



ROBERT J. BUTLER  
HARRY F. COLE  
ANNE GOODWIN CRUMP  
DONALD J. EVANS  
PAUL J. FELDMAN  
CHRISTINE GOEPP  
KEVIN M. GOLDBERG  
FRANK R. JAZZO  
M. SCOTT JOHNSON  
DANIEL A. KIRKPATRICK  
MITCHELL LAZARUS  
STEPHEN T. LOVELADY  
SUSAN A. MARSHALL  
HARRY C. MARTIN  
MICHELLE A. McCLURE  
MATTHEW H. McCORMICK  
FRANCISCO R. MONTERO  
RAYMOND J. QUIANZON  
JAMES P. RILEY  
DAVINA SASHKIN  
PETER TANNENWALD  
KATHLEEN VICTORY  
HOWARD M. WEISS

\* NOT ADMITTED IN VIRGINIA

1300 NORTH 17th STREET, 11th FLOOR  
ARLINGTON, VIRGINIA 22209

OFFICE: (703) 812-0400  
FAX: (703) 812-0486  
[www.fhhlaw.com](http://www.fhhlaw.com)  
[www.commlawblog.com](http://www.commlawblog.com)

RETIRED MEMBERS  
VINCENT J. CURTIS, JR.  
RICHARD HILDRETH  
GEORGE PETRUTSAS

OF COUNSEL  
ALAN C. CAMPBELL  
THOMAS J. DOUGHERTY, JR.  
KATHRYN A. KLEIMAN  
ROBERT M. GURSS\*  
ROBERT J. SCHILL  
RICHARD F. SWIFT

June 21, 2012

MITCHELL LAZARUS  
(703) 812-0440  
[LAZARUS@FHHLAW.COM](mailto:LAZARUS@FHHLAW.COM)

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington DC 20554

**Re: WT Docket No. 10-153, *Amendment of Part 101 to Facilitate Wireless Backhaul*  
*Ex Parte Communication***

Dear Ms. Dortch:

On behalf of the Comsearch and the Fixed Wireless Communications Coalition (FWCC), pursuant to Section 1.1206(b)(2) of the Commission's Rules, I am electronically filing this notice of an oral *ex parte* communication in the above-referenced docket.

Yesterday, Chris Hardy and Will Perkins, both of Comsearch, and Christine Goepp of this firm and I, representing the FWCC, met with John Leibovitz, Charles Oliver, John Schauble, Blaise Scinto, and Melissa Glidden Tye, and by teleconference, Chris Andes and Stephen Buenzow, all of the Commission staff.

We presented the points summarized below.

Ms. Marlene H. Dortch, Secretary

June 21, 2012

Page 2

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## EFFICIENCY STANDARDS IN RURAL AREAS

Comsearch and the FWCC continue to oppose the Commission's proposal to relax efficiency standards for rural links, where "rural" is defined as locations at which "the environment allows for the use of antennas meeting performance Standard B."<sup>1</sup>

As the FWCC noted in an earlier filing, such a rule would create an added incentive for the use of inferior antennas.<sup>2</sup> We also noted a class of antennas, often used in dense urban areas, having highly directive radiation patterns that narrowly miss qualifying for Standard A. These rarely require upgrades to Standard A, yet under the Commission's proposal they would trigger deregulation as to spectrum efficiency.<sup>3</sup>

The practical effect of the proposed rule would be to largely eliminate the standards of Section 101.141(a)(3), and allow the operation of low-efficiency radios almost everywhere in the country.

In theory, the present rules require an existing licensee to upgrade from Standard B to Standard A where needed to permit successful frequency coordination by a new entrant.<sup>4</sup> In practice, however, licensees could resist the expense of the upgrade. The new entrant, rather than endure the uncertainty and delay, typically seeks a different solution, such as frequency coordination in another band.

The proposed rule, by greatly raising the cost of an upgrade from Standard B to Standard A, would further complicate an already difficult process. Increasing the modulation rate in itself need not be an expensive step, as it can be accomplished in most modern Fixed Service radios by a software change. The problem, rather, is that a low modulation rate permits longer links, other properties remaining constant.

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<sup>1</sup> *Amendment of Part 101 to Facilitate Wireless Backhaul*, Report and Order, Further Notice of Proposed Rulemaking, and Memorandum Opinion and Order, 26 FCC Rcd 11614 at ¶ 84 (2011) (*Further Notice*).

<sup>2</sup> Letter from Mitchell Lazarus, Counsel for FWCC, to Marlene H. Dortch, Secretary, FCC, in WT Docket No. 10-153 at 2 (filed Jan. 26, 2012).

<sup>3</sup> *Id.*

<sup>4</sup> "Fixed stations . . . must employ transmitting and receiving antennas (excluding second receiving antennas for operations such as space diversity) meeting the appropriate performance Standard A indicated below, except that in areas not subject to frequency congestion, antennas meeting performance Standard B may be used, subject to the requirements set forth in paragraph (d) of this section [on passive reflectors]." 47 C.F.R. § 101.115(b).

Ms. Marlene H. Dortch, Secretary

June 21, 2012

Page 3

(This is one of the Commission's motivations for proposing the rule.<sup>5</sup>) Raising the modulation rate as a consequence of upgrading from Standard B to Standard A, and leaving other factors unchanged, will tend to increase the bit error rate. This may render the long link unusable. The existing operator will then have the additional expense of designing, coordinating, licensing, and installing a relay station to break up the link into two shorter ones. This will only worsen operators' reluctance to upgrade the antenna.

In principle, the Commission could address this issue by setting a firm timeline for antenna (and modulation) upgrades,<sup>6</sup> and then vigorously enforcing that timeline. In practice, though, we expect the additional costs of upgrades will be high enough to motivate continued foot-dragging—*e.g.*, enforcement challenges grounded in claims that the antenna upgrade is not really necessary. Such disputes can take months or years to play out. Even if the new entrant were ultimately to prevail, the process would take far longer than a new entrant can reasonably wait.

In consequence, we fear, the result of Commission's proposed rule will be the widespread deployment of low-efficiency radios, and a resulting congestion of Fixed Service spectrum. Even if all licensees complied promptly as to needed upgrades, new entrants would still face a more congested environment than they would without such a rule. And prompt compliance is unlikely. In areas where congestion occurs, there will be no ready way to ensure that operators quickly replace their antennas and improve their modulation rates. The added congestion ensuing from the rule will only serve to block new entrants.

#### **CONVERTING PART 101 EFFICIENCY STANDARDS TO BITS/SEC/Hz**

Comsearch and the FWCC continue to support changing the spectrum efficiency requirements of Section 101.141 to a bits/sec/Hz standard. Although Comsearch and the FWCC have both filed quantitative proposals in the past, we continue to examine the issues, and may update our recommendations in the near future.

We noted yesterday that a workable bits/sec/Hz standard must specify which bits in a transmission qualify toward the minimum. There are three main categories: (1) the customer payload; (2) header and trailer bits required by the packet protocol, which include addressing and other information; and (3) “housekeeping” bits generated by the radio system, as for forward error correction. For simplicity, the

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<sup>5</sup> *Further Notice at ¶ 82.*

<sup>6</sup> The FWCC has requested such a timeline in the past. *E.g.*, Reply Comments of the Fixed Wireless Communications Coalition at 3 (filed Oct. 25, 2011).

Ms. Marlene H. Dortch, Secretary

June 21, 2012

Page 4

FWCC proposes that any bits transmitted over the radio link count toward the required minimum.<sup>7</sup> (Comsearch's position on payload capacity is reflected in proposed Section 101.3 in the *Further Notice: "Payload Capacity.* The bit rate available for transmission of data over a radiocommunication system, excluding overhead data generated by the system.")

Finally, we asked the Commission to confirm our reading of Section 101.141: that the spectrum efficiency requirements refer to a system's capability, and do not require that number of bits to be transmitted every second of every day. And further, that a transmitter meets its loading requirements if it is connected to a multiplexer (or has a built-in multiplexer) having sufficient capacity.<sup>8</sup> The load on a given link tends to fluctuate over time, particularly on packet radios. As a practical matter, moreover, the operator has no way of ascertaining how many bits have passed during any time period.

#### **RELAXED ANTENNA STANDARDS AT 70/80/90 GHz**

Comsearch and the FWCC reported to the Commission that applications for 70/80/90 GHz radios have expanded since the current rules were adopted, and now include small-cell systems that use antennas close to street level, as on light poles. In view of these developments, Comsearch and the FWCC expect to approach the Commission in the near future with a proposal for standards allowing 6-8 inch antennas in these bands—either as a relaxed version of the current rules or, less preferably, as a new Standard B, in relation to which the current specifications would be redesignated as Standard A.

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Please contact me with any questions.

Respectfully submitted



Mitchell Lazarus  
Counsel for Comsearch and the Fixed  
Wireless Communications Coalition

cc: Meeting participants

<sup>7</sup> The FWCC opposes limiting the counted bits to customer payload, as that would artificially pressure system designers toward low-overhead protocols. The engineering decisions as to protocols for a particular system should remain outside regulatory influence.

<sup>8</sup> 47 C.F.R. § 101.141(a)(6).