

User Guide

MDT-500-2 Mobile Radio



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Safety

READ THE TETRA PRODUCT SAFETY GUIDE SUPPLIED WITH THE PRODUCT FOR IMPORTANT INFORMATION ABOUT SAFELY OPERATING THIS PRODUCT.

ALWAYS POWER OFF the mobile radio in environments where RF wireless devices could potentially cause an explosion. Potentially hazardous areas are not always signed. Obey all signs and instructions relating to the usage of RF wireless devices.

ONLY fit an approved accessory. If a non-approved accessory is fitted, it may compromise the product safety ratings and may void any product warranty.

DO NOT attempt to dismantle this product. Servicing and repairs to this product must be performed by trained service technicians at PowerTrunk approved service centres.

Important safety notes about the antenna

Only use PowerTrunk approved antennas with this product. PowerTrunk TETRA radios have been tested and certified for European and FCC safety and compliance regulations using the following antennas:

Model	Antenna (part no.)
MDT-500-2	LPL-810

The use of non-approved antennas may damage the product, will result in the non-compliance with regulatory requirements, compromise the product safety ratings, reduce the length of operating time and will invalidate the product warranty.

NEVER touch the antenna when your radio is transmitting, this may cause a minor burn to the skin and may affect the operational range of the antenna.

NEVER use your radio without an antenna attached.

NEVER use your radio if the antenna shows signs for damage.

Transmitting without an antenna may damage your radio.

The antenna should be installed and operated with a minimum distance of 1m from any person or other antenna.

Exposure to RF energy

PowerTrunk designs and manufactures products to meet strict guidelines and international standards relating to Radio Frequency (RF) energy and the potential health risks associated with using RF wireless devices. If you have any concerns relating to long term health risks associated with using RF wireless devices, you should obtain advice from your employer.

Operation

It is the responsibility of the person operating the product to ensure that it is operated safely at all times, and that local laws and regulations governing the usage of Radio Frequency (RF) wireless devices are observed. Obey all signs and instructions relating to the usage to RF wireless devices.

To reduce the potential risk of damage to the transmitter power amplifier contained within this equipment, PowerTrunk recommend a duty cycle of 1 minute of transmit followed by 4 minutes of Receive/Standby specifically in P25 mode.

Compliance

Federal Communication Commission (FCC) Regulations

PowerTrunk TETRA radios generate, use and radiate RF energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The device may contain functions that are not operational in U.S Territories except as noted in the certification filing. The TCB Grant may have extended frequencies as noted in the certification filing and Section 2.927(b) may apply to the authorisation. The device complies with 47 CFR Part 90.203 (e), in that the operator cannot directly program the transmit frequencies using the normal accessible external controls. All instructions detailed in this manual must be followed in order to ensure compliance with RF exposure limits.

Failure to observe these restrictions may result in exceeding the FCC RF exposure limits.

US Markets

PowerTrunk radios may be restricted in frequency by the FCC TCB Grant. Refer to the Grant for allowed frequency ranges.


FCC radiation exposure statement

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

The antenna should be installed and operated with a minimum distance of 1m from any person or other antenna.


Compliance product labelling

The following compliance product labelling applies to the MDT-500-2 mobile radio:

Product	Compliance product labelling
MDT-500-2	 <p>This radio is restricted to occupational use only to satisfy FCC RF energy exposure limits. Read the user guide for awareness and control information.</p>

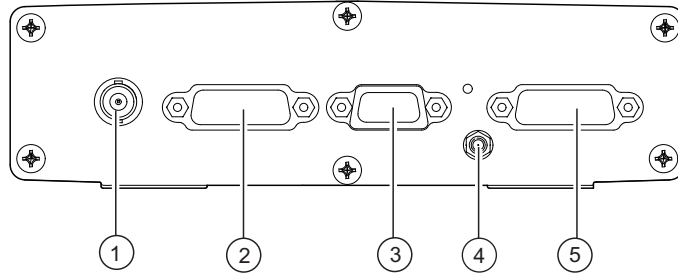
Waste Electrical and Electronic Equipment disposal information



This symbol on the product or its packaging indicates that this product must not be disposed of as household or commercial waste. Some countries have set up collection and recycling systems for  waste electrical and electronic products. By ensuring that this product is disposed of correctly, you will help prevent potentially negative consequences for the environment and human health, and help conserve natural resources. Please dispose of your waste product according to your national and local regulations. Contact your service provider or PowerTrunk for information on how to return this product for waste disposal.

MDT-500-2 connections

All connections are on the rear panel.



Item	Connection
1	Antenna
2	Power/Audio cable
3	Accessory - colour console or handset-based console
4	GPS antenna (optional)
5	Accessory/programming

Your mobile radio may not have a GPS antenna fitted.

Unpacking

Unpack the container(s) and ensure that all items specified on any delivery note are present and received in good condition. If any of the goods are damaged or not supplied, contact your service provider or PowerTrunk within 10 days of receipt of equipment.

The MDT-500-2 is supplied as follows:

- ▶ MDT-500-2 mobile radio
- ▶ Mounting bracket
- ▶ Cables (including fuses) for installation
- ▶ Product Safety Guide
- ▶ SCC3/HBC3 Quick Reference Guide
- ▶ Installation Guide

Note: If the MDT-500-2 mobile radio is supplied in bulk shipments (5 mobile radios per box), the cables and mounting brackets are supplied in separate boxes.

Note: The accessory pack must be specified at time of ordering.

Always keep the documentation supplied with the product for future reference. Ensure that any user documentation provided with the product is kept safe and accessible by any person who is responsible for operating the product.

Additional equipment

Your mobile radio requires the connection of additional equipment.

The MDT-500-2 can accommodate a Colour Console or a Hand-based Console, with additional audio equipment connected through the Colour Console.

Part no.	Description
300-01808	Sepura Colour Console 3 (SCC3) Latin
300-01913	MDT-500-2 programming cable
LPL-810	Antenna
300-01801	Hand-based Console 3 (HBC3) Latin
300-00217	Application interface box
300-00726	Handset
300-00897	Remote console cable 30m

Console options and accessories

There are many options available for the installation of the mobile radio. The transceiver can accommodate a Colour Console or a Handset-based Console, with additional accessories such as a Fist microphone or Handset connected through the Colour Console.

The mobile radio is designed to be installed within a vehicle, on a motorcycle or as a standalone unit within an office environment using a Desk Mount Unit (DMU).

There are a number of vehicle, motorcycle and desktop accessories that can be attached to the colour console. Contact PowerTrunk for more information about accessories available.

Console accessories

The Colour Console can accommodate a number of audio accessories such as a Fist microphone or Handset. The following accessories are available for connection to the Colour Console:

Part No.	Description
300-00061	Handset (PTT and hook switch)
300-00062	Fist Microphone
300-00074	Desk Microphone with PTT
300-00075	Headset (no PTT)
300-00076	Footswitch PTT

Internal back-up battery

The MDT-500-2 mobile radio has a small rechargeable internal back-up battery. This battery powers the internal Real Time Clock in the event that the main power to the product is removed.

The battery may have discharged during the manufacturing process or if the product has been in storage for some time. When the product is connected to its main supply, the back-up battery will charge regardless of whether the product is powered on or not. The charge period for a full charge may be up to 48 hours.

Connection with the MDT-500-2 mobile radio

Your MDT-500-2 mobile radio works with Colour Consoles and Hand-based Consoles, with the optional provision of the Applications Interface Unit (AIU).

Console and Application Interface Unit

The MDT-500-2 mobile radio supports the connection of a Colour Console or a Handset-based Console (via an Interface and Handsfree box), or an Applications Interface Unit, which is similar to a console but does not have a keypad and display.

The MDT-500-2 mobile radio supports Colour Console (SCC3) connection. SCC3 allows you to connect two of the following audio accessories at the same time:

- ▶ a fist microphone
- ▶ a handset audio accessory
- ▶ built-in handset
- ▶ up to one hands-free kit
- ▶ VAC speaker microphone

If two users are using the same mobile radio, operational procedures are required to ensure that the actions of the two users do not conflict.

On some configurations it is possible to have a hands-free kit attached. If this is the case, only one of the remote microphones is live during a call. The remote microphone which is live is the one attached to the console which accepted or made the call or switched the call to hands-free.

Mobile radio audio control

The mobile radio supports the concept of a single controlling audio accessory for a call. The controlling audio accessory is the one in control of the call, and the only one on which the microphone becomes active.

Tip: When a fist microphone or hands-free kit is used, the received audio is directed to the loudspeaker connected to the mobile unit. When a handset is used, the received audio is directed to the handset earpiece.

The controlling audio accessory is normally the Remote Microphone used in conjunction with the loudspeaker, i.e. the hands-free kit or 'Public' mode. To make a different accessory become the controlling accessory, press the PTT button on that accessory or by take it off hook. If the new controlling accessory has an earpiece then normally this is used for received audio instead of the Loudspeaker ('Private' mode).

When in 'Private' mode you can switch to 'Public' mode by pressing the hands free soft key (if configured). Taking a handset off hook, or using its PTT will return to 'Private' mode.

While the controlling accessory is not the Remote Microphone, you may switch to another accessory by pressing the PTT button on that accessory. Taking that accessory off-hook does not change the controlling accessory. This allows a second user to listen to received audio on another accessory.

If the controlling accessory is placed on-hook this clears the call unless customised differently. Other accessories can be put back on-hook without clearing the call in progress.

All earpiece audio is left on all the time in order that multiple users may listen to the received audio.

Customisation

The MDT-500-2 is programmed using Radio Manager. To program the mobile radio you will need the appropriate software loaded onto a PC and a programming cable.

The two main areas that may need adjusting are the audio levels and the microphone gain. If any changes are made to the default settings listed, it is necessary to re-program the mobile radio.

Periodically, you will need to reprogram your MDT-500-2 mobile radio with software updates.

The levels of receive speech volume, alert tone volume and microphone gains can be adjusted to suit the installation environment. The parameter reference number is provided to help identification when using Radio Manager.

Speech and alert volume

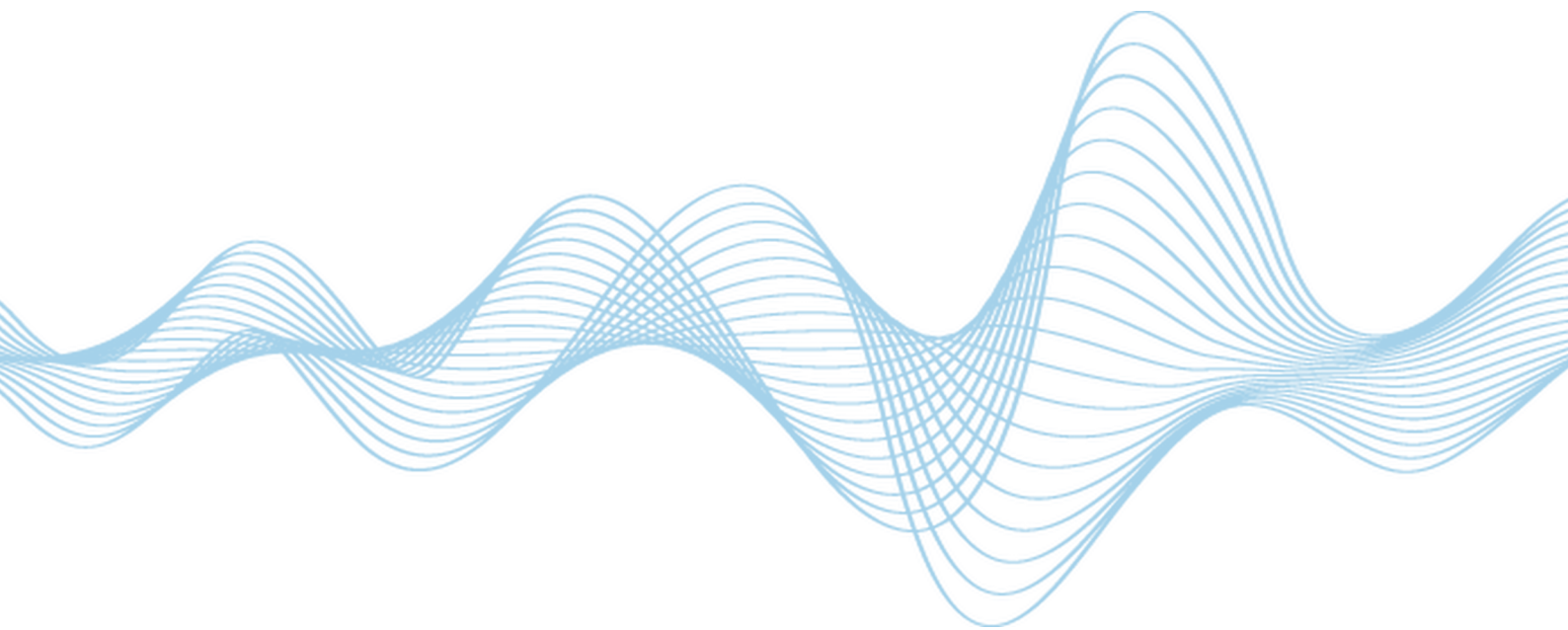
The following parameters can be found under the 'PROFILE' template.

Parameter name	Index	Default
Minimum Speech Level	8000	-45dB
Maximum Speech level	8010	0dB
Minimum Alert Volume	8020	-39dB
Maximum Alert Volume	8030	0dB

Microphone gain settings

The following parameters can be found under the 'PRODUCT' template.

Parameter name	Index	Default
Desk Microphone gain	7155	30dB
Headset Microphone Gain	7230	30dB
Vehicle Adaptor Fist Microphone gain setting	7145	30dB
Vehicle Adaptor Microphone gain setting	7150	30dB



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