



PUBLIC NOTICE

Federal Communications Commission
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DA 09-1427

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WIRELESS TELECOMMUNICATIONS BUREAU SEEKS COMMENT ON REQUEST OF ALCATEL-LUCENT, *et al.* FOR INTERPRETATION OF 47 C.F.R. § 101.141(a)(3) TO PERMIT THE USE OF ADAPTIVE MODULATION SYSTEMS

WT Docket No. 09-106

Comments Due: July 27, 2009

Reply Comments Due: August 11, 2009

On May 8, 2009, Alcatel-Lucent; Dragonwave Inc.; Ericsson Inc; Exalt Communications; Fixed Wireless Communications Coalition; Harris Stratex Networks; and Motorola, Inc. (“Petitioners”) filed a request for a declaratory ruling pursuant to Section 1.2 of the Commission’s Rules.¹ In their Request, Petitioners ask the Wireless Telecommunications Bureau (“Bureau”) to interpret Section 101.141(a)(3) of the Commission’s Rules² to permit data rates to drop for brief periods below the minimum payload capacity specified in the rule, when a link would otherwise be temporarily out of service, so long as the values mandated by the rule are maintained both in normal operation and on average.³

Section 101.141(a)(3) of the Commission’s Rules sets forth capacity and loading requirements which must be met by equipment operating in the 4, 6, 10, and 11 GHz bands for point-to-point systems operating under Part 101 of the Commission’s Rules.⁴ These capacity and loading requirements are designed to promote efficient use of the spectrum.⁵ Section 101.147 of the Commission’s Rules specifies authorized channel bandwidths in each band.⁶ For each authorized bandwidth, Section 101.141(a)(3) of the Commission’s Rules specifies a minimum payload capacity, expressed in megabits per second.⁷

According to Petitioners, the industry has generally construed the minimum payload requirements as applying each and every second the link is in service.⁸ Petitioners assert that fixed service links,

¹ 47 C.F.R. § 1.2. Request for Interpretation of Section 101.141(a)(3) of the Commission’s Rules to Permit the Use of Adaptive Modulation Systems (filed May 8, 2009) (“Request”).

² 47 U.S.C. § 101.141(a)(3).

³ Request at 2, 5.

⁴ 47 C.F.R. § 101.141(a)(3).

⁵ See Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, *et al.*, WT Docket No. 94-148, CC Docket No. 93-2, RM-7861, *Report and Order*, 11 FCC Rcd 13449, 13476 ¶¶ 76-77 (1996).

⁶ 47 C.F.R. § 101.147.

⁷ 47 C.F.R. § 101.141(a)(3).

⁸ Request at 2.

especially long links, are subject to atmospheric fading: a temporary drop in received power caused by changes in propagation conditions.⁹ Fading leads to an increase in bit errors, and sometimes to a complete loss of communications.¹⁰ According to Petitioners, one way to combat fading is by briefly reducing the data rate, which requires a temporary change in the type of modulation, a process called “adaptive modulation.”¹¹ Petitioners acknowledge that the use of adaptive modulation may reduce the minimum payload capacity below the value specified in the rule for a short time, although this still represents an increase over the otherwise zero level during the fade.¹² Petitioners further allege that, in a properly designed system, fading conditions that might trigger adaptive modulation occur well under one percent of the time, and thus, even under pessimistic assumptions, a system employing adaptive modulation will comfortably achieve the minimum on average.¹³

Petitioners ask that the Bureau confirm that the use of adaptive modulation is consistent with Section 101.141(a)(3) of the Commission’s Rules.¹⁴ Specifically, Petitioners ask the Bureau to rule that it is permissible for data rates to drop for brief periods below the minimum payload capacity specified in the rule, when a link would otherwise be temporarily out of service, so long as the values mandated by the rule are maintained both in normal operation and on average.¹⁵ They assert that the proposed reading of the rule fully maintains the rule’s purpose by enhancing spectrum efficiency.¹⁶ Petitioners also state that the interpretation would allow for the continued handling of critical traffic when the link would otherwise be inoperative.¹⁷ They claim that the use of adaptive modulation could preserve network synchronization during fading, which could eliminate several additional minutes of outage.¹⁸ Petitioners acknowledge that a license application and prior coordination for a system that uses adaptive modulation must list all of the modulations that the system might use, with their respective emissions designators.¹⁹

We seek comment on Petitioners’ Request. Interested parties may file comments on or before **July 27, 2009**, and reply comments on or before **August 11, 2009**. All filings must be addressed to the Commission’s Secretary, Marlene H. Dortch, Office of the Secretary, Federal Communications Commission, 445 12th Street, SW, Suite TW-A325, Washington, DC 20554. Comments may be filed under WT Docket No. 09-106 using the Commission’s Electronic Comment Filing System (ECFS) or by filing paper copies.²⁰ Parties that choose to file by paper must file an original and four copies of each filing. Commenters must also send a copy to Best Copy and Printing, Inc., 445 12th St, SW, Suite CY-

⁹ *Id.* at 3.

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.* at 2, 5.

¹⁶ *Id.* at 4.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ Instructions for filing paper copies can be found at <http://www.fcc.gov/osec/guidelines.html> or by calling the Office of the Secretary at 202-418-0300. For help filing electronically, see *Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998) and <http://www.fcc.gov/cgb/ecfs>.

B402, Washington, DC 20554, by telephone at 800-378-3160 or 202-488-5300, fax at 202-488-5563, or e-mail at fcc@bcpiweb.com.

Petitioners' Request and comments filed in response to this Public Notice will be available via the ECFS, in the Commission's Reference Center,²¹ or from Best Copy and Printing, Inc.

This matter shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.²²

FOR FURTHER INFORMATION, CONTACT: Barrett Brick of the Wireless Telecommunications Bureau, Broadband Division, at (202) 418-1065, Barrett.Brick@fcc.gov.

Action by the Chief, Broadband Division, Wireless Telecommunications Bureau.

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²¹ The Commission's Public Reference Center is located at Portals II, 445 12th Street SW, Room CY-A257, Washington, DC 20554.

²² See 47 C.F.R. §§ 1.1200, 1.1206. *Ex parte* presentations that are made with respect to the issues involved in the Petition will be allowed but must be disclosed in accordance with the requirements of 47 C.F.R. § 1.1206(b).