

Narrowbanding: FCC Mandate (What does this mean to me?)

We all enjoy the latest advances in wireless technology, but with these advances came a problem that was not expected to occur so quickly or affect so many. The problem: there are not enough radio frequencies available to serve all the products and services coming to consumers, businesses and public safety agencies. The adage of “packing ten pounds into a five pound bag” kind of fits the predicament the FCC is in.

The FCC had few options. They could reallocate licensed organizations to different bands or frequencies. However, this would likely require the purchase of new equipment, making this change extremely expensive for the operators (you and me).

Another option for that overloaded five-pound bag is for the FCC to change the size of what is trying to squeeze in that bag. The FCC has decided that instead of trying to fit ten one-pound units into the bag, they would try fitting ten *half-pound* units. To accomplish this, the FCC needed to decrease the size of the bandwidths (the “pounds”) that were trying to fit into the radio spectrum (the “bag”).

Now for the technical jargon: The first step for the FCC was to cut the current spacing, or what is referred to as bandwidth, in half. Currently, frequencies in the 155-170MHz (VHF) and the 421-512 MHz (UHF) bands are allowed to have a bandwidth of 25 kHz. By cutting the bandwidth from 25 kHz to 12.5 kHz, the FCC effectively doubled the number of frequencies that can be used within a given radio band. As technology continues to use more wireless features, the FCC will have to meet the ever-growing communication demands by decreasing the bandwidth size *again* to 6.25 kHz (now we’re down to 20 quarter-pound units in that five-pound bag). The result is that each time the FCC cuts the bandwidth in half, they effectively double the amount of frequencies that can be utilized within a given band.

To accomplish this, the FCC is requiring all Public Safety and Industrial/Business licensees using 25 kHz bandwidth in the 155-170MHz (VHF) and the 421-512 MHz (UHF) bands to migrate to minimum 12.5 kHz efficiency by January 1, 2013. (Ref: Private land mobile radio (LMR) systems (FCC Part 90)-including municipal government, State, and local public safety)

I'm sure you're still asking “What does this mean to me?” In general, what it means is that if you have an FCC license to operate in the those above mentioned frequencies, you are **REQUIRED** to ensure that your equipment is capable of and configured to use the 12.5 kHz or better frequency spacing (6.25 kHz) by the 2013 deadline. Many organizations who have purchased radios that were manufactured and certified within the last ten years may already be compliant capable but will still need to ensure that their equipment will function properly with the new narrower bandwidth. The best way to get answers on your equipment is by contacting your radio equipment provider and providing them with the make and model of your radio equipment. Your provider should then be able to help you through this process of ensuring compliance. Furthermore, the organization must apply for new narrowband licenses

or modify existing licenses while justifying channel requirements by that deadline.

If your radio system is inter-operable with other agencies or other organizations' radio systems, you should coordinate conversions, activities and plans with those agencies or organizations to insure that radio inter-operability capabilities are factored into any narrowbanding conversion plan.

One source of further detailed information can be found here:

<http://siec.wa.gov/links/files/narrowbanding.pdf>.

An FCC workshop held on this subject can also be viewed at the following link:

<http://www.youtube.com/watch?v=rdV5DC5Kb7o>.

Ken Anderson

Emergency Support Services

K0SAR

With help from Kelly Kugler