

MTP8000Ex SERIES

INTRINSICALLY SAFE TETRA PORTABLE RADIOS



MTP8550Ex

POWER AND PERFORMANCE DESIGNED FOR EXTREME ENVIRONMENTS

The MTP8000Ex Series intrinsically safe TETRA radios have been engineered to address workers' needs and offer reliable radio communications in hazardous environments. From their form to their function, these radios are certified to the latest standards listed by ATEX and IECEx.

Motorola Solutions has more than 20 years of experience in providing intrinsically safe two-way radios. We have used this knowledge and experience to develop the rugged MTP8000Ex Series intrinsically safe TETRA radios, giving workers the ability to work safely. The radios have powerful audio, enhanced coverage, long battery life, and advanced ergonomics for ease of use.

DESIGNED FOR THE MISSION

The MTP8000Ex Series intrinsically safe TETRA radios have been specifically designed for end-users who need to work in hazardous environments with potentially explosive gases, chemical vapours, flammable liquids or combustible dust.

SPECIFICATIONS

GENERAL

| | |
|----------------------------------|--|
| Dimensions | Height: 145mm, Width: 57mm, Depth: 40mm (with battery) |
| Weight | 441g (MTP8550Ex SIM with battery, with antenna) 442g (MTP8500Ex SIM with battery, with antenna) |
| Battery Options | 1250mAh IMPRES Li-ion Battery |
| Audio Output Power at Max Volume | 1.2W Integrated audio howling suppression |

TETRA SERVICES

RF

| | |
|------------------------------|------------------------------------|
| Frequency Bands | 350-470 MHz, 800 MHz |
| Transmitter RF Power | Class 3L (1.8W), Class 4 (1W) |
| Receiver Class | A and B |
| Receiver Static Sensitivity | -116dBm (min); -118dBm (typical) |
| Receiver Dynamic Sensitivity | -107 dBm (min); -109 dBm (typical) |

VOICE

| | |
|------------------------------------|---|
| Full Duplex | Full duplex TMO private, PABX, PSTN, emergency |
| Half Duplex | Half duplex TMO private, group, emergency Half duplex DMO private, group, emergency |
| Emergency Call (User Customisable) | Tactical emergency group call to ATTACHED talkgroup Non-tactical emergency group call to DEDICATED talkgroup Individual emergency call to PREDEFINED party (half/full duplex) HOT MIC emergency - hands free in moments that matter Smart TMO / DMO selection for emergency call set up - ensure call gets through Emergency status message sent to dispatch console |
| Other Voice Functions | Inter-MNI, gateway, repeater PTT double push Preemptive priority calls Adaptive audio control |

DATA

| | |
|-------------|--|
| Short Data | STATUS messaging in TMO & DMO SDS messaging in TMO and DMO, including concatenated messaging Short Data applications Radio messaging system (RMS) Callout (simple, full, E2EE) |
| Packet Data | Single and multi slot packet data service |
| TNP1 | Simultaneous operation of Packet Data and Short Data Services over a common Peripheral Equipment Interface (PEI) |
| AT Commands | ETSI and enhanced AT commands (including voice control) |
| WAP | WAP browser / WAP push |

DMO REPEATER

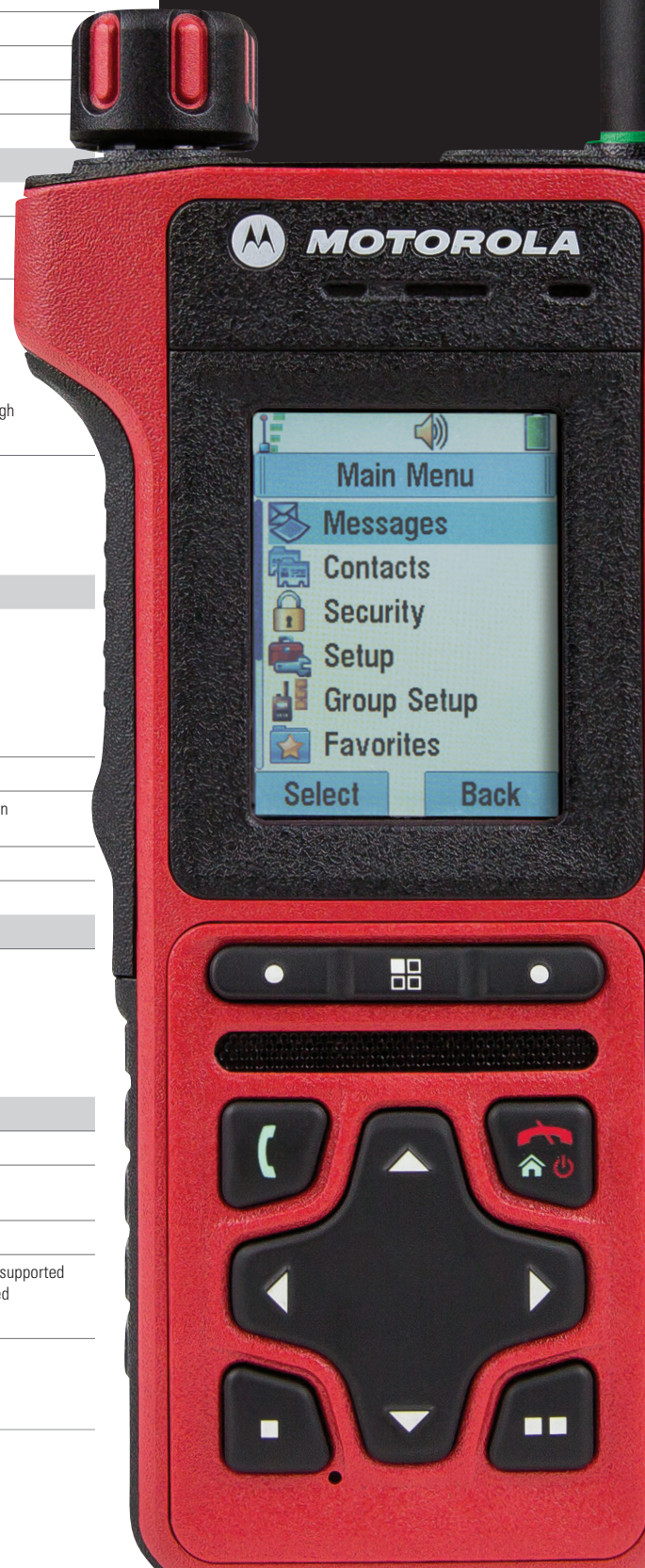
| | |
|--|--|
| DMO Repeater Mode Features and Functions | DMO repeater type 1A for efficient single channel operation Repeats DMO voice and tone signalling on selected talkgroup Repeats SDS and Status messaging on selected talkgroup Transmission of Repeater Presence Signal Emergency Call (Pre-emptive Priority Call) |
|--|--|

SECURITY

| | |
|---------------------------------------|---|
| Authentication | Infrastructure initiated and made mutual by radio terminal |
| Air Interface Encryption - Algorithms | TEA1, TEA2, TEA3 |
| Protocols - Security Classes | Security class 1, 2, 3 and 3G support |
| End to End Encryption | End-to-end encryption: AES128 or AES256 for voice and short data with OTAK supported through optional Hardware Security Module (HSM), FIPS 140-2 level 3 validated Optional SIM based encryption including BSI |
| Other Security Features | OTAR/DMO SCK Temporary Disable (Stun) Permanent Disable (ETSI or V2-Customer Restore) |



The MTP8500Ex has a limited keypad, ideally suited for use while wearing heavy gloves. For users that need a full keypad we offer the MTP8550Ex.



CONNECTIVITY

| BLUETOOTH | |
|------------------------------|--|
| Bluetooth Versions Supported | Bluetooth 2.1 + EDR, Bluetooth 4.0, Bluetooth Smart (BTLE) |
| Bluetooth Security | Bluetooth 2.1 includes mandatory encryption with secure simple pairing (SSP), easier pairing and preventing sniffing / hacking Bluetooth 4.0 supports Security Manager (SM) services with AES encryption |
| Bluetooth Audio Profiles | Head Set Profile (HSP), Fast PTT with Motorola Solutions Accessories |
| Bluetooth Data Services | Serial Port Profile, Dial Up Networking Profile, Discovery mode, Generic Access Profile, Object Push Profile, Generic Attributes Profile (GATT), Heart Rate Profile, Battery Service Profile, Devices Info Profile |

LOCATION SERVICES

| SATELLITE/ OUTDOOR NAVIGATION SERVICE | |
|---------------------------------------|---|
| Constellations Supported | GPS / Beidou / Glonass |
| Antenna | Integrated Internal Antenna |
| Simultaneous Satellites | 12 |
| GNSS Tracking Sensitivity, dBm | GPS: -162 (guaranteed); -163 (typical) BDS (BeiDou): -154 (guaranteed); -155 (typical) GLONASS: -154 (guaranteed); -155 (typical) |
| Accuracy, 3D | < 5 metre (50% probable) @ -130 dBm |
| Protocols | ETSI LIP & Motorola LRRP |

USER INTERFACE

| | |
|----------------------|---|
| Display | Dual displays: large front mounted display with scalable fonts for readability, top mounted display for easy interaction when worn on belt Colour Transflective Front Display, 240x320 pixel screen with 262k colours - viewable in bright sunlight Colour Transflective Top Display, 200x112 pixel screen with 262k colours - viewable in bright sunlight Flip screen, large/x-large text and icon options (front display only) Configurable smart backlight to optimise power use Universal time display Multiple display languages, user selectable Screen Saver GIF image and text |
| Controls | Large multi-function knob for volume and talkgroup control |
| Keypad | User Configurable One touch Buttons & Keys, extensive list of functions Simple keypad: MTP8500Ex, Full keypad: MTP8550Ex Multiple keypad languages Keypad lock |
| Menu | Customisable to user needs Menu shortcuts |
| Talkgroup Management | User friendly, flexible, fast and efficient interface |
| Talkgroups | TMO folders: up to 256, TMO talkgroups: up to 10000 DMO folders: up to 128, DMO talkgroups: up to 2000 |

| | |
|-----------------------------|---|
| Favourite Talkgroup Folders | 3 |
| Scan Lists | 40 lists of up to 20 groups |
| Country/Network Code List | 100 |
| Contacts Management | Rapid search |
| Contacts | 1000 contacts with 6 numbers per contact, (max 2000 unique numbers) |
| Dialling Methods | Dialling Direct, Scroll, Speed, One touch button/key, AlphaNumeric search, call history redial |
| Text Message List | Up to 200 Entries (short messages) At least 20 Entries for Outbox (long messages) ¹ At least 10 Entries for Inbox (long messages) ¹ |
| Status List | 400 pre-defined messages assignable to one touch buttons |
| Other Features | Fall alert (man down) sensor Enhanced T-bar grip for confident handling Unique nameplate for simple identification of radio Large 360° signal / status indicator for high visibility |

ENVIRONMENTAL SPECIFICATIONS

| | |
|---|---|
| Operating Temperature ² °C | ATEX/IECEx certified : -20 to +55 Ordinary Locations: -30 to +60 |
| Storage Temperature °C | -40 to +85 |
| Humidity (Condensation & High), Temperature Change, Low and High Temperature | ETS 300-019-1-7 class 7.3E |
| Shock (bumps & shock), Drop (free fall & drop & topple) and Vibration (random & sine) | ETS 300-019 1-7 class 5M3 |
| Dust and Water Ingress Protection | IP64, IP65, IP66 & IP67 per IEC-60079-0:2017 & IEC-60529 |
| Compliance to US Military Standard 810 | MIL-STD 810 D/E/F/G |

DEVICE MANAGEMENT SOLUTIONS

Supports Integrated Terminal Management (iTM) and Customer Programming Software (CPS)

RECOMMENDED SERVICES

| | |
|---------------------------|--|
| Services for TETRA radios | www.motorolasolutions.com/deviceservices |
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ACCESSORIES

For a complete list of MTP8000Ex series accessories, please visit: motorolasolutions.com/tetra/deviceaccessories

¹ Long messages of up to 1000 characters

² Performance may be degraded at extreme temperatures. ATEX/IECEx certification only valid when operated within -20 to +55°C



US MILITARY STANDARD MATRIX

APPLICABLE MIL-STD

| | MIL-STD 810C | | MIL-STD 810D | | MIL-STD 810E | | MIL-STD810F | | MIL-STD810G | |
|-----------------------|--------------|---------------|--------------|------------------|--------------|------------------|-------------|------------------|-------------|------------------|
| | METHOD | PROC/CAT | METHOD | PROC/CAT | METHOD | PROC/CAT | METHOD | PROC/CAT | METHOD | PROC/CAT |
| Low Pressure | 500.1 | I | 500.2 | II | 500.3 | II | 500.4 | II | 500.6 | II |
| High Temperature | 501.1 | I, II | 501.2 | I/A1, II/A1 | 501.3 | I/A1, II/A1 | 501.4 | I/Hot, II/Hot | 501.6 | I/A1, II/A1 |
| Low Temperature | 502.1 | - | 502.2 | I, II | 502.3 | I, II | 502.4 | I, II | 502.6 | I, II |
| Temperature Shock | 503.1 | - | 503.2 | A1/C3 | 503.3 | A1/C3 | 503.4 | I | 503.6 | I-C |
| Solar Radiation | 505.1 | II | 505.2 | I/A1 | 505.3 | I/A1 | 505.4 | I/A1 | 505.6 | I/A1 |
| Rain | 506.1 | I, II | 506.2 | I, II | 506.3 | I, II | 506.4 | I, III | 506.6 | I, III |
| Humidity | 507.1 | II | 507.2 | II | 507.3 | II | 507.4 | - | 507.6 | II/Aggravated |
| Salt Fog | 509.1 | I | 509.2 | I | 509.3 | I | 509.4 | - | 509.6 | - |
| Blowing Dust and Sand | 510.1 | I | 510.2 | I, II | 510.3 | I, II | 510.4 | I, II | 510.6 | I, II |
| Vibration | 514.2 | VIII/CatF, XI | 514.3 | I/Cat10, II/Cat3 | 514.4 | I/Cat10, II/Cat3 | 514.5 | I/Cat24, II/Cat5 | 514.7 | I/Cat24, II/Cat5 |
| Shock | 516.2 | I, II, V | 516.3 | I, IV, VI | 516.4 | I, IV, VI | 516.5 | I, IV, VI | 516.7 | I, IV, VI |

HAZARD SPECS



| SPECIFICATIONS | GAS | | DUST | | MINING | |
|--------------------------------------|--|---|--|---|--|---|
| | IECEx SPECIFICATIONS IEC 60079-0:2017 IEC60079-11:2011 | ATEX SPECIFICATIONS EN IEC 60079-0:2018 EN60079-11:2012 | IECEx SPECIFICATIONS IEC 60079-0:2017 IEC60079-11:2011 | ATEX SPECIFICATIONS EN IEC 60079-0:2018 EN60079-11:2012 | IECEx SPECIFICATIONS IEC 60079-0:2017 IEC60079-11:2011 | ATEX SPECIFICATIONS EN IEC 60079-0:2018 EN60079-11:2012 |
| Surface Industries (Equipment Group) | N/A | II | N/A | II | N/A | I |
| Equipment Category | N/A | 2 | N/A | 2 | N/A | M2 |
| Environment | N/A | G | N/A | D | N/A | N/A |
| Explosion Protection | Ex | Ex | Ex | Ex | Ex | Ex |
| Protection Concept Intrinsic Safety | ib (Zone 1 & 2) | ib (Zone 1 & 2) | ib (Zone 21/22) | ib (Zone 21/22) | ib (Category M2) | ib (Category M2) |
| Hazardous Location Groups | IIC | IIC | IIIC | IIIC | I | I |
| Temperature Classification | T4 | T4 | T90°C | T90°C | N/A | N/A |
| Equipment Protection Level | Gb (Zone 1 & 2) | Gb (Zone 1 & 2) | Db (Zone 21 & 22) | Db (Zone 21 & 22) | Mb (Level b) | Mb (Level b) |
| Ambient Temperature Range | -20°C +55°C | -20°C +55°C | -20°C +55°C | -20°C +55°C | -20°C +55°C | -20°C +55°C |
| Dust and Water Ingress Protection | IP65 / 66 / 67 | IP65 / 66 / 67 | IP65 / 66 / 67 | IP65 / 66 / 67 | IP65 / 66 / 67 | IP65 / 66 / 67 |

For more information on the MTP8000Ex Series intrinsically safe TETRA radios, please visit:

www.motorolasolutions.com/MTP8000Ex



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