



Federal Communications Commission
Washington, D.C. 20554

April 11, 2012

DA 12-571

Small Entity Compliance Guide

Improved Access to Spectrum for Wireless Broadband Operations in the 6875-6975 MHz, 7025-7125 MHz and 12700-13100 MHz Bands

FCC 11-120
WT Docket No. 10-153
Released: August 9, 2011

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:

1-888-CALL-FCC (1-888-225-5322)
TTY: 1-888-TELL-FCC (1-888-835-5322)
Fax: 1-866-418-0232
fccinfo@fcc.gov

I. OBJECTIVES OF THE PROCEEDING

In this *Report and Order (Backhaul R&O)*, the Commission continued its efforts to increase flexibility in the use of microwave services licensed under our Part 101 rules. The steps the Commission took will remove regulatory barriers that limit the use of spectrum for wireless backhaul and other Fixed Service communications. “Backhaul” in this context refers to telecommunications channels between cell sites or between cell sites and landline network backbones. “Fixed Service” (FS) refers to radio communication between specified points, typically but not always using directed beams. The Commission also made additional spectrum available for wireless backhaul – as much as 650 megahertz – especially in rural areas, where wireless backhaul is the only practical middle mile solution. By enabling more flexible and cost-effective microwave services, the Commission is helping to accelerate deployment of fourth-generation (4G) mobile broadband infrastructure across America.

II. REGULATIONS AND POLICIES THAT THE COMMISSION ADOPTED OR MODIFIED, INCLUDING COMPLIANCE REQUIREMENTS

Most terrestrial FS operators are licensed under Part 101 of the Commission’s rules; the two main exceptions are the Broadcast Auxiliary Service (BAS) and the Cable TV Relay Service (CARS). The Commission did two things to reduce artificial regulatory barriers between spectrum allocated to Part 101 FS and spectrum allocated to BAS and CARS:

- The Commission decided to allow Part 101 FS operators to share the 6875-6975 MHz, 7025-7125 MHz and 12700-13150 MHz bands, which had previously been reserved for BAS and CARS. However, Part 101 FS operators will be allowed to obtain microwave radio licenses in those bands only in places where they will not cause electrical interference to previously licensed BAS or CARS licensees. That will provide Part 101 FS operators with access to an additional 650 megahertz of spectrum in more than half of the nation’s land mass encompassing about 10 percent of the U.S. population.
- The Commission eliminated the “Final Link” rule. That rule had prohibited broadcasters from using FS stations licensed under Part 101 as the final radiofrequency link in the chain of distribution of program material to broadcast stations, restricting broadcasters to the use of BAS frequencies for such links. Eliminating the rule will make it easier for broadcasters to find vacant spectrum for final microwave links to their stations.

The Commission also adopted a new rule to facilitate sending of intelligible signals during bad weather. Part 101 contains a minimum data transmission rate rule, 47 C.F.R. § 101.141(a)(3), that is intended to ensure that FS links operate efficiently, without wasting spectrum. Severe weather, however, can render high-speed transmissions unintelligible. To provide operators with more flexibility under those circumstances, the Commission will allow FS operators licensed under Part 101 to use adaptive modulation, slowing down their transmission rates during severe weather, comparable to a human being speaking slowly and over-pronouncing words to be understood in a noisy environment. This rule modification will allow FS operators to maintain critical communications during periods when atmospheric disturbances cause signal fading.

III. RECORDKEEPING AND OTHER COMPLIANCE REQUIREMENTS

One of the rules adopted in the Backhaul R&O requires BAS licensees in the 6875-7125 MHz band, including small businesses, to register their fixed receive sites using the Commission’s Universal Licensing System (ULS). This requirement is an information collection under the Paperwork Reduction Act and will become effective after the Commission publishes a notice in the *Federal Register* announcing both the approval of the information collection by the Office of Management and Budget and the effective date. Once the requirement takes effect, affected licensees can report the information by logging on to ULS and filing an

application on FCC Form 601(Main Form and Schedule I) to modify their licenses to include the receive site information. For further information, see *Wireless Telecommunications Bureau Announces ULS Upgrade, Licensees of Television Pick-Up Stations Now Have the Option of Identifying Their Stationary, Receive-Only Sites on ULS to Aid Coordination with Other Services*, Public Notice, RM-11308, 23 FCC Rcd 6521 (WTB 2008).¹

Otherwise, the *Backhaul R&O* does not impose any mandatory new requirements or compliance burdens on small entities, including any reporting or recordkeeping burdens, but it does require applicants to comply with the requirements described below if they choose to use any of the expanded authority allowed by the new rules. Those requirements are as follows:

- When seeking a license under Part 101 to operate an FS microwave transmitter in the 6875-6975 MHz, 7025-7125 MHz or 12700-13150 MHz bands, the applicant must demonstrate that it will not cause electrical interference to previously licensed BAS or CARS licensees or to fixed satellite services (FSS) licensed in those bands. Point-to-point terrestrial microwave applications are submitted online through the Commission's ULS, which provides users with detailed, step-by-step instructions.² The applicant can identify terrestrial non-Federal licensees and applicants in its proposed area of operation through the ULS, and satellite earth stations through the International Bureau Electronic Filing System (IBFS), both of which are accessible on the Commission's web site.³ Applicants, including small businesses, may use frequency coordinators to meet their obligations to coordinate proposed operations. "Coordination" in this context means contacting microwave licensees and license applicants in the area to determine whether or not they believe that the applicant's proposed link would interfere with their signals, and making mutually agreed upon adjustments to resolve their concerns. The Commission does not license or endorse microwave frequency coordinators, but it lists them on its web site.⁴ Additional information regarding microwave frequency coordination is available from the National Spectrum Managers Association (NSMA), a voluntary, not-for-profit organization that provides an industry forum for microwave frequency coordinators.
- Part 101 applicants for the 6875-6975 MHz, 7025-7125 MHz or 12700-13150 MHz bands must demonstrate that they will comply with the capacity and loading requirements contained in Section 101.141(a)(3) of the Commission's Rules.⁵ The capacity is the maximum number of bits per second that a microwave radio link is capable of transmitting under normal circumstances. The rule lists minimum traffic loading payloads as percentages of the link's capacity,⁶ but for digital systems using bandwidths of at least 10 megahertz, the rule defines payload as the maximum capacity of a multiplexer attached to the transmitter, not the number of digital bits that is actually being transmitted.⁷ In addition, the

¹ The Public Notice is accessible at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-08-892A1.pdf. Previously BAS and CARS licenses were allowed but not required to register receive-only sites supporting mobile BAS and CARS.

² The ULS is accessible at <http://wireless.fcc.gov/uls/index.htm?job=home>.

³ As stated above, the ULS is accessible at <http://wireless.fcc.gov/uls/index.htm?job=home>. The IBFS web page for earth station searches is at <http://licensing.fcc.gov/myibfs/pointSearch.do>. The Lower 6 GHz Band is shared with satellite earth stations; the Upper 6 GHz Band is not.

⁴ Frequency coordinators are listed at http://wireless.fcc.gov/services/index.htm?job=licensing_1&id=microwave.

⁵ 47 C.F.R. § 101.141(a)(3). The Commission will not apply the capacity and loading requirements to BAS licensed under Part 74.

⁶ 47 C.F.R. § 101.141(a)(3).

⁷ 47 C.F.R. § 101.141(a)(6).

Commission retains an existing exemption from the capacity and loading requirements of Part 101 for transmitters carrying digital video motion material.⁸

- Except for the minimum capacity and payload requirements discussed above, the Commission will apply the same technical parameters that currently apply in the Upper 6 GHz band to the adjacent 6875-6975 MHz band and to the 7025-7125MHz band.⁹ Specifically, the Commission requires that license applicants demonstrate that their transmission systems meet the following design criteria: (1) a maximum frequency tolerance of 0.005 percent;¹⁰ (2) a maximum transmitter power of +55 dBw;¹¹ (3) the antenna standards currently applicable to Upper 6 GHz Band stations authorized after June 1, 1997,¹² and (4) the 17 kilometer minimum path length requirement of Section 101.143.¹³
- The Commission will apply to the 12700-13150 MHz band most of the technical rules that apply to the 12700-13000 MHz band.¹⁴ The Commission will require license applicants to meet the following system design criteria: (1) a maximum frequency tolerance of 0.005 percent;¹⁵ (2) a maximum transmitter power of +50 dBw;¹⁶ (3) the antenna standards currently applicable to Upper 6 GHz Band stations authorized after June 1, 1997,¹⁷ and (4) the 5 kilometer minimum path length requirement of Section 101.143.¹⁸ The exceptions are the minimum payload capacity and loading requirements discussed above.

The Commission will require applicants seeking permission to use modulations below the minimums established in Section 101.141(a)(3) of the Commission's Rules to design their microwave paths to be available at modulations compliant with the minimum payload capacity at least 99.95% of the time. This is a path design requirement, not an operational requirement. The Commission will not require operators to log instances where they have to use adaptive modulation, nor will it penalize operators that adjust their modulations to cope with prolonged adverse weather conditions that exceed reasonable expectations.

IV. INTERNET LINK AND CITATIONS

“Amendment of Part 101 of the Commission's Rules to Accommodate to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Fixed Microwave Licensees”

Report and Order:

http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-120A1.pdf

26 FCC Rcd 11614 (2011) (including correction); 76 Fed. Reg. 59559 (2011), corrected at 76 Fed. Reg. 65970-01 (2011).

⁸ 47 C.F.R. 101.141(a)(5).

⁹ See 47 C.F.R. Part 101, Subpart C.

¹⁰ See 47 C.F.R. § 101.107(a).

¹¹ See 47 C.F.R. § 101.113(a).

¹² See 47 C.F.R. § 101.115(b)(2).

¹³ 47 C.F.R. § 101.143.

¹⁴ See 47 C.F.R. Part 101, Subpart C.

¹⁵ See 47 C.F.R. § 101.107(a).

¹⁶ See 47 C.F.R. § 101.113(a).

¹⁷ See 47 C.F.R. § 101.115(b)(2).

¹⁸ 47 C.F.R. § 101.143.