

Mission Critical Communications Solutions Overview

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GOVERNMENT SALES EASTERN EUROPE



MOTOROLA SOLUTIONS





WE HELP PEOPLE BE THEIR BEST IN THE MOMENTS THAT MATTER

We provide the solutions that connect those in need to those who can help.
To find efficiencies, prevent crises, save lives.

MISSION-CRITICAL ECOSYSTEM

Flexible technology platforms to create a safer world.

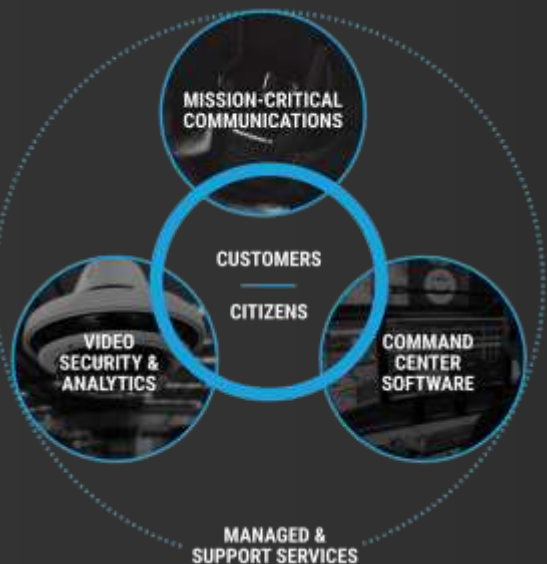


Motorola Solutions has created the first and only **mission-critical ecosystem** built for Public Safety & Enterprise. Its four platforms create the lifeline your safety and mission depend on.

Our mission is to never stop advancing that lifeline.

WHAT WE DO

The mission critical ecosystem for public safety and enterprise.



MISSION-CRITICAL COMMUNICATIONS

13K

private two-way radio networks

100k

customers around the world

COMMAND CENTER SOFTWARE

100m+

incidents managed through our software

70%

of 911 call takers rely on our software

VIDEO SECURITY AND ANALYTICS

320k

daily hot list alerts

40%

enforcement agencies using our video systems

MANAGED AND SUPPORT SERVICES

50M

events proactively monitored each day

50%

customer networks using our services

OUR ECOSYSTEM IS PROVEN IN SUPPORTING OUR CUSTOMERS EVERY DAY

WHO WE SERVE

We provide the mission critical technology lifeline that keeps you safe and effective.

HELPING GOVERNMENTS CREATE SAFER CITIES



AND ENTERPRISES BUILD STRONGER BUSINESSES



MISSION CRITICAL COMMS

Mission Critical Voice + Multimedia Collaboration

**Protect your push-to-X lifeline.
So you're always connected.**

We build infrastructure and devices that enable mission critical communications, so the lifeline is always in reach. By reinforcing radio with broadband capabilities, we enable the instant voice and multimedia collaborations that keep our users safe and aware when it matters most.



Global leader in every two-way radio standard and LTE solutions.

- APCO P25
- **TETRA**
- **Digital Mobile Radio**
- Professional Radio Standards
- Public Safety LTE Networks
- **Purpose-Built Broadband Devices**
- **Broadband Push-to-X**
- **LMR/LTE Interoperability**



“TETRA IS A PROVEN
MISSION-CRITICAL
TECHNOLOGY, TRUSTED
BY GOVERNMENTS AND
PUBLIC SAFETY
ORGANISATIONS
THROUGHOUT
THE WORLD.”

Thomas Lynch, Director for Safe Cities,
Critical Communications and Security Research
at OMDIA



INVESTING IN TETRA



COMMITMENT & HERITAGE

- Over 1000 DIMETRA systems in more than 100 countries
- 3.5 million TETRA terminals sold
- Over 30,000 base stations sold

INVESTMENT & INNOVATION

- DIMETRA X Core
- DIMETRA Express
- **NEW!** 5th Generation TETRA Radio Terminals

TETRA TODAY

TRUSTED · ALWAYS · EVERYWHERE

- Mission Critical Voice
- Secured Environment
 - AIE
 - E2E Voice Communication
- Narrowband Data
 - Short Data
 - Single-slot and Multi-Slot Packet Data





THE DIMETRA PORTFOLIO

TETRA SYSTEMS

REGIONAL / NATIONWIDE



X CORE

TRUNKING

SINGLE ZONE
MULTI-ZONE

UP TO 100 SITES PER ZONE – 5,000+ PER SYSTEM
UP TO 128,000 USERS PER ZONE – 1M+ PER SYSTEM
Geographical Redundancy

EXPANDABLE SINGLE-SITE



EXPRESS

TRUNKING

SINGLE ZONE
UP TO 20+ SITES
UP TO 4,000+ USERS
Geographical Redundancy

TETRA RADIOS

STANDARD



MTP3500 / 3550

MTM5200

MTM5400

HIGH TIER



MXP600 MTP6650

ReCH

MTM5500

TSCH

SPECIALIST



TPG2200

ST7000

ST7500

MTP8500Ex / 8550Ex

ACCESSORIES

MOBILES



BATTERIES



SPECIALITY



APPLICATIONS

COMMAND & CONTROL



VOICE DISPATCH



MESSAGING & ALERTING



MONITORING & CONTROL



LOCATION SOLUTIONS



INTEROPERABILITY SOLUTIONS



SYSTEM MANAGEMENT



FLEET MANAGEMENT



SECURITY SOLUTIONS



API's

Radio Control
APIs

Console
APIs

Network
APIs

Data
APIs

MANAGED & SUPPORT SERVICES

INFRASTRUCTURE



DEVICE MANAGEMENT



APPLICATION



CYBERSECURITY





MISSION-CRITICAL
TETRA PORTABLE RADIO





MXP600

FRONTLINE SAFETY,
TODAY AND TOMORROW

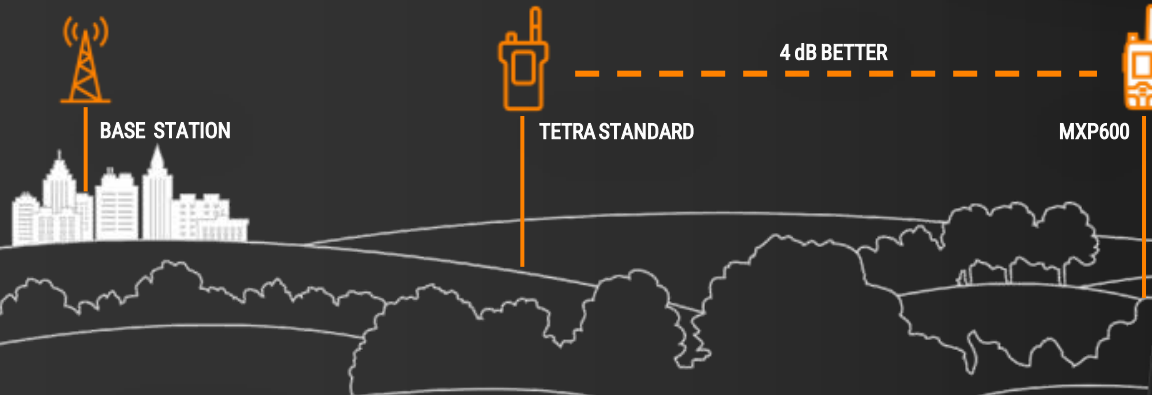


MOTOROLA SOLUTIONS



REACT TO WHATEVER HAPPENS WHEREVER IT HAPPENS

- 2.8 Watts, Class 3 transmission power
- High receiver sensitivity
(4 dB better than the TETRA standard*)
- Means your radio can work up to 30% further from
the base station
- Up to 55% better DMO range than a typical (1W)
TETRA radio



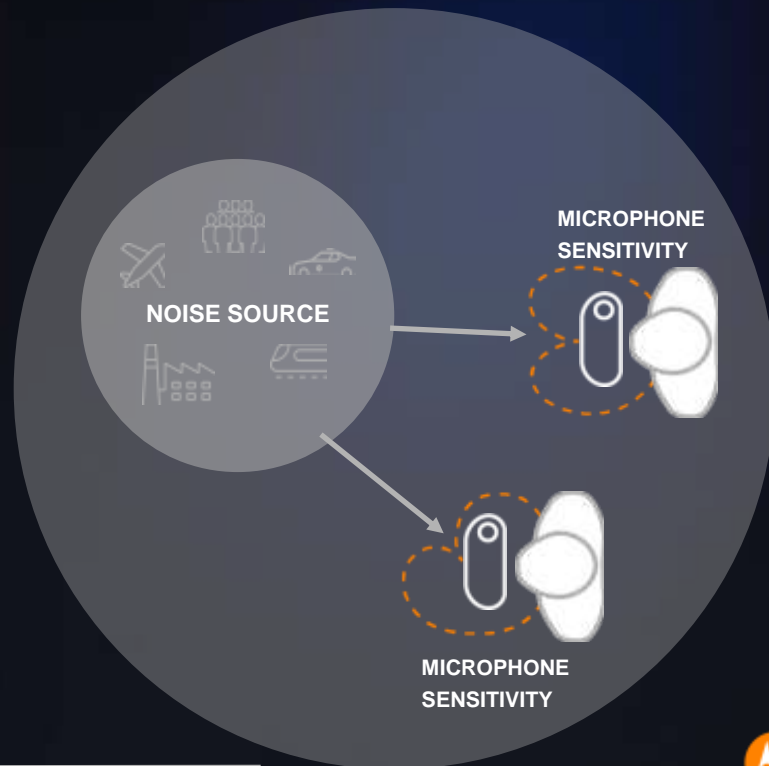
*ETSI EN 300 395-4





ADAPTIVE MULTI-MICROPHONE BEAM-FORMING NOISE SUPPRESSION

- Gives you the confidence that your users will be heard
- Beam-forming technology optimises the user's speech level while minimising background noise



The pair of Group Call microphones and our advanced adaptive algorithms enable beam-forming noise suppression to prioritise the user's voice.





ADAPTIVE WIND NOISE MITIGATION

- Keep communications clear and intelligible even in windy conditions



Lots of wind noise present during the transmission.



PROTECTED LOUDSPEAKER

MXP600 detects wind noise and automatically uses the protected loudspeaker as an additional microphone to reduce the effects of wind noise in the transmission.



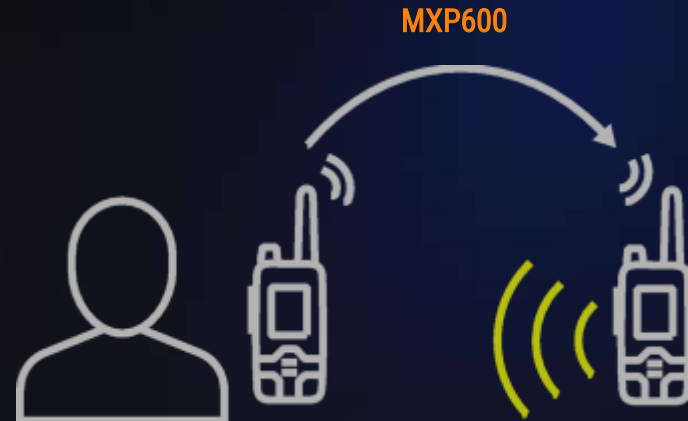


AUTOMATIC HOWLING SUPPRESSION

- Focus on the task, not your radio settings



Radios in close proximity to one another can sometimes cause acoustic feedback.



Automatic acoustic feedback suppression algorithm intelligently adjusts the radio to avoid the negative effects of acoustic feedback.





ALWAYS KNOW WHERE YOUR PEOPLE ARE

MXP600 supports four Global Navigation Satellite Systems (GNSS)

- GPS
- Galileo (new feature)
- Beidou
- GLONASS

GPS plus another GNSS provides location accuracy down to 1.2m*

*Using industry-standard test protocol. Horizontal Accuracy, 2D <1.2m (95% probable, -130 dBm, >15 SVs Galileo & GPS)



A RADIO THAT GOES THE DISTANCE



- Standard 1900mAh battery lasts up to 18 hours
- 2900mAh battery works down to -30 degrees C
- The optional 3400mAh high capacity battery lasts up to 30 hours*, enough for even the longest of shifts
- Easy to swap batteries in the field
- Operating temperature goes up to a market leading +70 degrees C
- Rugged and dependable
- Tested to military standards*
- IP65, IP66, IP67 and IP68 ratings:
 - Dustproof, waterproof, submersible
 - IP68 at 2m for 2 hours



High Capacity

Standard



ENABLING COLLABORATION

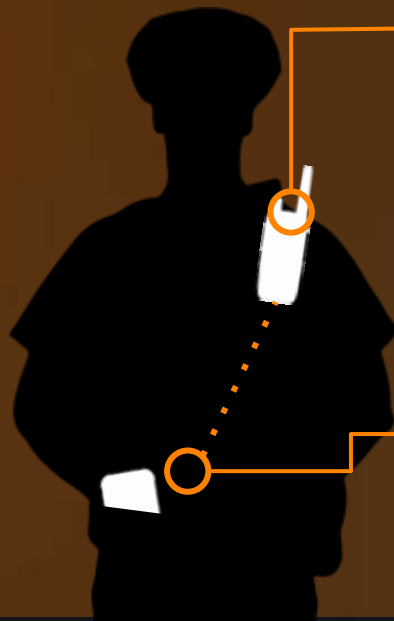
MXP600 is ideal for customers looking at LTE network migration

DUAL MODE CONSIDERATIONS

- **Accessible controls** - Rapid access under all conditions to emergency button and PTT without needing to think about it.
- **Audio on the shoulder** - able to hear dispatchers and colleagues even when on a foot chase
- **Direct mode** (device to device) available in case of network issues.
- **Handheld touchscreen** for workflow apps using Android or iOS.
- **Voice always available** even when using other apps

Meeting all these requirements in a single device is not possible

Motorola Solutions Solution Strategy: TWO DEVICES COLLABORATING SECURELY



Radio as Smart Speaker Mic

- Worn on body
- Rugged waterproof device
- Long battery life
- Dedicated emergency button and PTT
- Direct mode communication using TETRA DMO
- Pair with MC-PTT app on phone

AND

Handheld smartphone

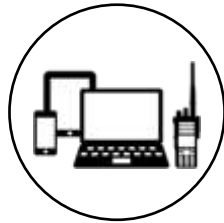
- LTE device running workflow apps.
- Carried on belt/in pocket



TAKE PUSH-TO-TALK FURTHER WITH WAVE PTX



**Extend Radio to
Broadband**



**Utilize Device and
Network of Choice**



**Increase Team
Collaboration**



**On Prem User Data
Security**



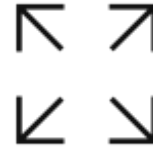
THE SOLUTION: WAVE ON PREMISE



**MULTIMEDIA
MESSAGING**



**INSTANT
COMMUNICATION**



SCALABLE



**CONNECTIVITY ACROSS DIFFERENT
DEVICES AND NETWORKS**



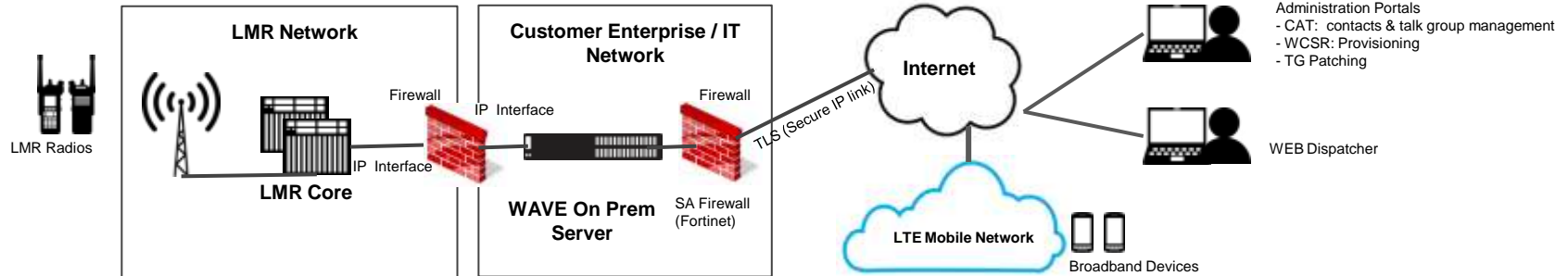
**BYOD DEVICES
COTS SERVER HARDWARE**



**STANDARDS COMPLIANT
SOFTWARE PLATFORM**



WAVE PTX ON PREM SOLUTION ARCHITECTURE



- ASTRO 25
- DIMETRA
- MOTOTRBO

- WAVE PTX Server Platform
- Standard IT HW
- Customer Data Fully Protected

- Android / iOS Mobile App
- WEB Portals for Administration



WAVE MOBILE APPLICATION

SINGLE APPLICATION. MANY FUNCTIONS



PTT Communication



Integrated Messaging



Presence & Status



Photo & Video Sharing



Location Services



COTS Devices:

iOS Client OS: Version 11 and above

Android Client OS: 5.0 and above. Preferably 6.0 and above



LEX L11



LEX L11 OFFERS DIRECT ACCESS TO MISSION-CRITICAL CAPABILITIES



HANDS FREE
Two Programmable Buttons
for hands free operations

**SINGLE HANDED
PTT**
Direct Access to PTT

BLIND NAVIGATION
Direct Access to Talkgroup
Toggle Capability

DIRECT ACCESS
Direct Access to
Emergency Capability



MAKING THE RIGHT CONNECTIONS ...



... BY UTILIZING THE RIGHT TOOL

- ✓ CRITICAL VOICE
- ✓ MISSION DATA
- ✓ EVIDENCE RECORDING





MOTOROLA SOLUTIONS

THANK YOU