



#### **4.9 GHz Band Licensing and Rules Overview**

In 2003, the FCC assigned the 4940-4990 MHz frequency band for Public Safety use. Any qualified agency may now obtain a license and use the band. This Application Note is a brief summary of FCC rules covering the 4.9 GHz band. Specific FCC rules are covered in Subpart Y in 47CFR part 90.

The 4.9 GHz band is a licensed band available for use by public safety agencies. Any agency qualified for a 700 MHz license qualifies for a 4.9 GHz license. Generally this covers all government entities, private companies sponsored by a government entity (such as private ambulance services) and any organization with critical infrastructure (power companies, pipelines, etc.).

#### **Approved Uses of the Band**

The band may be used for any terrestrial based radio transmission including data, voice, and video. Point-to-point and multipoint operations are permitted. All multipoint and temporary (less than 1 year) point-to-point links are primary uses of the band. Permanent point-to-point links are secondary uses and require separate site licenses. Where interference cannot be eliminated by technical or operational modifications, primary users take precedence over secondary users. Aeronautical use and commercial use of the band is prohibited.

#### **Special Considerations**

After filing of a license application, the FCC will handle any required coordination for band use near the Canadian border. Also, use of the 4.9 GHz band must not interfere with radio astronomy observatories (radio quiet zones). Both general and site-specific licenses may be obtained at any time through the Universal Licensing System (ULS) available at [wireless.fcc.gov/uls](http://wireless.fcc.gov/uls). There is no charge and applications are processed within hours. Site-specific licenses must have endpoint coordinates submitted with the application.

#### **Time Limits**

There is no time limit for construction and operation under a general license. A site-specific license must be operational within 18 months of the grant.

#### **Channel Plan**

The FCC has divided the band into 18 channels as detailed below:

#### **Frequency Coordination**

A general 4.9 GHz license gives an agency the right to use the entire 4940-4990 MHz frequency band. Multiple agencies may receive licenses within the same geographic area, so interference is possible. Usually interference can be prevented or eliminated by affected licensees working together on a technical solution. Point-to-Point links, when well-designed and implemented with good directional antennas should be resistant to interference. Many 700 MHz Regional Planning Committees are handling frequency planning in 4.9 GHz. A frequency plan does not have to be in place prior to use of the band. Any agency may use the band upon obtaining a license.

#### **Advantages of 4.9 GHz for Point-to-Point Links**

Public safety agencies historically had two choices for point-to-point radio links. One is a dedicated licensed microwave link. Implementation can be a time consuming process and involves purchasing expensive radio equipment. At the opposite end are the unlicensed bands where equipment is inexpensive but subject to interference at any time from general public users. The 4.9 GHz spectrum provides an intermediate alternative. Licensees must share the spectrum and coordinate frequency use, however overall operation can be made very reliable because the general public is prohibited from using the band.