



QUICK REFERENCE GUIDE

INTRINSICALLY SAFE PORTABLE TERMINAL



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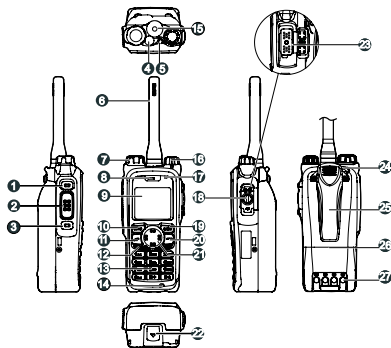
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Product Overview

Product Controls



No.	Part Name	No.	Part Name
1	Side Key 1 (SK1)	15	Antenna Connector
2	Push-to-Talk (PTT) Key	16	On-Off/Volume Control Knob
3	Side Key 2 (SK2)	17	Half-duplex Microphone
4	Emergency Key	18	Accessory Connector Cover
5	LED Indicator	19	Group/Back Key
6	Antenna	20	End Key
7	Group Selector Knob	21	Navigation Key
8	Full-duplex Receiver	22	Battery Latch
9	LCD Display	23	Accessory Connector
10	Menu/OK Key	24	Strap Hole

No.	Part Name	No.	Part Name
11	Answer/Call Key	25	Belt Clip
12	Half-duplex Speaker	28	Battery
13	Numeric Keypad	27	Charging Piece
14	Full-duplex Microphone	/	/



Note

You can adapt your radio to use the numeric keys 0–9, star (*) key, pound (#) key, navigation keys, **Answer/Call** key, **OK** key, **Back** key, **SK1**, and **SK2** as shortcuts to various terminal features. For a detailed introduction, see the TETRA Terminal Series Feature Book included with the product.

LCD Icon

Icon	Terminal Status
	The terminal is not registered with the system.
	This icon is applicable to Trunked Mode Operation (TMO) only.
	The terminal is registered with the system, and more bars indicate stronger signal strength.
	The terminal is not registered with the system while the WAP browser is running.
	The terminal is registered with the system while the WAP browser is running, and more bars indicate stronger signal strength.
	There is (are) unread message(s).
	The Inbox is full.
	One or more work orders are received.
	The terminal operates in TMO.

Icon	Terminal Status
	The terminal operates in Direct Mode Operation (DMO).
	The terminal operates in fallback mode.
	The scan feature is enabled in TMO.
	The scan feature is enabled in fallback mode.
	The terminal operates in silent mode.
	The terminal operates in normal (ring and vibration) mode.
	The terminal operates in vibration mode.
	An audio accessory is connected and available for use.
	An audio accessory is connected but not available for use.
	The GPS feature is active, and positioning data is received.
	The GPS feature is active, but no positioning data is received.
	A wireless accessory is connected and available for use.
	The BT feature is enabled but no wireless accessory is connected.
	A wireless accessory is connected but not available for use.
	A call is in progress.
	The terminal is selecting a group.
	A gateway device is available and connected in DMO.
	A gateway device is available but not connected in DMO.
	A repeater is available and connected in DMO.
	A repeater is available but not connected in DMO.

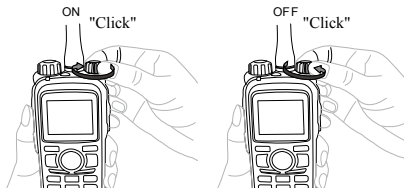
Icon	Terminal Status
	The keypad is locked.
	SIM card-based End-to-End Encryption (E2EE) is enabled.
	Air Interface Encryption (AIE) is enabled.
	E2EE is enabled.
	Both AIE and E2EE are enabled.
	The ongoing call has a pre-emptive priority.
	The ongoing call has a higher priority.
	The ongoing call has a lower priority.
	The terminal is prohibited from transmitting.
	A call via the gateway is in progress.
	An E2EE call via the gateway is in progress.
	A call via the repeater is in progress.
	An E2EE call via the repeater is in progress.
	An AIE call via the repeater is in progress.
	The AIE and E2EE call via the repeater is in progress.
	An emergency call is in progress.
	A broadcast call is in progress.

LED Indication

LED Indicator	Terminal Status
Glows red	The terminal is transmitting.
Flashes red slowly	The terminal is under low-voltage protection. Please replace or recharge the battery.
Glows green	The terminal is receiving.
Flashes green slowly	The channel is idle in DMO.
Glows orange	<ul style="list-style-type: none"> The channel is busy in DMO. The terminal is prohibited from transmitting.
Flashes orange slowly	In TMO, the terminal fails to find or connect to the base station (BS) with which it registers.

Basic Operations

Turning On/Off the Terminal



Adjusting the Call Volume



Switching the Operation Mode

This terminal can operate in TMO, DMO, or DMO repeater mode. To switch the operation mode, do as follows:

- Go to "Menu -> Mode".
- Select "DMO", "TMO", or "DMO RP" as required.

Selecting a Group



Inputting via Keypad

You can use the keypad to enter user aliases, call numbers, and text messages. Here are some useful tips:

- To switch between the alphabetic input mode and numeric input mode, press **# ↑**.
- To enter special characters, press **1 |<** in alphabetic mode, or long press **1 |<** in numeric mode.
- To enter an asterisk (*), press *** ↓**.
- To enter a space, long press *** ↓**.

Locking/Unlocking the Keypad

When the keypad is not in use, it is recommended that you lock it to avoid accidental key presses.


Locking the Keypad

To lock the keypad, use the following methods:


- Enable the Auto Lock feature.

The Auto Lock feature allows the keypad to be locked automatically if no operation is being performed within a preset time period.

To enable this feature, go to "Menu -> Settings -> Radio -> Keypad -> Auto Lock", and then select "On".

- Press the **Menu/OK** key, and then press .

Unlocking the Keypad

Press the **Menu/OK** key, and then press .

Setting the PIN Code Feature

The PIN code feature protects your terminal against unauthorised use. With this feature enabled, you need to enter the PIN code after turning on the terminal.

The terminal will be locked if you enter the incorrect PIN code after three consecutive tries. In this case, you need to enter the PUK code ("12345678" by default) to reset the PIN code.

Enabling or Disabling the PIN Code Feature

1. Go to "Menu -> Settings -> Function -> Security -> PIN Enable".
2. Select "On" or "Off".
3. Enter the PIN code ("1234" by default).
4. Press the **Menu/OK** key to finish.

Changing the PIN Code

1. Go to "Menu -> Settings -> Function -> Security -> PIN Edit".

2. Enter the old PIN code, and then press the **Menu/OK** key.
3. Enter the new PIN code, and then press the **Menu/OK** key.
4. Confirm the new PIN code, and then press the **Menu/OK** key to finish.

Managing the PhoneBook

The PhoneBook feature allows you to manage private, PABX, and PSTN numbers.

You can go to "Menu -> PhoneBook", and then add, view, search for, call, modify, or delete a contact, delete all contacts, or check the PhoneBook space.

TMO Services

TMO supports either half-duplex or full-duplex operations and allows terminals to communicate via the TETRA network. To access voice and data services in TMO, the terminal must register with the network first, and then operates within the network coverage.

Individual Call


An individual call in TMO is a half-duplex or full-duplex call initiated by an individual user to another individual user. In a half-duplex call, only one party can speak at a time, while in a full-duplex call, both parties can speak at the same time.

Initiating an Individual Call

Half-duplex Individual Call

1. Go to "Menu -> PhoneBook", and then select the private number to be called.
2. Press and hold the **PTT** key to initiate the call.
3. After the call is established, speak into the microphone while continuing holding the **PTT** key.

Full-duplex Individual Call


1. Go to "Menu -> PhoneBook", and then select the private number to be called.
2. Press  to initiate the call.
3. After the call is established, speak into the microphone directly.

Answering an Individual Call

When receiving a half-duplex or full-duplex individual call with direct signaling, you can answer the call without any operation. The call is established automatically.

When receiving a half-duplex or full-duplex individual call with hook signaling, press the **PTT** key to answer the call.

Ending an Individual Call

Press  to end the call.

Group Call

A group call is a half-duplex call initiated by an individual user to other members in a predefined group.


Initiating a Group Call

1. Rotate the **Group Selector** knob to select the required group.
The group number is displayed on the home screen.
2. Hold down the **PTT** key to initiate the call to the group.

Answering a Group Call

You can answer a group call without any operation.


Ending/Exiting a Group Call

Press  to end an outgoing group call or exit an incoming group call.

PABX/PSTN Call

A PABX/PSTN call is a full-duplex individual call with hook signaling established between an individual user and a PABX or PSTN user outside the TETRA network.

To initiate a PABX/PSTN call, do as follows:

1. Go to “Menu -> Settings -> Network -> PABX GW/PSTN GW”, and then select the required PABX or PSTN gateway.
2. Go to “Menu -> PhoneBook”, and then select the PABX or PSTN number to be called.
3. Press  to initiate the call.

The operations of answering and ending a PABX/PSTN call are similar to those of answering and ending an individual call. For details, see Individual Call.

Emergency Call

An Emergency call in TMO is a call initiated by an individual user to the predefined contact for summoning help in emergency situations. The predefined contact can be an individual user or a group, PABX or PSTN user.

Initiating an Emergency Call

To initiate an emergency call, hold down the **Emergency** key for the preset time.

Answering an Emergency Call

You can answer an emergency individual or group call without any operation. To answer an emergency PABX/PSTN call, you need to press the **PTT** key.

Ending/Exiting an Emergency Call

The operation of ending or exiting an emergency call varies with the type of the predefined contact. For details, see Ending an Individual Call, Ending/Exiting a Group Call, and PABX/PSTN Call.

Message

The Message feature allows you to send and receive status and text messages. The status message is preprogrammed by your dealer, while the text message can be edited in the form of text freely.

Sending a Status Message

1. Go to “Menu -> Message -> Status Msg”, and then select the required status message.
2. Press the **Menu/OK** key to view the status message.
3. Press the **Menu/OK** key again, and then select “Private No.” or “Group”.
4. Enter the private number or select the required group contact.
5. Press the **Menu/OK** key to send the status message.

Sending a Text Message

1. Go to “Menu -> Message -> New Msg”, and then edit the text.
2. Press the **Menu/OK** key, and then select “Send”.
3. Select “Private No.” or “Group”.
4. Enter the private number or select the required group contact.
5. Press the **Menu/OK** key to send the text message.

Viewing a Message

1. Go to “Menu -> Message -> Inbox”, and then select the message to be viewed.
2. Press the **Menu/OK** key to view the details.

DMO Services

DMO supports only half-duplex operations and allows terminals to communicate directly.

Individual Call

An individual call in DMO is a half-duplex call initiated by an individual user to another individual user.

Initiating an Individual Call

1. Go to “Menu -> PhoneBook”, and then select the private number to be called.
2. Hold down the **PTT** key to initiate the call.

3. After the call is established, speak into the microphone while continuing holding down the **PTT** key.

Answering an Individual Call

You can answer an individual call without any operation.

Ending an Individual Call

Press  to end the call.

Group Call

The group call operations in DMO are similar to those in TMO. For details, see Group Call.

Emergency Call

An Emergency call in DMO is a call initiated by an individual user to the default group for summoning help in emergency situations.


Initiating an Emergency Call

To initiate an emergency call, hold down the **Emergency** key for the preset time.

Answering an Emergency Call

You can answer an emergency call without any operation.

Ending/Exiting an Emergency Call

Press  to end an outgoing emergency call or exit an incoming emergency call.

Message

The message operations in DMO are similar to those in TMO. For details, see Message.

Specifications

General	
Frequency Band	320–380 MHz 380–430 MHz 405–475 MHz 806–870 MHz
Dimensions (HxWxD)	127.5 x 55 x 36.5 mm
Weight	421.5±20 g (with battery and antenna)
Battery	2400 mAh Li-Ion battery
Battery Life (TMO 5/5/90 duty cycle)	> 20 hours
Operating Voltage	7.4 V
RF	
RF Channel Bandwidth	25 kHz
RF Power Output	1 W
RF Power Level Accuracy	±2 dB
RF Power Control	3 steps of 5 dB
Receiver Class	ETSI EN 392-2/396-2 Class A and Class B
RX Static Sensitivity	-112 dBm (typical: -116 dBm)
RX Dynamic Sensitivity	-103 dBm (typical: -105 dBm)
Audio Power Output	2 W
GPS*	
Sensitivity	-146 dBm acquisition sensitivity
	-165 dBm tracking sensitivity
Accuracy	2.5 m

Cold Start (Time to First Fix)	35s
Hot Start (Time to First Fix)	1s
Environment	
Operating Temperature	-30°C to +55°C
Storage Temperature	-40°C to +85°C
Humidity	ETS 300-019-1-7 Class 7.3E MIL-STD 810 G
Water and Dust Protection	IP67 Per IEC60529
Drop, Shock & Vibration	ETS 300-019-1-7 Class 5M3 MIL-STD 810 G GJB150A-2009

*The terminal also supports GLONASS and BeiDou in addition to GPS.