# User Manual

## Tactilon® Dabat (TD-1)

**AIRBUS**

DECLARATION OF CONFORMITY

Hereby we, Airbus Defence and Space Oy, declare that this device is in compliance with the essential requirements and other relevant provisions of the Directive 2014/53/EU.

$CE$ This product can be used across EU member states. This product belongs to category 3 device according to ETSI EN 300440.

Importer: Airbus Defence and Space Oy

Address of importer: Hiomotie 32, 00380 Helsinki, Finland

Copies of the Declaration of Conformity can be found at https://www.securelandcommunications.com.

The crossed-out wheeled bin means that within the European Union the product must be taken to separate collection at the product end-of-life. This applies to your device but also to any enhancements marked with this symbol. Do not dispose of these products as unsorted municipal waste. Please deliver this product after operational life to your distributor or sales representative for recycling.

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A pocket-size quick guide has been delivered with your device to help you get started. If necessary, you can download it at https://www.securelandcommunications.com or order it through your Airbus Defence and Space representative.

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# FOR YOUR SAFETY

Read these simple guidelines. Not following them may be dangerous or illegal. Read the complete user manual for further information.

**SWITCH ON SAFELY**
Do not switch the device on when wireless phone use is prohibited or when it may cause interference or danger.

**ROAD SAFETY COMES FIRST**
Obey all local laws. Always keep your hands free to operate the vehicle while driving. Your first consideration while driving should be road safety.

**INTERFERENCE**
All wireless devices may be susceptible to interference, which could affect performance.

**SWITCH OFF IN HOSPITALS**
Follow any restrictions. Switch the device off near medical equipment.

**USE IN AIRCRAFT OR AT AIRPORT MAY BE PROHIBITED**
Follow any restrictions. Wireless devices can cause interference in aircraft. Airport professionals using wireless devices should follow the special guidance and instructions issued by their own organisation.

**SWITCH OFF WHEN REFUELLING**
Do not use the device at a refuelling point. Do not use near fuel or chemicals.

**SWITCH OFF NEAR BLASTING**
Follow any restrictions. Do not use the device where blasting is in progress.

**USE SENSIBLY**
Use only in the normal position as explained in the product documentation. Do not touch the antenna unnecessarily.

**QUALIFIED SERVICE**
Only qualified personnel may install or repair this product, or configure applications.

**ENHANCEMENTS AND BATTERIES**
Use only approved enhancements and batteries. Do not connect incompatible products. The socket outlet must be easily accessible.

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Unplug the charger from the mains plug and the radio when not in use. Do not leave the battery connected to a charger for prolonged periods.

Never use any charger or battery that is damaged, bloated, or is found getting uncomfortably hot during the use or charging.

**BACK-UP COPIES**
Remember to make back-up copies or keep a written record of all important information.

**CONNECTING TO OTHER DEVICES**
When connecting to any other device, read its user guide for detailed safety instructions. Do not connect incompatible products.

**EMERGENCY CALLS**
Ensure the device is switched on, in service and that the screen is unlocked.

•To make a TETRA emergency call, use Dabat's emergency button. TETRA services are used for voice communication and the location information can be transmitted to the organisation's preferred destination.

•To make an emergency call to the public network, open the App Drawer by swiping up anywhere on the **Home** screen. Tap the 3GPP Phone button and enter the emergency number, then tap the call button. Note that voice calls are supported, but the location information is not shared to the public emergency call number.

•Follow the received instructions before you disconnect the call.

To make an emergency call using Tactilon Dabat, see section *Emergency calls*.

**DOUBLE INSULATION**
The mains charger incorporates double insulation between hazardous mains voltage and parts that are accessible to users.

**USE INDOORS ONLY**
Use the mains charger indoors only.

**RISK FOR HEARING LOSS**
Prolonged listening at loud volumes may damage the user's hearing.

# ■ About your device

The device described in this guide is approved for use on the TETRA network and 3GPP network. Contact your service providers for more information about networks.

When using the features in this device, obey all laws and respect privacy and legitimate rights of others.

**Warning:** To use any features in this device, other than the alarm clock, the device must be switched on. Do not switch the device on when wireless phone use may cause interference or danger.

Your device and its enhancements may contain small parts. Keep them out of reach of small children.

# ■ TETRA Network Services

To use the device you must have service from a wireless service provider. Many of the features in this device depend on features in the wireless network to function. These Network Services may not be available on all networks or you may have to make specific arrangements with your service provider before you can utilize Network Services. Your service provider may need to give you additional instructions for their use and explain what charges will apply. Some networks may have limitations that affect how you can use Network Services. For instance, some networks may not support all language-dependent characters and services.

Your service provider may have requested that certain features be disabled or not activated in your device. Contact your service provider for more information.

# ■ Enhancements, batteries, and chargers

Always switch the device off and disconnect the charger before removing the battery.

Check the model number of any charger before use with this device. Use the designated charger and USB cable for the device.

**Warning:** Use only batteries, chargers, and enhancements approved by Airbus for use with this particular model. The use of any other types may invalidate any approval or warranty, and may be dangerous.

There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

For availability of approved enhancements, please check with your dealer. When you disconnect the power cord of any enhancement, grasp and pull the plug, not the cord.

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**Warning:** Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, can result in an explosion.

**Warning:** Leaving the battery in an extremely high temperature surrounding environment can result in an explosion or leakage of flammable liquid or gas. If the battery is subjected to extremely low air pressure, it may result in an explosion or leakage of flammable of flammable liquid or gas.

**Important:** Enhancements to be used with this device do not meet the same durability or water resistance specifications as the device itself. For example, all the chargers are only to be used in dry conditions. They should never be used when damp or wet.

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# 1. General

## ■ Introduction

Tactilon® Dabat (TD-1) is a smartphone and a full TETRA radio in one device. It provides you with both Android™ features and the special ergonomics of the TETRA radio, which makes it the overall solution for professional communication.

*Tactilon® Dabat User Manual* introduces the Tactilon® Dabat device, including its hardware and functionalities, and instructs how to use the device. The focus of this document is on the TETRA functionality, but a few key Android functionalities are covered as well. This document assumes that the reader has previous experience of using an Android smartphone. Note that the product images used in this document are for illustrating purposes only.

Tactilon Dabat is part of the Tactilon® Suite solution portfolio of Airbus Defence and Space.

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### Company policy

While all reasonable effort is taken to ensure accuracy of this document, all figures may not be up to date or some errors may exist. If any errors are found by the reader, Airbus DS SLC should be notified in writing.

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# ■ Carrying

You can carry your device in several ways: in a belt carrying case, shoulder carrying case, strap, car holder or belt clip.

# ■ Access codes

The factory setting for the four-digit TETRA Phone code is 1234. When the phone code request is enabled, the code is requested each time the device is switched on.

The factory setting for the five-digit security code is 12345.

Depending on how your device is configured, you may also be requested to enter the 3GPP network's PIN code and Android security code.

To prevent unauthorised use of your device, change the codes. Keep the new codes secret and in a safe place separate from your device.

# ■ Modes of operation

Your device has two TETRA modes of operation: network mode (TMO) and direct mode (DMO). In the network mode, the device operates using the TETRA network. In the direct mode, the device operates without the network, so that the devices communicate directly with each other. In the direct mode, only some functions of the device are available. For more information on the direct mode, see chapter *Direct mode (DMO)*.

# ■ 3GPP operation

Your device can operate in a 3GPP network if it is equipped with a 3GPP SIM card. The available 3GPP services depend on the 3GPP SIM card and your operator.

Note that as a basic rule, the TETRA services have a higher priority than the 3GPP services.

# ■ Time synchronization

The device's clock is synchronized based on the 3GPP network time, unless the device has been configured to synchronize its clock automatically based on the time received from the TETRA network.

If the TETRA network time is used, you cannot select between the automatic and manual time update in the Android settings. The automatic time update is always on and the date and time settings are disabled.

Note that when the TETRA services are off, the Android date and time settings are used.

# ■ Airplane mode

When the airplane mode is activated, radio-frequency signal transmission is suspended in the device and therefore it is safe to use in environments that are sensitive to radio signals. If Tactilon Dabat is registered to the network when the airplane mode is activated, it can receive TETRA group calls and group-addressed messages in the network mode (TMO) or direct mode group calls, SDS messages and statuses if it is in the direct mode (DMO). For more information on the TETRA functionality, see chapter *TETRA transmission barring*.

# ■ Using your device in wet and damp conditions

- You can use this device in the rain, but do not submerge it in water.
- If the device or the system connector has been exposed to salt water, wash it immediately with fresh water to avoid corrosion. The device must be carefully wiped dry.
- Before opening the back cover, dry the device to prevent water from reaching the interior of the device. The battery is not water resistant.
- Never charge the device when the bottom connector is wet or damp.
- Never use a damp device with enhancements that have an electrical function (such as a desk stand or car kit).

> **Note:** Make sure the interior of your device and the back cover seals are dry, clean, and free of any foreign objects. Foreign objects may damage the seals against water.

# ■ Disabling the device

If the device is stolen or lost, it may be necessary to prevent the use of the device temporarily or permanently. Inform your organisation of the stolen or lost device, so they can disable it.

## Temporary disabling

Temporary disabling means that the device is temporarily inoperative (stunned), but the functional state can be restored by the network operator. When the device is temporarily disabled, its display is blank. You cannot access any services or other activities in the device. If you press and hold the **Power** button to restart the device, the device powers on and you are requested to enter the TETRA codes, but the device is still temporarily disabled after you have passed the code queries. The pressing of the other physical buttons does not have any effect.

If the device is in direct mode (DMO) when you power it on, you may be asked if you want to switch to the network mode (TMO) after you have passed the code queries. The device must be registered to the TETRA network for the network operator to be able to enable it again over the air interface.

When the network operator enables a temporarily disabled device, the device starts up in the network mode (TMO) and all the normal functions are resumed.

## Permanent disabling

A permanently disabled device is unusable (killed).

# 2.  Getting started

This section explains how to configure the Tactilon Dabat hardware and start using the device.

> **Note:** Tactilon Dabat must be provisioned by your organisation before it can be taken into use. Make sure that the device has been provisioned before you start setting up the device as instructed in this chapter.
>
> Note also that your organisation may already have defined some settings - for example, the language - during the provisioning.

## ■ Setting up the device

> **Note:** The device must be switched off when you insert or remove the antenna, SIM cards, SD card or battery.

### Installing the antenna

1. Insert the provided antenna into the device's antenna socket.

2. Twist the antenna clockwise to tighten it.

Do not use an excessive amount of force when you tighten the antenna.



## Installing the SIM cards

Tactilon Dabat has two SIM card slots: one for TETRA and one for the 3GPP network.

**Note:** Tactilon Dabat supports only Micro SIM cards.

To install the SIM cards, do the following:

1. Verify that the device is switched off.

2. Open the battery cover.

2.1 Lift the locking ring to the upwards position.

2.2 Turn the locking ring counterclockwise.

2.3 Pull the locking ring upwards to lift the battery cover.

2.4 Remove the battery if it is in place.

3. Install the 3GPP SIM card.

✎ **Note:** The 3GPP usage may be authorised only for a certain network operator. In this case, use only 3GPP SIM card of an authorised network operator. If you insert an unauthorised 3GPP SIM card, Dabat indicates that the SIM card is locked, and only emergency calls are possible.

3.1 Insert the SIM card to the lower SIM card slot on the right



3.2 Gently slide the SIM card into place.

4. Install the TETRA smart card.

   4.1 Insert the TETRA smart card to the upper SIM card slot on right.



   4.2 Gently slide the SIM card into place.



## Removing a SIM card

If needed, a SIM card can be removed in the following way:

1. Switch the device off.

2. Open the battery cover.

3. Remove the battery.

4. Gently slide the SIM card out of the SIM card slot while pressing down the retaining clip (located on the left side of the SIM card slot).

## Installing the SD card

Tactilon Dabat supports up to 128 GB microSD cards. The use of SD card is optional.

1. If you are going to install an SD card, lift up the cover of the microSD card slot on the left.



2. Gently slide the SD card into place.



3. Close the microSD card slot's cover.

## Installing the battery

1. Verify that the device is switched off.
2. If the battery cover is not already open, open it.

2.1 Lift the locking ring to the upward position.



2.2 Turn the locking ring counterclockwise.

2.3 Pull the locking ring upwards to lift the battery cover.



3. Insert the contact end of the battery.

4. Gently push the battery in place in the battery slot.



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5. Close the battery cover.

6. Turn the locking ring clockwise until the battery locks.

7. Push the locking ring down.

**Removing the battery**

If you need to remove the battery:

1. Pull the locking ring to an upwards position.

2. Turn the locking ring counterclockwise.

3. Open the battery cover.

4. Lift the battery up from its top part.

# ■ Charging the battery

Tactilon Dabat is powered by a removable, rechargeable Li-PO battery. The battery must be fully charged before you use Tactilon Dabat for the first time.

**Note:** Use only approved batteries. Do not connect incompatible products.

**Note:** You can speed up the charging of the battery by switching the device off before you start charging it. This ensures that there are no programs or applications running on the background while the device is being charged.

If you turn the device on while it is being charged, switch the airplane mode on to speed up the charging of the battery.

To charge the battery:

1. Make sure that the battery is properly installed in the device.

2. Connect the USB charger to the device's USB port at the bottom of the device (see chapter *Top, bottom and sides*).

3. Plug the USB charger to a power outlet.

The LED notification light changes to red to indicate that the USB charger has been plugged in to a power outlet. The progress of the charging is displayed by the battery indicator on the screen.

4. When the battery is fully charged, unplug the USB charger from the power outlet and then disconnect it from the device.

## ■ Switching the device on or off

To switch Tactilon Dabat on:

1. Press the **Power** button until the device starts to switch on.

2. When the **Home** screen is displayed, swipe your finger upwards on the screen to unlock the screen.

If you want to switch the device off:

1. Press the **Power** button until a menu of the available options is shown.

2. Tap **Power off**.

   If you want to restart the device, select **Restart** instead.

   The device indicates that it is shutting down while the device powers off.

## ■ Access and security codes

When you switch Tactilon Dabat on, you are requested to enter one or more access or security codes, depending on how the device is configured by your organisation. The query view is the same for all code queries, except for the query text and the symbol of the requested code.

> **Note:** If you need to make an emergency call before you have passed all the code queries, use the physical **Emergency** button or the *Emergency* option in the code query view to initiate the emergency call. After the emergency call has ended, the code queries are continued.

If needed, you can interrupt entering the code at any time by using the Android backstepping functions, changing to another application or to the **Home** screen.

If the entering of the code is interrupted for example because the code query was closed by the Android system or the device was switched off, the code query starts from the beginning when the TETRA module is started.

> **Note:** If you get the error message that the smart card is either locked or blocked, contact your Administrator.

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1. Enter the TETRA Smart card's or E2EE smart card's PIN code, if requested, and tap the Done ✓ button.

   If your device has a TETRA smart card installed, you are requested to enter its PIN code. If you enter an incorrect PIN code three (3) times in succession, the TETRA smart card is locked. To unlock the smart card, enter the TETRA smart card PUK and a new TETRA smart card PIN code. The maximum length of the TETRA smart card PIN code is eight (8) digits.

   If your organisation has configured the use of E2EE smart card to be mandatory in the device, you are requested to enter the E2EE smart card's PIN code. It is not possible to use the device without the E2EE smart card. If you try to start up the device without the E2EE smart card, you are prompted to insert the smart card. After you have inserted the required E2EE smart card, start up the device again. On the other hand, if you try to start up the device with an unsupported smart card, you are prompted to remove the smart card. After you have removed or changed the smart card, start up the device again.

2. Enter the TETRA Phone code, if requested, and tap the Done ✓ button.

   If your device does not have a TETRA smart card installed, but the TETRA Phone query is enabled, you are requested to enter the TETRA Phone code (see chapter *Access codes* for the default codes).

   If you enter an incorrect TETRA Phone code five (5) times in succession, the TETRA security code is requested.

   After you have passed the TETRA code queries, the TETRA services start to work. If you receive a TETRA call during the rest of the code queries, you can answer the call.

3. Enter the 3GPP network's PIN code, if requested, and tap the Done ✓ button.

   The 3GPP network's PIN code is defined in the Android settings. If you enter an incorrect 3GPP PIN code, you must enter the 3GPP PUK code and a new 3GPP PIN code.Enter the Android security code, if requested, and tap the Done ✓ button.

The Android security code is requested if you have set up a screen lock password, PIN or pattern in the Android settings. If an Android security code is defined, it is needed to unlock the screen.

After you have entered the code(s) correctly, the **Home** screen is displayed. If voice feedback is activated, it informs you of the active mode (network mode (TMO) or direct mode (DMO)). The *In service* tone is played when the registration to the TETRA network succeeds in the network mode (TMO).

## ◼ Locking and unlocking the touch screen

The lock screen functions in Tactilon Dabat in the same way as in Android applications. After a period of inactivity, the screen is locked. The way the screen can be unlocked depends on the settings defined by your organisation or by you. The physical buttons of the device – such as the **PTT** button and **Emergency** button – function normally also when the screen is locked.

> **Note:** The screen is not unlocked automatically during a call.
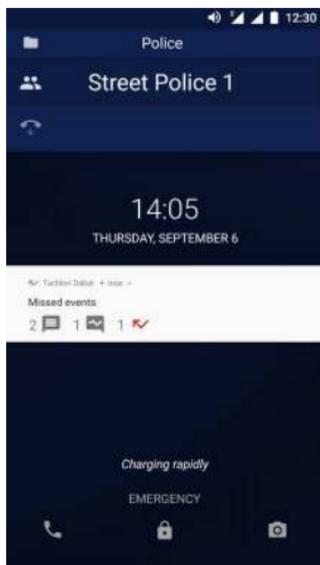


The proximity sensor switches the screen off when it detects that the screen is covered.

When the PMR application is running in the network mode, it displays the selected folder and group, as well as the talking party of the group call on the locked screen. In the direct mode, the lock screen displays the DMO group of the active DMO channel and the talking party of the group call.

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# 3.  Basics of Tactilon Dabat

Tactilon Dabat is an easy-to-use, smart and secure dual-mode device (DMD) designed for public safety and security professionals. You can use it as a TETRA radio for critical communications or as a smartphone for mobile applications and special public safety apps. Tactilon Dabat is comfortable even in prolonged use, and can be used with gloves on or even when the screen is switched off.

On the outside, Tactilon Dabat looks like a regular fully rugged smartphone, but it offers the special multi-purpose push-to-talk (**PTT**) button familiar from the Airbus TETRA radios. Two further physical function buttons provide you instant access to the PMR Status Bar (**Function 2**) and the **Fast menu** (**Function 1**). Because of the physical buttons, the main features of Dabat – for example group calls, emergency calls, and volume settings of an ongoing call – can be used with or without access to the graphical interface of the device.

Tactilon Dabat has still and video cameras for capturing the images, which can be shared within your organisation in a controlled, safe way.

Tactilon Dabat can operate on any standard TETRA network on the 380-430 MHz frequency band.

Tactilon Dabat is IP65 and IP67 certified.

For more information about the technical details, see *Appendix 1. Technical specifications*.

## ■ Getting to know Dabat

This section introduces the various parts of the Tactilon Dabat hardware and their functionality.

## Front and back

The key functions of the device's front and back are explained below.



1. **Earpiece** allows you to hear the audio of the call in private mode.
2. **Front camera** (5 MP) enables you to take front-facing photos or make videos.
3. **LCD display with a touch panel**.Resolution of 720 x 1280 pixels, 16.7 million colors and a bright display with optimized readability in daylight. Multi-touch is supported. The robust touch panel can be used in a wet environment or with gloves on.
4. **LED notification light** indicates the battery charging status or PMR status. The light is either constant or blinking. See chapter *LED notification lights* for further information.
5. **Bottom microphone** allows the other person(s) to hear you during the call.
6. **Back camera** (16 MP) for taking photos or making videos.
7. **Flash** enables you to shoot clear photos in low-light conditions.
8. **Battery cover** for protecting the battery. The SIM cards, and SD card are placed underneath the battery.
9. **Backside connector** for data, charging and mounting. Allows you to connect the device to the dashboard of a vehicle or to the desktop charger.

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10. **RF car kit connector**, located under a cover cap, allows you to connect the device to an external TETRA antenna.

11. **Loudspeaker** allows you to hear the audio of the call when the loudspeaker is on. It also allows you to hear the alerting of individual calls when the loudspeaker is off. Used also as a loudspeaker in handsfree mode.

## Top, bottom and sides

The top, bottom and sides of the device contain the physical buttons and connectors. The physical buttons are always functional, even when the screen is locked or turned off.
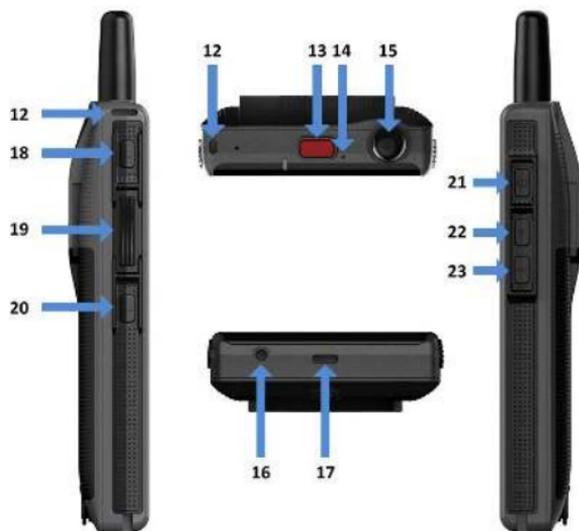


The key functions located on the device's top, bottom and sides are explained below.

12. **Wrist strap hole** for attaching a wrist strap to the device.

13. Red **emergency button**. See chapter *Emergency button*.

14. **Top microphone**, which is used as the microphone in group calls. If the loudspeaker is set to OFF, the bottom microphone or the microphone of active accessories is used also for group calls.

15. **PMR antenna**

16. **Headphone jack** for inserting a headphone (CTIA standard 3.5mm).

17. **USB port** for plugging in the USB cable, which is used for transferring data with a host PC or for plugging in the battery charger. The high-speed micro-UBS (type AB) can be connected only to a host PC. In later releases, Tactilon Dabat can also be connected to a peripheral devices.

18. **Function 2 button**. See chapter *Function 2 button*.

19. **Push-to-talk (PTT) button**. See chapter *PTT button*.

20. **Function 1 button**. See chapter *Function 1 button*.

21. **Power button** for switching the device on or off. See chapter *Power button*.

22. **Volume up (+).** See chapter *Volume buttons.*

23. **Volume down (-).** See chapter *Volume buttons*.

## ◼ Physical buttons

Tactilon Dabat, like other Airbus TETRA radios, has several physical buttons. The physical buttons are functional even when the device's screen is locked or switched off. When you press one of the physical buttons, it vibrates, except when there is an ongoing call.

> **Note:** When you press the **PTT** button, the functionality related to the pressing of the other physical buttons - with the exception of the **Emergency** button, **Function 2** button and the long pressing of the **Power** button - is disabled to prevent accidental pressing of the other buttons.

### Power button

When the device is powered off, pressing the **Power** button switches the device on.

When the device is powered on, you can switch the screen on or off by pressing the **Power** button briefly. When you press the button longer, a menu opens in which you can select to power off or restart the device.

> **Note:** If you press the **Power** button for more than 10 seconds, the device is forced to power off.

## PTT button

When you press and hold the push-to-talk (**PTT)** button, you request a speech item in the group shown in the PMR Status Bar and then you can speak during the group call. To let another group member speak in the group call or to end the call, release the **PTT** button.

The **PTT** button can also be used to initiate an express call.

For information about the interaction between the PTT button and the PMR Status Bar, see the chapter *PMR Status Bar*.

## Emergency button

Depending on how your organisation has configured the physical **Emergency** button, a long press on this red button initiates an emergency group call to the selected group or a predefined group address, or an individual emergency call. For more information, see chapter *Emergency*.

The **Emergency** button can also be configured to send an emergency status message to a predefined address. For more information, see chapter *Emergency status messages*.

## Volume buttons

The **Volume** buttons can be used for:

* Controlling the volume level.

  During a call, you can adjust the volume level of the incoming audio. If the screen is on, the volume slider is shown; you can check the current volume level there.

  > **Note:** If there is no ongoing call or an active application with audio focus, you can use the volume buttons to adjust the audio level of incoming group calls and express calls to a suitable level beforehand. To adjust the audio level of duplex calls and 3GPP calls, use the Android audio settings.

* Changing the group when the PMR Status Bar is activated.

* Switching the loudspeaker on or off.

Press and hold the **Volume +** button to switch the loudspeaker on or off. If the loudspeaker is switched off, the audio is routed to the earpiece and vice versa. A notification informs you whether the loudspeaker is on or off.

You can set the loudspeaker on or off also by using the *Hi/Lo* option in the Quick Settings.

- Activating and deactivating the *Do not disturb* ⊖ mode.

  All audio streams are muted and all vibration effects are switched off. The audio streams are restored when you make or answer a call. The microphones are not muted, so you can still transmit and talk normally in all calls in this mode.

  - To activate the *Do not disturb* mode, press and hold the **Volume -** button. A notification informs you that this mode is activated.
  - To deactivate the *Do not disturb* mode, press and hold the **Volume -** button again or press the V**olume +** button briefly. A notification informs you that the mode is deactivated.

Note that the *Do not disturb* mode is deactivated when you initiate an emergency call or when an emergency call is started as a part of the *Man down action*.If you want to adjust an audio stream which is not the active audio stream, use the volume settings of the Android system.

## Function 1 button

The **Function 1** button opens the Fast menu, which provides you a quick access to the scanning-, network mode- and transmission barring settings. You can access the Fast menu without looking or touching the screen by briefly pressing the **Function 1** button. A tone is played when the Fast menu is opened.

The Fast menu is shown as a selection list on the screen, also when the screen is locked. Note, however, that opening the Fast menu does not switch the screen on. If voice feedback is activated, it tells you the current item in the Fast menu.

The Fast menu contains the options:

- *Scanning ON* / *Scanning OFF*

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- *Network mode* / *Direct mode*
- *Transmission barring ON* / *Transmission barring OFF*

To change the current value of a setting, select the item in the **Fast menu**. When the **Fast menu** is open, press the **Function 1** button briefly to move to the next item in the menu. To select the menu item, press the **Function 1** button long. Alternatively, you can browse and select the item by tapping it on the touch screen.

If the Action center widget is configured in the device, you can open it by pressing and holding the **Function 1** button. For more information about the widget, see chapter *Action center widget*.

### Function 2 button

If the PMR Status Bar is hidden, press the **Function 2** button to display it. You can then change the selected group by using the **Volume +** and **Volume -** buttons.

To hide the PMR Status Bar, press the **Function 2** button twice.

You can display and hide the PMR Status Bar almost at any time, with the following exceptions:

- The PMR Status Bar cannot be displayed during an ongoing duplex emergency call or when the TETRA services are off in the device.
- The PMR Status Bar cannot be hidden on locked screen.

## ■ Audio control

You can use the earpiece, loudspeaker, or audio accessories (for example a headset) with Tactilon Dabat.

You can switch the loudspeaker on or off by pressing and holding the **Volume +** button or by selecting the *Hi/Lo* option in Quick Settings. The changing of the state is indicated with a notification. You can check whether the loudspeaker is on 🔊 from the Android Status Bar.

- When the loudspeaker is on, you can use the device in handsfree mode because the audio is heard from the loudspeaker. The top microphone is in use, except in duplex calls.

- When the loudspeaker is off, the audio is routed to the earpiece and you can speak in the private mode. The bottom microphone is used.

The loudspeaker is on or off until you change the setting again. You can also change the setting during a call, but the setting is restored back to its original value after the call ends.

The application saves the audio mode (loudspeaker or earpiece) when it is closed. The latest active audio mode is used when it is started again. If an accessory is connected to the device when the application is started, the accessory mode is active.

Volume and muting are controlled via the **Volume** buttons.

## Notifications

The TETRA notifications (message alert tones and call notification tones) are routed either to the loudspeaker or earpiece based on the audio routing setting. The notification tone is played on low volume during calls. If you receive a TETRA notification while you are transmitting in a group call in which the audio is routed via the loudspeaker, your device vibrates but no notification tone is played.

Notifications received from the Android system and smartphone applications are handled according to the Android settings and specifications on audio routing.You are informed either by sound or vibration when there are no calls or when there is an ongoing 3GPP call.

If you receive a smartphone application notification during a TETRA call, your device vibrates but no tone is played. The Android system settings define whether sound or vibration is used to inform you of system notifications during a TETRA call.

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## Audio accessories

If there is an accessory (for example, a headset) connected to the device, the audio is routed automatically via the accessory. If there are multiple accessories connected to the device (for example, a wired headset and a Bluetooth headset), the audio is routed the latest connected accessory by default.

When there is an accessory connected to the device, you can change the audio routing between the loudspeaker and the accessory by using the loudspeaker on/off setting. If the accessory mode is active when you disconnect the accessory, the audio routing returns to the state where it was before you connected the accessory. If the loudspeaker mode is active when you disconnect the accessory, the audio mode is not changed.

## ■ LED notification lights

The LED notification lights are used to communicate information to you. The notification light is either blinking or remains constant. The light remains on as long as you press the **PTT** button or as long as the operation indicated by the notification light is active.

| | |
|---|---|
| **Green (constant)** | Transmitting or automatic transmitting |
| **Yellow (constant)** | Call is queuing, connecting or changing between the network mode (TMO) and direct mode (DMO). |
| **Red (constant)** | The call is interrupted, there is an error related to the granting of the speech item or an error in the TETRA application, the device is out of service or the device is charging while it is switched on. |
| | If the device drops out of service while the LED is already red because of an call related error, it is indicated by the *No service* tone. |

| | |
|---|---|
| **Red (blinking)** | Indicates that the device is charging while being switched off. |
| | A red light blinking at a low frequency indicates receiving or idle state of an emergency call. It may also indicate that there was an ongoing or pending emergency call when the device dropped out of service. If the emergency call is ended, but the device is still out of service, the LED is a constant red. |
| **Off** | No ongoing calls or someone else is transmitting in the active group call, active express call or individual call while the user is not pressing or holding the PTT. |
| | During duplex calls, except when the duplex call is queuing. |

## ■ Proximity sensor

When the proximity sensor detects that the device's screen is covered, the screen is switched off automatically to prevent accidental selecting of settings or accidental pressing of buttons, which might, for example, start a call.

The proximity sensor is located near the earpiece. See chapter *Front and back*.

## ■ Getting to know the TETRA functionality

This section introduces some essential TETRA functionalities available in Tactilon Dabat.

### PMR operation mode

When you start up Tactilon Dabat for the first time, the TETRA services are active in the network mode (TMO). You can change the TETRA mode from TMO to direct mode (DMO), and vice versa.

**Note:** Changing the TETRA mode (TMO/DMO) is not allowed during an emergency call. If you attempted to change the TETRA mode during an emergency call, the changing of the mode fails.

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## Switching the TETRA services off or on

You can switch the TETRA services off or on in the TETRA Settings or Quick Settings. The change in the TETRA services' status (on or off) is confirmed to you by a dialog.

When the TETRA services are off, you cannot access the TETRA activities. In addition, the PMR Status Bar is hidden in all views and the TETRA icons are not shown in the Android Status Bar. The Alert icon ▲ displayed in the Android Status Bar and the permanent notification *TETRA Services disabled* related to this icon remind you that the TETRA services are off. The corresponding notification is also shown on the lock screen.

When you switch the TETRA services on, you are requested to enter the same TETRA codes as when you start up the device.

Note that when the TETRA services are off, other TETRA shortcut icons - except TETRA services indicator ⊺ - are not shown in the Quick Settings.

## Changing to DMO

Open the **Fast menu** and select *Direct mode*. Alternatively, open the PMR settings and select *Direct mode*. If you tap the Direct mode ▯»▯ icon or TETRA signal indicator ⊺ icon in the Quick Settings, the PMR settings are opened in which you can change the mode from TMO to DMO, or vice versa.

The color of the Android Status Bar changes to yellow and the Direct mode ▯»▯ icon is displayed when the changing of the mode to DMO succeeds. The selected DMO channel and group are shown in the PMR Status Bar. The TETRA signal indicator ⊺ icon the Android Status Bar indicates the received signal strength in DMO.

Note that the loading of the DMO channels and groups may take some time.

If there are no DMO channels configured, it is not possible to change the mode to DMO. This is indicated to you by an error tone and an error message.

For more information about DMO, see chapter *Direct mode (DMO)*.

#### Changing to TMO

To change from DMO to TMO, open the **Fast menu** and select *Network mode*. Alternatively, open the PMR settings in Android settings and switch the *Direct mode* toggle to off, or use the Quick Settings.

When the network registration succeeds, the *In Service* tone is played and the TETRA network's signal strength is indicated by the TETRA signal indicator ⊿ icon in the Android Status Bar. If the device has been out of network coverage before re-establishing a connection to the TETRA network, the constant red LED - which indicates the device being out of service - is turned off.

If the network registration fails, the *No service* tone is played, the LED is a constant red, and the TETRA out of service indicator ⊿ is displayed in the Android Status Bar.

The selected TMO folder and group are shown in the PMR Status Bar.

## Dabat Hybrid Roaming

When Dabat Hybrid Roaming is enabled by your organisation, Dabat has two possible TETRA connections available to the TETRA network. Both connections are connected all the time, but only one of the connections can be active at a time (so-called *active mode*). If the active connection is lost, Dabat switches over to using the other connection if it is available. You can also manually select the TETRA connection to be used or, if your organisation allows it, set Dabat to automatically switch over to using Dabat's own TETRA connection to the TETRA network again when the signal strength is strong enough.

The use of Dabat Hybrid Roaming requires that you have the PMR setting *TETRA Services* enabled in Dabat for the device to be able to register to the TETRA network. When the active mode changes, the *Active mode* notification informs you that Dabat Hybrid Roaming is in use and which of the modes is currently active. The color of the PMR Status Bar indicates whether the TETRA mode (dark blue) or Agnet TETRA mode (light blue) is active in the device.

For more information, see chapters *Hybrid roaming* and *TETRA network monitor* in this document. See also the document *Dabat Hybrid Roaming* (TRATRAPP00132).

## TETRA transmission barring

The airplane mode can be activated by swiping down from the top of the screen twice or by selecting it from the **Settings** menu. When the airplane mode is activated, also the TETRA transmission barring is active. The device does not send any signals to the network, and only limited network services are available.

**Note:** The airplane mode cannot be activated during an emergency call.

When the TETRA transmission barring is active, the device cannot re-register to the network, for example, if it is switched off and then on again. If you try to participate in the group call by pressing the **PTT** button, the attempt fails and an error message in the PMR Status Bar reminds you that transmission barring is activated.

The limited network services in the network mode are only available in the coverage area of the network cell where the device was last registered. The device cannot register to other network cells while transmission barring is active, and therefore the area of operation may be limited.

When transmission barring is active in the network mode (TMO), the device cannot send the necessary information about changes in talk groups to the network. Therefore, you cannot change the selected group. If you make any other changes that affect talk groups, such as change the scanning state of a group, you will not be able to receive further communication from the affected groups. After transmission barring has been deactivated, the device can attempt to negotiate the changes with the network.

**Note:** If you start to make an emergency call to an emergency number programmed into your device while transmission barring is activated, Dabat automatically deactivates transmission barring and attempts to make the call. Consider exiting the area where you wanted the transmission to be barred.

Transmission barring should be active before you enter the area where you want the transmission to be barred. When you activate transmission barring, it is indicated with the Airplane mode ✈ icon in the Android Status Bar. The TETRA signal indicator ⊿ and TETRA out of service indicator ⊠ icon in the Android Status Bar indicate whether there is a connection to the TETRA network.

## TETRA fallback mode

If the system-wide services are temporarily not supported in the TETRA base station to which Tactilon Dabat is registered, the device goes into the fallback mode. During the fallback mode some services may be unavailable.



The starting of the fallback mode is indicated by a tone. The color of the Android Status Bar changes to purple and the Fallback mode ⊛ icon is displayed as long as the device is in the fallback mode. The Fallback mode is also indicated in the Android Notification Drawer.

If you try to use a service or function that is not available during the fallback mode, normal error indications are shown.

Note that the target of the emergency call, emergency status and location information may not be available during the fallback mode. However, your organisation may have configured fallback mode specific targets for them to be used during the fallback mode.

To recover from the fallback mode, boot up Tactilon Dabat to get it to register to a base station that offers system-wide services. If the device registers again to a base station with limited services, the fallback indications are displayed after the registration.

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## Voice feedback

If voice feedback is activated, it is used when you change the selected group by using the physical buttons. It is also used to inform you of the active mode (network mode or direct mode) when the TETRA module is started and of the current item in the **Fast menu**.

## Man down alarm

See chapter *Man down detection*.

## Positioning

### GNSS receiver

The Global Navigation Satellite System (GNSS) is a worldwide radio navigation system that includes satellites and their ground stations that monitor the operation of the satellites. Your device is equipped with an internal GNSS receiver.

A GNSS terminal, such as the GNSS receiver in the Tactilon Dabat, receives low-power radio signals from the satellites, and measures the travel time of the signals. From the travel time, the GNSS receiver can calculate its location to the accuracy of metres.

When the GNSS receiver is on, the Positioning 📍 icon is displayed on Android Status Bar. If the icon blinks, the GNSS receiver is calculating its location. When using the GNSS receiver, do not touch the antenna of the device; the antenna of the GNSS receiver is located there. Hold the device upright in your hand at an angle of about 45 degrees, with a clear view of the sky.

The GNSS receiver in the Tactilon Dabat takes its power from the device's battery. Note that using the GNSS receiver may drain the battery faster.

Note that establishing a GNSS connection may take from a couple of seconds to several minutes. The availability and quality of GNSS signals may be affected by buildings, natural obstacles, and weather conditions. When the GNSS receiver is on, is displayed. If the indicator blinks, the GNSS receiver is calculating its location.

> **Note: The Global Positioning System**
>
> The Global Positioning System (GPS) is operated by the United States government, which is solely responsible for accuracy and maintenance of the system.
>
> The accuracy of location data can be affected by adjustments to GPS satellites made by the United States government and is subject to change with the United States Department of Defense civil GPS policy and the Federal Radio navigation Plan. Accuracy can also be affected by poor satellite geometry.
>
> Availability and quality of GPS signals may be affected by buildings and natural obstacles as well as weather conditions. The GPS receiver should only be used outdoors to allow reception of GPS signals.
>
> Therefore, GPS should not be used for precise location measurement and you should never rely solely on location data from the GPS receiver.

### Sending the position

The device may receive TETRA location information protocol (LIP) requests for position information.The setting **Allow Location Reporting** in the **PMR settings** defines whether Dabat is allowed to send LIP messages.The sending of position information is only possible in the network mode and when transmission barring is not activated. Note that this feature and its accuracy are dependent on the network, satellite systems (when GNSS is used), and the organization receiving the Information. This feature may not function in all areas or at all times.

The device attempts to send position information when it receives position requests from authorized numbers, during a call to an emergency number programmed into your device, and during a emergency button call to a network mode destination. If the GNSS receiver does not get the needed information from the satellites to determine the current coordinates before the call ends, the coordinates that were last calculated by the receiver are sent instead.

Note that the position information from the GNSS receiver may be sent to the network during these calls if it has been predefined by your organisation, regardless of which setting is selected.

## Developer mode

If you have enabled Android developer operations, the Developer mode 🐞 icon is shown in the Android Status Bar. The expiration date of the developer mode certificate is shown by a permanent notification. When the certificate expires, the device is factory reset and the developer mode is no longer available.

# 4.  Using Tactilon Dabat

Tactilon Dabat is a dual-mode device (DMD), which functions both as a TETRA radio and an Android smartphone, and as such, combines both the TETRA and Android functionality in one device.

When used as a TETRA radio, Tactilon Dabat provides you with the following TETRA functionalities.

 TETRA Contacts

 TETRA Messaging

 TETRA Phone

 TETRA Talk Groups

In addition, Tactilon Dabat has a **PMR Status Bar**, which is used to show important information regarding calls, the use of the push-to-talk (**PTT**) button, and changing of TETRA groups.

On the other hand, the **Android Status Bar** is used to show the status of the device and services also when the device is used as a TETRA radio.

This section introduces the **Home** screen, which is the starting point for accessing the TETRA features and other applications, and also gives an overview of the functionality of the Android Status Bar and the PMR Status Bar.

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### ■ **Home screen**

When you switch the device on and pass the login procedures, the **Home** screen is opened.
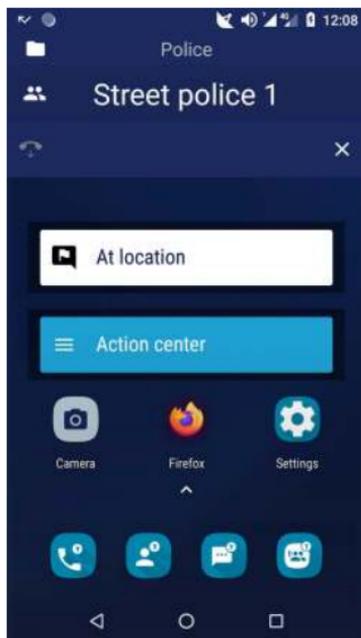
The **Home** screen contains the following items by default (listed from top to bottom):

•**Android Status Bar**

•**PMR Status Bar**

•**Situation widget**

•**Action center widget**

•**Camera** , **Web browser**  and

**Settings**  launcher icons

•**TETRA Phone** , **TETRA Messaging** , **TETRA Contacts**  and **TETRA Talk Groups**  launcher icons

•**App list** launcher icon

•**Back**, **Home** and **Recent** buttons, which enable you to display the previous screen, the **Home** screen or recently used apps, respectively.

In addition, you can also access the **Quick Settings** via the **Home** screen. For more information, see chapter *Quick Settings*.

### Modifying of the Home screen's content

If you want to modify the wallpaper and widgets displayed on the **Home** screen, open the available options by pressing and holding an empty space on the **Home** screen. In this view you can also access the Android settings or view the list of installed apps.

You can add or remove apps to/from the **Home** screen.

- To add an app, open the App list and press the launcher icon of the app you want to add on the **Home** screen.
- If you want to remove an app from the Home screen, press and hold the app's launcher icon on the **Home** screen. When the text *Remove* is displayed at the top of the screen, drag the app's launcher icon on top of it and release it.

## Switching the screen on and off

You can switch the screen on and off by a pressing the **Power** button briefly. The screen switches off automatically after the inactivity time defined in the Android settings.

If you have set up the password/PIN pattern for the screen lock, you are requested to enter the Android security code when you switch the screen on.

The screen is switched on automatically if you initiate or receive an emergency call, or if you receive a duplex call, provided that the proximity sensor allows it. The call is displayed in the full-size PMR Status Bar or in the duplex call view.

The screen is switched on according to the power management settings (*PMR settings* → Power management) if you receive a group or express call or if you initiate a group call by pressing the push to talk (PTT) button while the screen is switched off.

## Right to left view

If the right to left (RTL) reading and writing direction is enabled in your device, the content of the PMR Status Bar is mirrored for the correct reading direction.You can browse group by swiping from right to left or vice versa in the PMR Status Bar.

When writing a message in the **TETRA Messaging** app, the text fields and elements are shown in the right to left format. The other elements are mirrored in the conversation views.

# ■ Android Status Bar

The Android Status Bar shows relevant information regarding the device, service, network and encryption status. These include for example the TETRA signal- and network indicators, battery level, received signal strength and time.

The icons that are displayed on the left side of the Android Status Bar (see the table below) inform you about calls, messages and encryption. In some cases, the color of the Android Status Bar changes to indicate the current state of the TETRA mode (TMO/DMO), network or call. These icons represent notifications from the TETRA application. After you have opened and dismissed the notification in the Android Notification Drawer or selected an action provided in the notification, the corresponding icon disappears from the Android Status Bar.

| Icon | Icon name | Description |
|------|-----------|-------------|
| ⚠ | Alert | There is an error related to the network or the TETRA services are switched off. |
| ☎↓ | Blocking | Group calls are blocked from a single group. |
| ❶ | Call area error | The device is outside the individual call area. |
| 🐞 | Developer mode | Android developer options are enabled. |
| 🖳 | DMO gateway | The device is connected to DMO gateway. |
| 🖳✕ | DMO gateway disconnected | DMO gateway was disconnected from the device. |
| 📡 | DMO repeater | The device is connected to DMO repeater. |
| 📡✕ | DMO repeater disconnected | DMO repeater was disconnected from the device. |
| 📞 | Duplex call | Ongoing duplex call |

| | | |
|---|---|---|
| 📞 Tap to max... | Duplex call (in minimized call view) | Minimized duplex view. You can access the full-screen duplex call view from this view by tapping the Android Status Bar. |
| 📲 | Dynamic groups added | Dynamic groups added. |
| 📲 | Dynamic groups removed | Dynamic groups removed. |
| ☇ | Emergency call | Pending emergency call. During active and pending emergency call the Android Status Bar is red and the icons are white. |
| 🔓 | Clear call warning | Informs you of unencrypted call if encryption is used in communication. Accompanied with a notification, which provides you more information about the situation. This icon is blinking if there is no connection to the Key Management Center (KMC) when the E2EE smart card needs it or the E2EE smart card is receiving the encryption keys from the KMC. The blinking stops if there is need to inform you of an unencrypted call. |
| 🔒 | Encryption key received | Encryption key was negotiated successfully with Key Management Center. |
| 🔽 | Firmware update notification | New firmware OTA update is available. |
| ⟨⟩ | Maintenance | USB route configuration for maintenance use |

| | Missed events | Missed events, such as a missed call or an unread callback request, flash message, situation indicator, status message or text message. |
|---|---|---|
| | | The *Missed events* notification shows the number of missed events and their icons. When you click the notification, it opens the most recent missed event in the TETRA Phone activity or TETRA Messaging activity, depending on the type of the missed event. When you have viewed all missed events, the notification and the icon are no longer displayed. |
| | Mute | There is a muted group call in the background. |
| - | Operator names | Name(s) of 3GPP network operator and/or TETRA network operator on the locked screen when there is connection to these networks. These names replace the icons on the left side. If a 3GPP SIM is not inserted, the Android system shows an icon informing you of this. |
| | USB | The device is connected to the Taqto configuration tool via USB. |

The icons on the right side of the Android Status Bar (see the table below) are used to inform you about the network, TETRA mode (TMO/DMO), man down detection, audio, battery, and time.

| Icon | Icon name | Description |
|---|---|---|
| | Airplane mode | Airplane mode and TX inhibit are active. |
| | Battery indicator | Battery status |
| | Direct mode | Direct mode is active. The Android Status Bar is yellow. |

| | Do not disturb | Do not disturb mode is active. |
|---|---|---|
| | Encryption on | End-to-end encryption is on. Displayed only if the device's software is capable of E2EE. |
| | Encryption off | End-to-end encryption is off. Displayed only if the device's software is capable of E2EE. |
| | Fallback mode | Fallback mode is active. The Android Status Bar is purple. |
| | Loudspeaker on | Loudspeaker is on. The audio is routed to the loudspeaker. |
| | 3GPP network signal indicator | Signal strength in the 3GPP network |
| | Man down | Man down detection is active. |
| | Positioning | The GNSS receiver is on. If the icon blinks, the GNSS receiver is calculating its location. |
| | Scanning indicator | Scanning of groups is on in TMO and DMO. |
| | TETRA signal indicator | Signal strength in TMO and received signal strength in DMO. |
| | TETRA out of service indicator | Out of coverage of the TETRA network. The Android Status Bar is grey. |
| 12:34 | Time | Time |

## ■ PMR Status Bar

The PMR Status Bar shows information about the selected group, selected folder and ongoing group calls. It consists of three sections, which contain the following information:

- Currently selected group folder

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Additional notes are also displayed in this section. For example, if the group call transmission is interrupted, it is indicated by a notification.

- Selected group
- Status of the group call.

  Includes also **End call** and **Hide** buttons.

If the selected group is not available, if you are not allowed to use the group, or if the device is out of coverage, it is indicated in the PMR Status Bar.

## Displaying and hiding the PMR Status Bar

You can display or hide the PMR Status Bar almost at any time, except during an ongoing duplex emergency call or if the TETRA services are off. If the PMR Status Bar is hidden, press the **Function 2** button to display it.

To hide the PMR Status Bar, press the **Function 2** button twice. If the PMR Status Bar is hidden, the call information is shown in the minimized PMR Status Bar, which disappears when the call ends. When the PMR Status Bar is minimized, the Android Status Bar indicates the current speaker (phone number or name) and the call state (connecting, dialing, queuing, transmitting).

If the screen is locked, the PMR Status Bar is always visible when the TETRA services are activated in the device. If the TETRA services are not activated, the PMR Status Bar is hidden. The **End call** and **Hide** buttons are available in the PMR Status Bar also when the screen is locked.

## Colors of the PMR Status Bar

The PMR Status Bar changes its color based on the state of group communication and PTT.



When the PMR Status Bar is **dark blue**, there is no group communication ongoing and PTT button is not pressed by the user.

When the PMR Status Bar is **light blue**, the device is **receiving**. A group call is ongoing and the user is listening to the possible group communication, but is not pressing the PTT.

A **light blue** PMR Status Bar may also indicate that a group call is in the **reservation period** state. There is a group call ongoing, but nobody is talking in the group for the time being.

**Orange** color indicates **queuing**.

The PTT button is pressed down, and the user is either queuing or waiting to be able to talk to the active group.

**Green** color indicates that the device is **transmitting**.

The PTT button is pressed down and the user is talking to the active group.

When the PMR Status Bar is **grey**, there is either **no TETRA network coverage** or **an error related to group communication**. The reason for the error is displayed in the header of the status bar.

The PTT button is pressed down, but the user either does not get the speech item or loses it because the group calls fails or cannot be continued. You must release the PTT.

Airplane mode (also known as transmission barring) is activated in the device. The **grey** color indicates that the device is partly out of TETRA network coverage. The color changes from **grey** to **light blue** if you receive a TETRA group call while the device is in airplane mode.

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A **black** background with a red bar at the bottom or the PMR Status Bar indicates an **emergency call.**

Note that the color black is also used to indicate individual calls in the PMR Status Bar. In such cases, the background of the whole PMR Status Bar is black.



A group that has been configured as a *receive only* group is the selected group. You can receive group calls from this group, but you cannot transmit in the group.

# ■ Situation widget

The **Situation widget** provides you a quick way of sending a situation indicator. To send a situation indicator:

1. Tap the Situation widget field.
2. Select the applicable situation indicator from the list.

   When the situation indicator is sent, the list is closed.

   The last successfully sent situation indicator is shown in the Situation widget. If you have not yet sent any, the Situation widget shows the text *Set situation*. The widget is disabled when it is not possible to send situation indicators

# ■ Action center widget

The **Action center widget** provides you a quick way of accessing some additional services and actions. Depending on how your organisation has configured it, there are one or more actions available on the actions list. The *Dispatcher call* action is available by default. The actions list may also contain other predefined call or status related actions, such as the additional emergency services that are described in chapter *Additional emergency services*. The Action center may also contain short dial numbers for quick access if you have configured them to be shown in the Action center.

To open the Action center, tap the Action center widget on the **Home** screen or press and hold the **Function 1** button.

When the action list opens, select the applicable action to initiate a call or send a predefined message. If a service or action is disabled on the Action center list, it indicates that the service or action is configured in the device, but it is not available currently for example because of the current operation mode (TMO/DMO).

If you want to close the list without selecting an action, press any button.

### ■ Application list

All apps are shown on the App list screen, including the TETRA feature apps. You can open the App list screen by swiping up anywhere on the **Home** screen.

If you want to add a shortcut to an app on the **Home** screen, press the app's launcher icon in the App list screen. See chapter *Modifying of the Home screen's content*.

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# ■ PMR settings

In the PMR settings, you can view and change the settings related to:

TETRA Services
Note that when the TETRA services are off, all other TETRA settings except TETRA services are disabled.

Network selection

Operation Mode
Defines whether Network mode (trunked mode (TMO)) or Direct mode (DMO) is active.

Hybrid roaming

Scanning

Mandown detection

Voice feedback

Call override

Allow location reporting

Soft PTT

Messaging

Security

Short dial numbers

TETRA Net monitor

Maintenance

Power management

About Tactilon Dabat

To access the PMR settings, open the **Settings** and select **PMR settings**. Alternatively, open the Android Quick Settings and press and hold the relevant PMR settings button (TETRA Services, Direct mode, Scanning, Hi/Lo (Loudspeaker on/off) or Man down).

## TETRA Services

To set the **TETRA Services** on or off, tap the TETRA Services option, which opens a confirmation query asking whether you want to enable or disable the TETRA services. To change the settings of scanning, network operation mode, mandown detection or voice feedback, use the state switch (on/off).

## Network selection

By default, Dabat operates in its configured TETRA network. However, depending on how your organisation has configured the device, you may be able to select other TETRA networks or the device may change automatically to another TETRA network if the connection to the current TETRA network is lost. Note that the availability of the services and groups may change when the connection is switched to another network.

Network selection can be set to be automatic or you can select the network manually. When you go to PMR settings and tap the option **Network selection**, the *Network selection* dialog is opened. The dialog contains the option **Automatic** and a list of the configured TETRA networks from which you can choose. Tap the relevant option to select the mode. If you do not want to change the mode, tap **Cancel**.

| | |
|---|---|
| **Automatic selection** | Dabat automatically selects an available network among the configured TETRA networks. This is the default value for network selection. |
| | If the connection to the currently used TETRA network is lost, Dabat automatically selects one of the other available TETRA networks. The device is out of coverage only if the connection to all configured networks fails. |

**Manual selection**    When you select a specific network from the list of config-ured TETRA networks, Dabat attempts to use only that net-work. If Dabat cannot register to the selected TETRA network, a notification in the PMR Status Bar indicates that the network is not allowed.

If Dabat loses its connection to the manually selected TET-RA network, it is in the out of coverage state and does not attempt to connect to any other network.

The selected TETRA network is shown after the current network selection mode in PMR settings.

Network selection is disabled in direct mode (DMO).

## Hybrid roaming

Dabat uses either Dabat's own TETRA connection or Agnet connection to the TETRA network depending on the connection's availability. If Dabat is configured to prefer the Dabat connection, the connection is automatically switched from the Agnet connection back to the Dabat connection when the Dabat connection's TETRA signal strength is above the signal strength limit for the configured period of time.

If your organisation has allowed it, you can enable or disable the automatic switchover to using the Dabat connection the TETRA network by changing the TETRA recovery setting in the PMR settings. If you are not allowed to change the TETRA recovery setting, you can see the configured value in the Hybrid roaming settings. You can manually switch over to using the Dabat connection if the automatic switch to using the Dabat connection is disabled.

Note that Dabat switches over the connection automatically to the available connection if the connection is lost in the active mode although the option TETRA recovery is disabled.

The Hybrid roaming menu is disabled if the Agnet application is disabled or uninstalled, or if the TETRA Services are disabled.

For more information on hybrid roaming, see chapters *Dabat Hybrid Roaming* and *TETRA network monitor*.

## Scanning

When scanning is on in the network mode (TMO), the selected group, the background groups and all groups that are included in scanning in the selected folder are scanned. When scanning is off, only the selected group and the background groups are scanned.

When scanning is on in DMO, all groups of the selected DMO channel and the open group are scanned. When scanning is off, only the selected group and the open group are scanned.

## Mandown detection

See chapter *Man down detection*.

## Voice feedback

See chapter *Voice feedback*.

## Call override

See chapter *Call override*.

## Allow location reporting

The setting **Allow Location Reporting** defines whether Dabat is allowed to send location information protocol (LIP) messages. Depending on the configuration, this setting is either read-only or you can change it. If you can change this setting, both Android's location setting and this location reporting setting must be switched on to allow LIP reporting.

## Soft PTT

The soft PTT enables you to use a large part of the Dabat screen as a PTT button, making it easier to use the PTT when Dabat is in the car cradle. You can enable or disable the functionality by tapping the Soft PTT slider in the PMR settings.

When the soft PTT is enabled, you can access it by swiping down in the PMR Status Bar or by opening the PMR Status Bar from the PMR Status Bar widget if the widget is installed.

For more information on soft PTT and using Dabat in the car cradle, see the document *Ergo Plugin Smart Dashboard Holder for Tactilon® Dabat, User Manual* (PS12015).

## Messaging

The following settings related to the **TETRA Messaging** app are available in the Messaging section.

### Delivery report

The requesting of delivery reports from the recipients of text and flash messages is defined by your organisation. If the requesting is enabled, you can set the requesting of delivery reports on or off in the **TETRA Messaging** app or in the settings available in the *My conversations* view.

### Delivery report format

The option **Delivery report format** defines whether the delivery report is sent in short or standard format. When you open the list of options, press the desired option to select it.

### Message encoding

The **Message encoding** option defines the character encoding used for sending the text- or flash message to the air interface. You can select between the following options: Automatic, Unicode, GSM 7-bit, Latin/Cyrillic, and Cyrillic.

If you use automatic encoding, Latin 9 encoding (8bit encoding) is used. The character set is changed automatically in the message you are writing when you enter a character that needs a different character coding. If another encoding type is used in the device, you are informed if some character you have entered requires other character encoding than the one that is selected.

You can change the message encoding by using the overflow menu in the *Single conversation* view when you are writing the message. When you open the list of options, press the desired option to select it.

## Security

The *Security* settings contain settings related to the phone code and end-to-end encrypted (E2EE) smart card. There are different settings available depending on whether an E2EE smart card is inserted in the device or not. Unavailable settings are disabled in the security settings view.

### Change Phone code

To change the Phone code:

1. Select *Change Phone code*.

2. Enter the current Phone code and select **OK**.

   If you enter an incorrect current Phone code, you are requested to enter the current Phone code until the code is correct.

3. Enter the new Phone code and select **OK**.

4. Enter the new Phone code again to confirm it. Select **OK**.

   A message indicates that the changing of the Phone code succeeded.

### Change Smart card PIN

To change the smart card's PIN code:

1. Select *Change Smart card PIN* to change the smart card's PIN code.

2. Enter the current smart card PIN code and select **OK**.

   If you enter an incorrect PIN code, you have a maximum of three attempts to enter the current smart card PIN code correctly. After three failed attempts, the E2EE smart card PUK code and a new PIN code are requested. If you enter an incorrect PUK code ten times, the application will be locked.

3. Enter the new PIN code and select **OK**.

   The maximum length of the E2EE smart card PIN code is eight digits. When you enter the PIN code, only the latest entered digit code is visible.

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4. Enter the new PIN code again to confirm it. Select **OK**.

   A message indicates that the changing of the PIN code succeeded.

   If the new PIN codes do not match, you are requested to enter a new PIN code until you enter the same code twice.

## End-to-end encryption

With the *End-to-end encryption* setting, you can check and define whether E2EE is in use in the device or not. The setting is enabled only when your device has an E2EE smart card connected. Note that the use of E2EE also requires that the use of E2EE is enabled in the smart card configuration.

When you change the E2EE mode, a notification tone is played. The E2EE mode cannot be changed during an E2EE call.

The E2EE mode is valid for both TMO and DMO.

## SDS end-to-end encryption

This is a subsetting of the E2EE mode, which defines whether text and flash messages are sent encrypted if also defined by the E2EE smart card. The available options depend on how your device is configured.

## Operative tactical address (OPTA)

The operative tactical address (OPTA) can be used by your organisation to provide additional information about the caller or the sender of the message. If OPTA is configured to be used, the caller's or talking party's OPTA is shown in the PMR Status Bar at the beginning of each speech item or in the duplex call view after the call is connected. The received OPTA may be shown as filtered if only certain characters of the OPTA are configured to be shown when you receive it.

**Note:** Check with your administrator whether your E2EE smart card supports OPTA.

If your E2EE smart card supports OPTA, you can check the device's full length OPTA and possibly enable or disable it in the *Security* settings. If the option **Operative Tactical Address** is on, your E2EE smart card's OPTA is sent to the other call participants or message recipients. Note that your organisation may have configured the option **Operative Tactical Address** so that you cannot enable or disable it.

## Manual key negotiation

If Dabat is equipped with an E2EE smart card, you can start the key negotiation manually by using the option **Manual key negotiation**, which is available if Dabat is in network mode (TMO). If the calls are not working correctly while E2EE is active, you can request a new encryption key by going to the *Security* settings and tapping the option **Manual key negotiation**. Confirm the request for the new encryption key by selecting **Request**.

Manual key negotiation cannot be started if the device is in direct mode (DMO) or if there is an individual call or key negotiation ongoing.

If a Dabat equipped with an E2EE smart card does not have a valid encryption key which is needed for a call in TMO, it automatically starts negotiating the encryption key with the Key Management Center (KMC) when you initiate or receive a call or request a speech item. The Clear call warning 🔓 icon blinks while the key negotiation is ongoing. If the key negotiation takes too long or it prevents other actions, you can cancel it by tapping the **Abort** button in the key negotiation notification. When the key negotiation succeeds, the icon and the related notification disappear.

Note that the key negotiation is interrupted if you change to direct mode (DMO) or change the selected group in network mode (TMO) while the key negotiation is ongoing. Calls are not connected if you release the push-to-talk (**PTT**) button or reject a call before the key negotiations are completed.

If the key negotiation fails, you are informed about it with a permanent heads-up notification. You can start the key negotiation again by tapping **Request manually** in the notification or by using the option **Manual key negotiation**.

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#### DMO Crypto Mode

The DMO crypto operating mode may be available in the *Security* settings, depending on the E2EE smart card type used in the device. The settings **DMO 1** and **DMO 2** define which encryption key is used for calls in direct mode (DMO).

## Short dial numbers

Short dial numbers provide a quick means to get in touch with a contact. You can define a short dial number for up to eight existing contacts (short dial numbers 2-9), including locked contacts.

The *Short dial numbers* lists the contact name and the phone number associated with the short dial number. You can add, edit and delete the short dial numbers either in the *Short dial numbers* settings or by editing a contact (see chapter *Editing contacts*). The *+ Add contact* function indicates available short dial numbers in the *Short dial numbers* settings.

The existing short dial numbers are listed in the *Short dial numbers*. To make a call, long press the short dial number in the **TETRA Phone** 📞 app or use the Action center if you have configured the short dial numbers to be shown in the Action center. For more information, see chapter *Short dial numbers*.

## TETRA network monitor

If your organisation has configured the TETRA network monitor (also known as TETRA NET monitor) to be used, you can view and monitor detailed information about the TETRA network in Dabat. The TETRA network monitor view shows detailed information about the current TETRA network, the current channel, the serving cell, the neighbor cells, the current operation mode and the service state.

The network monitoring continues in the background if the screen lock activates, the screen is switched off or if the TETRA network monitor view is hidden by another view. You can view the current network monitoring values by opening the screen and returning to the TETRA network monitor view. Note that the network monitoring is interrupted when the device is booted.

If TETRA Net monitor is configured, you can check the TETRA recovery setting (TETRA signal strength and timer) based on which Dabat automatically switches to using Dabat's own TETRA connection to the TETRA network. The date and time of the latest automatic switchover is also shown. For more information, see chapter *Hybrid roaming*.

## Maintenance

The Maintenance settings are available in the TETRA settings if the device is capable of PMR logging, that is, monitoring the air interface signaling by using the Partet or Kunto tool. Otherwise the Maintenance section is not available.

You can set PMR logging on or off in the Maintenance settings. When PMR logging is activated, you can change the USB route configuration.

## ■ Quick Settings

The Quick Settings contain the settings that are used most frequently. You can access the Quick Settings by swiping down twice at the top of the screen in any application or view, including the **Home** screen.

The following TETRA functions are available in the Quick Settings. Tapping the shortcut icon switches the mode on or off.

- TETRA Services (on/off)

  Note that when the TETRA services are off, the other TETRA shortcut icons - except the TETRA services indicator - are disabled in the Quick Settings.

- Direct mode (on/off)

- Scanning (on/off)

- Hi/Lo (on/off)

  Switches the loudspeaker on or off.

- Man down (on/off)

When the Quick Settings tray is open, pressing and holding any of the shortcut icons listed above opens the PMR settings view.

You can adjust the values of some of the Quick Settings in more detail. Tap the Down arrow in the maximised Quick Settings tray to open the setting.

The following Android settings are also available in the Quick Settings:

• Airplane mode

• Bluetooth

• Do not disturb (DnD)

• Location

• Mobile data

• Portrait/Auto-rotate

• Wi-Fi

The following optional Android settings are available if you have replaced the default settings:

• Battery saver

• Cast

• Data saver

• Flashlight

• Invert colors

• Night light

In addition, you can also:

• View or modify the available Android settings in the Settings ⚙ menu. See chapter *Android settings* for more information.

• Adjust the screen's brightness by using the brightness bar.

# 5.   Emergency

## ■ Emergency calls

You can make and receive emergency calls in the TETRA network or initiate an emergency call in the 3GPP network. The TETRA emergency call can be a group call or individual call (duplex or express), and it can be made either in network mode (TMO) or direct mode (DMO).

Depending on how your organisation has configured the physical **Emergency** button, a long press on this button initiates either an emergency group call to the selected group, predefined group address or emergency ident or a duplex individual call. The **Emergency** button can also be configured to send the device's location information to a predefined address after the emergency call has been connected.
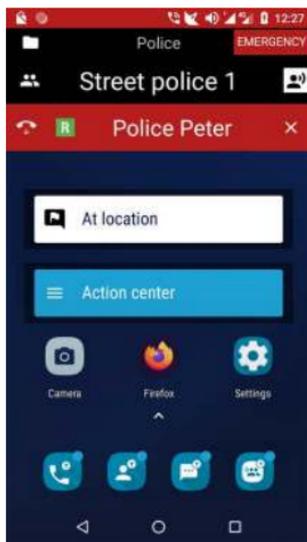


An emergency call is indicated by red color in the Android Status Bar and the bottom of the PMR Status Bar. The text *Emergency* is displayed below the Android Status Bar on the right.

**Note:** An emergency call is always unencrypted, even if E2EE is activated.

If you try to initiate an emergency call while the device is out of coverage of the TETRA network or when the TETRA network mode is off, a warning tone indicates that the emergency call failed. The emergency call or status is pending on the background until the device succeeds to connect to the TETRA network again or you end the emergency call using the pending notification.

> **Note:** If you initiate an emergency call before you have entered the access and security codes when the device starts up, press and hold the physical **PTT** button or use the *Emergency* option in the code query view. After the emergency call has ended, the code queries are continued.

## Making a TETRA emergency call

To make an emergency call in the TETRA network:

1. Press and hold the red **Emergency** button on the top of the device.

   A tone is played and the device vibrates. If the screen is switched off, it is switched on to inform you of the starting emergency call.

   If automatic transmission is used, the transmission starts automatically when the emergency group call or express call is initiated. There is no need for you to press the **PTT** button. An emergency tone indicates when the emergency call and automatic transmission actually start. The transmission continues until the automatic transmission timer expires. If you press the **PTT** button while automatic transmission in ongoing, the transmission ends when you release the **PTT** button.

   If automatic transmission is not used, you need to press the **PTT** button to request the speech item after the emergency call has been initiated.

   It is still possible to cancel the emergency call while the *Emergency starting* dialog is displayed on the screen.

   > **Note:** If you initiate an emergency call while your device is in the airplane mode (TX inhibit activated), the airplane mode is switched off and the emergency call is started. The airplane mode remains off after the call.

   > **Note:** If you initiate an emergency call while your device is in the *Do not disturb* 🚫 mode or an emergency call is started as a part of the *Man down action*, the *Do not disturb* 🚫 mode is deactivated.

   If the TETRA service is lost during the emergency call, you are informed about it with notifications. You can either end the emergency call or wait for

the device to register back to the TETRA network to continue the emergency call.

2. Follow the received instructions.

3. Release the **PTT** button.

> **Note:** The calling party has rights for call override in TETRA emergency calls.

4. End the emergency call by pressing and holding the End call ☎ button in the PMR Status Bar.

5. When you are queried whether you want to end the emergency call, tap the *END* button to confirm that you want to end the call.

## Receiving a TETRA emergency call

When you receive an emergency group call or express call, the emergency call alert tone and vibration inform you immediately about the call. If alerting calls are used, the emergency call alert tone and vibration are played after you have answered the call. The display changes to indicate the incoming emergency call depending on the call type.

> **Note:** An incoming emergency call has the highest priority. It interrupts any ongoing lower priority calls, except an ongoing emergency call.

If the number of the calling party is saved in Contacts, both the name and the number are shown in the incoming emergency call view. If it is not saved, only the number is shown.

> **Note:** You cannot reveal the PMR Status Bar during an ongoing duplex emergency call.

## Disconnecting a TETRA emergency call

An individual emergency call can be ended by either one of the call's participants or by the Dispatcher. To end the call, press and hold the End call ☎ button in the PMR Status Bar (group call or express call) or press the End call ☎ button in the emergency call view (duplex call). When an emergency duplex call is ended, there is no Redial ☎ button available in the ending duplex emergency call view.

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A group emergency call can be ended by the person who initiated it or by a user who has sufficient privileges to end a group emergency call. To end a group emergency call, press and hold the End call 📞 button in the PMR Status Bar. When prompted to confirm that you want to end the emergency call, choose *End* to disconnect the call.

If you do not have sufficient privileges to end a group emergency call, the pressing and holding of the End call 📞 button mutes the call temporarily in your device and all emergency call indications disappear from the display. If there is another group call ongoing, it is displayed in the PMR Status Bar instead of the muted group emergency call and by pressing the **PTT** button you are requesting a speech item in this other ongoing group call. The priority scanning defines if you get the speech item in the group call.

If the emergency group call continues in the muted group longer than the blocking timer, you continue receiving the emergency call if there is no other ongoing emergency group call.

## Changing of the call type

If the emergency call is configured differently in your device than in the TETRA network, the network may change the call type.

## Emergency calls in direct mode

A direct mode (DMO) emergency call is initiated and ended in the same way as emergency calls in the network mode (TMO). However, there are a couple of significant differences between TMO and DMO emergency calls:

- The DMO emergency call is always a group call that is made to a configured DMO group address.
- Emergency statuses are not sent in DMO.
- The DMO emergency call can be ended only by the person who initiated the call when s/he has the speech item. If you initiated the call, press and hold the End call 📞 button and confirm that you want to end the emergency call. If no one is transmitting in an DMO emergency call, the call is automatically released after the DMO emergency call reservation period expires.

If you did not initiate the call, but try to end it by pressing and holding the End call ☎ button, the emergency call is blocked temporarily.

During the DMO emergency call, the bottom part of the PMR Status Bar is red, and the text *Emergency* is shown on red background in the top right corner of the PMR Status Bar.

## ■ Emergency status messages

Your organisation may have configured emergency status messages to be used in the device. When you press the red **Emergency** button long, an emergency status message is sent to the selected group, group address or individual TETRA address before the possible emergency call starts. A notification indicates that the emergency status was sent.

If the sending of the emergency status does not succeed because the device is out of network coverage, both the emergency status message and the subsequent emergency call will be pending until the device connects to the TETRA network again.

The received emergency status message is handled in the same way as a normal status message, expect the sent emergency statuses are not saved in the conversations.

## ■ Man down detection

*Man down detection* is intended as a lifeguard in dangerous and high-risk situations. It can be used both in the network mode (TMO) and direct mode (DMO).

*Man down detection* is based on the movement and verticality of the device. If the device is inactive for longer than the inactivity timer allows, a Man down alert is raised by the device. If you do not cancel the alert, *Man down action* is started. The alert continues as a periodic alert during the *Man down action*.

The *Man down action* can be an emergency action – typically an emergency call to a predefined phone number – or sending of user's location to a predefined phone number, depending on how the device is configured.

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> **Note:** Only operations supported by the current operation mode can be performed for *Man down action*. For example, the sending of location is not possible in the DMO.

## Activating Man down detection

If you find yourself in a dangerous or high-risk situation, activate *Man down detection* quickly in the Quick Settings or the PMR settings in Android settings.

1. Open the Quick Settings.

2. Tap the Man down ⵣ shortcut icon.

   This icon is displayed in the Android Status Bar while *Man down detection* is active, and there is also a Man down notification in the Android Notification Drawer indicating the *Man down detection* state.

3. If you do not cancel the Man down alert before the inactivity timer expires, an alert tone and vibration are used to inform you that *Man down action starts* soon.

   > **Note:** If the *Do not disturb* ⊖ mode is active or the Android volume and vibration settings are switched off, the alert tone and vibration are not played. However, also in these cases the heads-up dialog informing that the *Man down action starts* is displayed.

   If needed, cancel the alert by tapping *Cancel* in the heads-up dialog *Man down action starts*. The dialog indicates how much time you have left to cancel the alert before the *Man down action starts*. You can stop the alerting and close the *Man down action starts* dialog also by pressing any physical button in the device; in this case, the pressing of the physical button also activates the action related to the button.

   If the screen is off or locked, the Man down alert activates the screen and the Man down action dialog is shown on top of the display.

4. When *Man down action* is active, the *Man down action* dialog is displayed in the device. You can stop the Man down alerting and close the dialog by tapping *End* in this view; otherwise the alerting continues periodically while the *Man down action* is active. Alternatively, press any physical button to

stop the alerting and close the dialog. Note that pressing the physical button also activates the action related to the button.

**Note:** The alerting overrides the *Do not disturb* ⊖ mode and Android volume settings if they are switched off.

The possible emergency call is active until you – or some other participant or Dispatcher having privileges to end the emergency call – end the call.

## Deactivating Man down detection

You can deactive *Man down detection* by opening the Quick Settings and tapping the Man down 🕴 shortcut icon or via PMR settings in Android settings.

## ■ Additional emergency services

Your organisation may have configured additional emergency services to be available in Dabat. Disaster calls, announcement calls and help calls are additional emergency call types, which can be used for example in specific situations defined by your organisation. For example, disaster calls may have been configured to be made to a Dispatcher who is specialised in handling demanding disaster situations.

You can access the additional emergency services either by using the Action center widget or by pressing and holding the **Function 1** button. For more information about the widget, see chapter *Action center widget*.

### Disaster call

Disaster calls are unencrypted emergency group calls, which are available in the network mode (TMO), direct mode (DMO), or both. When you initiate a disaster call in the network mode (TMO), an emergency group call is made either to the configured group address (GTSI) or to the selected group, depending on how your organisation has configured it. The disaster call can be either a normal TMO group call in which all group members can transmit or a broadcast call.

If disaster calls are enabled in direct mode (DMO), an emergency group call is made to an open group or to the selected group.

## Announcement call

Announcement calls are group calls that are initiated to the configured group address (GTSI) or to the selected group, depending on how your organisation has configured it. If you initiated the announcement call, you have the same pre-emption rights as when making an emergency call.

Announcement calls are available only in the network mode (TMO). The call can be a normal group call or broadcast call.

## Help call

Help calls are unencrypted duplex calls to a configured number. The help call's priority, number type, and the destination number are configured by your organisation. It is also possible that your organisation has configured a status message and/or location information to be sent after the help call has been connected.

Help calls are only available in the network mode (TMO).

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# 6. Direct mode (DMO)

The direct mode (DMO) provides your device the ability to communicate directly with other devices independent of the TETRA network. This mode is useful for example in situations where the signal strength is poor or when there is a high load in the TETRA network.

**Note:** Duplex calls are not supported in DMO.

## ■ Activating Direct Mode

To activate direct mode, select one of the following options:

- Use the **Fast menu** to switch direct mode on.
- Select *Direct mode* ⬜ in the Quick Settings.
- Switch direct mode on in the PMR settings in Android settings.

When DMO is activated, the Android Status Bar changes to yellow to indicate that your device is in a different mode. The direct mode ⬜ icon and TETRA signal indicator icon are displayed in the Android Status Bar while your device is in the direct mode. If scanning is on in DMO, also the Scanning indicator ⬛ icon is displayed.

The selected DMO group 📷 and DMO channel ⟨⋯⟩ are displayed in the PMR Status Bar. The available DMO groups and channels are defined by your organisation.

## ■ Changing DMO group, channel or scanning state

When DMO is activated, the network mode (TMO) groups and folders are replaced with DMO channels and groups in the PMR Status Bar. You can change the DMO channels and groups in the same way as changing the TMO groups and folders. For more information, see chapter *TETRA Talk Groups*.

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## Changing the DMO group

To change the DMO group, open the group list of the DMO channel:

1. Open the **TETRA Talk Groups** app.

2. Tap the name of the DMO channel in the Channels view.

   The DMO channels are listed in the order defined by your organisation. The selected DMO channel and group are marked with a green bar, in the same way as the TMO folder and group are marked.

   Note that it may take some time for the group list to be loaded if you are opening the group list of a non-selected DMO channel. The progress of the loading is shown by Indeterminate Progress Bar.

3. To change the selected DMO group:

   • Tap the group's name in the group list and then tap the *Select group* button.

   or:

   • Tap and hold the group's name in the group list. When prompted to confirm the selecting of the group, answer *Yes*.

## Changing the DMO channel

If you want to change the DMO channel:

1. Open the **TETRA Talk Groups** app.

2. Tap and hold the channel's name and confirm that you want to change the selected channel.

   If you try select a DMO channel you are not allowed to use, the failing of the operation it is indicated by a message and an error tone.

## Changing the scanning state

**Note:** You cannot change the DMO group's scanning state. All groups of the selected DMO channel are either scanned or not, depending on the DMO scanning state. The DMO groups do not have scanning priority state or availability state.

To change the scanning state, which is a common setting for both TMO and DMO, set the scanning on or off by using one of the following options:

- **Fast menu**
- Quick Settings
- PMR settings in Android settings
- *Settings* in **TETRA Talk Groups** 🔘 app.

When scanning is on in DMO, all groups of the selected DMO channel and the open group are scanned in DMO. The Scanning indicator 🔽 icon is displayed in the Android Status Bar.

When scanning is off in DMO, only the selected group and the open group are scanned, and the Scanning indicator 🔽 icon is not shown. The open group is always scanned like the background groups in TMO; the open group is not visible to the user in the group lists.

## ■ Making and receiving DMO group calls

> **Note:** If you are transmitting continuously for longer than the call transaction timer allows in the DMO group call, the speech item is released and the call goes into the idle state. The expiring of the connection is indicated by a notification and a notification tone. The call is ended if nobody requests a new speech item.

### Making a DMO group call

1. Initiate or participate in a DMO group call by pressing the **PTT** button.

   If someone else is talking in the DMO group, you have to queue for your turn to talk.

### Receiving a DMO group call

If scanning is on in the direct mode, you can receive group calls from all groups of the selected DMO channel. The PMR Status Bar shows the DMO group from which you receive the call and the talking party. The icon in front of the DMO group's name indicates whether the group is a Selected DMO group 👥 or Scanned DMO group 🔽 .

If you receive a DMO group call from an open group - such as a background group in TMO - the mnemonic of the open group is shown in the PMR Status Bar if it is configured in the device. If the mnemonic is not available, it is indicated as an open group.

If you want to mute the incoming DMO group call for a while, press and hold the End call ☎ button in the PMR Status Bar. All speech items from blocked groups that reserve the whole DMO channel are blocked during the blocking time. If the blocked DMO group call ends before the blocking time ends, also the blocking ends and a new DMO group call can be started on the selected DMO channel. The call is not muted if it is in the idle state.

If the DMO group call is active but nobody is talking in the group, the call's state changes to idle. A reservation period timer is started when the talking party releases the speech item. If nobody starts a new speech item before the timer expires, the call is ended.

## Disconnecting a DMO group call

If you have the latest speech item in the DMO group call, you can end the call by pressing and holding the End call ☎ button in the PMR Status Bar. Otherwise the DMO group call ends automatically when the connection is timed out if nobody starts a new speech item before that.

# ■ Making and receiving DMO individual calls

## Making a DMO individual call

Individual calls are always express calls in direct mode (DMO). Duplex calls are not supported.

The call type is always an express call when you make a DMO individual call.

1. Enter or select the number you want to call (see *Making a duplex call*).

   Make sure that you have a private TETRA number selected. The private TETRA number is not necessarily listed as the contact's default number.

2. Press the device's PTT button to initiate the call.

An error notification is displayed if you try to make a call to a number that is not a private TETRA number, if you attempt to initiate a duplex call in DMO or you try to make a DMO individual call although your organisation does not support them.

The same notification and vibration tones are used for express calls both in DMO and TMO.

### Receiving a DMO individual call

Receiving a DMO individual call is like receiving any other individual call (see chapter *Receiving an express call*).

### Disconnecting a DMO individual call

Either one of the call participants can end the express call in DMO by pressing and holding the **End call** button in the PMR Status Bar.

## ■ DMO gateway and repeater

Dabat can provide direct mode functions also via a DMO gateway or repeater if your organisation has separate DMO gateway- or repeater devices configured. The DMO gateway and repeater devices operate on certain frequencies, and offer an additional service for Dabat when it is in a coverage area of a compatible device, and operates in direct mode on the same frequency as the DMO gateway or repeater.

When a DMO gateway is used, direct mode calls are routed through the gateway device. In addition to transmitting group calls to the direct mode group, the gateway device may also transmit outgoing group calls to a network mode talk group predefined by your service provider, and you may also be able to receive group calls from that group.

When Dabat is connected to a DMO gateway, the DMO gateway ▭ icon is displayed in the Android Status Bar and the DMO gateway's address is shown in a notification. The TETRA signal indicator ◢ shows the DMO gateway's signal strength also in the DMO idle state. The DMO gateway supports DMO group calls and messages. Individual calls are not supported. Note that when calls are routed through the DMO gateway device, they are not connected as fast as normal DMO calls.

DMO repeaters can be used to extend the coverage area of direct mode calls. When Dabat is connected to a DMO repeater, the DMO repeater ▭ icon is displayed in the Android Status Bar and the DMO repeater's address is shown in a notification. The TETRA signal indicator ◢ shows the DMO repeater's signal strength also in the DMO idle state. The DMO repeater supports all DMO communication (group calls, individual calls and messages),

If the connection to the DMO gateway or repeater device is lost, a heads-up notification informs you about it and a notification tone is played. The DMO gateway disconnected ▭ or DMO repeater disconnected ▭ icon is shown in the Android Status Bar. After the connection is lost, Dabat continues to operate in the normal direct mode.

# 7. TETRA Group Communication

Group calls are immediate communication between talk group members. The call is connected without you having to answer it.

The TETRA group communication is based on TETRA talk groups, which are defined by your organisation.

## ■ TETRA Talk Groups

Your organisation has pre-configured the talk groups and group folders to your device. One group folder is the selected folder. Group communication is received from the scanned groups of this folder including the selected group, if these groups are available.

Background groups are groups that are configured to the device, but they are not shown in any group list. The background groups are always scanned, even if scanning is set off, and they have the highest scanning priority. Receiving a group call from a background group interrupts any normal group call.

If a group is configured as a receive only group in a folder, you can receive group calls from this group, but you cannot transmit in the group, except if you have started an emergency call whose emergency target is a receive only group.

Groups are managed in Tactilon Dabat by using the **TETRA Talk Groups** app.

### Changing the selected folder

1. Open the **TETRA Talk Groups** app.

The folders are listed in the defined order in the *Folders* view. The selected folder is marked with a green bar.

2. Change the selected folder by pressing and holding an unselected folder's name in the list.

3. Confirm whether you want to change the selected folder by tapping either **Yes** or **No**.

   If you confirm the change, the new folder is marked selected in the folder list and shown as the selected folder in PMR Status Bar.

## Viewing the group list

To view the groups, their availability and scanning states:

1. Open the **TETRA Talk Groups** app.

2. Tap the name of the folder to open the *Group list* view.

   The groups belonging to the folder are displayed together with the information about their availability, scanning priority and scanning state.
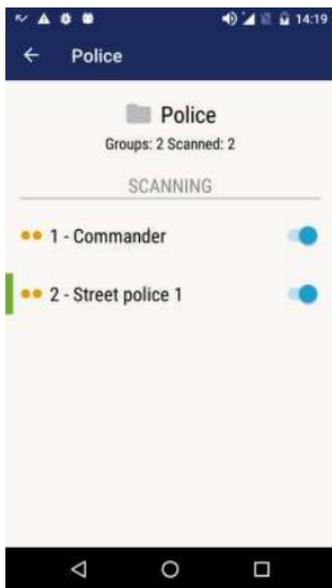
The selected group is marked with a green bar | in the selected folder. The icon in front of the group name shows the scanning priority of the group (low, medium, or high). In the selected folder the icon also shows the availability of the groups included in scanning.

The scanning state of the group is indicated by the scanning switch (On/Off) on the right.

An empty group only has the mnemonic *(empty)* in the group list.

The total number of groups in the folder (*Groups*), as well as the number of scanned groups (*Scanned*) in this folder, is shown under the folder's name in the selected folder. Empty or invisible groups are not counted in the total number of the groups in a folder. If the folder is unselected, the text *Non-selected folder* is displayed instead.

A group can have folder-specific properties, such as visibility and transmission permit. For example, a group can be invisible in one folder and visible in another one. An invisible group appears in the PMR Status Bar only when you receive a group call to a scanned group or the group is assigned as a selected group via DGNA.

The availability of the group is indicated with the following icons:

| | | | |
|---|---|---|---|
|  | Available high |  | Inactive medium |
|  | Not available high |  | Available low |
|  | Inactive high |  | Not available low |
|  | Available medium |  | Inactive low |
|  | Not available medium | | |

## Viewing a group's information

To view a single group's information

1. Open the **TETRA Talk Groups**  app.

2. Tap the name of the folder to open the *Group list* view.

3. Tap the group's name to open the *Group information* view.

   The *Group information* view gives you a summary of the group's priority, scanning and availability. You can change the group's scanning state in this view by using the scanning switch.

   You can also change the selected group in the selected folder by using the *Select group* button. This button is disabled in unselected folders or if the group already is the selected group.

   To exit the *Group information* view, use the Back button in the header area or the Android Back button.

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## Changing the scanning state

> **Note:** When scanning is on in the network mode (TMO), the selected group, the background groups and all groups that are included in scanning in selected folder are scanned in TMO. When scanning is off in TMO, only the selected group and the background groups are scanned.

1. Open the **TETRA Talk Groups** app.

   > **Note:** You can also change the scanning state by using the **Fast menu**, in the Settings or Quick Settings.

2. Tap the folder which contains the group(s) whose scanning state you want to change.

3. Change the scanning state of the group(s) by using the scanning state switch.

## Dynamic updates in groups

The groups can be updated via TETRA air interface by using Dynamic Group Number Assignment (DGNA). When DGNA groups are added or removed, an information tone is played and the Dynamic groups added or Dynamic groups removed icon is displayed in the Android Status Bar. The corresponding notification in the Android Notification Drawer indicates whether group(s) were added or removed or if the selected group was changed. By selecting the **View** action in the notification, you can open the group list of the selected folder. The DGNA groups are shown at the end of the group list in all group folders.

The selected group can also be changed by using DGNA. A new or existing DGNA group can be assigned as the selected group or a selected DGNA group can be removed from the device by using DGNA.Then the selected group changes in the device.

When an existing group that is assigned as a selected group is located in another folder than in the selected folder, the selected folder is not changed. This group is the selected group as long as you (or DGNA) change the selected group.

If an invisible group is assigned as the selected group via DGNA, the group is displayed as the selected group in the PMR Status Bar although it is not visible elsewhere in Dabat. The group is visible and accessible in the PMR Status Bar until you (or DGNA) change the selected group, including folder changes and reboots. If you change to a folder where an invisible selected group is visible, the group remains selected, visible and normally accessible in Dabat.

If Dabat's selected group is removed, the home group becomes the selected group. If there are only DGNA groups in Dabat and the selected DGNA group is removed, the first group of the selected folder is selected (either a DGNA group or an empty group).

When you hear the information tone or the Dynamic groups added ![icon] or Dynamic groups removed ![icon] icon is displayed in the Android Status Bar, check which group is the selected group for example from the PMR Status Bar.

## ■ Group calls

Group calls are always one-way calls, which are transmitted using the TETRA network. In a group call, one of the group members transmits by using the push-to-talk (**PTT**) button while the others are listening to the group call. If nobody is transmitting during an ongoing group call, the call is in the idle state, which is indicated by the Group call idle state ![icon] icon in the PMR Status Bar. The call will be released after it has been idle for a certain time.

> **Note:** The group call can be either encrypted or unencrypted when end-to-end encryption (E2EE) is activated and the device is equipped with an E2EE smart card. If the clear call warning tones are on in a device that has E2EE activated, the Clear call warning ![icon] icon is shown in the Android Status Bar during unencrypted group calls.

If E2EE is not activated, but the device has an E2EE smart card connected, the Clear call warning ![icon] icon is shown when you are transmitting or receiving in an unencrypted group call. A clear call warning tone is played on both cases either periodically during the call or at the beginning of the call or speech item, depending on how the device is configured.

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If the decrypting of the received E2EE call fails, it is indicated by an error tone is played and an error notification in the PMR Status Bar.

## Broadcast calls

Broadcast calls are group calls that are specifically used to broadcast information to the group. Only the caller can transmit in a broadcast call. If you try to request the speech item in a received broadcast call, an error tone is played and an error notification in the PMR Status Bar indicates that the speech item is not granted.

Broadcast calls are shown in the PMR Status Bar in the same way as group calls, except the broadcast call 📢 icon is displayed in front of the group mnemonic when you are transmitting or receiving during the call. The broadcast groups are defined in the network configuration. If you are not allowed to initiate a call to a broadcast group, it is indicated by an error notification in the PMR Status Bar and an error tone.

Broadcast calls can be disconnected in the same way as other group calls.

## TETRA groups calls vs. 3GPP calls

Ongoing emergency calls are not interrupted by any type of calls. Emergency calls and other high priority calls interrupt lower priority calls.

- If you initiate a 3GPP call while there is an ongoing TETRA group call (incoming or outgoing), the TETRA group call is muted until the 3GPP call ends.

- If you receive a 3GPP call while there is an ongoing TETRA group call (incoming or outgoing), the device vibrates and you are prompted to accept or reject the incoming 3GPP call. If you accept the 3GPP call, the TETRA group call is muted. A muted group call is shown in the minimized PMR Status Bar. All incoming TETRA group calls are muted until the 3GPP call ends.

If you want to listen to the muted group call during the ongoing 3GPP call, press the **Function 2** button once to reveal the PMR Status Bar. This makes the group call audible again, and the 3GPP call is put on hold. To return to the 3GPP call, press the **Function 2** button twice.

## Changing the selected group

To change the selected group:

1. Swipe the groups from left to right (or vice versa) in the PMR Status Bar.

2. When you find the group you want to select, stop scrolling.

   Alternatively, change the selected group in the **TETRA Talk Groups** app or by using the Volume buttons.

   > **Note:** If you cannot use the user interface - for example because the exposing the screen is not possible for some reason - you can browse and select the groups by first pressing the **Function 2** button and then either the **Volume +** or **Volume -** button to select the next or previous available group. If voice feedback is activated, the index of the selected group (TMO) or selected channel (DMO) is indicated when you browse the TMO groups or DMO channels.

## Making a group call

To initiate a group call or participate in an ongoing group call:

1. Press and hold the **PTT** button.

   If there is no ongoing group call, a new group call is initiated to the group whose name is shown in the PMR Status Bar if the selected group is available.

   > **Note:** If there is a group call ongoing when you want to make a call to another group, you must end the ongoing call first. Press and hold the End call button in the PMR Status Bar to disconnect the call, then check that the selected group is shown in the PMR Status Bar and press the **PTT** button.

   > **Note:** If the *Limited group coverage* notification is displayed in the PMR Status Bar at the beginning of the group call, the network has indicated that some group members do not necessarily receive the group call.

2. To request a speech item, press the **PTT** button.

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If you have to wait for your turn to talk in the group when you press the **PTT** button, an information tone notifies that you have been placed in a queue. When the call is connected and the speech item is granted to you, a notification tone is played.

When you release the **PTT** button, a notification tone is played. If nobody else requests the speech item, the group call goes to idle state and is eventually released by the network.

When the network releases the call, a latency timer is set. During this time the latest call information remains in the PMR Status Bar, unless you receive a new call. If you press the **PTT** button during the latency time, a new call is made to the latest active group. Note that a group call from a background group does not have a call latency time.

## Receiving a group call

You can receive group calls from all active groups in the selected folder, that is, from the selected group, background groups and all scanned groups if they are available.

When you receive a group call, the device vibrates and, a notification tone is played and the PMR Status Bar indicates:

- The name of the group from which the call is received.
- The talking party's name or number, with the Receive **R** icon in front of it.

If no talking party information is available, the text *Unknown* is displayed instead of the talking party's name or number. If the talking party has OPTA configured to be used, it is displayed in the PMR Status Bar at the beginning of each speech item. For more information on OPTA, see chapter *Operative tactical address (OPTA)*.

If the call is coming from the selected group, the Selected group 👥 icon is shown in front of the group name in the PMR Status Bar. The Scanned group 🔍 icon indicates that the group call is received from a scanned group other than the selected group.

> **Note:** If you have hidden the PMR Status Bar, the group call information is shown in the minimized PMR Status Bar instead. The call state is shown in the Android Status Bar. The current speaker and the call state (connecting, dialing, queuing or transmitting) and the call icon are shown underneath it.

When the talking party releases the PTT button, an information tone is played for the group members who are receiving the group call.

If your organisation has configured receive only groups, you can receive group calls in such groups, but you cannot transmit in them, except if the emergency target of an emergency call is a receive only group. If you try pressing the PTT button in a receive only group, the note *Not allowed* or *Receive only* (in the soft PTT view) is displayed in the PMR Status Bar and an error tone is played.

## Call override

You can request a call override - also known as a pre-emptive speech item - in TMO and/or DMO group calls if sufficient rights have been granted by your organisation. If you have rights for using call override, the **Override** 🔊 button is shown after the group or channel name in the PMR Status Bar when you receive a TMO/DMO group call or if the DMO channel is busy.

1. Activate the call override state in Dabat.

   You can activate or deactivate the call override state by using the **Override** button in the PMR Status Bar or by using the *Call override* option in PMR settings. If you do not have rights to request a pre-emptive speech item in the current operation mode (TMO or DMO), the setting is disabled.

   Note that the override state is inactivated when you change the operation mode or power off the device.

2. To request a pre-emptive speech item in an ongoing group call, press the **PTT** button and talk to the group.

   The current speaker in the group call is informed about the overriding.

# 8.   TETRA Individual Communication

You can make and receive individual calls both to/from the TETRA network and the 3GPP network. However, when making a call, you need to make a distinction between the TETRA numbers and other phone numbers (PSTN or PABX).

Individual calls can be **duplex** (two-way) or **express** (one-way) calls. The express call has no ringing tone, except if it is specifically configured to be an alerting express call or if it is changed into an alerting express call by the network. Note that the alerting duplex calls and alerting express calls have different ringing tones.

The phone numbers and duration of dialed, received or missed individual calls are stored to the Call log. Missed calls are indicated in the Android Status Bar as Missed events ↖✓.

## E2EE calls

Depending on the E2EE settings of the device and smart card, the individual call you make is either encrypted or unencrypted. If the call you make or receive is unencrypted, the Clear call warning 🔓 icon is displayed in the Android Status Bar when you are participating in an unencrypted duplex or express call. If the clear call warning tones are on, a clear call warning tone is played either periodically during the call or at the beginning of the call or speech item, depending on how the device is configured.

If the decrypting of the E2EE call fails, it is indicated in the PMR Status Bar and an error tone is played.

If the caller has OPTA configured to be used, it is displayed in the duplex call view when the duplex call is connected. In express calls, the OPTA replaces the caller's Contact name at the beginning of each speech item. For more information on OPTA, see chapter *Operative tactical address (OPTA).*

### Call interaction (TETRA individual calls vs. 3GPP calls)

Only one individual call can be active at a time. If you answer or initiate an individual call while you already have a TETRA individual call or 3GPP call ongoing, the ongoing individual call is released.

If you receive an express call during an ongoing 3GPP call, the express call is changed into an alerting express call. If you answer the express call, the 3GPP call is disconnected. If you want to continue the 3GPP call instead, reject or ignore the alerting express call.

## ■ Duplex calls

Duplex calls are displayed in full screen call view. If you want to minimize the view, tap the **Home** button of the device or navigate to the previous activity. To return to the full screen call view, press the Android Status Bar or swipe down from top to reveal the call notification and then tap it.

### Making a duplex call

You can make duplex calls to TETRA numbers (*Private*), PSTN numbers (*Phone*) or PABX numbers (*Office Ext.*). There are several ways in which you can initiate an individual call in Tactilon Dabat.

1. Initiate the call by using one the following options:

   • Open the **TETRA Phone** app to make a new call.

     Search for the contact or enter the phone number.

   • Open **TETRA Contacts** to make a call to a person who is saved as one of your contacts.

   • If you want to make a call to a recently dialed, received or missed number, open the **Call log**.

   • Call the sender or recipient of messages in the *Single conversation* view.

2. Start the call by tapping the Duplex call or button in any of the views listed above.
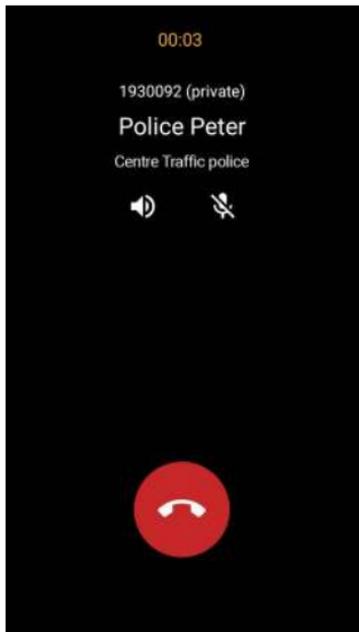
The call view shows the called party's phone number, the name saved in the Contacts information and OPTA.

• With the Audio 🔊 button, you can switch the audio routing from the earpiece to the loudspeaker, and vice versa.

• If you want to mute the call, tap the Mute 🔇 button.

If the call is encrypted, it is indicated in this view. If the called party's device does not support E2EE, you are asked if you want to initiate a non-E2EE call because the recipient does not support E2EE. You can either *Cancel* or *Initiate* an unencrypted call.

If the called party rejects the call, you are informed that the number is busy.

3. To end the call, tap the End call 📞 button.

## Receiving a duplex call

When you receive a duplex call, your device plays the duplex call ringing tone and vibrates. The call is opened in the full screen view. If the screen is off, it is switched on and it remains on during the duration of the call. If the caller is one of your contacts, the contact's name and number are displayed on the screen; otherwise, only the number is displayed. If the caller has calling line identification restriction (CLIR) activated, the text *Unknown* is displayed.

When you receive a duplex call, you can choose to:

• **Answer the call** by swiping the Answer 📞 button up.

  When you answer the call, the call duration is displayed on the screen. You can choose to route the audio to the loudspeaker or earpiece by tapping the Loudspeaker 🔊 button. By default, the audio is routed to the earpiece or accessory, if you have an accessory connected to the device. With the

Mute 🎤 button, you can mute or unmute the microphone. After the call has ended, the screen fades out after a short delay.

- **Reject the call** by swiping the Answer 📞 button down.
- **Ignore the call** - Tap the Ignore ➖ button to silence the alerting or press the **Volume -** button.

  If you press the **PTT** button while there is a silenced alerting duplex call ongoing, an error tone is played, the display is switched on and the alerting call view is shown to remind you that you must complete the alerting call to be able to initiate or participate in other calls.

If you are for example in the launcher view or using some application when you receive a duplex call, a heads-up notification is displayed at the top of the screen. You can choose to answer, reject or ignore the call.

If you want to end the call, tap the End call 📞 button. To call back to the latest calling party, tap the Redial 📞 button briefly.

## ■ Express calls

Express calls are immediate one-way TETRA calls between two persons. They are connected without any actions needed from the recipient's part. Express calls have no ringing tone, unless they have been configured to be alerting express calls or if they are changed into alerting express calls by the network because the called party has the loudspeaker off, the *Do not disturb mode* ➖ on or a 3GPP call ongoing. The changing of the call type is indicated by a notification and a notification tone.

The following icons are used in express calls:

| | |
|---|---|
| 👤 | Ongoing express call |
| **R** | Receiving in express call |
| **T** | Transmitting in express call |
| **Q** | Queuing in express call |

Alerting express call

## Making an express call

To make an express call:

1. If the PMR Status Bar is visible, minimize or hide it.
2. Open the **TETRA Phone** app or **TETRA Contacts** app.
3. If you selected to use the **TETRA Phone** app:

    3.1 Enter the phone number in the *Phone* view.

    **Or:**

    3.2 Select the *Contacts* tab and then:

    - Tap the contact to whom you want to call
    - Tap the *PTT call to* action or press the **PTT** button.

    **Or:**

    3.3 Select the *Call log* tab and then.

    - Tap the contact or number you want to call.
    - Tap the call action icon.

4. If you selected to use the **TETRA Contacts** app:

    4.1 Tap contact to whom you want to call.

    4.2 Tap the *PTT call to* action or press the **PTT** button.

5. In the *Phone* view, press the **PTT** button to initiate the express call.

    If there is a group call ongoing when you initiate the express call, the group call is blocked for the duration of the express call.

    If you are trying to make an encrypted call to a person whose device does not support it, you are asked if you want to initiate an unencrypted call instead. If you choose this option, an unencrypted express call is initiated; otherwise, no call is initiated.

6. To get the first speech item in the call or to request the speech item in general during the call, press and hold the **PTT** button.

You can end the call by tapping the End call 🔴 button in the *Phone view*.

Note that the information tones are not played while you are transmitting in an express call to guarantee as undistorbed transmission as possible.

## Receiving an express call

The device vibrates when you receive an express call. There is no ringing tone in express calls, unless the call is configured to be an alerting express call, you have the loudspeaker off, the *Do not disturb* ⊖ mode is on or you have a 3GPP call ongoing. In such cases, the call starts directly as an alerting call when the calling party initiates the call by pressing the **PTT** button in the device. The network may change the call type to alerting express call in the call setup phase also, for example, if the call type is not supported by the network or the called party's device.

When you receive an express call, the caller's phone number or both name and phone number are displayed in the PMR Status Bar. If the caller has calling line identification restriction (CLIR) activated, the text *Unknown* is shown instead. The call icon in the PMR Status Bar indicates whether you are receiving 🟩 R or transmitting 🟩 T in the call.

If you receive an alerting express call, your device plays the express call ringing tone and vibrates. If the screen is off when you receive the call, the screen is switched on. The text *Incoming semi-duplex call* is displayed in the call notification.

When you receive an alerting express call, you can choose to:

- **Answer the call** -by tapping the Answer 📞 button or by pressing the **PTT** button.
- **Reject the call** by tapping the Reject 🔴 button.
- **Ignore the call** - Swipe the notification away or silence the alerting by using the **Volume -** button. Note that if you choose to ignore the call, the

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calling party is informed that the call is alerting until the call is ended either by the calling party or the system.

If the PMR Status Bar is hidden when you receive an express call, it is activated for the duration of the call. The minimized Android Status Bar is used if you have hidden the PMR Status Bar.

When you press or release the **PTT** button, a notification tone is played to indicate that transmitting is started or stopped. The transmitting stopped notification tone is also played in the recipient's device when the transmitting party stops transmitting.

If you request the speech item while the other party is transmitting, you may be placed in a queue, which is indicated by the queuing information tone. To stay in the queue, continue pressing the **PTT** button. The transmitting started notification tone indicates when you get the speech item.

If the decrypting of an encrypted express call failed, an error message is displayed in the PMR Status Bar and an error tone is played. The call is ended right away.

## ■ Dispatcher call

Dispatcher calls are individual calls to the selected group. The calls are either duplex calls or express calls, depending on how the device is configured. The calls are end-to-end encrypted if E2EE is active in the device; otherwise the calls are unencrypted.

To initiate a dispatcher call, select the **Dispatcher call** action in the **Action center widget**. The text *Dispatcher call* and the Dispatcher's possible OPTA are shown in the active call view during the dispatcher call.

Dispatcher calls cannot be made in direct mode (DMO).

For more information, see chapter *Action center widget*.

# ■ Individual call area

Depending on the configuration, Dabat may support individual calls in network mode (TMO) only in a certain geographic area. You can initiate, receive and participate in TMO individual calls only if the device is located in this individual call area. A notification and call area error icon indicate if you have roamed outside the individual call area or you switched the device on while you are outside the individual call area. If there is a TMO individual call ongoing, the call is ended.

If you are outside the individual call area when you open the **TETRA Phone** app or *Single contacts view* in **TETRA Contacts** app, a notification informs you that you are outside the call area and that individual calls are not supported. If you try to initiate an individual call, the call fails with an error notification and error tone. The call also fails if somebody tries to call you while you are outside the individual call area.

# ■ Call log

The *Call log* displays the history of individual calls. The phone numbers of the individual calls you have made, received or missed are stored in this log in chronological order and grouped by the date.

To open the *Call log*:

1. Open the **TETRA Phone** or **TETRA Contacts** app.
2. Select the *Call log* tab.

You can open a log item for viewing and managing the log information by tapping it in the *Call log* view. You can make calls, send messages, delete log items, view call durations, and view or update contacts related to call logs.
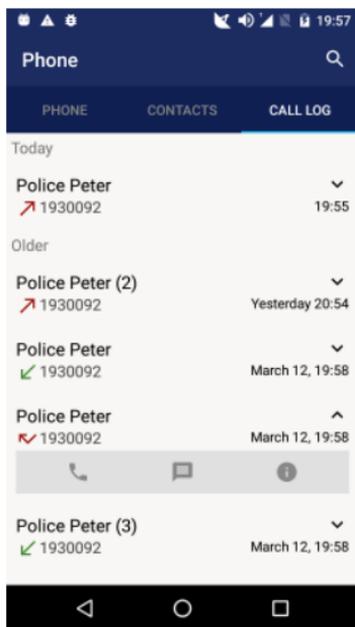
The *Call log* shows the following information for a single call log item:

•Phone number or name and phone number, if the number is saved in Contacts.

•Call type

•Time

•Number of calls to/from the number or the number of missed calls from this number in the same day

If there are no call logs, a notification about the call log history being empty is displayed instead of the *Call log* list.

The calls made or received on the same day are listed under the title *Today* and older calls are listed under the title *Older* in the call log list. No date is shown if you made or received the call on the same day as you viewed its information.

The call type is indicated by an icon in front of the name or phone number.

↗ Dialed call

↙ Received call

↗ Failed call. The dialed call was rejected by the called party or you have canceled it before the called party answered the call.

↖ Missed call. Received call, which you have rejected or the caller canceled it before you answered it.

If there have been several calls to/from the same number on the same day, the number of the calls is shown after the contact's name or phone number. The time in the call log list is the time of the latest call.

Missed calls on a certain day are shown as a separate call log item. Information on missed calls is also available in the Android Notifications Drawer. The Missed events ↙ icon in the Android Status Bar indicates that you have new missed calls in the Call log or unread messages on the messaging list.

## Searching from the logs

You can search for a contact or phone number by using the Search  Q  function in the *Call log* list.

## Viewing the call details

To view the detailed call log:

1. Expand the call log item by tapping the Expand  ⌄  button in the *Call log* list view.

2. Tap the Details  ⓘ  button to view the call details.

   • The contact's name and phone number, or only the phone number, is shown in the *Call details* view.

   • The whole call log history is listed in chronological order grouped by the phone calls made or received on the same day or before that. One list item consists of the call type icon and the date and time of the call.

   • If the call succeeded, it is listed either as *Incoming* or *Outgoing*. If the call failed, it is listed as *Failed* or *Missed* without any call duration shown.

   • If the phone number is not saved in your Contacts, you can choose to *Add contact.* You can also make a call or send a message to the person whom you called or who called you in this view.

3. To close the expanded list, tap the Collapse  ⌃  button.

## Making a call

You can make a duplex or express call to the phone number listed in the *Call log* view.

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1. To initiate a call, tap the contact or number in the *Call log* list to open the expanded view.

2. Tap the *Call* 📞 button to open the **Phone** tab.

   For more information on making a call, see chapter *TETRA Individual Communication*.

3. To return to the *Call log* list view after the call, use the Android backstepping functions.

## Sending a message

To send a text, flash or status message in the *Call log* list view:

1. Open the expanded view.

2. Tap the *Text message* 🖃 button.

3. Write the message and send it.

4. For more information, see chapter *TETRA Messaging*.To return to *Call log* list view, use the Android backstepping functions.

## Adding or updating contacts

If the phone number of a call log item is not found in Contacts, you can add it in the *Call log* list view.

1. Open the expanded list view.

2. Tap the *Add contact* 👤+ button.

   • To add a new contact, select the option *Add as new*.

   • To add the phone number to an existing contact's information, select the option *Add to contacts*.

   For further instructions on how to add contacts, see chapter *TETRA Contacts*.

3. After you have created or updated a contact, you can return to the *Call log* list view by using the Android backstepping functions.

## Deleting call logs

You can delete call log items from the call log list. When you clear the call history of a phone number, all call log items related to the phone number are removed from the *Call log* list view.

To delete call logs:

1. Open the *Call details* view by expanding the list view and tapping the Details ⓘ button.

2. Tap the Delete 🗑 button.

3. When prompted to answer whether you want to delete the call history, select *Delete* to confirm the deleting of the call history or *Cancel* to cancel the deleting.

# 9. TETRA Messaging

You can send, receive and manage SDS-, flash- and status messages in by using the **TETRA Messaging** app. Both individually addressed and group addressed SDS messages (SDS-4 TL) are supported.

**Note:** Only sending messages to TETRA (*Private*) numbers is supported in direct mode (DMO).

The message types are identified with the following icons:

SDS message

Flash message

Status message

Situation indicator

Callback request

If E2EE is active, the following icons are used to identify the encryption status:

Encrypted message

Delivered as encrypted

Unencrypted message

The messages are grouped as conversations according to the sender(s) or recipient(s) of the message in the *My conversations* view. All types of messages are stored in the same conversation. The conversations are listed in chronological order according to the latest sent or received message in the conversation. The conversation type is either individual or group .

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If your organisation has configured OPTA to be used, it is added automatically to the beginning of every text- and flash message. When OPTA is included in the message, the maximum message length is reduced by 24 characters, because those characters are reserved for OPTA. For more information on OPTA, see chapter *Operative tactical address (OPTA)*.
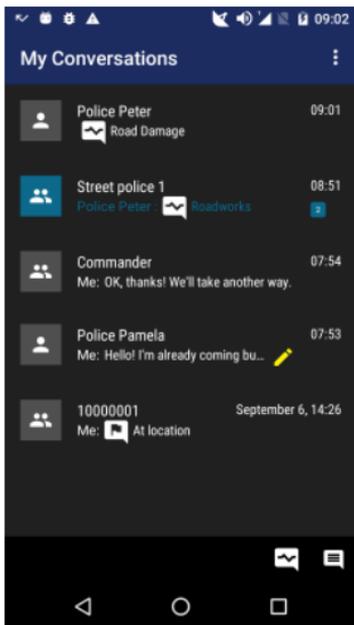


If the message is sent to several recipients, the sent message is saved in the conversation of these recipients. Only the sent messages are saved in the conversations that have several recipients. The answers to such messages are saved in the private conversations of each recipient or sender.

**Note:** The conversations are created based on the sender's or recipient's phone number. Because a single contact can have several phone numbers, the same contact may have several conversations in the *My conversations* view.

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To view all messages in a conversation, open the *Single conversation* view by tapping the conversation in the *My conversations* view.

> **Tip:** You can start an individually addressed call in the *Single conversation* view by selecting the option Call 📞 . This is useful, for example, if you have received a callback request.

## ■ **Encrypted messages**

If end-to-end encryption (E2EE) is configured to be used, you can send and receive both encrypted and unencrypted SDS- and flash messages in network mode (TMO) and direct mode (DMO). When E2EE is activated, encrypted messages are identified with the Encrypted message 🔒 icon in notifications and in the *My conversation*s view. The Unencrypted message 🔓 icon is used to inform you that the message is unencrypted, although E2EE is activated.

> **Note:** It is not possible to send E2EE messages during calls.

When you open a single conversation containing encrypted messages, the messages are decrypted. If the decrypting of an encrypted message fails, it is indicated by an error notification. Note that the decrypted content is shown only for the time defined by the security timer. If you leave the conversation views for a longer time than the security timer allows, the encrypted messages are shown as encrypted when you return to the conversations view.

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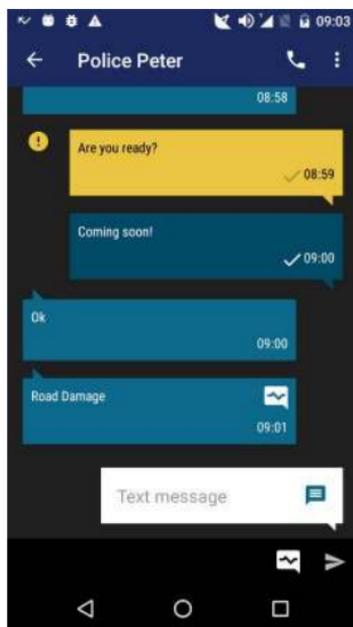
If you want to send an unencrypted message when E2EE is active, select the message type Non-encrypted text message in the input field in the *Single conversation* view. The maximum length of SDS and flash messages is 109 characters when E2EE is activated.

Encrypted messages are stored in the messaging database either as encrypted or unencrypted, depending on how the device is configured. Text- and flash messages that are stored encrypted are indicated with the Encrypted message 🔒 icon and text *Content encrypted* in the *My conversations* view. If a message is marked with the text *Content encrypted*, but there is no Encrypted message 🔒 icon in the *Single conversation* view, the message was not sent encrypted to the recipient, but it is saved encrypted in the database.

When you open a conversation having encrypted messages in the *Single conversation* view, the encrypted messages are decrypted one by one starting from the newest message and the contents of the messages are shown. The Delivered as encrypted 🔒 icon indicates that the encrypted message has been decrypted. If the decrypting fails, an error notification is shown at the bottom or the display. The decrypted messages are shown decrypted in the conversation views as long as either one of the conversation views is active. If you leave the conversation view for a while, the encrypted messages are shown as encrypted when you return to the conversation views.

Note that if the E2EE key used for encrypting messages to the message storage is missing from the E2EE smart card, messages cannot be saved as end-to-end encrypted to the message database. If you are informed that the message storage encryption key is missing from the smart card, take the E2EE smart card to be re-configured.

## ■ SDS messages

You can send individually addressed SDS-, flash- and status messages to TETRA-, PSTN-, and PABX numbers when the device is in the network mode (TMO). In the direct mode (DMO), you can send individually addressed messages only to TETRA numbers.

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Group addressed messages are always sent directly to the groups.

The requesting of delivery reports from the recipients of text and flash messages is defined by your organisation. If the requesting is enabled, you can set the requesting of delivery reports on or off in the PMR settings or in the settings available in the *My conversations* view. For more information, see chapter *Delivery report*.

## Sending an SDS message

**Note:** If you want to use predictive text input for writing messages, select it from the Android settings.

**New message**

To send a new SDS message:

1. Open the **TETRA Messaging** app.

   All existing conversations are displayed. If there are no existing conversations, a notification is displayed.

2. To send a new SDS message, tap the SDS message button at the bottom of the *My conversations* view.

   If OPTA is configured to be used, your device's OPTA is shown dimmed at the beginning of the message.

3. Select the recipient(s) from existing groups or contacts.

   You can also search for contacts or add a new contact in this view.

4. Tap the *Done* button.

5. Tap the *Text message* input field.

6. Write the message you want to send.

   You can change the encoding used in the message. For more information, see chapter *Message encoding*.

7. Tap the Send message button to send the message.

### Sending a message to an existing conversation

If you want to add a new message to an existing conversation:

1. Open the **TETRA Messaging** app.

2. Tap the conversation to which you want to add a new message.

3. Tap the *Text message* input field at the bottom of the *Single conversation* view.

4. Write the message you want to send.

5. Tap the Send message ➤ button to send the message.

## Re-sending an SDS message

If the sending of the message failed, it is indicated with a notification. You can try to resend the message by tapping the failed messages 🛈 icon next to the message and then selecting *Retry*.

## Receiving an SDS message

When you receive a new SDS message, the text message alert is played and the device vibrates. If you receive a message during a call, the alert tone and vibration are shorter.Unread messages are indicated by the Missed events ↙ icon in the Android Status Bar.

If OPTA is configured to be used, the received OPTA is shown in the *Single conversation view* in both individually addressed and group addressed messages. The group addressed messages have two sender identifiers displayed.

To access the message:

1. Open the **TETRA Messaging** app or Android Notification Drawer.

2. Open the conversation to read the message(s).

> **Note:** If the *Single conversation* view is open when you receive a new message, a bar indicating the number of new messages appears at the top of this view. Tap the message bar to view the latest message in the conversation.

## Managing SDS messages

You can view, forward, copy, delete or reply to SDS messages in the *Single conversation* view.

### Viewing the details of an SDS message

You can view the details of single messages. The message details contain information about the sender or recipient of the message, the time when the sending or receiving of the message succeeded or failed.

1. Open the **TETRA Messaging** app.
2. Tap the message whose details you want to view.
3. Tap the message to view the message details.

   If the sending of the message failed, you can retry sending it in this message details view.

### Forwarding an SDS message

You can forward one or several messages. If you are forwarding a message containing OPTA, the received OPTA is replaced with your device's OPTA in the forwarded message.

1. Open the **TETRA Messaging** app.
2. Tap the conversation where you want to forward a message.
3. Tap and hold the message in the *Single conversation* view.
4. Open the overflow menu ⋮ and select **Forward**.
5. Select the recipient(s) from your contacts or add a new contact.
6. If needed, edit the message by tapping the message field.
7. Tap the Send ➤ button to send the message.

### Copying an SDS message

If you want to copy the contents of a single message to the clipboard, perform the following actions:

1. Open the **TETRA Messaging** app.
2. Tap the conversation where you want to copy a message.

3. Tap and hold the message in the *Single conversation* view.

4. Open the overflow menu ⋮ and select **Copy**.

   The contents of the message are copied to the clipboard.

5. Paste the copied text anywhere where the Android Paste function is available.

### Replying to a group addressed message

To reply the sender of a group addressed message:

1. Open the **TETRA Messaging** app.

2. Tap the conversation to which you want to reply.

   Note that the reply is sent to the sender of the group addressed message, not to the whole talk group.

3. Tap the *Text message* input field.

4. Write the message you want to send.

5. Send the message.

### Deleting an SDS message

You can delete one, several or all messages in the *Single conversation* view. If you want to delete whole conversations, it canbe done in the *My conversations* view.

To delete a single or several message in a conversation:

1. Open the **TETRA Messaging** app.

2. Tap the conversation which contains the message(s) you want to delete.

3. Tap and hold the message you want to delete.

4. If you want to delete more than one message, tap the other messages you want to delete.

   The number of messages to be deleted is shown in the Action Bar.

5. Tap the Delete 🗑 button.

6. When prompted to confirm that you want to delete message(s), confirm it by selecting *Delete*.

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If you do not want to delete the message, select *Cancel*.

To delete one or more conversations:

1. Open the **TETRA Messaging** app.
2. Tap and hold the conversation you want to delete.
3. If you want to delete other conversations, tap the other conversations you want to delete.

   The number of conversations to be deleted is shown in the Action Bar.

4. Tap the Delete button.
5. When prompted to confirm that you want to delete message thread(s), confirm it by selecting *Delete*.

   If you do not want to delete the message thread, select *Cancel*.

> **Note:** If you delete a whole message thread, all messages in the conversation are removed also from the *My conversations* view.

## ■ Flash messages

Flash messages are similar to SDS messages, but they are used for immediate communication. New flash messages are displayed instantly on your display.

### Sending a flash message

To send a flash message:

1. Open the **TETRA Messaging** app.
2. Tap the SDS message button at the bottom of the *My conversations* view.

   If OPTA is configured to be used, your device's OPTA is shown dimmed at the beginning of the message.

3. Select the recipient(s) from existing groups or contacts.

   You can also search for contacts or add a new contact in this view.

4. Tap the *Done* button.
5. Change the message type.

5.1  Tap the SDS message ▤ button in the *Text message* input field.

5.2  Change the message type to *Flash message*. ⚡

6.  Write the message you want to send.

7.  Tap the Send message ➤ button to send the message.

## Receiving a flash message

When you receive a new flash message, the text message alert is played, the device vibrates and the message is shown instantly on the device's display.



The alert tone and vibration are shorter if you receive a message during a call. If the device's display is locked when you receive the flash message, it is indicated by a notification.

> **Note:** A new flash message is always shown decrypted in the flash message dialog.

The flash message shows the sender of the message, time when the message was received, and a snapshot of the message's content.

•To read the message, select *Read*.

•If you want to continue working on other tasks, select *Exit* to dismiss the message. The message is marked as unread and you can access it later on for example in *My conversations*.

If you receive a new flash message before you have reacted to the previous flash message, the new flash message dialog replaces the previous one. the previous message is stored as an unread flash message.

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# ■ Status messages

Status messages are pre-defined messages, which are used to quickly deliver information about the state and/or the location of the sender between the group members and/or a dispatcher. The contents of these messages are defined by your operator. You can send, receive and manage both individually addressed and group addressed status messages.

There are three different types of TETRA status messages: **status**, **callback requests** and **situation indicators**. A callback request is a status message type, with which the sender is requesting you to call the sender. Situation indicators are always sent to the same recipient, which is defined by your organisation.

Statuses my have a default recipient defined by your organisation, but you can select the recipient(s) of the status.

The status messages are listed among all the other messages in the *My conversations* view. If you want to view only the status messages, you can filter them by selecting *Show statuses* in the overflow menu. The status messages are listed in chronological order, with the latest status first.

## Sending a status message or situation indicator

To send a status message, callback request or situation indicator in the TETRA network:

1. Open the **TETRA Messaging** app.

2. If you want to send a new status, tap the Status message button at the bottom of the display.

   To send a status message to a participant of a conversation instead, open the *Single conversation* view and tap the Status message button there.

3. Select the status or situation you want to send.

   The available statuses are listed in the *Statuses* tab and the situations in the *Situations* tab. If you want to send a callback request, select *Callback* which is listed as the first item on the *Statuses* tab.

> **Tip:** To send a situation indicator quickly, use the Situation widget on the **Home** screen. For more information, see chapter *Home screen*.

4. Add recipients by selecting groups or contacts.

   A situation indicator is always sent to the pre-defined recipient.

   You can also search for a contact or add a new contact in this view.

5. Tap the *Send* button.

If the sending of the status failed, you can retry to resend it by tapping the failed messages 🛈 icon next to the message in the *Single conversation* view.

Note that delivery reports are not requested for status messages.

## Receiving a status message

When you receive a new status message, the status message alert is played and the device vibrates. If you receive a message during a call, the alert tone and vibration are shorter.

Unread messages are indicated by the Missed events ↙ icon in the Android Status Bar.

## Deleting a status message

You can delete status messages in the same way as SDS messages. For instructions, see chapter *Managing SDS messages*.

# 10. TETRA Contacts

Your device may have contacts pre-configured by your organisation. You can also add, edit, delete, browse or search contacts, and make calls or send messages to contacts by using the **TETRA Contacts** 🔵 app or by accessing the contacts in the **TETRA Phone** 🔵 app.

Each contact has at least a name, phone number and number type configured in the Contacts list. If only one name has been configured, it is the contact's last name. A contact can have up to five phone number defined.

The same name can be saved only once to the Contacts, but different contacts can have the same phone number configured. If a contact has several phone numbers, one of the numbers is the contact's default number.
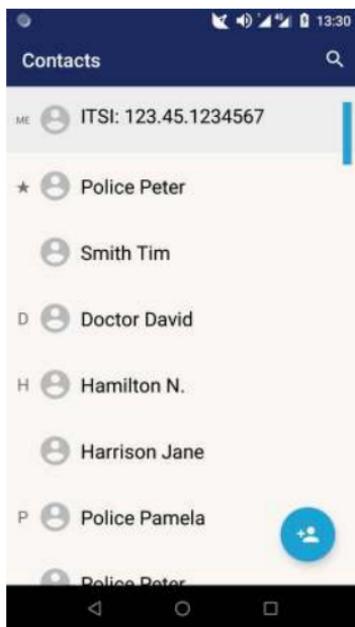


The first item on the Contacts list is your TETRA ITSI number. If Hybrid Roaming is used, your Agnet TETRA ITSI is also shown.

If you have defined favorite contacts, they are listed in alphabetical order after your contact entry. The first favorite contact on the list is marked with a star ★ icon.

The TETRA contacts are listed after the favorite contacts. They are listed in alphabetical order based on the contact's last name. They are further grouped and headed by the letters of the alphabet. If there are no contacts defined yet, it is also indicated.

📝 **Note:** It may take some time for the contacts to be loaded when you open **TETRA Contacts** 🔵 for the first time after the device has started up.

Contacts that have only a phone number defined are listed at the end of the contact list in ascending order according to the default phone number.

## ■ Browsing and searching contacts

When you open the **TETRA Contacts** app, the contacts are displayed in alphabetical order in the *Contact list* view. If you have defined favorite contacts, they are shown first on the list. You can scroll the contact list normally or by using the fast scroll function, which is available on the right side bar of the contact list.

If you need to find a certain contact, use the Search action available in the Action Bar. You can search contacts by using a name or number, a part of a name or number, or any string saved in the contact data.

1. Open the **TETRA Contacts** app.
2. Tap the Search 🔍 button in the Action Bar.
3. Enter the search criteria in the *Search from contacts* field.

   The contacts matching the search criteria are listed under the search field in alphabetical order. If there are no matching contacts, it is indicated as no results being found.

   If you want to empty the search field, tap the X symbol at the end of the field.

   You can close the keypad by using the Android Back button.

4. If you want to view the contact's details, tap the contact on the list.

## ■ Viewing a contact's details

To view a single contact's details:

1. Open the **TETRA Contacts** app.
2. Browse or search for the contact whose information you want to view.
3. Tap the contact's name to open the *Single contact* view.
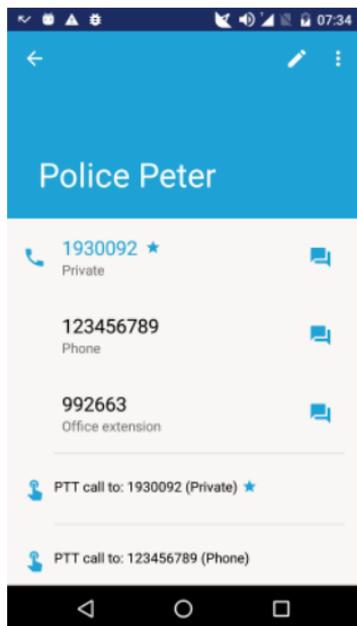
The detailed information shows all of the contact's phone numbers and any notes related to the contact. The default number is listed first and it is marked in blue.

**Tip:** You can start a call or send a message to the contact in this view.

## ■ Adding contacts

You can add contacts by using the *Add contact* button, which is floating in the *Contact list* view.

**Note:** You can also add a new contact when you are entering a phone number in the **TETRA Phone** app or when adding participants to a new conversation in the **TETRA Messaging** app.

1. Open the **TETRA Contacts** app.

2. Tap the *Add contact* button.

3. Enter the first name and last name.

   A contact must have at least a last name defined.

   The same name cannot be used for two contacts. If the name already exists in the contacts, you are notified about that.

4. Enter the phone number(s).

4.1 Select the phone number type by opening the drop-down menu on top of the phone number field.

The default value for the phone number type is TETRA (*Private*). If you are entering a PSTN (*Phone*) or PABX (*Office ext.*) number, select the number type accordingly.

4.2 Enter the phone number.

The maximum length of a phone number is 32 digits. If the entered number is not a formally valid phone number in the selected number type, a notification about the invalid phone number is shown under the phone number.

> **Note:** If you want to add the contact to your favorite contacts, tap the *Favorite contact* switch.

4.3 If needed, add one or more additional phone numbers for the contact.

A single contact can have a maximum of five numbers defined. If a contact has several phone numbers, one of the numbers is the default number. The default number is marked with a blue star. The first number in the contact's number list is the default number; however, you can change the default number by tapping the star button next to the number you want to be the default number.

5. If needed, add information related to the contact to the *Notes* field.

You can add, for example, an e-mail address or postal address.

6. Save the information by tapping the **Done** button.

If you want to cancel creating the new contact instead, use the Android Back button to exit the editing view.

## ■ Editing contacts

> **Note:** You cannot edit or delete contacts that have been defined as *locked* by your organisation, except you can add the contact to your favorite contacts or define a short dial number for it. The locked contacts can be identified by the Lock 🔒 icon in the *Contact list* view.

1. Open the **TETRA Contacts** 📇 app.

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2. Locate the contact whose information you want to edit by browsing or searching in the *Contact list* view.

3. Tap the Edit ✎ button in the Action Bar.

4. Edit the data as needed.

   • You can change the information in the existing fields, or add or delete phone numbers.

   > **Note:** If you delete the default number but do not select a new default number, the first number on the contact's number list is set as the default number.

   • If you want to add the contact to your favorite contacts, tap the *Favorite contact* switch.

   • You can also add a short dial number for an existing contact's phone number or delete the short dial number.

5. Save the changes by tapping the **Done** button.

   If you do not want to save the changes, use the Android Back button to exit the editing mode.

## ■ Deleting contacts

You can delete unnecessary contacts in the *Contact list* view. If you want to delete a single contact, you can also do it in the *Single contact* view.

> **Note:** You cannot edit or delete contacts that have been defined as *locked* by your organisation. The locked contacts can be identified by the Lock 🔒 icon in the *Contact list* view.

1. Open the **TETRA Contacts** app.

2. Find the contact you want to delete on the *Contact list*.

3. Tap and hold the contact's name to open the editing mode.

   If you want to delete more than one contact, select also the other contacts to be deleted. To exit the editing mode without deleting the contact, tap the Back button in the Action Bar.

> **Tip:** You can delete a single contact also in the *Single contact* view. Tap the contact in the *Contact list* view, select the overflow menu ⋮ and then select *Delete contact*. When prompted to confirm that you want to delete the contact, answer *Delete* to remove the contact.

4. After you have selected the contact(s), tap the Delete 🗑 button.

5. When prompted to confirm that you want to delete the selected contact, answer **OK** to delete them or **Cancel** to cancel the deleting.

## ■ Calling a contact

You can make a duplex call to any of your TETRA contacts by tapping the phone number in the *Single contact* panel.

> **Note:** You cannot start a new call if there is an individual call ongoing. The ongoing call must be ended before you can start a new call.

1. Open the **TETRA Contacts** 📇 app.

2. Browse or search for the contact to whom you want to call.

3. Tap the contact's name.

4. Initiate a duplex call by tapping the phone number.

   You can also initiate a PTT call (express call) to your contact by tapping the number in the *PTT call to* field. The *Phone* view with the selected phone number is opened. If you press the **PTT** button in the *Single contact* view, the *Phone* view with the default number of the contact is opened. You can initiate an express call to this number as described in chapter *Express calls*.

   > **Note:** You can make DMO individual calls only to TETRA private numbers. For more information, see chapter *Making a DMO individual call*.

   If you press the **PTT** button in the *Phone view* while there is a group call ongoing, the group call is disconnected and an express call is initiated.

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## ■ Sending a message to a contact

You can send an SDS or status messages to a contact by using the single contact panel.

1. Open the **TETRA Contacts** [icon] app.

2. Browse or search for the contact to whom you want to send a message.

3. Tap the contact's name.

4. Tap the conversation [icon] button, which is shown next to contact's phone number. In the *Conversation* view, you can send different types of messages.

5. Type the text to the Text message field and tap the **Send** [icon] button.

   If you want to send a status message instead, tap the Status message [icon] button in the *Conversation* view, select the status you want to send and select **Send**.

   If you do not want to send the message, use the backstepping functions to exit the message view.

## ■ Short dial numbers

### Adding a short dial number

You can add a short dial number for up to 8 existing contacts, including locked contacts. A short dial number cannot be added if the contact does not already exist in your contacts.

1. Go to *PMR settings*.

2. Select *Short dial numbers*.

   The option *+ Add contact* is shown on the list if the short dial number is available.

3. Tap the *+ Add contact* function on the list.

4. *Select contact*.

5. Find the contact entry for which you want to add the short dial number and tap it. If the contact name is greyed out, a short dial number cannot be added for the contact.

6. If the contact has more than one phone number in the contact information, select the phone number to be associated with the short dial number.

7. If you want the contact to be quickly accessible via the Action Center, tap the *Show in Action Center* switch.

8. Save the settings.

   A notification in the Android snackbar indicates *Short dial number added*.

## Editing or deleting a short dial number

You can change the phone number associated with the short dial number or disable the *Show in Action Center* setting. It is also possible to delete a short dial number you have configured.

1. Go to *PMR settings*.

2. Select *Short dial numbers*.

3. Tap the short dial number contact you want to edit.

4. Edit as needed.

5. Save the settings.

6. If you are deleting a short dial number, you are asked to confirm that you want to remove the short dial number.

   A notification in the Android snackbar indicates *Short dial number updated* or *Short dial number removed*.

## Calling a short dial number

The device must be in the network mode (TMO) when you call a short dial number.

1. Open the **TETRA Phone** 📞 app.

2. Select the Phone view.

3. Long press the short dial number on the numeric keypad (numpad).

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# 11. Dabat as an Android smartphone

Tactilon Dabat runs on Android operating system and therefore includes various basic Android settings and apps. This chapter gives an overview of the available Android settings as well as brief instructions on how to use the Android Phone and Messaging apps, as well as an overview of the other basic Android apps available in the device.

## ■ Android settings

The **Settings** menu contains both TETRA and Android related settings. The following main categories are available in the Android settings.

> **Note:** Depending on how your organisation has configured the device, some of the Android settings may not be available in your device.

- PMR settings
- Network & Internet
- Connected devices
- Apps & notifications
- Battery
- Display
- Sound
- Storage
- Security & location
- Users & accounts
- Accessibility
- System

Each of these options contains further options (see the following sections).

To access the settings, tap the Settings ⚙ launcher icon on the Home screen. Alternatively, open the App Drawer by swiping up anywhere on the **Home** screen and then select Settings on the App list screen.

## PMR settings

See chapter *PMR settings*.

## Network & Internet

You can change the following settings in this category:

- Wi-Fi, including resetting app preferences
- Cellular networks
- Data usage
- Hotspot & Tethering
- VPN
- *Airplane mode*

### Re-registration Booster

The SIM card or SIM card profile used in the device may be configured so that Dabat registers only to a single cell in the 4G network (so-called Tactical cell). If Dabat drops out of the Tactical cell's coverage while the re-registration booster is activated, it actively tries to re-register to the Tactical cell.

To activate the re-registration booster, go to the **Settings** and select **More →  Cellular networks → Re-registration Booster**. When you active this function, you are asked to make sure that the active SIM profile is inteded to be used in a Tactical cell. When you select **Activate**, the re-registration booster is activated. If you 4G network is not selected as the preferred network type when you try to activate the re-registration booster, you are prompted to select 4G as the preferred network type first.

Re-registration booster can be deactivated in the Android settings. There is no confirmation when you set the re-registration booster off.

When the device is restarted or if you change the SIM profile, the re-registration booster is set to the same state (on or off) as it was when the SIM profile was last used, provided that the SIM card's public land mobile network (PLMN) is the same as the latest Tactical cell's PLMN.

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## Connected devices

You can view and change the following settings in this category:

- Bluetooth enables you to pair with your Bluetooth device.
- Cast
- NFC
- Android Beam
- USB
- Printing

## Apps & notifications

Provides information about the applications, including notifications and permissions. You can also view and modify the notification preferences.

## Battery

Provides options for power management:

- Battery saver
- Adaptive brightness, which allows you to optimise the brightness level for the available light
- Sleep

You can also find here information about the app- and device usage since the device was last charged.

## Display

You can modify the brightness level, wallpaper, sleep and device rotation settings. In the *Advanced* settings, you can also adjust the adaptive brightness, font size, display size, screen saver and ambient display settings.

## Sound

The *Sound* settings enable you to adjust the volume- and Do not disturb settings. You can also set the ring tone here.

The *Advanced* settings have options for changing sound- and vibration settings, as well as emergency broadcast settings.

## Storage

You can manage the storage settings here. For example, free up storage space.

## Security & location

In the *Security & location* settings, you can view and edit the security-, privacy and administration settings. For example, you can check the security patch level or set the screen lock and fingerprint.

## Users & accounts

In the *Users & accounts* settings you can add, edit and delete accounts. You can also list all the accounts.

## Accessibility

*Accessibility* provides you with the accessibility option.

## System

You can change the following settings in this category:

- *Languages & input* offers you the system language selection and keyboard input method. In the Advanced settings, there are also the following options available: spell checker, personal dictionary, moves, pointer speed and text to speech output.

- In the *Date & time* settings, you can set the system time and change the format. Note, however, that if TETRA network time has been configured to be used in your device, the system time is synchronized automatically with the time received from the TETRA network. You cannot change the time manually.

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- *Backup* provides the options for network settings reset and factory data reset, including backing up apps, call history, device settings, Google calendar, Google contacts, and SMS.
- Developer options
- Software update
- Reset options
- *About phone* provides you information about the smartphone, including the status of the smartphone, model number and Android version.
- System UI tuner

## ■ 3GPP applications

You can access the apps via the App Drawer by swiping up anywhere on the Home screen. The camera, clock and email apps are available directly on the **Home** screen by default. If needed, you can modify the **Home** screen as instructed in chapter *Home screen*.

**Note:** Your organisation may have installed additional Android apps to your device.

### Phone for 3GPP

To make a phone call in the 3GPP network:

1. Open the App Drawer by swiping up anywhere on the **Home** screen.
2. Tap the 3GPP Phone 📞 button.
3. Enter the contact's name or phone number.

   If the person exists in your contacts, you can add the phone number from the Contacts, search for a contact or select the name from the call history. Alternatively, tap the dialer ⊞ button and enter the phone number.

   **Tip:** To check the call history, add a new contact, or change the smartphone settings, select the overflow menu in this view.

4. Tap the call 📞 button to initiate the call.

### 3GPP emergency call

To make an emergency call in the 3GPP network:

1. Ensure the device is switched on, in service and that the screen is unlocked.

2. Open the App Drawer by swiping up anywhere on the **Home** screen.

3. Tap the 3GPP Phone 📞 button.

4. Enter the emergency number and then tap the call 📞 button.

Follow the received instructions before you disconnect the call.

Note that the location information is not shared to the public emergency call number.

## SMS/MMS Messaging

To send an SMS or MMS message in the 3GPP network:

1. Open the App Drawer by swiping up anywhere on the **Home** screen.

2. Tap the 3GPP Messaging 💬 button.

   The sent and received SMS/MMS messages are listed in the main part of the display. If there are no sent or received messages, a notification about there being no conversations is displayed.

3. Create a new SMS or MMS message by tapping the **New message** button.

4. In the *New message* window, add the individual or group recipients from the contacts to the TO line.

5. If you want to add an attachment (for example a photo or video), tap the **Attachment** button. With the adding of the attachment, the SMS is changed into an MMS.

6. Write the message to the *Type message* field.

7. Tap the **Send** button.

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## Web browser

It is possible for you to update the Firefox web browser on your device. Ask your organisation for instructions.

## Other smartphone applications

In addition to the Phone and Messaging apps, Tactilon Dabat has the following basic Android apps:

| | |
|---|---|
| **Calculator** | Use your device as a calculator. |
| **Calendar** | Keep track of daily, weekly or monthly events by entering them into your calendar. |
| **Camera** | Take photographs and shoot videos. Access to the app is available directly on the **Home** screen. |
| **Clock** | Enables you to set the device's time, set an alarm or stopwatch, or use a timer. Access to the app is available directly on the **Home** screen. |
| **Contacts** | Manage your 3GPP contacts. |
| **Email** | Create and send emails. Access to the app is available directly on the **Home** screen |
| **File Manager** | Manager the various types of files stored on your device. |
| **Firefox** | For using the Firefox web browser on your device. |
| **Gallery** | View and edit photos in the Gallery. |
| **Music** | For storing and playing music files. |
| **Search** | Open Google search in the web browser |
| **Settings** | Settings both for TETRA and smartphone. |
| **SMM configuration** | Upload certificates and update configuration. |
| **Sound Recorder** | Allows you to record an audio file. |
| **Videos** | View videos stored on your device. |

# 12. Updating the Android firmware

Tactilon Dabat can receive the Android firmware updates over the air (OTA). When you reboot Dabat, the device automatically checks for new and pending firmware updates. After that, available firmware updates are checked once during the configured checking period, which is 24 hours by default.

The firmware update icon 🔽 in the Android Status Bar and the Firmware update notification inform you when there is a firmware update available. The firmware update notification is available in the Android Notification Drawer until the firmware has been updated successfully.

The updating requires that you initiate the downloading of the firmware and then start the installing of the update. You can update the firmware either by using the Firmware update notification or via the device's **Settings** → **System** → **Software update** settings.

You can check the current firmware version installed in Dabat from the **PMR settings** → **About Tactilon Dabat**.

## ◼ Updating the firmware via the Android firmware update notification

1. When you are notified of an available firmware update, open the Firmware update heads-up notification and select **Download**.
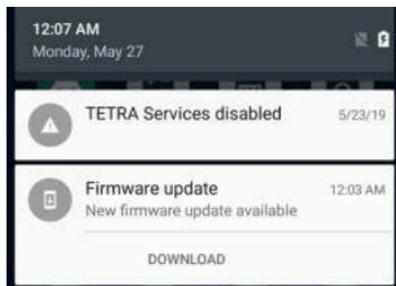


The progress bar in the Firmware update notification shows the progress of the download.

2. When the downloading is finished, the Firmware update notification indicates that the firmware is *Ready to install*. Select **Continue** to start updating the firmware.

If the downloading of the firmware fails, the error *Downloading failed* is shown in the Firmware update notification.

If the download of the firmware is interrupted for some reason - for example, the device goes out of network coverage - the **Download** option remains available in the firmware notification as long as the downloading succeeds.

3. In the **Firmware update** window, select **Install now**.

> **Note:** The firmware update cannot be started if the device's battery is not charged enough (under 20%). In such cases, the **Install now** button is disabled until you connect the charger to the device.

The device is first shut down and then rebooted in recovery mode. The progress bar shows progress of the installation.

4. After the firmware has been installed, the device is restarted and you are requested to enter the same codes as when you start up the device. See chapter *Access and security codes*.

## ■ Updating the firmware via the System settings

You can check the currently installed Android firmware version and available updates in the Android System settings. If there are updates available, you can also update the firmware.

1. Go to **Settings**.

2. Select **System → Software update**.

The **Software update** view shows when the device's firmware was last updated. If there are no pending firmware updates, this view shows the information *Your system is up to date*.

3. Select **Check for updates**.

4. If there is a firmware update available, download the firmware by tapping the **Download** button.

When you start the downloading, the same process starts as described in chapter *Updating the firmware via the Android firmware update notification*. Follow the instructions shown on the screen to complete the downloading and updating of the firmware.

If there are any further firmware updates, you are informed about them after the previous update has been performed successfully.

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# 13. Glossary

This section explains the abbreviations that are used in this document.

| TERM | DESCRIPTION |
|------|-------------|
| 3GPP | 3rd Generation Partnership Project. 3GPP is used as a collective term for the 2G, 3G and 4G cellular standards in this document. |
| BER | Bit Error Rate |
| CLIR | Calling Line Identification Restriction |
| DGNA | Dynamic Group Number Assignment |
| DMD | Dual Mode Device |
| DMO | Direct mode |
| E2EE | End to End Encryption |
| FSSN | Fleet Specific Short Number |
| GNSS | Global Navigation Satellite System |
| GPS | Global Positioning System |
| GSSI | Group Short Subscriber Identity |
| GTSI | Group TETRA Subscriber Identity: MCC + MNC + GSSI |
| KMC | Key Management Center |
| LAC | Location Area Code |
| LIP | Location Information Protocol |
| MCC | Mobile Country Code |
| MNC | Mobile Network Code |
| NFC | Near Field Communication |
| OPTA | Operative Tactical Address |
| OTA | Over the Air |
| PABX | Private Automatic Branch Exchange |
| PMR | Private/Professional Mobile Radio |

| PSTN | Public Switched Telephone Network |
|------|-----------------------------------|
| PTT | Push To Talk |
| RSSI | Received Signal Strength Indicator |
| SDS | Short Data Service |
| TETRA | Terrestrial Trunked Radio |
| THR | TETRA Handportable Radio (for example THR9, TH1n) |
| TMO | Trunked mode |
| UI | User Interface |
| VPN | Virtual Private Network |

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# 14. Appendices

## ■ Appendix 1. Technical specifications

### Product

| Product model | TD-1 |
|---|---|

### Network

| TETRA | 380 ~ 430 MHz<br>Compliant EN300392-2 power class 3L |
|---|---|
| 2G bands | **Operation frequency:**<br>E-GSM 900: 880 ~ 915MHz<br>DCS 1800:1710 ~ 1785MHz |
| | **Max power:**<br>E-GSM 900: 31.6 dBm (conducted)<br>DCS 1800: 29.9 dBm (conducted) |
| 3G bands | **Operation frequency:**<br>Band 1:1920 ~ 1980MHz<br>Band 8: 880 ~ 915MHz |
| | **Max power:**<br>Band 1: 22.76 dBm (conducted)<br>Band 8: 23.18 dBm (conducted) |

| LTE bands | **Operation frequency:**<br>Band 3:1710 ~ 1785MHz<br>Band 7:2500 ~ 2570MHz<br>Band 20:832 ~ 862MHz<br>Band 28:703 ~ 748MHz<br>Band 40:2300 ~ 2400MHz |
|---|---|
| | **Max power:**<br>Band 3: 24.8 dBm (conducted)<br>Band 7: 23.0 dBm (conducted)<br>Band 20: 24.3 dBm (conducted)<br>Band 28: 22.08 dBm (conducted)<br>Band 40: 23.4 dBm (conducted) |
| **Cellular standards** | **2G:** GSM, GPRS, EDGE |
| | **3G:** WCDMA, UMTS/HSxPA, HSPA+, DC-HSPA+ |
| | **4G:** LTE, LTE-A; Cat 4, data transfer up to 150 Mbit/s |
| **Bluetooth** | **Operation frequency:**<br>2402MHz~2480MHz |
| | **Max power:**<br>V3.0: 7.53 dBm (conducted)<br>V4.2: 3.08 dBm (conducted) |

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| WIFI | 2412 ~ 2472 MHz for 1b/802.11g/802.11n(HT20) |
| --- | --- |
| | 2422 ~ 2462 MHz for 802.11n(HT40) |
| | 5180 ~ 5240 MHz; 5260 ~ 5320 MHz; 5500 ~ 5700 MHz for 802.11a/n/ac(HT20) |
| | 5190 ~ 5230 MHz; 5270 ~ 5310 MHz; 5510 ~ 5670 MHz for 802.11n/ac(HT40) |
| | 5210 ~ 5290 MHz; 5530 ~ 5610 MHz for 802.11ac(HT80) |
| | **Note:** Operation in the 5 GHz band is for indoor use only. The WIFI 5 GHz band can be used in the following countries: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LI, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK. |
| | **Max. power:** <br> 2.4 GHz: 17.38 dBm (conducted) <br> 5.0 GHz: 13.92 dBm (conducted) |
| | **5.8G SRD** <br> 5745 ~ 5825 MHz <br> **Max power:** <br> 13.25 dBm (conducted) |
| NFC | **Operation frequency:** <br> 13.56 MHz |
| | **H-field @3m:** <br> 41.75 dBuA/m |

## Platform

| Operating system | Android 8.1.0 Oreo |
| --- | --- |
| Internal memory | 16 GB Flash <br> 3 GB RAM |
| Extended storage | up to 128 GB |

| GPS | GPS, Glonass, BDS |
|---|---|
| | Operation frequency L1/G1/B1I:1559MHz-1610MHz |

## Sensors

| Accelerometer | Yes |
|---|---|
| Gyrometer | Yes |
| Proximity | Yes |
| Compass | Yes |
| Ambient light monitoring | Yes |

## Display

| Resolution | 720 x 1280 pixels |
|---|---|
| Colors | 16.7 M |
| Multi-touch | Yes |
| Usable with gloves on | Yes |
| Usable in wet environment | Yes |

## Connectors

| Audio jack | 3.5 mm (four connectors, CTIA standard) |
|---|---|
| Backside connector | for USB data, charging, and mounting |
| TETRA external antenna connector | for Car kit |
| USB | Micro-B |

## Camera

| Main (back) | 16 MP, LED flash |
|---|---|

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| Front | 5 MP |
|-------|------|

## Durability

| IP rating | IP65 and IP67 certified |
|-----------|-------------------------|
| Drop test | Up to 1.5m according to MIL STD 810G standard |
| Ambient temperature | |
| Operating | -20°C to +55C° |
| Charging | 0°C to +55°C |
| Storage | -40°C to +85°C |
| Protected against | Humidity, salt, vibration, ESD, Solar radiation, liquids, heat cycles, mechanical pressure |

## Size

| Size | 155 x79 x 28 mm with standard battery |
|------|----------------------------------------|
| Weight | 345 g |

## Battery

| Type | Standard: Removable Li-Po 4600 mAh |
|------|-------------------------------------|
| Model | BLN-18 |
| Voltage | 3.8V |
| Estimated time with standard battery (TETRA 10/30/60) | 11 h |
| Estimated standby time | 36 h |

| Manufacturer: | Jiade Energy Technology (Zhuhai) Co., Ltd. |
|---|---|
| | #1 Building, No.9 The 7th Dingwan Road, Sanzao Town, Jinwan District, Zhuhai 519060, P.R. China |
| | ZHUHAI SUNDA TECHNOLOGY CO.,LTD. |
| | NO.16 DEXIANG RD., PINGSHA TOWN, JINWAN PORT, ZHUHAI, GUANGDONG PROVINCE, P.R. CHINA |

| Type | High Capacity: Removable Li-Po 6900 mAh |
|---|---|
| Model | BLN-19 |
| Voltage | 3.8V |
| Estimated time with standard battery (TETRA 10/30/60) | 17 h |
| Estimated standby time | 55 h |
| Manufacturer: | Jiade Energy Technology (Zhuhai) Co., Ltd.. |
| Address of manufacturer: | #1 Building, No.9 The 7th Dingwan Road, Sanzao Town, Jinwan District, Zhuhai 519060, P.R. China |

## Adapter

| Model | P12B050200EU |
|---|---|
| Input | AC 100-240V, 50/60Hz, 0.3A |
| Output | DC 5V, 2A |
| Manufacturer: | Something High Electric (Xiamen) Company Inc. |
| Address of manufacturer: | Unit 1,4 FI,No.903,Tonglong Second Road, Torch Hi-tech Zone, Xiang'an Industrial District, Xiamen, China |

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**A p p e n d i c e s**

# CARE AND MAINTENANCE

Your device is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you protect your warranty coverage.

- Do not use or store the device in dusty, dirty areas. Its moving parts and electronic components can be damaged.

- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.

- Do not store the device in cold areas device returns to its normal temperature, moisture can form inside the device. When the device returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.

- Do not attempt to open the device other than as instructed in this guide.

- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.

- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.

- Do not paint the device. Paint can clog the moving parts and prevent proper operation.

- Use only the supplied or an approved replacement antenna. Unauthorised antennas, modifications, or attachments could damage the device and may violate regulations governing radio devices.

All of the above suggestions apply equally to your device, battery, charger, or any enhancement. If any device is not working properly, take it to the nearest authorized service facility for service.

# IMPORTANT SAFETY INFORMATION

## ■ Traffic safety

Obey all local laws concerning the use of a radio device while driving a vehicle. Always secure all parts of the radio device in their holders; do not place parts on the passenger seat or where they can break loose in a collision or sudden stop.

Remember road safety always comes first!

## ■ Operating environment

Remember to follow any special regulations in force in any area and always switch off your device when its use is prohibited or when it may cause interference or danger. Use the device only in its normal operating positions. To maintain compliance with radio frequency exposure guidelines only use enhancements approved by Airbus for use with this device. When the device is on and being worn on the body, always use an approved holder or carrying case.

When the earpiece is used in the radio device, hold the device as you would use any telephone, with the antenna pointed up and over your shoulder. When the loudspeaker is used, hold the device approximately 10 cm (4 inches) away from the mouth with the antenna pointed up and away from the face and eyes.

Devices supporting hands-free mode shall not be put close to the ear when the hands-free mode is activated: auditory acuity of the listener may be damaged as a result of this misuse due to the audio power output level.

Using two devices closeby may cause them to interfere with each other, for example, when two such devices are in the same vehicle. If you experience such interference, separate the two devices until the interference stops.

## ■ Medical devices

Operation of any radio transmitting equipment, including wireless phones, may interfere with the functionality of inadequately protected medical devices. Consult a physician or the manufacturer of the medical device to determine if they are adequately shielded from external RF energy or if you have any questions. Switch off your device in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

## Pacemakers

Pacemaker manufacturers recommend that a minimum separation of 6 in. (15.3 cm) be maintained between a wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research. Persons with pacemakers should:

- always keep the device more than 6 in. (15.3 cm) from their pacemaker when the device is switched on;

- not carry the device in a breast pocket; and

- hold the device to the ear opposite the pacemaker to minimise the potential for interference.

If you have any reason to suspect that interference is taking place, switch off your device immediately.

## Hearing aids

Some digital wireless phones may interfere with some hearing aids. If interference occurs, consult your service provider.

## Posted facilities

Switch your device off in any facility where posted notices so require.

## ■ Vehicles

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles such as electronic fuel injection systems, electronic antiskid (antilock) braking systems, electronic speed control systems, air bag systems. For more information, check with the manufacturer or its representative of your vehicle or any equipment that has been added.

Only qualified personnel should service the device, or install the device in a vehicle. Faulty installation or service may be dangerous and may invalidate any warranty that may apply to the device. Check regularly that all device equipment in your vehicle is mounted and operating properly. Do not store or carry flammable liquids, gases, or explosive materials in the same compartment as the device, its parts, or enhancements. For vehicles equipped with an air bag, remember that air bags inflate with great force. Do not place objects, including installed or portable wireless equipment in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

Using the device in an aircraft or at an airport may be prohibited. Follow any restrictions. Wireless phones can cause interference in an aircraft. Airport professionals using wireless phones should follow the special guidance and instructions issued by their own organization.

## ■ Potentially explosive environments

Switch off your device when in any area with a potentially explosive atmosphere and obey all signs and instructions. Potentially explosive atmospheres include areas where you would normally be advised to turn off your vehicle engine. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Switch off the device at refuelling points such as near gas pumps at service stations. Observe restrictions on the use of radio equipment in fuel depots, storage, and distribution areas, chemical plants or where blasting operations are in progress. Areas with a potentially explosive atmosphere are often but not always clearly marked. They include below deck on boats, chemical transfer or storage facilities, vehicles using liquefied petroleum gas (such as propane or butane), and areas where the air contains chemicals or particles such as grain, dust or metal powders.

However, Airbus provides special Atex certified products that can be used in potentially explosive gas areas. For more information on these products, please contact the nearest authorised Airbus distributor.

## ■ Emergency calls

**Important:** Wireless phones, including this device, operate using radio signals, wireless networks, landline networks, and user-programmed functions. Because of this, connections in all conditions cannot be guaranteed. You should never rely solely on any wireless phone for essential communications like medical emergencies.

**To make a TETRA emergency call:**

1. Ensure the device is switched on, in service and that the screen is unlocked.
2. Press the device's Emergency button.
3. Follow the received instructions before you disconnect the call.

When making an emergency call, give all the necessary information as accurately as possible. Your device may be the only means of communication at the scene of an accident. Do not end the call until given permission to do so.

TETRA services are used for voice communication and the location information can be transmitted to the organisation's preferred destination.

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**To make an emergency call to the public network:**

1. Ensure the device is switched on, in service and that the screen is unlocked.
2. Open the App Drawer by swiping up anywhere on the **Home** screen.
3. Tap the 3GPP Phone 📞 button.
4. Enter the emergency number and tap the call 📞 button.
5. Follow the received instructions before you disconnect the call.

When making an emergency call, give all the necessary information as accurately as possible. Your device may be the only means of communication at the scene of an accident. Do not end the call until given permission to do so.

Note that voice calls are supported, but the location information is not shared to the public emergency call number.

## ■ Certification information (SAR)

THIS MODEL MEETS INTERNATIONAL GUIDELINES FOR EXPOSURE TO RADIO WAVES.

Your TETRA device is a radio transmitter and receiver. It is designed and manufactured not to exceed the limits for exposure to radio frequency (RF) recommended by international guidelines (ICNIRP). These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The guidelines include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure standard for these products employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit stated in the international guidelines is 2.0 W/kg. Tests for SAR are conducted using standard operating positions with the handset transmitting at its highest certified power level in all tested frequency bands.

The maximum SAR value is 1.406 W/kg for the radio type TD-1 when the phone is used at 5 mm distance to the user.

While there may be differences between the SAR levels of various products and at various positions, they all meet the relevant international guidelines for RF exposure.

The SAR limit for products used by the public is 2.0 watts/kilogram (W/kg) averaged over 10 grams of body tissue. The guidelines incorporate a substantial margin of safety to give additional protection for the public and to account for any variations in measurements. SAR values may vary depending on national reporting requirements and the network.