



MISSION CRITICAL SOLUTIONS



MOTOROLA
SOLUTIONS

MOTOROLA SOLUTIONS CONFIDENTIAL



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Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. [motorolasolutions.com](https://www.motorolasolutions.com)

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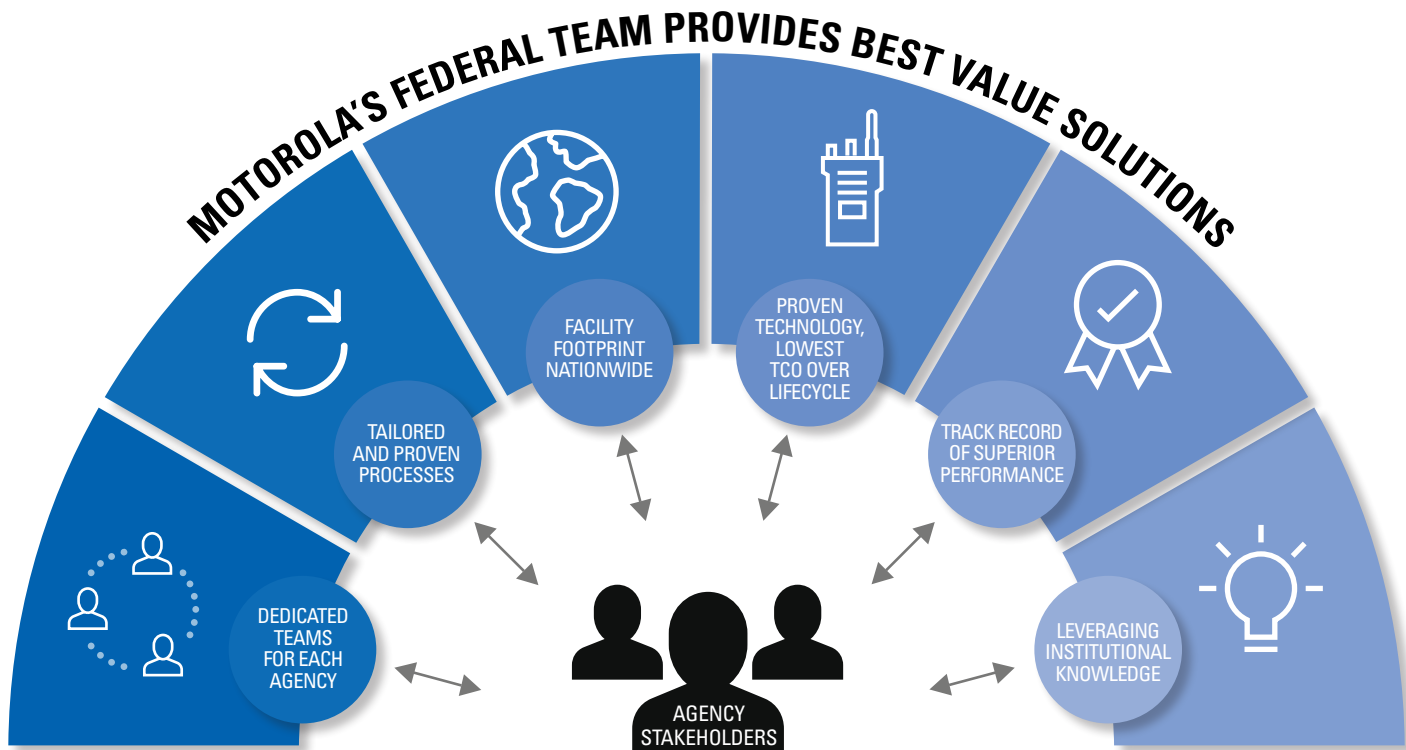
A COMPANY BUILT ON INNOVATION, TRUST AND BEST VALUE

HELPING PEOPLE IN THE MOMENTS THAT MATTER

Federal customers have chosen Motorola Solutions as their best value communications partner for over 90 years. Today Motorola continues to stand on sound financial footing and leads in all of the markets and verticals we serve. We pledge to continue to innovate, lead this industry and connect people in the moments that matter by providing best value solutions.

When you choose Motorola Solutions as your trusted partner, we help reduce total cost of ownership while maximizing return on investment.

Our solutions are not commodities; they are fielded and supported with resources and processes that have been specially developed to support this unique market.



LEVERAGING EXPERT TEAM OF DEDICATED RESOURCES

When purchasing Motorola technology customers receive full support from the stakeholders listed below as trusted advisors and partners. We have dedicated teams and resources assigned to every agency, activity and command. These resources have decades of experience and institutional knowledge surrounding your mission critical wireless requirements, stakeholders, and your fielded communications solutions. These resources are contained in a dedicated 400 person division of Motorola that serves only the Federal Government and their unique needs. This dedicated team has the required clearances for your agency and is ready to support your unique communication needs on a moment's notice. We support you from the initial system concept throughout the life of your system.

RESOURCES INCLUDE:

Dedicated Account Manager – From constant contact about customer needs, to working with them on any technology challenges, your dedicated account manager is your primary focal point into Motorola Solutions. They have in depth knowledge of your operations and are your trusted advisor for all your communication needs.

Dedicated Customer Service Manager – Bringing the knowledge of customers' technology within their operations, service managers ensure that customers are receiving the most advanced support and services.

Dedicated Systems Engineering Lead – Solutions design, refresh and interoperability are the primary goals behind our account systems engineering leads, who average over a decade of experience with each customer.

Customer Satisfaction and Field Engineer (CSAFE) – A travel team dedicated to supporting Federal customers for the resolution of any field related subscriber radios with the resolution of any field related subscriber issues.

Cyber Security Lead – Attacks to customers' infrastructure and edge devices are a reality; the cyber security lead secures your technology of any possible threats that could pose a breach into operations.

Federal Technical Center (FTC) – Dedicated to federal government agencies and provides the necessary secure environment to repair and upgrade customer products. Repair cycle times are monitored daily and customers can view their repair process via an online portal.

MAXIMIZING ROI WITH SERVICE CENTERS & SUPPORT PROCESSES

RESOURCES INCLUDE:

Customer Critical Care (C3) – This process and our Failure Review Board Process are two of the cornerstones of our systemic improvement and sustainment best practices. Both are defined methodologies whereby our front line personnel have access to all 14,000 Motorola Solutions employees when resolving system anomalies and/or system performance issues.

Customer Center for Solutions Integration (CCSi) – Six Sigma tools and methodologies are utilized to stage, test and deliver defect-free systems. Our dedicated CCSi team stages hundreds of systems annually and enables MSI to deliver defect-free systems to public safety customers.

System Integration and Test Team (SIT) – A specialized engineering team that maintains dozens of legacy Motorola systems in a lab environment to fully test and vet patches and upgrades prior to the release to the field.

Worldwide Learning Services (WWLS) – A specialized team of educators who deliver field based, classroom based and distance learning courses to thousands of customers annually.

Vetting Lab – A lab dedicated to testing and vetting new versions of 3rd party software patches and information assurance (IA) testing, ensuring the technology our customers are equipped with meets IA standards.

System Support Center – The heart of Motorola Solution's central support operations employs state-of-the-art diagnostic tools and is designed to detect and restore issues before they occur. It also houses our 24x7x365 toll-free call center that handles your incoming service request and manages each case from inception to closure, keeping you informed every step of the way.

Federal customers have chosen Motorola Solutions as their best value communications partner for over the past 90 years. Today Motorola Solutions continues to stand on sound financial footing and leads in all of the markets and verticals we serve. When you purchase a Motorola Solutions radio or system you get much more than just equipment. At Motorola Solutions will continue to innovate, lead this industry and connect people in the moments that matter by providing best value solutions.



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UNLIMITED MOBILITY. UNCOMPROMISING PERFORMANCE.

101 GUIDE TO MOTOROLA'S APX PORTABLES

SECTION: MISSION CRITICAL RADIOS

Radios are the communication tool and lifeline of Land Mobile Radio users. Coverage and Audio performance are critical factors in overall radio performance. With Motorola Solutions you are putting a device in your first responders hands that is rugged, reliable, and provides unparalleled communications.

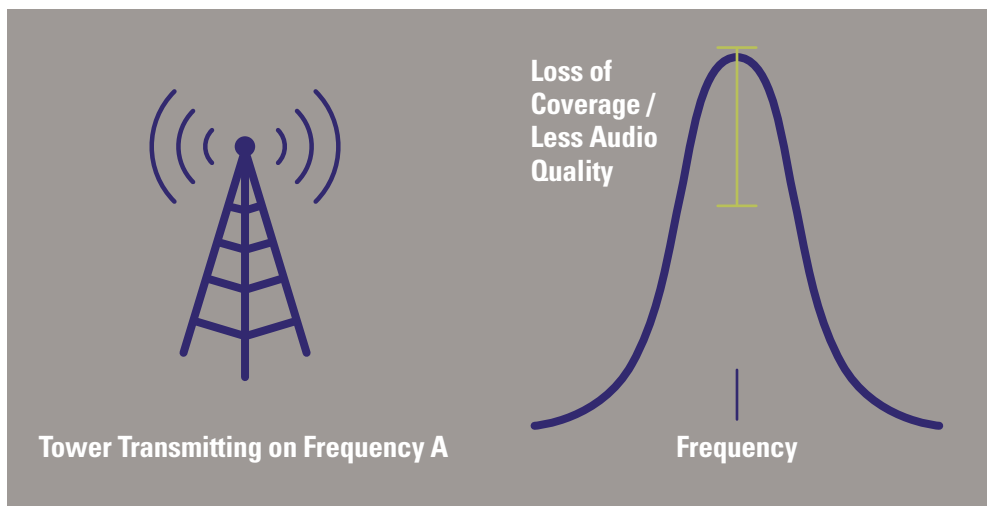
SECTION: FREQUENCY STABILITY

- Audio Quality
- Coverage

Frequency Stability is the radio's ability to stay on frequency over time and varying temperature. Poor Frequency Stability will affect the radio's receive and transmit coverage requirements.

APX RECEIVER FREQUENCY STABILITY - ± 1 PPM

APX TRANSMIT FREQUENCY STABILITY - ± 1 PPM

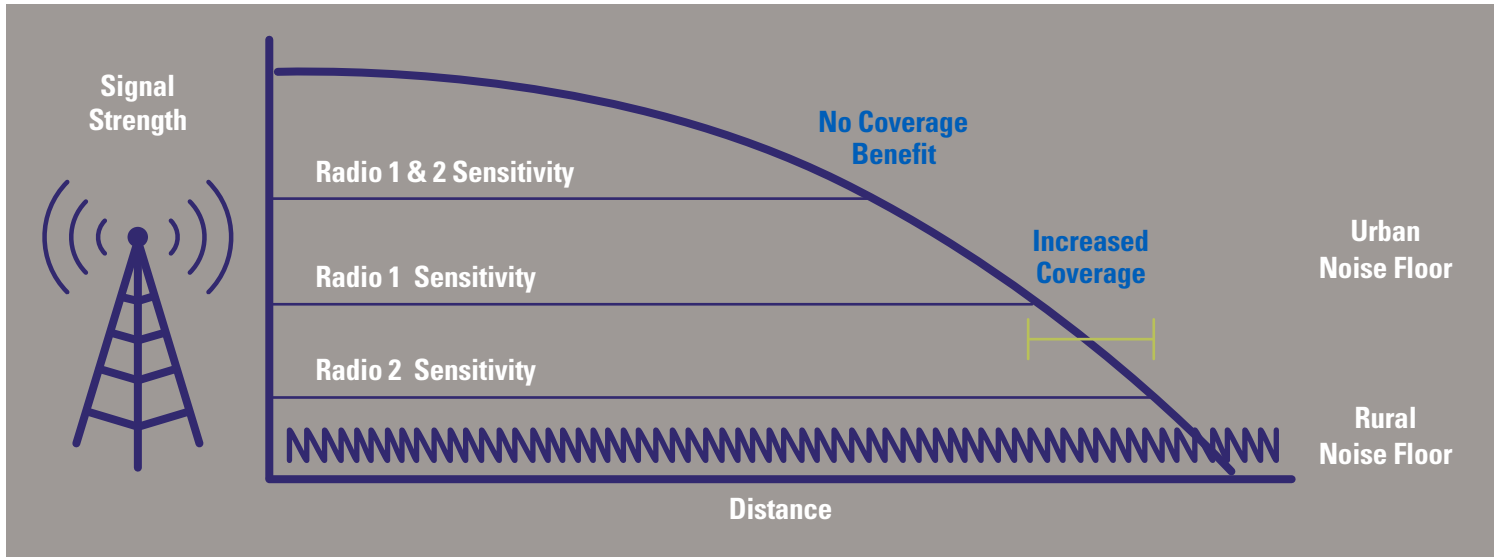


SECTION: RADIO-SENSITIVITY



Radio Sensitivity is a measure of the radio's threshold for detecting a signal. For a Project 25 radio, sensitivity cannot drop below the noise floor.

APX SENSITIVITY (12DB SINAD) – 0.199UV



SECTION: RADIO SELECTIVITY



Radio Selectivity is a measure of the radio's ability to reject out of channel energy and receive the desired signal. Unwanted signals can interfere with the radio's ability to receive the desired signal. Improved Selectivity can reduce the intensity of the interfering signals.

APX SELECTIVITY (12.5 KHZ) – 51 DB

LESS INTERFERENCE = BETTER COVERAGE



SECTION: INTERMODULATION REJECTION



Intermodulation occurs when two or more signals mix together in a non-linear environment. Intermodulation Rejection is a measurement of the radio's immunity to the mixing of signals within the radio.

High Intermodulation Rejection (IMR) Intermodulation exists where wireless transmissions exist. The higher the Intermodulation Specification the better the radio will reject unwanted interfering signals.

APX INTERMODULATION REJECTION – 80DB

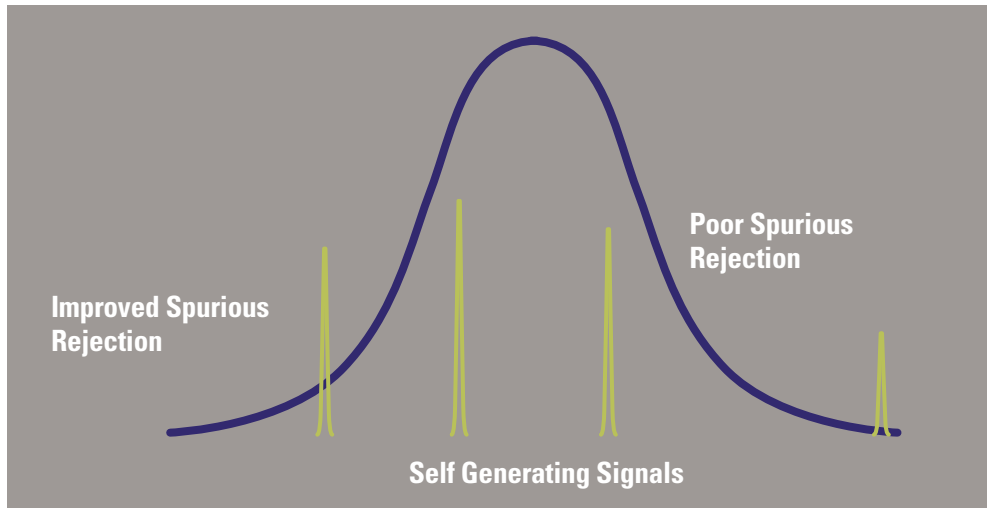
SECTION: SPURIOUS REJECTION



Spurious Rejection is a measurement of the radio's resistance to self generating and jamming signals. Radio's ability to not interfere with its own ability to hear a wanted signal.

The better the radio's Spurious Rejection the greater its resistance is to jamming and self generating interference. Improves Signal to Noise ratio and quiets spurs that are a mathematical phenomena and will occur based on radio design. Such as:

- Image Rejection
- Half IF Rejection
- Direct IF Rejection



APX SPURIOUS REJECTION – 98 DB



SECTION: FM HUM AND NOISE



FM Hum and Noise is a measurement of the radio noise floor.

The lower the noise floor of the radio the greater the likelihood that it can maintain the integrity of the receiving or transmitting signal.

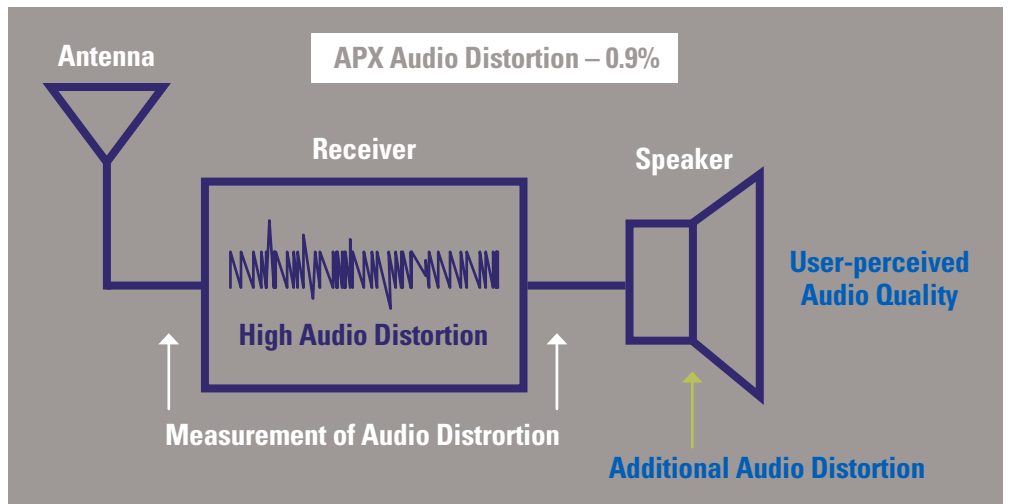
APX FM HUM & NOISE (12.5 KHZ) – 54DB

SECTION: AUDIO DISTORTION

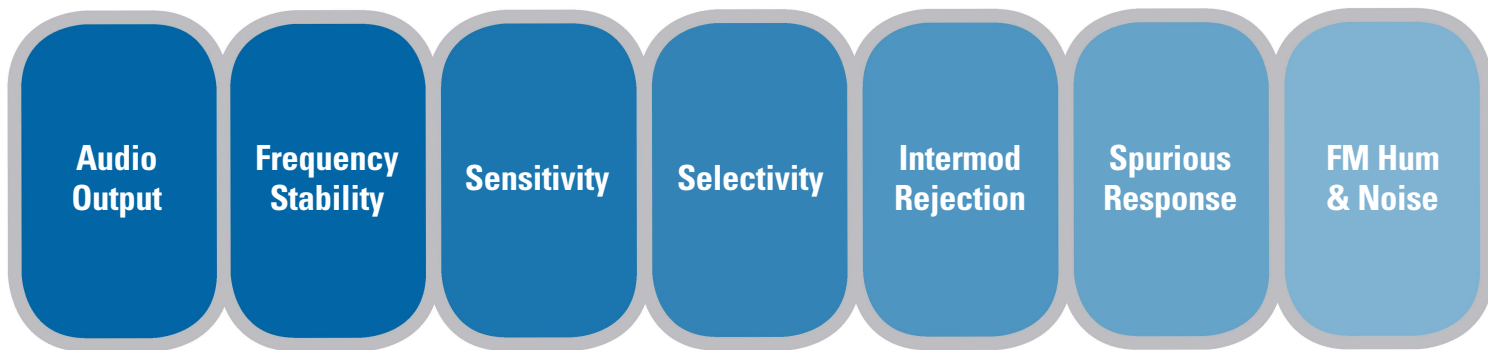


Audio Distortion is a measurement of the amount of distortion of a radio signal as the signal passes through the receiver or radio transmitter.

Speaker Audio Distortion can also affect Audio Quality.



NO COMPROMISES





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MISSION CRITICAL DEVICES: APX RADIO

MANUFACTURE INDEPENDENT FEATURES

INDUSTRY LEADING FEATURES CUSTOMER DESIGNED

Top View

Integrated Wifi,
Bluetooth & GPS

Easy Located
Emergency Button

Knob Spacing

Enlarged Knobs (XE Models)

Adaptive Audio Engine

3 Microphones
(APX8000, 6000,
SRX 2200)

Enlarged Bump Ring
For Durability

APX Signature
T-Grip Design

Fully Sealed
High-strength Aluminum
Alloy Endoskeleton

Enlarged /
Shielded PTT

Three Watt Speaker

(APX8000, 6000
Refresh, SRX 2200)
Impact Absorbing Dual
Battery Latch

Gorilla Glass Display

- Display Strength Improved by 5x Than Standard Glass
 - Provides Larger Display Size
 - 40% Thicker
 - Fights "Rainbow" Effect with Polarized Glasses
- Color Lcd Screen - 6 Lines
Capable Of 14 Characters
(Includes Ptt Id Lines)



MISSION CRITICAL RUGGEDNESS

APX ENDOSKELETON RUGGEDNESS:

The endoskeleton design provides improved submersibility and ruggedness for internal components. This will protect the radio in the harshest conditions and environments.

GORILLA GLASS™ LENS: Tempered glass for displays which provides a wider viewing angle, greater scratch and harvey impact resistance than competing radios, plus prevents distorted view with polarized lenses.

EXTREME CONDITION (XE) DESIGN: The ergonomic design of the APX "XE" series is designed specifically for mission critical fire environments. For gloved users, the exaggerated control knobs are easy to grip and locate in even the most stressful moments. From display size to button positioning, this radio is easy to access and operate.

MIL SPEC: Conformance with the Best-In-Industry shock, submerged water and scratch resistance

IP RATINGS: Up to IP68 Enhanced- Two Meters for up to 4 hours of submersion

INDUSTRY LEADING DURABILITY:

Conformance to Motorola Solutions Internal 12 M specifications which are even more stringent than MIL Spec

DUAL LATCH BATTERY: Protects the radio from resetting, powering off or ejecting the battery upon impact from drops.

T-GRIP DESIGN: Allows users to maintain a secure handling on the radio in the harshest environments. Controls and buttons are easily differentiated to help decrease inadvertent button pressing.

SEQUENTIAL LIFE TESTING: All of our APX Radios go through sequential accelerated life testing. This ensures that our radios will be ready for any environment, any challenge, and always deliver in the moments that matter.

MISSION CRITICAL AUDIO

NOISE CANCELLING: APX automatically optimizes speaker and noise cancelling parameters of multiple microphones allowing the radio to be functional in unlimited radio orientations

BEAMFORMING TECHNOLOGY: APX leverages adaptive beam forming technology to ensure multiple microphones work in conjunction to maximize speaker microphone gain in the direction of user speech while minimizing gain in the direction of any noise sources at the frequency of the noise source.

MULTIPLE MICROPHONE DESIGN: APX radio user is able to speak into any radio microphone with noise cancelling turned on and not degrade the user's speech captured.

LOUD AND CLEAR TRANSMISSIONS: APX Radios have a loud and clear 3 Watt speaker to ensure transmissions will be heard in loud and noisy environments.

APX Portable High Tier Radios Utilize our Mission Critical Adaptive Audio Engine which consists of:

ADAPTIVE DUAL-SIDED OPERATION: The radio uses beam-forming to allow the 2 mics to adaptively hone in on the talker and the source of the noise and dynamically amplify the voice and suppress the noise.

ADAPTIVE NOISE SUPPRESSION Based on the ambient noise level, the noise suppression intensity adapts to provide maximum noise cancellation while maintaining optimum voice clarity

ADAPTIVE SPEAKER EQUALIZATION

- The speaker automatically optimizes equalization settings based on user-selected loudness level
- At lower volumes, the speaker is equalized so incoming talker's voice sounds authentic
- At higher volumes, the speaker is equalized for intelligibility

ADAPTIVE AGC (AUTOMATIC GAIN CONTROL) - ENHANCED: Adaptive AGC ensures consistently loud and clear audio on the receiving end, by adjusting the microphone gain as needed.

ADAPTIVE WIND-PORTING: When no RSM is used, and wind is detected, third microphone with a wind-ported design is automatically used

MISSION CRITICAL AUDIO

SECURE COMMUNICATIONS: APX Radios contain the highest security ensuring radio transmissions stay secure. APX Radios have the highest FIPS Security with FIPS certified for 140-2 Level 3 security ensuring any stolen radios will not compromise encryption key information.

ENCRYPTION: APX Radios can contain multiple hardware encryption algorithms like AES, DES, ADP with up to 128 keys so sensitive information stays protected

P25 RADIO AUTHENTICATION ensures only valid users can access the system. Infrastructure authenticates subscribers using a special access key before allowing on the system

OVER-THE-AIR RE-KEY (OTAR) to efficiently update encryption keys of fielded radios over time
Note: OTAP/OTAR for APX radios with the correct setup is NOT dependent on manufacture infrastructure

TACTICAL STUN/KILL: Protect the integrity of your system with Tactical Inhibit (Stun/Kill). This feature allows a radio administrator to remotely disable a potentially compromised radio. It also provides a reactive security tactic against cloned or stolen radios attempting to eavesdrop or interrupt critical communications.

MISSION CRITICAL DEVICE COLLABORATION

MISSION CRITICAL SECURED WIRELESS BLUETOOTH 4.0 places a wide range of wireless accessories at your disposal and provides personnel with an added level of security by improving response time in emergencies.

EMERGENCY FIND ME, a Bluetooth-enabled beacon signal guides other Bluetooth-enabled APX radios within range to assist the user in distress.

COLLABORATION WITH LEX L11:

- Quickly and easily manage and control a BT paired radio from Motorola Solutions directly from your LEX L11. Remote Control Radio's Zones, Channels, Volume and Battery Life
- Remote Emergency Button Activation
- Speak Directly into the LEX L11 Over LMR Network

MISSION CRITICAL RADIO FEATURES

GPS LOCATION: Integrated GPS receiver can transmit the outdoor location of an individual or vehicle to map-based location software.

GPS LOCATION ON EMERGENCY: An emergency notification will be sent to dispatch upon activation of the emergency button. This will provide the GPS Location of the emergency allowing dispatchers to send out emergency help to the location.

MISSION CRITICAL GEOFENCE ensures fast communication and collaboration across multiple departments arriving on a scene by automatically placing first responders in the same talkgroup when they enter an agency-defined virtual barrier. Also provides subscriber notifications such as voice announcement triggers & display color changes (Red Zone, Yellow Zone, Green Zone)

VOICE ANNOUNCEMENTS: APX radios can audibly convey information to the radio user, when the radio display is not easily accessible. Information includes channel change, scan on/off, geofence triggers, etc. . .

OVER THE AIR PROGRAMMING (OTAP): The POP25 solutions allows APX radio subscribers to be programmed over the air while remaining in the field without interruption decreasing time the radio needs to spend in the shop. Note: OTAP/OTAR for APX radios with the correct setup is NOT dependent on manufacture infrastructure

EMERGENCY MAN DOWN: Unique accelerometer that senses the physical position of the user to communicate updated information to incident command/dispatch. Contains an audible beach with a unique critical emergency tone that will repeat itself until the emergency is manually deactivated

COVERT TACTICAL SETTINGS (SRX 2200):

- Ultra-low power operation allows military personnel to communicate in 0.25-watt transmission for low detection (UHFR1 only).
- Night Vision Goggle Mode: Settings provide users with the ability to disable lights and tones, and reduce the backlight display, which then becomes visible only with night vision goggles.

MODE SELECT: Allows users to store any channels to a single button press such as a side button or a number on the keypad.

CREATE DYNAMIC TALKGROUP ZONES: Allows users to create a new dynamic zone and add any talkgroups to it that are already programmed into the radio.

MISSION CRITICAL ACCESSORIES

IMPRES 2 ENERGY: With IMPRES 2 chargers, you can charge batteries up to 40% faster. Customize your charging to extend the life of batteries in storage. And manage power more intelligently with enhanced diagnostics, so you get the most from each battery.

IMPRES AUDIO ACCESSORIES: Motorola's exclusive IMPRES audio accessories help suppress ambient noise, amplify loudness and improve voice intelligibility. IMPRES audio can virtually block out all background noise in any extreme environment with windporting and noise-cancelling technology. Ensure your voice is heard loud and clear no matter what direction you speak with an advanced microphone system. IMPRES audio will make sure you are heard in any demanding environment.

COVERT & TACTICAL Accessories- For surveillance operations, our unique Mission Critical Wireless Covert audio kit provides the options an undercover officer needs when heading out for duty. Having these options available, gives the agent the opportunity to match the right discreet accessory to their surveillance needs for that day.

MISSION CRITICAL BLUETOOTH TOUCH PAIRING- APX Mission Critical Wireless Accessories pair with just a touch of the blue dots. Accessories pair in less than two seconds and connect in fewer than five seconds. There's no need to enter codes or navigate through menus on the radio.

MISSION CRITICAL HEARING PROTECTION- Heavy-duty headsets have been optimized and certified to meet the performance of your Motorola radio. These headsets protect your hearing and improve communication in loud environments. The variety of styles allows you to customize your solution in virtually every situation.

SCBA INTEGRATION-With integrated bluetooth technology, you can now pair MSA G1 & Scott Safety Epic 3 Voice Amplifier with Motorola APX Series Radios. Transmit clear communication while eliminating background noise, ensuring that voice is the only sound received b incident command

APX NEXT

P25 ALL BAND SMART RADIO



P25 ALL BAND SMART RADIO

In public safety, focus is your greatest resource. Make sure it's protected with APX NEXT.

A MASSIVE ADVANCE IN MISSION-CRITICAL VOICE AND DATA

Your radio is your lifeline. APX NEXT is our next step in advancing it. APX Next is a rugged, converged device that combines LMR and Broadband delivering Mission Critical Features essential for operations. It's designed to military standards for extreme ruggedness. The touchscreen works with or without gloves—in rain, dirt, and dust. Digital mics and high-power speakers deliver our best audio ever, while SmartConnect keeps you connected even beyond your P25 system. The result is a radio that works when you need it, virtually without pause, distraction or doubt.



MISSION CRITICAL RUGGEDNESS

- APX NEXT is built around an alloy frame or “endoskeleton”. It maintains the integrity of the device, even if the housing is damaged
- The touchscreen is protected by Gorilla Glass and supported by a stainless steel plate, to prevent it from twisting
- IP 68: Dustproof, waterproof, submersible (2 Meters, 4 Hours)

MISSION CRITICAL AUDIO

APX Next utilizes our industry leading audio with our Adaptive Audio Engine, however we also added audio capabilities on the receive side

- New HDR(High Dynamic Range) microphones
- Our loudest RSM ever with four mechanically integrated microphones
- Improved noise reduction
- Enhanced clarity
- Receive audio leveling
- Improved wind-porting

MISSION CRITICAL USER INTERFACE

APX Next utilizes our SmartTouch technology:

- Rugged hardware
 - Designed for rain, dirt, & gloved operation
 - Gorilla glass with steel substructure
- High-velocity UI design
 - Large touch targets
 - Shallow menu structure
- Integrated applications
 - Information at a glance
 - One-touch access to optional apps

MISSION CRITICAL AUDIO

Protect the Device

- Secure boot
- Hardened OS
- Integrity monitoring
- Data encryption
- HW protected security credentials (keys, certs)

Protect Data In Transit

- Secure broadband applications
- (TLS 1.2) - via MSI PKI Device Certs
- SmartConnect
- SmartLocate (IOT HUB)
- ViQi Virtual Partner
- SmartProgramming
- SmartMapping
- LMR P25 voice & data HW encrypted (FIPS 140-2 L3)

Protect The Cloud

- Cloud security
- Authorized Access - MFA
- Radio user authentication
- Event logging

Protect The System

- Internet Firewall
- Secure data at rest
- Authorized access
- Radio Authentication
- Event logging

MISSION CRITICAL BROADBAND SERVICES

- SmartConnect
- SmartLocate
- SmartProgramming
- ViQi Virtual Partner
- SmartMapping
- SmartInsight
- SmartMessaging

KEY TAKEAWAYS:

Best in class radio operation via SMARTTouch and ViQi Voice Control

Stay connected everywhere with SMARTConnect

Ensure officer safety and efficiency with SMARTLocate

Seamless programming using SMARTProgramming and Radio Central

Streamline officer and dispatch operations with ViQi Virtual Partner

APX NEXT is a Multi Band, Multi protocol P25 radio with WiFi, BT, and

LTE operation

Simultaneous LTE/LMR Operation

Seamless LTE/WiF Programming means APX NEXT can be updated remotely

in the field with minimal effort

Large Touch Screen Interface for high velocity radio use and future features

Dynamic Dual Microphone Noise Cancellation, built-in windporting, and Adaptive Audio Engine allows users to be heard clearly in any environment

Receive Audio Leveling allows users to focus on their job, not adjusting their volume

Standard Capacity Batteries (12+ hrs) and High Capacity Batteries (16+ hrs)

means APX NEXT will support officers for their entire shift

ViQi Virtual Partner and Voice Control allows users to interact naturally with

APX NEXT

XV Microphone with 4 Dynamic, Windporting Mics



ASTRO 25 SYSTEMS AND APX RADIOS

THE BEST RELIABILITY

MEASURABLE 99.999% AVAILABILITY WITH NO SINGLE POINT OF FAILURE

Users can fully trust ASTRO 25 for mission-critical communications. Critical components are available with redundancy built-in throughout the entire system. More Police, Fire, EMS, and Military users trust ASTRO 25 than any other P25 system – and for good reason. 99.999% uptime is Motorola's performance objective for all ASTRO systems it deploys

SUPPLY CHAIN CONTINUITY

Motorola's supply chain managers are experts in supply chain resiliency and 3rd party relationships. Motorola assures predictable product availability, component quality, roadmap feature enhancements, and warranty support throughout the lifecycle of each Motorola ASTRO system.

DYNAMIC SYSTEM RESILIENCY (DSR)

Adds a geographically redundant ASTRO 25 Core to protect against catastrophic failure of the primary Master Site. Fully automatic switchover within seconds minimizes impact to users. In the event that the remote sites cannot connect with their currently active core, the sites will switch to their alternative core. Ensure the continuity of your network in the event of a major disaster with redundancy for voice, data, system management, and security services.

EDGE AVAILABILITY

Architecture adds an additional fallback feature with wireline console and site-to-site communications for a trunking subsystem, increasing the resiliency of ASTRO 25 Trunking systems. If a critical failure occurs at the Master Site (s), or with the links to the Master Site (s), Edge Availability will pass call control outward from the central core to the system edges. Control at the edge will maintain trunking voice operations to regional users by enhancing the Site Trunking fallback mode. The regional dispatch and RF sites utilizing Edge Availability will benefit from: Multi-site voice operation across local RF and dispatch sites, Talkgroup roaming across local RF sites, Wireline dispatch capability providing emergency alarms with aliases, and MCC-series console priority and access to all talkgroups.

BROCHURE | ASTRO 25 + APX RADIOS

HIGH AVAILABILITY DATA

Provides an automatic geographically-redundant data solution that is not subject to loss of service from a single point of failure or even loss of an entire site. Data can be protected to the same level as voice!

PROVEN RELIABILITY + LONG-TERM SUPPORT

ASTRO 25 System Components, MCC-Series Dispatch Consoles, G-Series Site Equipment are purpose built and field-proven with thousands of customer deployments worldwide.

FULL EXPANDABLE SITE SUBSYSTEM (ESS) BUILT-IN REDUNDANCY

The completely redundant, software-defined GTR 8000 ESS results in superior system availability by eliminating single points of failure and includes hot-swappable FRU's. The modular design incorporates all site controllers and Radio Frequency Distribution (RFDS) in a one rack form factor (700/800MHZ) for a more efficient design with less RF losses to optimize signal power in both the transmit and receive networks.

FULL KMF (KEY MANAGEMENT FACILITY) REDUNDANCY

Seamless and automatic backup of KMF containing identical key material information. Maintain system security even in the event of a KMF or site failure. The KMF allows for geographic redundancy so that services can be maintained in the event of a failure at one of the physical locations.

DISPATCH CONSOLES USE COTS WORKSTATIONS

Commercial Off-The-Shelf (COTS) hardware, rather than proprietary hardware, means dispatch console PCs are easier to maintain, easier to replace, more scalable, and field proven over a longer lifecycle.

DISPATCH CONSOLES WITH DUAL-LAN REDUNDANCY

Dual network paths to individual consoles provide alternate paths in case of dispatch site switch failure. Ensure continued dispatch operations with high availability consoles!

THE BEST COVERAGE

SMARTCONNECT

Motorola's revolutionary network connectivity enhancement allows users to roam from LMR coverage to broadband LTE seamlessly. Smartconnect offers connectivity to a user's home LMR system from anywhere there is LTE Broadband or WiFi connectivity. Just because you leave your RF service area doesn't mean you have to lose connection with your system.

RECEIVE DIVERSITY Motorola's TDMA Dual-Receive Diversity option compensates for the lower inbound coverage performance that all TDMA systems will experience vs. FDMA. This results in increased inbound coverage performance, less sites, and less cost. Motorola's Dual-Receive Diversity also provides the redundancy benefit of two built-in receivers and two receive antennas.

SUPERIOR TRANSMITTER & RECEIVER RF SPECIFICATIONS Motorola's APX Subscribers and G-Series Base Stations offer unparalleled transmitter and receiver RF performance. Superior spec such as Frequency Stability, Sensitivity, Selectivity, Intermodulation Rejection, FM Hum and Noise, and Audio Distortion result in increased coverage and better audio quality.

DATA COVERAGE = VOICE COVERAGE With the same coverage for data as voice, workers can rely on ASTRO 25 for mission-critical data applications when it's needed most.

SOPHISTICATED BEST-IN-CLASS COVERAGE PREDICTION TOOLS Used by experienced engineers and leveraging data from hundreds of past Coverage Acceptance Tests (CATPs) produces system designs yielding more coverage with fewer sites.

INTEGRATED G-SERIES COMPACT SITE Provide fill-in coverage or additional channels where required. Protected from the elements, the G-Series Compact Site contains all the necessary components of an RF site. Simply place the cabinet on a concrete pad or mount on a pole to reduce costs and complexities associated with traditional building construction and difficult terrains. Coverage where you need it.

INTELLIGENT ROAMING ENGINE Minimize the number of site handovers and ensure that voice calls are not missed. ASTRO 25 + APX = Best roaming performance in the industry by simultaneously using Adjacent Site Broadcasts, Fast Site Roaming, Least and Most Preferred Site Selections, and far superior roaming algorithms.

THE BEST MANAGEMENT AND CONTROL

CIRRUS CENTRAL MANAGEMENT

CirrusCentral Management is a modern, cloud-based system management suite built for ASTRO 25 radio systems. It can give you insights into your system's performance with detailed statistics and trends to help identify potential issues before they become a problem. The easy to use intuitive interface helps streamline remediation of alarms and events. The best part, you can securely access your radio system from anywhere, on any device, over LTE, when it is difficult to physically get to the network operations center.

HIGH SECURITY SYSTEM RELEASE FOR FEDERAL GOVERNMENT

The High Security (.HS) release provides robust security updates and patches specifically tailored to the Federal Government's requirements for security and hardening.

OVER-THE-AIR SOFTWARE UPDATE

Keep firmware, codeplug, and flashcode of radios up-to-date over the ASTRO 25 system to save time and costs. Firmware updates are broadcast to multiple radios simultaneously, meaning large fleets can be fully updated automatically in a matter of days instead of weeks or months of manual effort.

APX RADIO MANAGEMENT

Motorola's Customer Programming Software (CPS) Radio Management application simplifies APX radio configuration and management, saving time and money while ensuring users can accomplish their mission without interruption. Radio Management tracks the progress of software updates for each radio and supports Pause/Resume, Batch Programming, and Partial Codeplug Rewrites to greatly speed up the time taken to reprogram large fleets of radios using PoP25 (Programming Over P25).

INTEGRATED FAULT MANAGEMENT FOR ALL EQUIPMENT

Provides a single location to view, organize, and manage all fault data, including alarms and event views from third-party equipment. Combined UEM and MOSCAD functionality provides advanced support for microwave devices, real-time device metering, environmental inputs, and digital controls into a single application. New system views, site views, microwave views, interactive maps, overview status screens, and drill-down menus provide technicians and system managers the information needed to ensure ASTRO 25 performs optimally. Use Cirrus to compliment this functionality from broadband devices

SYSTEM AUDITING AND ROLE-BASED ACCESS

Manage and track changes from various agencies that use a shared system. Technicians or operations personnel can be given access to control certain radios, sites, talkgroups, and equipment. The Provisioning Manager Audit feature allows the authorized user to identify who, when, what operation, object type, which records, and what data has been modified, created, or deleted. The authorized user can view configuration parameter values before and after a system event, login and logout events, provisioning and administrative actions of all users, search and filter audit data records. The Audit feature enables stricter enforcement of system policies and provides an efficient way of troubleshooting when identifying mis-configuration issues.

E-MAIL NOTIFICATIONS

E-mail notifications of system alarms provide technicians instant information which enables them to be more effective and efficient at monitoring systems and responding to events.

AGENCY PARTITIONING

Agencies can gain the interoperability benefits of being on the same system, leverage cost savings, yet still maintain control of their own console configurations, subscriber configurations, channels, site equipment, and secure encryption keys.

IMPRES BATTERY FLEET MANAGEMENT

Eliminates the guesswork, complexity, and costs of managing hundreds or thousands of radio batteries and chargers wherever they're located, and makes it easier for personnel to work safely and successfully. IMPRES Battery Fleet Management provides the most accurate information on each battery in a fleet, so users can be assured they're fully charged and will last the entire shift. Whether radios are in the charger or in the field, the IMPRES software automatically collects battery-critical data. This includes battery age, capacity, charge and recondition history, manufacturing and put-in-service dates.

THE BEST CAPACITY & BANDWIDTH EFFICIENCY

ENHANCED DATA

Drastically improve inbound data efficiency while using fewer channels. Up to 12X capacity improvement over P25 Standards Data for location messages. Enhance safety and dispatcher awareness by tracking 12X more radios or 12X more frequent location updates per channel

GROUP SERVICES

A method of delivering data to an entire talkgroup of users simultaneously. Maximize efficiency while harnessing powerful data capabilities by broadcasting data over the voice channel to all radios at the same time!

SOFTWARE DEFINED CORE

Means reduced space, power, heat, and weight while making it easy to expand capacity or add new features down the road.

CENTRALIZED DATABASE OF SUBSCRIBER AND INFRASTRUCTURE CONFIGURATIONS

Configure subscribers, consoles, and site equipment across the entire system from a centralized application on the radio network management suite of software solutions.

OPEN APPLICATION INTERFACES

ASTRO 25 has the most Application Programming Interfaces (APIs), giving customers the flexibility to work with independent software vendors to develop the best complement to Motorola's system. Fault Management, Performance Management, Subscriber Provisioning, Location, Presence, Packet Data, Computer-Aided Dispatch (CAD) interfaces can be used to provide custom solutions and additional functionality as needed.

COMPREHENSIVE SUITE OF THIRD-PARTY APPLICATIONS

Motorola has worked with over 130 licensed developers to integrate third-party products and customer-developed applications into the ASTRO 25 system, thereby providing more flexibility and choices to meet particular mission-critical communication needs. These applications and vendors are in total alignment with our supply chain team.

THIRD-PARTY APPLICATION TEST LAB

The ASTRO Application Solution Center is available for developers and customers to validate and pre-test 3rd-party applications before it is deployed, ensuring a smooth and risk-free deployment in the field. This testing lab also assures that upgrades will be done right every time to reduce system downtime.

FLEXIBLE AND SCALABLE PLATFORM

ASTRO 25 can be sized for individual bases or interconnected enterprise systems. ASTRO 25 supports Geo Redundancy, High Availability, and 4 layers of failover. Capacities included up to: 7 Zones, 200,000 Talkgroups, 2000 Dispatch Console Positions, 700 Dispatch Sites, 250,000 Configured Radio Users (Radio IDs), 64 Conventional Subsystems (CSUBs).

MOTOROLA = THE MOST NATIONWIDE, REGIONWIDE & STATEWIDE P25 SYSTEMS + THE MOST PROVEN TDMA SYSTEMS

TDMA provides twice the talkpath capacity for each channel, effectively doubling the channel capacity of a Motorola system. Larger customers with higher capacity requirements turn to ASTRO 25 over any other platform.

VOICE VS. DATA PRIORITIZED AS DESIRED

Voice can always have priority or certain channels can protect data. Flexible resource allocations to meet your voice and data needs! With voice priority, radios involved in data calls automatically join voice calls when their talkgroup becomes active. Alternatively, data channels used for mission-critical needs can be protected from pre-emption by non-emergency voice.

DYNAMIC TRANSCODING

Converting calls between TDMA and FDMA in real time to enable efficient communication between TDMA subscribers and FDMA subscribers. Transcoder will dynamically choose call type based on site resources and associated subscribers, while whenever possible calls shall be delivered using TDMA to maintain efficiency and full system capacity.

THE BEST USER COMMUNICATION FEATURES

AXS COMMANDCENTRAL CONSOLES

The AXS Dispatch Console provides the next generation dispatching experience. You will be able to integrate applications into the console and extend the console functions into other dispatch center software applications. Users can access multiple types of communication systems and connect with them simultaneously. New features and capabilities can be added with ease to provide pain free, secure enhancements as needed. The console leverages our mission-critical expertise in the industry for over 80 years

TALKGROUP TEXT MESSAGING

Dispatchers can broadcast a text message from the dispatch console to all APX radios on a talkgroup simultaneously. Enhance worker awareness and safety by using text messages with background colors to convey critical information like hazard alerts, incident updates, discrete information, BOLOs, and more!

ADVANCED MESSAGING SOLUTION (AMS)

Key information can be conveyed through predefined or free-form text messages sent from dispatch to radio, radio to dispatch, and radio to radio users using the AMS solution to optimize communications between system dispatchers and subscribers.

ALIAS GROUP DOWNLOAD

Keep radio alias information current without any radio codeplug re-programming! The radio system administrator can update the PTT-ID alias of a radio from a central application, and the updated alias is sent automatically to all subscribers on a talkgroup.

USER LOGIN ALIAS UPDATE

Enhance safety and communication effectiveness by knowing who is talking at all times, even when sharing radios or vehicles during shift changes! This feature ensures that a radio user's alias is updated on all radios and consoles within the talkgroup through the simple action of logging into the radio.

AGENCY CAPACITY ALLOCATION

Enforced agency allocations allow sharing of data bandwidth between multiple agencies on a common system. Public Safety, Transit, Utilities, and others can share one overlay system while allocating data capacity as desired.

CONVENTIONAL TALKGROUPS

Radio user groups can share the same conventional channel while keeping conversations separate. Dispatchers can more effectively manage the groups that are relevant to them, reduce unnecessary transmissions, and improve responsiveness.

DIFFERENTIATE EMERGENCY ALARMS: BUTTON PRESS VS. MAN DOWN

This feature enables a man down emergency condition detected by a P25 radio to be differentiated from an emergency button press initiated by a P25 radio user. The two types of emergency conditions are differentiated at the dispatch console and Radio Control Manager (RCM) operator positions with unique icons and alarm tones. The initiating P25 radio and other P25 radio users in the talkgroup that have a radio with a front panel display will see the specific emergency condition on their P25 radio.

APX PERSONNEL ACCOUNTABILITY INCIDENT

Commanders can better manage the incident at a fire or a hazmat scene by using APX Personnel Accountability software on a laptop or tablet to conduct Personnel Accountability Report (PAR) checks, issue evacuation notifications, or trigger customizable tactical orders to responders. Commanders can also monitor radio battery levels, identify radios, receive radio power down indications, and even move a radio to a different talkgroup.

INTUITIVE AND PROVEN DISPATCH INTERFACE

MCC 7500e dispatch console provides a modern yet familiar and easy to use graphical interface that enhances dispatch efficiency and accuracy under stressful situations. Highly customizable and ready to be tailored for your exact preferences. Purpose-designed Workflows ensure immediate alert notifications and functional operation to speed response with minimal click-throughs.

COMPREHENSIVE SUITE OF NEW AND LEGACY DISPATCH FEATURES

MCC Consoles offer both sequential and simultaneous paging, enabling customers to meet their paging requirements. Supporting both analog tone pages and system pages allows re-use of existing pagers, maximizing existing investments. MDC 1200 and Quick Call II support maintains operations and provides a smooth transition to P25.

INBOUND EVENT DISPLAY (IED)

Shows incoming radio events to the MCC-series Dispatch Console in a queue format. Manage and respond to calls, emergencies, status events, and message events even if dispatchers do not continuously monitor all resources; Well-suited for customers who operate in a Request-To-Talk (RTT) environment.

DYNAMIC GPS LOCATION POLLING

See up-to-date location of workers based on time, distance travelled, or in real-time on dispatcher demand. ASTRO 25 supports variable sized packets and variable update rates enabling smarter, more efficient distance-based GPS location updates than other manufacturers.

LOCATION ON PTT

Send GPS location updates to a mapping application over the voice channel upon pressing the PTT or Emergency button. Location on PTT enables dispatchers to continue to view a radio user's updated location in near real-time when accurate information is needed most – during emergency calls and periods of high voice traffic – to support a faster emergency response. Location on PTT can be sent in addition to cadence-based, distance-based, or manual on-demand location updates already being sent over the IV&D data channel.

LOCATION ON RX

Allows an APX™ radio enabled with TDMA to send in their location to a mapping application over the voice channel while receiving voice or in hangtime during a call. This is a valuable feature for customers using location services who have the need to obtain relatively frequent GPS location updates of their personnel during high voice call activity. Location on RX provides greater accuracy and reliability in determining location of radio users, especially during emergencies when needed most. Location continues to be reported even while in a call.

ENHANCED GEO SELECT

Increase the safety and productivity of field personnel with immediate and hands-free automated talkgroup selection and other radio actions! A dispatcher or incident manager can set up triggers within a geofence – a “virtual geographic boundary” – so when an APX radio enters or exits a particular area, a variety of radio actions occur automatically. Radios can perform any of the following actions upon crossing a geofence boundary: Change trunking talkgroup, change conventional channel, display a text message, report its location to the system, play an alert tone or audio announcement, and change the radio's transmit power.

THE BEST INTEROPERABILITY & BROADBAND CONVERGENCE

CONNECT (ISSI 8000)

Connects separate systems with different RF bands, system IDs, release versions, or channel types. Extend coverage area or interoperate with neighboring P25 systems with seamless Automatic Roaming or Manual Roaming. Multiple ISSI 8000 features go well beyond the P25 standard to enhance interoperable communications.

WAVE BROADBAND PUSH-TO-TALK (PTT)

Provides a secure, high-performance voice, messaging, and location service to interoperate with P25 LMR radios over any broadband or wide-area network using Android/iOS devices and PCs. Extend reach to radio users outside the coverage of the ASTRO 25 system, enabling global broadband connectivity. Enhance choice for users who do not carry a radio, but still need occasional interoperability with radio users. Increase productivity by enabling non-radio users to collaborate efficiently via secure PTT communication.

INTER-SYSTEM DATA

Use data applications when roaming and always have access to key information during interoperability scenarios. Inter-System Data enables data services (such as GPS location, text messaging, OTAP, and OTAR) interoperability for roaming users across ISSI 8000 connected to ASTRO 25 Trunking IV&D systems and to the home/primary system.

ENHANCED CONVENTIONAL CHANNEL GATEWAYS (CCGW)

Communicate with conventional stations, Mutual Aid radios, and seamlessly patch together conventional resources as needed while reducing hardware and costs.

INTELLIGENT MIDDLEWARE CONVERGENCE SUITE

Workers need to communicate regardless of technology or jurisdiction boundaries. Bridges are being built between ASTRO 25 systems and LTE broadband systems. Pairing mission critical two-way radios with companion data devices allows agencies to supplement voice with rich-media content for improved decision making. In the future, users will access voice talkgroups to push images or video to the accompanying data devices over a broadband network.

THE BEST SECURITY AND INFORMATION ASSURANCE (IA)

CAC/PIV

Smartcard based Multi Factor Authentication driven by federal mandate for FIPS-201 compliance for PKI standards to reduce identity fraud and protect personal privacy through the use of CAC (Common Access Cards) and PIV (Personal Identification Verification) assets. This feature is available on the High Security release for the federal markets.

KMF WEB-BASED THIN CLIENT

A web-based client architecture that provides KMF administrators with enhanced capabilities including: Detection and diagnostic mechanisms for reacting to potential details concerning encrypted units, enhanced historical reporting on individual units, and tools to enable a more flexible method for generating reports.

KEY MANAGEMENT FACILITY (KMF)

Manages communication security across both P25 and LTE devices using FIPS 140-2 Level 2 CRYPTR hardware-based encryption.

END-TO-END ENCRYPTED DATA

In order to protect critical data such as GPS and text messages, ASTRO 25 offers end-to-end encrypted data; the transmission of IV&D data packets shall be AES-256 encrypted between the subscriber radio and the Packet Data Encryption Gateway at the Core. Federally validated encryption can protect sensitive data information, like the GPS location of each officer or codeplug configurations of radios.

RADIO AUTHENTICATION

Restrict unauthorized system access and prevent use of cloned, lost, stolen, or illegitimate radios. Standards-compliant implementation protects the integrity of the system while maintaining P25 interoperability.

MOTOROLA ADVANCED CRYPTO ENGINE (MACE) FOR END-TO-END HARDWARE ENCRYPTION

Provides trusted cryptographic services in a Tamper-Protected Chassis. APX radios are the only radios in the industry to meet the FIPS 140-2 Level 3 validation.

ZONE CORE PROTECTION (ZCP)

Detects and blocks unauthorized packets attempting to enter the zone core which originate from remote sites or the communication links that remote sites utilize. ZCP also provides traffic filtering between zones in multi-zone system configurations.

OVER-THE-AIR REKEYING (OTAR) AND REMOTE INHIBIT

Ensures security is maintained quickly and easily.

COMPREHENSIVE SECURITY MONITORING SERVICES

Protect against malicious attacks from external and internal attack vectors. Shorten the time between detection and response, reduce operational costs, and proactively counter eminent threats with 24x7x365 real time remote monitoring.

LINK ENCRYPTION AND AUTHENTICATION

Ensures all traffic traversing between remote and master sites and between the DMZ and system border gateways are encrypted with AES 256 bit encryption.

INTRUSION DETECTION SENSING

Inspects all inbound and outbound network traffic and proactively identifies any suspicious patterns that may indicate an attack and provides automatic alerts of any and all anomalous activity.

SECURE NETWORK MANAGEMENT

Ensures the secure transmission of all voice, data, and management traffic between components within the network via authentication and encryption.

ROUTER ACCESS CONTROL LISTS

Ensures any unauthorized network traffic is prevented from crossing the network boundaries so only permitted traffic can transverse the network.

SECURE SOFTWARE DOWNLOAD

Ensures all downloaded software to infrastructure components are authenticated and encrypted based on the Secure-File-Transfer Protocol.

CENTRALIZED AUTHENTICATION AND AUTHORIZATION

Ensures only valid users are able to manage and take control over network infrastructure components.

CENTRALIZED LOGGING

Effectively manage and review all log information generated across the ASTRO 25 system without having to access every network component individually.

CENTRALIZED SYSTEM BACKUPS

Eliminate the need to perform costly local backups on individual system components by providing a centralized manager for critical data backup and restore operations.

NIST SP800-131A COMPLIANCE

National Institute of Standards and Technology (NIST) is the federal technology agency that works with industry to develop and apply technology, measurements, and standards. By meeting NIST 800-131A requirements, ASTRO 25 is using the latest recommended guidelines for cryptographic algorithms for key strength as set by NIST to ensure cryptographic integrity.



APX VALUE-ADDED FEATURES

UNIQUE FEATURES USING A MOTOROLA ASTRO INFRASTRUCTURE WITH MOTOROLA SUBSCRIBERS

Motorola participates in the DHS P25 CAP process and tests and certifies Motorola subscribers on Motorola infrastructure.

VOICE & DATA (IV&D) PRESENCE NOTIFICATION

- Using the Presence Notifier, the Motorola system is aware of the current availability of a Motorola subscriber on the system. This is useful for data applications in which you would not want to send packet messages to radios that are not available.
- Without presence notification, the radio system manager would have to keep a list of static IP addresses for each radio ID and then manage the individual radio IP address manually.
- For example, if you would like to upgrade a radio via OTAP: Using a Motorola radio, the system would have knowledge of a radio's availability to begin programming. A non-Motorola radio would need to attempt programming and fail before realizing the radio is not available (no presence notification).
- Additional benefits include: Motorola IV&D solutions are implemented, tested and certified for optimum performance with Motorola subscribers.

APX RADIO MANAGEMENT

- Schedule 1,000+ APX radios: This is a scalable and flexible deployment scheme that employs components with specific responsibilities.
- Over-The-Intranet-Programming (OTIP): Many machines and up to 16 USB ports in parallel for each machine.
- Differential Codeplug Updates: Allows Radio Management to only send out the part of the codeplug that was changed, saving an enormous amount of system resources by not having to download the whole radio codeplug, make the changes, and then write the new codeplug to the subscriber. This can make a multi-week operation take only a day if there are many subscribers on the system.

FIRMWARE UPDATES OVER P25 SYSTEM

- Allows for simultaneous radio codeplug updates over IV&D, a unique feature only available on MSI infrastructure with MSI subscribers. Large fleets can be fully updated automatically in a matter of days instead of weeks or months of manual effort, this allows the radios to stay in the hands of the users in the field rather than in a radio shop for service.

OVER THE AIR RADIO PROGRAMMING (OTAP)

- Motorola prioritizes voice over data on ASTRO networks. Motorola receives data in the background seamless to the user.
 - Each vendor must provide their own OTAP server for their radios as there is no software package that is able to program all vendor products.
 - Other vendors do not prioritize voice over data– the subscriber could potentially miss voice calls during data operations. Some codeplug downloads can take several minutes to complete which could result in missed critical voice transmissions.
 - Other vendor OTAP solutions do not have access to Motorola's presence notifier requiring static IP addressing and limiting batch functionality over the P25 network.
 - Other vendor radio OTAP sessions must begin before the OTAP server has any awareness of the availability of the radio being programmed using up valuable data bandwidth
 - Other vendor radios are limited in their ability to pause and resume an OTAP session if interrupted by a voice call.
- Automatic Pause/Resume Data On Voice Calls:
 - MSI Subscribers have the ability to pause data downloads during an incoming voice transmission and then resume once the call is finished. Radios users have no knowledge of OTA Software Updates until complete. Users are able to listen and transmit as needed during OTA Software Updates updates.

SECURITY

- APX supports the OTAR key-lost key replacement function in order to allow users to request a new key even in the event that the Unique Key Encryption key (UKEK) has been lost.
- APX supports OTAR keyset changeover command in order to prevent interruption of encrypted communications with radios which may have not received new keys. Encrypted radios are capable of Over The Air Rekeying radio to radio without requiring infrastructure support in addition to system designated methods.
- APX supports encrypted inhibit commands and does not allow for the acceptance of non-encrypted commands to limit any limitations around the radio being disabled by unknown sources.
- FIPS 140-2 Level 3 End-To-End Encrypted Data: In order to protect critical data such as GPS and text messages, The transmission of IV&D data packets are encrypted between the APX radio and the Packet Data Encryption Gateway at the Core.
- For additional security data encryption has the ability to use a separate encryption key not associated with the system's voice encryption key.
- Multi-system OTAR (MS-OTAR): Extends MSI Radio OTAR functionality from a Single KMF server OTAR solution to Multiple KMF Servers. It enables OTAR capable radios moving between Multiple Systems and their KMF Servers to get the latest UKEKs and TEKs to operate on a given system avoiding extensive manual reprogramming.
 - Multiple KMFs can update keys independently without the need to share key material. Therefore KMF users can be autonomous from each other.
 - With Motorola MS-OTAR solution, the user can simply change the channel select switch or change zones to move between multiple systems with OTAR enabled.
- Radio Inhibit/ Re-Enable: The inhibit/ re-enable feature can be used to provide security for Motorola radios that are lost, compromised, or not currently in operation. Sending an encrypted inhibit command to a radio renders the radio inoperable to the user. An inhibited radio appears to be out of service, and the radio user cannot successfully turn on the radio for operation. The radio can still be accessed by the KMF while it is in the Inhibit state.
- Key Loss Key Rekeying: Unique to Motorola radios and an added level of security is "Key Loss Key" (KLK) in OTAR. It enables the KMF operator to rekey a radio that has lost all of its keys including the UKEK without the use of a KVL. KLK is a method for recovering from encryption key variable loss, either inadvertent or the result of tampering. A predetermined key encryption key is encrypted with itself at the time when keys are first loaded, and the resulting key loss key is stored in nonvolatile memory. This key loss key acts as a key encryption key for decryption of new shadow and traffic keys. This feature can be enabled or disabled per radio as desired.
- Tactical Inhibit (Stun/Kill): Allows a radio administrator to remotely disable a potentially compromised radio. The Stun feature allows the impacted radio to be temporarily disabled with the ability for an approved user to restore the radio with a preapproved password. The Kill feature will permanently inhibit the radio, which requires the use of specialized computer tools to restore the radio to full operation. This solution provides a reactive security tactic against cloned or stolen radios attempting to eavesdrop or interrupt critical communications.

LOCATION (ENHANCED)

- APX/ASTRO supports improved inbound data efficiency while using fewer channels. Up to 12X capacity improvement over P25 Standards Data for location messages. APX radios are assigned a specific, non-random time-slot for the transmission of their data to the system, in order to minimize inbound data collisions and improve overall data throughput in the system. This allows for improved efficiency when transferring location or other telemetry data to the system. (Location via Enhanced Data)
- APX supports synchronized data sending with the system to allow for faster polling rates and automation of radio actions based on geographic boundaries.
- GPS updates supports more users with faster rates, sent on voice channel with no impact to data (Location on PTT)
- GPS information is automatically sent when user presses PTT or is listening to a TDMA talkgroup (Location on Receive)
- The system can configure different triggers to provide location updates based on time/ distance travel or events such as PTT and emergency to help keep track of users in the field in mission critical environments
- GPS location updates are sent to a mapping application over the voice channel upon pressing the Emergency button using the hotmic feature and is not delayed by the voice call awaiting a data channel to support faster emergency response.
- GPS updates are supported via a DVRS configuration
- Encrypted data and can provide FIPS 140-2 Level 3
- Geofencing: APX allows you to relieve workload on first responders by automating certain critical tasks. The radio is programmed to perform specific actions whenever it enters or leaves a pre-defined geographical area. Actions available:
 - Display message on screen
 - Change talkgroup (trunked), channel (conventional), system
 - Send status update to Dispatch
 - Sound audible alert (including stored audio announcement)
 - Mute site-selectable alert tones
 - Display geofence name with red, amber or green highlight (front display only)
 - Change transmitter power level

TEXT MESSAGING SERVICE (TMS)

- An audible alert notifies the user of a received text message.
- The user can enter and select from multiple text messages and save desired messages for future reference.
- Undeliverable messages are saved on a server to be delivered once the radio or user becomes available.
- Text Messages are logged on a server on the system
- The APX supports free form and canned text messaging options on models with a display and a full alpha-numeric keypad and options to save drafts of the text messages to send at a later time / date.

GROUP TEXT MESSAGING SERVICE

- The text messaging service allows messages to be sent to multiple radios/ dispatchers.
- An audible or voice alert can be combined with display color change to notify the talkgroup participants of a critical text message.
- Talkgroup Text Messages support immediate viewing of text messaging for users and support color changes to advise on degree of importance for the message.
- The APX can receive talkgroup based text messages simultaneously with other users.
- The system sends the text message over the voice channel. The text message is sent to all subscribers on a talkgroup even if no data channel resources are available.
- The system gives priority to voice transmissions. Text message packets are queued and sent after the talkgroup users and dispatchers stop transmitting audio.

RESPONDER ALERT

- Sensors provide status information and alerts regarding what's happening to officers during an incident such as, weapon drawn or fired and vest pierced. Sensor data can be sent over the control channel to ensure confidence in the solution as it is handled with similar reliability as LMR voice.

PERSONNEL ACCOUNTABILITY

- Conduct Personnel Accountability Report (PAR) checks, issue evacuation notifications, trigger customizable tactical orders to responders, monitor radio battery levels, identify radios with indication of who PTTd, receive radio power down indications, move a radio to a different talkgroup, log all transactions, Ability to send 16 Unique Messages to radios at the push of a button, ability to provide timers for team / individuals, acknowledgements from users that Messages are understood.

INTELLIGENT ROAMING ENGINE

- Minimizes the number of site handovers and ensures that voice calls are not missed. ASTRO 25 + APX = Best roaming performance in the industry by simultaneously using Adjacent Site Broadcasts, Fast Site Roaming, Least and Most Preferred Site Selections, and far superior roaming algorithms. Other considerations include:
 - Motorola Subs + System can keep a download going even while roaming between sites. We will retry the download on the next site and recover at the packet where we left off.
 - Motorola's P25 Subscribers have been designed to give the best roaming performance in the industry by utilizing all of the following simultaneously:
 - Adjacent Site Broadcasts ensure the subscriber will be able to use an adjacent control channel in the event that it roams on to a site that is not programmed
 - Least and Most preferred sites ensure more optimal use of system resources by keeping subscribers on the correct sites. Other vendors just choose the site with the best RSSI which may tie up channels on a site with a smaller talk-path capacity. Motorola would only switch to this smaller site if necessary when the subscribers are programmed correctly.
 - Most vendors use a simple voting algorithm which only takes into account RSSI levels of nearby sites. By simultaneously using RSSI, Bit Error Rate, Least and Most Preferred Sites, and Adjacent Site Broadcasts, Motorola subscribers can intelligently choose the best site while minimizing the number of site switches to ensure that voice calls are rarely missed

APX UNIQUE FEATURES INDEPENDENT OF INFRASTRUCTURE

SECURITY

- APX is FIPS certified for 140-2 Level 3 security ensuring any stolen radios will not compromise encryption key information. (APX 4000, SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT)

AUDIO

- APX automatically optimizes speaker and noise cancelling parameters of multiple microphones allowing the radio to be functional in unlimited radio orientations. (APX 4000, SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT)
- APX leverages adaptive beam forming technology to ensure multiple microphones work in conjunction to maximize speaker microphone gain in the direction of user speech while minimizing gain in the direction of any noise sources at the frequency of the noise source (i.e. dynamically amplifies the voice and suppresses the noise). (APX 4000, SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT)
- APX radio users are able to speak into any radio microphone with noise cancelling turned on and not degrade the user's speech captured. (APX 4000, SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT)
- Based on the ambient noise level, APX noise suppression intensity adapts to provide maximum noise cancellation while maintaining optimum voice clarity (APX 4000, SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT)
- APX Adaptive Speaker Equalization (SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT)
 - The speaker automatically optimizes equalization settings based on user-selected loudness level
 - At lower volumes, the speaker is equalized so incoming talker's voice sounds authentic
 - At higher volumes, the speaker is equalized for intelligibility
- APX enhanced adaptive Automatic Gain Control (AGC) ensures consistently loud and clear audio on the receiving end, by adjusting the microphone gain as needed. (SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT)
- APX Adaptive Wind-porting: When no RSM is used, and wind is detected, third microphone with a wind-ported design is automatically used (SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT)

RUGGEDNESS

- SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT portable radios have a sealed internal metal housing that allows it to be submerged and retain its immersion rating even when external housing is cracked.
- SRX 2200, APX 6000, APX 6000 XE, APX 8000, APX 8000 XE and APX NEXT portable radios have a thick tempered glass lens that is completely scratch/impact resistant.
- The APX O2 control head offers high strength tempered glass display lenses to protect the LCD display and provide clear viewing through polarized lenses and high resistance to scratching and impact.

LOCATION

- APX has a software option to allow the radio to recognize that it has crossed a codeplug programmable geo-fence boundary and take action to alert the user, change the talkgroup and update the mapping application.

INTELLIGENT PRIORITY SCAN

- Multi System scan (talkgroup scan) with priority. Not available across systems but available per system.

P25 VOICE AND DATA REROUTING OVER BROADBAND

- APX equipped with SmartConnect, can reroute P25 voice and data communication over broadband via built-in Wi-Fi or a tethered LTE/satellite router. The radio maintains communications, by automatically fast seamless switching between P25 LMR and LTE cellular capability. Authentication, status, talkgroups and encryption are all preserved, without interruptions or resets.

OTAP

- Motorola APX subscribers can be provisioned on non-Motorola P25 infrastructure

ACCESSORIES

- APX is equipped with intelligent batteries for fuel gauge accuracy and automatic reconditioning. APX supports a menu on the radio that provides for specific battery information including overall capacity, and current charge.
- APX technology detects ambient noise levels and automatically compensates for external noise by adjusting the sensitivity of the terminals. This is available with a wide range of Motorola accessory options, such as rugged RSMs, Bluetooth earpieces and others.

MOBILE RADIO IMPACT DETECTION

- Through the CommandCentral Aware suite, the APX 8500, APX 6500 enhanced and APX 4500 enhanced models can be upgraded to trigger an alert in the event of a vehicle crash.

DVRS

- Simplex / Full Duplex Capabilities: With full duplex, P25 emergency alarms are relayed from the portable to the network while there is activity on the talkgroup. In simplex, the P25 emergency will not get to the network until the talkgroup is idle which may seem like an eternity if the user is in trouble. Additionally, in simplex, the portable user will be unable to talk during the hang time of the system.
- Portable Priority Interrupt: Allows a portable to have priority over a network call. Without it, a portable call has to wait until the talkgroup is available.
- APX functional while Vehicular Repeater (VR) active: The DVR doesn't require disabling of the mobile radio. Not allowing for mobile radio usage when VR is active is a potential safety issue for a user.
- GPS Location: The DVRS is certified with 1 PSU to use GPS location.
- DVRS is available in all public safety bands: 380-430 / 450-470 / 470-512 / 700 / 800 MHz and VHF
- Activate on emergency: Should a DVRS be in off mode, but receive an emergency that goes unprocessed, they will activate and relay the emergency. This allows a user who has not activated the mobile repeater who has an emergency to get help without having to return to the vehicle.

- In-Band Operation: DVRS comes with in-band filtering providing min. 40 dB of rejection for interference-free and desense-free operation (requires 30 dB of antenna isolation). Without proper filtering, the range of the mobile radio and / or the DVRS will be significantly reduced or may simply be unusable.
- Mobile Radio Channel Steering: Portable radio users can remotely change the Mobile Radio channel / TG by paging the DVRS. This allows the user to change talkgroups from their portable without having to go back to the vehicle.
- Inbound Private Call: Users using the portable through the DVRS can originate or receive private calls.
- OTAP and firmware update: Allows either the codeplug or firmware of the devices to be updated either over the P25 network or using WiFi.
- APX Portable Radio Automatic switching to Talk Around (TA): If the portable radio can not establish handshake with the full duplex DVR, it can automatically switch to TA. If a user is out of range of the DVRS, they may still be able to talk to other portables directly.
- APX Portable Radio Scan: DVRS offers trunking scan on Mobile Subscriber Unit (MSU) and conventional scan on Portable Subscriber Unit (PSU)
- Link Layer Authentication of PSU: Authentication prevents these subscribers from being able to access the network.

TRANSPORTABLE MOBILE RADIO

- TXM 2000 single band in VHF and TXM 3000 all band (future) transportable mobiles offer full APX mobile functionality with Lithium Ion Battery



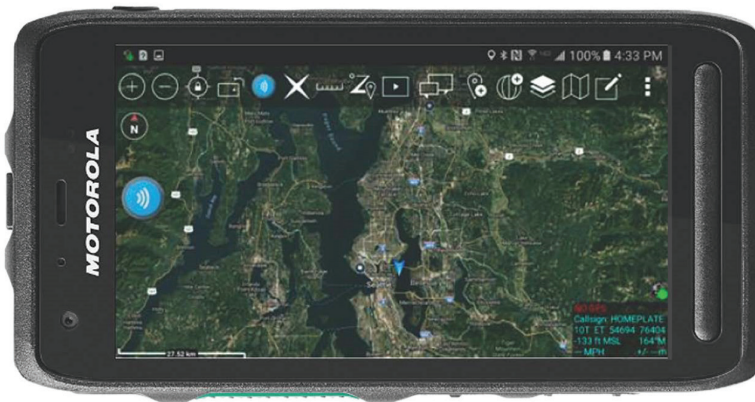
LEX L11

SECURE MISSION CRITICAL LTE DEVICE

MADE FOR THE MISSION

WHEN HARDWARE, SOFTWARE, AND ACCESSORIES WORK SEAMLESSLY TOGETHER, THE RESULT IS A DEVICE THAT WORKS SEAMLESSLY FOR YOU.

Introducing the LEX L11 Mission-Critical Secure Broadband Device, designed with the National Guard and First Responders in mind. Security should never be compromised with your broadband devices, the L11 is configured and ready to securely provide situational awareness and communications that the Guard needs. Every feature and function has been thoughtfully considered in this rugged device to make it easy to operate. It boasts loud and clear audio, intuitive operation, and long battery life. The L11 is dual SIM capable, certified on both Verizon and AT&T Networks, to include FirstNet.



Rugged and durable yet streamlined and slim, you can count on the LEX L11 to perform when it's needed. MIL-STD-810G For Drop and Shock and IP-67 rated.

SECURE ENABLEMENT FOR THE GUARD'S MISSION

The LEX L11 Secure Mobile Solution is ready for the National Guards Federal Title 32, Title 10 or State Active Duty Missions in response to the COVID-19 pandemic. Equipped out of the box with applications such as Wave Interoperability PTT, Android Team Awareness Kit (ATAK), and CSfC Certified Security Overlay. Rough Order of Magnitude per device: \$1,200.



KEY FEATURES

SECURE MOBILE PLATFORM

- NIAP and CSfC Approved Device
- Real-Time Device Protection
- Data-at-Rest (DAR) and Data-in-Transit (DIT) Security
- Auditing and Logging
- Supports Secure Device Management
- Multiple Modes and Persona's

INTUITIVE CONTROLS MAKE

OPERATION NATURAL

- Dedicated Push-To-Talk Button
- Dedicated Emergency Button
- Dedicated Talkgroup Rocker Switch
- Two Programmable Buttons

COLLABORATION

- Remote Control of your Radio's Zones, Channels and Volume
- Remote Emergency button capability for Motorola Solutions APX™ radios
- PTT capability over the LMR network, through a connected Motorola Solutions APX radio

For more information, please visit motorolasolutions.com/LEXL11



CSfC & NIAP
CERTIFIED

SECURE MOBILE ENVIRONMENT

A HARDENED MOBILE DEVICE SUPPORTING MULTIPLE CLASSIFIED SECURITY ENCLAVES



To succeed in today's asymmetrical mission environments, government executives, command leadership, military personnel, and members of the law enforcement and intelligence community, must be able to access and share information with mission partners across the globe. As a result, encrypted voice and data communications in the field are crucial to enabling tactical access to timely information and making more informed decisions in critical moments.

Motorola Solutions' Secure Mobile Environment (SME) is designed specifically to NSA's CSfC standards allowing federal personnel to access classified voice and data from anywhere, at any time, using the LEX L11 smart device.

LEX L11 is a purpose-built device for your agency's most challenging operations. It's a rugged, LTE-based smart device built to military drop and shock standards. It ensures teams receive the right information at the right time while bringing more actionable, real time intelligence directly into the hands of field personnel. It pairs the best-in-class voice and audio capabilities of our mission critical radios with smart device functionality so you can use modern applications, send and receive multimedia, and instantly connect with dedicated push-to-talk functionality.

LEX L11 : FEATURES

- Intuitive Controls for Head Up, Hands Free Operation
- Best-In-Class Audio Quality and Performance
- Push-To-Talk Experience with a Dedicated Button
- End-To-End Mobile Security
- Rugged Construction, Purpose-Built to Outperform Even in the Harshest Environments
- Remote Management and Control with Device Management Wall
- Standard and High-Capacity Battery Options

LEX L11

LEX L11 has been enhanced with accredited software and hardware security components to meet the highest information assurance and integrity standards. Now, federal and military users have an unprecedented opportunity to capitalize on advanced mobile computing and communications in the field.

SECURE MOBILE ENVIRONMENT

ENTERPRISE

GOVERNMENT AND MILITARY IT NETWORK

SECURITY MANAGEMENT

- OTA Device Management
- OTA Key Management
- Define and Manage Security Policies
- Supports OTA Secure Device

NETWORK

- Public Broadband Networks
- Wi-Fi Internet
- FirstNet Band 14
- Private Cellular Networks

SECURE TUNNEL

- Data in Transit Protection With CSfC VPN
- Mandatory Secure Connectivity
- End-to-End Authentication

LEX L11

MISSION CRITICAL BROADBAND DEVICE

ASSURED DEVICE

- Redwall Multiple Modes and Persona's
- Meets Latest Data-at-Rest (DAR) Capabilities Package as defined by the NSA CSS

CSfC HIGHLIGHTS

Motorola Solutions SME leverages the National Security Agency (NSA) cryptography standards that promote the Commercial Solutions for Classified (CSfC) protection profiles for secure sharing of classified information over wireless mobile networks. It specifies a common suite of public standards, protocols, algorithms and modes to meet stringent NSA directives for classified information up to TOP SECRET level.

ADDITIONAL ELEMENTS OF SECURE MOBILE ENVIRONMENT

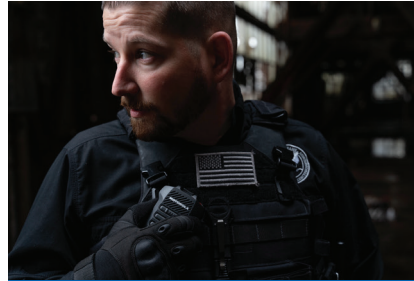
- Supports but is not limited to AES-256, ECDSA, ECDH, SHA-256, SHA-384
- Supports any CSfC Approved VPNs without modification to the device build
- End-to-End Encrypted Voice, Video and Messaging packets
- Security Enhanced OS with Modes Capability

ENABLING A GLOBAL FEDERAL WORKFORCE

Federal missions, operations and personal logistics are constantly changing. Motorola Solutions believes federal agencies need flexible, secure and scalable mobility solutions that enable the exchange of classified and sensitive information between disparate user groups. From military personnel to law enforcement officers to the broader federal workforce, the operation of government requires access to classified or sensitive information. SME streamlines these operations by enabling secure, mobile access to information, across multiple security domains, from a single device.



SECURE ACCESS TO CRITICAL INFORMATION & COMMUNICATIONS



WARFIGHTER SPECIAL OPERATIONS COVERT PERSONNEL

Securely access sensitive/
classified data from garrison to
battlefield



INTELLIGENCE COMMUNITY LAW ENFORCEMENT FIRST RESPONDERS

Securely share information and
collaborate among teams

The focus on COTS-based high assurance mobile security solutions allows Motorola to deliver both classified and unclassified protection in a single COTS homogeneous system (clear up to TS). As a trusted integrator, Motorola is dedicated to leveraging enhanced software security feature sets to extend classified-enabled communications capabilities to federal overt and covert personnel running on a purpose-built, mission-critical handheld LTE device supporting CONUS or OCONUS coverage needs.

FEDERAL BENEFITS

NSA's Commercial Solutions for Classified (CSfC) Program "enables commercial products to be used in layers protecting classified National Security System data." The CSfC Program provides the ability to securely communicate based on commercial standards in solutions that can be fielded in months, not years, ensuring users are equipped with devices at the cutting edge.

- Hardened Device
- Protecting Data at Rest and In Transit
- End-to-End Encrypted Voice, Video and Messaging packets
- Control, Manage and Enforce Mobile Security Policies



DEFENSE IN DEPTH

PROTECTING INFORMATION AT REST AND IN TRANSIT

The LEX L11 meets all defined DAR requirements in the latest NSA CSS Capabilities Package and the MDFPP, then goes further. It contains features that are novel enough to merit an NSA Innovations BAA to study the technology's ability to strongly separate multiple personas or security levels on-device, while resisting first-world forensics. The team that developed our DAR solution has extensive expertise in offensive key extraction and designed new defenses for the LEX L11 with that experience in mind, adding an additional layer on top of what CSfC requires, with no performance overhead.

The LEX L11 has a unique feature that allows for authenticated and cryptographically signed trusted daemons and privileged system services without modifying the firmware. These become part of the system's boot and run-time integrity checks. This allows support for multiple VPN applications, while controlling VPN state, IP tables, geofences, and more. All from a signed security policy that is compatible with any commercial EMM, without requiring one. In this way, the LEX L11 is not tied to a single VPN solution or management platform. It can be easily updated without an OTA or reflash, but still offers the same level of assurance as if the VPN services were baked into the firmware.

KEY BENEFITS OF SME

- **Ease-of-use:** Enables a user-friendly experience. The enhanced security features are transparent to the user. Interface enhancements provide visual cues to help users identify the security status in which they are operating.
- **Encrypted voice and messaging:** Enables AES-256, VoIP and messaging communications to other SME-enabled devices. Supporting the NSA's CSfC protection profiles.
- **Secure data:** Provides access to a protected enclave through integrated AES-256, IPsec VPN, and Data at Rest protection. Supports many 3rd party applications for situational awareness, realtime video, and email.
- **Security control:** Lets you define and control security policies from the secure enclave; delivers Over-the-Air support for key management and device management.
- **End-to-end integrated solution:** Leverages commercially available 3rd party vendors' security products and applications as part of the SME ecosystem, delivering a complete end-to-end solution for secure mobility.
- **Built-in firewall:** Allows for real-time configuration of kernel-level packet firewall (IPv4 and IPv6)

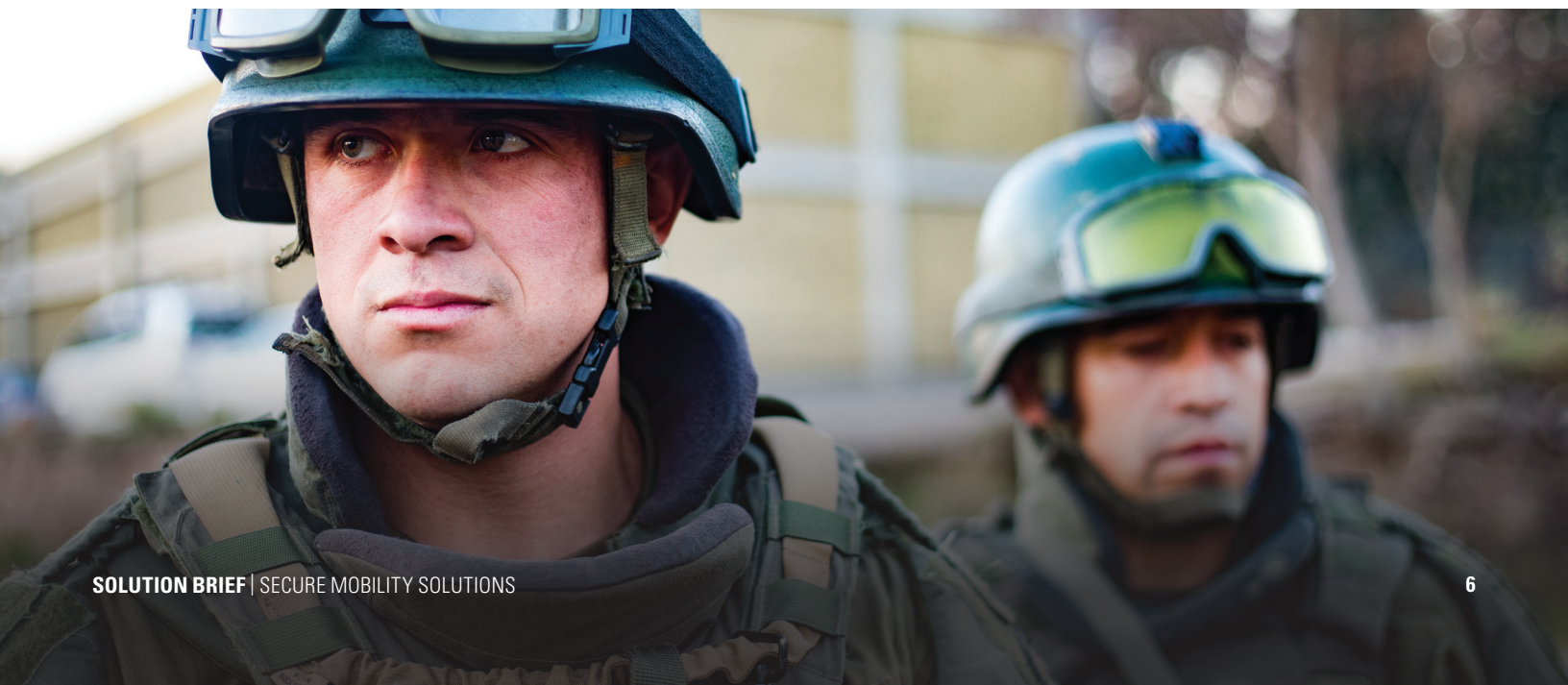
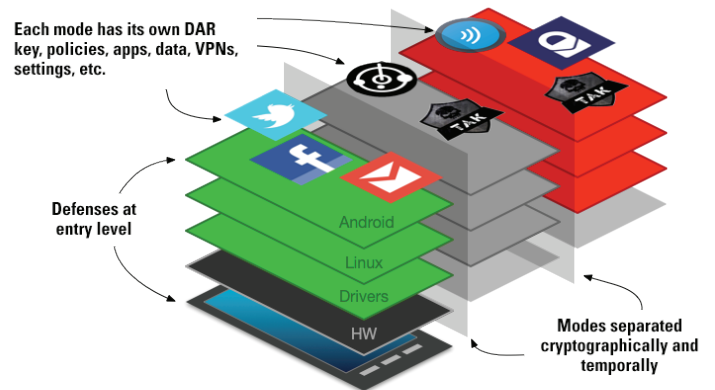


CONTROL, MANAGE AND ENFORCE MOBILE SECURITY.

All of the functions of the SME Solution operate without any connectivity, EMM/MDM, or any proprietary tools or services. While the LEX L11 is compatible with CSfC approved Android MDMs, none are required to sign or manage the devices. All policies and files, as well as device wiping and more, may be managed remotely over email, MMS, in the device's Web browser, and a myriad of other ways, or locally via microSD cards or USB. No special software is required.

UNIQUE MULTI-MODE TECHNOLOGY

This architecture allows for a unique method of providing multiple operational modes on the device. Each mode has its own authentication, data, policies and apps. Unlike multiple accounts, hypervisors, or TrustZone-based systems, modes are never co-resident in memory nor executing simultaneously. Multiple security levels may safely run on a single device, and even an operating system, baseband, or processor-level exploit cannot cross the boundary between modes.





GMS AND APP COMPATIBILITY

The SME's Google Mobile Services provide a richer and more complete Android experience, and gives the user access to millions of apps. But for those times when you need to lock down a mode or even the entire device, modes can also selectively be GMS or non-GMS. Disabling GMS results not only in a more "vanilla" or AOSP-like mode, but it goes much further to remove Google keyboards, browsers, time servers, SE policy, remote font usage by apps, and dozens more deeply embedded APIs. It also removes the steady stream of marketing, location, ID, and analytics data which GMS devices sends to Google, who subsequently sells that data to third parties. And while side-loading and downloading apps can be disabled along with the Play Store, properly signed APK files ranging from ATAK to WAVE PTT install and work without the need to re-compile, use any particular API, special app store, or whitelists and blacklists (unless desired).

Any combination of modes and policies is possible. One mode could be zero-emit (all radios off, even BLE), and accessed only via a non-obvious trigger operation. Another could allow LTE data, but disable SMS and LTE voice calling outside a geofence. Modes and policies can be managed by Motorola, or by the end user, in a flexible and intuitive manner enabling custom ROMs without the typical cost of customization.

POLICIES

A simple JSON file defines the modes and policies for each mode, and allows an admin to enable and disable not only GMS, but every feature and function of the phone on a per-mode basis, as shown in the example. The policies control low-level features such as individual system calls, baseband functions, and IP firewall settings, as well as high-level functions like VPN geofences, cameras, and radios such as Bluetooth. When the LEX L11 disables a feature, it does much more than the Android (or iOS) APIs could; drivers for disabled features are not loaded and access - even by the kernel - is blocked, disabled chipsets are not initialized, and not even an exploit could enable the feature.





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SECURE TAK ENVIRONMENT

PROBLEM

With the current trajectory of COVID-19 cases expected to overwhelm existing hospital facilities, state / local / federal agencies are rapidly mobilizing to construct new and / or transform existing civilian facilities to meet the medical demand. The rapid construction and large influx of personnel creates new communications, operations, and security challenges that require solutions that can be rapidly deployed and easily scaled.

SOLUTION

The National Guard, in conjunction with the Army, is deploying a nationwide Team Awareness Kit (TAK) system to provide the overarching command and control framework leaders rely on for situational awareness.

As part of this rapid TAK system deployment, Motorola is deploying a nationwide WAVE capability, providing the National Guard Push-To-Talk interoperability capabilities among handheld radios, cell phones and tactical radios. WAVE provides both seamless communications and interoperability among agencies that may have disparate communications capabilities. Motorola is working with the Army's TAK Product Center to deploy WAVE in the same timeframe as the TAK system (estimated completion 10 April 2020).

This initial rapid deployment of TAK and WAVE capabilities is predicated on users bringing their own devices. This is an expedient way to deploy the system, however it does potentially introduce cybersecurity vulnerabilities. The Guard will be operating over commercial cellular carriers

to reach back into the TAK system, and while TAK itself is a secure platform, voice and other application data of a sensitive nature, including Protected Health Information (PHI) and C2 information, could be at risk. Cybersecurity for all National Guard voice and data capabilities can be assured using a secure End User Device (EUD), operating within the TAK system framework with no additional infrastructure. The LEX L11 is an Android Based Mission Critical Secure End User Device (EUD) which uses a powerful security subsystem in a way that is transparent to apps and users, but resilient against even the most sophisticated attacks or inherent Android/Linux defects. The LEX 11 EUD can operate in dual modes with one mode running the security subsystem and the other mode operating like a normal cell phone.

Motorola Solutions has received NIAP certification on the LEX 11 EUD and as an NSA Trusted Integrator, Motorola Solutions furthermore is listed on the NSA's CSfC Approved Product List. Additionally, we are working with DISA to create a STIG to ensure the LEX 11 remains as secure in the future as it is now.

While the LEX L11 is compatible with CSfC approved Android Mobile Device Manager (MDM), none are required to sign or manage the devices. The devices may be managed remotely over email, MMS, in the device's Web browser, and a myriad of other ways, or locally via microSD cards or USB. No special software is required. Therefore, properly authorized and trained Guard device managers can reconfigure devices without significant intervention from the OEM.

Motorola Solutions proudly manufactures and deploys the sophisticated, cutting-edge communications, software, video security and analytics technologies that keep communities and nations safe. We have been on the frontlines with federal, state and local governments, including in times of crisis, for over 90 years. Today, our 17,000 innovators, engineers and manufacturing specialists are eager to help address critical gaps in the availability of medical and health management technology needed to fight the COVID-19 pandemic. We are pleased to offer hundreds of thousands of feet of secure, U.S.-based manufacturing, unrivaled operational agility and the capacity for rapid deployment.

**MOTOROLA SOLUTIONS STANDS READY
TO SERVE OUR COUNTRY IN THIS
MOMENT THAT MATTERS.**

FIELDING TIMELINE

This solution is ready now, and can be deployed to a given facility in a matter of 1-2 weeks. The underlying LEX L11 device is currently available at Technology Readiness Level-9, secure software has been tested and fielded, and multiple such systems are currently in use by the U.S. Government, and Authority to Operate (ATO) on the Army network has already been granted.

