



Federal Communications Commission
Washington, D.C. 20554

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Small Entity Compliance Guide

Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band

First Report and Order

FCC 14-30

ET Docket No. 13-49

Released April 1, 2014

This Guide is prepared in accordance with the requirements of Section 212 of the Small Business Regulatory Enforcement Fairness Act of 1996. It is intended to help small entities—small businesses, small organizations (non-profits), and small governmental jurisdictions—comply with the new rules adopted in the above-referenced FCC rulemaking docket(s). This Guide is not intended to replace the rules and, therefore, final authority rests solely with the rules. Although we have attempted to cover all parts of the rules that might be especially important to small entities, the coverage may not be exhaustive. This Guide may, perhaps, not apply in a particular situation based upon the circumstances, and the FCC retains the discretion to adopt approaches on a case-by-case basis that may differ from this Guide, where appropriate. Any decisions regarding a particular small entity will be based on the statute and regulations.

In any civil or administrative action against a small entity for a violation of rules, the content of the Small Entity Compliance Guide may be considered as evidence of the reasonableness or appropriateness of proposed fines, penalties or damages. Interested parties are free to file comments regarding this Guide and the appropriateness of its application to a particular situation; the FCC will consider whether the recommendations or interpretations in the Guide are appropriate in that situation. The FCC may decide to revise this Guide without public notice to reflect changes in the FCC's approach to implementing a rule, or to clarify or update the text of the Guide. Direct your comments and recommendations, or calls for further assistance, to the FCC's Consumer Center:

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New and Modified Compliance Requirements for Operation of U-NII Devices in the 5 GHz Band

1. Objectives of the Proceeding

In the *First Report and Order* released on April 1, 2014, in ET Docket No. 13-49, the Commission increased the utility of the 5 GHz band and modified certain U-NII rules and testing procedures, found in Subpart E of Part 15 of its rules, to ensure that U-NII devices do not cause harmful interference to authorized users. For certain U-NII devices in the 5.15-5.25 GHz band, the Commission generally removed the indoor-only restriction and increased the permitted power. Fixed outdoor access points operating in 5.15-5.25 GHz band must meet an Equivalent Isotropically Radiated Power (“EIRP”) limit above a 30 degree elevation angle. The Commission also extended the upper edge of the 5.725-5.825 GHz band to 5.85 GHz, and consolidated the Part 15 rules applicable to all digitally modulated devices operating across this 125 megahertz. In addition, the Commission required that all U-NII device software be secured to prevent its modification, to ensure that the devices will operate as authorized by the Commission. The Commission also modified certain technical rules and compliance measurement procedures for U-NII devices operating in these bands in order to protect Terminal Doppler Weather Radar (“TDWR”) systems and other radar systems from harmful interference.

In the *First Report and Order*, the objectives of the Commission were to enhance the existing 5 GHz spectrum by expanding the permissible uses of U-NII devices within the 5.15-5.25 GHz band which would in turn increase the utility of the existing spectrum by allowing operation over wider bandwidths, to provide more flexibility for providing broadband service, whether indoors or outdoors, and to take advantage of the new 802.11ac standard to achieve higher data rate transmissions across multiple U-NII segments of the 5 GHz band. The Commission also intended to reduce the likelihood of harmful interference not only to FAA’s TWDR systems, but to all authorized services in the 5 GHz bands by modifying the rules for operation in the U-NII bands to include device security requirements and by modifying the rules and measurement procedures for devices operating within the U-NII-2 bands (5.25-5.35 GHz and 5.47-5.725 GHz) with regard to Dynamic Frequency Selection (DFS). Also, the Commission found that a major cause of harmful interference to the TDWR was users who illegally modify devices certified to operate under Section 15.247 in the 5.47-5.725 GHz band without implementing DFS. To eliminate this source of interference, the Commission consolidated the provisions applicable to digitally modulated devices under Section 15.247 of the rules for this band with the U-NII rules in Section 15.407 so that all the digitally modulated devices operating in the 5 GHz band will operate under the combined rules and be subject to the new device security requirement.

To facilitate the transition to the new security requirements, the lower unwanted emissions limits in the 5.725-5.85 GHz band, and the modified DFS rules, the Commission established transition periods that would not unduly impair the availability or cost of U-NII devices or impose undue burdens on manufacturers or the public. The transition periods begin after the effective date of the new rules in this proceeding and provide manufacturers with the necessary lead time to design and produce U-NII devices that comply with the security requirements, and emissions limits for equipment certification and manufacturing, marketing, and importation purposes. The Commission also grandfathered U-NII devices that are already installed for the life of the equipment.

2. General Information

Part 15 of the FCC's rules contain the technical requirements for radio frequency (RF) devices that may be operated without an individual license. All Part 15 devices are required to accept harmful interference from other authorized operations, and are prohibited from causing harmful interference to other authorized operations. 47 C.F.R. § 15.5(b). The requirements in Part 15 also include radiated and power line conducted emission limits for intentional and unintentional radiators.

Intentional radiators are devices that intentionally generate and emit RF energy, *i.e.*, transmitters, such as the devices operating in the 5 GHz band addressed in the above proceeding. Examples of Part 15 intentional radiators also include cordless telephones, remote control transmitters, remote utility meter readers, and wireless local area networking equipment. Part 15 intentional radiators must be certified by the FCC or a designated Telecommunication Certification Body (TCB) before they can be imported into or marketed within the United States.

Unintentional radiators are devices that intentionally generate, but do not intentionally emit, RF energy. Examples of Part 15 unintentional radiators include radio receivers, computers and TV interface devices such as DVD players, cable and satellite boxes. Most unintentional radiators can be authorized through a self-approval process in which the manufacturer has the equipment tested to ensure it complies with the Part 15 rules, but does not have to obtain certification through the FCC or a TCB. However, scanning receivers, and devices for accessing broadband over power lines radar detectors, are required to be certified before they can be imported into or marketed within the United States.

3. What are the compliance requirements that apply to Part 15 operations in the 5 GHz U-NII band?

- The devices operating under these provisions must comply with the RF safety requirements specified in §§ 1.1307(b), 2.1091 and 2.1093.
- The devices operating under these provisions must be labeled with an FCC identification number as required by § 2.925 and the statement required by § 15.19(a)(3) indicating that the device complies with Part 15 of the rules, may not cause harmful interference and must accept any interference received.
- The devices operating under these provisions must provide information to the user as specified in § 15.21.
- In-band power must comply with the limits in § 15.407(a).
- Out-of-band emissions must comply with the limits in § 15.407(b).
- The transmitter conducted output power must comply with the limits in § 15.407(a).
- Applications for equipment authorization of devices operating under these provisions must contain a statement confirming compliance with the radio frequency radiation exposure requirements specified in §§ 1.1307(b), 2.1091 and 2.1093 for both fundamental emissions and unwanted emissions. *See* § 15.407(f).

- Applications for certification must document the methods used to prevent unauthorized software changes to the equipment. *See* §§ 15.407(i) and 2.1033(b)(13).
- Devices that operate within the 5.25-5.35 GHz and 5.47-5.725 GHz bands must comply with the Dynamic Frequency Selection and Transmit Power Control provisions in § 15.407(h).
- Companies that intend to deploy more than one thousand Access Points within the 5.15-5.25 GHz band must first submit a letter to the Commission acknowledging that, should harmful interference to licensed services in this band occur, they will be required to take corrective action. *See* § 15.407(j).

4. What are the Transition Periods for Compliance with the newly adopted rules U-NII 5 GHz band?

New transition provisions have been implemented for 5 GHz devices to comply with the new certification procedures and rules. The Commission has established the following deadlines:

- New devices or permissive changes on previously approved devices were permitted under the previous rules (rules prior to the effective date of FCC 14-30) until June 2, 2015.
- Devices approved under the rules that took effect on June 2, 2014 must apply all the appropriate test procedures for such devices and provide software security documentation outlined in the Office of Engineering and Technology's guidance documents. This also applies to applications for permissive change of previously approved devices seeking to use the provisions of the new rules.
- All devices approved under previous rules shall not be marketed after June 2, 2016.
- After June 2, 2016, no permissive changes will be permitted for devices approved under the previous rules unless they meet the requirements of the new rules.

5. What Measurement Procedures may be used to demonstrate compliance with the Part 15 U-NII requirements for operations in the 5 GHz band?

The Commission has published several guidance documents relating to the proper Measurement Procedures, these include Knowledge Database Publications 905462, 789033, and 594280. These documents can be downloaded at www.fcc.gov/labhelp.

6. What are the certification approval requirements for U-NII devices operating in the 5 GHz band?

All devices operating under the provisions of Section 15.407 must be certified by the FCC or a TCB before they can be imported into or marketed within the United States. Please refer to Sections 2.1031-2.109 *et seq.* for information on the equipment certification procedures.

7. What are the penalties for non-compliance with the rules?

Depending on the nature of the violator, willful or repeated violations of the FCC's equipment authorization, importation and marketing rules, including but not limited to operation of communications equipment that does not comply with one or more of those rules, can result in

forfeitures ranging from \$16,000 to \$160,000 for each violation or each day of continuing violation. See § 1.80 of the FCC rules. Individuals or organizations may also be subject to criminal penalties under Title 18 of the U.S. Code. FCC field personnel, working in conjunction with the Attorney General of the United States, may seize illegal equipment. See 47 U.S.C. § 510(b).

8. Where can I find the Part 15 rules and information for the 5 GHz band?

FCC Order revising the Part 2 and Part 15 rules for operation in 5 GHz band: *First Report and Order* in ET Docket No. 13-49, FCC 14-30, released April 1, 2014, 29 FCC Rcd 4127 (2014).

http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-14-30A1.docx (Word)

http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-14-30A1.pdf (Acrobat)

http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-14-30A1.txt (Text)

The Commission's rules (47 Code of Federal Regulations (47 C.F.R.)) are available at

[.http://www.fcc.gov/encyclopedia/rules-regulations-title-47](http://www.fcc.gov/encyclopedia/rules-regulations-title-47).

Equipment authorization information:

<http://www.fcc.gov/oet/ea/>

9. What if I have further questions on the rules for Part 15 operations in the 5 GHz band?

The FCC maintains a web-based system that is used to submit inquiries to its Laboratory, as well as to search for previous rule interpretations and frequently asked questions. This system, called the OET Knowledge Database, can be accessed at www.fcc.gov/labhelp.