

Public Safety's New Allocation— Answering Users' Questions on the 4.9 Gigahertz Band

The Federal Communications Commission's (FCC) allocation of 50 megahertz (MHz) of spectrum in the 4.9 gigahertz (GHz) band permits public safety agencies to implement on-scene wireless networks for streaming video, rapid Internet and database access, and transfers of large files such as maps, building layouts, medical files, and missing person images. It also allows these agencies to establish temporary fixed links to support surveillance operations. This allocation gives every jurisdiction in the country access to spectrum for deployable, interoperable, broadband communications.

What Does This New Allocation Mean for Public Safety Users?

This allocation offers public safety agencies an opportunity to deploy advanced services unavailable in other bands, such as permanent "hot spot" devices in high-use areas or temporary incident command centers erected at an incident scene. Particular technologies could include wireless personal area networks (WPAN), hot spot networks, and wireless vehicular area networks (WVAN). These devices would facilitate creation of ad-hoc wireless networks around a person or vehicle, personal telematics, voice, data, video, image, or biometric transmissions, and immediate, high-speed access to information.

Who Is Eligible to Use the 4.9 GHz Public Safety Band?

Similar to the 700 MHz band, licensees must fulfill *all three* of the following requirements—

- 1.) Have as their the sole purpose the protection of life, health, or property
- 2.) Be a state or local government entity or non-government entity authorized by a local or state public safety entity
- 3.) Provide services that are not commercially available to the public.

Non-government organizations seeking licensing to support public safety operations in a particular jurisdiction must obtain written approval from a sponsoring public safety entity in that jurisdiction.

What Are the Licensing Rules?

The FCC has implemented a geographic licensing scheme for mobile applications. A license grants a public safety agency authorization to use all 50 MHz of spectrum within its legal jurisdiction whether that jurisdiction is a state, town, city, or county. However, fixed point-to-point operations require an individual license for *each station* and can only be used for temporary operations on a primary basis, or for permanent operations on a secondary basis. Different licensees that are adjacent and collocated share all frequencies. These sharing agencies are responsible for interference prevention, mitigation, and resolution coordination.

What Are the Operational Rules?

The FCC concludes that Part 90 already contains the appropriate rules to guide fixed and mobile operations in the band. In addition, the FCC declines to adopt any standard for broadband technologies. However, the FCC does adopt Motorola's sliding scale power limit proposal for mobile operations that allows 20 dBm (100 mW) for a 1 MHz signal, up to 33 dBm (2 watts) for a 20 MHz signal with an antenna gain limit of 9 dBi. The equipment must also comply with the FCC's radio frequency radiation exposure evaluation requirements. Existing emission limits rules for each technology apply. The FCC also imposes a maximum antenna gain of 26 dBi for point-to-point operations.

The frequency utilization plan for the band located at 4940–4990 MHz consists of 10, 1-MHz channels and 8, 5-MHz channels that can be aggregated to a maximum channel width of 20 MHz. The Rules encourage the Regional Planning Committees (RPC) working on the 700 MHz band to coordinate the region's frequency utilization plan. In an effort to avoid any interference, licensing of aeronautical use is permitted only through the FCC waiver process.

How Soon Can Agencies Implement 4.9 GHz Technology?

Public safety agencies may use the 4.9 GHz band as soon as licensed equipment is developed. RPC frequency coordination serves to minimize the possibility of interference. The FCC requires that, within 6 months of the effective date of the Rules, all RPCs meet to consider coordination procedures. Any coordination plan developed by the RPCs must be submitted to the FCC within 12 months. The plan should cover fixed and mobile operations, incident management protocols, interference avoidance, and interoperability. If a region's RPC cannot perform the needed planning, the duties would default to the licensees, enabling coordination on an ad hoc basis. The amendments to the Rules created by this Report and Order were effective 30 days after the posting to the *Federal Register* on June 30, 2003. The FCC is presently accepting licensing applications.

For more detailed information on this rulemaking, download the *Second Report and Order (R&O)* and the *Memorandum Opinion & Order, Third R&O, WT Docket 00-32* from www.fcc.gov. If you would like to be added to the PSWN Program Policy Team's mailing list to receive updates and information on public safety spectrum policy, please send an e-mail to information@pswn.gov requesting to be added.