TETRA MTH800 Portable Radio

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intelligence everywhere™

The flexibility of the Motorola TETRA Handportable MTH800 terminal enhances safety and security across a diverse range of real-world needs.

GPS Location Service

Enhance user safety and efficiency with the MTH800 radio. Incorporating the latest semiconductor technology, it includes a highly sensitive, low power consumption GPS receiver. The MTH800 radio uses a new patented antenna combining TETRA and GPS signals to help ensure optimal positioning of the antenna for GPS coverage. The solution includes a full terminal resident software application providing control of all GPS parameters over the air – no need to touch programmed terminals when changes are required.

Performance

The MTH800 radio comes packed with power: a new processor and Digital Signalling Processor (DSP) to ensure future applications such as Java and imaging, will run smoothly and take advantage of the 16M byte flash memory. To allow flexibility for future RF assignments, the MTH800 radio is a full wide band 380-430 MHz terminal.

Audio

While the MTH800 radio includes many exciting new features, it is important to not forget the basics – audio quality! To that effect, the MTH800 radio has two major improvements: a new larger and more effective 1 Watt speaker as well as a new class D audio amplifier, all together providing exceptional clarity of audio with minimal distortion, even at high audio levels (user customizable sound level).

Color Display

Display technologies are moving fast. Motorola now has a 65,000 color display included in the MTH800 radio for ease of use to differentiate display information to the user. The 130 x 130 pixel display provides the ability to view high resolution pictures, such as missing persons and mug shots.

User Interface

To harness the power of the MTH800 radio, a new easy-to-use graphical user interface is included with assignable shortcuts to menu items, more than 3000 Talk Groups as well as a unified phonebook with 1000 number entries – enough to satisfy even the most demanding user.

End-to-End Encryption (E2E)*

While compact and lightweight, the MTH800 radio introduces full E2E encryption. Part of a complete E2E solution from Motorola for customers requiring enhanced operational security, the MTH800 radio offers support for multiple encryption algorithms and Over-the-Air Keying using Motorola's Key Management Facility.

Subject to security requirements, the MTH800 radio may be factory fitted with E2E encryption, can be provisioned in-country of alternatively retrofitted at a later date.

* Future software upgrade

TETRA MTH800 PORTABLE RADIO

GENERAL SPECIFICATIONS			
Dimensions HxWxD	mm	141 x 55 x 32	
Weight	g	196 Radio only 228 with standard Li-Ion battery 239 with 1500mAh battery	
Battery Capacity	mAh	800 Standard Li-Ion 1500 Extended Li-Ion	
Operating Life	Hours	**800 mAH**	**1500 mAH**
5/5/90		12 hrs	20 hrs
5/35/60		8 hrs	16 hrs
Talk Time	Hours	2 hours / 800 mAH 3 hours / 1500 mAH	
Talk Groups - TMO		2048	
Talk Groups - DMO		1024	
Combined Private Call, Phone and PABX Phone Book		1000 Entries	
Text Message List		20	
Status List		100	
Scan List		20 Lists of 20 Groups	

All values subject to change without notice.

IMPORTANT NOTICE: The features and facilities described in this brochure should be used for indicative purposes only. Availability of features and facilities will be dependent on the feature set supported by the system on which these units are used and on Motorola's scheduled product development program.

ENVIRONMENTAL SPECIFICATIONS		
Operating Temperature	°C	-20 to +60
Storage Temperature	°C	-40 to +85
Humidity		ETS 300 019-1-07 class 7.3E, up to 95% for 8 hours
Dust and Water		IP54 (cat. 2)
Shock, Drop and Vibration		ETS 300 019-1-7 class 5M3

RF SPECIFICATIONS		
Frequency Bands	MHz	380-430
DMO Band	MHz	380-430
RF Channel Bandwidth	kHz	25
Modulation Type		π/4 DQPSK
Transmitter/Receiver Separation	MHz	10
Transmitter RF Power	Watt	1
RF Power Control		3 Steps of 5 dB
RF Power Level Accuracy	+/-dB	2
Receiver Class		A and B
Receiver Static Sensitivity	dBm	-112 minimum (-116 typical)
Receiver Dynamic Sensitivity	dBm	-103 minimum (-105 typical)

GPS SPECIFICATIONS	
Simultaneous Satellites	12
Mode of Operation	Autonomous or Assisted (A-GPS)
GPS Antenna	Helical Integrated into TETRA Antenna
Sensitivity	-152 dbm / -182 dbW
Accuracy	5 Meter (50% probable)* 10 Meter (95% probable)* * Measured at -137 dbm

Features

▸ Voice Services Supported–Group
- Group Call – Trunked Mode (TMO), Direct Mode (DMO)
- Group Call – TMO/DMO via a DMO Gateway
- Late Entry – TMO/DMO
- Emergency Call – TMO/DMO (including 'Hot Microphone' option)
- Smart Emergency Call, Set Up to Selected Group, Pre-Defined Group, Individual or Telephone/PABX Subscriber
- Announcement Talk Group Call
- Favorite Talk Groups List
- Dynamic Group Number Assignment (DGNA) – (up to 2047 groups)
- Local Site Trunking
- Scanning
- Priority Monitor
- Scan List Edit via Keypad
- Site Wide Call

▸ Voice Services Supported–Private Call
- Half Duplex / Full Duplex Operation
- Flexible Dialing (list scroll, short number dial, direct entry, alphabetic search, last number called)
- Busy User Pre-emption (Pre-emption Priority Call – PPC)
- Speakerphone

▸ Voice Services Supported–Telephone Call (PABX/PSTN)
- Full Duplex Operation
- Speakerphone
- Flexible Dialing (list scroll, direct dial, alphabetic search, speed dial, one-touch dial, last number redial)
- DTMF Overdial
- Busy User Pre-emption (Pre-emption Priority Call – PPC)

▸ Security Services Supported
- Air Interface Encryption: TEA1, TEA2, TEA3*
- Radio Stun (Selective Inhibit)
- PIN/PUK code access
- Keypad Lock
- Authentication (made mutual by Terminal)
- DCK, CCK, SCK
- Packet Data User Authentication
- Secure Key Provisioning Tool for Customer Use
- Transmit Inhibit (TXI) – Enhanced Version
- New Screensaver with Customer Logo Option
- Talk Group Lock

▸ E2E Security Services Supported*
- E2E Encryption Module with Full Tamper Protection
- Factory or Field Install (including in-country) of E2E Module
- Multiple Algorithm Support
  - ETSI / IDEA Algorithm Supported
  - Support for National Algorithm Development
- Multiple Simultaneous Algorithms Supported
- Over the Air Keying (OTAK) of Encryption Keys

▸ Data/Messaging Services Supported
- Short Data Service (SDS, 140 characters)
- Alphanumeric Text Service (ATS)
- Predictive Text Entry (iTAP)
- Built-in Database Enquiry Templates
- One-touch Status Messaging
- Packet Data Service
- Peripheral Equipment Interface (PEI) for External RS232 Short and Packet Data Devices
- New Text Message Notification During Calls
- Database Enquiry During Calls
- Ability to Read, Compose and Edit Text Messages During Calls
- Ability to Send Text Message from Busy Talk Group
- WAP Support Using Packet Data Services via PEI

▸ GPS Location Service
- Fully Integrated Single Chip GPS Receiver
  - Low Current and High Sensitivity GPS
  - Autonomous and Assisted GPS Support
  - Location Request / Response Protocol (LRRP) for Positioning Data Transportation
  - Patented Helical GPS Antenna Integrated into TETRA Antenna
  - Storage of Position Data in Terminal for Post Processing
  - GPS Disable Option for Special Operations
  - Authentication of GPS Location Service Dispatchers
- Full Programmable Position Update Triggers Including:
  - On Request
  - Delta Distance
  - Delta Time
  - With Status Transmission
  - With Message Transmission
  - With Site Handover
  - On Power Up / Power Down
  - On Group Attachment
  - TXi Enable / Disable
  - DMO / TMO Switching
  - Low Battery
  - Insertion / Removal from Vehicle Adaptor
  - Full Over the Air Programmability of All GPS Location Service Parameters

▸ Other Features
- 5 Pre-programmed Languages (English, Spanish, French, German and Dutch)
- User Definable Display Languages (ISO 8859-1 characters)
- Display Flip (inverts text 180 degrees)
- Alphanumeric Talk Group Search
- Address Book Edit via Keypad
- Loud/Discreet Audio Mode Toggle
- Talking Party Identification (PTT-ID)
- Keypad Tones On/Off
- Alert Tones On/Off
- Backlight Options (disabled, automatic and manual)
- Multiple Network Support
- Side Connector for Audio Accessories and Lock Function, IP54
- Dedicated Connector for Digital Car Kit, Programming, Upgrading, Packet and Short Data as Well as Remote Speaker Microphone (RSM)
- Separate Front Mounted Main Loudspeaker and Earpiece to Prevent Acoustic Shock
- VibraCall®
- Dedicated Emergency Button
- Ambience Listening
- One-touch Phone / Private / PABX / Status / Talk Group / TXI / Database Template / Text Message Template / Display Flip
- 2 dedicated Context Sensitive Menu Softkeys
- 2 Dedicated Programmable Function Buttons
- Full Access to Menu System During Calls
- Call History Received/Dialed Lists
- Wallpaper
- New 1 Watt Audio Amplifier and Speaker
- Automatic Microphone Gain Adjustment During 'Hot' Microphone Emergency
- Top Mounted Knob Design for Talk Group Selection and Volume Control
- Dual Microphone Design for Optimal Dispatch and Telephony-style Operation
- Rugged Bottom Accessory Connector
- One-touch Functions on Numeric Keypad (10 entries)
- Multiple Software Upgrade Capability
- Programming Software Automatic Logging of Logistical Information
- Customer Programming Software Codeplug Password Enable
- Enhanced Mobility Operation (including subscriber classes)
- Modeless Operation
- Unified Address Book (contacts)

* Future software upgrade

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