TETRA MTP850

Delivering The Power Of TETRA Digital Radio

MTP850 – Industry's smallest TETRA portable radio

Built and designed for the Asian users in mind

Customers' continually evolving businesses ensure that Motorola is constantly developing new TETRA applications and features to meet their operational needs. As the latest addition to the Motorola market-leading suite of TETRA terminals, the MTP850 boasts a wide range of technological advances – developed in response to a myriad of real-world requirements. From public safety users such as the police, fire, emergency services and military, to commercial enterprises in industries as diverse as utilities, retailing, construction, logistics and transport – the need for greater security has never been more important.

True colour. Truly original

The MTP850 user friendly cellular interface with high resolution colour display ensures that TETRA communications have never been as easy to manage. From data queries to image sharing, the MTP850 with its 65,000 vivid colours offers accurate reproduction and delivery of photos, maps, or illustrations in various lighting conditions.

Safety through location

Safety and efficiency are critical factors for any business. The integrated GPS (satellite) location service, allows users to be located instantly, either to respond to help or location of an emergency call. Through multiple ways of triggering the GPS location service, it allows for more efficient use of resources or determining location in life-threatening situations.

Safety through design
Communications need to be quick and easy to be effective, so the MTP850 has been designed to protect users, delivering high quality voice call to its size. At only 12.5 cm height, it is easy to carry, but it is big where it matters, with large emergency and push to talk buttons.

Safety through secure communications
Maintaining private and secure communications is increasingly important as potentially sensitive information flows back and forth. With this in mind, the MTP850 has been designed to support the highest level of secure protection, from its Air Interface Encryption, Integrated End-to-End Encryption, to Motorola's industry leading key management facility.

Durable and Robust
Every Motorola TETRA terminal model passes an accelerated life testing process which simulates a 5 year life span; these vigorous tests ensure that the MTP850 meets some of the highest levels of military robustness (MIL-STD 810) and industrial STD - IP54.

Designed to deliver. Designed for the future.
Building on Motorola's data capabilities, the MTP850 is capable of supporting new and exciting applications such as WAP communications. With Multi-Slot Packet Data (MSPD) incorporated, high bandwidth connectivity for instant access to databases, directories or folders will be enhanced and as simple as using a computer for timely and dependable communication.

Features

Voice Service - Group:
- Local Site Trunking
- Announcement Talk Group call
- Emergency Call - DMO
- Emergency Call - TMO
- Emergency Call "Hot Mic"
- Site Wide Call
- Group Call - TMO/DMO
- Late Entry - TMO/DMO
- Dynamic Group Number Assignment (DGNA) - (up to 2047 Groups)
- Scanning
- Talking Party Identification
- Priority Monitor

Voice Service - Private Call:
- Half duplex/full duplex operation
- Flexible dialling (list scroll, short number dial, direct entry, alphabetic search, last number called)
- Loud/discreet audio mode
- Calling line Identification Presentation
- Pre-emption Priority Call Voice Services - Telephony
- Full duplex operation
- Speakerphone
- Flexible dialling (list scroll, direct dial, alphabetic search, speed dial, one-touch dial, last number redial)
- DTMF overdial
- Calling line Identification Presentation

Data/Messaging Services:
- Short Data Service (SDS) - to individual / group target
- Built-in database enquiry templates
- Full WAP support
- Multi Slot Packet Data
- One-touch status messaging
- Keypad entry of status values
- Peripheral Equipment Interface (PEI) for external RS232 short and packet data devices
- New text message notification during calls

Security Service:
- TETRA Air Interface Encryption:
  - TEA 1, TEA 3
- Authentication (Clear Mode, Secured Mode)
- Secure Key Provisioning Tool
- User crypto key deletion from keypad
- Radio Stun
- Packet data user authentication
- Security Class
  - Class 1: Clear
  - Class 2: Static Cipher Key (SCK)
  - Class 3: Derived Cipher Key (DCK) and Common Cipher Key (CCK)
- PIN/PUK code access
- GCK/OTAR#
- DMO-SCK#

E2E Security Services:
- End-to-End (E2E) encryption module with full tamper protection
- Factory or field install (including in-country) of E2E module
- Multiple Algorithm support

User Safety:
- Dedicated Emergency button
- Colour indication of Emergency Mode (Red Display)
- Editable Screensaver with logo option
- Talk Group lock
- Keypad lock
- Transmit Inhibit
- 'Hot' Microphone emergency
- Ambience Listening
- Separate front mounted main loud speaker and earpiece to prevent Acoustic Shock
- 1 Watt audio amplifier and speaker
- Site Wide Call

User Interface Features:
- 2 dedicated context sensitive menu softkeys
- 2 dedicated programmable function buttons
- One-touch functions on numeric key pad (10 entries)
- Flip Display
- 2 font sizes
- Display Contrasts
- Top Mounted multi-function Talk Group Selector and Volume Control
- Side & bottom accessory connector
- 2 microphones
  - Top microphone for dispatcher calls
  - Bottom microphone for "one-to-one" calls
- Alphanumeric Talk Group search
- Loud/discreet audio mode toggle
- Quick access to Menu items via edit able Menu Shortcuts
- Keypad tones on/off
- Alert tones on/off
- Configurable Notification tones
- Backlight options (disabled and automatic)
- Wallpaper
- Scan list edit via keypad
- Address book edit via keypad
- One-touch Private/PABX/Status/Talk Group/TXI/Database template/Test message template/Flip display
- Full access to menu system during calls
- Call history missed/received/dialled lists
- Fast access to functions using rotary knob

Asian Languages:
- Languages supported include English, Korean, and Chinese (Simplified and Traditional)
- Alphanumeric Text Service (ATS)
  - English, Korean, and Chinese (Simplified and Traditional)
- Predictive Text Entry - English, Korean, and Chinese (Simplified and Traditional)

GPS Location Service:
- Fully integrated single chip GPS receiver
  - GPS disable option for special operations
  - Authentication of GPS Location Service dispatchers
  - Low current and high sensitivity GPS
  - Autonomous GPS support
  - Multiple GPS protocol support
  - Patented Helical GPS antenna integrated into TETRA antenna
- Full programmable position update triggers including:
  - On request
  - Emergency Alerting
  - Low battery
  - Loss of GPS
  - Over the air programmability of all GPS Location Service parameters

Other:
- Side connector for audio accessories and lock function
- Dedicated connector for digital car kit, remote speaker mic (RSM), programming, upgrading, packet and short data
- VibraCall®
- Programming interface via USB and RS232
- Modeless Operation
- Favourite Talk Group (DMO/TMO Talk Groups)
- Unified Address Book (contacts)

Accessories

Performance Matched Accessories

Motorola accessories are designed as an integral part of the radio system and tested to ensure they are "performance matched". All of which are created and built to rigorous standards, then Accelerated Life Tested to simulate five years of service.

Expanding the MTP850 Capabilities

The MTP850 offers seamless and efficient co-ordination, control and response for staff operations. Motorola takes this a step further to maximise productivity through its accessory range to turn a great radio into a customised communications solution. Every Motorola accessory is designed to deliver peak performance, so adding the proper headsets, microphones, chargers and carry cases will ensure enhanced productivity.

FTN6573 FTN6574

FTN6575

WALN4092

FLN9469

Multi-unit Charger NNTN6900A

PMMN4015 with RLN4941

PMMN4057

Batteries

Motorola batteries have been designed to work hand in hand with the MTP850 optimising performance and staff operations.

FTN6573	Standard capacity battery 950 mAh - Lithium Ion (> 10hr for 5/5/90 duty cycle)
FTN6574	Ultra high capacity battery 1850 mAh - Lithium Ion (> 20hr for 5/5/90 duty cycle)

Chargers and Vehicle Solutions

Designed to work as a total system with the MTP850 and battery, Motorola chargers maximise battery life.

FTN6575	Dual pocket desktop charger base (requires travel charger/power supply NNTN4250B)
NNTN4250	Travel charger (power supply unit) US plug, add on country specific adaptor: (SYN7456A - Euro, SYN7455A - UK , SYN7460A - Korea, SYN8127B - Australia/New Zealand)
WALN4092	Travel charger kit (includes UK and Euro adapters)
NPN6443	Travel charger kit (includes Korean adapter)
FLN9469	Vehicle power adaptor

Multi-unit Chargers

Suitable for large fleet of radio users as it allows charging of six batteries at one go. Two factory fitted configurations are available - a 6 radio pocket configuration and a 6 battery pocket configuration.

To have a mix of radio and battery pockets, order the radio pocket inserts or battery pocket inserts separately.

NNTN6899	Multi-unit Charger with Radio Pocket insert Korean plug
NNTN6901	Multi-unit Charger with Radio Pocket insert UK plug
NNTN6900	Multi-unit Charger with Radio Pocket insert Euro plug
NNTN6904	Multi-unit Charger with Radio Pocket insert US plug
NNTN6906	Multi-unit Charger with Battery Pocket Insert Korean plug
NNTN6907	Multi-unit Charger with Battery Pocket Insert UK plug
NNTN6908	Multi-unit Charger with Battery Pocket Insert Euro plug
NNTN6911	Multi-unit Charger with Battery Pocket Insert US plug

Optional accessories for Multi-unit Charger :

NNTN6844	Wall Mount Bracket
NNTN6845	Radio Pocket (RP) Insert
NNTN6846	Battery Pocket (BP)Insert

NTN8371

PMLN5140

FTN6596

FTN6582

FTN6683

FTN6707

PMLN4605

WADN4223

RLN5717

RLN5720

GMDN0386

HLN9844

858726V08

858726V09

FKN4897

Audio Accessories

Remote microphone and functional earpieces leave the hands free and face unobstructed. Motorola offers solutions, from in-door to high speech clarity requirements, for those in noisy environments, to those carrying out surveillance work.

PMMN4057	Remote speaker microphone with emergency button, no earjack
PMMN4015	Remote speaker microphone with emergency button and earjack
	Optional Receive-only earpiece for use with PMMN4015:
RLN4941	Receive earpiece with translucent tube
AARLN4885	Earbud style receive earpiece
FTN6596	Earpiece receive only with coiled cord, suitable for shoulder worn radios
PMLN5140	Short cord soft D-shell earpiece, suitable for shoulder worn radios
FTN6582	Breeze headset with boom microphone and in-line Push-To-Talk
FTN6583	Personal hands free kit (ear bud with in-line microphone and Push-To-Talk)
FTN6595	Surveillance kit - 3 wire earpiece with separate Microphone and Push-To-Talk
FTN6707	Surveillance kit -2 wire earpiece with combined Microphone & Push-To-Talk
PMLN4605	Acoustic tube for use with 2 wire kit FTN6707A

Optional add-on accessories for use with FTN6595 and FTN6596:

NTN8371	Acoustic tube for low noise environments (clear voice tube with rubber ear tip)
NTN8370	Acoustic tube for extreme noise environments (clear voice tube with foam earplug)
WADN4223	Ear shell, large with grommet insert
WADN4224	Ear shell, small with grommet insert

Carry Options

Carrying accessories are available in various options and materials to meet different operational needs. Coupled with the MTP850 audio accessories, the Motorola solution offers convenience and hands free mobility.

RLN5717	Belt worn hard leather case with swivel 2" belt loop
RLN5718	Belt worn nylon holster with fixed 3" belt loop
RLN5719	Belt worn soft leather carry case with swivel 2" belt loop
RLN5720	Belt worn soft leather carry case with integrated belt clip
NTN5243	Shoulder strap (for use with above carrying cases)
HLN9767	Wrist strap
HLN9844	Belt clip (for 1.5" belt width)
HLN9714	Belt clip (for 2.5" belt width)
RLN5721	Soft leather carry case for use in combination with PMLN5004 Shoulder Wearing Device
PMLN5004	Shoulder wearing device with stud; requires GMDN0386 Sew On Dock
GMDN0386	Sew on dock

Antenna

Injection molded for use in rugged environments. Each antenna is tested and tuned to give maximum power and performance. The MTP850 patented antenna combines TETRA and GPS signal to help ensure optimal positioning for GPS coverage.

8587526V08	Compact Antenna 800-870 MHz with integrated GPS antenna
8587526V09	Enhanced Performance Antenna 800-870 MHz with integrated GPS antenna
8587526V14	Compact Antenna 380-430 MHz with integrated GPS antenna
8586381J11	Enhanced Performance Antenna 380-430 MHz with integrated GPS antenna
8566504A03	Compact Antenna 350-390 MHz with integrated GPS antenna
8566504A04	Enhanced Performance Antenna 350-390 MHz with integrated GPS antenna

Cables

PMKN4025	RS232 data cable
FLN9636	Programming cable
PMKN4026	USB programming cable

GENERAL SPECIFICATIONS

General		
Dimensions HxWxD mm	125 x 50 x 33.5 (standard capacity battery)	
	125 x 50 x 37.5 (ultra high capacity battery)	
Weight (g)	189 (radio only)	
	230 (with standard capacity battery)	
	243 (with ultra high capacity battery)	
Battery Performance	Standard capacity Li Ion	Ultra high capacity
Li Ion	(950 mAh)	(1850 mAh)
Duty Cycle (5/5/90)*	> 10 hours	> 20 hours
Colour Display	130x130 pixel screen size with 65,536 vivid colours	
	Flip screen and large text options	
Talk Groups TMO	2048	
Talk Groups DMO	1024	
Address book	1000 Persons	
Text Message List	20	
Status List	100	
Country code/Network code list	100	
Scan list	40 lists of 20 groups	

Environmental	
Operating Temperature °C	-25 to +60
Storage Temperature °C	-40 to +85
Humidity	ETS300 019-1-7 class 7.3E, up to 95% for 8 hours
Dust and Water	IP54 (cat.2) - EC529 class
Shock, drop and vibration	ETS 300 019-1-7 class 5M3
	MIL-STD 810 D/E/F

RF Specifications	
Frequency Bands MHz	380 - 430 / 350 - 390 / 806 - 870
RF Channel Bandwidth kHz	25
Transmitted RF Power Watt	1
RF Power of Accuracy +/db	2
Receiver Class	A and B
Receiver Static Sensitivity dBm	-115 typical
Receiver Dynamic Sensitivity dBm	-107 typical

GPS Specifications	
GPS antenna	Helical integrated into TETRA antenna
Sensitivity	152dbm/-182dbW
Accuracy	5 - 10 meter*

Available in future release
* Measured under specific controlled environment

The information contained in this document may be subject to change without further notice
- All product features are subject to infrastructure support
- Selected features are subject to optional software upgrade
- The availability of accessories included in this document are subject to change without notice

The Driving Force Behind TETRA

For over seventy five years, Motorola has led the way in the wireless communications marketplace. From the first walkie-talkie to the first ever moon landing, Motorola has consistently delivered innovative solutions to customers' exacting needs. Developing the potential of TETRA was another of Motorola's many 'firsts'.

Motorola TETRA firsts:

- 1995 - First demonstration of a TETRA radio call
- 1996 - First demonstration of TETRA 'group call'
- 1996 - First operational multi site TETRA system
- 1997 - First commercial contract
- 1999 - First integrated voice and data TETRA solution
- 1999 - First secure TETRA system
- 2001 - First fully TETRA over IP public safety network
- 2002 - First 800MHz TETRA contract
- 2002 - First to support cross-border TETRA communications
- 2003 - First packet switched TETRA system deployed over a satellite link
- 2003 - First integrated GPS and colour screen radio
- 2004 - First to launch increased data throughput with multi slot IP packet data
- 2004 - First TETRA system used during an Olympics with the Motorola secure digital communications network
- 2005 - First industry's smallest ruggedised cellular-style TETRA portable
- 2005 - First TETRA-based nationwide Government Radio Network in Asia
- 2005 - First largest TETRA digital migration for World's largest trans-shipment hub
- 2005 - First largest TETRA-based deployment for High-speed and Mass Rapid Transit communication systems in Asia

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