Data Sheet

MXM7000

Mission-critical converged TETRA and LTE mobile solution

MXM7000 is a secure mobile solution for mission-critical TETRA and 4G LTE broadband voice and data communications. It comprises the MXM7000 LTE control head with Android OS and the Motorola Solutions TETRA transceiver — for in-vehicle or desk-mounted use.

With its external roof-mounted antenna, the MXM7000 offers high transmission power and receiver sensitivity that helps keep people connected, even in areas of low coverage. LTE connectivity can turn the vehicle into a broadband hotspot for tethering a range of devices. The MXM7000 LTE control head runs on the Android operating system, supporting applications for workforce productivity.

The rugged MXM7000 is easy to use and operate, with a touch screen for interacting with data, glove-friendly buttons and separate LEDs for TETRA and broadband notifications.

With mission-critical TETRA and LTE broadband for voice and data, along with LTE tethering capabilities in a rugged, secure and easy to operate solution, the MXM7000 transforms communications.

MOTOROLA SOLUTIONS

GENERAL SPECIFICATIONS (MXM7000 CONTROL HEAD)		
SOFTWARE		
Bluetooth versions supported	Android 11 Non-GMS	
HARDWARE		
Dimensions	Height: 106 mm Width: 188 mm Depth: 43 mm	
Weight	650 g	
Display	5.0”, 1280 x 720 pixels, capacitive, touch-screen with Corning® Gorilla® glass	
	Support for use with disposable and combat gloves	
LEDs	One for TETRA, One for LTE	
Controls	Power on/off button (Screen lock/unlock) Emergency button Dual function rotary knob (TG change, volume change) 2 configurable buttons	
Memory	4GB RAM 64GB Internal Storage	
	Supports microSD[1]	
SIM slots	TETRA internal SIM: 2FF (mini SIM)[2] Optional TETRA external SIM[2] LTE: 4FF (nano SIM)	
Sensors	Ambient light	
Ports	Front: GCAI-MMP USB-A RJ45	Rear: RJ50 25-pin subD RF ports (LTE Div, GNSS, LTE Main) 12V Power Connector

GENERAL SPECIFICATIONS (TRANSCEIVER)	
HARDWARE	
Dimensions	Height: 45 mm Width: 180 mm Depth: 196 mm
Weight	1330 g
Input voltage	12 V DC: 10.8 V - 15.6 V 24 V DC: 20 V - 30 V
Input current	8 A - 9.5 A (@12 V DC), 4.7 A - 5.6 A (@24 V DC)

DEVICE SECURITY	
User authentication	PIN or password
Key storage	Hardware-backed encryption with Trusted Execution Environment (TEE)
Trusted boot process	Included with the use of tamper resistant hardware
OS hardening	Android OS hardening and SELinux access control
Secured device management	With the use of Integrated Terminal Management (iTM) solution
Restricted recovery mode	Included to avoid unauthorised access to features
Auditing	Auditing / logging functionality, with security logs captured and stored in a secured manner
Data-at-rest	Using Android’s AES256 File Based Encryption
Data-in-transit	Encryption with IPSec VPN support
Secured device management	With the use of Integrated Terminal Management (iTM) solution
Restricted recovery mode	Included to avoid unauthorised access to features

TETRA SERVICES	
RF	
Frequency band	380-430 MHz
Transmitter RF power	10 W (Class 2) and 3 W (Class 3)
Adaptive power control	Starting at 15 dBm; finishing at 40 dBm
Receiver class	A and B
Receiver static sensitivity	-115 dBm (guaranteed) -117 dBm (typical)
Receiver dynamic sensitivity	-106 dBm (guaranteed) -109 dBm (typical)
VOICE	
Full duplex call	TMO: Private, PSTN, emergency
Half duplex call	TMO: Private, group, emergency
Emergency call management (user customisable)	DMO: Private, group, emergency
	Non-Tactical: Emergency group call to dedicated talkgroup
	Individual: Emergency call to pre-defined party (half/full duplex)
	Hot mic: Allows user to talk without needing to press PTT button
	Emergency status message to dispatch console
Other voice functions	Gateway
	Repeater
	Repeater mode
	PTT double push
	Preemptive priority calls
DATA	
Short data	SDS messaging in TMO and DMO
	Supports concatenated SDS (1000 characters)
	Short data applications

[1] Future software release required to support storage use
[2] For BSI encrypted models only

DMO REPEATER	
DMO repeater mode features and functions	ETSI type 1A DMO repeater for channel efficient operation
	Repeats DMO voice calls on selected talkgroup
	Repeats SDS and status messaging on selected talkgroup
	Transmission of repeater presence signal
	Priority call
	Emergency call (Pre-emptive priority call)
	Monitoring of and participation in calls whilst in repeater mode
	Configurable repeater power levels
	End-to-End Encrypted DMO traffic
SECURITY[3]	
Authentication	Infrastructure initiated and made mutual by radio terminal
Air Interface Encryption - algorithm options	TEA 2[4]
Protocols - security classes	Class 1 (Clear) Class 2 (SCK) Class 3 (DCK/CCK, OTAR-CCK, OTAR-SCK) Class 3G (GCK, OTAR-GCK)
End-to-end encryption options	AES256 for voice and short data with OTAK supported through a Hardware Security Module (HSM)
	SIM based encryption including BSI
Other security features	Temporary disable (stun)
	Permanent disable (ESTI standard and customer restorable)

CONNECTIVITY	
TETRA/GNSS/LTE ANTENNA	
Connector	SMA
Impedance	Impedance: 50 Ω
LTE / 3G / 2G	
LTE bands	B3, B7, B20, B28
3G bands	B1, B8
2G bands	900 MHz, 1800 MHz

WI-FI	
IEEE standard supports	802.11 a/b/g/n/ac
Wi-Fi bands	2.4 GHz and 5 GHz
BLUETOOTH	
Bluetooth versions supported	Bluetooth 5.1 (data transfer only)
Bluetooth profiles	Generic Attribute (GATT)
	Attribute Protocol (ATT)
	Generic Access Profile (GAP)
	Serial Port Profile (SPP)
	Personal Area Networking Profile (PAN)
	Object Push Profile (OPP)

LOCATION SERVICES	
Constellation supported	GPS, aGPS, Galileo, GLONASS, BDS (BeiDou)
GNSS tracking sensitivity	GPS: -158 dBm (50% Fix losses) -159 dBm (typical)
Horizontal accuracy, 2D	<5 m (95% probable, -130 dBm)
TTFF cold start	<60 sec (95% probable at -135 dBm)

KEY FEATURES AND SETTINGS	
Protocols	ETSI LIP (short and long), Motorola Solutions LRRP
DEVICE	
Airplane mode[5]	Turns ON/OFF LTE Data, Wi-Fi and Bluetooth simultaneously
Location	Turns ON/OFF location functionality
Sound	Media volume Radio and voice calls Ring and notification volume Alarm volume
Night Vision Goggle (NVG) mode	Turn ON to set the display luminance for use with night vision goggles. LEDs will be turned OFF when in NVG mode
Backlight option	Automatic brightness adjustment

[3] Not all security options are available in every country, please contact your Motorola Solutions representative for more details.
[4] Only available with AES 256 End-to-End Encryption
[5] TETRA communications is still available

TETRA	
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	Up to 3
Contacts up to 1000 contacts	Rapid search to find the contact easily
Multiple dialling methods	Dialling direct, scroll and select via touchscreen
Call alert	Set ringtones via Android Settings
Message management	Distinct folders for each message type for flexible message management.
Text message list	Up to 200 entries (short messages) At least 20 entries for outbox (long messages up to 1000 characters) At least 10 entries for inbox (long messages up to 1000 characters)
Status list	Up to 100 user-defined messages Assignable to One Touch Buttons
Text entry	Touchscreen for ease of use
Transmit inhibit	Disables TETRA transmit and puts radio into Airplane Mode

DEVICE MANANGEMENT SOLUTIONS	
Integrated Terminal Management (iTM)	Requires iTM version 8.2.1 of newer

ENVIRONMENTAL SPECIFICATIONS	
Operating temperature	-20 °C to + 60 °C
Storage temperature	-40 °C to +85 °C
Climatic tests	ETSI 300 019-1-5 class 5.2
Mechanical tests	ETSI 300-019 1-5 class 5 M3
Dust and water ingress protection	IP54 per IEC 60529 (MXM7000 LTE Control Head) IP54 per IEC 60529 without cable connections (Transceiver)

US MILITARY STANDARD MATRIX		
	MIL STD 810 H	
	METHOD	PROC/CAT
Low pressure	500.6	II
High temperature	501.7	I/A1,II
Low temperature	502.7	I,II
Thermal shock	503.7	I-C
Solar radiation	505.7	I/A1
Humidity	507.6	II / Aggravated
Salt fog	509.7	-
Blowing sand	510.7	II
Vibration	514.8	I/Cat 24,II
Shock[6]	516.8	I, V, VI

[6] Shock test is covered as part of Shock Method 516.8 Proc I, V, VI

To learn more, visit: **motorolasolutions.com/MXM7000**

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