ESTEEM Wireless Modems

TECHNICAL BULLETIN
NARROWBAND LICENSING

Are You Prepared for the Narrowband Deadline January 1, 2013?

The Federal Communications Commission (FCC) has mandated that by January 1, 2013, all licensees and users of radio systems operating in the VHF 150 – 174 MHz and the UHF 450 – 512 MHz portions of the of the radio spectrum, convert their systems and radios so that they are operating on 12.5 kHz rather than the current wideband 25 kHz channels. This mandate has been put into place to bring about spectrum efficiency and as a result, to create additional channels to accommodate the demand of public safety and local government users.

The FCC has mandated that all licensees using wideband, 25 kHz radio systems migrate to narrowband, 12.5 kHz channels by January 1, 2013. Under the current FCC ruling, if you are licensee, operate, or use a system in the affected portion of the spectrum, you must comply with this FCC mandate. Licensees that do not meet that deadline face the loss of their licenses and the loss of communication capabilities.

If your company has not yet planned to narrowband your channels and equipment, you need to start that planning as soon as possible so that you are in compliance by January 1, 2013. Below is some information that might be useful to you or your company in understanding what needs to be done to comply with this requirement and to move forward with narrowbanding successfully:

- **Assess your current equipment to determine if it can be converted to operate in 12.5 kHz Radio channels**. You may need to contact your technical representative, vendor or manufacturer of the equipment to make this determination.

- **Identify funding sources.** Your equipment may not be capable of being narrowbanded and may need to be replaced. At the very least, to become narrowbanded it may require modification and reprogramming.

- **Put together a plan for accomplishing narrowbanding.** Plan for an orderly transition that will have to least impact on your users. Will all users continue to be served appropriately after narrowbanding? Will coverage expectations be met? Does the expense and effort of narrowbanding provide opportunities to upgrade to other technologies with additional features and capabilities for your users?

- **If you are the licensee and operator of the system, you need to establish a timetable to complete narrowbanding by the required date.** Understand what needs to be done before January 1, 2013 and how the timing of your transition to narrowbanding will affect the users of your channels and systems

- **If you operate on a shared channel, contact the channel licensee or system operator to determine if they are aware of the mandate and to coordinate the conversion of your radio equipment with the date they will be migrating the channel or system to narrowband.**

- **If you are the licensee of the channels, you will need to apply for licenses on the new narrowbanded channels.** This will require the coordination of your licensing request by a designated coordination organization and the filing of the license application with the FCC. When new licenses are granted, you will have twelve months to complete the conversion of your systems consistent with the FCC rules.

- **Coordinate the transition effectively with all users.** Let all the users know of your timelines for completing the conversion so that their radios can be converted to coincide with the transition date.

- **Understand how the conversion will affect interoperability with other jurisdictions and plan to address interoperability impacts.** Ensure the people you call on for back-up are able to meet your conversion dates so you do not lose the ability to talk to each other at any point. You may need to establish alternative interoperability methods to ensure you have effective communications when needed.

Following the above steps will allow you to meet the FCC deadlines for narrowbanding and will help insure that your transition is successful.

ESTeem's Wireless Solution

ESTeem's **narrow band** radios can be software configured to satisfy the 2013 FCC regulations, allowing the user to create a compliant "Radio Area Network" of up to 255 users on a single frequency. The packet burst communications technique was chosen to give the system very high data integrity in high noise industrial environments. The ESTeem incorporates forward error correction and CRC error checking that provides received data accuracy of greater than one part in 100 million.

The ESTeem® radio modem provides a wireless Radio Area Network (RAN) interface to the Allen-Bradley® PLC, ControlLogix, SLC and MicroLogix ® products by allowing asynchronous RS-232C, RS-422, and RS-485 modules to communicate without any additional programming to the PLC. The ESTeem allows Allen-Bradley users communication to inaccessible areas, eliminate in-plant wiring, leased line, and cellular communication costs.

The ESTeem modem supports the DF1 communication protocols. This allows the Allen-Bradley user to enable a READ or WRITE message instruction between PLCs. Once the ESTeem is configured for DF1 protocol, the ESTeem will read the destination address in the protocol and send the information to the ESTeem and Allen-Bradley PLC with that address. The ESTeem can route information through multiple ESTeems to extend the range of the network, transparent to the Allen-Bradley PLCs.