



ENABLING CURRENT AND FUTURE CRITICAL COMMUNICATIONS

MTM5200 TETRA MOBILE RADIO

KEY BENEFITS

Superior Audio Performance

- Next generation audio architecture delivering the loudest and clearest audio performance of any Motorola TETRA mobile available on the market¹

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 MTP850 portable and 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
- Hardware Encryption (AES128 or AES256 MACE) option

Advanced Terminal Management

- USB 2.0 interface for fast radio programming via Motorola's integrated Terminal Management solution
- Hardware ready for Over-The-Air terminal management
- Enabled via a software update, background programming will allow the radio to be programmed whilst staying fully functional

Flexible Installation Options

- Fully DIN-A compatible and available in Dash, Desk, Remote Head and Motorcycle mount formats
- Works seamlessly with existing MTM800 Enhanced control head accessories

Rugged Design with Exceptional Reliability

- Includes IP67 control head option, 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

The MTM5200 underlines Motorola's commitment to meeting the current and future needs of critical communications. This new radio supports a number of advanced capabilities including TEDS high speed data connectivity, to enhance operational efficiency and to enable users to make more informed decisions in the field.

¹ Assuming the appropriate audio accessory is used.

SPECIFICATIONS

| MODELS - COMPLAINT WITH DIN 75490 (ISO 7736) | | |
|--|--|---|
| Dash | Compact radio for fast vehicle installation | |
| Desk | Compact radio, for use in the office. Optional range of accessories such as desk tray with integrated loudspeaker | |
| Motorcycle | Environmentally enhanced radio meeting IP67 specification. Suitable for demanding environments such as motorcycle, fire appliance and marine installations | |
| Expansion head “Databox” | Radio without a control head, for data applications, or customised application development | |
| | | |
| GENERAL | | |
| | Dimensions HxWxD (mm) | Weight Typical (g) |
| Dash and Desk models | | |
| (transceiver + control head) | 60x188x198 | 1300 |
| Transceiver only | 45x170x169 | 1070 |
| Standard control head | 60x188x31 | 230 |
| Remote control head | 60x188x39 | 300 |
| Motorcycle control head | 60x188x39 | 320 |
| 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 |
| 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 |
| | Shortcuts | User configurable shortcuts to menus and common features using “One-Touch-Button” feature |
| | | |
| Rotary | Dual function | Talkgroup and volume change with lock option |
| Indication | LED | Tri-colour LED |
| | Tones | Configurable notification tones |
| User Interface Languages | 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 defined | User programmable, using ISO 8859-1 character |
| Menu | Tailored to user needs | |
| | Menu Shortcuts | |
| | Menu Configuration | |
| Contacts Management | Cellular Type | |
| Contact List | Up to 1000 contacts | |
| | Up to 6 numbers per contact, Max 2000 numbers | |
| Multiple Dialling Methods | User selects how to dial | |
| 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 Folder | 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 |
| 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) |

| ELECTRICAL SPECIFICATIONS | | |
|--------------------------------------|--|--|
| Voltage Range | 10.8 to 15.6 V DC | |
| Current Consumption (A, typ.) | Idle / Rx / Tx @ 3W | 0.5 / 1.0 / .9 (TX 2.2A Peak) |
| | Tx - TEDS @ 3W | 2.3 |
| | Using USB host | Adds 0.5A |
| RF SPECIFICATIONS | | |
| Frequency Bands (MHz) | 380 - 430 | |
| Transmit / Receive Separation (MHz) | 10 | |
| TMO Switching Bandwidth (MHz) | 50 | |
| DMO Switching Bandwidth (MHz) | 50 | |
| RF Channel Bandwidth (kHz) | 25 | |
| Transmitter RF Power | TETRA Release 1 | Class 3 (3W) only |
| | TETRA Release 2 (TEDS) | Class 3 (3W) only |
| RF Power Control | Power Step Levels (steps of 5 dBm) | Starting at 15 dBm |
| Receiver Class | A & B | |
| Receiver Static Sensitivity (dBm) | -114 minimum, -116 typical | |
| Receiver Dynamic Sensitivity (dBm) | -105 minimum, -107 typical | |
| 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) | |
| TTFF (HOT Start - Autonomous) | <1s | |
| TTFF (WARM Start - Autonomous) | <36s | |
| TTFF (COLD Start - Autonomous) | <36s | |
| Location Protocols | ETSI Location Information Protocol (LIP) | |
| | 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 |
| | Scanning | Attachment signalling, supports SWMI initiated attachment/detachment |
| Direct Mode (DMO) Services | Group call | |
| | Private 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) |
| | Voice Call Interaction | SDS messages can be sent and received during a voice call |
| Packet Data (PD) | Multi-slot PD | Data transmission with up to 4 slots supporting up to 28.8 kbit/s gross |
| | TETRA Enhanced Data Service (TEDS) (via software upgrade) | Supporting 25kHz and 50kHz channel bandwidths and enabling practical data rates of up to 80kbit/s |
| TEDS (capable) | QAM Channels: 25 kHz and 50 kHz (but not D8PSK channels) | |
| | QAM modulation/coding modes: 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) |
| | | TNP1; enables simultaneous PD and SDS sessions |
| Terminal Management | Programmable via Motorola Integrated Terminal Management (iTM) solution | |
| | Over-The-Air Programming (OTAP) Mode ² Capable | Background Mode Programming (BMP) capable ¹ - while radio is operational (providing TETRA services) it is being programmed/configured. ² Planned features with software upgrade |

| INTERFACES | | |
|---|--|--|
| RS232 | For PEI (Four Virtual Ports via AT Multiplexer enable PC applications to run simultaneously Packet Data, AT Commands, SDS, SCOUT) | |
| USB programming | 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 | |
| | USB On-The-Go (host & slave) capability for intelligent PEI applications | |
| | USB 1.1 support (Host Mode) to manage USB Slave Devices (e.g. SIM CARD READER) | |
| 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 | 7 (4 on remote and motorcycle control head, 3 on transceiver) |
| | Analog input | 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 3 (GCK) [Encryption support on DMO/TMO Gateway and DMO Repeater requires specific software release] |
| | Authentication | Infrastructure initiated and made mutual by terminal |
| Provisioning | 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 (RUA/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 (EtEE) | Voice E2EE | Enhanced End to End Encryption with OTAR supported through AES128 or AES256 Hardware or SIM (via integrated card slot) |
| | 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 | |
| | ETSI EN 300-392-2 | |
| EMC (R&TTE Article 3.1.b) | EN 301 489-1 V1.3.1 | |
| | EN 301 489-18 V1.3.1 | |
| Electrical Safety (R&TTE Article 3.1.a) | EN 60950-1 (2001) | |
| | EN50360:2001 EME | |
| Environmental | Directive 2002/96/EC WEE | |
| | Directive e2002/95/EC RoHS | |
| Automotive | E-mark, Automotive EMC Directive 95/54/EC | |

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