



# ***MOTOROLA TETRA TERMINALS***

Mission Critical Voice and Data Communications





A proud heritage

## Communications excellence in the most critical and demanding environments

### Focus on the mission

Working with Motorola's Private Networks Team ensures peace of mind and the confidence that only a global leader in communication solutions can bring.

With more than 75 years of communications excellence in the most demanding environments Motorola has proven expertise in wireless technologies across Private Mobile Radio (PMR), cellular, broadband and mesh networking.

Motorola is the only supplier actively involved in the standard development, design and manufacture of equipment for the world's leading digital PMR industry standards – ETSI TETRA, ETSI DMR and APCO 25.

- World leader in public safety networks, with over 5000 systems in operation
- More than 1000 digital radio contracts in over 90 countries
- Over 20 Million users of Motorola digital radio technology

### Unrivalled TETRA leadership

This commitment to PMR is reflected in Motorola's unwavering support for the ETSI TETRA standard. As a founding member of the TETRA Association, we were pivotal in establishing the multi-vendor certification process and extending the standard's reach into Asia, China and Latin America.

Motorola has led the market with many TETRA 'firsts':

- The world's first TETRA radio call in the 380-400 MHz spectrum
- First provider of 'class 3' encryption on TETRA
- The first all IP TETRA network: Motorola's Dimetra IP networks are now the leading secure resilient communication solution with advanced voice and data capabilities
- First cellular-style TETRA handset
- The world's first TETRA PDA and TETRA Data Modem
- A world leader by far in the supply of secure TETRA terminals: over 850,000 terminals to date

### TETRA now and in the future

Motorola continues to be heavily committed to establishing the regulatory and spectrum frameworks surrounding TETRA's ongoing development providing significant funding and expertise to advance the TETRA Release 2 standard.

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## Building on success

### Groundbreaking performance

Motorola's key focus is to enable communication of critical information seamlessly and without compromise to the fingertips of first responders, where and when they need it.

To date Motorola has invested more than €500 million in TETRA technology development. Our leading portfolio of solutions embraces all aspects of TETRA multi-system operations from network infrastructure, command and control to handheld radios, portables, vehicle based terminals and gateways.

Motorola offers key features synchronised across its network and subscriber terminal solutions. End-to-end encryption is a user option whether using one-to-one, or group voice calls. Integrated GPS provides new levels of mission critical user and vehicle location monitoring.

With Data communications Motorola uniquely offers higher data rates through the Multi-Slot Packet Data feature.

### Global strength with local knowledge

In Europe, Motorola's record of leadership in development, installation and provisioning TETRA infrastructure in the public safety and emergency services sectors is second to none.

- During the past decade, Motorola TETRA terminals have been specified for almost every new, nationwide public safety communications network in Europe.
- Providing expert resources during cross-border TETRA interoperability trials for Schengen co-operation in Europe
- More than 7,000 points of presence, 2,600 service centres and 3,000 design engineers throughout the Europe, Middle East and Africa region.

### Field-proven by Europe's mission critical users

Motorola is dedicated to working alongside our customers, collaborating with them, and delivering on their needs in terms of TETRA system capability, coverage, capacity and cost management.

The UK's Airwave network, the largest and most complex TETRA system of its kind in the world, was delivered by Motorola. Operated by independent wireless provider Airwave, and based on our Dimetra IP solution, it currently serves over 200,000 public safety users – a figure that continues to grow. So far, more than 100,000 Motorola radios have been shipped to users on the Airwave network. User organisations include all 54 regional police forces; the Public Highways Agency; the Immigration Service; CCTV monitoring teams; Emergency Planning Agencies; major airports; prison services; and street wardens. Fire and ambulance services also are soon to switch to Airwave.

Motorola's Dimetra IP solution has been similarly deployed to provide a multi-vendor solution for Netherlands' operator, C2000. Other TETRA deployments in Europe's public safety sector completed by Motorola include projects for the Basque Police, Warsaw Police and for the NATO summit in Prague... all delivered on time and on budget.





Rugged, reliable, proven radio solutions

## Motorola TETRA Terminals

Every day, millions of people place their trust in Motorola products

A vital communications lifeline for operatives in the field, Motorola's TETRA terminals are ensuring reliable and instant access to voice and data services, to police officers, fire fighters, paramedics and many other professional users around the globe.

### Meeting the exacting needs of public safety users

#### Handportables

Compact, durable, yet light in weight, our handportable radios are complemented by an extensive range of accessories designed to handle the myriad of environments encountered by first responders. Handportables include :

- MTH800
- MTP850
- MTP850Ex
- TCR1000

#### Mobile radios

If you need to communicate clearly and reliably on the move, our mobile radios offer flexible configuration and vehicle installation options – standard patrol cars, police vans / transports, fire engines / ambulances and even river patrol boats:

- MTM800 Enhanced Control Head
- CM5000 TETRA DMO Gateway / Repeater

#### Data solutions

Maximise productivity with TETRA's packet data options by deploying the latest applications on Motorola's specially designed data tools and handhelds including:

- MTC100 TETRA PDA
- TOM100 TETRA Modem

## Benefit from the latest innovations

From handheld and mobile radios offering optimum voice quality and ease of use, to our unique TETRA PDA, Motorola terminals are leading the latest developments in mission critical user experience.

### Advanced Features

- Cellular-type features provide alpha-numeric keypads, text capabilities, colour displays
- Ease of use: tactile keypads and intuitive user Interface
- WAP and Multi-Slot Packet Data support advanced applications such as GPS, database enquiries and field reporting

### Versatile yet durable

Rugged yet versatile, these two key attributes are widely recognised as being vital to mission critical operations and for which Motorola's TETRA terminals have gained worldwide acclaim.

Our entire range is subjected to a rigorous Accelerated Life Testing (ALT) programme, simulating over 5 years of tough usage including water and dust ingress to IP54 or better, drop and shock testing and aggressive temperature performance. Motorola terminals meeting and exceeding international standards of quality and performance is something you can rely on.

### Enhancing user safety

Motorola TETRA terminals support many features designed to enhance the safety of the user:

- A standard emergency button gives priority access to the network, and activates a 'hot mic' facility
- GPS option allows the location of the user to be identified during an emergency
- Ambience listening enables the dispatcher to open the microphone so that background noise can be monitored and situations assessed

### Trusted security

All our terminals support the highest level of encryption available to TETRA, together with additional security features that further enhance security.

- Air interface (Class 2 & 3) and End-to-End encryption
- Remote stun facility – ability to disable the radio over-the-air if it is lost or stolen

### Customise your TETRA radio

TETRA users operate under diverse operational conditions and to meet their individual communications needs Motorola offers a wide selection of robust, reliable accessories and installation options for our Handportables, Mobile Radios, TETRA PDA and Modem.

### Integrated Terminal Management Overview

Integrated Terminal Management provides a scalable provisioning, upgrading and reporting system for enterprise TETRA terminal users. This networkable system allows changes to be made to radio programming and software features deployed, simply by users docking radios into a programming point at a convenient location. Customers can now keep their radio fleet running, reducing the need to take radios out of use for programming. Full details of each Terminal's programming information is held on a central server. Administrators can load their entire Terminal fleet and programme new or existing terminals. The tasks can be set up from any management PC and reports can be viewed or exported on the state of the Terminal's data. Simply by the end user docking their terminal at a programming point it checks for and receives automatically any updates that are due to it. This modular expandable system allows customers to set up versatile programming jobs to configure some or all of their fleet exactly as needed and with no active involvement by the end user.

Critical performance

## MTH800



### TETRA Handportable Terminal

Motorola's MTH800 is a compact yet robust terminal which, thanks to its form factor and rubber features, provides a comfortable and user friendly tool you can depend on even in the toughest environments.

The MTH 800 features an extensive set of tools designed to enhance the personal safety, security and efficiency of both mission-critical and commercial users. Incorporating the latest technologies, it includes support for GPS Location Services, high-grade encryption, data services and much more – enhancing user safety and driving efficiencies.

Ensuring full customer flexibility, two GPS protocols are supported including the TETRA Location Information Protocol (LIP), allowing users to:

- Control and reconfigure GPS parameters over-the-air
- Define location and event driven position updates
- Set 'profiles' to enable different location update rules in various scenarios, such as emergency situations
- Ensure location information is only sent to authorised users via innovative authentication processes

### Advanced yet accessible features

Compact and lightweight, the MTH 800's advanced microprocessor and Digital Signalling Processor (DSP) support Motorola's latest TETRA innovations including WAP, Multi-Slot Packet Data, Short Data Service (SDS) and Predictive Text Entry (iTAP). Full end-to-end encryption as well as TEA1, TEA2, or TEA3 air encryption may either be factory fitted, provisioned in-country or, alternatively, retro-fitted at a later date.

Furthermore, the MTH 800's 65,000 colour, 130x130 pixel display provides accurate reproduction of faces and other images. This delivers maximum image definition in a wide range of lighting conditions.

The high-resolution display is complemented by an intuitive graphical user interface (GUI) that encompasses a range of customisable features, including scalable fonts, assignable shortcuts to menu items and features, access to more than 3,000 Talk Groups and a unified address book facility that can hold 2,000 entries.

User safety is further enhanced with the large, easy to use emergency button, as well as the programmable rotary knob with push button operation allowing fast access to volume and talk group control.

Audio quality is assured by a 1 Watt speaker, as well as a 1 Watt class D audio amplifier, which combine to offer exceptional audio clarity with minimal distortion. Two microphones are also included – a top microphone for dispatcher calls, and a bottom microphone for 'one-to-one' calls.

### Fast Facts:

(for full details see separate specifications datasheet)

- Dimensions HxWxD mm: 141 x 55 x 33 (with standard 800mAh battery) / 141 x 55 x 38 (with 1800mAh battery)
- Weight g: 196 Radio only / 228 (with standard 800mAh battery) / 239 (with 1800mAh battery)
- IP54 Dust and Water Ingress protection
- Shock, drop and vibration protected
- Frequency Bands MHz: 380-430, 440-470, 806-87
- Transmitter RF Power Watt: 1
- Receiver Class A and B
- Air Encryption: TEA1, TEA2, TEA3
- E2E encryption support
- SIM card reader
- GPS – simultaneous Satellites 12
- Colour Display: 130x130 pixel screen
- Group call – TMO (Trunked Mode Operation) / DMO (Direct Mode Operation)
- Smart Emergency call: TMO / DMO (including 'Hot Mic')
- Dynamic Group Number Assignment (DGNA): up to 2047 Groups
- Local site trunking
- Site Wide Call
- Scanning
- Talking Party Identification
- Call Priority Monitor
- PABX / PSTN calls
- Dedicated Emergency button
- Short Data
- Multi Slot Packet Data
- Peripheral Equipment Interface (PEI) for external RS232 short and packet data
- Side connector for audio accessories with lock function
- Programming interface via USB and RS232
- Pre-programmed languages (English, French, German, Spanish, Dutch, Greek, Arabic, Cyrillic, Hungarian, Italian and Swedish)



Every Motorola TETRA radio is designed to pass an Accelerated Life Test simulating over 5 years use.

# MTP850



## TETRA Handportable Terminal

### Seamless access to voice and data

At the core of Motorola's Seamless Mobility vision is a simple idea: an organisation benefits when its workers are provided with tools that empower them to be more productive. The MTP850 TETRA portable terminal delivers on this vision, with fully-integrated voice and data services that give mission-critical users immediate access to up-to-date intelligence on which they can make truly informed decisions.

The impressive processing power of the MTP850 means that users can take advantage of advanced data applications such as instant access to information databases via the integrated WAP browser and Multi Slot Packet Data-enabled features. Status Messaging lets the user update others on their immediate situation or call for support when needed, allowing the progress of job assignments to be monitored remotely.

### Sophisticated and intuitive interface

The MTP850 incorporates the latest in graphical user interfaces (GUIs), ensuring intuitive operation. Access to databases, directories or folders will be as simple as using a desktop PC, for timely and dependable communication. In addition, its 130x130 pixel, 65,000 colour display provides for high clarity and visibility, offering accurate reproduction of photos, maps and images.

- Dedicated Emergency button
- Colour indication of Emergency Mode (Red Display)
- Editable screensaver with logo option
- Talk Group lock
- Keypad lock

### Safety through location

Motorola's patented antenna combining TETRA and GPS signal for optimal positioning of the antenna for GPS coverage ensures that the location of the user can be determined and plotted. This enables dispatch personnel to ascertain exactly where and how resources are deployed, and base the allocation of tasks on live information.

- Low current and high sensitivity GPS
- Autonomous and assisted GPS support
- Location Request / Response Protocol (LRRP) or ETSI LIP for positioning data transportation

When the MTP850's emergency button is activated, it immediately alerts other TETRA users within the group(s) to critical situations, and transmits details of the user's handset location so that assistance may be sent to where it is needed. Secure communications is also an inherent feature of TETRA digital signalling and encrypted communications, with the MTP850 supporting both TETRA Air Interface Encryption and an end-to-end encryption module that is available as an option for those with enhanced security needs.

## Fast Facts:

(for full details see separate specifications datasheet)

- Dimensions HxWxD mm: 125 x 50 x 33.5 (slim battery) / 125 x 50 x 37.5 (standard battery)
- Weight g: 189 (radio only) / 237 (with slim battery) / 250 (with standard battery)
- Frequency Bands MHz: 350-390, 380-430, 806-870
- RF Channel Bandwidth kHz: 25
- Transmitter RF Power Watt: 1
- Encryption: TEA1, TEA2, TEA3  
GPS – simultaneous Satellites: 12
- Receiver Class A and B
- Colour Display 130x130 pixel screen
- Group call – TMO / DMO
- Direct Mode (DMO)
- Smart Emergency call – TMO / DMO (including 'Hot Mic' option in TMO)
- Dynamic Group Number Assignment (DGNA)
- Local site trunking
- Site Wide Call
- Scanning
- Talking Party Identification
- Transmit Inhibit (TXI)
- Call Priority Monitor
- PABX / PSTN calls
- Dedicated Emergency button
- 'Hot' Microphone emergency (TMO)
- DMO to TMO Emergency Switching
- Multi Slot Packet Data
- Peripheral Equipment Interface (PEI) for external RS232 short and packet data
- Side connector for audio accessories and lock function
- Programming interface via USB and RS232
- Pre-programmed languages (English, French, German, Spanish, Dutch, Greek, Arabic, Cyrillic and Swedish)
- IP54 Dust and Water Ingress protection
- Shock, drop and vibration protected



Every Motorola TETRA radio is designed to pass an Accelerated Life Test simulating over 5 years use.

## MTP850EX



### ATEX Terminal

Motorola's MTP850Ex TETRA portable terminal provides high quality communication with comprehensive user safety and class leading ATEX & IECEx specifications allowing use when in environments containing potentially explosive gas and dust.

Motorola is a world leader in the development and deployment of TETRA communication solutions, and the MTP850Ex ATEX TETRA radio delivers safe and reliable communications for users with a powerful set of features to harness the capability of TETRA.

### High performance communication

With 1 watt audio power the MTP850Ex delivers best in class audio performance in the typical noisy environments where specialist users from industry or public safety operate.

The MTP850Ex has a high level of robustness specially designed for industrial environments.

### Comprehensive user safety

The MTP850Ex can be used in explosive gas and dust environments due to its high level of protection – including gas Zone 1 and 2, and dust Zone 21 and 22 respectively. Operational safety is further enhanced with a range of features including:

- state of the art integrated GPS receiver providing the ability to locate personnel through the radio, improving user safety and resource management.

- Internal "Man Down" alert - this fully integrated solution triggers an emergency procedure when the carrier of the radio remains motionless for a set period or falls down.

### Simple but powerful user interface

The simplified keypad with large button surface makes the MTP850Ex easy to use with gloves. Combined with the large scalable display fonts and icons, the MTP850Ex facilitates operation in difficult environments with limited visibility.

### Data applications capability

The integrated WAP browser and Multi-Slot packet data enables rapid access to critical information in the field. Applications are further enhanced with ability to have simultaneous Short Data Service (SDS) and Multi-Slot packet data services via TNP1 protocol.

### Robust accessory portfolio

The MTP850Ex offers the essential ATEX approved accessories to support busy professionals and public safety officers operating in hazardous environments. Heavy-duty headsets offer noise protection and is designed for use with hard hats and other protective head gear. Lightweight headsets offer flexible, comfortable wearing options and are designed for indoor use in manufacturing facilities.

### Key Features

(for full details see separate specifications datasheet)

- An intrinsically safe TETRA portable radio designed to be operated in potentially explosive environments (gas and/or dust) providing safe and reliable communication
- Data Applications Capability
- Support of WAP plus simultaneous Short Data Service (SDS) and Multi-Slot packet data (MSPD)\* services via TNP1 protocol
- Best in Class Audio (1 watt audio output power) that maintains audio performance in the typical noisy environments where specialist users from industry or public safety operate
- Simplified Keypad with Large Buttons that are easy to use with gloves, facilitating operation in difficult environments with limited visibility
- Simplified User Interface - Large Icons/Fonts ensure easy access to critical features
- Wide range of Languages/Keypads
  - Languages including : Arabic, Chinese Simplified, Chinese Traditional, Dutch, English, French, German, Greek, Hungarian, Italian, Korean, Lithuanian, Norwegian, Portuguese Russian, Spanish and Swedish
- GPS Location Services
  - A state of the art integrated GPS receiver provides ability to locate personnel thereby improving user safety and resource management
- Man-Down
  - A fully integrated internal Man-Down solution triggers an emergency procedure when the carrier of the radio device does not move any more and/or has fallen down



Every Motorola TETRA radio is designed to pass an Accelerated Life Test simulating over 5 years use.

# TCR1000



## TETRA Covert Radio

Motorola is a world leader in the development and deployment of TETRA communication solutions, and the new TCR1000 Covert TETRA Radio from Motorola is the smallest, full function body worn TETRA radio available.

The TCR1000 is the ideal solution to ensure secure communications in surveillance covert type operations allowing officers to blend right into the crowd. Motorola's TCR1000 Tetra radio delivers high quality communication in a light and discrete package for those critical undercover applications.

There are no compromises in the design of the TCR1000. Motorola worked closely with police forces to ensure that it will be intuitive and simple to operate, truly Technology that's Second Nature. The TCR1000 incorporates control features specifically matched to the needs of officers in Covert operations, and is engineered to be easily hidden inside of light clothing. A unique portfolio of Covert accessories complement the TCR1000 and offer additional flexible options for undercover officers. This radio operates at 1 watt and the option for a body mounted antenna ensures excellent coverage and maintains the discreteness of the radio.

## Key Features

(for full details see separate specifications datasheet)

- Part of Motorola's highly capable and industry leading TETRA Radio platform
- Secure Communication for safety and protection of information
- TMO TETRA Class 2 / 3 Air Interface Encryption (SCK, CCK, DCK, GCK)
- DMO Air Interface Encryption
- End-End Encryption
- 1W, Class 4 Tx Power
- Whisper mode for discrete use
- Integrated GPS option that allows users to be located in need of assistance
- Wide range of covert accessories to give officers flexibility in the way the radio can be worn
- Connection to extension battery for increased operational life
- Uses the same standard battery as cellular handsets
- CPS-Lite facility for changing the talk groups with a TETRA PDA
- Unique body worn double-loop antenna option increases range
- Semi rigid antenna, adds flexibility in terms of how the radio can be worn



Every Motorola TETRA radio is designed to pass an Accelerated Life Test simulating over 5 years use.



# MTM800 ENHANCED



## TETRA Enhanced Control Head

### Setting the standard for new levels of durability, performance and usability

Discerning professionals demand high-quality voice communications with fast access to mobile applications. The MTM800 Enhanced delivers on both, with SDS, Mult-Slot Packet Data and WAP options.

Developed for organisations where rugged and versatile mobile radios are essential, Motorola's MTM800 Enhanced is ideal for use where the application, location and / or circumstances demand fast, reliable, no-nonsense solutions.

### Ergonomically engineered for future mission critical needs

- Ease-of-operation in the most demanding situations – unsurpassed audio quality, intuitive keypad and high-definition, colour display combined with a sleek yet durable design
- Dust and water resistant to IP 54. rain, salt, fog, and dust protection tested to MIL 810 C/D/E/F for the standard control head
- Motorcycle control head rated IP67 for dust and water resistance

The MTM800 Enhanced also supports the full suite of TETRA security functions, including air interface, SIM card and end-to-end encryption. Users can request assistance by simply hitting the emergency button, which not only alerts colleagues to critical situations, but also sends an update dispatch on the user's location. It also provides the ability to switch to covert mode at the press of a button, and features an integrated GPS receiver that enables users to locate their mobiles, and provides location-based services and mapping capabilities.

## Versatile configuration options



### MTM800E – 'Dash mounted'

A self-contained radio transceiver unit with enhanced control head. Fully compliant with the DIN-A standard for installation on car dashboards, its sleek yet durable design allows for easy deployment, while the high-quality display ensures optimum viewing for both driver and passenger.



### MTM800E – 'Desktop'

A fully integrated solution fitted in a purpose-built cradle and featuring desktop microphone and speaker. A host of user-specific accessories make the

MTM800 Enhanced suitable across a variety of office applications.



### MTM800E - 'Remote Control'

Offers the ability to locate the control head remotely from the radio transceiver unit via an umbilical cable, allowing for more flexible vehicle installation.

The rear accessory connector on the control head provides GPIOs (General Purpose Input Outputs) for easy integration with 3rd party applications.



### MTM800E – 'Motorcycle'

Features all the robust qualities of the MTM800 Enhanced user interface and a control head tested to IP67 standard for deployments where an environmentally-hardened, waterproof unit is required. Easy remote control is provided via GPIO.



### MTM800 – 'Expansion Head'

Can be used with or without a control head and offers full data capabilities (PEI) including SDS and packet data (single slot and multi-slot as an option). A

3rd party interface allows complete control of the radio, while the physical interface is provided via serial link.



## Fast Facts:

- Dimensions 60x185x175 mm
- Weight 1.5 Kg
- Frequency Bands 350-390MHz, 380-430MHz, 410-470MHz and 806-870MHz
- RF Channel Bandwidth 25 KHz
- Transmitter RF Power 3 Watt (power class 3)
- Encryption: TEA1, TEA2, TEA3; plus optional End to End Encryption
- Identical user interface (UI) with portable terminals (MTH800 / MTP850),
- Class leading colour display (VGA)
- Access to mobile applications and user databases via optional integrated WAP browser and Multi Slot Packet Data
- Accessory interface enabling enhanced audio and data connectivity e.g. USB, end-to-end encryption
- GPS Location services with an integrated GPS receiver
- Switch to covert mode at the press of a button
- ETSI compatible Peripheral interface (PEI), with option for Multi-Slot Packet Data
- Flexible integration and control capabilities via GPIO (General Purpose Inputs Outputs)
- Comprehensive installation options (fully DIN-A compatible, available in dash, remote or motorcycle version)
- Robust construction, vibration and shock tested to MIL 810 E, EIA/TIA 603
- IP 54 Dust and water resistance. rain, salt, fog, dust protection tested to MIL 810 C/D/E/F for the standard control head
- IP67 Dust and water resistance for the Motorcycle control head
- Pre-programmed languages including English, French, German, Spanish, Dutch, Greek, Arabic, Cyrillic, Hungarian, Italian and others



# CM5000 TETRA GATEWAY / REPEATER



## Maximise system flexibility in mission critical applications

Motorola's CM5000 TETRA DMO Gateway / Repeater, developed in conjunction with Cleartone, the leading provider of TETRA Gateway/Repeater technology, enhances TETRA radio performance and usability in locations where coverage is compromised. Inside buildings, underground locations or where the local topography may hinder radio network coverage.

## Combines three modes of operation

With its full data capability and in-built intelligence, the CM5000 complements a broad scope of TETRA operations. When configured in 'Gateway' mode, it acts as a gateway between the trunked radio network and TETRA radios not operating on the network – supporting DMO (Direct Mode Operation) to TMO (Trunked Mode Operation) communications between TETRA portable radio users.

Configured in 'Repeater' mode, it serves as a mobile base station – extending the communications range between personnel using TETRA radios in DMO. This increase in range is ideal for users working either in remote areas or where network coverage is compromised by topological features, e.g. built-up inner city locations, hilly areas, valleys, tunnels and underground car parks.

In standard mode, the CM5000 serves as fully-functional, vehicle-mounted TETRA radio, sharing the same easy to use interface used across Motorola's range of TETRA terminals.

## Seamless mobility in changing situations

In addition to its Gateway / Repeater role, the CM5000 also supports Air Interface Encryption and a full range of voice and data services including telephony calls, SDS and Multi-Slot Packet Data. An integrated GPS facility enables efficient and safe task deployment, with location coordinates forwarded automatically to the central database.

This best-of-breed Gateway / Repeater also facilitates 'Dual Mode' working by providing seamless communication between TETRA and existing VHF-UHF analogue radios – maximising usage of existing analogue equipment and assisting users in migration to TETRA.

## Enhanced Network Coverage

### DMO Gateway

The CM5000 enhances TETRA network coverage by rebroadcasting TMO calls to radios operating in Direct Mode (DMO)

A gateway is commonly used to extend coverage to portable radios in areas where only mobile radios are in coverage, for example:

- in rural areas, where signal levels may only provide mobile coverage
- Extending coverage into buildings
- Providing improved coverage in underground areas or tunnels, in response to accidents



### DMO Repeater

For users in Direct Mode, the CM5000 extends operational range by rebroadcasting signals.



Reaching out to remote locations

### Fast Facts:

#### CM5000 capabilities:

- Cost-effective migration from analogue to TETRA. The control head has the ability to control two radios – VHF/UHF and TETRA – and provides seamless connectivity between the two in standard mode
- Features the same cellular-style menu, icons and colour display that have established Motorola's MTH800 and MTP850 as key global leaders for TETRA portables
- Multiple language capability – support for English, French, German, Spanish, Dutch, Polish, Swedish and Lithuanian
- Access and query information on the move – Multi-Slot Packet Data provides high-bandwidth connectivity for instant access to mobile office applications and user databases
- Common TETRA user interface (UI) ensures ease of training and access to a wide portfolio of accessories and complementary products
- Air Encryption: TEA1, TEA2, TEA3
- Integrated GPS receiver delivers location-based services, mapping capabilities and allows users to locate their mobiles
- Dust and water resistant to IP 54

# TETRA DATA SOLUTIONS

## Intelligent solutions for informed decisions and rapid response

As public safety agencies look to increase levels of visibility, efficiency and effectiveness, TETRA is providing a secure and controllable wide-area data bearer that remains continuously available, even during major incidents.

Having delivered proven IP based mission-critical TETRA systems, Motorola is now leading the way in data focussed TETRA solutions with two more industry firsts - the TETRA PDA device and the TETRA data Modem.

Supporting SDS and Multi-Slot Packet Data the Motorola TETRA PDA (MTC100) enable users to interrogate remote databases, make specific enquiries for information and receive a rapid response at the critical point of decision - in the field.

The Motorola TETRA data modem (TOM100) facilitates rapid and cost effective development of TETRA enabled data user devices. It can be easily integrated into new and existing devices from handhelds, laptops to in-vehicle consoles.

Both the TETRA PDA and Modem continue Motorola's focus on secure network communication that protects the privacy of data applications and will not compromise the status of the operation.

### MTC100 TETRA PDA

Our innovative and robust TETRA PDA delivers public safety users pocket-sized, secure access to essential two-way data applications whilst on the move. It is designed with all the intrinsic features of Motorola's TETRA handportable radios: Always On, Trusted, Reliable and Secure.

We have worked closely with public safety and enterprise users to ensure that the MTC100 offers a comprehensive suite of communications services that meet their needs. All devices have the following core features:

- Microsoft® Windows 5 Mobile Edition with messaging and security feature pack
- Large 3.52 inch TFT touch screen
- Integrated camera and light, allowing pictures to be taken and circulated quickly



- TETRA wide area two-way radio (WAN) with optional encryption and authentication to provide secure connectivity

### Additional options include:

- Integrated 802.11 WiFi radio, for connection to wireless local area networks (WLAN) enabling rapid synchronisation of data and applications while in the office
- Bluetooth™ wireless radio, to create a personal area network (PAN) for connection to devices such as data scanners or portable printers
- Integrated Global Position System (GPS), so that both control room and in-field personnel benefit from increased information on the terminal user's precise location.

### Unlock the potential of TETRA

With the MTC100, users can access demographic and vehicle records, report crimes and accidents, and issue penalty tickets via customised applications. This functionality meets public safety users' targets to spend more time on visible, active patrol and increase daily productivity.

Whether accessing databases or submitting field reports via the TETRA network, the Motorola TETRA PDA provides an important data pipeline that allows emergency services controlled access to information when and where it is required – and at a competitive cost.

### Fast Facts:

(For full details see separate specifications datasheet)

- Dimensions HxWxD mm: 155 x 89 x 33 typical, to 155 x 89 x 44 maximum.
- Weight g: 430g typical, 450g max.
- Frequency Bands MHz: 380 – 430 MHz
- RF Channel Bandwidth kHz: 25
- Transmitter RF Power Watt: 1 (30 dBm)
- Receiver Class A and B
- Encryption: Class 2, Class 3, TEA1, TEA2, TEA3
- GPS: 16 channel receiver with DGPS and SBAS (WAAS, EGNOS) support
- Colour Display: 3.5" TFT panel, 256K colours, LED backlight with variable brightness control
- Processor Intel® XScale™ PXA27x, 520MHz
- Memory Internal: 128MB SD RAM / 196MB ROM
- Expansion: User accessible SD slot with protective cover
- Operating System: Microsoft® Windows™ Mobile 5.0, Premium Edition
- Audio Integral 500mW speaker and microphone with OS Support for voice record and audio playback (Voice over TETRA WAN is not supported)
- IP54 Dust and Water Ingress protection
- Shock, drop and vibration protected



Every Motorola TETRA radio is designed to pass an Accelerated Life Test simulating over 5 years use.

# TETRA DATA SOLUTIONS

## TOM100 TETRA OEM Data Modem

Motorola's TOM100 TETRA Modem adds TETRA capability to both new and existing devices. As an integral part of the MTC100 TETRA PDA, the TOM100 also provides a platform for 3rd parties to develop innovative solutions as part of Motorola's Application Partners Programme.

### Powerful and Flexible

- Small size – 47mm x 47mm footprint – huge possibilities
- Support for Short Data and Packet Data services
- Increase data throughput with Multi-Slot Packet Data

TOM100 can be integrated into both new and existing products, minimising the effort and cost of developing solutions for TETRA networks. It has already been adopted by users to migrate solutions from existing data bearers such as GSM, to realise the benefits of dedicated TETRA networks.



### Fast Facts:

(For full details see separate specifications datasheet)

- Dimensions HxWxD mm: 47.0 x 47.0 x 5.04
- Weight: 25g
- Frequency Bands MHz: 380 – 430 MHz
- RF Channel Bandwidth kHz: 25
- Transmitter RF Power Watt: 1 (30 dBm)
- Receiver Class A and B
- Encryption: TEA1, TEA2, TEA3



# MOTOROLA MOBILITY SUITE

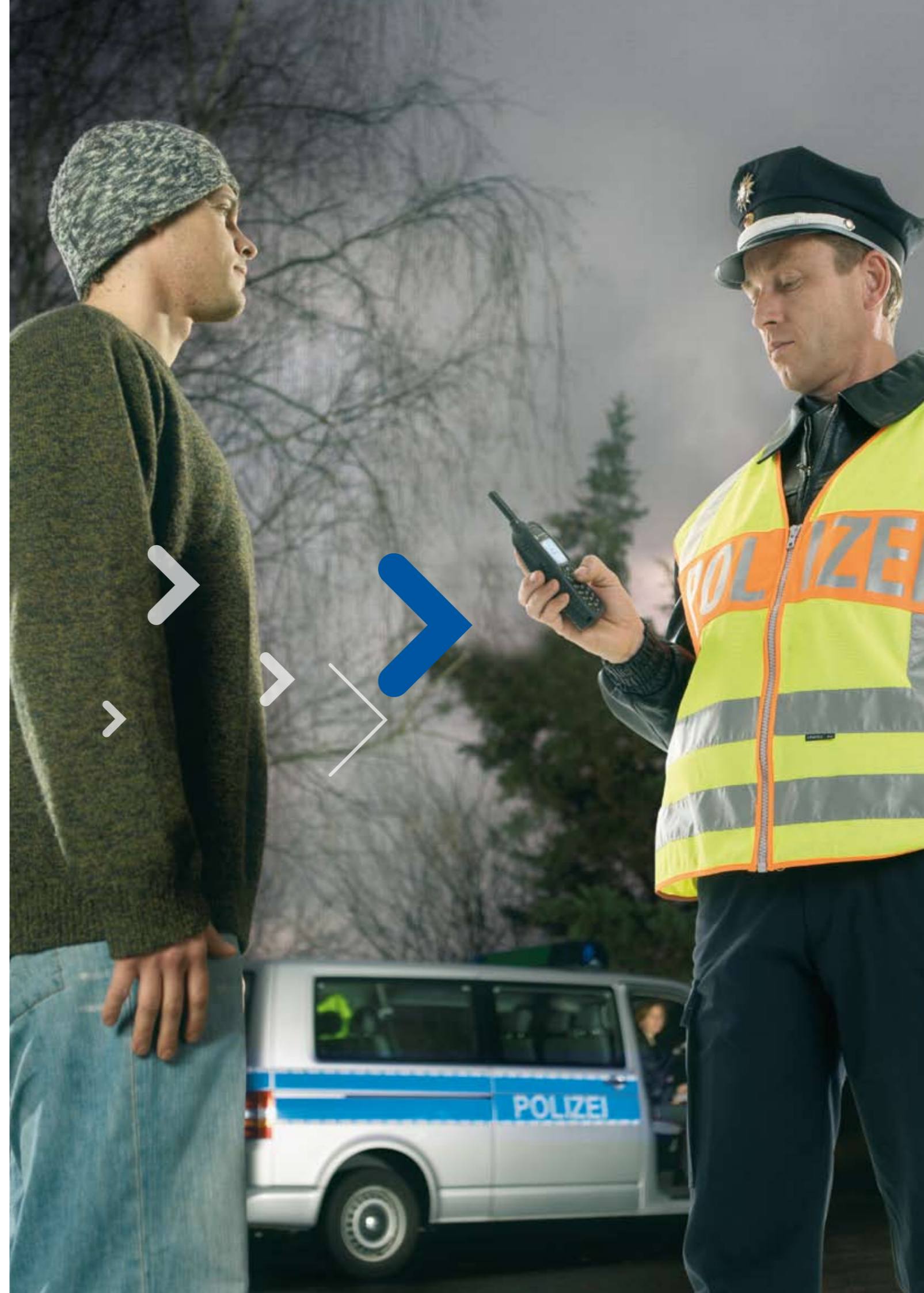
Motorola's Mobility Suite provides a comprehensive and scalable enterprise software suite that allows you to effectively plan, converge and control your Motorola wireless devices and wireless local area networks (WLAN's). It provides solutions for Motorola devices and WLAN's that :

- Reduce the complexity, cost and time to design, deploy and manage devices / WLAN
- Secure data and detect attempted intrusions
- Simplify access to the internet and legacy host applications
- Provides cost-effective, modular software license pricing model which allows enterprises to scale purchases
- Increase productivity of high-value IT staff who can focus on more strategic tasks, while Mobility Suite tools manage timeconsuming daily tasks

Over time, the Motorola Mobility Suite will be expanded to provide even richer capabilities for device management, network management, enabling device access and wireless security to match the evolving needs of our partners and enterprises. Future unified communications solutions will converge voice, data and messaging for both voice and data-centric mobile users.

## Motorola Mobility Suite includes:

- AppCenter - an application that will prevent the user from running "unauthorized" programs
- Pocket Browser- enables developers and integrators to provide advanced Web-based solutions for select Motorola Windows Mobile and Windows CE mobile computers
- Mobile Security Platform – simplify security enforcement and implement the same security policies on mobile devices that you have employed on desktops and laptops. Implementing control from a central console provides users with multiple security options, including authentication / authorisation, remote device-wipe, intrusion detection, network security and integrity management.
  - Block unauthorised access in wireless LAN and WAN environments
  - Disable lost and stolen devices
- Authentication – prevent unauthorised usage
- Intrusion detection – shield the enterprise from compromised handhelds
- Protects Bluetooth™ wireless technology, as well as 802.11, CDMA (code-division multiple access) and GPRS (general packet radio service) wireless technologies
- Enables end-to-end 256-bit AES (advanced encryption standard)
- Provides centrally-controlled policy and system access
- Monitors core system assets and alerts user of device-integrity violations
- Offers real-time event logging
- Interoperates with complementary security technologies
- Mobility Services Platform (MSP) – provides an unprecedented single point of control for mobile devices, mobile applications and wireless network infrastructure. End-to-end visibility delivers the power to quickly and easily deploy, monitor, track and transition all devices, as well as the information required to rapidly resolve end user device, application and network issues. Network and employee downtime is minimized — and workforce productivity is maximized. MSP delivers robust management capabilities for enterprise mobility solutions, driving the operational expenditures associated with day-to-day management down, reducing the total cost of ownership for wireless solutions, and providing a nearly instantaneous return on investment.
  - Designed to reduce your IT and operational budget by allowing IT staff to consistently provision, configure and distribute software; track assets and devices; and ensure connectivity and performance management.
  - Manages all mobile devices and their applications
  - Provides automatic backup, restore and synchronisation
  - Offers remote-control support and help
  - Allows for remote management and device diagnostics
  - Enables software distribution, applications and device provisioning
  - Ensures seamless software updates, performance management and repair
  - Facilitates inventory and asset management





# MOTOLOCATOR

## Track the location of people and assets by monitoring multiple devices, across multiple bearers

Motorola's MotoLocator is a server-based solution that receives and stores GPS location data from vehicle-mounted or personal wireless devices. This data may be viewed via an Applications Programming Interface (API) based on industry standard Web Services. Location data can be accessed as it is received, or stored and accessed retrospectively to determine the locations of devices at a particular time and date. Using MotoLocator, you can add location services to your existing applications or develop a range of new services:

- Automatic Vehicle Location (AVL)
- Geographic Information System (GIS)
- 'Push' information services

## An end-to-end solution

MotoLocator receives GPS data from devices across the TETRA wide-area network and this information can be sent via a 'push' software interface into mapping applications such as GIS, Google Earth, Fleet Management and Command & Control systems.

Access to 'pushed' information via the MotoLocator server is normally restricted during system set-up to registered service users (i.e. Fleet Management). However, system flexibility is key, and if you wish to link in more applications to MotoLocator, it's a simple task to enable this. You can also extend your system to add more networks and devices. MotoLocator additionally provides a simple mechanism to allow applications to send control messages to devices, effectively allowing for over the air reprogramming of the GPS refresh rates.

MotoLocator features a Network Adapter layer that allows users to define the bearer / multiple bearers, as well as a Protocol Translation layer to ensure connectivity across a wide range of manufacturers' devices.

- Operates over any radio infrastructure that provides IP networking: GSM / GPRS, Mesh, EDGE / UMTS, Motorola Dimetra

- Built-in support for location reporting of TETRA devices – including Motorola, Clearstone, Sepura and EADS
- For subscribers without GPS, MotoLocator can either interface with TETRA infrastructure to report the last known cell location of a subscriber or support black box GPS receivers operating over TETRA

## Combining TETRA's capabilities

Motorola's field mobility solutions provide the platform on which a variety of data applications can be delivered to TETRA terminals and PDAs. We have already helped a number of public safety organisations to deploy services such as:

- Mobile access to national databases (Police, Health etc.)
- Field reporting
- Real-time vehicle and address enquiries
- 'Push' information services – i.e. broadcasting of local weather conditions and building blueprints to fire fighters
- Transmission of patient condition / vitals etc., by ambulance crews

## Enhancing Emergency Response in Zagreb

The Emergency Medical Center Zagreb (EMCZ), Croatia, is efficiently coordinating response services through TETRA. It applies the TETRA network built by Motorola (covering 3,000 square kilometers in the greater Zagreb, Split, and Rijeka areas) to provide voice and data communications to first-response units. These services are complemented by Geographic Information Systems (GIS) fitted to the fleet of 70 ambulances that enable vehicles to be tracked and consequently more effectively deployed. On receiving a call, EMCZ's doctors determine the nature of the incident and enter their assessments into an application that's accessed by the dispatch team. Analyzing this feedback and crossreferencing it with the position of paramedics, dispatchers can make informed and rapid decisions about which response unit can reach the emergency first. The system accelerates response times and ensures the efficient application of resources for an organization that manages 150,000 emergency calls a year.

# TETRA ACCESSORIES ENHANCING PERFORMANCE

## Meeting your individual communications needs

So that you can tailor your TETRA Radio equipment to perform seamlessly and without effort in various deployment scenarios, Motorola has developed an extensive portfolio of accessories that ensure the man / machine interface is compatible with application criteria and optimises user efficiency.

## Accessories you can depend on

Genuine Motorola accessories are designed to be rugged, reliable and enhance the functionality and value of your TETRA device. Engineered to the same exacting standards as our radios, they are ergonomically designed to maximise safety, performance and operational efficiency.

Motorola Accessories include:

## Energy & charging solutions

Critical communications solutions require reliable and efficient power sources and Motorola delivers this with a range of batteries and charging solutions. Our range includes desktop, multiway and in-vehicle charging solutions, coupled with the latest in rechargeable cell technology.

## Carrying solutions

Motorola TETRA radios offer users many new features over traditional voice two-way radio – including text messaging, sophisticated users interfaces and access to data through features such as WAP browsers. These new capabilities require carrying solutions that allow easy access to these services, such as our innovative chest-worn carry system.

## Remote speaker microphone (RSM)

This device allows users to listen and speak clearly without removing their portable radio from the carrying case – even in windy environments. The RSM fits comfortably in the user's palm and, for enhanced, hands-free convenience, may be attached to clothing by a clip located on the back of the device.

## Earpieces

A flexible and discreet audio accessory such as a combined earpiece and microphone / Push to Talk (PTT) function removes the need to carry the radio in your hand and ensures complete privacy and confidentiality during communication. It also enhances the ability to react to emergencies, such as overpowering an intruder or breaking-up a fight. The earpiece transmits sound directly into the ear, ensuring clear reception of messages, even at a noisy location.

## Headsets

Lightweight headsets enable hands-free radio operation. A PTT switch provides the user with either continuous or sequential communication by simply pressing the PTT button.

## Mobile accessories

With Motorola microphones and remote PTT functions, you can always keep in touch with the team. 'Hot Mic' functionality allows you to operate hands-free, while an 'Emergency' feature enables distress calls to be sent at the press of a footswitch or standard PTT button. Devices are also supplied with double-sided adhesive tape, which allows convenient and flexible mounting on steering wheels or gearshifts.

Mobile microphones (with or without keypad) can provide clear messages while maintaining discretion. They also help eliminate background noise for the delivery of clear communications. In addition, a vehicle power adaptor for TETRA is available to ensure your portable radios maintain power on the move, while a vehicle adaptor can turn the radio into a mobile.

## Data Connectivity PDA MTC100

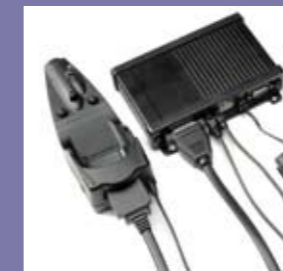
### Data Connectivity & Charging Solutions

Critical communications solutions require reliable and efficient power sources and Motorola delivers this with a range of charging solutions. Choose from simple wall chargers or complete desktop solutions allowing you to charge your battery while connected to your PC for data synchronisation.

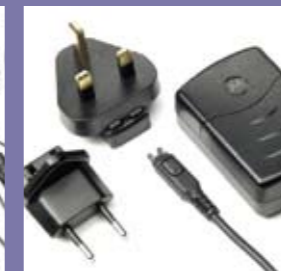
We also offer a range of cables for data connectivity including configuration of the TETRA radio modem.

### Carrying solutions & Accessories

The MTC100 TETRA PDA gives users the potential to access critical operational data and submit information from the field – all using the power of TETRA data services. This robust platform is complemented by carrying solutions and devices to ensure your PDA is protected and accessible when you need it.



In-Vehicle solutions



Charging solutions



Carrying solutions



Mobile accessories



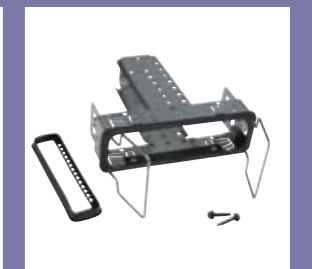
Audio solutions



Antennas & cables



Data connectivity solutions



Installation solutions



# MOTOROLA SERVICES AND WARRANTIES

## Our ongoing commitment

Motorola Services ensure that you achieve maximum return on investment and protect your long-term investment in TETRA, from installation and repair of TETRA radios, to full managed service programmes, ongoing technical support and tailored service packages.

- Technical expertise
- Guaranteed speed of service
- Quality and process security

## Warranties

We stand behind the product quality and specification conformity of Motorola products. As standard, we provide a full warranty for each Motorola product for 12 months from the date of delivery. Extended warranties are also available for multi-year agreements. All we ask is that you inform us of any lack of conformity to the applicable specifications or, if you detect a defect in material or workmanship, that you inform us within a period of two months from the date on which the problem became evident. The product should be returned immediately to a Motorola-authorised repair or service centre.

## Extended support options

We offer extended support options tailored to your organisation's purchasing and funding policies, which can be spread between multiple agencies or divisions. We will work with you to create a one-stop solution that combines quality, performance and resilience, plus competitive pricing to guarantee your Return on Investment.

## Maintenance & repair

As digital radio communications evolve, so does the complexity of the terminals, which is why specialist skills and equipment are vital in maintaining consistently high quality repairs and fast turnaround. Motorola's state-of-the-art European Radio Support Centre (ERSC) based in Germany offers a full spectrum of repair and maintenance services for TETRA hand-portable and mobile terminals.

Located in Berlin, the ERSC has extensive maintenance and test facilities for all Motorola terminals. So when the terminal is returned, you can be sure it is of the same high standard as that from the manufacturing plant. As a centralised facility, we are able to monitor quality and trend issues and address them rapidly. As part of our contracted maintenance solution, we can also provide tailored cycle times and fixed price repairs to meet the operational and business needs of mission-critical users.

Our expert repairs and installations meet the highest industry standards for quality.

## Advance replacement philosophy

Our advance replacement philosophy takes the form of a customised service that utilises a predetermined number of spare terminals purchased in advance and supplied to swap with a faulty unit whilst it is being repaired. We can even offer an immediate 24-hour replacement if you wish Motorola to manage spare terminals for mission critical operations.

## Other Service options include:

- Technical help desk – available during business hours, this single point of contact is manned by TETRA Terminal experts who leverage knowledge gained by supporting a wide breadth of customers throughout EMEA
- Installation service – for terminal installation in all types of vehicles used by the emergency services and for mission-critical applications, we offer a range of service options that extend from mobiles and antennas, to full turnkey solutions
- Provisioning – available on new terminals, the service can include provisioning of customer-specific code plug information as well as secure key management



# MANAGED SERVICES

## Did you know...

- Motorola is one of the largest providers of managed services in Europe
- We have been delivering support services for over 75 years globally
- We can provide an end-to-end view of the public safety market – from terminals through to nationwide networks

A managed service ensures the end user maximum returns on their investment and that communications are optimised for availability – so field personnel can be assured of terminal operation whenever it is in use. Our customised managed services may be designed to encompass all TETRA radios and equipment (including third-party TETRA mobiles and portables). This service can encompass accessories, such as batteries (through a battery management programme) and chargers etc., to provide complete peace of mind and assist you in maximising operational efficiencies. Service agreements include:

- Asset management
- Terminal deployment
- Software management
- Repair management and logistics
- Service level agreement

Paramount to any managed service contract or maintenance agreement is the security and safety of your organisation and that the radio network is not compromised. Motorola's ERSC complies with process security and is certified to comply with the following audited standards: ISO, ATEX / FM and CENELEC. This peace of mind can only come from an experienced and trusted supplier.

## Tailored service packages

With a vast experience in serving major public safety organisations throughout EMEA, our leading position as a supplier of TETRA infrastructure, terminals and services has given us unique, end-to-end visibility of mission-critical users and their needs. We can provide your organisation with comprehensive and cost effective service packages that meet your objectives:

- Optimal communications and equipment availability
- Minimal administration through single point of contact
- Flexible solutions to meet operational needs
- Identified, controlled and forecasted service costs
- Easier budgeting and reduced management via single supplier
- Peace of mind and low risk support options

## UK's Airwave chooses Motorola managed services

Motorola provides managed services to a large number of UK emergency services customers. We now support the Fire and Rescue Services (FRS) in England, Scotland and Wales, under a seven-year framework managed service contract. The contract covers the supply of Motorola TETRA radios (MTM800 and MTH800) with both voice and data capabilities for fire appliances and officers' cars; and mobile data terminals (MW800). Seven years extended support is also being provided by Motorola for radio and mobile data terminals, together with an option to extend this term for up to five further years.

This development complements the UK's FRS decision to join Airwave, the UK's established TETRA communications network dedicated to emergency services and public safety. It is one of the largest nationwide TETRA networks in the world and is used by police forces, ambulance services and now the FRS, for their primary communications needs.

So far, more than 100,000 Motorola TETRA terminals have been supplied for the Airwave project. Airwave's nationwide TETRA network went live in 2004 and was supplied by Motorola.



<b>AES</b>	Advanced Encryption Standard
<b>Air Interface encryption</b>	Encryption on the air interface, the link between base station and terminal
<b>Air Interface protocol</b>	The protocol that defines the way in which signals are transmitted between radio terminals and the system infrastructure
<b>AKD</b>	Authentication Key Distribution
<b>AL</b>	Ambience Listening: a supplementary service in TETRA to allow an authorised user, e.g. a dispatcher, to remotely switch the Mobile Station (MS) into transmit mode and monitor its environment without the intervention of the MS user
<b>ALT</b>	Accelerated Life Testing: the process of determining the reliability of a product in a short period of time by accelerating the use environment. Every Motorola TETRA radio is designed to pass an Accelerated Life Test simulating over 5 years use
<b>APCO 25</b>	The Association of Public-Safety Communications Officials International (APCO) Project 25: the North American standard for digital professional mobile radio
<b>API</b>	Application Programming Interface: published software interface specification for designing applications on top of some lower layer software
<b>ASSI</b>	Assigned Short Subscriber Identity
<b>ATEX</b>	An EC Directive named after the French 'ATmosphere EXplosible' stipulating the legal requirements for controlling explosive atmospheres and the suitability of equipment and protective systems used in them (see also FM)
<b>ATS</b>	Alphanumeric Text Service: A Motorola application used to send short data messages from a PC operating under Windows NT® to display on a Mobile Station (MS)
<b>AuC</b>	Authentication Centre: A Motorola software application that allows system managers to manage encryption keys for Dimetra
<b>Authentication</b>	A function that allows the radio system infrastructure to validate that a Mobile Station (MS) is genuine before granting access to system services
<b>AVL</b>	Automatic Vehicle Location: service or application showing location of a vehicle, either in terms of its geographical coordinates, or by its location on a map
<b>BER</b>	Bit Error Rate: Used as the performance metric for the digitised form of voice
<b>CCTV</b>	Closed Circuit Television
<b>CDMA</b>	Code-Division Multiple Access: multiple access is possible through coding each channel by a unique pre-assigned code; identifying of each user is through decoding the coded channel
<b>CENELEC</b>	Comité Européen de Normalisation Électrotechnique (European Committee for Electrotechnical Standardisation): basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300MHz – 3GHz)
<b>CPS</b>	Customer Programming Software: formerly known as RSS, CPS is the software application used for programming Mobile Stations

<b>DC</b>	Dispatch Console
<b>DDI</b>	Direct Dial In
<b>DGNA</b>	Dynamic Group Number Assignment: supplementary service defined in TETRA for dynamic management (creation and dissolution) of user talk-groups
<b>DGPS</b>	Differential Global Positioning System: an enhancement to GPS that uses a network of fixed ground-based reference stations to broadcast the difference between the positions indicated by the satellite systems and the known fixed positions
<b>Dimetra</b>	Digital Motorola Enhanced Trunked Network Radio: the Dimetra family is a sophisticated range of IP-based digital radio equipment that delivers the full benefits of the TETRA standard
<b>DIN-A</b>	A connector standardised by Deutsches Institut für Normung (DIN), the German national standards organisation
<b>Dispatcher</b>	A person logged-on to the RCM terminal who monitors and transmits commands to radio traffic
<b>DMO</b>	Direct Mode Operation: the facility for TETRA terminals to communicate directly with each other without using TETRA infrastructure
<b>DMO Gateway</b>	The ability for a terminal working in DMO to communicate with dispatchers and terminals operating in TMO via a DMO gateway
<b>DMR</b>	Digital Mobile Radio: an ETSI standard for digital PMR
<b>DSP</b>	Digital Signalling Processor
<b>EDGE</b>	Enhanced Data for GSM Evolution
<b>EGNOS</b>	European Geostationary Navigation Overlay Service: a satellite-based augmentation system (SBAS) under development to supplement GPS systems by reporting on the reliability and accuracy of the signals
<b>EMEA</b>	Europe, Middle-East and Africa
<b>ERSC</b>	Error Resilient Scalable Compression
<b>ETS</b>	European Telecommunication Standard
<b>ETSI</b>	European Telecommunications Standards Institute
<b>FM</b>	Factory Mutual: Standard substituted by ATEX
<b>FRS</b>	Fire and Rescue Services
<b>GIS</b>	Geographic Information System: A computer application used to store, view and analyse geographical information such as maps
<b>GPIOs</b>	General Purpose Input Outputs
<b>GPRS</b>	General Packet Radio Service
<b>GPS</b>	Global Positioning System: Uses satellites to provide a continuous time positioning system
<b>GSM</b>	Global System for Mobile Communications (cellular phone technology)
<b>GUI</b>	Graphical User Interface

<b>IMP</b>	A standard denoting a splash-proof product?
<b>IP</b>	Internet Protocol: A protocol used for carrying packets of data primarily in Ethernet-based systems
<b>IP54</b>	Environmental protection specification – rating for protection against dust and water
<b>ISO</b>	International Organisation for Standardisation
<b>ISSI</b>	Individual Short Subscriber Identity
<b>ITAP</b>	Predictive Text Entry
<b>LED</b>	Light Emitting Diode
<b>LIP</b>	Location Information Protocol
<b>LRRP</b>	Location Request / Response Protocol
<b>Mesh networking</b>	A resilient, wide area network (WAN) topology in which there are multiple paths connecting multiple sites so that every node has a connection to every other node in the network
<b>MIL-STD</b>	A series of military standards relating to telecommunications
<b>MPT</b>	Mobile Portable Terminal
<b>MS</b>	Mobile Station: A two-way voice and data communications TETRA device – i.e. portable and mobile radios
<b>MTH</b>	To be completed by Motorola
<b>MTP</b>	To be completed by Motorola
<b>NATO</b>	North Atlantic Treaty Organisation
<b>OS</b>	Operating system
<b>PABX</b>	Private Automatic Branch Exchange
<b>PAN</b>	Personal Area Network
<b>PDA</b>	Personal Digital Assistant
<b>PDS</b>	Packet Data Service: a TETRA bearer service that allows IP hosts to communicate using the Internet Protocol (IP)
<b>PEI</b>	Peripheral Equipment Interface
<b>PIN</b>	Personal Identification Number
<b>PMR</b>	Professional / Private Mobile Radio
<b>PNC</b>	Police National Computer
<b>PSTN</b>	Public Switched Telephone Network
<b>PTT</b>	Push-To-Talk
<b>RCM</b>	Radio Control Manager
<b>RF</b>	Radio Frequency: a general term for the range of frequencies used in radio communication systems. Radio communication is the electromagnetic energy wavelengths above the audio range and below visible sight (typically between 30KHz and 300GHz)
<b>RFID</b>	Radio Frequency Identification
<b>Roaming</b>	The movement of a radio user from one site to another. The radio registers and affiliates on each site as the user moves from one coverage area to another
<b>ROM</b>	Read Only Memory

<b>RSM</b>	Remote Speaker Microphone
<b>RTPI</b>	Motorola to confirm
<b>SBAS</b>	Satellite Based Augmentation System: a system supporting wide-area or regional augmentation through the use of a satellite-broadcast message (see also WAAS and EGNOS)
<b>Schengen</b>	The 1985 Schengen Agreement among members of the European Union allows for the abolition of systematic border controls between participating countries. It also includes provisions on common policy on the temporary entry of persons (including the Schengen Visa), the harmonisation of external border controls and cross-border police co-operation
<b>SDS</b>	Short Data Service: A flexible bearer service that transfers information from one interface to another
<b>SIM</b>	Subscriber Identity Module (as in the SIM card used with cellular phones)
<b>SOPs</b>	Standard Operating Procedures
<b>SSI</b>	Short Subscriber Identity: part of TETRA Subscriber Identity
<b>TEA1</b>	TETRA Encryption Algorithms (General Purpose)
<b>TEA2</b>	TETRA Encryption Algorithms (Western Europe PSR)
<b>TEA3</b>	TETRA Encryption Algorithms (in addition / supplementary to TEA1)
<b>TETRA</b>	Terrestrial Trunked Radio: an open standard defined by ETSI to meet the needs of the most demanding PMR users in both business and government markets. TETRA networks deliver integrated communications including two-way radio, cellular, paging and data functionality – enabling the user to instantly connect with one person or hundreds with the touch of a button
<b>TMO</b>	Trunked Mode Operation: where TETRA terminals communicate with each other via the TETRA infrastructure
<b>UHF</b>	Ultra High Frequency (300-3000MHz)
<b>UMTS</b>	Universal Mobile Telecommunications System
<b>USB</b>	Universal Serial Bus
<b>VHF</b>	Very High Frequency (30-300 MHz)
<b>VIDG</b>	Motorola to confirm
<b>VOX</b>	Voice-operated transmission
<b>VPN</b>	Virtual Private Network
<b>WAAS</b>	Wide Area Augmentation System: an extremely accurate navigation system developed to provide additional accuracy, integrity and availability to GPS systems
<b>WAN</b>	Wide Area Network
<b>WAP</b>	Wireless Application Protocol: an open industry standard enabling access to the Internet from a mobile device. Motorola was the first to introduce WAP browser functionality into TETRA terminals – providing users with a much richer experience when making data base enquiries and completing electronic forms for example
<b>WLAN</b>	Wireless Local Area Network



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TETRATERMINALS/BRO-ENG 08/07

For more information please contact your local Motorola Authorised Dealer or Distributor

[www.motorola.com/tetra](http://www.motorola.com/tetra)

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