this rule from its review under Executive Order (EO) 12866.

2. Paperwork Reduction Act—This rule does not impose an information collection burden under the Paperwork Reduction Act.

3. Regulatory Flexibility Act—After considering the economic impacts of today's rule on small entities under the Regulatory Flexibility Act, I certify that this rule will not have a significant economic impact on a substantial number of small entities.

4. Unfunded Mandates Reform Act—Because this rule approves pre-existing requirements under State law and does not impose any additional enforceable duty beyond that required by State law, it does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act.

5. Executive Order 13132: Federalism—EO 12132 does not apply to this rule because it will not have federalism implications (*i.e.*, substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government).

6. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments—EO 13175 does not apply to this rule because it will not have tribal implications (*i.e.*, substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes).

7. Executive Order 13045: Protection of Children From Environmental Health & Safety Risks—This rule is not subject to EO 13045 because it is not economically significant and it is not based on health or safety risks.

8. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use—This rule is not subject to EO 13211 because it is not a significant regulatory action as defined in EO 12866.

9. National Technology Transfer Advancement Act—EPA approves State programs as long as they meet criteria required by RCRA, so it would be inconsistent with applicable law for EPA, in its review of a State program, to require the use of any particular voluntary consensus standard in place of another standard that meets the requirements of RCRA. Thus, Section 12(d) of the National Technology Transfer and Advancement Act does not apply to this rule.

10. Congressional Review Act—EPA will submit a report containing this rule and other information required by the Congressional Review Act (5 U.S.C. 801 *et seq.*) to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This action will be effective on March 22, 2004.

List of Subjects in 40 CFR Part 271

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous waste, Hazardous waste transportation, Indian lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements.

Authority: This action is issued under the authority of sections 2002(a), 3006 and 7004(b) of the Solid Waste Disposal Act as amended, 42 U.S.C. 6912(a), 6926, 6974(b).

Dated: December 4, 2003.

James W. Newsom,

Acting Regional Administrator, EPA Region III.

[FR Doc. 04–1042 Filed 1–16–04; 8:45 am]

BILLING CODE 6560–50–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 2 and 15

[ET Docket No. 03–122; FCC 03–287]

Unlicensed Devices in the 5 GHz Band

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document amends the Commission's rules to make an additional 255 megahertz of spectrum available in the 5.470–5.725 GHz band for unlicensed National Information Infrastructure (U–NII) devices, including Radio Local Area Networks (RLANs). This action will align the frequency bands used by U–NII devices in the United States with bands in other parts of the world, thus decreasing development and manufacturing costs for U.S. manufacturers by allowing for the same products to be used in most parts of the world. We believe that the increased demand that will result from expanding the markets for U–NII devices, coupled with the operational flexibility provided by the U–NII rules, will lead manufacturers to develop a wide range of new and innovative unlicensed devices and thereby increase wireless broadband access and investment.

DATES: Effective February 19, 2004.

FOR FURTHER INFORMATION CONTACT: Ahmed Lahjouji, Office of Engineering and Technology, (202) 418–2061, TTY (202) 418–2989, e-mail *Ahmed.Lahjouji@fcc.gov.*

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order, ET Docket 03–122, FCC 03–287, adopted November 12, 2003, and released November 18, 2003. The full text of this document is available for inspection and copying during regular business hours in the FCC Reference Center (Room CY–A257), 445 12th Street, SW., Washington, DC 20554. The complete text of this document also may be purchased from the Commission's copy contractor, Qualex International, 445 12th Street, SW., Room CY–B402, Washington, DC 20554. The full text may also be downloaded at: *http://www.fcc.gov.* To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to *fcc504@fcc.gov* or call the FCC Consumer & Governmental Affairs Bureau at (202) 418–0531 (voice), (202) 418–7365 (TTY).

Summary of the Report and Order

1. The Report amends part 15 of our rules to make an additional 255 megahertz of spectrum available in the 5.470—5.725 GHz band for unlicensed National Information Infrastructure (U–NII) devices, including Radio Local Area Networks (RLANs). This action aligns the frequency bands used by U–NII devices in the United States with bands in other parts of the world, thus decreasing development and manufacturing costs for U.S. manufacturers by allowing for the same products to be used in most parts of the world. We believe that the increased demand that will result from expanding the markets for U–NII devices, coupled with the operational flexibility provided by the U–NII rules, will lead manufacturers to develop a wide range of new and innovative unlicensed devices and thereby increase wireless broadband access and investment.

2. There has been tremendous growth in demand for unlicensed wireless devices in recent years, particularly for devices used for wireless local area networking and broadband access to the internet. Sales of wireless local area network equipment have grown more than 150% since the year 2000. Companies are now offering broadband

access at ''hot-spots'' in restaurants, hotels, airports and other public gathering places by using unlicensed wireless devices. In cities across the nation, new start-up businesses are offering broadband services using unlicensed wireless devices. In rural areas, entrepreneurs and small businesses have introduced broadband service using unlicensed devices where no service was available before. We anticipate that the additional spectrum we are making available for U–NII devices will allow the continued growth in marketing, deployment and use of unlicensed devices. It will help meet the needs of businesses and consumers for fixed and mobile high-speed digital communications. We believe it will also stimulate the availability of broadband service to those who do not yet have it, and will increase competitive choices for those who do.

3. In addition to making more spectrum available for use by U–NII devices, we are taking steps to minimize the potential for these devices to cause interference to existing operations. Specifically, we are amending the Table of Frequency Allocations in Part 2 of the rules by: (1) Upgrading the Federal Government Radiolocation Service in the 5.46–5.65 GHz band and the non-Federal Government Radiolocation Service in the 5.47–5.65 GHz band to primary status; and (2) adding primary Federal Government allocations and secondary non-Federal Government allocations for the Space Research Service (active) (SRS) in the 5.35–5.57 GHz band and for the Earth Exploration-Satellite Service (active) (EESS) in the 5.46–5.57 GHz band. In addition, we are modifying certain technical requirements for U–NII devices. The amendments made herein are generally consistent with the U.S. proposals for the World Radiocommunication Conference 2003 (WRC–03), and with the resolutions adopted at WRC–03, pertaining to these bands.

Discussion

4. We continue to believe, and the comments support, our position in the Notice, that the spectrum currently available for U–NII devices is insufficient to support long-term growth for unlicensed wireless broadband devices and networks. We believe that the additional spectrum we are making available for unlicensed wireless broadband devices and networks should provide sufficient spectrum to meet consumers' needs, thereby stimulating investment. Ample evidence exists of the enormous growth in the demand for such devices and services. For example, a number of service providers are currently offering or have announced plans to deploy commercial unlicensed wireless broadband networks. Such networks offer significant benefits for American consumers and businesses, including increased competition with other providers of broadband service, such as cable and digital subscriber line (DSL) broadband services, and additional options in areas unserved by other broadband providers. We also believe that additional spectrum will give U–NII devices and networks more flexibility to avoid interference with other services sharing the existing U–NII bands, thereby improving the quality of service experienced by consumers. For these reasons, we are making an additional 255 megahertz available under the U–NII rules to meet the growing demand for new high data rate devices and services and to enable equipment to use spectrum that is harmonized internationally.

Changes to the Table of Frequency Allocations

5. *Proposals.* As noted in the *NPRM,* no change is needed to the Table of Frequency Allocations to make an additional 255 megahertz of spectrum available under the U–NII rules. However, we proposed several changes to the Table of Frequency Allocations to accommodate the spectrum requirements of other radio services. Specifically, we proposed to upgrade the allocations for the Federal Government Radiolocation Service in the 5.46–5.65 GHz band and the non-Federal Government Radiolocation Service in the 5.47–5.65 GHz band from secondary to primary. We further proposed to add primary Federal Government allocations and secondary non-Federal Government allocations for the SRS in the 5.35–5.57 GHz band and for the EESS in the 5.46–5.57 GHz band.

6. *Decision.* Consistent with the outcome of WRC–03, we are adopting the allocations proposed in the *NPRM.* These allocations are needed to meet the Federal Government's requirements for increased interference protection and additional spectrum for certain services. First, we modify the U.S. Table of Frequency Allocations in part 2 of the rules to upgrade the Federal Government Radiolocation service to primary in the 5.46–5.65 GHz band. We similarly upgrade the non-Federal Government Radiolocation Service to co-primary in the 5.47–5.65 GHz band. We note that the Federal Government Radiolocation Service already has a primary allocation in the 5.35–5.46 GHz band. The elevation in status of the Radiolocation Service along with the technical rules adopted will protect operations in that service against interference from U–NII devices. Further, we are adding primary Federal Government allocations and secondary non-Federal Government allocations for the SRS in the 5.35–5.57 GHz band and the EESS in the 5.46–5.57 GHz band. In making these changes to the Table of Frequency Allocations, we are also adopting the additional and modified international, Government, and U.S. footnotes, as generally recommended by NTIA.

Technical Requirements

Additional Spectrum for U–NII Devices

7. *Proposals.* In the *NPRM,* we proposed to modify our part 15 rules by adding the 5.470–5.725 GHz band to the U–NII bands with the same technical requirements that apply to the existing 5.250–5.350 GHz U–NII band. U–NII devices operating in the 5.25–5.35 GHz band may be used indoors and outdoors and are limited to 1 watt equivalent isotropically radiated power (e.i.r.p.). This proposal was consistent with the U.S. position for the WRC–03.

Decision. We continue to believe, as evidenced by the support in the record, that there is need to make the 5.470–5.725 GHz band available for unlicensed U–NII devices. This additional spectrum will relieve the developing congestion in the existing 5.725–5.825 GHz band and provide opportunities for further development of U–NII technologies and system capabilities. We therefore are adopting our proposal to modify the Part 15 rules to allow U–NII devices to operate in the 5.470–5.725 GHz band with 1 watt e.i.r.p. This is consistent with the outcome of WRC–03. We decline to adopt a mobile allocation, as suggested by IEEE 802 and instead will treat these devices similar to all other unlicensed intentional radiators (*i.e.*, they will operate on a non-interference basis under Section 15.15(c) of the rules). Based on the growth of similar unlicensed mobile devices operating in the 2.4 GHz band which also operate on a non-interference basis, we do not believe that such treatment will hinder the development or deployment of U–NII devices. In addition, as this action is consistent with the adoption of a mobile allocation by the ITU, manufacturers will benefit from economies of scale and consumers will benefit by having mobile, interoperable devices on a global basis.

8. We are not persuaded that we should either add or modify our proposed rules as requested by ARRL. As recognized by ARRL, our DFS and TPC requirements, while not specifically designed to protect amateur

operations, will in fact protect amateur operations. In addition, because of the large amount of spectrum we are adding for U–NII devices along with the existing 300 MHz of U–NII spectrum, we expect the density of devices throughout the spectrum to be relatively low. We believe that this low density of devices coupled with our technical requirements will provide adequate protection to all incumbent systems in the band, including amateur satellite uplink systems.

Dynamic Frequency Selection

9. *Proposals.* To ensure protection of Federal Government radar systems, we proposed to require that U–NII devices operating in the 5.25–5.35 GHz and 5.470–5.725 GHz bands employ Dynamic Frequency Selection. DFS is a feature that dynamically instructs a transmitter to switch to another channel whenever a particular condition (such as, for example, the prevailing ambient interference level on a channel) is met. Prior to initiating a transmission, a U–NII device's DFS mechanism would monitor the available spectrum in which it could operate for a radar signal. If a signal is detected, the channel associated with the radar signal would either be vacated and/or flagged as unavailable for use by the U–NII device.

10. We proposed to require that U–NII devices continuously monitor their environment for the presence of radar both prior to and during operation. We further proposed to require that U–NII devices use two detection thresholds to ascertain whether radar signals are present. The proposed threshold levels were –62 dBm for devices with a maximum e.i.r.p less than 200 mW and –64 dBm for devices with a maximum e.i.r.p between 200 mW and 1 W averaged, over 1 μs. Because these levels are referenced to a 1 megahertz bandwidth, we also proposed to require that U–NII devices with less than a 1 megahertz bandwidth use a correction factor when determining whether signals are over or below the threshold. In addition, we sought comment on the minimum number of radar pulses necessary, and the observation time required, for reliable detection of a radar signal. We also proposed a definition of DFS that would require a uniform spreading of loading over all available channels. Our proposals were based on an agreement on the use of DFS that was reached by industry, the National Telecommunications and Information Administration (NTIA), and the Department of Defense prior to WRC–03.

11. We also sought comment on the proper treatment of U–NII systems where multiple devices operate under the control of a central controller or ''master''. Specifically, we proposed to require only the central controller to have DFS capability. We also requested comment on how to identify remote units that operate only under the control of a central controller and whether DFS should be required for devices that operate in absence of controller, *i.e.*, on an *ad hoc* basis.

12. *Decision.* We are adopting our proposal to require that U–NII devices operating in the 5.25–5.35 GHz and 5.470–5.725 GHz bands employ DFS at the threshold levels proposed in the *NPRM.* We agree with the commenters that DFS is a key element in enabling unlicensed U–NII devices to share spectrum with important U.S. Government radar operations. It is also an ITU accepted mechanism that will allow U–NII devices to be globally marketed. With respect to Arcwave's objection to the DFS requirement on DOCSIS compatibility grounds, we are providing, as explained below, a transition period for implementing the DFS requirement in U–NII devices that operate in the 5.25–5.35 GHz band. Thus, all of Arcwave's existing products that have been certified to be used in the 5.25–5.35 GHz band can continue to be sold during this period and can be used indefinitely, which minimizes many of the potential economic hardships asserted by Arcwave. Moreover, the voluntary standards-making bodies, like IEEE, routinely update their standards to reflect Commission requirements. Thus, Arcwave can pursue changing the DOCSIS standard through the relevant standard-making body, Cable Television Laboratories. Also, we disagree with Works D'Arndt's characterization of the effects of DFS implementation. DFS will determine the RLANs' transmit frequency, but will not incrementally impair the reliability of RLAN communications. Moreover, we note that, as unlicensed devices, RLANs operate on a non-interference basis and must cease their operations should they interfere with other licensed or authorized services.

13. We are not requiring U-NII devices to have bandwidths of 1 megahertz or greater as requested by some commenters. The current rules for U-NII operations in the 5.25–5.35 GHz band, which will now extend to the new 5.470–5.725 GHz band, allow U-NII operations with bandwidths of less than 1 megahertz with a penalty in the form of reduced power levels for such devices. This approach provides incentives for manufacturers to develop broadband applications as was intended, but does not foreclose the ability for manufacturers to produce U-NII devices having bandwidths less than 1 MHz. The requirement that such devices operate with reduced power also diminishes their ability to cause interference.

14. We are adopting our proposal to exempt remote devices that are under the control of a central controller from the DFS requirement. The exclusion of such ''client'' devices from the radar detection and DFS functions is an integral part of the industry/Government pre-WRC–03 agreement and is also consistent with the final ITU Recommendation. However, we are not exempting controller devices or ''masters'' from the DFS requirement. We note that exempting a controller device from the DFS requirement would be both inconsistent with both pre-WRC–03 agreements and WRC–03 resolutions. We also agree with Proxim that it shouldn't be necessary to identify remote devices operating under control of a master other than at the time of product certification, since any devices operating without the control of a master will have the DFS capability as required for product certification. With respect to *ad hoc* U-NII devices, we agree with commenters that these devices should not be exempt from the DFS requirement in the 5.25–5.35 GHz and 5.470–5.725 GHz bands at this time because no analyses have been performed to determine the impact this may have on radio services in this spectrum.

15. Finally, we agree with Cisco that codifying requirements for a minimum number of pulses and observation time required to reliably detect the radar signals before the work on compliance testing procedures is completed could be overly burdensome and limit the flexibility for DFS implementations in particular devices. These parameters will be addressed under the compliance test procedures, as described below. Additionally, several commenters also requested that we distinguish between the DFS ''mechanism'' and the ''radar detection'' function. We are clarifying the rules to indicate that radar detection (sub-function) is part of the overall DFS function. Finally, we are adopting rules to clarify DFS detection that require a master device and associated client devices to dedicate periods of no transmissions before, during, or after each packet or frame. During these listen periods, successive averaging periods, not to exceed 1 microsecond, will be used and any power level above the detection threshold found in any one of these averaging periods will trigger the DFS detection circuit.

Transmit Power Control

16. *Proposals*. TPC can generally be defined as a mechanism that regulates a device's transmit power in response to an input signal or a condition (e.g., a command signal is issued by a controller when the received signal falls below a predetermined threshold). In the *NPRM*, we proposed to require U-NII devices operating in the 5.470–5.725 GHz band to employ a transmit power control (TPC) mechanism to further protect EESS and SRS operations. We also proposed to require that when TPC is triggered, the U-NII device's power level be reduced by 6 dB and requested comments on identifying a suitable triggering mechanism for TPC. In addition, we requested comments on whether TPC is necessary for U-NII devices that operate at maximum e.i.r.p less than or equal to 500 mW, *i.e.,* ≥3 dB below maximum e.i.r.p. of 1 Watt. Further, we requested comments on how TPC should be applied to system configurations where multiple devices may operate under the control of a central device.

17. *Decision*. We will require TPC for U-NII devices operating in the 5.250–5.350 GHz and 5.470–5.725 GHz bands. Although we did not propose applying the TPC requirement to the 5.250–5.350 GHz band in the *NPRM*, we believe that this requirement is also appropriate for U-NII devices in that band. At the time the *NPRM* was issued, there was no call to require TPC for the 5.25–5.35 GHz band. However, at WRC–03, there was strong support to require TPC for this band and the United States partners agreed to support this new requirement after consulting with their representatives from industry and Government who were present at the conference. The current 802.11 standards require TPC in the 5 GHz band. We are therefore adopting a requirement that U-NII devices operating in the 5.25–5.35 GHz band have TPC. We believe that the majority of devices that will be affected by this rule will already have the TPC feature built into them, since only TPC equipped devices will be able to take advantage of the new band. Also, requiring TPC for the 5.25–5.35 GHz band is also consistent with some commenters' call for uniform rules for the U-NII bands both domestically and internationally. We agree with the commenters arguments that there is no need to require TPC for low-power U-NII devices and therefore will only require TPC for U-NII operating at power levels higher than 500mW.

18. We recognize that the benefits of requiring a well defined TPC algorithm must be weighed against the burden it would impose. We agree with commenters that codifying a specific TPC algorithm into our rules is likely to hinder innovation, and therefore, eventually, increase equipment costs. We, therefore, decline to adopt requirements for a specific TPC triggering mechanism into our rules. Instead, we will require applicants seeking equipment authorization for U-NII devices to provide a statement in their certification application explaining how the equipment complies with our TPC rules.

Test Procedures

19. *Proposals*. In the *NPRM*, we requested comments on the test procedures needed to ensure compliance with the DFS and TPC requirements adopted herein. Specifically, we requested comments on how U-NII devices can be tested for compliance with TPC requirements to implement reduced power without placing unnecessary restrictions on device design. In addition, we requested comments on the extent to which devices under development may have unique or novel transmission waveforms that may require special measurement instrumentation settings, *e.g.,* integration times, that differ from those used for measuring compliance of previous U-NII band devices.

20. *Decision*. In order to allow the immediate implementation of U-NII devices in accordance with the rules adopted in the R&On, we are providing an interim test procedure drafted by the 5 GHz Project Team to be used in obtaining equipment certifications for U-NII devices. We have reviewed this draft procedure and believe its provisions are adequate to provide satisfactory testing and certification of U-NII devices containing DFS capabilities. We recognize that this procedure may need to be modified as equipment is developed and as the testing methodologies are refined. Therefore, consistent with existing practice, our Laboratory may issue updated measurement procedures in the future. The interim test procedure is set forth in Appendix C of the R&O.

Transition Period

21. *Proposals*. In the *NPRM*, we proposed transition rules for the U-NII equipment operating in the 5.250–5.350 GHz and 5.470–5.725 GHz bands. Specifically, we proposed to require that U-NII equipment, operating in the new 5.470–5.725 GHz band meet all of the technical requirements, including DFS and TPC, on the effective date of these rules. In addition, we proposed that in the 5.25–5.35 GHz band, U-NII equipment comply with the DFS requirement effective one year from the date of publication of the Report and Order in this proceeding in the **Federal Register**. We also proposed that all U-NII devices operating in the 5.25–5.35 GHz band that are imported or shipped in interstate commerce on or after two years from the date of publication in the **Federal Register** comply with these standards. We requested comments on our proposed transition provisions.

22. *Decision*. We are requiring that any product that has the capability to operate in the new spectrum at the 5.470–5.725 GHz band, including equipment designed to operate in both the 5.25–5.35 GHz and 5.470–5.725 GHz band, must meet all the rules contained in this Report and Order in accordance with the specified measurement procedures to obtain equipment certification. For all other equipment, we will provide a transition period. This will minimize economic hardships on manufacturers by allowing them, during the transition period, to continue producing and selling existing equipment while modifying their products to meet the new requirements. Thus, we are adopting our proposal to implement a cut-off date of one year from date of publication of this Report and Order in the **Federal Register** for applications for equipment certification of products that operate under the current rules in only the 5.25–5.35 GHz band. That is, equipment designed to operate in only the 5.25–5.35 GHz band may continue to obtain certification without having DFS and TPC so long as the application for equipment certification is filed prior to the cut-off date of one year. After that time, all devices for which an application for equipment certification is filed for U-NII equipment operating in the 5.25–5.35 GHz band must meet the rules adopted in the Report and Order. In addition, we are adopting a two-year cutoff date for marketing and importation of equipment designed to operate in only the 5.23–5.35 GHz band. This will prevent equipment that may be built in countries which do not have DFS and TPC requirements from continuing to be imported and marketed indefinitely. Finally, we note that users who obtain equipment prior to any of these cut-off dates may continue to use that equipment indefinitely.

Final Regulatory Flexibility Analysis

23. As required by the Regulatory Flexibility Act of 1980 as amended,[1] an

[1] *See* 5 U.S.C. 603. The RFA, *see* 5 U.S.C. 601–612, has been amended by the Small Business

Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Notice of Proposed Rule Making, Revision of Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) devices in the 5 GHz band.*[2] The Commission sought written public comment on the proposals in the Notice, including comment on the IRFA. The comments received are discussed below. This Final Regulatory Flexibility Analysis conforms to the RFA.[3]

A. Need for, and Objectives of, the Report and Order

24. This Report and Order amends part 15 of our rules governing the operation of unlicensed National Information Infrastructure (U-NII) devices, including Radio Local Area Networks (RLANs), to make available an additional 255 megahertz of spectrum in the 5.47–5.725 GHz band for the growth and development of unlicensed wireless broadband networks. This action responds to the petition for rule making submitted by the Wireless Ethernet Compatibility Alliance (WECA—now known as Wi-Fi Alliance).[4]

25. In addition to making more spectrum available for use by U-NII devices, the Report and Order also makes several other rule changes in the 5 GHz band that will further facilitate the use of this band for U-NII devices, while at the same time ensuring sufficient protection for various incumbents in the band. Specifically, it modifies the U.S. Table of Frequency Allocations in part 2 of the rules to upgrade the status of the Federal Government Radiolocation service to primary in the 5.46–5.65 GHz band. It similarly upgrades the non-Federal Government radiolocation service to primary in the 5.47–5.65 GHz band. It further adds primary allocations for the Federal Government and the non-Federal Government Space Research Service (active) (SRS) in the 5.35–5.46 GHz band and the Earth Exploration-Satellite Service (active) (EESS) and SRS (active) in the 5.46–5.57 GHz band.

26. The Report and Order also modified certain technical requirements for U-NII devices in the part 15 rules. In addition to applying the existing technical requirements for the 5.250–5.350 GHz sub-band to the new 5.470–5.725 GHz band, it requires that U-NII devices operating in both the existing 5.25–5.35 GHz sub-band and the new 5.470–5.725 GHz sub-band employ a listen-before-talk mechanism called dynamic frequency selection (DFS). DFS is an interference avoidance mechanism. Prior to the start of any transmissions, and through constant monitoring, the device (*e.g.,* RLAN) equipped with such a mechanism monitors the radio environment for the presence of radar. If the U-NII device determines that a radar signal is present, it either moves to another channel or enters a sleep mode if no channels are available.

27. The Report and Order also requires a transmit power control (TPC) mechanism in both the existing 5.25–5.35 GHz sub-band and the new 5.470–5.725 GHz sub-band to further reduce the potential for impact on EESS and SRS operations. TPC can generally be defined as a mechanism that regulates a device's transmit power in response to an input signal or a condition (*e.g.,* a command signal may be issued by a controller when the received signal falls below a predetermined threshold). TPC will allow the transmitter to operate at less than the maximum power for most of the time. As the signal level at the receiver rises or falls, the transmit power will be decreased or increased as needed. Because TPC equipped devices adjust their transmit power to the minimum necessary to achieve the desired performance, the average interference power from a large number of devices is reduced, the power consumption is minimized and network capacity is increased.

28. U-NII devices currently operate in the 5.25–5.35 GHz band without DFS capability. As a result, some period of time will be needed to implement the new DFS requirement for U-NII equipment operating in the 5.25–5.35 GHz band. The Report and Order requires U-NII equipment operating in the 5.25–5.35 GHz band that are authorized under the certification procedures on or after January 20, 2005 to comply with the DFS and TPC requirements specified in § 15.407 of the rules. U-NII equipment operating in the 5.25–5.35 GHz band that are imported or marketed January 20, 2006 shall comply with the DFS and TPC requirements in § 15.407 of the rules.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

29. We received no comments directly in response to the IRFA in this proceeding. We did, however, receive a comment from one small business, ArcWave, which stated that its use of the DOCSIS protocol will be compromised by the imposition of the DFS feature.[5] On consideration of ArcWave's comment regarding DFS and DOCSIS, we find their comment is unpersuasive. We believe that the beneficial value of DFS far outweighs the possible, but unproven, negative impact of DFS on a single commenter, ArcWave. However, as explained in the text and below, we have taken action in the form of a transition period that will ease any economic impact to entities, including small entities, that develop products in the 5.25–5.35 GHz band.[6]

C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply

30. The RFA directs agencies to provide a description of, and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted herein.[7] The RFA defines the term ''small entity'' as having the same meaning as the terms ''small business,'' ''small organization,'' and ''small governmental jurisdiction.''[8] In addition, the term ''small business'' has the same meaning as the term ''small business concern'' under the Small Business Act.[9] A ''small business concern'' is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).[10]

31. The Commission has not developed a definition of small entities applicable to unlicensed communications devices manufacturers. Therefore, we will utilize the SBA definition application to manufacturers of Radio and Television Broadcasting and Communications Equipment. According to the SBA regulations, unlicensed transmitter manufacturers must have 750 or fewer employees in order to qualify as a small business concern.[11] Census Bureau indicates that

Regulatory Enforcement Fairness Act of 1996 (SBREFA), Public Law 104–121, Title II, Stat. 857 (1996).

[2] *See* Notice of Proposed Rulemaking, ET Docket No. 03–122, 18 FCC Rcd 11581 (2003).

[3] *See* 5 U.S.C. 604(a).

[4] *See* WECA Petition for Rulemaking, RM–10371, filed on January 15, 2002, Public Notice Report No. 2527, January 29, 2002.

[5] *See* ¶ 25 of the R&O.

[6] *See* ¶ 36 of this FRFA, *supra.*

[7] *See* U.S.C. 604(a)(3).

[8] Id. 601(6).

[9] 5 U.S.C. 601(3) (incorporating by reference the definition of ''small business concern'' in the Small Business Act, 15 U.S.C. 632). Pursuant to 5 U.S.C. 601(3), the statutory definition of a small business applies ''unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the **Federal Register**.''

[10] Id. 632.

[11] *See* 13 CFR 121.201, NAICS Code 334220 (SIC Code 3663). Although SBA now uses the NAICS

Continued

there are 858 U.S. companies that manufacture radio and television broadcasting and communications equipment, and the 778 of these firms have fewer than 750 employees and would be classified as small entities.[12] We do not believe this action would have a negative impact on small entities that manufacture unlicensed U-NII devices. Indeed, we believe the actions should benefit small entities because it should make available increased business opportunities to small entities.

D. Description of Projected Reporting, Record Keeping and Other Compliance Requirements for Small Entities

32. Part 15 transmitters are already required to be authorized under the Commission's certification procedures as a prerequisite to marketing and importation. Under the amendments in the NPRM, manufacturers will be required to demonstrate that U-NII devices operating in the bands 5.250–5.350 GHz and 5.470–5.725 GHz have Dynamic Frequency Selection (DFS) Capabilities and transmit power control (TPC) capabilities. The reporting and recordkeeping requirements associated with these equipment authorizations would not be changed by the rule revisions in the Report and Order.

E. Steps Taken To Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered

33. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its approach, which may include the following four alternatives (among others): (1) The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.[13]

34. We have taken a significant step to minimize economic impact to small entities. As described in the Report and Order, we have provided a transition period for the U-NII devices operating in the 5.25–5.35 GHz band.[14] This period will provide entities with time to redesign existing products to comply with the rules while permitting them to continue manufacturing and marketing existing products. In addition, we note that one commenter, Works D'Arndt opposed the adoption of a requirement that equipment possess a DFS and a TPC requirement. We rejected this alternative because the DFS and TPC requirement will ensure that all entities can share the band with a minimal risk of causing harmful interference. All entities, including small entities, having an interest in this band will benefit from this requirement.

F. Report to Congress

35. The Commission will send a copy of the Report and Order, including the FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A). In addition, the Commission will send a copy of the Report and Order, including the FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. *See* 5 U.S.C. 604(b).

Ordering Clauses

36. Pursuant to sections 1, 4, 301, 302(a), 303, 307, 309, 316, and 332 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 151, 154, 301, 302(a), 303, 307, 309, 316, 332, 334, and 336, the Report and Order *is hereby adopted*.

37. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, shall send a copy of the Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in 47 CFR Parts 2 and 15

Communications equipment, Radio, Reporting and recordkeeping requirements.

Federal Communications Commission.

Marlene H. Dortch,

Secretary.

Final Rules

■ For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR parts 2 and 15 as follows:

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

■ 1. The authority citation for part 2 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

■ 2. Section 2.106, the Table of Frequency Allocations, is amended as follows:

■ a. Revise pages 56, 57, and 58.

■ b. In the list of International footnotes, add footnotes 5.446A, 5.446B, 5.447E, 5.447F, 5.448C, 5.448D, 5.450A, and 5.450B; and revise footnotes 5.447, 5.448, 5.448A, 5.448B, 5.450, 5.453, 5.454, and 5.455.

■ c. In the list of United States (US) footnotes, add footnote US390.

■ d. In the list of Federal Government (G) footnotes, revise footnotes US50 and US51; and add footnotes G130 and G131.

§ 2.106 Table of Frequency Allocations.

The revisions and additions read as follows:

* * * * *

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classifications, instead of SIC, the size standard remains the same.

[12] *See* U.S. Dept. of Commerce, *1992 Census of Transportation, Communications and Utilities* (issued May 1995), SIC category 3663 (NAICS Code 334220).

[13] *See* 5 U.S.C. 603(c).

[14] *See* ¶ 1 of the FRFA, *supra*.

5150-5250 AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.447 5.447B 5.447C	5.367 US211 US307 US344 US370	5150-5250 AERONAUTICAL RADIO-NAVIGATION US260 FIXED-SATELLITE (Earth-to-space) 5.447A US344 5.447C US211 US307	RF Devices (15) Satellite Communications (25) Aviation (87)
5250-5255 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.448 5.448A 5.447E	5250-5255 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G59 SPACE RESEARCH (active) 5.447D 5.448A	5250-5255 Earth exploration-satellite (active) Radiolocation Space research 5.558A	RF Devices (15) Private Land Mobile (90)
5255-5350 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.447F 5.448 5.448A 5.447E	5255-5350 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G59 SPACE RESEARCH (active) 5.448A	5255-5350 Earth exploration-satellite (active) Radiolocation Space research (active) 5.448A	
5350-5460 EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	5350-5460 EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) AERONAUTICAL RADIO-NAVIGATION 5.449 RADIOLOCATION G56 US390 G130	5350-5460 AERONAUTICAL RADIO-NAVIGATION 5.449 Earth exploration-satellite (active) 5.448B Space research (active) Radiolocation US390	Aviation (87) Private Land Mobile (90)
5460-5470 RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B	5460-5470 RADIONAVIGATION 5.449 US65 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION G56 5.448B US49 G130	5460-5470 RADIONAVIGATION 5.449 US65 Earth exploration-satellite (active) Space research (active) Radiolocation 5.448B US49	Private Land Mobile (90)
5470-5570 MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.450 5.451 5.452 5.448B	5470-5570 MARITIME RADIONAVIGATION US65 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION G56 5.448B US50 G131	5470-5570 MARITIME RADIONAVIGATION US65 RADIOLOCATION Earth exploration-satellite (active) Space research (active) US50	RF Devices (15) Maritime (80) Private Land Mobile (90)

5570-7250 MHz (SHF)

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International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
5570-5650 MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.450 5.451 5.452			5570-5600 MARITIME RADIONAVIGATION US65 RADIOLOCATION G56 US50 G131	5570-5600 MARITIME RADIONAVIGATION US65 RADIOLOCATION US50	RF Devices (15) Maritime (80) Private Land Mobile (90)
			5600-5650 MARITIME RADIONAVIGATION US65 METEOROLOGICAL AIDS RADIOLOCATION G56 5.452 US50 G131	5600-5650 MARITIME RADIONAVIGATION US65 METEOROLOGICAL AIDS RADIOLOCATION 5.452 US50	
5650-5725 RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455			5650-5925 RADIOLOCATION G2	5650-5830 Amateur 5.150 5.282	RF Devices (15) ISM Equipment (18) Amateur (97)
5725-5830 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455 5.456	5725-5830 RADIOLOCATION Amateur 5.150 5.453 5.455				
5830-5850 FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455 5.456	5830-5850 RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.453 5.455			5830-5850 Amateur Amateur-satellite (space-to-Earth) 5.150	ISM Equipment (18) Amateur (97)
5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Amateur Radiolocation 5.150	5850-5925 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE Radiolocation 5.150	5.150 US245	5850-5925 FIXED-SATELLITE (Earth-to-space) US245 MOBILE NG160 Amateur 5.150	ISM Equipment (18) Private Land Mobile (90) Amateur (97)
5925-6700 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE			5925-6425	5925-6425 FIXED NG41 FIXED-SATELLITE (Earth-to-space)	International Fixed (23) Satellite Commun. (25) Fixed Microwave (101)

	6425-6525 5.440 5.458	6425-6525 FIXED-SATELLITE (Earth-to-space) MOBILE 5.440 5.458	Auxiliary Broadcasting (74) Cable TV Relay (78) Fixed Microwave (101)
5.149 5.440 5.458	6525-6700 5.458 US342	6525-6700 FIXED FIXED-SATELLITE (Earth-to-space) 5.458 US342	Satellite Communications (25) Fixed Microwave (101)
6700-7075 FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B 5.458C	6700-7125 5.458	6700-6875 FIXED FIXED-SATELLITE (Earth-to-space)(space-to-Earth) 5.441 5.458 5.458A 5.458B	
		6875-7025 FIXED NG118 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE NG171 5.458 5.458A 5.458B	Satellite Communications (25) Auxiliary Broadcasting (74) Cable TV Relay (78)
		7025-7075 FIXED NG118 FIXED-SATELLITE (Earth-to-space) NG172 MOBILE NG171 5.458 5.458A 5.458B	
7075-7250 FIXED MOBILE		7075-7125 FIXED NG118 MOBILE NG171 5.458	Auxiliary Broadcasting (74) Cable TV Relay (78)
	7125-7190 FIXED 5.458 US252 G116	7125-7190 5.458 US252	
	7190-7235 FIXED SPACE RESEARCH (Earth-to-space) 5.458	7190-7250	
5.458 5.459 5.460	7235-7250 FIXED 5.458	5.458	

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International Footnotes

* * * * *

5.446A The use of the bands 5150–5350 MHz and 5470–5725 MHz by the stations in the mobile service shall be in accordance with Resolution 229 (WRC–03).

5.446B In the band 5150–5250 MHz, stations in the mobile service shall not claim protection from earth stations in the fixed-satellite service. No. 5.43A does not apply to the mobile service with respect to fixed-satellite service earth stations.

5.447 *Additional allocation:* In Israel, Lebanon, Pakistan, the Syrian Arab Republic and Tunisia, the band 5150–5250 MHz is also allocated to the mobile service, on a primary basis, subject to agreement obtained under No. 9.21. In this case, the provisions of Resolution 229 (WRC–03) do not apply.

* * * * *

5.447E *Additional allocation:* The band 5250–5350 MHz is also allocated to the fixed service on a primary basis in the following countries in Region 3: Australia, Korea (Rep. of), India, Indonesia, Iran (Islamic Republic of), Japan, Malaysia, Papua New Guinea, Philippines, Sri Lanka, Thailand and Viet Nam. The use of this band by the fixed service is intended for the implementation of fixed wireless access (FWA) systems and shall comply with Recommendation ITU-R F.1613. In addition, the fixed service shall not claim protection from the radiodetermination, Earth exploration-satellite (active) and space research (active) services, but the provisions of No. 5.43A do not apply to the fixed service with respect to the Earth exploration-satellite (active) and space research (active) services. After implementation of FWA systems in the fixed service with protection for the existing radiodetermination systems, no more stringent constraints should be imposed on the FWA systems by future radiodetermination implementations.

5.447F In the band 5250–5350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). These services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendations ITU-R M.1638 and ITU-R SA.1632.

5.448 *Additional allocation:* In Azerbaijan, Libyan Arab Jamahiriya, Mongolia, Kyrgyzstan, Slovakia, Romania and Turkmenistan, the band 5250–5350 MHz is also allocated to the radionavigation service on a primary basis.

5.448A The Earth exploration-satellite (active) and space research (active) services in the frequency band 5250–5350 MHz shall not claim protection from the radiolocation service. No. 5.43A does not apply.

5.448B The Earth exploration-satellite service (active) operating in the band 5350–5570 MHz and space research service (active) operating in the band 5460–5570 MHz shall not cause harmful interference to the aeronautical radionavigation service in the band 5350–5460 MHz, the radionavigation service in the band 5460–5470 MHz and the maritime radionavigation service in the band 5470–5570 MHz.

5.448C The space research service (active) operating in the band 5350–5460 MHz shall not cause harmful interference to nor claim protection from other services to which this band is allocated.

5.448D In the frequency band 5350–5470 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the aeronautical radionavigation service operating in accordance with No. 5.449.

* * * * *

5.450 *Additional allocation:* In Austria, Azerbaijan, Iran (Islamic Republic of), Mongolia, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 5470–5650 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

5.450A In the band 5470–5725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. Radiodetermination services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendation ITU-R M.1638.

5.450B In the frequency band 5470–5650 MHz, stations in the radiolocation service, except ground-based radars used for meteorological purposes in the band 5600–5650 MHz, shall not cause harmful interference to, nor claim protection from, radar systems in the maritime radionavigation service.

* * * * *

5.453 *Additional allocation:* In Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo, Côte d'Ivoire, Korea (Rep. of), Egypt, the United Arab Emirates, Gabon, Guinea, Equatorial Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, the Libyan Arab Jamahiriya, Madagascar, Malaysia, Nigeria, Oman, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Sri Lanka, Swaziland, Tanzania, Chad, Thailand, Togo, Viet Nam and Yemen, the band 5650–5850 MHz is also allocated to the fixed and mobile services on a primary basis. In this case, the provisions of Resolution 229 (WRC–03) do not apply.

5.454 *Different category of service:* In Azerbaijan, Georgia, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan and Turkmenistan, the allocation of the band 5670–5725 MHz to the space research service is on a primary basis (see No. 5.33).

5.455 *Additional allocation:* In Armenia, Azerbaijan, Belarus, Cuba, Georgia, Hungary, Kazakhstan, Latvia, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 5670–5850 MHz is also allocated to the fixed service on a primary basis.

* * * * *

United States (US) Footnotes

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US50 In the band 5470–5650 MHz, the radiolocation service may be authorized for non-Federal Government use on the condition that harmful interference is not caused to the maritime radionavigation service or to the Federal Government radiolocation service.

US51 In the band 9300–9500 MHz, the radiolocation service may be authorized for non-Federal Government use on the condition that harmful interference is not caused to the Federal Government radiolocation service.

US390 Federal Government stations in the space research service (active) operating in the band 5350–5460 MHz shall not cause harmful interference to, nor claim protection from, Federal and non-Federal Government stations in the aeronautical radionavigation service nor Federal Government stations in the radiolocation service.

* * * * *

Government (G) Footnotes

* * * * *

G130 Federal Government stations in the radiolocation service operating in the band 5350–5470 MHz, shall not cause harmful interference to, nor claim protection from, Federal stations in the aeronautical radionavigation service operating in accordance with ITU *Radio Regulation* No. 5.449.

G131 Federal Government stations in the radiolocation service operating in the band 5470–5650 MHz, with the exception of ground-based radars used for meteorological purposes operating in the band 5600–5650 MHz, shall nor cause harmful interference to, nor claim protection from, Federal Government stations in the maritime radionavigation service.

PART 15—RADIO FREQUENCY DEVICES

■ 3. The authority citation for part 15 continues to read as follows:

Authority: 47 U.S.C. 154, 302, 303, 304, 307 and 544A.

■ 4. Section 15.37 is amended by adding paragraph (l), to read as follows:

§ 15.37 Transition provisions for compliance with the rules.

* * * * *

(l) U-NII equipment operating in the 5.25–5.35 GHz band for which applications for certification are filed on or after January 20, 2005 shall comply with the DFS and TPC requirements specified in § 15.407. U-NII equipment operating in the 5.25–5.35 GHz band that are imported or marketed January 20, 2006 shall comply with the DFS and TPC requirements in § 15.407.

■ 5. Section 15.401 is revised to read as follows:

§ 15.401 Scope.

This subpart sets out the regulations for unlicensed National Information Infrastructure (U-NII) devices operating

in the 5.15–5.35 GHz, 5.47–5.725 GHz and 5.725–5.825 GHz bands.

■ 6. Section 15.403 is revised to read as follows:

§ 15.403 Definitions.

(a) *Access Point (AP).* A U-NII transceiver that operates either as a bridge in a peer-to-peer connection or as a connector between the wired and wireless segments of the network.

(b) *Available Channel.* A radio channel on which a *Channel Availability Check* has not identified the presence of a radar.

(c) *Average Symbol Envelope Power.* The average symbol envelope power is the average, taken over all symbols in the signaling alphabet, of the envelope power for each symbol.

(d) *Channel Availability Check.* A check during which the U-NII device listens on a particular radio channel to identify whether there is a radar operating on that radio channel.

(e) *Channel Move Time.* The time needed by a U-NII device to cease all transmissions on the current channel upon detection of a radar signal above the DFS detection threshold.

(f) *Digital modulation.* The process by which the characteristics of a carrier wave are varied among a set of predetermined discrete values in accordance with a digital modulating function as specified in document ANSI C63.17–1998.

(g) *Dynamic Frequency Selection (DFS)* is a mechanism that dynamically detects signals from other systems and avoids co-channel operation with these systems, notably radar systems.

(h) *DFS Detection Threshold.* The required detection level defined by detecting a received signal strength (RSS) that is greater than a threshold specified, within the U-NII device channel bandwidth.

(i) *Emission bandwidth.* For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

(j) *In-Service Monitoring.* A mechanism to check a channel in use by the U-NII device for the presence of a radar.

(k) *Non-Occupancy Period.* The required period in which, once a channel has been recognized as containing a radar signal by a U-NII device, the channel will not be selected as an available channel.

(l) *Operating Channel.* Once a U-NII device starts to operate on an Available Channel then that channel becomes the Operating Channel.

(m) *Peak Power Spectral Density.* The peak power spectral density is the maximum power spectral density, within the specified measurement bandwidth, within the U-NII device operating band.

(n) *Peak Transmit Power.* The maximum transmit power as measured over an interval of time of at most 30/B (where B is the 26 dB emission bandwidth of the signal in hertz) or the transmission pulse duration of the device, whichever is less, under all conditions of modulation. The peak transmit power may be averaged across symbols over an interval of time equal to the transmission pulse duration of the device or over successive pulses. The averaging must include only time intervals during which the transmitter is operating at its maximum power and must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level.

(o) *Power Spectral Density.* The power spectral density is the total energy output per unit bandwidth from a pulse or sequence of pulses for which the transmit power is at its peak or maximum level, divided by the total duration of the pulses. This total time does not include the time between pulses during which the transmit power is off or below its maximum level.

(p) *Pulse.* A pulse is a continuous transmission of a sequence of modulation symbols, during which the average symbol envelope power is constant.

(q) *RLAN.* Radio Local Area Network.

(r) *Transmit Power.* The total energy transmitted over a time interval of at most 30/B (where B is the 26 dB emission bandwidth of the signal in hertz) or the duration of the transmission pulse, whichever is less, divided by the interval duration.

(s) *Transmit Power Control (TPC).* A feature that enables a U-NII device to dynamically switch between several transmission power levels in the data transmission process.

(t) *U-NII devices.* Intentional radiators operating in the frequency bands 5.15–5.35 GHz and 5.470–5.825 GHz that use wideband digital modulation techniques and provide a wide array of high data rate mobile and fixed communications for individuals, businesses, and institutions.

■ 7. Section 15.407 is amended by revising paragraphs (a)(2), by redesignating paragraphs (b)(3) through (7) as paragraphs (b)(4) through (8), by adding a new paragraph (b)(3), and by adding paragraph (h) to read as follows:

§ 15.407 General technical requirements.

(a) * * *

(2) For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the peak transmit power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

* * * * *

(b) * * *

(3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.

* * * * *

(h) Transmit Power Control (TPC) and Dynamic Frequency Selection (DFS).

(1) Transmit power control (TPC). U-NII devices operating in the 5.25–5.35 GHz band and the 5.47–5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

(2) Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating in the 5.25–5.35 GHz and 5.47–5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems. The minimum DFS detection threshold for devices with a maximum e.i.r.p. of 200 mW to 1 W is −64 dBm. For devices that operate with less than 200 mW e.i.r.p. the minimum detection threshold is −62 dBm. The detection threshold is the received power averaged over 1 microsecond referenced to a 0 dBi antenna. The DFS process shall be required to provide a uniform spreading of the loading over all the available channels.

(i) Operational Modes. The DFS requirement applies to the following operational modes:

(A) The requirement for channel availability check time applies in the master operational mode.

(B) The requirement for channel move time applies in both the master and slave operational modes.

(ii) Channel Availability Check Time. A U-NII device shall check if there is a radar system already operating on the channel before it can initiate a transmission on a channel and when it has to move to a new channel. The U-NII device may start using the channel if no radar signal with a power level greater than the interference threshold values listed in paragraph (h)(2) of this part, is detected within 60 seconds.

(iii) Channel Move Time. After a radar's presence is detected, all transmissions shall cease on the operating channel within 10 seconds. Transmissions during this period shall consist of normal traffic for a maximum of 200 ms after detection of the radar signal. In addition, intermittent management and control signals can be sent during the remaining time to facilitate vacating the operating channel.

(iv) Non-occupancy Period. A channel that has been flagged as containing a radar system, either by a channel availability check or in-service monitoring, is subject to a non-occupancy period of at least 30 minutes. The non-occupancy period starts at the time when the radar system is detected.

[FR Doc. 04–1126 Filed 1–16–04; 8:45 am]

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MB Docket No. 02–230; FCC 03–273]

Digital Broadcast Content Protection

AGENCY: Federal Communications Commission.

ACTION: Final rule; announcement of effective date.

SUMMARY: The Federal Communications Commission has received Office of Management and Budget (OMB) approval for the new public information collection, Digital Broadcast Content Protection, MB Docket 02–230, OMB Control Number 3060–1049. Therefore, the Commission announces that OMB Control No. 3060–1049 and associated rules 47 CFR 73.9002 and 73.9008 are effective January 20, 2004.

DATES: The rules in 47 CFR 73.9002 and 73.9008 published at 68 FR 67599 (December 3, 2003) are effective January 20, 2004.

SUPPLEMENTARY INFORMATION: The Federal Communications Commission has received OMB approval for a new information collection in Digital Broadcast Content Protection, MB Docket No. 02–230, 68 FR 67599, December 3, 2003, which includes interim approval procedures for digital content protection and recording technologies, as well as written commitment regimes for manufacturers and importers of both demodulators and products where the demodulator and transport stream processor are physically separate. Through this document, the Commission announces that it received this approval on January 8, 2004; OMB Control No. 3060–1049. The effective date for this collection and associated rules 47 CFR 73.9002 and 73.9008 is January 20, 2004.

Pursuant to the Paperwork Reduction Act of 1995, Public Law 104–13, an agency may not conduct or sponsor a collection of information unless it displays a currently valid control number. Notwithstanding any other provisions of law, no person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a valid control number. Questions concerning the OMB control numbers and expiration dates should be directed to Leslie F. Smith, Federal Communications Commission, (202) 418–0217 or via the Internet at *leslie.smith@fcc.gov*.

Federal Communications Commission.

Marlene H. Dortch,

Secretary.

[FR Doc. 04–1190 Filed 1–16–04; 8:45 am]

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