



LEX L11 KEY FEATURES





This document provides an overview of key LEX L11 hardware and software features. The software features described in this document include the R2.4 software release. This document does not cover standard Android features supported by Google.

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AUDIO PERFORMANCE & FEATURES





AUDIO PERFORMANCE & FEATURES

Noise Cancellation & Echo Cancellation

Noise cancellation uses three microphones to pick up 360 degrees of audio and advanced algorithms to monitor the sounds, adjusting the integrated noise cancellation level to best match your environment.

In doing so, it suppresses unwanted background noises, such as crowds, high-winds, sirens and speeding motor vehicles.

This results in a high level of clarity with clear, natural sounding speech in both quiet and noisy environments.

Loudness

Dual front-facing speakers provide up to 112 dBSPL of loudness. Even at 30 cm away from the source the outgoing audio is measured at 96 dBPhon of loudness.

The audio profile of the LEX L11 is on par with traditional Land Mobile Radios.

PTT Audio Profile Mode

PTT audio profile mode offers unique audio profiles, optimized for use with the Motorola Solutions Broadband PTT application:

- PTT Enhanced Noise Suppression
- Howling Suppression

It is accessible via:

Menu Settings → Sound → LEX Audio Preferences

In addition, user can toggle the PTT Audio Profile ON/OFF via the Quick Settings panel.

PTT Enhanced Noise Suppression (ENS)

When using the device with Motorola Solutions Broadband PTT application in a noisy environment, users can enable PTT Enhanced Noise Suppression (ENS) feature to enhance the noise suppression capability to ensure clarity of voice communications.

We have optimized and tuned the audio profile by leveraging the audio profile used by our APX radios when used in noisy and mission critical environments.

Note: Works with Motorola Solutions broadband PTT solution 9.x and above.



AUDIO PERFORMANCE & FEATURES

Howling Suppression

When devices in close proximity are affiliated with the same talkgroup, a feedback loop can occur. This screeching or howling noise isn't just annoying - it can disrupt critical communication when lives are on the line.

When enabled, the LEX L11 Howling Suppression audio profile will suppress this unwanted effect, resulting in clear and uninterrupted conversations. This technology has been successfully deployed on our LMR devices for many years.

Dynamic Howling Suppression with Motorola Solutions Broadband PTT application: when enabled, the LEX L11 will automatically adjust the audio loudness on the receiving based on the proximity to the transmitting devices to eliminate unwanted acoustic feedback.

Note: The Howling Suppression audio profile has been optimised with the Motorola Solutions broadband PTT application, and not all applications or use cases can take advantage of the Howling Suppression profile. When used with a third-party PTT application, Static Howling Suppression is used.

	LEX L11 with Motorola Broadband PTT application		LEX L11 with a third-party PTT application	
	Howling Suppression (HS)	Enhanced Noise Suppression (ENS)	Howling Suppression (HS)	Enhanced Noise Suppression (ENS)
Both OFF	OFF	OFF	OFF	OFF
Both ON	Dynamic Howling Suppression	ON	Static Howling Suppression	OFF
HS OFF, ENS ON	OFF	ON	OFF	OFF
HS ON, ENS OFF	Dynamic Howling Suppression	OFF	Static Howling Suppression	OFF



AUDIO PERFORMANCE & FEATURES

Carry Holster

A traditional belt holster can block the phone's external speaker which causes a significant decrease in audio quality making it difficult to properly hear.

When the LEX L11 is holstered the outgoing audio is funneled more effectively in the direction of your ear making it easier to hear.



Note: The holster requires purchase with separate Peter Jones attachments (e.g. belt loop, garment fitting, belt clip). Please refer to the LEX L11 Accessory Catalogue for more information.



INTUITIVE CONTROLS





INTUITIVE CONTROLS

Dedicated PTT Button¹

Quickly communicate and be able to stay in constant contact with your team thanks to the extremely large, dedicated push-to-talk button that's designed for use with your thumb, multiple fingers, or even a gloved hand.

With specially designed ramps located on either side, it allows users to intuitively locate the button by feel alone, this is particularly ideal for high stress situations.

If the LEX L11 has been dropped, the raised protective ridges help prevent accidental activation.

The LEX L11 has been optimized and works seamlessly with our Motorola Solutions Broadband PTT application to ensure fast PTT communication can be established upon a button press.

Dedicated Emergency Button¹

In the event of an emergency, the call for help simply cannot wait. The LEX L11 has a dedicated and highly visible emergency button that when pushed will send an alert to dispatch and other command staff when used with an application that supports emergency button capability.

LARGE AND VISIBLE EMERGENCY BUTTON



PTT BUTTON

RAISED PROTECTIVE RIDGES

helps prevent against accidental activation



¹ For third party applications requiring access to use the button, please contact your Motorola Solutions representative.



INTUITIVE CONTROLS

Dedicated Talkgroup Rocker Switch

Users can manage their communications with a unique talkgroup rocker switch that's conveniently and strategically located at the top of the device.

Quickly and easily change talkgroups without having to unholster the device, keeping your eyes focused on what's in front of you. Additionally receive audible voice announcements to better know which channel you are on.

Note: It's the Motorola Solutions broadband PTT application that does the announcement on the device.

To prevent accidental talkgroup change, users can opt to enable/disable the rocker switch via the Menu Settings or the Quick Settings Panel.

ROCKER SWITCH





INTUITIVE CONTROLS

Programmable Buttons

With the LEX L11's two programmable buttons, you can customize the experience with the capabilities you need most.

Each button has two functions, triggered by a short or long press. Answer a call or end a call — or even toggle covert mode on or off, when on the device's screen is automatically dimmed and any and all tones and alerts are muted. And capabilities keep coming.

With software updates, new functionality is added all the time. The current functionalities² available are:



COVERT MODE
ON / OFF



SPEAKER
MUTE / UNMUTE



RETURN TO
HOME SCREEN



CAMERA
CAMERA ON / TAKE
PHOTO



SCREEN BRIGHTNESS
UP / DOWN



INITIATE
OK GOOGLE



SPEAKER PHONE
ON / OFF



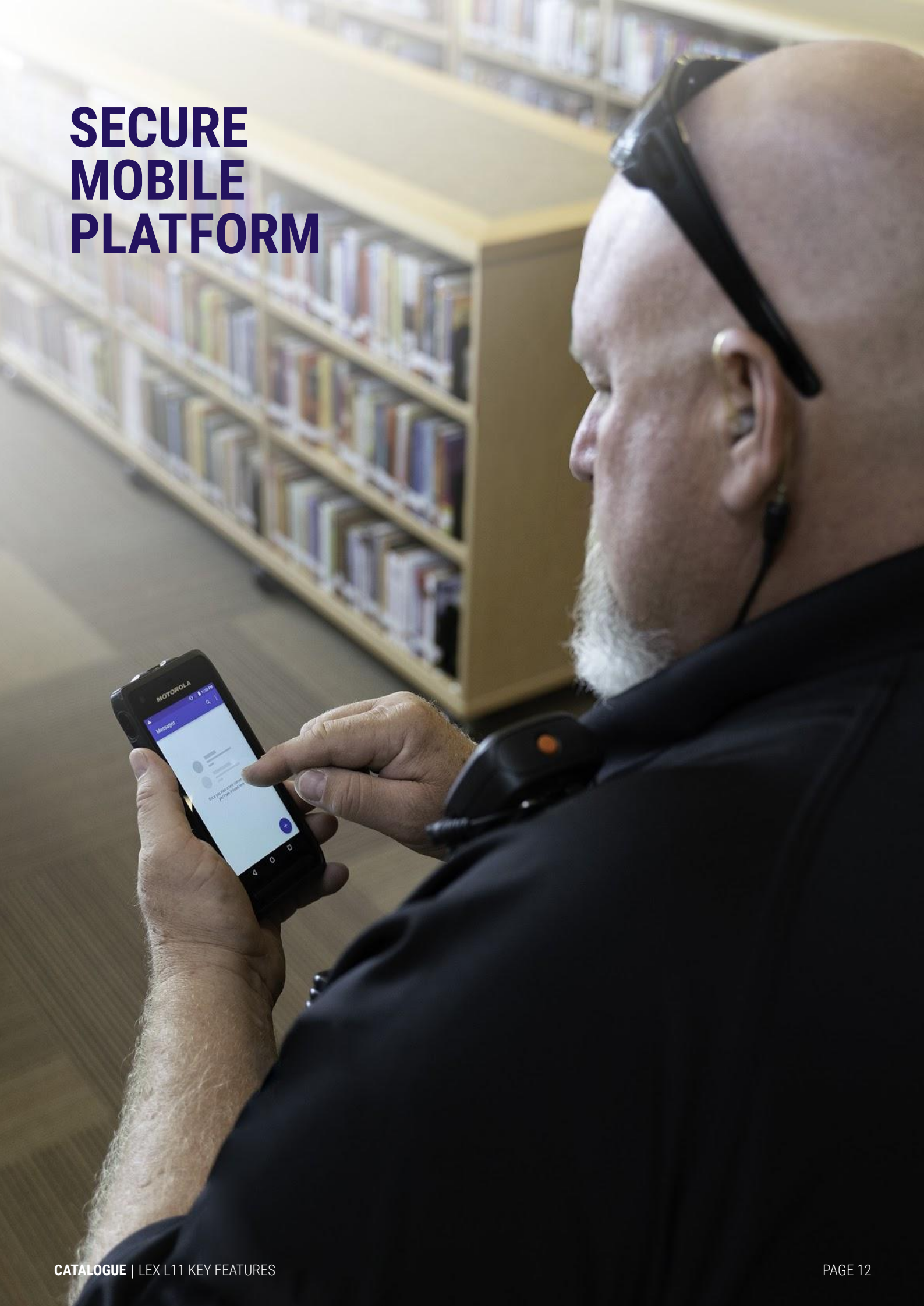
LAUNCH
APPLICATION



PHONE CALL
ANSWER / END

² Also supports the send Status Message feature with Motorola Solutions broadband PTT solution 9.x and above.

SECURE MOBILE PLATFORM





SECURE MOBILE PLATFORM

NIAP Certified

The LEX L11 is certified to the NIAP Common Criteria Evaluation and Validation Scheme (CCEVS). This means that the LEX L11 is deemed eligible for national security system procurement for highly sensitive national security, law enforcement and public safety use.

Certification means that a product has been evaluated against the rigorous international Common Criteria. It uses accredited laboratories to ensure that all security claims have been verified by a neutral third-party.

Once certified, users can be assured that a product's security claims have been verified by a neutral third party.

The Common Criteria certification reflects LEX L11's defense-in-depth approach to security, combining multiple layers of advanced defensive walls that stop adversaries from accessing your mission-critical voice and data communications.

NSA CSfC Certified

The LEX L11 is certified to U.S. National Security Agency (NSA) Commercial Solutions for Classified (CSfC) Program standards for accessing sensitive information across national security systems up to and including the top secret level.

The LEX L11 is a key component in Motorola Solutions' Secure Mobile Environment (SME), which is designed specifically to NSA's CSfC standards allowing federal personnel to access classified voice and data from anywhere, at any time.

For more details, please refer to the Motorola Solutions' Secure Mobile Environment [Brochure](#).

DISA STIG Certified

The LEX L11 is certified to Security Technical Implementation Guide (STIG) provided by the Defense Information Systems Agency (DISA) as part of the Department of Defense (DoD). This means that the LEX L11 complies with the technical testing and hardening frameworks that contain technical guidelines for the standardization of security protocols in order to enhance overall security and reduce vulnerabilities.



SECURE MOBILE PLATFORM

Trusted Boot Process

The LEX L11 checks the authenticity and integrity of the firmware during the device boot processes.

If during this process the firmware fails integrity or authenticity checks, the firmware is prevented from being executed.

This ensures the LEX L11 is executing trusted unmodified firmware.

Real-Time Integrity Monitoring

Real-Time Integrity Monitoring detects and prevents tampering of firmware and the injection of malware into the running firmware and receive alerts of attempted breaches

Device User Authentication

The LEX L11 supports configurable single factor and multi-factor authentication, including PIN and fingerprint.

Operating System & Applications Hardening

The Operating System and applications on the LEX L11 are security hardened following and adapting industry best practices and standards.

These include the United States Department of Defense (DoD) Security Implementation and Guidelines (STIGs), Center for Internet Security (CIS) Benchmarks, and Motorola Solutions' internal standards.

Real-Time Protection of Operating System and Applications

The LEX L11 includes multi-layer, real-time threat protection to detect and protect against operating system (kernel and services) and application exploits and attacks, such as device rooting, privilege escalation, zero-days, code execution flow attacks, malware installation / execution, bypass of internal kernel security and access controls.

Auditing / Logging

Security and operational event logging is done by the operating system and applications to produce retrievable audit trails for troubleshooting, security monitoring and forensics.



SECURE MOBILE PLATFORM

Data-at-Rest & Data-in-Transit Security

Credentials, certificates, keys and all other data are securely stored when at rest as well as in transit.³

Sensitive application data can be stored in Android keystore using AES-256.

Additionally, LEX L11 offers a NIAP certified mode an enhanced data-at-rest encryption. This mode requires device provisioning, dependent on user requirements.

Secure Device Management and Configuration

The LEX L11 provides support for secure device management based on industry standards, with over-the-air monitoring and control capability including: remote configuration, remote firmware and software upgrades, application whitelisting and over-the-air wipe and lock capability.

Policy Based Controls and Resource Management⁴

Policy-based security controls restrict which applications may run on the LEX L11, as well as which applications the user may access. Additionally the device can restrict which device resources the applications and the user may access, for example Wi-Fi, Bluetooth®, and camera.

Restricted Recovery Mode⁵

Restricted Recovery Mode is an enhanced fastboot mode to block uncertified image upgrade.

Enhanced VPN Restrictions⁵

Enhanced VPN Restrictions block outbound traffic when VPN is enabled.

³ Data in Transit protection with CSfC VPN - see Motorola Solutions' Secure Mobile Environment brochure for more details.

⁴ The following configuration files will be supplied upon request:

- Security Policy file, based on customer requirements, where customers can choose to manage their own configuration policies.
- NIAP mode control file - for customers requiring NIAP compliance

⁵ May require additional device provisioning



SECURE MOBILE PLATFORM

Multi-Modes

Multi-Modes allows the user to use one device for different domains, such as work, personal and secure in order to protect sensitive data.

LEX L11 features security extensions to the Android operating system allowing a single device to operate in multiple modes.

Each mode has unique authentication, data, settings, security, policies and applications. The modes are not co-resident in memory, and do not work simultaneously.

Multiple security levels run safely on a single device. Operating system, baseband, or processor-level exploits in one mode do not affect other modes.

Inactive modes' data is inaccessible, and not present in the device memory. Switching to another mode requires a zeroization process and device reboot.

Mode switch can be initiated by any customer defined process or pre-defined parameters.

NOTE: Each mode works independently, no data access between modes is possible. Please contact a Motorola Solutions representative for further discussions on user requirements. Additional cost applies to enable this feature.

Switching Between Modes

If your device has been previously provisioned with Multi-Modes, follow these steps to switch between them.

- 1) Swipe up the home screen, and open the Switcher application.
- 2) From the list that appears, choose a desired mode.

NOTE: The device always boots in the default mode



SECURE MOBILE PLATFORM

Covert Mode

For use by public safety or enforcement officers who need to operate in a covert environment.

In the Covert Mode, the device goes dark and quiet. All visible and audible alerts and notifications are shut down. This feature makes the LEX L11 device effectively unnoticeable even in a silent and dark environment.

In Covert Mode, the following sounds, visual indications, and keys are disabled:

- Display backlight
- Touchscreen
- Keylight
- LED indications
- Vibration and haptics - optional
- Speaker audio

NOTE: In Covert Mode, sound is routed to a Bluetooth headset or to a wired earpiece, if connected, else the sound is routed to the device earpiece.

The Covert Mode can be enabled via the Power button Menu or via a Programmable button (see section under Intuitive Controls - Programmable button).

To access the Power button menu, long press and hold the power key for about 2 seconds. A menu will appear and user can then select either to enable or disable the Covert Mode.

In Covert Mode, the following features remain active:

- Power button
- PTT button
- Emergency button
- Talkgroup Rocker switch
- Programmable buttons
- Volume button
- Audio indications are available using a wired headset (through headset port) or a Bluetooth headset.

When the LEX L11 device is in covert mode, after a long press of the power key, the device illuminates the display backlight at low intensity to display the Power button menu, where you can exit the covert mode.

RADIO COLLABORATION





RADIO COLLABORATION

Supported Models

The LEX L11 can be paired via Bluetooth with an LMR radio by using the Radio Services application that is pre-installed in the LEX L11. This collaborative mode extends control of the LMR radio to the LEX L11.

The supported Motorola Solutions LMR radios that can be connected to the LEX L11 device are as follows:

- ASTRO APX Models (Release R17.01.00 and later releases)
 - APX 6000
 - APX 6000XE
 - APX 7000
 - APX 8000
 - APX 8000XE
- Release MR18 and later of the following TETRA Radio Models:
 - TETRA MTP3000 series radios
 - TETRA MTP6000 series radios

When in collaborative mode with a TETRA or APX radio, the LEX device supports both half-duplex private calls and group PTT calls sent to and from the TETRA or APX radio.

NOTE: TETRA radios need to be provisioned to use the LEX L11 device as an accessory.

Radio Remote Control

Once users are connected via Bluetooth, the LEX L11 can be used to remotely manage and control a Motorola Solutions TETRA or APX portable radio directly.

Users can leverage the convenience of Push-to-Talk capability over the LMR network, through the connected Motorola Solutions TETRA or APX portable radio.

From a single interface, users can stay connected to both LTE and LMR networks with ease. Users can also remotely activate the radio's emergency button by pressing the dedicated emergency button on the LEX L11.

In addition, users have the capability to quickly and easily manage the radio's folders, channels, and volume.

Features currently supported:

- Remote Manage: Channel, Volume Signal, Volume, Signal Strength and Battery Life
- Remote Activate: Emergency and PTT
- Audio Routing: Users PTT over LMR network via LEX L11



RADIO COLLABORATION

Audio Mix Mode (Routing Audio During Phone Call)

When in collaboration mode between LEX L11 and a supported Bluetooth paired Motorola Solutions APX or TETRA portable radio, the user can mute or allow incoming non-emergency or private Land Mobile Radio (LMR) Push-To-Talk (PTT) calls during an ongoing phone call.

In case of an incoming emergency call, non-emergency or private calls are ended, and the LMR emergency audio is played.

Under the “Radio Audio During Phone Call” settings, users can perform one of the following actions:

- To mute incoming LMR PTT audio during an active phone call, tap Mute Radio Audio.
- To allow incoming LMR PTT audio to play during an active phone call, tap the Mix Radio and Phone Audio option.

While in Mix Radio and Phone Audio mode, users should note the following:

- When the LEX L11 device is in the speakerphone mode, both radio and phone streams are played through the loudspeaker.
- When the LEX L11 device is not in the speakerphone mode, both radio and phone streams are played through the earpiece speaker.
- When a wired audio accessory is connected, both radio and phone streams are played through the accessory earpiece and speaker. Only a wired audio accessory can be connected.



DEVICE MANAGEMENT





DEVICE MANAGEMENT

Android Enterprise Recommended



LEX L11 is an Android Enterprise Recommended (AER) certified device, which means is that the LEX L11 has met Google's highest standards, and has been verified against enterprise-level requirements in hardware and software.

"With an enterprise mobility management (EMM) provider, you can deploy and manage Android devices in different ways, depending on the needs of your organization. Each management option is called a management set, and comes with a unique set of features to support common enterprise scenarios."⁶

LEX L11 supports the following management sets:

- Full device management
- Dedicated device management
- Work profiles

Zero-Touch Enrollment

In addition to be AER certified, LEX L11 supports the Zero-Touch Enrollment method offered for Android devices, which is the preferred enrollment method with AER certified EMM solution.

"Zero-touch enrollment is a streamlined process for Android devices to be provisioned for enterprise management. On first boot, devices check to see if they've been assigned an enterprise configuration.

If so, the device initiates the fully managed device provisioning method and downloads the correct device policy controller app, which then completes setup of the managed device."⁷

This enrollment and requires connectivity to the public network, where the Zero Touch portal resides.

Other Enrollment Methods

Devices can be enrolled to the EMM via the following methods:

- Near-Field Communications (NFC)
- EMM Token
- QR Code
- Enterprise Google Account

In a closed network, only NFC and QR Code can be used.

⁶ See [Management Sets](#)

⁷ See [Zero-touch enrollment for IT admins](#)



DEVICE MANAGEMENT

LEX OEMConfig Application



LEX L11 as AER certified device is aimed to support customers with OEM specific configurations, which are not supported by EMMs in Android Enterprise deployments via standard Android Enterprise API.

For this purpose, Android Enterprise recommends the use of OEMconfig application, which complies with Android managed configuration standard.

The OEMConfig app allows device admins to set custom policies created by device manufacturers (OEMs), removing the necessity for enterprise mobility management vendors (EMMs) to customize each OEM feature.

The application is available on Google Play Store, and is installed by the EMM, after the device has been enrolled.

Features supported on the LEX OEMConfig application (v9.13):

- Control display settings
- Control battery settings
- Control sound settings
- Control network settings
- Control connected devices settings
- Control LEX L11 audio preferences settings
- Control LEX L11 public safety settings
- Control location settings
- Control Camera app Settings

For more details please refer to the [OEMConfig Release Notes](#).

NOTE: The LEX L11 features listed above are supported ONLY on devices with LEX L11 software build number: PIE_L11_P_R30.23.03 or later. The LEX L11 build number can be obtained using the Android Settings panel: About phone > Build number.



DEVICE MANAGEMENT

Radio Management (RM)

The Radio Management application consists of a server application and a client application. The RMLink application on the LEX L11 device applies the data and files to the device.

The Radio Management server application, available from Motorola Solutions, resides on technician computers. This application sends data and files over USB or Wi-Fi to the RM Link client application which resides on the LEX L11 device.

The following functions can be performed with the Radio Management application:

- Firmware upgrade
- Initial device setup
- APN provisioning
- Application management (new installation, upgrade, and removal)
- Add and modify:
 - End user devices
 - Configurations
 - Licenses
 - Certificates
- Package provisioning
- Certificate management
- File upload

For more details on setup and use of the RM application, please refer to the LEX L11 Device Management Guide



For more information, please visit
<https://www.motorolasolutions.com/LEXL11>

