3 Adjusting the Call Volume

Rotate the **Power On-Off/Volume Control** knob clockwise to increase the call volume, or counter-clockwise to decrease the volume. After the adjustment, the terminal will save the settings and return to the former screen automatically.

6.4 Inputting through Keypad

You can use the numeric keypad to enter user alias and number, edit messages, etc. The terminal supports these input methods: English and Number. To switch the input method, press the ⬚ key on the numeric keypad. In English/Number input method, you can enter special characters and common punctuations by pressing ⬚. Enter "*" by pressing ⬚ and enter a space by pressing ⬚ . As for other language input methods (depending on your customization), operate accordingly.

6.5 Locking/Unlocking the Keypad

To enable the keypad lock, enter the Function menu by pressing the **Func/OK** key in the home screen, and then go to "Settings -> Radio -> Keypad -> Auto Lock -> On". After this feature is enabled, keypad will get locked automatically when the preset time (preset by the dealer) expires. Then you can press the **OK** key and the ⬚ to unlock the keypad.

Apart from locking the keypad via menu, you can lock the keypad manually by pressing the **Func/OK**

key and then $*$ directly in the home screen.

6.6 PIN Code Security and Changing

PIN code can prevent unidentified user from using your terminal.   To enable or disable the PIN Code feature, enter the Function menu from the home screen by pressing the **Func/OK** key , and then go to "Settings -> Function -> Security -> PIN Enable". Every time you need to change the settings, it is required to input the PIN code first (default PIN code: 1234, preset by the dealer).

With this feature enabled, you will need to enter the correct PIN code prior to operating the terminal after turning it on. If you input the wrong code for 3 times (predefined by the dealer) in a row, the terminal will be locked. Then you will need to enter the correct PUK code (default PUK code: 12345678) to reset the PIN code.

To change the PIN code, go to "Settings -> Function -> Security -> PIN Edit", and input the correct current PIN code prior to changing the code.

6.7 Managing the Contacts

To view the list, press the **Func/OK** key to enter the Function menu and then go to the "PhoneBook" menu.

6.7.1 New Contact

Then press the **Func/OK** key to enter "Options -> New Contact" to add a new contact: enter the contact's alias in the editing screen, and press the **OK** key to enter the "Input No." screen to input the contact number. At last, press the **OK** key again to select the call type ("Private No.", "PABX" or "PSTN").

6.7.2 Viewing the Memory Capacity

To add a new contact, you can enter the Function menu by pressing the **Func/OK** key and go to "PhoneBook"; then press **Func/OK** key to enter "Memory".

7. Call Services

7.1 TMO

7.1.1 Individual Call

In TMO mode, an individual call can be initiated either as a half-duplex call or full-duplex call, which can be received without pressing any key (Direct Signaling) or by pressing **PTT** (Hook Signaling). Contact your dealer for such programming as well as for more details.

Initiating an Individual call

- Via Menu

  In the home screen, press **Func/OK** key to enter the "PhoneBook" or "Call Log" submenu, and select a contact. Then press **PTT** key to initiate a half-duplex call, or press to initiate a full-duplex call.

- Via Manual Dial

  In the home screen, to initiate a half-duplex individual call, input the number you want to call through the keypad, and then press **PTT** key. To initiate a full-duplex individual call, input the number you want to call through the keypad, and press `ctype` repeatedly to select the call type "Private No.". Then press to initiate a full-duplex call.

Note:

- Entry of individual numbers must comply with the SSI&TSI dialing rules. See "SSI&TSI Dialing Rules" in "Appendix" for more details.
- Calls will end automatically if the predefined call timer expires.

Answering an Individual Call

- Half-duplex Individual Call

  - If it is an incoming call with Direct Signaling, there will be an alert tone to inform the called party that a call is received.

  - If it is an incoming call with Hook Signaling, the terminal sounds alert and vibrates to inform the called party that there is an incoming call. And to receive the call, the **PTT** key or **Func/OK** key should be pressed.

  To take the talk rights during the call, there are two situations:

  1) if you have no pre-emptive priority, hold down **PTT** key to talk after the talking party stops talking and releases its **PTT** key;

  2) if you have already been programmed with pre-emptive priority, hold down **PTT** key to talk at any time.

- Full-duplex Individual Call

  - If it is an incoming call with Direct Signaling, there will be an alert tone to inform the called party that a call is received.

  - If it is an incoming call with Hook Signaling, the terminal sounds alert and vibrates to inform the called party that there is an incoming call. And to receive the call, press the **PTT** key, **Func/OK** key or .

  After the call is established, both parties can talk at any time, with no need to use any key.

Hanging up/ Rejecting an Individual Call

When initiating the individual call, press or **Options/Back** key to terminate it. In the presence of an incoming individual call, press the **Options/Back** key or to reject it. In the presence of an individual call, any party can press to terminate it.

7.1.2 Group Call

Initiating a Group call

In the home screen, you can initiate a group call to the default group by pressing **PTT** key. To call other groups, please do as follows:

1. In the home screen, rotate the **Group Call Selector** knob to select a group. Please perform this step as soon as the icon appears; otherwise, you may fail to select.

2. Press the **Func/OK** key to confirm your selection.

3. Press **PTT** to initiate a group call to this group.

Answering a Group Call

You can receive a group call without any operation. To take the talk rights during the call, there are two situations: 1) if you have no pre-emptive priority, hold down **PTT** key to talk after the talking party stops talking and releases the **PTT** key;

2) if you have already been programmed with pre-emptive priority, hold down **PTT** key to talk at any time.

Hanging up a Group Call

The calling party can press to exit a group call. And for the called party in a group call, only those enabled with "Hang Up" feature (programmed by the dealer) can press to exit a group call.

7.1.3 Telephone Call

The telephone call is a full-duplex individual call with Hook signaling. To initiate the call, follow the steps below. To answer or hang up/reject the call, see the "Individual Call" in "TMO".

Initiating a Telephone Call

1. Select a gateway.

    In the home screen, press **Func/OK** key and then go to "Settings -> Network -> PSTN GW / PABX GW". Select an appropriate gateway, and press **Func/OK** key to confirm.

2. Input a telephone number.

    Return to the home screen. Input a PABX or PSTN number, which is composed of a prefix (specified by the gateway, please contact the system administrator) and the telephone number of the target contact.

3. Select a call type.

    Select "PABX" or "PSTN" through the **Func/OK** key with a screen-label .

4. Press to initiate the call.

7.1.4 Emergency Call

Initiating an Emergency Call

Press the **Emergency** key and you can initiate an emergency call to the predefined contact. Any individual contact, group contact, default group, PSTN or PABX contact can be predefined as the emergency contact. There are two levels for emergency call: emergency priority and pre-emptive priority 3, which can be programmed by your dealer. The emergency priority is endowed with the higher privilege; thus a call with such priority can break any other call with pre-emptive priority 3, as well as calls with lower priorities.

Answering an Emergency Call

The emergency call is always received automatically. During an emergency call, the calling party can talk with no need to use any key. If another member needs to talk, he/she should hold down PTT only after the calling party stops talking and releases the **PTT** key.

Hanging up an Emergency Call

See the corresponding part of "Individual call" or "Group call" in accordance with the call type of the predefined contact.

7.2 DMO

7.2.1 Individual Call

In DMO mode, an individual call can be initiated only as a half-duplex call.

Initiating an Individual Call

In the home screen, directly input the number you want to call through the keypad, or press **Func/OK** key to enter the "PhoneBook" or "Call Log" submenu, and select a contact. Then press **PTT** key to initiate the call.

✏️ Note:

Entry of individual numbers must comply with the SSI&TSI dialing rules. See "SSI&TSI Dialing Rules" in "Appendix" for more details.

Answering an Individual Call

You can receive an individual call in DMO automatically. During the call, you can hold down the **PTT** key to talk after the calling party stops talking and releases the **PTT** key.

Hanging up an Individual Call

The calling party can press 📞 to terminate the call. The called party can press 📞 to exit the call.

7.2.2 Group Call

Group calls in DMO mode is the same as that in TMO mode. Please refer to operation method described in"Group Call" in the above "TMO" section.

7.2.3 Emergency Call

In DMO mode, emergency calls are endowed with emergency priority only. Please refer to operation method described in "Emergency Call" in the above "TMO" section.

8. Message

8.1 Status Message

Status message, which should be programmed by your dealer only, can facilitate instant messaging of the frequently-used messages. You can only send or view rather than edit the status messages. When the message is sent successfully, for the receiving terminal, it will receive either the status ID of the status message (if the terminal has not predefined the message text) or the predefined text of the status ID (if the terminal has predefined the message text).

📝**Note:**

The "Fixed Status Message" and the "Status Message" are predefined by the dealer via the CPS.

Sending a Status Message

● Press the **Func/OK** key and go to "Message -> Create Msg -> StatusMsg -> Sel Msg". Select a desired status message, and press the **Func/OK** key to proceed. Choose either an individual or a group as the target contact, input the appropriate number and press **Func/OK** to send the message.

● Long press the programmed **One Key** key to send the preset status message directly.

Viewing the Status Message

When the icon ✉appears in the status bar, it indicates there is/are unread message(s). Do as follows to view it:

● In the prompt screen for an unread message, press the **Func/OK** key to enter the Inbox, and press **Func/OK** key again to read.

● In the home screen, press the **Func/OK** key and navigate to "Message -> Inbox -> Inbox". Then you can view the unread message.

8.2 User Message

Editing a User Message

Press the **Func/OK** key and navigate to "Message -> Create Msg -> User Msg". Press **Func/OK** key again to edit a user message.

Sending a User Message

After editing, press **Func/OK** key to confirm. Then select the target contact and decide whether to send it as a flash message.

Note:

If the message is sent as a flash message, the receiving party can preview all the content in a predefined time period without any operation. Once the time period expires, the terminal will go back to the home screen, with the icon ⊠ displaying on the status bar.

Viewing the User Message

When the icon ⊠ appears in the status bar, it indicates there is/are unread message(s). Do as follows to view it:

- In the prompt screen for an unread message, press the **Func/OK** key to enter the Inbox, and press **Func/OK** key again to read.

- In the home screen, press the **Func/OK** key and navigate to "Message -> Inbox -> Inbox". Then you can view the unread message.

9. Troubleshooting

Phenomenon	Analysis	Solution
Terminals cannot be powered on.	The battery power gets too low to power on the terminal.	Charge for the battery.
Network registration fails or network cannot be found.	The terminal may be operating in DMO.	Switch to TMO mode.
	The terminal may get out of the network coverage (in TMO mode).	Check the signal strength. Make sure the terminal is within the network coverage.
	The terminal may not be granted network access.	Contact the network operator for the terminal authorization.
Calls cannot be initiated.	The terminal or the called party may not be within the network coverage.	Check the signal strength. Make sure the terminal is within the network coverage.
	The terminal may operate in an improper mode.	Check the operation mode. Make sure the terminal works in the right mode.
A certain group call cannot be initiated or received.	The terminal may not be a member of the group.	Check whether the terminal is a member of the group. If not, contact your dealer to add the terminal to the group.
	The terminal may not be authorized to access the target group.	Contact the network operator for the terminal authorization.
Calls are always interrupted.	The current channel is assigned to emergency calls or other calls with higher priority.	Wait until the channel becomes available and try again.
A half-duplex call can not be established.	The predefined time period for establishing a call may expire.	Make sure the call is established within the predefined time period.
	The channel may be occupied by	Wait until the channel becomes

Phenomenon	Analysis	Solution
	another terminal with higher call priority.	available and try again.
	The channel resources may be allocated to other services due to overloaded network.	Wait until the channel becomes available and try again.
Abnormal disconnection occurs during a call.	The terminal may get out of the network coverage (in TMO mode).	Check the signal strength. Make sure the terminal is within the network coverage.
	The terminal might operate at an unfavorable position where communication may be blocked by high buildings or frustrated in the underground areas (in DMO mode).	Move to an open and flat area, and restart the terminal.
As for the same status message, the content displayed at the receiving party is different from that of the sending party .	The parties have associated the same status message ID with different contents.	Make sure the status message ID is associated with the same content.

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.

10. Care and Cleaning

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

Product Care

- Do not pierce or scrape the product.

- Keep the product far away from substances that can corrode the circuit.

- Do not hold the product by its antenna or earpiece cable directly.

- Attach the accessory connector cover when the product is not in use.

Product Cleaning

⚠️**Caution:** Turn off the product and remove the battery before cleaning.

- Clean up the dust and fine particles on the product surface and charging piece with a clean and dry lint-free cloth or a brush regularly.

- Use neutral cleanser and a non-woven fabric to clean the keys, control knobs and front case after long-time use. Do not use chemical preparations such as stain removers, alcohol, sprays or oil preparations, so as to avoid surface case damage.

- Make sure the product is completely dry before use.

11. Optional Accessories

The following items are the main optional accessories for the product. For more other accessories, please consult your local dealer.

⚠️**Caution:** Use the accessories specified by the Company only. If not, the Company shall not be liable for any loss or damage arising out of use of unauthorized accessories.

● Power Supply:

MCA05 Battery Optimizing System,

MCA08 MCU Multi-unit Rapid-rate Charger (for Li-Ion/Ni-MH Battery),

CH10A06 Dual-pocket MCU Multi-unit Rapid-rate Charger (for Li-Ion/Ni-MH Battery),

CHV09 Vehicle Adapter for Charger

● Audio Accessory:

SM18N8-Ex Remote Speaker Microphone (IP67)

EHN12-Ex Swivel Earset with on-MIC PPT

● Cable:

PC67 Programming Cable (USB Port)

● Carrying Accessories:

LCY005 Leather Carrying Case for thin battery (swivel)

12. Appendix

12.1 SSI & TSI Dialing Rules

In the TETRA system, subscribers are distinguished by different identities. Each subscriber is assigned with a unique short subscriber identity (SSI), which serves a part of the TETRA subscriber identity (TSI). And TSI is generally composed in this way: Mobile Country Code (MCC) + Mobile Network Code (MNC) + SSI. To initiate an individual call, please dial the SSI or TSI in compliance with the rules below.

- SSI Dialing: Make sure there are not more than 8 digits.

- TSI Dialing

  - MNC+SSI: 1) Input the MNC as it is; 2) SSI must be 8 digits long. Add 0 before the first digit of SSI which is shorter than 8 digits. For example, when MNC is 20 and SSI is 504, you need to input 2000000504.

  - MCC+MNC+SSI: 1) MCC must contain 3 digits. Add 0 before the first digit of MCC which is shorter than 3 digits; 2) MNC must contain 4 or 5 digits. When the MNC is shorter than 4 digits, add 0 before its first digit; when it is 5 digits long, use it directly; 3) SSI must be 8 digits long. Add 0 before the first digit of SSI which is shorter than 8 digits. For example, when MCC is 460, MNC is 20 and SSI is 504, you need to input 460002000000504.