FCC Narrowbanding Mandate

What it means to your radio system and operations

FCC Narrowbanding Mandate



Narrowbanding FCC Mandate

In an effort to promote greater spectrum efficiency, the FCC is requiring all Public Safety and Industrial/Business licensees using 25 kHz VHF and UHF radios systems to migrate to minimum 12.5 kHz efficiency by January 1, 2013

Now is the time to start Preparing

- Take inventory of your current equipment to verify it is 12.5 kHz capable
- Develop funding plans to replace non 12.5 kHz capable equipment

Narrowband Requirements for Manufacturers and Users

- FCC Rule Making started in 1992 with deadlines set in 2003
- 12.5 kHz capable equipment required in 1997

Key Narrowbanding Dates



January 1, 2011

- Applications for new licenses or license modifications to expand existing service areas must specify 12.5 kHz efficiency
- Manufactures can no longer certify, manufacture or import equipment capable of 25 kHz operation
- Existing licensees may continue to operate previously certified equipment in the 25 kHz mode until Dec 31, 2012

January 1, 2013

- All licensees must convert to and operate in at least 12.5 kHz efficiency
- Equipment only capable of operating at 25 kHz efficiency must be replaced
- Existing dual mode (25/12.5 kHz) equipment must have the 25 kHz efficiency mode disabled via software

FCC Rules



- Series of Orders over 15 years
- Dec. 11, 2009 Public
 Notice
- Code of Federal Regulations
 - Licensee Deadlines
 - CFR 90.209 (b)(6)(i)
 - CFR 90.209 (b)(6)(ii)
 - CFR 90.209 (b)(5)
 - Manufacturer Deadlines
 - CFR 90.203 (j)(3)
 - CFR 90.203 (j)(4)
 - CFR 90.203 (j)(5)
 - CFR 90.203 (j)(10)

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LICENSEES, FREQUENCY COORDINATORS, AND EQUIPMENT MANUFACTURERS REMINDED OF NARROWBAND MIGRATION DEADLINES IN THE 150-174 MHz AND 421-512 MHz BANDS

This Public Notice reminds interested parties of the Commission's deadlines for private land mobile radio services in the 150-174 MHz and 421-512 MHz bands to migrate to narrowband (12.5 kHz or narrower) technology.¹ The Commission directed that a *Public Notice* be issued by December 31, 2009 reminding licensees and frequency coordinators of the approaching deadlines.² This *Public Notice* also provides additional information regarding the transition to narrowbanding technology.

Kev Deadlines

Licensees and frequency coordinators should be aware of the following deadlines:

(1) beginning January 1, 2011,3 the Commission will no longer accept applications for

-new wideband 25 kHz (*i.e.*, operating with only one voice path per 25 kHz of spectrum) operations, and

-modification of existing wideband 25 kHz stations that expands the authorized interference contour (19 dBu VHF, 21 dBu UHF); and

(2) by January 1, 2013, Industrial/Business and Public Safety Radio Pool licensees must

- operate on 12.5 kHz (11.25 kHz occupied bandwidth) or narrower channels, or

 - employ a technology that achieves the narrowband equivalent of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data).

² See Narrowbanding Third Memorandum Opinion and Order, 19 FCC Rcd at 25057 ¶ 26.

³ A petition seeking a stay of the January 1, 2011 deadlines, filed by the National Public Safety Telecommunications Council (NPSTC) on September 29, 2009, is pending. See Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Seek Comment on National Public Safety Telecommunications Council Petition for Stay of Interim Narrowband Implementation Dates, Public Notice, WT Docket No. 99-87, DA 09-2364 (WTB/SHSB rel. Nov. 2, 2009).

¹ See Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, Second Report and Order and Second Further Notice of Proposed Rulemaking, WT Docket No. 99-87, RM-9332, 18 FCC Red 3034 (2003); Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order, WT Docket No. 99-87, RM-9332, 19 FCC Red 25045 (2004) (Narrowbanding Third Memorandum Opinion and Order); see also 47 C.F.R. 55 90.203(j), 90.209(b).

FCC Narrowbanding Support



Motorola radios are 12.5 kHz Compliant

- Motorola radios shipped after 1997 are likely 12.5 kHz capable via software upgrade
- <u>NO</u> FCC mandate to move to 6.25 kHz efficiency technology
- Licensees who want greater than 12.5 kHz capacity, Motorola is currently shipping two complete product families that can operate in 6.25 kHz efficiency using your existing 12.5 kHz channels
 - ASTRO 25 product line for mission critical markets
 - MOTOTRBO product line for commerce and enterprise markets

Motorola is here to help you achieve 12.5 kHz Compliance

- Assist in radio inventory and determination of devices that can be reprogrammed and those that need to be replaced
- Create a Customer Narrowbanding Plan
 - System design and performance evaluation
 - Radio 12.5 kHz operation migration
 - FCC License modification

Narrowbanding System Considerations

You may continue to use the current infrastructure site equipment to meet narrowband requirements

• Duplexers, combiners, multicouplers, line and antennas

System Performance Characteristics with narrower bandwidth

- Coverage range reduction
- Audio constraint
- Caution using mixed bandwidth radios (25kHz and 12.5kHz)

System Alternatives

- Narrowband Analog become FCC compliant
- Narrowband Digital become compliant with enhanced features
- Operator System shed system and license responsibility and gain features/coverage

Narrowbanding Process



Inventory User Equipment Subject to Narrowbanding

- Radios purchased before 1997 most likely need to be replaced
- Radios purchased after 1997 most likely need to be reprogrammed or replaced for 12.5 kHz capability

Determine Future System Expansion Requirements

• Capability, coverage and exclusivity

Establish Optimum Migration Timeframe

- Evaluate performance impact of narrowband
- Identify and secure funding requirements

Complete Licensing and Frequency Coordination

- Add or change narrowband emission designator
- Modify administrative/technical data as needed

Reprogram or Replace User Equipment

• Test and optimize system performance