



Broadband PTT for LMR Augmentation

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Introduction

First deployed in the 1930's, land mobile radio (LMR, also referred to as professional mobile radio) technology was developed specifically to enable push-to-talk (PTT) group communications for emergency first responders, technicians in the field, delivery drivers, workers on a factory floor, and other mobile work force.

While narrowband LMR has proven to be a highly reliable solution for instantaneous voice communications, organizations using an LMR system can achieve further communication efficiency and increase employee productivity by augmenting LMR with broadband PTT, which can deliver the immediacy of voice communications along with access to mobile broadband data over 4G LTE, 3G, and Wi-Fi networks.

Key Benefits of Using Broadband PTT for LMR Augmentation

According to a survey of US LMR users conducted by market research firm Market in View for Kodiak, a Motorola Solutions Company, decision makers in organizations using an LMR system have a strong interest in adopting a broadband PTT service:

- 97% of decision makers who use LMR and 75% of non-managerial LMR users are already using cellular networks to supplement LMR for calls outside LMR coverage, private 1:1 calls, mobile broadband data, etc.
- 59% of the decision makers said they “definitely” or “probably” would adopt broadband PTT. Only 9% expressed unlikelihood to purchase a broadband PTT service.
- Decision makers project that with adoption of broadband PTT, the number of PTT users/devices in their organization would increase by an average of 47%.

When asked to rate the attractiveness of the key attributes and capabilities of the Kodiak Broadband PTT solution, a high percent of decision makers gave them a rating of “extremely compelling” or “very compelling”:

- Expanded coverage: 85%
- Support for 4G LTE/3G cellular networks and Wi-Fi: 84%
- Compatible with the latest smartphones: 81%
- Support for private 1:1 calls in addition to group calls: 78%
- Single device for all mobile applications: 78%
- Availability of ruggedized low-cost cell phone for PTT: 76%

With broadband PTT, organizations that have been using LMR can easily expand coverage, increase the number of PTT users, and reap numerous other benefits as well.

Key Benefits of Using Broadband PTT for LMR Augmentation	
Preserve LMR system resources	✓
Use PTT outside LMR coverage area	✓
Expand PTT system capacity quickly and cost-effectively	✓
Allow personnel without a radio to use PTT while at work	✓
Allow private 1:1 PTT calls	✓
Allow off-duty personnel to stay connected with PTT when necessary	✓
Allow users to carry a single device for both PTT and mobile broadband data	✓
Interoperability between LMR and cellular networks	✓
Subsidized devices from carriers with periodic free/low-cost device upgrades	✓
Low monthly fee for broadband PTT service	✓

Using Broadband PTT: from Business Entities to Public Safety

Business entities are among the first organizations to use broadband PTT. However, public safety agencies can also use this PTT service, even though it will take time for mission-critical broadband PTT solutions to be developed and deployed.

Below are examples of broadband PTT use cases for public safety today:

- Public safety mission support:** Many employees in public safety agencies are in mission-support roles that do not handle life-and-death situations directly. These employees can use broadband PTT for voice communications, while first responders who rely on mission-critical PTT communications continue to use LMR.
- Allocating LMR frequency to the most critical communications:** One problem that public safety agencies face is crowded LMR frequency spectrums. With broadband PTT, LMR frequency can be reserved to those who need it most, while others can use cellular or Wi-Fi networks for PTT communications with one another and with LMR radio users as well.
- PTT communications while traveling or at home:** When public safety personnel travel outside LMR coverage area or are at home without a radio, they can still maintain PTT communications by using a cellphone.
- PTT communication by under-cover detectives:** Under-cover detectives do not want

to reveal their mission by carrying a radio that can be easily seen. 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 cross-agency LMR system compatibility issues. LMR-interoperable broadband PTT allows multiple agencies to communicate with each other and collaborate in real time.
- **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. Broadband PTT leverages Wi-Fi as an alternative to using on-site amplifiers, LMR antennas, or small cell systems for signal transmission.



What You Need from Broadband PTT

Not all broadband PTT solutions are created equal. Thus you need to ensure that the solution you use has the right attributes and capabilities to meet your needs:

- **Standards based:** There are industry standards for broadband PTT (e.g., OMA PoC v2). The solution you use should be based on industry standards to ensure future-proof investment.
- **Reliability:** Reliability needs to encompass the platform, the network, and devices. The best way to ensure end-to-end reliability is tight integration of the broadband PTT platform into the carrier's network and daily operations.
- **High performance:** High performance requires consistent sub-second call set-up and high voice quality.
- **Security:** Voice and signaling encryption using the AES-256 standard can effectively ensure protection from unauthorized call interception, monitoring, or recording. In addition, the broadband PTT solution you use needs to meet FIPS-104-2 requirements.
- **Broad choices of devices and accessories:** Compatible devices should include the iPhone, Android-based smartphones, tablets, and feature phones as well. There should also be specialty rugged phones and a wide scope of accessories.

- **Efficient management tool:** There needs to be a Web-based tool that enables centralized management of PTT contacts and talk groups, synched to each user's device wirelessly and in real time.
- **LMR interoperability:** Users of a broadband PTT solution need to be able to communicate with those who carry an LMR radio.
- **Integration into 3rd-party productivity applications:** There should be APIs that enable integration of broadband PTT into 3rd-party productivity applications such as fleet management or work force management.
- **Ease of deployment and management:** A hosted solution provides ease of deployment and management, eliminating the need for on-site installation and maintenance.

The Kodiak Broadband PTT solution meets all the requirements listed above, and it is the industry's benchmark solution for next-generation PTT. Kodiak has the largest broadband PTT network footprint and user base in the world.

Summary

Broadband PTT has emerged as a high-performance PTT solution for LMR augmentation. A recent Kodiak survey of LMR users in the US shows that decision makers are very interested in adopting broadband PTT. With a standards-based platform, Kodiak Broadband PTT delivers fast, reliable, and feature-rich communication service. For more information, visit www.kodiakptt.com.