

Executive Summary

Understanding FCC Narrowbanding

The FCC's narrowbanding requirements were adopted during the course of a proceeding known as "refarming" that was initiated in 1992. The basic purpose of this proceeding was to enhance spectrum efficiency in the VHF and UHF land mobile bands. "Refarming" entails not only mandatory narrowbanding, but also the consolidation of twenty separate radio services into two radio pools: a Public Safety Pool and an Industrial/Business Pool. While service pool consolidation already has occurred, narrowbanding is not yet complete. The FCC's narrowbanding requirements and deadlines are discussed below.

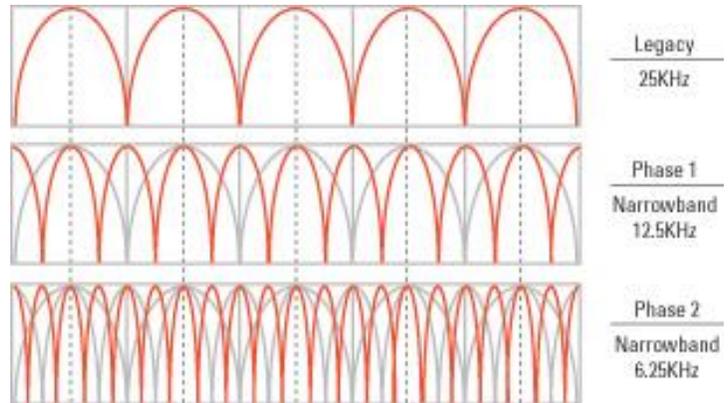
Most public safety and industrial / business communications usage now falls within the private land mobile radio service. Private land mobile radio . including industrial, business, education, public safety and state and local government use blocks of radio spectrum called channels. Traditionally licensees in the VHF and UHF bands have employed systems that operate on channel bandwidths of 25 kHz. "Mandatory Narrowbanding" refers to a requirement by the FCC that **on or before January 1, 2013** — all existing licensees implement equipment designed to operate on channel bandwidths of **12.5 kHz** or less or that meets a specific efficiency standard. This means that licensees will need to convert their existing wideband (25 kHz) systems to narrowband (12.5 kHz) operation. **Any equipment that is not capable of operating on channels of 12.5 kHz or less will need to be replaced.**

The FCC expects that licensees ultimately will implement equipment that is designed to operate on channel bandwidths of **6.25 kHz** or less. However, **there currently is no deadline set for making this transition.**

As noted above, licensees may meet an efficiency standard instead of satisfying the requirement to operate of channels with a bandwidth of 12.5 kHz or less.

1. For **voice** operations, the efficiency standard is satisfied if the equipment is capable of transmitting at least **one voice channel per 12.5 kHz of bandwidth**. In other words, voice equipment operating on a channel bandwidth of up to 25 kHz will be permitted if the equipment supports two or more voice channels.
2. For **data** operations, the efficiency standard is satisfied if the equipment is capable of supporting a minimum data rate of **4800 bits per second per 6.25 kHz of channel bandwidth**.

The purpose of mandatory narrowbanding is to promote more efficient use of the VHF and UHF land mobile bands. Today, these bands are highly congested, and there often is not enough spectrum available for licensees to expand their existing systems or implement new systems. As licensees convert to equipment that operates on narrower channel bandwidths, it will allow additional channels to exist within the same spectrum space, illustrated in figure 1. It is also evident that the narrowband conversion will spur the development and use of new technologies that will further promote efficient spectrum use, be less susceptible to interference, and provide licensees with enhanced capabilities.



Deadlines

To phase in the migration deadline of January 1, 2013, the FCC has established interim deadlines.

January 1, 2011 (Interim Deadline)

- FCC will not accept applications for new systems using 25 kHz channels, or modification applications that expand the authorized contour of an existing 25 kHz station.

January 1, 2013

- All Public Safety and Industrial/Business licensees in the 150-174 MHz and 421-512 MHz bands must either migrate to 12.5 kHz technology or utilize a technology that achieves equivalent efficiency.

Key Points

- Most current radio systems use 25 kHz-wide channels.
- Every current 25 kHz license in VHF & UHF bands will expire January 1, 2013 regardless of the date printed on the license itself.
- Agencies need to start planning now to migrate to narrowband systems by assessing their current equipment and applying for new or modified licenses.
- Agencies that do not meet the deadline could face cancellation of their license(s), loss of communication capabilities and / or fines.
- Chicago Communications LLC has the experience to assist you through a large-scale project of this magnitude.