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WASTE MANAGEMENT

The symbol means that the product must be taken to separate collection at the product end-of life. Do not dispose of these products as unsorted municipal waste.


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CE0341  *This
equipment
can be used in member states
of the European Union once
the corresponding administrative
licence is obtained.*



1 GUARANTEE

POWERTRUNK INC. guarantees the repair or replacement, free of charge, of the products that present defects due to anomalies, according to the general guarantee conditions of POWERTRUNK INC.

POWERTRUNK INC. will not, under any circumstances, be held responsible for problems or damage caused by any accessory or auxiliary element that has not been approved or supplied by POWERTRUNK INC. It will not guarantee that this product will function in conjunction with an auxiliary unit or accessory that has not been approved or supplied by POWERTRUNK INC.

POWERTRUNK INC. will not be held responsible for damage caused by installation performed by staff who are not authorised by POWERTRUNK INC.

2 INTRODUCTION

Thank you for purchasing this PowerTrunk HTT-500!

Advanced TETRA services and an extensive range of options and accessories will help you to get the most out of mobile communications at work.

With this manual, you will quickly discover how easy it is to use the main functions of your new TETRA terminal. You will learn how to make group calls, individual calls, how to send a status message or how to edit a text message and send it to one or more users.



Before using the terminal, read carefully this manual.

In addition to the instructions for how to use it, you will also find important information on using it safely, including references to the compliance with international regulations on exposure to radiofrequency.

Keep the manual for future reference. For any additional information, consult your supplier.

3 FOR YOUR SAFETY

3.1 General

PowerTrunk has approved a wide range of accessories for the HTT-500 terminal: antennas, batteries, chargers, cases, audio accessories, etc. These accessories have passed all types of tests that ensure their suitability and safety for the use for which they are intended. So, it is recommended only to use approved accessories.

For your safety, only allow PowerTrunk qualified staff to repair the terminal or its accessories. If the installation or repair is not correct, it may be dangerous and may void the guarantee of the terminal.

The equipment has been designed to fulfil the applicable compliance regulations. The equipment complies with Part 15 of the FCC Title 47 of the Code of Federal Regulations. Operation is subject to the condition that this device does not cause harmful interference. The equipment complies with the applicable Part 90 of the FCC Title 47 of the Code of Federal Regulations.

3.2 Exposure to radiofrequency energy

Your HTT-500 terminal and the accessories approved by PowerTrunk are designed and manufactured not to exceed the limits of exposure to radiofrequency energy, in compliance with the international regulations for this purpose.

These regulations, which are result of periodical scientific trials by independent organisations, include a considerable safety margin, designed to guarantee the safety of all staff, regardless of their age or state of health.



HTT-500 is restricted to occupational/controller use to safety FCC RF energy exposure limits. This radio is **NOT** authorized for general population.

Use only accessories, batteries and antennas approved by PowerTrunk. Use of non-approved accessories, batteries and antennas may exceed FCC RF energy exposure limits.

3.3 ***Electromagnetic compatibility***

The majority of electronic devices are susceptible to electromagnetic interference if they are not adequately shielded, designed or configured for electromagnetic compatibility.

To avoid these compatibility conflicts, respect the current regulations of the area you are in, and turn off the terminal whenever its use is prohibited, when it may cause interference or be hazardous, for example, at hospitals or health care premises, where equipment sensitive to external RF radiation may be being used.

Aircraft

Follow all existing restrictions, according to the regulations of the airlines or the instructions of the crew.

Pacemakers

Pacemaker manufacturers recommend keeping a minimum safety distance of 15 cm between a portable radio terminal and a pacemaker, to avoid possible interferences with the latter. People with pacemakers should:

- When switched on, always keep the terminal more than 15 cm away from the pacemaker.
- Not carry the terminal in your breast pocket.

- Use the terminal with the ear on the opposite side to the pacemaker to minimise possible interference.
- Turn off the terminal immediately if, for any reason, you suspect it is causing interference.
-

Hearing aids or other medical devices

Some digital mobile devices may interfere with these appliances. If this interference occurs, contact your service supplier or the manufacturer of the hearing aid or medical device.

Using two TETRA terminals nearby may cause interference between them, for example when two of these devices are in the same vehicle. If this happens, separate the terminals until the interference disappears.

3.4 Other operational warnings

Vehicles

The RF signals may affect the electronic systems of motor vehicles that are not well installed or protected, for example, electronic injection systems, electronic anti-locking brake systems (ABS), speed control systems or airbag systems. For further information, verify these aspects of your vehicle, or equipment that has been added, with the corresponding manufacturers.

Do not place the terminal in the area above the airbag or in the area where it would inflate. Airbags inflate with great force and the terminal may be thrown, causing serious injury to the occupants of the vehicle.

User Guide

Potentially explosive environments

Disconnect the terminal when it is in an area where explosions may occur and obey all signs and instructions.

The areas where explosions may occur are usually, but not always, marked. These areas include fuel loading areas, such as ship decks, petrol stations, premises for storage and transport of motor fuel or chemical products, vehicles that use liquid gas petroleum and areas where the air contains chemical particles or elements, as grain, powder or metallic particles.

Sparks in these areas may cause explosions or fire, with the subsequent risk of injury or even death.

Driver safety

Check the laws and regulations about the use of mobile telephones and radiotelephones in the area where you are driving and always respect them. While driving, pay full attention, and always keep your hands free for operating the vehicle.

As measure of caution, whenever possible, park off the road before making or answering a call.

Acoustic shock

The terminal has a low power front speaker, only used for duplex calls, and a high power rear speaker for half-duplex calls. Only keep the terminal near to your ear (as if it were a mobile phone) when you make or receive duplex calls, otherwise it may damage your ear.

Outdoor use

PowerTrunk guarantees that the equipment features an IP54 degree of protection when it is completely sealed and has all the protective gaskets on the different connectors, as it is first

supplied by PowerTrunk. To comply with this degree of protection it is also necessary that the battery pack is inserted in the equipment.

Use under severe conditions

Under aggressive environments (heavy rain, excess of humidity, chemical substances, dusty environments,...) or if any of the terminal gaskets is taken off or lost, additional protections are needed. In this case it is recommended to protect the terminal with covers.

To make this protection level is also necessary that the terminal will put your battery pack and antenna.

Programming

The equipment must always be programmed using a programmer release compatible with its firmware.

3.5 Antenna

1. Do not use the terminal without the antenna.
2. To guarantee the safety requirements, always use antennas validated by PowerTrunk.
3. To position the antenna, turn it clockwise, until it is suitably secured. (Do not force the thread of the connector).
4. Never use a terminal that has a damaged antenna. If a damaged antenna comes into contact with your skin, it may cause burns.

3.6 Battery and chargers

PowerTrunk batteries have electronic intelligence and have protection circuits to protect the battery from abnormal charge and discharge conditions.

Battery use conditions

1. Charge battery packs only with chargers approved by PowerTrunk. The use of any other type of packs or chargers will invalidate the guarantee and can lead to early breakdown or make them be useless.
2. Do not throw battery packs into the fire or put them near heaters. Do not place them inside microwave ovens. Also, avoid putting them close to combustible materials.
3. Avoid exposing battery packs to direct sunlight or putting them in places that, potentially, can reach high temperatures (for example, inside a vehicle). They could overheat or damage, then reducing their useful life.
4. Do not submerge battery packs in water or another liquids, or touch their contacts with the hands wet or with damp materials.
5. Do not allow metallic objects contact or short-circuit the battery pack's terminals. Avoid placing it on metallic surfaces or putting it into a pocket, bag or recipient with metallic elements.
6. Do not try to drill, disassemble or modify the battery pack. Do not hit or handle it with sharpened objects.
7. Charge the battery pack between 0°C and +40°C only.
8. Do not expose battery packs to AC or DC voltages that could produce uncontrolled charge or discharge currents.
9. It is advisable to put the battery charger on a clear place, free of elements that could prevent a proper ventilation during charging process.
10. If a battery pack shows severe mechanical damage (greater than the scratches or small hits produced during normal use), its internal structure could be affected. In this case, do not use that battery pack any more.
11. Charge a battery pack only when necessary. Do not recharge it if it's not completely discharged. It is advisable to carry a spare to replace the battery in use when it is fully discharged.

12. Avoid leaving the HTT-500 terminal connected to the charger once the battery pack is fully charged, since continuous charging processes shorten battery life. Do not use the battery charger as a radio stand.
13. If a battery is very discharged, it can take up to half an hour to show the process of loading.
14. When it is planned to use the equipment at low temperatures, it is recommended that the battery is fully charged.
15. Do not return fully charged battery packs to the charger for an extra-recharge, since this reduces significantly cycle life. Short cycle charging should be avoided.
16. Battery packs should be properly recycled at their end-of-life, in compliance with local regulations.
17. Use only fully charged batteries in order to get the better battery performance and to increase their lifetime.
18. Avoid the equipment coming into contact with chemical substances such as solvents or similar elements.

Battery storage conditions

1. **Storage place:** It must be a cool, dry and well ventilated place, away from direct sunlight, heaters and combustible materials.
2. **Humidity:** It is recommended to store batteries in a place where humidity is less than 70%. It must never be over 85%. Avoid putting battery packs in damp environments or near wet materials, water or any other liquid substances.
3. **State of charge:** Battery packs should be charged to about 50% of their capacity prior to be stored. For this purpose, PowerTrunk can provide the battery maintenance accessory D037223, that leaves the batteries charged to 50%.

User Guide

4. If battery packs are not going to be used for a long time, it will be necessary to recharge them to 50% every 3 months, so that they are ready for a new storage period. For this purpose use the maintenance accessory D037223.
5. How to store battery packs: Insert each pack in an insulating plastic bag. It is advisable to put them in cardboard boxes to better protect them against environmental condition changes.

Emergency actions

If during charging, storage or use a battery pack gives off an odour, overheats, discolours, shows deformation (for example, swelling) or electrolyte leakage, or its appearance is abnormal, remove it from the terminal or charger immediately and do not use it any more. Its use could be harmful to health and besides, it could damage the HTT-500 terminal or the charger.

In case that some electrolyte contacts the eyes, wash them immediately with clean water and go to the doctor's as soon as possible. Batteries electrolyte is harmful to the eyes.

If electrolyte leakage contacts skin or clothing, wash them away immediately with clean water. Electrolyte is harmful to skin.

3.7 Audio accessories

1. Only use accessories approved by PowerTrunk.
2. To connect them to left side connector of the terminal, turn the screw clockwise until it is suitably secured (do not force the thread of the connector).

3.8 Transport accessories

When you place the terminal in the cover, check that it is well positioned with the holes for the terminal microphone and speakers.

3.9 Care and maintenance

The following recommendations will help to increase the useful life of your terminal and protect the cover of your guarantee:

1. Do not use the terminal in dirty or dusty places. The mobile parts and electronic components could be damaged.
2. Use a soft and damp cloth to clean the outer surfaces. Never use chemical aerosols or abrasive cleaners.
3. To ensure efficient operation, periodically clean the contacts of the battery with a clean, dry cloth.
4. Never expose the terminal to extreme temperatures, for example by a window with direct sunlight. The high temperatures may reduce the duration of the electronic devices, damage the battery and deform or melt the plastic.
5. Do not keep the terminal in cold places. When the device returns to its normal temperature, moisture may form inside, which may damage the internal electronics.
6. Do not hit or drop the terminal. The internal circuit boards and the more delicate mechanical parts may break.
7. Do not paint the terminal. The paint may obstruct moving parts and impede proper functioning.
8. If you observe an indication on the display of your terminal of an error that prevents normal operation, consult your service supplier.
Do not try to repair the terminal yourself, by opening it or manipulating it in any way, as you will lose the cover of your guarantee.

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9. Attention! You must never grasp the terminal by its antenna. The equipment antenna has been designed as a radiating element, and not as a handle to make the terminal be easier transported.
10. Do not manipulate the battery connector terminals of the equipment. This could make the terminal operate improperly and will invalidate its guarantee.
11. If you see a continuing failure in reading / writing of your terminal using the programming cable, clean the contacts of the equipment bottom connector in order to remove dirt in it. Use an electronic contact cleaner, using no harsh chemicals, solvents or strong detergents.

4 FIRST STEPS

4.1 Inserting the battery



1. Insert the battery as shown in the figure.
2. Press down until you hear a click, making sure that it is in place.
3. To remove, press the open button inwards.
4. Always remember to turn off the terminal and disconnect the charger before removing the battery.

4.2 Charging the battery



FIG. 1



FIG. 2

1. Only use the battery charger provided by PowerTrunk.
2. As shown in the figures, the battery can be charged separately or while connected to the terminal.
3. Before starting to use your terminal, make sure the battery is fully charged.
4. The desktop charger, as seen in figures 1 and 2, can simultaneously charge a detached battery and a terminal.
5. In addition to the desktop charger, there are other models that allow you to charge the battery of your terminal more comfortably anywhere.










Procedure for charging the battery:

1. Connect the personal charger or place the terminal (or the detached battery) in the desktop charger.
2. If the charger is connected with the terminal off, some seconds could be needed before the HTT-500 is turned on, to ensure the battery is Ok.
3. When the process is finished and the battery is fully charged, a message will inform us: "Battery charge completed".
4. Another message will indicate when the battery charge level is low. You should wait for the message before charging again.
5. Periodically, for example once a month, it's advisable to let the battery discharge completely before charging it again. This way you get a more accurate indication of the state of the battery charge.







Indicative icons:

The battery charge level is always shown on the display, both when the terminal is off (symbol in the centre of the screen), and when it is on (icon in the upper line of symbols).


Indications on the desktop charger

Desktop charger LED	Function
 Blue, continuous	Standby. No battery.
 Blue, flashing	Wait, detecting battery.
 Orange, flashing	Charging battery. Low charge state.
 Green, flashing	Charging battery. High charge state.
 Green, continuous	Charge completed. Remove the battery.
 Red, continuous	Battery fail.
 Red, flashing	Temperature out of range.



Indications on the HTT-500

HTT-500 Icon	Function
 Flat battery, flashing	Battery flat.
 Low battery, flashing red	Very low charge state.
  Medium battery, flashing yellow	Low / medium charge state.
 Full battery, flashing green	High charge state.
 Full battery, green, continuous	Full charge.

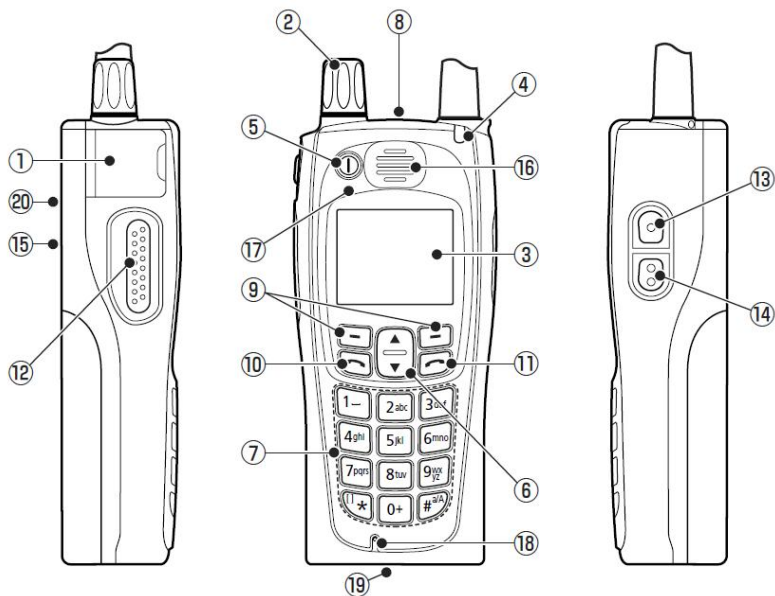
4.3 Start-up procedure

1. Press and hold the ON/OFF button  to turn the terminal on and off. After holding down this key for a few seconds, the indicator lights up your Terminal, proceeding to boot it.
2. If the terminal requests a PIN code, enter the 4-digit code (by default, the preset code is 0000), which appears on the screen as ****, and press OK. You should change this code for a more secure code that you can remember.
3. While it is switching on, the terminal will show additional information on the display: welcome message, version and user information.
4. There are two operating modes, network mode and direct mode. In network mode, the terminal will be operative when it has successfully registered on the system.

User Guide

5. During the registration process, the  icon will flash. When the process is finished and the terminal is ready to work on the network, the icon will be constant, the message "In service" will appear on the screen and you will hear a characteristic tone.
6. If the terminal is configured to start up in direct mode, the main screen, displayed after start-up, will show the  icon.

5 BASIC USE OF THE TERMINAL














User Guide











No.	Description	Observations
1	Audio accessory connector	Side connector to connect micro speakers, earphones, hands-free, etc.
2	Rotary knob	This allows you to set the audio volume to the desired level. Programmed changes between ranges and groups after pulse Auxiliary button 1.
3	Screen	Colour display.
4	Indicator light	Bicolour LED with various associated functions. See section 6.2.
5	On / off button	Hold it down for a few seconds to turn the terminal on / off.
6	Up / down arrows (2)	These help you navigate through the different menus and lists of options.
7	Alphanumeric keys	Keys 0 - 9, *, #.
8	Emergency button	Hold it down for a few seconds to make a priority call to the preset destination.
9	Soft keys (2)	Press these to select the option that appears on the lower left or right of the screen.
10	Green call key	Press this to make or answer a call. In standby mode, this allows you to access the list of calls made.
11	Red hang-up key	Its main function is to end a call. When you are not calling, pressing this key will take you to the main screen.
12	PTT	Press to talk button.
13	Auxiliary button 1	Quick access to the special function programmed on this button.
14	Auxiliary button 2	Quick access to the special function programmed on this button.
15	Speaker 1	Speaker for half-duplex calls.
16	Speaker 2	Speaker for duplex calls.
17	Microphone 1	Microphone for half-duplex calls.
18	Microphone 2	Microphone for duplex calls.
19	Auxiliary connector	Auxiliary connector for programming, charger, car kit, etc.
20	Vehicular antenna connector	It allows to connect the HTT-500 terminal to a car kit (it is only available in equipments with "Vehicular antenna" option).




5.1 Screen indicators

The screen indicators show information about terminal operation:

Symbol	Description
	Terminal registration status. (Blue) - Constant: Terminal registered. - Flashing: Seeking registration.
	Migration: Terminal registered on a network other than your local network. (Red)
	Level of coverage.
	Emergency call.
	GPS module state. - Constant: GPS active and obtained connection with satellites. - Flashing: GPS module is synchronising and still does not have position information.
	Bluetooth™ interface active. - Flashing: Activated. - Constant: Pairing with device.
	Active call with air interface encryption. - Constant: Terminal registered in encrypted mode. Encrypted call. - Flashing: Terminal registered in encrypted mode but call set up in clear mode.
	Data service. - Constant: Packet data session active. - Flashing: The icon flashes while transmitting or receiving packets.
	Direct mode (DMO).
	DMO-GAT presence detected in the selected DMO frequency.
	DMO-REP presence detected in the selected DMO frequency.

User Guide

	New message in inbox.
	Missed call.
	Discrete mode activated.
	All tones deactivated.
	<p>Audio Profile selected.</p> <ul style="list-style-type: none"> - Normal - Outdoor - Silent - Meeting - Car - Personal - Audio accessory connected
	Scan of active groups (group listening).
	Call active.
	<p>When the terminal module E2EE is activated (End-to-End Encryption):</p> <ul style="list-style-type: none"> Active call with E2EE. Clear active call.
	<p>Battery level.</p> <p>Green indicates a full battery; yellow, medium; and red, low.</p> <p>When the battery is flat and requires charging immediately, the flat icon will flash.</p>
	Audio accessory connected.

	Discreet mode activated. Direct individual calls will be converted to on hook signalling. The icon will appear at the right side of the screen.
	Keypad locked.
	Man-down option activated. The icon will appear at the right side of the screen.

5.2 Indicator light

The indicator light provides additional information about terminal operation:

LED state	Function
Registration	
Red slow blink	On standby and out of service.
Red / orange slow blink	On standby and out of service. New messages or missed calls.
Green slow blink	On standby and registered on the system.
Green / orange slow blink	On standby and registered on the system. New messages or missed calls.
Calls	
Red, constant	Transmitting.
Green, constant	Receiving. Busy channel.
Flashes red	Transmission request.
Flashes green	Standby, call active but nobody transmitting.
Orange, constant	Call set-up or call end (including queued calls).
Battery charge (when terminal off)	
Flashes orange	Charging battery.
Flashes green	Final battery charging stage.
Green, continuous	Battery charged.

5.3 Main screen

The main screen is the 'Voice call – Group mode' screen. The terminal is ready for you to press PTT (Press-to-talk) and launch the call directly to the selected group.

As it is showed in the following figure, the basic information displayed on the main screen consists of the folder or range the selected group belongs to, the name of the group, and its status.



From the main screen, you can access a number of basic functions:

- Soft key 1: Access to the main menu.
- Soft key 2: Access to the phonebook (contacts list).
- Arrows: Navigation through the list of groups.
- Green key: Quick access to the last dialled calls.
- Numeric keypad: Dialling of the destination number for an individual call.

Your service supplier may configure other keys to quick access to specific functions. For example:

- Access to favourites menu screens.
- Sending of specific events (status messages, voice calls, etc...)
- Immediate actions (selection of preferred group, deactivation of some functions, etc...)

6 MAIN MENU

The terminal has a user-friendly menu and sub-menu system accessible using the **Menu** soft-key, which is always on the main screen.

It has a graphic format, and you use the arrow keys to navigate through the different options. If you know the screen number, you can also access it directly by pressing this number.

By default, when you press the **Menu** soft-key, it starts from sub-menu 2: Groups.

When any of the HTT-500 features is disabled, whether disabled by customization or not available due to terminal configuration, it will appear in grey and will be not accessible to the user.

Below you can see a diagram with the HTT-500 menu structure:



1. PHONEBOOK



Names list

....Name 1

View

Edit

Send status

Send text

Delete

....Name 2



New name



Mem Status



Delete
One by one
Delete all



2. GROUPS



Range



Mem Status



Preferred GRP

Group selection
Current group



Scanning lists

List selection
Current list

View
Add Group
Delete Group

Scan Status

Active scan
Deactive scan



3. STATUS



Inbox

Send

Phone back
Delete



Outbox



Delete inbox



4. TEXT



New message

Send
Save
Exit



Inbox

View
Phone back
Edit
Send
Delete



Outbox

Send
Edit
Delete



WAP push



Delete

Inbox
Outbox

WAP push
All



SDS Options
Message centre
Reports



5. CALL REGISTER



Dialled calls
View Details
Call
Save (as new contact)
Delete



Received calls



Missed calls



Delete All



6. MODES



V+D



DMO



Txl



7. EXTRAS



GPS Info



Bluetooth



E2EE settings



Man-down



8. APPLICATIONS



Gateways



Favourites



Auxiliary buttons



Login



Inquiry



WAP



9. SETTINGS



User settings

Language

Display

Keypad lock

Date and time



Call settings
Discreet mode
Area selection
Hide number



Audio settings
Profiles
Ring volume
Call rings
Messages ring
Tones settings



Security settings
PIN Code



Network selection



Data settings
Voice & Data
Only Data

7 BASIC FUNCTIONS

7.1 *Group calls*

Group calls allow you to communicate with a group of users who have the option to participate in the communication enabled, by attaching the groups into the network.

The groups are organised into ranges or folders. Each range may have a variety of groups, the group distribution is programmed.


The name of the range and group you have selected appears on the main screen.

You can navigate through the different groups in the range using the arrows.

To change the range, access the **Groups** menu from main menu.

Once you have selected the chosen group, press PTT to initiate the call. You will hear an acoustic warning and the indicator light will turn red when the network has given permission for transmission. Whenever you wish to stop speaking, release the button.

The terminal always shows the progress of the call and the identity of the speaker.

To disconnect the call, press the red hang-up key , or simply release the PTT and wait for the system to disconnect the call.

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Calls using the PTT to speak:

To optimise the sound quality of the HTT-500, ensure that the terminal is vertical with the antenna pointing upwards, between 2.5 and 10 cm from your mouth, while you are pressing the PTT.

You can configure the groups so that they are on listen (scanned groups), so that you will receive all the communications of the groups with this status. You can configure this by programming or using the menu: **Groups\Scanning lists**.


You do not require any specific action to receive a group call from the selected group or from those configured in scan. It will be received automatically and, on the screen, you can see the group receiving the call and the identifier of the user that has made it.


7.2 Individual calls

Individual calls are private calls between 2 users. No other user can hear the conversation. You can make these to numbers on the TETRA network (private calls) or to numbers on the external telephone network (PSTN or PABX telephone calls).






In addition, they may be half-duplex (to speak you must press the PTT) or, if the network allows it, duplex (the call is similar to a telephone call, and there is no need to press the PTT to speak).


To make a private half-duplex call:

- Enter the number of the person you wish to call or select it from the contacts list.
- With the **Mode** soft-key select the type of call you wish to make. Next to the number you have dialled, you will see the  symbol, which indicates that it is a private TETRA call.

- Press the PTT button and speak into the microphone. When you wish to stop speaking, release the button.
- The other person can then do the same; pressing the PTT button and speaking.
- Either of the two users may disconnect the call by pressing the red hang-up key .
- Instead of making a direct call, you can make a call so that the called user must hang up first. To do this, start the call with the programmable keys in which you have programmed this function, for example, with one of the auxiliary buttons.

To make a private duplex call:

- Enter the number of the person you wish to call or select it from the contacts list.
- With the **Mode** soft-key select the type of call you wish to make. Next to the number you have dialled, you will see the  symbol, which indicates that it is a private TETRA call.
- Press the green call key .
- During connection you will hear a ringing tone. Wait for the user that you have called to answer. Then you can start to speak without the need for pressing the PTT button.
- Either of the 2 users may disconnect the call by pressing the red hang-up key .
- If you wish to make a telephone-type call, when dialling the number, use the **Mode** soft-key to select the icon . For telephone switching calls (PABX), select the mode .

To receive an individual call, press the PTT button or the green call key . On the display, you can see the type of call and the number of the calling user, or the name, if it is stored in the contacts list.

7.3 Status messages

A status message is a numeric code associated with a predefined fixed text. These messages are programmed into the terminal.

Select the message to send from the list found in the menu **Status\Outbox**.


After selecting the message, press the **Send** soft-key to select the destination.

You can send status messages to individual numbers (private TETRA addresses or telephone numbers) or group addresses stored in the group phonebook, or dial the destination number directly.

While you are introducing the number, the **Mode** soft-key enables you to select the address type: TETRA or telephone.

Then press the green key  to send the message.

The terminal will indicate the result of the operation with an information message.


No action is necessary to receive status messages. When you receive one, you will hear a characteristic tone and the icon  will indicate in the lower right of the screen that there is a new message to read.

In the **Status\Inbox** menu you can consult all your received status messages. Also, in the **Inbox \ Phone back** you can call the sender of the message received.


7.4 Text messages

Another function of your TETRA terminal is sending text messages of up to 140 characters (160 if the destination address is a telephone number).

You can create a new message by using the keypad to type the text (**Text\New message Menu**), or select one of the messages stored in the outbox (**Text\Outbox Menu**).

Once you have written the message or selected one from the outbox, select the destination number, as explained in section 8.3 (status messages), and press the green key  to send the message.

The terminal will indicate the result of the operation with an information message.

No action is necessary to receive text messages. When you receive one, you will hear a characteristic tone and the  icon will indicate in the lower right of the screen that there is a new message to read.

In the **Text\Inbox** menu you can consult all received text messages, with the possibilities of read the message, edit, forward, and call the sender of the message (**Inbox\Phone Back**). Also, in **Text\SDS Options** you can access the different parameters which can be modified in the text message service, for example, activating delivery reports.

8 SPECIAL FUNCTIONS


8.1 *Emergency call*

There is a special orange button, at the top of the terminal, with which you can make emergency calls.

The emergency calls may be:

- Group call (to a specific group in the phonebook, to the selected group or to another special group not included in the user phonebook).
- Individual call (to a private TETRA address or to a telephone number, e.g. 112).
- A status message sent to an individual or group address.

The main characteristic of these calls is that they have maximum priority and interrupt any other ongoing calls.

The emergency icon  appears when the call is active, whether you have initiated the call or you are the recipient.

If the call is not connected, the terminal retries periodically until it connects, or until the action is cancelled by pressing the emergency button again.

If the emergency call is a half-duplex voice call, an initial time can be programmed when the terminal will transmit directly without having to press the PTT.

Besides, being able to send the standard emergency status (status code: 0) it can be configured just before sending the programmed event to the emergency key.

Another possible configuration is to set the PTT priority as pre-emptive. This option (only available by programming) will allow you to define priority users who will be able to interrupt the talking party within a call.

8.2 Operation modes: Direct mode

This special operation mode, called DMO, allows you to communicate directly with other TETRA terminals without having to use a network.

To access DMO mode, select the **Modes\DMO** menu or press the quick access you have configured in the terminal for this function.

In DMO mode you can make group calls and individual calls. The emergency button is also available, with which you can make a maximum priority call (pre-emptive) as explained in the previous section. In this mode can made sending and receiving text and state messages.

Each group programmed to work in DMO mode is associated with a frequency, so changing the group involves changing the frequency and only terminals with the same group selected may communicate with each other in this operation mode.

Individual calls are made using the active channel, i.e., that associated with the selected group.

Group calls

To make a group call in DMO mode, select the group with the arrows and press PTT. The procedure is similar to a group call in network mode.

User Guide

Individual calls

To start a private call, dial the destination number or select it from the phonebook. Then, press PTT.

Before making the call, you can select a special function called **Presence check**, with which you will receive a message if the user you are calling is not operating in the selected DMO channel.

8.3 Security

The terminal has encryption services to ensure the confidentiality of your communications.

If you have configured your terminal to operate in one of these encryption modes, during encrypted calls you can see the following icons:



Air interface encryption



End-to-end encryption

Consult your services supplier for how to configure your terminal to work in encrypted mode.

PIN code

From the menu **Settings\Security settings\PIN code** you can activate or deactivate the PIN code request when switching on the terminal, in addition to changing the code.

8.4 Network selection

After turning the power on, the Terminal always tries to register into the programmed home network. From the menu **Settings\Network selection**, you can select manually a new network from a list of enabled networks.

8.5 Supplementary services

The following TETRA supplementary services are also available for your terminal HTT-500:

- Late Entry:
This supplementary service allows the terminal to enter in an ongoing group call.

- Ambience Listening:
This service is defined as the facility whereby a control point may place a TETRA MS (or LS) into a special type of individual voice call teleservice so that the called MS transmits without any action from, or indication to, the called user. Ambience listening only is set-up if the called unit is not already engaged in a call.
In the same way, Ambience Listening supplementary service does not prevent the affected user from making or receiving other calls.

- DGNA:
Dynamic Group Number Assignment.

- Fall-back mode (local mode):
HTT-500 supports working in cells in fallback mode (disconnected from the rest of the system) indicating this situation to the MMI user.

The Terminal avoids registration in fall-back cells unless there are no other available cells. Services available in this mode will depend on system configuration.

Consult your supplier for other available services and special options.

8.6 *Data services*

From the menu **Settings>Data settings**, options 'Voice & Data' and 'Only Data' can be selected.

- With 'Voice & Data', voice services and short data messages (text messaging and status) will be activated simultaneously and managed through the user interface.
- With 'Only Data', voice services will be ignored and the terminal will enter into a data working mode, with which an external application will be able to use the terminal to send data.

Data connection is performed through the auxiliary connector and it will be configured with the following available methods:

- Packet Data (Mono and multislots TETRA services)
- Standard TETRA Protocol PEI: AT commands to remotely send short data messages (text messages and status messages).

Consult your service supplier for details on how to configure your terminal for this service.

8.7 *GPS receiver*

The HTT-500 may incorporate an internal GPS receiver that enables you to know its exact location at all times.

If the terminal has this option, you can access this information from the menu **Extras\GPS info**. The current location position is displayed on the screen. When the GPS module gets a valid position, the text will be shown in black colour.

The GPS technology uses radio signals from earth orbiting satellites, to establish the location co-ordinates, maximizing your view of clear, unobstructed sky is essential for optimum performance.

Where adequate signals from multiple satellites are not available (usually because you cannot establish a view of a wide area of the sky) the GPS feature of your terminal will not work.

In addition, via programming, you can configure various parameters for sending the GPS position to a central application which will manage this location information. Consult your service supplier for details on how to configure your terminal for this service.

8.8 **Bluetooth**

The HTT-500 may incorporate an internal Bluetooth® module that allows you to detect and connect to wireless audio devices complying with HFP1.5 bluetooth profile.

(Consult your supplier for wireless audio devices recommended by PowerTrunk).

If the Terminal has this option, the menu **Extras\Bluetooth** will allow you to access to the following actions:

- Activate / Deactivate
- Search for devices
- See active devices
- See paired devices
- Configure pairing method: Manual / Automatic
- Edit name

8.9 *Man-down option*

The functionality "man down" is designated to increase the security of users which have been identified as high risk users.

It is based on the use of special hardware installed in the HTT-500, which will detect situations of possible danger. For instance, the immobility of the terminal during some time or if it is tilted at a certain angle, indicating that the user has fallen.

If the terminal has this option, you can activate it from the menu **Extras\Man down**.

By programming, you can configure the option parameters, and the events associated to the different alarms detected.

Consult your service supplier for details on how to configure your terminal for this service.

8.10 *WAP Browser Option*

The WAP browser application needs the WAP Browser option to be activated; otherwise this feature will not be available, for this the HTT-500 must be a terminal with this option available.

This functionality allows the user to access WAP and WEB pages using TETRA packet data as bearer service.

The main target is to provide to the user the ability to access to WAP / web pages where the user can query operational information from internal or external databases.

Consult your services supplier for how to configure your terminal for this service.

9 OTHER FUNCTIONS

9.1 *Phonebooks*

From the **Phonebook** menu you can configure your names list. You can consult your contacts, add new ones, delete them, or select them to make calls.

Each contact has a number of fields where you can store different information:

- User Name.
- TETRA individual address.
- Telephone number (PSTN).
- Telephone extension (PABX).
- Home telephone.
- Work telephone.

When you receive a call from any of the numbers associated with a contact stored in your contacts list, this name will appear on the screen.

In addition, you can make an alphabetical search inside the **Phonebook** menu. This search allows direct access, by pressing the key corresponding, to different ranges or groups starting with the selected key. Press the key '*' to exit the search, returning to the initial list.

9.2 *Call register*

In the menu **Call register** you can access the following lists:

- Dialed calls.
- Received calls.

- Missed calls.


To access the last call made, press the green call key directly .

9.3 Display Settings

In the menu **Settings\User settings\Display** you can select the brightness for the screen when it is lit. You can change it with the up/down arrow keys or with the rotary knob.

By default, the terminal is configured with an automatic lighting mode. The screen will light up whenever you press a key or receive a call, and will stay off in other situations to conserve battery power.

Press and hold key '5' for several seconds to turn the display 180°. It can be useful to view the display in this way in some situations. To return the display to its normal state, press and hold key '5' again.

The HTT-500 terminal can program quick access keys. In the menu **Applications\Auxiliary buttons**  you can visualize the programming quick access keys in your terminal.

9.4 Language


The HTT-500 terminal has a programmable multilingual interface.

From the menu **Settings\User settings\Language** you can select your desired language. You can change the language setting with the up / down arrow keys.

Consult your supplier for other languages for your terminal.

9.5 Keypad locking

To lock the keypad, hold down the # key. To unlock it, press it again.

The  icon will appear on the lower part of the screen.

With the keypad locked, you can still receive calls normally. When a call is received, the keys are enabled again so that you can answer the call. Once the call is finished, the keypad will return to its previous locked states.

There is an option in the menu **Settings\User settings\Keypad lock\Auto**, where the keypad locks itself automatically after a period of inactivity. Different locking levels can be programmed.

9.6 Audio settings

From the **Settings\Audio settings** menu you can perform the following:

- Select the audio profile.
- Modify the ring volume.
- Select the ring tone that will sound when you receive an individual call.
- Select the ring tone that will sound when you receive a message.
- Activate / deactivate the following sounds independently:
 - o Keypad.
 - o Control: service / no service tones.
 - o Call.
 - o Call Rx permission: nobody is transmitting on the call ongoing.
 - o Call Tx permission: transmission permission granted.
 - o Received message.

- Sent message.
- All tones.

9.7 Use of audio accessories

When you connect audio accessories to the side connector, the HTT-500 automatically recognises them and, according to the accessory connected, modifies the use of the terminal:

Connection with the equipment.

1. Connect the audio accessory connector plug into the side connector socket.
2. Screw the accessory in place by hand to ensure the lines into the audio accessory connector are suitably secured and attached to the radio (do not force the thread of the connector!).
3. Speak clearly into the microphone approximately 2.5cm. away from it, taking care not to obstruct it with your hand. Operation of soft keys will depend on your customisation.
4. Remove the audio accessory to allow access to the side connector socket when using another audio accessory (microspeaker, Hands Free Kit, Earhanger, ...)

Warning.

1. Do not use the audio accessory in the way depicted below. Always guide the cable up above the terminal.
2. Do not cause high levels of strain between the cable, the grommet protector and the left side connector. This excessive strain can significantly reduce the lifespan of the product, void the warranty and potentially cause damage to the hand-portable unit.



Improper connection cable accessory

Microspeaker

This accessory allows you to wear the terminal comfortably on your waist while you make/receive voice calls.

- It has a keypad with PTT, emergency button, and + and - keys which, by default, allow you to increase/decrease the volume.
- The audio is directed through the microphone and speaker of the accessory. You may also connect an earphone to the microspeaker.
- It also has a vibration function, which you can program to activate when you receive each type of call.
- You can make half-duplex calls (pressing either of the PTTs; on the terminal or on the microspeaker), and duplex calls (when you wish to speak, you must press the PTT).

Hands-free kit

This accessory allows you to listen to communications confidentially or in noisy environments and, in addition, communicate in a duplex call with the hands-free.

- The audio is directed through the microphone and speaker of the accessory.
- You can make half-duplex calls (pressing either of the PTTs; on the terminal or on the hands-free kit), and duplex calls (without pressing any PTT).

Earhanger

This accessory allows you to listen to communications confidentially or in noisy environments.

- The audio is directed through the microphone of the terminal and the earhanger speaker.
- You can make half-duplex calls (pressing the PTT on the HTT-500), and duplex calls (without pressing any PTT).



10 QUICK GUIDE

This section is a quick reference containing some basic tips about using the PowerTrunk HTT-500 terminal. For detailed information, carefully read the rest of the sections.



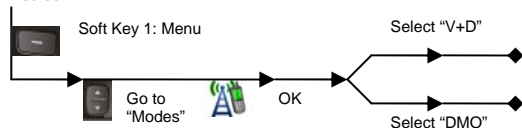
No.	Description	No.	Description
1	Microspeaker connector	11	Red hang-up key
2	Volume control (rotary switch)	12	PTT
3	Screen	13	Auxiliary button 1
4	LED	14	Auxiliary button 2
5	On/off button	15	Speaker 1 (half-duplex calls)
6	Up/down arrows (2)	16	Speaker 2 (duplex calls)
7	Alphanumeric keys	17	Microphone 1 (half-duplex calls)
8	Emergency button	18	Microphone 2 (duplex calls)
9	Soft keys (2)	19	Auxiliary connector
10	Green call key	20	Vehicular antenna connector

SWITCHING ON AND OFF

Keep the button  pressed for a few seconds.

CHANGING OPERATION MODE (V+D / DMO)


Main screen



DESCRIPTION OF THE MAIN MENU

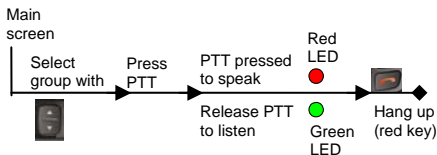
The arrows and soft-keys are for navigating through the different graphic menus.

The red hang-up key allows you to leave any menu or sub-menu and return to the main screen, cancelling any action underway.

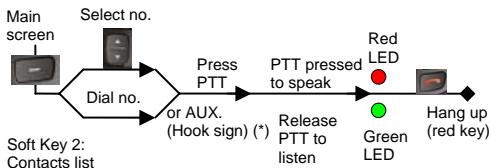
 (ATTENTION) The configuration of the menus and certain options could vary according to the programming of the terminal. Consult your supplier about the functions available on your terminal.

MAKING V+D CALLS

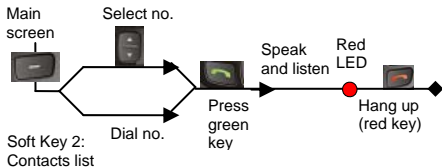
Group calls



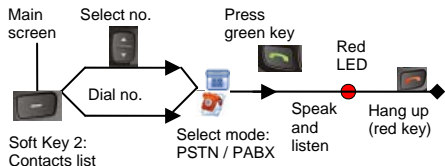
Private half-duplex calls



Private duplex calls

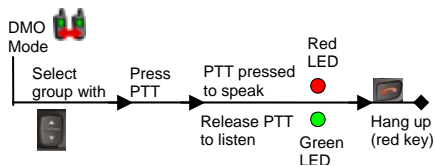


Telephone calls

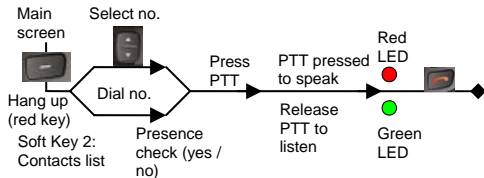


MAKING DMO CALLS

Group calls



Private calls





RECEIVING CALLS

Direct calls (individual or group)

You hear a tone and the LED turns green. Press PTT to speak.

Hook calls (private or telephone) (*)

You hear a tone and the LED turns orange.
To accept the call, press PTT or the green OK key.
To reject the call press the red hang-up key.


QUICK ACCESS KEYS (V+D / DMO)

From the main screen, you can quickly access a number of basic functions:

MENU: Press soft key 1 to access the main menu screens

CONTACTS: Press soft key 2 to access the contacts list directly.

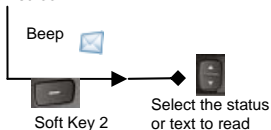
GROUPS: On the main screen, use the arrows to change group.

RECALL: Pressing the green key  takes you directly to the calls list sub-menu, where you can select calls made, received or missed.

RECEIVING MESSAGES (V+D / DMO)

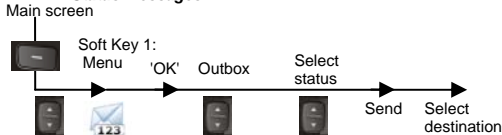
Status / text messages

Main screen

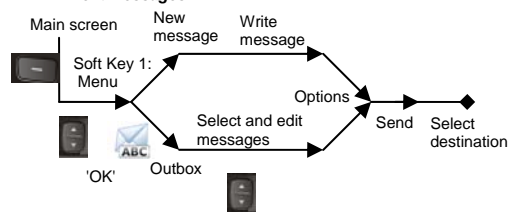


SENDING MESSAGES (V+D / DMO)


Status messages



Text messages



Emergency call (V+D / DMO)

Keep the orange emergency button  pressed for a few seconds. The call automatically retries until it connects. If you wish to cancel it during the connection stage, press the button again.

11 DECLARATION OF CONFORMITY

PowerTrunk Inc., as manufacturer of the product HTT-500, declares that the said product complies with the essential requirements established in article 3 of the Council of Europe Directive 1999/5/CE, dated 9th March, 1999.