



ROBERT J. BUTLER  
HARRY F. COLE  
ANNE GOODWIN CRUMP  
DONALD J. EVANS  
PAUL J. FELDMAN  
KEVIN M. GOLDBERG  
FRANK R. JAZZO  
M. SCOTT JOHNSON  
DANIEL A. KIRKPATRICK  
MITCHELL LAZARUS  
CHENG-YI LIU  
STEPHEN T. LOVELADY  
JONATHAN MARKMAN  
SUSAN A. MARSHALL  
HARRY C. MARTIN  
MICHELLE A. McCLURE  
MATTHEW H. McCORMICK  
FRANCISCO R. MONTERO  
RAYMOND J. QUIANZON  
DAVINA SASHKIN  
PETER TANNENWALD  
JAMES U. TROUP  
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  
www.commlawblog.com

March 24, 2014

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

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

MITCHELL LAZARUS  
(703) 812-0440  
LAZARUS@FHHLAW.COM

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
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 Fixed Wireless Communications Coalition, Inc. (FWCC),<sup>1</sup> pursuant to Section 1.1206(b)(1) of the Commission's Rules, I am electronically filing this written *ex parte* communication in the above-referenced docket.

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<sup>1</sup> The FWCC is a coalition of companies, associations, and individuals interested in the Fixed Service—i.e., in terrestrial fixed microwave communications. Our membership includes manufacturers of microwave equipment, fixed microwave engineering firms, licensees of terrestrial fixed microwave systems and their associations, and communications service providers and their associations. The membership also includes railroads, public utilities, petroleum and pipeline entities, public safety agencies, cable TV providers, backhaul providers, and/or their respective associations, communications carriers, and telecom attorneys and engineers. Our members build, install, and use both licensed and unlicensed point-to-point, point-to-multipoint, and other fixed wireless systems, in frequency bands from 900 MHz to 95 GHz. For more information, see [www.fwcc.us](http://www.fwcc.us).

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On October 5, 2012, the FWCC filed comments in this docket seeking relaxation of the antenna standards in the 71-76 and 81-86 GHz bands.<sup>2</sup> We proposed new antenna suppression standards for the table in Section 101.115.

On April 4, 2013, by *ex parte* letter in this docket, the FWCC supplemented that request by asking the Commission also to (1) apply the co-polar discrimination requirement to angles between 2.5 and 5 degrees, rather than between 1.2 and 5 degrees; and (2) reduce the cross-polar discrimination requirement from 25 dB to 21 dB.<sup>3</sup>

On the next day, Aviat Networks, through its affiliate Aviat U.S., Inc., requested a waiver pending the rulemaking sought by the FWCC.<sup>4</sup> The specifics of the Aviat Networks waiver request were identical to those of the FWCC rulemaking request, as amended on April 4.

As development work continued, Aviat Networks' engineers and vendors have found the need for additional relief with respect to the same rule. Today Aviat Networks is filing an amendment to its waiver request that asks the Commission to relax the required magnitude of co-polar discrimination from G-28 dB to G-33 dB, where G is the antenna gain in dBi.

The FWCC here submits the same change to its rulemaking request.

By way of explanation, we quote from today's Aviat Networks amendment:

Planar antennas that satisfy the other conditions in the requested waiver cannot also comply with the magnitude of the required co-polar discrimination, namely, G-28 dB, where G is the antenna gain in dBi.<sup>5</sup> The requirement is less demanding for lower-gain antennas, and in fact our prototypes at 38 dBi can pass; although just barely. But our 43 dBi planar antennas cannot. The problem is not amenable to better design or construction, but rather appears to be integral to the physics of wave activity that governs antenna performance.

For these reasons, Aviat Networks must add a fourth element to its waiver request:

reduction of the required magnitude of co-polar discrimination from G-28 dB to G-33 dB, where G is the antenna gain in dBi.

[ ... ]

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<sup>2</sup> Comments of the Fixed Wireless Communications Coalition in Response to the Commission's Notice of Inquiry in WT Docket No. 10-153 at 2-6 (filed Oct. 5, 2012).

<sup>3</sup> Letter from Mitchell Lazarus, counsel for the FWCC, to Marlene H. Dortch, Secretary, FCC, in WT Docket No. 10-153 (filed April 4, 2013).

<sup>4</sup> Request for Waiver of Aviat Networks (no docket number) (filed April 5, 2013).

<sup>5</sup> 47 C.F.R. § 101.115(b) (note 15).

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The proposed change sidesteps the question whether “G” in the rule refers to nominal or measured antenna gain. The measured gain increases with frequency, which could make the co-polar discrimination requirement more stringent at higher frequencies. Where compliance is a close call, an antenna might meet the standard at some frequencies but not at others. The requested relaxation moots this question, as it makes possible the design of antennas capable of complying at all relevant frequencies no matter how the gain is specified.

[ ... ]

We do not see a downside. The original proponent for the co-polar discrimination requirement referred specifically to the “need to control interference to a narrow, spatial pipe,”<sup>6</sup> apparently related to multiple links that share the same geographic path, *e.g.*, between the same two rooftops. The Commission, in adopting the requirement, added no further explanation.<sup>7</sup> Whatever the merits of the requirement as to the applications for which it was intended, it has no relevance to the small-antenna, short-range applications that will benefit from the waiver. We note, additionally, that all of the fixed service bands below 71 GHz function well without *any* co-polar discrimination requirement.

The FWCC supports rules that allow smaller antennas regardless of technology. For that reason, we agree with Aviat Networks on the need to relax the co-polar discrimination requirement for 71-76/81-86 GHz antennas. We amend our rulemaking request to ask for a reduction in the required magnitude of co-polar discrimination from G-28 dB to G-33 dB, where G is the antenna gain in dBi. We further agree with Aviat Networks that the rule was intended to control interference among high-gain systems, and that the requested change will have little or no effect on the small-antenna, short-range applications that will benefit from relaxed antenna rules.

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<sup>6</sup> Petition for Reconsideration of Wireless Communications Association International in WT Docket No. 02-146 at 16-18 (filed Feb. 23, 2004).

<sup>7</sup> *Allocations and Service Rules for the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands*, Memorandum Opinion and Order, 20 FCC Rcd 4889 at ¶ 34 n.103 (2005).

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Please do not hesitate to contact me with any questions.

Respectfully submitted,



Mitchell Lazarus

Counsel for the Fixed Wireless  
Communications Coalition

cc: Chairman Tom Wheeler  
Commissioner Mignon Clyburn  
Commissioner Jessica Rosenworcel  
Commissioner Ajit Pai  
Commissioner Michael O'Rielly  
Roger C. Sherman, Acting Chief, Chief, Wireless Telecom. Bur.  
James Schlichting, Senior Deputy Chief, Wireless Telecom. Bur.  
John S. Leibovitz, Deputy Chief, Wireless Telecom. Bur.  
Tom Peters, Chief Engineer, Wireless Telecom. Bur.  
Blaise Scinto, Chief, Broadband Div., Wireless Telecom. Bur.  
John Schauble, Deputy Chief, Broadband Div., Wireless Telecom. Bur.  
Stephen Buenzow, Deputy Chief, Broadband Div., Wireless Telecom. Bur.  
Charles Oliver, Attorney Advisor, Broadband Div., Wireless Telecom. Bur.  
Brian Wondrack, Attorney Advisor, Broadband Div., Wireless Telecom. Bur.