



# MTM5000 SERIES TETRA MOBILE RADIOS

## SAFER SMARTER FASTER

ENABLING CURRENT AND FUTURE CRITICAL COMMUNICATIONS





# MTM5000 SERIES TETRA MOBILE RADIOS

## SOFTWARE FEATURES TO CUSTOMISE THE MTM5000

The Motorola mobile radio family has been deployed by many industrial users. Special applications have been developed to meet the particular needs of these customers which are available for all users. These are just some examples.

**Messaging Applications.** Special messaging applications are available to increase the speed of communicating with teams. For example, Disaster Alert which is an emergency pre-emptive priority call made by a user alerting a single pre-defined group to the presence of a disaster such as an accident.

**Resource Allocation.** Call out is an application to determine quickly which people are available to answer a job and to then allocate them to the task.

**Optimising the network.** GPS service inevitably uses some data capacity, Language Interference Pack (LIP) throttling limits the impact of GPS traffic when the network is congested. Secondary Control Channel (SCCH) will increase capacity for data traffic in a TETRA network by opening a second channel. This will help to speed-up the flow of GPS and Sequence Detection System (SDS) traffic. Network access can be adapted for special needs, either by preventing access for unauthorised users or providing preferential access for special users.

**Security.** End-to-End encryption can be enabled on either voice or data services. Stun or Kill will temporarily or permanently disable the radio if stolen from or in the vehicle.

**SDS Remote Control.** Enables control of one or more terminals from a workstation and a controlling TETRA Radio Over the Air using the Peripheral Equipment Interface (PEI).

## READY FOR THE FUTURE, THE EVOLUTION OF TETRA AND CRITICAL COMMUNICATIONS

TETRA has continued to evolve since its introduction in 1992 and users have been offered a continuous stream of improvements and enhancements which have increased the functionality, reliability, and value of the TETRA network. During this time the data speeds of TETRA have increased with the introduction of Multi-Slot Packet Data. Now with the introduction of TETRA Enhanced Data Service (TEDS) a further significant increase is enabled. This has come at a time when many users are experiencing the benefits of mobile data using public carriers and PDAs and Smartphones. TEDS will support the migration of many applications across to TETRA networks with the attendant benefits of security and resilience.

## DATA IS GROWING IN IMPORTANCE

When it was introduced the dominant use of TETRA was for voice communications, but the use of TETRA as a data bearer has steadily increased. Beginning with the use of status messaging and text, data over TETRA has evolved into the use of picture messaging, WAP, and database access. TETRA is also used for machine-to-machine communication in industries such as power distribution.

TEDS will enrich the data experience for all types of users. For example, database access will be faster and additional data can be accessed, including pictures. Uploads can be enlarged to include fingerprints, pictures and small video clips.

## SAFER

- HEAR AND BE HEARD IN DIFFICULT ENVIRONMENTS WITH ENHANCED AUDIO
- STAY IN TOUCH WITH GREAT COVERAGE, IMPROVED RX SENSITIVITY AND HIGH POWER OPTIONS

## SMARTER

- VERSATILE INSTALLATION CONNECTS END USERS IN AND AROUND THE VEHICLE, UP TO 40M FROM THE RADIO WITH THE MTM5500
- CONTROL THE RADIO AND MAKE VOICE AND DATA CALLS INSIDE OR OUTSIDE THE VEHICLE WITH THE TELEPHONE STYLE CONTROL HEAD

## FASTER

- BE READY FOR TEDS FOR FASTER DATA COMMUNICATIONS TO IMPROVE EFFICIENCY AND SAFETY
- LINK TO DATA DEVICES FOR FLEXIBILITY AND POWERFUL APPLICATIONS

## FOR AREAS WHERE COVERAGE IS RESTRICTED

### SINGLE CONTROL HEAD INSTALLATION



The **MTM5200** is the base model sharing the enhanced audio and receiver sensitivity of the current MTM5400, as well as being TEDS-ready.



The **MTM5400** includes high power modes and the Gateway Repeater functionality features required by end users in areas of limited coverage.

### MULTIPLE CONTROL HEAD INSTALLATION



The **MTM5500** is a highly flexible and capable system radio which permits the installation of multiple control heads and/or the new Telephone Style Control Head up to 40m from the radio.



Optional Second Control Head



Combining leading robustness with a sleek ergonomic design, the discreet **Telephone - Style Control Head (TSCH)** provides flexibility and ease of operation, making it well suited for in-vehicle applications. Fully compatible with MTM5500 radios, the design attributes of the TSCH ensure uncompromising performance for business-critical operations.

## MTM5000 SERIES BENEFITS

### EXTENDED OPERATIONAL RANGE

- Up to 10W transmit power (MTM5400/5500), with leading receiver sensitivity delivers comprehensive network coverage
- Integrated DMO Gateway and DMO Repeater capabilities (MTM5400/5500), ensure secure and resilient communications where needed most

### SUPERIOR AUDIO PERFORMANCE

- Next generation audio architecture delivering the loudest and clearest audio performance of any Motorola TETRA mobile available on the market\*

### HIGH SPEED DATA CONNECTIVITY

- TEDS Ready hardware - with a simple software license upgrade, enables 20x faster data connectivity for accessing back-office systems and databases
- Integrated USB 2.0 PEI, enabling rapid radio programming and standardised interfacing to data terminals and accessories. For additional flexibility, USB host and slave modes are also supported

### LOW USER MIGRATION COSTS

- Familiar cellular style user interface and VGA colour display for enhanced usability and reduced staff training costs
- Same user interface as market proven MTM800 Enhanced mobile radios
- Re-use of MTM800 Enhanced accessories using GCAI connector

### ENHANCED END-TO-END ENCRYPTION OPTIONS

- Integrated hardware for SIM based end-to-end encryption
- Universal Crypto Module option\*\*

### ADVANCED TERMINAL MANAGEMENT

- USB 2.0 interface for fast radio programming via Motorola's integrated Terminal Management solution

### FLEXIBLE INSTALLATION OPTIONS

- Fully DIN-A compatible and available in Dash, Desk, Remote Head and Motorcycle mount formats
- Supports multiple control heads - an ideal solution for installations in trains or vehicles where more than one control point might be required

### RUGGED DESIGN WITH EXCEPTIONAL RELIABILITY

- Includes IP67 control head option (MTM5200/5400), for exposed and challenging environments
- Front and Rear rugged GCAI connector for reliable connection of audio and data peripheral equipment
- Mobile radio and accessories are performance matched for enhanced reliability
- MTM5500 ethernet style connections enable up to 40m separation to either the new eCH Control Head or the Telephone Style Control Head

\*Assuming the appropriate audio accessory is used \*\*Model specific

# MTM5000 SERIES SOLUTIONS

The MTM5000 Series brings a wide range of installation options to the operator, with multiple control and expansion head options together with the option of multiple control head installation options.

## PRODUCT SELECTOR

| MTM5200                     | MTM5400                           | MTM5500         |
|-----------------------------|-----------------------------------|-----------------|
| 1 CONTROL HEAD              |                                   | 2 CONTROL HEADS |
| STANDARD POWER              | HIGH POWER FOR LOW COVERAGE AREAS |                 |
| NOT INCLUDED                | GATEWAY REPEATER INCLUDED         |                 |
| TEDS AND ESSENTIAL FEATURES |                                   |                 |
| ESSENTIAL                   | HIGH CAPABILITY                   | PREMIUM         |

## MTM5200 AND MTM5400

### EXPANSION HEAD OPTIONS



**EXPANSION HEAD**  
SINGLE STD CONNECTION



**EXPANSION HEAD ENHANCED**  
STD AND AUXILIARY 25 PIN AND RS232

### CONTROL HEAD OPTIONS



**STANDARD CONTROL HEAD**



**REMOTE CONTROL HEAD**



**IP67 CONTROL HEAD**

### INSTALLATION OPTIONS



**DASH MOUNT -**  
CAR, TRUCK



**REMOTE HEAD MOUNT -**  
CAR, INDUSTRIAL VEHICLE

UP TO 10m



**DESK MOUNT -**  
CONTROL CENTRE



**IP67 MOUNT -**  
OUTDOOR USE

UP TO 10m



USER SUPPLIED TERMINAL

DATA ONLY INSTALLATION

# MTM5000 SERIES ACCESSORIES

## MTM5500

### EXPANSION HEAD OPTIONS



**FLEXIBLE EXPANSION HEAD**  
(ETHERNET READY)  
2X STD ETHERNET TYPE, ETHERNET SIM READER AND RS232

### CONTROL HEAD OPTIONS



**FLEXIBLE CONTROL HEAD (eCH)**  
SUPPORTS EXTERNAL SPEAKERS AND PTT



**TSCH (TELEPHONE STYLE CONTROL HEAD)**  
SUPPORTS EXTERNAL SPEAKERS AND PTT

### INSTALLATION OPTIONS

**MULTIPLE CONTROL HEADS -**  
CONTROL ROOM, INDUSTRIAL VEHICLE, TRAIN



**USER SUPPLIED TERMINAL**



**AUDIO - VISOR MICROPHONE**



**AUDIO - MOBILE MICROPHONE**



**AUDIO - MOBILE MICROPHONE**



**AUDIO - MOBILE MICROPHONE**



**AUDIO - MOBILE MICROPHONE**



**AUDIO - MOBILE MICROPHONE**



**AUDIO - LOUDSPEAKER**



**MOUNT - DASH OR FLOOR BRACKET**



**ANTENNAS**



**CONTROL STATION**



**ALARMS, SWITCHES & CABLES**

## MODELS - COMPLIANT WITH DIN 75490 (ISO 7736)

|                              | MTM5200  | MTM5400 | MTM5500   |
|------------------------------|--|---------|---|
| Dash                         | Compact radio for fast vehicle installation  |         | N.A.  |
| Desk                         | Compact radio, for use in the office. Optional range of accessories such as desk tray with integrated loudspeaker  |         | N.A.  |
| Multiple Remote Control Head | N.A.   |         | Radio with multiple remote mount control head capability.                 |
|                              | N.A.   |         | Range of installation options enable use in cars, vans and other vehicles |
| Motorcycle                   | Environmentally enhanced radio meeting IP67 specification. Suitable for demanding environments such as motorcycle, fire appliance and marine installations |         | N.A.  |
| Expansion head "Databox"     | Radio without a control head, for data applications, or customised application development   |         |   |

## GENERAL

|   | Dimensions HxWxD (mm) | Weight Typical (g) | Dimensions HxWxD (mm) | Weight Typical (g) | Dimensions HxWxD (mm) | Weight Typical (g) |
|---|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|
| Dash and Desk models (transceiver + control head) | 60x188x198            | 1300               | 60x188x198            | 1300               | N.A.                  |                    |
| Transceiver only                                  | 45x170x169            | 1070               | 45x170x169            | 1070               | 45x170x169            | 1070               |
| Standard control head                             | 60x188x31             | 230                | 60x188x31             | 230                | N.A.                  |                    |
| Remote control head                               | 60x188x39             | 300                | 60x188x39             | 300                | 60x188x39             | 300                |
| Motorcycle control head                           | 60x188x39             | 320                | 60x188x39             | 320                | N.A.                  |                    |

## USER INTERFACE & DISPLAY

|                           |                               |   |                      |
|---------------------------|-------------------------------|---|----------------------|
| Display                   | Diagonal dimension            | 2.8"  |                      |
|                           | Type                          | VGA - 640x480 pixels Transflective TFT, 65,000 colours  |                      |
|                           | Backlight                     | Variable backlight, User configurable   |                      |
|                           | Font sizes                    | Standard & Zoom mode (90 pixels, 4.5mm high) characters   |                      |
| TSCH                      |                               | N.A.  | Available as option* |
| Buttons & Keypad          | Numeric                       | Integral backlit numeric keypad of 12 keys, with keypad lock option   |                      |
|                           | International keypad versions | Roman, Arabic, Cyrillic, Korean, Chinese, Taiwanese characters  |                      |
|                           | Programmable function keys    | 3 programmable function keys (plus 10 programmable numeric keys)  |                      |
|                           | Navigation                    | 4-way navigation key, menu and soft keys  |                      |
|                           | Emergency                     | Emergency button with backlight   |                      |
| Rotary                    | Dual Function                 | Talkgroup and volume change with lock option  |                      |
|                           | LED                           | Tri-colour LED  |                      |
| Indication                | Tones                         | Configurable notification tones   |                      |
|                           | Standard Options              | Arabic, Chinese Simplified, Chinese Traditional, Croatian, Danish, Dutch, English, French, German, Greek, Hebrew, Hungarian, Italian, Korean, Lithuanian, Macedonian, Mongolian, Norwegian, Portuguese, Russian, Spanish, Swedish |                      |
| User Interface Languages  | User defined                  | User programmable, using ISO 8859-1 character   |                      |
|                           | Menu                          | Tailored to user needs<br>Menu Shortcuts<br>Menu Configuration  |                      |
| Contacts Management       | Cellular Type                 | Up to 1000 contacts   |                      |
| Contact List              |                               | Up to 6 numbers per contact, Max 2000 numbers   |                      |
| Multiple Dialling Methods |                               | User selects how to dial  |                      |

## USER INTERFACE & DISPLAY

|                               | MTM5200  | MTM5400 | MTM5500 |
|-------------------------------|--|---------|---------|
| Fast/Flexible Call Response   | Private Call Response to a Group Call via One Touch Button |         |         |
| Multiple Ring Tones           | Configurable with CPS                                      |         |         |
| Message Manager               | Cellular Type  |         |         |
| Text message list             | 20   |         |         |
| Intelligent Keypad Text Input | All Control Heads  |         |         |
| Status list                   | 100  |         |         |
| Country/Network Code List     | 100  |         |         |
| Scan lists                    | 40 lists of 20 groups                                      |         |         |
| Discrete Mode                 | All Control Heads  |         |         |
| Screen Saver                  | gif image & text (any user's selection)                    |         |         |
| Universal Time Display        | All Control Heads  |         |         |
| Keypad Lock                   | All Control Heads  |         |         |
| Talkgroup Folders             | Dual layer folder structure (folder/subfolder)             |         |         |
|                               | 256 folders  |         |         |
| Favourite Folders             | Up to 3 (to store any favourite talkgroup)                 |         |         |

## ENVIRONMENTAL SPECIFICATIONS

|  |                                   |   |
|--|-----------------------------------|---|
| Operating Temperature (°C)                   |                                   | -30 to +60  |
| Storage Temperature (°C)                     |                                   | -40 to +85  |
| Not in use - Storage                         | ETSI 300 019-1-1 CLASS 1.3        | Non-Weather Protected Storage Locations                           |
| Not in use - Transportation                  | ETSI 300 019-1-2 CLASS 2.3        | Public Transportation   |
| Stationary use - Weather Protected Locations | ETSI 300 019-1-3 CLASS 3.2        | Partly Temperature Controlled Locations                           |
| Mobile use - Ground Vehicle Installation     | ETSI 300 019-1-5 CLASS 5.2        | Climatic Tests  |
| Mobile use - Ground Vehicle Installation     | ETSI 300 019-1-5 CLASS 5M3        | Mechanical Tests  |
| Rail Certification Environmental             | EN50155:2007 and IEC60571 ED. 3.0 | Environmental   |
| MIL STD                                      | 810 C/D/E/F Specifications        | All 11 categories met (or exceeded)                               |
| Dust and Water Ingress Protection            | IP54 (dust cat. 2)                | Dash/Desk/Remote models   |
|  | IP67                              | Motorcycle model (only control head is IP67; transceiver is IP54) |
|  |                                   | MTM5500 TSCH IP55   |

## ELECTRICAL SPECIFICATIONS

|                               |                                     |                   |                                 |  |
|-------------------------------|-------------------------------------|-------------------|---------------------------------|--|
| Voltage Range                 |                                     | 10.8 to 15.6 V DC |                                 |  |
| Current Consumption (A, typ.) | Idle / Rx / Tx @ 10W                | N.A.              | 0.5 / 1.0 / 1.2 ( TX 3.4A Peak) |  |
|                               | Idle / Rx / Tx @ 3W                 |                   | 0.5 / 1.0 / .9 (TX 2.2A Peak)   |  |
|                               | Tx - Multi Slot PD (4 slots) @ 5.6W | N.A. (3W only)    | 2.7                             |  |
|                               | Tx - TEDS @ 3W                      |                   | 2.3                             |  |
|                               | Using USB host                      |                   | Adds 0.5A                       |  |

## RF SPECIFICATIONS

|                                    |                                      | MTM5200                                     | MTM5400 | MTM5500                         |
|------------------------------------|--------------------------------------|---|---------|---------------------------------|
| Frequency Bands (MHz)**            |                                      | 350 - 390, 380 - 430, 410 - 470, 806 - 870  |         | 380 - 430, 410 - 470, 806 - 870 |
| Transmitter RF Power               | TETRA Release 1                      | N.A. (3W only)                              |         |                                 |
|                                    | TETRA Release 2 (TEDS)               | 10W, Class 2 Note: MSPD                     |         |                                 |
| RF Power Control                   | 6 Power Step Levels (steps of 5 dBm) | 3W, Class 3                                 |         |                                 |
| Receiver Class                     |                                      | Starting at 15 dBm; finishing at 40 dBm     |         |                                 |
| Receiver Static Sensitivity (dBm)  |                                      | A & B                                       |         |                                 |
| Receiver Dynamic Sensitivity (dBm) |                                      | -114 minimum, -116 typical (ETSI 300-392-2) |         |                                 |
| Receiver Dynamic Sensitivity (dBm) |                                      | -105 minimum, -107 typical (ETSI 300-392-2) |         |                                 |

## GPS SPECIFICATIONS

|                                    |   |
|------------------------------------|---|
| Simultaneous Satellites            | 12  |
| Mode of Operation                  | Autonomous or assisted (A-GPS)                            |
| GPS Antenna                        | Supports active antenna (5V, 25mA supply)                 |
| Autonomous Acquisition Sensitivity | -143 dBm / -173 dBW                                       |
| Tracking Sensitivity               | -159 dBm / -189 dBW                                       |
| Accuracy                           | <5m (50% probable) <10m (95% probable)                    |
| TTF (HOT Start - Autonomous)       | <1s   |
| TTF (WARM Start - Autonomous)      | <11s  |
| TTF (COLD Start - Autonomous)      | <36s  |
| Location Protocols                 | ETSI Location Information Protocol (LIP)<br>Motorola LRRP |

## VOICE SERVICES

|                               |  |  |
|-------------------------------|--|--|
| Talkgroups                    | 2048 (TMO) & 1024 (DMO)  |  |
| Phone book entries            | 1000 persons. Up to 6 numbers per entry (mobile, office etc). Max 2000 entries |  |
| Scan lists                    | 40 lists of 20 talkgroups  |  |
| Trunked Mode (TMO) Services   | Group call   | Late Entry, TMO/DMO Mapping  |
|                               | Private call   | Half / Full Duplex   |
|                               | Telephony (PABX, PSTN, MS-ISDN)  | Full Duplex  |
|                               | DGNA   | Up to 2047 groups  |
| Direct Mode (DMO) Services    | Scanning   | Attachment signalling, supports SWMI initiated attachment/detachment |
|                               |  | Group call   |
| Emergency (tailored by users) | Tactical   | Emergency Group Call to ATTACHED talkgroup                           |
|                               | Non-Tactical   | Emergency Group Call to DEDICATED talkgroup                          |
|                               | Individual   | Emergency Call to PREDEFINED party (half/full duplex)                |
|                               | Smart emergency  | TMO/DMO/DMO to TMO automatic switching options                       |
|                               | Hot Mic  | Configurable timers for automatic open mic (talk without PTT)        |
|                               | Location   | Location (GPS) sent with emergency                                   |
|                               | Target Address   | Sent to individual or group address (selected or dedicated)          |
|                               | Alarm (status message)   | Emergency Status (or other pre-defined status)                       |

## DATA SERVICES

|                                      |   |   |
|--------------------------------------|---|---|
| Status                               | Alias messages  | 400 Entries   |
|                                      | Options   | Can be sent via One-Touch or via menu   |
| Short Data Service (SDS)             | Inbox   | 200 Entries (short messages), 40 Entries (long messages of up to 1000 characters)   |
|                                      |   | Cellular style iTAP predictive text entry   |
|                                      | Target Address  | Sent to individual or group address (selected or dedicated)   |
| Packet Data (PD)                     | Voice Call Interaction                                    | SDS messages can be sent and received during a voice call   |
|                                      | Multi-slot PD   | Data transmission with up to 4 slots supporting up to 28.8 kbit/s gross   |
| TEDS (capable)                       | TETRA Enhanced Data Service (TEDS) (via software upgrade) | Supporting 25kHz and 50kHz channel bandwidths and enabling practical data rates of up to 80kbit/s   |
|                                      |   | QAM Channels: 25 kHz and 50 kHz (but not D8PSK channels)<br>QAM modulation/coding modes:<br>4-QAM R1/2, 16-QAM R1/2, 64-QAM R1/2, and 64-QAM R2/3                                 |
| WAP                                  | Integrated WAP browser (including WAP-PUSH)               | Integrated Openwave browser   |
|                                      |   | WAP 1.2.x and WAP 2.0 compatibility for UDP/IP Stack  |
| Peripheral Equipment Interface (PEI) | Interface Protocol  | AT Commands - Full Set ETSI Mandatory Compliant   |
|                                      |   | AT Multiplexer - 4 Virtual Physical Port (simultaneous PD, SDS, AT commands and Air Tracer SESSIONS)<br>TNP1; enables simultaneous PD and SDS sessions                            |
| Terminal Management                  |   | Programmable via Motorola Integrated Terminal Management (iTM) solution   |
|                                      | Over-The-Air Programming (OTAP) Mode* Capable             | Background Mode Programming (BMP) capable* - while radio is operational (providing TETRA services) it is being programmed/configured.<br>* Planned features with software upgrade |

## GATEWAY SERVICES

|                 | MTM5200 | MTM5400   | MTM5500 |
|-----------------|---------|---|---------|
| DMO/TMO Gateway | N.A.    | Group voice calls from DMO to TMO   |         |
|                 | N.A.    | Group voice calls from TMO to DMO   |         |
|                 | N.A.    | Emergency group call from DMO to TMO  |         |
|                 | N.A.    | Emergency group call from TMO to DMO  |         |
|                 | N.A.    | Transmission of Gateway Presence Signal   |         |
|                 | N.A.    | Automatic detection and management of co-located Gateways                                   |         |
|                 | N.A.    | Call Pre-emption (in either direction)  |         |
|                 | N.A.    | SDS messaging from DMO to TMO (including GPS) or from TMO to DMO*                           |         |
|                 | N.A.    | Configurable routing of SDS messages to console or PEI                                      |         |
|                 | N.A.    | Intelligent handling of point to point calls and SDS messages whilst operating as a Gateway |         |

## REPEATER SERVICES

|              |      |  |
|--------------|------|--|
| DMO Repeater | N.A. | Repeats DMO voice on selected talkgroup                          |
|              | N.A. | Repeats SDS and Status messaging on selected talkgroup*          |
|              | N.A. | ETSI type 1A DMO Repeater for channel efficient operation        |
|              | N.A. | Transmission of Repeater Presence Signal                         |
|              | N.A. | Priority Call  |
|              | N.A. | Emergency Call (Pre-emptive Priority Call)                       |
|              | N.A. | E2EE Encrypted DMO traffic                                       |
|              | N.A. | Monitoring of and participation in calls whilst in Repeater mode |
|              | N.A. | Configurable Repeater Power Levels                               |
|              | N.A. |  |

## INTERFACES

|                                   |  |
|-----------------------------------|--|
| RS232                             | For PEI (Four Virtual Ports via AT Multiplexer enable PC applications to run simultaneously Packet Data, AT Commands, SDS, SCOUT)                                    |
| USB                               | USB 2.0 support for PEI (Two Virtual Ports via standard Windows drivers enable PC applications to run simultaneously Packet Data and AT Commands)                    |
|                                   | USB 2.0 support for PEI (Four Virtual Ports via AT Multiplexer enable PC applications to run simultaneously Packet Data, AT Commands, SDS, SCOUT); rapid programming |
|                                   | USB On-The-Go (host & slave) capability for intelligent PEI applications   |
| Rugged Accessory Connector (GCAI) | GCAI - Motorola accessory and ancillary interface for connection of accessories, data terminals and programming  |
| General Purpose Input/Output      | Digital I/O<br>7 (4 on remote and motorcycle control head, 3 on transceiver)<br>Analog input<br>4 (1 on remote and motorcycle control head, with 4 levels)           |

## SECURITY FEATURES

|                              |  |  |
|------------------------------|--|--|
| Air Interface Encryption     | Algorithms   | TEA1, TEA2, TEA3   |
|                              | Security Classes   | Class 1 (Clear), Class 2 (SCK), Class 3G   |
| Provisioning                 | Authentication   | Infrastructure initiated and made mutual by terminal   |
|                              |  | Secure provisioning tool via Key Variable Loader (KVL)   |
| User Access Control          |  | PIN/PUK code access  |
|                              | Service Profile Selection for Radio User Assignment / Radio User Identity (RU/A/RUI) Operation | Based on login credentials, a radio user can be limited to only those radio capabilities defined in pre-installed service profiles, selected by the infrastructure |
| Data                         |  | Packet Data user authentication  |
| End to End Encryption (E2EE) | Voice E2EE   | Enhanced End to End Encryption with OTAR supported through Universal Crypto Module (UCM) and SIM (via integrated card slot) and/or Cnrypr 2 Broadband IP unit.     |
|                              | Packet Data E2EE   |  |
|                              | Short Data (SDS) E2EE  |  |

## REGULATORY COMPLIANCE

|   |   |
|---|---|
| Radio (R&TTE Article 3.2)               | EN 303 035-1                                |
|   | EN 303 035-2                                |
|   | ETSI EN 300-394-1<br>ETSI EN 300-392-2      |
| EMC (R&TTE Article 3.1.b)               | EN 301 489-1 V1.3.1<br>EN 301 489-18 V1.3.1 |
|   | EN 60950-1 (2001)                           |
| Electrical Safety (R&TTE Article 3.1.a) | EN50360:2001 EME                            |
|   | Directive 2002/96/EC WEEE                   |
| Environmental                           | Directive 2002/95/EC RoHS                   |
|   | EN50155:2007 IEC60571 Ed. 3.0               |
| Automotive                              | E-mark, Automotive EMC Directive 95/54/EC   |
| Rail Certification EMC                  | EN50121:2007 IEC60571 Ed. 3.0               |

\* Future software release



For more information on the MTM5000 Series radios, please visit us on the web at:  
[www.motorolasolutions.com.au/MTM5000](http://www.motorolasolutions.com.au/MTM5000)

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