



Kodiak Broadband PTT for Public Safety

An Application Brief

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Overview of U.S. Public Safety Sector

Public safety agencies carry a wide scope of responsibilities that focus on enforcing laws, protecting life/property, and keeping peace. Public safety in the U.S. is largely comprised of law enforcement, fire and rescue, homeland security, and emergency response. The latest data from the U.S. Bureau of Labor Statistics and the Department of Justice shows the following key facts for the public safety sector:

- Total number of state and local law enforcement agencies: around 18,000
- Total number of protective service employees: 3.38 million
- Police and detectives: 806,400
- Correctional officers: 474,800
- Probation officers and correctional treatment specialists: 91,700
- Fire fighters: 327,300
- Emergency medical services personnel: 241,200
- Security guards and gaming surveillance officers: 1,102,500
- Police, fire, and ambulance dispatchers: 102,000

Key Challenges for Public Safety Agencies

U.S. public safety agencies are faced with a number of challenges that include increased sophistication of criminal activity, the need to operate within severe budgetary constraints, and rising expectations around crime prevention, emergency response effectiveness, and citizen care. Law enforcement and other public safety personnel have to do more with less.

Overall Challenges	Communication Challenges
<ul style="list-style-type: none">• Economic, social, and political environment• Broad scope of responsibilities that impact citizens' life and safety• Budget constraint• Increasing sophistication of crimes• Limited in-house resources	<ul style="list-style-type: none">• Real-time mobile broadband data• Communications with the right person or group at any time• System interoperability across multiple jurisdictions and agencies• Communications cost control• Public safety agency and citizen demands for real-time communications updates during emergency situations

Kodiak Broadband PTT for Public Safety

Commercial cellular networks, driven by the needs of both consumers and business users, have benefitted from rapid innovation and excellent economy of scale. Advanced technologies such as LTE provide multimedia capabilities through data rates of multi-megabit per second in addition to supporting traditional voice and messaging services. Next-generation PTT over

mobile broadband now delivers combined benefits of LMR and commercial cellular networks in the form of high-performance PTT integrated with broadband data applications. Broadband PTT solution from Kodiak, a Motorola Solutions Company, represents the utmost standard of PTT over mobile broadband, which allows public safety agencies to be better equipped to meet their communication challenges. Key features and capabilities of Kodiak Broadband PTT include the following:

- **Standards based.** The Kodiak PTT platform complies with the industry's OMA PoC standards, which represent the commercial-ready baseline of 3GPP's MCPTT standard. Kodiak Broadband PTT is also evolving from enterprise grade to public safety grade to provide mission-critical PTT features compliant with the MCPTT standard.
- **Communication over the latest cellular networks and W-Fi.** Cellular networks supported include 4G LTE, 4G HSPA+, and 3G, providing ubiquitous wide area coverage. Support for Wi-Fi ensures effective in-building coverage and a fall-back wireless network where Wi-Fi is available.
- **Dynamic creation and update of contact list and group list.** Kodiak Broadband PTT comes with a powerful Web-based corporate administrator tool that allows a PTT address book to be created or updated on the fly and synched to individual users' devices wirelessly, in real time.
- **Broad device choices, including the latest smartphones, feature phones, tablets, and specialty devices.** Smartphone/tablet operating systems supported by Kodiak Broadband PTT include Android and iOS. Ruggedized specialty handsets with a dedicated PTT button and Intrinsically Safe feature are available. In addition, Kodiak Broadband PTT comes with numerous accessories, including car kits.
- **Multiple application modes.** Kodiak Broadband PTT offers two application modes: PTT radio mode, which provides a single and easy-to-use screen that emulates experience with traditional radio, and a standard mode, which offers full client functionality interactions.
- **Sub-second call set-up.** Kodiak-powered PTT enables truly instant voice communication with fast call-set-up, which is critical to first respondents' needs when handling emergency situations.
- **Multiple PTT calling types.** Users can make 1:1 private calls, pre-defined group calls, ad hoc group calls, and broadcast calls.
- **Call override.** The supervisory override feature allows a supervisor or any other designated person to take over the voice channel at any time, which is essential during emergency situations.
- **Voice and signaling encryption.** Kodiak-powered PTT provides security through voice and signaling encryption, using the Advanced Encryption Standard (AES) 256 standard to protect PTT users from unauthorized call interception and monitoring. Encryption is compliant with FIPS 140-2 Level 1 requirements, with FIPS validation.

- **Secure multimedia messaging and location tracking features.** Kodiak Broadband PTT supports secure multimedia messaging (with text, picture, video, file, and recorded voice), location mapping on device, and geo-fencing, all of which enhance effectiveness of mobile communications. Users now can access different means of mobile communication through a single application.
- **Interoperability between two-way radio and cellular networks.** The interoperability capability allows continued use of an existing two-way radio system and expansion of coverage or capacity cost-effectively, with seamless interoperability between PTT devices operating on different networks.
- **Integrated dispatch.** Kodiak offers an integrated dispatch application, which can be PC-based or Web-based. The application supports PTT communications, location tracking, group monitoring, voice recording, etc.
- **Significant cost savings.** Kodiak Broadband PTT, through its carrier partners, provides two pricing options: a low-cost PTT-only plan or a small nominal fee on top of an existing cellular voice/data plan, giving end customers significant cost savings.

Kodiak Broadband PTT delivers numerous benefits, including:

- High performance that ensures reliable instant voice communications
- Ubiquitous coverage, both outdoor and indoor
- Use of a single device for PTT and mobile broadband data, including multimedia messaging and location tracking on device
- LMR/cellular interoperability and enablement of cross-agency PTT communications
- Tools for efficient talk group management and talker priority.
- Reduction of communications costs
- Broad device choices and support for critical safety features
- Secure PTT voice and messaging
- Integrated dispatch application

Key Use Cases for Kodiak Broadband PTT

Kodiak Broadband PTT provides not only the traditional core capabilities of LMR but also integration of PTT with mobile broadband data, delivered through the most advanced and diverse wireless networks to the broadest choice of devices. With Kodiak Broadband PTT, public safety agency employees can reach the right group or person at any time and have real-time access to mobile data relevant to their role or functions, all on a single device.

Kodiak Broadband PTT is evolving from enterprise grade to public safety grade. Even before Kodiak Broadband PTT fully implements the MCPTT standard, it can be used by public safety in various situations.

	What PTT Voice Is Used For	Typical Device	Non-PTT Voice Application
Agency Directors/ Leaders	<ul style="list-style-type: none"> • Emergency situations • Discrete communications 	<ul style="list-style-type: none"> • Smartphone 	<ul style="list-style-type: none"> • Messaging • Mobile data & other apps
Supervisors/ Team Leaders	<ul style="list-style-type: none"> • Routine & emergency situations • Assigning tasks • Getting status updates 	<ul style="list-style-type: none"> • Smartphone 	<ul style="list-style-type: none"> • Messaging • Mobile data & other apps
Patrol Officers	<ul style="list-style-type: none"> • Receiving assignments • Collaborations • Status reporting 	<ul style="list-style-type: none"> • Smartphone 	<ul style="list-style-type: none"> • Messaging • Mobile data & other apps
Correctional Officers/ Probation Officers	<ul style="list-style-type: none"> • Supervising criminal offenders and defendants • Receiving assignments • Status reporting 	<ul style="list-style-type: none"> • Smartphone • Tablet 	<ul style="list-style-type: none"> • Messaging • Mobile data & other apps
Fire Fighters/ Rescue Workers	<ul style="list-style-type: none"> • Responding to medical emergencies • Receiving assignments • Status reporting 	<ul style="list-style-type: none"> • Smartphone • Feature phone 	<ul style="list-style-type: none"> • Messaging • Mobile data & other apps
Security Guards/ Surveillance Officers	<ul style="list-style-type: none"> • Patrolling, inspections, and monitoring • Receiving assignments • Status reporting 	<ul style="list-style-type: none"> • Smartphone • Feature phone 	<ul style="list-style-type: none"> • Messaging • Mobile data & other apps
Emergency Medical Services Personnel	<ul style="list-style-type: none"> • Receiving assignments • Coordination & collaboration • Status reporting 	<ul style="list-style-type: none"> • Smartphone • Feature phone 	<ul style="list-style-type: none"> • Messaging • Mobile data & other apps
Dispatchers	<ul style="list-style-type: none"> • Dispatching • Updates to/from incident sites or field personnel 	<ul style="list-style-type: none"> • PC 	<ul style="list-style-type: none"> • Messaging • Mobile data
Back Office Support Personnel	<ul style="list-style-type: none"> • Operational support • Status reporting 	<ul style="list-style-type: none"> • Tablet • Smartphone • Feature phone 	<ul style="list-style-type: none"> • Messaging • Mobile data

The following scenarios describe specific use cases of Kodiak Broadband PTT for public safety, even though it is not used as LMR replacement.

- **LMR frequency reservation for the most critical communications:** One problem that public safety agencies face is crowded LMR frequency spectrums without adequate funds for capacity expansion. With Kodiak Broadband PTT, frequency can be reserved to those who need it most, while non-mission critical personnel can use the cellular

network or a Wi-Fi network to communicate via PTT with LMR radio users.

- **Single device for mission-support PTT and mobile broadband data:** Kodiak Broadband PTT eliminates the need for non-mission-critical public safety personnel to carry a radio for PTT voice and a smartphone or tablet for mobile broadband data.
- **PTT communication outside LMR coverage area:** When traveling outside LMR coverage area, public safety personnel can still maintain PTT communications by using Kodiak Broadband PTT.
- **PTT communication when not carrying a radio:** Certain personnel in public safety agencies are not issued a radio while on duty. Under-cover detectives also do not want to reveal their mission by carrying a radio. Kodiak Broadband PTT allows these personnel to have PTT communications without using a radio.
- **Collaboration across multiple agencies:** When two or more agencies belonging to different jurisdictions need to communicate, they may experience LMR system interoperability issues. Kodiak Broadband PTT is interoperable with LMR and supports both PTT and regular voice.
- **Coverage inside buildings with heavily reinforced walls:** Various public safety buildings have heavily reinforced walls that impact radio signal strength, therefore creating in-door coverage issues. Kodiak Broadband PTT leverages Wi-Fi as an alternative to using on-site amplifiers, LMR antennas, or small cell systems for signal transmission.

Summary

Kodiak Broadband PTT is an ideal carrier-integrated mobile communication solution for public safety. It allows users to access instant voice and mobile broadband data services on a single device, with ubiquitous network coverage. For more information, visit Kodiakptt.com.